



ViEye[®] 90PD

Intelligent Welding Specialized 3D Camera



Arc Resistance



Anti-splash Cover



High Precision



Strong Light Interference



Compact Structure



Dynamic and Static Integration

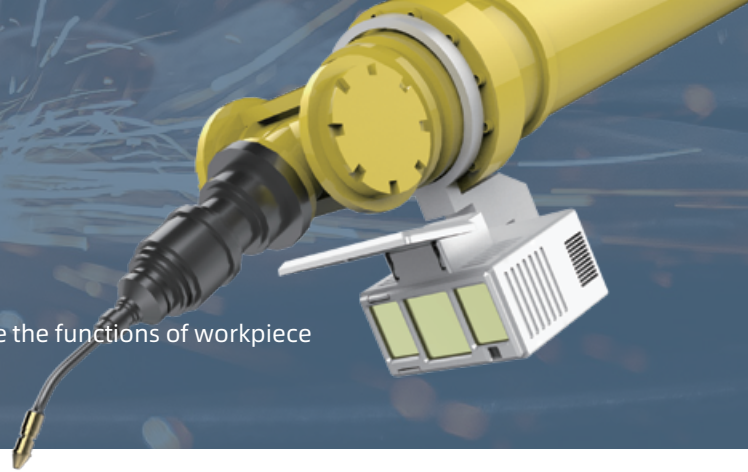


SVersion-HJ-90

www.vizumtech.com

ViEye (90PD)

Applied in the field of industrial intelligent welding to achieve the functions of workpiece positioning, weld seam extraction, and weld seam tracking.



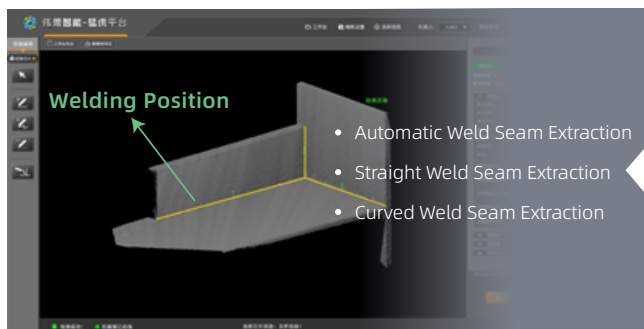
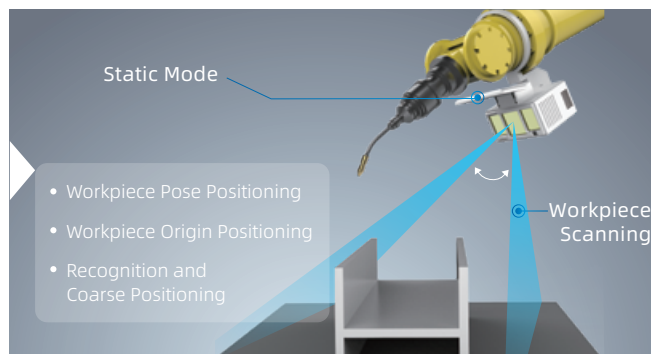
The ViEye® industrial-grade line laser 3D camera (hereinafter referred to as "ViEye") is a 3D camera product designed for machine vision applications that generates point cloud data models, depth maps, grayscale maps, among other result data information, quickly. It is also able to adapt to various complex environments and support high-precision modeling even in scenarios with strong light, reflection, and black objects that absorb light.

The ViEye is used in the industrial intelligent welding field and serves as the visual input for welding systems. Before welding, the ViEye, together with specialized software, can perform operations such as workpiece scanning, weld seam extraction, and weld seam planning. During welding, the ViEye can switch to a dynamic camera and perform weld seam tracking, achieving a dynamic and static integration. After the welding action is completed, the ViEye can serve as a detection tool and, together with the welding system, perform functions such as weld seam flatness inspection and dimensional deviation inspection.

Product Functions

Workpiece Positioning

The welded workpiece is positioned as a whole, and the information of its attitude and position is provided, so that the welding origin can be located.

