PEMBROKE INSTRUMENTS, LLC

SWIR CAMERA DATA SHEET

SenS 1280V ST

Manufacturer: New Imaging Technologies (NIT)

Technical data reproduced from the original manufacturer datasheet.

For a quote or more information email

sales@pembrokeinstruments.com

Ordering Information

Commercial Reference

Commercial reference	Description	Ordering information
SenS 1280 V-ST	SenS 1280 USB3 (HD)	9SEC1901AE31VC0# #: **product revision, A or higher**

Included Accessories

- Power and trigger Cable (Hirose HR10 connector)
- 12V power supply
- Heatsinks
- Cardboard shipping and storage box

Optional Accessories

- Optical Filter mount
- Hardened protective case

Custom variants (OEM)

Various options may be available depending on your camera model:

- Open frame housing
- Sensor without cover glass
- Flex configuration (sensor board split from camera electronics)
- …

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Products are only warranted by NIT to meet NIT's production data sheet specifications.

FUNCTIONALITIES

Camera

Main camera features (For full documentation contact):

Sensor characteristics	Sensor type	InGaAs (0.9-1.7 spectral response, see QE curve)
	Pixel pitch	$10\mu m$
	Resolution	1280x1024
	Sensor diagonal	16.4mm
	Sensor noise	• High gain (CDS): $30e^-$ typical • Low gain: $120e^-$
	Dynamic range	• High gain (CDS): 52dB typical • Low gain: 61dB typical
	Peak QE	>80%
Camera features	Frame rate	60Hz (full frame)
	Sensor Readout	Global shutter ITR (Integrate Then Read)
	Sensor modes	Low Gain / High gain (CDS)
	Output Type	14 bits pixel format
	Exposure time	Minimum Integration time: 10us Controlled by camera register or Trigger width
	Trigger	Internal/External (LVTTL) Software Trigger
	Trigger delay	User-Selectable
	Partial reading mode	Region of Interest (ROI). User-Selectable with a step of 8 pixels Maximum FPS increase with reduced ROI
Software (Processing on host system)	NIT Software	NITVision GUI: • Windows/Linux, x64/aarch64 platforms NITLibrary SDK: • Windows/Linux, x64/aarch64 platform: C++/Python Windows, x64 platform: .NET
	AGC (Histogram Stretching)	Automatic/Manual Automatic: continuous offset and gain adjustment based on current image histogram User Selectable parameters: % pixels to ignore, ROI Manual: User-Selectable low and high limits
	NUC correction	Correction 1-Point or 2-Point. 2 Point factory calibrated. (20°C sensor Temperature)
	Bad pixel correction	Factory calibrated Bad Pixel Map
	Temperature monitoring	Image Sensor
	Image Flip	Horizontal/Vertical
	Image / video recording	JPEG, PNG, TIFF / AVI, PTW

