MECH MIND

Mech-Eye 3D Cameras

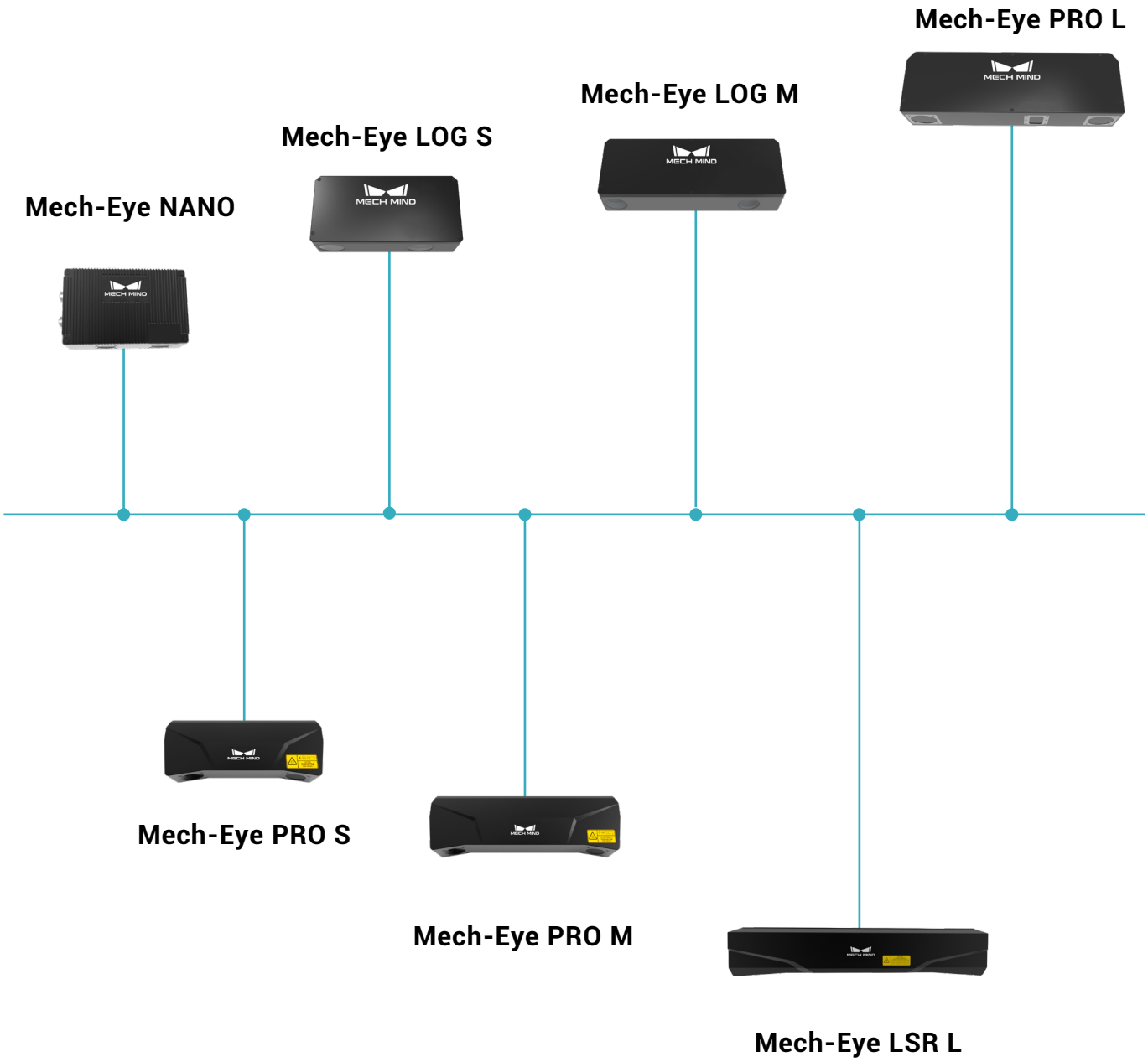
NANO | LOG S & M | PRO S & M | PRO L | LSR L

Overview of our cameras

Thanks to advanced algorithms, our intelligent cameras achieve high precision and deliver high-quality 3D data of objects.

A compact aluminum housing, powerful projectors (LED/Laser) and a completely fanless thermal management make the Mech-Eye 3D cameras an ideal solution. All Mech-Mind Robotics 3D cameras are CE, FCC and VCCI certified and have passed an endurance test of 10,000 hours in the lab.

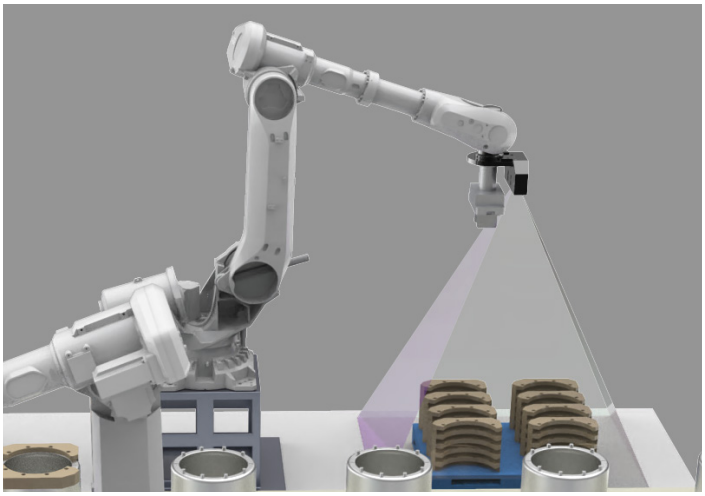
At Mech-Mind, we understand that unique applications require different cameras. That's why we offer our cameras in many sizes and configurations.



