**Light Speed Vision (Beijing) Co., Ltd.**
503 Block A, Singularity Center, Shahe Town
Changping District, Beijing , China 102206
Tel: +86(10)80709022-602  Web: www.qhyccd.com

QHYCCD


# QHY268C APS-C Back-Illuminated 28Mp Color CMOS

Light Speed Vision (Beijing) Co., Ltd., 503 Block A, Singularity Center, Shahe Town, Changping District, Beijing , China 102206

# QHY268C

## 26 Megapixel Back-Illuminated Native 16-bit A/D <1e- Read Noise APS-C Color

**Ultra High Resolution, 26 Megapixels, APS-C format**

QHY268C is a 26 Megapixel back-illuminated cooled color CMOS camera with 16-bit A/D and 3.76um pixels. The QHY268C is available only in a color model.

**Native 16-bit A/D, 65536 Levels**

The QHY268C is the CMOS camera with native 16-bit A/D on-chip. The output is real 16-bits with 65536 levels. Compared to 12-bit and 14-bit A/D, 16-bit A/D provides higher sampling resolution. System gain is less than 1e-/ADU with low noise and no sampling error.

**Full Well, 51ke- and > 80ke- in Extended Mode**

One benefit of the back-illuminated CMOS structure is improved full well capacity. This is particularly helpful for sensors with small pixels. Even with unbinned 3.76um pixels the QHY268C has a full well capacity of 51ke-. When binned 2x2 to 7.5um the full well is 176ke- and when binned 3x3 to 11um the full well is 396ke-.

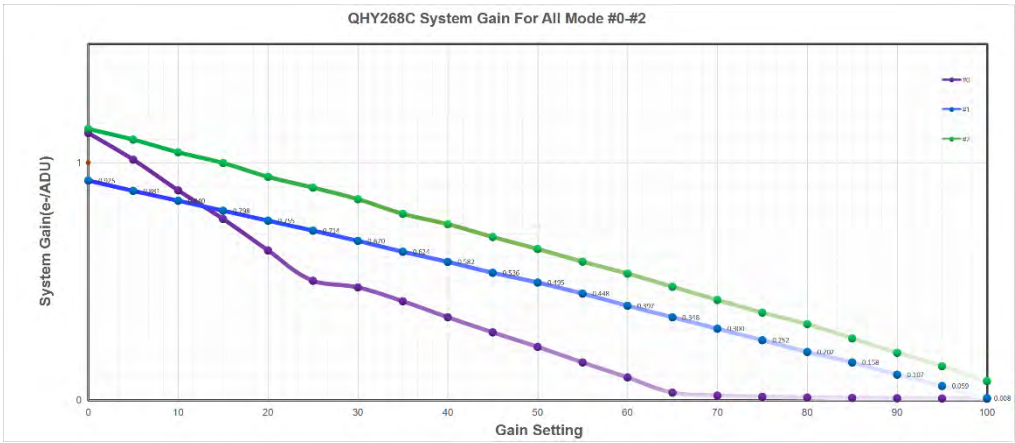
**Ultra-Low Read Noise, < 1 Electron at High Gain**

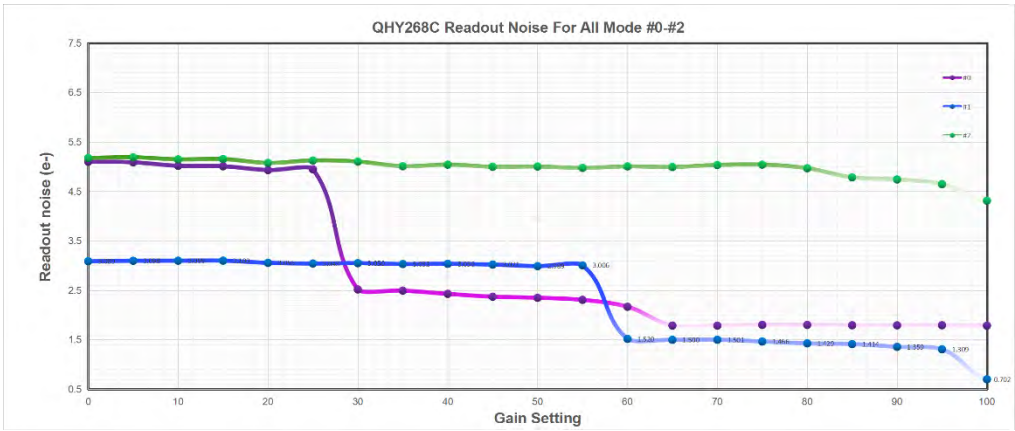
The QHY268 has less than one electron of read noise at high gain and 6 FPS high readout speed. One electron of read noise means the camera can achieve a SNR>3 at only 3 to 4 photons. This is perfect performance when conditions are photon limited, i.e., short exposures, narrow band imaging, etc., making this large area sensor ideal for sky surveys and time domain astronomy.

