PEMBROKE INSTRUMENTS, LLC

SWIR CAMERA DATA SHEET

WIDY SenS 640A STE

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
WiDy SenS 640 A-STE PAL	WiDy SenS 640 embedded CCIR (PAL) camera	9SEC1601AE01PC0# #: **product revision, A or higher**
WiDy SenS 640 A-STE NTSC	WiDy SenS 640 embedded EIA (NTSC) camera	9SEC1601AE01NC0# #: **product revision, A or higher**

Included Accessories

- Power and communication Cable (Harwin connector)
- 12V power supply
- NITLink GUI
- Cardboard shipping and storage box

Optional Accessories

- Heatsinks
- 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	$15\mu m$
	Resolution	640x512 (VGA)
	Sensor diagonal	12.3mm
	Sensor noise	• High gain (CDS): <$50e^-$ • Low gain : < $270e^-$ • Log: <$340e^-$
	Dynamic range	• High gain (CDS): 49dB typical • Low gain: 63dB typical • Log: 120dB typical
	Peak QE	>70%
Camera features	Frame rate	25HZ (PAL) or 30Hz (NTSC)
	Sensor Readout	Global shutter in ITR (Integrate Then Read)
	Sensor modes	4 modes: Log, Linear Low Gain, Linear High Gain and Linear High Gain with CDS
	Output Type	Analog video format, CCIR (PAL) or EIA (NTSC)
	Exposure time	Integration time variable from 10us to 28ms in NTSC Integration time variable from 10us to 34ms in PAL Maximum integration time in Log mode: 10ms
	AET (automatic exposure time)	On/Off Automatic exposure time adjustment User-Selectable parameters: from 0 to 100% related to the entire dynamic in 14 bits (0 to 16383)
	AGC (Histogram Stretching)	Automatic/Manual Automatic: continuous offset and gain adjustment based on current image histogram Manual: User-Selectable gain and offset
	Histogram calculation	User Selectable parameters: % pixels to ignore, ROI
	NUC correction	Correction 1-Point or 2-Point. 2 Point factory calibrated. (25°C sensor Temperature)
	Bad pixel correction	Factory calibrated Bad Pixel Map
	Temperature monitoring	Image Sensor
	Overlay	Histogram ROI + CrossHair
	User Configuration	Camera configuration at bootup modifiable by user
	Image Flip	Horizontal/Vertical/Both

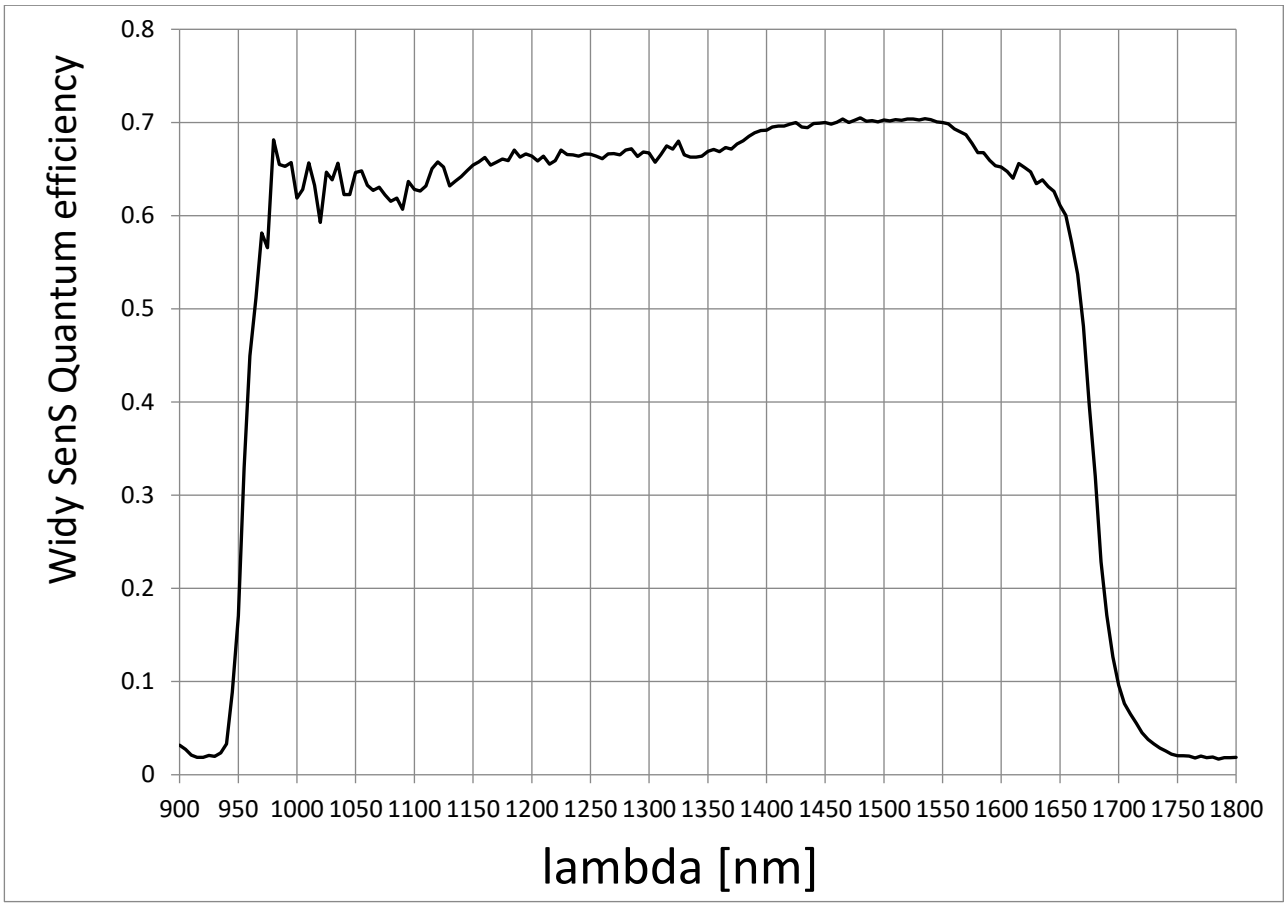
*Products and specifications discussed herein are for evaluation and reference purposes only and are subject to change by NIT without notice.
Products are only warranted by NIT to meet NIT's production data sheet specifications.

