

DESCRIPTION

The TP102-OBJ is an objective temperature controller that provides precise heating and cooling to **maintain sample temperature during oil immersion microscopy**. An adjustable mounting mechanism accommodates **multiple objective sizes**, making the system easy to integrate into existing microscopy platforms. Thermoelectric (Peltier) **heating and cooling provide bidirectional temperature control from -20°C to +90°C**, while the mK2000 Precision Temperature Controller delivers accurate PID temperature regulation and seamless integration with other Instec thermal products.



Figure 1. TP102-OBJ mounted on an objective.

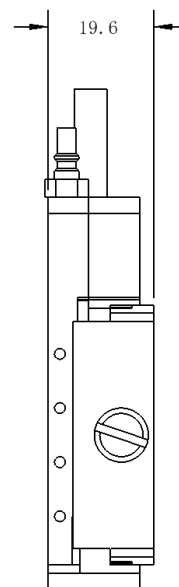
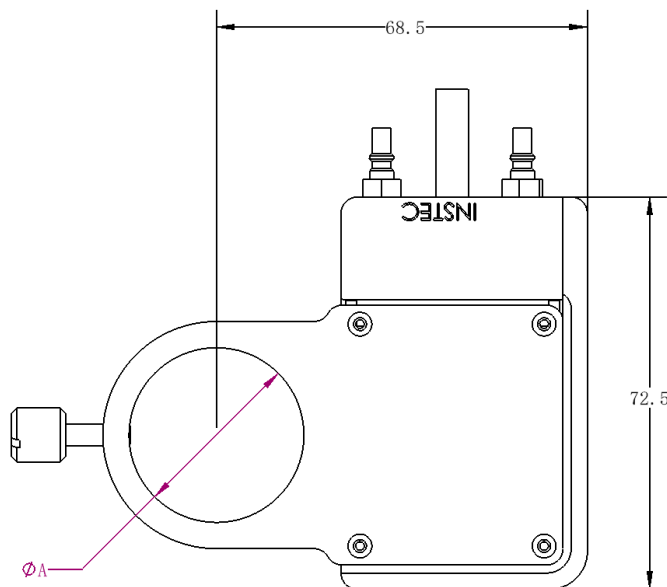
KEY FEATURES

Thermoelectric Heating and Cooling

TEC heating and cooling provides exceptional temperature stability and range without the need for consumable coolant. Heat up to 90°C and cool down to -20°C with the required [CW3000 Chiller](#).

Accuracy and Stability

A pt100 platinum RTD sensor is embedded into the plate to guarantee high temperature accuracy and stability.



Additional Features

- Includes standalone [mK2000](#) temperature controller.
- Includes 'InstecApp' Windows software for optional operation via PC.
- Options for 29.5mm, 30.5mm, and 32mm objectives, with custom options available.

Figure 2. TP102-OBJ dimensions in millimeters.

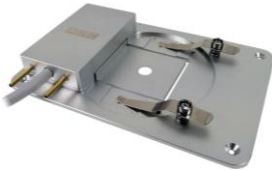
THERMAL SPECIFICATIONS

Temperature Control	mK2000 with bidirectional LVDC output
Thermal Block	Clear anodized aluminum
Minimum Temperature	-20°C with standard water circulator
Maximum Temperature	90°C
Temperature Sensor	100 Ω Platinum RTD
Maximum Heating Rate	+20°C per minute at 37°C
Maximum Cooling Rate	-10°C per minute at 37°C
Minimum Heating and Cooling Rate	$\pm 0.01^\circ\text{C}$ per minute
Temperature Resolution	0.01°C
Temperature Stability	$\pm 0.05^\circ\text{C}$
Power supply	Universal power input – 150W max (Not including water-cooling accessories)
Software	Windows software to record and export temperature vs time data

STRUCTURAL SPECIFICATIONS

Objective Diameter Options	$\varnothing 29.5\text{mm}$, $\varnothing 30.5\text{mm}$, $\varnothing 32\text{mm}$, or custom
Frame Cooling	Integrated TEC cooling when paired with CW3000 Chiller .
Frame Dimensions	100mm x 90mm x 17mm
Weight	400g

PAIRS WELL WITH THE FOLLOWING INTEC STAGES

	TS102/TS102XY	TS102S	TS102Si
			
Temperature Range	-40°C to 120°C	-30 to 120°C	-30°C to 120°C
Inverted Compatibility		X	X
Sample Area	40mm x 40mm	45mm x 45mm	$\varnothing 35\text{mm}/ 24\text{mm} \times 75\text{mm}$
Sample Cooling	TEC	TEC	TEC
Thermal Block	Aluminum	Aluminum	Aluminum

CONTACT A REPRESENTATIVE

