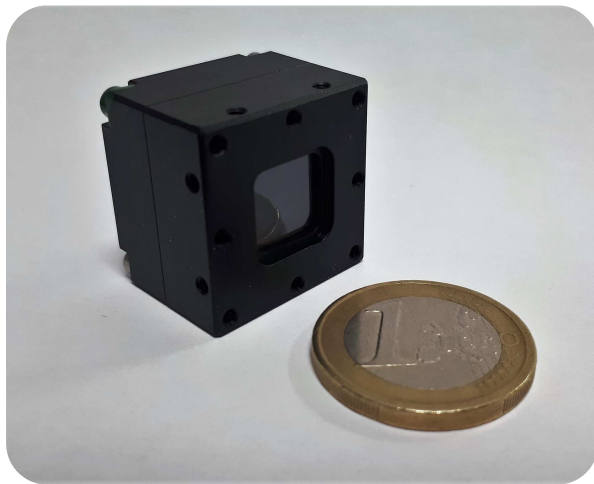


One of the most compact and lightest QVGA 12 μ m thermal imaging module in the world

Shutterless capable, ready to integrate in OEM Camera



IrLugX320 is an affordable compact and a featherweight thermal imaging camera embedding the new generation of the 320 x 240 micro-bolometer **with 12 μ m pixel** pitch in a ceramic package. This module is especially designed for simple integration into customer sub-system, enabling low-power consumption, providing an agility of configurations and addressing the medium and high volumes OEMs for **low-end markets**

IrLugX320 is the plug and play perfect core engine, thanks to **easy to use USB 2.0 interface** with 16 bits video streaming. This thermal imaging camera includes the software that performs in real time recording sequence, single image capture and display and optional Shutterless function

IrLugX320 is ready to integrate in your application thanks to a SDK providing high level services (Configuration, Control, Processing)

TYPICAL APPLICATIONS

Goggles and Monoculars
Firefighter or Maintenance Handheld Cam
Temperature Measurement
UAVs, UGVs and Robotics
Surveillance, Security and Maritime Cameras
Building Management and Quality Inspection
Automotive Vision



IRLUGX VIEWER (GUI)

IrLugX Viewer 320 is a powerful user-friendly tool to manage and optimize the module settings:

Calibration wizard (up to 8 maps: gain and/or offset tables)

Easy and fast Import/Export of gain, offset & data to Matlab; ImageJ, Excel, ...

BPR (Bad Pixel Replacement); NUC (Non Uniformity Correction); AGC (Automatic Gain Correction) management can be done by just clicking

Free SDK (Software Design Kit): for easy integration into your applications

Compatible with **Windows & Linux**



KEY TECHNICAL SPECIFICATIONS

SYSTEM FEATURES	IrLugX320	DESCRIPTION
Camera resolution	320x240 pixels	Based on Micro-bolometer technology with 12 µm pixel pitch : ATTO320-058 detector from ULIS
Spectral response (LWIR)	8 - 14 µm	
NETD (F/1 ; 300K ; 30 Hz)	< 60 mK	
Power consumption	< 700mW	@ 30 Fps
Interfaces: USB 2.0 (micro-USB type B female)	RAW 16 bits digital output Camera control	Plug & Play to any host controller system (PC or Computer Board) USB 2.0 compliant up to 60 Fps
Shutter	No	Standard model
Camera control	Free run	Exposure mode
	Adjustable IR setting point (Exposure time, Gain, ...)	
	Power consumption management: Standby power mode Deep standby power mode	Video disable and wakeup for fast time to image Video disable, detector powered off
User Configuration Storage	Up to 8	On module
Storage Calibration Table	Up to 8	On module
Time to image	< 5 s	Time from power on at USB power supply
Image Optimization	BPR, NUC, AGC	Configuration dependant Processing inside IrLugX320's SDK on Host controller (PC or Computer Board)
Video Speed: Full Frame Rates Standard Frame Rates Exportable Frame Rates	60 Hz 30 Hz 9 Hz	Using digital mode for video output from sensor. A 60 Hz version is available on demand (with some limitations)
Image Flip	Yes	On module
Qualification grade	Industrial	
Operating temperature range	-20°C; +60°C	
Size: Length x Width x Height	24 x 24 x 18 mm ³	With mechanical casing excluding optic
Weight	< 7 g < 22 g	Excluding mechanical casing and optic Including mechanical housing and optic
Demo Graphical User Interface	Windows	IrLugX Viewer adjusts all image parameters in GUI. GUI compatible Windows only
SDK	Windows & Linux	SDK compatible with Windows, Linux of Operating System

