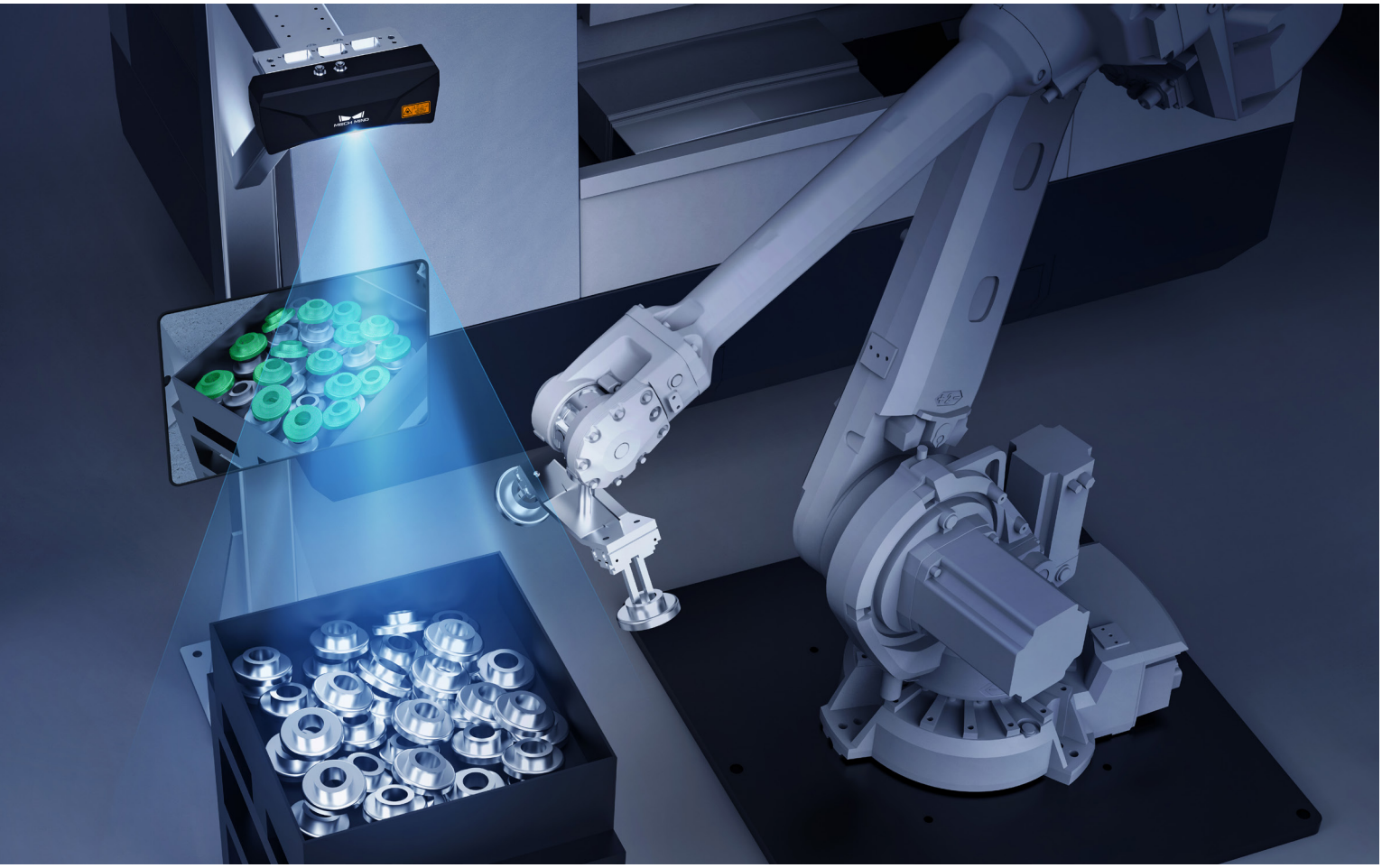
MECH MIND



3D Vision & AI for Robots and More

Mech-Mind Robotics Product Catalog

We Help Integrators WIN
with best-in-class AI + 3D vision tools and services.

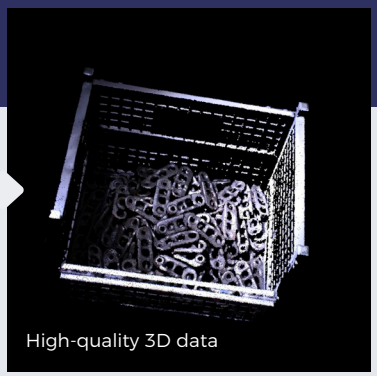
Advanced Techs | Proven | Versatile | Fast and Easy | No Black-Box | Industry-Ready | Open | Best Services

Empower System Integrators with Advanced AI + 3D Vision Tools

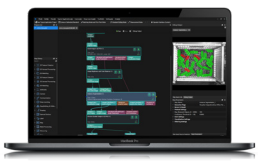
Mech-Mind is an industry-leading provider of industrial 3D cameras and AI software suites for robotic applications. With the comprehensive product portfolio, Mech-Mind empowers partners and system integrators to manage the most demanding robotic applications and brings automation to the next level.

Mech-Eye
Industrial 3D Cameras

- High accuracy
- Fast scanning
- Resistance to ambient light
- IP65/IP67 protection and CE, FCC, VCCI, UKCA, KC, ISED, NRTL, and RoHS certified
- Multiple model options

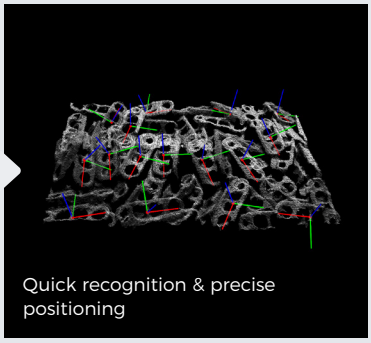


High-quality 3D data

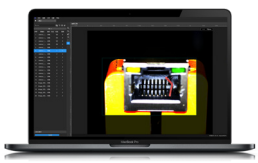


Mech-Vision
Machine Vision Software

- Code-free graphical user interface
- Extensive solution library
- Easy integration
- Various vision tools integrated
- Integrates 1,000+ robot models

