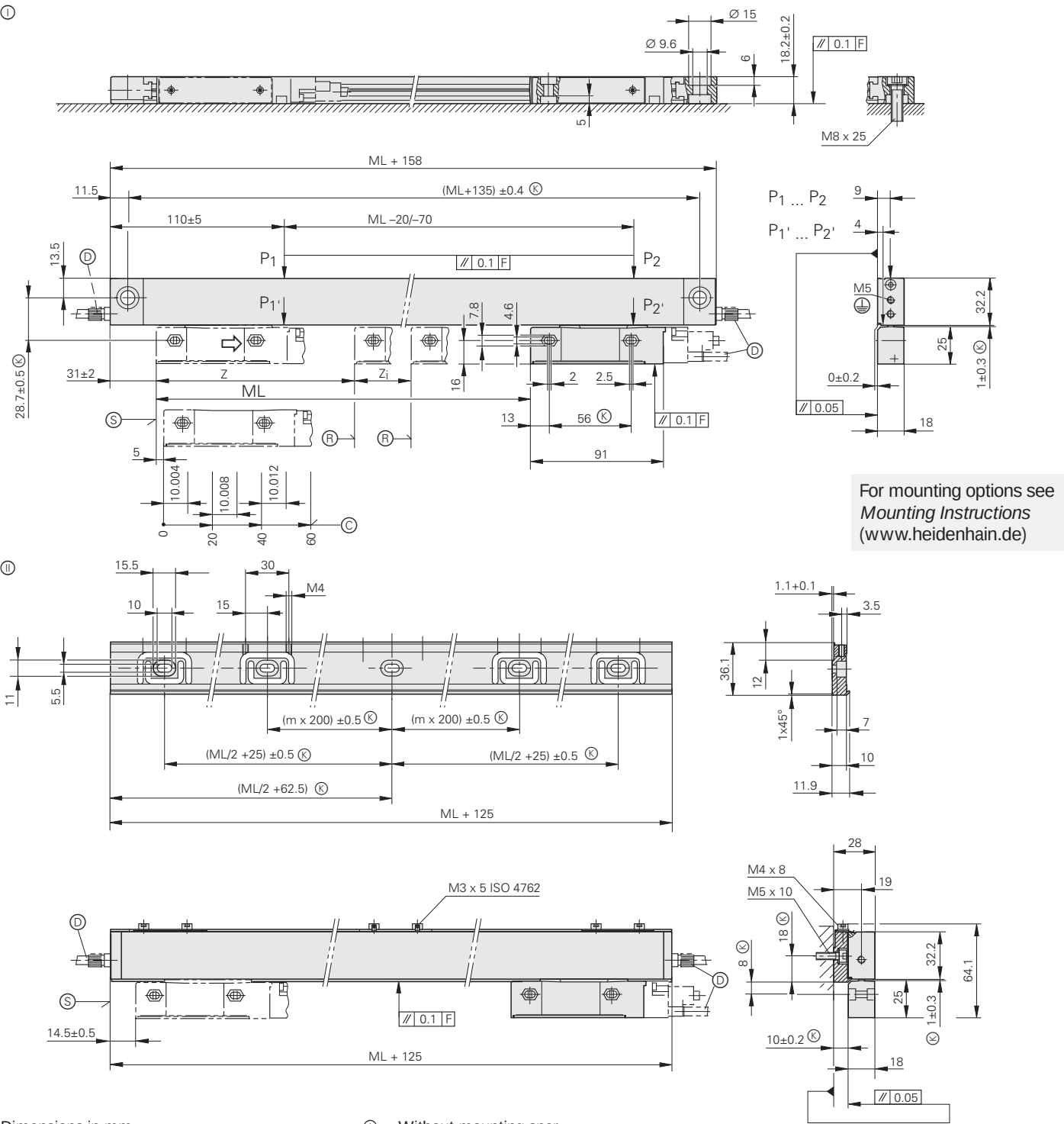


LF 481

- Incremental linear encoder for measuring steps to 0.1 µm
- Thermal behavior similar to steel or cast iron
- For limited installation space



