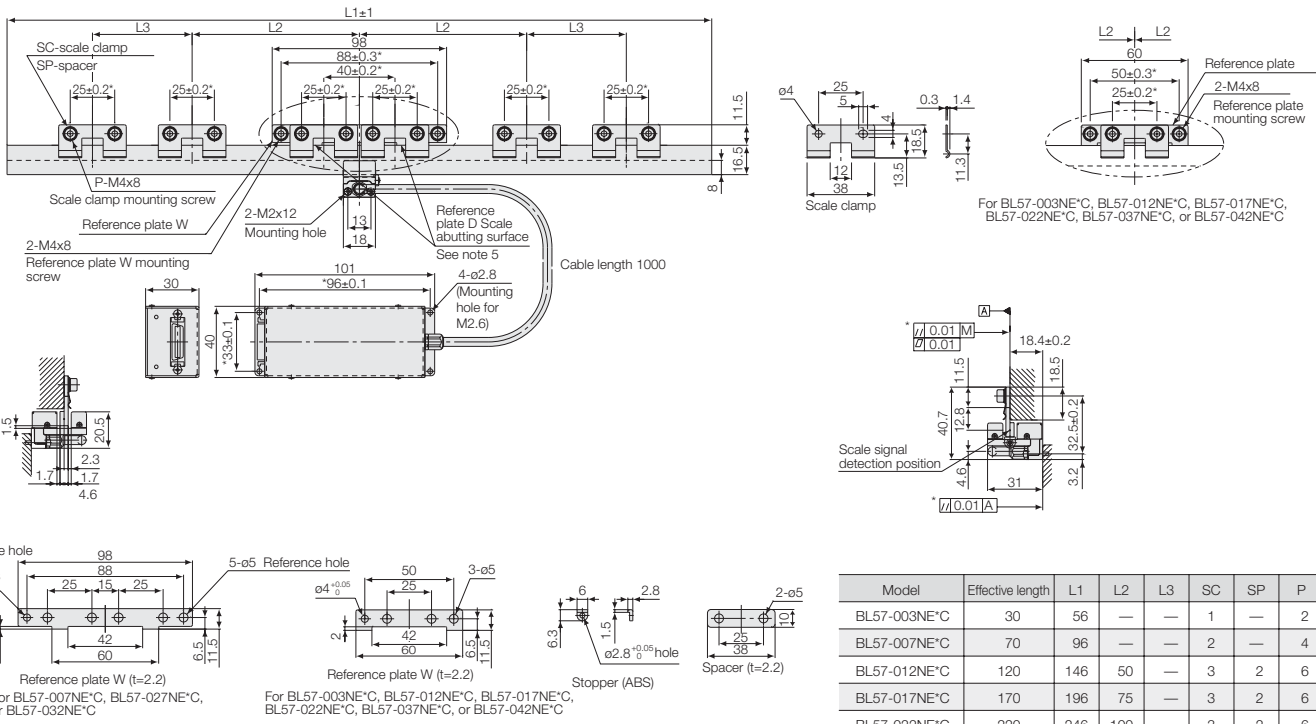


External Dimensions

● BL57-xxxNE*C (Effective length: 003/007/012/017/022/027/032/037/042)



Unit: mm

Note 1: The items marked by an asterisk indicate the machining dimensions on the mounting surface. Note 2: The surface roughness of the scale mounting surface is $R_{max} = 6.3 S (250\mu\text{inch})$. Note 3: The surface roughness of the detector head mounting surface is $R_{max} = 12.5 S (500\mu\text{inch})$. Note 4: "M" refers to the machine guide. Note 5: When mounting the reference plate (reference plate W), adjust the plate so that the parallelism between the corresponding scale abutting surface and the machine guide is 0.01mm or less.

Main specifications[BL57-NE]

Model	A	F	G	H
Output signal form	A/B quadrature output			Analogue output
Detection system	Diffraction grating scanning system			
Scale length (Low expansion glass)	Measuring length(mm)	30. 70. 120. 170. 220. 270. 320. 370. 420		
	Maximum movable length	Measuring length +10mm (5mm on each side)		
	Entire scale length	Measuring length + 26mm		
Scale length (Blue plate glass)	Measuring length(mm)	60. 160. 260. 360. 460. 560. 660. 760. 860. 960. 1060		
	Maximum movable length	Measuring length +10mm (5mm on each side)		
	Entire scale length	Measuring length + 36mm		
Grating pitch	1.6 μm			
Signal pitch	0.4 μm			
Output signal	Differential (compliant with EIA-422)			Differential
Resolution	0.1 μm	0.1/0.05 μm (can be changed)	0.02/0.01 μm (can be changed)	0.4 μm (1Vp-p)
Accuracy (at 20°C)	$\pm 0.5\mu\text{m}$ (30 to 170mm)/ $\pm 1.0\mu\text{m}$ (220 to 370mm)/ $\pm 1.5\mu\text{m}$ (420mm or more)			
Temperature expansion coefficient	Low expansion glass: $-0.7 \times 10^{-6}/^{\circ}\text{C}$ Blue plate glass: $8 \times 10^{-6}/^{\circ}\text{C}$			
Maximum response speed	1000mm/s	1,500mm/s (0.1 μm) 650mm/s(0.05 μm)	300mm/s(0.02 μm) 120mm/s(0.01 μm)	3000mm/s (Note 1)
	Minimum phase difference:80ns	Minimum phase difference:38ns	Minimum phase difference:38ns	Max 7.5MHz

Note 1: There is a correlation between the maximum response speed and output cable length (the part beyond the interface box). Note 2: A power supply line longer than 10m is incompatible with EN61000-6-2. Take surge protection measures upon use. Note 3: Satisfy the required specifications at the connector input section.

Model	A	F	G	H
Alarm	High-impedance A/B quadrature output signals when signal level error detected.	High-impedance output when maximum response speed exceeded or signal level error detected.		None
Head cable	Cable length	300min		
	Bending radius	When stationary: 10mm		
Output cable length	15mMax (Note 2) (to the electronic control section)	15mMax (Note 1) (Note 2)		
Power source (Note 3)	+5V (+10%-5%)	+5V ($\pm 5\%$)		
Power consumption	200 mA (no load) 250 mA (9120 ohm termination)	290mA (no load) 350mA (120 ohm termination)	250 mA (no load, 120 ohm termination)	
Vibration resistance	100m/s ² (50 to 2000Hz)			
Impact resistance	200m/s ²			
Operating temperature range	0 to +40°C(no condensation)			
Storage temperature range	-10 to +50°C			
Light source	Semiconductor laser with power of 4mW and wavelength of 790nm			
Radiation power	JIS Class 1 equivalent, DHHS Class 1 equivalent			
Cable length (m)	Maximum response speed (mm/s)			
3	3000			
9	2330			
15	1660			