EPIX10KA panel flatness measurement

- Optical measurements from Chris Kenney
- Panel profile
- Summary
- References

Optical measurements from Chris Kenney

2020-08-20 Chris Kenney

Нi,

I did a flatness scan, as Philip suggested, on one of the ePix10k modules from the batch that was used to construct the epix10k.2m.1 detector. An image of the setup and an Excel file with the values are attached. As tested it seems fairly flat. Afterwards it occurred to me that the module flatness could be affected by the mounting onto the transport base plate as well as the cold plate in the actual camera. Since the strongback is 1/4 inch thick, this may not matter, but to get a definitive answer we'd need to measure the flatness after mounting in the detector. Repeatability locally is about 1 micron and globally over the entire process duration about 5 microns. But it looks like it is pretty flat - probably no worse than 40 microns full width. Thanks, Chris Kenney, Christopher J. <kenney@slac.stanford.edu> Thu 8/20/2020 10:33 AM To: Hart, Philip Adam; Dubrovin, Mikhail; Nakahara, Kazutaka; Hansson, Conny; McKelvey, Mark E; O'Grady, Paul Christopher; Blaj, Gabriel+1 other

The flatness measurements were done on the B84 machine, which is more accurate than the B33 one used for the 2Ms

We always redo the first measurement after competing the metrology as a check.



10K Flatness Scan.xlsx

Panel profile



Summary

- tilt of the (mounted flat) panel is ~60um
 sags of edges ~20um
 Z measurement precision is better than 10um!

References

- EPIX10KA2M ReferencesEPIX10KA2M and EPIX10KAQUAD