Dimensions in mm



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

- ① = Without mounting spar
- ② = With mounting spar
- F = Machine guideway
- P = Gauging points for alignment
- ⊗ = Required mating dimensions
- ⊕ = Compressed air inlet
- ⊙ = Reference-mark position on LF 481  
2 reference marks for measuring lengths
- 50 ... 1000      1120 ... 1220
- z = 25      z = 35
- z<sub>i</sub> = ML - 50      z<sub>i</sub> = ML - 70
- ⊙ = Reference-mark position on LF 481C
- ⊕ = Beginning of measuring length (ML)
- ⇨ = Direction of scanning unit motion for output signals in accordance with interface description

Mounting spar

| ML            | m |
|---------------|---|
| 50 ... 500    | 0 |
| 550 ... 900   | 1 |
| 1000 ... 1220 | 2 |



LF 481 without mounting spar

LF 481 with mounting spar

| Specifications                                         | LF 481                                                                                                                                                                                                                                     |
|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Measuring standard<br>Expansion coefficient            | DIADUR phase grating on steel<br>$\alpha_{\text{therm}} \approx 10 \times 10^{-6} \text{ K}^{-1}$                                                                                                                                          |
| Accuracy grade*                                        | $\pm 3 \mu\text{m}; \pm 5 \mu\text{m}$                                                                                                                                                                                                     |
| Measuring length ML* in mm                             | Mounting spar* recommended<br><div> <div>50100150200250300350400450500550600650700</div> <div>750800900100011201220</div> </div>                                                                                                           |
| Incremental signals                                    | $\sim 1 \text{ V}_{\text{PP}}$                                                                                                                                                                                                             |
| Grating period<br>Signal period                        | 8 $\mu\text{m}$<br>4 $\mu\text{m}$                                                                                                                                                                                                         |
| Reference marks*<br>LF 481<br>LF 481C                  | ML 50 mm: 1 reference mark at midpoint<br>ML 100 to 1000 mm: 2, located 25 mm from the beginning and end of the measuring length<br>From ML 1120 mm: 2, located 35 mm from the beginning and end of the measuring length<br>Distance-coded |
| Cutoff frequency<br>-3dB                               | $\geq 200 \text{ kHz}$                                                                                                                                                                                                                     |
| Power supply<br>without load                           | 5 V $\pm 5 \%$ / < 200 mA                                                                                                                                                                                                                  |
| Electrical connection                                  | Separate adapter cable (1 m/3 m/6 m/9 m) connectable to mounting block                                                                                                                                                                     |
| Cable length <sup>1)</sup>                             | $\leq 150 \text{ m}$                                                                                                                                                                                                                       |
| Traversing speed                                       | $\leq 30 \text{ m/min}$                                                                                                                                                                                                                    |
| Required moving force                                  | $\leq 5 \text{ N}$                                                                                                                                                                                                                         |
| Vibration 55 to 2000 Hz<br>Shock 11 ms<br>Acceleration | $\leq 80 \text{ m/s}^2$ (IEC 60068-2-6)<br>$\leq 100 \text{ m/s}^2$ (IEC 60068-2-27)<br>$\leq 30 \text{ m/s}^2$ in measuring direction                                                                                                     |
| Operating temperature                                  | 0 °C to 50 °C                                                                                                                                                                                                                              |
| Protection IEC 60529                                   | IP 53 when mounted according to the mounting instructions<br>IP 64 if compressed air is connected via DA 300                                                                                                                               |
| Weight without mounting spar                           | 0.4 kg + 0.5 kg/m measuring length                                                                                                                                                                                                         |

\* Please indicate when ordering  
<sup>1)</sup> With HEIDENHAIN cable