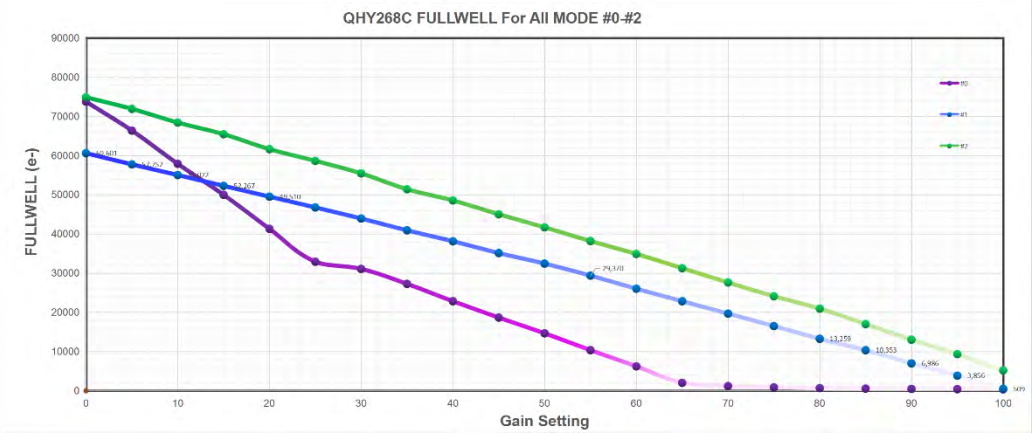
**Low Dark Current, TE Cooling, Round Body**

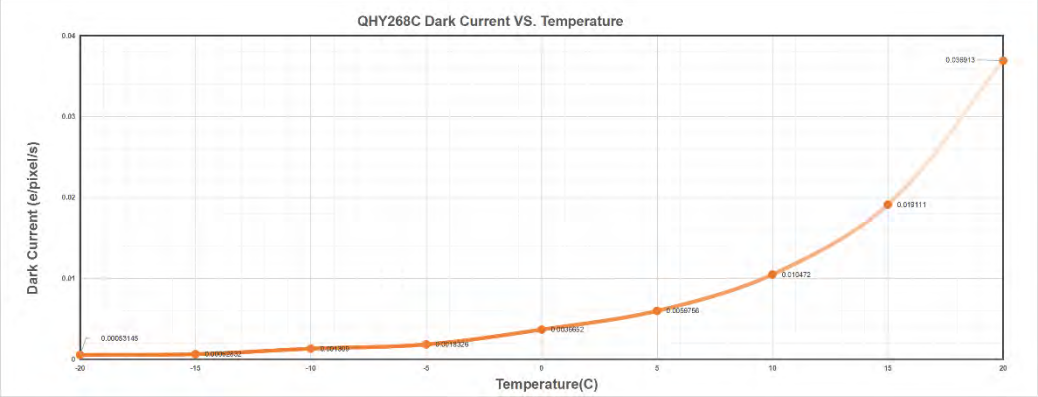
The QHY268C has extremely low dark current using SONY's Exmor BSI CMOS technology. In addition, the camera uses QHYCCD's proprietary thermal noise reduction technology and 2-stage TE cooling to reduce the dark current noise to extremely low levels. The round body and sensor size make this camera ideal for Hyperstar systems. The camera has a USB3.0 interface to the computer.

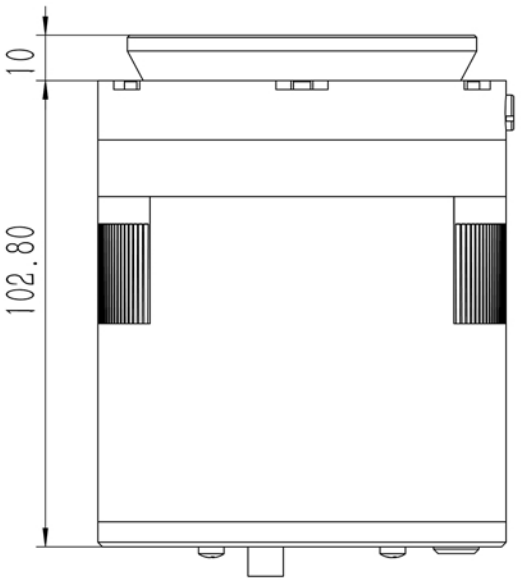
| TYPICAL SPECIFICATIONS | |
|---|---|
| Model | QHY268C-PH (Photographic Version) |
| Image Sensor | SONY IMX571 APS-C BSI CMOS Sensor |
| Array | 26 Megapixels (6280 x 4210 incl. overscan and optically black pixels) |
| Pixel Size | 3.76um x 3.76um |
| Image Area | APS-C Format, 23.5mm x 15.7mm (28.3mm Diagonal) |
| Color / Mono | Color Only |
| Full Well Capacity | 51ke- / > 80ke- in extended mode |
| A/D | Native 16-bit |
| Full Frame Rate | 6 FPS @ 16-bits |
| Read Noise | 0.7e- to 3.5e- |
| Dark Current | 0.0005e-/p/s @ -20C, 0.001e-/p/s @ -10C |
| Exposure Time Range | 30us - 3600sec |
| Firmware/FPGA remotely upgrade | Yes, via USB port |
| Shutter Type | Electronic Rolling Shutter |
| Computer Interface | USB3.0 |
| Built-in Image Buffer | 1GByte/2GByte (16Gbit) DDR3 |
| Cooling System | Dual Stage TE Cooler -35C below ambient |
| Anti-Dew Heater | Yes |
| Telescope Interface | M54/0.75 |
| Optical Window | AR+AR High Quality Multi-Layer Anti-Reflection Coating |
| Non-volatile memory / In camera storage | Built-in total 64MByte Flash Memory. 10MBytes user-accessible space for stellar ROI frames for analysis of exoplanet investigation, occultations, atmospheric seeing measurement, focus, optical analysis etc. Supports 100*100 image x 500 frames, 50*50 image x 4000 frames, 25*25 image x16000 frames, 10*10 image x 250000 frames. |


