

# Crystal Ovens

Many of widely used nonlinear crystals are susceptible to ambient humidity, for example KD\*P, BBO, LBO. Protective coatings applied to the surface can reduce degradation to some extent only. To improve the protection of surfaces of the crystals from the degradation it is desirable to keep the crystals at higher than ambient temperature, which helps avoid condensation on the crystal surfaces.

In addition, if the crystal is used for harmonics generation, the phase-matching angle depends on crystal temperature. For example, the output power of second harmonics generator based on KD\*P crystal can decrease by 50 % if the crystal temperature changes just by one degree, hence for good laser stability precise crystal temperature stabilization is necessary.

## TEMPERATURE CONTROLLER TC2 WITH OVEN CO1 – TC2 / CO1

TC2 and CO1 is high temperature set (up to 200 °C) consisting of thermocontroller TC2 and crystal oven CO1. TC2 has two independent outputs and can control two CO1-30 ovens simultaneously. Controller is equipped by LAN and USB computer control interfaces.

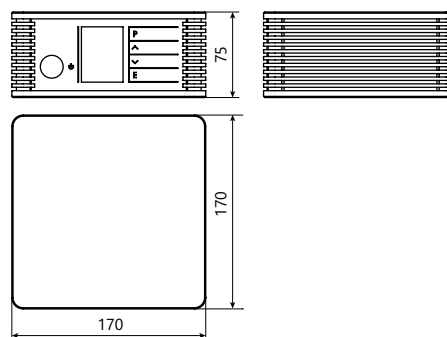
The nonlinear crystal is mounted into adapter before insertion into oven CO1. Such design facilitates handling and replacement of the crystal. The nonlinear crystal can be sealed with fused silica windows in order to provide extra protection. The standard adapters are 30 and 50 mm length with apertures of 3×3, 4×4, 5×5, 6×6 mm and up to 12×12 mm size. Oven is delivered with one, customer's specific size of adapter. Adapters for different sizes can be ordered separately.



## Specifications

MODEL	TC2 + CO1-30	TC2 + CO1-50
Quantity of ovens possible to connect to one controller TC2	2	
Temperature tuning range	RT – 200 °C	
Maximum crystals dimensions	12×12×30 mm	12×12×50 mm
Sealing (optional)	FS windows (operation wavelength must be specified before ordering)	
Temperature tuning step	0.05 °C	
Accuracy	± 0.5 °C	
Long-term stability	± 0.05 °C	
Control interfaces	LAN, USB	
Mains	90–264 V, 47–66 Hz	
Power consumption	< 50 W	
Dimensions, DiaxD	Ø52×52 mm	Ø52×72 mm

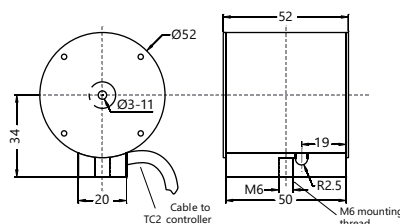
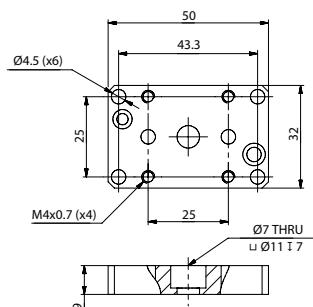
Specifications are subject to changes without advance notice.



Temperature controller TC2 outline drawing

## Related products

Adapter MS-4 for CO1 mounting on tilt stage



Crystal oven CO1-30 outline drawing

## COMPACT OVEN FOR NONLINEAR CRYSTALS – Heatpoint

Heatpoint is a compact round oven designed for heating and thermo-stabilization of humidity sensitive nonlinear crystals. Temperature of the oven can be adjusted in 25 – 70 °C range using a small thermocontroller attached on a wire. Heatpoint ovens exhibit precise long-term stability and are ideal for keeping nonlinear crystals at their optimal operational temperature, preventing moisture condensation on crystal's faces.

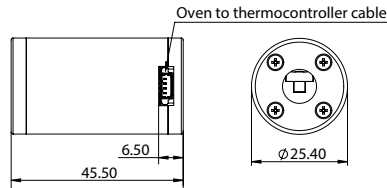
Because of their compact design, Heatpoint ovens can be easily installed into tight spaces. These ovens can be mounted in any standard one-inch optics positioning mount.

Heatpoints are available in two sizes: HP15 accepts crystals up to 15 mm in length, while slightly longer HP30 fits crystals up to 30 mm in length. The exact aperture of the crystal must be specified when ordering, as a special adapter is made for the installation.

Each oven is made exactly for specific crystal aperture size, so it cannot be used for different size crystals.



