

CELERA One
single-USB3 cameras

CELERA One series



CELERA One camera series provides the same excellence in quality, flexibility and performances of CELERA cameras, with the only exception of a single USB3 interface. Its ultra-fast acquisition rate, extremely reduced dimensions and rugged design make CELERA One cameras suitable for the most demanding applications: automated optical inspection, high performance sorting systems, industrial metrology, microscopy, medical diagnostics and machine vision.

CELERA One is available with both CMV and IMX sensors in different resolutions and color mode. It provides powerful on-line user-controlled image processing with a control sequencing mechanism, allowing to set up 64 different video settings to be applied to a chain of subsequent frames.

Even beyond

Alkeria development team is also deeply focused on full-custom camera products. If you need more from your CELERA One camera, we can implement smarter hardware and extra firmware features for you. Depending on volumes, we can design your custom camera to protect your IP, differentiate your products and let you gain market share over competitors. If you have been discouraged with custom designs, give us a call: you'll be surprised.

Features

USB3 interface

Up to 5 Gbps USB3 interface allows easy interface to your PC, eliminating expensive frame-grabbers and bulky cables while keeping highest performances.

Tiny rugged design

Small, ultra-lightweight, rugged aluminum machined high precision case allows maximum installation flexibility even in space constrained environments.

Fast global-shutter CMOS technology

AMS CMV series and SONY Pregius® global shutter CMOS sensors, featuring 12 bit A/D converter, allow a framerate up to 170 fps even at full resolution.

Triple Programmable LUTs

Independent LUTs (one for each color) allow easy color thresholding, filtering and calibration for color-critical applications.

Smart Data

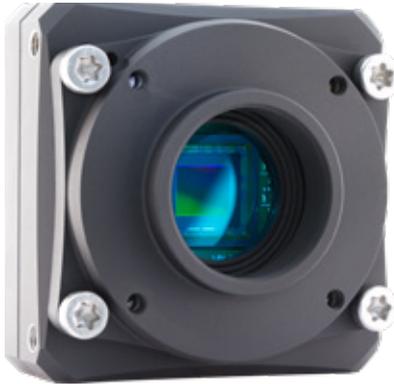
Embedded timestamp, trigger counters, encoder position, latched input status and input change detection allow perfect image-to-real world pairing.

Versatile I/O

CELERA One series offers unprecedented flexibility for interfacing to outer world signals: line/frame triggering, direct encoder readout and strobed lighting have never been so easy.

Advanced triggering

With CELERA One series, you can choose among a long list of triggering mechanisms. Acquisition can be driven by logic levels, edges and encoder position. Furthermore, the frequency of triggering signals can be internally converted to solve even the most challenging problems.



Accessories

Image quality does not depend only on the resolution of the camera: to get top performances out of a vision system it is essential to choose the best combination of all components. For this reason we offer our customers a complete range of high-quality accessories to equip our cameras with: lens adapters, I/O and USB3 industrial-grade cables, selected machine vision lenses and more.

Visit www.alkeria.com/accessories to discover the complete range of accessories.



C-mount



F-mount

Interfacing

USB3

Cost-effective, wide-spread, highly performant, plug&play, directly powered by the PC. All of these perks make USB3 the right choice for cameras intended to be ready out-of-the-box.

I/O

CELERA One provides a versatile 24 V tolerant I/O interface to control external devices such as strobe lights, encoders, etc.: 2 input lines with direct encoder interface, 2 output lines and 1 input/output (RS422, RS644 LVDS, LVTTTL). Its multipurpose I/O connector provides user I/O, line/frame triggering and direct encoder interface.



HALCON
COMPATIBLE

COGNEX
COMPATIBLE

Vision libraries

Image processing libraries represent the most flexible way of developing vision applications: these systems provide a complete range of powerful vision analysis tools, as well as the possibility to develop tailor-made algorithms and functionality to address specific application needs.

That's why our cameras are totally compatible with the major vision libraries, such as MVTech Halcon or COGNEX VisionPro.

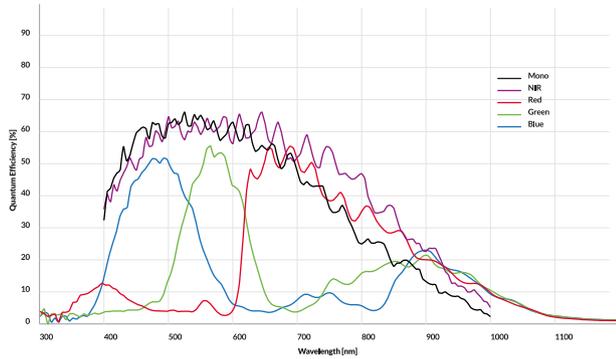
Want to use your own code instead?

Our cameras come with a comprehensive SDK for Windows and Linux featuring a sample player for live view and setting of the camera, and a rich list of code samples in C# and C++ (WIN32 and Qt).

