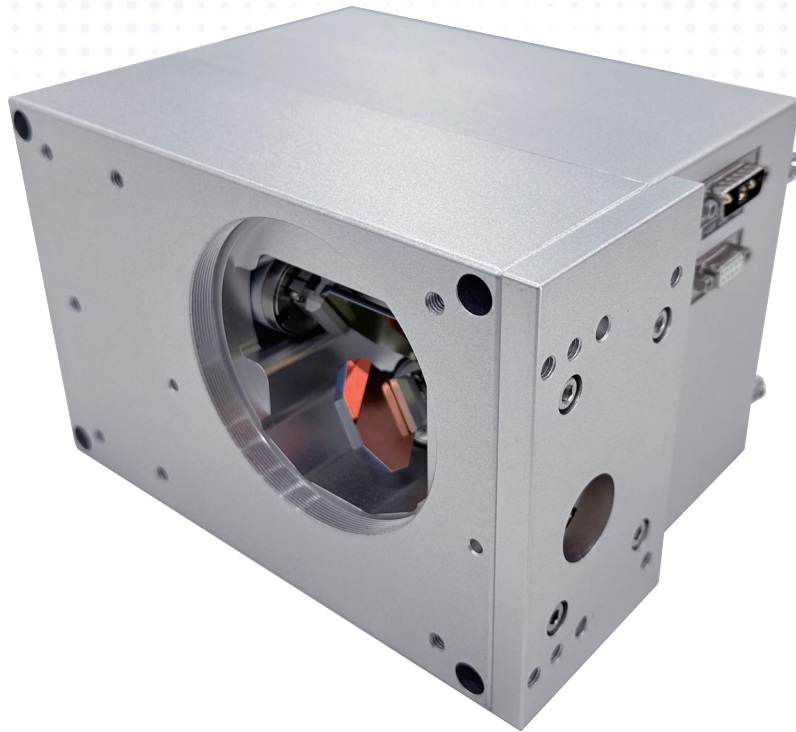


PSH20AW-3D Scan Head

Focusing on high-end industrial laser applications



Typical Applications:

PSH20AW-3D is designed to fulfill the most stringent demands and is utilized widely across diverse laser processing applications, such as additive manufacturing(3D printing), high-precision cutting, multi-head manufacturing, materials processing in the semiconductor industry, micro-structuring, drilling, cladding, processing-on-the-fly, scribing, solar industry applications, etc.

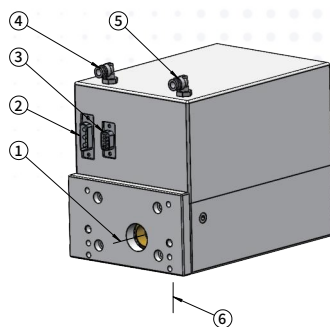
The product is distinguished by its superior high precision, highest speed, minimal temperature drift and extraordinary long-term stability, while maintaining maximum flexibility in terms of usage.

PSH20AW-3D Scan Head

Focusing on high-end industrial laser applications

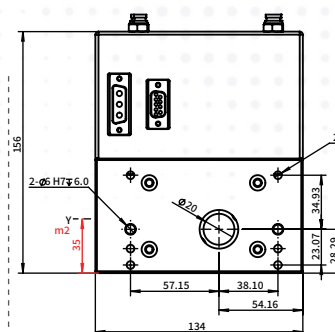


Mechanical Drawings (Dimensions in mm)

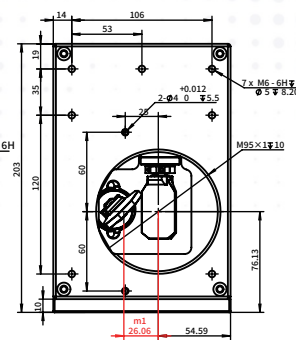


PSH20AW-3D Scan Head

- Legend:
1. Beam in
 2. Power in
 3. Electrical connector (PRS422)
 4. Water out
 5. Water in
 6. Beam out



Beam In & Mounting Bracket



Beam Exit Side

Specifications

Specifications	PSH20AW-3D
Maximum allowed average laser power ⁽¹⁾	1000 W
Optional adaptable wavelengths ⁽⁸⁾	532nm;1030-1090nm
Cooling	Water
Aperture	20 mm
Typical scan angle ⁽²⁾	$\pm 10^\circ$
Tracking error	≤ 0.28 ms
Step response time (1% of full scale)	≤ 0.65 ms
Speed Positioning / Jump ⁽³⁾ Line scan ⁽³⁾ Vector scan ⁽⁴⁾ Good writing quality ⁽³⁾⁽⁵⁾	 < 15 m/s < 15 m/s < 2 m/s 400 cps
Precision Linearity Repeatability	 99.9 % 2 μ rad
Temperture drift(with laser power<500W) Offset Gain	 15 μ rad/°C 15 μ rad/°C
Long-term drift(after 30 mins warm up)⁽⁶⁾ Over 8 hours long-term offset drift Over 8 hours long-term gain drift	 25 μ rad 40 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) 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!