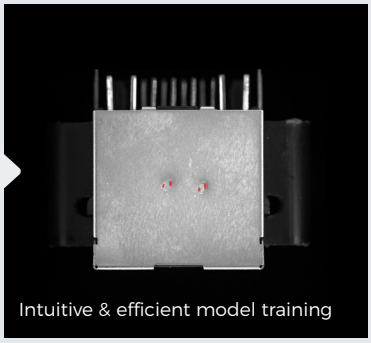


Quick recognition & precise positioning



Mech-DLK
Deep Learning Software

- Intuitive graphical user interface
- Visualized model validation
- Simple labeling and fast training
- Easy integration using multi-language SDKs, including C, C++, C#, and Python
- Standalone AI software for quality control



Intuitive & efficient model training

Mech-Viz
Robot Programming Software

- Task-oriented graphical programming interface
- One-click simulation
- Powerful algorithms
- Support for almost all major-brand robots

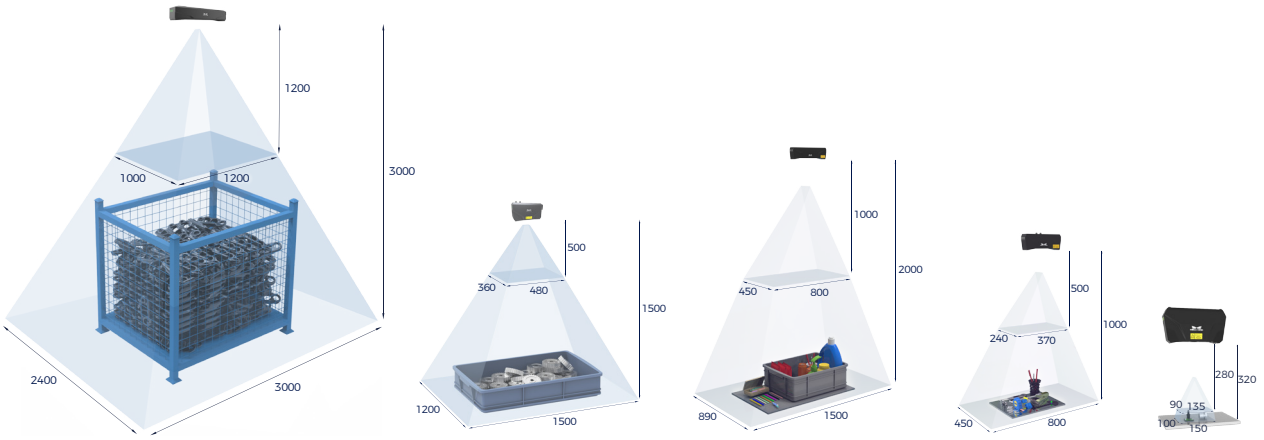
Robot accomplishes complex tasks

Mech-Eye Industrial 3D Cameras

- Detailed and accurate 3D point clouds
- Ambient light resistance
- Short capture time
- IP65 water and dust resistance
- Rugged aluminum alloy housing
- MTBF (Mean Time Between Failures): ≥ 40,000 hours

Specification	LSR L 	LSR S 	PRO M 	PRO S 	UHP-140 
Recommended working distance	1200–3000 mm	500–1500 mm	1000–2000 mm	500–1000 mm	300 ± 20 mm
Near FOV	1200 × 1000 mm @ 1.2 m	480 × 360 mm @ 0.5 m	800 × 450 mm @ 1.0 m	370 × 240 mm @ 0.5 m	135 × 90 mm @ 0.28 m
Far FOV	3000 × 2400 mm @ 3.0 m	1500 × 1200 mm @ 1.5 m	1500 × 890 mm @ 2.0 m	800 × 450 mm @ 1.0 m	150 × 100 mm @ 0.32 m
Resolution	Depth map: 2048 × 1536 RGB: 4000 × 3000/ 2000 × 1500	Depth map: 2048 × 1536 RGB: 4000 × 3000/ 2000 × 1500	1920 × 1200	1920 × 1200	2048 × 1536
Megapixels	/	/	2.3 MP	2.3 MP	3.0 MP
Point repeatability Z (σ)[1]	0.5 mm @ 3.0 m	0.2 mm @ 1.5 m	0.2 mm @ 2.0 m	0.05 mm @ 1.0 m	2.6 μm @ 0.3 m Region[2]: 0.09 μm @ 0.3 m
VDI/VDE accuracy[3]	1.0 mm @ 3.0 m	1.0 mm @ 1.5 m	0.2 mm @ 2.0 m	0.1 mm @ 1.0 m	0.03 mm @ 0.3 m
Typical capture time	0.5–0.9 s	0.5–0.9 s	0.3–0.6 s	0.3–0.6 s	0.6–0.9 s
Baseline	380 mm	140 mm	270 mm	180 mm	80 mm
Dimensions	459 × 77 × 86 mm	228 × 77 × 126 mm	353 × 57 × 100 mm	265 × 57 × 100 mm	260 × 65 × 142 mm
Weight	2.9 kg	1.9 kg	1.9 kg	1.6 kg	1.9 kg
Light source	Red laser (638 nm, Class 2)		Blue LED (459 nm, RG2)/White LED(RG2)		Blue LED (459 nm, RG2)
Image sensor	Sony CMOS for high-end machine vision				
Operating temperature	-10–45°C		0–45°C		
Communication interface	Gigabit Ethernet				
Input	24V DC, 3.75 A				
Safety and EMC	CE/FCC/VCCI/KC/ISED/NRTL				
IP rating	IP65	IP67	IP65		
Cooling	Passive				

Mech-Eye LSR L	Mech-Eye LSR S	Mech-Eye PRO M	Mech-Eye PRO S	Mech-Eye UHP-140



Field of view (mm)

