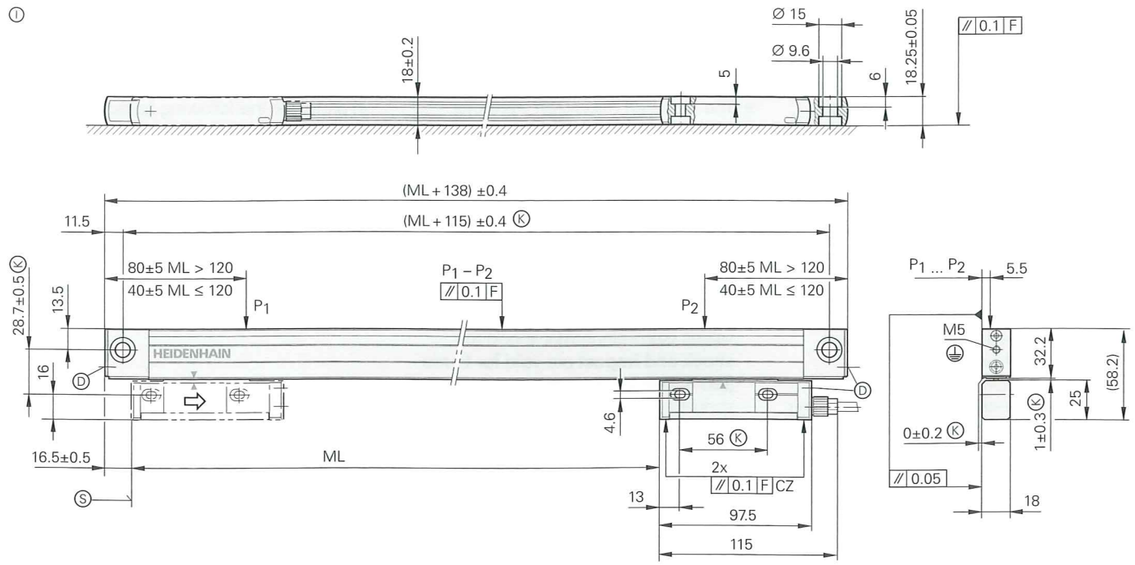
LC 400 Series

- **Absolute linear encoders for measuring steps to 0.1 µm (resolution to 0.005 µm)**
- **For limited installation space**
- **Up to two additional scanning units are possible**



For mounting options see *Mounting Instructions* (www.heidenhain.de)

Dimensions in mm

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

Ⓘ = Without mounting spar (with M8 screws)
Ⓘⓘ = Mounting with mounting spar (LC 483 with short end pieces shown; LC with normal end pieces can also be mounted)
F = Machine guideway
P = Gauging points for alignment
ML ≤ 820 $P_1 – P_2$
ML > 820 $P_1 – P_3$
Ⓚ = Required mating dimensions
Ⓓ = Compressed air inlet
Ⓢ = Beginning of measuring length (ML) (at 20 mm)
⇨ = Direction of scanning unit motion for output signals in accordance with interface description

Mounting spar

ML	m
70 ... 520	0
570 ... 920	1
1020 ... 1340	2
1440 ... 1740	3
1840 ... 2040	4

LC 483 without mounting spar

LC 483 with mounting spar

Specifications	**LC 483**	**LC 493 F**	**LC 493 M**
Measuring standard Expansion coefficient	DIADUR glass scale with absolute track and incremental track $\alpha_{therm} \approx 8 \times 10^{-6}\ K^{-1}$ (mounting type Ⓘ); *with mounting spar:* $\alpha_{therm} \approx 9 \times 10^{-6}\ K^{-1}$ (mounting type Ⓘⓘ)		
Accuracy grade*	± 3 µm; ± 5 µm		
Measuring length ML* in mm	Mounting spar* or clamping elements* optional 70 120 170 220 270 320 370 420 470 520 570 620 670 720 770 820 870 920 1020 1140 1240		
	Mounting spar* or clamping elements* necessary 1340 1440 1540 1640 1740 1840 2040		
Absolute position values*	EnDat 2.2 *Ordering designation* EnDat 02	Fanuc 02 serial interface	Mitsubishi high speed serial interface, Mit 02-4 or Mitsu 01
Resolution *Accuracy ± 3 µm* *Accuracy ± 5 µm*	 0.005 µm 0.01 µm	 0.01 µm 0.05 µm	
Calculation time t_{cal} *EnDat 2.1 command set* *EnDat 2.2 command set*	 < 1 ms ≤ 5 µs	 – –	
Incremental signals	~ 1 V_{PP} [1]	–	
Grating period/signal period	20 µm	–	
Cutoff frequency –3dB	≥ 150 kHz	–	
Power supply without load	3.6 to 5.25 V/< 300 mA		
Electrical connection	Separate adapter cable (1 m/3 m/6 m/9 m) connectable to mounting block		
Cable length [2]	≤ 150 m; depending on the interface and subsequent electronics	≤ 30 m	≤ 20 m
Traversing speed	≤ 180 m/min		
Required moving force	≤ 5 N		
Vibration 55 to 2000 Hz **Shock** 11 ms **Acceleration**	*Without mounting spar:* ≤ 100 m/s^2 (IEC 60068-2-6) *With mounting spar and cable outlet right/left:* ≤ 200 m/s^2/100 m/s^2 (IEC 60068-2-6) ≤ 300 m/s^2 (IEC 60068-2-27) ≤ 100 m/s^2 in measuring direction		
Operating temperature	0 °C to 50 °C		
Protection IEC 60529	IP 53 when mounted according to the mounting instructions IP 64 if compressed air is connected via DA 300		
Weight	*Encoder:* 0.2 kg + 0.5 kg/m measuring length, *mounting spar:* 0.9 kg/m		

* Please indicate when ordering
[1] Depending on the adapter cable
[2] With HEIDENHAIN cable