

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/cm ² at 1550nm For exposure time of 1 ms	60mW/cm ² at 1520nm For exposure time of 1 ms
Lowest measurable signal	0.5µW/cm ² at 1550nm For exposure time of 400 ms	30µW/cm ² at 1520nm For exposure time of 100 ms
Damage threshold	50W/cm ² / 1J/cm ² 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

