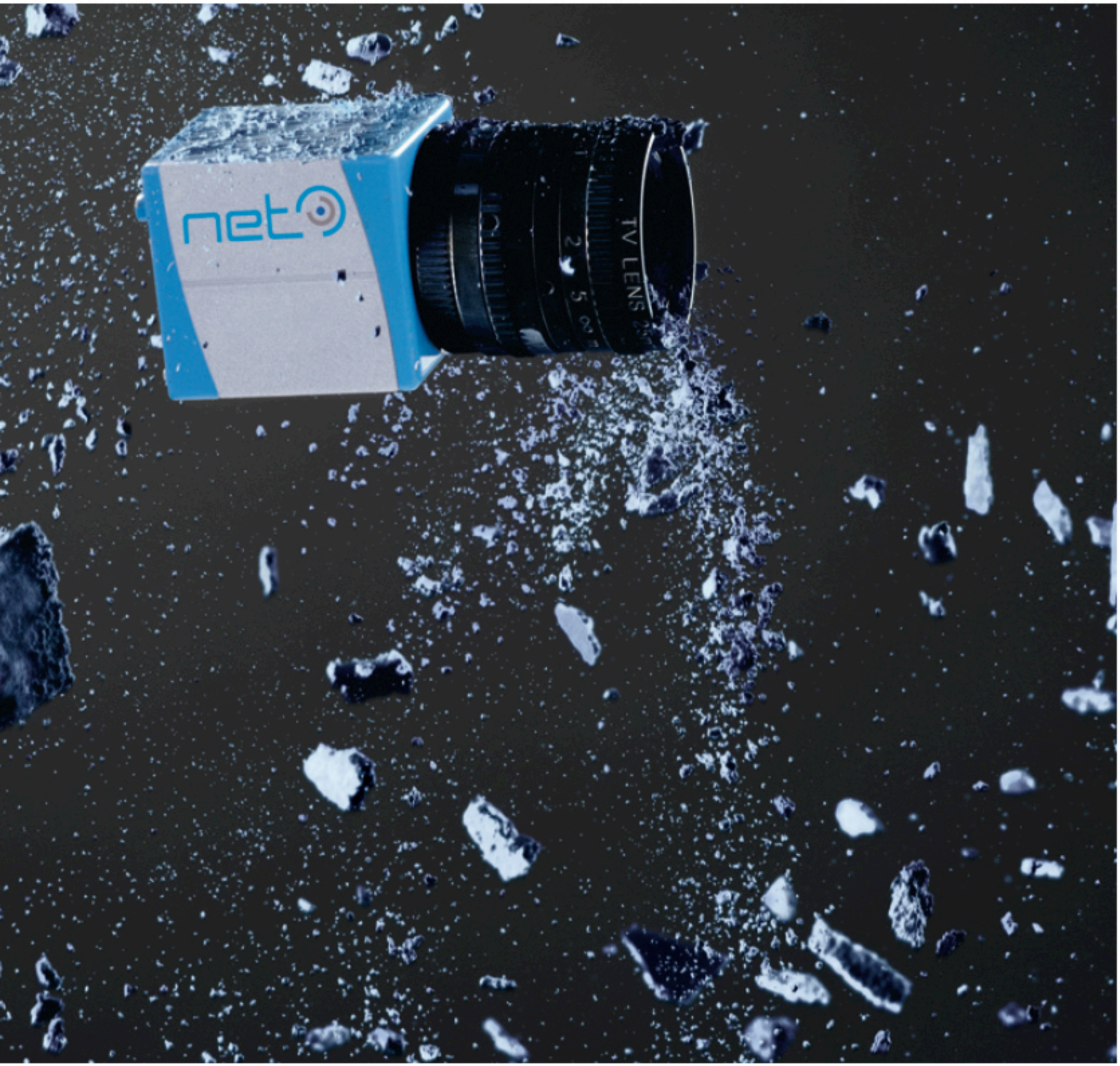

3iCube

Dynamics in vision.

USB3.0 CMOS CAMERAS – INDUSTRIAL AND OEM VERSION

This information is brought to you by:

Aegis
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net
NEW ELECTRONIC TECHNOLOGY

3iCube – DYNAMICS IN VISION

3iCube – meet challenging applications at an optimal price-performance ratio.

3iCube USB3.0 SERIES

NET's easy to use compact camera with USB3.0 interface taps the full potential of the latest CMOS image sensors to set new standards in regard of achievable frames rates and image quality. It supports 24-bit RGB true color while offering a high speed interface to meet the most challenging applications like multi-camera systems.

Moreover, the 3iCube series supports monochrome and low light image sensors reflecting an extensive range of selectable resolutions and frame rates for all requirements.

