



QHYCCD

QHY5-III Series Planetary Imaging and Guide Cameras



The QHY5-III series cameras are USB3 super-speed cameras and guiders. They can be used in a standard 1.25-inch eyepiece holder and have an adjustable location ring for confocality with an eyepiece. All QHY5III series cameras come in a very small but powerful package!

QHY5III174M/C uses the 2.3 Megapixel IMX174, 1/1.2-inch Exmor sensor with global shutter. Available in both monochrome and color. The large sensor size is a great choice for solar imaging, and the large pixel size and high QE (78%) makes it excellent for deep-sky imaging as well.

QHY5III178M/C uses the new 6.0 Megapixel IMX178 STARVIS Exmor R **back-illuminated** CMOS sensor. Available in both color and monochrome. With its small 2.4um pixels and 1/1.8-inch sensor size, the monochrome QHY5III178M is a superb guiding camera due to its advantages in resolution and wide FOV, plus its extraordinary sensitivity due to the STARVIS Exmore sensor. (STARVIS is Sony's designation for sensors that can record real time video in starlight).

QHY5III185C is a 1/1.9inch format, 1920 x 1200, USB 3.0, Color CMOS Camera with ultra-high sensitivity and very low read noise. The pixel size is 3.75um x 3.75um. Maxium Frame rate is 100FPS @ full resolution. The CMOS sensor is a SONY IMX185 noted for its very good SNR1 score

QHY5III224C uses the IMX224 sensor (available in color only). With its extremely-low readout noise of less than one electron, the IMX224 sensor achieved the top score in the new SNR1 index proposed by Sony for picture quality at low illumination. It is one of your best choices for color planetary imaging.

QHY5III290M/C uses the IMX290 STARVIS Exmor R **back-illuminated** CMOS sensor. Available in both color and monochrome versions. Extremely low read noise. 1920x1080 full-HD resolution. 1/2.8-inch sensor size. This might be the highest-sensitivity sensor from Sony with such a small pixel size. The QHY5III290M can be regarded as the next generation in monochrome planetary cameras after the QHYCCD QHY5L-II-M.

For TE cooled versions of cameras using these sensors, please see our **Small Cooled CMOS Cameras**.



Jupiter Image QHY5III-290M, Courtesy Christopher Go
M51 Image QHY5III-174M, Courtesy Alberic De Bonnevie

NGC4631 Image QHY5III-174M, Courtesy Alberic De Bonnevie
Mars Image QHY-290M, Courtesy Jack

“The QHY5-III-290M camera is so low noise and more sensitive that I could reduce my capture time. I can finish my session in 15 minutes with superior images vs 45 minutes before!” — Chris Go.

Model	QHY5III-174M/C	QHY5III-178M/C	QHY5III-185C	QHY5III-224C	QHY5III-290M/C
Sony Sensor	IMX174 Exmor CMOS	IMX178 STARVIS Exmor R CMOS	IMX185 Exmore CMOS	IMX224 Exmor CMOS	IMX290 STARVIS Exmor R CMOS
Illumination	Front Illuminated	Back Illuminated	Front Illuminated	Front Illuminated	Back Illuminated
Total Pixels	2.3 Megapixels	6.3 Megapixels	2.3 Megapixels	1.2 Megapixels	2.0 Megapixels
Pixel Size	5.86um	2.4um	3.75um	3.75um	2.9um
Pixel Array	1920 x 1200	3072 x 2048	1920 x 1200	1280 x 960	1920 x 1080
Optical Format	1/1.2-inch	1/1.8-inch	1/1.9-inch	1/3-inch	1/2.8-inch
FPS @ ROI	490@480x300	190@764x512	413@320x240	557@320x240	460@480x270
FPS @ Full Resolution	138FPS	50FPS	96FPS	150FPS	135FPS
Shutter	Electronic (Global)	Electronic	Electronic	Electronic	Electronic
A/D Resolution	12-bit	14-bit	12-bit	12-bit	12-bit
Read Noise	1.6e- to 5.3e-	0.9e- to 2.4e-	1e- to 4e-	0.5e- to 3e-	0.75e- to 3.2e-
Full Well Capacity	32ke-	15ke-	TBD	19ke-	>15.7ke-
Weight (M/C)	89g / 85g	86g / 87g	86g	86g	86g / 87g
Reference Price (M/C)	\$549 / \$549	\$399 / \$429	\$379	\$369	\$399 / \$429

For more information please visit: <http://www.qhyccd.com>