Environment and mechanical characteristics	Power consumption (12V supply)	• Camera: <5.5W
		• Cooling: User-Selectable TEC power limit
		  ○ Off
		  ○ Low: <1Ws
		  ○ Medium: <2W
		  ○ High: <4W (Default, user defined value)

	Supply voltage range	6 to 15V, 12V nominal (Overvoltage, reverse polarity protection)
	Storage temperature	-40 to +80°C
	Operating temperature	-40 to +71°C
	Size (WxHxL, mm)	46x46x58.9 90x46x65.4 with heatsinks
	Weight	<240g <340g with heatsinks
	Lens mount	C-Mount
Software	NIT Software	NITLink GUI (Windows/Linux, x64/aarch64 platforms)

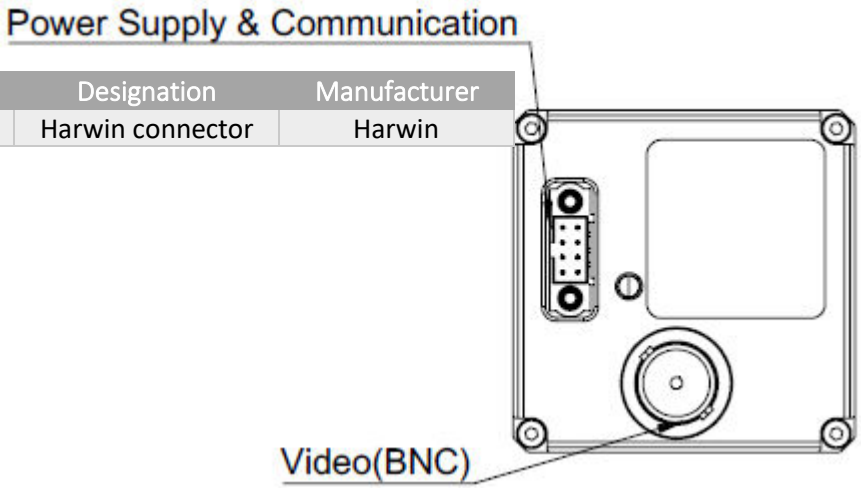
*Products and specifications discussed herein are for evaluation and reference purposes only and are subject to change by NIT without notice.
Products are only warranted by NIT to meet NIT's production data sheet specifications.

