6. Technical data

6.1 Information of YAG Laser at 1064 nm

Warning!

Do not exceed the maximum laser power output specification of the laser! 300W for PowerLine L 400!

Caution!

The LBO SHG crystal can be damaged by excessive YAG laser peak pulse power. Set Q-switch frequency to 10-kHz.

6.2 Laser system data (typical values before fiber)

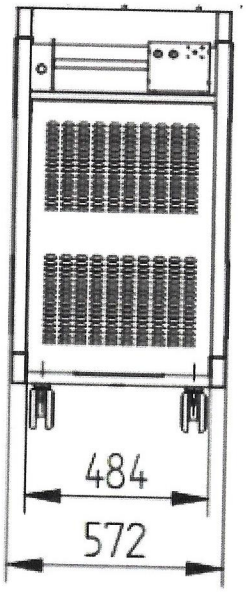
Type of laser		Nd:YAG
Laser class		4
Protection		IP 32
Wave length		1064 nm
Beam Diameter, nominal		2.75 mm
Beam Divergence (full angle), nominal		15 mrad
Beam quality		Multimode
Polarization		Random
Q-switched Performance at 10 kHz		
Pulse peak power Pulse Energy, Pulse Width, nominal	typ. typ. typ.	>80 kW 70 mJ 70ns
Average Power		max. 400 Watts

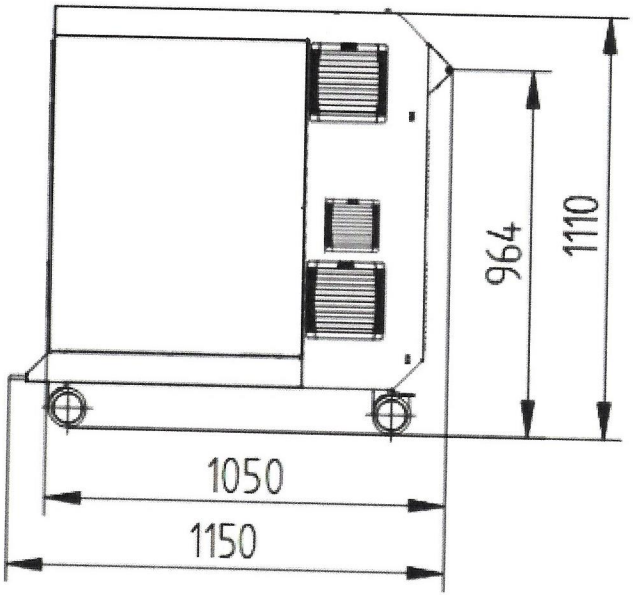
6.3 Emission value

The emissions value at the work place is equal to 70 dB (A).

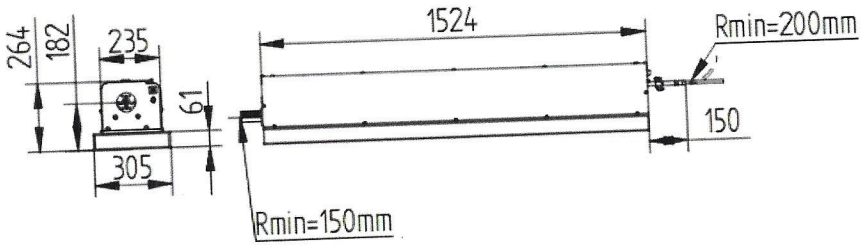
6.4 Mechanical

6.4.1 Dimensions supply rack





6.4.2 Dimensions laser rail:

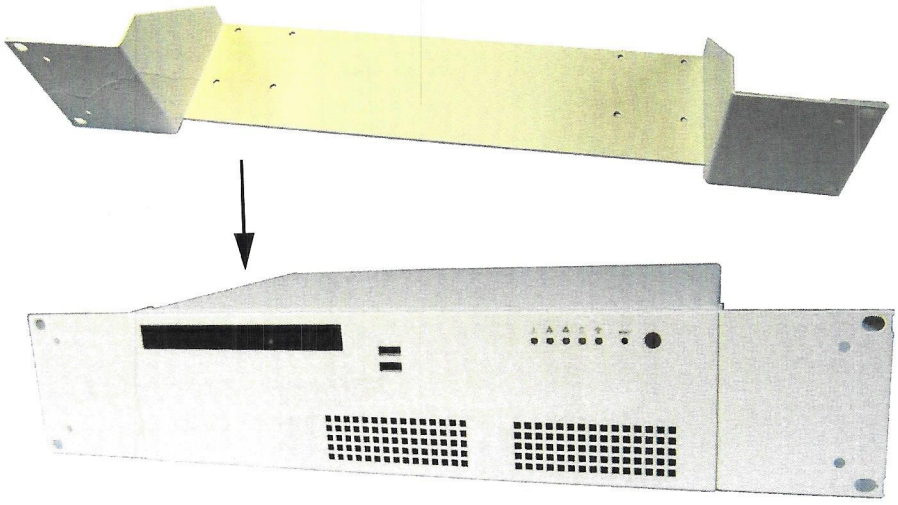


Weight supply rack: approx. 210 kg
Weight laser rail: approx. 150 kg

2 U industrial PC (19“ Option)

W x H x D:	327 x 88 x 200mm
Max. cable legth	Power supply 1.5 m Network cable 2 x 15 m.

