datasheet
pco.dimax 3.6 DS ST CLHS

advancement through high-speed streaming

ST high-speed streaming

DS double shutter

resolution
3.6 MPixel

pixel size
11.0 µm x 11.0 µm

interface
CLHS FOL

high-speed imaging
2166 fps @ 3.6 MPixel

real-time streaming
over 8 x 10G fiber

excellent sensitivity
11 µm pixel size

uncompressed 10-bit
data transfer

interframing time of 250 ns

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technical data

image sensor

	low-gain mode	high-gain mode
sensor technology	CMOS	
color type	monochrome	
resolution (horizontal × vertical)	1984 px × 1808 px	
pixel size (horizontal × vertical)	11.0 µm × 11.0 µm	
sensor size (horizontal × vertical)	21.8 mm × 19.8 mm	
sensor diagonal	29.5 mm	
shutter mode	global shutter (GS) double shutter (DS)	
peak quantum efficiency	64 % @ 500 nm	
spectral range	340 nm - 1100 nm	
dark current (typ.)	< 1000 e^- /pixel/s @ +35 °C sensor temperature	< 150 e^- /pixel/s @ +35 °C sensor temperature
fullwell capacity	60 000 e^-	10 000 e^-
readout noise	< 65 e^- rms	< 12 e^- rms
dynamic range (intra-scene)	60 dB	58 dB

frame rate table

vertical resolution reduction

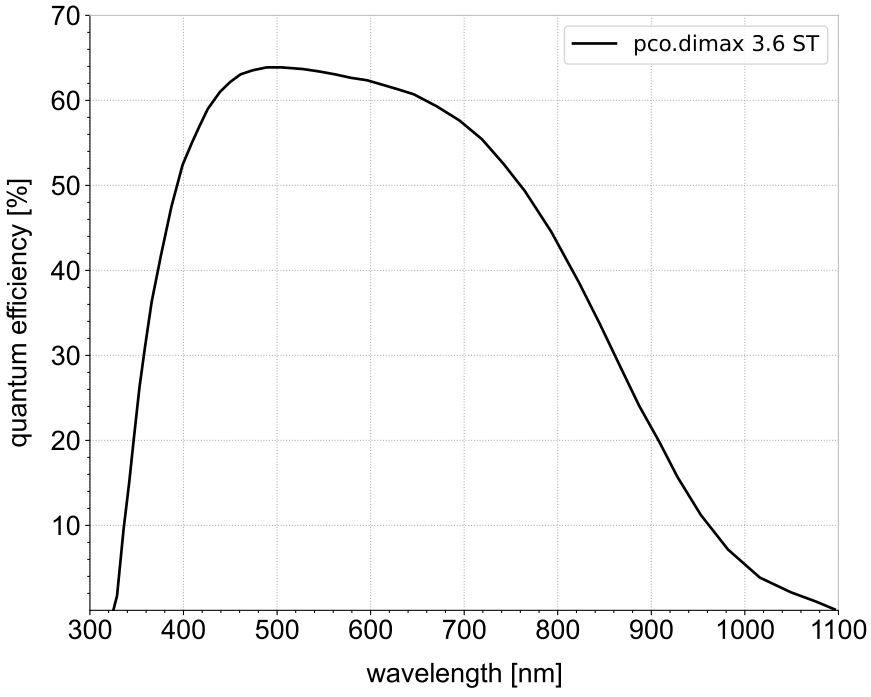
	GS	DS
1984 x 1808	2166 fps	1085 fps
1984 x 1024	3728 fps	1871 fps
1984 x 744	5020 fps	2522 fps
1984 x 512	7042 fps	3545 fps
1984 x 256	12676 fps	6418 fps
1984 x 128	21126 fps	10788 fps
1984 x 64	31690 fps	16356 fps
1984 x 32	42253 fps	22045 fps
1984 x 16	50704 fps	26686 fps
1984 x 8	56338 fps	29826 fps

