

Optical metrology of epix10ka2m.0 from 2020-06-25

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Metrology data

Detector epix10ka2m.0 (old), previous [2018-11-18 non-complete metrology of epix10ka2m.0](#)

2020-07-08 email from Chris Kenney

Hi Philip, Chris, and Mikhail,

My apologies for not getting this to you sooner.

Additional apologies in that the order we took the measurements in is rotated from our "standard" and we were unable to set the origin to zero. In the picture the XPP mounting bars on on the left side and so this would be UP.

A map of the sensor corners measurement ordering and the quad number locations is attached along with a picture of the setup. The origin (not 0-0-0) is in the upper left of the picture.

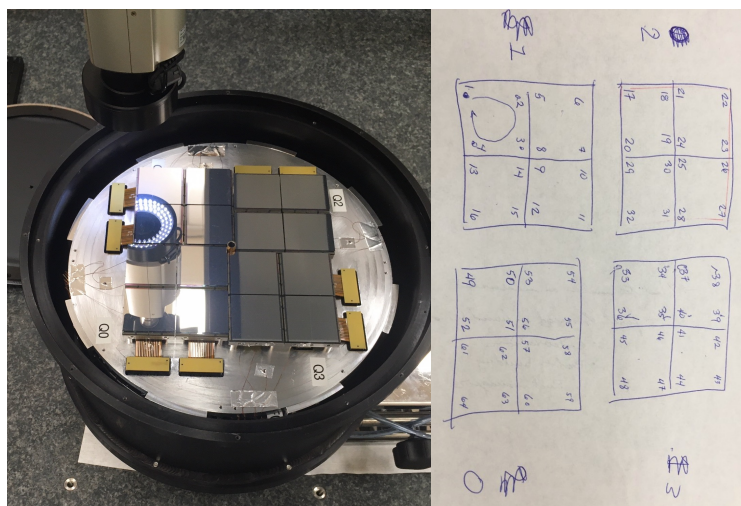
Along with the Excel spreadsheet.

Please ask questions as I know this can be confusing.

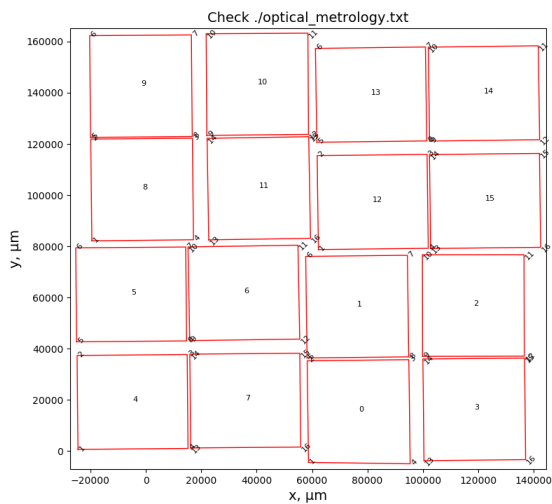
Thanks,
Chris

- 2020-06-25-epix10ka2m-A-metrology.xlsx

Measurement map



Quality check



quality check for raw metrology data

X-Y quality check for optical metrology measurements

segm:	S1	S2	dS1	dS2	L1	L2	dL1	dL2	angle(deg)	D1	D2	dD	d
(dS)	d(dL)												
segm: 0	36699	36691	-477	-485	39689	40683	-558	436	0.68576	54051	54789		
-737	8	-994											
segm: 1	36702	36696	-483	-489	39683	39678	439	434	0.70171	54044	54063		
-19	6	5											
segm: 2	36716	36681	-72	-107	39693	39650	70	27	0.12926	54018	54068		
-49	35	43											
segm: 3	36690	36705	-405	-390	39713	39684	390	361	0.57368	54070	54058		
11	-15	29											
segm: 4	36718	36692	388	362	39723	39746	-323	-300	0.54072	54121	54069		
51	26	-23											
segm: 5	36702	36703	332	333	39721	39701	-306	-326	0.47973	54069	54083		
-13	-1	20											
segm: 6	36599	36701	594	696	39702	39700	-631	-633	0.93077	54012	54065	-53	
-102	2												
segm: 7	36664	36664	369	369	39714	39708	-343	-349	0.53238	54046	54054		
-7	0	6											
segm: 8	36677	36713	-412	-376	39744	39682	420	358	0.56842	54092	54055		
36	-36	62											
segm: 9	36695	36728	-338	-305	39744	39719	319	294	0.46362	54104	54090		
13	-33	25											
segm:10	36702	36736	-263	-229	39708	39568	371	231	0.35558	54087	53980		
106	-34	140											
segm:11	36725	36688	-614	-651	39683	39703	596	616	0.91292	54086	54055		
30	37	-20											
segm:12	36706	36692	476	462	39668	39671	-429	-426	0.67736	54050	54040		
10	14	-3											
segm:13	36672	36714	523	565	39697	39708	-512	-501	0.78501	54064	54069		
-5	-42	-11											
segm:14	36705	36692	538	525	39731	39700	-479	-510	0.76673	54078	54082		
-3	13	31											
segm:15	36696	36695	473	472	39712	39699	-421	-434	0.68179	54076	54062		
13	1	13											

