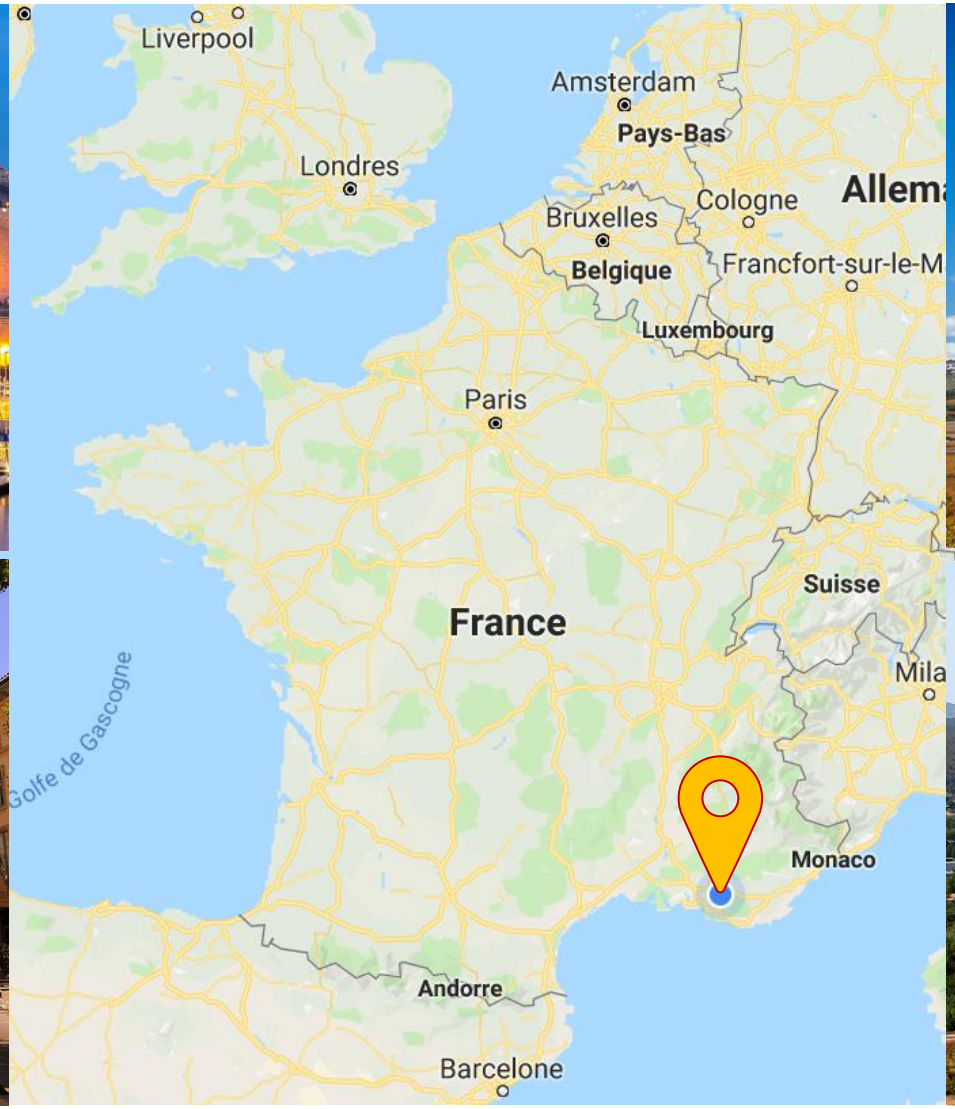
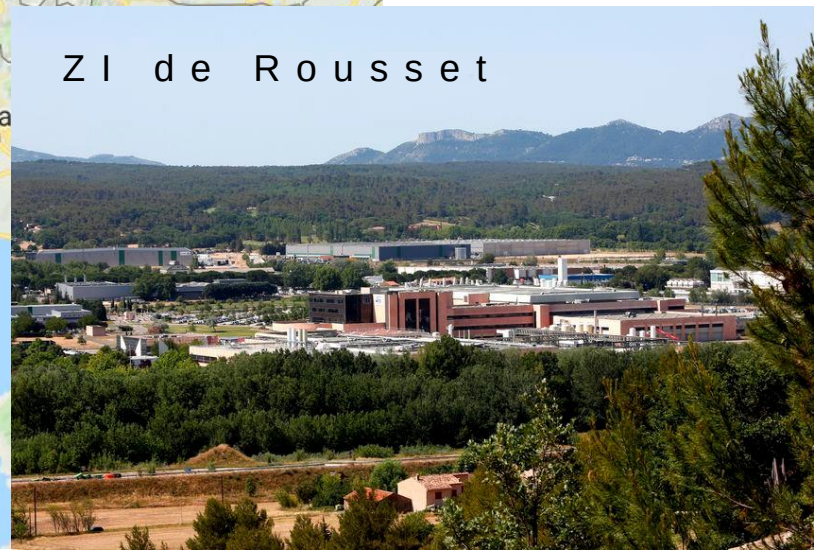
Snapshot Multispectral Imaging