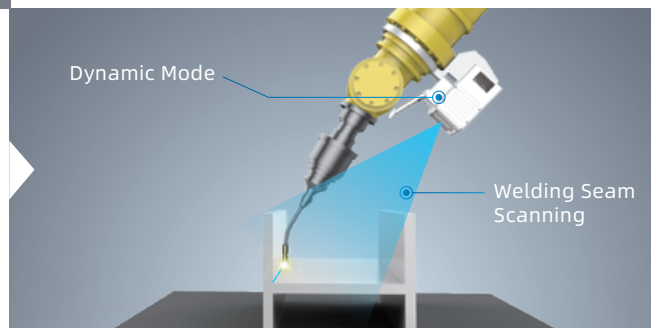


Weld Seam Extraction

Close-range fast scanning provides precise welding location, one-click generates welding path, and connects with welding robots.

Weld Tracking

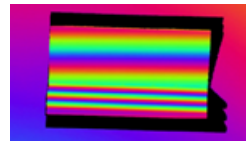
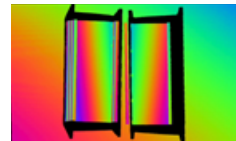
Real-time detection of welding seam position, correction of welding path, ensuring that the welding gun always follows the welding seam for welding, and guaranteeing welding quality.



Product Features

1 Resistant to strong light, anti-glare, and anti-absorption, adapting to various complex environments.

- Supports high-precision modeling in bright environments up to 480,000 Lux.
- Supporting object surface reflection and glossy material modeling without noise.
- Black light-absorbing material on object surface for flawless modeling
- Not afraid of welding arc light, high-precision scanning can still be performed during welding.



An example of point cloud in bright light (>480000 Lux)

2 High precision and high frame rate to improve welding accuracy.

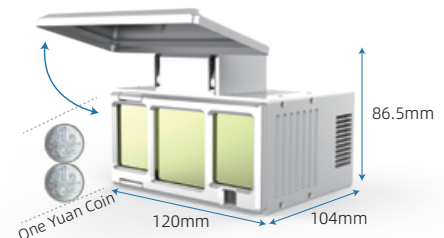
- Equipped with a high-resolution image chip, the number of single-line point clouds can reach up to 2048.
- Uses a global exposure chip, with a maximum line scanning rate of 3000 lines/s.
- High spatial positioning accuracy, meeting the refined scene detection requirements.



An example of point cloud visualization at 3000 frames per second

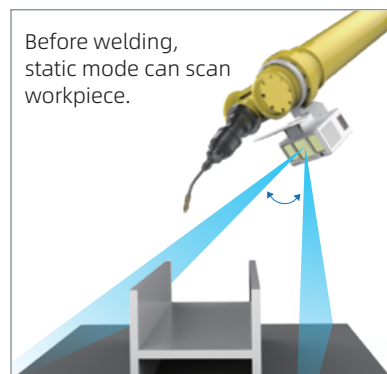
3 Lightweight, compact, electric-driven anti-splash cover design.

- Weighing only 0.9kg, it is suitable for lightweight robotic arm installation.
- Length of 120mm, suitable for welding scenarios in confined spaces.
- The electric-driven anti-splash cover design allows the cover to automatically close after scanning is completed.
- It can be controlled via software or an external trigger line, providing better lens protection and adapting to harsh environments.

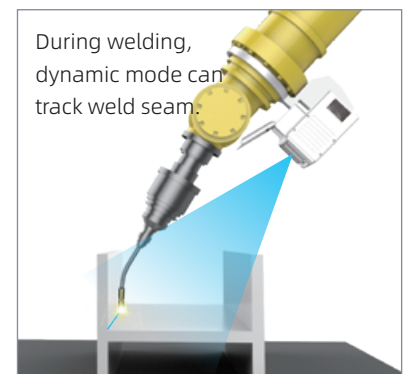


4 Dynamic and static integration, one camera for the entire welding process.

- Static mode supports workpiece scanning.
- Dynamic mode supports welding tracking.
- Dynamic and static in one, switching through software.

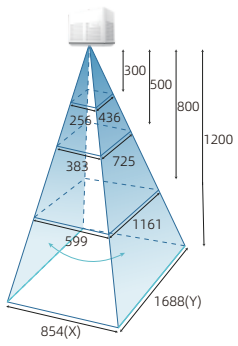


Static Mode: the camera is stationary relative to the measured object, while the laser line is pivoted left and right to complete the scan.



Dynamic Mode: The object being measured moves relative to the camera, and the laser line sweeps over the object to complete the scan.

