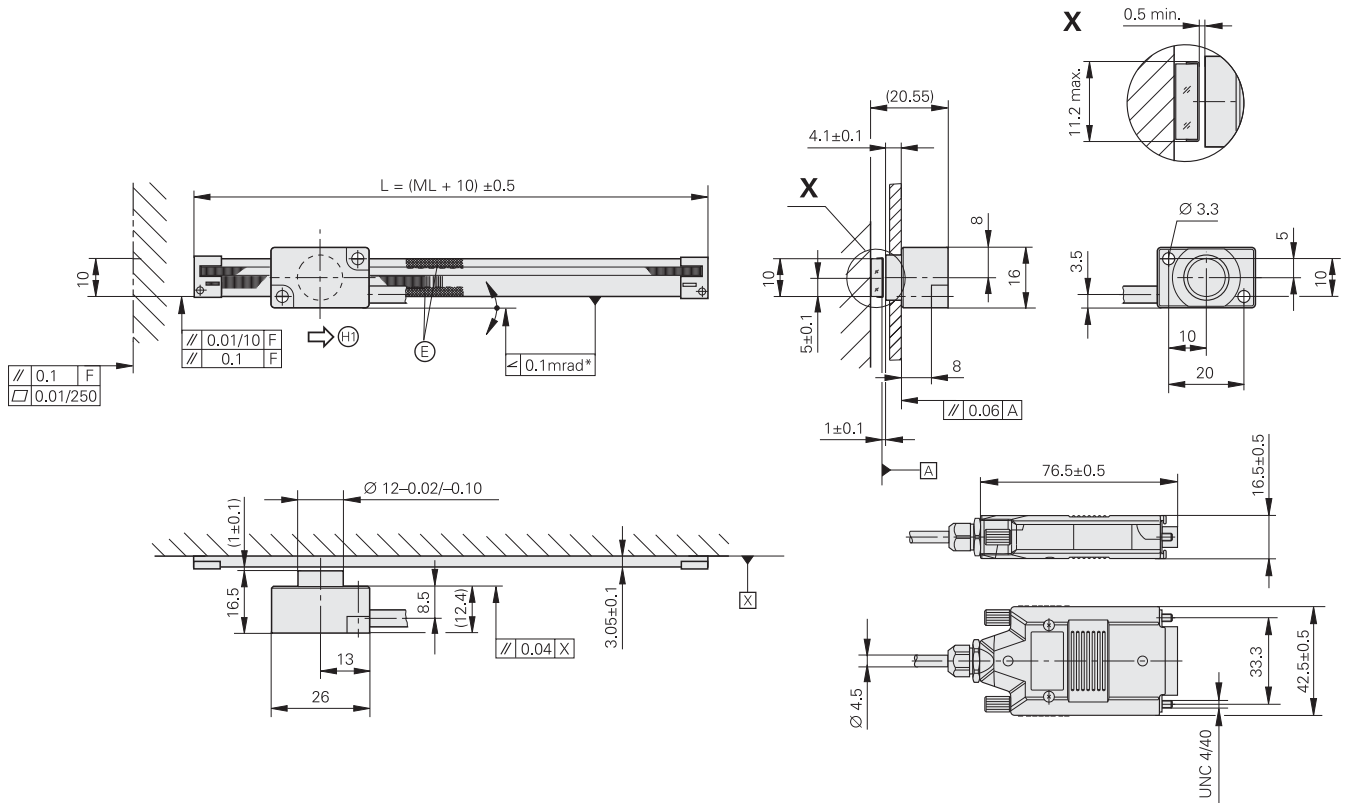



LIF 471, LIF 481

Incremental encoder for simple installation

- For measuring steps of 1 μm to 0.01 μm
- Position detection through homing track and limit switches
- Glass scale fixed with adhesive film



mm

 Tolerancing ISO 8015
 ISO 2768 - m H
 < 6 mm: ± 0.2 mm

- * = Max. change during operation
- F = Machine guideway
- ML = Measuring length
- E = Epoxy for ML < 170
- H = Direction of scanning unit motion for output signals in accordance with interface description