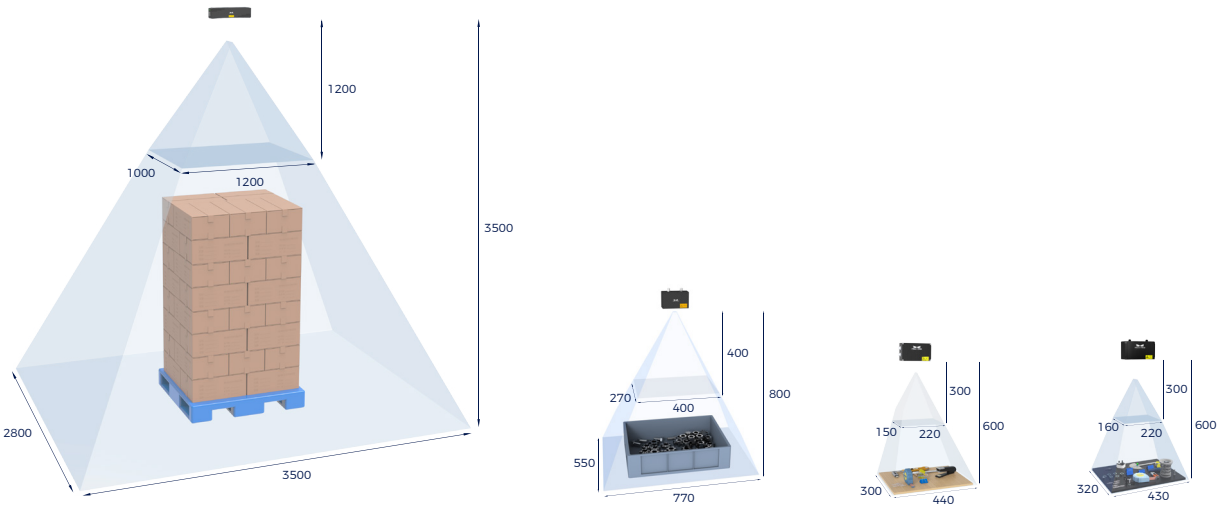
[1] One standard deviation of 100 Z-value measurements of the same point. The measurement target was a ceramic plate.
[2] One standard deviation of 100 measurements of the difference between the Z-value means of two same-sized regions. The measurement target was a ceramic plate.
[3] According to VDI/VDE 2634 Part II.

Mech-Eye Industrial 3D Cameras

- Detailed and accurate 3D point clouds
- Ambient light resistance
- Short capture time
- IP65 water and dust resistance
- Rugged aluminum alloy housing
- MTBF (Mean Time Between Failures): ≥ 40,000 hours

Specification	DEEP 	NANO ULTRA 	NANO 	PRO XS 
Recommended working distance	1200–3500 mm	400–800 mm	300–600 mm	300–600 mm
Near FOV	1200 × 1000 mm @ 1.2 m	400 × 270 mm @ 0.4 m	220 × 150 mm @ 0.3 m	220 × 160 mm @ 0.3 m
Far FOV	3500 × 2800 mm @ 3.5 m	770 × 550 mm @ 0.8 m	440 × 300 mm @ 0.6 m	430 × 320 mm @ 0.6 m
Resolution	Depth map: 2048 × 1536 RGB: 2000 × 1500	2400 × 1800	1280 × 1024	1280 × 1024
Megapixels	/	4.3 MP	1.3 MP	1.3MP
Point repeatability Z (σ)[1]	1.0 mm @ 3.0 m	0.1 mm @ 0.6 m	0.1 mm @ 0.5 m	0.1 mm @ 0.5 m
VDI/VDE accuracy[2]	3.0 mm @ 3.0 m	0.1 mm @ 0.6 m	0.1 mm @ 0.5 m	0.1 mm @ 0.5 m
Typical capture time	0.5–0.9 s	0.5–0.9 s	0.6–1.1 s	0.7–1.1 s
Baseline	300 mm	86 mm	68 mm	93 mm
Dimensions	366 × 77 × 92 mm	125 × 46 × 76 mm	145 × 51 × 85 mm	160 × 52 × 87 mm
Weight	2.4 kg	0.7 kg	0.7 kg	0.8 kg
Light source	Red Laser (638 nm, Class 2)	Blue LED (440 nm, RG2)	Blue LED (459 nm, RG2)/White LED(RG2)	Blue LED (459 nm, RG2)
Image sensor	Sony CMOS for high-end machine vision	High-performance CMOS for high-end machine vision	Sony CMOS for high-end machine vision	
Operating temperature	-10–45°C	0–45°C		
Communication interface	Gigabit Ethernet			
Input	24V DC, 3.75 A		24V DC, 1.5 A	
Safety and EMC	CE/FCC/VCCI/KC/ISED/NRTL			
IP rating	IP65			
Cooling	Passive			

Mech-Eye DEEP	Mech-Eye NANO ULTRA	Mech-Eye NANO	Mech-Eye PRO XS



Field of view (mm)

[1] One standard deviation of 100 Z-value measurements of the same point. The measurement target was a ceramic plate.
[2] According to VDI/VDE 2634 Part II.

Industrial 3D Camera

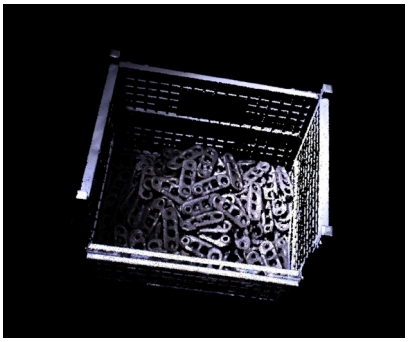
Mech-Eye LSR L

Long-Range Working Distance

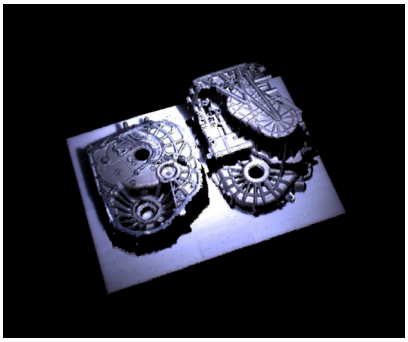
MTBF (Mean Time Between Failures): **≥ 40,000 hours**

High Accuracy | Large FOV | Ambient Light Resistance

The next-gen Mech-Eye LSR L can generate accurate, complete, and detailed 3D point cloud data of a wide variety of objects under severe ambient light interference (> 30,000 lx).



