

D3 intelligent components

VRmD3FC-22C-OEM/COB

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D3 Intelligent Board Level Camera

- Programmable camera with Ubuntu Linux OS
- 1 GHz ARM® Cortex™-A8 Core, 700 MHz C674x™ DSP, both with FPU
- 2 GB DDR3-800 RAM, 32 GB flash memory
- Gigabit Ethernet
- FPGA chip with 256 MB RAM
- Wide support of embedded image processing software, e.g. Common Vision Blox Embedded, EyeVision, GStreamer, HALCON Embedded, OpenCV, and VM_LIB
- Same API on all cameras; development and debugging of camera software on the PC
- Ultra precise sensor positioning (COB C-mount)

Sensor Characteristics

Type	CMOSIS CMV2000
Technology	CMOS, global shutter
Mono/Color	Monochrome or color
Sensor Size	2/3" ultra wide
Resolution	2048 x 1088
Pixel Size	5.5 µm x 5.5 µm
Max. Frame Rate *	44 Hz
Min. Exposure Time	44.3 µs
Bit Depth	8/10 bit
Pixel Clock	4 x 25 MHz
Responsivity	5.56 V/lux·sec
Dynamic Range	60 dB

Camera Features

Wide range of interfaces available on different interface boards for flexible embedded control

Mono™-compatible .NET interface, Qt®

Cortex-A8 NEON™ Architecture, Real-time clock

User programmable windowing and panning

Freely definable vertical region of interest (ROI)

Gamma, contrast, luminance (via LUT), optional auto white balance

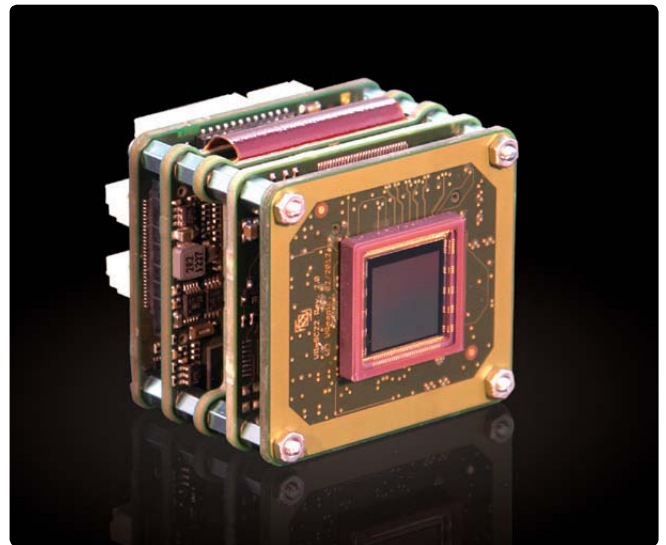
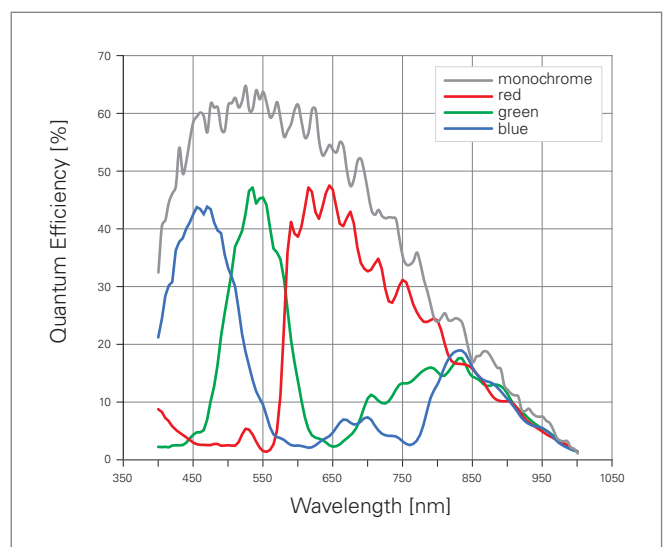


Photo similar to original product



* Maximum value at full ROI with minimum exposure time. Actual value depends on pixel clock, sensor settings, and image format.

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Physical Characteristics

Dimensions	
Number of Boards	5
Board Stack Size	
OEM	42 x 38 x 37 mm
COB C-mount	46 x 42 x 54 mm
Mounting Holes	36 x 32 mm
Inter-board Distance	5 mm
Ambient Conditions	
Operating Temperature	0 ... +40 °C
Storage Temperature	-30 ... +80 °C

Camera Variants

OEM	without lens mount
COB C-Mount	C-mount and filter glass, lens not included

Product Code

The table shows the available ordering options. Grey fields represent selectable options. The # and - characters are delimiters.

