PEMBROKE INSTRUMENTS, LLC

SWIR CAMERA DATA SHEET

SenS 1280ML 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
SenS 1280 M-STE	SenS 1280 Cameralink Embedded (SDR26 & HR10-10R output connectors)	9SEC1901AE31MC0# #: product revision, A or higher
SenS 1280 L-STE	SenS 1280 Cameralink Embedded (LSHM-130 output connector)	9SEC1901AE31LC0# #: product revision, A or higher

Included Accessories

- Power and trigger Cable (Hirose HR10 connector)
- 12V power supply
- Heatsinks (unmounted)
- 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):

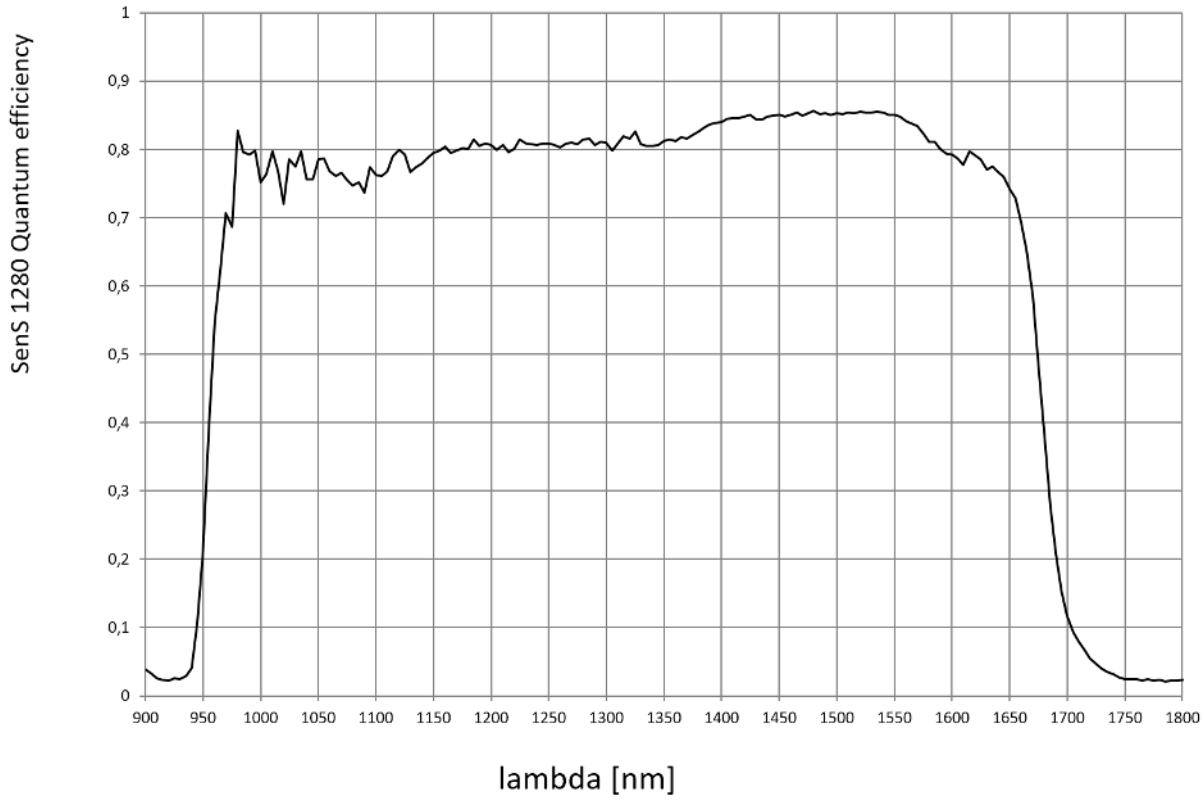
Sensor characteristics	Sensor type	InGaAs (0.9-1.7 spectral response, see QE curve)
	Pixel pitch	$10\mu m$
	Resolution	1280x1024
	Sensor diagonal	16.4mm
	Sensor noise	• High gain (CDS): $30e^-$ typical • Low gain: $120e^-$
	Dynamic range	• High gain (CDS): 52dB typical • Low gain: 61dB typical
	Peak 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 data range	14 bit ADC
	Output Type	Cameralink base 8/10/12/14 bits pixel formats Configurable output geometry: 1X_1Y / 1X2_1Y
	Exposure time	Minimum Integration time: 10us Controlled by camera register or Trigger width
	Trigger	Internal/External (LVTTL) Software Trigger Trigger over Cameralink
	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
	AGC (Histogram Stretching)	Auto/Once/Manual Auto: Automatic per frame gain and offset adjustment 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 Firmware Update Correction table (NUC and BPM) download and upload File management software provided (Windows compatible)
	Temperature monitoring	Mainboard & Image Sensor
	Overlay	Histogram ROI + Crosshair
	User Configuration	4 User-defined presets Selectable boot-up preset
	Image Flip	Horizontal/Vertical

