



Specifications

Image sensor	Sony IMX250 Pregius
Inertial sensor (IMU)	BNO080
Max. IMU measurement rate	400 Hz
Environment protection	IP67
Power supply	10 - 30 V DC
Power consumption	35 W
Dimensions	217 × 68 × 161 mm for 10 cm baseline 320 × 68 × 148 mm for 25 cm baseline
Weight (total)	ca. 1.8 kg for 10 cm baseline ca. 1.9 kg for 25 cm baseline
I/O	Gigabit Ethernet, 10 Gigabit Ethernet, GPIO
Operating temperature	0 – 50 °C
Conformity	CE, UKCA, FCC, RoHS

Achievable frame rates and image resolutions (recommendations)

Model	Disparity range	Frame rate			
		832 x 608	1024 x 768	1216 x 1024	2432 x 2048
Scarlet monochrome	256 pixels	125 fps	90 fps	60 fps	16 fps
	512 pixels	n/a	n/a	26 fps	8 fps
Scarlet color	256 pixels	65 fps	56 fps	36 fps	8 fps
	512 pixels	n/a	n/a	26 fps	8 fps

Stereo matching

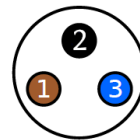
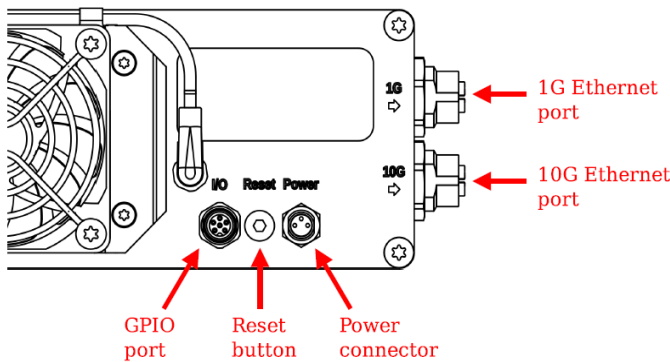
Stereo algorithm	Variation of Semi-Global Matching
Max. greyscale resolution	2432 x 2048 pixels
Max. color resolution	2432 x 2048 pixels
Supported pixel formats	Mono8, Mono12, RGB8
Disparity range	128 to 512 pixels
Frame rate	Up to 120 fps
Sub-pixel resolution	4 bits (1/16 pixel) for disparity range < 256 3bits (1/8 pixel) for disparity range > 256
Post-processing	Consistency check, uniqueness check, gap interpolation, noise reduction, speckle filtering
Latency (incl. image capture)	The latency time depends on the chosen configuration. Typical: <i>time between two frames + exposure time + approx. 9 ms</i>

Operation, software, etc.

Compatibility	Windows, Linux x86 and ARM OpenCV, Open3D, PCL, Matrox MIL, Halcon, EVT, GenICam
API and software	<ul style="list-style-type: none"> • C++ and Python API • Client software: NVCom • GenICam GenTL Producer • ROS Node
Package includes	<ul style="list-style-type: none"> • Scarlet 3D depth camera 24 V DC power supply with interchangeable mains connectors for Europe, North America, UK and Australia • User manual • Calibration board • M12 Ethernet cable, 3 m
Services	<ul style="list-style-type: none"> • 2 year warranty • 1 year product support • Support forum

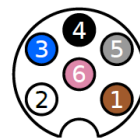
Physical interfaces

Power connector	10 - 30 V DC, male 3 pin Binder 718/768 Power supply with max. power of at least 40W required.
Reset button	Button for resetting the device configuration back to the default state.
GPIO port	Allows the output of a trigger signal or synchronizes Scarlet to an external trigger source. Also functions as an input for the time synchronization pulse.
1G Ethernet port	Port for connecting Scarlet to a client computer or another embedded system through 1G Ethernet. This port is used for delivering processing results and for providing access to the configuration interface.
10G Ethernet port	Port for connecting Scarlet to a client computer or another embedded system through 10G Ethernet. Using the 10G Ethernet port allows for higher frame rates compared to the 1G port.
Reset button	Button for resetting the device configuration back to the default state. The button is hidden behind a sealed screw.



