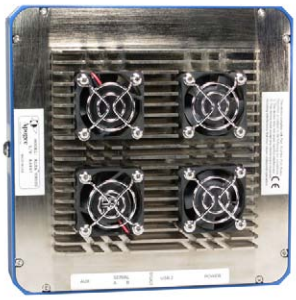
High Performance Cooled CCD Camera System
ALTA U230

The Alta U230 uses a very large format 4-megapixel back-illuminated sensor, ideal for applications requiring large field of view, such as sky surveys and radiology.

Imaging Area of CCD

- 2048 x 2048 array, 15 x 15 micron pixels
- 16-bit digitization at 700 kHz; 12 bits at 2 MHz
- 32 Mbyte camera memory
- USB 2.0 interface: no plug in cards or external controllers
- Programmable, intelligent cooling to 45°C below ambient (D07 housing) / 65-70°C below ambient (D09 housing)
- Binning up to 8 Horizontal x 2048 Vertical
- Subarray readout and fast sequencing modes
- Programmable fan speed for low / zero vibration
- Two serial port outputs for control of peripheral devices
- General purpose programmable I/O port
- External triggering and strobe controls
- ActiveX drivers included with every system
- Field upgradeable firmware
- Fused silica windows
- Runs from single 12V supply with input voltage monitor
- Compact enclosure
- Programmable status indicators

- Astronomy
- Radiology
- Non-destructive testing

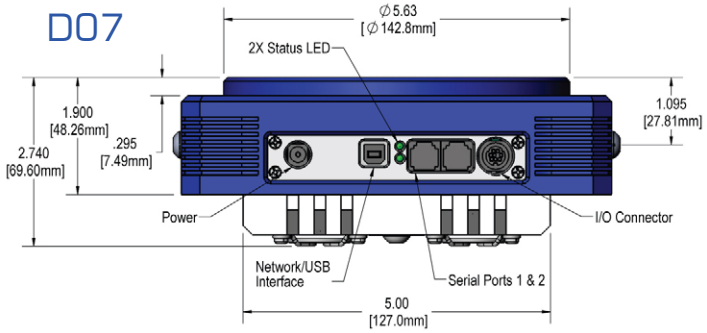


CCD SPECIFICATIONS

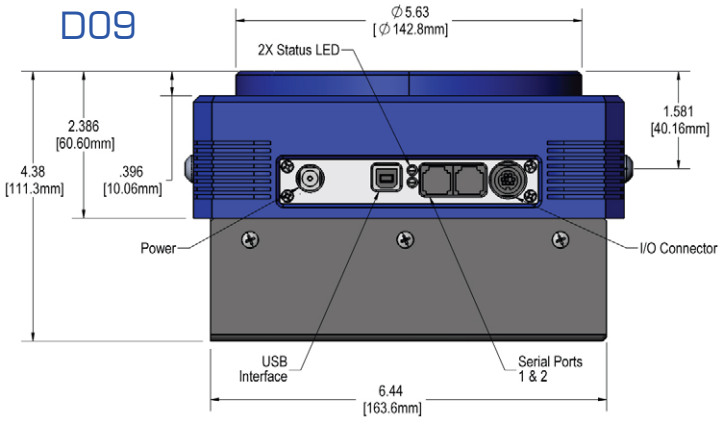
CCD	e2v CCD230-42
Array Size (pixels)	2048 x 2048
Pixel Size	15 x 15 microns
Imaging Area	30.7 x 30.7 mm (944 mm2)
Imaging Diagonal	43.4 mm
Video Imager Size	2.7”
Linear Full Well (typical)	150K electrons
Dynamic Range	85 dB
QE at 400 nm	55%
Peak QE (720 nm)	96%

For complete CCD specifications, including cosmetic grading, see data sheet from manufacturer.

