data sheet
pco.edge 26 DS CLHS

high resolution double shutter camera

DS double shutter

resolution
26 MPixel

pixel size
2.5 µm x 2.5 µm

interface
CLHS FOL

1288
EMVA Standard Compliant

double shutter
interframing time 350 ns

excellent frame rate
149 fps @ 26 MPixel

high resolution
5120 x 5120 pixel

low readout noise
3.4 $e^-_{(rms)}$

small pixel size of
2.5 µm x 2.5 µm
ideal for low magnifications

temperature-stabilized
image sensor

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technical data

image sensor	
sensor technology	scientific CMOS (sCMOS)
color type	monochrome
resolution (horizontal x vertical)	5120 pixel x 5120 pixel
pixel size (horizontal x vertical)	2.5 µm x 2.5 µm
sensor size (horizontal x vertical)	12.8 mm x 12.8 mm
sensor diagonal	18.1 mm
shutter type	global / snapshot shutter (GS)[1], double shutter (DS)
modulation transfer function (theoretical max.)	200.0 lp/mm
fullwell capacity	4.000 e^-
readout noise (typ.)[1]	3.4 e^- rms
dynamic range (typ.)	61.4 dB
peak quantum efficiency	65 % @ 500 nm
spectral range	320 nm - 1000 nm
dark current	0.4 e^- /pixel/s @ +15 °C sensor temperature

[1] true charge domain global shutter

frame rate table		
vertical resolution reduction	**frame rate**	
	single shutter	**double shutter**
5120 x 5120	149 fps	74 fps
5120 x 1024	743 fps	372 fps
5120 x 512	1475 fps	740 fps
5120 x 256	2907 fps	1464 fps
5120 x 128	5644 fps	2863 fps

typical resolutions

	single shutter	double shutter
1920 x 1080	705 fps	353 fps
1600 x 1200	635 fps	318 fps
1280 x 1024	743 fps	372 fps
640 x 480	1572 fps	789 fps
320 x 240	3095 fps	1559 fps

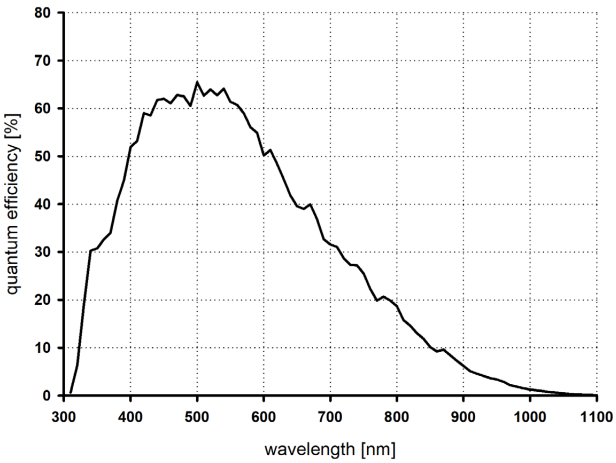
camera	
max. frame rate @ full resolution	149 fps / 74 fps[2]
double shutter interframing time	350 ns
exposure time range	6 µs - 60 s
dynamic range A/D	10 bit
conversion factor[3]	0.24 e^-/DN
pixel rate	3.93 GPixel/s
region of interest (ROI)	horizontal: steps of 32 pixel vertical: steps of 4 pixel
binning[4]	horizontal: x2, x4 vertical: x2, x4
non-linearity	< 0.34 %
dark signal non-uniformity (DSNU)	< 0.9 e^- rms
photo response non-uniformity (PRNU)	< 0.7 %
cooling temperature image sensor	+15 °C stabilized (calibration setpoint)
cooling method	adjustable: from 0 °C to +25 °C peltier with forced air (fan) and water cooling
trigger input signals	frame trigger, sequence trigger (tbd), programmable input
trigger output signals	exposure, busy, programmable output
input / output signal interface	SMA connectors
time stamp	in image (1 µs resolution)
data interface	Camera Link HS FOL

[2] Double shutter mode.

[3] According to EMVA1288 the conversion factor equals the inverse of the system gain and can be operational mode dependent.

[4] Optional sum / average.

quantum efficiency



The pco.scheimpflug camera adapter allows to easily adjust the plane of focus in your imaging system. By tilting the lens relative to the image sensor, this set-up alters the angle of the focal plane, enabling to achieve selective focus and improved sharpness across three-dimensional objects in a single image.

