

## Nonlinear crystal oven

Nonlinear crystal (NLC) materials which are used in higher laser frequency generation requires phase matching to be kept in stable temperature conditions, therefore crystal holder plays key part in this role. To avoid temperature drift, issues with water absorption for hygroscopic crystals, temperature of NLC needs to be controlled by a stable crystal oven.

The Digital Thermo Control (DTC) nonlinear crystal oven models **DTC-A**, **DTC-B**, **DTC-C** and **DTC-HT** have excellent temperature control stability of  $\pm 0.1^{\circ}\text{C}$  in the range of  $30\text{--}71^{\circ}\text{C}$ , at the same time assuring precise and stable mechanical angle-tuning construction. The new DTC-HT model The DTC-A model ovens are designed and recommended for crystals with apertures  $2\times 2$ ,  $3\times 3$ ,  $4\times 4$ ,  $5\times 5\text{mm}$  and length up to 30mm.



The DTC-B is specified for crystals with apertures  $6\times 6$ ,  $8\times 8$ ,  $10\times 10$ ,  $12\times 12$  and  $15\times 15\text{mm}$ , length up to 30mm.

Larger aperture size and length nonlinear crystals are supported by DTC-C oven.

The DTC-HT model designed for high, up to  $220^{\circ}\text{C}$  temperature application. The standard model accepts crystals for up to  $25\times 25\text{mm}$  apertures composition.

On request we can manufacture ovens for crystals with aperture up to  $>60\times 60\text{ mm}$  or even bigger. Each oven model is optimized for best performance at up to specified crystal aperture sizes.

Temperature settings are stored in internal memory of thermos-controller and can be easily changed via USB cable via Geola Thermo-Tool software provided along with any of DTC oven model.

After temperature is set and DC 24V power supply is applied, oven works in completely autonomous regime (DTC doesn't require any cable connection with PC).

## Typical Specifications\*

Specification	Value			
Temperature stability	$\pm 0.1^{\circ}\text{C}$			
Preset temperature range	DTC-A	DTC-B	DTC-C	DTC-HT
	$25\text{--}71^{\circ}\text{C}$			$25\text{--}220^{\circ}\text{C}$
Temperature set precision	$\leq \pm 0.1^{\circ}\text{C}$			
Default angle adjustment tilt <sup>1</sup>	$\geq \pm 3^{\circ}$			
Crystal aperture size <sup>2</sup>				
DTC-A	$2\times 2\text{mm}$ , $3\times 3\text{mm}$ , $4\times 4\text{mm}$ , $5\times 5\text{mm}$			
DTC-B	$6\times 6\text{mm}$ , $8\times 8\text{mm}$ , $10\times 10\text{mm}$ , $12\times 12\text{mm}$ and $15\times 15\text{mm}$			
DTC-C	From $16\times 16\text{mm}$ to $\geq 25\times 25\text{mm}$			
DTC-HT	$6\times 6\text{mm}$ , $8\times 8\text{mm}$ , $10\times 10\text{mm}$ , $22\times 22\text{mm}$ , $25\times 25\text{mm}$			
Maximal crystal length <sup>3</sup>	up to 50 mm			
Maximal oven dimensions (W x H x D), mm	Please see typical drawing on next page			
Power supply / Control interface (PC)	24 V DC / USB			

\* Specifications marked 'typical' are indications of typical performance and will vary with each unit we manufacture.

<sup>1</sup> Other adjustment angles are available on request

<sup>2</sup> The non-standard crystal sizes and custom DTC modifications are welcome.

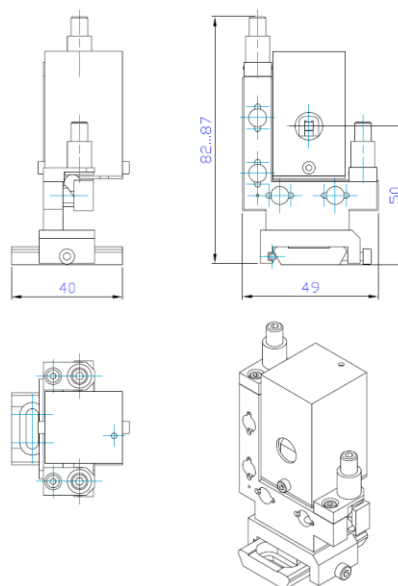
<sup>3</sup> The non-standard crystal length and custom DTC modifications are welcome.

