

# **Pre-Installation Guide For Talon Laser Systems**

Spectra-Physics  
3635 Peterson Way  
Santa Clara, CA 95054  
800-456-2552

March 2020

## 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 Talon 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:	15C 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 *Talon* 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 to the laser head to remove excess heat. Other components in the *controller* 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

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.

### *Power and cooling*

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

## Fuse Requirements

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

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

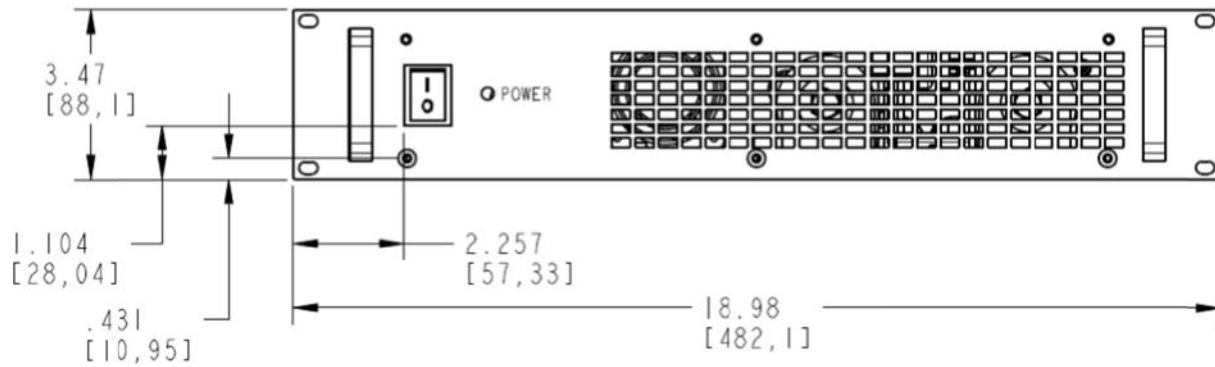
## Cooling Requirements

### *Chiller output specifications*

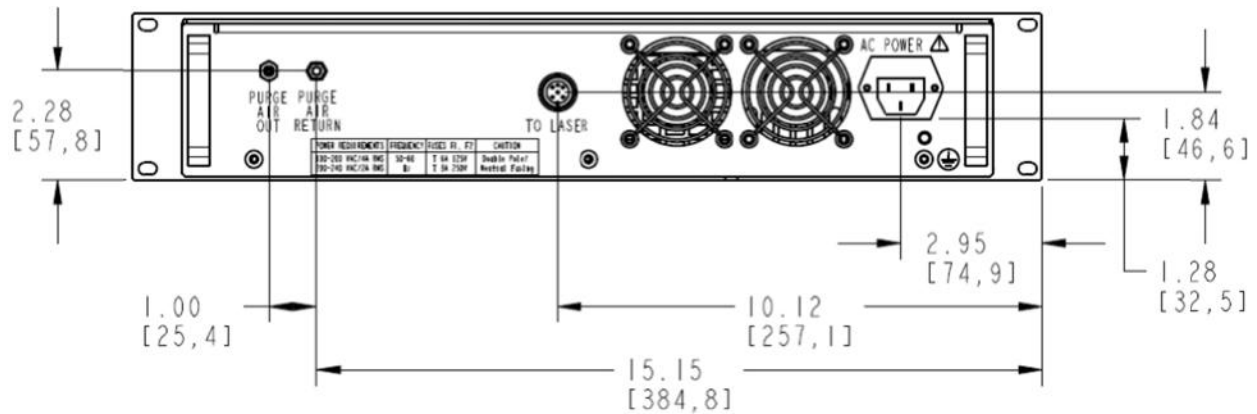
Feature	Specifications
Fluid temperature	20°C

