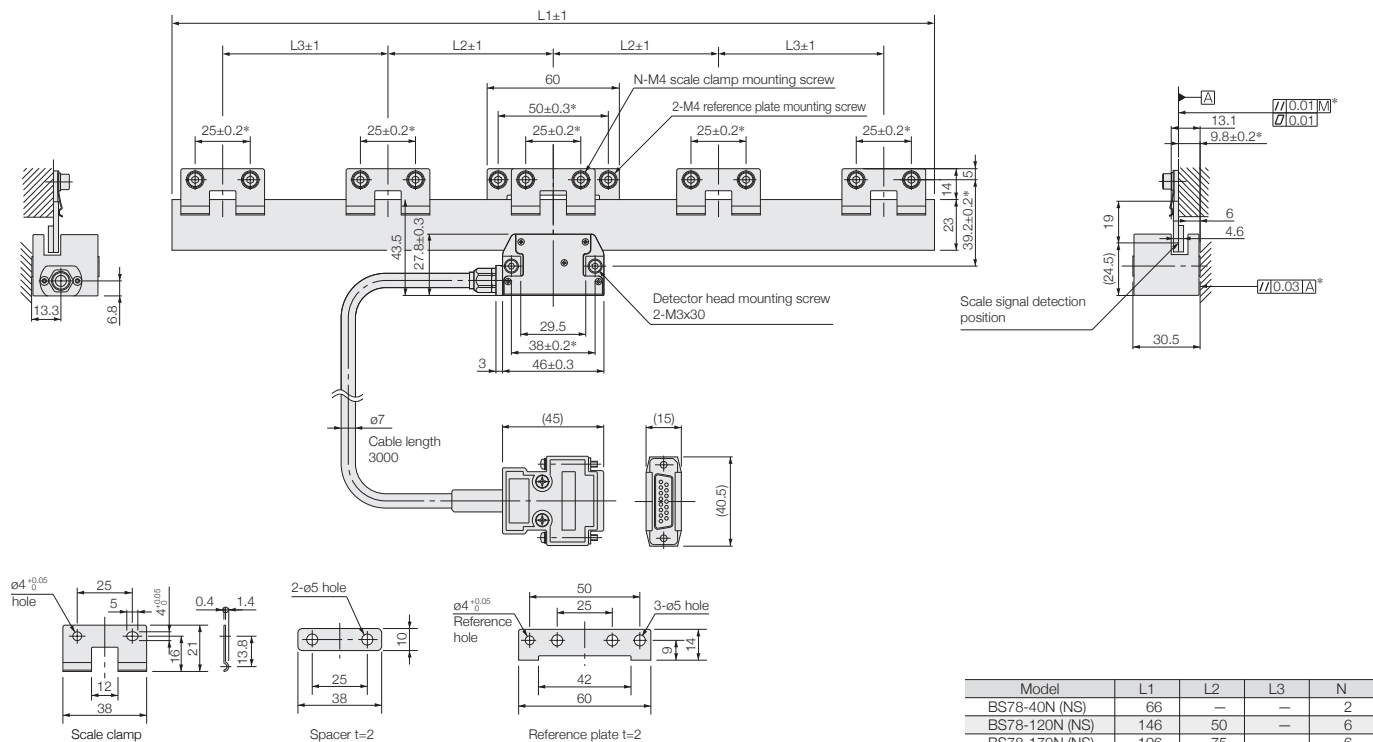


External Dimensions

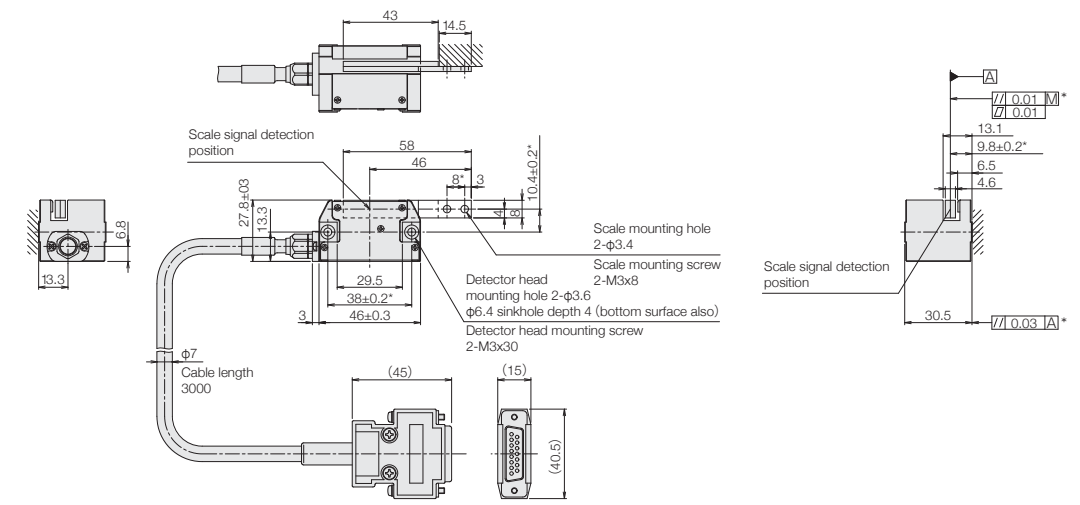
● BS78-xxxN(NS) (Measuring length : 40/120/170/220/370/420 mm)



Note 1: The items marked by an asterisk indicate the machining dimensions on the mounting surface.
 Note 2: The surface properties of the scale mounting surface is Rmax = 6.3S.
 Note 3: The surface properties 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.

