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915nm 200W High Power MM Laser

User Manual

P/N: HPML-A20012111312

Version: 2025-5





Warning

When Emission Button is pushed down laser output will be on at the power level set last time in terms of pump current and percentage. The pump current and percentage power level can be changed through GUI and/or tuning knob on front panel.

Releasing Emission Button after operation is strongly recommended.

1 Warning

- 1) Inspect fiber cable and collimator surface prior to operation.
- 2) Use only industry approved methods, materials, and solutions for cleaning.
- 3) Always turn off the laser emission after use.

2 Summary

The front and rear panel of this laser are shown in Figure 1.

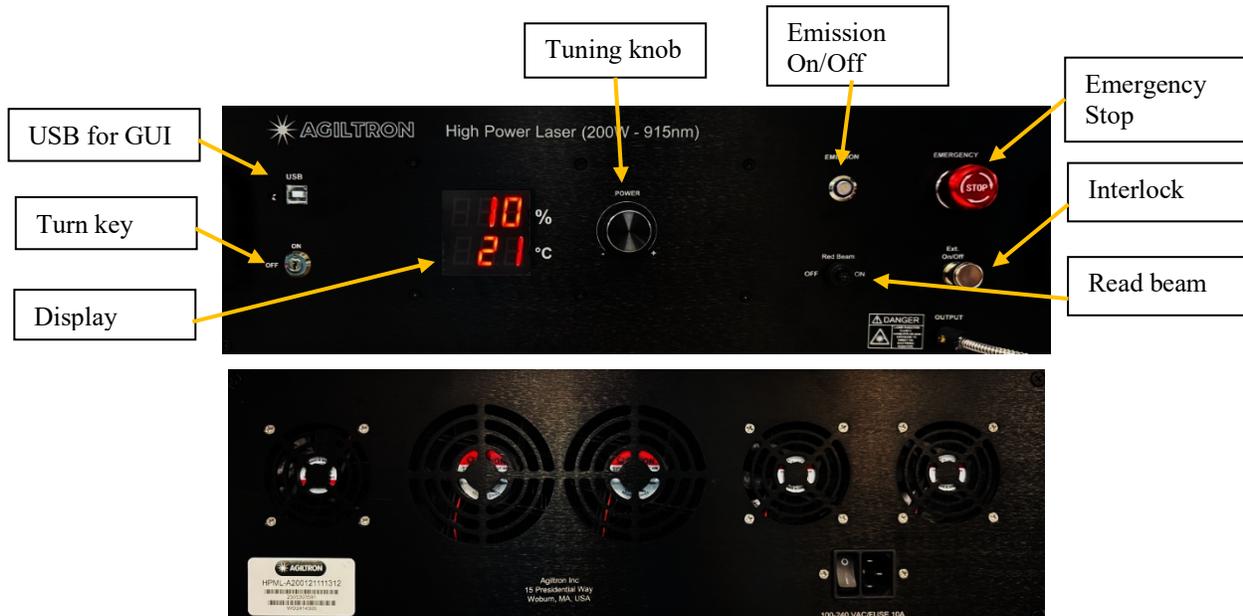


Figure 1: Front & rear panel of laser

Front Panel

- Turn key
For On/Off of pump power.
Note:
 When it is OFF USB functions are disabled.
- USB port
For GUI remote control.
- Display
 - a. Output power level in percentage at set pump current.
 - b. Pump temperature monitor.
- Tuning knob
Turn the knob clockwise and counterclockwise to increase and decrease power level in percentage, respectively.
Note:
 The actual output power level depends on this percentage and pump current setting, see Part 4 for details.
- Emission button
Enable or disable laser emission. Push it down to enable laser emission, and push it one more time to release it thus to disable laser emission.
 OFF: Dark
 ON: Lighted up in solid blue
- Emergence stop
In case of emergence push it down to disable laser output.
To resume laser output turn it clockwise.
- Red beam switch
Switch to turn On/Off red indication beam.
Note:
 When laser emission is on the red beam will be turned off automatically.
- Interlock
Short-circuit: laser emission is enabled.
Open-circuit: laser emission is blocked.
A short-circuit cap is installed as default option.

Front Panel

- The laser needs 100-240V AC power. AC port and on/off power switch locates on the rear panel.

