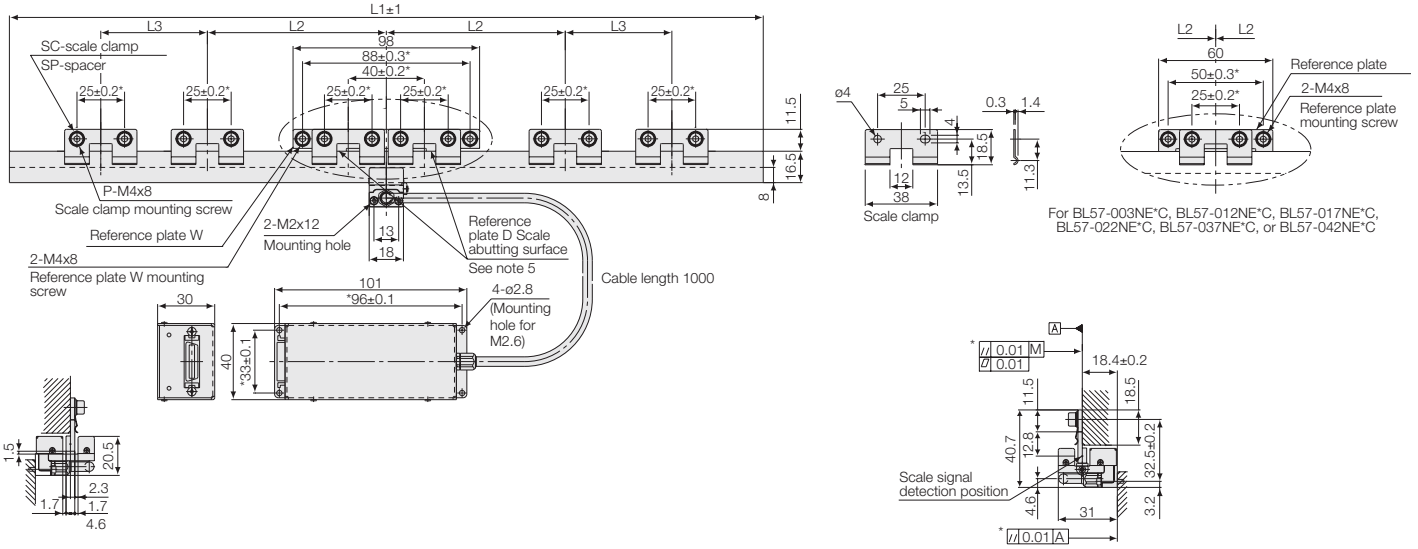
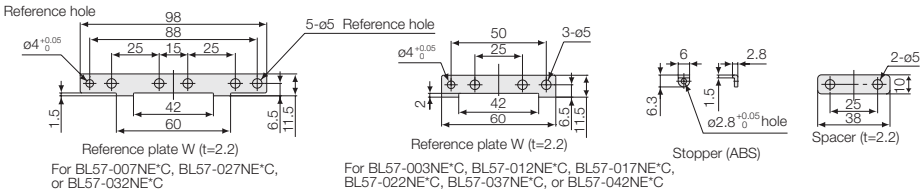
External Dimensions

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





Model	Effective length	L1	L2	L3	SC	SP	P
BL57-003NE*C	30	56	—	—	1	—	2
BL57-007NE*C	70	96	—	—	2	—	4
BL57-012NE*C	120	146	50	—	3	2	6
BL57-017NE*C	170	196	75	—	3	2	6
BL57-022NE*C	220	246	100	—	3	2	6
BL57-027NE*C	270	296	120	—	4	2	8
BL57-032NE*C	320	346	120	—	4	2	8
BL57-037NE*C	370	396	75	75	5	4	10
BL57-042NE*C	420	446	100	100	5	4	10

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 Rmax = 6.3 S (250μ inch).
Note 3: The surface roughness of the detector head mounting surface is Rmax = 12.5 S (500μ 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		1.6μm			
Signal pitch		0.4μm			
Output signal		Differential (compliant with EIA-422)			Differential
Resolution		0.1μm	0.1/0.05μm (can be changed)	0.02/0.01μm (can be changed)	0.4μm (1Vp-p)
Accuracy (at 20℃)		±0.5μm (30 to 170mm)/ ±1.0μm (220 to 370mm)/ ±1.5μm (420mm or more)			
Temperature expansion coefficient		Low expansion glass: -0.7 x 10^{-6}/℃ • Blue plate glass:8 x 10^{-6}/℃			
Maximum response speed		1000mm/s	1,500mm/s (0.1μm) 650mm/s(0.05μm)	300mm/s(0.02μm) 120mm/s(0.01μm)	3000mm/s (Note 1)
		Minimum phase difference:80ns	Minimum phase difference:38ns	Minimum phase difference:38ns	Max 7.5MHz

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 (±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℃(no condensation)			
Storage temperature range		-10 to + 50℃			
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

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.