By SILIOS Technologies

Stéphane Tisserand – CEO and co-founder

Location



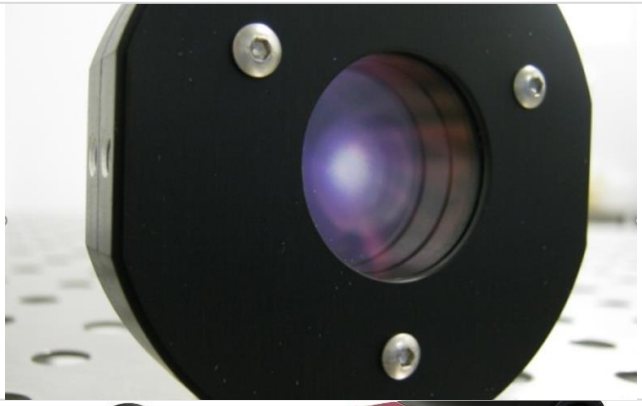


Our Core Expertise :

Design and Manufacturing of
Micro-Optical Components

Our Manufacturing tool

Two Lines of Products



MICRO-OPTIC (2001-today)

SCIENTIFIC HIGH ENERGY/POWER LASERS, ASTRONOMY & SPACE

PetaWatt Laser Chains, Laser MegaJoules,…

VLT/ELT Instruments, ESA EUCLID Space Mission,…

MULTISPECTRAL (2009-today)

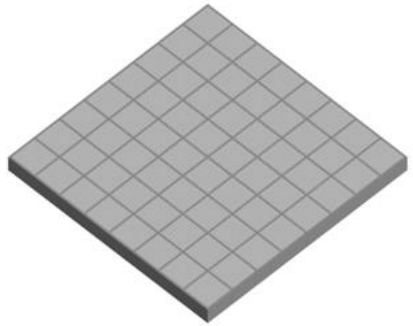
MULTISPECTRAL IMAGING

TECHNOLOGY

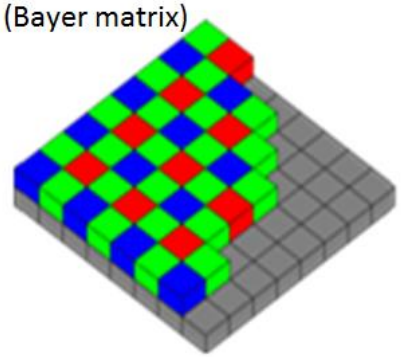
Multispectral Imaging by SILIOS : Principle

Standard color Imager

Monochrome imager

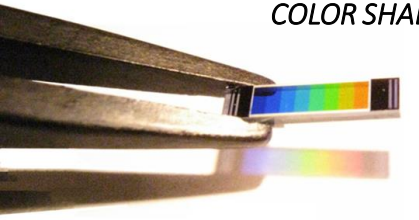


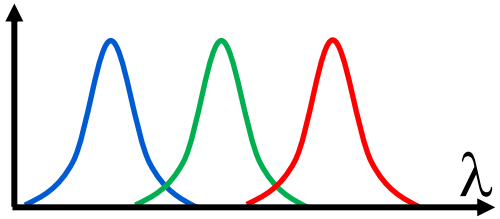
RGB imager
(Bayer matrix)



