

BL

BL55-RU
(with origin)

上海迈德信

Although the sealed-type BL55 is enclosed, great care was taken to ensure a non-contact design, thus eliminating inherent mechanical error. The enclosure additionally provides higher protection against a harsh environment.



Actual size

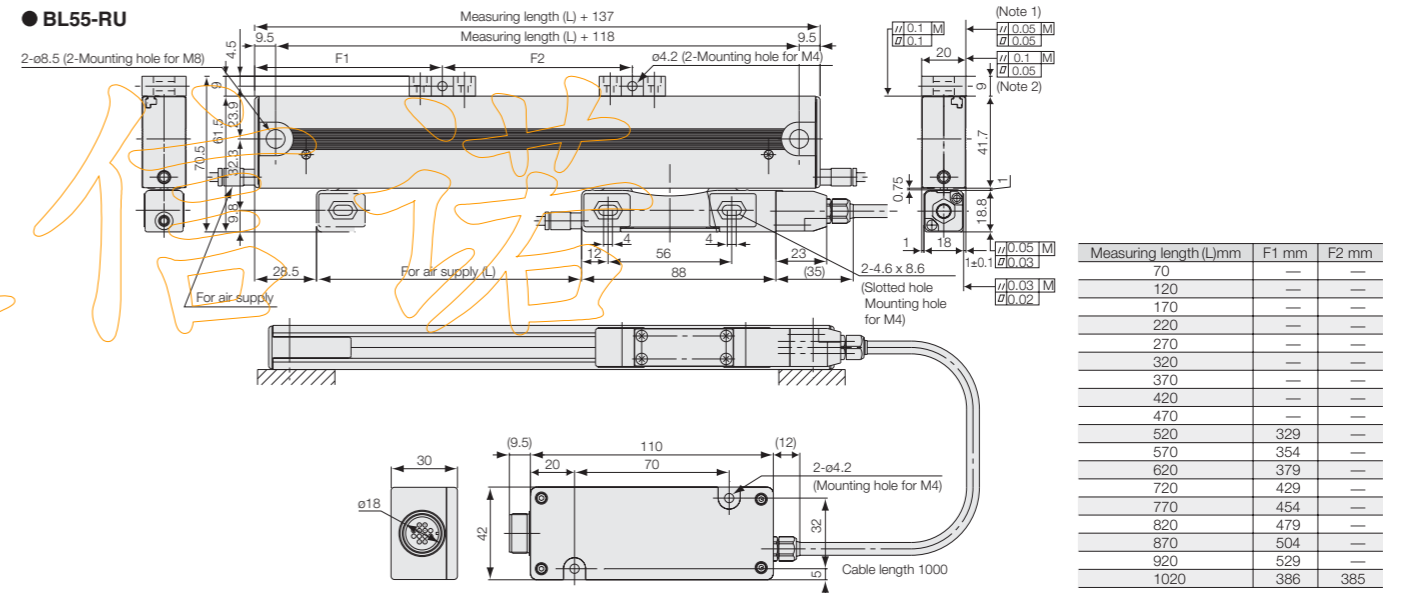
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- All the advanced features of Magnescale's Laserscale technology have been incorporated into the environmentally protective design.
 - Highest response speed and accuracy in its class.
 - Non-contact design of the detector head eliminates inherent mechanical error, and achieves a repeat accuracy of 0.1μm or less.
 - Given the head signal pitch of 400nm, the interpolation error is practically non-existent.
 - Built-in reference point.
- Applications: Precision measuring equipment precision stages.



External Dimensions

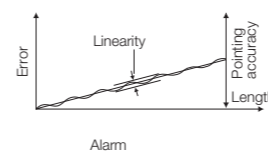
● BL55-RU



Note 1: Parallelism is 0.05mm or less when Measuring length is 120mm or less. Note 2: Parallelism is 0.1mm or less when Measuring length is 170mm or less. Note 3: M indicates the machine guide (machine movement).

Main specifications

Model	F	G	H
Output signal form	A/B quadrature output		Analogue output
Detection system	Diffraction grating scanning system		
Scale length (Blue plate glass)	Measuring length (mm)	70•120•170•220•270•320•370•420•470•520•570•620•720•770•820•870•920•1020	
	Maximum movable length	Measuring length + 2mm	
	Entire scale length	Measuring length + 137mm	
Accuracy (20°C)	±2.5 (70 to 320mm) ±4.5μm (370mm or more)		
Linearity (Note 2)	±2.5μm (370mm or more)		
Grating pitch	1.6μm		
Signal pitch	400nm		
Output signal	Differential (compliant with EIA-422)		Differential (only reference point output, models are compliant with EIA-422)
Resolution	0.1/0.05μm (switchable using a switch) (Note 1)	0.02/0.01μm (switchable using a switch)	0.4μm (1Vp-p)
Repeatability	0.1μm or less		
Returning error	0.1μm or less		
Reference point accuracy (at 20°C)	±0.4μm (depending on machine movement accuracy)		
Reference point position	User definable		
Direction of reference point detection	For one		
Temperature expansion coefficient	8x10 ⁻⁶ /°C		
Light source	Two semiconductor lasers with power of 6mW and wavelength of 790nm		
Radiation power	JIS Class 1 equivalent, DHHS Class 1 equivalent		
Operating temperature range	0 to +40°C (no condensation)		
Storage temperature range	-10 to +50°C		
Maximum response speed	F: 1,500mm/s (0.1μm) 650mm/s (0.05μm) Minimum phase difference : 38ns G: 300mm/s (0.02μm) 120mm/s (0.01μm) Minimum phase difference : 38ns		3000mm/s (Note 3) Max 7.5MHz
Alarm	High impedance, alarm by output signal when maximum response speed is exceeded or signal level error detected		None
Head cable	Cable length	1000m (Note 4)	
	Bending radius	When stationary : 30mm When in motion : 100mm	
Output cable length	15m Max	15m Max (Note 3)	
Power source	+5V (±5%)		
Power supply	450mA (no load) 600mA (maximum when cable is connected)		
Protective design	IP53 or equivalent (when air is supplied) : IP64 or equivalent		
Vibration resistance	100m/s ² (50 to 2000Hz)		
Impact resistance	200m/s ²		



Note 1: Special modes can support AB quadrature output with 0.01μm resolution.
 Note 2: The linearity is the range of scattering when scale accuracy slope is set to zero.
 Note 3: Please inquire for details regarding the correlation between the maximum response speed and the output cable length.
 Note 4: Special models can support up to 3m.