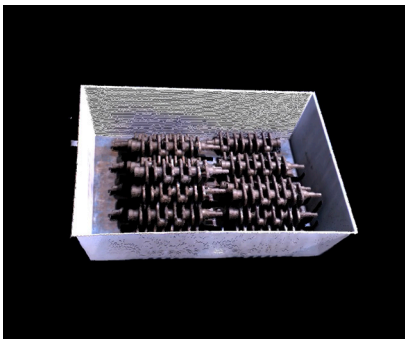
Track links



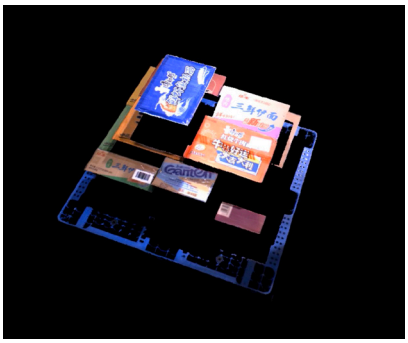
Gearbox housings

Brake discs
Color rendered by height

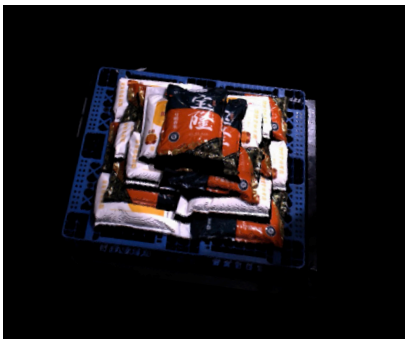
Point clouds captured by Mech-Eye LSR L under challenging light conditions of > 30,000 lx @ 2.0 m



Crankshafts



Colored cartons



Colored sacks

Point clouds captured by Mech-Eye LSR L under challenging light conditions of > 30,000 lx @ 2.0 m

Industrial 3D Camera

Mech-Eye PRO

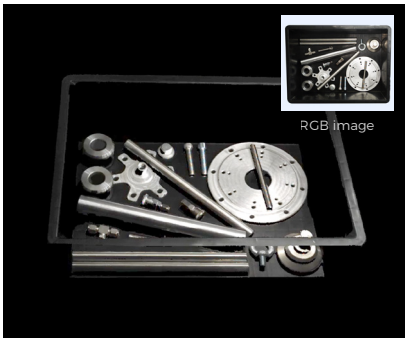
Medium-Range Working Distance

MTBF (Mean Time Between Failures): ***≥ 40,000 hours***

High Accuracy | Fast Scanning Speed | Blue and White Light Options

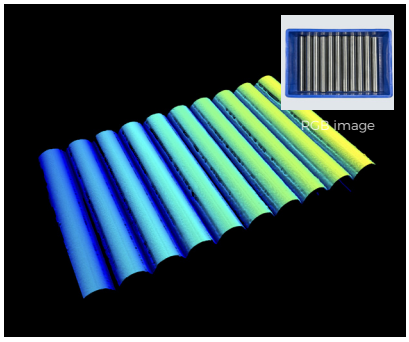
Mech-Eye PRO delivers an extraordinary level of detail with super high accuracy. Capturing point clouds with accurate details takes as low as 0.3 s.

Dark and reflective objects
Mech-Eye PRO S



Highly reflective metal parts
Mech-Eye PRO S

Transparent groceries
Mech-Eye PRO S



Reflective shafts
Mech-Eye PRO S
Color rendered by height

Colored goods
Mech-Eye PRO M

Colored cartons
Mech-Eye PRO M

Point clouds captured under typical indoor lighting conditions

Industrial 3D Camera

Mech-Eye NANO

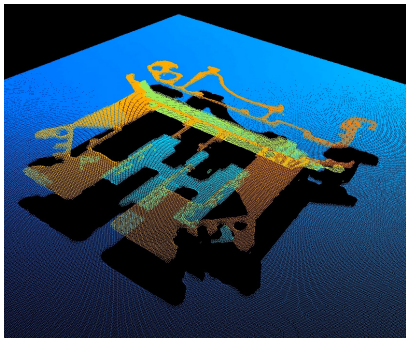
Short-Range Working Distance

MTBF (Mean Time Between Failures): ***≥ 40,000 hours***

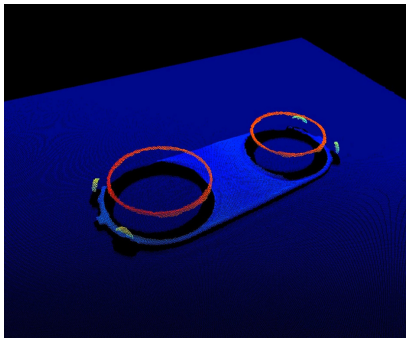
Ultra-Small Size | High Accuracy | Ambient Light Resistance

Mech-Eye NANO (accuracy: 0.1 mm @ 0.5 m) can create 3D data of most complex parts with extraordinarily high accuracy.

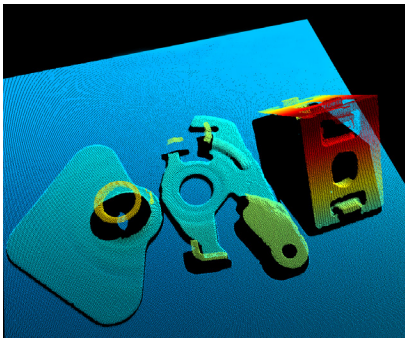
In space-critical applications, Mech-Eye NANO is easy to install and shows outstanding flexibility thanks to its ultra-small size (145 × 85 × 51 mm).



Precision component



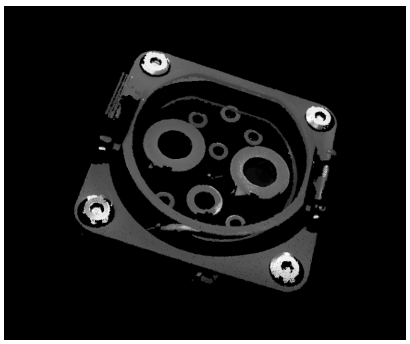
Thin objects
(only 0.6 mm thick)