3iCube is available as industrial and board level camera. Its advantages can be put to full use through the integration into professional factory automation, quality inspection, surveillance and non-industrial applications like biometrics and microscopy.

The lightweight board level camera can perform challenging onboard image processing tasks in real-time to meet any particular demand. In return, the 3iCube USB3.0 series is a flexible and fast to implement solution.

High speed connection and power via one USB port turn 3iCube into a universal plug and play camera linked with a notebook, a PC or even for an embedded computer system.

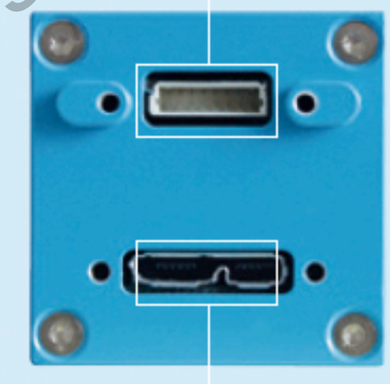
Due to the user friendly interface no additional power supply devices and no expensive cabling is necessary. The included viewer software iControl allows for quick implementation as well as access to and handling of several 3iCube cameras at once.

robust and small aluminum housing (30 x 30.5 x 31.5 mm)

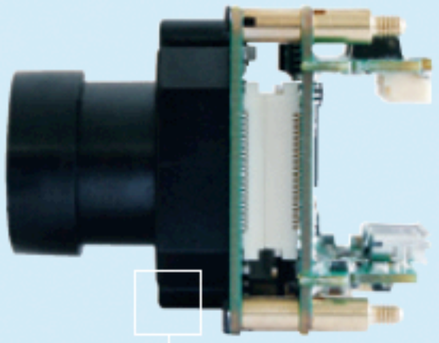
NET's lens portfolio: high resolution mega pixel, telecentric, CCTV and macro lenses

C-/CS-lens mount

trigger/strobe/GPIO connection



lockable micro USB3.0 B



S-mount with M12 optics available

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TECHNICAL DATA – CMOS CAMERA LINE

PRODUCT OVERVIEW

The 3iCube series with USB3.0 5 Gbps interface features the latest CMOS image sensors with an excellent image quality for a broad range of applications. NET offers 3iCube with resolutions ranging from 0.4 to 10 megapixel and performing high speed frame rates at full resolution. Its sensor design encompasses global shutter for fast moving objects and rolling shutter, also with global reset image readout, to capture images with outstanding signal quality. In case of processing image sections, 3iCube offers multiple regions of interest (ROI) with extensively configurable windows embedded on chip. Due to its enhanced image sensor sensitivity, 3iCube realizes a high quantum efficiency and thus is a perfect fit for applications in the near infrared region (NIR). In addition, long exposure photography is supported by 3iCube. The series allows to benefit fully from the possibilities of state-of-the-art camera technology. 3iCube's attractive price-performance ratio at an extraordinary quality level speaks for itself.

INDUSTRIAL	IC1044BU	IC1044CU	IC1130BU	IC1130CU	IC4133BU	IC4133CU	IC4133IR	IC4203BU	IC4203CU	IC1300CU	IC1500BU	IC1500CU	IC11000BU	IC11000CU
BOARD	BC1044BU	BC1044CU	BC1130BU	BC1130CU	BC4133BU	BC4133CU	BC4133IR	BC4203BU	BC4203CU	BC1300CU	BC1500BU	BC1500CU	BC11000BU	BC11000CU
Resolution (H x V) [px]	752 x 480 / WVGA		1280 x 1024 / SXGA		1280 x 1024 / SXGA			1600 x 1200 / UXGA		2048 x 1536 / QXGA	2592 x 1944 / QSXGA		3840 x 2748 / WQUXGA	
Sensor	CMOS		CMOS		CMOS			CMOS		CMOS	CMOS		CMOS	
Image sensor	MT9V032		MT9M001	MT9M131	EV76C560		EV76C661	EV76C570		MT9T001	MT9P031	MT9P001	MT9J003	
Sensor size	1/3"		1/2"	1/3"	1/1.8"			1/1.8"		1/2"	1/2.5"		1/2.3"	
Pixel size [µm]	6.00 x 6.00		5.20 x 5.20	3.60 x 3.60	5.30 x 5.30			4.50 x 4.50		3.20 x 3.20	2.20 x 2.20		1.67 x 1.67	
Frame rate [fps]	86		30		60			50		12	15		7.5	
Shutter	global		rolling		global; rolling; global reset			global; rolling; global reset		rolling with global reset	rolling with global reset		rolling with global reset	
Shutter speed	0.024 - 763 ms	0.062 - 745 ms	0.02 - 394 ms	0.039 - 633 ms	0.031 - 1030 ms			0.031 - 1030 ms		0.056 ms - 50 s	0.085 ms - 89 s	0.074 ms - 77 s	0.146 ms - 135 s	
Dynamic range [dB]	55		68	71	62			62		61	70		65	
Binning	2 x 2 / 4 x 4		-		2 x 2			2 x 2		2 x 2 / 4 x 4	2 x 2 / 4 x 4		2 x 2 / 4 x 4	
Skipping	-		640 x 512		640 x 512 / 320 x 256 multiple ROI's / user-defined			640 x 512 / 320 x 256 multiple ROI's / user-def.		1024 x 768 / 512 x 384	1280 x 960 / 640 x 448		1920 x 1344 / 960 x 640	
Aspect ratio	14:9		5:4		5:4			4:3		4:3	4:3		4:3	
Gain [dB]	12		23	24	24			24		18	18		18	
Lens	C- / CS-mount													
Scanning system	progressive scan													
Trigger	external / software													
Strobe	yes													
GPIO	3x													
Interface	USB3.0 / 5 Gbps													
Dimension (WxHxD) [mm]	industrial: 30 x 30.5 x 31.5 board: 28 x 28 x 22													
USB connection	lockable micro USB3.0 B													
Digital I/O connection	8 pin lockable													
Power consumption [W]	< 1.0		< 1.0		< 1.0			< 1.0		< 1.5	< 1.5		< 1.5	
Operating temperature	0 to +45°C													

