Mech-Eye
Industrial 3D Camera

NANO-GL

Technical Specifications V3.0

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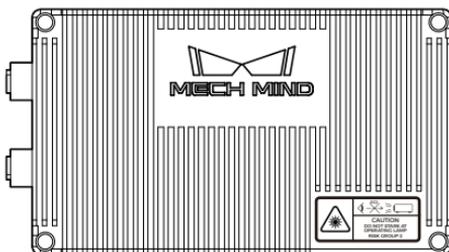
Physical Specifications

Model	NANO-GL	
Dimensions	145 × 51 × 85 mm	
Weight	0.7 kg	
Baseline	68 mm	
Light source	Blue LED (459 nm, RG2)	White LED (RG2)
2D image color	Monochrome	Color
Operating temperature	0–45°C	
Operating humidity	0–85%RH, non-condensing	
Storage temperature	-20–60°C	
Communication interface	Gigabit Ethernet	
Input	24 VDC, 1.5 A	
Power	Idle: 8 W Average: 14 W Peak: 24 W	
IP rating[1]	IP65	
Cooling	Passive	
Flatness tolerance for mounting surface[2]	± 0.05 mm	
Vibration resistance[3]	Sinusoidal vibration along the X-, Y-, and Z-axes, 10–57 Hz, 1.5 mm peak-to-peak value, 3 hours per axis	
Shock resistance[4]	Half sine shock pulses along the positive and negative directions of the X-, Y-, and Z-axes, 147 m/s^2 (15 g), 11 ms, 3 shocks per direction, 18 shocks in total	

[1] Test implemented based on IEC 60529. 6: dust-tight; 5: waterproof.
[2] The flatness of the surface used to mount the camera should satisfy this requirement.
[3] Test implemented based on IEC 60068-2-6.
[4] Test implemented based on IEC 60068-2-27.

Performance Specifications

Working distance	300–450 mm	450–600 mm
Recommended working distance	300–450 mm	450–600 mm
Object focal distance[1]	350 mm	550 mm
FOV (near)	220 × 150 mm @ 0.3 m	
FOV (far)	440 × 300 mm @ 0.6 m	
Resolution	1280 × 1024	
Typical capture time[2],[3]	0.6–1.1 s	
Recommended warm-up time[2],[4]	30 min	
Point Z-value repeatability (1σ)[2],[5]	0.1 mm @ 0.5 m	
Measurement accuracy (VDI/VDE)[2],[6]	0.1 mm @ 0.5 m	

[1] The object focal distance of the 2D camera inside the product.
[2] Unless otherwise specified, this test was conducted under the standard test conditions listed on page 7.
[3] The range of time taken to acquire depth data in the "Fast" and "Accurate" fringe coding mode.
[4] The recommended warm-up time required to guarantee data accuracy to the listed values. For the warm-up method, refer to the user manual (The data acquisition interval is 10 s). Please adjust the warm-up time based on the actual data acquisition interval, ambient temperature, and heat-dissipation conditions.
[5] The standard deviation of the 100 measured depth values of each point on the target object was calculated, and then the median of all the standard deviations was taken. The target object was a white 95% alumina ceramic plate with a rough surface. The Point Cloud Processing parameters were set to "Off".
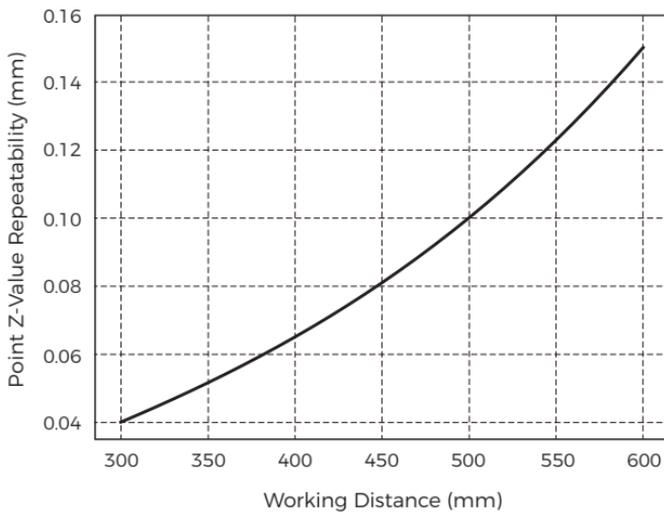[6] Test implemented with reference to VDI/VDE 2634 Part 2.
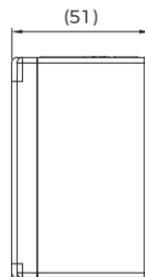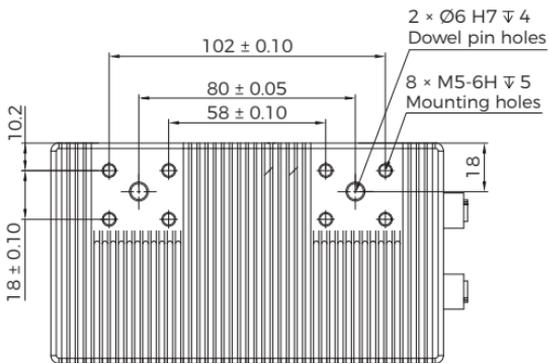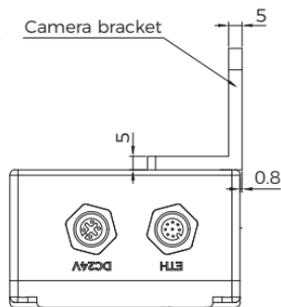
FOV