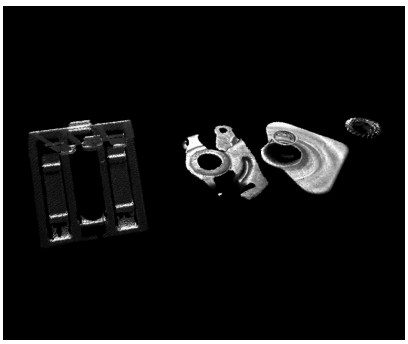
Various small workpieces

Point cloud examples captured by Mech-Eye NANO

Screws and nuts



Car charging port



Small parts

Point cloud examples captured by Mech-Eye NANO

Industrial 3D Camera

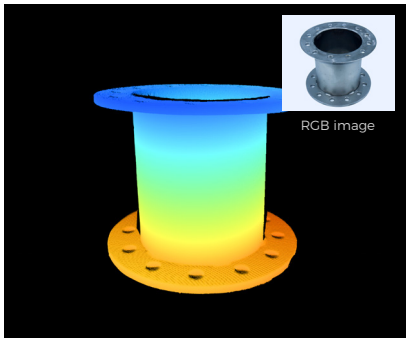
Mech-Eye NANO ULTRA

Short-Range Working Distance

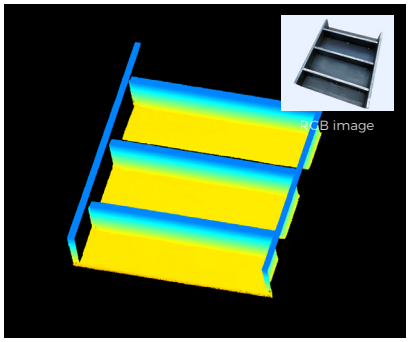
MTBF (Mean Time Between Failures): ***≥ 40,000 hours***

Ultra-High Precision | Palm Size | Ideal for Welding and Fine Assembly

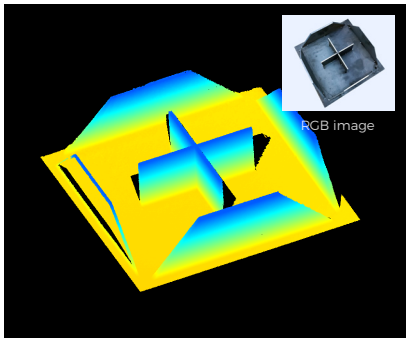
Mech-Eye NANO ULTRA, featuring impressive ambient light resistance and anti-reflection capability, can capture clear, detailed point clouds of reflective weldments and metal parts even under strong light (60,000 lx)



Cylindrical metal part

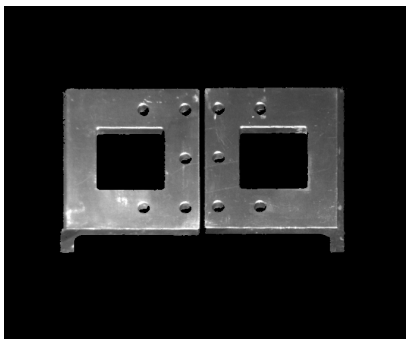


H-beam



Sub-assembly component of the ship hull

Mech-Eye NANO ULTRA @ 0.6m, color rendered by height



Shiny steel plates with holes

Gas connectors

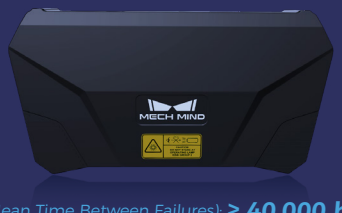
Bolts

Mech-Eye NANO ULTRA @ 0.6m

Industrial 3D Camera

Mech-Eye UHP-140

Short-Range Working Distance

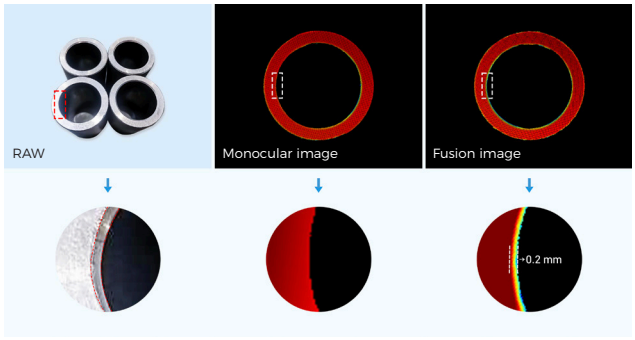


MTBF (Mean Time Between Failures): ***≥ 40,000 hours***

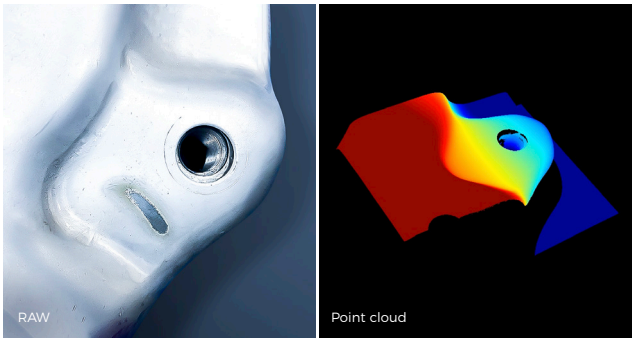
Micron-Level Accuracy | Robust Anti-Reflection Performance | Advanced Image Stitching Algorithms

Mech-Eye UHP-140 is designed to inspect or measure the subtlest features and defects (accuracy: 0.03 mm @ 0.3 m; standard: VDI/VDE 2634 part II of Germany).

Coupled with advanced image fusion and anti-reflection 3D reconstruction algorithms, Mech-Eye UHP-140 can effectively reduce blind spots and generate high-quality point clouds of reflective and complex-shaped parts.

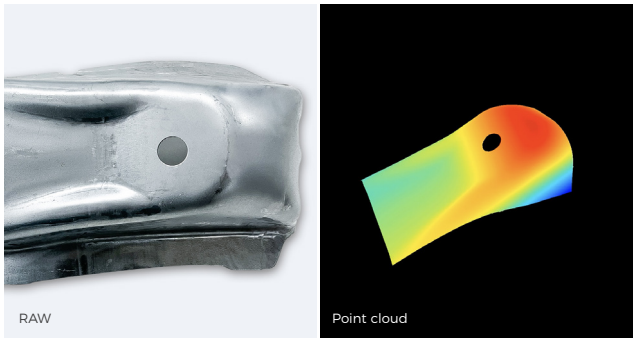


Round positioning hole with chamfered edges

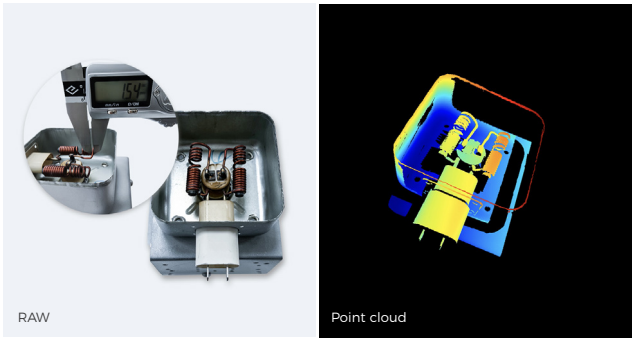


Threaded hole

Mech-Eye UHP-140 @ 0.3 m, color rendered by height



Reflective curved sheet metal part



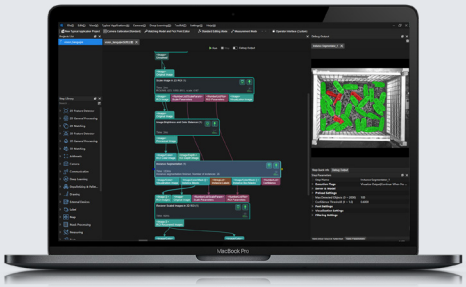
Reflective enameled copper wire with a diameter of about 1.5 mm

