



modular camera experts

ABOUT PHOTONFOCUS



Photonfocus is one of the world's leading manufacturers of high-quality CMOS image sensors, OEM camera modules and industrial cameras for sophisticated applications. Since 2019, the high-end technological company based in Lachen, Switzerland has been owned by ISRA VISION GmbH – the global innovation leader for industrial image processing (machine vision), surface inspection and 3D machine vision.

Thanks to its many years of experience and a consistent customer focus, Photonfocus creates intelligent system solutions for all industry sectors on the basis of a modular camera architecture.

The customer can choose from the entire range of cameras with CMOS sensors, from low-light to highly dynamic HDR image sensors. The strictly modular design of the camera systems opens up virtually unlimited possibilities for the individual configuration of application solutions for machine vision.

Thanks to their consistent customer orientation, the universal Photonfocus products have established themselves as the “best practice” solution in a wide range of fields.

The high degree of development expertise at Photonfocus makes the company one of the pioneers in embedded vision systems for high-resolution images of surroundings. Embedded processors and memory enable short scanning times and fast data processing directly in the camera system. The modular embedded vision solutions

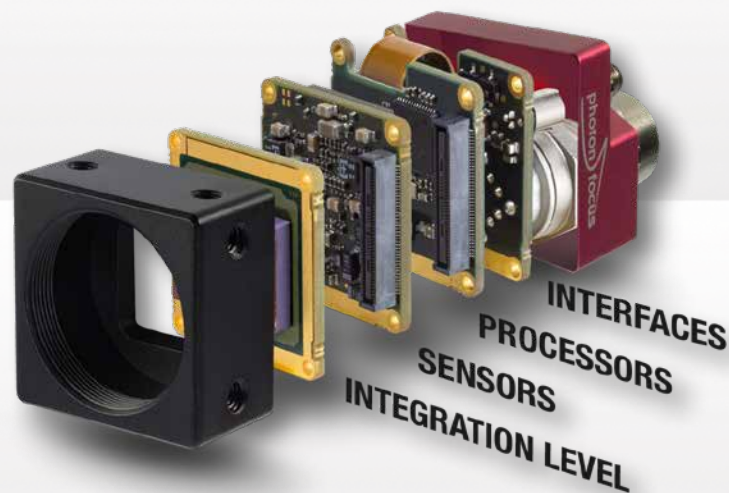
from Photonfocus can be used as all-in-one components for specific applications, or, alternatively, can easily be integrated in existing devices and systems.

The company has received numerous awards and has always stood for innovation in everything it does. Accordingly, the high-dynamic range of CMOS image sensors with global shutter from Photonfocus based on its patented LinLog® technology has set new standards in the market. As a pioneer in the development of software-defined camera platforms, the company continuously pushes the boundaries in terms of image resolution, sensitivity and data processing. As a result, high-end camera systems from Photonfocus are not only used in industry and science, but also in professional elite sport, where a high degree of sensitivity is essential when performing measurements. Photonfocus has also opened up entirely new areas of application with groundbreaking developments in 3D and infrared technology and hyperspectral sensors.

Customers especially benefit from the Swiss high-precision company's ability to implement technological solutions and its high level of flexibility. Thousands of Photonfocus camera systems have now been installed worldwide with tailor-made customer solutions for a broad range of applications.

With its inspiring passion for realizing innovative, customer-oriented products, Photonfocus is perfectly equipped for the future. Simply speak to us if we can help optimize your production processes with our vast experience in machine vision. We will be delighted to develop the best and most efficient solution for you.

MODULAR HIGH-END CAMERA SET-UP FOR FLEXIBLE INTEGRATION



Benefit from all advantages of our individually configurable high-end cameras:

- Form factor: With or without housing – select the best option for integration into your application!
- Sensor variety: More than 20 different sensors from well-known producers provide for precise image acquisition with up to 65 MP and extremely high-speed with more than 2,000 fps.
- Select from various interfaces and ensure fast and secure data transfer: GigE®, 10GigE®, Camera Link®, and LVDS.
- Software support: Our free SDK is the foundation for your application programming. In addition, all cameras feature the GenICam™ and GigE Vision® standards thus making the use of 3rd party software tools quick and easy.

