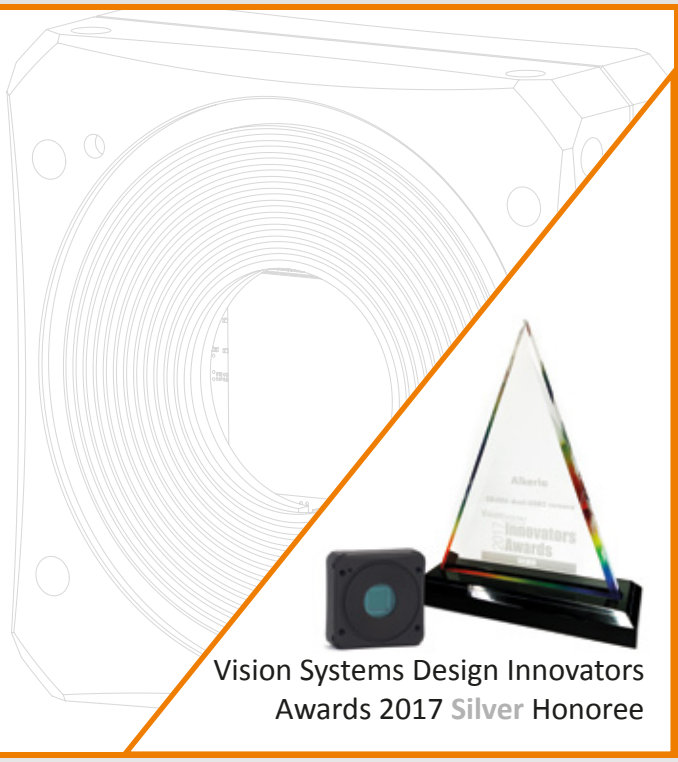
CELERA Dual-USB3 Camera

Alkeria IMAGINACTION

CELERA Camera Series

COLOR B/W NIR SONY Pregius® CMOSIS CMV series Advanced Sequencer



Vision Systems Design Innovators Awards 2017 Silver Honoree

CELERA family

CELERA dual-USB3 family of CMOS cameras provides unrivaled speed, extreme flexibility and quick system integration.
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 directly powered by the USB3 bus eliminating the need for external power adapters. USB3 provides the most cost-effective widespread interface, pushing speed performances at the top level.

CELERA provides powerful on-line user-controlled image processing: independent LUTs, gamma correction, white balance, brightness, contrast, sharpness and saturation.

CELERA features Alkeria's Advanced Sequencer, allowing to cycle multiple complex video presets according to a programmed trigger pattern..

CELERA comes with an easy-to-use set of software API which allows developers to quickly produce fast and well readable code on Windows (VC++/C#/VB.NET) and Linux (C++).

CELERA accessories available upon request: F-mount adapter and shielded I/O cable. The default C-mount adapter can be removed.

Even beyond

Alkeria development team is also deeply focused on 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.

Dual-USB3 interface

Alkeria's dual-USB3 solution allows highest performances, keeping the advantages of USB3 such as lower cost and ease of use.

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

CELERA allows top performances and image quality, thanks to CMOSIS CMV and SONY Pregius® sensors, pushed at their limits.

Advanced Sequencer

Alkeria's Advanced Sequencer allows the user to modify camera controls on the fly, on the occurrence of an external or internal event. Changing the shutter time or adjusting the ROI to follow the target has never been so easy.

Versatile I/O

With 2 inputs, 2 outputs and 1 I/O, CELERA series offers unprecedented flexibility for interfacing to outer world signals: direct encoder readout and strobed lighting have never been so easy.

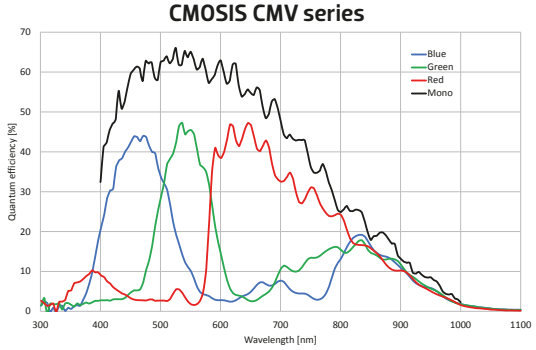
Smart triggering

User can choose among a long list of triggering mechanisms. Acquisition can be driven by I/O levels, edges and encoder position. Furthermore, the frequency of triggering signals can be internally converted to solve even the most challenging problem.

