

Pre-Installation Guide For Pulseo Laser Systems

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Introduction

Congratulations on your purchase of a Spectra-Physics laser system. The purpose of this document is to assist the user in establishing a suitable location and operating environment for optimum performance of the Pulseo system.

Proper power and room temperature are required for each system. You are responsible for meeting these requirements prior to installation, with due consideration given to all applicable building and safety codes.

When Your System Arrives

When the system arrives inspect the shipping containers for signs of rough handling or damage. Indicate any such signs on the bill of lading. Report any damage immediately to the shipping carrier and to a Spectra-Physics Customer Service Representative.

Retain the shipping containers. The containers will be required if the system is returned to the factory for service. The containers may also be needed to support a shipping damage claim.

The packing list identifies all items that have been ordered. Check each item received against the packing list, open all packages and inspect them for possible shipping damage. Make sure that each system has a user's Packet, which contains a USB stick. Note that some items may have been installed at the factory. Report any missing or damaged items to Spectra-Physics.

Pre-Installation Considerations

Environmental Specifications

The environmental conditions under which the laser system will function are listed below.

Indoor Use

Altitude:	Up to 3000 m
Temperatures:	18C to 35C
Maximum relative Humidity:	85% non-condensing for temperatures up to 31C
Mains supply voltage:	Do not exceed +- 10% of the nominal voltage
Insulation category:	II
Pollution degree:	2

Environmental Control

The *Pulseo* system requires cooling fluid to remove heat and to stabilize the temperature of various system components. A closed-loop chiller is used for this purpose. The recirculating, temperature-controlled fluid flows first to the laser head to remove excess heat, then flows to the power supply where it removes heat from the laser diode modules. Other components in the *D-Series* are air-cooled by fans inside the power supply.

The power supply contains a closed-loop active laser purification system (ALPS) that circulates clean, dry air through the laser head to remove humidity, airborne particles, and volatile organic compounds.

Maximum Emission Levels

The maximum emission level possible for the Pulseo Laser are shown below. Use this information to select laser safety eyewear and to implement appropriate safety procedures. These values *do not* imply actual system power or specifications!

Emission Wavelength	Maximum Power
Laser fiber emission: 879 nm	300 W, CW
Laser head emission: 355 nm	40 W, pulsed
Laser head emission: 532 nm	70 W, pulsed

Utility Requirements (Power Requirements)

Provide enough room cooling capacity to remove this waste heat and prevent the system from overheating.

Provide at least 10 cm (4 in.) of unobstructed space around the front and rear panels of the D-Series power supply to allow cooling air to enter the front and heated air to exhaust from the back. The power supply draws 150 CFM of air flow.

Power and cooling

Feature	Specifications
AC power input	100 to 240 VAC
Maximum power consumption (absolute)	750 W

Fuse Requirements

The *D-Series* power supply incorporates double-pole neutral fusing for operation from 100 to 240 VAC. These two fuses are located on the rear panel of the power supply and can be accessed using a standard screwdriver. Replacement fuses must be size 5 x 32 mm and of same type and rating as shown below.

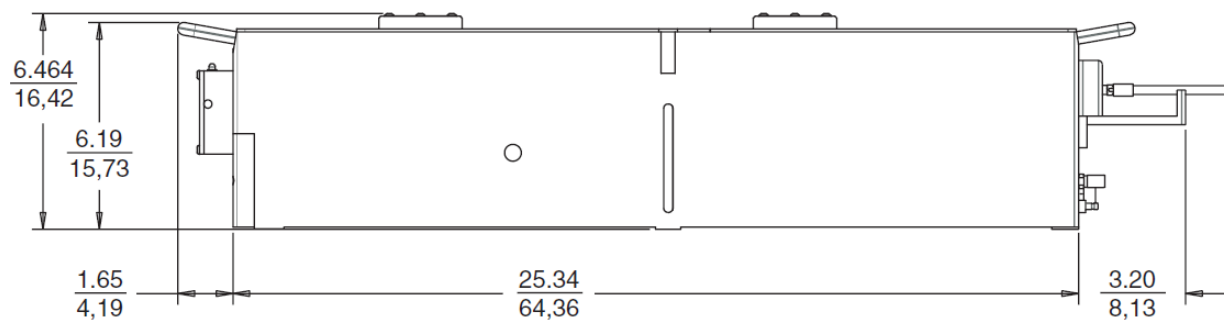
Fuse ratings for F1, F2 for the D-Series power supply

