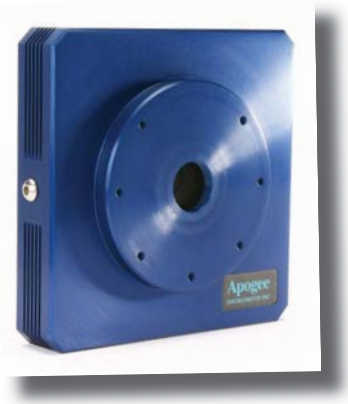
High Performance Cooled CCD Camera System
ALTA U1

The Alta U1 has a Kodak Blue Plus full frame sensor with very high quantum efficiency. Low noise and large field-of-view are ideal for OEMs, biological sciences, spectroscopy, and astronomy.

Imaging Area of CCD

- 768 x 512, 9 x 9 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 50°C below ambient
- Binning up to 8 Horizontal x 512 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

- Astronomy
- Fluorescence microscopy
- Luminance testing



CCD SPECIFICATIONS

CCD	Kodak KAF-0402ME
Array Size (pixels)	768 x 512
Pixel Size	9 x 9 microns
Imaging Area	6.9 x 4.6 mm (31.9 mm^2)
Imaging Diagonal	8.3 mm
Video Imager Size	1/2”
Linear Full Well (typical)	100K electrons
Dynamic Range	76 dB
QE at 400 nm	53%
Peak QE (600 nm)	85%
Anti-blooming	none

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

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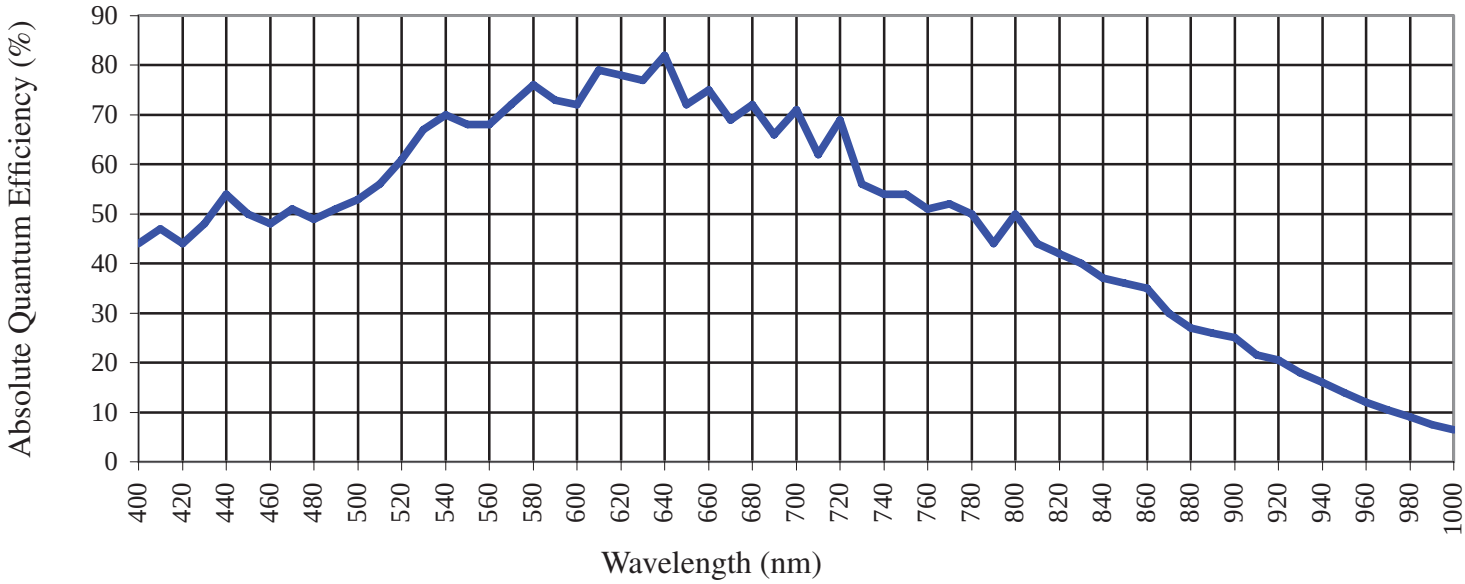
ALTA U1
Camera System Performance

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)	15 e^- RMS at 1 MHz and 2 counts at 5 MHz
Pixel Binning	1x1 to 8 x 512 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°C below ambient temperature
Dark Current (typical)	0.1 e^-/pixel/sec (-25°C)
Temperature Stability	± 0.1°C
Camera Head Size	D1. Low profile: D5. Aluminum, hard blue anodized. 6" x 6" x 2.1" (15 x 15 x 6.25 cm) Weight: 3.1 lb. (1.4 kg)
Mounting	3.5" bolt circle. C-mount (1" 32 tpi thread). Optional Nikon F-mount or Canon FD mount.
Back Focal Distance	Standard: 0.685" (17.40 mm). Low profile: 0.455" (11.56 mm). [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: Vincent 25mm. 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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