

data sheet

pc_o. pixelfly™ 1.3 SWIR

versatile VIS - **SWIR** camera

SWIR shortwave
infrared

resolution

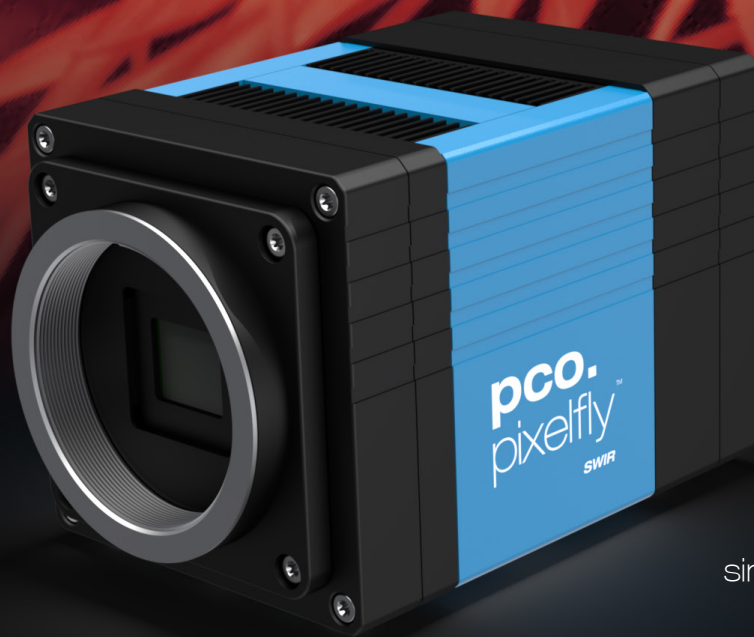
1.3 MPixel

pixel size

5.0 µm x 5.0 µm

interface

USB 3.1 Gen 1



InGaAs image sensor
technology

single cable solution

VIS & SWIR sensitivity
350 nm to 1700 nm

max. frame rate
72 fps @ 1.3 MPixel

small pixel size
5 µm x 5 µm

enduring performance
through TEC stabilization

technical data

image sensor

sensor technology	InGaAs
color type	monochrome
resolution (horizontal x vertical)	1280 pixel x 1024 pixel
pixel size (horizontal x vertical)	5.0 μm x 5.0 μm
sensor size (horizontal x vertical)	6.4 mm x 5.1 mm
sensor diagonal	8.2 mm
shutter type	global shutter
modulation transfer function (theoretical max.)	100.0 lp/mm
fullwell capacity	155.700 e^-
readout noise (typ.)	210 e^- rms
dynamic range (intra-scene)	680 : 1 (57.0 dB)
peak quantum efficiency	90 % @ 1200 nm
spectral range	350 nm - 1700 nm
dark current	2000 e^- /pixel/s @ +5 °C sensor temperature

frame rate table

vertical resolution reduction ¹	frame rate
1280 x 1024	72 fps
1280 x 512	139 fps
1280 x 256	259 fps
1280 x 128	457 fps
1280 x 16	1373 fps

¹ For ROIs smaller than the maximum resolution, values are theoretical and may deviate.



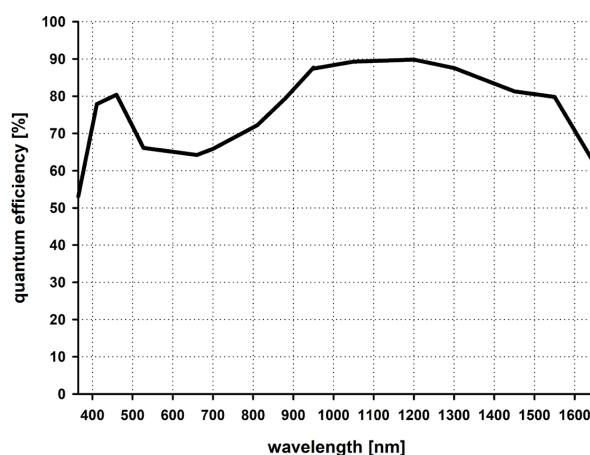
Illustration of the pco.pixelfly™ 1.3 SWIR camera (side and rear view).

camera

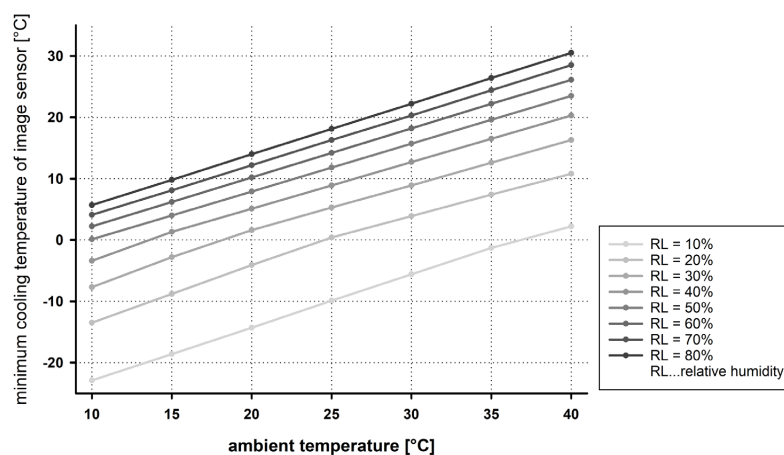
max. frame rate @ full resolution	72 fps
exposure time range	20 μ s - 30 s
dynamic range A/D	12 bit
conversion factor ¹	41 e ⁻ /DN
pixel rate	93 MPixel/s
region of interest (ROI)	horizontal: steps of 8 columns vertical: steps of 4 rows
non-linearity	< 0.5 %
dark signal non-uniformity (DSNU)	< 147 e ⁻ rms
photo response non-uniformity (PRNU)	< 0.9 %
cooling temperature	+18 °C image sensor temperature @ ambient temperature +25 °C and humidity 70 %
cooling method	peltier with forced air, dewpoint regulated
trigger input signals	frame trigger, sequence trigger, programmable input
trigger output signals	exposure, busy, programmable output
input / output signal interface	SMA connectors
time stamp	in image (1 μ s resolution)
data interface	USB 3.1 Gen 1