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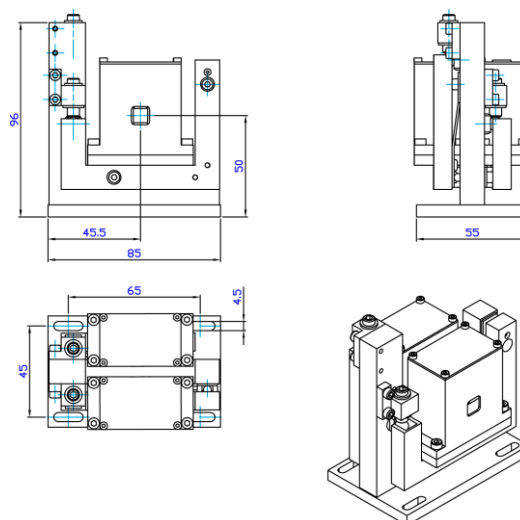
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## DTC-A type crystal oven

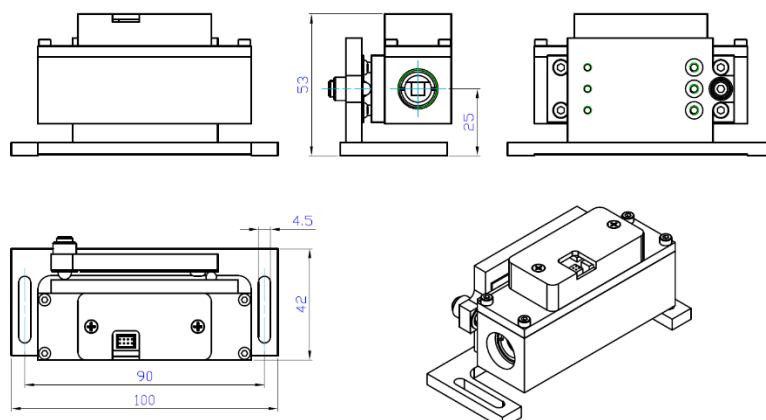


## DTC-B type crystal oven (double-crystal design) \*



\*Also available single crystal design

## DTC-C type crystal oven

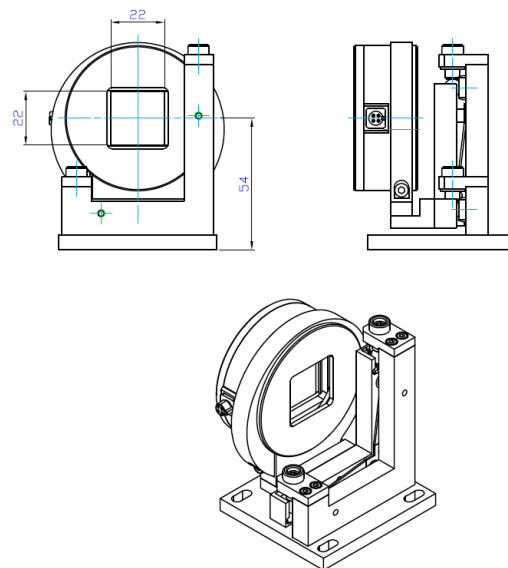
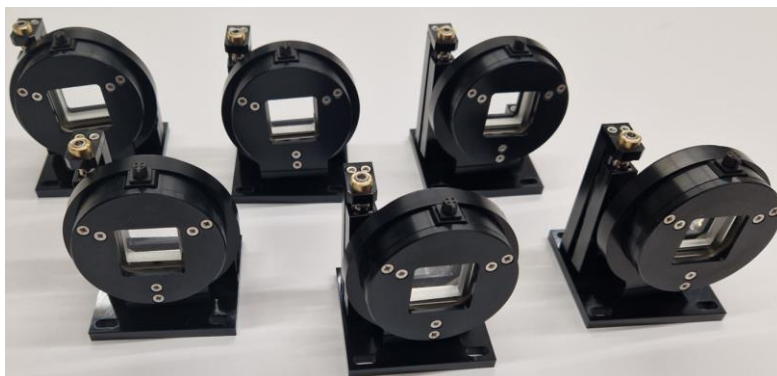


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## DTC-HT type crystal oven



## Ordering information

