

# Report document

Report generated: 2022-11-09 10:18:57.461865

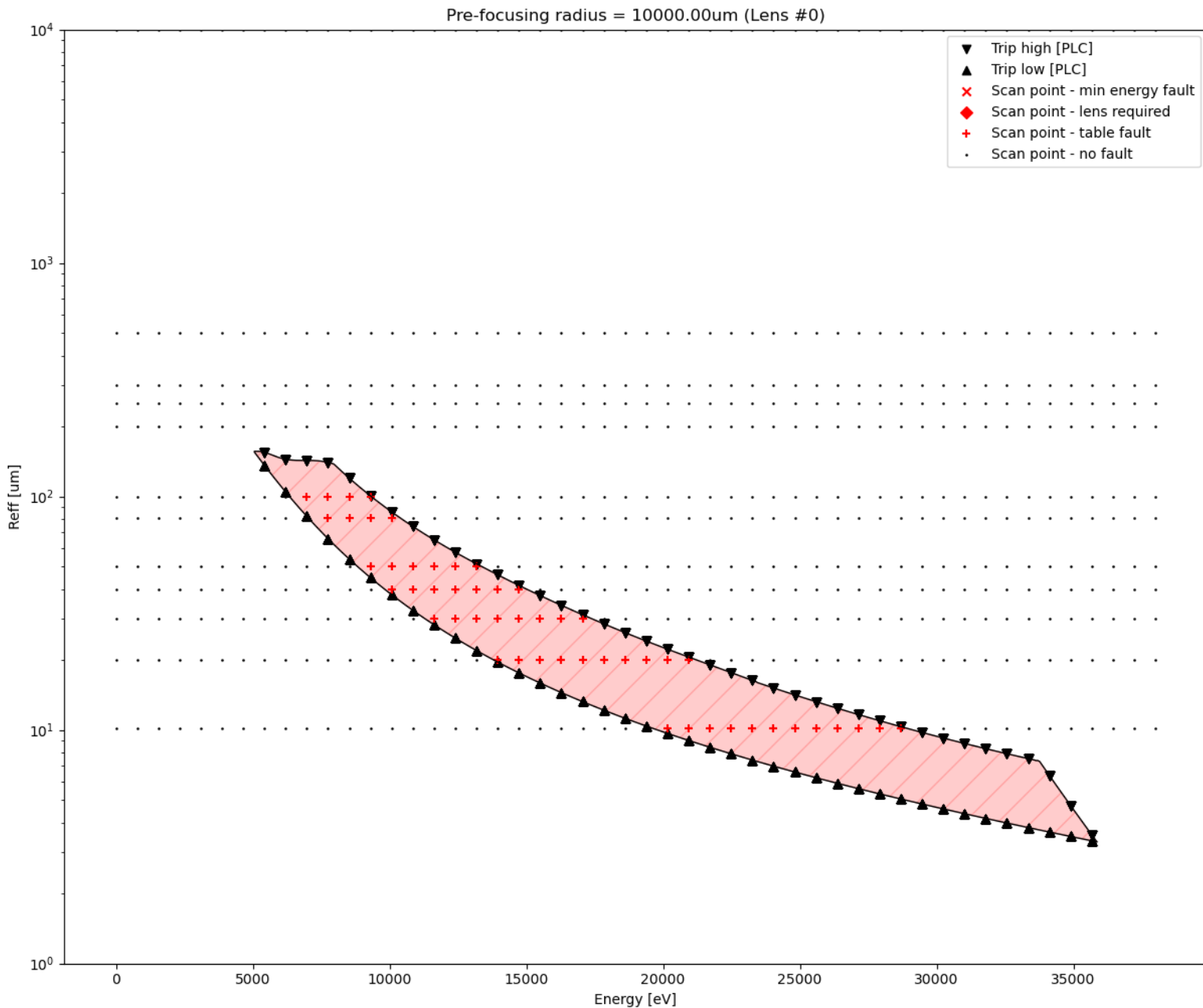
The next 4 sections describe individual scans, without a pre-focus lens and then one per pre-focus lens.

## Scan 1: No pre-focusing lens

Data generated: 2022-11-09 18:18:56 (Note: data generation timestamps ahead by 8 hours)  
bluesky scan sweep\_energy\_plan performed without a pre-focus lens.

### Scan Information

1. Choose a few transfocator lens sets to span the effective radius range.
2. For each of those lens sets, scan energy at regular intervals.
3. Each marker on the plot represents one of those scan points.
4. Record if PLC reported a fault and why.



## Plot / Table Information

**No fault** indicates that a data point was checked but no fault reported by PLC.

**Trip Low** and **Trip High** are values from the spreadsheet table, interpolated by the PLC and reported to EPICS.

The lines drawn around these regions and the highlighted regions are directly from the spreadsheet.

**Min Energy Fault** indicates that it does not meet minimum energy requirement for a given XRT lens.

**Table Fault** indicates a fault from the spreadsheet table disallowed region.

**Lens Required Fault** markers are clipped at the bottom of the plot.

## Scan 1: No pre-focusing lens: Scan Data Table

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 0.00        | 0.00          | 10000.00        | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 775.51      | 0.00          | 10000.00        | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 1551.02     | 0.00          | 10000.00        | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 2326.53     | 0.00          | 10000.00        | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 3102.04     | 0.00          | 10000.00        | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 3877.55     | 0.00          | 10000.00        | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 4653.06     | 0.00          | 10000.00        | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 5428.57     | 135.90        | 10000.00        | 154.66         | 0       | 0           | 0                | 0                   | 0           |
| 6204.08     | 104.53        | 10000.00        | 144.25         | 0       | 0           | 0                | 0                   | 0           |
| 6979.59     | 82.12         | 10000.00        | 142.55         | 0       | 0           | 0                | 0                   | 0           |
| 7755.10     | 65.89         | 10000.00        | 139.79         | 0       | 0           | 0                | 0                   | 0           |
| 8530.61     | 53.89         | 10000.00        | 119.71         | 0       | 0           | 0                | 0                   | 0           |
| 9306.12     | 44.86         | 10000.00        | 100.49         | 0       | 0           | 0                | 0                   | 0           |
| 10081.63    | 37.92         | 10000.00        | 85.80          | 0       | 0           | 0                | 0                   | 0           |
| 10857.14    | 32.50         | 10000.00        | 74.31          | 0       | 0           | 0                | 0                   | 0           |
| 11632.65    | 28.19         | 10000.00        | 65.13          | 0       | 0           | 0                | 0                   | 0           |
| 12408.16    | 24.71         | 10000.00        | 57.64          | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 21.86         | 10000.00        | 51.44          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 19.51         | 10000.00        | 46.13          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 17.54         | 10000.00        | 41.55          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 15.87         | 10000.00        | 37.59          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 14.44         | 10000.00        | 34.14          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 13.21         | 10000.00        | 31.12          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 12.14         | 10000.00        | 28.45          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 11.21         | 10000.00        | 26.09          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 10.39         | 10000.00        | 24.01          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.66          | 10000.00        | 22.16          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 9.01          | 10000.00        | 20.50          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 8.42          | 10000.00        | 19.00          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.90          | 10000.00        | 17.61          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 7.42          | 10000.00        | 16.30          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.99          | 10000.00        | 15.11          | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 24816.33    | 6.60          | 10000.00        | 14.12          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 6.24          | 10000.00        | 13.21          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.91          | 10000.00        | 12.38          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.60          | 10000.00        | 11.63          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 5.32          | 10000.00        | 10.95          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 5.06          | 10000.00        | 10.32          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.81          | 10000.00        | 9.75           | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.59          | 10000.00        | 9.23           | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.38          | 10000.00        | 8.75           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 4.18          | 10000.00        | 8.31           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.99          | 10000.00        | 7.90           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.82          | 10000.00        | 7.53           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.65          | 10000.00        | 6.38           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.50          | 10000.00        | 4.74           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.35          | 10000.00        | 3.55           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 10000.00        | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 10000.00        | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 10000.00        | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 10.17           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 775.51      | 0.00          | 10.17           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 1551.02     | 0.00          | 10.17           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 2326.53     | 0.00          | 10.17           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 3102.04     | 0.00          | 10.17           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 3877.55     | 0.00          | 10.17           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 4653.06     | 0.00          | 10.17           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 5428.57     | 135.90        | 10.17           | 154.66         | 0       | 0           | 0                | 0                   | 0           |
| 6204.08     | 104.53        | 10.17           | 144.25         | 0       | 0           | 0                | 0                   | 0           |
| 6979.59     | 82.12         | 10.17           | 142.55         | 0       | 0           | 0                | 0                   | 0           |
| 7755.10     | 65.89         | 10.17           | 139.79         | 0       | 0           | 0                | 0                   | 0           |
| 8530.61     | 53.89         | 10.17           | 119.71         | 0       | 0           | 0                | 0                   | 0           |
| 9306.12     | 44.86         | 10.17           | 100.49         | 0       | 0           | 0                | 0                   | 0           |
| 10081.63    | 37.92         | 10.17           | 85.80          | 0       | 0           | 0                | 0                   | 0           |
| 10857.14    | 32.50         | 10.17           | 74.31          | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 11632.65    | 28.19         | 10.17           | 65.13          | 0       | 0           | 0                | 0                   | 0           |
| 12408.16    | 24.71         | 10.17           | 57.64          | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 21.86         | 10.17           | 51.44          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 19.51         | 10.17           | 46.13          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 17.54         | 10.17           | 41.55          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 15.87         | 10.17           | 37.59          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 14.44         | 10.17           | 34.14          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 13.21         | 10.17           | 31.12          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 12.14         | 10.17           | 28.45          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 11.21         | 10.17           | 26.09          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 10.39         | 10.17           | 24.01          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.66          | 10.17           | 22.16          | 1       | 0           | 0                | 0                   | 1           |
| 20938.78    | 9.01          | 10.17           | 20.50          | 1       | 0           | 0                | 0                   | 1           |
| 21714.29    | 8.42          | 10.17           | 19.00          | 1       | 0           | 0                | 0                   | 1           |
| 22489.80    | 7.90          | 10.17           | 17.61          | 1       | 0           | 0                | 0                   | 1           |
| 23265.31    | 7.42          | 10.17           | 16.30          | 1       | 0           | 0                | 0                   | 1           |
| 24040.82    | 6.99          | 10.17           | 15.11          | 1       | 0           | 0                | 0                   | 1           |
| 24816.33    | 6.60          | 10.17           | 14.12          | 1       | 0           | 0                | 0                   | 1           |
| 25591.84    | 6.24          | 10.17           | 13.21          | 1       | 0           | 0                | 0                   | 1           |
| 26367.35    | 5.91          | 10.17           | 12.38          | 1       | 0           | 0                | 0                   | 1           |
| 27142.86    | 5.60          | 10.17           | 11.63          | 1       | 0           | 0                | 0                   | 1           |
| 27918.37    | 5.32          | 10.17           | 10.95          | 1       | 0           | 0                | 0                   | 1           |
| 28693.88    | 5.06          | 10.17           | 10.32          | 1       | 0           | 0                | 0                   | 1           |
| 29469.39    | 4.81          | 10.17           | 9.75           | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.59          | 10.17           | 9.23           | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.38          | 10.17           | 8.75           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 4.18          | 10.17           | 8.31           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.99          | 10.17           | 7.90           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.82          | 10.17           | 7.53           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.65          | 10.17           | 6.38           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.50          | 10.17           | 4.74           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.35          | 10.17           | 3.55           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 10.17           | 0.00           | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 37224.49    | 0.00          | 10.17           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 10.17           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 20.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 775.51      | 0.00          | 20.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 1551.02     | 0.00          | 20.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 2326.53     | 0.00          | 20.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 3102.04     | 0.00          | 20.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 3877.55     | 0.00          | 20.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 4653.06     | 0.00          | 20.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 5428.57     | 135.90        | 20.00           | 154.66         | 0       | 0           | 0                | 0                   | 0           |
| 6204.08     | 104.53        | 20.00           | 144.25         | 0       | 0           | 0                | 0                   | 0           |
| 6979.59     | 82.12         | 20.00           | 142.55         | 0       | 0           | 0                | 0                   | 0           |
| 7755.10     | 65.89         | 20.00           | 139.79         | 0       | 0           | 0                | 0                   | 0           |
| 8530.61     | 53.89         | 20.00           | 119.71         | 0       | 0           | 0                | 0                   | 0           |
| 9306.12     | 44.86         | 20.00           | 100.49         | 0       | 0           | 0                | 0                   | 0           |
| 10081.63    | 37.92         | 20.00           | 85.80          | 0       | 0           | 0                | 0                   | 0           |
| 10857.14    | 32.50         | 20.00           | 74.31          | 0       | 0           | 0                | 0                   | 0           |
| 11632.65    | 28.19         | 20.00           | 65.13          | 0       | 0           | 0                | 0                   | 0           |
| 12408.16    | 24.71         | 20.00           | 57.64          | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 21.86         | 20.00           | 51.44          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 19.51         | 20.00           | 46.13          | 1       | 0           | 0                | 0                   | 1           |
| 14734.69    | 17.54         | 20.00           | 41.55          | 1       | 0           | 0                | 0                   | 1           |
| 15510.20    | 15.87         | 20.00           | 37.59          | 1       | 0           | 0                | 0                   | 1           |
| 16285.71    | 14.44         | 20.00           | 34.14          | 1       | 0           | 0                | 0                   | 1           |
| 17061.22    | 13.21         | 20.00           | 31.12          | 1       | 0           | 0                | 0                   | 1           |
| 17836.73    | 12.14         | 20.00           | 28.45          | 1       | 0           | 0                | 0                   | 1           |
| 18612.24    | 11.21         | 20.00           | 26.09          | 1       | 0           | 0                | 0                   | 1           |
| 19387.76    | 10.39         | 20.00           | 24.01          | 1       | 0           | 0                | 0                   | 1           |
| 20163.27    | 9.66          | 20.00           | 22.16          | 1       | 0           | 0                | 0                   | 1           |
| 20938.78    | 9.01          | 20.00           | 20.50          | 1       | 0           | 0                | 0                   | 1           |
| 21714.29    | 8.42          | 20.00           | 19.00          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.90          | 20.00           | 17.61          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 7.42          | 20.00           | 16.30          | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 24040.82    | 6.99          | 20.00           | 15.11          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.60          | 20.00           | 14.12          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 6.24          | 20.00           | 13.21          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.91          | 20.00           | 12.38          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.60          | 20.00           | 11.63          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 5.32          | 20.00           | 10.95          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 5.06          | 20.00           | 10.32          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.81          | 20.00           | 9.75           | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.59          | 20.00           | 9.23           | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.38          | 20.00           | 8.75           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 4.18          | 20.00           | 8.31           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.99          | 20.00           | 7.90           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.82          | 20.00           | 7.53           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.65          | 20.00           | 6.38           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.50          | 20.00           | 4.74           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.35          | 20.00           | 3.55           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 20.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 20.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 20.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 30.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 775.51      | 0.00          | 30.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 1551.02     | 0.00          | 30.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 2326.53     | 0.00          | 30.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 3102.04     | 0.00          | 30.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 3877.55     | 0.00          | 30.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 4653.06     | 0.00          | 30.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 5428.57     | 135.90        | 30.00           | 154.66         | 0       | 0           | 0                | 0                   | 0           |
| 6204.08     | 104.53        | 30.00           | 144.25         | 0       | 0           | 0                | 0                   | 0           |
| 6979.59     | 82.12         | 30.00           | 142.55         | 0       | 0           | 0                | 0                   | 0           |
| 7755.10     | 65.89         | 30.00           | 139.79         | 0       | 0           | 0                | 0                   | 0           |
| 8530.61     | 53.89         | 30.00           | 119.71         | 0       | 0           | 0                | 0                   | 0           |
| 9306.12     | 44.86         | 30.00           | 100.49         | 0       | 0           | 0                | 0                   | 0           |
| 10081.63    | 37.92         | 30.00           | 85.80          | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 10857.14    | 32.50         | 30.00           | 74.31          | 0       | 0           | 0                | 0                   | 0           |
| 11632.65    | 28.19         | 30.00           | 65.13          | 1       | 0           | 0                | 0                   | 1           |
| 12408.16    | 24.71         | 30.00           | 57.64          | 1       | 0           | 0                | 0                   | 1           |
| 13183.67    | 21.86         | 30.00           | 51.44          | 1       | 0           | 0                | 0                   | 1           |
| 13959.18    | 19.51         | 30.00           | 46.13          | 1       | 0           | 0                | 0                   | 1           |
| 14734.69    | 17.54         | 30.00           | 41.55          | 1       | 0           | 0                | 0                   | 1           |
| 15510.20    | 15.87         | 30.00           | 37.59          | 1       | 0           | 0                | 0                   | 1           |
| 16285.71    | 14.44         | 30.00           | 34.14          | 1       | 0           | 0                | 0                   | 1           |
| 17061.22    | 13.21         | 30.00           | 31.12          | 1       | 0           | 0                | 0                   | 1           |
| 17836.73    | 12.14         | 30.00           | 28.45          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 11.21         | 30.00           | 26.09          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 10.39         | 30.00           | 24.01          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.66          | 30.00           | 22.16          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 9.01          | 30.00           | 20.50          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 8.42          | 30.00           | 19.00          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.90          | 30.00           | 17.61          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 7.42          | 30.00           | 16.30          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.99          | 30.00           | 15.11          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.60          | 30.00           | 14.12          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 6.24          | 30.00           | 13.21          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.91          | 30.00           | 12.38          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.60          | 30.00           | 11.63          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 5.32          | 30.00           | 10.95          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 5.06          | 30.00           | 10.32          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.81          | 30.00           | 9.75           | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.59          | 30.00           | 9.23           | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.38          | 30.00           | 8.75           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 4.18          | 30.00           | 8.31           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.99          | 30.00           | 7.90           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.82          | 30.00           | 7.53           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.65          | 30.00           | 6.38           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.50          | 30.00           | 4.74           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.35          | 30.00           | 3.55           | 0       | 0           | 0                | 0                   | 0           |



| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 36448.98    | 0.00          | 30.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 30.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 30.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 40.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 775.51      | 0.00          | 40.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 1551.02     | 0.00          | 40.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 2326.53     | 0.00          | 40.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 3102.04     | 0.00          | 40.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 3877.55     | 0.00          | 40.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 4653.06     | 0.00          | 40.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 5428.57     | 135.90        | 40.00           | 154.66         | 0       | 0           | 0                | 0                   | 0           |
| 6204.08     | 104.53        | 40.00           | 144.25         | 0       | 0           | 0                | 0                   | 0           |
| 6979.59     | 82.12         | 40.00           | 142.55         | 0       | 0           | 0                | 0                   | 0           |
| 7755.10     | 65.89         | 40.00           | 139.79         | 0       | 0           | 0                | 0                   | 0           |
| 8530.61     | 53.89         | 40.00           | 119.71         | 0       | 0           | 0                | 0                   | 0           |
| 9306.12     | 44.86         | 40.00           | 100.49         | 0       | 0           | 0                | 0                   | 0           |
| 10081.63    | 37.92         | 40.00           | 85.80          | 1       | 0           | 0                | 0                   | 1           |
| 10857.14    | 32.50         | 40.00           | 74.31          | 1       | 0           | 0                | 0                   | 1           |
| 11632.65    | 28.19         | 40.00           | 65.13          | 1       | 0           | 0                | 0                   | 1           |
| 12408.16    | 24.71         | 40.00           | 57.64          | 1       | 0           | 0                | 0                   | 1           |
| 13183.67    | 21.86         | 40.00           | 51.44          | 1       | 0           | 0                | 0                   | 1           |
| 13959.18    | 19.51         | 40.00           | 46.13          | 1       | 0           | 0                | 0                   | 1           |
| 14734.69    | 17.54         | 40.00           | 41.55          | 1       | 0           | 0                | 0                   | 1           |
| 15510.20    | 15.87         | 40.00           | 37.59          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 14.44         | 40.00           | 34.14          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 13.21         | 40.00           | 31.12          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 12.14         | 40.00           | 28.45          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 11.21         | 40.00           | 26.09          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 10.39         | 40.00           | 24.01          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.66          | 40.00           | 22.16          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 9.01          | 40.00           | 20.50          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 8.42          | 40.00           | 19.00          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.90          | 40.00           | 17.61          | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 23265.31    | 7.42          | 40.00           | 16.30          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.99          | 40.00           | 15.11          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.60          | 40.00           | 14.12          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 6.24          | 40.00           | 13.21          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.91          | 40.00           | 12.38          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.60          | 40.00           | 11.63          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 5.32          | 40.00           | 10.95          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 5.06          | 40.00           | 10.32          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.81          | 40.00           | 9.75           | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.59          | 40.00           | 9.23           | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.38          | 40.00           | 8.75           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 4.18          | 40.00           | 8.31           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.99          | 40.00           | 7.90           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.82          | 40.00           | 7.53           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.65          | 40.00           | 6.38           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.50          | 40.00           | 4.74           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.35          | 40.00           | 3.55           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 40.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 40.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 40.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 50.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 775.51      | 0.00          | 50.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 1551.02     | 0.00          | 50.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 2326.53     | 0.00          | 50.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 3102.04     | 0.00          | 50.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 3877.55     | 0.00          | 50.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 4653.06     | 0.00          | 50.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 5428.57     | 135.90        | 50.00           | 154.66         | 0       | 0           | 0                | 0                   | 0           |
| 6204.08     | 104.53        | 50.00           | 144.25         | 0       | 0           | 0                | 0                   | 0           |
| 6979.59     | 82.12         | 50.00           | 142.55         | 0       | 0           | 0                | 0                   | 0           |
| 7755.10     | 65.89         | 50.00           | 139.79         | 0       | 0           | 0                | 0                   | 0           |
| 8530.61     | 53.89         | 50.00           | 119.71         | 0       | 0           | 0                | 0                   | 0           |
| 9306.12     | 44.86         | 50.00           | 100.49         | 1       | 0           | 0                | 0                   | 1           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 10081.63    | 37.92         | 50.00           | 85.80          | 1       | 0           | 0                | 0                   | 1           |
| 10857.14    | 32.50         | 50.00           | 74.31          | 1       | 0           | 0                | 0                   | 1           |
| 11632.65    | 28.19         | 50.00           | 65.13          | 1       | 0           | 0                | 0                   | 1           |
| 12408.16    | 24.71         | 50.00           | 57.64          | 1       | 0           | 0                | 0                   | 1           |
| 13183.67    | 21.86         | 50.00           | 51.44          | 1       | 0           | 0                | 0                   | 1           |
| 13959.18    | 19.51         | 50.00           | 46.13          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 17.54         | 50.00           | 41.55          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 15.87         | 50.00           | 37.59          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 14.44         | 50.00           | 34.14          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 13.21         | 50.00           | 31.12          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 12.14         | 50.00           | 28.45          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 11.21         | 50.00           | 26.09          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 10.39         | 50.00           | 24.01          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.66          | 50.00           | 22.16          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 9.01          | 50.00           | 20.50          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 8.42          | 50.00           | 19.00          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.90          | 50.00           | 17.61          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 7.42          | 50.00           | 16.30          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.99          | 50.00           | 15.11          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.60          | 50.00           | 14.12          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 6.24          | 50.00           | 13.21          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.91          | 50.00           | 12.38          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.60          | 50.00           | 11.63          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 5.32          | 50.00           | 10.95          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 5.06          | 50.00           | 10.32          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.81          | 50.00           | 9.75           | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.59          | 50.00           | 9.23           | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.38          | 50.00           | 8.75           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 4.18          | 50.00           | 8.31           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.99          | 50.00           | 7.90           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.82          | 50.00           | 7.53           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.65          | 50.00           | 6.38           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.50          | 50.00           | 4.74           | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 35673.47    | 3.35          | 50.00           | 3.55           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 50.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 50.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 50.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 81.08           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 775.51      | 0.00          | 81.08           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 1551.02     | 0.00          | 81.08           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 2326.53     | 0.00          | 81.08           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 3102.04     | 0.00          | 81.08           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 3877.55     | 0.00          | 81.08           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 4653.06     | 0.00          | 81.08           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 5428.57     | 135.90        | 81.08           | 154.66         | 0       | 0           | 0                | 0                   | 0           |
| 6204.08     | 104.53        | 81.08           | 144.25         | 0       | 0           | 0                | 0                   | 0           |
| 6979.59     | 82.12         | 81.08           | 142.55         | 0       | 0           | 0                | 0                   | 0           |
| 7755.10     | 65.89         | 81.08           | 139.79         | 1       | 0           | 0                | 0                   | 1           |
| 8530.61     | 53.89         | 81.08           | 119.71         | 1       | 0           | 0                | 0                   | 1           |
| 9306.12     | 44.86         | 81.08           | 100.49         | 1       | 0           | 0                | 0                   | 1           |
| 10081.63    | 37.92         | 81.08           | 85.80          | 1       | 0           | 0                | 0                   | 1           |
| 10857.14    | 32.50         | 81.08           | 74.31          | 0       | 0           | 0                | 0                   | 0           |
| 11632.65    | 28.19         | 81.08           | 65.13          | 0       | 0           | 0                | 0                   | 0           |
| 12408.16    | 24.71         | 81.08           | 57.64          | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 21.86         | 81.08           | 51.44          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 19.51         | 81.08           | 46.13          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 17.54         | 81.08           | 41.55          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 15.87         | 81.08           | 37.59          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 14.44         | 81.08           | 34.14          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 13.21         | 81.08           | 31.12          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 12.14         | 81.08           | 28.45          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 11.21         | 81.08           | 26.09          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 10.39         | 81.08           | 24.01          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.66          | 81.08           | 22.16          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 9.01          | 81.08           | 20.50          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 8.42          | 81.08           | 19.00          | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 22489.80    | 7.90          | 81.08           | 17.61          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 7.42          | 81.08           | 16.30          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.99          | 81.08           | 15.11          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.60          | 81.08           | 14.12          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 6.24          | 81.08           | 13.21          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.91          | 81.08           | 12.38          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.60          | 81.08           | 11.63          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 5.32          | 81.08           | 10.95          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 5.06          | 81.08           | 10.32          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.81          | 81.08           | 9.75           | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.59          | 81.08           | 9.23           | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.38          | 81.08           | 8.75           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 4.18          | 81.08           | 8.31           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.99          | 81.08           | 7.90           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.82          | 81.08           | 7.53           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.65          | 81.08           | 6.38           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.50          | 81.08           | 4.74           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.35          | 81.08           | 3.55           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 81.08           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 81.08           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 81.08           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 100.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 775.51      | 0.00          | 100.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 1551.02     | 0.00          | 100.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 2326.53     | 0.00          | 100.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 3102.04     | 0.00          | 100.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 3877.55     | 0.00          | 100.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 4653.06     | 0.00          | 100.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 5428.57     | 135.90        | 100.00          | 154.66         | 0       | 0           | 0                | 0                   | 0           |
| 6204.08     | 104.53        | 100.00          | 144.25         | 0       | 0           | 0                | 0                   | 0           |
| 6979.59     | 82.12         | 100.00          | 142.55         | 1       | 0           | 0                | 0                   | 1           |
| 7755.10     | 65.89         | 100.00          | 139.79         | 1       | 0           | 0                | 0                   | 1           |
| 8530.61     | 53.89         | 100.00          | 119.71         | 1       | 0           | 0                | 0                   | 1           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 9306.12     | 44.86         | 100.00          | 100.49         | 1       | 0           | 0                | 0                   | 1           |
| 10081.63    | 37.92         | 100.00          | 85.80          | 0       | 0           | 0                | 0                   | 0           |
| 10857.14    | 32.50         | 100.00          | 74.31          | 0       | 0           | 0                | 0                   | 0           |
| 11632.65    | 28.19         | 100.00          | 65.13          | 0       | 0           | 0                | 0                   | 0           |
| 12408.16    | 24.71         | 100.00          | 57.64          | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 21.86         | 100.00          | 51.44          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 19.51         | 100.00          | 46.13          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 17.54         | 100.00          | 41.55          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 15.87         | 100.00          | 37.59          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 14.44         | 100.00          | 34.14          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 13.21         | 100.00          | 31.12          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 12.14         | 100.00          | 28.45          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 11.21         | 100.00          | 26.09          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 10.39         | 100.00          | 24.01          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.66          | 100.00          | 22.16          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 9.01          | 100.00          | 20.50          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 8.42          | 100.00          | 19.00          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.90          | 100.00          | 17.61          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 7.42          | 100.00          | 16.30          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.99          | 100.00          | 15.11          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.60          | 100.00          | 14.12          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 6.24          | 100.00          | 13.21          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.91          | 100.00          | 12.38          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.60          | 100.00          | 11.63          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 5.32          | 100.00          | 10.95          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 5.06          | 100.00          | 10.32          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.81          | 100.00          | 9.75           | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.59          | 100.00          | 9.23           | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.38          | 100.00          | 8.75           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 4.18          | 100.00          | 8.31           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.99          | 100.00          | 7.90           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.82          | 100.00          | 7.53           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.65          | 100.00          | 6.38           | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 34897.96    | 3.50          | 100.00          | 4.74           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.35          | 100.00          | 3.55           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 100.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 100.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 100.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 200.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 775.51      | 0.00          | 200.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 1551.02     | 0.00          | 200.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 2326.53     | 0.00          | 200.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 3102.04     | 0.00          | 200.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 3877.55     | 0.00          | 200.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 4653.06     | 0.00          | 200.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 5428.57     | 135.90        | 200.00          | 154.66         | 0       | 0           | 0                | 0                   | 0           |
| 6204.08     | 104.53        | 200.00          | 144.25         | 0       | 0           | 0                | 0                   | 0           |
| 6979.59     | 82.12         | 200.00          | 142.55         | 0       | 0           | 0                | 0                   | 0           |
| 7755.10     | 65.89         | 200.00          | 139.79         | 0       | 0           | 0                | 0                   | 0           |
| 8530.61     | 53.89         | 200.00          | 119.71         | 0       | 0           | 0                | 0                   | 0           |
| 9306.12     | 44.86         | 200.00          | 100.49         | 0       | 0           | 0                | 0                   | 0           |
| 10081.63    | 37.92         | 200.00          | 85.80          | 0       | 0           | 0                | 0                   | 0           |
| 10857.14    | 32.50         | 200.00          | 74.31          | 0       | 0           | 0                | 0                   | 0           |
| 11632.65    | 28.19         | 200.00          | 65.13          | 0       | 0           | 0                | 0                   | 0           |
| 12408.16    | 24.71         | 200.00          | 57.64          | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 21.86         | 200.00          | 51.44          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 19.51         | 200.00          | 46.13          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 17.54         | 200.00          | 41.55          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 15.87         | 200.00          | 37.59          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 14.44         | 200.00          | 34.14          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 13.21         | 200.00          | 31.12          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 12.14         | 200.00          | 28.45          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 11.21         | 200.00          | 26.09          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 10.39         | 200.00          | 24.01          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.66          | 200.00          | 22.16          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 9.01          | 200.00          | 20.50          | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 21714.29    | 8.42          | 200.00          | 19.00          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.90          | 200.00          | 17.61          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 7.42          | 200.00          | 16.30          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.99          | 200.00          | 15.11          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.60          | 200.00          | 14.12          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 6.24          | 200.00          | 13.21          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.91          | 200.00          | 12.38          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.60          | 200.00          | 11.63          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 5.32          | 200.00          | 10.95          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 5.06          | 200.00          | 10.32          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.81          | 200.00          | 9.75           | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.59          | 200.00          | 9.23           | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.38          | 200.00          | 8.75           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 4.18          | 200.00          | 8.31           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.99          | 200.00          | 7.90           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.82          | 200.00          | 7.53           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.65          | 200.00          | 6.38           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.50          | 200.00          | 4.74           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.35          | 200.00          | 3.55           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 200.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 200.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 200.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 250.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 775.51      | 0.00          | 250.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 1551.02     | 0.00          | 250.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 2326.53     | 0.00          | 250.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 3102.04     | 0.00          | 250.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 3877.55     | 0.00          | 250.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 4653.06     | 0.00          | 250.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 5428.57     | 135.90        | 250.00          | 154.66         | 0       | 0           | 0                | 0                   | 0           |
| 6204.08     | 104.53        | 250.00          | 144.25         | 0       | 0           | 0                | 0                   | 0           |
| 6979.59     | 82.12         | 250.00          | 142.55         | 0       | 0           | 0                | 0                   | 0           |
| 7755.10     | 65.89         | 250.00          | 139.79         | 0       | 0           | 0                | 0                   | 0           |



| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 8530.61     | 53.89         | 250.00          | 119.71         | 0       | 0           | 0                | 0                   | 0           |
| 9306.12     | 44.86         | 250.00          | 100.49         | 0       | 0           | 0                | 0                   | 0           |
| 10081.63    | 37.92         | 250.00          | 85.80          | 0       | 0           | 0                | 0                   | 0           |
| 10857.14    | 32.50         | 250.00          | 74.31          | 0       | 0           | 0                | 0                   | 0           |
| 11632.65    | 28.19         | 250.00          | 65.13          | 0       | 0           | 0                | 0                   | 0           |
| 12408.16    | 24.71         | 250.00          | 57.64          | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 21.86         | 250.00          | 51.44          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 19.51         | 250.00          | 46.13          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 17.54         | 250.00          | 41.55          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 15.87         | 250.00          | 37.59          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 14.44         | 250.00          | 34.14          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 13.21         | 250.00          | 31.12          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 12.14         | 250.00          | 28.45          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 11.21         | 250.00          | 26.09          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 10.39         | 250.00          | 24.01          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.66          | 250.00          | 22.16          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 9.01          | 250.00          | 20.50          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 8.42          | 250.00          | 19.00          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.90          | 250.00          | 17.61          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 7.42          | 250.00          | 16.30          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.99          | 250.00          | 15.11          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.60          | 250.00          | 14.12          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 6.24          | 250.00          | 13.21          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.91          | 250.00          | 12.38          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.60          | 250.00          | 11.63          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 5.32          | 250.00          | 10.95          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 5.06          | 250.00          | 10.32          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.81          | 250.00          | 9.75           | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.59          | 250.00          | 9.23           | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.38          | 250.00          | 8.75           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 4.18          | 250.00          | 8.31           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.99          | 250.00          | 7.90           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.82          | 250.00          | 7.53           | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 34122.45    | 3.65          | 250.00          | 6.38           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.50          | 250.00          | 4.74           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.35          | 250.00          | 3.55           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 250.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 250.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 250.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 300.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 775.51      | 0.00          | 300.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 1551.02     | 0.00          | 300.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 2326.53     | 0.00          | 300.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 3102.04     | 0.00          | 300.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 3877.55     | 0.00          | 300.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 4653.06     | 0.00          | 300.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 5428.57     | 135.90        | 300.00          | 154.66         | 0       | 0           | 0                | 0                   | 0           |
| 6204.08     | 104.53        | 300.00          | 144.25         | 0       | 0           | 0                | 0                   | 0           |
| 6979.59     | 82.12         | 300.00          | 142.55         | 0       | 0           | 0                | 0                   | 0           |
| 7755.10     | 65.89         | 300.00          | 139.79         | 0       | 0           | 0                | 0                   | 0           |
| 8530.61     | 53.89         | 300.00          | 119.71         | 0       | 0           | 0                | 0                   | 0           |
| 9306.12     | 44.86         | 300.00          | 100.49         | 0       | 0           | 0                | 0                   | 0           |
| 10081.63    | 37.92         | 300.00          | 85.80          | 0       | 0           | 0                | 0                   | 0           |
| 10857.14    | 32.50         | 300.00          | 74.31          | 0       | 0           | 0                | 0                   | 0           |
| 11632.65    | 28.19         | 300.00          | 65.13          | 0       | 0           | 0                | 0                   | 0           |
| 12408.16    | 24.71         | 300.00          | 57.64          | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 21.86         | 300.00          | 51.44          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 19.51         | 300.00          | 46.13          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 17.54         | 300.00          | 41.55          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 15.87         | 300.00          | 37.59          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 14.44         | 300.00          | 34.14          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 13.21         | 300.00          | 31.12          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 12.14         | 300.00          | 28.45          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 11.21         | 300.00          | 26.09          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 10.39         | 300.00          | 24.01          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.66          | 300.00          | 22.16          | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 20938.78    | 9.01          | 300.00          | 20.50          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 8.42          | 300.00          | 19.00          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.90          | 300.00          | 17.61          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 7.42          | 300.00          | 16.30          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.99          | 300.00          | 15.11          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.60          | 300.00          | 14.12          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 6.24          | 300.00          | 13.21          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.91          | 300.00          | 12.38          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.60          | 300.00          | 11.63          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 5.32          | 300.00          | 10.95          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 5.06          | 300.00          | 10.32          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.81          | 300.00          | 9.75           | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.59          | 300.00          | 9.23           | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.38          | 300.00          | 8.75           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 4.18          | 300.00          | 8.31           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.99          | 300.00          | 7.90           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.82          | 300.00          | 7.53           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.65          | 300.00          | 6.38           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.50          | 300.00          | 4.74           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.35          | 300.00          | 3.55           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 300.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 300.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 300.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 500.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 775.51      | 0.00          | 500.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 1551.02     | 0.00          | 500.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 2326.53     | 0.00          | 500.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 3102.04     | 0.00          | 500.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 3877.55     | 0.00          | 500.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 4653.06     | 0.00          | 500.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 5428.57     | 135.90        | 500.00          | 154.66         | 0       | 0           | 0                | 0                   | 0           |
| 6204.08     | 104.53        | 500.00          | 144.25         | 0       | 0           | 0                | 0                   | 0           |
| 6979.59     | 82.12         | 500.00          | 142.55         | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 7755.10     | 65.89         | 500.00          | 139.79         | 0       | 0           | 0                | 0                   | 0           |
| 8530.61     | 53.89         | 500.00          | 119.71         | 0       | 0           | 0                | 0                   | 0           |
| 9306.12     | 44.86         | 500.00          | 100.49         | 0       | 0           | 0                | 0                   | 0           |
| 10081.63    | 37.92         | 500.00          | 85.80          | 0       | 0           | 0                | 0                   | 0           |
| 10857.14    | 32.50         | 500.00          | 74.31          | 0       | 0           | 0                | 0                   | 0           |
| 11632.65    | 28.19         | 500.00          | 65.13          | 0       | 0           | 0                | 0                   | 0           |
| 12408.16    | 24.71         | 500.00          | 57.64          | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 21.86         | 500.00          | 51.44          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 19.51         | 500.00          | 46.13          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 17.54         | 500.00          | 41.55          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 15.87         | 500.00          | 37.59          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 14.44         | 500.00          | 34.14          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 13.21         | 500.00          | 31.12          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 12.14         | 500.00          | 28.45          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 11.21         | 500.00          | 26.09          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 10.39         | 500.00          | 24.01          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.66          | 500.00          | 22.16          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 9.01          | 500.00          | 20.50          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 8.42          | 500.00          | 19.00          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.90          | 500.00          | 17.61          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 7.42          | 500.00          | 16.30          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.99          | 500.00          | 15.11          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.60          | 500.00          | 14.12          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 6.24          | 500.00          | 13.21          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.91          | 500.00          | 12.38          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.60          | 500.00          | 11.63          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 5.32          | 500.00          | 10.95          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 5.06          | 500.00          | 10.32          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.81          | 500.00          | 9.75           | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.59          | 500.00          | 9.23           | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.38          | 500.00          | 8.75           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 4.18          | 500.00          | 8.31           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.99          | 500.00          | 7.90           | 0       | 0           | 0                | 0                   | 0           |

| <b>Energy [eV]</b> | <b>Trip low [um]</b> | <b>TFS Radius [um]</b> | <b>Trip high [um]</b> | <b>Faulted</b> | <b>State Fault</b> | <b>Min Energy Fault</b> | <b>Lens Required Fault</b> | <b>Table Fault</b> |
|--------------------|----------------------|------------------------|-----------------------|----------------|--------------------|-------------------------|----------------------------|--------------------|
| 33346.94           | 3.82                 | 500.00                 | 7.53                  | 0              | 0                  | 0                       | 0                          | 0                  |
| 34122.45           | 3.65                 | 500.00                 | 6.38                  | 0              | 0                  | 0                       | 0                          | 0                  |
| 34897.96           | 3.50                 | 500.00                 | 4.74                  | 0              | 0                  | 0                       | 0                          | 0                  |
| 35673.47           | 3.35                 | 500.00                 | 3.55                  | 0              | 0                  | 0                       | 0                          | 0                  |
| 36448.98           | 0.00                 | 500.00                 | 0.00                  | 0              | 0                  | 0                       | 0                          | 0                  |
| 37224.49           | 0.00                 | 500.00                 | 0.00                  | 0              | 0                  | 0                       | 0                          | 0                  |
| 38000.00           | 0.00                 | 500.00                 | 0.00                  | 0              | 0                  | 0                       | 0                          | 0                  |

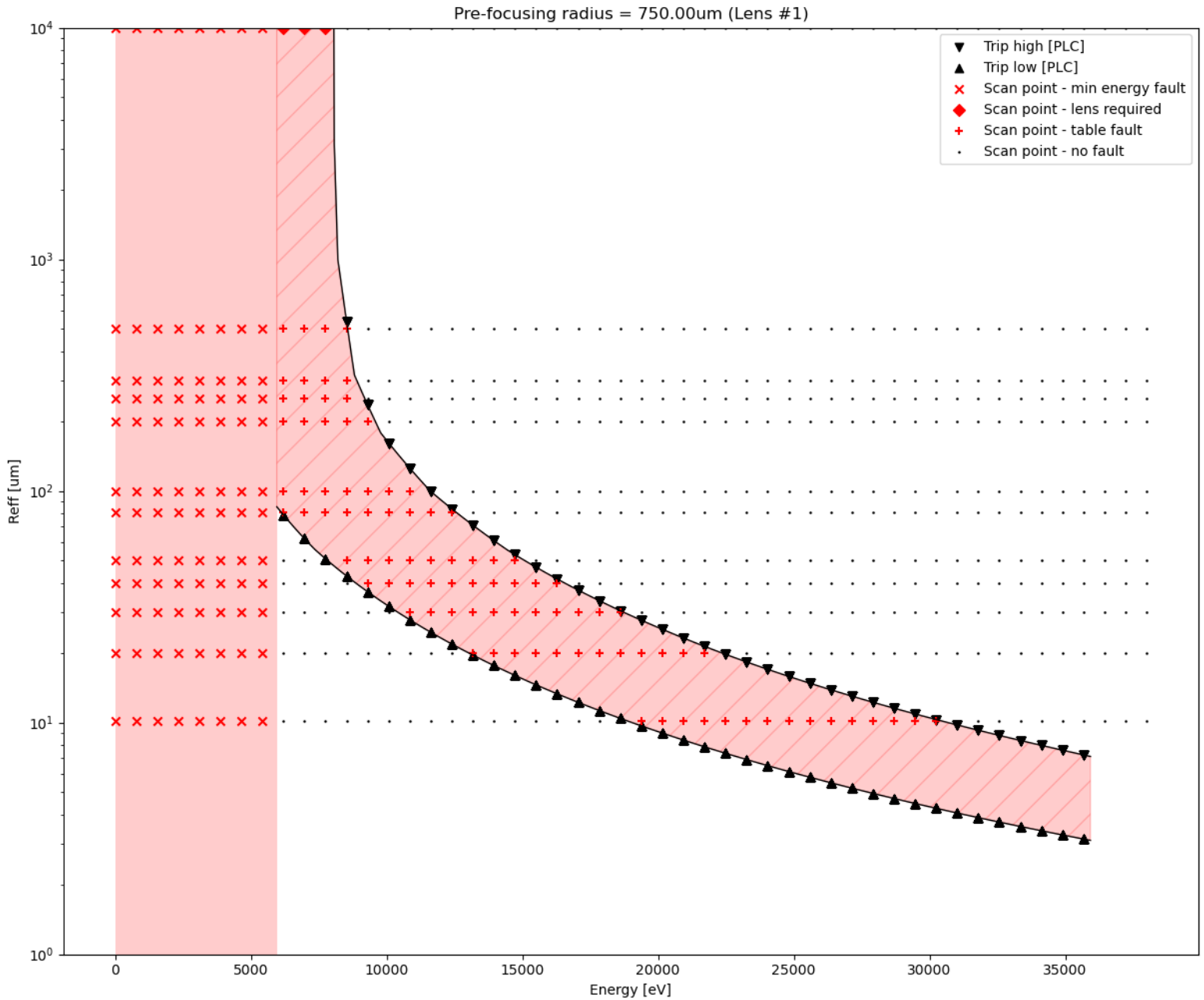
## **Scan 2: 750.000 $\mu$ m pre-focusing lens**

Data generated: 2022-11-09 18:18:56

bluesky scan sweep\_energy\_plan with 750.000 $\mu$ m pre-focusing lens..

### **Scan Information**

1. Choose a few transfocator lens sets to span the effective radius range.
2. For each of those lens sets, scan energy at regular intervals.
3. Each marker on the plot represents one of those scan points.
4. Record if PLC reported a fault and why.



## Plot / Table Information

**No fault** indicates that a data point was checked but no fault reported by PLC.

**Trip Low** and **Trip High** are values from the spreadsheet table, interpolated by the PLC and reported to EPICS.

The lines drawn around these regions and the highlighted regions are directly from the spreadsheet.

**Min Energy Fault** indicates that it does not meet minimum energy requirement for a given XRT lens.

**Table Fault** indicates a fault from the spreadsheet table disallowed region.

**Lens Required Fault** markers are clipped at the bottom of the plot.

## Scan 2: 750.000µm pre-focusing lens: Scan Data Table

| Energy [eV] | Trip low [µm] | TFS Radius [µm] | Trip high [µm] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 0.00        | 0.00          | 10000.00        | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 10000.00        | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 10000.00        | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 10000.00        | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 10000.00        | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 10000.00        | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 10000.00        | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 10000.00        | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 78.79         | 10000.00        | 10000.00       | 1       | 0           | 0                | 1                   | 1           |
| 6979.59     | 62.19         | 10000.00        | 10000.00       | 1       | 0           | 0                | 1                   | 1           |
| 7755.10     | 50.90         | 10000.00        | 10000.00       | 1       | 0           | 0                | 1                   | 1           |
| 8530.61     | 42.90         | 10000.00        | 539.26         | 0       | 0           | 0                | 0                   | 0           |
| 9306.12     | 36.68         | 10000.00        | 235.21         | 0       | 0           | 0                | 0                   | 0           |
| 10081.63    | 31.76         | 10000.00        | 161.03         | 0       | 0           | 0                | 0                   | 0           |
| 10857.14    | 27.78         | 10000.00        | 125.36         | 0       | 0           | 0                | 0                   | 0           |
| 11632.65    | 24.52         | 10000.00        | 99.43          | 0       | 0           | 0                | 0                   | 0           |
| 12408.16    | 21.81         | 10000.00        | 83.63          | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 19.54         | 10000.00        | 71.09          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 17.61         | 10000.00        | 60.99          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 15.96         | 10000.00        | 53.02          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 14.54         | 10000.00        | 46.82          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 13.30         | 10000.00        | 41.65          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 12.22         | 10000.00        | 37.29          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 11.27         | 10000.00        | 33.57          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.42         | 10000.00        | 30.39          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.67          | 10000.00        | 27.64          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.00          | 10000.00        | 25.25          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 8.40          | 10000.00        | 23.16          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 7.85          | 10000.00        | 21.32          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.36          | 10000.00        | 19.70          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 6.92          | 10000.00        | 18.25          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.51          | 10000.00        | 16.97          | 0       | 0           | 0                | 0                   | 0           |



| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 24816.33    | 6.14          | 10000.00        | 15.81          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.80          | 10000.00        | 14.78          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.49          | 10000.00        | 13.84          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.21          | 10000.00        | 13.00          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.94          | 10000.00        | 12.23          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.70          | 10000.00        | 11.53          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.47          | 10000.00        | 10.89          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.26          | 10000.00        | 10.30          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.07          | 10000.00        | 9.76           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.89          | 10000.00        | 9.26           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.72          | 10000.00        | 8.80           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.56          | 10000.00        | 8.37           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.41          | 10000.00        | 7.97           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.27          | 10000.00        | 7.59           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.14          | 10000.00        | 7.25           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 10000.00        | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 10000.00        | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 10000.00        | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 78.79         | 10.17           | 10000.00       | 0       | 0           | 0                | 0                   | 0           |
| 6979.59     | 62.19         | 10.17           | 10000.00       | 0       | 0           | 0                | 0                   | 0           |
| 7755.10     | 50.90         | 10.17           | 10000.00       | 0       | 0           | 0                | 0                   | 0           |
| 8530.61     | 42.90         | 10.17           | 539.26         | 0       | 0           | 0                | 0                   | 0           |
| 9306.12     | 36.68         | 10.17           | 235.21         | 0       | 0           | 0                | 0                   | 0           |
| 10081.63    | 31.76         | 10.17           | 161.03         | 0       | 0           | 0                | 0                   | 0           |
| 10857.14    | 27.78         | 10.17           | 125.36         | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 11632.65    | 24.52         | 10.17           | 99.43          | 0       | 0           | 0                | 0                   | 0           |
| 12408.16    | 21.81         | 10.17           | 83.63          | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 19.54         | 10.17           | 71.09          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 17.61         | 10.17           | 60.99          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 15.96         | 10.17           | 53.02          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 14.54         | 10.17           | 46.82          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 13.30         | 10.17           | 41.65          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 12.22         | 10.17           | 37.29          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 11.27         | 10.17           | 33.57          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.42         | 10.17           | 30.39          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.67          | 10.17           | 27.64          | 1       | 0           | 0                | 0                   | 1           |
| 20163.27    | 9.00          | 10.17           | 25.25          | 1       | 0           | 0                | 0                   | 1           |
| 20938.78    | 8.40          | 10.17           | 23.16          | 1       | 0           | 0                | 0                   | 1           |
| 21714.29    | 7.85          | 10.17           | 21.32          | 1       | 0           | 0                | 0                   | 1           |
| 22489.80    | 7.36          | 10.17           | 19.70          | 1       | 0           | 0                | 0                   | 1           |
| 23265.31    | 6.92          | 10.17           | 18.25          | 1       | 0           | 0                | 0                   | 1           |
| 24040.82    | 6.51          | 10.17           | 16.97          | 1       | 0           | 0                | 0                   | 1           |
| 24816.33    | 6.14          | 10.17           | 15.81          | 1       | 0           | 0                | 0                   | 1           |
| 25591.84    | 5.80          | 10.17           | 14.78          | 1       | 0           | 0                | 0                   | 1           |
| 26367.35    | 5.49          | 10.17           | 13.84          | 1       | 0           | 0                | 0                   | 1           |
| 27142.86    | 5.21          | 10.17           | 13.00          | 1       | 0           | 0                | 0                   | 1           |
| 27918.37    | 4.94          | 10.17           | 12.23          | 1       | 0           | 0                | 0                   | 1           |
| 28693.88    | 4.70          | 10.17           | 11.53          | 1       | 0           | 0                | 0                   | 1           |
| 29469.39    | 4.47          | 10.17           | 10.89          | 1       | 0           | 0                | 0                   | 1           |
| 30244.90    | 4.26          | 10.17           | 10.30          | 1       | 0           | 0                | 0                   | 1           |
| 31020.41    | 4.07          | 10.17           | 9.76           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.89          | 10.17           | 9.26           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.72          | 10.17           | 8.80           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.56          | 10.17           | 8.37           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.41          | 10.17           | 7.97           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.27          | 10.17           | 7.59           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.14          | 10.17           | 7.25           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 10.17           | 0.00           | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 37224.49    | 0.00          | 10.17           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 10.17           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 78.79         | 20.00           | 10000.00       | 0       | 0           | 0                | 0                   | 0           |
| 6979.59     | 62.19         | 20.00           | 10000.00       | 0       | 0           | 0                | 0                   | 0           |
| 7755.10     | 50.90         | 20.00           | 10000.00       | 0       | 0           | 0                | 0                   | 0           |
| 8530.61     | 42.90         | 20.00           | 539.26         | 0       | 0           | 0                | 0                   | 0           |
| 9306.12     | 36.68         | 20.00           | 235.21         | 0       | 0           | 0                | 0                   | 0           |
| 10081.63    | 31.76         | 20.00           | 161.03         | 0       | 0           | 0                | 0                   | 0           |
| 10857.14    | 27.78         | 20.00           | 125.36         | 0       | 0           | 0                | 0                   | 0           |
| 11632.65    | 24.52         | 20.00           | 99.43          | 0       | 0           | 0                | 0                   | 0           |
| 12408.16    | 21.81         | 20.00           | 83.63          | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 19.54         | 20.00           | 71.09          | 1       | 0           | 0                | 0                   | 1           |
| 13959.18    | 17.61         | 20.00           | 60.99          | 1       | 0           | 0                | 0                   | 1           |
| 14734.69    | 15.96         | 20.00           | 53.02          | 1       | 0           | 0                | 0                   | 1           |
| 15510.20    | 14.54         | 20.00           | 46.82          | 1       | 0           | 0                | 0                   | 1           |
| 16285.71    | 13.30         | 20.00           | 41.65          | 1       | 0           | 0                | 0                   | 1           |
| 17061.22    | 12.22         | 20.00           | 37.29          | 1       | 0           | 0                | 0                   | 1           |
| 17836.73    | 11.27         | 20.00           | 33.57          | 1       | 0           | 0                | 0                   | 1           |
| 18612.24    | 10.42         | 20.00           | 30.39          | 1       | 0           | 0                | 0                   | 1           |
| 19387.76    | 9.67          | 20.00           | 27.64          | 1       | 0           | 0                | 0                   | 1           |
| 20163.27    | 9.00          | 20.00           | 25.25          | 1       | 0           | 0                | 0                   | 1           |
| 20938.78    | 8.40          | 20.00           | 23.16          | 1       | 0           | 0                | 0                   | 1           |
| 21714.29    | 7.85          | 20.00           | 21.32          | 1       | 0           | 0                | 0                   | 1           |
| 22489.80    | 7.36          | 20.00           | 19.70          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 6.92          | 20.00           | 18.25          | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 24040.82    | 6.51          | 20.00           | 16.97          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.14          | 20.00           | 15.81          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.80          | 20.00           | 14.78          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.49          | 20.00           | 13.84          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.21          | 20.00           | 13.00          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.94          | 20.00           | 12.23          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.70          | 20.00           | 11.53          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.47          | 20.00           | 10.89          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.26          | 20.00           | 10.30          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.07          | 20.00           | 9.76           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.89          | 20.00           | 9.26           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.72          | 20.00           | 8.80           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.56          | 20.00           | 8.37           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.41          | 20.00           | 7.97           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.27          | 20.00           | 7.59           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.14          | 20.00           | 7.25           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 20.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 20.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 20.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 78.79         | 30.00           | 10000.00       | 0       | 0           | 0                | 0                   | 0           |
| 6979.59     | 62.19         | 30.00           | 10000.00       | 0       | 0           | 0                | 0                   | 0           |
| 7755.10     | 50.90         | 30.00           | 10000.00       | 0       | 0           | 0                | 0                   | 0           |
| 8530.61     | 42.90         | 30.00           | 539.26         | 0       | 0           | 0                | 0                   | 0           |
| 9306.12     | 36.68         | 30.00           | 235.21         | 0       | 0           | 0                | 0                   | 0           |
| 10081.63    | 31.76         | 30.00           | 161.03         | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 10857.14    | 27.78         | 30.00           | 125.36         | 1       | 0           | 0                | 0                   | 1           |
| 11632.65    | 24.52         | 30.00           | 99.43          | 1       | 0           | 0                | 0                   | 1           |
| 12408.16    | 21.81         | 30.00           | 83.63          | 1       | 0           | 0                | 0                   | 1           |
| 13183.67    | 19.54         | 30.00           | 71.09          | 1       | 0           | 0                | 0                   | 1           |
| 13959.18    | 17.61         | 30.00           | 60.99          | 1       | 0           | 0                | 0                   | 1           |
| 14734.69    | 15.96         | 30.00           | 53.02          | 1       | 0           | 0                | 0                   | 1           |
| 15510.20    | 14.54         | 30.00           | 46.82          | 1       | 0           | 0                | 0                   | 1           |
| 16285.71    | 13.30         | 30.00           | 41.65          | 1       | 0           | 0                | 0                   | 1           |
| 17061.22    | 12.22         | 30.00           | 37.29          | 1       | 0           | 0                | 0                   | 1           |
| 17836.73    | 11.27         | 30.00           | 33.57          | 1       | 0           | 0                | 0                   | 1           |
| 18612.24    | 10.42         | 30.00           | 30.39          | 1       | 0           | 0                | 0                   | 1           |
| 19387.76    | 9.67          | 30.00           | 27.64          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.00          | 30.00           | 25.25          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 8.40          | 30.00           | 23.16          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 7.85          | 30.00           | 21.32          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.36          | 30.00           | 19.70          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 6.92          | 30.00           | 18.25          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.51          | 30.00           | 16.97          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.14          | 30.00           | 15.81          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.80          | 30.00           | 14.78          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.49          | 30.00           | 13.84          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.21          | 30.00           | 13.00          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.94          | 30.00           | 12.23          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.70          | 30.00           | 11.53          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.47          | 30.00           | 10.89          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.26          | 30.00           | 10.30          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.07          | 30.00           | 9.76           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.89          | 30.00           | 9.26           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.72          | 30.00           | 8.80           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.56          | 30.00           | 8.37           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.41          | 30.00           | 7.97           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.27          | 30.00           | 7.59           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.14          | 30.00           | 7.25           | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 36448.98    | 0.00          | 30.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 30.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 30.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 78.79         | 40.00           | 10000.00       | 0       | 0           | 0                | 0                   | 0           |
| 6979.59     | 62.19         | 40.00           | 10000.00       | 0       | 0           | 0                | 0                   | 0           |
| 7755.10     | 50.90         | 40.00           | 10000.00       | 0       | 0           | 0                | 0                   | 0           |
| 8530.61     | 42.90         | 40.00           | 539.26         | 0       | 0           | 0                | 0                   | 0           |
| 9306.12     | 36.68         | 40.00           | 235.21         | 1       | 0           | 0                | 0                   | 1           |
| 10081.63    | 31.76         | 40.00           | 161.03         | 1       | 0           | 0                | 0                   | 1           |
| 10857.14    | 27.78         | 40.00           | 125.36         | 1       | 0           | 0                | 0                   | 1           |
| 11632.65    | 24.52         | 40.00           | 99.43          | 1       | 0           | 0                | 0                   | 1           |
| 12408.16    | 21.81         | 40.00           | 83.63          | 1       | 0           | 0                | 0                   | 1           |
| 13183.67    | 19.54         | 40.00           | 71.09          | 1       | 0           | 0                | 0                   | 1           |
| 13959.18    | 17.61         | 40.00           | 60.99          | 1       | 0           | 0                | 0                   | 1           |
| 14734.69    | 15.96         | 40.00           | 53.02          | 1       | 0           | 0                | 0                   | 1           |
| 15510.20    | 14.54         | 40.00           | 46.82          | 1       | 0           | 0                | 0                   | 1           |
| 16285.71    | 13.30         | 40.00           | 41.65          | 1       | 0           | 0                | 0                   | 1           |
| 17061.22    | 12.22         | 40.00           | 37.29          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 11.27         | 40.00           | 33.57          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.42         | 40.00           | 30.39          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.67          | 40.00           | 27.64          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.00          | 40.00           | 25.25          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 8.40          | 40.00           | 23.16          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 7.85          | 40.00           | 21.32          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.36          | 40.00           | 19.70          | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 23265.31    | 6.92          | 40.00           | 18.25          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.51          | 40.00           | 16.97          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.14          | 40.00           | 15.81          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.80          | 40.00           | 14.78          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.49          | 40.00           | 13.84          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.21          | 40.00           | 13.00          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.94          | 40.00           | 12.23          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.70          | 40.00           | 11.53          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.47          | 40.00           | 10.89          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.26          | 40.00           | 10.30          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.07          | 40.00           | 9.76           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.89          | 40.00           | 9.26           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.72          | 40.00           | 8.80           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.56          | 40.00           | 8.37           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.41          | 40.00           | 7.97           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.27          | 40.00           | 7.59           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.14          | 40.00           | 7.25           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 40.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 40.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 40.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 78.79         | 50.00           | 10000.00       | 0       | 0           | 0                | 0                   | 0           |
| 6979.59     | 62.19         | 50.00           | 10000.00       | 0       | 0           | 0                | 0                   | 0           |
| 7755.10     | 50.90         | 50.00           | 10000.00       | 0       | 0           | 0                | 0                   | 0           |
| 8530.61     | 42.90         | 50.00           | 539.26         | 1       | 0           | 0                | 0                   | 1           |
| 9306.12     | 36.68         | 50.00           | 235.21         | 1       | 0           | 0                | 0                   | 1           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 10081.63    | 31.76         | 50.00           | 161.03         | 1       | 0           | 0                | 0                   | 1           |
| 10857.14    | 27.78         | 50.00           | 125.36         | 1       | 0           | 0                | 0                   | 1           |
| 11632.65    | 24.52         | 50.00           | 99.43          | 1       | 0           | 0                | 0                   | 1           |
| 12408.16    | 21.81         | 50.00           | 83.63          | 1       | 0           | 0                | 0                   | 1           |
| 13183.67    | 19.54         | 50.00           | 71.09          | 1       | 0           | 0                | 0                   | 1           |
| 13959.18    | 17.61         | 50.00           | 60.99          | 1       | 0           | 0                | 0                   | 1           |
| 14734.69    | 15.96         | 50.00           | 53.02          | 1       | 0           | 0                | 0                   | 1           |
| 15510.20    | 14.54         | 50.00           | 46.82          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 13.30         | 50.00           | 41.65          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 12.22         | 50.00           | 37.29          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 11.27         | 50.00           | 33.57          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.42         | 50.00           | 30.39          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.67          | 50.00           | 27.64          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.00          | 50.00           | 25.25          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 8.40          | 50.00           | 23.16          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 7.85          | 50.00           | 21.32          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.36          | 50.00           | 19.70          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 6.92          | 50.00           | 18.25          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.51          | 50.00           | 16.97          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.14          | 50.00           | 15.81          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.80          | 50.00           | 14.78          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.49          | 50.00           | 13.84          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.21          | 50.00           | 13.00          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.94          | 50.00           | 12.23          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.70          | 50.00           | 11.53          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.47          | 50.00           | 10.89          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.26          | 50.00           | 10.30          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.07          | 50.00           | 9.76           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.89          | 50.00           | 9.26           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.72          | 50.00           | 8.80           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.56          | 50.00           | 8.37           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.41          | 50.00           | 7.97           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.27          | 50.00           | 7.59           | 0       | 0           | 0                | 0                   | 0           |



| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 35673.47    | 3.14          | 50.00           | 7.25           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 50.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 50.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 50.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 78.79         | 81.08           | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 6979.59     | 62.19         | 81.08           | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 7755.10     | 50.90         | 81.08           | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 8530.61     | 42.90         | 81.08           | 539.26         | 1       | 0           | 0                | 0                   | 1           |
| 9306.12     | 36.68         | 81.08           | 235.21         | 1       | 0           | 0                | 0                   | 1           |
| 10081.63    | 31.76         | 81.08           | 161.03         | 1       | 0           | 0                | 0                   | 1           |
| 10857.14    | 27.78         | 81.08           | 125.36         | 1       | 0           | 0                | 0                   | 1           |
| 11632.65    | 24.52         | 81.08           | 99.43          | 1       | 0           | 0                | 0                   | 1           |
| 12408.16    | 21.81         | 81.08           | 83.63          | 1       | 0           | 0                | 0                   | 1           |
| 13183.67    | 19.54         | 81.08           | 71.09          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 17.61         | 81.08           | 60.99          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 15.96         | 81.08           | 53.02          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 14.54         | 81.08           | 46.82          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 13.30         | 81.08           | 41.65          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 12.22         | 81.08           | 37.29          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 11.27         | 81.08           | 33.57          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.42         | 81.08           | 30.39          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.67          | 81.08           | 27.64          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.00          | 81.08           | 25.25          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 8.40          | 81.08           | 23.16          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 7.85          | 81.08           | 21.32          | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 22489.80    | 7.36          | 81.08           | 19.70          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 6.92          | 81.08           | 18.25          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.51          | 81.08           | 16.97          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.14          | 81.08           | 15.81          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.80          | 81.08           | 14.78          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.49          | 81.08           | 13.84          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.21          | 81.08           | 13.00          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.94          | 81.08           | 12.23          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.70          | 81.08           | 11.53          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.47          | 81.08           | 10.89          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.26          | 81.08           | 10.30          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.07          | 81.08           | 9.76           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.89          | 81.08           | 9.26           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.72          | 81.08           | 8.80           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.56          | 81.08           | 8.37           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.41          | 81.08           | 7.97           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.27          | 81.08           | 7.59           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.14          | 81.08           | 7.25           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 81.08           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 81.08           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 81.08           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 78.79         | 100.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 6979.59     | 62.19         | 100.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 7755.10     | 50.90         | 100.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 8530.61     | 42.90         | 100.00          | 539.26         | 1       | 0           | 0                | 0                   | 1           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 9306.12     | 36.68         | 100.00          | 235.21         | 1       | 0           | 0                | 0                   | 1           |
| 10081.63    | 31.76         | 100.00          | 161.03         | 1       | 0           | 0                | 0                   | 1           |
| 10857.14    | 27.78         | 100.00          | 125.36         | 1       | 0           | 0                | 0                   | 1           |
| 11632.65    | 24.52         | 100.00          | 99.43          | 0       | 0           | 0                | 0                   | 0           |
| 12408.16    | 21.81         | 100.00          | 83.63          | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 19.54         | 100.00          | 71.09          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 17.61         | 100.00          | 60.99          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 15.96         | 100.00          | 53.02          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 14.54         | 100.00          | 46.82          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 13.30         | 100.00          | 41.65          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 12.22         | 100.00          | 37.29          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 11.27         | 100.00          | 33.57          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.42         | 100.00          | 30.39          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.67          | 100.00          | 27.64          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.00          | 100.00          | 25.25          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 8.40          | 100.00          | 23.16          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 7.85          | 100.00          | 21.32          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.36          | 100.00          | 19.70          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 6.92          | 100.00          | 18.25          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.51          | 100.00          | 16.97          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.14          | 100.00          | 15.81          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.80          | 100.00          | 14.78          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.49          | 100.00          | 13.84          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.21          | 100.00          | 13.00          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.94          | 100.00          | 12.23          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.70          | 100.00          | 11.53          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.47          | 100.00          | 10.89          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.26          | 100.00          | 10.30          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.07          | 100.00          | 9.76           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.89          | 100.00          | 9.26           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.72          | 100.00          | 8.80           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.56          | 100.00          | 8.37           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.41          | 100.00          | 7.97           | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 34897.96    | 3.27          | 100.00          | 7.59           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.14          | 100.00          | 7.25           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 100.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 100.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 100.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 78.79         | 200.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 6979.59     | 62.19         | 200.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 7755.10     | 50.90         | 200.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 8530.61     | 42.90         | 200.00          | 539.26         | 1       | 0           | 0                | 0                   | 1           |
| 9306.12     | 36.68         | 200.00          | 235.21         | 1       | 0           | 0                | 0                   | 1           |
| 10081.63    | 31.76         | 200.00          | 161.03         | 0       | 0           | 0                | 0                   | 0           |
| 10857.14    | 27.78         | 200.00          | 125.36         | 0       | 0           | 0                | 0                   | 0           |
| 11632.65    | 24.52         | 200.00          | 99.43          | 0       | 0           | 0                | 0                   | 0           |
| 12408.16    | 21.81         | 200.00          | 83.63          | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 19.54         | 200.00          | 71.09          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 17.61         | 200.00          | 60.99          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 15.96         | 200.00          | 53.02          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 14.54         | 200.00          | 46.82          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 13.30         | 200.00          | 41.65          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 12.22         | 200.00          | 37.29          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 11.27         | 200.00          | 33.57          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.42         | 200.00          | 30.39          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.67          | 200.00          | 27.64          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.00          | 200.00          | 25.25          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 8.40          | 200.00          | 23.16          | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 21714.29    | 7.85          | 200.00          | 21.32          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.36          | 200.00          | 19.70          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 6.92          | 200.00          | 18.25          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.51          | 200.00          | 16.97          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.14          | 200.00          | 15.81          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.80          | 200.00          | 14.78          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.49          | 200.00          | 13.84          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.21          | 200.00          | 13.00          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.94          | 200.00          | 12.23          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.70          | 200.00          | 11.53          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.47          | 200.00          | 10.89          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.26          | 200.00          | 10.30          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.07          | 200.00          | 9.76           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.89          | 200.00          | 9.26           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.72          | 200.00          | 8.80           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.56          | 200.00          | 8.37           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.41          | 200.00          | 7.97           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.27          | 200.00          | 7.59           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.14          | 200.00          | 7.25           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 200.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 200.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 200.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 78.79         | 250.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 6979.59     | 62.19         | 250.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 7755.10     | 50.90         | 250.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 8530.61     | 42.90         | 250.00          | 539.26         | 1       | 0           | 0                | 0                   | 1           |
| 9306.12     | 36.68         | 250.00          | 235.21         | 0       | 0           | 0                | 0                   | 0           |
| 10081.63    | 31.76         | 250.00          | 161.03         | 0       | 0           | 0                | 0                   | 0           |
| 10857.14    | 27.78         | 250.00          | 125.36         | 0       | 0           | 0                | 0                   | 0           |
| 11632.65    | 24.52         | 250.00          | 99.43          | 0       | 0           | 0                | 0                   | 0           |
| 12408.16    | 21.81         | 250.00          | 83.63          | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 19.54         | 250.00          | 71.09          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 17.61         | 250.00          | 60.99          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 15.96         | 250.00          | 53.02          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 14.54         | 250.00          | 46.82          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 13.30         | 250.00          | 41.65          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 12.22         | 250.00          | 37.29          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 11.27         | 250.00          | 33.57          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.42         | 250.00          | 30.39          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.67          | 250.00          | 27.64          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.00          | 250.00          | 25.25          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 8.40          | 250.00          | 23.16          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 7.85          | 250.00          | 21.32          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.36          | 250.00          | 19.70          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 6.92          | 250.00          | 18.25          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.51          | 250.00          | 16.97          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.14          | 250.00          | 15.81          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.80          | 250.00          | 14.78          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.49          | 250.00          | 13.84          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.21          | 250.00          | 13.00          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.94          | 250.00          | 12.23          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.70          | 250.00          | 11.53          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.47          | 250.00          | 10.89          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.26          | 250.00          | 10.30          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.07          | 250.00          | 9.76           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.89          | 250.00          | 9.26           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.72          | 250.00          | 8.80           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.56          | 250.00          | 8.37           | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 34122.45    | 3.41          | 250.00          | 7.97           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.27          | 250.00          | 7.59           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.14          | 250.00          | 7.25           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 250.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 250.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 250.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 78.79         | 300.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 6979.59     | 62.19         | 300.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 7755.10     | 50.90         | 300.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 8530.61     | 42.90         | 300.00          | 539.26         | 1       | 0           | 0                | 0                   | 1           |
| 9306.12     | 36.68         | 300.00          | 235.21         | 0       | 0           | 0                | 0                   | 0           |
| 10081.63    | 31.76         | 300.00          | 161.03         | 0       | 0           | 0                | 0                   | 0           |
| 10857.14    | 27.78         | 300.00          | 125.36         | 0       | 0           | 0                | 0                   | 0           |
| 11632.65    | 24.52         | 300.00          | 99.43          | 0       | 0           | 0                | 0                   | 0           |
| 12408.16    | 21.81         | 300.00          | 83.63          | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 19.54         | 300.00          | 71.09          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 17.61         | 300.00          | 60.99          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 15.96         | 300.00          | 53.02          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 14.54         | 300.00          | 46.82          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 13.30         | 300.00          | 41.65          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 12.22         | 300.00          | 37.29          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 11.27         | 300.00          | 33.57          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.42         | 300.00          | 30.39          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.67          | 300.00          | 27.64          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.00          | 300.00          | 25.25          | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 20938.78    | 8.40          | 300.00          | 23.16          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 7.85          | 300.00          | 21.32          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.36          | 300.00          | 19.70          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 6.92          | 300.00          | 18.25          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.51          | 300.00          | 16.97          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.14          | 300.00          | 15.81          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.80          | 300.00          | 14.78          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.49          | 300.00          | 13.84          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.21          | 300.00          | 13.00          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.94          | 300.00          | 12.23          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.70          | 300.00          | 11.53          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.47          | 300.00          | 10.89          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.26          | 300.00          | 10.30          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.07          | 300.00          | 9.76           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.89          | 300.00          | 9.26           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.72          | 300.00          | 8.80           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.56          | 300.00          | 8.37           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.41          | 300.00          | 7.97           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.27          | 300.00          | 7.59           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.14          | 300.00          | 7.25           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 300.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 300.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 300.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 78.79         | 500.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 6979.59     | 62.19         | 500.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |



| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 7755.10     | 50.90         | 500.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 8530.61     | 42.90         | 500.00          | 539.26         | 1       | 0           | 0                | 0                   | 1           |
| 9306.12     | 36.68         | 500.00          | 235.21         | 0       | 0           | 0                | 0                   | 0           |
| 10081.63    | 31.76         | 500.00          | 161.03         | 0       | 0           | 0                | 0                   | 0           |
| 10857.14    | 27.78         | 500.00          | 125.36         | 0       | 0           | 0                | 0                   | 0           |
| 11632.65    | 24.52         | 500.00          | 99.43          | 0       | 0           | 0                | 0                   | 0           |
| 12408.16    | 21.81         | 500.00          | 83.63          | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 19.54         | 500.00          | 71.09          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 17.61         | 500.00          | 60.99          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 15.96         | 500.00          | 53.02          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 14.54         | 500.00          | 46.82          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 13.30         | 500.00          | 41.65          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 12.22         | 500.00          | 37.29          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 11.27         | 500.00          | 33.57          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.42         | 500.00          | 30.39          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.67          | 500.00          | 27.64          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.00          | 500.00          | 25.25          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 8.40          | 500.00          | 23.16          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 7.85          | 500.00          | 21.32          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.36          | 500.00          | 19.70          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 6.92          | 500.00          | 18.25          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.51          | 500.00          | 16.97          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.14          | 500.00          | 15.81          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.80          | 500.00          | 14.78          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.49          | 500.00          | 13.84          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.21          | 500.00          | 13.00          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.94          | 500.00          | 12.23          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.70          | 500.00          | 11.53          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.47          | 500.00          | 10.89          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.26          | 500.00          | 10.30          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.07          | 500.00          | 9.76           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.89          | 500.00          | 9.26           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.72          | 500.00          | 8.80           | 0       | 0           | 0                | 0                   | 0           |

| <b>Energy [eV]</b> | <b>Trip low [um]</b> | <b>TFS Radius [um]</b> | <b>Trip high [um]</b> | <b>Faulted</b> | <b>State Fault</b> | <b>Min Energy Fault</b> | <b>Lens Required Fault</b> | <b>Table Fault</b> |
|--------------------|----------------------|------------------------|-----------------------|----------------|--------------------|-------------------------|----------------------------|--------------------|
| 33346.94           | 3.56                 | 500.00                 | 8.37                  | 0              | 0                  | 0                       | 0                          | 0                  |
| 34122.45           | 3.41                 | 500.00                 | 7.97                  | 0              | 0                  | 0                       | 0                          | 0                  |
| 34897.96           | 3.27                 | 500.00                 | 7.59                  | 0              | 0                  | 0                       | 0                          | 0                  |
| 35673.47           | 3.14                 | 500.00                 | 7.25                  | 0              | 0                  | 0                       | 0                          | 0                  |
| 36448.98           | 0.00                 | 500.00                 | 0.00                  | 0              | 0                  | 0                       | 0                          | 0                  |
| 37224.49           | 0.00                 | 500.00                 | 0.00                  | 0              | 0                  | 0                       | 0                          | 0                  |
| 38000.00           | 0.00                 | 500.00                 | 0.00                  | 0              | 0                  | 0                       | 0                          | 0                  |

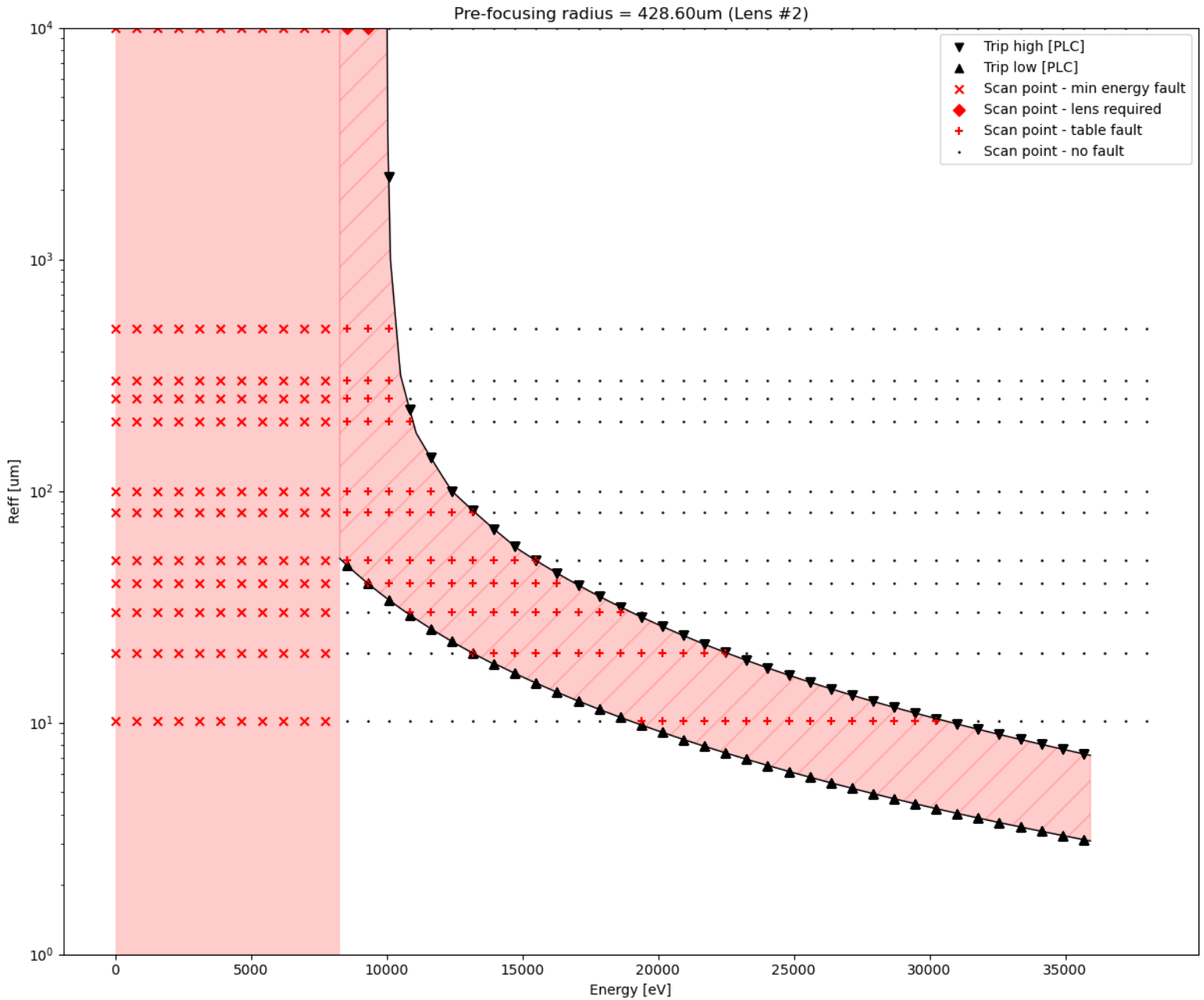
## **Scan 3: 428.571 $\mu$ m pre-focusing lens**

Data generated: 2022-11-09 18:18:56

bluesky scan sweep\_energy\_plan with 428.571 $\mu$ m pre-focusing lens.

### **Scan Information**

1. Choose a few transfocator lens sets to span the effective radius range.
2. For each of those lens sets, scan energy at regular intervals.
3. Each marker on the plot represents one of those scan points.
4. Record if PLC reported a fault and why.



### Plot / Table Information

**No fault** indicates that a data point was checked but no fault reported by PLC.  
**Trip Low** and **Trip High** are values from the spreadsheet table, interpolated by the PLC and reported to EPICS.  
 The lines drawn around these regions and the highlighted regions are directly from the spreadsheet.  
**Min Energy Fault** indicates that it does not meet minimum energy requirement for a given XRT lens.  
**Table Fault** indicates a fault from the spreadsheet table disallowed region.  
**Lens Required Fault** markers are clipped at the bottom of the plot.

### Scan 3: 428.571 $\mu$ m pre-focusing lens: Scan Data Table

| Energy [eV] | Trip low [ $\mu$ m] | TFS Radius [ $\mu$ m] | Trip high [ $\mu$ m] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------------|-----------------------|----------------------|---------|-------------|------------------|---------------------|-------------|
| 0.00        | 0.00                | 10000.00              | 0.00                 | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00                | 10000.00              | 0.00                 | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00                | 10000.00              | 0.00                 | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00                | 10000.00              | 0.00                 | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00                | 10000.00              | 0.00                 | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00                | 10000.00              | 0.00                 | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00                | 10000.00              | 0.00                 | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00                | 10000.00              | 0.00                 | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 0.00                | 10000.00              | 0.00                 | 1       | 0           | 1                | 0                   | 0           |
| 6979.59     | 0.00                | 10000.00              | 0.00                 | 1       | 0           | 1                | 0                   | 0           |
| 7755.10     | 0.00                | 10000.00              | 0.00                 | 1       | 0           | 1                | 0                   | 0           |
| 8530.61     | 47.89               | 10000.00              | 10000.00             | 1       | 0           | 0                | 1                   | 1           |
| 9306.12     | 39.93               | 10000.00              | 10000.00             | 1       | 0           | 0                | 1                   | 1           |
| 10081.63    | 33.87               | 10000.00              | 2263.58              | 0       | 0           | 0                | 0                   | 0           |
| 10857.14    | 29.16               | 10000.00              | 224.18               | 0       | 0           | 0                | 0                   | 0           |
| 11632.65    | 25.42               | 10000.00              | 139.24               | 0       | 0           | 0                | 0                   | 0           |
| 12408.16    | 22.40               | 10000.00              | 99.99                | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 19.92               | 10000.00              | 82.26                | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 17.86               | 10000.00              | 68.49                | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 16.29               | 10000.00              | 57.58                | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 14.80               | 10000.00              | 50.05                | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 13.51               | 10000.00              | 44.14                | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 12.39               | 10000.00              | 39.21                | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 11.40               | 10000.00              | 35.07                | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.53               | 10000.00              | 31.56                | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.75                | 10000.00              | 28.56                | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.07                | 10000.00              | 25.98                | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 8.45                | 10000.00              | 23.74                | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 7.89                | 10000.00              | 21.78                | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.39                | 10000.00              | 20.06                | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 6.94                | 10000.00              | 18.55                | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.53                | 10000.00              | 17.21                | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 24816.33    | 6.15          | 10000.00        | 16.02          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.81          | 10000.00        | 14.95          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.49          | 10000.00        | 13.99          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.20          | 10000.00        | 13.12          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.93          | 10000.00        | 12.34          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.69          | 10000.00        | 11.63          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.46          | 10000.00        | 10.99          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.25          | 10000.00        | 10.40          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.05          | 10000.00        | 9.86           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.87          | 10000.00        | 9.35           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.70          | 10000.00        | 8.89           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.54          | 10000.00        | 8.45           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.39          | 10000.00        | 8.05           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.25          | 10000.00        | 7.67           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.12          | 10000.00        | 7.32           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 10000.00        | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 10000.00        | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 10000.00        | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6979.59     | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 7755.10     | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 8530.61     | 47.89         | 10.17           | 10000.00       | 0       | 0           | 0                | 0                   | 0           |
| 9306.12     | 39.93         | 10.17           | 10000.00       | 0       | 0           | 0                | 0                   | 0           |
| 10081.63    | 33.87         | 10.17           | 2263.58        | 0       | 0           | 0                | 0                   | 0           |
| 10857.14    | 29.16         | 10.17           | 224.18         | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 11632.65    | 25.42         | 10.17           | 139.24         | 0       | 0           | 0                | 0                   | 0           |
| 12408.16    | 22.40         | 10.17           | 99.99          | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 19.92         | 10.17           | 82.26          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 17.86         | 10.17           | 68.49          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 16.29         | 10.17           | 57.58          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 14.80         | 10.17           | 50.05          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 13.51         | 10.17           | 44.14          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 12.39         | 10.17           | 39.21          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 11.40         | 10.17           | 35.07          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.53         | 10.17           | 31.56          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.75          | 10.17           | 28.56          | 1       | 0           | 0                | 0                   | 1           |
| 20163.27    | 9.07          | 10.17           | 25.98          | 1       | 0           | 0                | 0                   | 1           |
| 20938.78    | 8.45          | 10.17           | 23.74          | 1       | 0           | 0                | 0                   | 1           |
| 21714.29    | 7.89          | 10.17           | 21.78          | 1       | 0           | 0                | 0                   | 1           |
| 22489.80    | 7.39          | 10.17           | 20.06          | 1       | 0           | 0                | 0                   | 1           |
| 23265.31    | 6.94          | 10.17           | 18.55          | 1       | 0           | 0                | 0                   | 1           |
| 24040.82    | 6.53          | 10.17           | 17.21          | 1       | 0           | 0                | 0                   | 1           |
| 24816.33    | 6.15          | 10.17           | 16.02          | 1       | 0           | 0                | 0                   | 1           |
| 25591.84    | 5.81          | 10.17           | 14.95          | 1       | 0           | 0                | 0                   | 1           |
| 26367.35    | 5.49          | 10.17           | 13.99          | 1       | 0           | 0                | 0                   | 1           |
| 27142.86    | 5.20          | 10.17           | 13.12          | 1       | 0           | 0                | 0                   | 1           |
| 27918.37    | 4.93          | 10.17           | 12.34          | 1       | 0           | 0                | 0                   | 1           |
| 28693.88    | 4.69          | 10.17           | 11.63          | 1       | 0           | 0                | 0                   | 1           |
| 29469.39    | 4.46          | 10.17           | 10.99          | 1       | 0           | 0                | 0                   | 1           |
| 30244.90    | 4.25          | 10.17           | 10.40          | 1       | 0           | 0                | 0                   | 1           |
| 31020.41    | 4.05          | 10.17           | 9.86           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.87          | 10.17           | 9.35           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.70          | 10.17           | 8.89           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.54          | 10.17           | 8.45           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.39          | 10.17           | 8.05           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.25          | 10.17           | 7.67           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.12          | 10.17           | 7.32           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 10.17           | 0.00           | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 37224.49    | 0.00          | 10.17           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 10.17           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6979.59     | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 7755.10     | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 8530.61     | 47.89         | 20.00           | 10000.00       | 0       | 0           | 0                | 0                   | 0           |
| 9306.12     | 39.93         | 20.00           | 10000.00       | 0       | 0           | 0                | 0                   | 0           |
| 10081.63    | 33.87         | 20.00           | 2263.58        | 0       | 0           | 0                | 0                   | 0           |
| 10857.14    | 29.16         | 20.00           | 224.18         | 0       | 0           | 0                | 0                   | 0           |
| 11632.65    | 25.42         | 20.00           | 139.24         | 0       | 0           | 0                | 0                   | 0           |
| 12408.16    | 22.40         | 20.00           | 99.99          | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 19.92         | 20.00           | 82.26          | 1       | 0           | 0                | 0                   | 1           |
| 13959.18    | 17.86         | 20.00           | 68.49          | 1       | 0           | 0                | 0                   | 1           |
| 14734.69    | 16.29         | 20.00           | 57.58          | 1       | 0           | 0                | 0                   | 1           |
| 15510.20    | 14.80         | 20.00           | 50.05          | 1       | 0           | 0                | 0                   | 1           |
| 16285.71    | 13.51         | 20.00           | 44.14          | 1       | 0           | 0                | 0                   | 1           |
| 17061.22    | 12.39         | 20.00           | 39.21          | 1       | 0           | 0                | 0                   | 1           |
| 17836.73    | 11.40         | 20.00           | 35.07          | 1       | 0           | 0                | 0                   | 1           |
| 18612.24    | 10.53         | 20.00           | 31.56          | 1       | 0           | 0                | 0                   | 1           |
| 19387.76    | 9.75          | 20.00           | 28.56          | 1       | 0           | 0                | 0                   | 1           |
| 20163.27    | 9.07          | 20.00           | 25.98          | 1       | 0           | 0                | 0                   | 1           |
| 20938.78    | 8.45          | 20.00           | 23.74          | 1       | 0           | 0                | 0                   | 1           |
| 21714.29    | 7.89          | 20.00           | 21.78          | 1       | 0           | 0                | 0                   | 1           |
| 22489.80    | 7.39          | 20.00           | 20.06          | 1       | 0           | 0                | 0                   | 1           |
| 23265.31    | 6.94          | 20.00           | 18.55          | 0       | 0           | 0                | 0                   | 0           |



| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 24040.82    | 6.53          | 20.00           | 17.21          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.15          | 20.00           | 16.02          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.81          | 20.00           | 14.95          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.49          | 20.00           | 13.99          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.20          | 20.00           | 13.12          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.93          | 20.00           | 12.34          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.69          | 20.00           | 11.63          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.46          | 20.00           | 10.99          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.25          | 20.00           | 10.40          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.05          | 20.00           | 9.86           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.87          | 20.00           | 9.35           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.70          | 20.00           | 8.89           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.54          | 20.00           | 8.45           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.39          | 20.00           | 8.05           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.25          | 20.00           | 7.67           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.12          | 20.00           | 7.32           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 20.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 20.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 20.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6979.59     | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 7755.10     | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 8530.61     | 47.89         | 30.00           | 10000.00       | 0       | 0           | 0                | 0                   | 0           |
| 9306.12     | 39.93         | 30.00           | 10000.00       | 0       | 0           | 0                | 0                   | 0           |
| 10081.63    | 33.87         | 30.00           | 2263.58        | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 10857.14    | 29.16         | 30.00           | 224.18         | 1       | 0           | 0                | 0                   | 1           |
| 11632.65    | 25.42         | 30.00           | 139.24         | 1       | 0           | 0                | 0                   | 1           |
| 12408.16    | 22.40         | 30.00           | 99.99          | 1       | 0           | 0                | 0                   | 1           |
| 13183.67    | 19.92         | 30.00           | 82.26          | 1       | 0           | 0                | 0                   | 1           |
| 13959.18    | 17.86         | 30.00           | 68.49          | 1       | 0           | 0                | 0                   | 1           |
| 14734.69    | 16.29         | 30.00           | 57.58          | 1       | 0           | 0                | 0                   | 1           |
| 15510.20    | 14.80         | 30.00           | 50.05          | 1       | 0           | 0                | 0                   | 1           |
| 16285.71    | 13.51         | 30.00           | 44.14          | 1       | 0           | 0                | 0                   | 1           |
| 17061.22    | 12.39         | 30.00           | 39.21          | 1       | 0           | 0                | 0                   | 1           |
| 17836.73    | 11.40         | 30.00           | 35.07          | 1       | 0           | 0                | 0                   | 1           |
| 18612.24    | 10.53         | 30.00           | 31.56          | 1       | 0           | 0                | 0                   | 1           |
| 19387.76    | 9.75          | 30.00           | 28.56          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.07          | 30.00           | 25.98          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 8.45          | 30.00           | 23.74          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 7.89          | 30.00           | 21.78          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.39          | 30.00           | 20.06          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 6.94          | 30.00           | 18.55          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.53          | 30.00           | 17.21          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.15          | 30.00           | 16.02          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.81          | 30.00           | 14.95          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.49          | 30.00           | 13.99          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.20          | 30.00           | 13.12          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.93          | 30.00           | 12.34          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.69          | 30.00           | 11.63          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.46          | 30.00           | 10.99          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.25          | 30.00           | 10.40          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.05          | 30.00           | 9.86           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.87          | 30.00           | 9.35           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.70          | 30.00           | 8.89           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.54          | 30.00           | 8.45           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.39          | 30.00           | 8.05           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.25          | 30.00           | 7.67           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.12          | 30.00           | 7.32           | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 36448.98    | 0.00          | 30.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 30.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 30.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6979.59     | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 7755.10     | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 8530.61     | 47.89         | 40.00           | 10000.00       | 0       | 0           | 0                | 0                   | 0           |
| 9306.12     | 39.93         | 40.00           | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 10081.63    | 33.87         | 40.00           | 2263.58        | 1       | 0           | 0                | 0                   | 1           |
| 10857.14    | 29.16         | 40.00           | 224.18         | 1       | 0           | 0                | 0                   | 1           |
| 11632.65    | 25.42         | 40.00           | 139.24         | 1       | 0           | 0                | 0                   | 1           |
| 12408.16    | 22.40         | 40.00           | 99.99          | 1       | 0           | 0                | 0                   | 1           |
| 13183.67    | 19.92         | 40.00           | 82.26          | 1       | 0           | 0                | 0                   | 1           |
| 13959.18    | 17.86         | 40.00           | 68.49          | 1       | 0           | 0                | 0                   | 1           |
| 14734.69    | 16.29         | 40.00           | 57.58          | 1       | 0           | 0                | 0                   | 1           |
| 15510.20    | 14.80         | 40.00           | 50.05          | 1       | 0           | 0                | 0                   | 1           |
| 16285.71    | 13.51         | 40.00           | 44.14          | 1       | 0           | 0                | 0                   | 1           |
| 17061.22    | 12.39         | 40.00           | 39.21          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 11.40         | 40.00           | 35.07          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.53         | 40.00           | 31.56          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.75          | 40.00           | 28.56          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.07          | 40.00           | 25.98          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 8.45          | 40.00           | 23.74          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 7.89          | 40.00           | 21.78          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.39          | 40.00           | 20.06          | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 23265.31    | 6.94          | 40.00           | 18.55          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.53          | 40.00           | 17.21          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.15          | 40.00           | 16.02          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.81          | 40.00           | 14.95          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.49          | 40.00           | 13.99          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.20          | 40.00           | 13.12          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.93          | 40.00           | 12.34          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.69          | 40.00           | 11.63          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.46          | 40.00           | 10.99          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.25          | 40.00           | 10.40          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.05          | 40.00           | 9.86           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.87          | 40.00           | 9.35           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.70          | 40.00           | 8.89           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.54          | 40.00           | 8.45           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.39          | 40.00           | 8.05           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.25          | 40.00           | 7.67           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.12          | 40.00           | 7.32           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 40.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 40.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 40.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6979.59     | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 7755.10     | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 8530.61     | 47.89         | 50.00           | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 9306.12     | 39.93         | 50.00           | 10000.00       | 1       | 0           | 0                | 0                   | 1           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 10081.63    | 33.87         | 50.00           | 2263.58        | 1       | 0           | 0                | 0                   | 1           |
| 10857.14    | 29.16         | 50.00           | 224.18         | 1       | 0           | 0                | 0                   | 1           |
| 11632.65    | 25.42         | 50.00           | 139.24         | 1       | 0           | 0                | 0                   | 1           |
| 12408.16    | 22.40         | 50.00           | 99.99          | 1       | 0           | 0                | 0                   | 1           |
| 13183.67    | 19.92         | 50.00           | 82.26          | 1       | 0           | 0                | 0                   | 1           |
| 13959.18    | 17.86         | 50.00           | 68.49          | 1       | 0           | 0                | 0                   | 1           |
| 14734.69    | 16.29         | 50.00           | 57.58          | 1       | 0           | 0                | 0                   | 1           |
| 15510.20    | 14.80         | 50.00           | 50.05          | 1       | 0           | 0                | 0                   | 1           |
| 16285.71    | 13.51         | 50.00           | 44.14          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 12.39         | 50.00           | 39.21          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 11.40         | 50.00           | 35.07          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.53         | 50.00           | 31.56          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.75          | 50.00           | 28.56          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.07          | 50.00           | 25.98          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 8.45          | 50.00           | 23.74          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 7.89          | 50.00           | 21.78          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.39          | 50.00           | 20.06          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 6.94          | 50.00           | 18.55          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.53          | 50.00           | 17.21          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.15          | 50.00           | 16.02          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.81          | 50.00           | 14.95          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.49          | 50.00           | 13.99          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.20          | 50.00           | 13.12          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.93          | 50.00           | 12.34          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.69          | 50.00           | 11.63          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.46          | 50.00           | 10.99          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.25          | 50.00           | 10.40          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.05          | 50.00           | 9.86           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.87          | 50.00           | 9.35           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.70          | 50.00           | 8.89           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.54          | 50.00           | 8.45           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.39          | 50.00           | 8.05           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.25          | 50.00           | 7.67           | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 35673.47    | 3.12          | 50.00           | 7.32           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 50.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 50.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 50.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6979.59     | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 7755.10     | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 8530.61     | 47.89         | 81.08           | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 9306.12     | 39.93         | 81.08           | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 10081.63    | 33.87         | 81.08           | 2263.58        | 1       | 0           | 0                | 0                   | 1           |
| 10857.14    | 29.16         | 81.08           | 224.18         | 1       | 0           | 0                | 0                   | 1           |
| 11632.65    | 25.42         | 81.08           | 139.24         | 1       | 0           | 0                | 0                   | 1           |
| 12408.16    | 22.40         | 81.08           | 99.99          | 1       | 0           | 0                | 0                   | 1           |
| 13183.67    | 19.92         | 81.08           | 82.26          | 1       | 0           | 0                | 0                   | 1           |
| 13959.18    | 17.86         | 81.08           | 68.49          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 16.29         | 81.08           | 57.58          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 14.80         | 81.08           | 50.05          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 13.51         | 81.08           | 44.14          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 12.39         | 81.08           | 39.21          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 11.40         | 81.08           | 35.07          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.53         | 81.08           | 31.56          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.75          | 81.08           | 28.56          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.07          | 81.08           | 25.98          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 8.45          | 81.08           | 23.74          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 7.89          | 81.08           | 21.78          | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 22489.80    | 7.39          | 81.08           | 20.06          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 6.94          | 81.08           | 18.55          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.53          | 81.08           | 17.21          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.15          | 81.08           | 16.02          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.81          | 81.08           | 14.95          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.49          | 81.08           | 13.99          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.20          | 81.08           | 13.12          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.93          | 81.08           | 12.34          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.69          | 81.08           | 11.63          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.46          | 81.08           | 10.99          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.25          | 81.08           | 10.40          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.05          | 81.08           | 9.86           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.87          | 81.08           | 9.35           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.70          | 81.08           | 8.89           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.54          | 81.08           | 8.45           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.39          | 81.08           | 8.05           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.25          | 81.08           | 7.67           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.12          | 81.08           | 7.32           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 81.08           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 81.08           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 81.08           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6979.59     | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 7755.10     | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 8530.61     | 47.89         | 100.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 9306.12     | 39.93         | 100.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 10081.63    | 33.87         | 100.00          | 2263.58        | 1       | 0           | 0                | 0                   | 1           |
| 10857.14    | 29.16         | 100.00          | 224.18         | 1       | 0           | 0                | 0                   | 1           |
| 11632.65    | 25.42         | 100.00          | 139.24         | 1       | 0           | 0                | 0                   | 1           |
| 12408.16    | 22.40         | 100.00          | 99.99          | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 19.92         | 100.00          | 82.26          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 17.86         | 100.00          | 68.49          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 16.29         | 100.00          | 57.58          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 14.80         | 100.00          | 50.05          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 13.51         | 100.00          | 44.14          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 12.39         | 100.00          | 39.21          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 11.40         | 100.00          | 35.07          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.53         | 100.00          | 31.56          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.75          | 100.00          | 28.56          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.07          | 100.00          | 25.98          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 8.45          | 100.00          | 23.74          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 7.89          | 100.00          | 21.78          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.39          | 100.00          | 20.06          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 6.94          | 100.00          | 18.55          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.53          | 100.00          | 17.21          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.15          | 100.00          | 16.02          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.81          | 100.00          | 14.95          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.49          | 100.00          | 13.99          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.20          | 100.00          | 13.12          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.93          | 100.00          | 12.34          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.69          | 100.00          | 11.63          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.46          | 100.00          | 10.99          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.25          | 100.00          | 10.40          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.05          | 100.00          | 9.86           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.87          | 100.00          | 9.35           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.70          | 100.00          | 8.89           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.54          | 100.00          | 8.45           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.39          | 100.00          | 8.05           | 0       | 0           | 0                | 0                   | 0           |



| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 34897.96    | 3.25          | 100.00          | 7.67           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.12          | 100.00          | 7.32           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 100.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 100.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 100.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6979.59     | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 7755.10     | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 8530.61     | 47.89         | 200.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 9306.12     | 39.93         | 200.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 10081.63    | 33.87         | 200.00          | 2263.58        | 1       | 0           | 0                | 0                   | 1           |
| 10857.14    | 29.16         | 200.00          | 224.18         | 1       | 0           | 0                | 0                   | 1           |
| 11632.65    | 25.42         | 200.00          | 139.24         | 0       | 0           | 0                | 0                   | 0           |
| 12408.16    | 22.40         | 200.00          | 99.99          | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 19.92         | 200.00          | 82.26          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 17.86         | 200.00          | 68.49          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 16.29         | 200.00          | 57.58          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 14.80         | 200.00          | 50.05          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 13.51         | 200.00          | 44.14          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 12.39         | 200.00          | 39.21          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 11.40         | 200.00          | 35.07          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.53         | 200.00          | 31.56          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.75          | 200.00          | 28.56          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.07          | 200.00          | 25.98          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 8.45          | 200.00          | 23.74          | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 21714.29    | 7.89          | 200.00          | 21.78          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.39          | 200.00          | 20.06          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 6.94          | 200.00          | 18.55          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.53          | 200.00          | 17.21          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.15          | 200.00          | 16.02          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.81          | 200.00          | 14.95          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.49          | 200.00          | 13.99          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.20          | 200.00          | 13.12          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.93          | 200.00          | 12.34          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.69          | 200.00          | 11.63          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.46          | 200.00          | 10.99          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.25          | 200.00          | 10.40          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.05          | 200.00          | 9.86           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.87          | 200.00          | 9.35           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.70          | 200.00          | 8.89           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.54          | 200.00          | 8.45           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.39          | 200.00          | 8.05           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.25          | 200.00          | 7.67           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.12          | 200.00          | 7.32           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 200.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 200.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 200.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6979.59     | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 7755.10     | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 8530.61     | 47.89         | 250.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 9306.12     | 39.93         | 250.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 10081.63    | 33.87         | 250.00          | 2263.58        | 1       | 0           | 0                | 0                   | 1           |
| 10857.14    | 29.16         | 250.00          | 224.18         | 0       | 0           | 0                | 0                   | 0           |
| 11632.65    | 25.42         | 250.00          | 139.24         | 0       | 0           | 0                | 0                   | 0           |
| 12408.16    | 22.40         | 250.00          | 99.99          | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 19.92         | 250.00          | 82.26          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 17.86         | 250.00          | 68.49          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 16.29         | 250.00          | 57.58          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 14.80         | 250.00          | 50.05          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 13.51         | 250.00          | 44.14          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 12.39         | 250.00          | 39.21          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 11.40         | 250.00          | 35.07          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.53         | 250.00          | 31.56          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.75          | 250.00          | 28.56          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.07          | 250.00          | 25.98          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 8.45          | 250.00          | 23.74          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 7.89          | 250.00          | 21.78          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.39          | 250.00          | 20.06          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 6.94          | 250.00          | 18.55          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.53          | 250.00          | 17.21          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.15          | 250.00          | 16.02          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.81          | 250.00          | 14.95          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.49          | 250.00          | 13.99          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.20          | 250.00          | 13.12          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.93          | 250.00          | 12.34          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.69          | 250.00          | 11.63          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.46          | 250.00          | 10.99          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.25          | 250.00          | 10.40          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.05          | 250.00          | 9.86           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.87          | 250.00          | 9.35           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.70          | 250.00          | 8.89           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.54          | 250.00          | 8.45           | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 34122.45    | 3.39          | 250.00          | 8.05           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.25          | 250.00          | 7.67           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.12          | 250.00          | 7.32           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 250.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 250.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 250.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6979.59     | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 7755.10     | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 8530.61     | 47.89         | 300.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 9306.12     | 39.93         | 300.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 10081.63    | 33.87         | 300.00          | 2263.58        | 1       | 0           | 0                | 0                   | 1           |
| 10857.14    | 29.16         | 300.00          | 224.18         | 0       | 0           | 0                | 0                   | 0           |
| 11632.65    | 25.42         | 300.00          | 139.24         | 0       | 0           | 0                | 0                   | 0           |
| 12408.16    | 22.40         | 300.00          | 99.99          | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 19.92         | 300.00          | 82.26          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 17.86         | 300.00          | 68.49          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 16.29         | 300.00          | 57.58          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 14.80         | 300.00          | 50.05          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 13.51         | 300.00          | 44.14          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 12.39         | 300.00          | 39.21          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 11.40         | 300.00          | 35.07          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.53         | 300.00          | 31.56          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.75          | 300.00          | 28.56          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.07          | 300.00          | 25.98          | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 20938.78    | 8.45          | 300.00          | 23.74          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 7.89          | 300.00          | 21.78          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.39          | 300.00          | 20.06          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 6.94          | 300.00          | 18.55          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.53          | 300.00          | 17.21          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.15          | 300.00          | 16.02          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.81          | 300.00          | 14.95          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.49          | 300.00          | 13.99          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.20          | 300.00          | 13.12          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.93          | 300.00          | 12.34          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.69          | 300.00          | 11.63          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.46          | 300.00          | 10.99          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.25          | 300.00          | 10.40          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.05          | 300.00          | 9.86           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.87          | 300.00          | 9.35           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.70          | 300.00          | 8.89           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.54          | 300.00          | 8.45           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.39          | 300.00          | 8.05           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.25          | 300.00          | 7.67           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 3.12          | 300.00          | 7.32           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 300.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 300.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 300.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6979.59     | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 7755.10     | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 8530.61     | 47.89         | 500.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 9306.12     | 39.93         | 500.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 10081.63    | 33.87         | 500.00          | 2263.58        | 1       | 0           | 0                | 0                   | 1           |
| 10857.14    | 29.16         | 500.00          | 224.18         | 0       | 0           | 0                | 0                   | 0           |
| 11632.65    | 25.42         | 500.00          | 139.24         | 0       | 0           | 0                | 0                   | 0           |
| 12408.16    | 22.40         | 500.00          | 99.99          | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 19.92         | 500.00          | 82.26          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 17.86         | 500.00          | 68.49          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 16.29         | 500.00          | 57.58          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 14.80         | 500.00          | 50.05          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 13.51         | 500.00          | 44.14          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 12.39         | 500.00          | 39.21          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 11.40         | 500.00          | 35.07          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.53         | 500.00          | 31.56          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.75          | 500.00          | 28.56          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.07          | 500.00          | 25.98          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 8.45          | 500.00          | 23.74          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 7.89          | 500.00          | 21.78          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.39          | 500.00          | 20.06          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 6.94          | 500.00          | 18.55          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.53          | 500.00          | 17.21          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.15          | 500.00          | 16.02          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.81          | 500.00          | 14.95          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.49          | 500.00          | 13.99          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.20          | 500.00          | 13.12          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.93          | 500.00          | 12.34          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.69          | 500.00          | 11.63          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.46          | 500.00          | 10.99          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.25          | 500.00          | 10.40          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 4.05          | 500.00          | 9.86           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.87          | 500.00          | 9.35           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.70          | 500.00          | 8.89           | 0       | 0           | 0                | 0                   | 0           |

| <b>Energy [eV]</b> | <b>Trip low [um]</b> | <b>TFS Radius [um]</b> | <b>Trip high [um]</b> | <b>Faulted</b> | <b>State Fault</b> | <b>Min Energy Fault</b> | <b>Lens Required Fault</b> | <b>Table Fault</b> |
|--------------------|----------------------|------------------------|-----------------------|----------------|--------------------|-------------------------|----------------------------|--------------------|
| 33346.94           | 3.54                 | 500.00                 | 8.45                  | 0              | 0                  | 0                       | 0                          | 0                  |
| 34122.45           | 3.39                 | 500.00                 | 8.05                  | 0              | 0                  | 0                       | 0                          | 0                  |
| 34897.96           | 3.25                 | 500.00                 | 7.67                  | 0              | 0                  | 0                       | 0                          | 0                  |
| 35673.47           | 3.12                 | 500.00                 | 7.32                  | 0              | 0                  | 0                       | 0                          | 0                  |
| 36448.98           | 0.00                 | 500.00                 | 0.00                  | 0              | 0                  | 0                       | 0                          | 0                  |
| 37224.49           | 0.00                 | 500.00                 | 0.00                  | 0              | 0                  | 0                       | 0                          | 0                  |
| 38000.00           | 0.00                 | 500.00                 | 0.00                  | 0              | 0                  | 0                       | 0                          | 0                  |