QHY268C System Gain For All Mode #0-#2
System Gain(e-/ADU)
Gain Setting


QHY268C Readout Noise For All Mode #0-#2
Readout noise (e-)
Gain Setting


QHY268C FULLWELL For All MODE #0-#2
FULLWELL (e-)
Gain Setting


QHY268C Dark Current VS. Temperature
Dark Current (e/pixel/s)
Temperature(C)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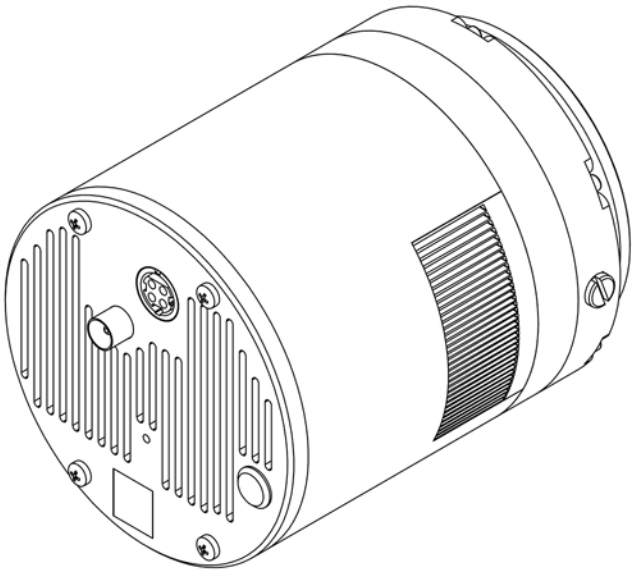

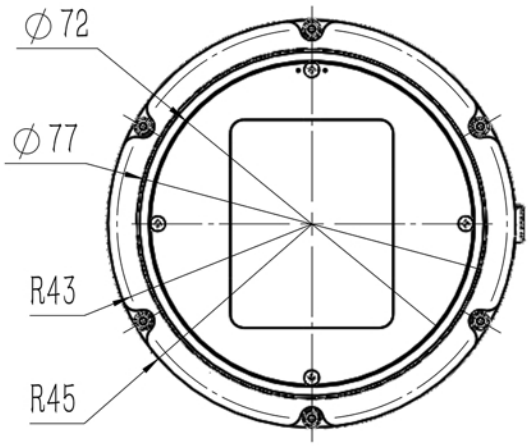
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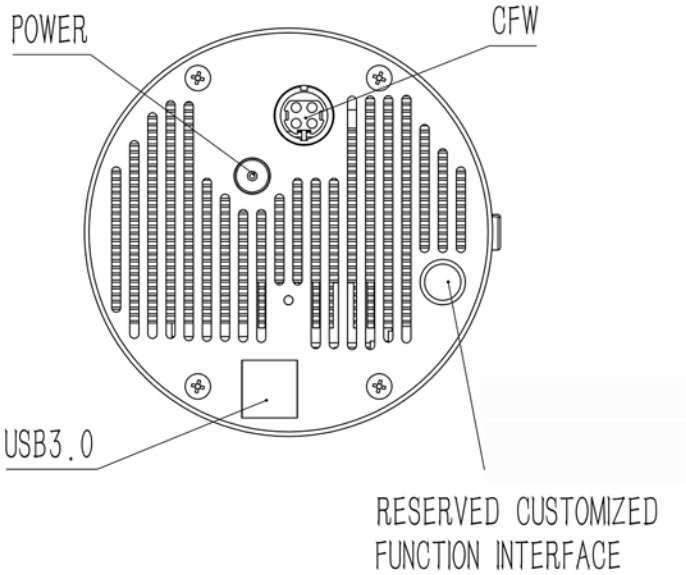
POWER
CFW
USB3.0
RESERVED CUSTOMIZED
FUNCTION INTERFACE