3.3.4.2.1 Phosphor Coated CMOS For NIR Response Cameras

Features

- 1440-1605nm Wavelengths
- NIR Telecom mode field analysis
- NIR Laser beam analysis

Available Models

- Medium: SP203P
- Large Format: SP403P

SP203P

SP403P

Model	SP203P		SP403P	
Application	SWIR wavelengths, 1/1.8" format		SWIR wavelengths, 1.1" format	
Wavelengths	1440 - 1605nm		1440 - 1605nm	
Active area	7.06mm x 5.3mm		12.3mm x 12.3mm	
Beam sizes (1)	600µm - 5.3mm		600µm - 12.3mm	
Pixel spacing (2)	3.45µm x 3.45µm		2.74µm X 2.74µm	
Number of effective pixels	2048 x 1536		4512 x 4512	
Dynamic range (3)	~32 dB		~32 dB	
Linearity with power	±5%		±5%	
Accuracy of beam width	±5%		±5%	
Frame rates in 12 bit mode (4)	24 fps at full resolution		11 fps (12 bit mode)	
Exposure	25µs - 400ms		10µs – 400ms	
Gain control	1.4 dB to 256 dB		1.4 dB to 256 dB	
Trigger	Supports both trigger and strobe out		Supports both trigger and strobe out	
Photodiode trigger (Optional) (5)	InGaAs response: SP90409		InGaAs response: SP90409	
Saturation intensity	200mW/cm² at 1550nm For exposure time of 1 ms		60mW/cm² at 1520nm For exposure time of 1 ms	
Lowest measurable signal	0.5µW/cm² at 1550nm For exposure time of 400 ms		30µW/cm² at 1520nm For exposure time of 100 ms	
Damage threshold	50W/cm² / 1J/cm² with all filters installed for < 100ns pulse width (6)			
Ambient operating temperature	10°C to 40°C		10° C - 40° C	
Dimensions	45mm x 45mm x 22.5mm		45mm x 45mm x 22.5mm	
Imager recess	4.5mm ±0.11mm		4.5mm	
Operation mode	CMOS, Global Shutter		CMOS, Global Shutter	
PC interface	USB 3.0		USB 3.0	
OS supported	Windows 10 (64) and Windows 11			
Compliance	CE, UKCA, China RoHS			
Ordering Information				
Supported software	Item	P/N	Item	P/N
BeamGage Professional (7)	BGP-USB3-SP203P	**SP90637**	BGP-USB3-SP403P	**SP90658**
BeamGage Standard (7)	BGS-USB3-SP203P	**SP90636**	BGS-USB3-SP403P	**SP90657**

Notes:
(1) The maximal beam size refers to "Flat-top" laser beams. For Gaussian beams, reduce maximum beam size by 1/3. Below beam sizes of 1.5 mm, the measurement error increases due to the broadening created by the thickness of the phosphor layer.
(2) Despite the small pixel size, the spatial resolution will not exceed 50µm due to diffusion of the light by the phosphor coating.
(3) Signal to noise ratio is degraded due to the gamma of the phosphor's response. Averaging or summing of up to 256 frames improves dynamic range by up to 16x = +24 dB.
(4) In normal (non-shuttered) camera operation, the frame rate is the fastest rate at which the laser may pulse and the camera can still separate one pulse from the next. With electronic shutter operation, higher rate laser pulses can be split out by matching the laser repetition to the shutter speed.
(5) For more information please see "Optical Camera Trigger" catalog page.
(6) This is the damage threshold of the filter glass of the filters. Assuming all filters 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.
(7) Comes with USB 3.0 cable, Trigger cable and 3 ND filters.

SP203P/SP403P