Photonfocus modular camera set-up features:

- All Photonfocus camera models are based on a well thought-out modular system that allows for quick integration of both proven and new technologies.
- Select the components needed for your inspection task to get an industrial-grade camera that optimally meets your requirements.
- In certain cases standard level components are not sufficient and a specific sensor or algorithm is needed. Based on more than 20 years of camera development knowledge, we are open to designing a custom camera to your specifications.

3D CAMERAS FOR LASER TRIANGULATION

photon3D camera series features:

- Designed for laser triangulation applications
- High-speed scan rate at up to 69 kHz
- LineFinder algorithm option: Secure single and multi-laser line detection
- Embedded technology with onboard FPGA pre-processing
- Laser triangulation optimized for highly reflective materials
- Integrated encoder interface for numerous standard applications, also available as board-level camera models
- Board-level camera models are ideal for integration into your 3D triangulation systems



Photonfocus' innovative 3D camera technology offers completely new options for laser triangulation applications.

The photon3D cameras are optimized to achieve high frame rates with high sensitive sensors. They offer robust FPGA algorithms to determine the laser line with our powerful LineFinder tool. These algorithms are optimized to suppress artifacts such as reflections and provide reliable recognition of single or up to four laser lines in a single scan. The triangulation algorithm calculates the line position of the four laser lines with 1/64 sub-pixel accuracy.

Thanks to Photonfocus' proven modular camera set-up, other sensors or preferred components can be implemented easily, or if needed, we gladly help with custom-design cameras.



Product	Sensor	Optical format	Resolution	Megapixel	PPS	Interface
MV0-D1280-O01-3D06-G2	ON Semiconductor, PYTHON1300	1/2"	1280x1024	1.3	6700 pps	GigE
MV0-D1984-O01-3D06-G2	ON Semiconductor, PYTHON2000	2/3"	1984x1264	2	7900 pps	GigE
MV0-D2048-C01-3D06-G2	CMOSIS, CMV4000	1"	2048x2048	4	14842 pps	GigE
MV0-D2048x1088-C01-3D06-G2	CMOSIS, CMV2000	2/3"	2048x1088	2	18540 pps	GigE
MV2-D1280-O01-3D06-G1	ON Semiconductor, PYTHON1300	1/2"	1280x1024	1.3	6700 pps	GigE
MV2-D1984-O01-3D06-G1	ON Semiconductor, PYTHON2000	2/3"	1984x1264	2	7900 pps	GigE
MV2-D2048-C01-3D06-G1	CMOSIS, CMV4000	1"	2048x2048	4	14842 pps	GigE
MV2-D2048x1088-C01-3D06-G1	CMOSIS, CMV2000	2/3"	2048x1088	2	18540 pps	GigE
MV4-D1280-L01-3D06-FB	LUXIMA, LUX1310	2/3"	1280 x 1024	1.3	65600 pps	10 GigE Fibre
MV4-D1280-L01-3D06-G2	LUXIMA, LUX1310	2/3"	1280x1024	1.3	41880 pps	GigE
MV4-D1280-L01-3D07-GT	LUXIMA, LUX1310	2/3"	1280 x 1024	1.3	65600 pps	10GigE
MV4-D1280-L01-3D07-G2	LUXIMA, LUX1310	2/3"	1280x1024	1.3	41880 pps	10 GigE
MV4-D2048-L01-3D06-G2	LUXIMA, LUX2810	1"	2048x1400	2.8	27000 pps	GigE
MV4-D2048-L01-3D06-GT	LUXIMA, LUX2810	1"	2048x1400	2.8	> 80000 pps	10 GigE
MV4-D2048x1088-C01-3D06-G2	CMOSIS, CMV2000	2/3"	2048x1088	2.2	18540 pps	GigE
OEM0-D1280-O01-3D06-G2	ON Semiconductor, PYTHON1300	1/2"	1280 x 1024	1.3	6700pps	GigE
OEM2-D1984-O01-3D06-G1	ON Semiconductor, PYTHON2000	2/3"	1984 x 1264	2	7900 pps	GigE
OEM2-D2048x1088-C01-3D06-G1	CMOSIS, CMV2000	2/3"	2048 x 1088	2	18540 pps	GigE

