



Yb:Er:glass passively q-switched DPSS lasers "Ranger 1.5"

DATA SHEET



Laser specifications:

Laser model	Ranger 1.5
Operating mode	Pulsed
Pulse duration	6-6.5 ns
Repetition rate	5 or 10 Hz
Wavelength	1533 nm
Beam divergence, full angle	< 4.5 mRad
Beam divergence with collimator, full angle	<0.5 mRad
Maximum beam deviation during operation	< 0.15 mRad
Energy stability Standard Deviation (-20...+60C°) @5Hz	<3 %
Energy stability Standard Deviation (-20...+60C°) @10Hz	<3 %
Beam profile	TEM ₀₀
Average output energy (21C°) @5 Hz	>1.6 mJ
Average output energy (21C°) @10 Hz	>1.5 mJ
Average output energy (-20...+60C°) @5 and10 Hz	>1.5 mJ
Peak Power (-20...+ 60C°) 5 and 10Hz	>250 kW
Beam diameter at exit window	<1 mm
Beam ellipticity	>0.8
Storage temperature	-40 - +70 °C
Shock resistance test	<75 g/6 ms
Vibration resistance test	According to MIL-810G-STD

Physical dimensions:

Laser module dimensions	61.5 x 30.6 x 20.5 mm (L x W x H)
Laser driver dimensions	164 x 78 x 46 mm (L x W x H)



Utility requirements:

Pump current	100.0 A
Pump duration (-20°C...60°C)	1.8...2.5 ms
Laser crystal holder recommended temperature (thermistor inside laser)	< 73 °C
Operating environment temperature	Ranger 1.5_LAB: +10 ... +40 °C. Ranger 1.5_LAB-OEM: +10 ... +40 °C. Ranger 1.5_OEM: -20 ... +60 °C
Cooling	No cooling/ Natural Passive

Drawings:

