



High Performance Cooled CCD Camera System ALTA U9000

The Alta U9000 uses a very large format 9-megapixel full frame sensor with anti-blooming gates, ideal for applications requiring large field of view, such as astrophotography, sky surveys, and radiology.

Imaging Area of CCD

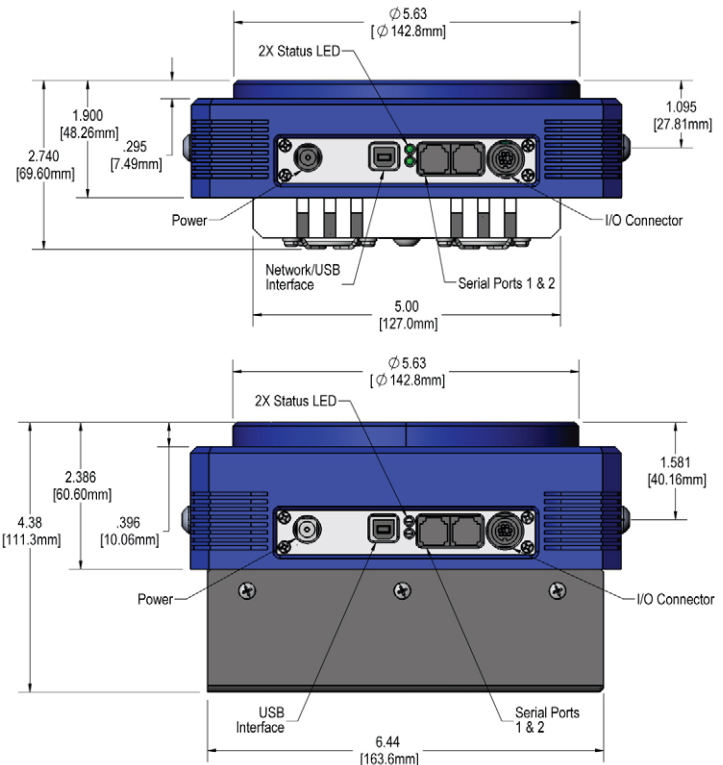
- Astronomy
- Radiology
- Optical testing
- Non-destructive testing

- 3056 x 3056 array, 12 x12 micron pixels
- 5 MHz 12-bit and 1 MHz 16-bit digitization
- 32Mbyte camera memory
- USB 2.0 interface: no plug in cards or external controllers
- Programmable, intelligent cooling to 45°C below ambient (D07 housing) / 60-65°C below ambient (D09 housing)
- Binning up to 8 Horizontal x 3056 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	Kodak KAF-09000
Array Size (pixels)	3056 x 3056
Pixel Size	12 x 12 microns
Imaging Area	36.7 x 36.7 mm (1345 mm ²)
Imaging Diagonal	51.9 mm
Video Imager Size	3.24"
Linear Full Well (typical)	110K electrons
Dynamic Range	84 dB
QE at 400 nm	37%
Peak QE (550 nm)	64%
Anti-blooming	>100X



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

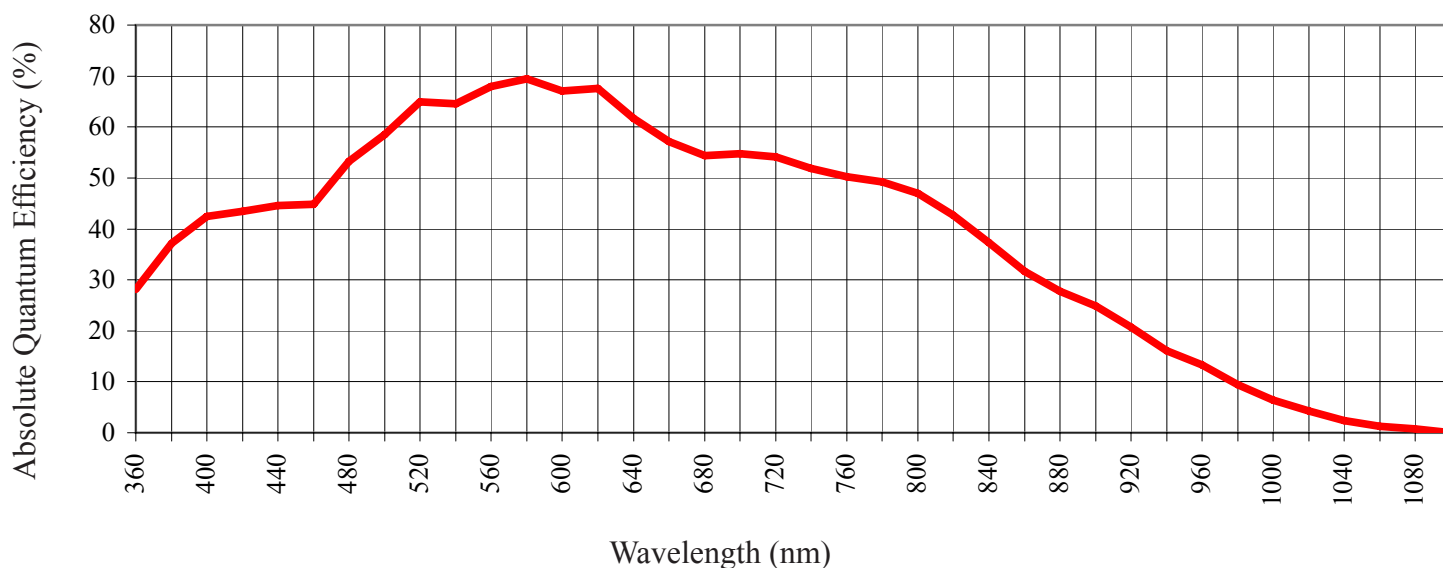


ALTA U9000

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 1 MHz and 12 bits at 5 MHz
System Noise (typical)	12 e ⁻ RMS at 1 MHz and 2 counts at 5 MHz
Pixel Binning	1x1 to 8x3058 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); 60-65°C below ambient temperature (D09 housing).
Dark Current (typical)	<0.6 e ⁻ /pixel/sec (-25°C). <1.5 eps for High Cooling D09 housing.
Temperature Stability	± 0.1°C
Camera Head Size	D07: Aluminum, hard blue anodized. 7" x 7" x 2.55" (17.8 x 17.8 x 6.48 cm) Weight: 4.2 lb. (1.9 kg)
Mounting	5.125" bolt circle. 2.5" 24-tpi thread. Optional Nikon F-mount or Canon EOS/EF or FD mount.
Back Focal Distance	D07: 1.005" (2.56 cm). D09: 1.363" (3.46 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.
Remote Triggering	LVTTL input allows exposure to start within 25 microseconds of rising edge of trigger

CCD SENSITIVITY



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