

# SP-45000C-CXP4

## Technical Datasheet



See the possibilities

XGS 45000



## Apex Series



Spark Series area scan cameras are the perfect choice for machine vision applications demanding high quality images with the highest possible throughput. They feature the latest CMOS imagers delivering high resolution images at speeds as much as 10 times faster than traditional CCD cameras.

For example, 45-megapixel (MP) models can deliver over 50 fps output while some 5-MP models run at 250 fps or more. Using the region-of-interest (ROI) feature, even higher frame rates can be achieved.

### Specification Highlights

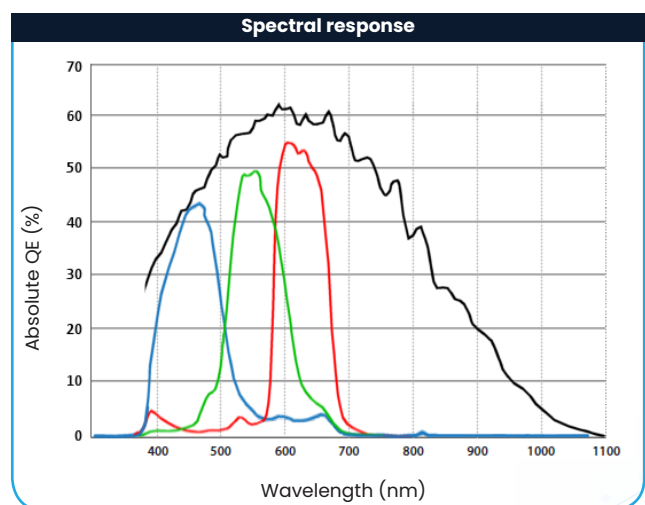
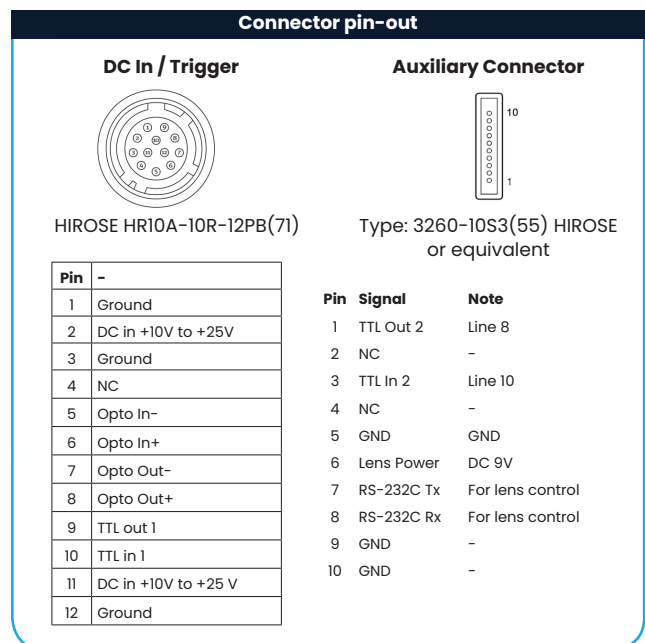
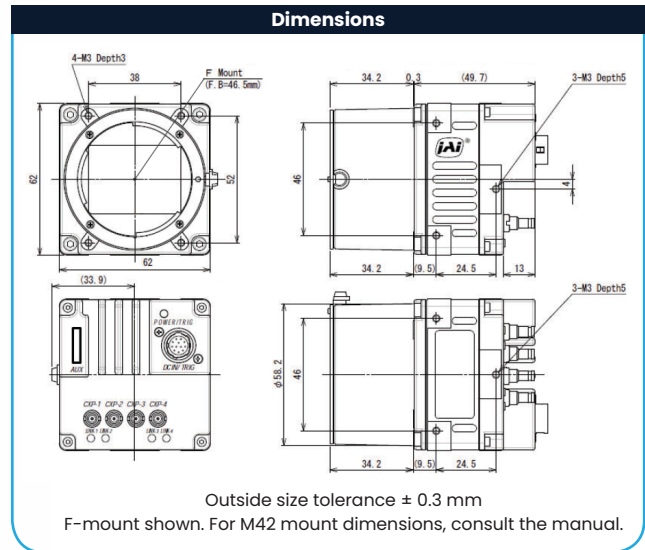
**SENSOR:** XGS 45000  
**FORMAT:** Super 35 mm  
**PIXEL SIZE:** 3.2 x 3.2  $\mu\text{m}$   
**LENS MOUNT:** F-Mount  
**SPECTRUM:** Color (Visible)

**SHUTTER:** Global Shutter  
**FRAME RATE:** 51 fps  
**INTERFACE:** CoaxPress-4-Cable (PoCXP)  
**RESOLUTION MP:** 45 MP  
**RESOLUTION WxH:** 8183 x 5460 px

