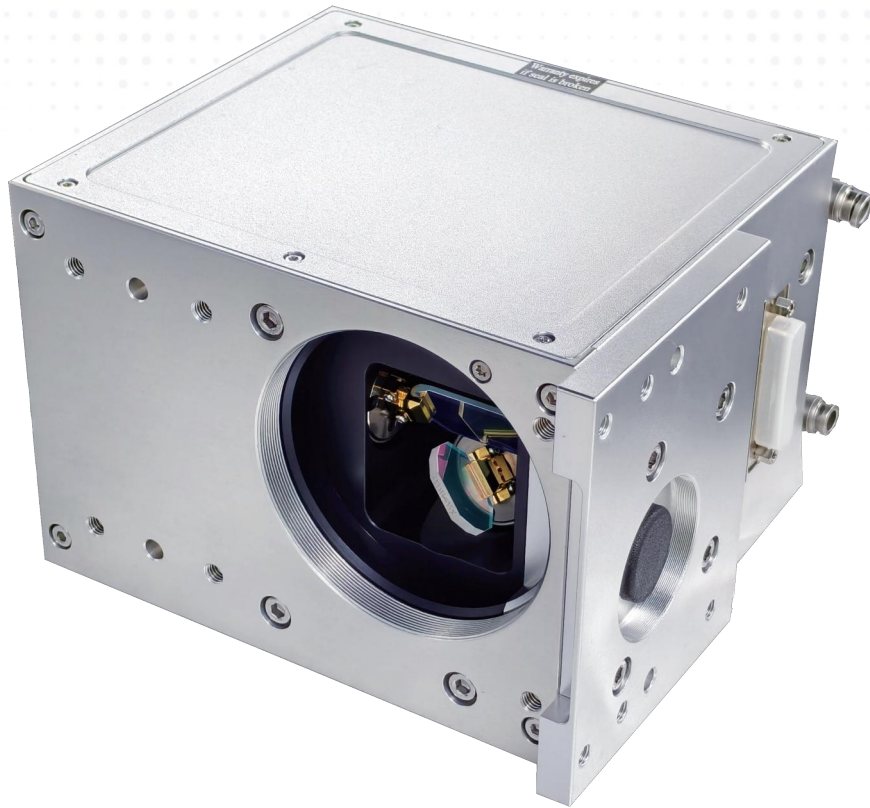


PSH14AW Scan Head

Focusing on high-end industrial laser applications



Typical Applications:

PSH14AW is designed to fulfill the most stringent demands and is utilized widely across diverse laser processing applications, such as additive manufacturing(3D printing), materials processing in the semiconductor industry, multi-head manufacturing, micro-structuring, drilling, high-speed laser cleaning, cladding, processing-on-the-fly, scribing, cutting, applications in solar industry, etc.

The product is distinguished by its superior high precision, highest speed, minimal temperature drift and extraordinary long-term stability, while maintaining maximum flexibility in terms of usage.

Specifications are subject to change without notice.
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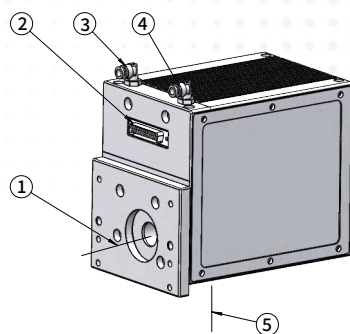
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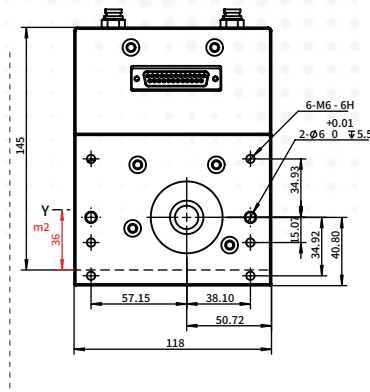
Mechanical Drawings (Dimensions in mm)



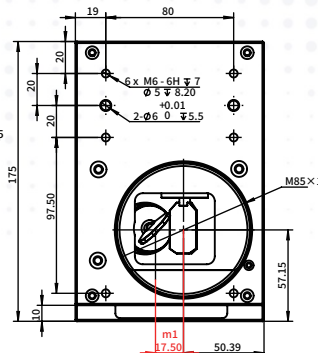
PSH14AW Scan Head

Legend:

1. Beam in
2. Electrical connectors (XY2-100, Power in)
3. Water in
4. Water out
5. Beam out



Beam In & Mounting Bracket



Beam Exit Side

Specifications

Specifications	PSH14AW
Maximum allowed average laser power ⁽¹⁾	500 W
Optional adaptable wavelengths ⁽⁸⁾	355nm;532nm;1030-1090nm
Cooling	Water
Aperture	14 mm
Typical scan angle ⁽²⁾	± 10°
Tracking error	≤ 0.15 ms
Step response time (1% of full scale)	≤ 0.36 ms
Speed	
Positioning / Jump ⁽³⁾	< 30 m/s
Line scan ⁽³⁾	< 30 m/s
Vector scan ⁽⁴⁾	< 3 m/s
Good writing quality ⁽³⁾⁽⁵⁾	750 cps
Precision	
Linearity	99.9 %
Repeatability	2 μrad
Temperture drift(with laser power<500W)	
Offset	15 μrad/°C
Gain	15 μrad/°C
Long-term drift (after 30 mins warm up)⁽⁶⁾	
Over 8 hours long-term offset drift	25 μrad
Over 8 hours long-term gain drift	40 μrad
Operating Temperature Range	25 °C ± 10 °C
Signal interface	Analog: ± 10 V or ± 5 V Digital: XY2 - 100, PRS422 protocol
Input power requirement (DC)	± 15 V @ 5 A Max RMS

Note:

(1) For laser wavelength 1030-1090 nm.

(2) All angles are in mechanical degrees.

(3) With F-Theta objective f = 160 mm. Speed value varies correspondingly with different focal lengths.

(4) Repeatability and temperature drift are measured within this speed.

(5) Single-stroke font with 1 mm height.

(6) The long-term thermal drift test shall be carried out under a constant ambient temperature of approximately 25 °C, with the laser power kept below 500 W. High laser power shall not be adopted for thermal drift testing. Under high laser power, thermal distortion will occur in both the optical system and mechanical system. Consequently, it cannot be determined whether the measured drift originates from the inherent drift of the galvo scanner or from thermal deformation of the optical and mechanical systems.

(7) Appropriate delay parameters must be configured for normal operation of the galvo scanner. Failure to do so may result in abnormal operation of the galvo motor and even irreversible damage to the motor! Please contact PSI engineers regarding relevant parameter configuration issues.

(8) Wavelength customization available. Please consult PSI engineers!