¹ According to EMVA1288 the conversion factor equals the inverse of the system gain and can be operational mode dependent.

quantum efficiency



temperature image sensor vs. ambient temperature vs. relative humidity



general

power supply	power over USB 3.1 Gen 1
power consumption	typ. 7 W, max. 15 W
weight	680 g
dimensions (height x width x length ¹)	70 mm x 70 mm x 115 mm
operating temperature range	+10 °C to +40 °C
storage temperature range	-10 °C to +60 °C
humidity range (non-condensing)	10 % to 80 % (recommended <65 %)
CE / FCC certified	yes

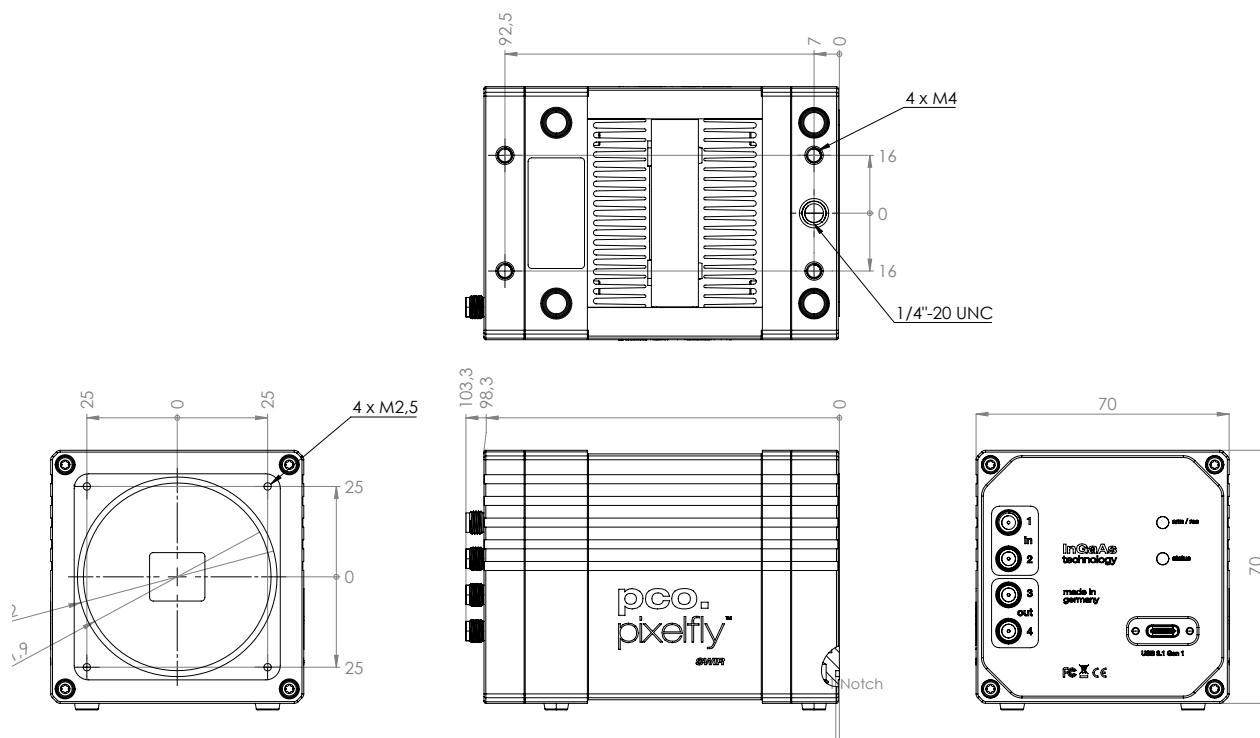
¹ This value refers to the length including the lens mount adapter.

optical interface

direct mounting	5.2 mm ±10 %
lens mounting	C-mount
optional lens mounting	F-mount, TFL-mount

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

dimensions



outlines of pco.pixelfly™ 1.3 SWIR (all dimensions given in mm)

software

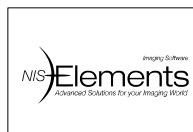
Your first choice is pco.camware:

Our main camera control software enables full control of all camera settings and facilitates image acquisition and storage. You can customize it exactly to your needs using different layouts, styles and features.



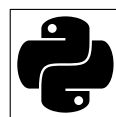
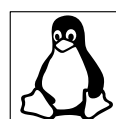
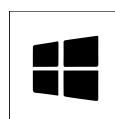
You prefer to use a different software:

PCO cameras are integrated in a variety of software applications.



You want to create your own application:

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.



You are in the field of microscopy:

PCO cameras are integrated in µManager.



areas of application

brightfield microscopy | fluorescence microscopy | structured illumination microscopy (SIM) | high-speed bright-field ratio imaging | industrial quality inspection | wafer inspection | material sorting | intravital microscopy | inspection | material testing | material selection | biometrics | in-vivo microscopy | industrial packaging | waste sorting | semiconductor inspection | food processing quality control

ordering information

pco.pixelfly 1.3 SWIR

85108015110

camera system, mono, 72 fps @ 1280 x 1024 pixel,
USB3.1 Gen1, global shutter

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