

pco.ultraviolet

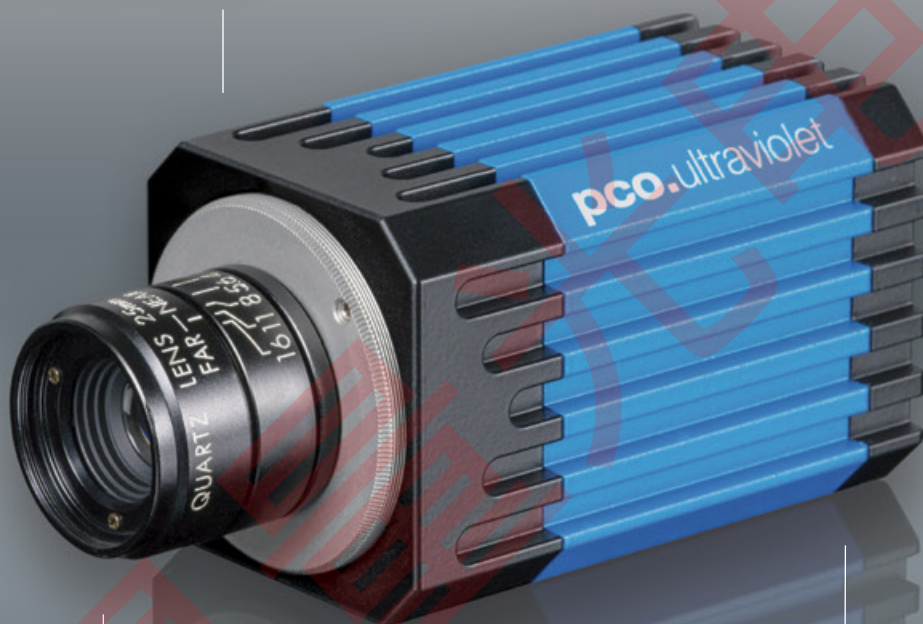
digital 14 bit CCD camera

low noise

8 electrons

resolution

1.4 megapixel



housing

ultra compact design

UV quantum efficiency

40%

scientific application

superior flat field

technical data

image sensor

image sensor	interline CCD
resolution (h x v)	1392 x 1040 pixel (normal) 800 x 600 (center ROI)
pixel size (h x v)	4.65 μm x 4.65 μm
sensor format / diagonal	1/2" / 8 mm
shutter mode	global (snapshot)
MTF	107 lp/mm (theoretical)
fullwell capacity	14 000 e ⁻ 24 000 e ⁻ (binning)
readout noise	7 .. 9 e ⁻ rms ¹
dynamic range	1 750 : 1 (65 dB) 3 000 : 1 (69.5 dB) binning
quantum efficiency	40 % @ 193 nm
spectral range	190 nm .. 1100 nm
dark current	2 e ⁻ /pixel/s @ 25 °C ²
DSNU ³	3 e ⁻ rms
PRNU ⁴	< 1 %

camera

max. frame rate	7.3 fps (12 MHz, normal) 11.7 fps (12 MHz, center)
exposure/shutter time	1 μs .. 60 s
dynamic range A/D	14 bit
A/D conversion factor	0.8 e ⁻ /count 1.4 e ⁻ /count (binning)
pixel scan rate	12 MHz
binning (hor x ver)	1 x 1 .. 4 x 4
non linearity	< 1 %
smear	< 0.005 %
anti-blooming factor	> 200 (standard 100 ms exposure)
interframing time ⁵	< 1 μs
trigger input signals	software / TTL level
trigger output signals	3.3 V LVTTTL level
data interface	USB 2.0

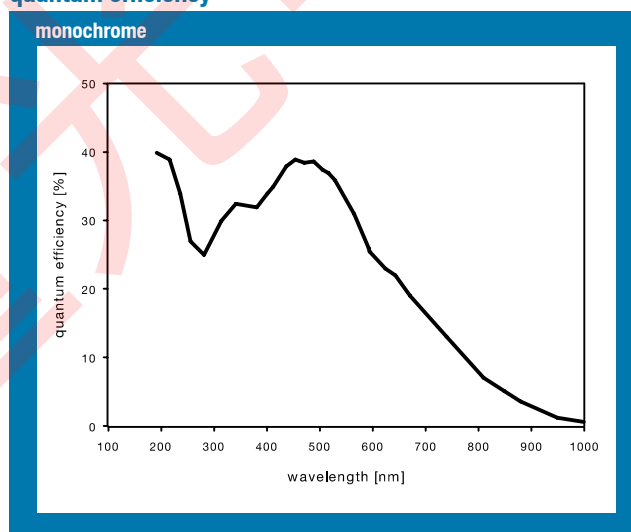
general

power supply	9 .. 28 VDC (12 VDC typ.)
power consumption	< 3 W
weight	0.35 kg
operating temperature	+ 10 °C .. + 35 °C
operating humidity range	10 % .. 80 % (non-condensing)
storage temperature range	- 20 °C .. + 70 °C
optical interface	C-mount
CE certified	yes