For close range

Not every application requires a large working distance. Small cameras are practical and can easily be mounted directly on the robot wrist.

Depending on the application, we offer the following camera models.



Mech-Eye NANO

Mech-Eye NANO can be mounted on a variety of different robot arms (cobots, industrial robots, etc.). The camera is particularly suitable for applications in small spaces

Optimal scanning range:	300 mm - 600 mm
Calibration accuracy:	0.1 mm @ 0.5 m

Mech-Eye LOG S

The Mech-Eye LOG S is ideal for applications where shorter ranges are sufficient, such as bin picking, sorting & picking, as well as locating small components.

Optimal scanning range:	500 mm - 1,000 mm
Calibration accuracy:	0.2 mm @ 1 m

Mech-Eye PRO S

The Mech-Eye PRO S offers increased camera resolution and denser point clouds.

Optimal scanning range:	500 mm - 1,000 mm
Calibration accuracy:	0.1 mm @ 1 m

Medium field of view

Our Mech-Eye M cameras are the optimal solution for medium-sized image fields and cover a wide range of industrial applications due to their performance and range.

Depending on the application, there is a choice between the LOG M or the PRO M version.

Mech-Eye LOG M

The LOG M camera is one of the most popular cameras due to its combination of range and performance. It is ideal for applications such as bin picking, palletizing & depalletizing, sorting & picking.

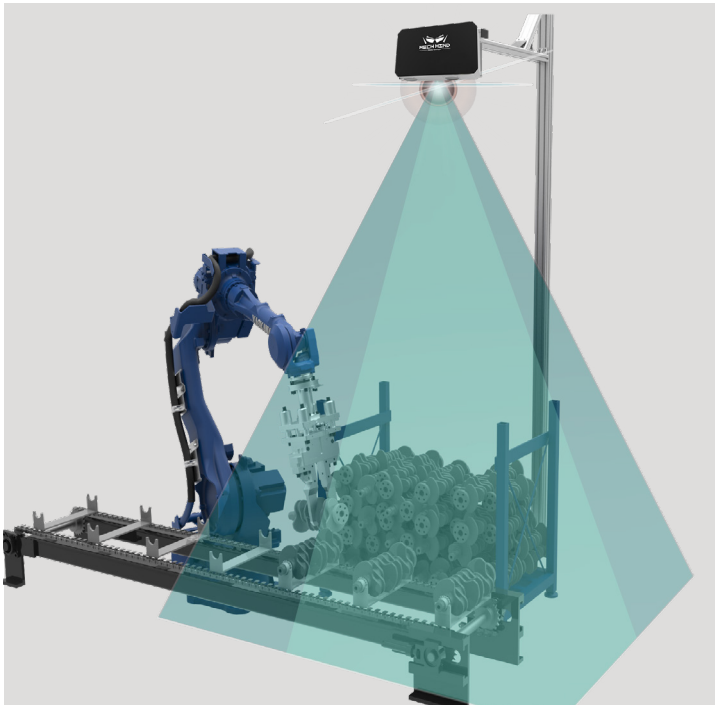
Optimal scanning range:	800 mm - 2,000 mm
Calibration accuracy:	0.3 mm @ 2 m

Mech-Eye PRO M

Te PRO M camera offers increased resolution and denser point clouds.

Optimal scanning range:	1,000 mm - 2,000 mm
Calibration accuracy:	0.2 mm @ 2 m

Large field of view



Large objects as well as difficult environmental conditions often pose a great challenge for object detection.

Our PRO L series was developed especially for such applications. The Mech-Eye PRO L offers an extremely large working distance of up to 3.5 m and the Mech-Eye LSR L camera provides very high detail accuracy even in difficult lighting conditions.

Depending on the application, the following solution variants are available.

Mech-Eye PRO L

The Mech-Eye PRO L has a powerful LED projector as well as a color camera and is especially suitable for logistic applications such as palletizing & depalletizing, mixed palletizing and parts removal from wire mesh boxes.

Optimal scanning range:	1,200 mm - 3,500 mm
Calibration accuracy:	3 mm @ 3 m

Mech-Eye LSR L

Thanks to its integrated laser technology, the Mech-Eye LSR L 3D camera enables optimum recognition of even complicated objects at long working distances, even under difficult lighting conditions.

Optimal scanning range:	1,200 mm - 3,000 mm
Calibration accuracy:	1 mm @ 3 m

Mech-Eye NANO

Due to its lightweight design, high flexibility and small size, the NANO camera can be mounted on a variety of different robot arms (cobots, industrial robots, etc).

Specifications

With a **working distance of 300 mm - 600 mm,** Mech-Eye NANO is ideal for applications in small spaces.

