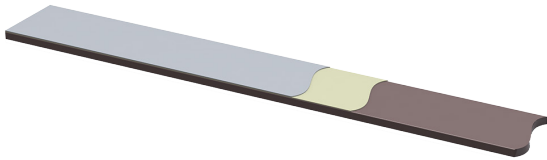




Counting



Controlling



LMSN

Linear Magnetic Scale Nonius

- Linear applications
- Different scale materials available
- Different pole pitches

Features

- different accuracies available on demand
- Two or three track magnetization
- Different scale geometries
- Customizable for many applications
- No attrition from usage
- Resistant to dust, cooling lubricant emulsion, oil, etc.

Controlling movements with the LMSN

Simple – precise – economic

BOGEN produces magnetic scales for a large variety of different applications. The Linear Magnetic Scale Nonius can be written two or three tracks. Using different accuracy classes scales can be tailored to the requirements. The scales can be used for many different solutions.

Linear Magnetic Scale

Characteristics Linear Magnetic Scale

Accuracy class	$\pm 3 \mu\text{m}, \pm 10 \mu\text{m}, \pm 20 \mu\text{m}$
Material	Magnetic Tape: Elastomer filled with ferrite Carrier Tape: Stainless Steel
Width [mm]	6, 8, 10
Thickness [mm]	0.5 to 1.66 (depending on scale setup)
Pole pitch [mm]	1.28; 1.5
Magnetic flux	tbd
Operating temperature	-20°C to +100°C max.
Expansion coefficient	$\sim 17 \times 10^{-6}/\text{K}$
Minimum bending radius [mm]	65
Length in pieces	see page 4 supply
End processing for pieces	Multiple hole combinations and angle cuts possible (on request)

Characteristics Adhesive Tape (optional)

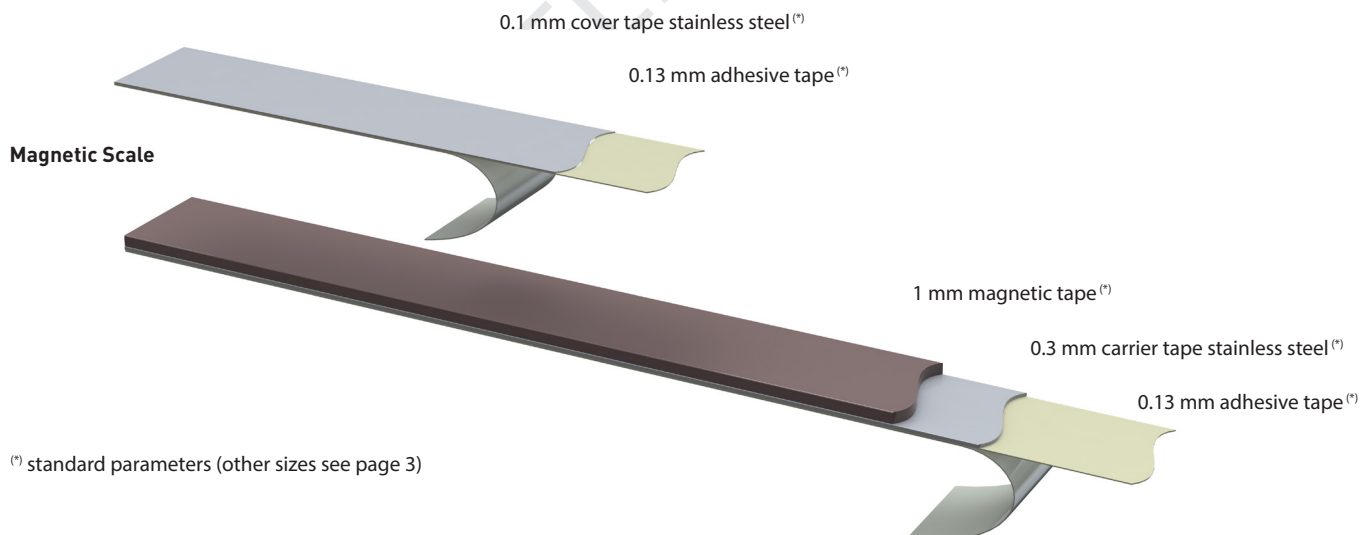
Material	Double sided acrylic adhesive tape
Width [mm]	5, 7, 9
Thickness [mm]	0.13

Characteristics Cover Tape (separate accessory)

Material	Cover tape: Stainless steel, non magnetic Adhesive tape: Acrylic adhesive tape
Width [mm]	5 ± 0.2 8 ± 0.2 10 ± 0.2
Thickness [mm]	0.23 total thickness (0.1 mm stainless steel tape + 0.13 mm adhesive tape)

