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## QSI 540

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### QSI 540 4.2mp Scientific Cooled CCD Camera

Breakthrough QSI image quality now with a larger sensor at a breakthrough price!

The QSI 540 model camera employs a 4.2mp Kodak interline transfer CCD image sensor with microlens technology. The increased Field of View, high quantum efficiency, wide dynamic range and low noise performance make the 540i ideally suited to a broad range of demanding astronomical, scientific, medical and industrial imaging applications.

Because the internal color filter wheel is positioned very close to the focal plane in QSI 500 Series cameras, the 21.4mm diagonal Kodak KAI-04022 sensor experiences no optical vignetting through standard 1¼" filters, even with fast optical systems down below f/4.5. Even below f/4 the very small amount of light drop-off in the extreme corners of the large 2K x 2K sensor is almost undetectable and easily corrected with routine flat field calibration. Without filters, the 540si supports unvignetted imaging to below f/2.3, and the electronic shuttered 540i below f/1.

The compact design of the QSI 500 Series allows the 540 to set a new benchmark for cost and size in a high performance, full-featured scientific CCD camera. With optional features and upgradeability, the QSI 540 can be tailored to fit your needs today and in the future.

The 540 camera system is supported by industry leading image acquisition software and development tools are available for creating custom Windows or Linux imaging applications.



4.2mp 540wsi allows LRGB imaging through standard 1¼" filters resulting in a breakthrough in size, weight and cost.

- n 4.2mp 2048x2048 KAI-04022 sensor
- n Low noise, wide dynamic range
- n Very fast electronic shutter
- n Up to 45°C CCD cooling
- n Available mechanical shutter
- n Available internal 5-position color filter wheel
- n MaxIm DL and CCDSoft Drivers
- n Available MaxIm DL or LE camera control and image processing software
- n ASCOM-compatible Windows COM API
- n Linux drivers and API [▶ more software info](#)

Single Shot Color 540c also available [Click here for details>>](#)

#### Why QSI?

**The Best Images begin with the best data**

QSI 500 Series cameras offer exceptional imaging performance *Compare for yourself...*

[▶ more info](#)

**LIMITED TIME OFFER!**  
**SAVE UP TO \$300 WITH INTRODUCTORY PRICING STARTING AT \$3,995**

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Features

Specifications




Accessories

### Model 540i CCD Image Sensor Specifications

Feature	Standard
CCD Manufacturer & Model	Kodak KAI-04022
CCD Architecture	Interline Transfer
Microlens	Yes
Anti-blooming	Yes - 300x suppression
Imager Size: (WxH)	15.15mm x 15.15mm

Pixel Array (WxH):	2112x2072 total pixels, 2048x2048 active (visible)
Pixel Size:	7.4µm x 7.4µm
<b>Typical Values</b>	
Pixel Full Well Depth	40,000 electrons
Absolute Quantum Efficiency	Peak: 55% at 500nm
Pixel Dark Current	<0.1 electron per second at 0°C
Intrinsic Read Noise	<8 electrons RMS
Dynamic Range	74db
Charge Transfer Efficiency	>0.99999
	<b>Manufacturer's CCD Imager Specifications</b>
	<a href="#">KAI-04022M (PDF)</a>

### Model 540i Camera Specifications *(Preliminary - May 2008)*

Feature	Model 540i	Model 540si	Model 540wsi
CCD Image Sensor	KAI-04022		
Electronic Shutter	100µsec to 240 minutes	100µsec to 240 minutes	100µsec to 240 minutes
Mechanical Shutter	No	Yes	Yes
Internal Color Filter Wheel	No	No	Yes - 5 Position, 1.25" std filters
Filters	None	None	Standard with LRGB Optional configurations available
Camera Body Configuration	Slim Enclosure 	Medium Enclosure 	Full Enclosure 
Dimensions	W4.45" x H4.45" x D1.68" (add 0.225" for T-Mount)	W4.45" x H4.45" x D2.00" (add 0.225" for T-Mount)	W4.45" x H4.45" x D2.50" (add 0.225" for T-Mount)
Weight, without Nosepiece	26 oz. / 740g	34 oz. / 950g	40 oz. / 1120g
Optical Back Focus (without Filters in path)	0.61" w/ T-mount adapter 0.68" w/ C-mount adapter 0.39" w/o mounting adapter	0.90" w/ T-mount adapter 0.68" w/ C-mount adapter 0.68" w/o mounting adapter	1.40" w/ T-mount adapter 1.18" w/ C-mount adapter 1.18" w/o mounting adapter
Thermoelectric CCD Cooling	Temperature regulation +/- 0.1°C, @ 0°C to -40°C CCD temperature		
In free air, Fans @ Full Speed	Typically 38°C below ambient air with 85% cooling power		
With Opt Liquid Cooling - Fans Off	Typically 45°C below circulating liquid with 85% cooling power (adds 0.75" to camera depth)		
Cooling Fan Control	Intelligent, user configurable		
Camera Gain	User Selectable 0.8 e-/ADU, 1.9 e-/ADU		
Digital Resolution	16 bits		
Total System Read Noise	Typically <8 electrons RMS (CCD specification limited)		
Pixel Dark Current	<0.1 electron per second at 0°C		
Full Image Read and Download Time	Typically <10 second (host computer dependent)		
Binning Modes	Symmetrical on-chip 2x2 and 3x3, user selectable Asymmetrical binning up to 3 pixels in either dimension		
Status and Notification	User configurable multi-color LED status indicator and multifunction audible beeper. Over-temperature and high/low voltage alarms.		

Power Consumption	12v, 1.5A (18 watts) at max cooling, max fans and filter moving (25 AC watts max with included 90-240V AC power supply)		
Operating Environment	Temperature: -20°C to 30°C, Humidity: 10% to 90% non-condensing		
Computer Connectivity	USB 2.0 (USB 1.1 compatible)		
Other Ports	Optically isolated 4 channel control port for telescope guiding or other application specific control		
T Mounting Adapter	Standard adapter - T-Thread, 42mm x .75mm		
C Mounting Adapter (1" x 32TPI) ( <i>Not recommended for 540i</i> )	Optional, C-Mount lens focus compatible (17.5mm backfocus)	Optional, C-Mount lens focus compatible (17.5mm backfocus)	Optional, for non-lens adapters and accessories (standard C-Mount lens does not reach focus)
Nosepiece	Standard, T-Adapter to 2" nosepiece Optional, T-Adapter to 1.25" nosepiece		


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