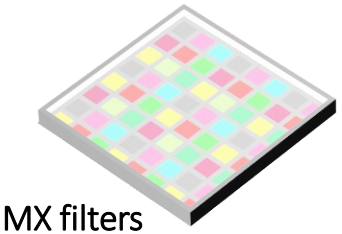
3 interleaved RGB images

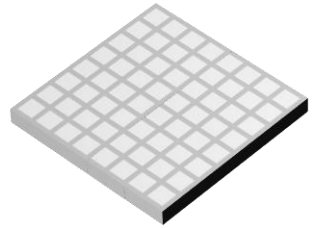
MULTISPECTRAL FILTER :
COLOR SHADES® Technology



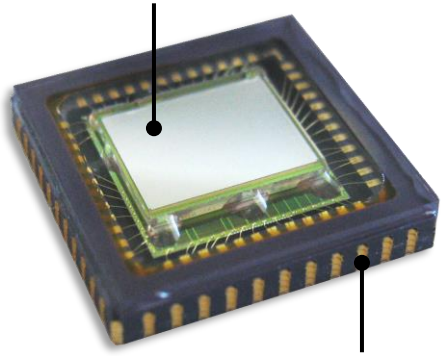


Hybridization of MX filters on the top of commercial imagers.





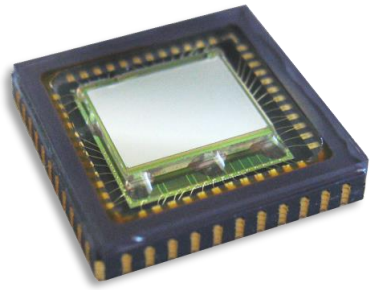
MX FILTER



COMMERCIAL IMAGER

Range of Multispectral Products

We supply…

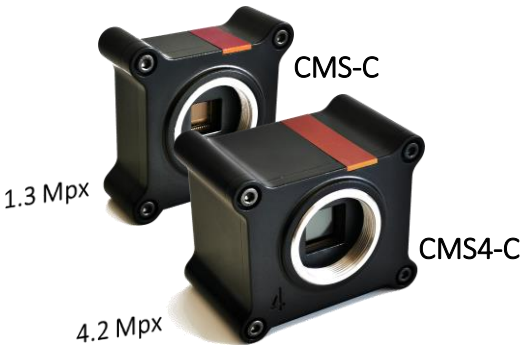


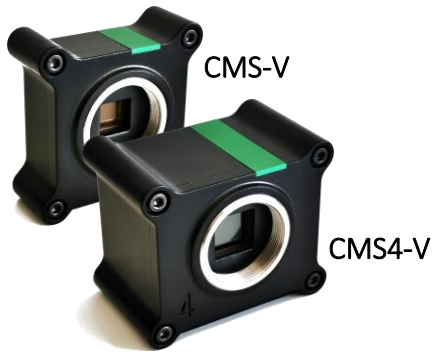
Multispectral Sensors

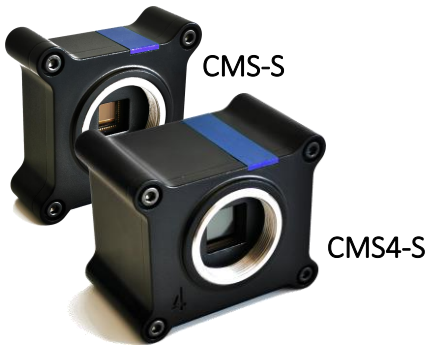