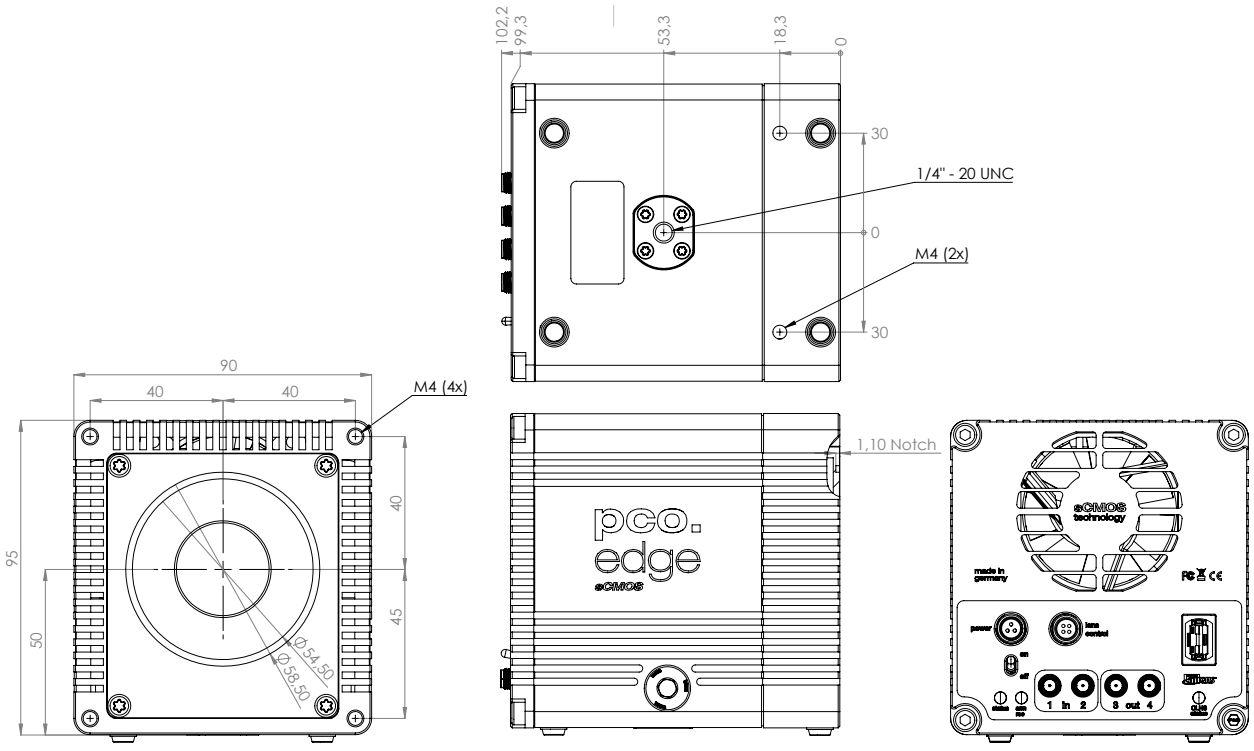
left: quantum efficiency image sensor;
right: camera rear view with scheimpflug-adapter

general	
power supply	24 VDC (±10 %)
power consumption	26 W (typ.)
weight	970 g
dimensions (height x width x length)	95 mm x 90 mm x 109 mm
operating temperature range	+10 °C to +40 °C
operating humidity range	10 % to 80 % (non-condensing)
storage temperature range	-10 °C to +60 °C
relative humidity range (non-condensing)	10 % to 80 % (recommended: < 65 %)
CE / FCC certified	yes

optical interface	
direct mounting	6.2 mm ± 10 %
lens mounting	C-Mount
optional lens mounting	F-Mount, TFL-Mount
optional lens remote controller	EF-Mount, EF-S-Mount (Canon)

Configure your optical setup with our **MachVis Lens Selector** online tool.

dimensions



Outlines of pco.edge 26 DS CLHS (all dimensions given in mm).

software

Our main camera control software pco.camware is the first choice to get started with your camera. It enables full control of all camera settings and makes image acquisition and storage very easy. Using different layouts, stiles and features you can customize it exactly to your needs.

You are using a different software:
PCO cameras are also integrated in a variety of software applications. Check our homepage to find a list of all applications that support PCO cameras.

You want to create your own application for the camera:
We offer a wide range of Software Development Kits (SDK) for different programming languages, both for windows and linux. Our pco.sdk, pco.recorder and high-level SDK are designed for C/C++ apps. With pco.python, pco.matlab, pco.labview and pco.java you can control the camera in your C#, python, matlab, labview and java applications, respectively.

Your use case is in the field of microscopy:
PCO cameras are also integrated in µManager.

areas of application

particle image velocimetry (PIV) | particle tracking velocimetry (PTV) | spray analysis | wind tunnels | hydrodynamics | fuel injection | ballistics | combustion analysis | flow visualization

ordering information

pco.edge 26 DS CLHS	camera system, monochrome, 5120 x 5120 pixel, air & water cooled, double shutter mode, CLHS FOL

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