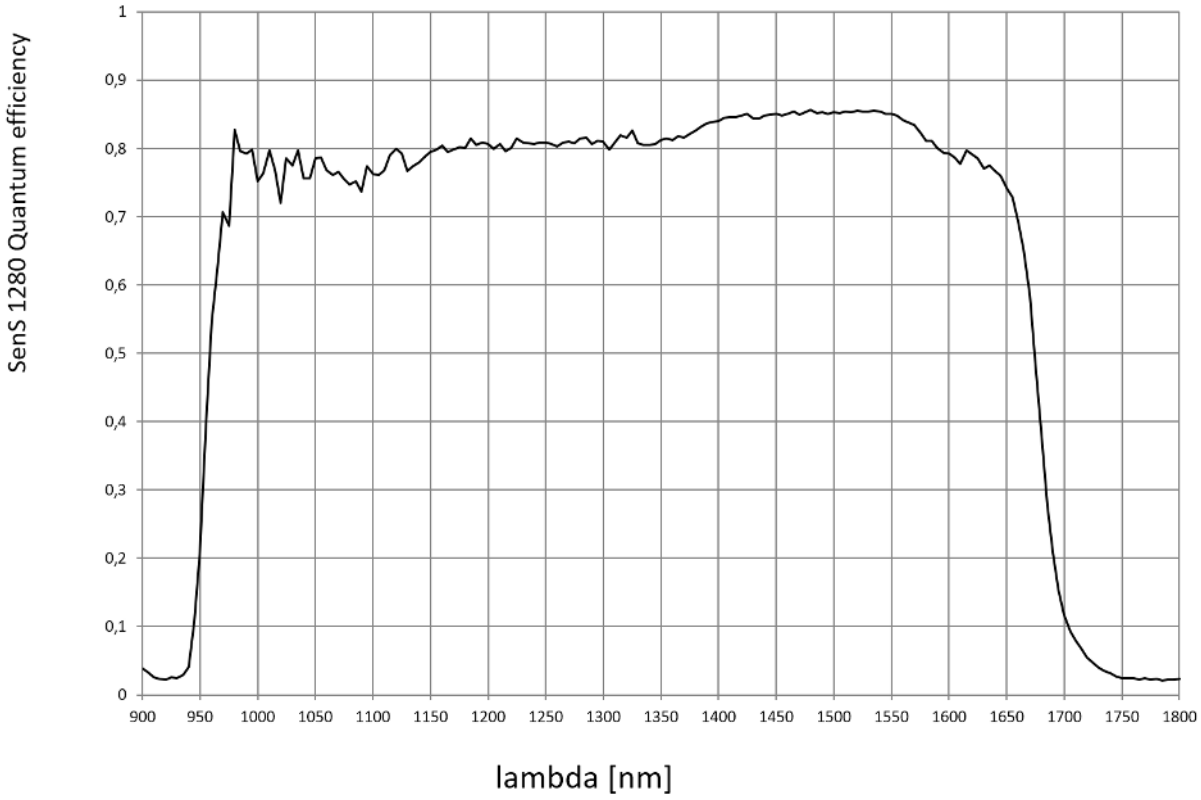
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Environment and mechanical characteristics	Power consumption (12V supply)	• Camera: <3W
		• Cooling: User-Selectable TEC power limit
		  ○ Off
		  ○ Low: <1W
		  ○ Medium: <2W
		High: <4W

	Supply voltage range	• 6 to 15V (Overvoltage, reverse polarity protection)
	Storage temperature	• -40 to +80°C
	Operating temperature	• -40 to +71°C
	Size (WxHxL, mm)	58x58x69.8 • 118x58x69.8 with heatsinks
	Weight	<350g without accessor heatsinks
	Lens mount	C-Mount

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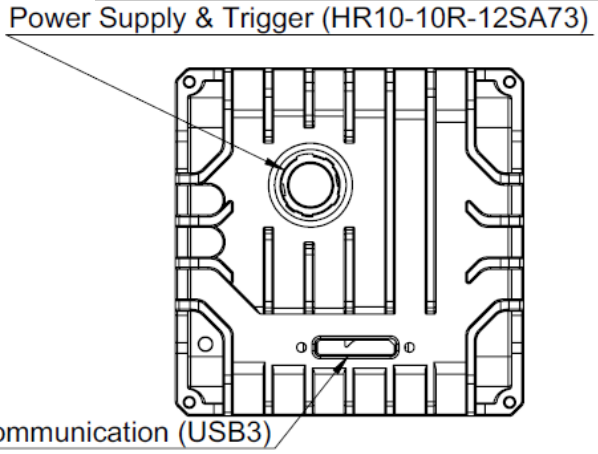
QE Curve (typical)



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Electrical ICD

Reference	Designation	Manufacturer
HR10-10R-12SA	Connector Female 12 positions	Hirose

