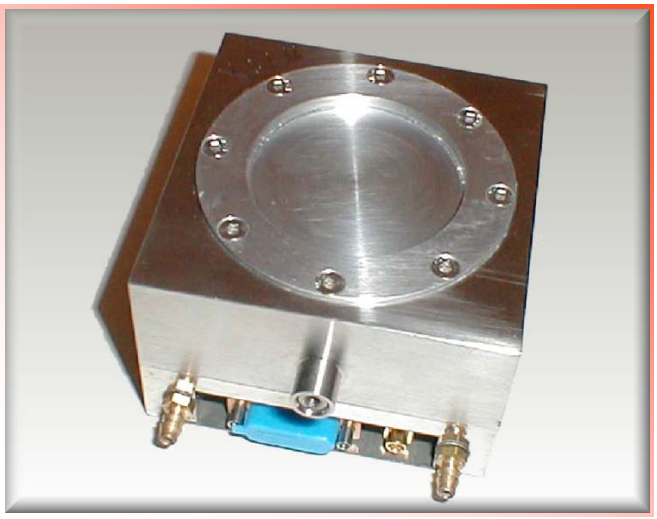
SCIENTIFIC CCD CAMERA

XDS 22
Specification Notes

X-ray Imaging

Dispersed X-ray Spectroscopy

Photon-Counting Spectroscopy



- *Deep-depletion CCD* for high sensitivity to X-rays over extended energy range. ***This CCD chip has been specifically designed for an X-ray space mission, and has superior soft X-ray characteristics (30% QE @ 300ev)***
- Two node readout for faster frame rates
- Vacuum compatible
- Cryogen-free thermoelectric cooling, with supplementary water-cooling
- 12, 14 or 16 bit digitisation
- <5 electrons rms noise, depending on CCD type
- Frame Transfer architecture
- Full software control of your system including, readout parameters, binning and windowing modes
- High-speed readout for rapid spectral acquisition or slow-speed readout for highest sensitivity and greatest dynamic range

CCD specifications

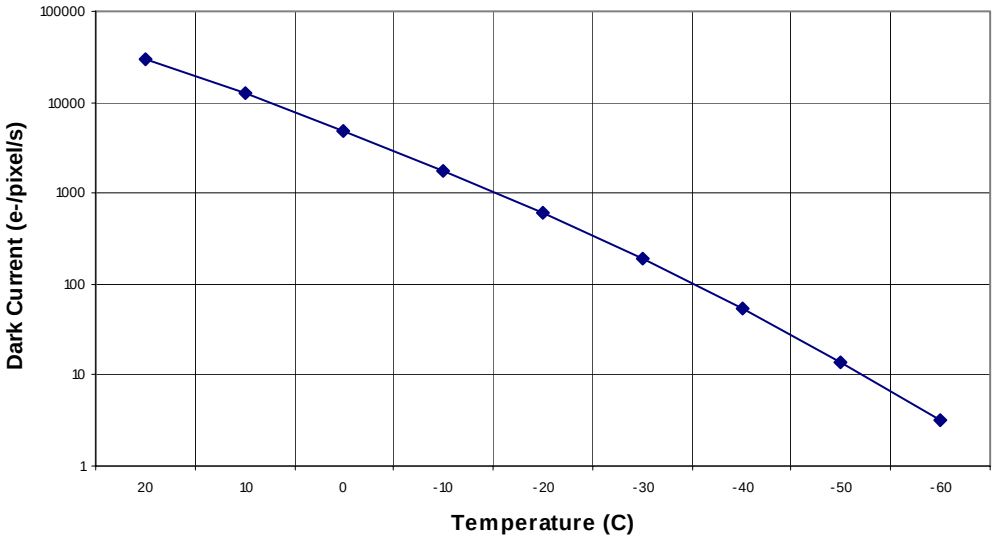
Architecture	Frame Transfer
Active pixels	600 x 600
Pixel Size	40 x 40 μm
Image Area	24.0 x 24.0 mm
Full Well Capacity [a]	70,000 e^-
Dark Current @ 293K [b]	36,500 e^-/pixel/s
Dark Current @ 243K [b]	553 e^-/pixel/s
Readout Noise @ 253K [a]	4 rms e^-/pixel