Specifications	SP-45000-CXP4
Sensor	44.7-megapixel, super 35 mm CMOS global shutter
Active pixels	8192 (h) x 5460 (v)
Frame rate	51 frames/sec. @ 8-bit mono/Bayer
Full frame	65 frames/sec @ 8-bit mono/Bayer
8K format (8192 x 4320)	HDR Mode operates at < half speed
Active area	26.2 mm (h) x 17.4 mm (v) - 31.5 mm diagonal
Pixel size	3.2 μm x 3.2 μm
Read-out modes	
Full ROI (single)	8192 (h) x 5460 (v) up to 51 fps H: 128 - 8192 pixels in 128-pixel steps V: 8 to 5460 lines in 4-line steps
ROI (multi)	Up to 64 scanning areas - no overlap
Binning	1x2, 2x1, 2x2 (mono only)
EMVA 1288 Parameters	12-bit output format
Absolute sensitivity	Mono: 8.92 p Color: 10.14 p (λ = 531 nm)
Maximum SNR	Mono: 39.0 dB Color: 37.3 dB
Traditional SNR*	>58 dB mono, >54 dB color (0 dB gain, 10-bit)
Video signal output	Monochrome: 8/10/12-bits <sup>†</sup> Color: 8/10/12-bit Bayer <sup>†</sup>
Special built-in modes	Overlay mode, HDR (High Dynamic Range), Frame Integration. Supports 14-bit output in some modes
Interface	CoaXPress v2.0 (CXP-6, DIN 1.0/2.3 connectors) Link Configs: CXP6_X4, CXP6_X2, CXP6_X1 CXP3_X4, CXP3_X2, CXP3_X1
Gain	Manual/auto 0 dB to +24 dB
White balance	Off, presets (4000K, 4600K, 5000K, 6500K, 7500K), or one-push/continuous AWB (3000K to 9000K)
Gamma/LUT	0.45 to 1.0 (9 steps) or 257-point programmable LUT
Shading correction	Flat shading, color shading (color model only)
Trigger input	Opto In, TTL In (2), CoaXPress In, Software, Pulse Generators (4), NAND Out (2), User Output (4)
Exposure modes	Timed/EPS, Trigger Width, Auto
Electronic shutter	Timed: 50.4 μs to 8 s Trigger width: 50.4 μs to ∞ s
Auto Level Control (ALC)	Shutter range from 100 μs to 19.6 ms, gain range from 0 dB to +24 dB. Tracking speeds and max. values adjustable.
Operating temp. (ambient)	-5°C to +45°C (20 to 80% non-condensing)
Storage temp. (ambient)	-25°C to +60°C (20 to 80% non condensing)
Vibration	10G (20 Hz to 200 Hz, XYZ directions)
Shock	Shock
Regulations	CE (EN 55032:2015, EN 55035:2017) FCC Part 15 Class B, RoHS/WEEE
Power	+10V to +25V DC. 12.5 W typical @ +12 V (PoCXP not supported)
Lens mount	F-mount, M42 mount (45.5 mm FBD)
Lens control	RS-232C commands via Birger Mount
Dimensions (H x W x L)	62 mm x 62 mm x 84.2 mm (excl. connectors)
Weight	330 g/340 g (F-mount/M42 mount)
<b>Ordering Information</b>	
SP-45000M-CXP4-F	44.7 megapixel monochrome camera - F-mount
SP-45000M-CXP4-M42	44.7 megapixel monochrome camera - M42 mount
SP-45000C-CXP4-F	44.7 megapixel color camera - F mount
SP-45000C-CXP4-M42	44.7 megapixel color camera - M42 mount

<sup>†</sup>12-bit output only available in video processing bypass mode. See manual for details.

\*Traditional SNR is based on random noise in a single frame, where EMVA SNR measurements consider more comprehensive noise sources and variance over time.

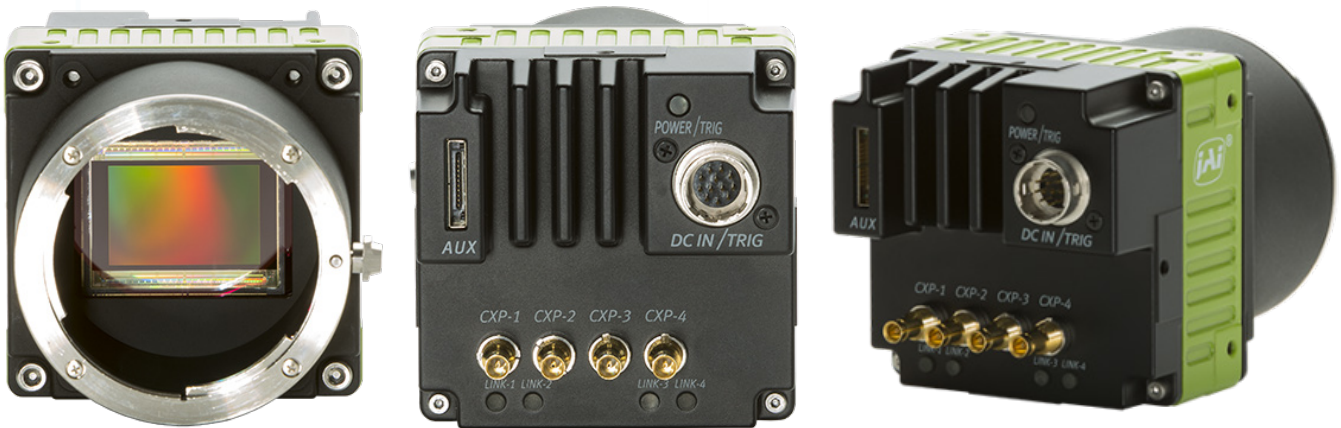


## Product Highlights

- High resolution 44.7 megapixel CMOS image sensor (global shutter)
- Up to 51 fps at full resolution (8192 x 5460)
- Capable of 65 fps at 8K resolution (8192 x 4320)
- Super 35mm format (31.5 mm diagonal) with 3.2  $\mu\text{m}$  square pixels
- Built-in functions for HDR (High Dynamic Range), frame integration and more
- Horizontal / vertical image flip function
- Lens control function utilizing Birger Mount and RS-232C lens control commands
- Excellent shock and vibration resistance
- 8/10/12/14-bit\* output over 4-channel, GenICam-compliant CoaXPress 2.0 interface
- Can share processing across multiple PCs with the CXP link sharing function
- F-mount or M42 lens mount options

\* Not all processing functions supported with 12-bit output. 14-bit output for HDR and frame integration modes only.

## Additional Product Images



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