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	2 166 fps	1 085 fps
1984 x 1024	3 728 fps	1 871 fps
1984 x 744	5 020 fps	2 522 fps
1984 x 512	7 042 fps	3 545 fps
1984 x 256	12 676 fps	6 418 fps
1984 x 128	21 126 fps	10 788 fps
1984 x 64	31 690 fps	16 356 fps
1984 x 32	42 253 fps	22 045 fps
1984 x 16	50 704 fps	26 686 fps
1984 x 8	56 338 fps	29 826 fps

typical resolutions

	GS	DS
1920 x 1080	3 545 fps	1 779 fps
1600 x 1200	3 209 fps	1 609 fps
1280 x 1024	3 728 fps	1 871 fps
640 x 512	7 042 fps	3 545 fps
640 x 480	7 456 fps	3 755 fps
320 x 256	12 676 fps	6 418 fps
320 x 240	13 343 fps	6 760 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
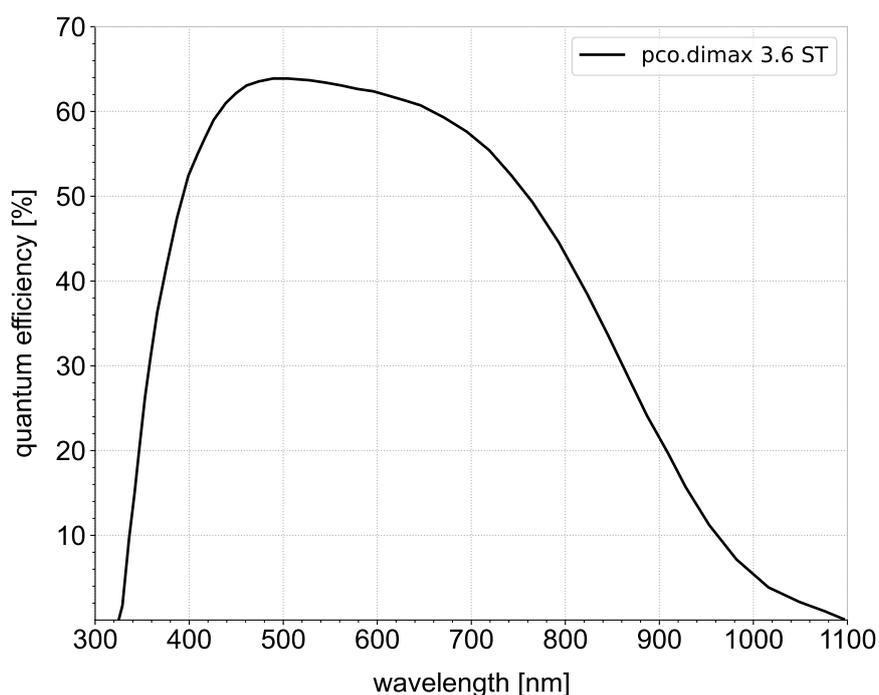
general

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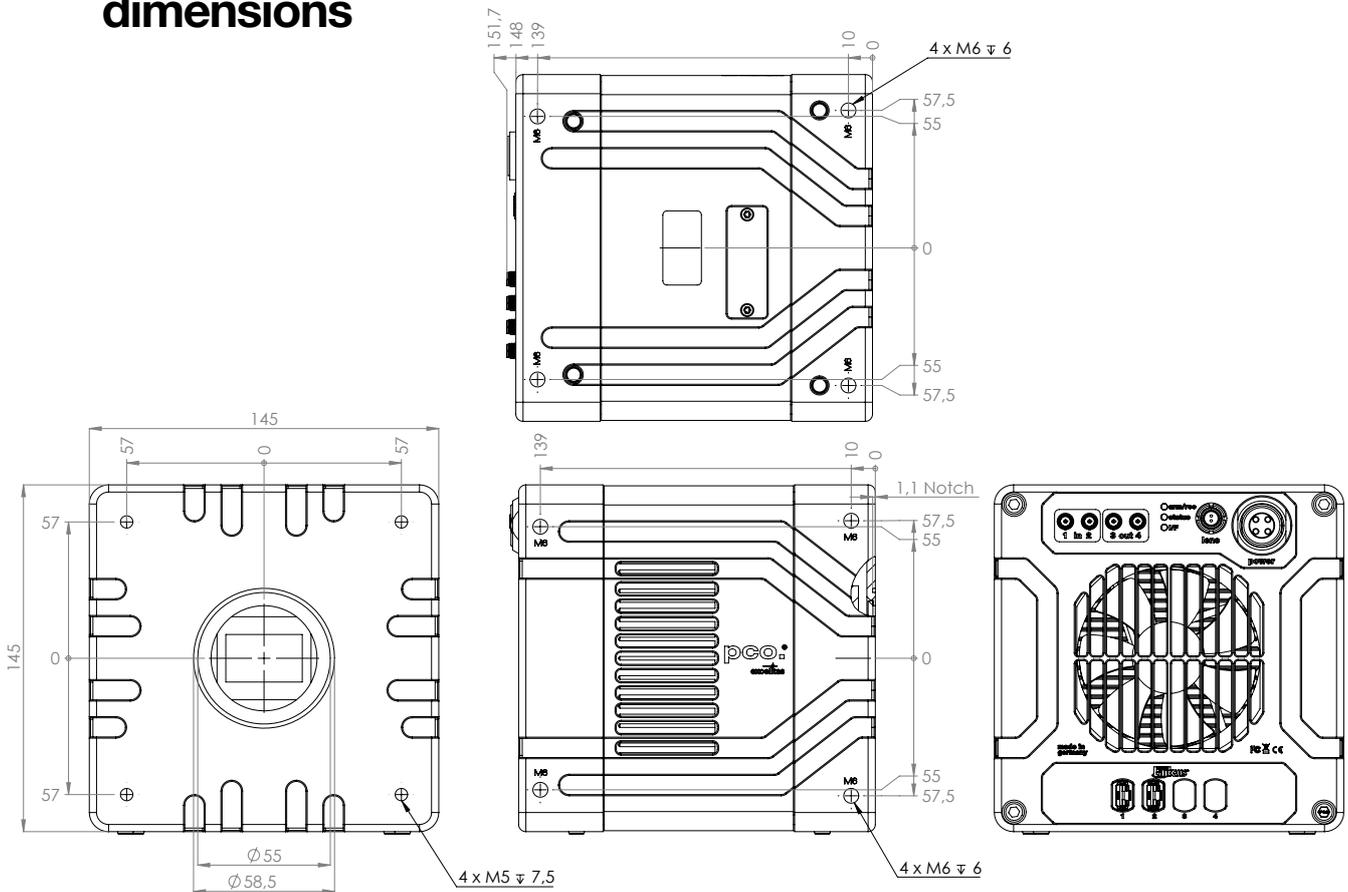
outlines of pco.dimax 3.6 DS ST CLHS air-cooled without camera flange (all dimensions given in mm)

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.
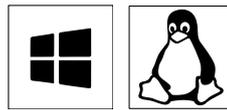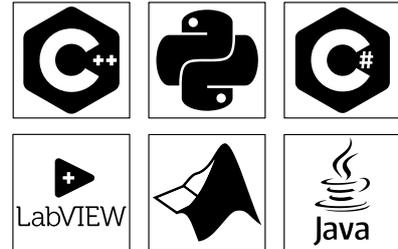
Our software is available for Windows and Linux platforms.

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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