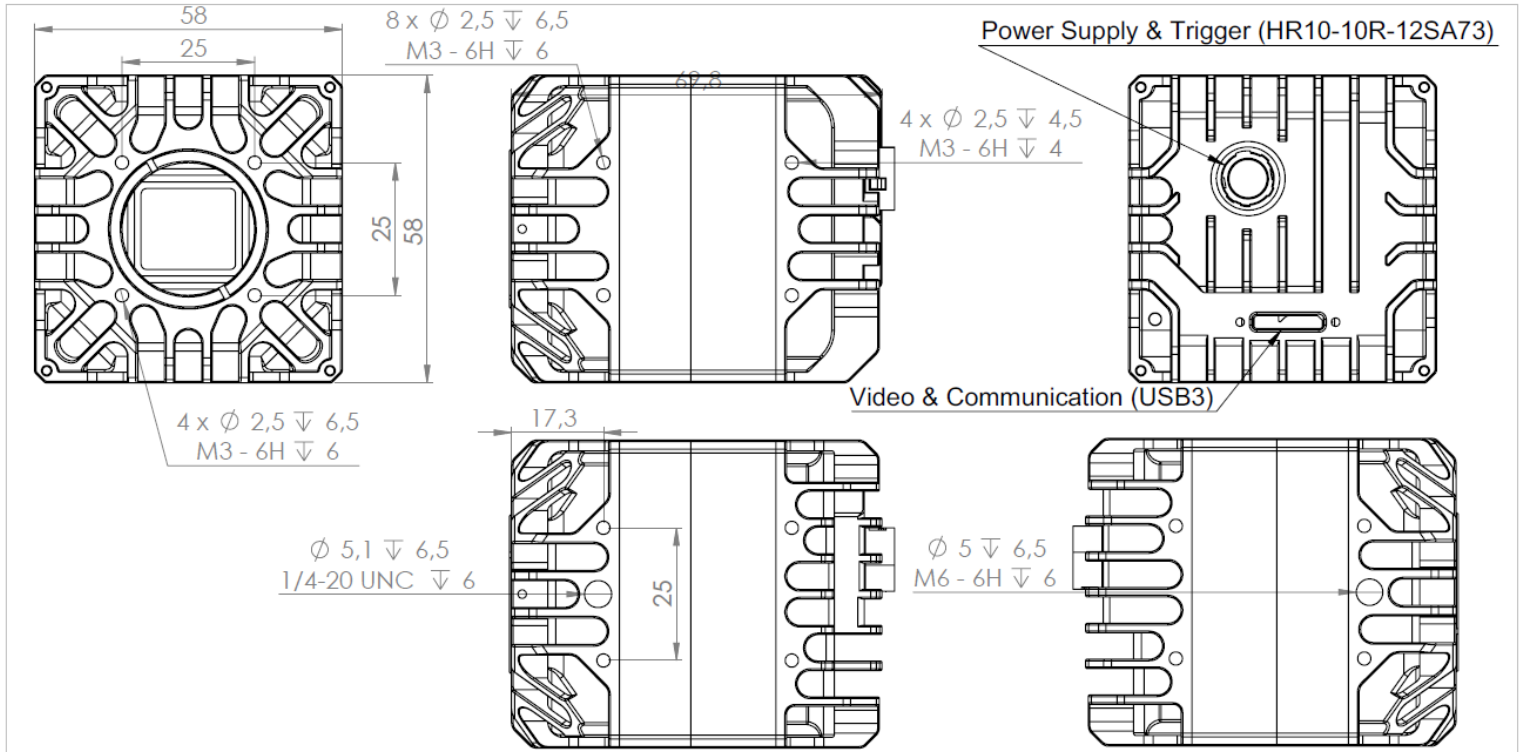


Reference	Designation	Manufacturer
897-10-010-00-300002	Mini USB 3.0	MILL-MAX

Hirose Connector Pinout		
Pin	Signal Name	Cable color
1	Power (6-24V)	Red/Purple/(Orange)
2	Power GND	Blue/Brown
3	Trigger OUT2	White
4	Trigger OUT1	Yellow
5	NC	
6	NC	
7	Reserved	
8	Power GND	Blue/Brown
9	Power (6-24V)	Red/Purple/(Orange)
10	Trigger IN/OUT (LVTTL)	Green
11	Not connected	
12	Trigger GND	Black

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Mechanical ICD (SenS 1280 V-ST)

