PEMBROKE INSTRUMENTS, LLC

SWIR CAMERA DATA SHEET

HiPe SenS 640V 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
HiPe SenS 640V-ST	HiPe SenS 640 USB3	9SMC1902AT31VI0# #: product revision, C or higher

Included Accessories

- Power and trigger Cable (Hirose HR10 connector)
- NITVision GUI/NITLibrary SDK
- Cardboard shipping and storage box

Optional Accessories

- Hardened protective case

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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):

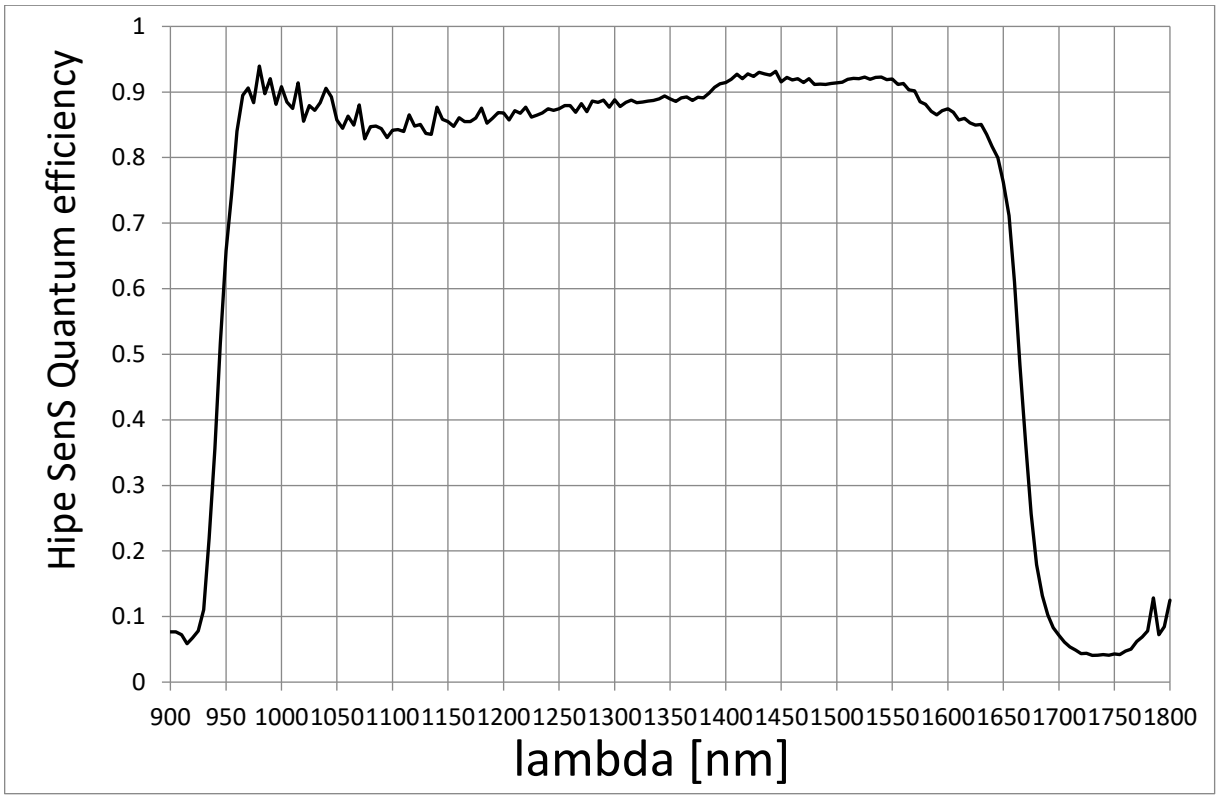
Sensor characteristics	Sensor type	InGaAs (0.9-1.7 spectral response, see QE curve)
	Pixel pitch	$15\mu m$
	Resolution	640x512
	Sensor diagonal	12.3mm
	Sensor noise	• High gain (CDS): <40e^- • Medium gain: <95e^- • Low gain: <185e^-
	Full well capacity	• High gain (CDS): <15ke^- • Medium gain: <122ke^- • Low gain: <315ke^-
	Dynamic range	• High gain: 52dB typical • Medium gain: 62dB typical • Low gain: 64dB typical
	Dark current	<2500 $e^-.pixel^{-1}.s^{-1}$; 2000 $e^-.pixel^{-1}.s^{-1}$ typical @-15°C FPA Temperature <1500 $e^-.pixel^{-1}.s^{-1}$; 1200 $e^-.pixel^{-1}.s^{-1}$ typical @-20°C FPA Temperature
	Peak QE	>85%
Camera features	Frame rate	>200Hz (full frame)
	Sensor Readout	Global shutter ITR (Integrate Then Read) and IWR (Integrate While Read)
	Sensor modes	3 modes: Linear Low Gain, Linear Medium Gain and Linear High Gain
	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 @-15°C sensor temperature
	Bad pixel correction	Factory calibrated Bad Pixel Map
	Temperature monitoring	Image Sensor
	Image Flip	Horizontal/Vertical
	Image recording	JPEG, PNG, TIFF
	Video recording	AVI, PTW