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Environment and mechanical characteristics	Power consumption (12V supply)	• Camera: <5.5W
		• Cooling: User-Selectable TEC power limit
		  ○ Off
		  ○ Low: <1W
		  ○ Medium: <2W
		  ○ 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)	58x58x71.8 (M-STE) / 52.8 (L-STE) 118x58x71.8 (M-STE) with heatsinks
	Weight	<350g without optionnal heatsinks.
	Lens mount	C-Mount
Software	Control protocol	GenCP (Genicam) compliant
	NIT Software	NITGenicamControlTool (Windows, camera control only)
	Third party	Genicam/GenCP compliant software

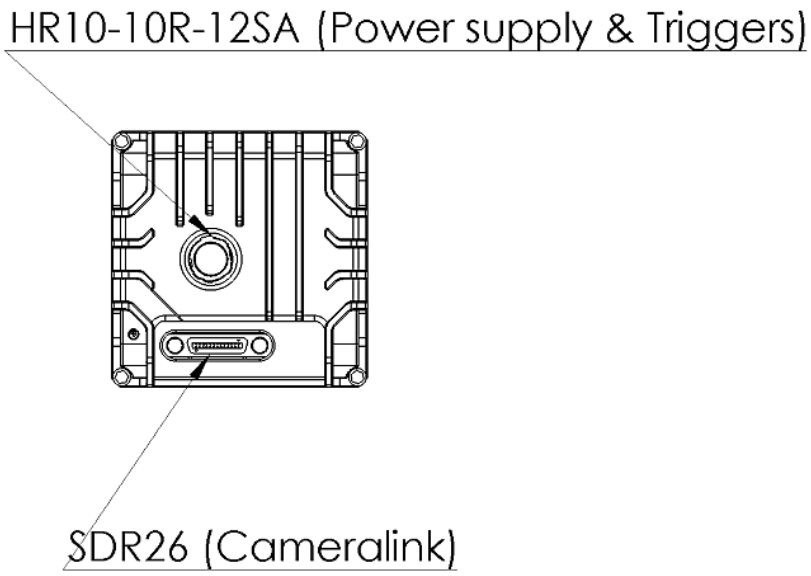
QE Curve (typical)



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Electrical ICD (M-STE – SDR26 video output)

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

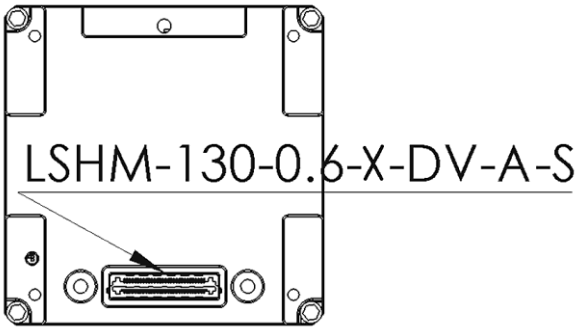


Reference	Designation	Manufacturer
12226-1150-00FR	SDR26 connector	3M

Hirose Connector Pinout		
Pin	Signal Name	Cable color
1	Power (9-35V)	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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Electrical ICD (L-STE – LSHM130 output)

