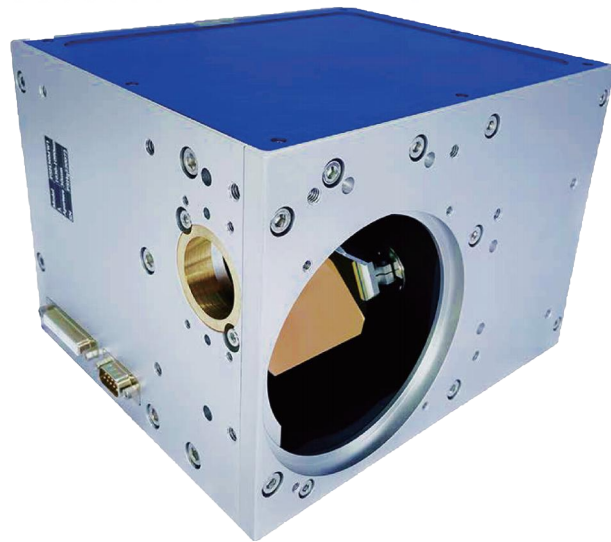


PSH30MW Scan Head

Focusing on high-end industrial laser applications



Typical Applications:

The PSH30MW scan heads are highly versatile and well-suited for a wide range of laser processing applications, such as laser marking, laser cleaning, drilling, welding, scribing, micro-structuring, materials processing, processing on-the-fly, etc. The PSH30MW scan heads are specifically designed to perform optimally in high-laser-power scenarios below the 3-kilowatt range. All products are equipped with a water cooling system to effectively minimize temperature drift. These products exhibit exceptional long-term stability, high dynamic performance, and superior safety features.

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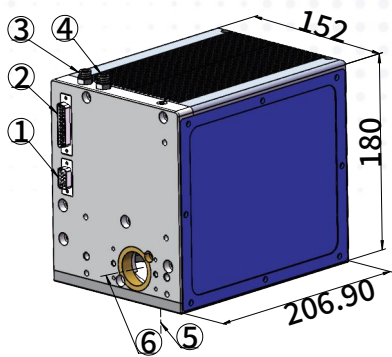
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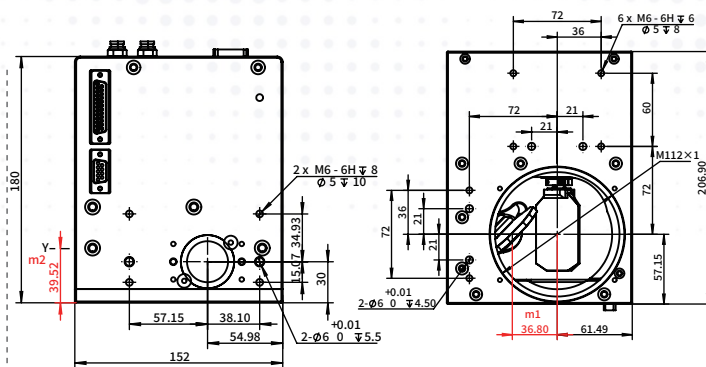
Mechanical Drawings (Dimensions in mm)



PSH30MW Scan Head

Legend:

1. Power in
2. XY2-100 interface
3. Water in
4. Water out
5. Beam out
6. Beam in



Beam In & Mounting Bracket

Beam Exit Side

Specifications

Specifications	PSH30MW
Maximum allowed average laser power ⁽¹⁾	3000 W
Applicable wavelength ⁽⁸⁾	1030-1090nm
Optional OCT coating	840nm;1310nm
Cooling	Water
Aperture	30 mm
Typical scan angle ⁽²⁾	$\pm 10^\circ$
Tracking error	≤ 0.4 ms
Step response time (1% of full scale)	≤ 1 ms
Speed	
Positioning / Jump ⁽³⁾	< 10 m/s
Line scan ⁽³⁾	< 10 m/s
Vector scan ⁽⁴⁾	< 1.2 m/s
Good writing quality ⁽³⁾⁽⁵⁾	280 cps
Precision	
Linearity	99.9 %
Repeatability	2 μ rad
Temperture drift (with laser power<500W)	
Offset	20 μ rad/°C
Gain	20 μ rad/°C
Long-term drift (after 30 mins warm up)⁽⁶⁾	
Over 8 hours long-term offset drift	40 μ rad
Over 8 hours long-term gain drift	80 μ rad
Operating Temperature Range	25 °C $\pm$ 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) Reapeatability 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!