WARNING segm 0: $|-737| > 60.0$
WARNING segm 0: $|-994| > 60.0$
WARNING segm 6: $|-102| > 60.0$
WARNING segm 8: $|62| > 60.0$
WARNING segm 10: $|106| > 60.0$
WARNING segm 10: $|140| > 60.0$

Z quality check for optical metrology measurements

segm:	SA	LA	XSize	YSize	dZS1	dZS2	dZL1	dZL2	dZSA	dZLA	ddZS	ddZL	dZX	dZY
angXZ(deg)	angYZ(deg)	dz3(um)												
segm: 0	36695	40186	36695	40186	44	248	54	258	146	156	-204	-204	146	156
0.22796	0.22242	-202.642												
segm: 1	36699	39680	36699	39680	85	115	-30	0	100	-15	-30	-30	100	-15
0.15612	-0.02166	-30.010												
segm: 2	36698	39671	36698	39671	146	274	23	151	210	87	-128	-128	210	87
0.32786	0.12565	-128.163												
segm: 3	36697	39698	36697	39698	171	109	1	-61	140	-30	62	62	140	-30
0.21858	-0.04330	62.067												
segm: 4	36705	39734	36705	39734	8	89	26	107	48	66	-81	-81	66	48
0.09589	0.07571	80.991												
segm: 5	36702	39711	36702	39711	-71	-149	204	126	-110	165	78	78	165	-110
0.23806	-0.17172	-77.894												
segm: 6	36650	39701	36650	39701	0	14	24	38	7	31	-14	-14	31	7
0.04474	0.01094	14.000												
segm: 7	36664	39711	36664	39711	-14	-42	123	95	-28	109	28	28	109	-28
0.15727	-0.04376	-27.981												
segm: 8	36695	39713	36695	39713	235	111	0	-124	173	-62	124	124	173	-62
0.27012	-0.08945	124.224												
segm: 9	36711	39731	36711	39731	84	152	-20	48	118	14	-68	-68	118	14
0.18416	0.02019	-67.912												
segm:10	36719	39638	36719	39638	76	220	-241	-97	148	-169	-144	-144	148	-169
0.23094	-0.24428	-143.077												
segm:11	36706	39693	36706	39693	82	103	-2	19	92	8	-21	-21	92	8
0.14438	0.01227	-21.083												
segm:12	36699	39669	36699	39669	36	199	79	242	117	160	-163	-163	160	117
0.23181	0.18344	163.008												
segm:13	36693	39702	36693	39702	75	42	85	52	58	68	33	33	68	58
0.09885	0.09135	-33.110												
segm:14	36698	39715	36698	39715	169	165	160	156	167	158	4	4	158	167
0.22794	0.26073	-3.817												
segm:15	36695	39705	36695	39705	96	65	177	146	80	161	31	31	161	80
0.23305	0.12569	-30.939												

WARNING segm 0: |-202.6| > 100.0
WARNING segm 2: |-128.2| > 100.0
WARNING segm 8: |124.2| > 100.0
WARNING segm 10: |-143.1| > 100.0
WARNING segm 12: |163.0| > 100.0

quality check for corrected metrology in 3-points

Corrected points:

Quad 0

point	X	Y	Z
#4	95420	-4982	158686
4	95420	-3988	158686

Quad 1

point	X	Y	Z
#9	15847	43156	158511
9	15847	43054	158511

Quad 2

point	X	Y	Z
#12	58727	123727	158774
12	58727	123587	158774

X-Y quality check for optical metrology measurements

segm:	S1	S2	dS1	dS2	L1	L2	dL1	dL2	angle(deg)	D1	D2	dd	d
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(dS) d(dL)