## Outline Drawings

### Utility Module Outline Drawings

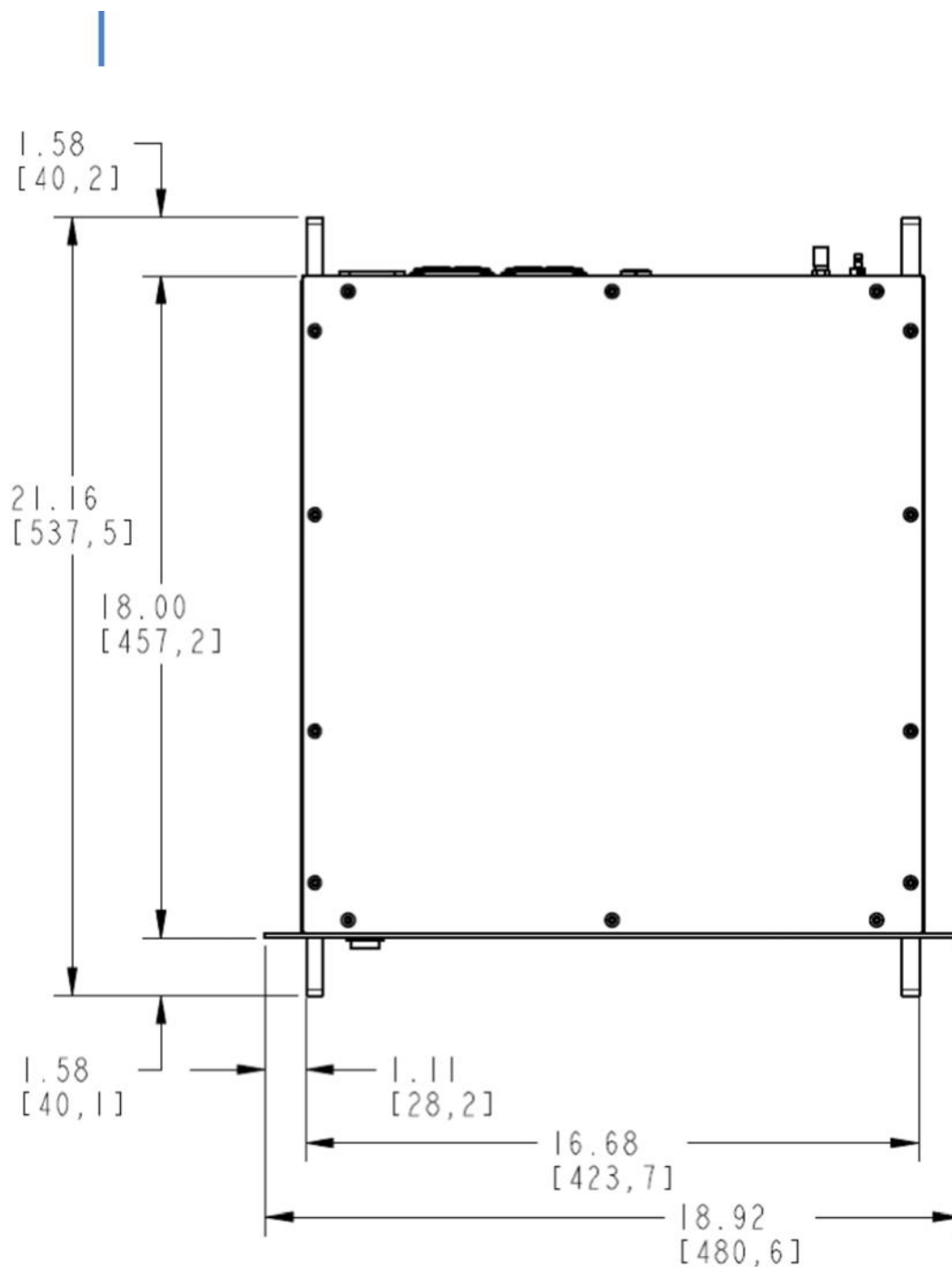


Utility Unit Front View



Utility Unit Back View

Utility Module Outline Drawings (Continued)