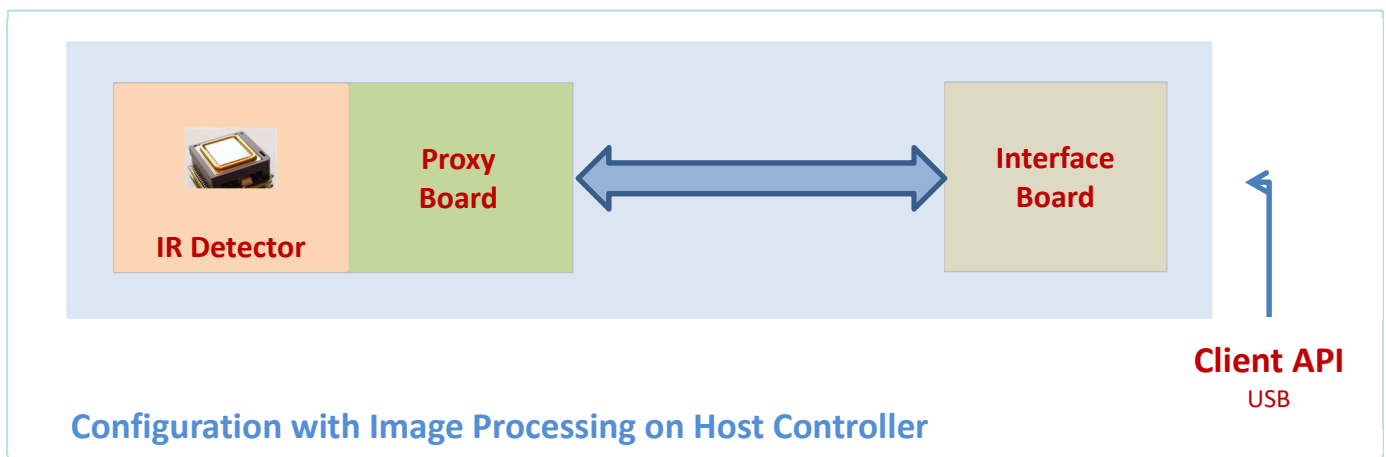
The products described herein are subject to French Government Export Controls except the products of lower than or equal to 9 Hz frame rates.

CONFIGURATION OF ENGINE CORE

IrLugX320 is developed using a modular concept and architecture.

Thanks to its SDK, IrLugX320-USB consists in embedding the processing into the Host Controller mainly for UAVs, UGVs and Machine Vision applications.

For handheld and portable application, a Processing Board can be added to the previous stack (see figure below), allowing to embed the optimized and just needed processing to the aimed application.



ORDER YOUR OWN AND GET IT!

The following list is not comprehensive. Many other configurations may be ordered (e.g. alternative lens, higher frame rate, etc...)

MODEL (with housing and standard grade)	VIDEO SPEED	LENS	DIMENSION/WEIGHT	PART NUMBER
IrLugX320-USB	30 Hz	25 mm; HFOV: 8.7°; F/1.20	38 x 38 x 58 mm ³ / 82 g	M320-0001AIGI-CAUB2- XX S
IrLugX320-USB	30 Hz	16.7 mm; HFOV: 13.2°; F/1.25	38 x 38 x 40 mm ³ / 56 g	M320-0001AHGI-CAUB2- XX S
IrLugX320-USB	30 Hz	7.5 mm; HFOV: 29.5°; F/1.40	30 x 24 x 34 mm ³ / 48 g	M320-0001AGGI-CAUB2- XX S
IrLugX320-USB	9 Hz	25 mm; HFOV: 8.7°; F/1.20	38 x 38 x 58 mm ³ / 82 g	M320-0001EIGI-CAUB2- XX S
IrLugX320-USB	9 Hz	16.7 mm; HFOV: 13.2°; F/1.25	38 x 38 x 40 mm ³ / 56 g	M320-0001EHGI-CAUB2- XX S
IrLugX320-USB	9 Hz	7.5 mm; HFOV: 29.5°; F/1.40	30 x 24 x 34 mm ³ / 48 g	M320-0001EGGI-CAUB2- XX S
IrLugX320-USB	30 Hz	No	24 x 24 x 18 mm ³ / 22 g	M320-0001AXGI-CAUB2- XX S
IrLugX320-USB	9 Hz	No	24 x 24 x 18 mm ³ / 22 g	M320-0001EXGI-CAUB2- XX S

Note of Part numbering:

XX are summarized below in table of **compatibility version**.

The last digit means the maturity level of the device. Example: **S** is meaning an engineering sample device. **M** is meaning the mass production device.

COMPATIBILITY VERSION

RELEASE VERSION	RELEASE DATE	NEW FEATURES
A0	July 2019	Operating System : Windows & Linux (1)

Note (1): Windows (x86; x64) or Linux on Embedded Platform ARM9, Libc 2.x with x>=13 or Linux_x86, Linux_x64 on Platform (Intel and AMD)

WHAT'S IN THE BOX

Module of Thermal Imaging Camera

SmartIR viewer (GUI)

ICD (mechanical drawings)

SDK for developers

Documentation (user's guide)

Downloadable on Device-ALab website through customer access

General Notices:

This OEM module is intended only for product evaluation, development or incorporation into other product or sub-system. It is not a finished end-product fit for general consumer use. As such, this module is without the scope of the European Union (EU) directives concerning electromagnetic compatibility (EMC).