Mech-Eye NANO ULTRA Industrial 3D Camera

- Ultra-high precision
- Palm-sized design
- Extended FOV
- Ideal for welding and fine assembly

Accurate and anti-reflection

- Self-developed DLP projector technology and binocular structured light 3D imaging algorithms
- Great resistance to strong ambient light (60,000 lx)
- Impressive anti-reflection capability
- High-quality imaging of reflective weldments and metal parts

Ultra compact and lightweight

- Compact body: 125×46×76 mm
- Suitable for robot-mounted applications in compact workspaces

Industry-ready

- IP65 rating
- Protective covers keep the camera away from dust and debris
- Stable performance even in harsh environments (e.g., high temperatures)

Open and easy-to-deploy

- Various SDKs in common programming languages
- Compatible with GenICam and GigE Vision
- Seamlessly integrated with Halcon and other vision software

Field of View (mm)

Object Focal Distance: 350mm

Object Focal Distance: 700mm

Specifications

Recommended working distance: 250-500 mm/400-800 mm

Near FOV: 220 × 165 mm @ 0.25 m/400 × 270 mm @ 0.4 m

Far FOV: 500 × 340 mm @ 0.5 m/770 × 550 mm @ 0.8 m

Resolution: 2400 × 1800

Megapixels: 4.3 MP

Operating temperature: 0-45°C

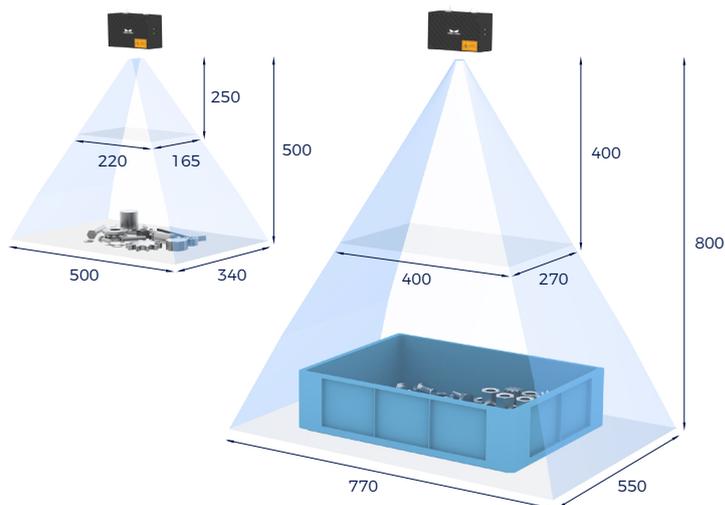Communication interface: Gigabit Ethernet

IP rating: IP65

Point Z-value repeatability (σ)[1]: 0.1 mm @ 0.6 m

Measurement accuracy (VDI/VDE)[2]: 0.1 mm @ 0.6 m

Typical capture time: 0.5-0.9 s

Baseline: 86 mm

Dimensions: 125 × 46 × 76 mm

Weight: 0.7 kg

Input: 24 V DC, 3.75 A

Safety and EMC: CE/FCC/VCCI/KC/ISED/NRTL

Cooling: passive

Light source: blue LED (440 nm, RG2)

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

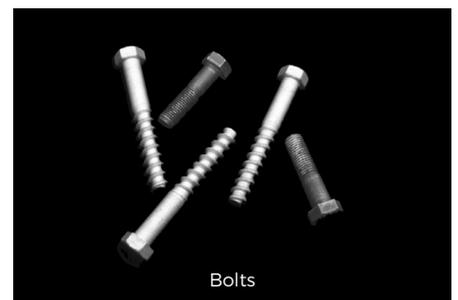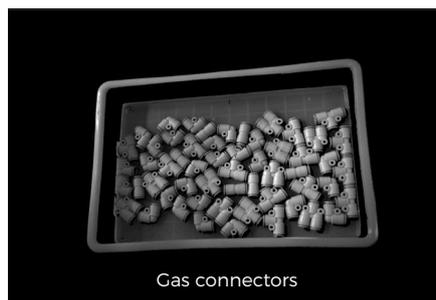[1] One standard deviation of 100 Z-value measurements of the same point. Measurement target was a ceramic plate.
[2] According to VDI/VDE 2634 Part II.

High-Quality Point Clouds

- Create clear, accurate 3D point clouds under strong light (> 60,000 lx)
- Effectively tackle reflective or dark surfaces and complex structures
- Used to locate various weld seams of weldments (e.g., beam hangers, steel plates, and blast doors)

Cylindrical metal part

H-beam

Sub-assembly component of the ship hull
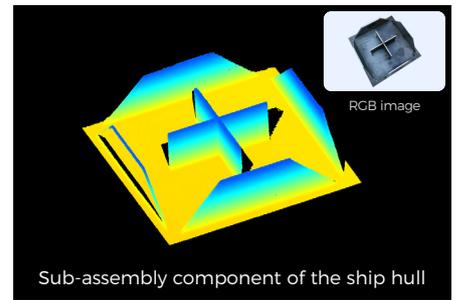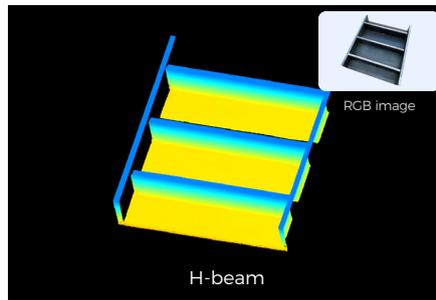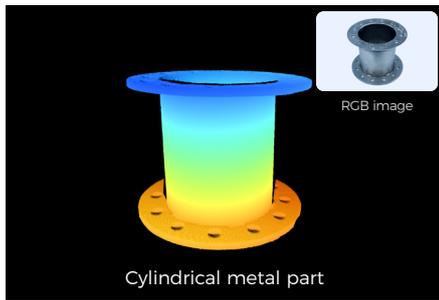
▲ Mech-Eye NANO ULTRA @ 0.6m, color rendered by height

Shiny steel plates with holes

Gas connectors

Bolts

▲ Mech-Eye NANO ULTRA @ 0.6m

For Autonomous Welding and Fine Assembly Work

- Installed on the robot's arm to conduct fine welding work in steel structure, machinery, shipbuilding, and automotive industries

Ship sub-assembly component welding

Square pipe welding

Loading and welding of bucket ear plates

- Work with cobots, AGVs, mobile and industrial robots for machine tending, fine assembly, bolt tightening and grinding

PCB picking and placing

Bolt tightening

EV charging