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segm: 0  36699  36691  -477  -485  39689  39689  436  436  0.69435  54051  54063
-11      8      0
segm: 1  36702  36696  -483  -489  39683  39678  439  434  0.70171  54044  54063
-19      6      5
segm: 2  36716  36681  -72   -107  39693  39650  70   27  0.12926  54018  54068
-49     35     43
segm: 3  36690  36705  -405  -390  39713  39684  390  361  0.57368  54070  54058
11     -15     29
segm: 4  36718  36692  388   362  39723  39746  -323 -300  0.54072  54121  54069
51      26    -23
segm: 5  36702  36703  332   333  39721  39701  -306 -326  0.47973  54069  54083
-13     -1     20
segm: 6  36701  36701  696   696  39702  39700  -631 -633  1.00435  54082  54065
16      0      2
segm: 7  36664  36664  369   369  39714  39708  -343 -349  0.53238  54046  54054
-7      0      6
segm: 8  36677  36713  -412  -376  39744  39682  420  358  0.56842  54092  54055
36     -36     62
segm: 9  36695  36728  -338  -305  39744  39719  319  294  0.46362  54104  54090
13     -33     25
segm:10  36702  36736  -263  -229  39708  39708  231  231  0.35496  54087  54082
4      -34     0
segm:11  36725  36688  -614  -651  39683  39703  596  616  0.91292  54086  54055
30      37    -20
segm:12  36706  36692  476   462  39668  39671  -429 -426  0.67736  54050  54040
10      14     -3
segm:13  36672  36714  523   565  39697  39708  -512 -501  0.78501  54064  54069
-5     -42    -11
segm:14  36705  36692  538   525  39731  39700  -479 -510  0.76673  54078  54082
-3      13     31
segm:15  36696  36695  473   472  39712  39699  -421 -434  0.68179  54076  54062
13      1     13
-----
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WARNING segm 8: |62| > 60.0
Z quality check for optical metrology measurements
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-----
segm:      SA      LA  XSize  YSize  dZS1 dZS2 dZL1 dZL2  dZSA dZLA ddZS ddZL  dZX dZY
angXZ(deg) angYZ(deg) dz3(um)
-----
segm: 0  36695  39689  36695  39689  44  248  54  258  146  156 -204 -204  146  156
0.22796  0.22520 -204.009
segm: 1  36699  39680  36699  39680  85  115 -30  0  100 -15 -30 -30  100 -15
0.15612 -0.02166 -30.010
segm: 2  36698  39671  36698  39671  146  274  23  151  210  87 -128 -128  210  87
0.32786  0.12565 -128.163
segm: 3  36697  39698  36697  39698  171  109  1 -61  140 -30  62  62  140 -30
0.21858 -0.04330  62.067
segm: 4  36705  39734  39734  36705  8  89  26  107  48  66 -81 -81  66  48
0.09589  0.07571  80.991
segm: 5  36702  39711  39711  36702  -71 -149 204  126 -110 165  78  78  165 -110
0.23806 -0.17172 -77.894
segm: 6  36701  39701  39701  36701  0  14  24  38  7  31 -14 -14  31  7
0.04474  0.01093  14.001
segm: 7  36664  39711  39711  36664  -14 -42 123  95  -28 109  28  28  109 -28
0.15727 -0.04376 -27.981
segm: 8  36695  39713  36695  39713  235 111  0 -124  173 -62 124  124  173 -62
0.27012 -0.08945 124.224
segm: 9  36711  39731  36711  39731  84 152 -20  48  118  14 -68 -68  118  14
0.18416  0.02019 -67.912
segm:10  36719  39708  36719  39708  76 220 -241 -97  148 -169 -144 -144  148 -169
0.23094 -0.24385 -143.925
segm:11  36706  39693  36706  39693  82 103  -2  19  92  8 -21 -21  92  8
0.14438  0.01227 -21.083
segm:12  36699  39669  39669  36699  36 199  79  242  117 160 -163 -163  160  117
0.23181  0.18344 163.008
-----
```

segm:13	36693	39702	39702	36693	75	42	85	52	58	68	33	33	68	58
0.09885	0.09135	-33.110												
segm:14	36698	39715	39715	36698	169	165	160	156	167	158	4	4	158	167
0.22794	0.26073	-3.817												
segm:15	36695	39705	39705	36695	96	65	177	146	80	161	31	31	161	80
0.23305	0.12569	-30.939												

WARNING segm 0: |-204.0| > 100.0
WARNING segm 2: |-128.2| > 100.0
WARNING segm 8: |124.2| > 100.0
WARNING segm 10: |-143.9| > 100.0
WARNING segm 12: |163.0| > 100.0

References

- [Optical metrology of epix10ka2m.0 from 2018-11-18](#)
- [Optical metrology of epix10ka2m.1 from 2020-02-25](#)
- [2018-11-18 non-complete metrology of epix10ka2m.0](#)
- [EPIX10KA2M References](#)
- [EPIX10KA2M and EPIX10KAQUAD](#)