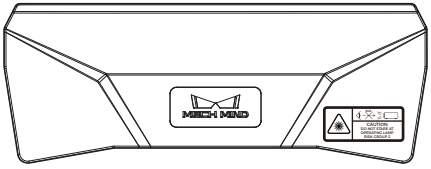
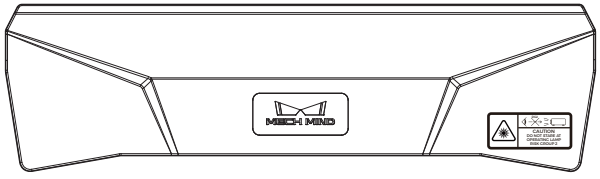
Mech-Eye Industrial 3D Camera

PRO S-GL
PRO M-GL

Technical Specifications V3.0





MECH MIND

Physical Specifications

PRO S-GL

Model	PRO S-GL	
Dimensions	265 × 57 × 100 mm	
Weight	1.6 kg	
Baseline	180 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, 3.75 A	
Power	Idle: 12 W Average: 36 W Peak: 60 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.

PRO M-GL

Model	PRO M-GL	
Dimensions	353 × 57 × 100 mm	
Weight	1.9 kg	
Baseline	270 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, 3.75 A	
Power	Idle: 12 W Average: 36 W Peak: 60 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	
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[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

PRO S-GL

Working distance	500–600 mm	600–800 mm	800–1000 mm
Recommended working distance	500–600 mm	600–800 mm	800–1000 mm
Object focal distance[1]	500 mm	700 mm	1000 mm
FOV (near)	370 × 240 mm @ 0.5 m		
FOV (far)	800 × 450 mm @ 1.0 m		
Resolution[2]	1920 × 1200		
Typical capture time[3],[4]	0.3–0.6 s		
Recommended warm-up time[3],[5]	30 min		
Point Z-value repeatability (1σ)[3],[6]	0.05 mm @ 1.0 m		
Measurement accuracy (VDI/VDE)[3],[7]	0.1 mm @ 1.0 m		

[1] The object focal distance of the 2D camera inside the product.
[2] Can be changed to 960 × 600 through Mech-Eye Viewer.
[3] Unless otherwise specified, this test was conducted under the standard test conditions listed on page 11.
[4] The range of time taken to acquire depth data in the "Fast" and "Accurate" fringe coding mode.
[5] 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.
[6] 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".
[7] Test implemented with reference to VDI/VDE 2634 Part 2.

PRO M-GL

Working distance	1000–1300 mm	1300–2000 mm
Recommended working distance	1000–1300 mm	1300–2000 mm
Object focal distance[1]	1200 mm	1800 mm
FOV (near)	800 × 450 mm @ 1.0 m	
FOV (far)	1500 × 890 mm @ 2.0 m	
Resolution[2]	1920 × 1200	
Typical capture time[3],[4]	0.3–0.6 s	
Recommended warm-up time[3],[5]	30 min	
Point Z-value repeatability (1σ)[3],[6]	0.2 mm @ 2.0 m	
Measurement accuracy (VDI/VDE)[3],[7]	0.2 mm @ 2.0 m	

[1] The object focal distance of the 2D camera inside the product.
[2] Can be changed to 960 × 600 through Mech-Eye Viewer.
[3] Unless otherwise specified, this test was conducted under the standard test conditions listed on page 11.
[4] The range of time taken to acquire depth data in the "Fast" and "Accurate" fringe coding mode.
[5] 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.
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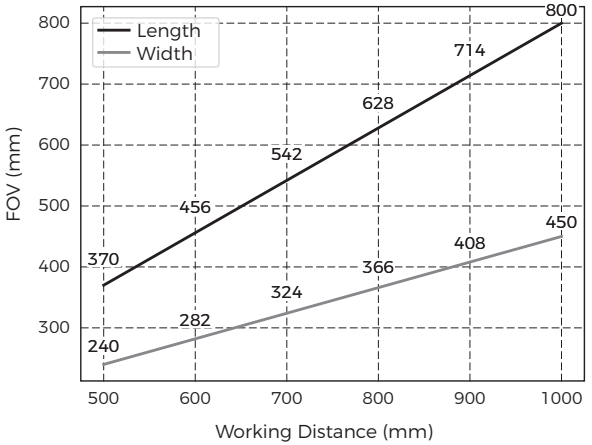
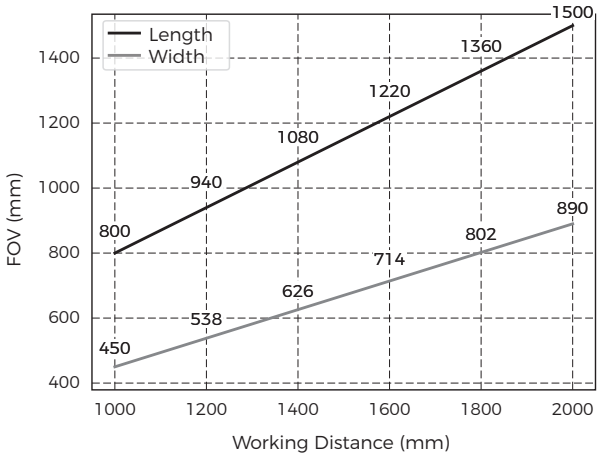
FOV