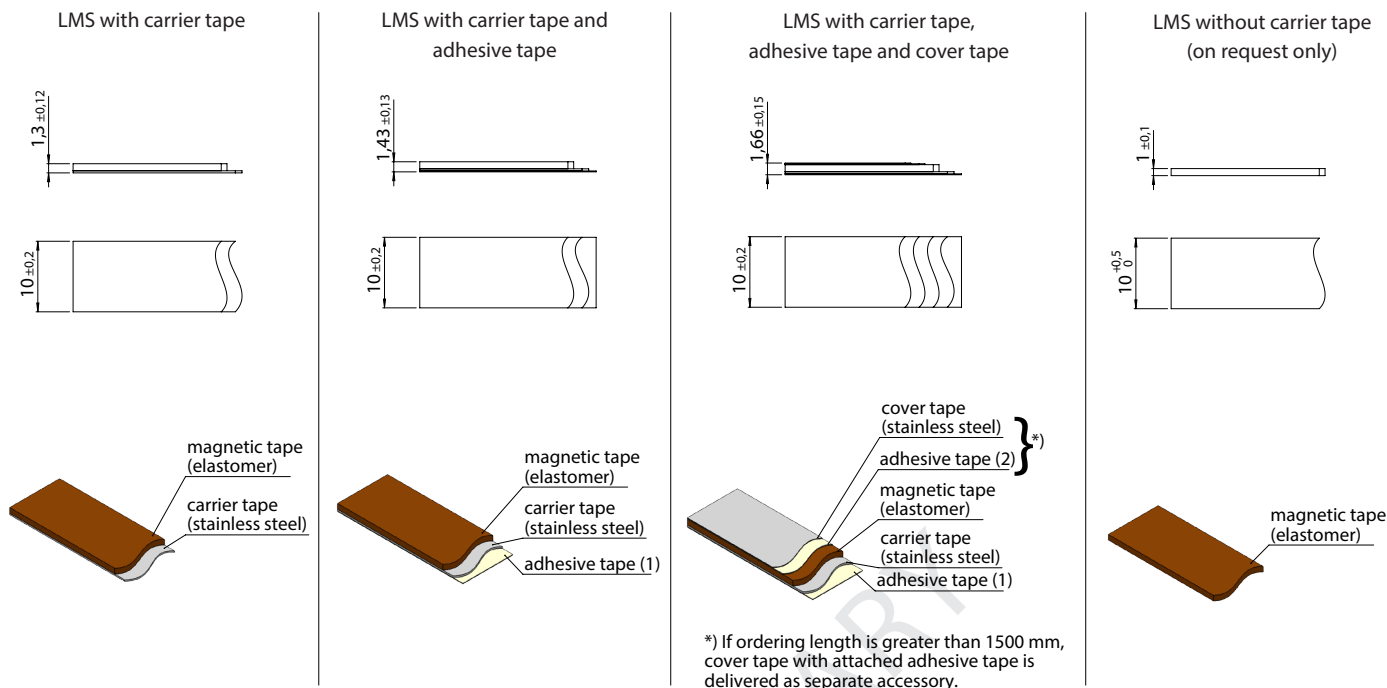
Dimension Magnetic Scale

Cover Tape (separate accessory)



(*) standard parameters (other sizes see page 3)

Scale Dimensions with Standard Layer Stackup



Scale Dimensions with optional Layer Stackup (*)

For individual scale setups following layer dimensions can be used

Magnetic tape	0.5 mm or 1.0 mm
Carrier tape	0.1 mm or 0.3 mm
Adhesive tape	0.13 mm or 0.55 mm
Cover tape	0.076mm, 0.1 mm , 0.15mm

(*) standard parameters are bold

Length

Linear magnetic scales cut in pieces or supplied on reel

Marking¹⁾

The marking distance is 250 mm and builds up as follows:
 accuracy class . pole pitch [µm] . year/week . reel no. . magnetic strip counter (optional)
 e.g. A20.2000.1605.19 (marking every 250 mm)
 A20.2000.1608.19.012 (marking one time per magnetic strip)

¹⁾ The magnetic strip counter indicates the number of remaining strips on the reel. The strip is marked only once per length.

Optional Accessory

- Extruded aluminum profile
- Scale applicator

Order Code

Parameters

 LMSN -

N	W	P	L	A	K	C	T
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		Code	Explanation (*)
Parameters	N	Number of Pole Pairs	M-N Master-Nonius
	W	Width (mm)	W6 6 mm
			W8 8 mm
			W10 10 mm
	P	Pole Pitch (mm)	P1.28 1.28 mm
			P1.5 1.5 mm
	L	Length (mm)	L51 piece length 51 mm
			L58 piece length 58 mm
			L92 piece length 92mm
			L106 piece length 106 mm
			L174 piece length 174 mm
			L202 piece length 202 mm
			L338 piece length 338 mm
			L394 piece length 394 mm
			L666 piece length 666 mm
			L778 piece length 778 mm
			L1321 piece length 1321 mm
			L1546 piece length 1546 mm
	A	Accuracy Class	A03 ± 3 µm/m
			A10 ± 10 µm/m
A20 ± 20 µm/m			
K	Adhesive Tape	without adhesive tape	
		K equipped with adhesive tape	
C	Cover	without cover tape	
		C equipped with cover tape (only delivered up to piece length 1500 mm)	
T	Text Imprint	with BOGEN text imprint	
		T0 without text imprint	
		T2 with customer specific text imprint (on request)	

(*) standard parameters are bold

Ordering Example

LMSN-32-31W10P1.5L338A20T1

Linear magnetic scale nonius, number of pole pairs 32 Master-31 Nonius, width 10 mm, pole pitch 1.28 mm, supplied as piece with 338 mm length, accuracy class ± 20 µm/m, with standard text imprint

LMSN-32-31W6P1.28L92A10T1

Linear magnetic scale nonius, number of pole pairs 32 Master-31 Nonius, width 6 mm, pole pitch 1.28 mm, supplied as piece with 92 mm length, accuracy class ± 10 µm/m, with standard text imprint