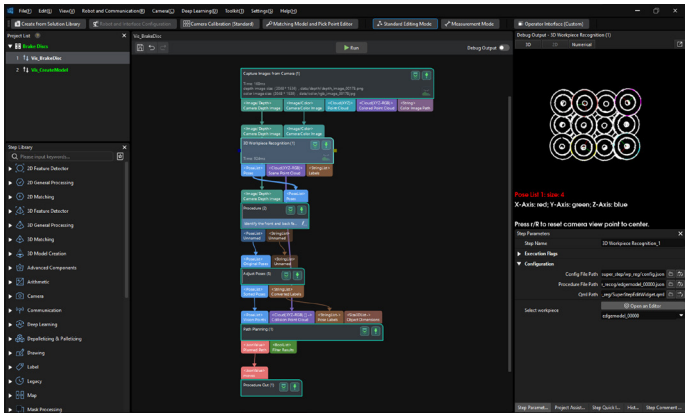
Mech-Eye UHP-140 @ 0.3 m, color rendered by height

Mech-Vision

Machine Vision Software

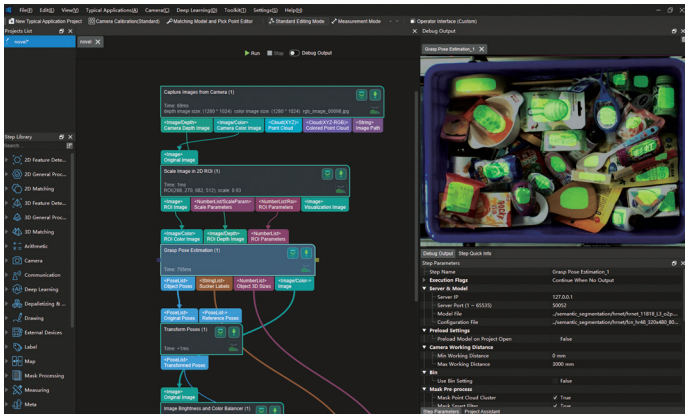
Mech-Vision is an industry-leading machine vision software. It is designed to quickly build vision applications, whether simple or complex. With Mech-Vision, users can manage a wide range of vision tasks, including identification, localization, inspection & measurement, etc.





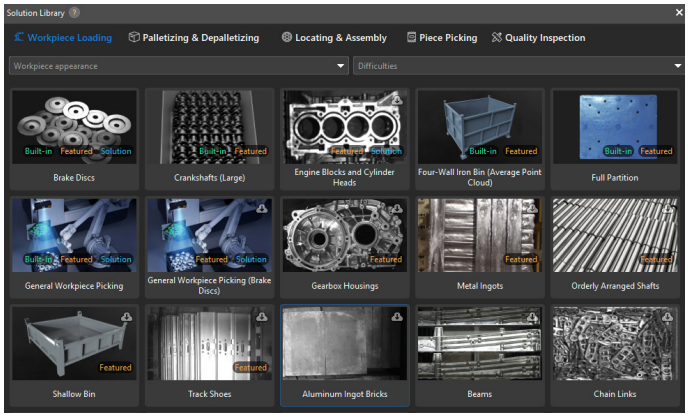
Build your vision applications efficiently

- Intuitive solution-oriented graphical user interface
- Drag-and-drop programming simplifies setup without writing a line of code
- Visualized configuration



Manage complex vision applications with extensive tools

- Powerful algorithms: 2D/3D matching, 2D/3D deep learning, 2D/2.5D measurement, etc.
- Integrated machine vision tools: matching model, pick point editor, automatic calibration, caliper, etc.
- The **3D Workpiece Recognition** tool delivers recognition results in 1 sec, enabling easier and faster deployment of various loading and handling applications



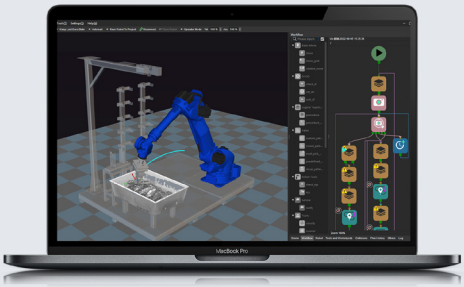
Develop vision applications easily and flexibly

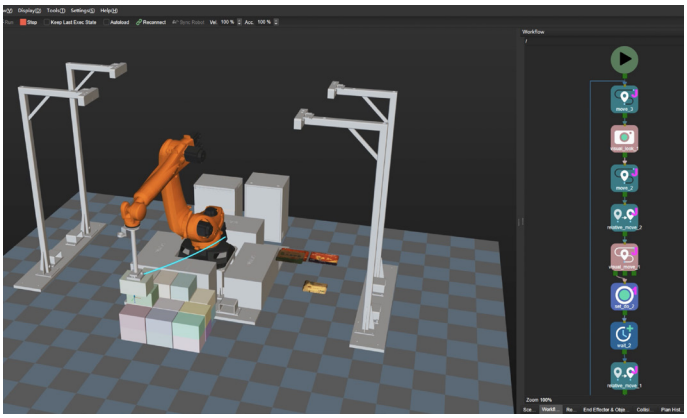
- **Robust Solution Library:** get faster application deployment by adapting an existing project after simple modifications
- **Production Interface** for easy production status monitoring and data reporting
- Multiple languages: English, Japanese, Chinese, and Korean