Supply Voltage	Fuses (x2, ceramic package)
100 – 240 VAC	T10 A / 250 V slow blow

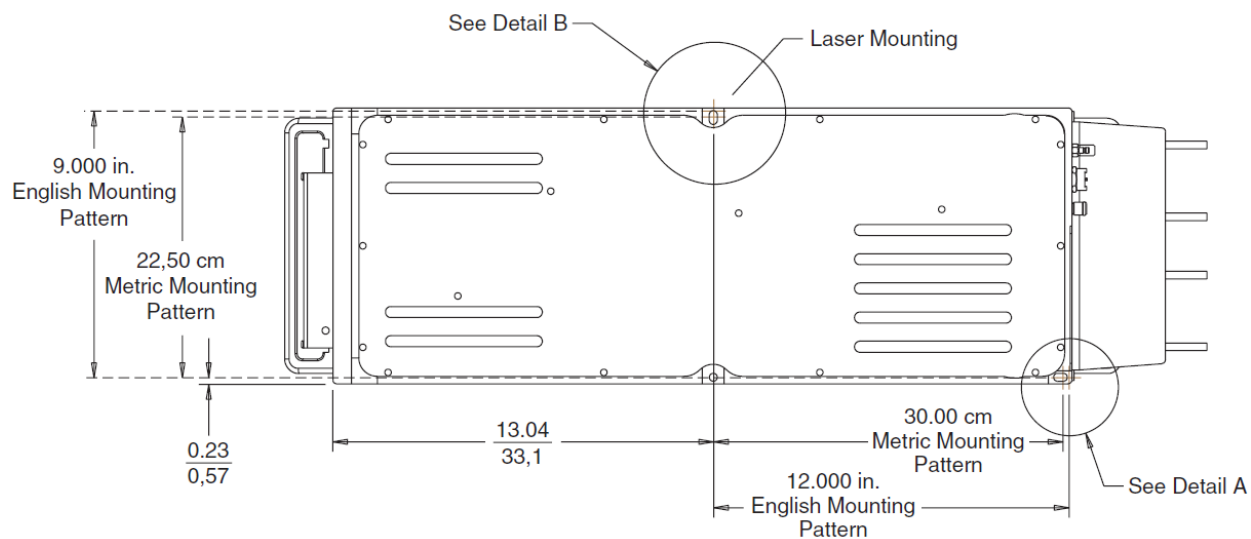
Outline Drawings

Laser Head Drawing

All dimensions in the figures are inches over mm.

