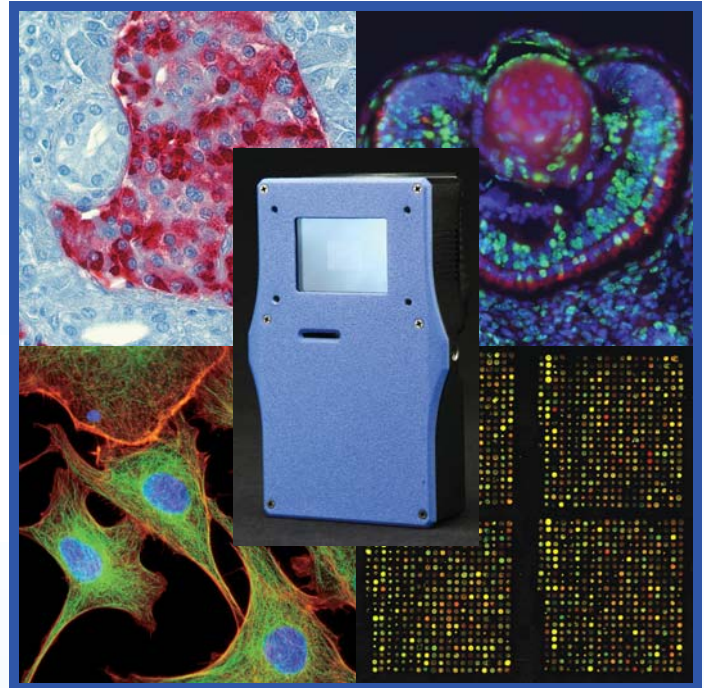


We've selected the four most popular CCDs in life science imaging and integrated them into clean, fast, 16-bit digitization with deep cooling. The result is simple, low-cost, publication quality imaging, whether for bright field or low light fluorescence. The cameras are available with a monochrome or color sensors. See www.ccd.com for the complete line of Ascent cameras.

- 32 Mbyte SDRAM image buffer
- Programmable single / dual channel 16-bit digitization speeds
- 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 shutter
- Optional C-mount or Nikon F-mount adapter
- Compact enclosure: 23 oz. (0.65 kg)
- Programmable status indicators
- Single 6V supply with input voltage protection system



Optional integrated filter wheel with F-mount & lens



Clockwise from lower left: image courtesy Scientific Instrument Company; slide courtesy Ventana Medical Systems; image courtesy Dr. David Rapaport, UCSD

CCD SPECIFICATIONS

	Ascent A205	Ascent A285	Ascent A2000	A4000
CCD	Sony ICX205	Sony ICX285	Kodak KAI-2020	Kodak KAI-4021
Array Size (pixels)	1360 x 1024	1360 x 1024	1600 x 1200	2048 x 2048
Pixel Size (microns)	4.65 x 4.65	6.45 x 6.45	7.4 x 7.4	7.4 x 7.4
Active Area (mm)	6.3 x 4.8	8.8 x 6.6 mm	11.8 x 8.9	15.2 x 15.2
Active Area (mm ²)	30.1	57.9	105.1	229.7
Imaging Diagonal	8 mm	11 mm	14.8 mm	21.4 mm
Video Imager Size	0.50"	0.70"	0.93"	1.34"
Channels	Single	Single	Dual	Dual
Dark current (e/p/s)	0.1	0.01	0.1	0.1
Readout Noise (e-)	8 e-	8 e-	7 e-	7 e-
Linear Full Well (typical)	10K e-	18K e-	40K e-	40K e-

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

CAMERA DATA SHEETS

A complete set of camera data sheets as well as mechanical drawings are on our Integration Starter Kit CD, or at www.ccd.com



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ASCENT

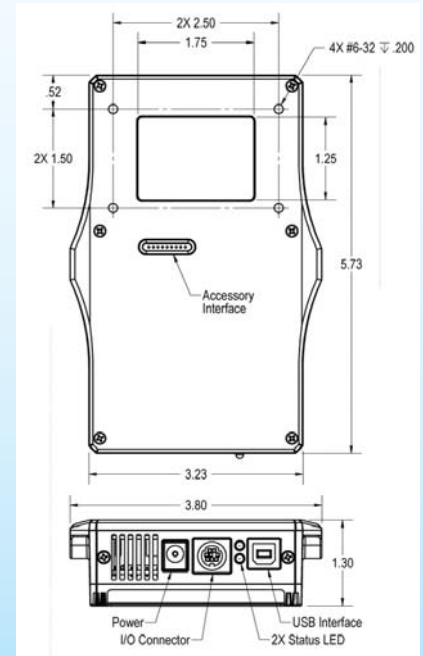
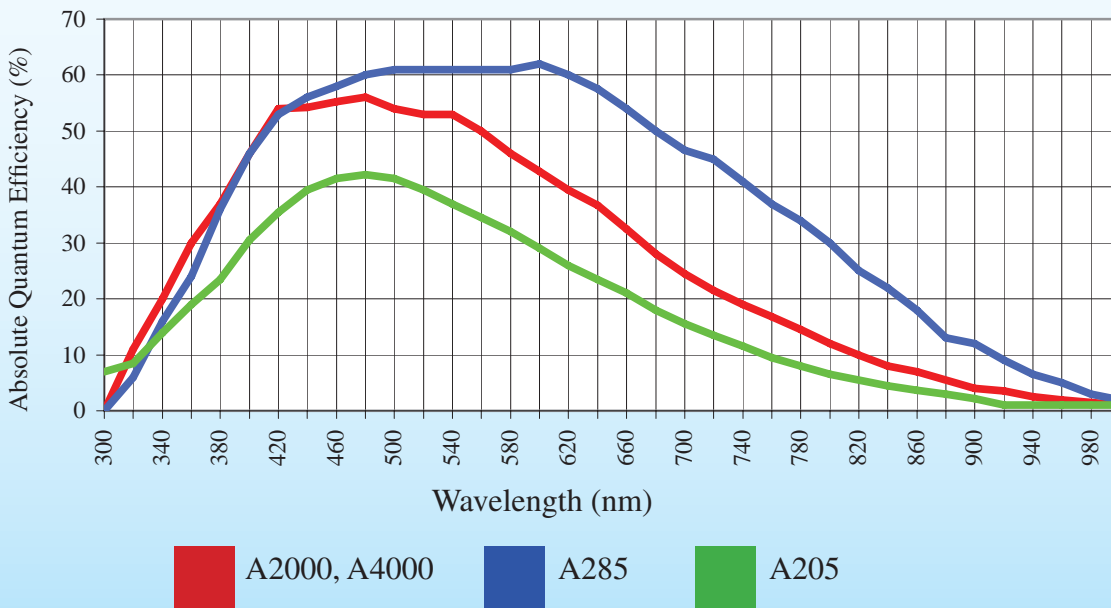
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ASCENT Camera System Performance



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; Kodak dual channel; Sony single channel at up to 10 Mpixels/sec (programmable speed)
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.
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 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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