PRO S-GL



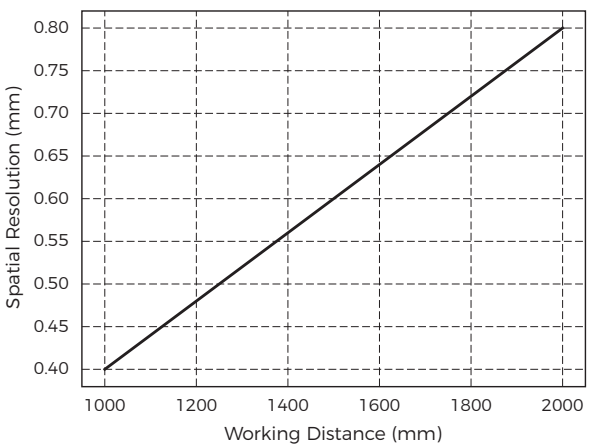
PRO M-GL



Spatial Resolution

PRO S-GL

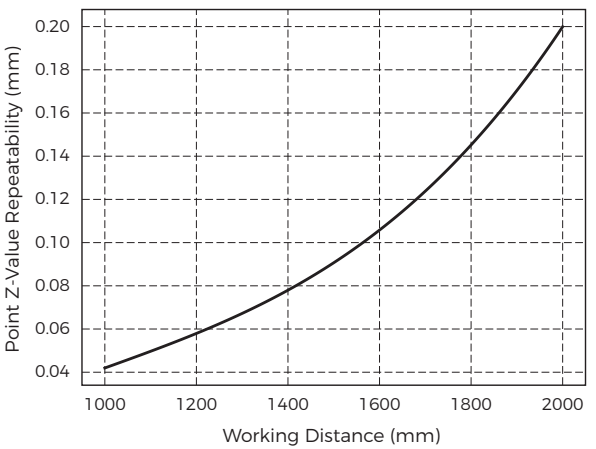
PRO M-GL



Point Z-Value Repeatability

PRO S-GL

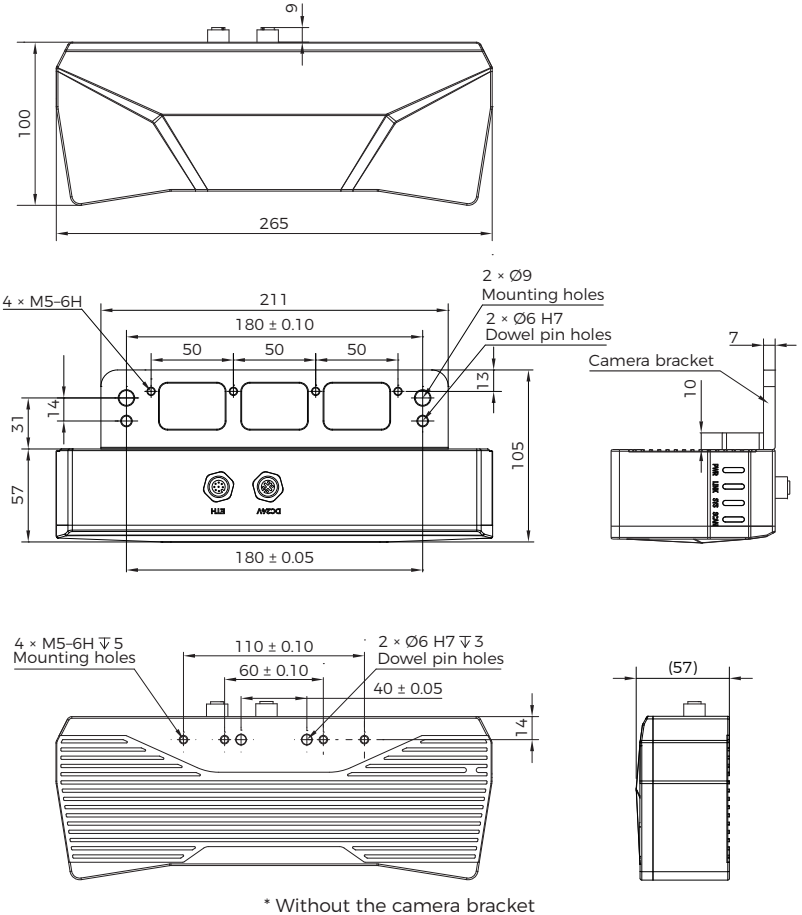
PRO M-GL



Dimensions

PRO S-GL

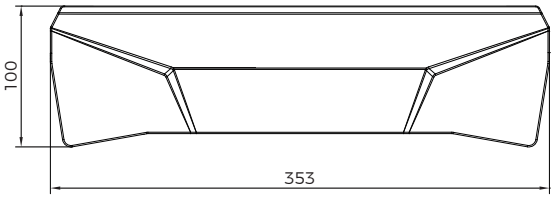
Unit: mm

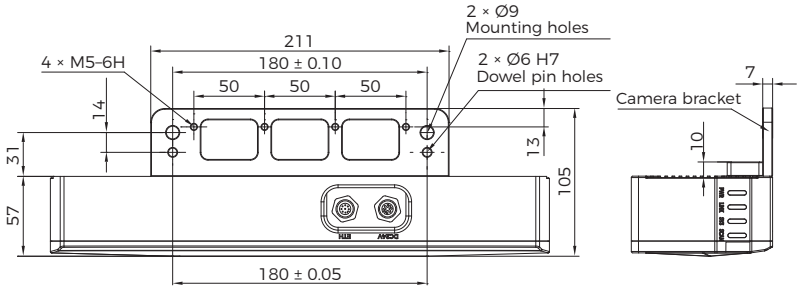


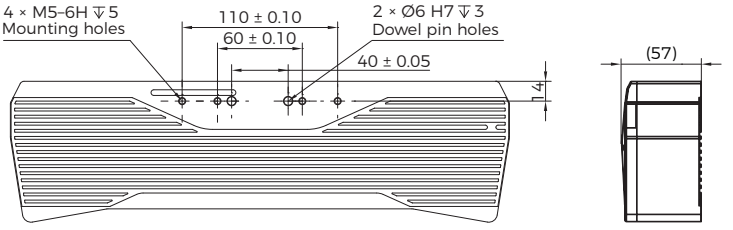
* Without the camera bracket

PRO M-GL

Unit: mm







* Without the camera bracket

Certifications

CE

Hereby [Mech-Mind Robotics Technologies Ltd.] declares that [PRO S-GL] and [PRO M-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

KC R-R-viz-PRO

Standard Testing Conditions

<table>
<tr><td colspan="3">Working distance[1],[2]</td><td>PRO S-GL:
500–600 mm
600–800 mm
800–1000 mm</td><td>PRO M-GL:
1000–1300 mm
1300–2000 mm</td></tr>
<tr><td colspan="3">Ambient temperature</td><td colspan="2">15–30°C</td></tr>
<tr><td colspan="3">Ambient humidity</td><td colspan="2">0–85%RH, non-condensing</td></tr>
<tr><td colspan="3">Ambient light</td><td colspan="2">200–1000 lx</td></tr>
<tr><td rowspan="7">Camera parameters[3]</td><td colspan="2">Exposure Time: 3D</td><td colspan="2">8 ms</td></tr>
<tr><td colspan="2">Exposure Mode: 2D</td><td colspan="2">Timed
