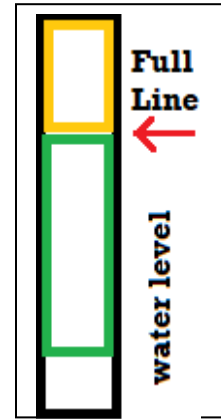


Lightobject Fiber Laser Water Chiller Instructions

Please read the instructions below before using the chiller.

Startup procedures

- 1) Remove the cap on the back and slowly pour in distilled water until the water level reaches below the “Full” line. This ensures accurate temperature reading and high cooling efficiency.
- 2) Connect the chiller’s water outlet to the laser machine’s water inlet. Connect the chiller’s water inlet to the laser machine’s water outlet.
- 3) Make sure the power button is off. Connect the protection ground wire. Connect the AC power cord from the back of the chiller L&N to a wall mount AC outlet. The two thin wires on the left H1 and H3 are optional alarm output.
- 4) Power up the chiller. Check the water flow direction. Check for any leaks.



Operation

Before using the laser, set the water temperatures to the recommended temperatures for the laser machine. When the chiller power is on, water pump is always running. The chiller will try to maintain water temperature to the Set Value within +/-one degree. There is a heater connected to the 6mm outlet, so its temperature is higher than the water from the 12mm outlet. The refrigerant split valve will open when water temperature drops below set temperature. It will close again when water temperature rises above SV+FB. The purpose of this valve is to keep the water temperature relatively constant during the use of the laser.

Alarm

- 1) **Water is not flowing.**
Loud beeping. The water flow sensor is installed behind the 12mm outlet.
- 2) **The current water temperature is too high/low.**
Loud beeping. Press esc button to turn off alarm. Make sure the alarm temperatures are correct.

The H1 and H3 alarm pins become open circuit when alarm occurs. Closed circuit when chiller is running normally.

Chiller Control Instruction



L-PV is the 12mm outlet water temperature. H-PV is the 6mm outlet water temperature.

SV: set target water temperature

FB: for controlling refrigerant valve

Hold the set button for 4seconds to get into menu. Press esc after changing parameters.

Parameters implemented under menu:

Set temperature: SV (note here the “Low” means low flow rate for the 6mm outlet)

Temperature unit: C/F

High/low water temperature for alarm

System reset: change parameters and language back to factory setting

Cautions and Conditions

- 1) Water pump can be damaged when running without water.
- 2) Air filters on the side doors must be cleaned regularly. Unscrew the screws and push the side panel down, then pull it out. Leaves space around the chiller for proper ventilation.
- 3) Distilled water is recommended to prevent bacterial growth. Change the water every 3 - 6 months, or before water gets dirty.
- 4) **Do not power on immediately after powering off the chiller, it could trip breaker.** Please wait for about 30 seconds.
- 5) To avoid water back flow from the machine when draining, drain water from the bottom of the chiller at the drain plug first.
- 6) Drain out water before transportation. Do not lay the chiller on the side or put it upside down.

Specification

Water Inlet/Outlet outer diameter: 6mm&12mm

Recommended Ambient Temperature: $\leq 35^{\circ}\text{C}$ (95°F)

Recommended Water Temperature setting: $20\sim 28^{\circ}\text{C}$

Built-in water flow alarm and high temperature alarm

Trouble Shooting

1) **Chiller does not turn on when switch is on.**

Check if the L and N pins are getting 220V. If yes, disconnect power, then check the contactors and relay behind the controller.

2) **Chiller does not cool down the water to target temperature.**

Quick Check: Turn off the laser power and see if the chiller can cool down the water. If it does, it means the chiller is still functioning but not able to cool down high water temperature.

- a) Make sure you are using the appropriately sized water chiller for your laser tube power. If not, you may need to upgrade to a higher power water chiller.
- b) If your compressor's performance is getting worse, it could potentially be that there is not enough refrigerant left in your water chiller.

3) **Chiller does not cool down water the first time I use it.**

The fans and compressor should be running when the chiller is cooling water. If it does not function as intended, turn off the chiller and seek assistance from LightObject. Repair or replacement might be needed to prevent damage to your laser source.

4) **The water flow alarm shows up but I don't see any kink.**

Connect the water inlets directly to the water outlets of the chiller. If the alarm is gone, it could be the water line in the laser machine has kink.