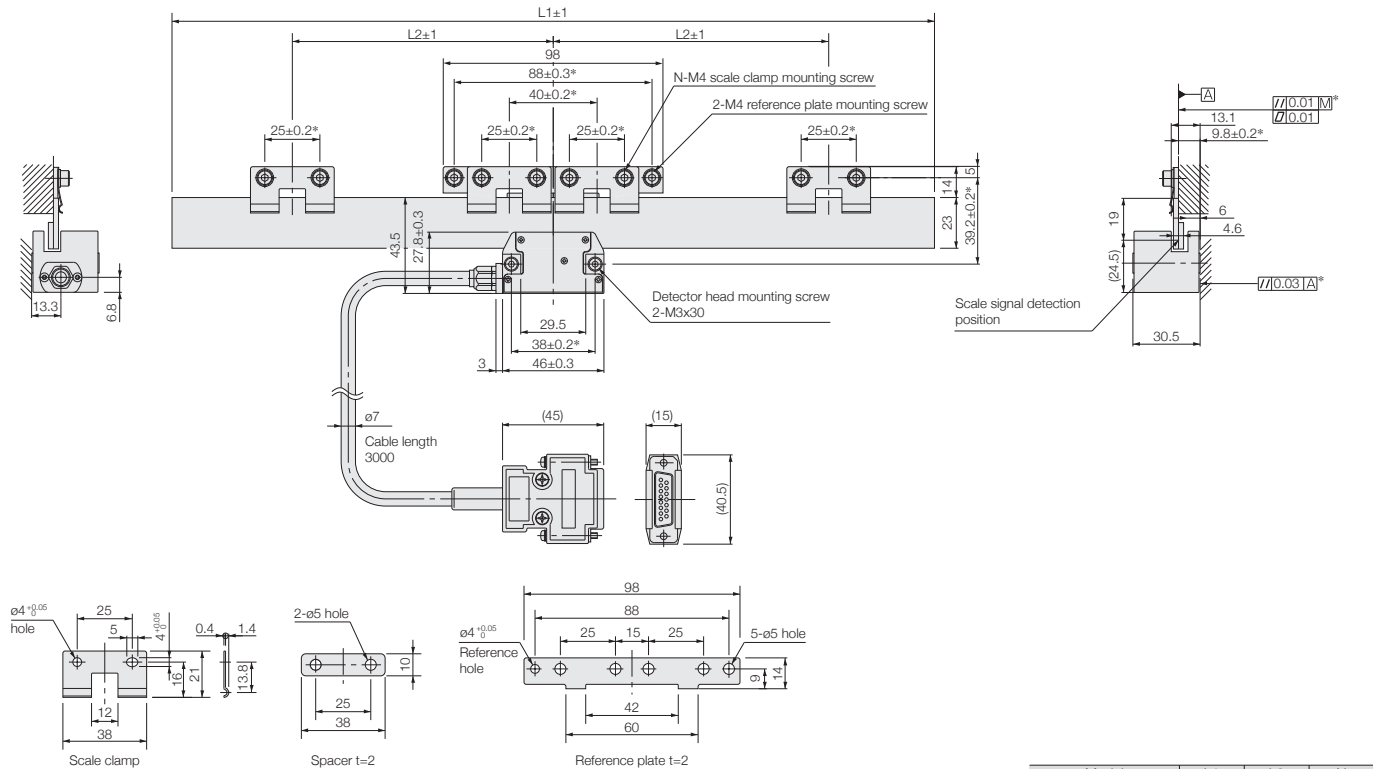
External Dimensions

● BS78-10N/NS (Measuring length : 10 mm)



Note 1: The items marked by an asterisk indicate the machining dimensions on the mounting surface.
 Note 2: The surface properties of the scale mounting surface is Rmax = 6.3S.
 Note 3: The surface properties 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.

● BS78-xxxN(NS) (Measuring length : 70/270/320 mm)



Note 1: The items marked by an asterisk indicate the machining dimensions on the mounting surface.
 Note 2: The surface properties of the scale mounting surface is Rmax = 6.3S.
 Note 3: The surface properties 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		BS78	
Measuring length	10(only N/NS)/40/70/120/170/220/270/320/370/420 mm		
Overall length	58mm (L=10mm:open type scale), L + 26mm (L= 40mm to 420mm) L: Measuring length		
Max. travel	L + 2mm (L=10mm:open type scale), L + 10mm (L= 40mm to 420mm) L: Measuring length		
Scale accuracy(at20°C)	NS type, RS type : ±0.03µm (L=10mm : NS type) ±0.04µm (L=40mm) ±0.10µm (L=70/120mm) ±0.18µm (L=170/220mm) L: Measuring length	±0.25µm (L=270mm) ±0.34µm (L=320mm) ±0.39µm (L=370mm) ±0.44µm (L=420mm)	N type, R type : ±0.06µm (L=10mm : N type) ±0.08µm (L=40mm) ±0.20µm (L=70/120mm) L: Measuring length
Grating pitch	Approx. 0.55µm		
Signal pitch	Approx. 0.138µm (Approx. 138nm)		
Reference point accuracy	0.1µm (Only R/RS type)		
Reference point position	At the center, and every 50mm from the center to the left and to the right (BS78 models with measuring lengths of 320, 370, 420mm: 20mm offset from the center at 50mm intervals)		
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	-0.7 x 10 ⁻⁶ /°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 60% or less)		
Max. response speed	400mm/s (When connected with BD96)		

Magnescape reserves the right to change product specifications without prior notice.