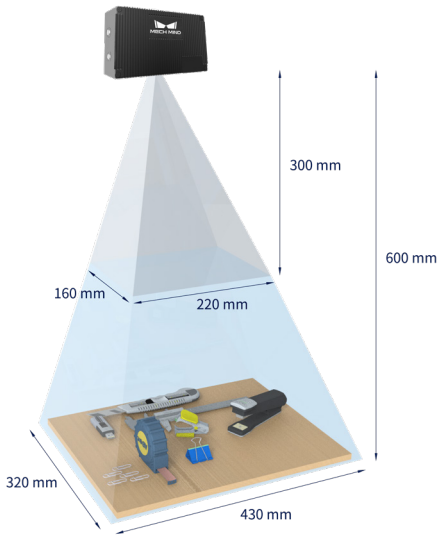
Scope of delivery

NANO Camera

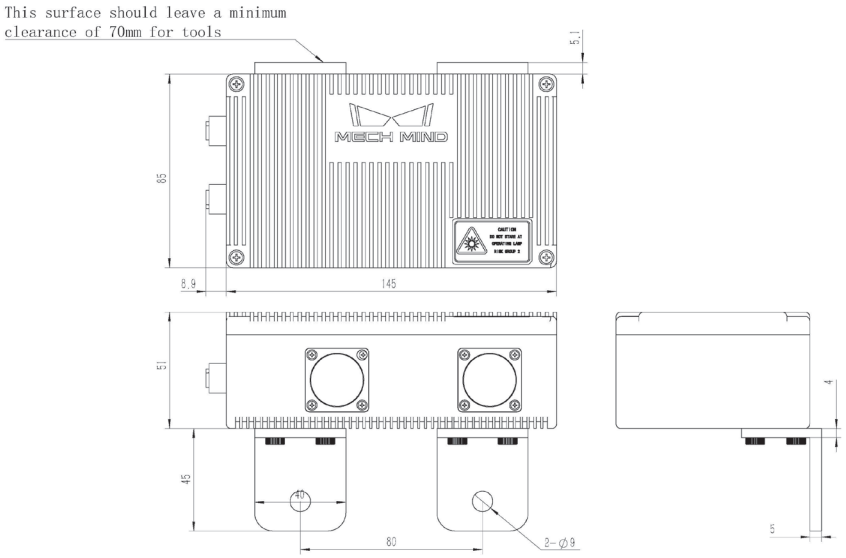
Power - M12, 4-pin, A-coded to EU 230 (10 m) *

Data - M12, 8-pin, A-coded to RJ45 (10 m) *

*further cable lengths are available



Technical drawing



Technical data

Optimal scanning range	300 - 600 mm
Min. FOV	220 x 160 mm @ 0.3 m
Max. FOV	430 x 320 mm @ 0.6 m
Resolution	1,280 x 1,024 px (1.3 MP)
Sensor type	CMOS (RGB/Monochrome)
Projector	Structured light (LED)
Z Repeatability	0.1 mm @ 0.5 m
Calibration accuracy	0.1 mm @ 0.5 m
Typical capture time	0.6 - 1.1 s
Baseline	68 mm
Dimension	145 x 51 x 85 mm
Weight	0.7 kg
Working temperature	0 - 45 °C (max. gradient 10°/hour)
Interface	GigE, C++, C#, Python, ROS
Connectors	M12, 8-pin, A-coded (F) - Data M12, 4-pin, A-coded (F) - Power
Power supply	24V DC / 1.5 A
Certification	CE/FCC/VCCI
Protection class	IP65
Cooling	Passive

Mech-Eye LOG S

With a **working distance of 500 mm - 1,000 mm** and a **calibration accuracy of 0.2 mm**, the LOG S camera covers a wide range of industrial applications where shorter ranges are sufficient.

Specifications

The LOG S is ideal for applications such as bin picking, sorting & picking, and locating small components.

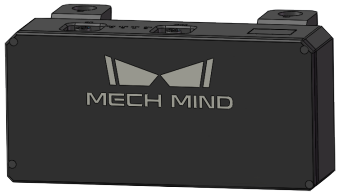
Scope of delivery

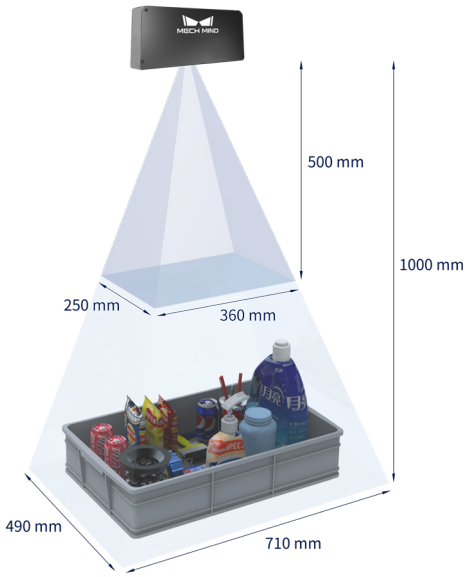
LOG S Camera

Power - M12, 4-pin, A-coded to EU 230 (10 m) *

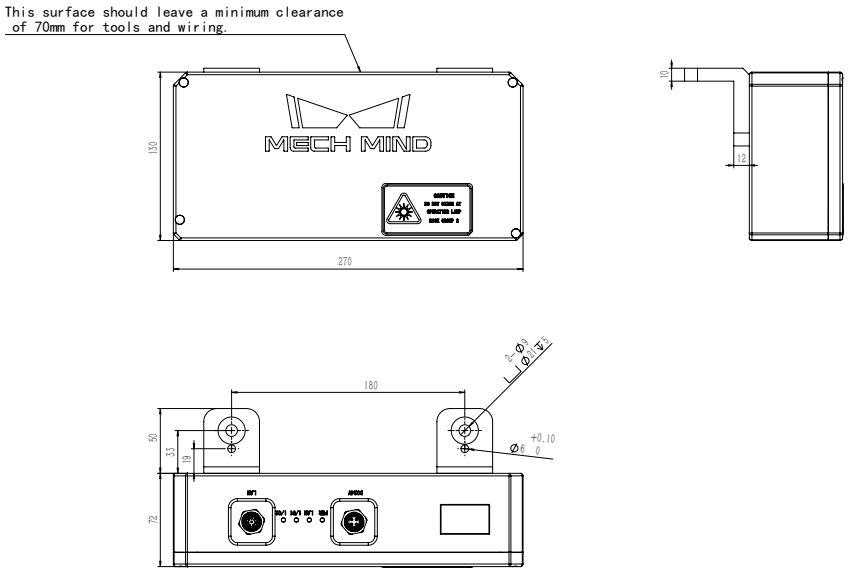
Data - M12, 8-pin, A-coded to RJ45 (10 m) *