D07



D09



AIS Apogee IMAGING SYSTEMS

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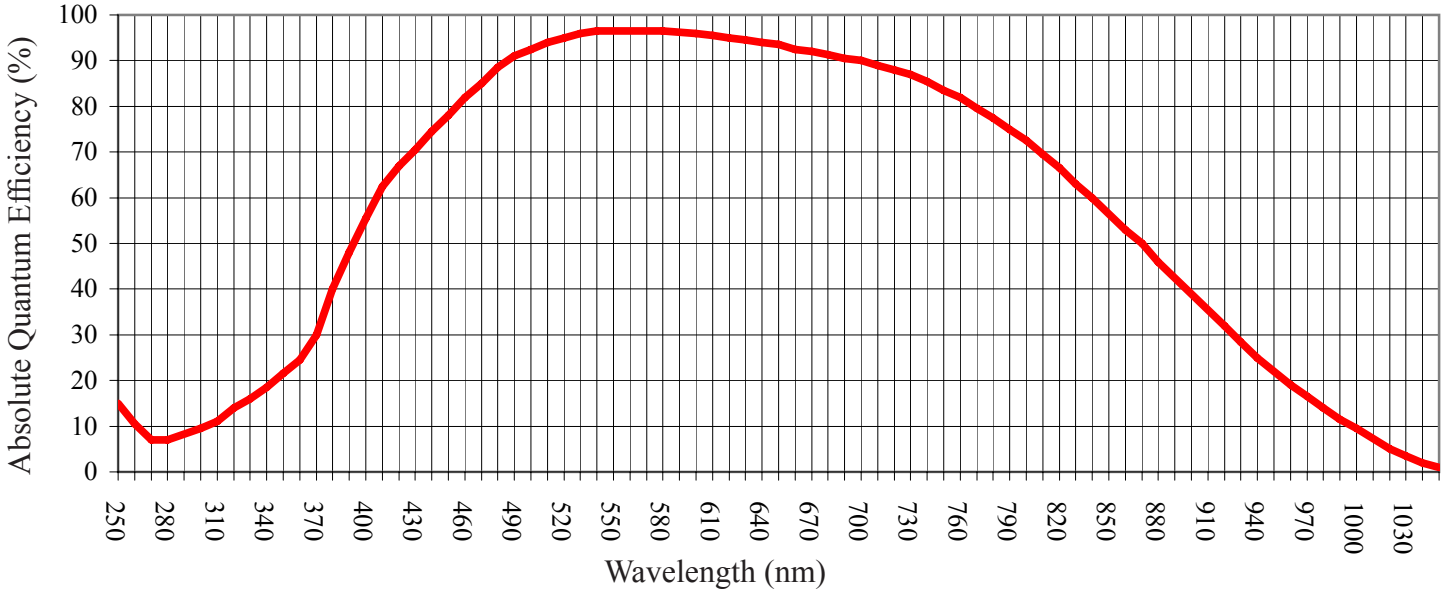
ALTA U230
Camera System Performance

PC Interface	USB 2.0
Max. Cable Length	5 meters between hubs; 5 hubs maximum (max. total of 30m)
Digital Resolution	16 bits at 700 kHz; 12 bits at 2 MHz.
System Noise (typical)	12 e^- RMS (preliminary)
Pixel Binning	1x1 to 8 x 2048 on-chip
Exposure Time	30 milliseconds to 183 minutes (2.56 microsecond increments)
Image Sequencing	1 to 65535 image sequences under software control
Frame Sizes	Full frame, subframe, focus mode
Cooling (typical)	Thermoelectric cooler with forced air. Maximum cooling 45°C below ambient temperature (D07 housing); 65-70°C below ambient temperature (D09 housing).
Dark Current (typical)	0.4 e^-/pixel/sec (-25°C). 0.04 eps for High Cooling D09 housing.
Temperature Stability	± 0.1°C
Camera Head	D07. Aluminum, hard blue anodized. 7" x 7" x 2.55" (17.8 x 17.8 x 6.48 cm) Optional High Cooling housing: D09. 7" x 7" x 3.25" (17.8 x 17.8 x 8.9 cm) Weight: 4.2 lb. (1.9 kg)
Mounting	5,125" bolt circle. Optional Nikon F-mount or Canon FD mount.
Back Focal Distance	1.025" (2.60cm). Optional low profile housing D11 (no shutter): 0.61" (1.56 cm) Optional D09: 1.40" (3.56 cm) [optical]
Operating Environment	-22° to 27°C. Relative humidity: 10 to 90% non-condensing.
Cable Length	Standard: 15 ft (4.5m)
Power	40W maximum power with shutter open and cooling maximum. AC/DC "brick" supply with int'l AC input plug (100-240V, 50-60 Hz). Alternate 12V input from user's source.
Shutter	Melles Griot 63mm (D07 and D09). D11 Low profile: no shutter.
Remote Triggering	LVTTL input allows exposure to start within 25 microseconds of rising edge of trigger

CCD SENSITIVITY



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