Spatial Resolution

Point Z-Value Repeatability

Dimensions

Unit: mm

9

85

145

2 × M5-6H

120

80 ± 0.10

50

80 ± 0.05

2 × Ø9
Mounting holes

2 × Ø6 H7
Dowel pin holes

Camera bracket

5

5

0.8

32

18

96

51

PWR LINK

DC24V   ETH

2 × Ø6 H7 ▽ 4
Dowel pin holes

8 × M5-6H ▽ 5
Mounting holes

(51)

102 ± 0.10

80 ± 0.05

58 ± 0.10

10.2

18 ± 0.10

18
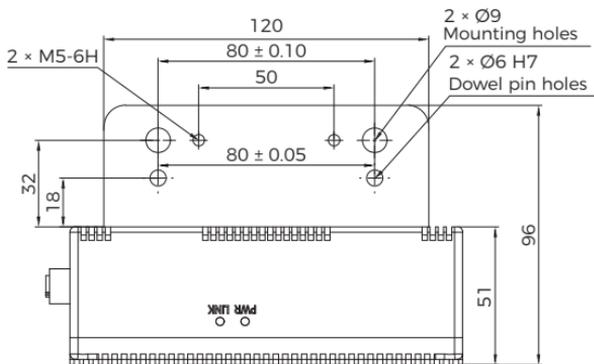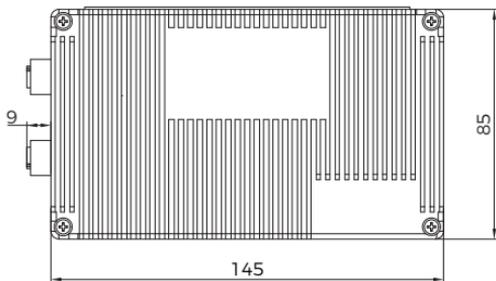
* Without the camera bracket

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Certifications

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Hereby [Mech-Mind Robotics Technologies Ltd.] declares that [NANO-GL] is in compliance with the Electromagnetic Compatibility Directive 2014/30/EU.

The full text of the EU Declaration of Conformity is available at: https://downloads.mech-mind.com/?tab=tab-eu-dec

R-R-viz-MM001

Standard Testing Conditions

Working distance[1]		300–450 mm 450–600 mm
Ambient temperature		15–30°C
Ambient humidity		0–85%RH, non-condensing
Ambient light		200–1000 lx
Camera parameters[2]	Exposure Time: 3D	5 ms
	Exposure Mode: 2D	Timed (Exposure Time: 80 ms)
	Gain	0 dB
	Light Brightness	High
	Fringe Coding Mode	Accurate
	Point Cloud Processing — Outlier Removal	Normal
	Point Cloud Processing — Noise Removal	Normal
	Point Cloud Processing — Surface Smoothing	Normal
Tested region[3]		Length: 90% of FOV length Width: 90% of FOV width Position: center of FOV

[1] For the object focal distance of 350 mm, the working distance used in tests is 300–450 mm. For the object focal distance of 550 mm, the working distance used in tests is 450–600 mm.

[2] Parameters not listed are set to their default values.

[3] Test data was obtained from this region.