Mech-Viz

Robot Programming Software

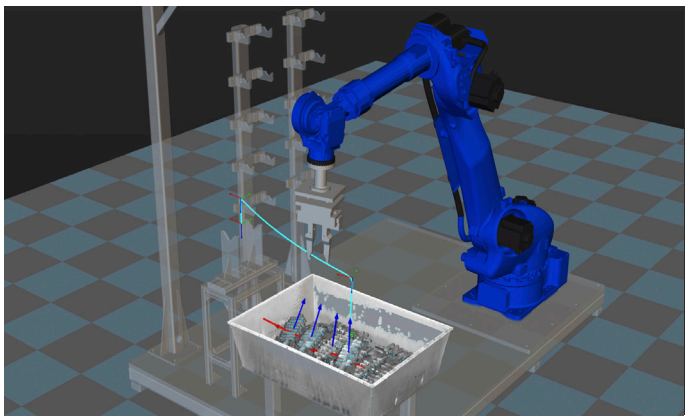
Mech-Viz is a software product for efficiently implementing robotic applications without writing a line of code. Mech-Viz enables robots to manage demanding automation tasks with excellent stability, extraordinary flexibility, and outstanding consistency.





Intuitive Robot Programming

- Intuitive graphical user interface
- Code-free programming environment
- One-click simulation of robot path



Powerful Algorithms for Reliable Robotic Operation

- Motion planning and collision detection
- Multi-pick depalletizing algorithms
- Picking strategies: multiple pick points, rotational symmetry, etc.

ABB KUKA YASKAWA FANUC Kawasaki
NACHI DENSO UNIVERSAL ROBOTS STÄUBLI EFORT
GREE ROKAE ELITE ROBOTS PEITIAN ROBOTICS TM ROBOT
ESTUN ROBOTICS TURIN AUBO DOBOT QJAR
HAN'S ROBOT HYUNDAI JAKA SIASUN DELTA

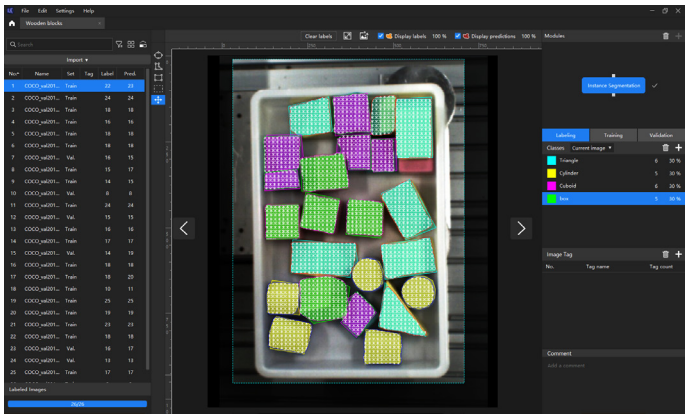
Flexible and Easy Implementation

- Support for almost all major-brand robots
- Streamlines configuration and redeployment with robot path reporting and tracking capabilities
- Multiple languages: English, Japanese, Chinese, and Korean

Mech-DLK

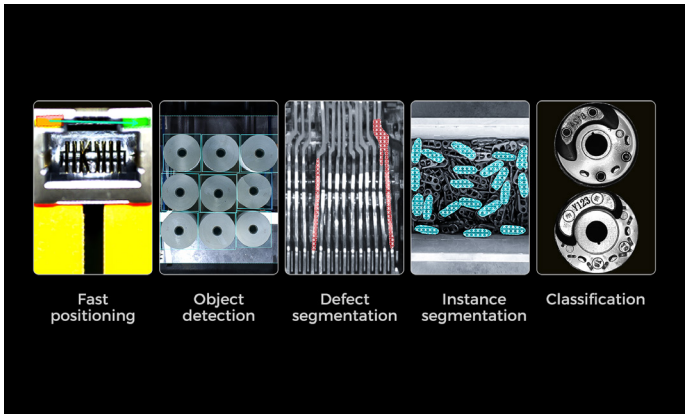
Deep Learning Software

Mech-DLK is a versatile deep learning software solving complex machine vision tasks. It enables users to rapidly train models and easily solve demanding vision applications, including overlapping object recognition and classification, complex defect detection, character reading, etc.



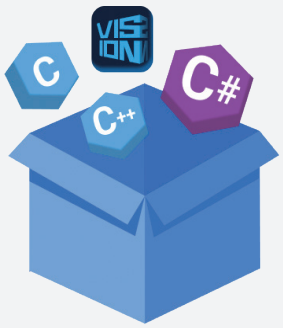
Train models efficiently without writing a line of code

- Intuitive code-free user interface
- Visualized model validation
- Advanced data augmentation: train models with smaller image sets
- **Finetune** function: leverage pre-trained models to expedite training, rather than train a model from scratch



Manage complex machine vision tasks with speed and accuracy

- Manages complex vision applications with powerful algorithms such as fast positioning, defect segmentation, and instance segmentation
- **Smart Labeling Tool** and **Template Tool** simplify the labeling process, saving time and effort



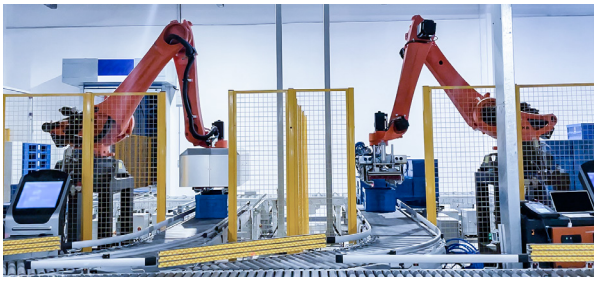
Integrate your vision tasks into your production environment easily

- Multi-language SDKs: C, C++, C#, and Python
- Easy integration with Mech-Vision for quick deployment

