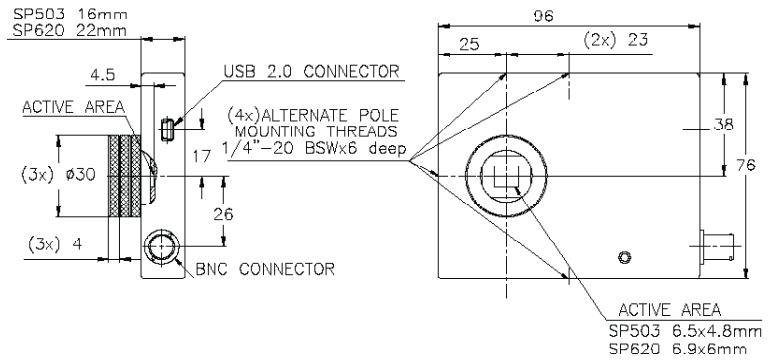


USB Silicon CCD Cameras

SP Series



Built in photodiode trigger

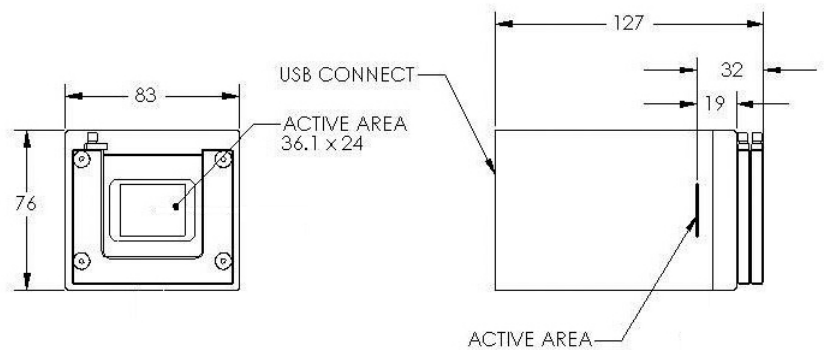
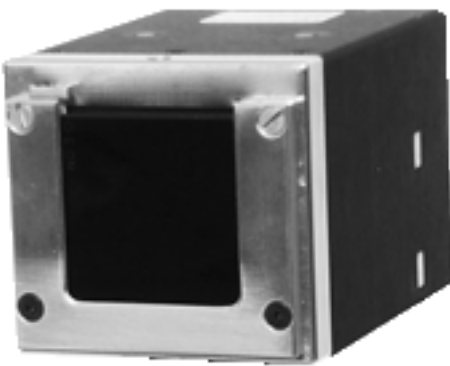


SP503U, SP620U

Features

- USB 2.0 compatible
- 64dB true system dynamic range - highest in the industry
- Programmable high speed electronic shutter
- Choice of LBA, BeamStar or BeamGage software for sophisticated measurements
- Spectral range: 190 - 1300nm
- Gain adjustable to accommodate a wide range of input levels
- Unique built in optical trigger synchronizes with even the shortest laser pulses.
- Slim profile and multiple mounting options
- Available with BeamGage, LBA and BeamStar software

L-Series



USB L11058

Features

- 35mm format for large beams
- 59dB true system dynamic range
- Spectral range: 190 - 1300nm
- Available only with BeamGage and LBA software

USB Cameras for use with Laptop or Desktop PC

Item	Specification		
Camera	SP503U	SP620U	USB L11058
Application:	½" format, slim profile, wide dynamic range, CW & pulsed lasers, adjustable ROI	1/1.8" format, high resolution, wide dynamic range, pulsed lasers, CW YAG, adjustable ROI	36mm x 24mm, 35mm format for large beams, CW YAG, Adjustable ROI
Spectral Response:	190 – 1320nm ⁽²⁾	190 – 1320nm ⁽²⁾	190 – 1100nm ⁽²⁾
Maximum beam size:	6.3mm W x 4.7mm H	7.1mm W x 5.4mm H	20mm W x 13.5mm H
Pixel spacing:	9.9µm x 9.9µm	4.40µm x 4.40µm	9.0µm x 9.0µm
Number of effective pixels:	640 x 480	1600 x 1200	4008 x 2672
Minimum system dynamic range:	64 dB	62 dB	59dB
Linearity with Power:	±1%	±1%	±1%
Accuracy of beam width:	±2%		
Frame rates:	50 fps at full resolution	7.5 fps at full resolution	3.1 fps at full resolution
In 12 bit mode:	80 fps at 320x240	28 fps at 640x480	higher rates with binning and smaller region of interest
Shutter duration:	30us to multiple frame times		10us to multiple frame times
Gain control	43:1 automatic or manual control	29:1 automatic or manual control	14:1 manual control LBA only
Trigger:	Various options below allow synchronization with laser pulses at up to 1KHz repetition rates ⁽⁴⁾ . LED on camera indicates triggering. Built in pre-trigger allows synchronization to even sub-nanosecond pulses. The various trigger input options are given below: 1. Built in optical trigger on camera face unique to Spiricon SP cameras. Will synchronize with laser pulse energies >10µJ under most conditions ⁽⁵⁾ . 2. BNC connector accepts positive or negative voltage trigger. Same connector can provide trigger out to synch laser. Supports programmable delay on Strobe Out. 3. Optional external photodiode trigger connects to cable and BNC input of camera for cases where optical signal does not reach built in optical trigger – see below.		Supports both Trigger In and Strobe Out.
Photodiode trigger:	Optional photodiode trigger available: P/N SPZ17005		N/A
Saturation intensity ⁽¹⁾ :	1.3µW/cm ² 2.2µW/cm ²	2.2µW/cm ²	0.15µW/cm ²
Lowest measurable signal ⁽¹⁾ :	0.5nW/cm ²	2.5nW/cm ²	0.17nW/cm ²
Damage threshold:	50W/cm ² / 0.1J/cm ² with all filters installed for <100ns pulse width ⁽³⁾		0.15mW/cm ²
Dimensions and CCD recess:	96mm x 76mm x 16mm CCD recess: 4.5mm below surface	96mm x 76mm x 23mm CCD recess: 4.5mm below surface	83mm x 76mm x 128mm CCD recess: 18.8mm below bezel, 31.75 from ND filter holder
Image quality at 1064nm:	Pulsed with trigger synch – excellent Pulsed with video trigger – good CW – poor	Pulsed with trigger synch – excellent Pulsed with video trigger – good CW – good	Pulsed with trigger synch – excellent Pulsed with video trigger – good CW – good
Operation mode:	Interline transfer progressive scan CCD		
Software supported:	BeamGage, LBA and BeamStar		BeamGage and LBA
PC interface:	USB 2.0		
Minimum host system requirements:	Pentium IV 1GHz (Dual-core & >2GHz for best performance), 1GB Memory, USB2, Operating system: Windows XP Pro, Vista-32		

- (1) Camera set to full resolution at maximum frame rate and equivalent exposure times, running CW at 632.8nm wavelength. Camera set to minimum useful gain for saturation test and maximum useful gain for lowest signal test.
- (2) May be useable for wavelengths below 350nm but sensitivity is low and detector deterioration may occur. Therefore UV image converter is recommended. For operation at 1300nm sensitivity is low and short wavelength blocking filter SPZ08242 is recommended.
- (3) 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 as low as 5W/cm²
- (4) Built in photodiode can synch up to 1000Hz. External photodiode to 500Hz.
- (5) This corresponds to an energy of about 10nJ impinging on the photodiode itself.