pco.panda series
product overview

ultra compact
sCMOS
cameras

pco.
panda
back illuminated
sCMOS

pco.
panda
sCMOS

pco.

An Excelitas Technologies Brand

pco.panda series

The pco.panda series represents the compact cameras within PCO's scientific CMOS (sCMOS) camera product portfolio. The camera housing comprises an optimized passive thermal management enabling the high performance of sCMOS image sensors in smallest form factor. The camera is the ideal and cost-effective choice for various scientific and industrial applications. pco.panda cameras are available with versatile optional features like low light mode, lightsheet scanning mode, or double shutter technology which even increase the cameras' performance for dedicated applications.

technical table	**pco.**panda 26	**pco.**panda 26 DS
interface	USB 3.1 Gen 1	USB 3.1 Gen 1
sensor technology	sCMOS	sCMOS
color type	monochrome or color	monochrome
resolution [pixel]	5120 x 5120	5120 x 5120
sensor diagonal [mm]	18.1	18.1
pixel size [μm]	2.5 x 2.5	2.5 x 2.5
max. frame rate @ full resolution [fps]	6	6 (single shutter mode) 1 (double shutter mode)
max. pixel rate [MPixel/s]	187	187
peak QE	65 % @ 500 nm[1]	65 % @ 500 nm
typ. read noise[2] [e−]	2.3	2.3
max. dynamic range	2000 : 1	2000 : 1
shutter type[3]	GS	GS
sensor cooling	passive	passive
additional options[4]	–	double shutter with 1 μs interframing time
dimensions H x W x L [mm]	65 x 65 x 72	65 x 65 x 72
camera housing		

Top feature – Double shutter technology

The outstanding global shutter capabilities of the pco.panda 26 sCMOS sensor make it a perfect candidate for effective double imaging – a prerequisite to perform all types of Particle Image Velocimetry measurements in flow analysis. In PIV, light scattering particles are added to the flow under test. A laser beam is formed into a light sheet, illuminating the scattering particles twice with a short pulse at a time interval Δt. The lower limit for this time interval is defined by the double shutter interframing time of the camera. The scattered light is recorded onto two consecutive frames of a high resolution digital camera. The shorter the double shutter interframing time, the higher the flow speeds which can be analyzed.
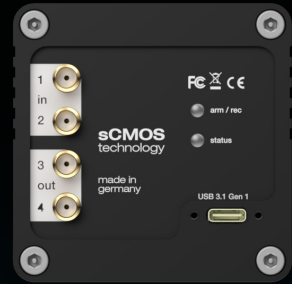
technical table	**pco.**panda 4.2	**pco.**panda 4.2 bi	**pco.**panda 4.2 bi UV
interface	USB 3.1 Gen 1	USB 3.1 Gen 1	
sensor technology	sCMOS	back–illuminated sCMOS	
color type	monochrome or color	monochrome	
resolution [pixel]	2048 x 2048	2048 x 2048	
sensor diagonal [mm]	18.8	18.8	
pixel size [μm]	6.5 x 6.5	6.5 x 6.5	
max. frame rate @ full resolution [fps]	40	40	
max. pixel rate [MPixel/s]	176	184	
peak QE	80 % @ 600 nm[1]	92 % @ 550 nm	90 % @ 550 nm 46 % @ 240 nm
typ. read noise[2] [e−]	2.1	1.8	
max. dynamic range	21,400 : 1	26,667 : 1	
shutter type[3]	RS	RS	
sensor cooling	passive	passive	
additional options[4]	lightsheet scanning mode	lightsheet scanning mode, low light mode	
dimensions H x W x L [mm]	65 x 65 x 66	65 x 65 x 66	
camera housing			

[1] monochrome version
[2] The readout noise values are given as median (med). All values are raw data without any filtering.
[3] RS = Rolling Shutter | GS = Global Shutter
[4] Selectable via software.

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