PEMBROKE INSTRUMENTS, LLC

SWIR CAMERA DATA SHEET

SenS 1920V 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 1920 V-ST	USB3 Full-HD Camera	9SEC2101AE31VC0# #: **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)
- …

*Products and specifications discussed herein are for evaluation and reference purposes only and are subject to change by NIT without notice.
Products are only warranted by NIT to meet NIT's production data sheet specifications.

FUNCTIONALITIES

Camera

Main camera features (For full documentation contact):

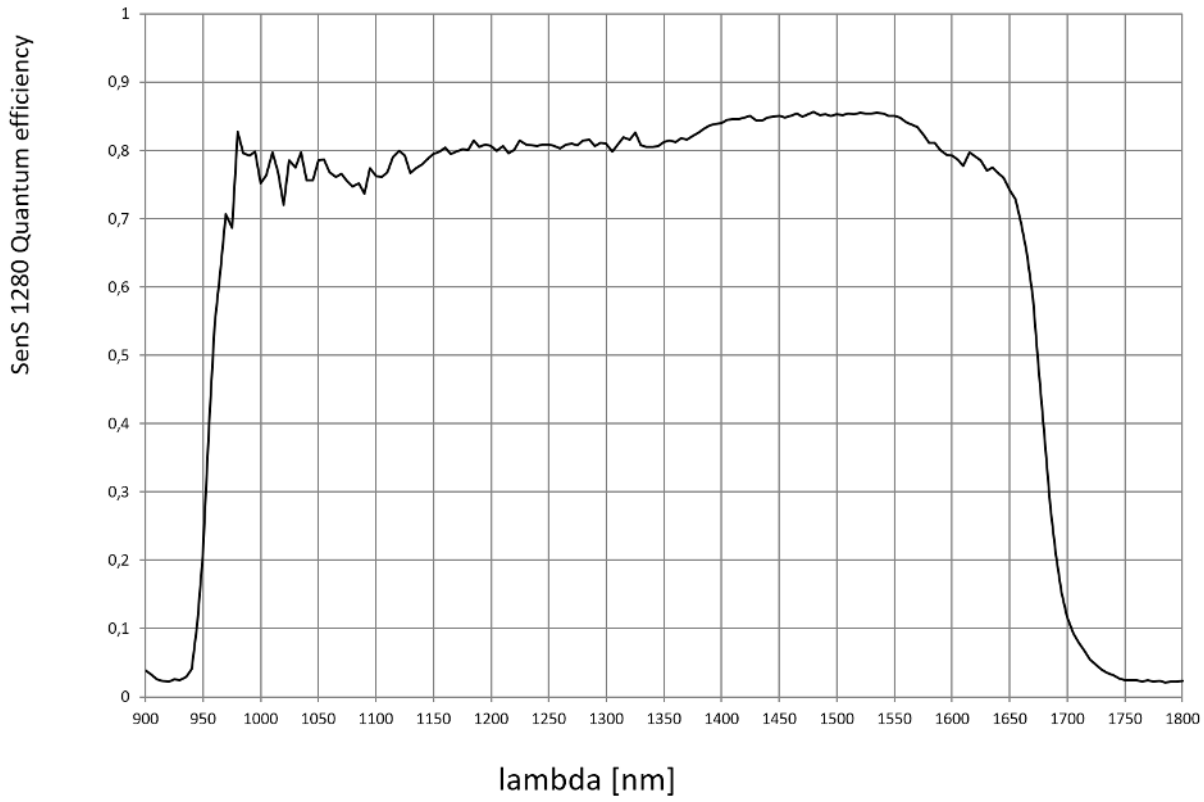
Sensor characteristics	Sensor type	InGaAs (0.9-1.7 spectral response, see QE curve)
	Pixel pitch	$8\mu m$
	Resolution	1920x1080
	Sensor diagonal	17.6mm
	Sensor noise	• High gain (CDS): $25e^-$ typical • Low gain: $150e^-$
	Dynamic range	• High gain (CDS): 54dB typical • Low gain: 63dB typical
	Peak QE	>80%
Camera features	Frame rate	Up to 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 gain and offset
	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

*Products and specifications discussed herein are for evaluation and reference purposes only and are subject to change by NIT without notice.
Products are only warranted by NIT to meet NIT's production data sheet specifications.