Multispectral eBoards

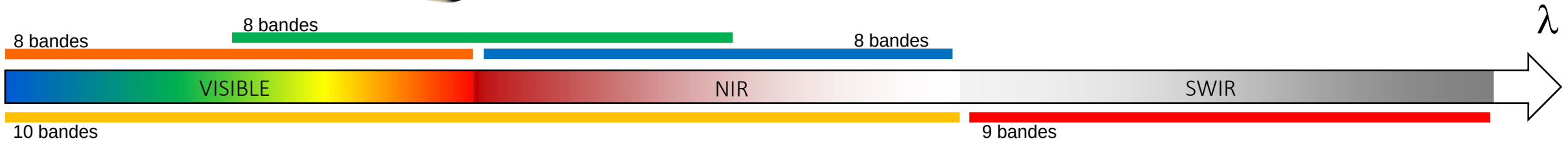
Multispectral Cameras

Off-the-shelf MX cameras



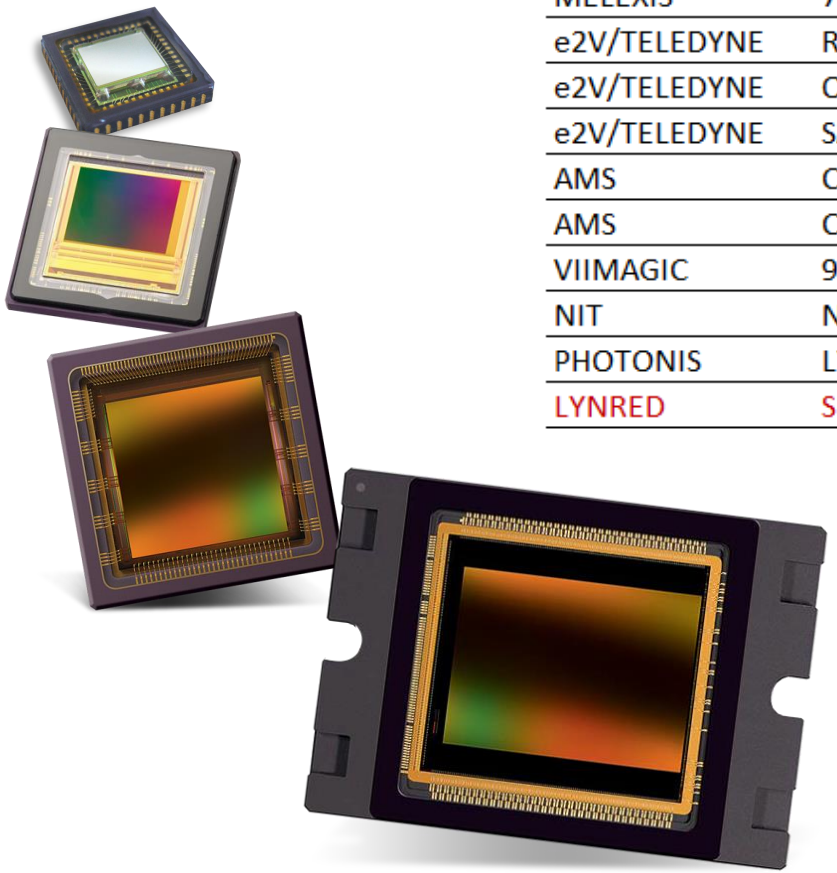






TOUCAN Cam

Custom MX cameras



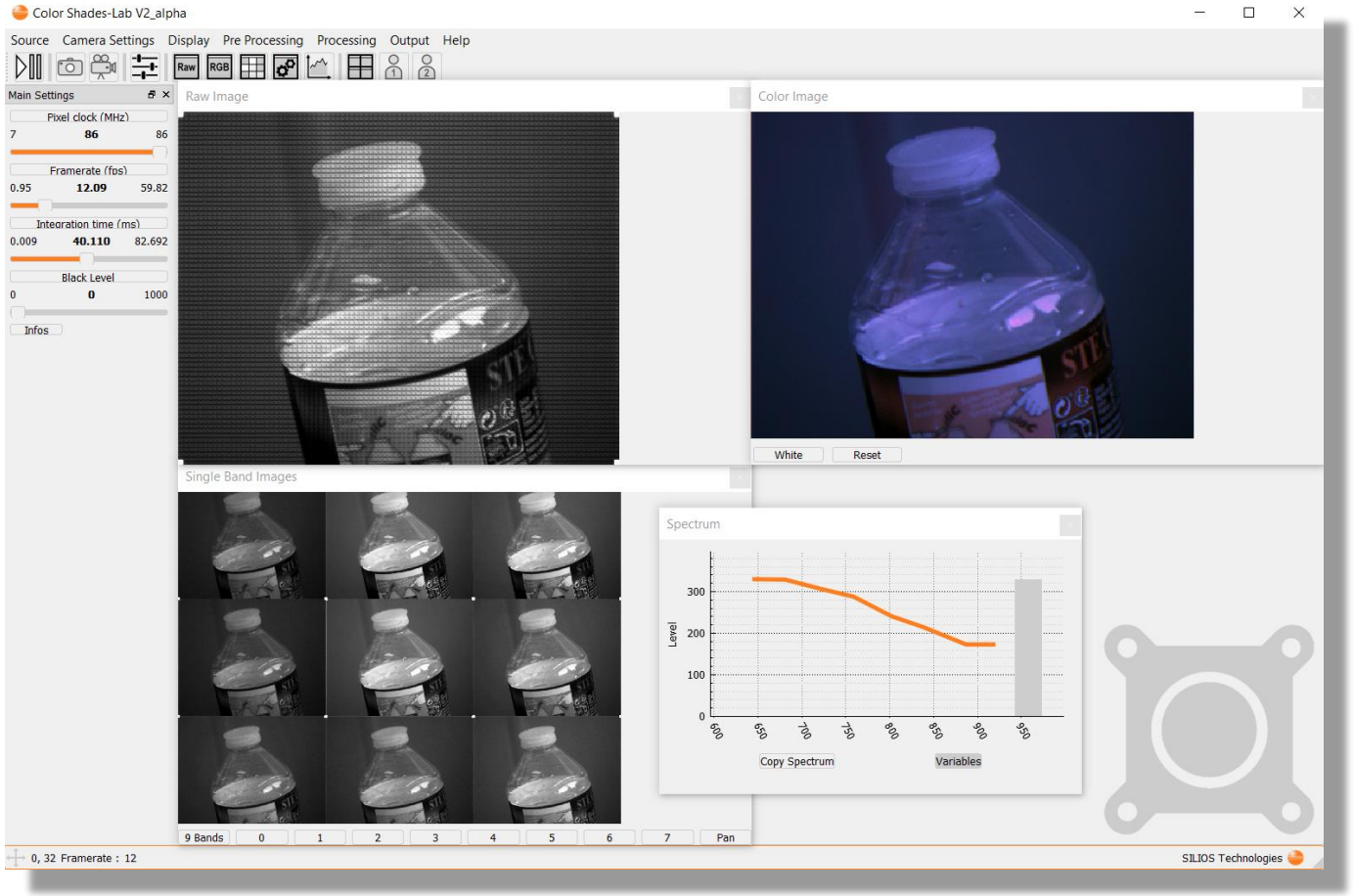
Manufacturer	Model	Pixel number	Pixel number	Pixel pitch	Range	Macropixels configurations
MELEXIS	75005EA	172 x 1	172	66	VIS/NIR	1 x 8
e2V/TELEDYNE	RUBY	1280 x 1024	1.3 Mpx	5.3	VIS/NIR	3 x 3 / 4 x 4 / 5 x 5 / 6 x 6
e2V/TELEDYNE	ONYX	1920 x 1080	2.1 Mpx	5.3	VIS/NIR	3 x 3
e2V/TELEDYNE	SAPHIR	1600 x 1200	1.9 Mpx	4.5	VIS/NIR	4 x 4
AMS	CMV4000	2048 x 2048	4.2 Mpx	5.5	VIS/NIR	3 x 3 / 5 x 5 / stripes
AMS	CMV12000	4096 x 3072	12.6 Mpx	5.5	VIS/NIR	4 x 4
VIIMAGIC	9225	2068 x 1100	2.3 Mpx	5.0	VIS/NIR	6 x 6
NIT	NSC1602	648 x 488	0.3 Mpx	7.5	VIS/NIR	2 x 2
PHOTONIS	LYNX	1280 x 1024	1.3 Mpx	9.7	VIS/NIR	2 x 2 / 4 x 4
LYNRED	SNAKE	640 x 512	0.3 Mpx	15	SWIR	3 x 3 / 2 x 2

Build your own VIS/NIR/SWIR multispectral camera…

… and choose its settings :

- ✓ the Sensor (CMOS, InGaAs,…)
- ✓ the Spectral Bands
- ✓ the Pixel Mosaïc Layout