typical resolutions

	GS	DS
1920 x 1080	3545 fps	1779 fps
1600 x 1200	3209 fps	1609 fps
1280 x 1024	3728 fps	1871 fps
640 x 512	7042 fps	3545 fps
640 x 480	7456 fps	3755 fps
320 x 256	12676 fps	6418 fps
320 x 240	13343 fps	6760 fps

camera	low-gain mode	high-gain mode
max. frame rate @ full resolution	2166 fps	
double shutter interframing time	250 ns	
exposure time range	10.0 µs - 10 ms (step size 2 µs)	
dynamic range A/D	10 bit	
conversion factor	70 e^-/DN	10 e^-/DN
pixel rate	7.8 GPixel/s	
region of interest (ROI)	horizontal: steps of 64 pixels vertical: steps of 8 pixels (symmetrical)	
binning	horizontal: x2 vertical: x2	
non-linearity	< 0.4 %	
dark signal non-uniformity (DSNU)	< 60 e^-	< 20 e^-
photo response non-uniformity (PRNU)	< 0.5 %	
cooling temperature image sensor	+35 °C stabilized	
cooling method	forced air optional: liquid cooling	
trigger input signals	external exposure start, external exposure control, sequence trigger, acquire enable	
status output signals	exposure, busy	
input / output signal connectors	SMA	
time stamp	in image (1 µs resolution) and metadata	
data interface	Camera Link HS FOL	

quantum efficiency



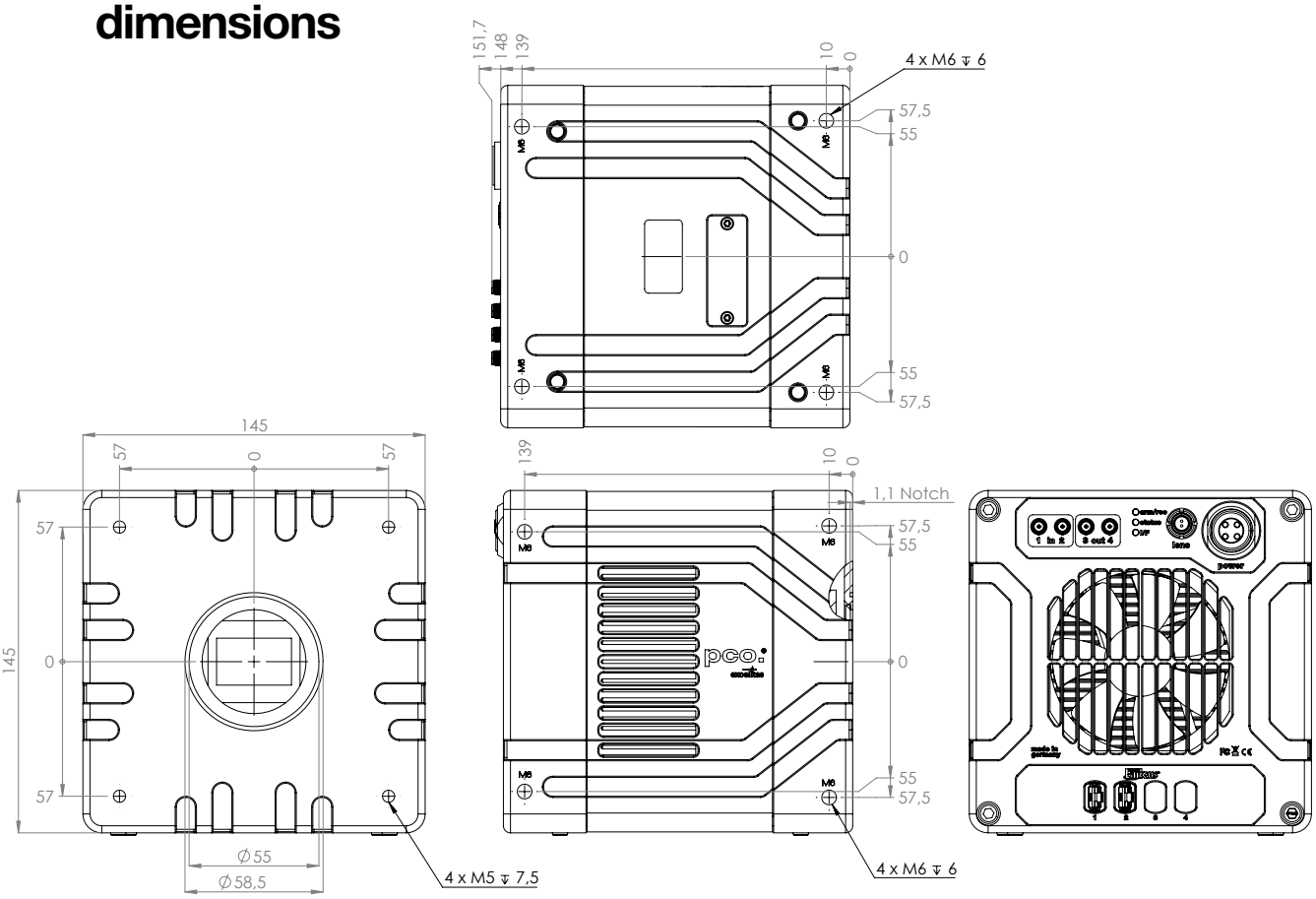
general	
power supply	24 VDC (±10 %)
power consumption	max. 120 W
weight	4.5 kg
dimensions (height × width × length[1])	145 mm × 145 mm × 160 mm
operating temperature range	+10 °C to +30 °C
storage temperature range	-10 °C to +60 °C
humidity range (non-condensing)	10 % to 80 % (recommended < 65 %)
certifications	CE, FCC, UKCA