*further cable lengths are available





Technical drawing



Technical data

Optimal scanning range	500 - 1,000 mm
Min. FOV	360 x 250 mm @ 0.5 m
Max. FOV	710 x 490 mm @ 1 m
Resolution	1,280 x 1,024 px (1.3 MP)
Sensor type	CMOS (RGB)
Projector	Structured light (LED)
Z Repeatability	0.1 mm @ 1 m
Calibration accuracy	0.2 mm @ 1 m
Typical capture time	0.3 - 0.5 s
Baseline	150 mm
Dimension	270 x 72 x 130 mm
Weight	2.2 kg
Working temperature	0 - 45 °C (max. gradient 10°/hour)
Interface	GigE, C++, C#, Python, ROS
Connectors	M12, 8-pin, A-coded (F) - Data M12, 4-pin, A-coded (F) - Power
Power supply	24V DC / 3.75A
Certification	CE/FCC/VCCI
Protection class	IP65
Cooling	Passive

Mech-Eye PRO S

With a **working distance of 500 mm - 1,000 mm** and a high **calibration accuracy of 0.1 mm**, the PRO S offers a solution for applications where shorter ranges are sufficient but more accurate calibration is required.

Specifications

The PRO S is ideal for applications such as bin picking, sorting & picking, and locating small components.

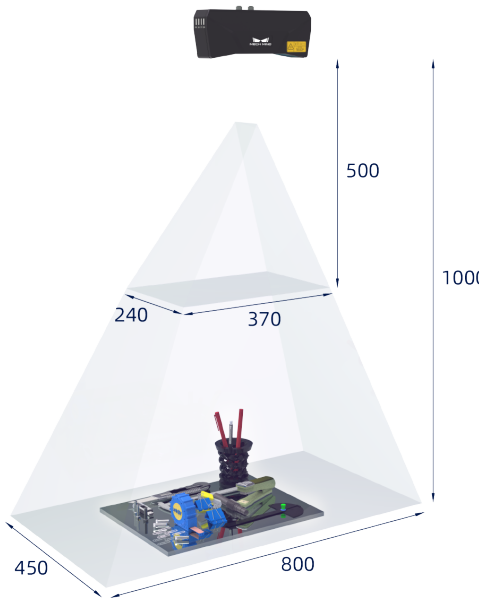
Scope of delivery

PRO S Camera

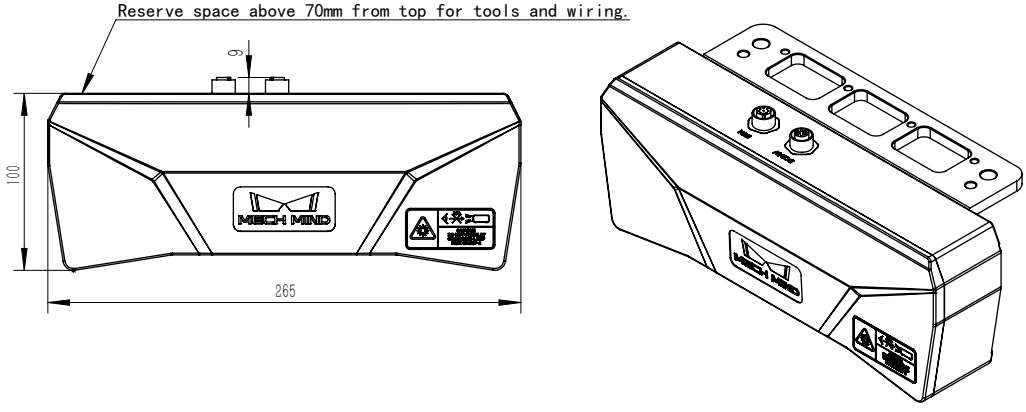
Power - M12, 4-pin, A-coded to EU 230 (6 m) *

Data - M12, 8-pin, A-coded to RJ45 (10 m) *

*further cable lengths are available



Technical drawing



Technical data

Optimal scanning range	500 - 1,000 mm
Min. FOV	370 x 240 mm @ 0.5 m
Max. FOV	800 x 450 mm @ 1 m
Resolution	1,920 x 1,200 px (2.3 MP)
Sensor type	CMOS (Monochrome / RGB*)
Projector	structured light (LED)
Z Repeatability	0.05 mm @ 1 m
VDI/VDE** accuracy	0.1 mm @ 1 m
Typical capture time	0.3 - 0.6 s
Baseline	180 mm
Dimension	265 x 57 x 100 mm
Weight	1.6 kg
Working temperature	0 - 45 °C (max. gradient 10°/hour)
Interface	GigE , C++, C#, Python, ROS
Connectors	M12, 8-pin, A-coded (F) - Data M12, 4-pin, A-coded (F) - Power
Power supply	24V DC / 3.75A
Certification	CE/FCC/VCCI
Protection class	IP65
Cooling	Passive

* Coming in the future

** Refering to VDI/VDE 2643 Part II

Mech-Eye LOG M

With a **working distance of 800 mm - 2,000 mm** and a **calibration accuracy of 0.3 mm**, the LOG M camera covers a wide range of industrial applications with a medium field of view very well.

