



ASCENT

Apogee Instruments Inc.

PRELIMINARY

High Performance Cooled CCD Camera System ASCENT A285

The Ascent A285 has a 1.3-megapixel interline transfer sensor with low noise and high quantum efficiency. The camera is available with a monochrome or color sensor. Small pixels are ideal for microscopy.

- Fluorescence microscopy

- 1360 x 1024 array, 6.45 x 6.45 micron pixels
- 32 Mbyte SDRAM image buffer
- Programmable 16-bit digitization speeds up to 10 Mpixels/sec
- USB 2.0 interface: no plug in cards or external controllers
- Programmable, intelligent cooling to 40°C below ambient
- Binning up to 4 Horizontal x CCD height
- Subarray readout and fast sequencing modes
- Programmable offset and gain
- External triggering and strobe controls
- ActiveX drivers included with every system
- Field upgradeable firmware
- BK7 windows (optional fused silica)
- Optional internal vane or external electromechanical shutter
- Optional C-mount, Nikon F-mount, or 2" slip fit adapter
- Single 6V supply with input voltage protection system
- Compact enclosure: 23 oz. (0.65 kg)
- Programmable status indicators

CCD SPECIFICATIONS

CCD	Sony ICX285
Array Size (pixels)	1360 x 1024
Pixel Size	6.45 x 6.45 microns
Imaging Area	8.8 x 6.6 mm (57.9 mm ²)
Imaging Diagonal	11.2 mm
Video Imager Size	0.70"
Linear Full Well (typical)	18K electrons
Dynamic Range	67 dB
QE at 400 nm	46%
Peak QE (600 nm)	62%
Anti-blooming (nominal)	Yes

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

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Imaging Area of CCD



Actual Size of Camera



1020 Sundown Way, Ste 150
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 fax 916-218-7451
<http://www.ccd.com>



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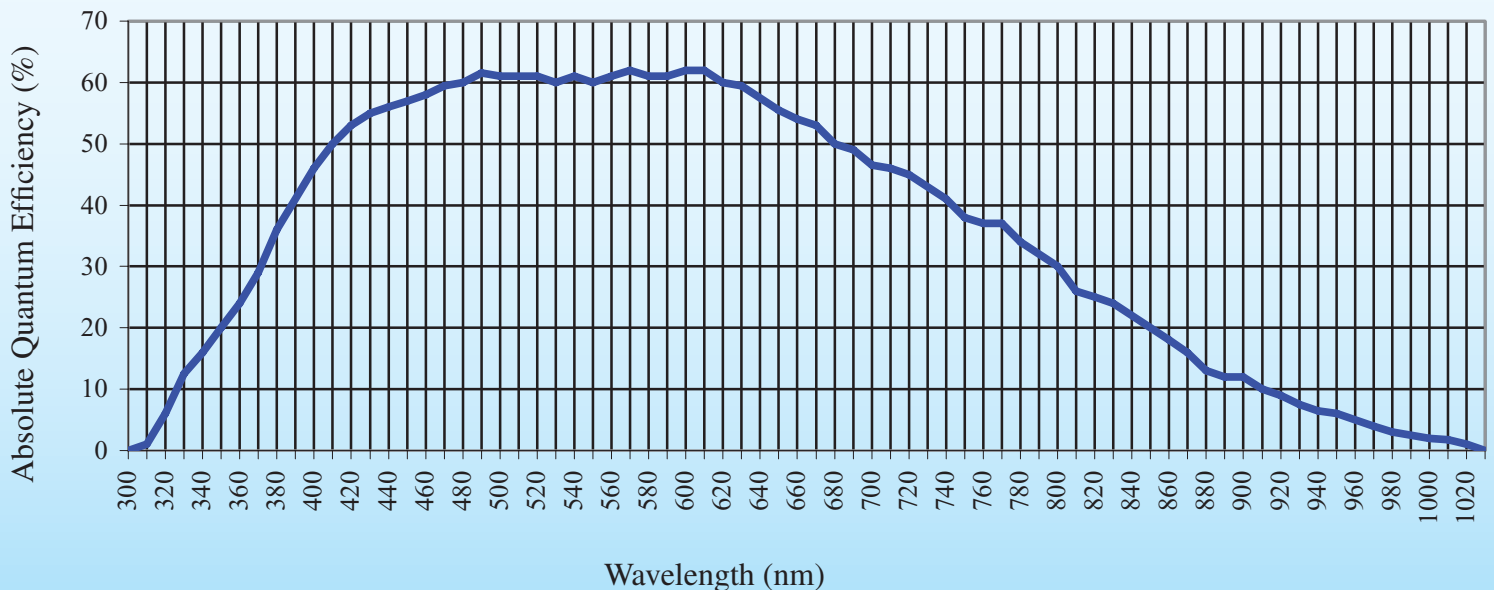
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ASCENT A285 Camera System Performance



PC Interface	USB 2.0
USB2 Cable	Std.: 5m. Extensions: 5 meters between hubs; 5 hubs maximum (max. total of 30m) Wide variety of extenders available, including fiber optics to 10 km.
Digital Resolution	16 bits at up to 10 Mpixels/sec
System Noise (typical)	8 e ⁻ RMS at 1.5 MHz
Pixel Binning	1 x 1 to 4 x 1024 on-chip
Exposure Time	Minimum 100 microseconds (no vane shutter); max.183 minutes
Image Sequencing	1 to 65535 image sequences under software control
Frame Sizes	Full frame, subframe, focus mode
Cooling (typical)	Thermoelectric cooler. Maximum forced air cooling 40°C below ambient temperature.
Dark Current (typical)	Photodiode: 0.6 e ⁻ /pixel/sec. Storage diode: 6 e ⁻ /pixel/sec. (-15°C)
Temperature Stability	± 0.1°C
Camera Head Size	Aluminum. 3.2" x 5.7" x 1.3" (8.1 x 14.5 x 3.3 cm) Weight: 1.4 lb. (0.65 kg)
Mounting	1.5" x 2.5" bolt pattern, 6-32 thread. Optional C-mount (1" 32 tpi thread), Nikon F-mount, or 2" slip-fit adapters.
Back Focal Distance	Standard: 0.32" (0.81 cm). [optical]
Operating Environment	-30°C to 35°C. Relative humidity: 10 to 90% non-condensing.
Op.Sys.Support	Windows, Linux, Mac OSX
Power	20W maximum power with internal shutter open and cooling maximum. AC/DC "brick" supply with int'l AC input plug (100-240V, 50-60 Hz). Alternate 6V input from user's source.
Shutter	Standard: Electronic. Optional internal vane or external electromechanical shutter.
Remote Triggering	LVTTL input allows exposure to start within 25 microseconds of rising edge of trigger

CCD SENSITIVITY



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