Environment and mechanical characteristics	Power consumption (12V supply)	• Camera: <3W • Cooling: User-Selectable TEC power limit o Off o Low: <1W o 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 heatsinks
	Lens mount	C-Mount

*Products and specifications discussed herein are for evaluation and reference purposes only and are subject to change by NIT without notice.
Products are only warranted by NIT to meet NIT's production data sheet specifications.

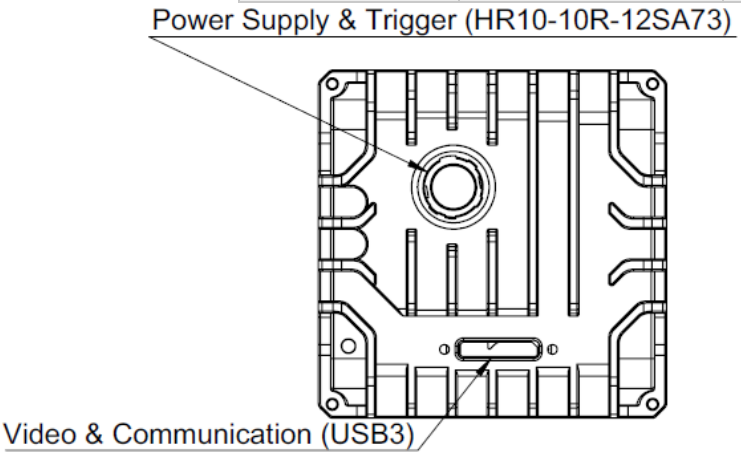
QE Curve (typical)



*Products and specifications discussed herein are for evaluation and reference purposes only and are subject to change by NIT without notice.
Products are only warranted by NIT to meet NIT's production data sheet specifications.

