

CMOS Camera

# BL1-D1312I SERIES

1.4 Megapixel resolution with proprietary Photonfocus sensor

## Features

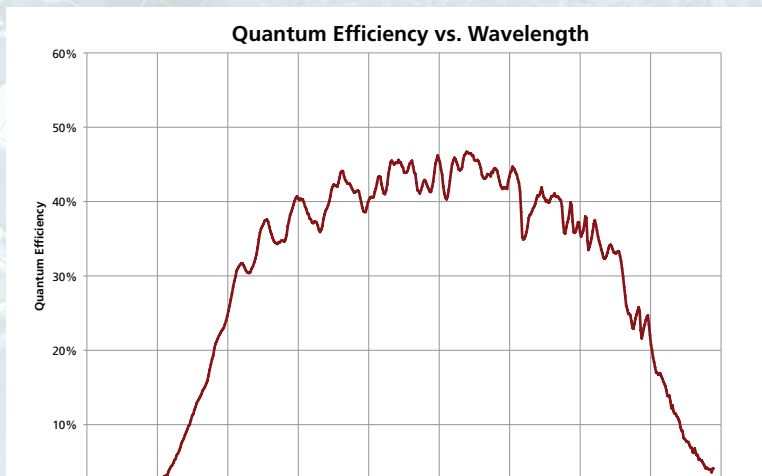
- Photonfocus A1312I CMOS image sensor
- 1312 x 1082 pixel resolution
- Excellent NIR response
- Dynamic range up to 120 dB via LinLog®
- Up to 108 fps @ full resolution
- Global shutter
- Monochrome
- Extended features
- CameraLink® interface
- 12 bit greyscale resolution



BL1-D1312I-160-CL-12



## Spectral response of the Photonfocus A1312I CMOS image sensor





BL1-D1312I-40-CL-12	BL1-D1312I-80-CL-12	BL1-D1312I-160-CL-12
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**Image Sensor**

Image sensor	Photonfocus A1312I (3. Generation)		
Technology	CMOS active pixel (APS)		
Scanning system	Progressive scan		
Optical format / diagonal	1" (13.6 mm diagonal) maximum resolution 2/3" (11.6 mm diagonal) 1024 x 1024 resolution		
Resolution	1312 x 1082 pixels		
Pixel size	8 µm x 8 µm		
Active optical area	10.48 mm x 8.64 mm (maximum)		
Dark current	1.15 fA/pixel		
Full well capacity	~100 ke <sup>-</sup>		
Spectral range	< 370 to 1100 nm (to 10 % of peak responsivity)		
Responsivity	300 x 10 <sup>3</sup> DN / (J/m <sup>2</sup> ) @ 850 nm / 8 bit / gain = 1		
Quantum Efficiency	> 50 %		
Optical fill factor	> 60 %		
Dynamic range	60 dB in linear mode; 120 dB with LinLog®		
Colour format	Monochrome		
Characteristic curve	Linear, LinLog®		
Shutter mode	Global shutter		
Read out mode	Sequential read out or simultaneous read out (read out during exposure)		

**Camera**

Exposure time	10 µs ... 1.68 s / 100 ns steps	10 µs ... 0.83 s / 50 ns steps	10 µs ... 0.41 s / 25 ns steps
Frame rate	27 fps	55 fps	108 fps
Pixel clock	40 MHz		80 MHz
Camera taps	1		2
Greyscale resolution	8 bit / 10 bit / 12 bit		
Fixed pattern noise (FPN)	< 1 DN @ 8 bit / correction ON		
Analogue gain	1		
Digital gain	1 / 2 / 4 / 8		
Configuration interface	Gigabit Ethernet / CL SERIAL (9600 or 57600 Baud, user selectable)		
Trigger modes	<ul style="list-style-type: none"> <li>• Free running (non triggered)</li> <li>• Interface trigger</li> <li>• External trigger input</li> <li>• Software trigger</li> </ul>		
Features	<ul style="list-style-type: none"> <li>• Region of Interest (ROI)</li> <li>• 512 Multiple ROI (MROI)</li> <li>• Decimation Y</li> <li>• Image correction</li> <li>• 2 Look-up tables (LUT)</li> <li>• Constant frame rate</li> <li>• Crosshair</li> <li>• Convolver 3x3</li> <li>• Temperature</li> <li>• Image information</li> <li>• Extended trigger input and strobe output functionality</li> </ul>		
Interface	CameraLink® Base		
Operating temperature	0°C ... +50°C		
Power supply	+12 V DC (±10%)		
Power consumption	2.5 W	< 3.0 W	< 3.3 W
Lens mount	C-Mount (CS-Mount optional)		
Dimensions	53 x 46 x 42 mm <sup>3</sup>		
Mass	128 g		
Conformity	CE / RoHS / WEEE		
Specials	Adjustable backfocus; Opto-isolated I/Os		

**Software**

Camera control	PFRemote™ graphical user interface (GUI) and PFLib (SDK)		
OS	win2k; winxp; winvista; other OS (Linux, QNX, etc) on request		

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