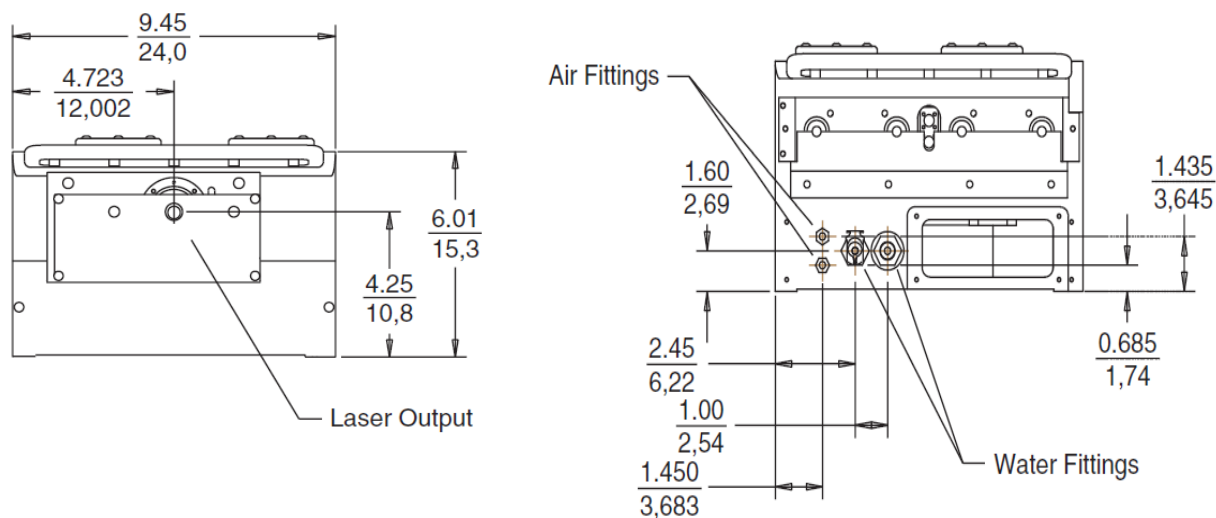


Pulseo laser head outline, side view

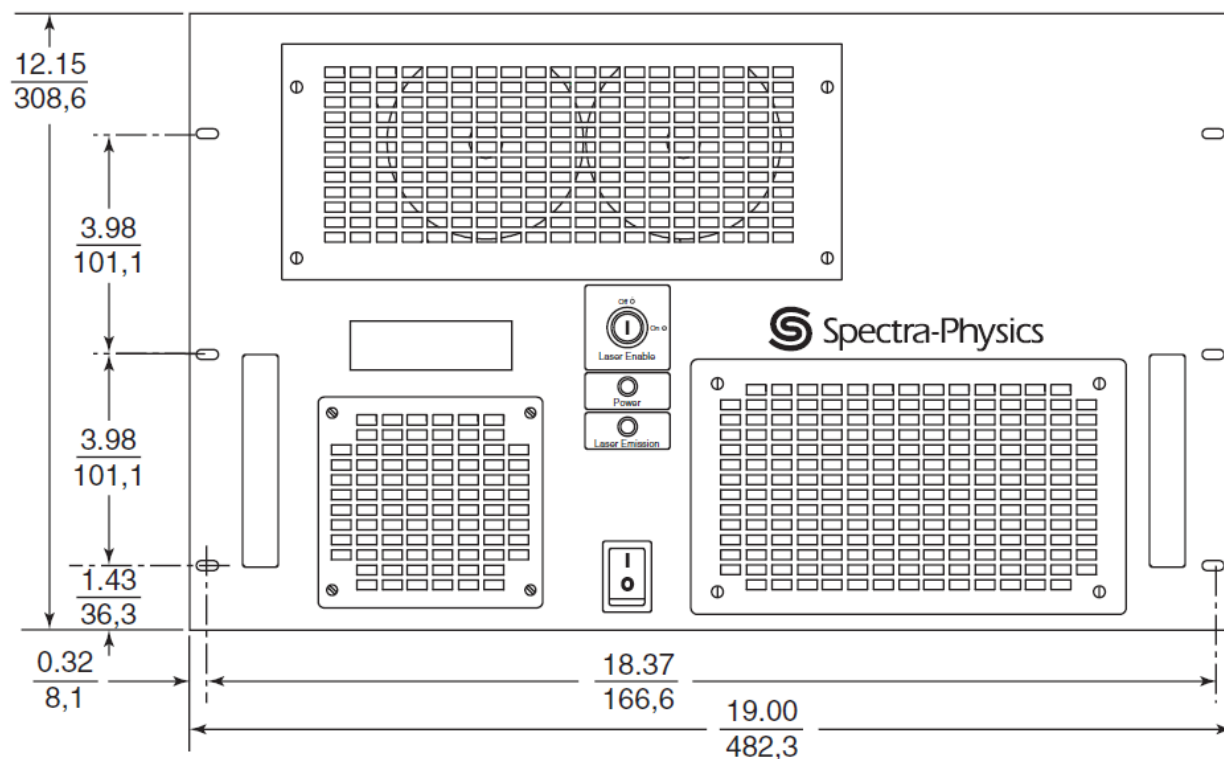


Pulseo laser head outline, bottom view

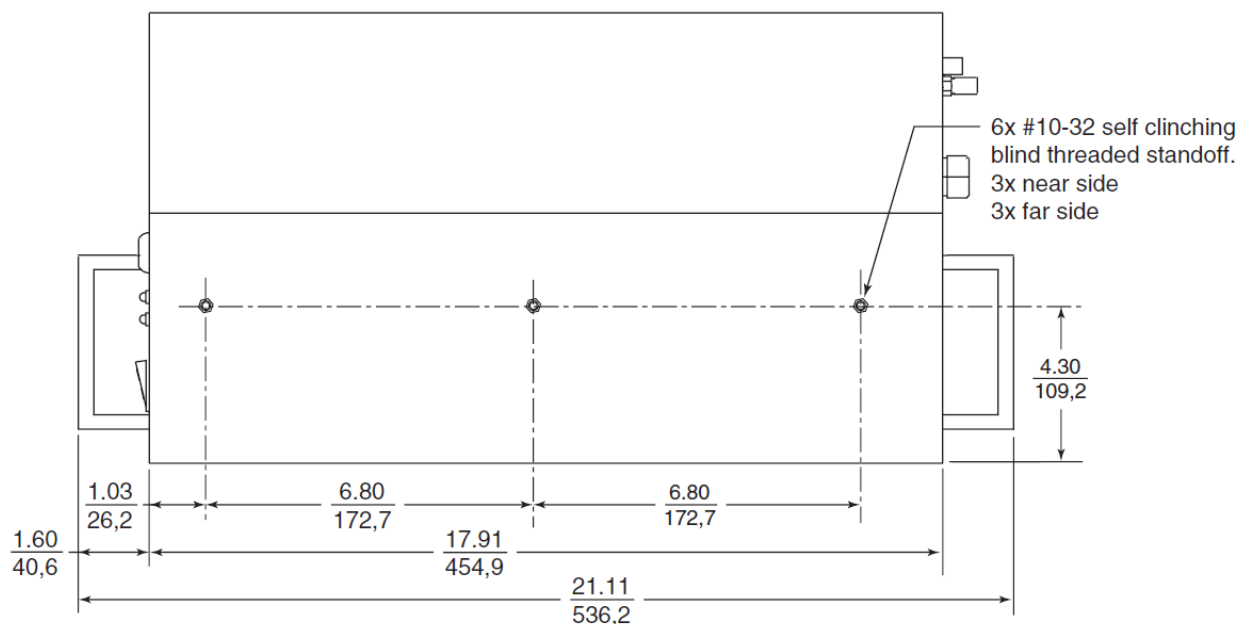
Laser Head drawing (Continued)



Power Supply Drawings



Power Supply Drawing (Cont'd)



Cooling Requirements

Chiller output specifications

Feature

Fluid temperature

Fluid flow rate

Specifications

20°C

3.8 liter/min @ 210 kPa (1 gpm @ 30 psi)

Required Maintenance:

Filter Cleaning Recommendations

Filters are located behind the access panels on the front of the power supply as shown in Figure 4-4 in the User's Manual. The lower left and right access panels have filters attached with Velcro. The frequency with which they should be cleaned depends on the operational environment. Filters should be cleaned when they become visibly dirty. Check the filters every 3-6 months to establish a cleaning frequency requirement for the environment.

Alps Filter:

Replace the Alps system once a year. Inspect the desiccant canisters every three months.

Chiller Maintenance:

Check the chiller for proper fluid levels at least once a week. Change the coolant in the reservoir every 6 to 9 months of usage.

Inspect the cooling hoses every 3 months for damage.