LASER COOLING UNIT PS1223CO

FEATURES

- *Water-to-water cooling unit in 19" rack mount stainless steel case*
- *Cooling capacity 0–5 kW (at temperature difference 10 °C)*
- *PID controller based temperature regulation in range 15–35 °C, better than 0.1 °C stability*
- *Smooth supply water flow regulation by proportional valve*
- *Controlled deionizer maintains constant coolant conductivity (preset in range 1...100 µS/cm)*
- *Easy replaceable particle filter, accessed from front panel*
- *Coolant pressure can be reduced using Bypass valve*
- *Graphic display*
- *Overheat, overpressure, low flow, low coolant level warnings and error stop, error indication by LED, beeper, display, interlock connector, remote control interfaces*
- *Optional USB, Ethernet interface for installation adjustment and remote control*
- *Optional RS232, CAN interfaces*

Cooling unit PS1223CO is second generation of water-to-water cooling units designed for flashlamp-pumped lasers. Microcontroller operated PS1223CO has better performance than PS1222CO while maintaining full backward compatibility.

PID controller smoothly regulates water flow thru heat exchanger maintaining high stability of output temperature in a wide range of removed heat (*Fig. 1*). Temperature of coolant at output, return, tank and water supply, coolant flow, pressure, tank water level and conductivity are measured. Using this data microcontroller stabilizes output temperature, estimates removed heat, generates early warnings and errors. All data can be accessed by any of interface: USB, Ethernet or optional RS232, RS485, CAN. Test and adjustment utility program for Windows is included (for use with USB interface).

Coolant flow and output pressure can be adjusted manually using bypass valve, located inside unit (*Fig. 2*).

Maximum heat removal capability of the PS1223CO depends on temperature difference between coolant output temperature and supply water temperature (*Fig. 3*)

SPECIFICATIONS

Model	PS1223CO
Cooling capacity at dT=10 °C*	4 kW
Output temperature regulation	±0.1 °C, (typ. ±0.05 °C)
Stabilization temperature range	15–35 °C
Coolant flow range	1–6 l/min
Maximum output pressure with bypass valve closed, zero flow	3.0 Bar
Coolant	deionized or distilled water
Coolant reservoir capacity	3.5 l
Maintained coolant conductivity	1..100 µS/cm
Required water supply pressure	1–8 bar
Required water drain pressure	<0.3 bar
Mains	single phase 180–250 V, 50/60 Hz
Power consumption	<200 W
Size	19" 4U, depth 500 mm max
Weight	<20 kg

** Cooling capacity is limited by Supply water consumption.*

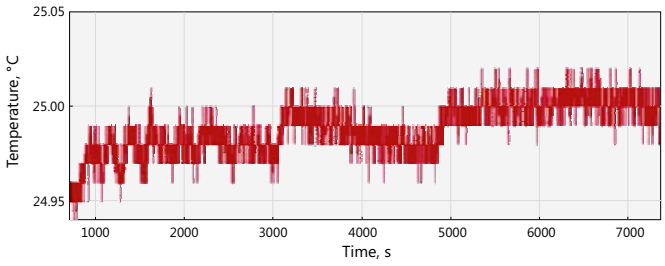

Fig. 1. Output temperature stability

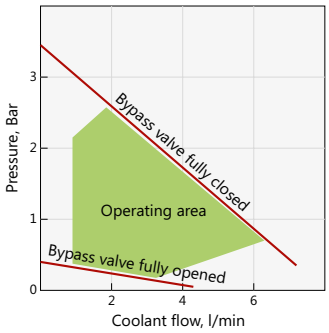

Fig. 2. Coolant pressure and flow – operating limits

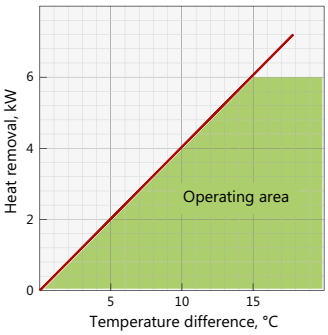

Fig. 3. Heat removal capability

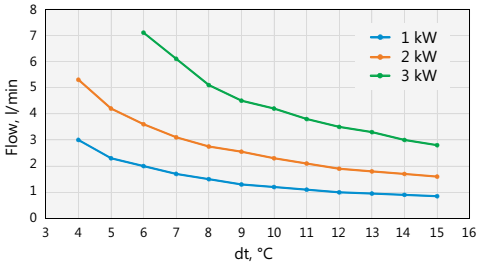

Fig. 4. Water supply requirement depending on cooling power and temperature difference