Specifications

The LOG M is ideal for applications such as bin picking, sorting & picking, palletizing & depalletizing, and component localization.

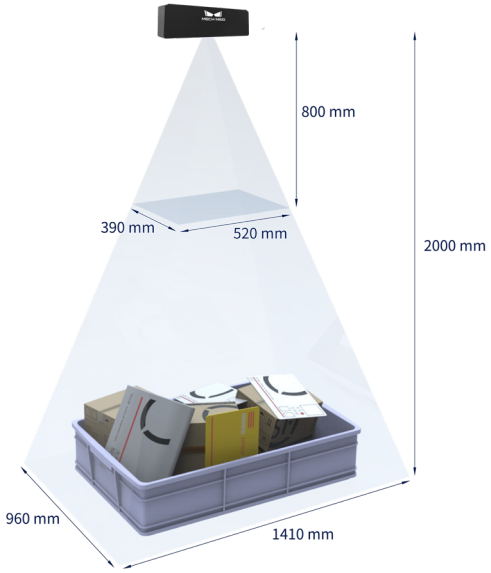
Scope of delivery

LOG M Camera

Power - M12, 4-pin, A-coded to EU 230 (10 m) *

Data - M12, 8-pin, A-coded to RJ45 (10 m) *

*further cable lengths are available



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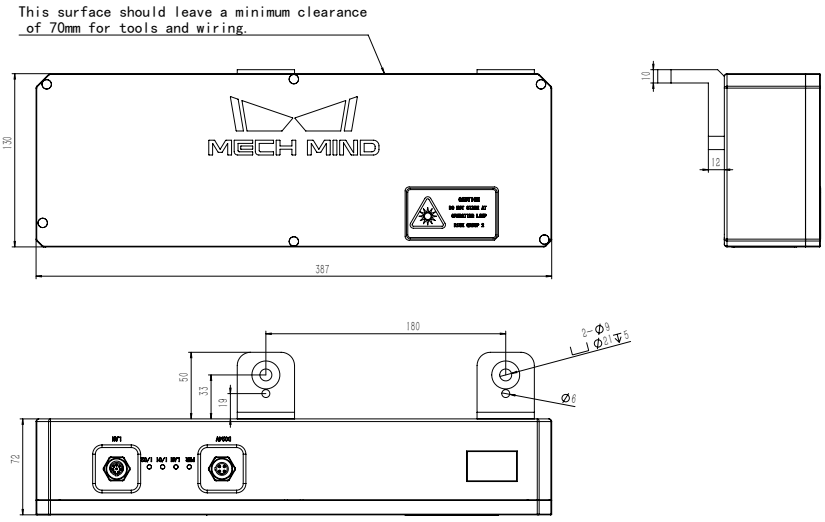


Technical data

Optimal scanning range	800 - 2,000 mm
Min. FOV	520 x 390 mm @ 0.8 m
Max. FOV	1,410 x 960 mm @ 2 m
Resolution	1,280 x 1,024 px (1.3MP)
Sensor type	CMOS (RGB)
Projector	Structured light (LED)
Z Repeatability	0.3 mm @ 2 m
Calibration accuracy	0.3 mm @ 2 m
Typical capture time	0.3 - 0.5 s
Baseline	280 mm
Dimension	387 x 72 x 130 mm
Weight	2.4 kg
Working temperature	0 - 45 °C (max. gradient 10°/hour)
Interface	GigE, C++, C#, Python, ROS
Connectors	M12, 8-pin, A-coded (F) - Data M12, 4-pin, A-coded (F) - Power
Power supply	24V DC / 3.75A
Certification	CE/FCC/VCCI
Protection class	IP65
Cooling	Passive

Mech-Eye PRO M

For applications requiring high accuracy combined with a medium-range working distance, the PRO M with a **working distance of 1,000 mm - 2,000 mm** and a **calibration accuracy of 0.2 mm** provides an optimal solution.

Specifications

The PRO M is ideal for applications such as bin picking, sorting & picking, palletizing & depalletizing, and component localization.