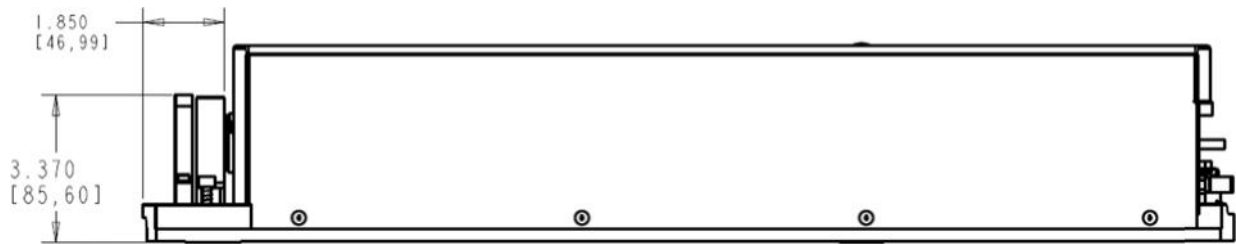


Utility Unit Top View

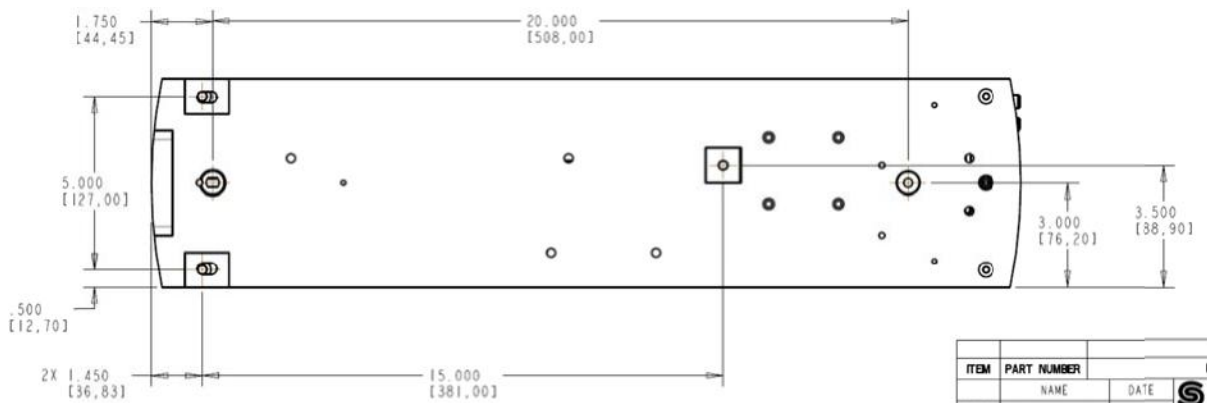
## Laser Module Outline Drawings



Top



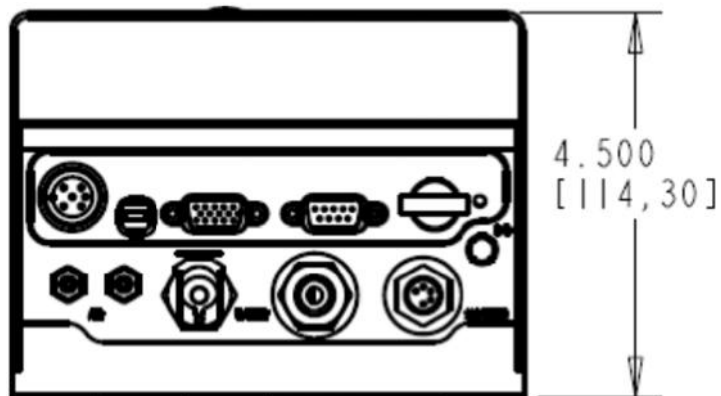
Side View with optional shutter and optional mounting plate



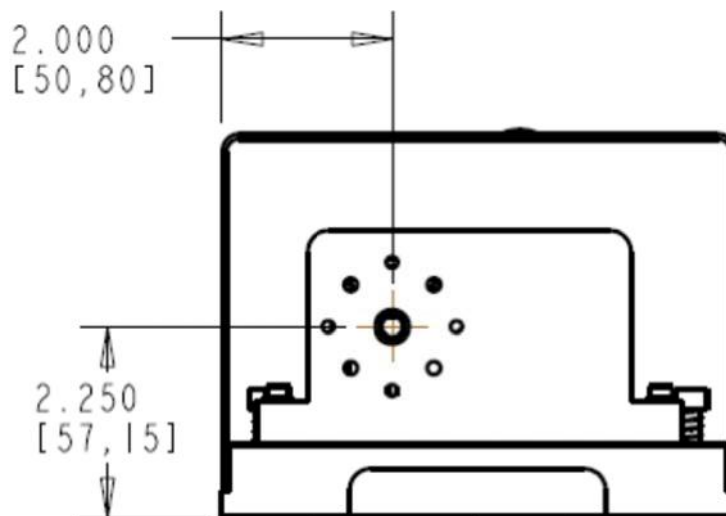
ITEM	PART NUMBER	DATE	C
	NAME	DATE	

Bottom View

Laser Module Outline Drawings (Continued)