SWIR, UV & HYPERSPECTRAL CAMERAS

photonSPECTRAL camera series features:

- **UV IMAGING:** Global shutter UV CMOS camera with an extraordinarily wide spectral range of 170 - 820 nm with more than 40 % quantum efficiency
- **SWIR IMAGING:** High-speed SWIR cameras with MROI (multi-ROI) option for even faster imaging
- High-speed hyperspectral imaging (HSI) snapshot cameras
- Embedded technology with onboard processor power
- Modular platform configuration ideal for integration into all applications, also available as board-level camera models



Photonfocus has developed outstanding solutions for numerous fields of application in order to meet the growing demand for imaging applications in the non-visible light spectra.

The photonSPECTRAL series covers highly sensitive cameras with wavelengths ranging from deep UV to short-wavelength infrared light (SWIR), as well as innovative systems within the hyperspectral range. All cameras are designed for maximum performance delivering high frame rates and reliably processing high data quantities while maintaining the same image quality.

All camera models are based on our proven modular camera set-up, which allows us to implement quickly and easily components like sensors, processors, interfaces etc. according application requirements. We're also experts in developing fully customized cameras for projects that need extraordinary camera solutions.



Product	Sensor	Optical format	Resolution	Megapixel	FPS	Interface
MV4-D1280U-H01-GT	Photonfocus, UV	1"	1280x1024	1.3	28 fps/ 140 fps	10GigE
MV3-D320I-T01-40-CL	Chunghwa, FPA-320x256-K	1"	320x256	0.1	344 fps	Camera Link
MV3-D320I-T01-40-G2	Chunghwa, FPA-320x256-K	1"	320x256	0.1	344 fps	GigE
MV3-D640I-M01-144-CL	Lynred, SNAKE	1"	640x512	0.3	300 fps	Camera Link
MV3-D640I-M01-144-G2	Lynred, SNAKE	1"	640x512	0.3	300 fps	GigE
MV4-D2048x1088-C01-HS02-GT	IMEC, CMV2K-SM5x5	2/3"	2048x1088	2.2	340 fps	10GigE
MV4-D2048x1088-C01-HS03-GT	IMEC, CMV2K-SM4x4	2/3"	2048x1088	2.2	340 fps	10GigE
MV4-D2048x1088-C01-HS05-GT	IMEC, CMV2K-LS150	2/3"	2048x1088	2.2	340 fps	10GigE
OEM0-D2048x1088-C01-HS02-G2	IMEC, CMV2K-SM5x5	2/3"	2048x1088	2.2	50 fps	GigE
OEM0-D2048x1088-C01-HS03-G2	IMEC, CMV2K-SM4x4	2/3"	2048x1088	2.2	50 fps	GigE
MV0-D2048x1088-C01-HS02-G2	IMEC, CMV2K-SM5x5	2/3"	2048x1088	2.2	50 fps	GigE
MV0-D2048x1088-C01-HS03-G2	IMEC, CMV2K-SM4x4	2/3"	2048x1088	2.2	50 fps	GigE
MV2-D2048x1088-C01-HS02-G1	IMEC, CMV2K-SM5x5	2/3"	2048 x 1088	2.2	50fps	GigE
MV2-D2048x1088-C01-HS03-G1	IMEC, CMV2K-SM4x4	2/3"	2048 x 1088	2.2	50fps	GigE
MV2-D2048x1088-C01-HS05-G1	IMEC, CMV2K-LS150	2/3"	2048 x 1088	2.2	50fps	GigE

HIGH-SPEED CAMERAS FOR DEMANDING APPLICATIONS

photonHiSPEED camera series features:

- High-performance cameras
- 10 GigE® interface for fast data transmission rate
- Configurable region of interest (ROI), up to 8 MROI, increasing frame rates
- DoubleRate and QuadRate technology option offers 2x - 4x faster frame rates over GigE® and 10 GigE® standard cameras thanks to our optically lossless compression algorithms
- Embedded technology with onboard processor power
- Modular platform configuration ideal for integration into all applications, also available as board level camera models



The photonHiSPEED cameras from Photonfocus are designed for maximum performance: They deliver high frame rates and constantly process high data quantities while maintaining the same quality. The fast and precise cameras reliably meet your requirements and are proven in complex high-speed applications.

