# PEMBROKE INSTRUMENTS, LLC

SWIR CAMERA DATA SHEET

## SenS 1280H STE

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 |
|---|---|---|
| SenS 1280 H-STE | SenS 1280 Embedded HD-SDI camera | 9SEC1901AE31DC3#<br>**#: product revision, A or higher** |

## Included Accessories

- Power and serial communication Cable (Harwin M80-5001605 connector)
- 12V power supply
- Cardboard shipping and storage box

## Optional Accessories

- Hardened protective case

## Custom variants (OEM)

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

# FUNCTIONALITIES

## Camera

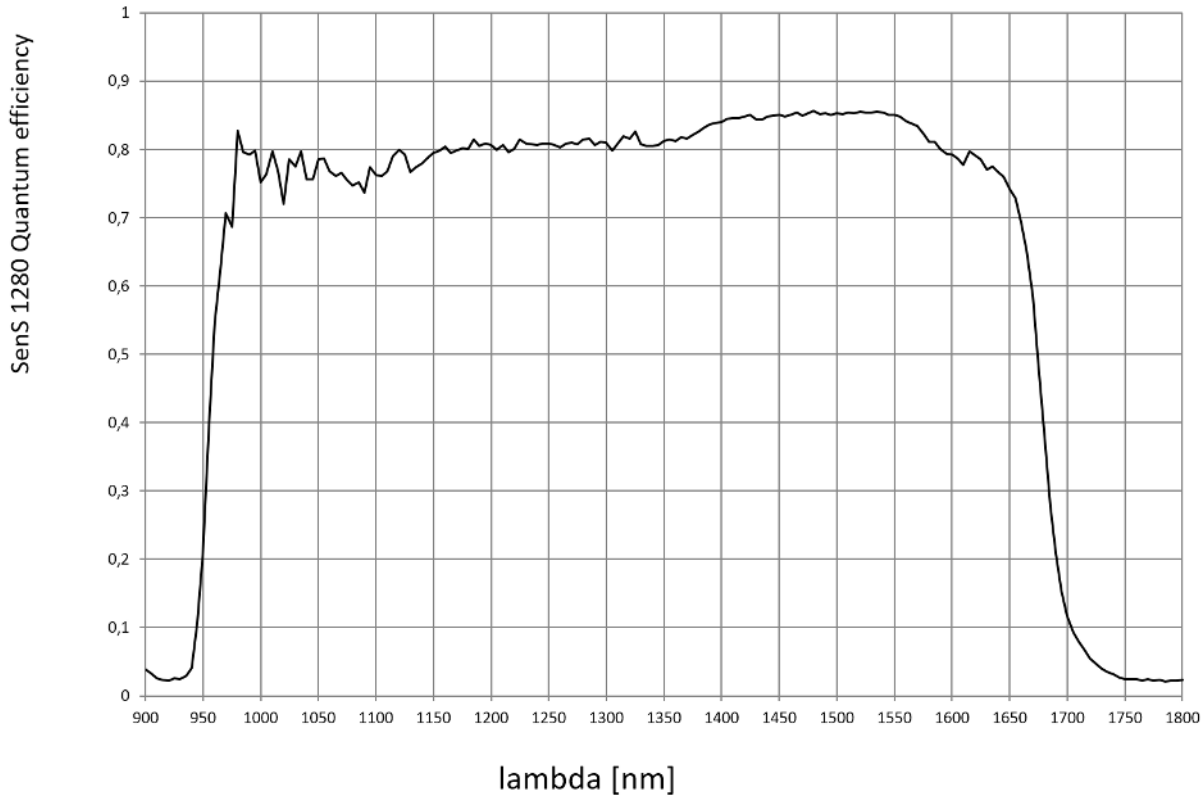
Main camera features (For full documentation contact ):