Product Code	VRM-D3#xx-DX-F2-22x#xxN#	Description
VRM		VRmagic identifier
D3		Platform: D3 intelligent
EV CO CS		Interfaces: VRmEIO3 evaluation board VRmCUEO3 OEM board VRmCUEOS3 OEM board
DX		Processor: D3 with 32 GB flash memory
F2		FPGA: Additional FPGA board
22C 22M 22I		Sensor: CMOSIS CMV2000 color CMOSIS CMV2000 monochrome CMOSIS CMV2000 IR enhanced
O C		Design: OEM (without housing or optics) Design: COB C-mount
N C P W		Filter glass: none IR-cut IR-pass Window glass (protective)
N		Options: none
VRM - D3 # CO - DX - F2 - 22C # C C N #		Example for product code

Interfaces

Communication
Gigabit Ethernet, 2 x USB 2.0 host/device, up to 44 GPIOs, RS232, RS485, CAN bus, SPI bus, I2C bus
Video/Audio
HDMI, RGB888, S-Video, Analog audio (line in/out, mic in), Digital audio (S/PDIF out)
Further Interfaces
SD card reader, trigger, strobe, Watchdog, 5 V DC power in

Interface Boards

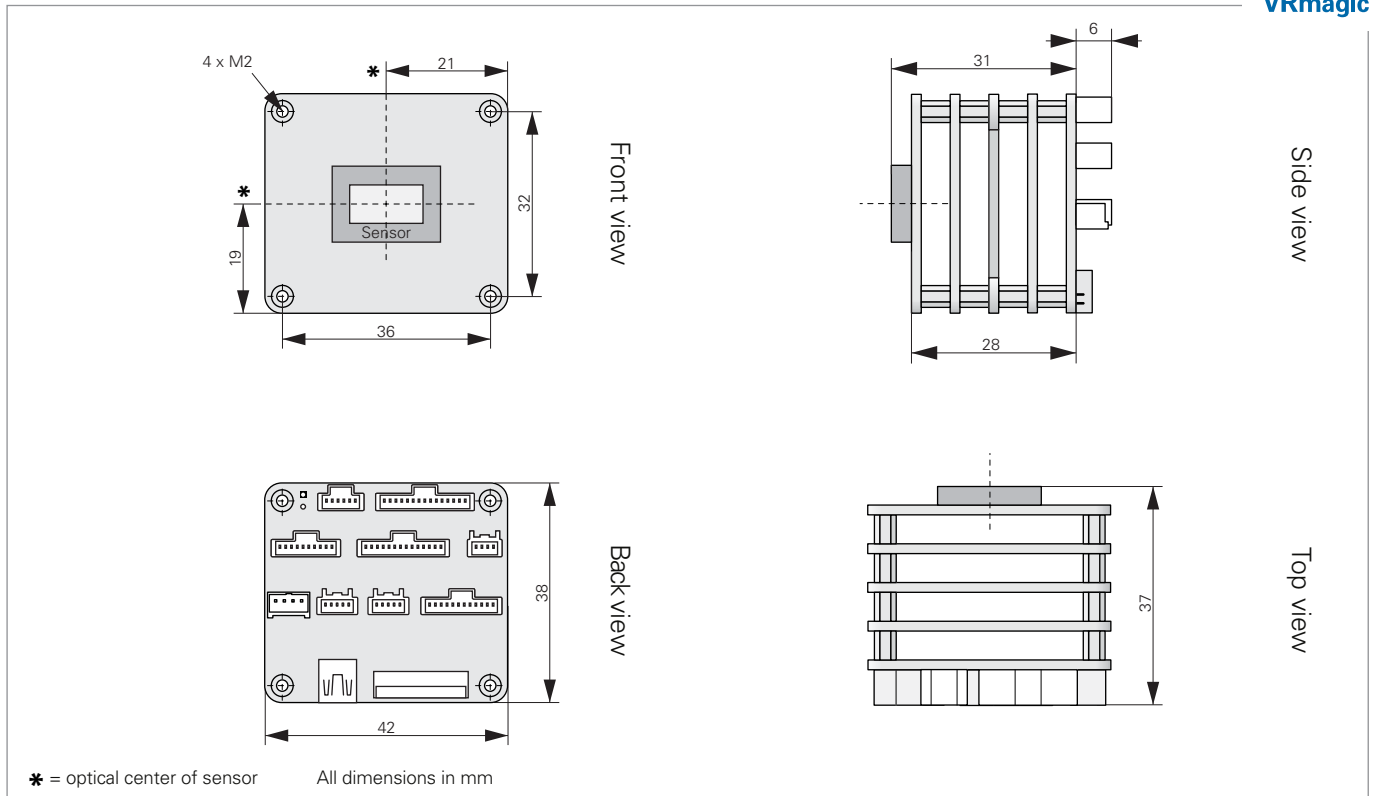
The camera is available with various interface board options.