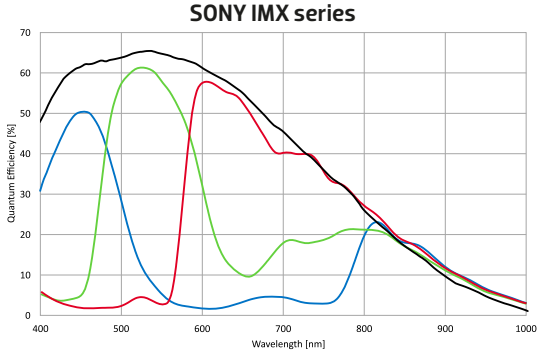
CELERA Camera Series
Technical Specifications

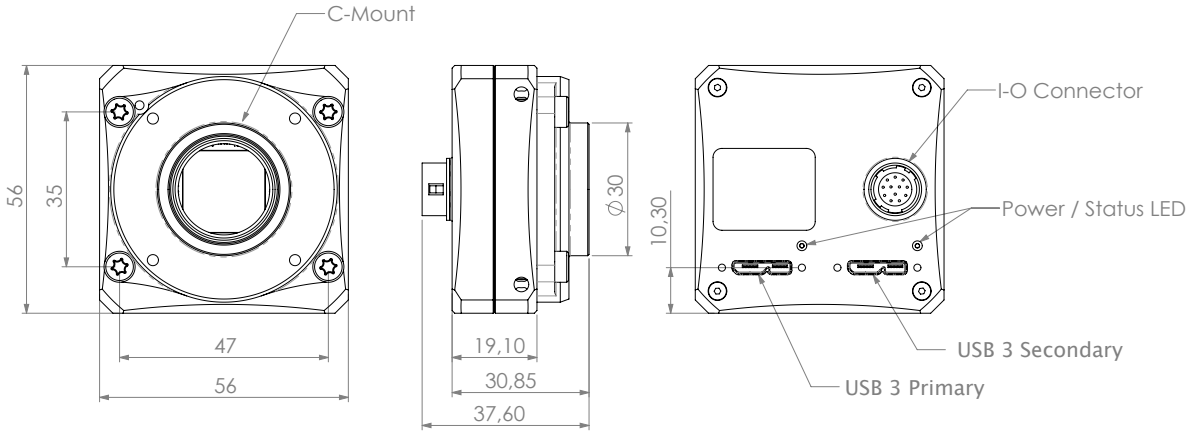
Model	C2K-M	C2K-C	C2K-N	C4K-M	C4K-C	C3S-M	C3S-C	C5S-M	C5S-C	C12S-M	C12S-C	C12SX-M	C12SX-C
Resolution	2048 × 1088			2048 × 2048		2048 x 1536		2448 x 2048		4112 x 3004			
Sensor	AMS CMV2000			AMS CMV4000		SONY IMX 252		SONY IMX 250		SONY IMX 304		SONY IMX 253	
Format	2/3"			1"		1/1.8"		2/3"		1.1"			
Pixel Size	5.5 × 5.5 µm²					3.45 x 3.45 µm²				3.45 x 3.45 µm²			
Color / Mono	Mono	Color	NIR	Mono	Color	Mono	Color	Mono	Color	Mono	Color	Mono	Color
Max Frame Rate	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
A / D Conversion	10 - 12 bit					8 - 10 - 12 bit				12 bit		8-10-12 bit	
Synchronization	External trigger, software trigger												
Shutter Control	15 µs ÷ 5 s (global shutter)			26 µs ÷ 5 s (global shutter)		17 µs ÷ 5 s (global shutter)				29 µs ÷ 5 s (global shutter)		25 µs ÷ 5 s (global shutter)	
Power Supply	< 3 W, powered by USB3 interface												
Inputs / Outputs	2 in (direct encoder interface), 2 out and 1 I/O (RS422, RS644 LVDS, LVTTL)												
Lens Adapter	C-mount, F-mount (optional)												
Interface	2 × USB 3.1 Gen 1												
Weight	<130 g (camera only)												
Dimensions	56 mm × 56 mm × 26.7 mm (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												

CMOSIS CMV series



SONY IMX series





All dimensions are expressed in millimeters.
Camera specifications are subject to change without notice.
Sensor specifications (monochrome and color) are extracted from the data sheet of the manufacturer excluding lens and filter and may vary depending on specific sensor.

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