



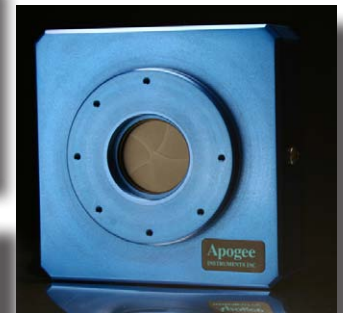
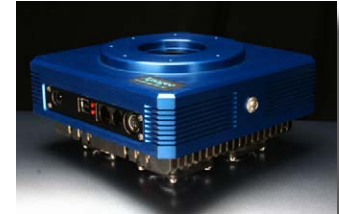
High Performance Cooled CCD Camera System ALTA U1008

The Alta U1008 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 allow high spectral resolution.

Imaging Area of CCD

- Spectroscopy
- TDI Imaging

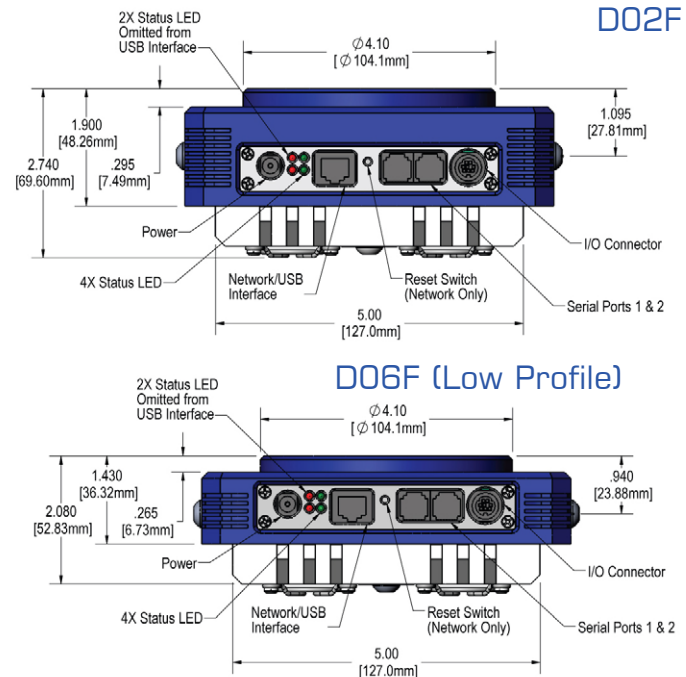
- 1024 x 250 array, 12 x 12 micron pixels
- 500 kHz 16-bit digitization
- 32Mbyte camera memory
- USB 2.0 interface: no plug in cards or external controllers
- Programmable, intelligent cooling to 55°C below ambient (D02 housing) / 70-75°C below ambient (D09 housing)
- Binning up to 8 Horizontal x up to 250 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



CCD SPECIFICATIONS

| | |
|----------------------------|---------------------------------------|
| CCD | Hamamatsu S10140-1008 |
| Array Size (pixels) | 1024 x 250 |
| Pixel Size | 12 x 12 microns |
| Imaging Area | 12.3 x 3.0 mm (36.9 mm ²) |
| Imaging Diagonal | 12.65 mm |
| Video Imager Size | 0.79" |
| 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
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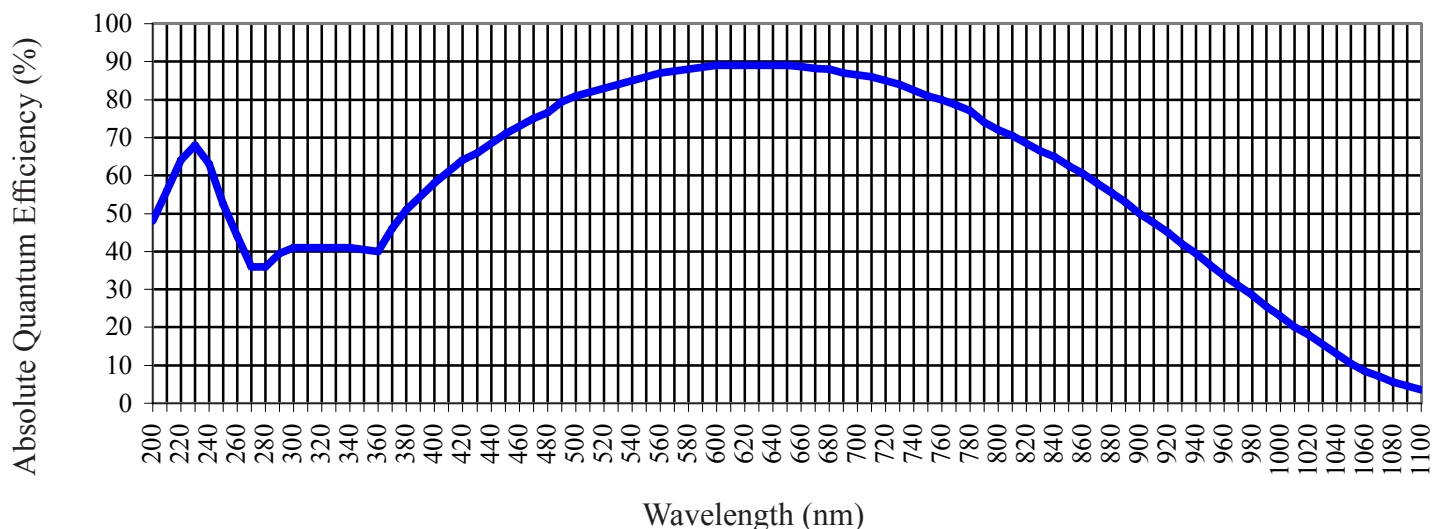


ALTA U1008

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 500 kHz |
| System Noise (typical) | 15 e ⁻ RMS at 500 kHz |
| Pixel Binning | 1x1 to 8 x 250 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 55°C below ambient temperature (D02 housing); 70-75°C below ambient temperature (D09 housing). |
| Dark Current (typical) | 0.2 e ⁻ /pixel/sec (-30°C). <0.02 eps for High Cooling D09 housing. |
| Temperature Stability | ± 0.1°C |
| Camera Head Size | D2. Low profile: D6. Aluminum, hard blue anodized. 6" x 6" x 2.5" (15 x 15 x 6.35 cm) Weight: 3.1 lb. (1.4 kg). 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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