

SBIG®
STC-428-P

**SBIG STC-428-P PHOTOMETRIC CMOS
IMAGING SYSTEM**

The STC-428-P is designed for astronomical photometric measurements. With our StackPro™ in-camera stacking capability, the STC-428-P has enormous dynamic range and much greater sensitivity than possible with CCD technology.



The new STC-428-P scientific CMOS camera represents a major improvement over CCD technology. Compared with previous CCD models such as the STF-8300M, the STC-428-P features higher sensitivity (78% QE versus 56%), significantly lower read noise (2.5 e- versus 9.3 e-), and 20X faster readout.

While a single exposure on the IMX428 sensor can equal CCD dynamic range, the combination of fast readout and very low read noise allows for stacking many shorter to produce greater dynamic range than previously possible. The built-in StackPro™ capability can automatically divide your exposure into up to 16 shorter sub-exposures, and stack them inside the camera prior to download. This dramatically increases dynamic range without imposing greater processing requirements on the host computer – with read noise equal to or lower than comparable CCD cameras.

Our SmartCooling™ active regulation maintains the sensor temperature to within 0.1°C, and minimizes fan speed based on heat sink temperature for longer life and quieter operation.

FEATURES AND BENEFITS

The SBIG STC-428-P features include:

High sensitivity, low noise 7 megapixel Sony IMX428 imaging sensor	SmartCooling™ active temperature regulation to 0.1°C for high calibration stability
Electronic global shutter for fast exposure times (0.001 to 3600 s) to image bright or faint targets	Eight position FW8-STC filter wheel for optional 36mm unmounted or 1.25" threaded filters, with one slot configured as a dark frame shutter, no need to cover the telescope for dark frames
High-speed USB 3.0 interface or use USB 2.0 for longer cable length	Compatible with SBIG StarChaser SC-2 off-axis guiding camera for accurate tracking
Downloads in under 90 milliseconds (depending on computer speed) much faster than a CCD	Supports AO-8A adaptive optics unit via StarChaser SC-2 for crisp, tight stars
StackPro™ automatic in-camera sub-exposure stacking saves disk space, yields longer exposures	MaxIm LT control software to get you running on the first night
Regulated two-stage cooling with delta T of -30°C	Multiplatform software API and sample code available for easy application development

SBIG MODEL NAME
STC-428-P

A/D Converter	12-bit with High Gain / Low Gain modes
Binning Modes	1×1, 2×2
Computer Interface	USB 3.0 (USB 2.0 compatible)
Cooling Delta	30°C
Dark Current	0.1 e-/p/s at -5°C
Exposure	0.001 – 3600 seconds
Filter Size	36mm / 1.25"
Filter Wheel Option	FW8-STC Included
Full Frame Download	90 ms
Imaging / Pixel Array	3208 x 2200 pixels
Imaging Sensor	Sony IMX428 CMOS sensor
OS Compatibility	Windows 7, 8, 10 x86/x64, MacOS 10.14 "Mojave" x86 binaries, Ubuntu 18.04 LTS x64, Raspbian Buster armhf, Ubuntu MATE arm64
Peak QE	78% typical
Pixel Size	4.5 x 4.5 µm
Power	12VDC, 4A max
Read Noise (Typical)	1.9 e- High Gain, 2.5 e- Med Gain, 5 e- Low Gain
Sensor Size	14.4 mm X 9.9 mm
Shutter	Global Shutter (electronic), Opaque Slot on Filter Wheel for Dark Frames
Temperature Regulation	Yes
Total Pixels	7.1 megapixel

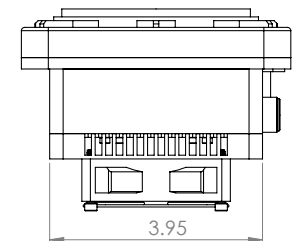
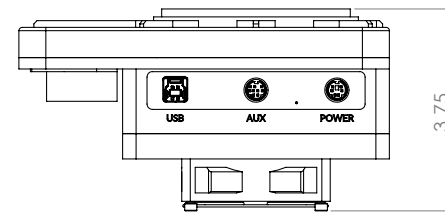
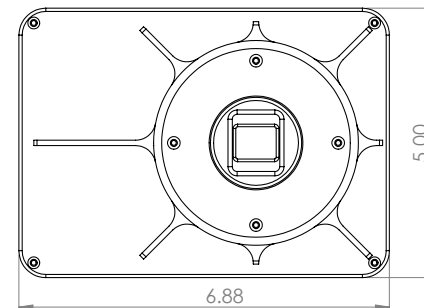
SENSOR SPECIFICATIONS

17.6 mm diagonal

Typical QE:

- Red (635-700 nm) ~ 63%
- Green (520-560 nm) ~ 78%
- Blue (450-490 nm) ~ 75%

80 dB dynamic range



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Specifications subject to change without notice – January 2021

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