- **VRmCUEO3** OEM interface board with miniature connectors: Features all above-mentioned interfaces (see drawings and separate datasheet)
- **VRmCUEOS3** OEM interface board with the same connectors as VRmCUEO3 and additional SATA interface
- **VRmEIO3** interface evaluation board with industry standard connectors (not pictured, see separate data sheet): Large euroboard featuring all above-mentioned interfaces and additional SATA and JTAG interfaces
- **Custom** interface boards for production quantities

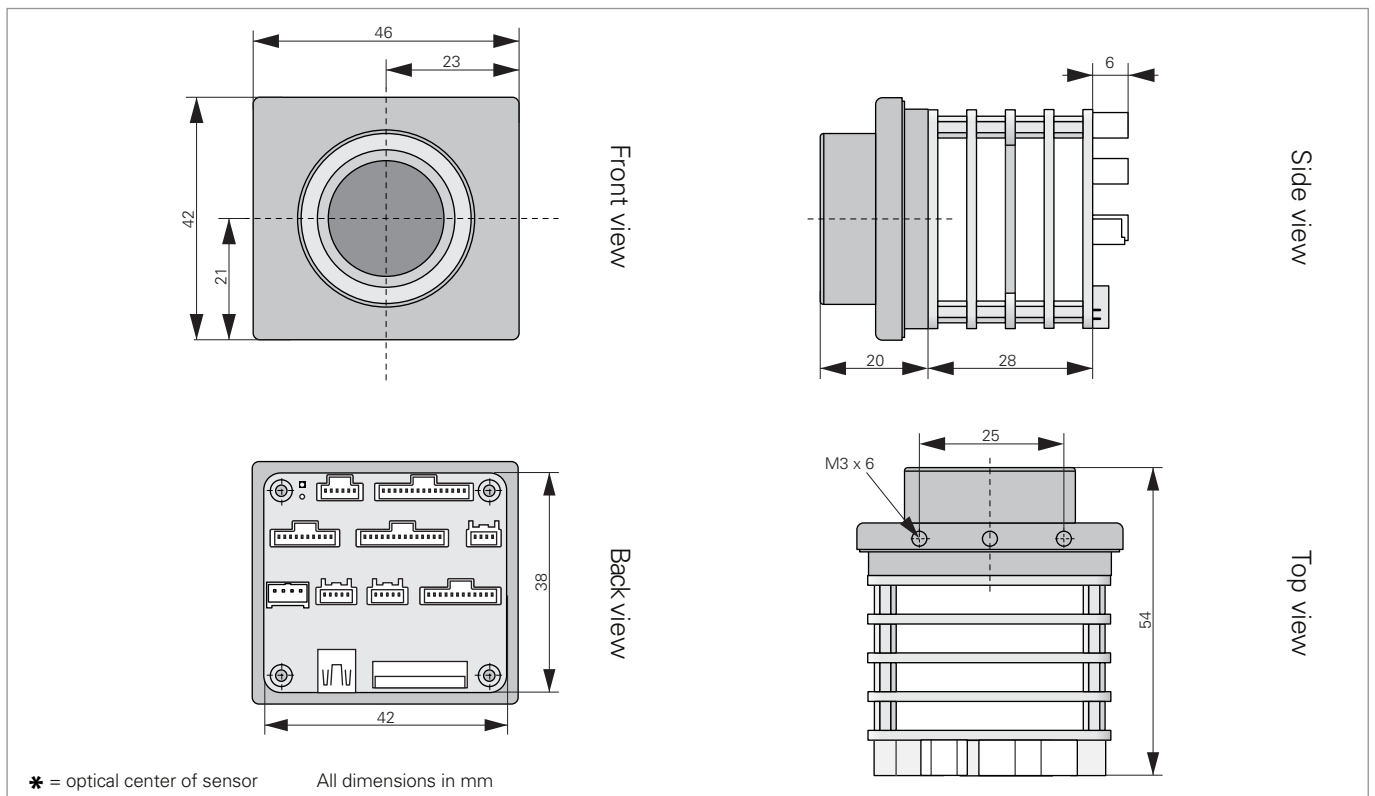
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OEM Design



COB C-Mount Design



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