

# LC 481

Absolute linear encoder for measuring steps of 1 µm to 0.1 µm  
(0.00005 in. to 0.000005 in.)

- With defined thermal behavior
- For limited installation space
- Simple mounting with backup spar
- Absolute position values and incremental signals via EnDat interface

Specifications	LC 481
<b>Measuring standard</b>	DIADUR glass scale with absolute track and incremental track
Thermal expansion coefficient	$\alpha_{\text{therm}} \approx 8 \text{ ppm/K}$
<b>Accuracy grade</b>	$\pm 5 \text{ } \mu\text{m}$ ( $\pm 0.0002 \text{ in.}$ ) $\pm 3 \text{ } \mu\text{m}$ ( $\pm 0.00012 \text{ in.}$ )
<b>Measuring length ML</b> in mm inches	70, 120, 170, 220, 270, 320, 370, 2.7, 4.7, 6.7, 8.6, 10.6, 12.6, 14.5
Mounting spar recommended	420, 470, 520, 570, 620, 720, 770, 16.5, 18.5, 20.5, 22.4, 24.4, 28, 30,
Only with mounting spar	820, 920, 1020, 1140, 1240, 32, 36, 40, 44, 48, 1340, 1440, 1540, 1640, 1740, 1840, 52, 56, 60, 64, 68, 72, 2040 80
<b>Max. traversing speed (mech.)</b>	120 m/min (4720 ipm)
<b>Vibration</b> without mounting spar (55 to 2000 Hz) with mounting spar	$\leq 100 \text{ m/s}^2$ (IEC 60 068-2-6) $\leq 150 \text{ m/s}^2$ (IEC 60 068-2-6)
<b>Shock</b> (11 ms)	$\leq 150 \text{ m/s}^2$ (IEC 60 068-2-27)
<b>Required moving force</b>	$\leq 5 \text{ N}$
<b>Protection</b> (IEC 60 529)	IP 53 when installed as per instructions IP 64 with compressed air
<b>Operating temperature</b>	0 to 50 °C (32 to 122 °F)
<b>Weight</b>	0.4 kg + 0.5 kg/m measuring length
<b>Power supply</b>	5 V $\pm$ 5 % at encoder/ max. 300 mA (with no load) (power supply via remote sensing possible)
<b>Interface</b>	<b>EnDat interface</b> (bidirectional serial interface)
<b>Absolute signals</b>	According to EIA standard RS-485
<b>Incremental signals</b> Signal period Cutoff frequency (-3 dB)	$\sim 1 \text{ V}_{\text{pp}}$ 20 µm $\geq 130 \text{ kHz}$
<b>Electrical connection</b> Cable length to subsequent electronics	Sep. adapter cable (1 m/3 m/6 m/9 m) for mounting block (see <i>Electrical Connection</i> ) 150 m (492 ft) max.

## Dimensions

in mm



DIN ISO 8015  
ISO 2768 - m H

### Mounting spar

ML	m
70 ... 520 (2.7 ... 20.5")	0
570 ... 920 (22.4 ... 36")	1
1020 ... 1340 (40 ... 52")	2
1440 ... 1740 (56 ... 68")	3
1840 ... 2040 (72 ... 80")	4

- ① = Without mounting spar
- ② = With mounting spar
- F = Machine guideway
- P = Gauging points for alignment
- ⓐ = Required mating dimensions
- ⓑ = Compressed air inlet
- ⓒ = Beginning of measuring length (ML) at 20 mm