Notes

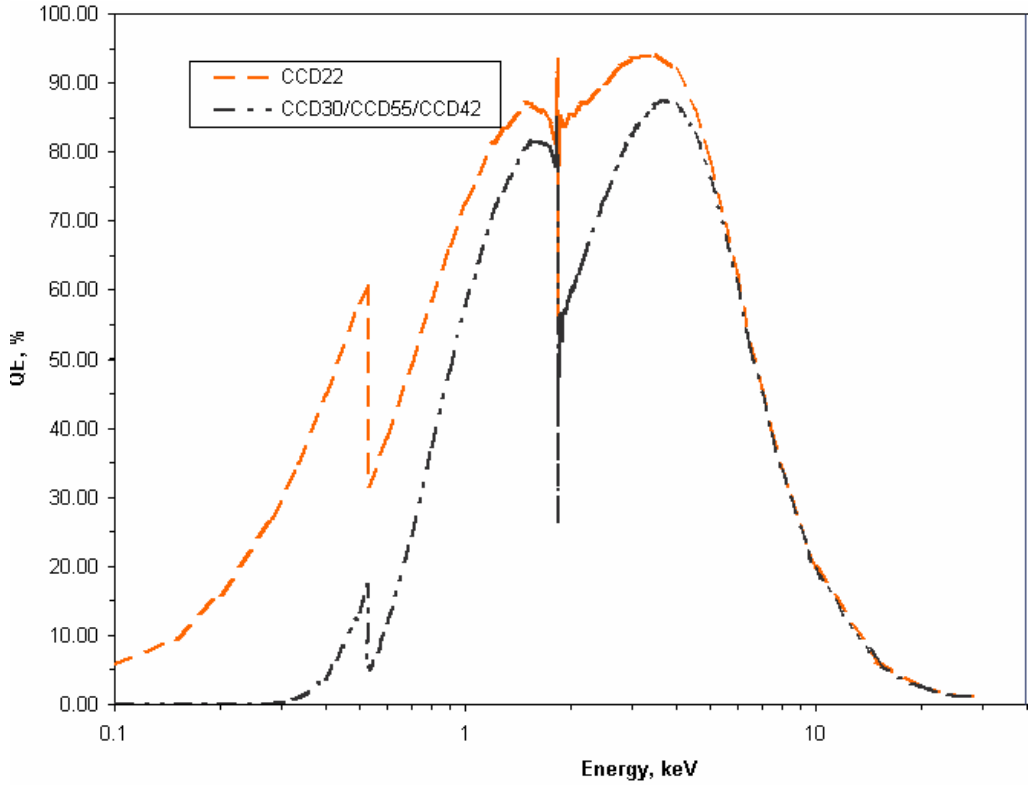
[a] Manufacturer's data measured at 20KHz using correlated double sampling

[b] Typical values

Typical Dark Current Characteristics



Typical X-ray Quantum Efficiency



XDS 22
Specification Notes

System Specifications

System noise @ 200KHz [b]	5 e^-
System noise @ 800KHz [b]	15 e^-
Blank pixels (underscan)	User programmable
Frame rate [c]	4.4 per second @ 800KHz

Computer and Power Requirements

Recommended PC Requirements	-
Minimum PC requirements	500 MHz, 256 Mb RAM
TE cooler power @ -20°C (vacuum) [2]	3 W
TE cooler power @ -50°C (vacuum) [2]	12 W

Accessories

The XDS 22 requires the following components to function:

CCDREM2/USB or CCDREM2/HiP controller unit

Either *(a) vacuum interface details, or*
(b) a vacuum feedthrough kit

The XDS 22 also requires software to enable image display:

Either *(a)* ***Xcam*** Image Display software, or
(b) ***Xcam*** Software Developers Kit, consisting of dll drivers and a manual, allowing you to write your own software to control the camera

Additionally, the following accessories are available:

Temperature controller
Water Chiller

Notes

[c] Much faster frame rates can be achieved if reading out vertically binned, windowed spectra, as the unwanted rows can then be dumped fast, and the vertically binned spectra constitute few pixels. Please enquire with details of your application for more information

XDS 22
Specification Notes

Mechanical Specifications