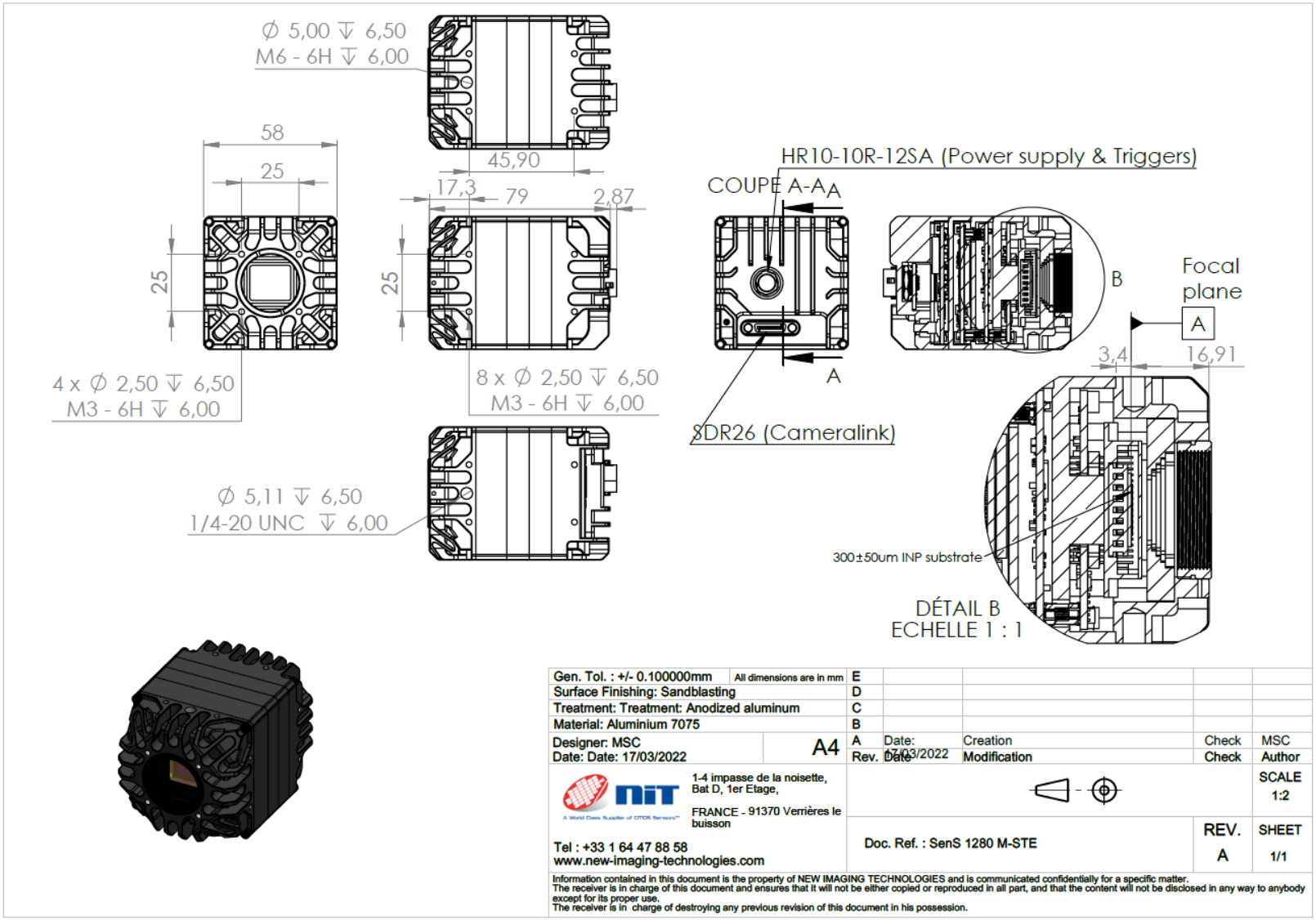


- LSHM-130-06.0-S-DV-A-S Pinout

Pin Number	Name	Type	Comment	Pin Number	Name	Type	Comment
1	GND	Power	Supply voltage ground	31	NC		
2	GND	Power	Supply voltage groun	32	NC		
3	CamLinkPair4+	Clock		33	NC		
4	CamLinkPair5+	Data3		34	Trigger Out	TTL	Programmable
5	CamLinkPair4-	Clock		35	NC		
6	CamLinkPair5-	Data3		36	Trigger Out	TTL	Programmable
7	GND			37	NC		
8	GND			38	Trigger In/Ou	TTL	Programmable
9	CamLinkPair3+	Data2		39	GND		
10	CamLinkPair2+	Data1		40	GND		
11	CamLinkPair3-	Data2		41	NC		
12	CamLinkPair2-	Data1		42	NC		
13	GND			43	NC		
14	GND			44	NC		
15	CamLinkPair1+	Data0		45	Cable detect		100 Ohm to GND
16	NC			46	NC		
17	CamLinkPair1-	Data0		47	Enable		On : 1.6 to 3.3V or floating Off: Connect to GND to turn off
18	NC			48	NC		
19	GND			49	GND		
20	GND			50	GND		
21	CamLinkPair7+	SerTG		51	GND		
22	CamLinkPair8+	CC1		52	GND		
23	CamLinkPair7-	SerTG		53	GND		
24	CamLinkPair8-	CC1		54	GND		
25	CamLinkPair6+	SerTC		55	Power Input	Power	9 to 35V
26	CamLinkPair9+	CC2		56	Power Input	Power	9 to 35V
27	CamLinkPair6-	SerTC		57	Power Input	Power	9 to 35V
28	CamLinkPair9-	CC2		58	Power Input	Power	9 to 35V
29	GND			59	Power Input	Power	9 to 35V
30	GND			60	Power Input	Power	9 to 35V

