

BS

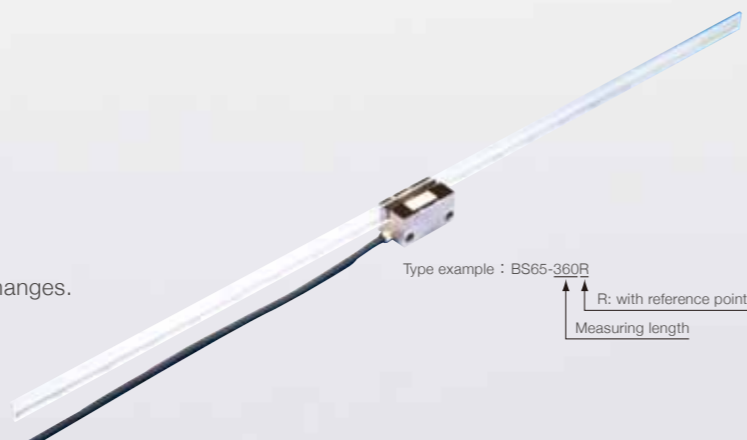
BS65-R
(with reference point)

High accuracy Laserscale with built-in optical reference point



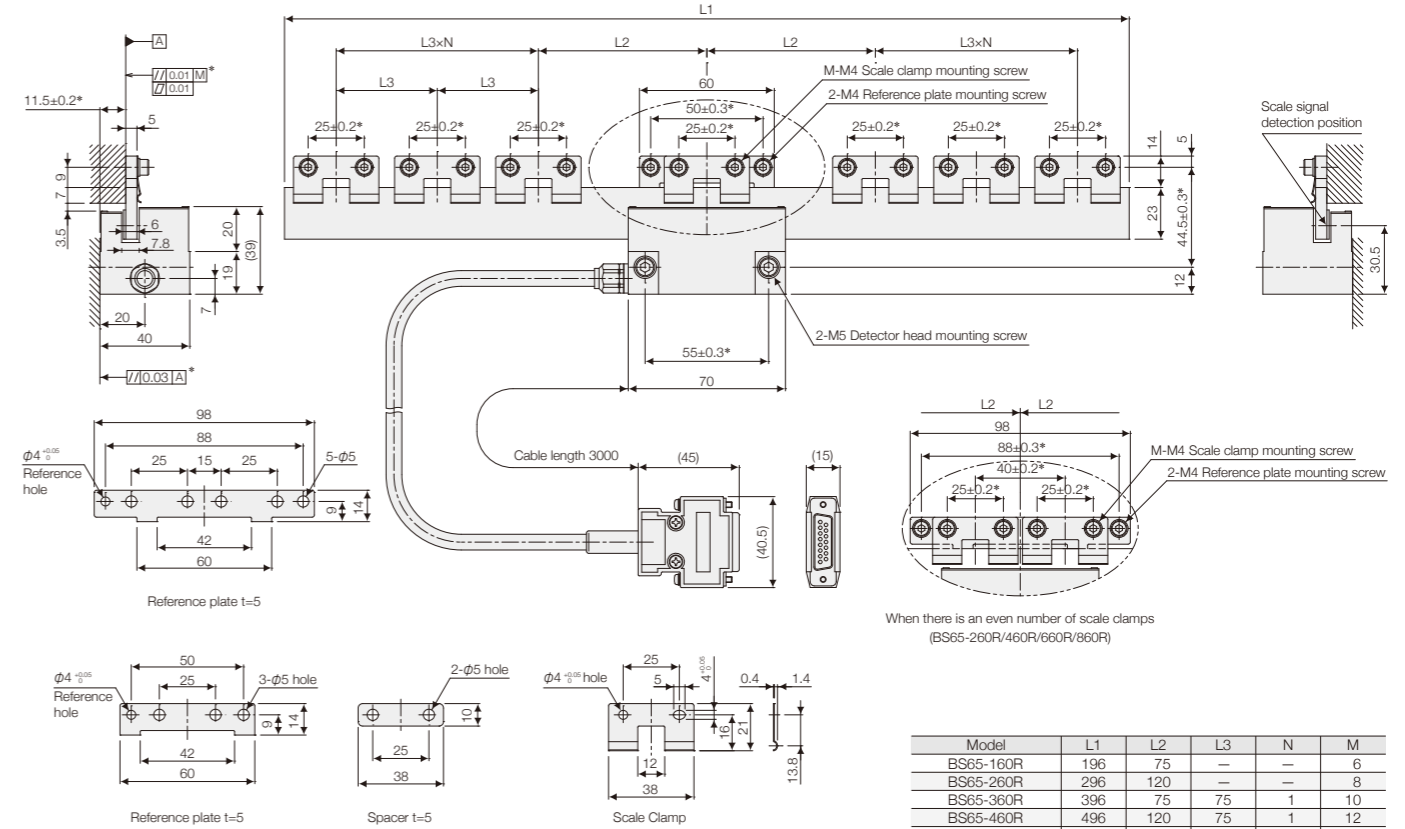
Actual size

- Signal pitch of 138nm
- High accuracy, high resolution
Scale accuracy : $L < 460 : (0.1+0.4L / 100) \mu\text{m p-p}$
(L=measuring length in mm)
- High accuracy optical reference point : $\pm 0.1 \mu\text{m}$
- Measuring length : 160 mm to 960 mm
- Easy installation
- Minimal effect from disrupted air current and atmospheric changes.



External Dimensions

● BS65-xxxR (Measuring length : 160/260/360/460/560/660/760/860/960 mm)



When there is an even number of scale clamps
(BS65-260R/460R/660R/860R)

Model	L1	L2	L3	N	M
BS65-160R	196	75	—	—	6
BS65-260R	296	120	—	—	8
BS65-360R	396	75	75	1	10
BS65-460R	496	120	75	1	12
BS65-560R	596	75	75	2	14
BS65-660R	696	120	75	2	16
BS65-760R	796	75	75	3	18
BS65-860R	896	120	75	3	20
BS65-960R	996	75	75	4	22

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 = 6.3S.

Note 3: The surface roughness of the detector head mounting surface is Rmax = 12.5S.

Note 4: "M" refers to the machine guide.

Note 5: Mount and adjust the paired reference plates so that their reference surfaces have a parallelism of 0.01 or less with respect to the machine guide.

Main Specifications

Model	BS65-R
Measuring length	160/260/360/460/560/660/760/860/960 mm
Overall length	Measuring length + 36mm
Max. travel	Measuring length + 10mm (5mm on each side)
Scale accuracy (at 20°C)	$L < 460 : (0.1 + 0.4L/100) \mu\text{m p-p}$, $L \geq 460 : 3 \mu\text{m p-p}$ L : Measuring length (mm)
Grating pitch	Approx. 0.55μm
Signal pitch	Approx. 0.138μm (Approx. 138nm)
Reference point accuracy	$\pm 0.1 \mu\text{m}$
Reference point position	At the center, and every 50mm from the center to the left and to the right
Reference point detection direction	Single direction
Return error	This is virtually eliminated. It should be considered to be less than two resolution limits of the detector that is used.
Repeatability	This is virtually eliminated. It should be considered to be less than one resolution limit of the detector that is used.
Thermal expansion coefficient	$8 \times 10^{-6} / ^\circ\text{C}$
Light source	Semiconductor laser : Wavelength 790nm, Output 6mW
Radiation power	DHHS class 1
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	400mm/s (When connected with BD96)