

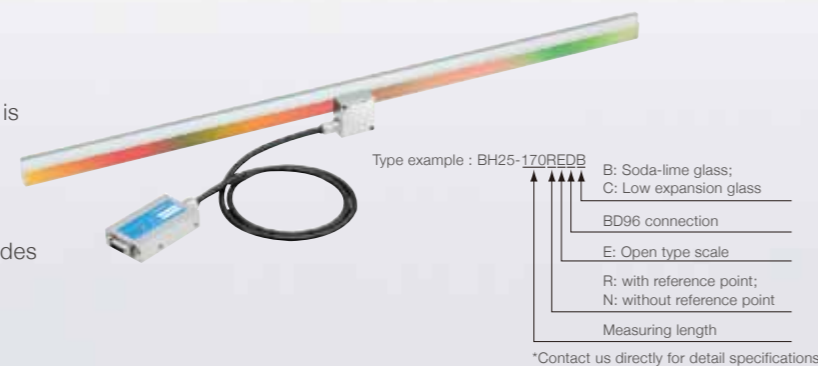
# BH

BH25-RE / BH25-NE  
(with/without reference point)

High-accuracy, reflective Laserscale with signal pitch of 250nm  
Ideal for low-profile stages, semiconductor back-end processing equipment  
and precision microscopes

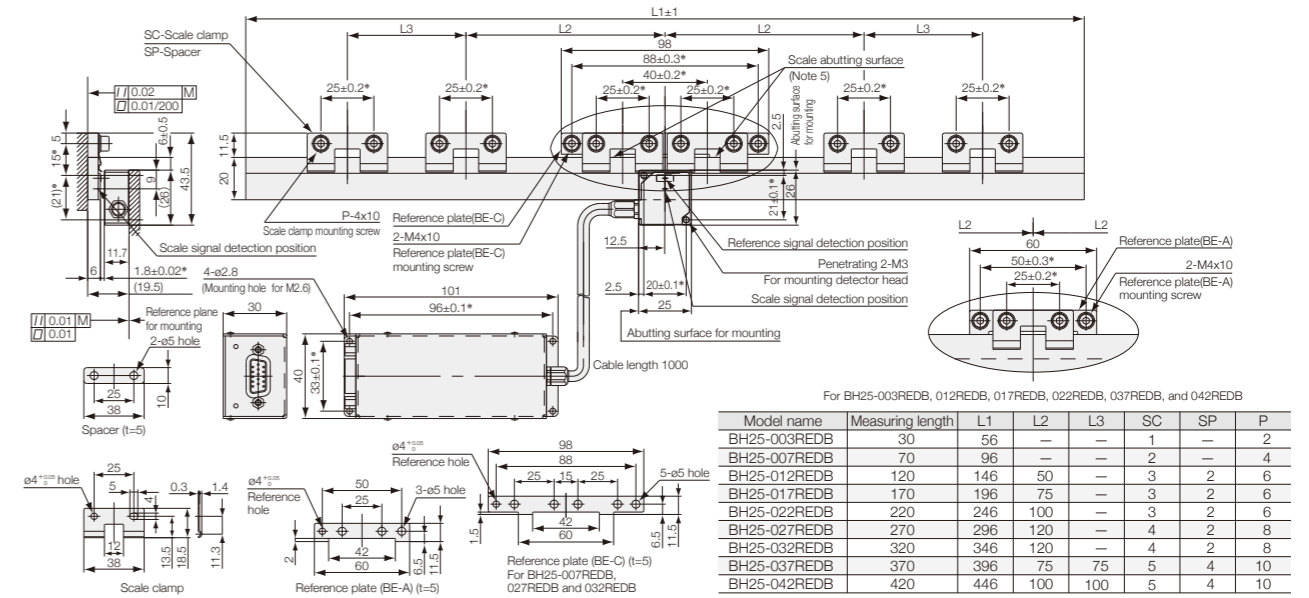


- Signal pitch : 250nm
- High accuracy :  $\pm 1\mu\text{m}/420\text{mm}$
- High response speed : 700mm/s
- Minimum resolution : 0.03125nm
- Available : with/without reference point
- Completely non-contact design : Return error is theoretically eliminated.
- Scale : Soda-lime glass/Low expansion glass
- Thin head with thickness of 12mm
- Supporting various resolutions and output modes (Depending on the interpolator connected.)
- Special vacuum-compatible models available



