

High Performance Cooled CCD Camera System ALTA U16MHC

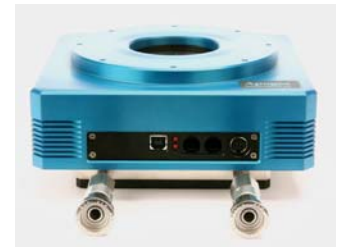
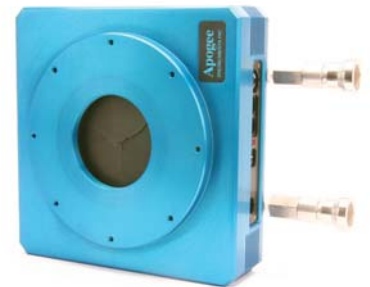


The Alta U16MHC uses a very large format 16-megapixel full frame sensor with micro-lenses and anti-blooming gates, ideal for applications requiring large field of view, such as astrophotography, sky surveys, and radiology. The HC version increases cooling by 20C compared to the U16M and is available with liquid circulation only.

Imaging Area of CCD

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

- 4096 x 4096 array, 9 x9 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 60°C below ambient
- Binning up to 8 Horizontal x 4096 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-16803
Array Size (pixels)	4096 x 4096
Pixel Size	9 x 9 microns
Imaging Area	36.8 x 36.8 mm (1359 mm ²)
Imaging Diagonal	52.1 mm
Video Imager Size	3.26"
Linear Full Well (typical)	85K electrons
Dynamic Range	79 dB
QE at 400 nm	41.5%
Peak QE (550 nm)	60%
Anti-blooming	>100X

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



With optional LR001 Liquid Recirculation Unit

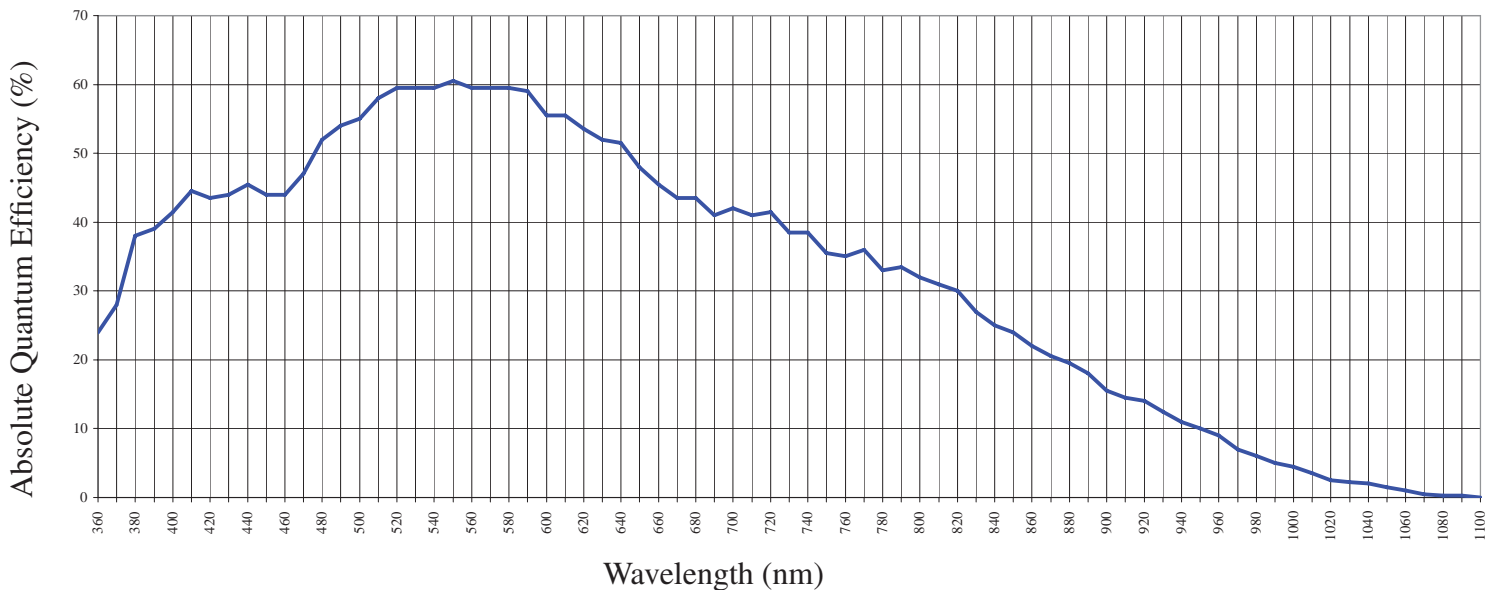
©2007 Apogee Instruments Inc. Alta is a registered trademark of Apogee Instruments Inc. Specifications subject to change without notice.

ALTA U16MHC 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)	7 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 liquid recirculation. Maximum cooling 60°C below ambient temperature
Dark Current (typical)	0.04 e ⁻ /pixel/sec (-40°C)
Temperature Stability	± 0.1°C
Camera Head Size	D7. Aluminum, hard blue anodized. 7" x 7" x 3.24" (17.8 x 17.8 x 8.23 cm) Weight: 4.2 lb. (1.9 kg)
Mounting	5,125" bolt circle. Optional Nikon F-mount or Canon FD mount.
Back Focal Distance	1.363" (34.62 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	Melles Griot 63mm.
Remote Triggering	LVTTL input allows exposure to start within 25 microseconds of rising edge of trigger

CCD SENSITIVITY



©2007 Apogee Instruments Inc. Alta is a registered trademark of Apogee Instruments Inc. Specifications subject to change without notice.



1020 Sundown Way, Ste 150
Roseville CA 95661 USA
tel 916-218-7450
fax 916-218-7451
<http://www.ccd.com>