Product Specifications

Specification Items	Indications				
Camera Model	SVersion-HJ-90				
Camera Size	120×104×86.5mm				
Baseline Length	90mm				
Camera Weight	0.9kg				
Camera Funcation	Weld Seam Extraction + Weld Seam Tracking				
Work Distance Range	300~1200mm				FOV: 
Work Distance	300mm	500mm	800mm	1200mm	
Field of View (mm)	256×436	383×725	599×1161	854×1688	
Z-axis Single Point Repeatability* ¹	0.03mm	0.03mm	0.06mm	0.19mm	
VDI/VDE Measuring Accuracy * ²	0.29mm	0.40mm	1.08mm	2.51mm	
Typical Full Frame Capture Time	0.2~0.8s (Full-frame Frame Rate Max: 6FPS)				
Maximum Line Scan Rate	3000Line/s				
Output Data Format	Point Cloud Data (Pcd、Las、Txt)				
Front-end Processing	Output the results directly, without the need for additional hardware platforms for calculation				
Intelligent Development Platform	Vizum MH®Platform				
Resistance to Environmental Light Intensity	480000Lux				
Working Temperature	-20℃~70℃				
Communication Interface	Gigabit Ethernet				
Light Source	Blue laser (450nm) and infrared laser (808, 850nm) are optional				
Power Input	24V DC, 1.1A				
Protection Rating	IP65				

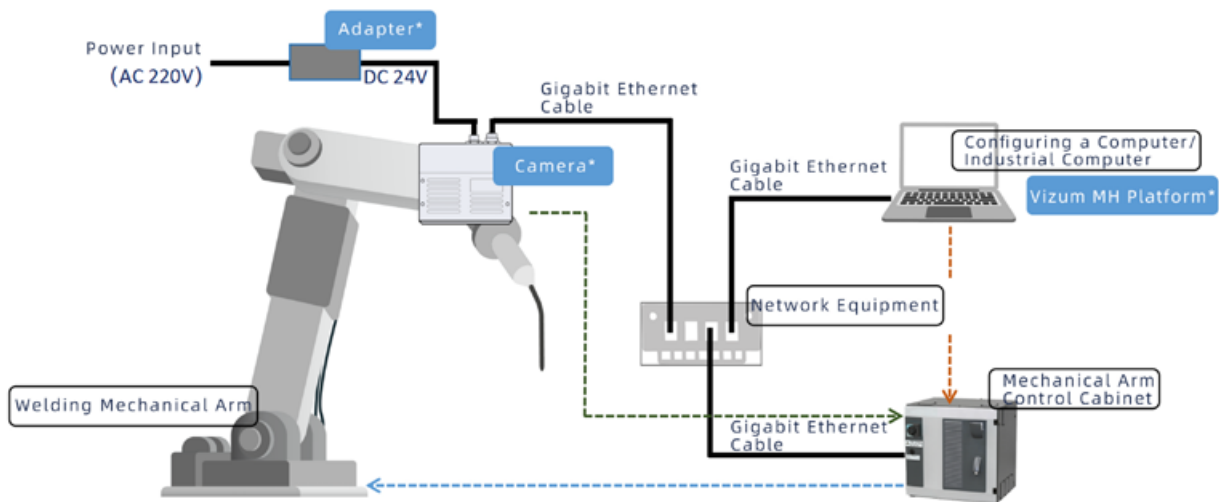
*1: One standard deviation of 100 measurements of the z-value for a ceramic ball.

*2: Complies with VDI/VDE 2634 Part II standard.

Shipping Invoice

Name	Quantity	Graphic Example
Camera	1	
Camera Power Cord and Adapter	1	
Gigabit Ethernet Cable	1	
Free App Platform	1	Vizum MH Platform - 3D Vision Intelligent Welding Guidance Application Platform

System Connection



Graphic Example:

- > 3D Scanning Data
- - -> Welding Joint Planning Data
- - -> Control Signal

Note:

- 1: * The equipment is provided by Vizum.
- 2: Six-axis calibration method is available.
- 3: Control system interface: Supports Modbus TCP and TCP/IP.