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



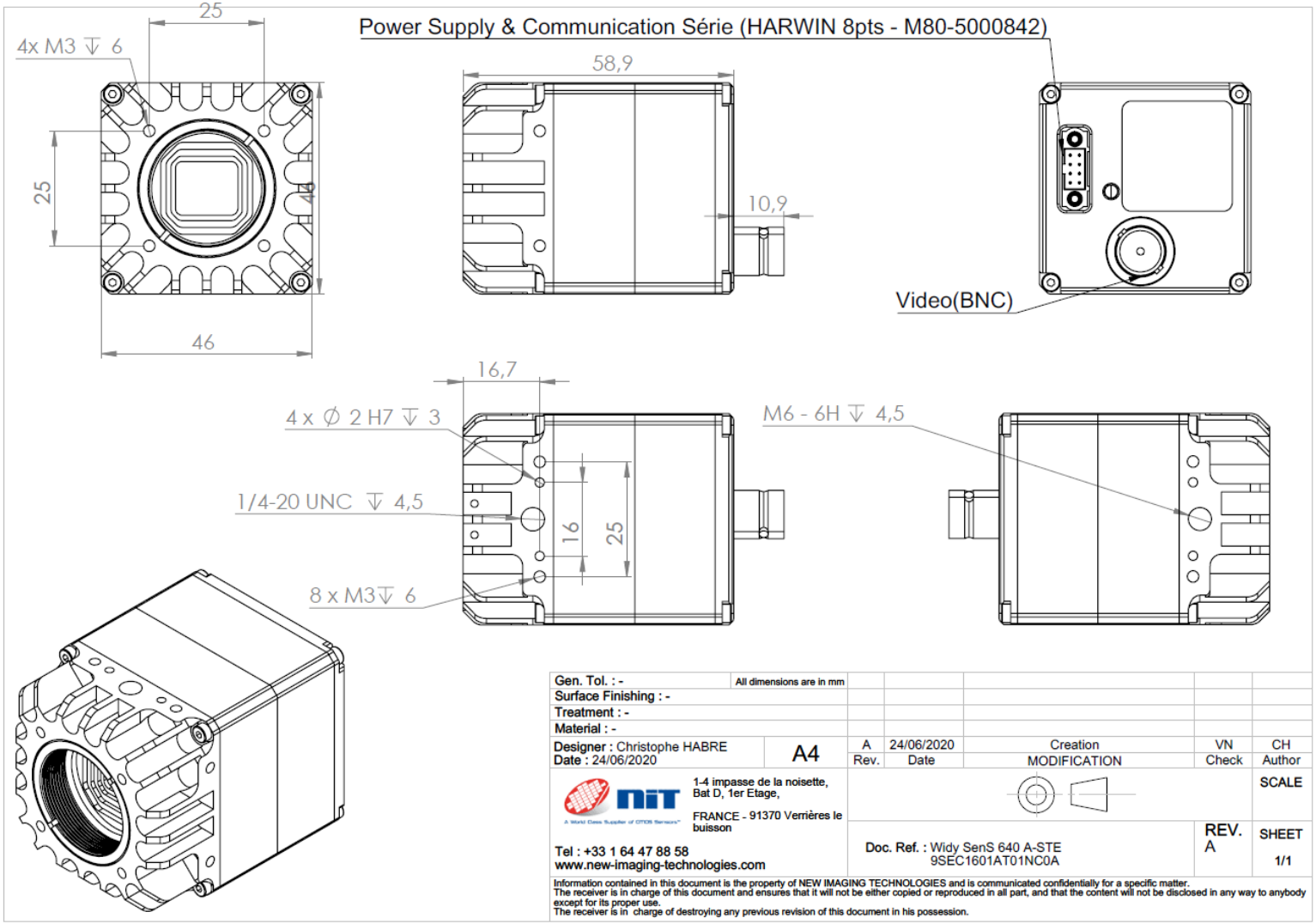
Reference	Designation	Manufacturer
M80-5000842	Harwin connector	Harwin

Reference	Designation	Manufacturer
5-1634506-2	BNC	TE CONNECTIVITY

Harwin Connector Pinout		
Pin	Signal Name	Cable color
1	RS-232 TX	Transmission (out)
2	RS-232 RX	Reception (in)
3	Reserved	-
4	Reserved	-
5	GND	
6	- Voltage	Return Power Supply
7	+Voltage	Power Supply
8	+Voltage	Power Supply

*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 (WiDy SenS 640 A-STE)



Gen. Tol. : - All dimensions are in mm						
Surface Finishing : -						
Treatment : -						
Material : -						
Designer : Christophe HABRE Date : 24/06/2020	A4	A Rev.	24/06/2020 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. : Widy SenS 640 A-STE 9SEC1601AT01NC0A	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