PSH14ART Scan Head

Focusing on high-end industrial laser applications

PSIGALVO





Typical Applications:

PSH14ART is the ideal product for laser processing applications that require extremely high precision. It is perfectly suitable for applications demanding the curvature accuracy of less than ±0.5 μm and a line spacing accuracy of less than ±1 μm, for example, high-precision resistor trimming, etc.

The product has extremely high positioning accuracy, outstanding scan line straightness and lowest temperature drift value.

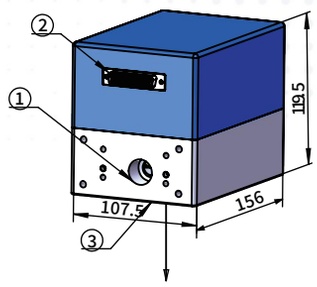
Specifications are subject to change without notice.
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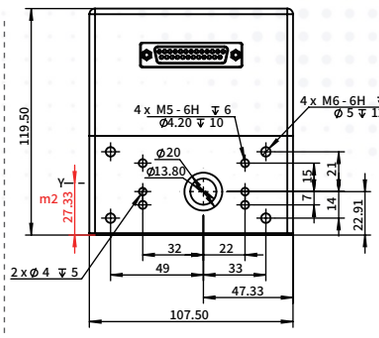
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Mechanical Drawings (Dimensions in mm)

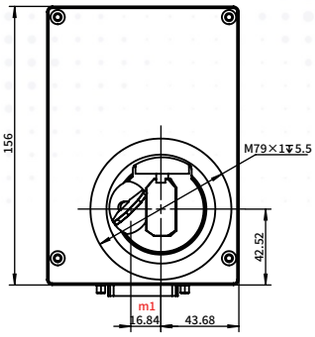


Legend:
1.Beam in
2.Electrical interface
(XY2-100, power in)
3.Beam out

PSH14ART Scan Head



Beam In & Mounting Bracket



Beam Exit Side

Specifications

Specifications	PSH14ART
Maximum allowed average laser power(1)	100 W
Optional adaptable wavelengths(8)	355nm;532nm;1030-1090nm
Aperture	14 mm
Typical scan angle(2)	± 10°
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)	300 cps
Precision	
Linearity	99.9 %
Repeatability	2 µrad
Temperture drift	
Offset	15 µrad/°C
Gain	15 µrad/°C
Long-term drift (at constant ambient temperature around 25 °C)	
Over 8 hours long-term offset drift (after 30 mins warm-up)	25 µrad
Over 8 hours long-term gain drift (after 30 mins warm-up)	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 532 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) Reapeatibility 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!