Applications such as motion analysis (e.g. in sports or biomechanical analysis) and process failure analysis (e.g. burst or fracture of tools, failure of handling systems) require high-speed frame rates.

To meet these requirements, Photonfocus has developed the DoubleRate and QuadRate camera technology providing double bandwidth for data transmission via the standardized 10 GigE Vision® interface. It is based on standard software protocol GenICam™ and GigE Vision® and compatible with standard 3rd party machine vision tools and libraries.



Product	Sensor	Optical format	Resolution	Megapixel	FPS	Interface
DR2-D1920-S01-G1	Sony, IMX174	1/1.2"	1920 x 1200	2.3	94 fps	GigE
DR4-D1280-L01-G2	LUXIMA, LUX1310	2/3"	1280x1024	1.3	165 fps	GigE
DR4-D1952-L01-GT	LUXIMA, LUX2100	4/3"	1952x1080	2	1000 fps	10 GigE
MV4-D1280-L01-FB	LUXIMA, LUX1310	2/3"	1280x1024	1.3	934 fps	10 GigE Fibre
MV4-D1280-L01-GT	LUXIMA, LUX1310	2/3"	1280x1024	1.3	934 fps	10 GigE
MV4-D1280-L01-G2	LUXIMA, LUX1310	2/3"	1280 x 1024	1.3	85fps	GigE
MV4-D1600-S01-GT	Sony, IMX425	1"	1600x1100	1.7	260 fps	10 GigE
MV4-D1952-L01-GT	LUXIMA, LUX2100	4/3"	1952x1080	2	581 fps	10 GigE
MV4-D2048-L01-GT	LUXIMA, LUX2810	1"	2048 x 1400	2.9	50 fps	10 GigE
MV4-D2048x1088-C01-G2	CMOSIS, CMV2000	2/3"	2048x1088	2.2	50 fps	GigE
MV4-D2048x1088-C01-GT	CMOSIS, CMV2000	2/3"	2048 x 1088	2.2	339fps	10GigE
QR1-D2048x1088-384-G2	CMOSIS, CMV2000	2/3"	2040 x 1088	2.2	169fps	GigE

HIGH-RESOLUTION CAMERAS FOR EVERY DETAIL

photonHiRES camera series features:

- Especially sensitive cameras with extremely high resolution of up to 65 MP
- Embedded technology with ultra-fast data transmission
- Robust housing with outstanding temperature management
- Supporting GigE®, 10 GigE Vision® and fiber-optic transmission
- Flexible design – ideal for integration into all applications, also available as board level camera models



photonHiRES cameras are suitable for all applications in industrial and non-industrial sectors where high-resolution is in demand. The series integrates sensors from well-known manufacturers like Gpixel®, CMOSIS® and others. Even when facing challenging applications and poor light conditions, these cameras achieve the best possible results.

The robust housings are equipped with an outstanding temperature management system that enables fan-free operation of even large sensors. Moreover, the powerful 10 GigE Vision® interface guarantees an optimum data transmission rate and compatibility with a wide range of interfaces.

All camera models are based on our proven modular camera set-up, which allows us to implement quickly and easily components like sensors, processors, interfaces etc. according application requirements. We're also experts in developing fully customized cameras for projects that need extraordinary camera solutions.



Product	Sensor	Optical format	Resolution	Megapixel	FPS	Interface
MV4-D9344-G01-GT	Gpixel, GMAX3265	2.3"	9344x7000	65	18fps	10GigE
MV8-D8424-G01-GT	Gpixel, GMAX4651	35mm	8424x6032	51	24fps	10GigE

With more than **20 years experience** in camera and CMOS sensor design, Photonfocus is a **true pioneer** in the field of machine vision and imaging.



**Contact us and discuss your project with the
modular camera experts!**

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