# PEMBROKE INSTRUMENTS, LLC

SWIR CAMERA DATA SHEET

## WIDY SWIR 640V S

Manufacturer: New Imaging Technologies (NIT)

Technical data reproduced from the original manufacturer datasheet.

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**For a quote or more information email**

**sales@pembrokeinstruments.com**

# Ordering Information

## Commercial Reference

| Commercial reference | Description | Ordering information |
|---|---|---|
| WiDy SWIR 640V-S | WiDy SWIR 640 USB3 (VGA) | 9SMC1201IY31VC0#<br>#: product revision, B or higher |

## Included Accessories

- USB and trigger Cable (SMC connector)
- NITVision GUI/NITLibrary SDK
- Cardboard shipping and storage box

## Optional Accessories

- Optical Filter mount (640 model)
- 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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# FUNCTIONALITIES

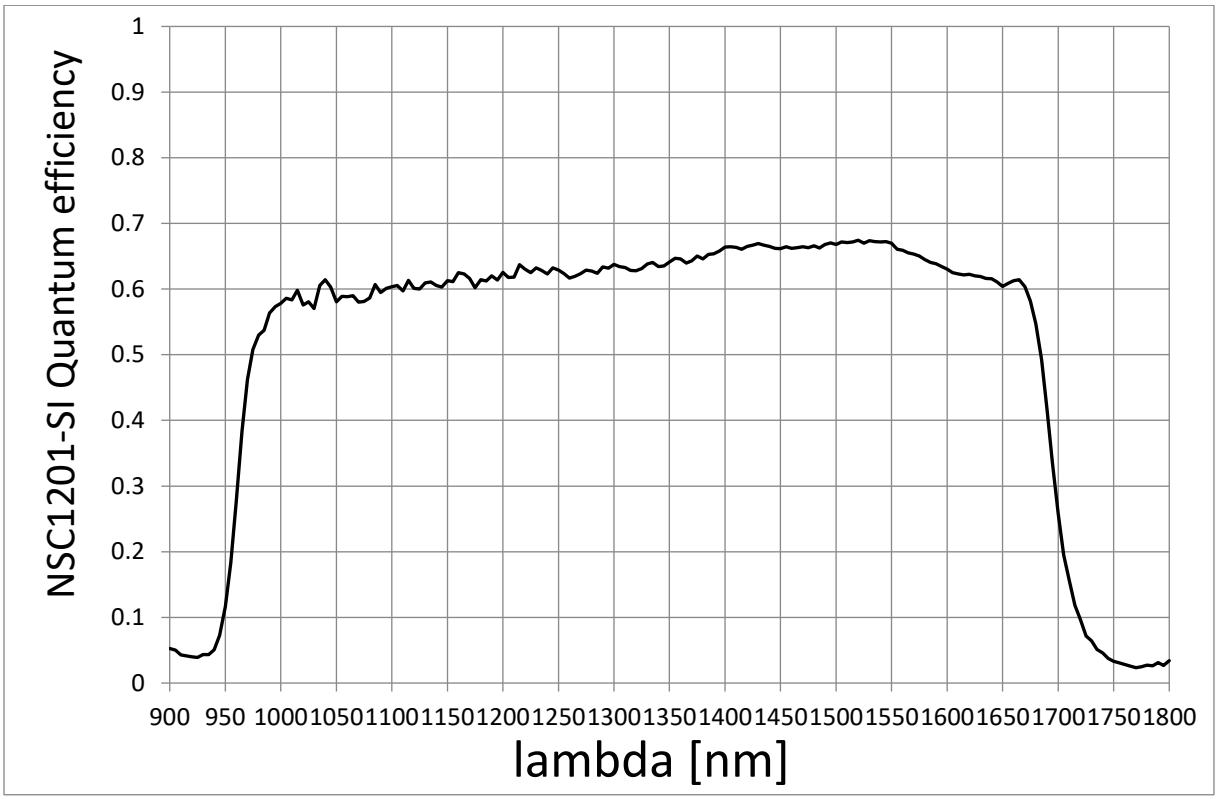
## Camera

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 | $280e^-$ typical |
| | Dynamic range | 120dB typical |
| | Peak QE | >50% |
| **Camera features** | Frame rate | Pixel clock @25MHz: Adjustable between 20Hz to 50Hz (in full resolution)<br>Pixel clock @66MHz: Adjustable between 50Hz to 100Hz (in full resolution) |
| | Sensor Readout | Global shutter in ITR (Integrate Then Read) |
| | Output Type | 14 bits pixel format |
| | Exposure time | 100us to 25ms<br>Controlled by camera register or Trigger width |
| | Trigger | Internal/External (LVTTL) |
| | Partial reading mode | Region of Interest (ROI). User-Selectable with a step of 8 pixels.<br>Maximum FPS increase with reduced ROI |
| **Software (Processing on host system)** | NIT Software | NITVision GUI (Windows/Linux, x64/aarch64 platforms)<br>NITLibrary SDK (Windows/Linux, x64/aarch64 platform, C++/Python language) |
| | AGC (Histogram Stretching) | Automatic/Manual<br>Automatic: continuous offset and gain adjustment based on current image histogram<br>User Selectable parameters: temporal averaging, ROI<br>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. (15°C sensor temperature for VGA, 20°C for QVGA) |
| | 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 |
| **Environment and mechanical characteristics** | Power consumption | <1.5W |
| | Storage temperature | -10 to +80°C |
| | Operating temperature | 0 to +65°C |
| | Size (WxHxL, mm) | 48.6x48.6x32.6 |
| | Weight | <125g |
| | Lens mount | CS-Mount (C-Mount adapter provided) |