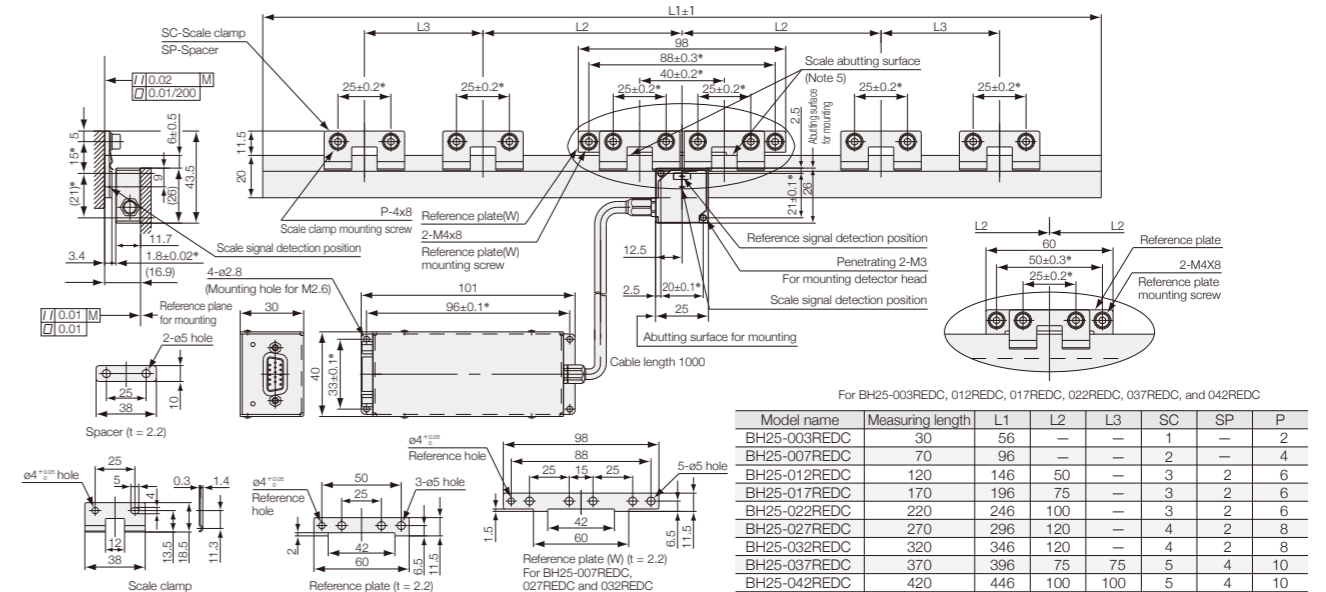
## External Dimensions

### ● BH25-xxxREDB (Measuring length : 30/70/120/170/220/270/320/370/420 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  $R_{\text{max}} = 6.3\text{S}$ .  
Note 3: The surface roughness of the detector head mounting surface is  $R_{\text{max}} = 6.3\text{S}$ . Note 4: "M" refers to the machine guide.  
Note 5: Mount and adjust the reference plate so that their reference surfaces have a parallelism of 0.01 or less with respect to the machine guide.

### ● BH25-xxxREDC (Measuring length : 30/70/120/170/220/270/320/370/420 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  $R_{\text{max}} = 6.3\text{S}$ .  
Note 3: The surface roughness of the detector head mounting surface is  $R_{\text{max}} = 6.3\text{S}$ . Note 4: "M" refers to the machine guide.  
Note 5: Mount and adjust the reference plate so that their reference surfaces have a parallelism of 0.01 or less with respect to the machine guide.

## Main Specifications

Model	BH25-RED	BH25-NED
Measuring length	30/70/120/170/220/270/320/370/420 mm (Low expansion glass/Soda-lime glass)	
Overall length	Measuring length +26mm	
Max. travel	Measuring length +10mm	
Scale accuracy (at 20°C)	$\pm 0.5\mu\text{m}$ (30 to 170mm) $\pm 1.0\mu\text{m}$ (220 to 420mm)	
Grating pitch	1.0 $\mu\text{m}$	
Signal pitch	0.25 $\mu\text{m}$ (250nm)	
Reference point	With reference point	None
Reference point detection direction	Single direction	None
Output signal	Interpolator BD96	
Resolution	BD96 connection(Depend on the number of divisions)	
Thermal expansion coefficient	$-0.7 \times 10^{-6}/^\circ\text{C}$ (Low expansion glass) $8 \times 10^{-6}/^\circ\text{C}$ (Soda-lime glass)	
Light source	Semiconductor laser : Wavelength 790nm, Output 6mW	
Detection principle	Diffraction grating scanning system	
Operating temperature	10 to 30°C (No condensation)	
Storage temperature	-10 to 50°C (Humidity less than 60%)	
Max. response speed	700mm/s (When connected with BD96)	