



High Performance Cooled CCD Camera System ALTA U1009

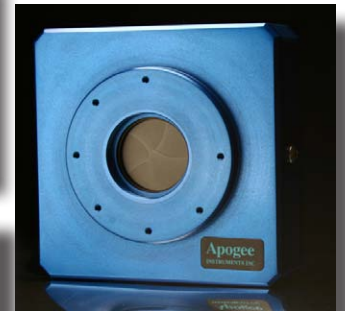
The Alta U1009 has a back-illuminated full frame spectroscopy format CCD with exceptionally high quantum efficiency across the visible and in the UV. The 12 micron pixels provide high spectral resolution.

Imaging Area of CCD



- Spectroscopy
- UV Imaging

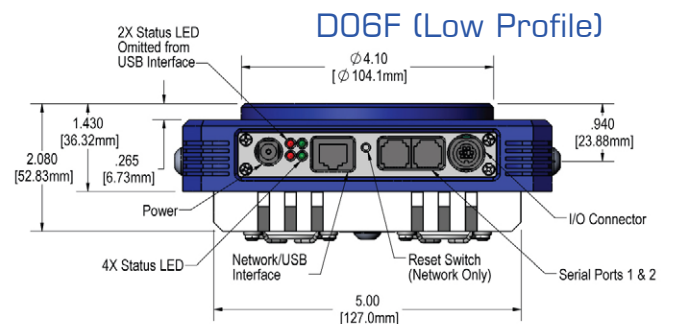
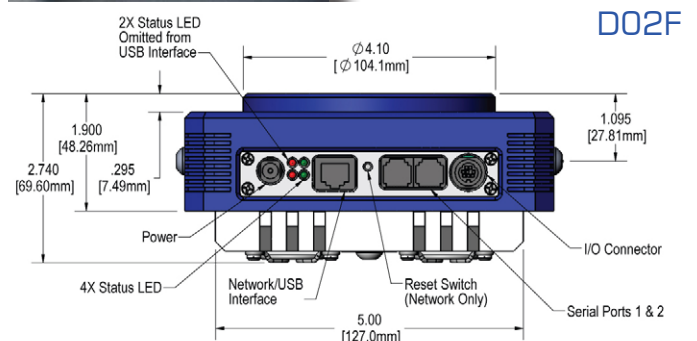
- 1024 x 506 array, 12 x 12 micron pixels
- 500 kHz 16-bit digitization
- 32Mbyte camera memory
- USB 2.0 interface: no plug in cards or external controllers
- Programmable, intelligent cooling to 50-55°C below ambient (D02 housing) / 70-75°C below ambient (D09 housing)
- Binning up to 8 Horizontal x up to 506 Vertical
- Subarray readout and fast sequencing modes
- Precision time delayed integration (TDI) and kinetics mode readout
- 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



CCD SPECIFICATIONS

CCD	Hamamatsu S10140-1009
Array Size (pixels)	1024 x 506
Pixel Size	12 x 12 microns
Imaging Area	12.3 x 6.1 mm (74.6 mm ²)
Imaging Diagonal	13.7 mm
Video Imager Size	0.86"
Linear Full Well (typical)	75K electrons
Dynamic Range	81 dB
QE at 400 nm	58%
Peak QE (600-650 nm)	89%
Anti-blooming	none

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

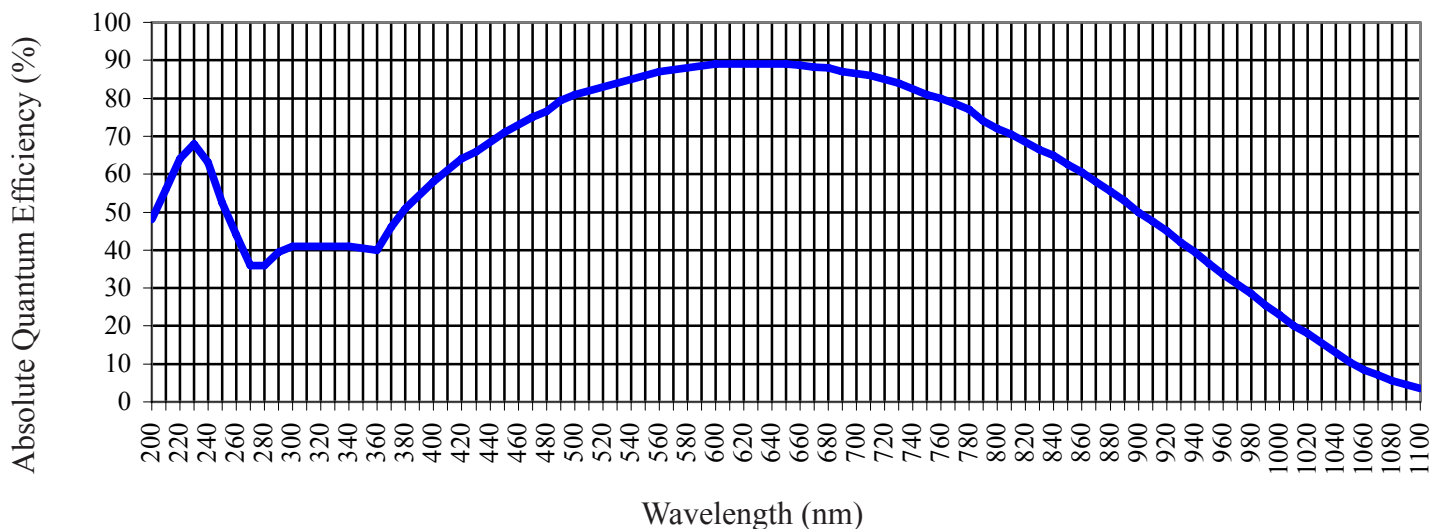


151 N. Sunrise Ste 902
Roseville CA 95661 USA
tel 916 218 7450
fax 916 218 7451
www.ccd.com



PC Interface	USB 2.0
Max. Cable Length	5 meters between hubs; 5 hubs maximum (max. total of 30m)
Digital Resolution	16 bits at 500 kHz
System Noise (typical)	15 e ⁻ RMS at 500 kHz
Pixel Binning	1x1 to 8 x 122 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 50-55°C below ambient temperature (D02 Housing). 70-75°C below ambient temperature (D09 housing).
Dark Current (typical)	Standard D02: 0.2 e ⁻ /pixel/sec (-30°C). High Cooling D09: 0.02 eps (-50°C).
Temperature Stability	± 0.1°C
Camera Head Size	D02. Aluminum, hard blue anodized. 6" x 6" x 2.5" (15 x 15 x 6.35 cm) Weight: 3.1 lb. (1.4 kg) Low profile: D06. Wide Angle: D13. High Cooling: D09 (17.8 x 17.8 x 8.9 cm. 1.9 kg).
Mounting	3.5" bolt circle. 2" 24 tpi thread. Optional Nikon F-mount or Canon FD or EOS/EF mount.
Back Focal Distance	Standard: 1.025" (2.60cm). Low profile: 0.460" (1.17 cm). D09: 1.40" (3.56cm). [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	Standard: Melles Griot 43mm. Low profile: no shutter. D09: Melles Griot 63mm.
Remote Triggering	LVTTL input allows exposure to start within 25 microseconds of rising edge of trigger

CCD SENSITIVITY



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