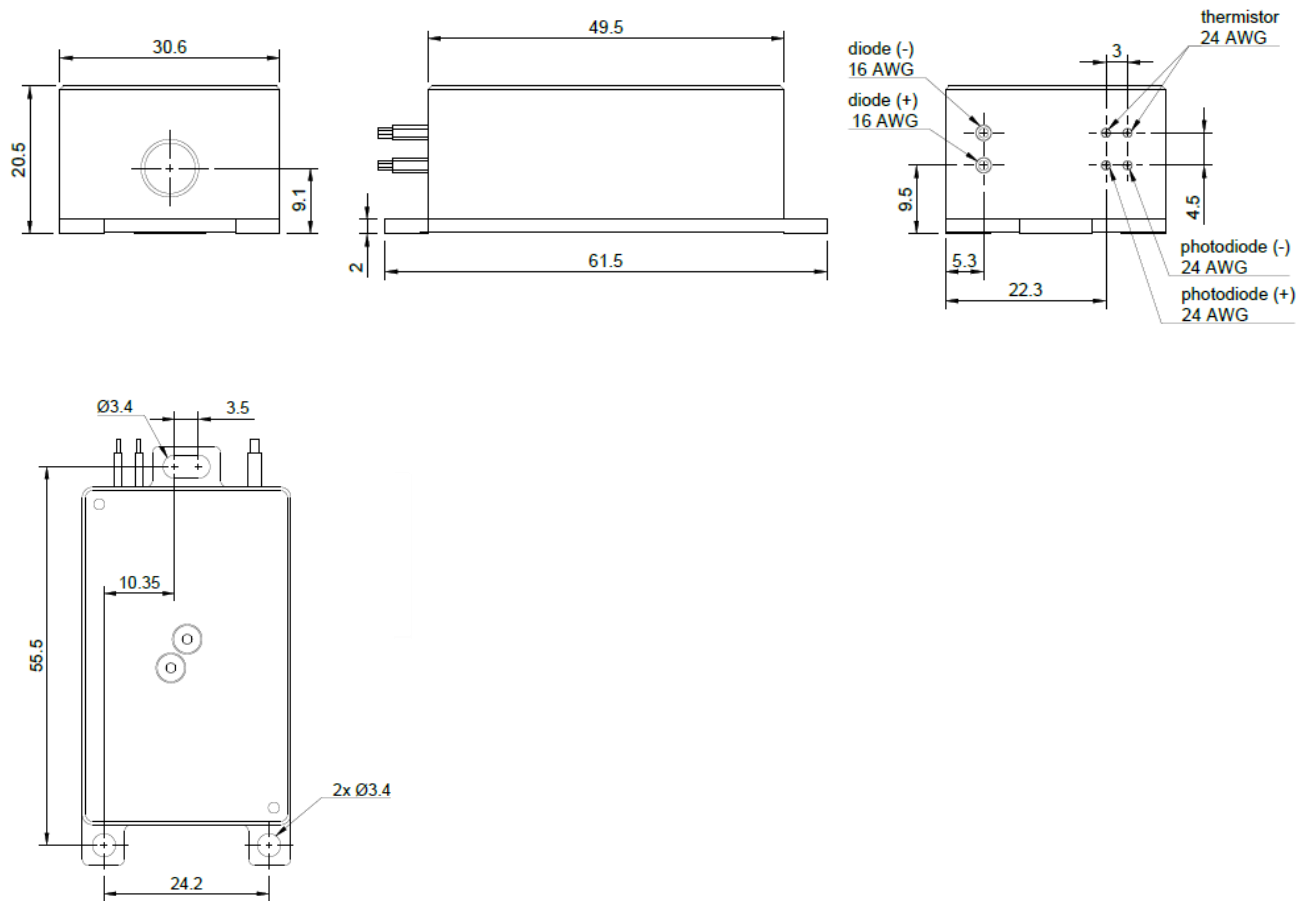


Figure 1. Laser head.



Laser including collimator (optional):

Laser can be equipped with a collimator fixed to laser head (see figure 2) or the collimator can be provided separately to be mounted by the user (figure 3). Beam divergence after the collimator can be slightly adjusted by changing distance between laser output window and collimator input window. Factory mounted collimators typically have <math><0.5\text{ mRad}</math> divergence angle (full).

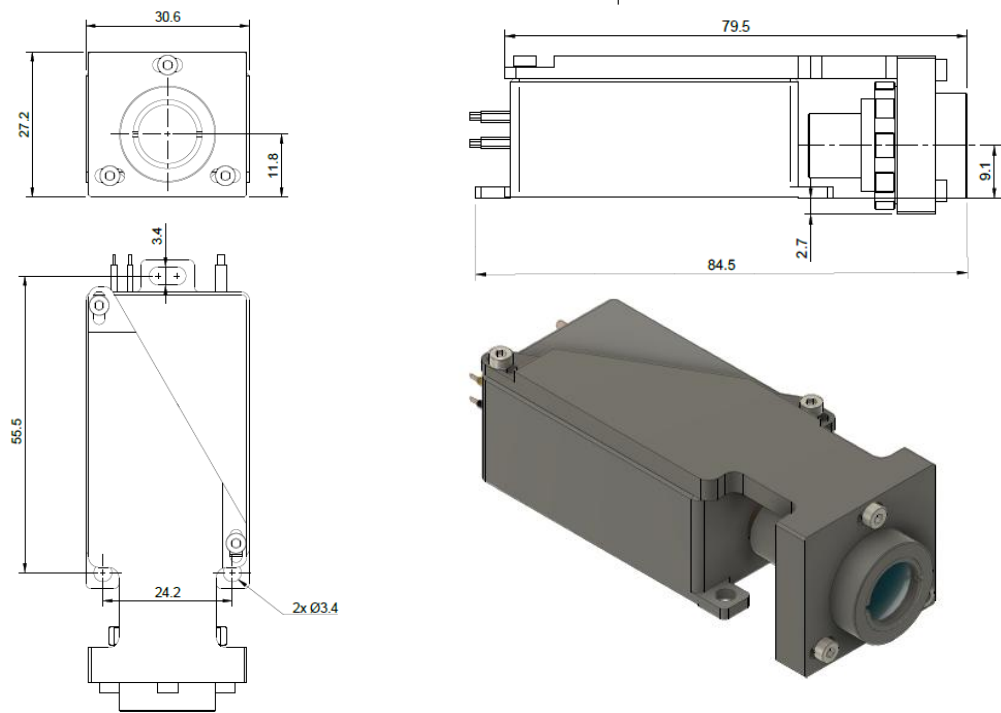


Figure 2. laser head with factory attached collimator.

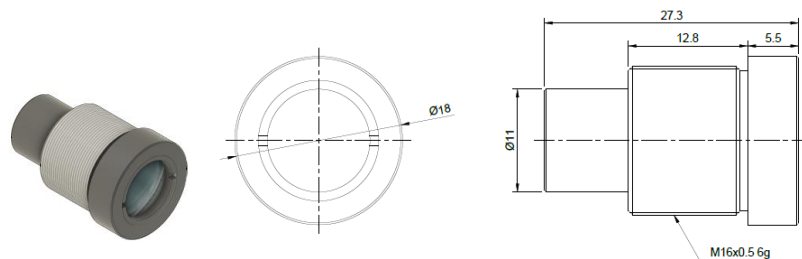


Figure 3. Collimator as separate component (not mounted).