

3.3.4.1 190-1100nm Cameras

3.3.4.1.1 USB Silicon High Resolution CMOS Cameras

SP932U

Features

- Specially optimized for NIR and Nd:YAG focused lasers below 100µm via “Blooming Correction” algorithm
- 72dB true dynamic resolution, high bitrate

SP204S

Features

- Highest resolution and accuracy measurement of focused and collimated laser beams
- Frame rate, up to 37fps at full resolution
- Highest quantum efficiency

SP932U



SP204S



Model	SP932U	SP204S
Format	1/1.8"	1/1.8"
Wavelengths ⁽¹⁾	190-1100nm	190-1100nm
Active area	7.06mm x 5.3mm	6.7mm x 5.6mm
Beam sizes ⁽²⁾	34.5µm - 5.3mm	27.4µm - 5.6mm
Pixel spacing	3.45µm x 3.45µm	2.74µm x 2.74µm
Number of effective pixels	2048 x 1536	2472 x 2064
Dynamic range	72 dB	67 dB
Linearity with power	±1%	±1%
Accuracy of beam width ⁽³⁾	±2%	±2%
Frame rates in 12 bit mode ⁽⁴⁾	24 fps at full resolution	37 fps
Exposure Time	25µs to 400ms	10µs - 400ms
Gain control	1.46 dB to 256 dB	1.4 dB to 256 dB
Trigger	Hardware/Software Trigger & Strobe Out	Hardware/Software Trigger & Strobe Out
Photodiode trigger (Optional) ⁽⁵⁾	Si response: SP90408	Si response: SP90408
Lowest measurable signal ⁽⁶⁾	0.2nW/cm² at 633nm	0.35nW/cm² at 530nm
Damage threshold ⁽⁷⁾	50W/cm² / 1J/cm² for < 100ns pulse width	50W/cm² / 1J/cm² for < 100ns pulse width
Ambient operating temperature ⁽⁸⁾	10° C - 40° C	10° C - 40° C
Dimensions	45 mm x 45 mm x 22.5 mm	45mm x 45mm x 22.5mm
Imager recess	4.5±0.11mm	4.5mm ±0.11mm
Operation mode	CMOS, Global shutter	CMOS, Global Shutter
PC interface	USB 3.1	USB 3.0
OS supported	Windows 10 (64) and Windows 11	Windows 10 (64) and Windows 11
Compliance	CE, UKCA, China RoHS	CE, UKCA, China RoHS
Ordering Information		
Supported software	Item	P/N
BeamGage Professional	BGP-USB3-SP932U	SP90607 ⁽⁹⁾
BeamGage Standard	BGS-USB3-SP932U	SP90606 ⁽⁹⁾
	Item	P/N
	BGP-USB3-SP204S	SP90648 ⁽¹⁰⁾
	BGS-USB3-SP204S	SP90647 ⁽¹⁰⁾

Notes: (1) Wavelength is typically specified down to 190nm, however the camera's natural response is from 300nm through 1100nm. To measure effectively below 300nm a UV converter is recommended, otherwise the measurement accuracy may degrade and long-term intensive irradiation at UV wavelengths may cause permanent damage to the imager.
(2) The maximal beam size refers to “Flat-top” laser beams. For Gaussian beams, reduce maximum beam size by 1/3.
(3) For SP204S camera, at NIR wavelengths above 900 nm and beam width below 100 µm, the accuracy would be lower.
(4) Dependent on PC processor and graphics card performance.
(5) For more information please see “Optical Camera Trigger” catalog page.
(6) Camera set to full resolution at maximum frame, 400ms exposure time and without any ND filter.
(7) This is the damage threshold of the filter glass. Assuming all filters are mounted with ND1 (red housing) filter in the front. Distortion of the beam may occur with average power densities of 5W/cm² for beam size 5mm, 10W/cm² for 2mm beam, and >30W/cm² for 1mm beam.
(8) The storage Temp is -30°C to 70°C and Operation Humidity is 5% to 90% (non-condensing).
(9) Comes with USB 3.0 cable, Trigger cable and 3 ND filters.
(10) Comes with USB 3.0 cables 0.5 & 3m, Trigger cable and 3 ND filters.

SP932U/SP204S