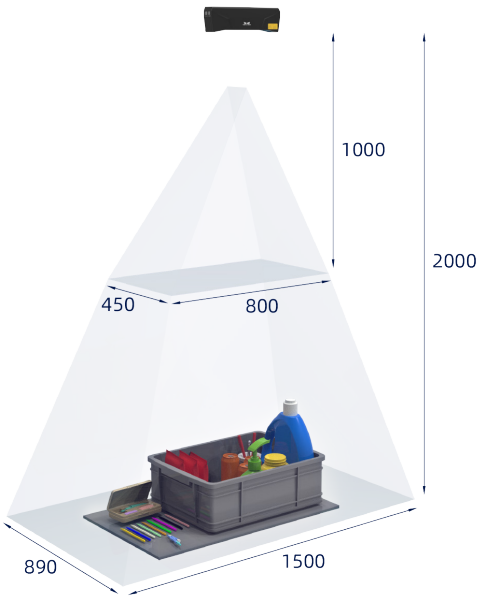
Scope of delivery

PRO M Camera

Power - M12, 4-pin, A-coded to EU 230 (6 m) *

Data - M12, 8-pin, A-coded to RJ45 (10 m) *

*further cable lengths are available



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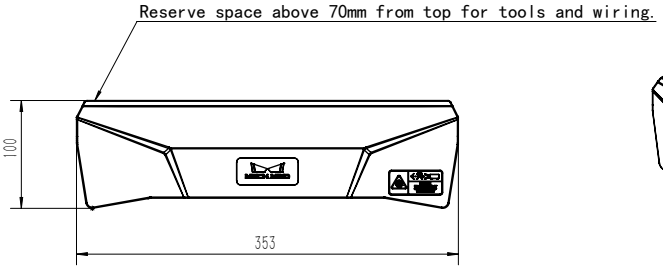
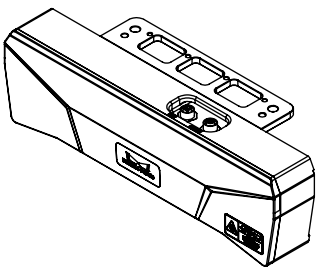




Technical data

Optımal scannıng range	1,000 - 2,000 mm
Min. FOV	800 x 450 mm @ 1 m
Max. FOV	1,500 x 890 mm @ 2 m
Resolution	1,920 x 1,200 px (2.3 MP)
Sensor type	CMOS (Monochrome / RGB*)
Projector	structured light (LED)
Z Repeatability	0.2 mm @ 2 m
VDI/VDE** accuracy	0.2 mm @ 2 m
Typical capture time	0.3 - 0.6 s
Baseline	270 mm
Dimension	353 x 57 x 100 mm
Weight	1.9 kg
Working temperature	0 - 45 °C
Interface	GigE , C++, C#, Python, ROS
Connectors	M12, 8-pin, A-coded (F) - Data M12, 4-pin, A-coded (F) - Power
Power supply	24V DC / 3.75A
Certification	CE/FCC/VCCI
Protection class	IP65
Cooling	Passive

* Coming in the future

** Refering to VDI/VDE 2643 Part II

Mech-Eye PRO L

With a **working distance of 1,200 mm - 3,500 mm** and a **calibration accuracy of 3.0 mm**, the PRO L camera is especially suitable in scenarios that require a large field of view.

Specifications

The PRO L is ideally suited for applications such as palletizing & depalletizing of Euro pallets as well as parts removal from wire mesh boxes.

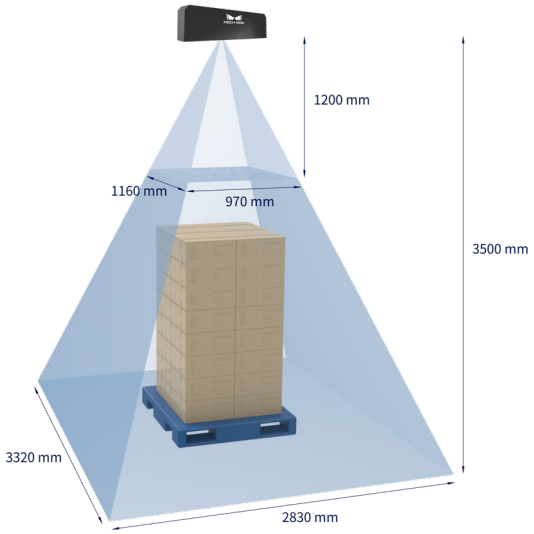
Scope of delivery

PRO L Camera

Power - M12, 4-pin, A-coded to EU 230 (10 m) *

Data - M12, 8-pin, A-coded to RJ45 (10 m) *

*further cable lengths are available



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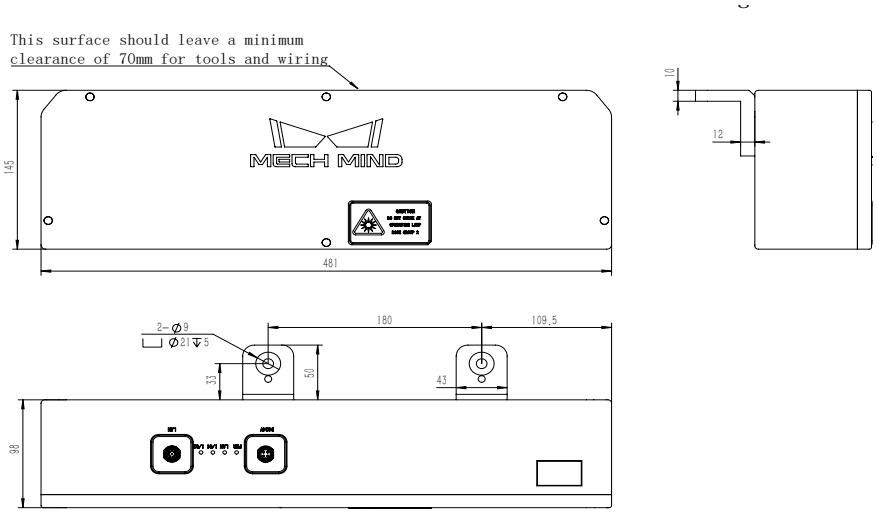