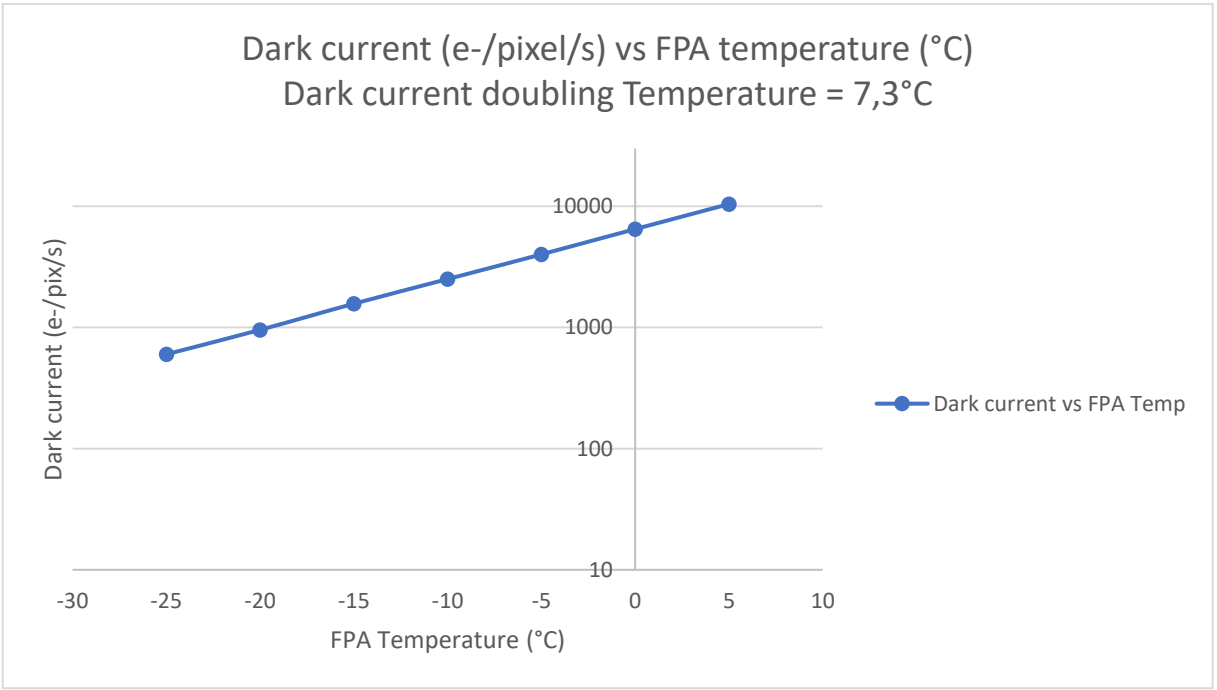
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Environment and mechanical characteristics	Power consumption (12V supply)	• Camera: <2.5W • Cooling (Sensor TEC + Air Cooling): ○ <15W
	Storage temperature	-10°C to +80°C
	Operating temperature	0°C to +65°C
	Size (WxHxL, mm)	57x46x105.5
	Weight	<350g
	Lens mount	C-Mount

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QE Curve (typical)