# Scan 4: 333.333 $\mu$ m pre-focusing lens

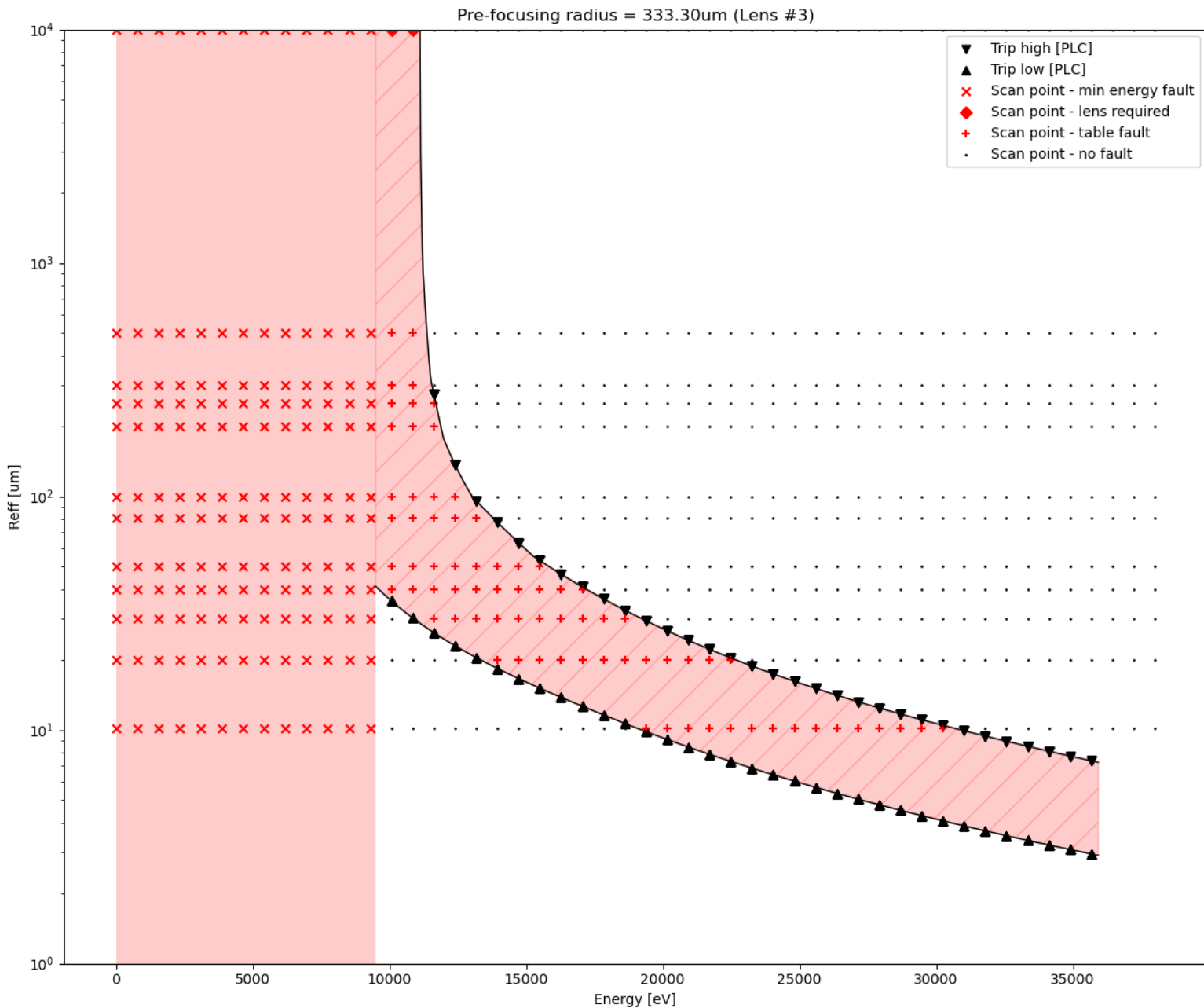
Data generated: 2022-11-09 18:18:56

bluesky scan sweep\_energy\_plan with 333.333 $\mu$ m pre-focusing lens.

## Scan Information

1. Choose a few transfocator lens sets to span the effective radius range.
2. For each of those lens sets, scan energy at regular intervals.
3. Each marker on the plot represents one of those scan points.
4. Record if PLC reported a fault and why.





### Plot / Table Information

**No fault** indicates that a data point was checked but no fault reported by PLC.

**Trip Low** and **Trip High** are values from the spreadsheet table, interpolated by the PLC and reported to EPICS.

The lines drawn around these regions and the highlighted regions are directly from the spreadsheet.

**Min Energy Fault** indicates that it does not meet minimum energy requirement for a given XRT lens.

**Table Fault** indicates a fault from the spreadsheet table disallowed region.

**Lens Required Fault** markers are clipped at the bottom of the plot.

### Scan 4: 333.333µm pre-focusing lens: Scan Data Table

| Energy [eV] | Trip low [µm] | TFS Radius [µm] | Trip high [µm] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 0.00        | 0.00          | 10000.00        | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 10000.00        | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 10000.00        | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 10000.00        | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 10000.00        | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 10000.00        | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 10000.00        | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 10000.00        | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 0.00          | 10000.00        | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6979.59     | 0.00          | 10000.00        | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 7755.10     | 0.00          | 10000.00        | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 8530.61     | 0.00          | 10000.00        | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 9306.12     | 0.00          | 10000.00        | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 10081.63    | 35.65         | 10000.00        | 10000.00       | 1       | 0           | 0                | 1                   | 1           |
| 10857.14    | 30.16         | 10000.00        | 10000.00       | 1       | 0           | 0                | 1                   | 1           |
| 11632.65    | 26.07         | 10000.00        | 274.10         | 0       | 0           | 0                | 0                   | 0           |
| 12408.16    | 22.92         | 10000.00        | 136.69         | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 20.39         | 10000.00        | 95.73          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 18.32         | 10000.00        | 77.39          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 16.58         | 10000.00        | 63.29          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 15.08         | 10000.00        | 53.10          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 13.78         | 10000.00        | 46.44          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 12.62         | 10000.00        | 40.96          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 11.59         | 10000.00        | 36.41          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.66         | 10000.00        | 32.58          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.83          | 10000.00        | 29.34          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.10          | 10000.00        | 26.58          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 8.44          | 10000.00        | 24.20          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 7.86          | 10000.00        | 22.14          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.33          | 10000.00        | 20.34          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 6.85          | 10000.00        | 18.77          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.42          | 10000.00        | 17.38          | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 24816.33    | 6.03          | 10000.00        | 16.15          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.68          | 10000.00        | 15.06          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.35          | 10000.00        | 14.08          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.05          | 10000.00        | 13.20          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.78          | 10000.00        | 12.41          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.53          | 10000.00        | 11.70          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.30          | 10000.00        | 11.05          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.08          | 10000.00        | 10.46          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 3.88          | 10000.00        | 9.92           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.70          | 10000.00        | 9.41           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.52          | 10000.00        | 8.94           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.36          | 10000.00        | 8.51           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.21          | 10000.00        | 8.11           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.07          | 10000.00        | 7.73           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 2.94          | 10000.00        | 7.38           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 10000.00        | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 10000.00        | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 10000.00        | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6979.59     | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 7755.10     | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 8530.61     | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 9306.12     | 0.00          | 10.17           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 10081.63    | 35.65         | 10.17           | 10000.00       | 0       | 0           | 0                | 0                   | 0           |
| 10857.14    | 30.16         | 10.17           | 10000.00       | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 11632.65    | 26.07         | 10.17           | 274.10         | 0       | 0           | 0                | 0                   | 0           |
| 12408.16    | 22.92         | 10.17           | 136.69         | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 20.39         | 10.17           | 95.73          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 18.32         | 10.17           | 77.39          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 16.58         | 10.17           | 63.29          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 15.08         | 10.17           | 53.10          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 13.78         | 10.17           | 46.44          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 12.62         | 10.17           | 40.96          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 11.59         | 10.17           | 36.41          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.66         | 10.17           | 32.58          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.83          | 10.17           | 29.34          | 1       | 0           | 0                | 0                   | 1           |
| 20163.27    | 9.10          | 10.17           | 26.58          | 1       | 0           | 0                | 0                   | 1           |
| 20938.78    | 8.44          | 10.17           | 24.20          | 1       | 0           | 0                | 0                   | 1           |
| 21714.29    | 7.86          | 10.17           | 22.14          | 1       | 0           | 0                | 0                   | 1           |
| 22489.80    | 7.33          | 10.17           | 20.34          | 1       | 0           | 0                | 0                   | 1           |
| 23265.31    | 6.85          | 10.17           | 18.77          | 1       | 0           | 0                | 0                   | 1           |
| 24040.82    | 6.42          | 10.17           | 17.38          | 1       | 0           | 0                | 0                   | 1           |
| 24816.33    | 6.03          | 10.17           | 16.15          | 1       | 0           | 0                | 0                   | 1           |
| 25591.84    | 5.68          | 10.17           | 15.06          | 1       | 0           | 0                | 0                   | 1           |
| 26367.35    | 5.35          | 10.17           | 14.08          | 1       | 0           | 0                | 0                   | 1           |
| 27142.86    | 5.05          | 10.17           | 13.20          | 1       | 0           | 0                | 0                   | 1           |
| 27918.37    | 4.78          | 10.17           | 12.41          | 1       | 0           | 0                | 0                   | 1           |
| 28693.88    | 4.53          | 10.17           | 11.70          | 1       | 0           | 0                | 0                   | 1           |
| 29469.39    | 4.30          | 10.17           | 11.05          | 1       | 0           | 0                | 0                   | 1           |
| 30244.90    | 4.08          | 10.17           | 10.46          | 1       | 0           | 0                | 0                   | 1           |
| 31020.41    | 3.88          | 10.17           | 9.92           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.70          | 10.17           | 9.41           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.52          | 10.17           | 8.94           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.36          | 10.17           | 8.51           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.21          | 10.17           | 8.11           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.07          | 10.17           | 7.73           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 2.94          | 10.17           | 7.38           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 10.17           | 0.00           | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 37224.49    | 0.00          | 10.17           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 10.17           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6979.59     | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 7755.10     | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 8530.61     | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 9306.12     | 0.00          | 20.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 10081.63    | 35.65         | 20.00           | 10000.00       | 0       | 0           | 0                | 0                   | 0           |
| 10857.14    | 30.16         | 20.00           | 10000.00       | 0       | 0           | 0                | 0                   | 0           |
| 11632.65    | 26.07         | 20.00           | 274.10         | 0       | 0           | 0                | 0                   | 0           |
| 12408.16    | 22.92         | 20.00           | 136.69         | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 20.39         | 20.00           | 95.73          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 18.32         | 20.00           | 77.39          | 1       | 0           | 0                | 0                   | 1           |
| 14734.69    | 16.58         | 20.00           | 63.29          | 1       | 0           | 0                | 0                   | 1           |
| 15510.20    | 15.08         | 20.00           | 53.10          | 1       | 0           | 0                | 0                   | 1           |
| 16285.71    | 13.78         | 20.00           | 46.44          | 1       | 0           | 0                | 0                   | 1           |
| 17061.22    | 12.62         | 20.00           | 40.96          | 1       | 0           | 0                | 0                   | 1           |
| 17836.73    | 11.59         | 20.00           | 36.41          | 1       | 0           | 0                | 0                   | 1           |
| 18612.24    | 10.66         | 20.00           | 32.58          | 1       | 0           | 0                | 0                   | 1           |
| 19387.76    | 9.83          | 20.00           | 29.34          | 1       | 0           | 0                | 0                   | 1           |
| 20163.27    | 9.10          | 20.00           | 26.58          | 1       | 0           | 0                | 0                   | 1           |
| 20938.78    | 8.44          | 20.00           | 24.20          | 1       | 0           | 0                | 0                   | 1           |
| 21714.29    | 7.86          | 20.00           | 22.14          | 1       | 0           | 0                | 0                   | 1           |
| 22489.80    | 7.33          | 20.00           | 20.34          | 1       | 0           | 0                | 0                   | 1           |
| 23265.31    | 6.85          | 20.00           | 18.77          | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 24040.82    | 6.42          | 20.00           | 17.38          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.03          | 20.00           | 16.15          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.68          | 20.00           | 15.06          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.35          | 20.00           | 14.08          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.05          | 20.00           | 13.20          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.78          | 20.00           | 12.41          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.53          | 20.00           | 11.70          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.30          | 20.00           | 11.05          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.08          | 20.00           | 10.46          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 3.88          | 20.00           | 9.92           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.70          | 20.00           | 9.41           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.52          | 20.00           | 8.94           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.36          | 20.00           | 8.51           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.21          | 20.00           | 8.11           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.07          | 20.00           | 7.73           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 2.94          | 20.00           | 7.38           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 20.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 20.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 20.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6979.59     | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 7755.10     | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 8530.61     | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 9306.12     | 0.00          | 30.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 10081.63    | 35.65         | 30.00           | 10000.00       | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 10857.14    | 30.16         | 30.00           | 10000.00       | 0       | 0           | 0                | 0                   | 0           |
| 11632.65    | 26.07         | 30.00           | 274.10         | 1       | 0           | 0                | 0                   | 1           |
| 12408.16    | 22.92         | 30.00           | 136.69         | 1       | 0           | 0                | 0                   | 1           |
| 13183.67    | 20.39         | 30.00           | 95.73          | 1       | 0           | 0                | 0                   | 1           |
| 13959.18    | 18.32         | 30.00           | 77.39          | 1       | 0           | 0                | 0                   | 1           |
| 14734.69    | 16.58         | 30.00           | 63.29          | 1       | 0           | 0                | 0                   | 1           |
| 15510.20    | 15.08         | 30.00           | 53.10          | 1       | 0           | 0                | 0                   | 1           |
| 16285.71    | 13.78         | 30.00           | 46.44          | 1       | 0           | 0                | 0                   | 1           |
| 17061.22    | 12.62         | 30.00           | 40.96          | 1       | 0           | 0                | 0                   | 1           |
| 17836.73    | 11.59         | 30.00           | 36.41          | 1       | 0           | 0                | 0                   | 1           |
| 18612.24    | 10.66         | 30.00           | 32.58          | 1       | 0           | 0                | 0                   | 1           |
| 19387.76    | 9.83          | 30.00           | 29.34          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.10          | 30.00           | 26.58          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 8.44          | 30.00           | 24.20          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 7.86          | 30.00           | 22.14          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.33          | 30.00           | 20.34          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 6.85          | 30.00           | 18.77          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.42          | 30.00           | 17.38          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.03          | 30.00           | 16.15          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.68          | 30.00           | 15.06          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.35          | 30.00           | 14.08          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.05          | 30.00           | 13.20          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.78          | 30.00           | 12.41          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.53          | 30.00           | 11.70          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.30          | 30.00           | 11.05          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.08          | 30.00           | 10.46          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 3.88          | 30.00           | 9.92           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.70          | 30.00           | 9.41           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.52          | 30.00           | 8.94           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.36          | 30.00           | 8.51           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.21          | 30.00           | 8.11           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.07          | 30.00           | 7.73           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 2.94          | 30.00           | 7.38           | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 36448.98    | 0.00          | 30.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 30.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 30.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6979.59     | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 7755.10     | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 8530.61     | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 9306.12     | 0.00          | 40.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 10081.63    | 35.65         | 40.00           | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 10857.14    | 30.16         | 40.00           | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 11632.65    | 26.07         | 40.00           | 274.10         | 1       | 0           | 0                | 0                   | 1           |
| 12408.16    | 22.92         | 40.00           | 136.69         | 1       | 0           | 0                | 0                   | 1           |
| 13183.67    | 20.39         | 40.00           | 95.73          | 1       | 0           | 0                | 0                   | 1           |
| 13959.18    | 18.32         | 40.00           | 77.39          | 1       | 0           | 0                | 0                   | 1           |
| 14734.69    | 16.58         | 40.00           | 63.29          | 1       | 0           | 0                | 0                   | 1           |
| 15510.20    | 15.08         | 40.00           | 53.10          | 1       | 0           | 0                | 0                   | 1           |
| 16285.71    | 13.78         | 40.00           | 46.44          | 1       | 0           | 0                | 0                   | 1           |
| 17061.22    | 12.62         | 40.00           | 40.96          | 1       | 0           | 0                | 0                   | 1           |
| 17836.73    | 11.59         | 40.00           | 36.41          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.66         | 40.00           | 32.58          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.83          | 40.00           | 29.34          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.10          | 40.00           | 26.58          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 8.44          | 40.00           | 24.20          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 7.86          | 40.00           | 22.14          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.33          | 40.00           | 20.34          | 0       | 0           | 0                | 0                   | 0           |



| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 23265.31    | 6.85          | 40.00           | 18.77          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.42          | 40.00           | 17.38          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.03          | 40.00           | 16.15          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.68          | 40.00           | 15.06          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.35          | 40.00           | 14.08          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.05          | 40.00           | 13.20          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.78          | 40.00           | 12.41          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.53          | 40.00           | 11.70          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.30          | 40.00           | 11.05          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.08          | 40.00           | 10.46          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 3.88          | 40.00           | 9.92           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.70          | 40.00           | 9.41           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.52          | 40.00           | 8.94           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.36          | 40.00           | 8.51           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.21          | 40.00           | 8.11           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.07          | 40.00           | 7.73           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 2.94          | 40.00           | 7.38           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 40.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 40.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 40.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6979.59     | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 7755.10     | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 8530.61     | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 9306.12     | 0.00          | 50.00           | 0.00           | 1       | 0           | 1                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 10081.63    | 35.65         | 50.00           | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 10857.14    | 30.16         | 50.00           | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 11632.65    | 26.07         | 50.00           | 274.10         | 1       | 0           | 0                | 0                   | 1           |
| 12408.16    | 22.92         | 50.00           | 136.69         | 1       | 0           | 0                | 0                   | 1           |
| 13183.67    | 20.39         | 50.00           | 95.73          | 1       | 0           | 0                | 0                   | 1           |
| 13959.18    | 18.32         | 50.00           | 77.39          | 1       | 0           | 0                | 0                   | 1           |
| 14734.69    | 16.58         | 50.00           | 63.29          | 1       | 0           | 0                | 0                   | 1           |
| 15510.20    | 15.08         | 50.00           | 53.10          | 1       | 0           | 0                | 0                   | 1           |
| 16285.71    | 13.78         | 50.00           | 46.44          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 12.62         | 50.00           | 40.96          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 11.59         | 50.00           | 36.41          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.66         | 50.00           | 32.58          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.83          | 50.00           | 29.34          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.10          | 50.00           | 26.58          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 8.44          | 50.00           | 24.20          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 7.86          | 50.00           | 22.14          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.33          | 50.00           | 20.34          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 6.85          | 50.00           | 18.77          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.42          | 50.00           | 17.38          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.03          | 50.00           | 16.15          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.68          | 50.00           | 15.06          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.35          | 50.00           | 14.08          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.05          | 50.00           | 13.20          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.78          | 50.00           | 12.41          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.53          | 50.00           | 11.70          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.30          | 50.00           | 11.05          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.08          | 50.00           | 10.46          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 3.88          | 50.00           | 9.92           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.70          | 50.00           | 9.41           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.52          | 50.00           | 8.94           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.36          | 50.00           | 8.51           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.21          | 50.00           | 8.11           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.07          | 50.00           | 7.73           | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 35673.47    | 2.94          | 50.00           | 7.38           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 50.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 50.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 50.00           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6979.59     | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 7755.10     | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 8530.61     | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 9306.12     | 0.00          | 81.08           | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 10081.63    | 35.65         | 81.08           | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 10857.14    | 30.16         | 81.08           | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 11632.65    | 26.07         | 81.08           | 274.10         | 1       | 0           | 0                | 0                   | 1           |
| 12408.16    | 22.92         | 81.08           | 136.69         | 1       | 0           | 0                | 0                   | 1           |
| 13183.67    | 20.39         | 81.08           | 95.73          | 1       | 0           | 0                | 0                   | 1           |
| 13959.18    | 18.32         | 81.08           | 77.39          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 16.58         | 81.08           | 63.29          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 15.08         | 81.08           | 53.10          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 13.78         | 81.08           | 46.44          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 12.62         | 81.08           | 40.96          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 11.59         | 81.08           | 36.41          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.66         | 81.08           | 32.58          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.83          | 81.08           | 29.34          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.10          | 81.08           | 26.58          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 8.44          | 81.08           | 24.20          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 7.86          | 81.08           | 22.14          | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 22489.80    | 7.33          | 81.08           | 20.34          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 6.85          | 81.08           | 18.77          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.42          | 81.08           | 17.38          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.03          | 81.08           | 16.15          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.68          | 81.08           | 15.06          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.35          | 81.08           | 14.08          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.05          | 81.08           | 13.20          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.78          | 81.08           | 12.41          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.53          | 81.08           | 11.70          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.30          | 81.08           | 11.05          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.08          | 81.08           | 10.46          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 3.88          | 81.08           | 9.92           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.70          | 81.08           | 9.41           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.52          | 81.08           | 8.94           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.36          | 81.08           | 8.51           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.21          | 81.08           | 8.11           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.07          | 81.08           | 7.73           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 2.94          | 81.08           | 7.38           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 81.08           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 81.08           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 81.08           | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6979.59     | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 7755.10     | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 8530.61     | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 9306.12     | 0.00          | 100.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 10081.63    | 35.65         | 100.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 10857.14    | 30.16         | 100.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 11632.65    | 26.07         | 100.00          | 274.10         | 1       | 0           | 0                | 0                   | 1           |
| 12408.16    | 22.92         | 100.00          | 136.69         | 1       | 0           | 0                | 0                   | 1           |
| 13183.67    | 20.39         | 100.00          | 95.73          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 18.32         | 100.00          | 77.39          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 16.58         | 100.00          | 63.29          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 15.08         | 100.00          | 53.10          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 13.78         | 100.00          | 46.44          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 12.62         | 100.00          | 40.96          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 11.59         | 100.00          | 36.41          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.66         | 100.00          | 32.58          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.83          | 100.00          | 29.34          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.10          | 100.00          | 26.58          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 8.44          | 100.00          | 24.20          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 7.86          | 100.00          | 22.14          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.33          | 100.00          | 20.34          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 6.85          | 100.00          | 18.77          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.42          | 100.00          | 17.38          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.03          | 100.00          | 16.15          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.68          | 100.00          | 15.06          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.35          | 100.00          | 14.08          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.05          | 100.00          | 13.20          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.78          | 100.00          | 12.41          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.53          | 100.00          | 11.70          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.30          | 100.00          | 11.05          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.08          | 100.00          | 10.46          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 3.88          | 100.00          | 9.92           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.70          | 100.00          | 9.41           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.52          | 100.00          | 8.94           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.36          | 100.00          | 8.51           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.21          | 100.00          | 8.11           | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 34897.96    | 3.07          | 100.00          | 7.73           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 2.94          | 100.00          | 7.38           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 100.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 100.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 100.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6979.59     | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 7755.10     | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 8530.61     | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 9306.12     | 0.00          | 200.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 10081.63    | 35.65         | 200.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 10857.14    | 30.16         | 200.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 11632.65    | 26.07         | 200.00          | 274.10         | 1       | 0           | 0                | 0                   | 1           |
| 12408.16    | 22.92         | 200.00          | 136.69         | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 20.39         | 200.00          | 95.73          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 18.32         | 200.00          | 77.39          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 16.58         | 200.00          | 63.29          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 15.08         | 200.00          | 53.10          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 13.78         | 200.00          | 46.44          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 12.62         | 200.00          | 40.96          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 11.59         | 200.00          | 36.41          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.66         | 200.00          | 32.58          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.83          | 200.00          | 29.34          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.10          | 200.00          | 26.58          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 8.44          | 200.00          | 24.20          | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 21714.29    | 7.86          | 200.00          | 22.14          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.33          | 200.00          | 20.34          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 6.85          | 200.00          | 18.77          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.42          | 200.00          | 17.38          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.03          | 200.00          | 16.15          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.68          | 200.00          | 15.06          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.35          | 200.00          | 14.08          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.05          | 200.00          | 13.20          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.78          | 200.00          | 12.41          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.53          | 200.00          | 11.70          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.30          | 200.00          | 11.05          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.08          | 200.00          | 10.46          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 3.88          | 200.00          | 9.92           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.70          | 200.00          | 9.41           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.52          | 200.00          | 8.94           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.36          | 200.00          | 8.51           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.21          | 200.00          | 8.11           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.07          | 200.00          | 7.73           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 2.94          | 200.00          | 7.38           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 200.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 200.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 200.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6979.59     | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 7755.10     | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 8530.61     | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 9306.12     | 0.00          | 250.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 10081.63    | 35.65         | 250.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 10857.14    | 30.16         | 250.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 11632.65    | 26.07         | 250.00          | 274.10         | 1       | 0           | 0                | 0                   | 1           |
| 12408.16    | 22.92         | 250.00          | 136.69         | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 20.39         | 250.00          | 95.73          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 18.32         | 250.00          | 77.39          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 16.58         | 250.00          | 63.29          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 15.08         | 250.00          | 53.10          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 13.78         | 250.00          | 46.44          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 12.62         | 250.00          | 40.96          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 11.59         | 250.00          | 36.41          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.66         | 250.00          | 32.58          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.83          | 250.00          | 29.34          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.10          | 250.00          | 26.58          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 8.44          | 250.00          | 24.20          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 7.86          | 250.00          | 22.14          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.33          | 250.00          | 20.34          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 6.85          | 250.00          | 18.77          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.42          | 250.00          | 17.38          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.03          | 250.00          | 16.15          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.68          | 250.00          | 15.06          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.35          | 250.00          | 14.08          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.05          | 250.00          | 13.20          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.78          | 250.00          | 12.41          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.53          | 250.00          | 11.70          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.30          | 250.00          | 11.05          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.08          | 250.00          | 10.46          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 3.88          | 250.00          | 9.92           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.70          | 250.00          | 9.41           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.52          | 250.00          | 8.94           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.36          | 250.00          | 8.51           | 0       | 0           | 0                | 0                   | 0           |



| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 34122.45    | 3.21          | 250.00          | 8.11           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.07          | 250.00          | 7.73           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 2.94          | 250.00          | 7.38           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 250.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 250.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 250.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6979.59     | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 7755.10     | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 8530.61     | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 9306.12     | 0.00          | 300.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 10081.63    | 35.65         | 300.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 10857.14    | 30.16         | 300.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 11632.65    | 26.07         | 300.00          | 274.10         | 0       | 0           | 0                | 0                   | 0           |
| 12408.16    | 22.92         | 300.00          | 136.69         | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 20.39         | 300.00          | 95.73          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 18.32         | 300.00          | 77.39          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 16.58         | 300.00          | 63.29          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 15.08         | 300.00          | 53.10          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 13.78         | 300.00          | 46.44          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 12.62         | 300.00          | 40.96          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 11.59         | 300.00          | 36.41          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.66         | 300.00          | 32.58          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.83          | 300.00          | 29.34          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.10          | 300.00          | 26.58          | 0       | 0           | 0                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 20938.78    | 8.44          | 300.00          | 24.20          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 7.86          | 300.00          | 22.14          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.33          | 300.00          | 20.34          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 6.85          | 300.00          | 18.77          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.42          | 300.00          | 17.38          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.03          | 300.00          | 16.15          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.68          | 300.00          | 15.06          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.35          | 300.00          | 14.08          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.05          | 300.00          | 13.20          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.78          | 300.00          | 12.41          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.53          | 300.00          | 11.70          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.30          | 300.00          | 11.05          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.08          | 300.00          | 10.46          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 3.88          | 300.00          | 9.92           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.70          | 300.00          | 9.41           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.52          | 300.00          | 8.94           | 0       | 0           | 0                | 0                   | 0           |
| 33346.94    | 3.36          | 300.00          | 8.51           | 0       | 0           | 0                | 0                   | 0           |
| 34122.45    | 3.21          | 300.00          | 8.11           | 0       | 0           | 0                | 0                   | 0           |
| 34897.96    | 3.07          | 300.00          | 7.73           | 0       | 0           | 0                | 0                   | 0           |
| 35673.47    | 2.94          | 300.00          | 7.38           | 0       | 0           | 0                | 0                   | 0           |
| 36448.98    | 0.00          | 300.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 37224.49    | 0.00          | 300.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 38000.00    | 0.00          | 300.00          | 0.00           | 0       | 0           | 0                | 0                   | 0           |
| 0.00        | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 775.51      | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 1551.02     | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 2326.53     | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3102.04     | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 3877.55     | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 4653.06     | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 5428.57     | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6204.08     | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 6979.59     | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |

| Energy [eV] | Trip low [um] | TFS Radius [um] | Trip high [um] | Faulted | State Fault | Min Energy Fault | Lens Required Fault | Table Fault |
|-------------|---------------|-----------------|----------------|---------|-------------|------------------|---------------------|-------------|
| 7755.10     | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 8530.61     | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 9306.12     | 0.00          | 500.00          | 0.00           | 1       | 0           | 1                | 0                   | 0           |
| 10081.63    | 35.65         | 500.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 10857.14    | 30.16         | 500.00          | 10000.00       | 1       | 0           | 0                | 0                   | 1           |
| 11632.65    | 26.07         | 500.00          | 274.10         | 0       | 0           | 0                | 0                   | 0           |
| 12408.16    | 22.92         | 500.00          | 136.69         | 0       | 0           | 0                | 0                   | 0           |
| 13183.67    | 20.39         | 500.00          | 95.73          | 0       | 0           | 0                | 0                   | 0           |
| 13959.18    | 18.32         | 500.00          | 77.39          | 0       | 0           | 0                | 0                   | 0           |
| 14734.69    | 16.58         | 500.00          | 63.29          | 0       | 0           | 0                | 0                   | 0           |
| 15510.20    | 15.08         | 500.00          | 53.10          | 0       | 0           | 0                | 0                   | 0           |
| 16285.71    | 13.78         | 500.00          | 46.44          | 0       | 0           | 0                | 0                   | 0           |
| 17061.22    | 12.62         | 500.00          | 40.96          | 0       | 0           | 0                | 0                   | 0           |
| 17836.73    | 11.59         | 500.00          | 36.41          | 0       | 0           | 0                | 0                   | 0           |
| 18612.24    | 10.66         | 500.00          | 32.58          | 0       | 0           | 0                | 0                   | 0           |
| 19387.76    | 9.83          | 500.00          | 29.34          | 0       | 0           | 0                | 0                   | 0           |
| 20163.27    | 9.10          | 500.00          | 26.58          | 0       | 0           | 0                | 0                   | 0           |
| 20938.78    | 8.44          | 500.00          | 24.20          | 0       | 0           | 0                | 0                   | 0           |
| 21714.29    | 7.86          | 500.00          | 22.14          | 0       | 0           | 0                | 0                   | 0           |
| 22489.80    | 7.33          | 500.00          | 20.34          | 0       | 0           | 0                | 0                   | 0           |
| 23265.31    | 6.85          | 500.00          | 18.77          | 0       | 0           | 0                | 0                   | 0           |
| 24040.82    | 6.42          | 500.00          | 17.38          | 0       | 0           | 0                | 0                   | 0           |
| 24816.33    | 6.03          | 500.00          | 16.15          | 0       | 0           | 0                | 0                   | 0           |
| 25591.84    | 5.68          | 500.00          | 15.06          | 0       | 0           | 0                | 0                   | 0           |
| 26367.35    | 5.35          | 500.00          | 14.08          | 0       | 0           | 0                | 0                   | 0           |
| 27142.86    | 5.05          | 500.00          | 13.20          | 0       | 0           | 0                | 0                   | 0           |
| 27918.37    | 4.78          | 500.00          | 12.41          | 0       | 0           | 0                | 0                   | 0           |
| 28693.88    | 4.53          | 500.00          | 11.70          | 0       | 0           | 0                | 0                   | 0           |
| 29469.39    | 4.30          | 500.00          | 11.05          | 0       | 0           | 0                | 0                   | 0           |
| 30244.90    | 4.08          | 500.00          | 10.46          | 0       | 0           | 0                | 0                   | 0           |
| 31020.41    | 3.88          | 500.00          | 9.92           | 0       | 0           | 0                | 0                   | 0           |
| 31795.92    | 3.70          | 500.00          | 9.41           | 0       | 0           | 0                | 0                   | 0           |
| 32571.43    | 3.52          | 500.00          | 8.94           | 0       | 0           | 0                | 0                   | 0           |

| <b>Energy<br/>[eV]</b> | <b>Trip low<br/>[um]</b> | <b>TFS Radius<br/>[um]</b> | <b>Trip high<br/>[um]</b> | <b>Faulted</b> | <b>State<br/>Fault</b> | <b>Min Energy<br/>Fault</b> | <b>Lens Required<br/>Fault</b> | <b>Table<br/>Fault</b> |
|------------------------|--------------------------|----------------------------|---------------------------|----------------|------------------------|-----------------------------|--------------------------------|------------------------|
| 33346.94               | 3.36                     | 500.00                     | 8.51                      | 0              | 0                      | 0                           | 0                              | 0                      |
| 34122.45               | 3.21                     | 500.00                     | 8.11                      | 0              | 0                      | 0                           | 0                              | 0                      |
| 34897.96               | 3.07                     | 500.00                     | 7.73                      | 0              | 0                      | 0                           | 0                              | 0                      |
| 35673.47               | 2.94                     | 500.00                     | 7.38                      | 0              | 0                      | 0                           | 0                              | 0                      |
| 36448.98               | 0.00                     | 500.00                     | 0.00                      | 0              | 0                      | 0                           | 0                              | 0                      |
| 37224.49               | 0.00                     | 500.00                     | 0.00                      | 0              | 0                      | 0                           | 0                              | 0                      |
| 38000.00               | 0.00                     | 500.00                     | 0.00                      | 0              | 0                      | 0                           | 0                              | 0                      |