OPERATION MANUAL

Tunneling Laser
TL-80

GEO LASER MESSTECHNIK

Congratulation on your new GEO-Laser.

Designed, developed and made in Germany

In addition on how to use the laser, these operating instructions also contain important safety instructions.

Read the operating instructions carefully before using the laser

First read the safety instructions on the supplement page.

Stand 04/2021_02

1. Description

The TL-80 emits a laser beam as reference axis.
It is equipped with a horizontal and vertical rotation axis system with clamp and fine adjustment knob for quick and exact fine adjustment.
The tunnelling laser can be used on its own or in combination with a traversing system. In this case it is advantegeous to adjust the trunnion axis height to the surveying instrument that is used.

1.1 Robust metal housing

1.4 Laser and electronic housing
Swept and filled with nitrogen,
100 % watertight.

1.8 Optical sight
for quick alignment of the laser beam.

1.7 Power supply
10 to 14 V DC/0,1 A
(On the side, not visible)

1.6 Vert. clamping screw

1.2 Nameplate
Manufacturer address, output, type designation, power supply, serial number.

1.3 Vert. fine adjustment screw

1.5 Laser warning sign
Laser class 3R, P < 5 mW

1.9 Hz. fine adjustment screw

1.10 Hz. clamping screw

1.12 Level difference adapter HA-196
(optional)

1.11 Clamping thread 5/8"

2. Alignment

Easier by the optical sight 1.8.

2.1 Rough adjustment

1. Set screw to central position (see 2.2).
2. Release clamping screw 1.6 and 1.10, align laser and retighten clamping screw.

2.2 Fine adjustment

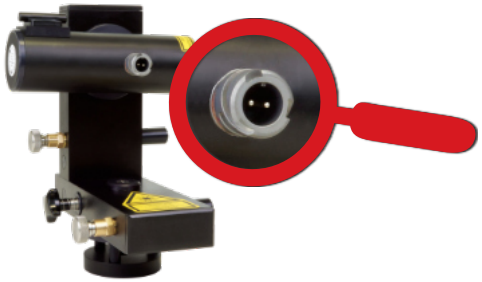
by setting screw 1.3 and/or 1.9.

fine adjustment range central position

setting range approx. ± 5 rotations referred to the central position.

3. Power supply

Watertight CACOM-plug-in connection for external 12 V DC power supply with galvanical isolation.



4. Troubleshooting

1. No laser beam - check power supply.
2. Low range - clean laser beam exit window.

5. Maintenance

The laser requires no special maintenance. Keep the electrical connections clean. Do not clean with water spray. Clean glass parts with a soft, clean close. Store dry. Always transport the laser in its original case.

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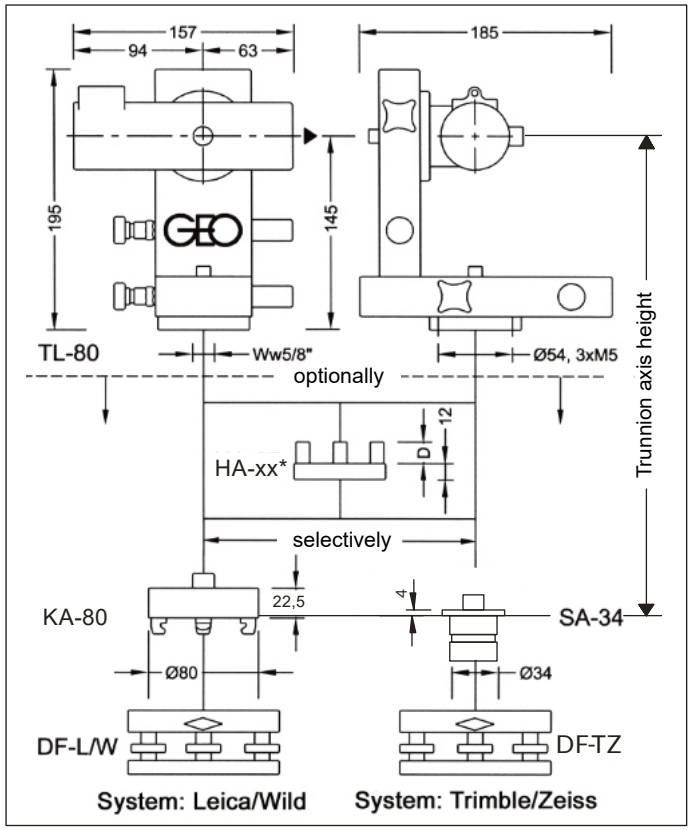
6. Dimensional sketch



* HA-xx with D optionally for individual trunnion axis height **or**

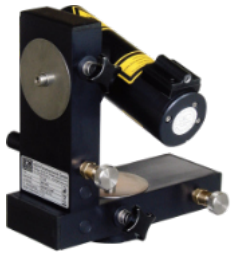
HA-196 with D = 16,5 mm for trunnion axis height 196 mm

7. Technical specifications

Laser class:	3R, P < 5 mW
Laser type:	diode, visible red, 635 nm
Beam diameter:	at laser 13 mm
Range:	to 500 m
Power supply:	10 bis 14 V DC/0.1 A
Reverse battery protection:	yes
Watertight::	to 3.5 m
Temperature range:	from - 20° C bis + 50° C
Weight:	1.8 kg
Guarantee:	24 month

8. Delivery package

No.	Order no.	Type	Description
1	0001.550	TL-80	Tunneling Laser
2	0094.00.1S		5/8" hexagon head cap screw with nut and washer
3	0077.30		Transport case TL-80
1-3	**0001.550.1**		**TL-80 with standard delivery package**



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9. Accessories, optional

No.	Order no.	Type	Description
1	8803.02	KA-80	Claw adapter, system Leica/Wild
2	1051.05	DF-LW	Tripod, system Leica/Wild
3	0037.09	NE-12/2A	Power supply
4	8803.03	SA-34	Plug-in spigot adapter, d = 34, D = 45, 5/8"
5	8869.00	DF-TZ	Tripod, system Trimble/Zeiss
6	0029.13	HA-196	Level difference adapter with D = 16,5 mm for trunnion axis height 196 mm
	or		
	0029.03	HA-xx	With D optionally for individual trunnion axis height. When ordering please indicate the desired trunnion axis height.

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