Laser Safety

- The laser warning sign is located on the camera housing, and the sign is as follows:



- Laser safety levels are classified according to IEC 60825-1:2014.
- Caution - Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
- The laser module information is as follows :

Wavelength: 450nm±10nm

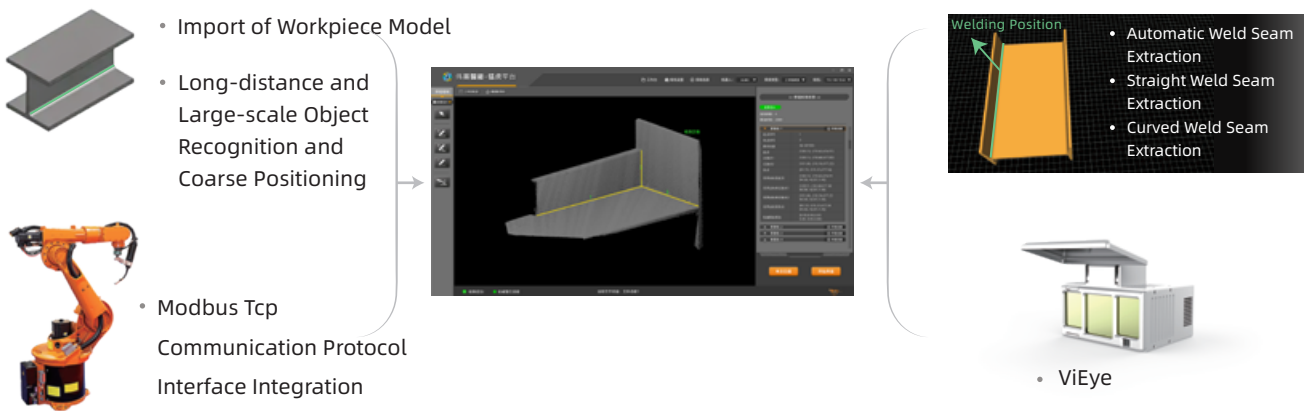
Maximum output power: <5mW

Laser safety level: Class 3R

- The level of laser radiation emitted through the laser aperture exceeds Class 1.

Vizum MH Platform

MH Platform is a 3D vision-based intelligent welding guidance platform independently developed by Vizum. Based on the high-performance and high-precision 3D scanning technology of ViEye, it provides a series of functions such as workpiece scanning, weld seam extraction, weld seam planning, and weld seam tracking. It enables precise guidance and efficient implementation throughout the entire intelligent welding process.

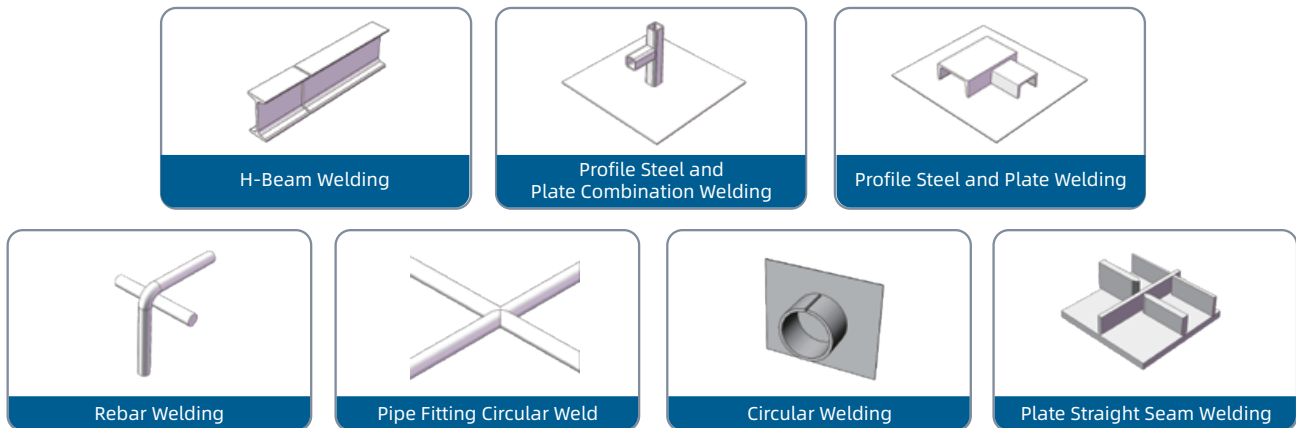


● Diverse Design: Support Importing Design Drawings.

- MH Platform supports importing model files, allowing for more precise weld seam recognition.



● Supports a Variety of Workpiece Types.