[1] This value refers to the length including the camera flange.

optical interface	
direct mounting distance (no camera flange)	7.9 mm ±10 %
lens mounting	F-mount, C-mount
optional lens mounting	TFL-mount
optional lens remote control	EF-mount, EF-S-mount (Canon)

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

dimensions



outlines of pco.dimax 3.6 DS ST CLHS air-cooled without camera flange (all dimensions given in mm)

software

Your first choice is pco.camware:

Our main camera control software enables control of most 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:

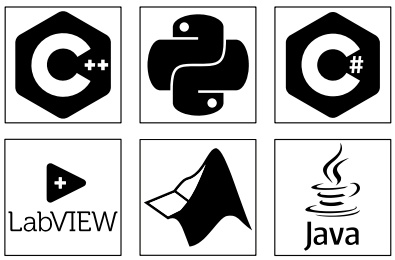
Our cameras integrate with a range of third-party software applications.

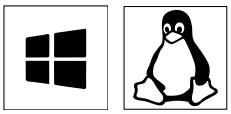
In microscopy we offer dedicated support for µManager, while ensuring compatibility with other software maintained by their providers.

You want to create your own application:

We feature a wide range of software development kits (SDK) for various programming languages, such as C++, Python, C#, LabVIEW, Matlab, and Java.

If you are looking for more general SDKs, we present pco.sdk and pco.recorder, our low-level SDKs with C interface.





Our software is available for Windows and Linux platforms.

Visit our **website** for detailed information, installation guidance, and Github projects.

areas of application

aerospace | astronomy | automotive airbag & component testing | ballistics | combustion analysis | flow visualization | fluid dynamics | fuel injection research | industrial production control and analysis | industrial quality assurance | laser & inert gas welding | material development | particle image velocimetry (PIV) | particle tracking velocimetry (PTV) | pressure-sensitive paint (PSP) | spray analysis | welding technology | wind tunnel studies

ordering information		
pco.dimax 3.6 DS ST AIR	85108025005	camera system, monochrome, 1984x1808 pixel, double shutter feature, air cooling, CLHS, 8x10G fiber optics
pco.dimax 3.6 DS ST WAT	85108025004	camera system, monochrome, 1984x1808 pixel, double shutter feature, liquid cooling, CLHS, 8x10G fiber optics

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