Pin assignment of power connector

Pin	Assignment
1	Ground
3	Ground
4	10 - 30 V supply voltage

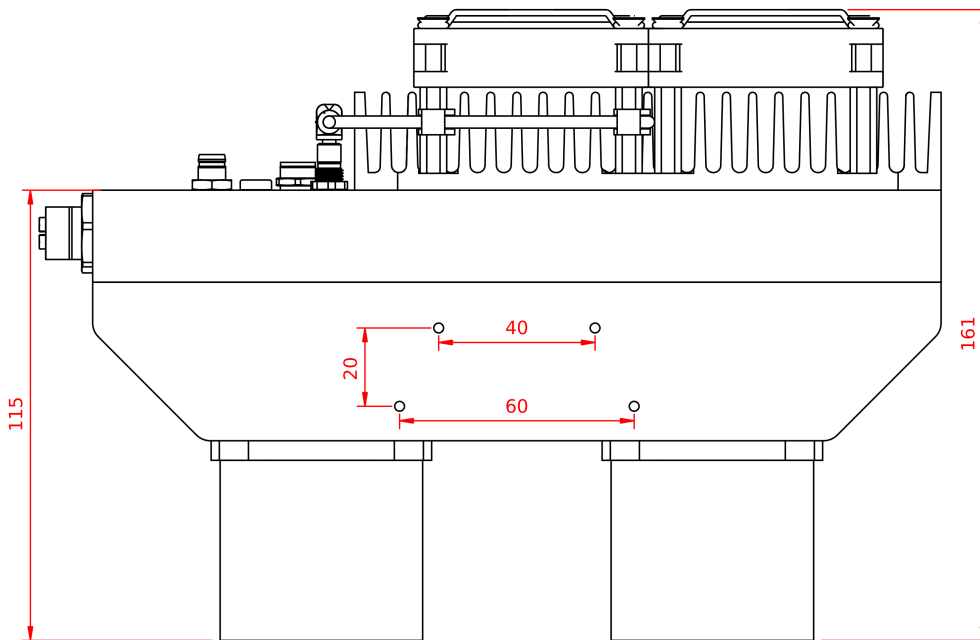
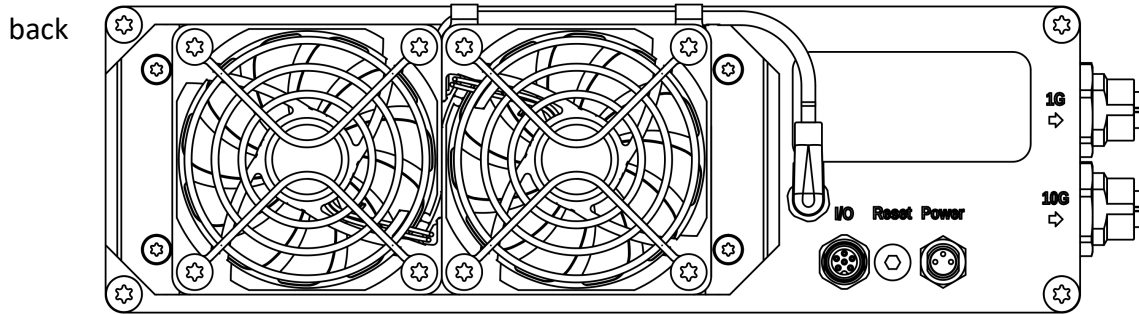
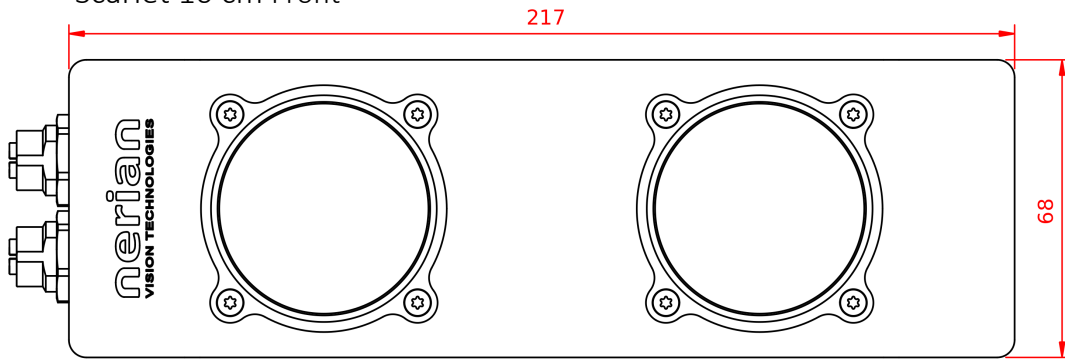


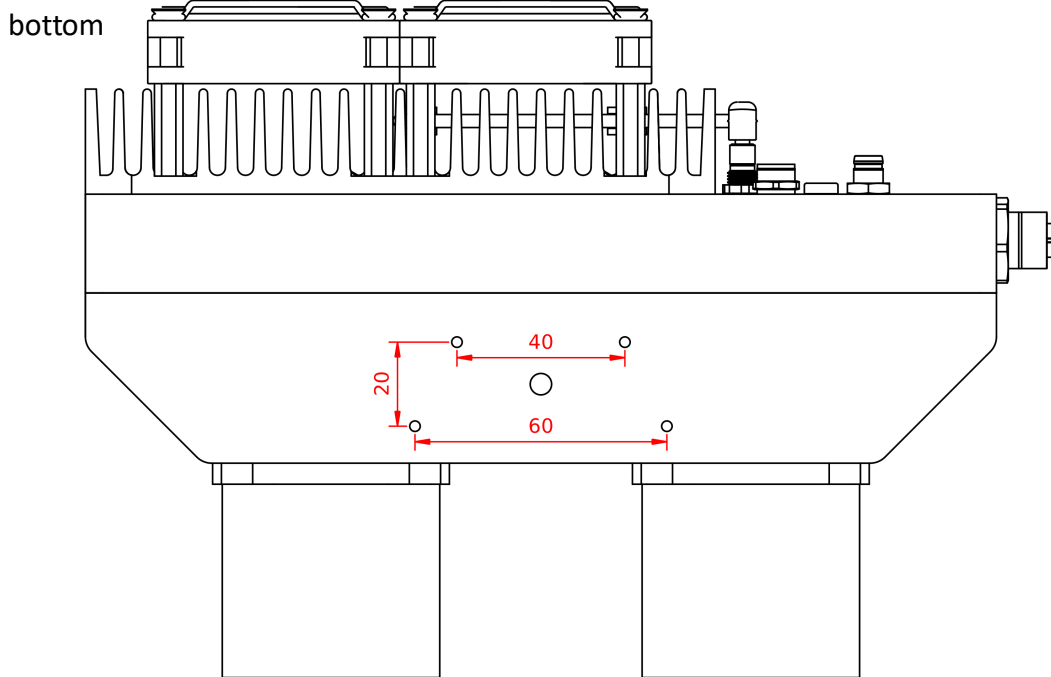
Pin assignment of trigger connector

Pin	Assignment
1	Trigger input -
2	Trigger input +
3	Trigger output -
4	Trigger output +
5	Sync -
6	Sync +

Technical drawing

dimensions in mm
Scarlet 10 cm Front





Scarlet 25 cm