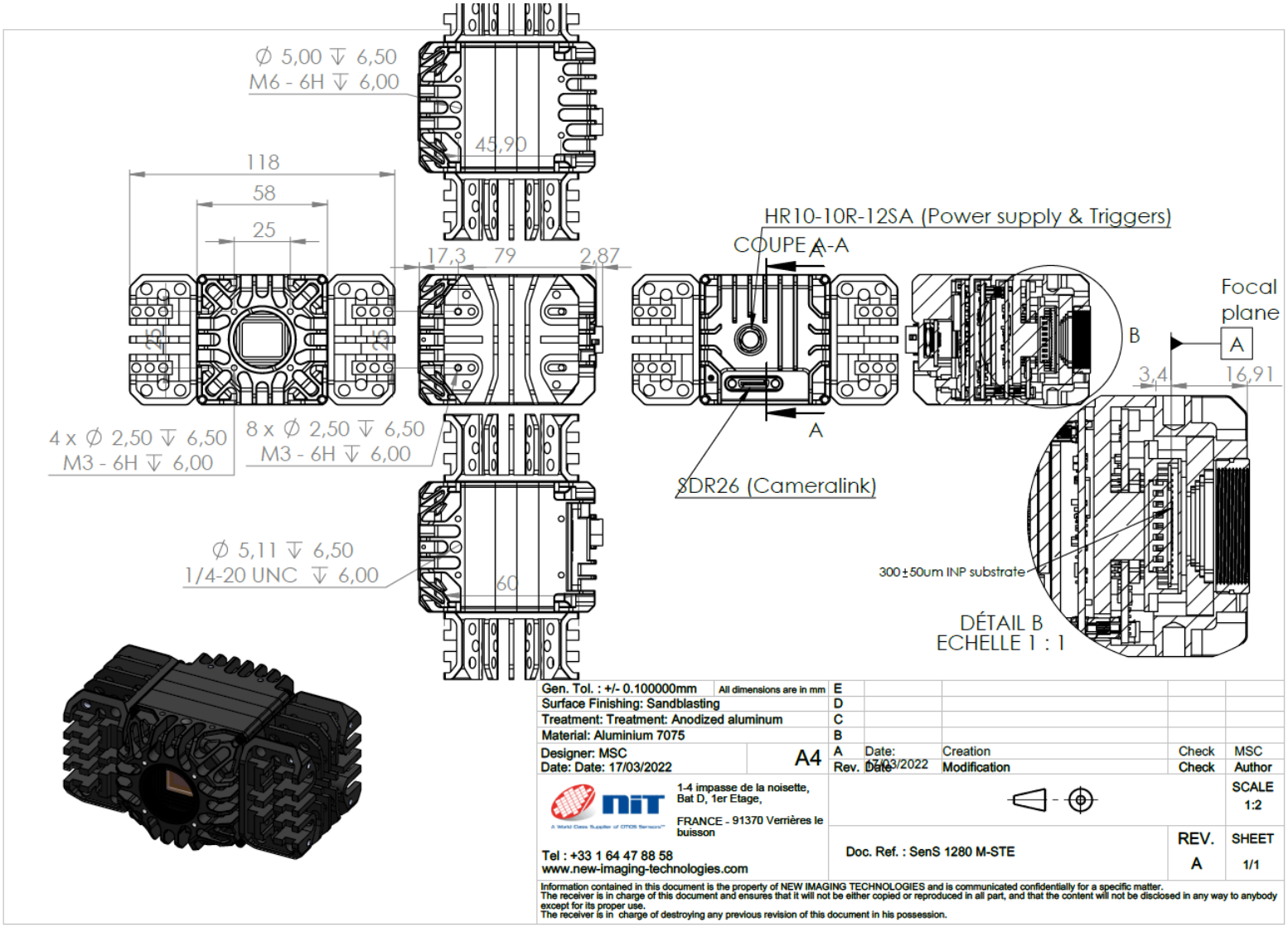
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Mechanical ICD (SenS 1280 M-STE)