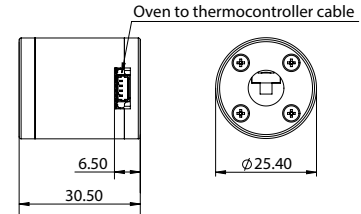
Heatpoint HP30



HP30 dimensions



Heatpoint HP15



HP15 dimensions

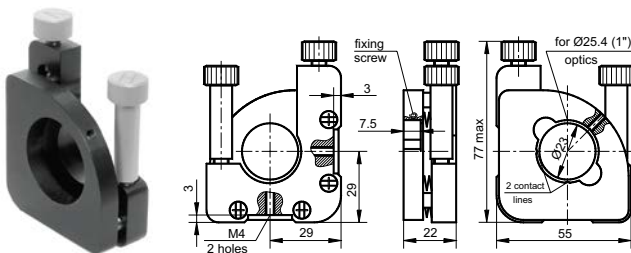


Heatpoint HP30 with thermocontroller

## Specifications

MODEL	HP15	HP30
Crystal length (max)	15 mm	30 mm
Crystal aperture (max)	6 × 6 mm	
Temperature tuning range	25 – 70 °C	
Temperature tuning step	0.1 °C	
Long-term stability	± 0.1 °C	
Temperature ramp rate	3 °C/min	
Powering requirements	12 V DC	
Power consumption (P <sub>MAX</sub> )	6 W	
Power connector	2.1/5.5 mm	
Power adaptor (included)	90 – 264 V AC, 47 – 66 Hz, 12 V DC	
Dimensions (oven)	Ø 25.4 × 30.5 mm	Ø 25.4 × 45.5 mm
Dimensions (thermocontroller)	60 × 14 × 7.5 mm	
Distance (wiring length) from oven to thermocontroller	250 mm	

## Related products



Positioning mount 840-0193

## OVEN FOR NONLINEAR CRYSTALS – CH8

CH8 is compact oven with built-in thermocontroller for nonlinear crystals to keep them at stabilized temperature in range 30...80 °C. It is ideal for larger aperture crystals like KD\*P. The crystals with up to 15 × 15 mm dimensions can be mounted. Each oven is made exactly for specific

crystal aperture size, so it cannot be used for different size crystals. CH8 crystal oven can be used with temperature preset at the factory or customer has the possibility to adjust temperature in the range 30 – 80 °C via CAN interface.



### Specifications

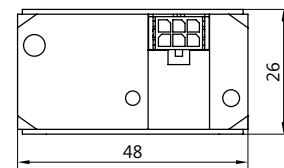
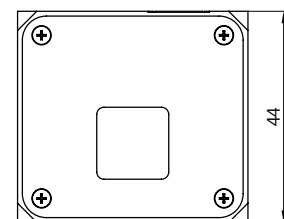
MODEL	CH8-20	CH8-30	CH8-50
Temperature range	30 – 80 °C		
Maximum crystals dimensions	15×15×20 mm	15×15×30 mm	15×15×50 mm
Temperature stability	better than ± 0.05 °C		
Power consumption	<6 W	<6 W	<9 W
Control interface	CAN		
Crystal center position above pad	16 mm		
Dimensions, W×H×D	48×44×26 mm	48×44×36 mm	48×44×56 mm

Specifications are subject to changes without advance notice.

### Ordering information

CODE *	DESCRIPTION, FEATURES
<b>OVENS WITH PRESET TEMPERATURE (must be specified before ordering)</b>	
CH8-20-y/y-PS	CH8 oven (crystal length up to 20 mm) with power supply
CH8-30-y/y-PS	CH8 oven (crystal length up to 30 mm) with power supply
CH8-50-y/y-PS	CH8 oven (crystal length up to 50 mm) with power supply
<b>OVENS WITH ADJUSTABLE TEMPERATURE CONTROL (30 – 80 °C)</b>	
CH8-20-y/y-CAN	CH8 oven (crystal length up to 20 mm) with CAN-USB converter and power supply
CH8-30-y/y-CAN	CH8 oven (crystal length up to 30 mm) with CAN-USB converter and power supply
CH8-50-y/y-CAN	CH8 oven (crystal length up to 50 mm) with CAN-USB converter and power supply
<b>MOUNTING ACCESSORIES</b>	
MS-1	Two axis tilt adjustment 5 degrees range

\* y/y – indicates crystal size, sizes 3×3, 4×4, ..., 15×15 mm are standard.



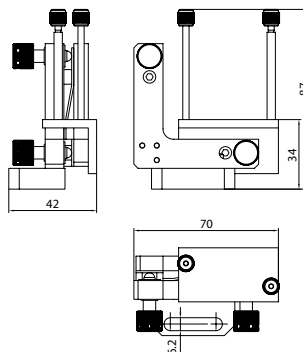
CH8-20 dimensions

### Related products

Mounts for fine tuning of CH8 crystal ovens angle. The tuning range is ± 2.5°.



Mount MS-1



Mount MS-1 outline drawing