| | | |
|---|---|---|
| **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<br>• Low gain: $120e^-$ |
| | Dynamic range | • High gain (CDS): 52dB typical<br>• Low gain: 61dB typical |
| | Peak QE | >80% |
| **Camera features** | Frame rate | Defined by selected HD-SDI output format (see Output type options) |
| | Sensor Readout | Global shutter<br>ITR (Integrate Then Read) |
| | Sensor modes | Low Gain / High gain (CDS) |
| | Output data range | Defined by SDI standard |
| | Output Type | User Selectable HD-SDI standard video formats:<br>• 1080P 24Hz<br>• 1080P 25Hz<br>• 1080P 30Hz<br>• 720P 24Hz<br>• 720P 25Hz<br>• 720P 30Hz<br>• 720P 50Hz<br>• 720P 60Hz |
| | Exposure time | Minimum Integration time: 10us<br>Controlled by camera register or Trigger width |
| | Trigger | Internal/External (LVTTL)<br>Triggers provided via Harwin pin7 |
| | Trigger delay | User-Selectable |
| | Partial reading mode | Region of Interest (ROI). User-Selectable with a step of 8 pixels<br>Maximum FPS increase with reduced ROI |
| | AGC (Histogram Stretching) | Auto/Once/Manual<br>Auto: Automatic per frame gain and offset adjustment<br>Manual: User-Selectable fixed 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 |
| | File Management | Upload/Download via camera communication interface<br>Firmware Update<br>Correction table (NUC and BPM) download and upload<br>File management software provided (Windows compatible) |
| | Temperature monitoring | Mainboard & Image Sensor |
| | Overlay | Histogram ROI + Crosshair |
| | User Configuration | 4 User-defined presets<br>Selectable boot-up preset |
| | Image Flip | Horizontal/Vertical |

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| | | |
|---|---|---|
| **Environment and mechanical characteristics** | Power consumption (12V supply) | • Camera: <5.5W<br>• Cooling: User-Selectable TEC power limit<br>  ○ Off<br>  ○ Low: <1W<br>  ○ Medium: <2W<br>  ○ High: <4W (Default, user defined value) |
| | Supply voltage range | 9 to 35V (Overvoltage, reverse polarity protection) |
| | Storage temperature | -40 to +80°C |
| | Operating temperature | -40 to +71°C |
| | Size (WxHxL, mm) | 58x58x64.38 |
| | Weight | <350g |
| | Lens mount | C-Mount |
| **Software** | Control protocol | GenCP (Genicam) compliant |
| | NIT Software | NITGenicamControlTool (Windows, camera control only) |
| | Third party | Genicam/GenCP compliant software |

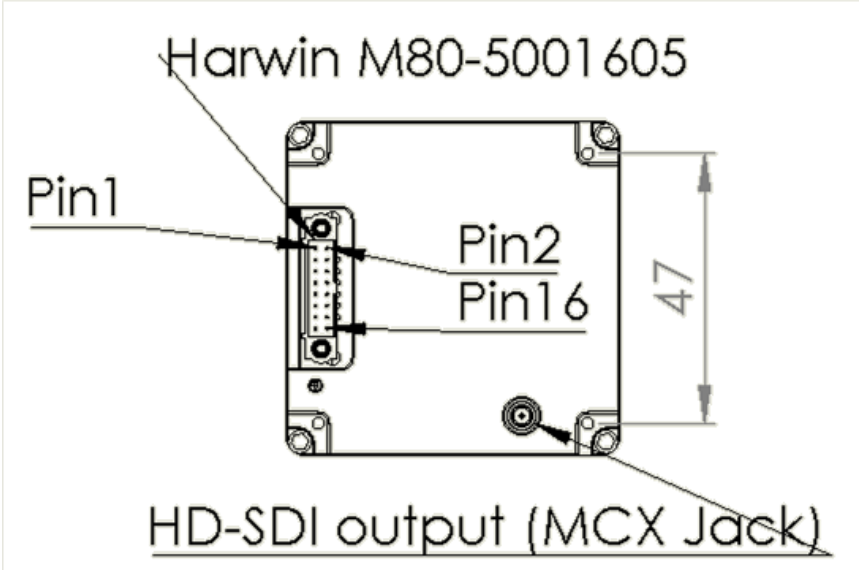
QE Curve (typical)




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# Electrical ICD (M-STE – SDR26 video output)

| Reference | Designation | Manufacturer |
|---|---|---|
| M80-5001605 | Connector 16 pins | Harwin |