frame rate table

resolution	normal	center
1392 x 1040	7.3 fps	
800 x 600		11.7 fps
v2 binning	14.7 fps	21.8 fps
v4 binning	27.0 fps	35.7 fps

quantum efficiency



¹ for operating environment up to 27°C

² temperature of CCD sensor element

³ dark signal non-uniformity measured in a 90% center zone of the image sensor

⁴ photo response non-uniformity

⁵ time between two consecutive images for particle image velocimetry (PIV) applications

technical data

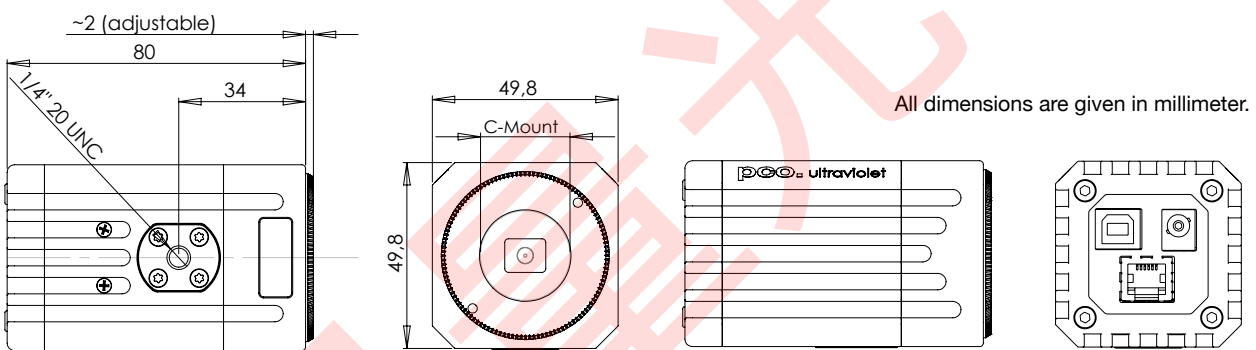
software

For camera control, image acquisition and archiving of images in various file formats PCO provides the software application Camware (Windows XP, 7 and 8).

A camera SDK (software development kit) including a 32 / 64 bit dynamic link library for user customization and integration on PC platforms is available for free.

For a list of third party software supported, please visit www.pco.de

dimensions



camera views

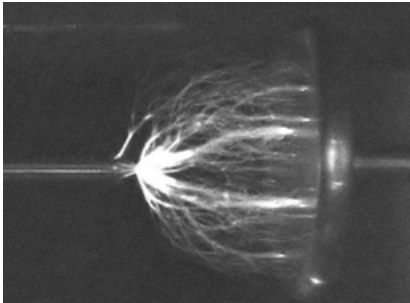


Further information can be found on www.pco.de



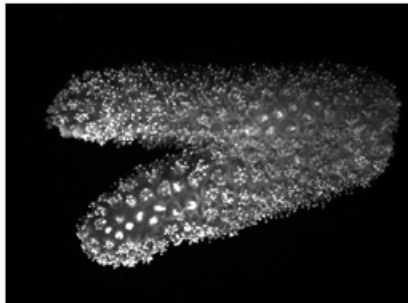
applications

high voltage technology



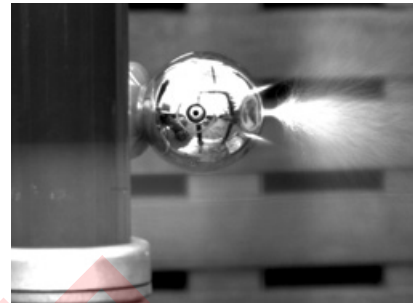
High voltage discharge between gas insulated (SF6 gas) conduits. With friendly permission of: Laboratory of High Voltage Engineering and Switchgear Technology, Technische Universität München, Munich, Germany www.hsa.ei.tum.de

life science



UV light excited fluorescent symbionts zooxanthellae in Stylophera corals

high voltage technology



Corona discharge in air at the terminal of a transformer at 163 kV. With friendly permission of: Laboratory of High Voltage Engineering and Switchgear Technology, Technische Universität München, Munich, Germany www.hsa.ei.tum.de

application areas

■ uv detection ■ hyper spectral imaging ■ wafer inspection ■ mask inspection ■ scientific imaging ■ low light level imaging ■ combustion imaging ■ high resolution microscopy ■ machine vision ■ industrial applications ■ spectroscopy ■ industrial oem applications ■ material testing ■ luminescence spectroscopy

europa

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