Technical data

Optimal scanning range	1,200 - 3,500 mm
Min. FOV	970 x 1,160 mm @ 1.2 m
Max. FOV	2,830 x 3,320 mm @ 3.5 m
Resolution	2,048 x 1,536 px (3.0 MP)
Sensor type	CMOS (RGB)
Projector	Structured light (LED)
Z Repeatability	1 mm @ 3 m
Calibration accuracy	3 mm @ 3 m
Typical capture time	0.7 - 1.1 s
Baseline	400 mm
Dimension	481 x 98 x 145 mm
Weight	4.3 kg
Working temperature	0 - 45 °C (max. gradient 10°/hour)
Interface	GigE, C++, C#, Python, ROS
Connectors	M12, 8-pin, A-coded (F) - Data M12, 4-pin, A-coded (F) - Power
Power supply	24V DC / 3.75A
Certification	CE/FCC/VCCI
Protection class	IP65
Cooling	Passive

Mech-Eye LSR L

With a **working distance of 1,200 mm - 3,000 mm** and a **VDI/VDA accuracy of 1.0 mm**, the Mech-Eye LSR L 3D camera offers the optimal combination of a large field of view with high accuracy.

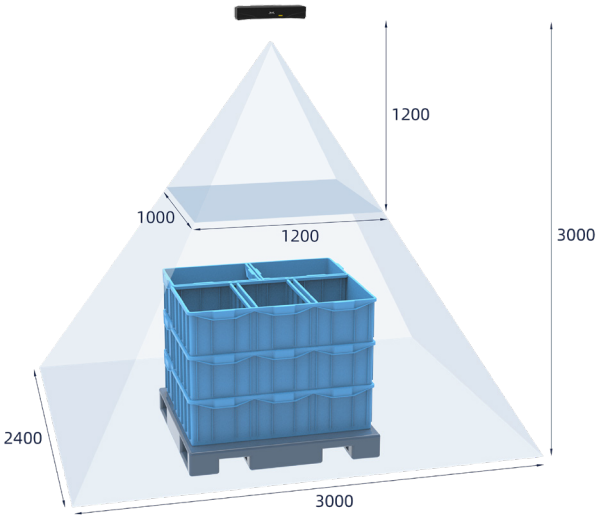
Specifications

The LSR L camera is ideal for applications in a working environment with difficult lighting conditions.

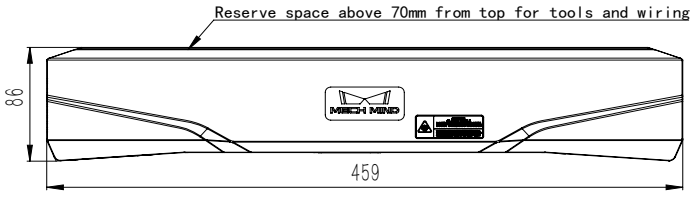
Scope of delivery

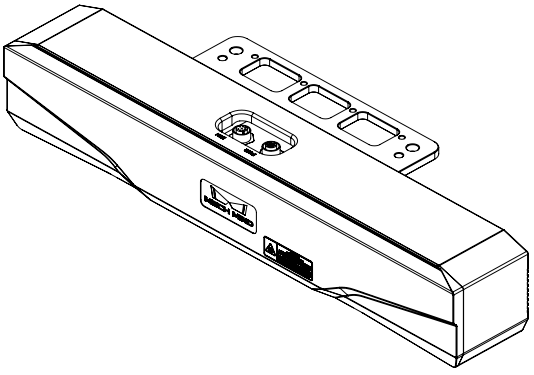
LSR L Camera
Power - M12, 4-pin, A-coded to EU 230 (6 m) *
Data - M12, 8-pin, A-coded to RJ45 (10 m) *

*further cable lengths are available upon inquiry



Technical drawing





Technical data

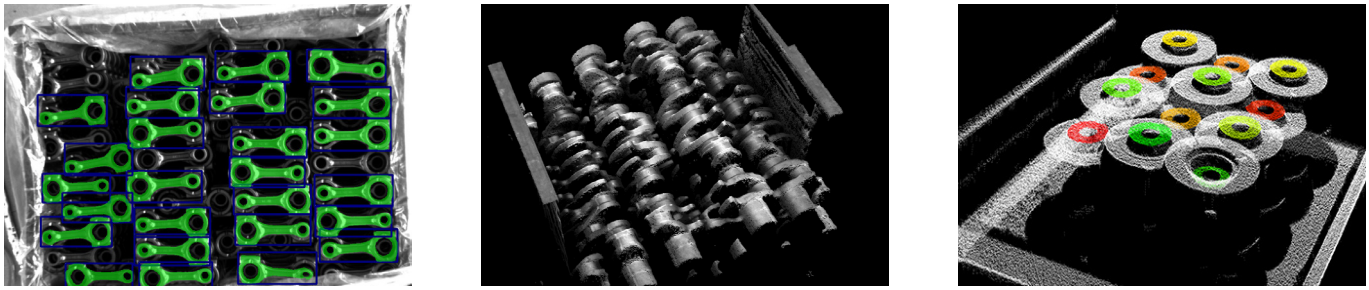
Optimal scanning range	1,200 - 3,000 mm
Min. FOV	1,200 x 1,000 mm @ 1.2 m
Max. FOV	3,000 x 2,400 mm @ 3 m
Resolution	Depth 2,048 x 1,536 px (3.0 MP) RGB 4,000 x 3,000 (12.0 MP)/2,000 x 1,500 px (3.0 MP)
Sensor type	CMOS (RGB)
Projector	Structured laser light (Class 2)
Z Repeatability	0.5 mm @ 3 m
Calibration accuracy	1 mm @ 3 m
Typical capture time	0.5 - 0.9 s
Baseline	380 mm
Dimension	459 x 77 x 86 mm
Weight	2.9 kg
Working temperature	-10 - 45 °C (max. gradient 10°/hour)
Interface	GigE, C++, C#, Python, ROS
Connectors	M12, 8-pin, A-coded (F) - Data M12, 4-pin, A-coded (F) - Power
Power supply	24V DC / 3.75 A
Certification	CE/FCC/VCCI
Protection class	IP65
Cooling	Passive

Outstanding point clouds

Our Mech-Eye 3D cameras are capable of generating 3D point clouds of various objects (boxes, bags, objects with reflective surfaces, etc.) with extremely high accuracy.

