



## HSR08 Direct Encoded Rotary Stage

The HSR08 is a high precision, direct encoded, worm gear driven rotary stage. While most high resolution, direct encoded rotary stages use direct drive servo motors, some applications need the at-position stability offered by a stepper motor. Other applications benefit from the torque amplification of a gear drive, or the ability to support a torsional load without applying power. In the configuration pictured above, a 0.45° stepper motor achieves a positioning resolution of better than 0.3 arc-sec. Bidirectional repeatability is better than ±1.0arc-sec. Low wobble error and high stiffness is achieved by using precision matched, preloaded angular contact bearings in conjunction with a strong body and hub made of 7075 aluminium. To ensure the top mating surface of the hub is parallel to the plane of rotation a final machining operation is performed after the stage is assembled. Indicated runout at the outside edge is typically less than 3µm.

Stage Specifications	
Travel	360°
Rotational Accuracy	±10 arc-sec
Bidirectional Repeatability	±1 arc-sec
Encoder Ring	31,488 Cycles per Revolution
Digital Encoder Resolution, RS422 <sup>1</sup>	10.28, 2.06, 1.03, 0.41, 0.21, 0.10 arc-sec
Wobble	±4 arc-sec
Radial Runout (Eccentricity)	3µm
Axial Runout	2µm
Load Capacity	25Kg
Motor Mount	NEMA23
Drive Type	90:1 Worm Gear
Home Sensor	Open Collector, Logical (170°/190° H/L)
End-of-Travel Limits	None

<sup>1</sup>Other encoder resolution options available including Sine 1V<sub>p-p</sub>

<sup>2</sup>Test configuration: 0.45° step motor, 0.10 arc-sec resolution encoder

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