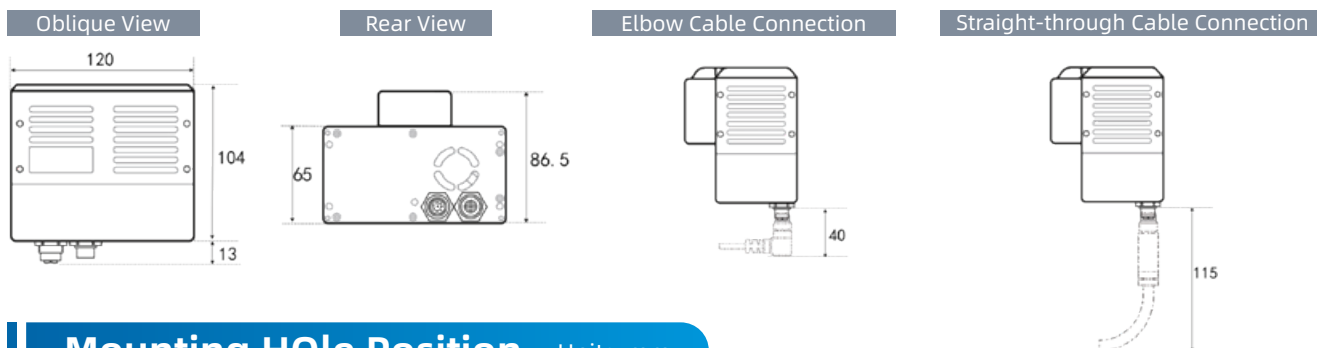


● Supports Dozens of Domestic and International Robotic Arm Brands.

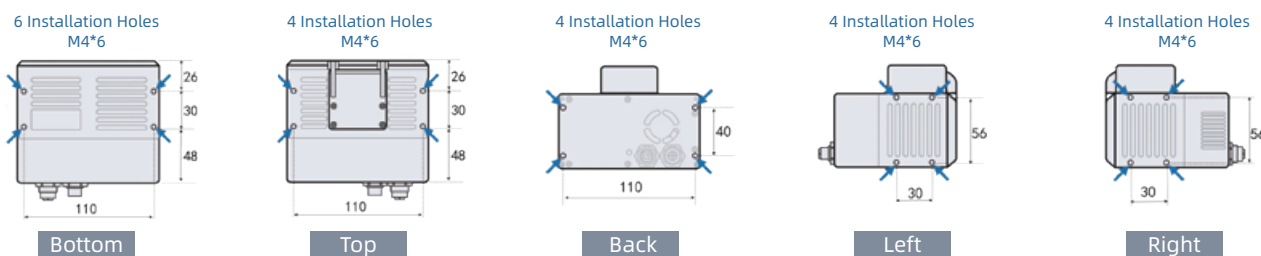
Supports mainstream robotic arm manufacturers from both domestic and international markets, including ABB, Yaskawa, Kuka, Nachi, Panasonic, Fanuc, Kawasaki, Aubo, Han's Robot, Step, Efort, Peitian, Rokae, QJAR, Estun, Siasun, Jaka, Bronte, Moka, and more.



Product Size Unit: mm



Mounting HOle Position Unit: mm



Computer System Requirements

Computer	Requirements
Operating System	Windows11、Windows10、Windows7 (Simplified Chinese, 64-bit Version)
CPU	Based on Intel® Core™ i7 Processor or Higher
Memory	16 GB or Above
Disk Space	500 GB or Above (Need Storage Space for Image Data Additionally)
Graphics Card	Dedicated Graphics Card with 2GB or More of Video Memory
Display Resolution	1920*1080
Network Interface	Gigabit Ethernet Port

Power and Trigger Interfaces

When using external triggering, connect the external signal to the camera's trigger cable according to the actual situation. The detailed explanation and definition of the power and external trigger interface are as follows:



Number	Color-coded Accessory Cables	Indications
1	Red	Positive Terminal of Power Input (VCC)
2	White	Trigger Input Signal_1-GND
3	Green	Trigger Output Signal, Not Currently Supported
4	Yellow	Trigger Input Signal_1
5	Purple	Trigger Input Signal_2(Photocell Input)
6	Blue	Trigger Input Signal_2-GND
7	Brown	Trigger Output Signal-GND
8	Black	Power Ground (GND)