Electrical ICD

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

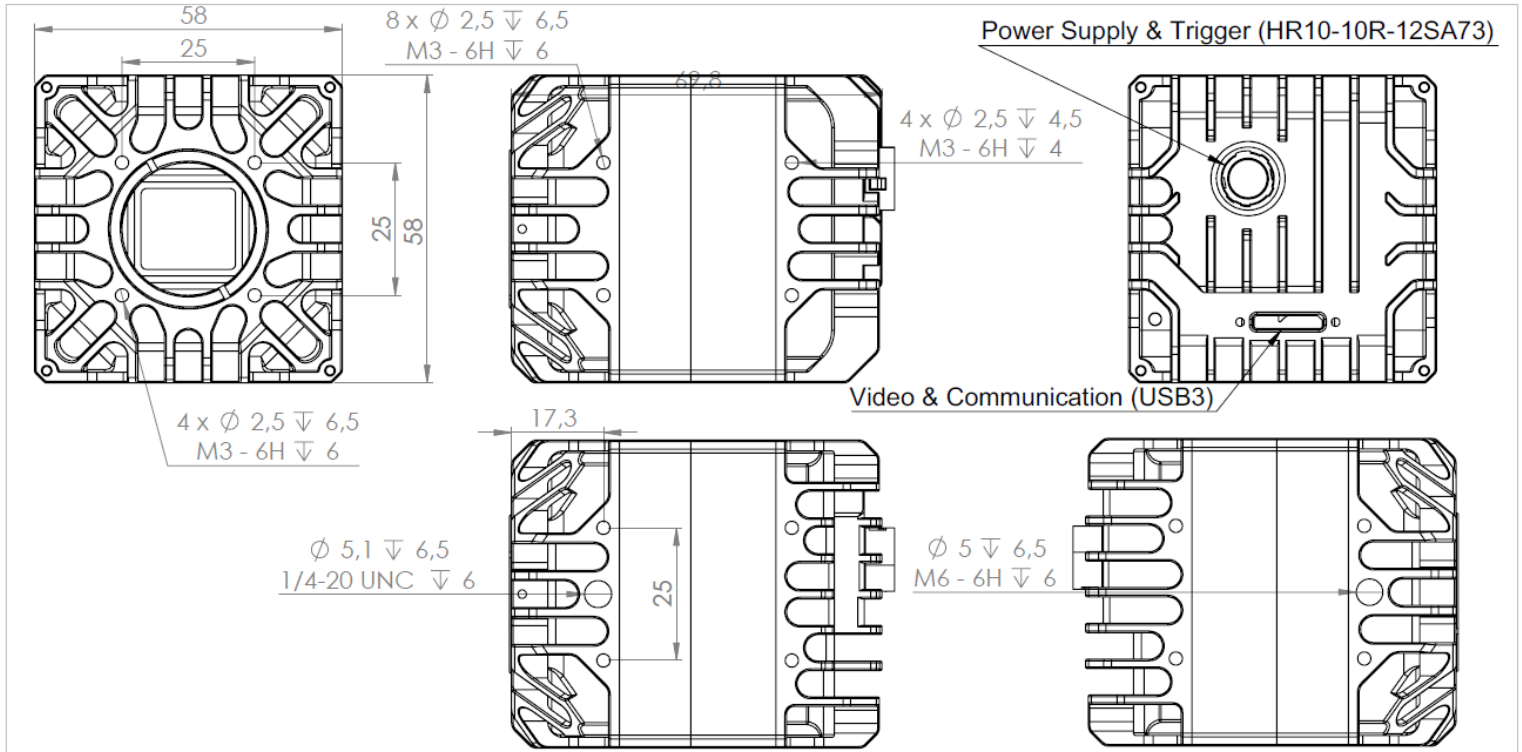


Reference	Designation	Manufacturer
897-10-010-00-300002	Mini USB 3.0	MILL-MAX

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

*Products and specifications discussed herein are for evaluation and reference purposes only and are subject to change by NIT without notice.
Products are only warranted by NIT to meet NIT's production data sheet specifications.