(Exposure Time: 80 ms)</td></tr>
<tr><td colspan="2">Gain</td><td colspan="2">0 dB</td></tr>
<tr><td colspan="2">Light Brightness</td><td colspan="2">High</td></tr>
<tr><td colspan="2">Fringe Coding Mode</td><td colspan="2">Accurate</td></tr>
<tr><td rowspan="3">Point Cloud Processing</td><td>Outlier Removal</td><td colspan="2">Normal</td></tr>
<tr><td>Noise Removal</td><td colspan="2">Normal</td></tr>
<tr><td>Surface Smoothing</td><td colspan="2">Normal</td></tr>
<tr><td colspan="3">Tested region[4]</td><td colspan="2">Length: 90% of FOV length
Width: 90% of FOV width
Position: center of FOV</td></tr>
<tr><td colspan="3">Resolution</td><td colspan="2">1920 × 1200</td></tr>
</table>

[1] PRO S-GL: For the object focal distance of 500 mm, the working distance used in tests is 500–600 mm. For the object focal distance of 700 mm, the working distance used in tests is 600–800 mm. For the object focal distance of 1000 mm, the working distance used in tests is 800–1000 mm.

[2] PRO M-GL: For the object focal distance of 1200 mm, the working distance used in tests is 1000–1300 mm. For the object focal distance of 1800 mm, the working distance used in tests is 1300–2000 mm.

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

[4] Test data was obtained from this region.