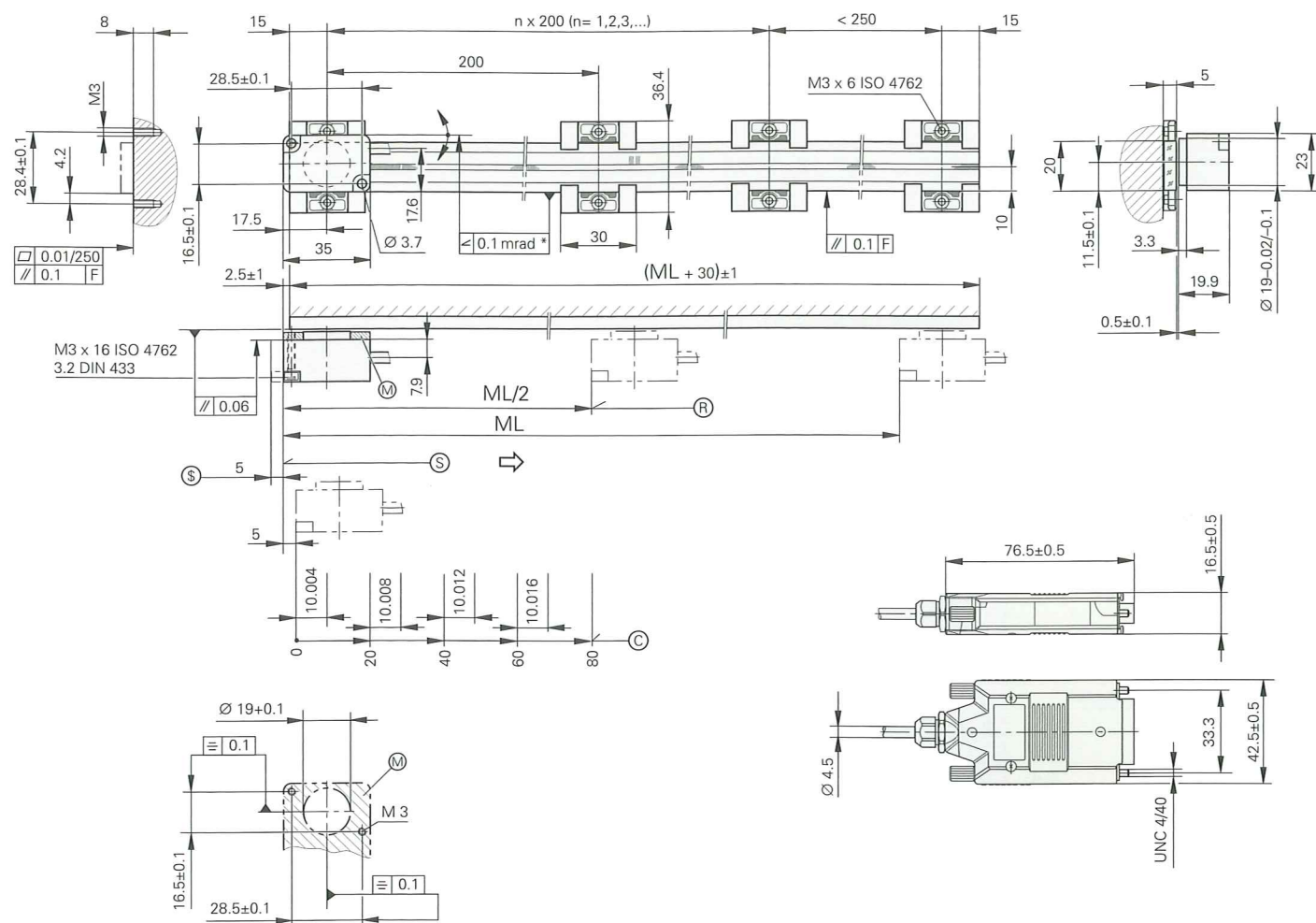


# LIP 500 Series

Incremental linear encoders with very high accuracy

- For larger measuring lengths
- For measuring steps of 1 µm to 0.01 µm



Dimensions in mm

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

- F = Machine guideway
- \* = Max. change during operation
- Ⓡ = Reference-mark position on LIP 5x1 R
- Ⓢ = Reference-mark position on LIP 5x1 C
- Ⓣ = Beginning of measuring length (ML)
- Ⓤ = Permissible overtravel
- Ⓜ = Mounting surface for scanning head
- ↔ = Direction of scanning head motion for output signals in accordance with interface description



Specifications	LIP 581	LIP 571												
<b>Measuring standard</b> Coefficient of linear expansion	DIADUR phase grating on glass $\alpha_{\text{therm}} \approx 8 \cdot 10^{-6} \text{ K}^{-1}$													
<b>Accuracy grade*</b>	± 1 µm													
<b>Measuring length ML* in mm</b>	70 720	120 770	170 820	220 870	270 920	320 970	370 1020	420 1240	470 1440	520	570	620	670	
<b>Reference marks*</b> LIP 5x1 R LIP 5x1 C	One at midpoint of measuring length Distance-coded													
<b>Incremental signals</b>	~ 1 V <sub>PP</sub>		□ TTL											
<b>Grating period</b>	8 µm													
<b>Integrated interpolation*</b> Signal period	-		5-fold 0.8 µm				10-fold 0.4 µm							
<b>Cutoff frequency</b> -3dB	≥ 300 kHz		-											
<b>Scanning frequency*</b> Edge separation a	-		≤ 200 kHz ≥ 0.220 µs		≤ 100 kHz ≥ 0.465 µs		≤ 50 kHz ≥ 0.950 µs		≤ 100 kHz ≥ 0.220 µs		≤ 50 kHz ≥ 0.465 µs		≤ 25 kHz ≥ 0.950 µs	
<b>Traversing speed</b>	≤ 72 m/min		≤ 48 m/min		≤ 24 m/min		≤ 12 m/min		≤ 24 m/min		≤ 12 m/min		≤ 6 m/min	
<b>Power supply</b> <b>Current consumption</b>	5 V ± 5 % < 175 mA		5 V ± 5 % < 175 mA (without load)											
<b>Electrical connection*</b> Cable length	Cable 0.5 m, 1 m, 2 m or 3 m with D-sub connector (15-pin), interface electronics in the connector ≤ 30 m (with HEIDENHAIN cable)													
<b>Vibration</b> 55 to 2000 Hz <b>Shock</b> 11 ms	≤ 200 m/s <sup>2</sup> (EN 60068-2-6) ≤ 500 m/s <sup>2</sup> (EN 60068-2-27)													
<b>Operating temperature</b>	0 °C to 50 °C													
<b>Weight</b> Scanning head Connector Scale Connecting cable	25 g (without connecting cable) 140 g 75 g + 0.25 g/mm measuring length 38 g/m													

\* Please select when ordering