Nonlinear Crystal Oven for Up to 30 mm Length Crystals, Metric

NLCH2/M



Description

Thorlabs' NLCH2/M Nonlinear Crystal Oven is designed for controlling the temperature of nonlinear crystals with lengths of up to 30.00 mm for second harmonic (SHG) and sum frequency (SFG) generation. Our LBO crystals can be mounted by first removing the cover from the oven via four M2.5 x 0.45 cap screws, and then removing the two interior M2.5 x 0.45 cap screws and aligning the pins with the holes on the specialized crystal housing. The oven can heat mounted crystals from ambient temperature to 200 °C.

One HR10CAB1 3 m long, male-to-male Hirose connector cable is included with the oven.

Specifications

Specification	Value
Compatible Crystal Lengths	Up to 30.00 mm[a]
Operating Temperature	Ambient to 200 °C
Clear Aperture	Ø0.18" (4.6 mm)
Beam Height	1.00" (25.4 mm)
Input Voltage	24 V Max
Heater Power	15 W Max @ 24 V
Heater Resistance	38.4 Ω
Electrical Connection	6-Pin Female Hirose[b]
Dimensions (H x W x D)	1.87" x 2.51" x 2.50" (47.4 mm x 63.8 mm x 63.5 mm)
Weight	0.27 kg
Recommended Controller	TC300B

a. Compatible with Our NLCL1, NLCL2, NLCL3, NLCL4, NLCL5, NLCL6, NLCL7, NLCL8, and NLCL9 Mounted LBO Nonlinear Crystals

b. Compatible with the HR10CAB1 6-Pin Hirose Cable (Included) and the HR10AD1 Hirose Cable to Breakout Box

Recommended TC300B Controller Settings	
Thermistor Type	NTC1
Thermistor Beta Value	3976 K
R0	10 kΩ
T0	25 °C
Temp Resolution Setting	High Resolution
Temperature Max	200 °C
Sample PID Configuration[a]	P: 0.06 A/K, I: 16.75 A/K·s, D: 4.18 A·s/K

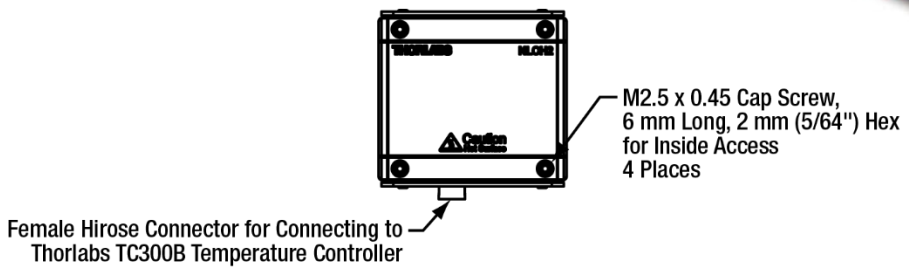
a. These PID settings are an example starting point. We recommend running the "AutoTune" function.

