pcodimax family
high-speed cameras

product overview
**High-speed camera series**

**pco.dimax cs1**
- Resolution: 1024 x 1280 pixels
- Frame rate: 600 fps
- Recording time: 1.6 sec

**pco.dimax cs3**
- Resolution: 1920 x 1440 pixels
- Frame rate: 1603 fps
- Recording time: 1.4 sec

**pco.dimax cs4**
- Resolution: 2016 x 2016 pixels
- Frame rate: 2032 fps
- Recording time: 1.4 sec

**Technical specifications**

**Image sensor**
- Pixel size: 8.8 µm x 8.8 µm
- Quantum efficiency: Up to 50%
- Readout noise (typ.): 22 e-
- Dynamic range: 1600 : 1 (64 dB)

**Camera values**
- Sensor noise: 1.5 µs - 40 ms
- Camera memory: 9 GB
- Signal types: RS-485, TTL, Contact closure
- Multi-camera sync: Ext., Sync, PLL, Sync
- Video compression: PFM, PFM, DVI
- Interfacing time (ITM)
- Data interface: Gigabit Ethernet, HD-SDI
- Hop: CDI
- Operating temperature: 0°C - 40°C
- Power delivery: 15 - 48 V DC
- Camera connector: LEMO (18-pin)
- Lens mounts: C-mount, F-mount, EF-mount (optional)
- Weight: 0.985 kg
- Dimensions: 85 x 85 x 102.5 mm³

**Quantum efficiency**

**Frame rate table**

<table>
<thead>
<tr>
<th>Resolution [pixel]</th>
<th>Frame rate</th>
<th>Recording time [sec]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1024 x 1280</td>
<td>600 fps</td>
<td>1.6 sec</td>
</tr>
<tr>
<td>1920 x 1440</td>
<td>1603 fps</td>
<td>1.4 sec</td>
</tr>
<tr>
<td>2016 x 2016</td>
<td>2032 fps</td>
<td>1.4 sec</td>
</tr>
<tr>
<td>512 x 512</td>
<td>4346 fps</td>
<td>1.5 sec</td>
</tr>
<tr>
<td>1024 x 512</td>
<td>4009 fps</td>
<td>1.63 sec</td>
</tr>
<tr>
<td>864 x 848</td>
<td>5010 fps</td>
<td>1.71 sec</td>
</tr>
<tr>
<td>528 x 528</td>
<td>10782 fps</td>
<td>2.08 sec</td>
</tr>
</tbody>
</table>

*Available for monochrome versions only.*
technical specifications

image sensor
- pixel size: 11µm x 11µm
- quantum efficiency: up to 50%
- readout noise (typ.): 22...23 e- (CDI mode)
- dynamic range: 18 bit (CDI mode), 2000...1659 (CDI mode)
- dynamic range A/D: 12 bit

camera values
- exposure time: 1.5µs...40ms
- camera memory: 18/36GB
- signal types: RS-485, TTL, Contact closure
- multi-camera sync: Master/Slave, Ext. Sync, PLL Sync
- trigger output: PFI-II (optional)
- interframing time (PIV): 3.15µs/3.58µs (optional)
- data interface: USB 3.0, USB 2.0, Camera Link
- shock: 30g > 1ms (full load)
- operating temperature: +5°...+40°C
- power delivery: 90...260 VAC (12 VDC opt.)
- lens mounts: C-mount, F-mount, EF-/PL-mount (optional)
- weight: 7.9 kg
- dimensions: 311 x 200 x 160 mm³

quantum efficiency

frame rate table

<table>
<thead>
<tr>
<th>resolution</th>
<th>frame rate (fps)</th>
<th>images in memory (36GB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>pco. dimax S1</td>
<td>1008 x 1008</td>
<td>4467 fps</td>
</tr>
<tr>
<td>pco. dimax S4</td>
<td>2000 x 2000</td>
<td>1279 fps</td>
</tr>
<tr>
<td>pco. dimax S</td>
<td>480 x 240</td>
<td>23 061 fps</td>
</tr>
<tr>
<td>pco. dimax HS4</td>
<td>2000 x 2000</td>
<td>27 642 fps</td>
</tr>
<tr>
<td>pco. dimax HD+</td>
<td>1920 x 1080</td>
<td>27 642 fps</td>
</tr>
<tr>
<td>pco. dimax HS</td>
<td>1296 x 720</td>
<td>4857 fps</td>
</tr>
<tr>
<td>pco. dimax S4</td>
<td>2000 x 2000</td>
<td>27 642 fps</td>
</tr>
</tbody>
</table>

The given resolutions are selected for the frame rate calculations only, they are not mandatory.

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applications

**crash test**

Full scale crash test of a car hitting the rear end of a truck for deformation analysis in order to develop safer vehicles.

**material testing**

Image of a tensile splitting strength test to characterize the tensile strength of ultra-high performance concrete. Courtesy of TU Braunschweig, IBMB, Division of Concrete Construction.

**fluid dynamics**

Original and processed data of a PIV measurement showing the flow induced by a ship propeller. Courtesy of ILA_5150 GmbH.

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subject to changes without prior notice | lens is sold separately
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