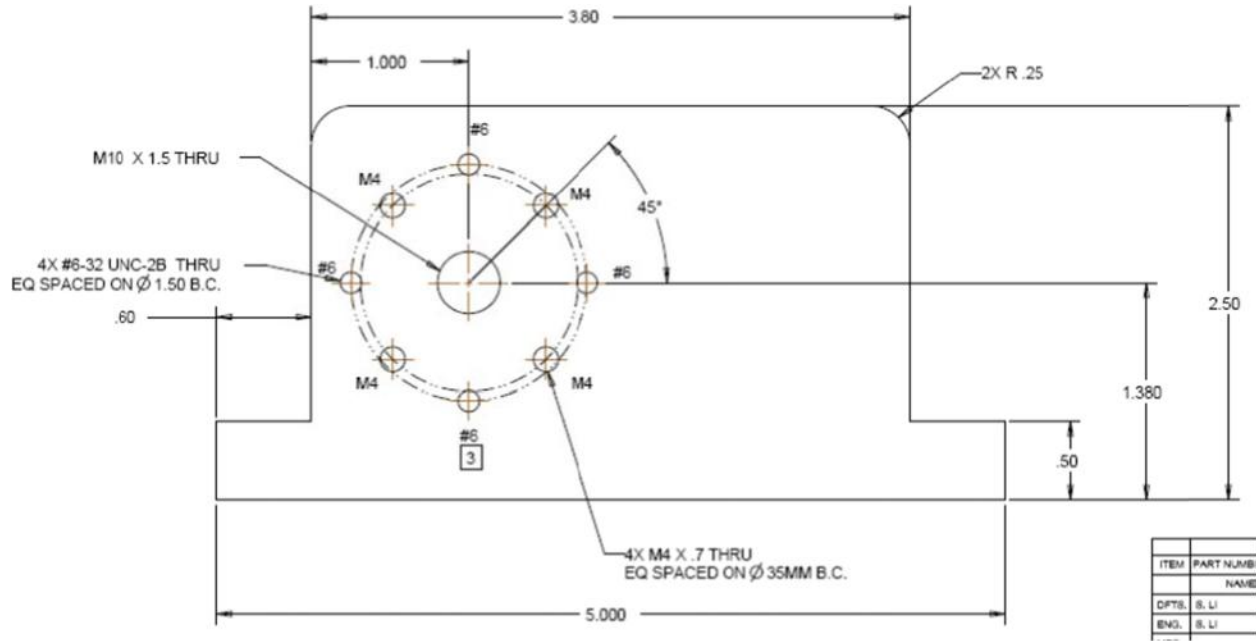


Back View



Front View with Optional Mounting Plate

Laser Module Outline Drawings (Continued)



Optional Mounting Plate



## Required Maintenance:

User replaceable window	Inspect as necessary for cleanliness of the replaceable window; cleaner operating environments should require the window to be replaced less often, establish a service replacement interval based on the environment	Replace if damaged or becomes contaminated, refer to "Replacing the User Replaceable Window."
Laser shutter	Test functionality daily	Replace if not functional, refer to "Replacing the Optional Shutter Assembly."
Air tubes	Inspect weekly	Replace if the tube becomes damaged or contaminated.
Chiller hoses	Inspect weekly	Replace the chiller hoses if leaking or other damaged occurs.
Cables and cords	Inspect weekly	Replace if damaged.
Nalco cleaner	Use to clean cooling system every six months	Refer to "Flushing and Refilling the Chiller in the User's Manual."
Nalco solution	Replace every six months	Refer to "Flushing and Refilling the Chiller in the User's Manual."
Chiller filter	Replace every six months	Refer to "Flushing and Refilling the Chiller in the User's Manual."
Active Laser Purification System (ALPS)	Replace every twelve months	Refer to "Replacing the ALPS Filter in the User's Manual."