COLOR SHADES Lab



COLOR SHADES Lab (SDK)

+

DLL for :

- ✓ Hypercube extraction
- ✓ Crosstalk correction

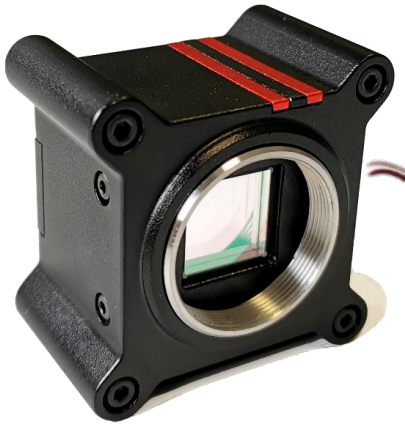
The TOUCAN Camera

The Unique VIS+NIR Snapshot Multispectral Camera on the Market.

	FEATURES
Wavelength range (nm)	430-890 nm
Number of Bands	10
Bandwidth (FWHM)	30 to 50 nm
Imager Type	CMOS sensor
Spatial Resolution	2048 x 2048 full picture (4.2 Mpx)
Frame Rate	Camera : 65 FPS (10 bits) / *COLOR SHADES Lab* : 20 FPS (10 bits)
Pixel Pitch	5.5 microns
Bit Depth	10
Interfaces	USB3.0

Dimension	62 x 52 x 40 mm^3
Weight	180 g

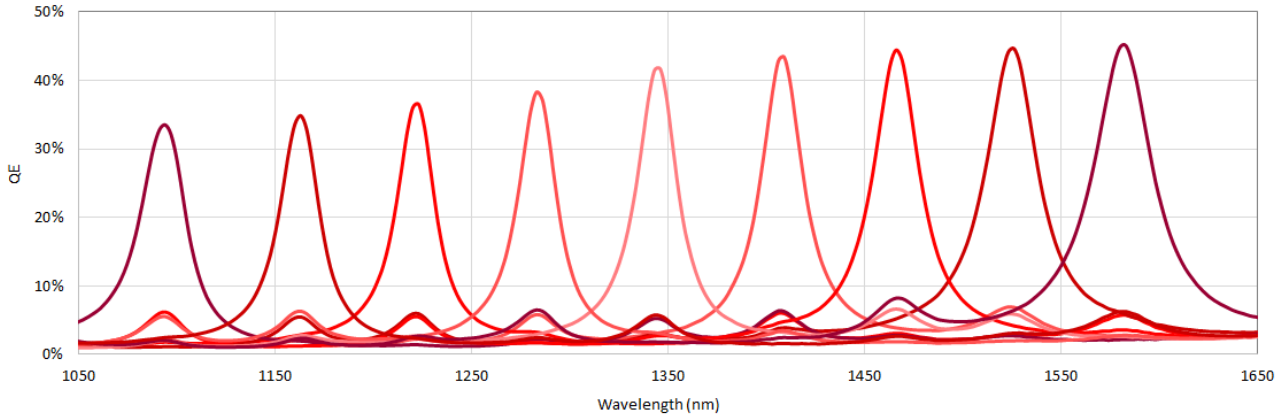
The ANT Camera



Snapshot Multispectral Camera
1100-1600 nm Spectral Range
9 Spectral Bands
640x512 Raw Spatial Resolution

Availability : June 2022 !

	FEATURES
Wavelength range (nm)	1100-1600 nm
Number of Bands	9
Bandwidth (FWHM)	30 nm (average)
Imager Type	InGaAs
Pixel Pitch	15 µm
Lens Mount	CS-mount / C-mount with supplied adaptation ring
Resolution (raw pictures)	640x512
Resolution (spectral pictures)	213x170
Frame Rate	Camera : 178 FPS (16 bits) / *COLOR SHADES Lab* : 110 FPS (16 bits)
Exposure time range	0.3 µs to 7 ms
ADC	16 bits
Interface (data & power supply)	USB3.0
Dimensions	46.5 x 46.5 x 32.5 mm^3
Weight	120 gr



Thank you for your attention

www.silios.com