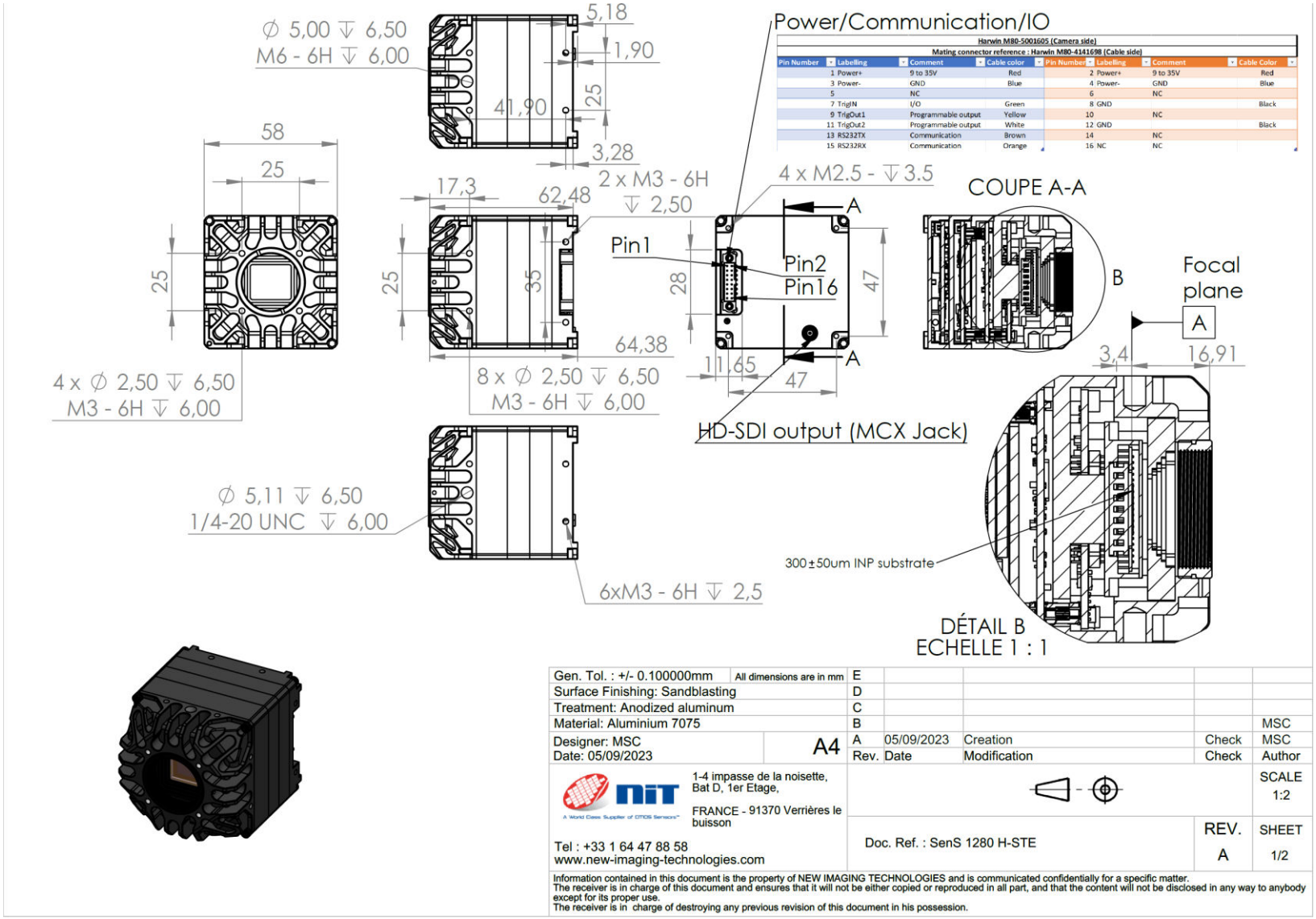



| Reference | Designation | Manufacturer |
|---|---|---|
| MCX7-J-P-H-ST-TH1 | MCX7 – 75 Ohms | SAMTEC |

| Harwin M80-5001605 (Camera side) | | | | | | | |
|---|---|---|---|---|---|---|---|
| Mating connector reference : Harwin M80-4141698 (Cable side) | | | | | | | |
| Pin Number | Labelling | Comment | Cable color | Pin Number | Labelling | Comment | Cable Color |
| 1 | Power+ | 9 to 35V | Red | 2 | Power+ | 9 to 35V | Red |
| 3 | Power- | GND | Blue | 4 | Power- | GND | Blue |
| 5 | | NC | | 6 | | NC | |
| 7 | TrigIN | I/O | Green | 8 | GND | | Black |
| 9 | TrigOut1 | Programmable output | Yellow | 10 | | NC | |
| 11 | TrigOut2 | Programmable output | White | 12 | GND | | Black |
| 13 | RS232TX | Communication | Brown | 14 | | NC | |
| 15 | RS232RX | Communication | Orange | 16 | NC | NC | |

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# Mechanical ICD (SenS 1280 H-STE)






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