3iCube – when performance and flexibility matter.

Aegis Electronic Group
www.aegiselect.com

APPLICATION & SOFTWARE

Ask us for matching lenses & illumination!

APPLICATION OVERVIEW

3iCube targets industries in rough environments like quality inspection, completeness, surface and printing inspection, bar code, data matrix applications and others. Being also appropriate for non-industrial segments like medicine applications and microscopy, security, document management and access control, the small and efficient 3iCube is a versatile and reliable solution for your application requirements. Because of its high speed interface, 3iCube is particularly suitable for video traffic in HD quality or multi-camera systems.

eyetracking with NIR

CAMERA CUSTOMIZATION

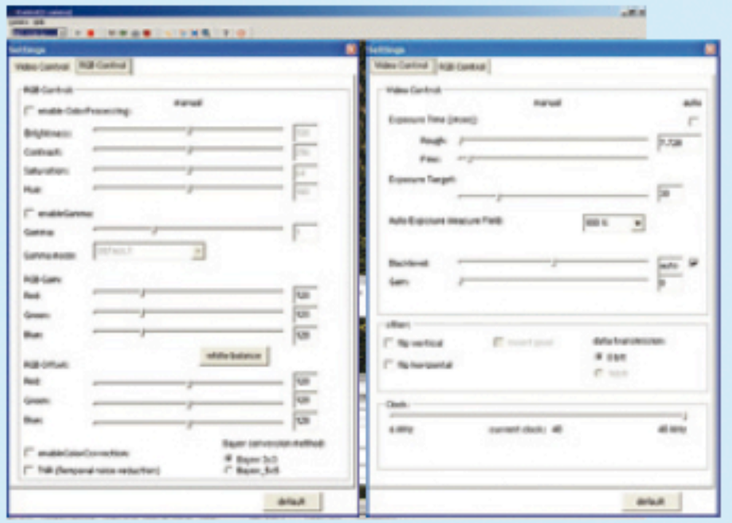
Particular applications require specific camera features and functions. To fulfill these requirements NET is able to offer camera customization, e.g. through onboard processing of specific available NET or customers' algorithms.

OEM APPLICATION

The 3iCube series is suitable as lightweight board level cameras for OEM use due to its compact size. Being a flexible and powerful solution, 3iCube can be offered with custom features such as customized firmware, FPGA/DDR RAM, real-time processing.

VIEWER SOFTWARE

The iControl viewer is a part of the provided software development kit (SDK) and provides an easy and quick access to all 3iCube cameras via Windows and LINUX for testing and evaluation. It allows a fast access to camera and image processing settings, and the creation of customer modes. iControl supports the possibility to save images as jpg, bmp or tiff as well as videos as avi file on a connected computer.



iControl user interfaces for easy and quick image capture control and image processing setting

SOFTWARE DEVELOPMENT KIT

3iCube's SDK facilitates the integration into existing and customized image capturing and processing systems. NET supports some of the most popular programming languages for Microsoft: C++, Visual Basic and C#.

3RD PARTY SOFTWARE-APPLICATION

The integration of 3iCube USB cameras is supported through a wide variety of common drivers, e.g. for Cognex, and allows an easy handling of the camera. 3iCube is compatible to common software libraries with Direct-X/Direct-Show interface. The software facilitates an easy integration into commercial vision systems from suppliers like Halcon and Matrox.

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Technical changes, errors and omissions excepted. 12/2012