# PSH14RT Scan Head

## Focusing on high-end industrial laser applications

PSIGALVO






## Typical Applications:

PSH14RT scan head is specifically developed for laser resistor trimming. It is suitable for resistor trimming applications that require the curvature of less than ±1.5 µm and a line spacing accuracy of less than ±1.5 µm.

The product is featured with the compact, light-weighted design while delivering good cost-effectiveness and high speed.

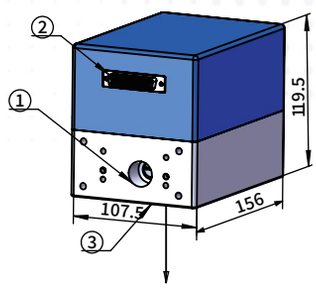
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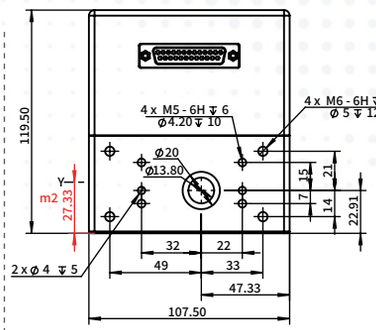
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### Mechanical Drawings (Dimensions in mm )

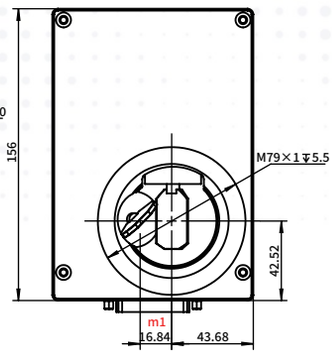



Legend:
1.Beam in
2.Electrical interface
(XY2-100, power in)
3.Beam out

PSH14RT Scan Head




Beam In & Mounting Bracket




Beam Exit Side

### Specifications

| Specifications | PSH14RT |
|---|---|
| Maximum allowed average laser power(1) | 500 W |
| Optional adaptable wavelengths(8) | 355nm;532nm;1030-1090nm |
| Aperture | 14 mm |
| Typical scan angle(2) | ± 10 ° |
| Tracking error | ⩽ 0.25 ms |
| Step response time (1% of full scale ) | ⩽ 0.5 ms |
| **Speed** | |
| Positioning / Jump(3) | < 12 m/s |
| Line scan(3) | < 12 m/s |
| Vector scan(4) | < 2 m/s |
| Good writing quality(3)(5) | 600 cps |
| **Precision** | |
| Linearity | 99.9 % |
| Repeatability | 2 µrad |
| **Temperture drift** | |
| Offset | 20 µrad/°C |
| Gain | 20 µrad/°C |
| **Long-term drift (at constant ambient temperature around 25 °C )** | |
| Over 8 hours long-term offset drift (after 30 mins warm-up) | 40 µrad |
| Over 8 hours long-term gain drift (after 30 mins warm-up) | 60 µrad |
| Operating Temperature Range | 25 °C ± 10 °C |
| Signal interface | Analog: ± 10 V or ± 5 V<br>Digital: XY2 - 100,<br>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) 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!