# Dhyana 6060BSI Large-Format BSI sCMOS Camera, 6144 × 6144, 95% QE

Model Dhyana 6060BSI · waveqvanta.com/products/dhyana-6060bsi-scmos-camera

A 36 MP back-illuminated sCMOS camera with 10 µm pixels for wide-field, low-light scientific imaging.



The Dhyana 6060BSI is built around a 6144 × 6144 back-illuminated sCMOS sensor with 10 µm pixels and an 86.8 mm diagonal, reaching 95% peak QE at 580 nm. It brings large-format imaging, previously the territory of CCDs, to frame rates of up to 26.4 fps over a four-lane CoaXPress 2.0 link while keeping median read noise at 3 $e^-$. Typical uses include astronomy, space debris tracking, quantum imaging and soft X-ray work.

## Key features

- 95% peak QE at 580 nm and 3 $e^-$ median read noise for high signal-to-noise ratio with weak signals
- 6144 × 6144 pixels (36 MP) at 10 µm on a 61.4 × 61.4 mm active area, 86.8 mm diagonal
- 102 $ke^-$ typical full-well capacity and 90 dB dynamic range
- Up to 26.4 fps at 12 bit or 11.3 fps in 16-bit HDR mode over CoaXPress 2.0 (CXP-12 × 4)
- Air or liquid cooling, down to 45°C below ambient; dark current 0.15 $e^-$/pixel/s with liquid cooling
- GPS support and 1 µs timestamp accuracy for time-tagged observations
- Customizable optical interface and an operating range of -35°C to 40°C

## Specifications

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| **Sensor Type** | BSI sCMOS |
| **Sensor** | GSENSE6060BSI |
| **Color / Mono** | Mono |
| **Peak QE** | 95% @ 580 nm |
| **Resolution** | 6144 × 6144 (36 MP) |
| **Pixel Size** | 10 µm × 10 µm |
| **Effective Area** | 61.4 mm × 61.4 mm |
| **Array Diagonal** | 86.8 mm |
| **Full-Well Capacity** | 102 $ke^-$ (typical) |
| **Readout Noise** | 3 $e^-$ (typical, median) |
| **Dynamic Range** | 90 dB (typical) |
| **Frame Rate** | 26.4 fps @ 12 bit STD; 11.3 fps @ 16 bit HDR; 8.6 fps @ 14 bit STD |
| **Shutter Type** | Rolling |
| **Exposure Time** | 12 µs to 300 s |
| **Binning** | 2 × 2, 4 × 4 |
| **ROI** | Supported |
| **Cooling Method** | Air cooling, liquid cooling |
| **Cooling Temperature** | 45°C below ambient (liquid cooling) |
| **Dark Current** | 0.25 $e^-$/pixel/s (air); 0.15 $e^-$/pixel/s (liquid) |

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|---|---|
| **DSNU / PRNU** | 1.5 $e^-$ / 0.2% |
| **Bit Depth** | 12 bit, 14 bit, 16 bit |
| **Data Interface** | CoaXPress 2.0 (CXP-12 × 4) |
| **Trigger** | Hardware, software (SMA); outputs incl. exposure start, global exposure, readout end |
| **Optical Interface** | Customized to user requirements |
| **Power Supply** | 12 V / 10 A |
| **Power Consumption** | < 100 W |
| **Dimensions** | Ø 160 mm × 164 mm |
| **Weight** | 4 kg |
| **Operating Environment** | Working: -35°C to 40°C, 0–95% RH; storage: -35°C to 60°C, 0–95% RH |
| **Software / SDK** | Acquisition and analysis software; MaxIm DL, LabVIEW, MATLAB, EPICS; C/C++/C#/Python SDK |

## Typical applications

- Space debris detection
- Solar observation and astronomy
- Soft X-ray imaging
- Quantum imaging and quantum optics
- Flat-panel display (FPD) inspection