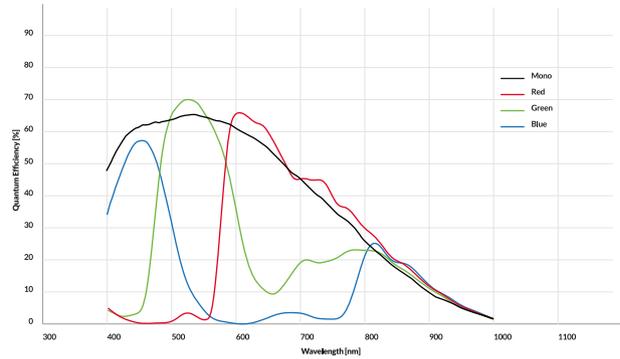
Technical specifications

Sensors specifications

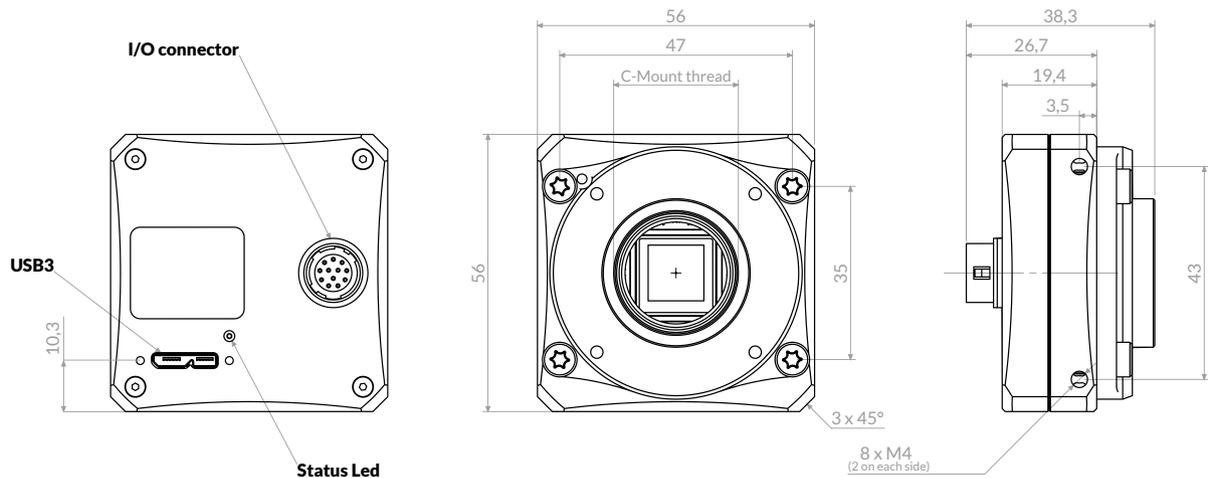
CMOSIS CMV series



SONY IMX series



Mechanical specifications



All dimensions are expressed in millimeters.
 Camera specifications are subject to change without notice.
 Sensor specifications (monochrome and color) are taken from the data sheet of the manufacturer.

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MODEL	C02K-M	C02K-C	C02K-N	C04K-M	C04K-C	C05S-M	C05S-C	C012S-M	C012S-C
Sensor	AMS CMV2000			AMS CMV4000		SONY IMX 264		SONY IMX 304	
Megapixels	2 MP			4 MP		5 MP		12 MP	
Resolution (w x h)	2048 × 1088			2048 × 2048		2464 x 2056		4112 x 3004	
Format	2/3"			1"		2/3"		1.1"	
Pixel Size	5.5 × 5.5 μm					3.45 x 3.45 μm			
Color mode	BW	Color	NIR	BW	Color	BW	Color	BW	Color
Max framerate	175 fps	87 fps	175 fps	92 fps	46 fps	35 fps	35 fps	23 fps	15 fps
Pixel format	MONO8/16 RAW8/16	YUV 4:2:2 RGB24 MONO8/16 RAW8/16	MONO8/16 RAW8/16	MONO8/16 RAW8/16	YUV 4:2:2 RGB24 MONO8/16 RAW8/16	MONO8/16 RAW8/16	YUV 4:2:2 RGB24 MONO8/16 RAW8/16	MONO8/16 RAW8/16	YUV 4:2:2 RGB24 MONO8/16 RAW8/16
Max Shutter	15 μs	15 μs	15 μs	26 μs	26 μs	28 μs	28 μs	29 μs	36 μs
Min Shutter	5 s	5 s	5 s	5 s	5 s	5 s	5 s	5 s	5 s
A / D Conversion	10 - 12 bit					12 bit			
Synchronization	External trigger, software trigger								
Power Supply	< 3 W, powered by USB3 interface								
Inputs / Outputs	2 in (direct encoder interface), 2 out and 1 I/O (RS422, RS644 LVDS, LVTTTL) , 24 V tolerant								
Interface	USB 3.2 Gen 1								
Lens adapter	C-mount included F-mount optional								
Weight	< 130 g (with C-mount lens adapter)								
Dimensions	56 mm × 56 mm × 26.7 mm - (L x W x D) camera only								
Conformity	CE, RoHS, FCC/IC								
Main Controls	Shutter, gain, brightness, contrast, saturation, LUT and gamma correction, white balance, sequencer configuration								
Operative Temp	0 ÷ 50 °C								

This chart shows all technical specifications of the current CELERA One product line.

To know more about specifications and prices, please contact our Sales department at sales@alkeria.com: we'll help you finding the right camera for your application.



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