

The Ascent® Camera Series supports a variety of interline transfer sensors with high quantum efficiency and low dark current. Most cameras are available with a choice of monochrome sensor or color sensor with a Bayer mosaic. Low noise and small pixels are ideal for OEM applications, astrophotography, biological sciences, guiding / adaptive optics, and other high frame rate applications.

- Chemiluminescence
- Fluorescence
- Astronomy
- Colorimetry
- Fundus Imaging

- CCDs up to 29 megapixels
- 16-bit digitization up to 16 MHz throughput
- Dual channel CCD support
- Video focus mode
- USB 2.0 interface: no plug in cards or external controllers
- Programmable, intelligent cooling to 35°C below ambient
- Binning up to 8 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
- Fused silica window
- Optional 6-position 1" or 8-position 1.25" filter wheels
- Optional C-mount, Nikon F-mount, or 2" slip fit adapter
- Single 6V supply
- Compact enclosure: 23 oz. (0.65 kg)
- Programmable status indicators



CCD SPECIFICATIONS

Model	CCD	Array	Pixels	Pixel size (microns)	CCD Size (mm)	Area (mm ²)	Diagonal (mm)	Video size (")
A29050	KAI-29050	6576 x 4384	28.8M	5.5	36 x 24	872	43.5	2.7
A16000	KAI-16000	4872 x 3248	15.8M	7.4	36 x 24	866.5	43.3	2.7
A8050	KAI-8050	3296 x 2472	8.1M	5.5	18.1 x 13.6	246.5	22.7	1.42
A4000	KAI-4022	2048 x 2048	4.2M	7.4	15.2 x 15.2	229.7	21.4	1.34
A4050	KAI-4050	2336 x 1752	4.2M	5.5	12.8 x 9.6	123.8	16.1	1.0
A2150	KAI-2150	1920 x 1080	2.1M	5.5	10.6 x 5.9	62.7	12.1	0.76
A2000	KAI-2020	1600 x 1200	1.9M	7.4	11.8 x 8.9	105.1	14.8	0.93
A2050	KAI-2050	1600 x 1200	1.9M	5.5	8.8 x 6.6	58.1	11.0	0.69
A1050	KAI-1050	1024 x 1024	1.1M	5.5	5.6 x 5.6	34.8	8.3	0.52
A285	ICX285	1360 x 1024	1.4M	6.45	8.8 x 6.6	57.9	11.0	0.69
A205	ICX205	1360 x 1024	1.4M	4.65	6.3 x 4.8	30.1	7.9	0.49
A340	KAI-0340	684 x 484	313K	7.4	4.8 x 3.6	17.2	6.0	0.37

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



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 16 MHz throughput*
System Noise (typical)	4.5 e ⁻ RMS at 3.3 MHz (A285); 6 e ⁻ RMS at 10 MHz (A285)*; 7 e ⁻ RMS at 8/16 MHz (A2150)
Pixel Binning	1 x 1 to 8 x height of CCD on-chip
Exposure Time	Minimum 100 microseconds; 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 35°C below ambient temperature.
Dark Current (typical)	A4000: 0.01 e ⁻ /pixel/sec*
Temperature Stability	± 0.1°C
Camera Head Size	Aluminum. 3.2" x 4.7" x 1.3" (8.1 x 11.9 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.
Remote Triggering	LVTTL input allows exposure to start within 25 microseconds of rising edge of trigger

*Varies from CCD to CCD. See data sheet for specific model.

CCD SENSITIVITY (Example: A285)