Example Cases

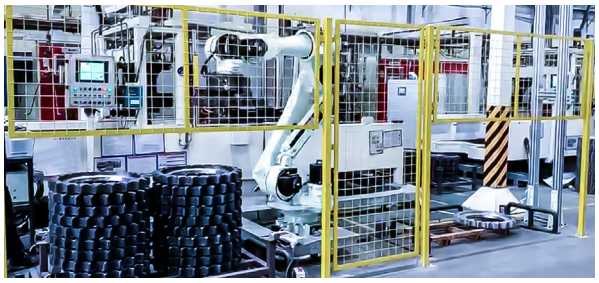
Scan QR code
to watch videos

Vision-Guided
Case Depalletizing



Vision-Guided
Case and Tote Depalletizing

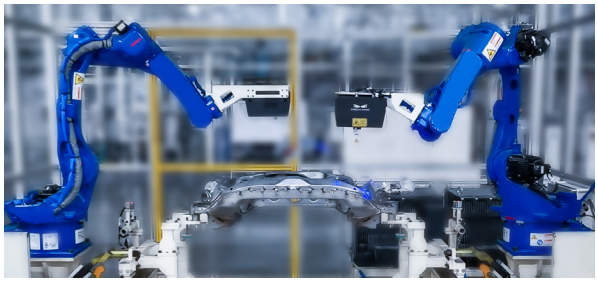
Vision-Guided
Sack Depalletizing



Vision-Guided
Machine Tending of Drive Gears

Vision-Guided
EV Charging

Vision-Guided
Bin Picking of CV Joints

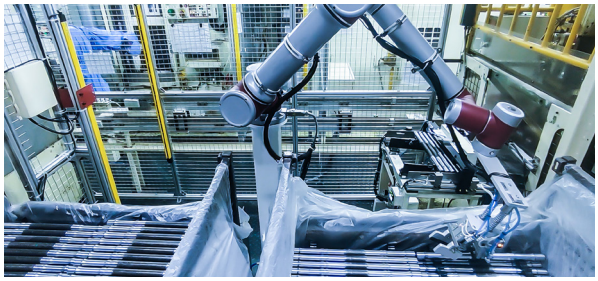


Subframe Inline
Measurement

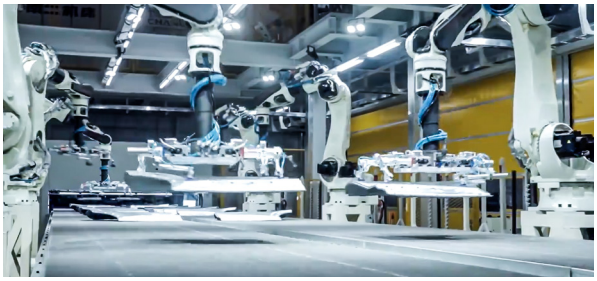
Vision-Guided
Car Door Inner Panel Picking

Example Cases

Scan QR code
to watch videos



Vision-Guided Machine Tending of Countershafts



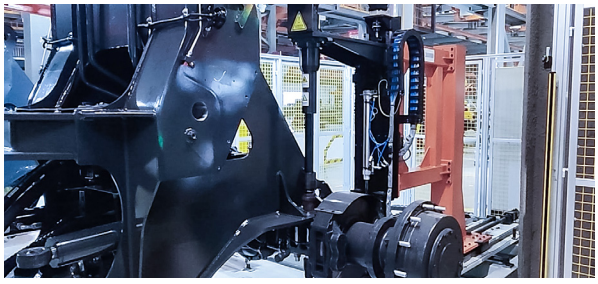
Vision-Guided De-racking of Stamping Parts

Vision-Guided Heavy-Duty Truck Tire Assembly

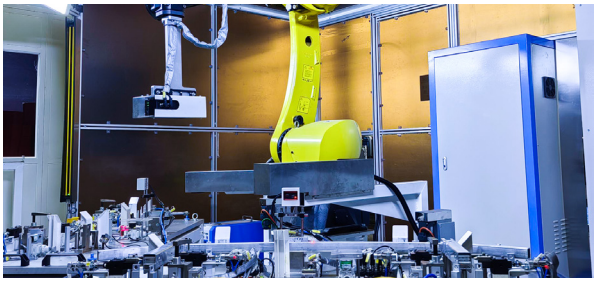
Vision-Guided Machine Tending of Battery Modules

Vision-Guided Tote Depalletizing

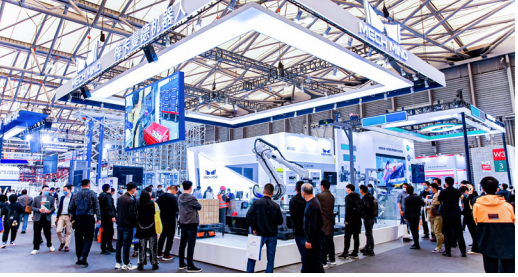
Vision-Guided Depalletizing of Shrink-Wrapped Bottles



Vision-Guided Bolt Tightening



Inline Measurement of Bumper Beams



About Mech-Mind

Mech-Mind is an industry-leading company focusing on industrial 3D sensors and software suites for intelligent robotics.

By combining 3D vision with AI technology, Mech-Mind brings automation to the next level and empowers partners and system integrators to manage the most challenging automation tasks, including bin picking, depalletizing & palletizing, picking & placing, and more.

One of the Highest-Funded AI + Robotics Companies

Founded in 2016, Mech-Mind has closed its Series C+ with total funding of **> USD 200 million**. Backed by Intel and other global top investors, Mech-Mind has been one of the highest-funded AI + robotics companies all over the world.

World-Class Team with Deep Technical Knowledge

Mech-Mind assembles highly qualified experts with rich technical knowledge in **3D sensing**, **vision and robotics algorithms**, **robotics software**, **and intelligent robotic solutions**.

Create Success Together with Partners and Integrators

Excellent usability, approved quality, high flexibility, comprehensive service, and competitive price, that's what we stand for and how we help our customers and partners to exceed in their business. Our mature solutions empower system integrators and partners to solve the most demanding applications and bring automation to the next level.

10,000+ Cameras Deployed

Mech-Mind partnered with industry-leading companies and has deployed applications in **50+** regions. By delivering cutting-edge technology and reliable solutions, Mech-Mind has created visible ROI for global customers across diverse industries, including **automotive, construction machinery, logistics, home appliances, food and beverage, etc.**

10,000+ cameras
installed worldwide

> $200 million
total funding

50+
regions

Customers and Partners

Compatible with Major Robot Brands

3D VISION & AI FOR ROBOTS AND MORE

Get the most from Mech-Mind's 3D vision - get in touch with us!

Website: www.mech-mind.com
E-mail (business): info@mech-mind.net
E-mail (PR & marketing): marketing@mech-mind.net

Learning guidance to deploy your vision application STEP BY STEP, please visit

Documentation: docs.mech-mind.net
Online community: community.mech-mind.com