

3.3.4.1 190-1100nm Cameras

3.3.4.1.1 USB Silicon High Resolution CMOS Camera

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



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/cm ² at 633nm	0.35nW/cm ² at 530nm		
Damage threshold ⁽⁷⁾	50W/cm ² / 1J/cm ² for < 100ns pulse width	50W/cm ² / 1J/cm ² 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	Item	P/N
BeamGage Professional	BGP-USB3-SP932U	SP90607 ⁽⁹⁾	BGP-USB3-SP204S	SP90648 ⁽¹⁰⁾
BeamGage Standard	BGS-USB3-SP932U	SP90606 ⁽⁹⁾	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