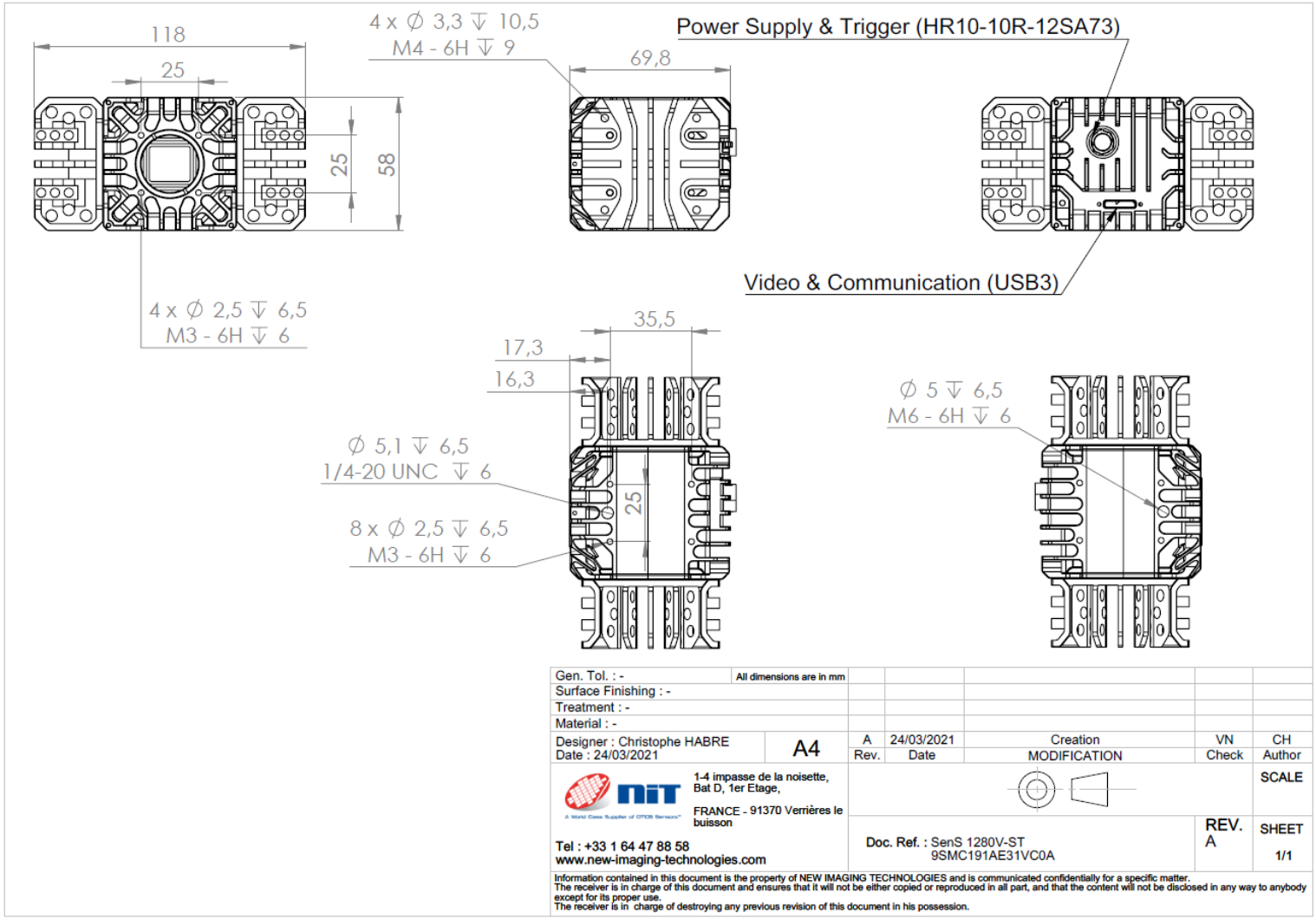


Gen. Tol. : - All dimensions are in mm						
Surface Finishing : -						
Treatment : -						
Material : -						
Designer : Christophe HABRE Date : 24/03/2021	A4	A Rev.	24/03/2021 Date	Creation MODIFICATION	VN Check	CH Author
1-4 impasse de la noisette, Bat D, 1er Etage, FRANCE - 91370 Verrières le buisson Tel : +33 1 64 47 88 58 www.new-imaging-technologies.com						SCALE
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Mechanical ICD - With Heatsinks (SenS 1280 V-ST)



Gen. Tol. : - All dimensions are in mm						
Surface Finishing : -						
Treatment : -						
Material : -						
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