The point clouds impress with their high level of detail, which we achieve through excellent resolution and accuracy of the cameras. The optimal setting of the cameras is additionally supported by the Exposure Assistant tool, which automatically tests different setting variants and then suggests the optimal combination. Our Mech-Eye cameras are less susceptible to reflections and matte surfaces and thus deliver significantly better results in 3D matching and the application of trained Deep Learning models.

Examples from the logistics industry



Examples from the automobile industry

Other examples

Interfaces

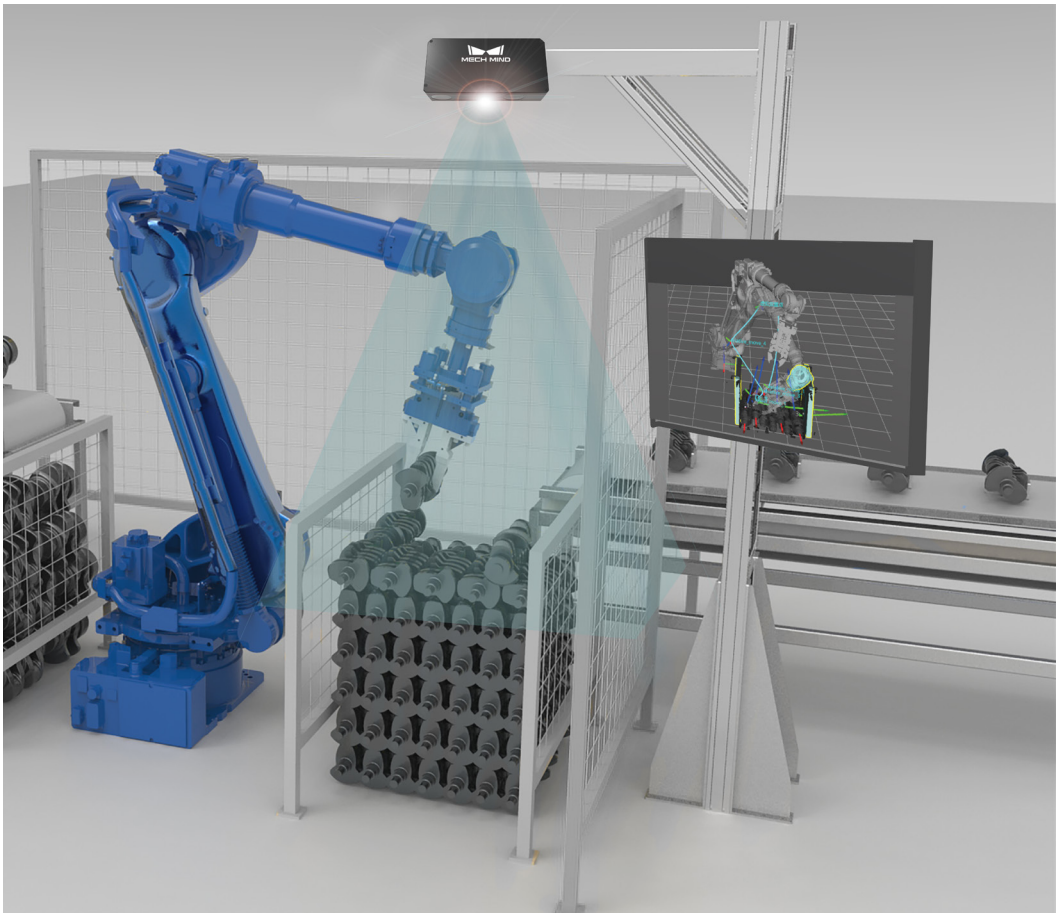
The cameras have a GigE interface as standard. Via this open interface, the data is transferred to the respective software for further processing. With the help of the interface connections listed below, the point clouds can be individually evaluated and further processed.

Alternatively, our complete solution consisting of the image recognition software Mech-Vision and the code-free programming environment for robots Mech-Viz can be used.

GiGE VISION

ROS

ROS **C++** **C#** **PYTHON**



Fast, efficient and easy-to-use full package solution.

We make it possible.

Our Full Package:

Mech-Eye, Mech-Vision und Mech-Viz

In addition to the extensive portfolio of Mech-Eye 3D cameras, a full package including solutions for image processing and robot programming are also available. The full package consist of:

Mech-Eye

Cameras in different sizes for the detection of objects.

Mech-Vision

Intelligent image processing software.

Mech-Viz

Code-free programming environment for various robots.

Contact

If you are interested in our Mech-Eye cameras or have specific questions about our full package solutions, please feel free to contact us at any time.

Send us your inquiry today!

Our E-mail

sales@mech-mind.de

Our Address

Mech-Mind Robotics GmbH
Industriestraße 15
82110 Germering

Our Website

www.mech-mind.de

MECH MIND

www.mech-mind.de

info@mech-mind.de