Mechanical ICD (SenS 1920 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

Doc. Ref. : SenS 1280V-ST
9SMC1901AE31VC0A

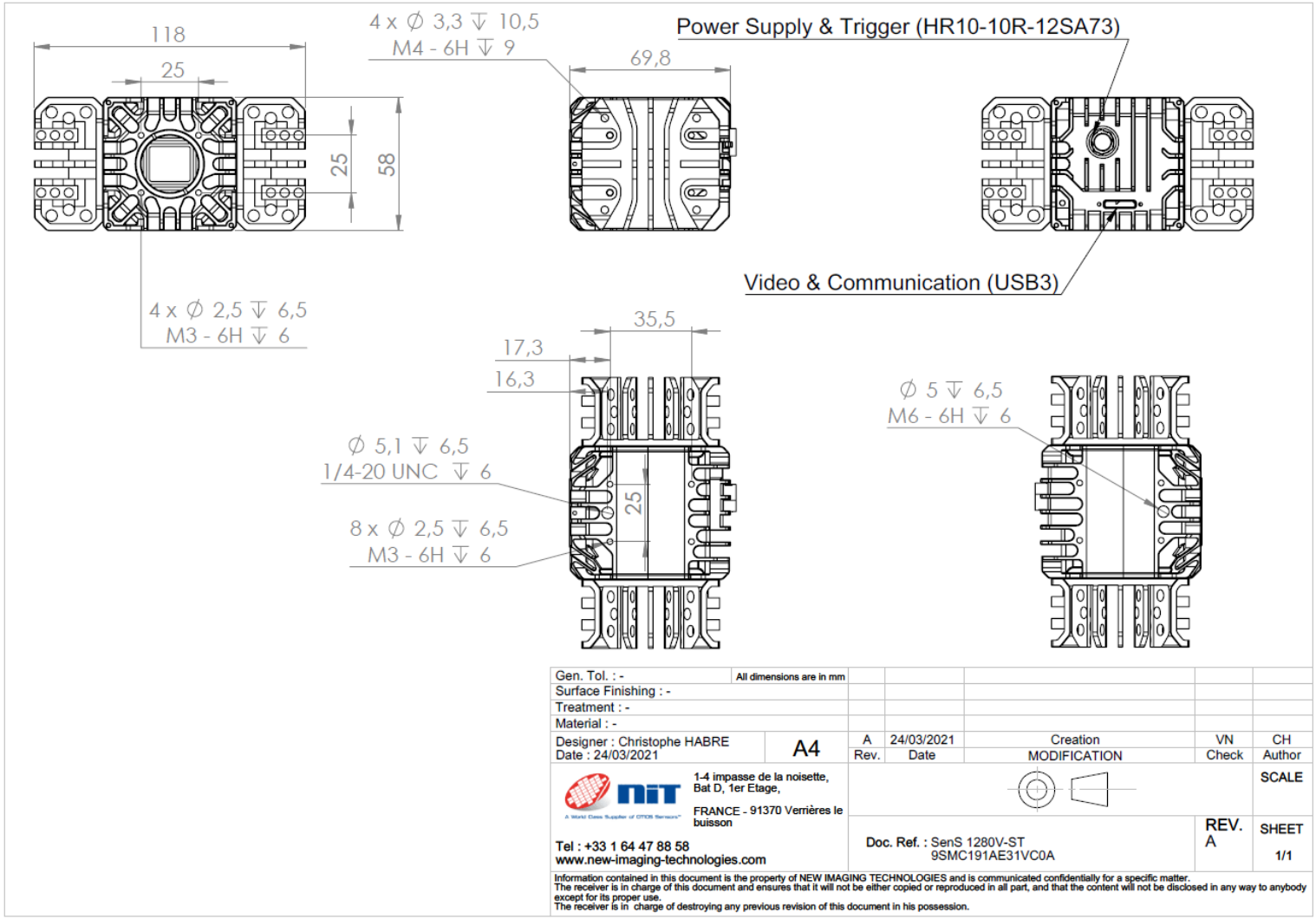
REV. A

SHEET 1/1

Information contained in this document is the property of NEW IMAGING TECHNOLOGIES and is communicated confidentially for a specific matter.
The receiver is in charge of this document and ensures that it will not be either copied or reproduced in all part, and that the content will not be disclosed in any way to anybody except for its proper use.
The receiver is in charge of destroying any previous revision of this document in his possession.

*Products and specifications discussed herein are for evaluation and reference purposes only and are subject to change by NIT without notice.
Products are only warranted by NIT to meet NIT's production data sheet specifications.

Mechanical ICD - With Heatsinks (SenS 1920 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

Doc. Ref. : SenS 1280V-ST
9SMC191AE31VC0A

REV. A

SHEET 1/1

Information contained in this document is the property of NEW IMAGING TECHNOLOGIES and is communicated confidentially for a specific matter.
The receiver is in charge of this document and ensures that it will not be either copied or reproduced in all part, and that the content will not be disclosed in any way to anybody except for its proper use.
The receiver is in charge of destroying any previous revision of this document in his possession.

*Products and specifications discussed herein are for evaluation and reference purposes only and are subject to change by NIT without notice.
Products are only warranted by NIT to meet NIT's production data sheet specifications.


PEMBROKE
INSTRUMENTS
Imagining a Brighter Tomorrow
Advanced
Imaging Solutions
for a Smarter World
greateyes
CHARLIE
Avenir
PHOTONICS
ARIS
Compact USS spectrometer
NYLIS
High resolution spectrometer
pembrokeinstruments.com
sales@pembrokeinstruments.com
+1-650-550-8618
CAMERAS | SPECTROMETERS | IMAGING SOLUTIONS