

Details of CCD systems at JCBT

ProEM 1024B eXcelon

Array : 1024 x 1024 pixels

pixel size: 13 micron

13.3mm x 13.3 mm imaging area

Full well capacity 80,000 e (single pixel, normal mode)

Operating temperature -68°C

Mounted in East port

Dark current 0.04 e⁻/pixel/sec

Speeds 5Mhz, 1 Mhz and 100 Khz

Gain in normal mode (e/ADU)

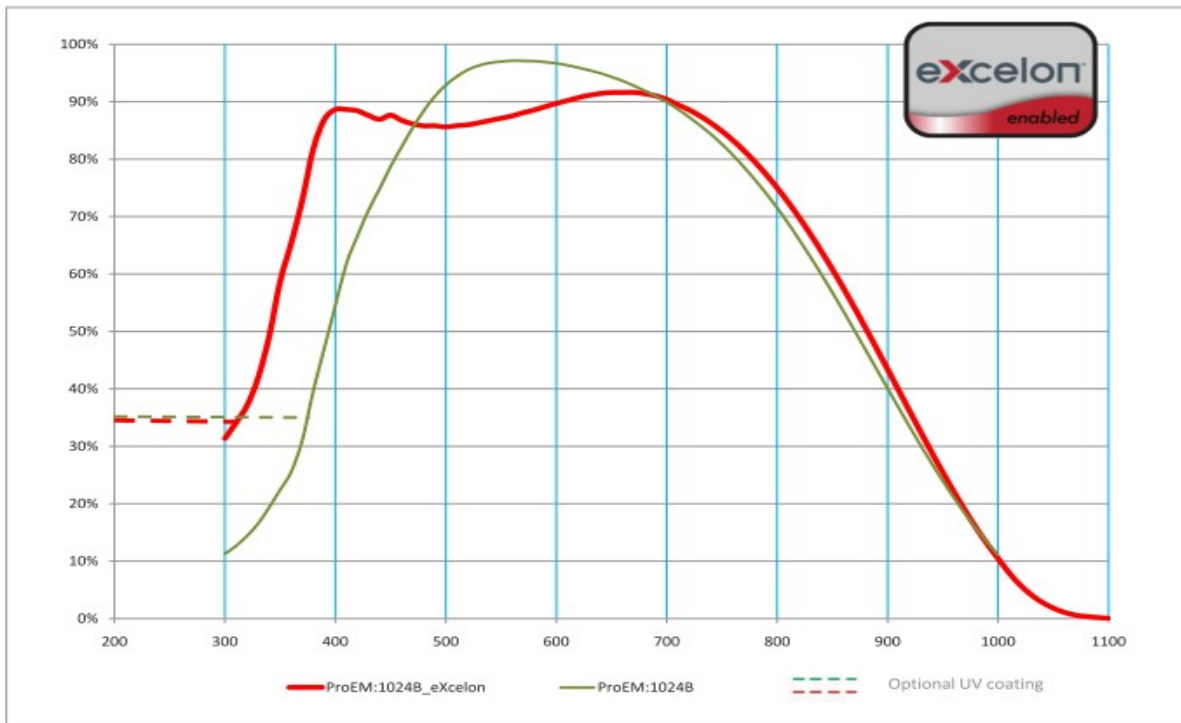
Low Gain setting is not usable

| Gain setting | 5 Mhz | 1 Mhz | 100 Khz |
|---------------------|--------------|--------------|----------------|
| High Gain | 1.19 | 0.693 | 0.699 |
| Medium Gain | 2.26 | 1.37 | 1.38 |

Read out Noise e RMS

| Gain setting | 5 Mhz | 1 Mhz | 100 Khz |
|---------------------|--------------|--------------|----------------|
| High Gain | 13.0 | 6.24 | 3.87 |
| Medium Gain | 14.2 | 10.35 | 4.74 |

Quantum Efficiency Curve



2K x 4K UKATC CCD System

Sensor: E2V 4482 (LN2 cooled)

Array: 2048 x 4096 pixels

Pixel size: 15 micron

Back illuminated chip coated with E2V Astro-broadband AR coatings, mounted in through port

Gain (Speed 0 ,Gain 0 setting) 0.74 e/ADU

Read out Noise 3.8 e RMS

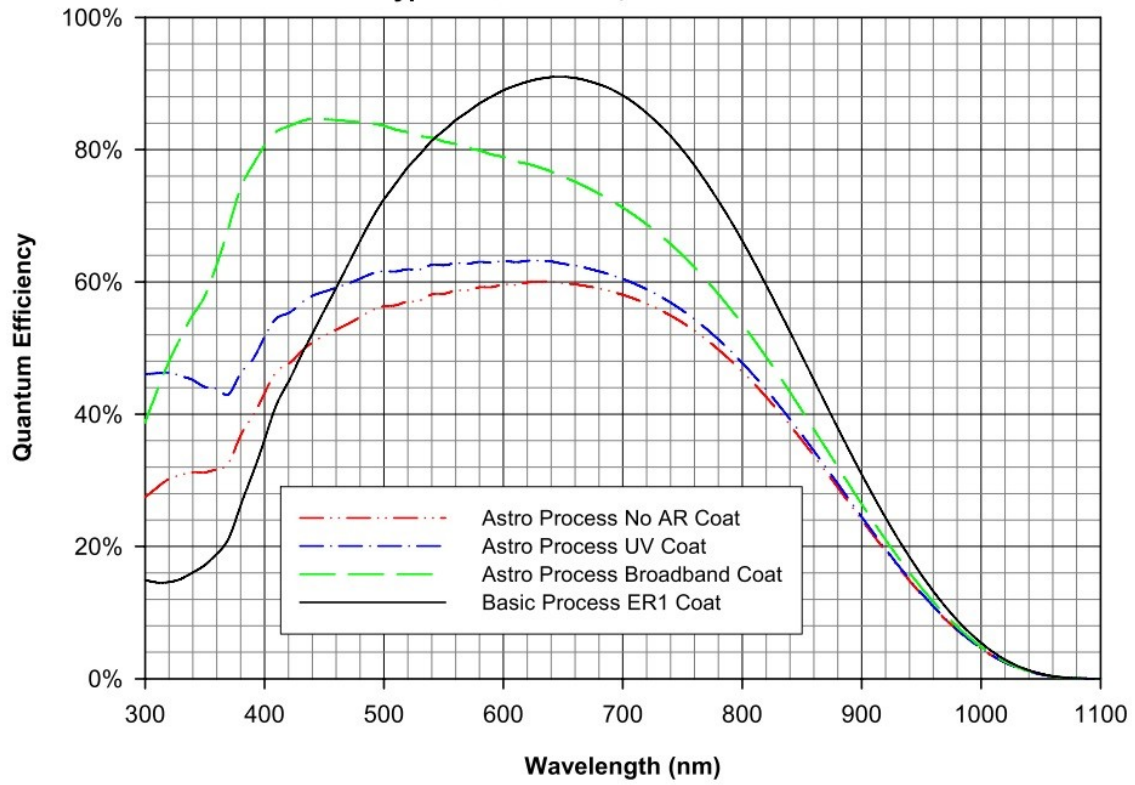
Read out speed (single output, Speed 0) 46 seconds

Full well capacity 200,000 e

Quantum Efficiency

| Wavelength in nm | 350 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 |
|-----------------------------|-----|-----|-----|-----|-----|-----|-----|------|
| Qe | 52 | 79 | 93 | 87 | 79 | 57 | 29 | 4 |

Typical QE at 173K, Standard Silicon



CCD 4482