



QHYCCD

QHY8/QHY10/QHY12 Single-Shot Color Sony CCD Cameras



The QHY8L/8PRO is a 6 Megapixel camera with an APS-C size SONY CCD sensor. APS-C is a relatively large size among single shot color CCD cameras. SONY CCD sensors are famous for their low thermal noise. This is reduced even more in the QHY8L/8PRO by our 2-stage TE cooling and thermal construction design. The QHY8L has the cooling capability of -40C below ambient. This results in the production of very clean images even in exposures of 30 minutes to one hour. The QHY8L/8PRO also has very low read noise, typically 6e- or 7e-. In a dark site it offers the user a simple and easy way to capture deep sky objects in full color without the need, complexity and cost of RGB filters and filter wheel. The QHY8L/8PRO camera body has a diameter of only 63mm only, making it ideally suited for Hyperstar imaging. It also comes with a cable clip for solid connections. The 8L and 8PRO use sensors with almost identical specs but the 8PRO can read in progressive scan whereas the 8L reads two fields separately. This means the 8PRO is somewhat better when imaging fast moving objects. For long exposures there is little difference, although the 8PRO also has slightly better cooling.

The QHY10 is an APS-C size cooled single shot CCD camera using SONY's ICX493AQA sensor. It has 10 Megapixels with a pixel size of 6.05 x 6.05um. The QHY10 has two-stage thermoelectric cooling that reduces the temperature of the CCD to -40C below ambient. The combination of QHYCCD cooling technology and SONY SuperHAD low dark current technology results in an exceptionally clean, low noise image, even in a very long exposure. In addition to the very low thermal noise of Sony's SuperHAD technology, this sensor has a high full well capacity. Even with high resolution 6.05um square pixels, it has a 45ke- full well. This is almost double that of the ICX413 with 7.8um square pixels, and almost double that of the KAF-8300 color sensor with 5.4um square pixels. The high full well capacity yields a higher dynamic range allowing a longer exposure time without signal saturation. This yields better colors and smaller star points. The QHY10 comes with a clip for USB and power cables to help keep solid connections and avoid conditions that result in loss of contact. QHYCCD adjusted the price of the QHY10 at the beginning of 2014. Compared to other cameras using the KAF-8300C, the QHY10 has a larger sensor, larger pixel size, more pixels, greater full well capacity (dynamic range), lower thermal noise, lower read noise, and smaller body size. It has an electronic shutter and 2-stage TE cooling. If you are considering an 8300 color camera, don't hesitate get an affordably priced QHY10 right now.

The QHY12 with 14.2 Megapixels is the highest resolution in the QHYCCD cooled APS size color CCD family. The CCD sensor is Sony's ICX613 Super HAD sensor which has very low thermal noise and readout noise. If you have a Hyperstar telescope, the QHY12 is a very good choice. Its small diameter will not obstruct the entrance beyond the secondary. The small 5.12um pixels will yield higher details of deep space objects.



QHY8L Image



QHY12 Image



Captured with QHY10 by Dr.YuriyToropin



QHY8L Image

Model	QH8L/QHY8PRO	QHY10	QHY12
Sony Sensor	ICX413AQ CCD/ ICX453AQ CCD	ICX493 CCD	ICX613 Super HAD CCD
Illumination	Front Illuminated	Front Illuminated	Back Illuminated
Total Pixels	6.3 Megapixels	10.2 Megapixels	14.2 Megapixels
Pixel Size	7.8um x 7.8um	6.05um x 6.05um	5.12um x 5.12um
Pixel Array	3110 x 2030	3900 x 2626	4610 x 3080
Optical Format	APS-C	APS-C	1/2.8-inch
Cooling Delta T	-40C / -45C	-40C	-40C
Shutter	Electronic	Electronic	Electronic
A/D Resolution	16-bit	16-bit	16-bit
Read Noise	6e- to 10e-	8e- to 10e-	8e- to 10e-
ABG	-110dB	-100dB	-100dB
Weight (M/C)	400g	400g	400g
Reference Price (M/C)	QHY8L \$1400 / QHY8PRO \$1980	\$1700	\$2699

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