

Laser Cooling unit

PS1223



FEATURES

- Water-to-water cooling unit in 19" rack mount stainless steel case
- Cooling capacity 3 kW
- PID controller based temperature regulation in range 15 – 45 °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
- USB, Ethernet LAN interface for installation adjustment and remote control
- Optional RS232, RS485, CAN interfaces

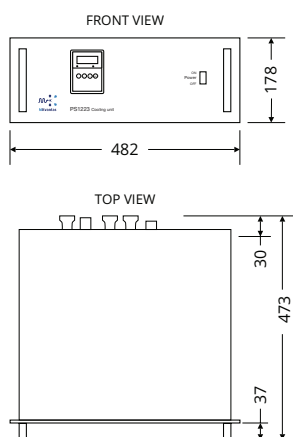


Fig. 1. Dimensions



Fig. 2. Control Panel

Cooling unit PS1223 is a water-to-water cooling unit designed for flashlamp-pumped lasers.

PID controller smoothly regulates water flow thru heat exchanger maintaining high stability of output temperature in a wide range of removed heat (Fig. 3). 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 LAN or optional RS232, RS485, CAN. Test and adjustment utility program is included (for use with USB interface).

Coolant flow and output pressure can be adjusted manually using bypass valve, located inside unit (Fig. 4).

Maximum heat removal capability of the PS1223 depends on temperature difference between coolant output temperature and supply water temperature (Fig. 5)

As standard front and rear panels are powder coated in RAL7035 (Light Grey). RAL7021 (Black Grey) and RAL9002 (Grey White) are possible upon request.

All set of power supply and cooling units can be mounted to 19" standard racks (sold separately). More about Mounting Racks – page 12 (Accessories).

SPECIFICATIONS

Model	PS1223	
Cooling capacity ¹	3 kW	
Output temperature regulation	±0.1 °C, (typ. ±0.05 °C)	
Stabilization temperature range	15–45 °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	2.6 l (± 5%)	
Maximum coolant capacity ² (filled system)	3.3 l (± 5%)	
Maintained coolant conductivity	1..100 µS/cm	
Required water supply pressure	1–8 bar	
Required water drain pressure	<0.3 bar	
Mains	single phase 220V AC (-10%, +15%) 50/60Hz	
Power consumption	<200 W	
Size	19" 4U, depth 500 mm max	
Weight	<20 kg	
Operation conditions		
Ambient temperature	Storage	from +5 to +50 °C
	Operation	from +15 to +40 °C
Humidity	below 80 % non condensing	
Protection class	IP20	

¹ Cooling capacity is limited by supply water consumption.

² The actual capacity depends on laser head volume, pipe length and size.

Contact MKvantas if your requirements are different as in this table. We will consult you and make suggestion best matching your requirements.

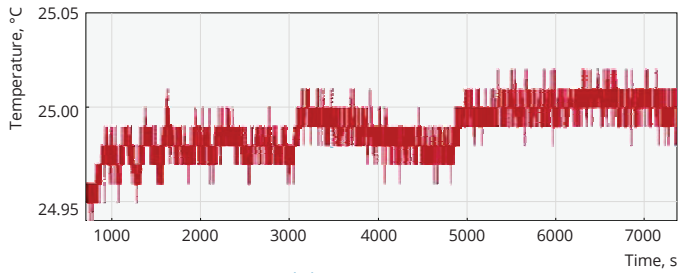


Fig. 3. Output temperature stability

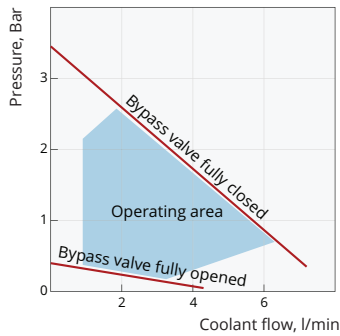


Fig. 4. Coolant pressure and flow – operating limits

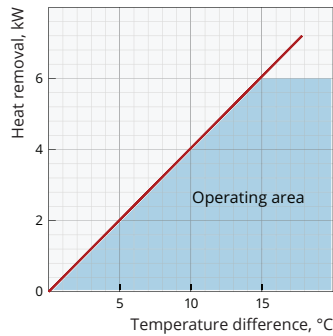


Fig. 5. Heat removal capability

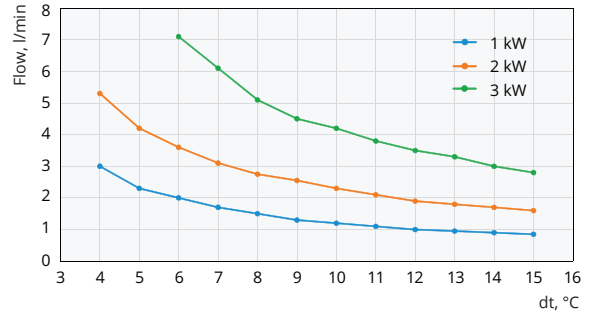


Fig. 6. Water supply requirement depending on cooling power and temperature difference

Ordering code

PS1223-B

Model |

Remote control options:
 B – USB, Ethernet LAN
 V – USB, Ethernet LAN, RS232, CAN

Customized orders

Depending on customers needs, we can offer air-to-water cooling units with specified parameters.