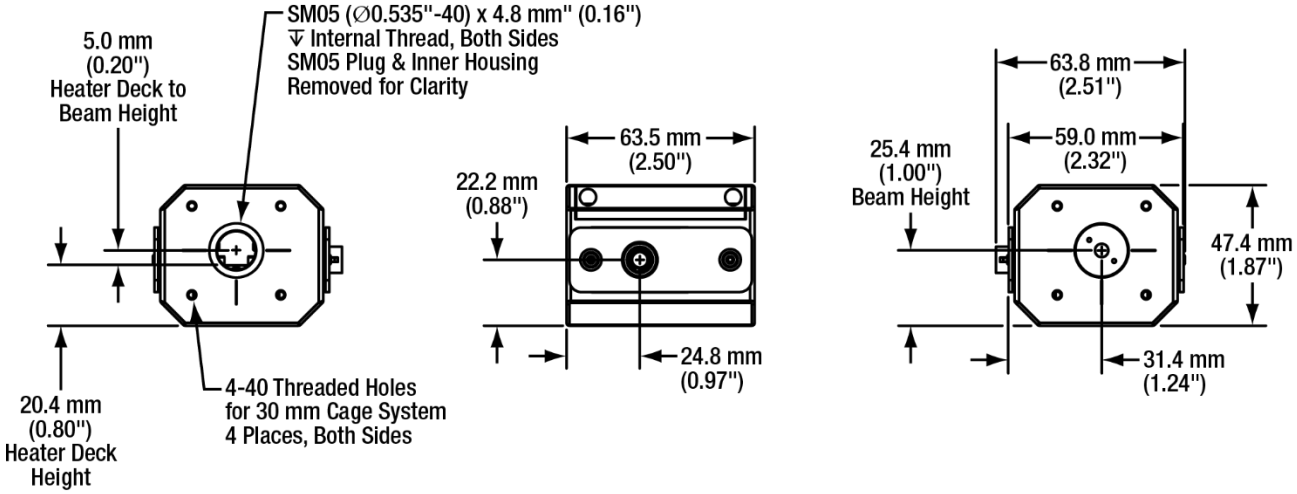
Pin Diagram

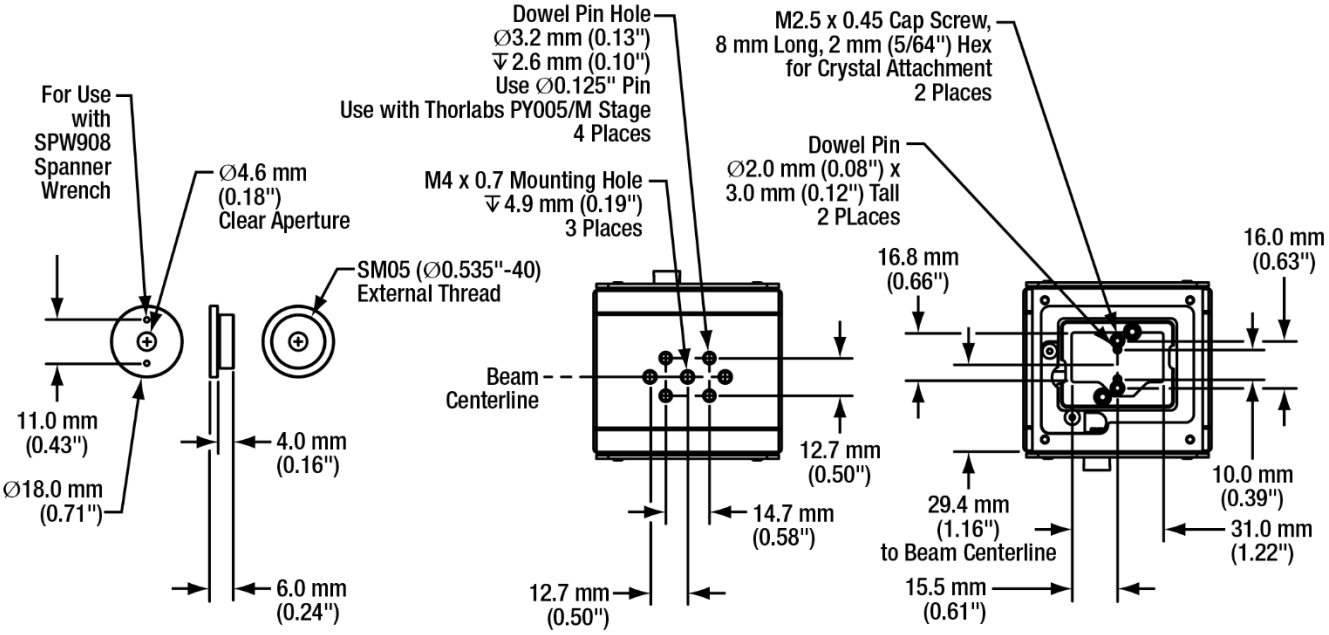


Pin	Connection
1	Heater Input
2	Heater Input Return
3	Not Connected
4	Thermistor Input (+)
5	Thermistor Input Ground
6	Not Connected

Drawing


M2.5 x 0.45 Cap Screw,
6 mm Long, 2 mm (5/64") Hex
for Inside Access
4 Places
Female Hirose Connector for Connecting to
Thorlabs TC300B Temperature Controller


5.0 mm
(0.20")
Heater Deck to
Beam Height
SM05 (Ø0.535"-40) x 4.8 mm" (0.16")
↧ Internal Thread, Both Sides
SM05 Plug & Inner Housing
Removed for Clarity
20.4 mm
(0.80")
Heater Deck
Height
4-40 Threaded Holes
for 30 mm Cage System
4 Places, Both Sides
63.5 mm
(2.50")
22.2 mm
(0.88")
24.8 mm
(0.97")
63.8 mm
(2.51")
59.0 mm
(2.32")
25.4 mm
(1.00")
Beam Height
47.4 mm
(1.87")
31.4 mm
(1.24")


For Use
with
SPW908
Spanner
Wrench
Ø4.6 mm
(0.18")
Clear Aperture
SM05 (Ø0.535"-40)
External Thread
11.0 mm
(0.43")
Ø18.0 mm
(0.71")
4.0 mm
(0.16")
6.0 mm
(0.24")
SM05 Plug Both Sides
Dowel Pin Hole
Ø3.2 mm (0.13")
↧2.6 mm (0.10")
Use Ø0.125" Pin
Use with Thorlabs PY005/M Stage
4 Places
M4 x 0.7 Mounting Hole
↧4.9 mm (0.19")
3 Places
Beam
Centerline
12.7 mm
(0.50")
14.7 mm
(0.58")
12.7 mm
(0.50")
M2.5 x 0.45 Cap Screw,
8 mm Long, 2 mm (5/64") Hex
for Crystal Attachment
2 Places
Dowel Pin
Ø2.0 mm (0.08") x
3.0 mm (0.12") Tall
2 PLaces
16.8 mm
(0.66")
16.0 mm
(0.63")
10.0 mm
(0.39")
29.4 mm
(1.16")
to Beam Centerline
31.0 mm
(1.22")
15.5 mm
(0.61")
Heater Deck Mount Parameters