Specifications	LIF 481	LIF 471											
Measuring standard* Coefficient of linear expansion	SUPRADUR phase grating on Zerodur glass ceramic or glass $\alpha_{\text{therm}} \approx (0 \pm 0.1) \cdot 10^{-6} \text{ K}^{-1}$ (Zerodur glass ceramic) $\alpha_{\text{therm}} \approx 8 \cdot 10^{-6} \text{ K}^{-1}$ (glass)												
Accuracy grade	$\pm 3 \mu\text{m}$												
Measuring length ML* in mm	70 720	120 770	170 820	220 870	270 920	320 970	370 1020	420	470	520	570	620	670
Reference marks	One at midpoint of measuring length												
Incremental signals	$\sim 1 \text{ V}_{\text{pp}}$		\square TTL										
Grating period	8 μm												
Integrated interpolation* Signal period	– 4 μm	5-fold 0.8 μm	10-fold 0.4 μm	20-fold 0.2 μm	50-fold 0.08 μm	100-fold 0.04 μm							
Cutoff frequency –3dB –6dB	$\geq 300 \text{ kHz}$ $\geq 420 \text{ kHz}$	–											
Scanning frequency*	–	$\leq 500 \text{ kHz}$ $\leq 250 \text{ kHz}$ $\leq 125 \text{ kHz}$	$\leq 250 \text{ kHz}$ $\leq 125 \text{ kHz}$ $\leq 62.5 \text{ kHz}$	$\leq 250 \text{ kHz}$ $\leq 125 \text{ kHz}$ $\leq 62.5 \text{ kHz}$	$\leq 100 \text{ kHz}$ $\leq 50 \text{ kHz}$ $\leq 25 \text{ kHz}$	$\leq 50 \text{ kHz}$ $\leq 25 \text{ kHz}$ $\leq 12.5 \text{ kHz}$							
Edge separation a ¹⁾	–	$\geq 0.080 \mu\text{s}$ $\geq 0.175 \mu\text{s}$ $\geq 0.370 \mu\text{s}$	$\geq 0.080 \mu\text{s}$ $\geq 0.175 \mu\text{s}$ $\geq 0.370 \mu\text{s}$	$\geq 0.040 \mu\text{s}$ $\geq 0.080 \mu\text{s}$ $\geq 0.175 \mu\text{s}$	$\geq 0.040 \mu\text{s}$ $\geq 0.080 \mu\text{s}$ $\geq 0.175 \mu\text{s}$	$\geq 0.040 \mu\text{s}$ $\geq 0.080 \mu\text{s}$ $\geq 0.175 \mu\text{s}$							
Traversing speed ¹⁾	$\leq 72 \text{ m/min}$ $\leq 100 \text{ m/min}$	$\leq 120 \text{ m/min}$ $\leq 60 \text{ m/min}$ $\leq 30 \text{ m/min}$	$\leq 60 \text{ m/min}$ $\leq 30 \text{ m/min}$ $\leq 15 \text{ m/min}$	$\leq 60 \text{ m/min}$ $\leq 30 \text{ m/min}$ $\leq 15 \text{ m/min}$	$\leq 24 \text{ m/min}$ $\leq 12 \text{ m/min}$ $\leq 6 \text{ m/min}$	$\leq 12 \text{ m/min}$ $\leq 6 \text{ m/min}$ $\leq 3 \text{ m/min}$							
Position detection	Homing signal and limit signal, TTL output signals (without line driver)												
Power supply Current consumption	DC 5 V \pm 5 % < 175 mA	DC 5 V \pm 5 % < 180 mA (without load)											
Electrical connection* Cable length	Cable 0.5 m, 1 m, 2 m or 3 m with D-sub connector (15-pin), interface electronics in the connector <i>Incremental:</i> $\leq 30 \text{ m}$; <i>homing, limit:</i> $\leq 10 \text{ m}$; (with HEIDENHAIN cable)												
Vibration 55 to 2000 Hz Shock 11 ms	$\leq 200 \text{ m/s}^2$ (EN 60068-2-6) $\leq 500 \text{ m/s}^2$ (EN 60068-2-27)												
Operating temperature	0 °C to 50 °C												
Weight	Scanning head	For scale of Zerodur glass ceramic: 25 g For scale of glass: 9 g (each without cable)											
	Scale	0.8 g + 0.08 g/mm measuring length											
	Connecting cable	38 g/m											
	Connector	140 g											

* Please indicate when ordering

¹⁾ At the corresponding cutoff or scanning frequency

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