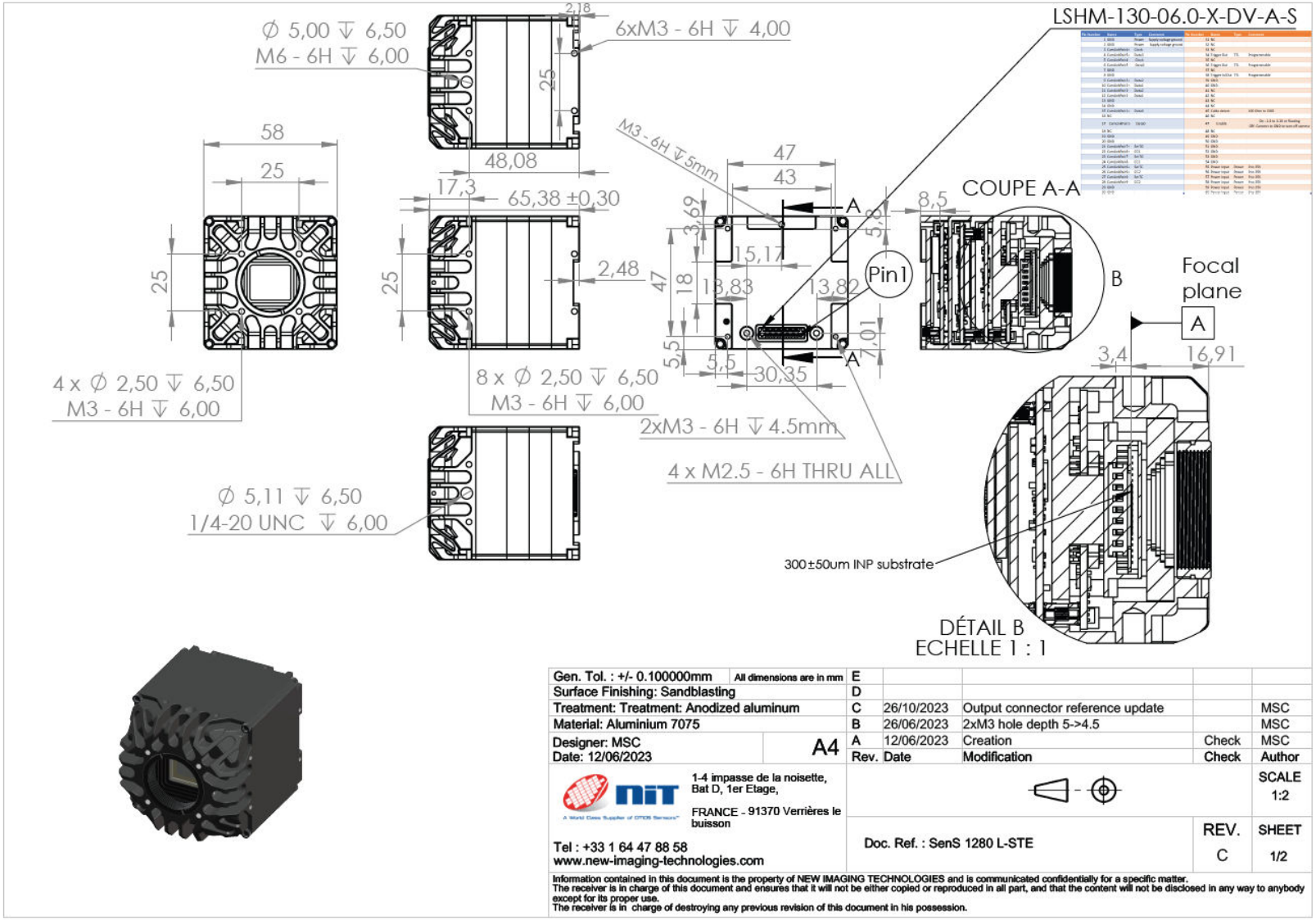
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Mechanical ICD - With Heatsinks (SenS 1280 M-STE)



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Mechanical ICD (SenS 1280 L-STE)



Gen. Tol. : +/- 0.100000mm All dimensions are in mm	E				
Surface Finishing: Sandblasting	D				
Treatment: Treatment: Anodized aluminum	C	26/10/2023	Output connector reference update		MSC
Material: Aluminium 7075	B	26/06/2023	2xM3 hole depth 5->4.5		MSC
Designer: MSC A4	A	12/06/2023	Creation	Check	MSC
Date: 12/06/2023	Rev.	Date	Modification	Check	Author

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SHEET 1/2

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