



CELERA
the first dual-USB3 camera

CELERA series



CELERA CMOS dual-USB3 cameras provides unrivaled speed, extreme flexibility and quick system integration.

Its double USB3 interface, ultra-fast acquisition rate, extremely reduced dimensions and rugged design make CELERA cameras suitable for the most demanding applications: automated optical inspection, high performance sorting systems, industrial metrology, microscopy, medical diagnostics and machine vision.

CELERA is available with both CMV and IMX sensors in different resolutions and color modes. 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 sequence of subsequent frames.

Even beyond

Alkeria development team is also deeply focused on full-custom camera products. If you need more from your CELERA 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

dual-USB3 interface

Twice the bandwidth with double USB3 interface, supporting the maximum frame rate of both CMV and IMX image sensors.

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/CMOSIS CMV series and SONY Pregius® global shutter CMOS sensors, featuring 12 bit A/D converter, allow a framerate up to 340 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

With 2 inputs and 2 outputs and 1 I/O, CELERA 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 series, user 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.



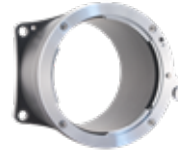
Lens adapters

Vision system performances rely on many factors: one of these is lens quality. There are many lenses currently on the market, with different specifications and price levels: every application needs its very own lens.

We know that in Alkeria, so we decided to equip CELERA with specific C-mount and F-mount lens adapter: they give our customers the perfect flexibility in choosing best optics for their applications.



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 provides a versatile 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).

MODEL	C2K-M	C2K-C	C2K-N	C4K-M	C4K-C	C3S-M	C3S-C	C5S-M	C5S-C	C12S-M	C12S-C	C12SX-M	C12SX-C
Sensor	AMS CMV2000			AMS CMV4000		SONY IMX 252		SONY IMX 250		SONY IMX 304		SONY IMX 253	
Megapixels	2 MP			4 MP		3 MP		5 MP		12 MP			
Resolution (w x h)	2048 × 1088			2048 × 2048		2064 × 1544		2464 × 2056		4112 × 3004			
Format	2/3"			1"		1/1.8"		2/3"		1.1"			
Pixel Size	5.5 × 5.5 μm ²					3.45 × 3.45 μm ²				3.45 × 3.45 μm ²			
Color mode	BW	Color	NIR	BW	Color	BW	Color	BW	Color	BW	Color	BW	Color
Max framerate	337 fps	174 fps	337 fps	179 fps	92 fps	216 fps	120 fps	152 fps	76 fps	23 fps	23 fps	62 fps	31 fps
Pixel format	MONO8 MONO16	YUV 4:2:2 RGB 24	MONO8 MONO16	MONO8 MONO16	YUV 4:2:2 RGB 24	MONO8 MONO16	YUV 4:2:2 RGB 24	MONO8 MONO16	YUV 4:2:2 RGB 24	MONO8 MONO16	YUV 4:2:2 RGB 24	MONO8 MONO16	YUV 4:2:2 RGB 24
Min. Shutter	15 μs	15 μs	15 μs	26 μs	26 μs	17 μs	19 μs	17 μs	21 μs	29 μs	29 μs	20 μs	25 μs
Max. Shutter	5 s	5 s	5 s	5 s	5 s	5 s	5 s	5 s	5 s	5 s	5 s	5 s	5 s
A / D Conversion	10 - 12 bit					8 - 10 - 12 bit				12 bit		8-10-12 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)												
Interface	2 × USB 3.1 Gen 1												
Lens adapter	C-mount lens adapter included - F-mount lens adapter 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												

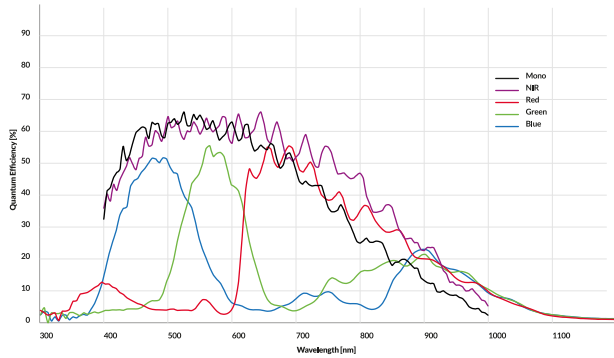
This chart shows all technical specifications of the current CELERA product line.

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.

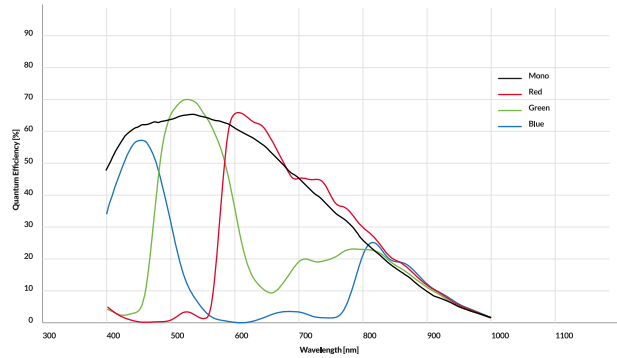
Technical specifications

Sensors specifications

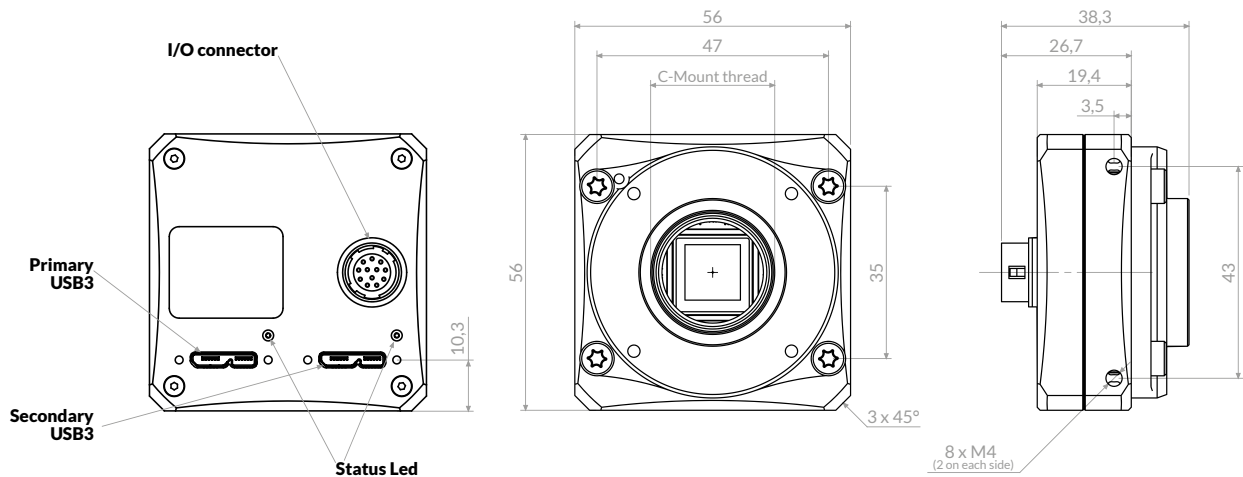
CMOSIS CMV series



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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