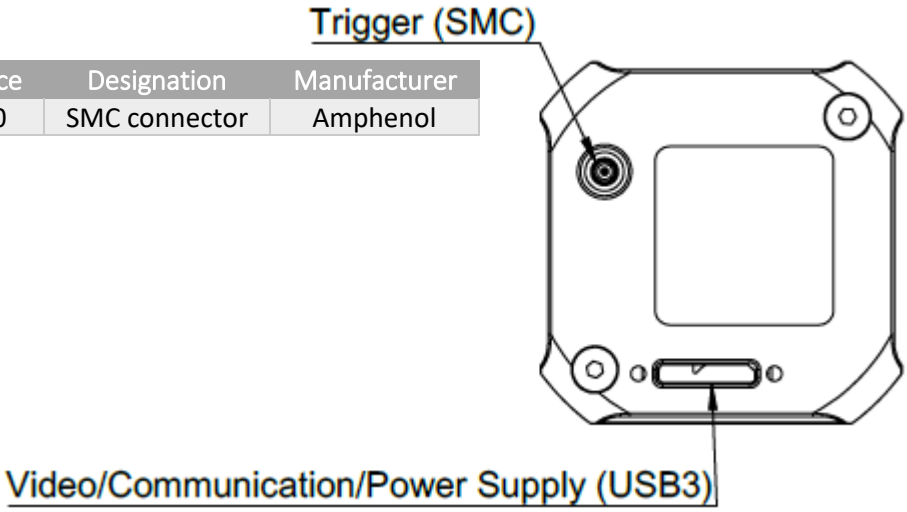
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QE Curve (typical)




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## Electrical ICD

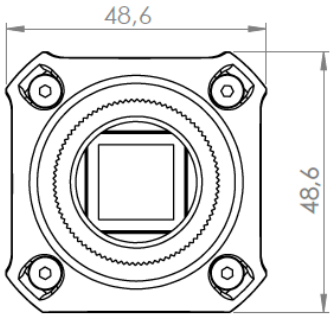


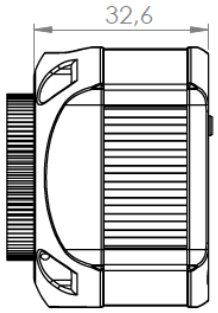

| Reference | Designation | Manufacturer |
|---|---|---|
| 152140 | SMC connector | Amphenol |

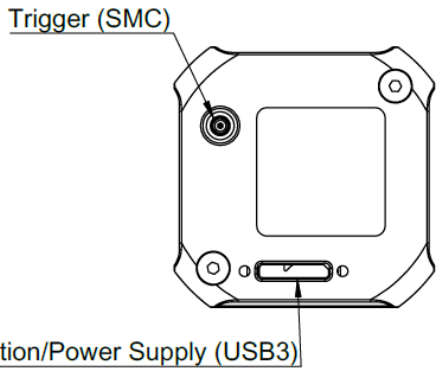
| Reference | Designation | Manufacturer |
|---|---|---|
| 897-10-010-00-300002 | Mini USB 3.0 | MILL-MAX |

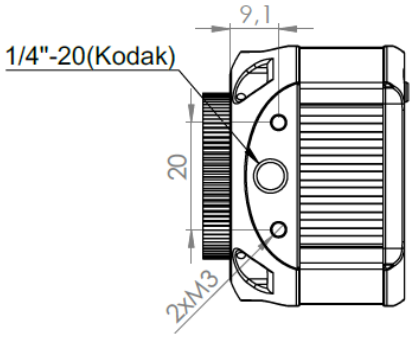
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# Mechanical ICD (WiDy SWIR 640 V-S)






| | | | | | | |
|---|---|---|---|---|---|---|
| Gen. Tol. : - All dimensions are in mm | | | | | | |
| Surface Finishing : - | | | | | | |
| Treatment : - | | | | | | |
| Material : - | | | | | | |
| Designer : Christophe HABRE<br>Date : 21/02/2017 | A4 | D | 21/02/2017 | Creation | VN | CH |
| | | Rev. | Date | MODIFICATION | Check | Author |
| 1-4 impasse de la noisette, Bat D, 1er Etage, FRANCE - 91370 Verrières le buisson<br>Tel : +33 1 64 47 88 58<br>www.new-imaging-technologies.com | | | | | | SCALE |
| | | Doc. Ref. : WIDy SWIR 640V-S 9SMC1201IY31VC0D | | | REV. D | SHEET 1/1 |

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