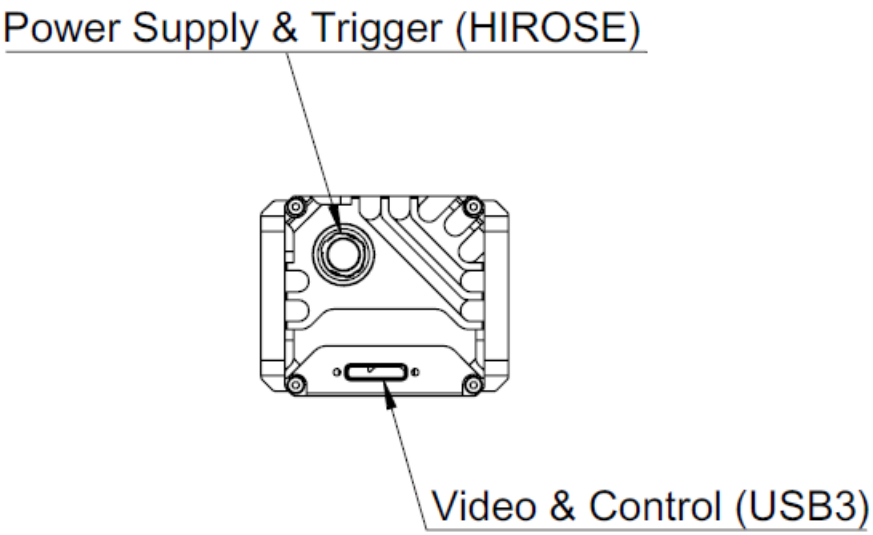




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Electrical ICD

Reference	Designation	Manufacturer
HR10-10R-12SA	12 pins female connector	Hirose

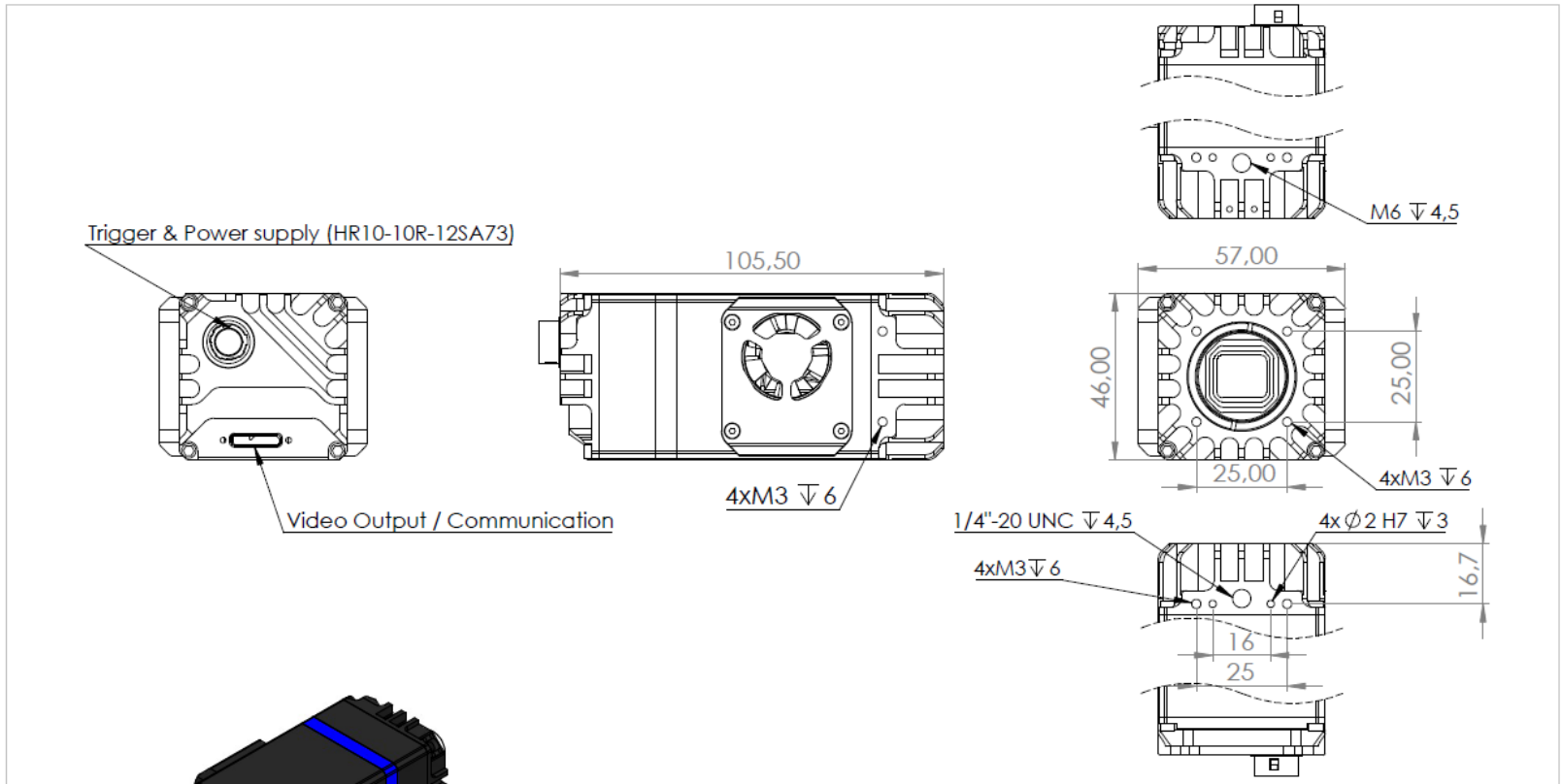


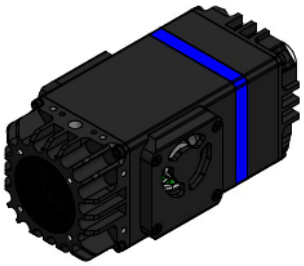
Reference	Designation	Manufacturer
897-10-010-00-300002	Mini USB 3.0	MILL-MAX

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 (HiPe SenS 640 V-ST)





Gen. Tol. : - All dimensions are in mm						
Surface Finishing : -						
Treatment : -						
Material : -						
Designer : Martin SCHWEITZER Date : 27/03/2020	A4	A Rev.	27/03/2020 Date	Creation MODIFICATION	VN Check	MS Author

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SCALE 1:1.5

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REV. A

SHEET 1/1

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