3 Connection and Operation

Warning

- **If the laser wasn't set as 'Control Off' though GUI, then once the Emission Button lights up, even without GUI connection, it will have output at the power level set last time.**
- **The laser was set as 'Control OFF' in factory.**

- 1) Plug the AC power cord into the receptacle on the rear panel of the module, and connect to 100-240V AC power source.
- 2) Check output fiber cable to ensure there is no sign of damage.
- 3) Check output collimator surface to ensure it is clean.
- 4) Connect the USB port on the front panel to a computer by using the USB cable coming with the laser.
- 5) Place and fix the output collimator at desired place.
- 6) Remove the protection cap of the output collimator.
- 7) Turn AC power on by using the rocker switch on the rear panel.
- 8) Switch the Turn Key to 'On' position, then the display of laser power percentage setting and pump temperature will be lighted up.
- 9) Turn the Red Beam switch on to produce a red beam to locate the expected location of the laser. Adjust the position of the output collimator if necessary.
- 10) Ensure the Emergency Button is released.
- 11) Ensure the interlock is shorted.
- 12) Run Laser_913nm.exe on host computer.
- 13) Set current limit and power percentage in GUI, see Part 4 for details.

Pump current limit range: 1 ~ 22A

Power percentage range: 0 ~ 100%

Note:

The power percentage setting 0%~100% corresponds to pump current 0A ~ current limit.

For example, pump current limit is set as 8A, then only when the power percentage is set at 100% the actual pump current can reach 8A. For any other power percentage settings that is less than 100%, the actual pump current will be less than 8A.

There is a threshold for pump current. If pump current setting is lower than the threshold, the output power might be unstable.

- 14) Click 'Control ON'.
- 15) Push the Emission button down to turn on laser emission. The Emission Button will be lighted up in solid blue. Now the laser will have output power if it wasn't set as 'Control Off' in GUI last time.
- 16) The laser output power will be presented in percentage on the front panel display, as well as pump temperature.
- 17) Remote software control (GUI) provided can be used for getting laser status, changing output power, saving setting, etc. See Part 4 for details.
- 18) To turn off laser, push the Emission button to release it. The Emission Button will turn dark.

For safety, click 'Control Off' in GUI. Disconnect the host computer from the laser.

Switch Turn Key to Off position.

Turn off AC power.

4 Software Instruction

Note:

USB to COM driver for the device needs to be installed on the host computer for remote control. The FTDI driver can be found on the USB flash drive that accompanies the laser.

- 1) Run 'Laser 913nm.exe' to install remote control GUI on host computer. Turn on Emission on the front panel to power up the whole unit and enable USB functions.
- 2) Run Laser GUI.

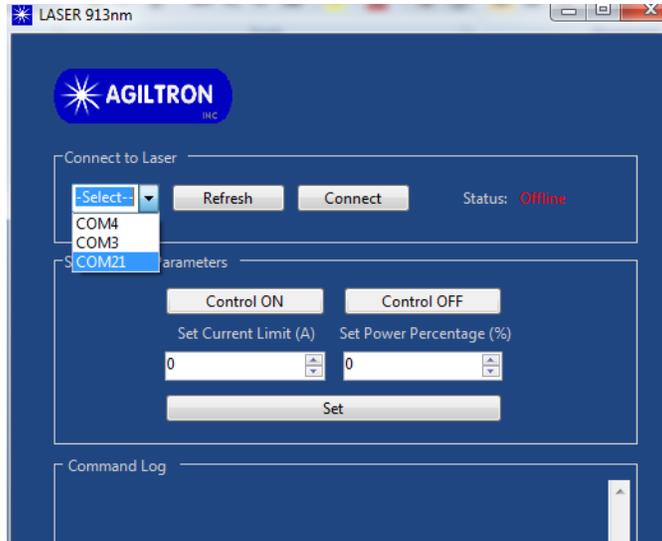


Figure 2: Remote control software: COM port selection

- 3) Select the COM port of the laser.

If the COM port of the laser doesn't show up, click 'Refresh' button to update the COM port list.

Click 'Connect' button to connect the host computer to the laser.

- 4) Set pump current limit 1~22A.
- 5) Set output laser power level in percentage.

This laser power percentage corresponds to the pump current limit setting. The actual pump current reaches the value of set current limit when power percentage setting is 100%.

- 6) Click 'Set' button to save and apply the settings.



7) Laser ON/OFF

Click 'Control ON' button to turn on laser output.

Click 'Control OFF' button to turn off laser output.

Note:

Laser output will be enabled only when all the following hardware status is met.

- Turn key: at 'On' position
- Emission button: pushed down & lighted up in solid blue
- Interlock: shorted
- Emergency button: pulled up.



8) Save Settings

All inputs will be automatically saved in the laser once 'Set' button is clicked, including 'Laser ON/OFF' status. When 'Emission' button is turned on next time, even without GUI control, the laser will start to run at the saved settings.