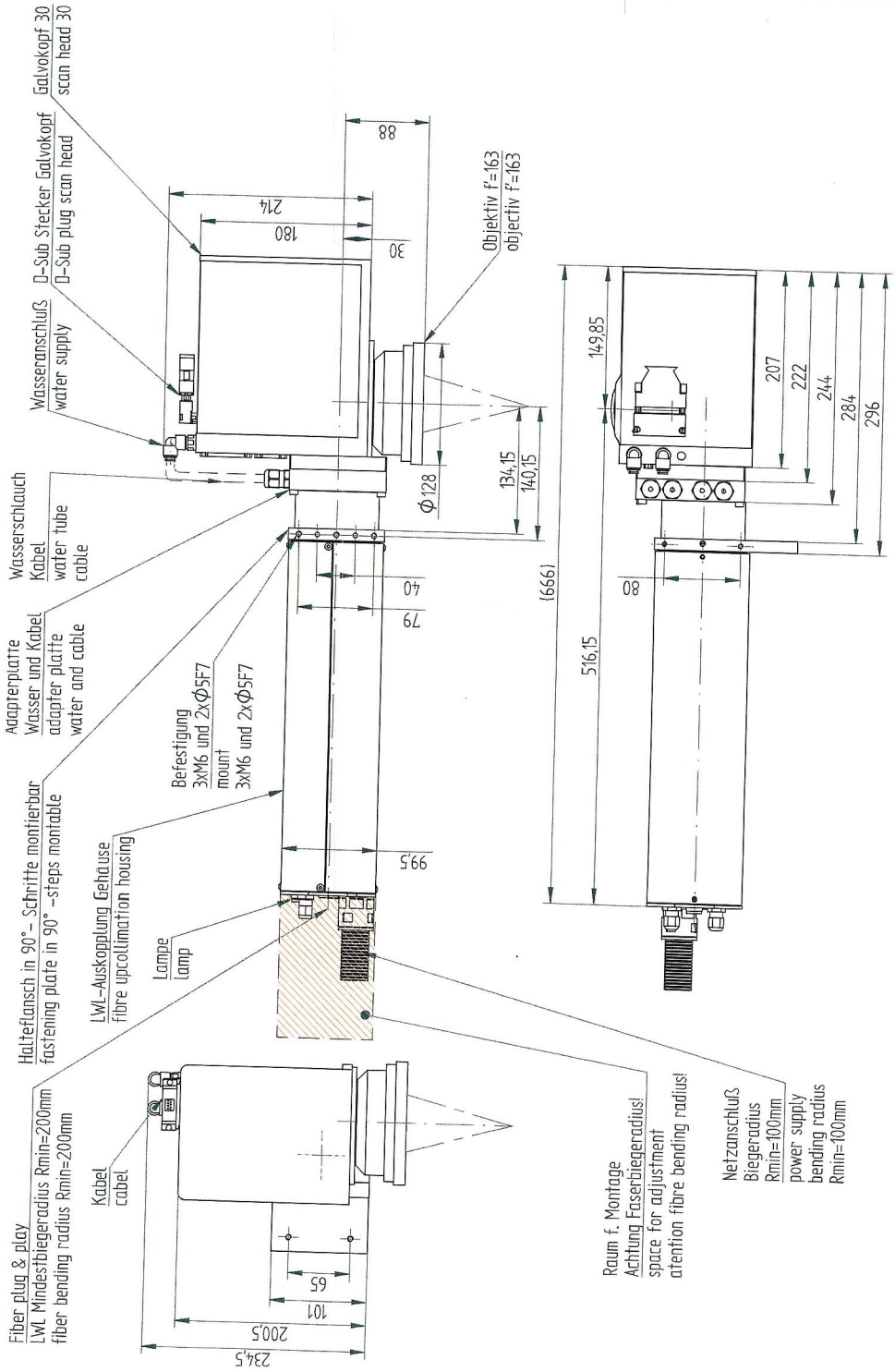
This PC can be integrated by the customer.



6.4.3 Scanning head and Laser optics

For your information

Depending on the system used certain components may not match the figures and descriptions in this operating manual.



6.5 Environmental parameters

Subsurface	vibration-free level
Ambient temperature during operation	+15°C to +35°C
Ambient storage temperature	+5°C to +60°C
Relative humidity limit values during operation	10%- 90% non condensing
Distance between wall and back of electrical cabinet	approx. 1m
Side distance between wall and electrical cabinet	approx. 0.5m each
Location altitude	</= 3000 m above sea level

For your information

Do not exceed the limit values and avoid variations in temperature!

6.6 Connection values

Electrical Power

Recommended Service	400 ±10% VAC, 3P+N+PE, 50/60 Hz, 32 A
Average Consumption	4 kW, maximum

6.7 Cooling

6.7.1 External Water (tap water)

Laser with integrated	16 liters/min @ max. temp. 18°C
Minimum pressure drop must be	>2.5 bar (35 psi)
Maximum input pressure	4.1 bar (60 psi)

For your information

Specifications external cooling water:

- Particles > 0.6 mm are not allowed!
- Fibrous materials (algae, wood, etc.) are not alowed!
- Total portion of solid material has to be less than 5 %!

In any case use a pre-filter for the mains water inlet (Max. nominal size 500 µm)!
ROFIN-BAASEL Lasertech GmbH & Co. KG suggests an external pre-filter with nominal particle size of 90 µm (Order no.: 141200149).

6.7.2 DI-water

Conductivity	1-5 µS
Capacity of DI-water tank	ca. 15 l

6.8 Fiber delivery to the deflection (galvo) head

6.8.1 Type

Fiber QBH (**Q**uarz **B**lock **H**ydro):

- fused quarz optics for min. laser power loss
- Fiber plug, water-cooled
- Length: 10 m
- various rectangular and square cross sections.

6.9 Scanning (galvo) head and Laser optics

Modell:	S30 High Speed
Aperture:	30 mm
Focussing lens:	f = 163 mm)
Working distance:	193 mm ±10mm
Field size:	50 mm x 50 mm square
Scan speed	will be determined based on application tests
Upcollimation:	included
Spot size:	will be determined based on application tests