

Linear Scale

SH50

Rigid scale for feedback applications

- No interface required.
- Resolutions: 0.1, 0.5, and 1 μm
- Measuring length: 120 to 2270 mm (4.7" to 89.4") (22 models)
- A/B phase output and zero point signal by differential line driver.
- Built-in error detection circuit.
- Air injection available, increasing resistance to harsh workshop conditions such as coolant.
- Perfect for positioning all types of NC machine tools.

Specifications

Model	SH50- 012-227										
	C4A3	C4B3	D4B3	D4C3	E4B3	E4D3	D4B5	D4C5	E4B5	E4D5	
Measuring length L mm (inch)	120/170/220/270/320/370/420/470/570/670/740/790/840/890/990/1090/1240/1440/1640/1870/2070/2270 (4.7,6.6,8.6,10.6,12.6,14.5,16.5,18.5,22.4,26.3,29.1,31.1,33,35,38.9,42.9,48.8,56.6,64.5,73.6,81.4,89.4)										
Resolution	0.1 μm		0.5 μm		1.0 μm		0.5 μm		1.0 μm		
Engraving pitch	20 μm										
Minimum phase difference	0.16 μs	0.3 μs	0.3 μs	0.6 μs	0.3 μs	1.2 μs	0.3 μs	0.6 μs	0.3 μs	1.2 μs	
Accuracy (at 20 °C / 68 °F)	± 3 μm					± 5 μm					
Max. response speed	20 m/min	10 m/min	50 m/min	24 m/min	60 m/min	24 m/min	50 m/min	24 m/min	60 m/min	24 m/min	
Max. Zero point response speed	15 m/min	10 m/min	15 m/min								
Light source	Infrared LED										
Photo detector	Photo diode										
Expansion coefficient	(8.8 ± 1) × 10 ⁻⁶ / °C										
Operating temperature	0 °C to 45 °C / 32 °F to 113 °F										
Storage temperature	-10 °C to 60 °C / 14 °F to 140 °F										
Humidity range	Relative humidity 30 to 90 % (no condensation)										
Protective design grade	(1) Equivalent to IP53* (2) Improvement of the protective design grade (see the instruction manual)										
Atmosphere	Corrosive gas should not be contained in the atmosphere.										
Vibration resistance	49 m/s ² (according to our vibration test data, 30 to 1000 Hz for 30 min)										
Shock resistance	98 m/s ² (according to our vibration test data, 11 ms, in each of the X, Y, Z directions)										
Sliding resistance of detector head	3.9 N (average)										
Power supply	5V DC ± 5 %										
Power consumption	Approx. 250 mA										

*Air purge may be used to increase resistance to dust, humidity and condensation.

Dimensions

