

# *Optical Floating zone furnace*

Model : FZ-T-4000-H-VIII-VPO-PC



**Optical floating zone furnace**



**Crystal Systems Corporation**

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## Specification

Model		FZ-T-4000-H-VIII-VPO-PC
Type of lamp		Halogen lamp
Number of lamp & mirror		Mirror: 4 pieces
		Lamp : 4 pieces
Atmospheric pressure	Pressure	0.95 MPa
	Vacuum	$6.7 \times 10^{-3}$ Pa ( $5 \times 10^{-5}$ Torr)
Sealing		Shafts and Quartz tube are sealed by O-ring
Growing method		Mirror stage moves
Max. temperature		2,200°C
Temperature in normal use		1,850°C
Lamp power		1,200W (300W x 4 lamps)
		4,000W (1,000W x 4 lamps)
Temperature difference		< 30°C (along circumference of crystal)
Lamp cooling		Air
Mirror cooling		Air
Quartz tube sealing part		Water
Max. growth length		150 mm
Upper shaft moving distance		150 mm
Max. feed rod length		200 mm
Mirror stage: slow moving		0.01~300mm/hr
Mirror stage: fast moving		6~150 mm/min
Upper shaft slow moving		0.01~300 mm/hr
Upper shaft fast moving		6~150 mm/min
Upper/lower shaft rotation speed		5~100 rpm
Monitoring		CCD camera & LCD
Control system	Computer	LabVIEW / Windows 10 (with remote control function)
	Manual	Hand-Control-Box
Output voltage stability		Less than +/-0.2 % against +/-10% of source
Atmosphere gas flow rate (flow meter)		a. 5L/min Ar (*1) b. 500cc/min O <sub>2</sub> (*1) c. 10L/min Air with compressor
Utility	Electricity	3-phase 200V, 30A
	Water	3~5L/min
Size of furnace		Main body 700W × 760D × 1950H (mm)
		Control box 605W × 760D × 1700H (mm)

Remarks:

1. Alternative lamp power (option): 150W / 500W / 750W
2. (\*1) It is possible to change another type of gas and flow rate.
3. Warranty;

Crystal Systems Corporation warrants for one (1) year from the date of installation, except for abnormal use. Glassware such as (1) lamp (2) mirror and (3) quartz tube are out of warranty.

4. Specifications may be changed without any notification.

# *Optical floating zone furnace*

Model : FZ-T-10000-H-VIII-VPO-PC



**Optical floating zone furnace**



**Crystal Systems Corporation**

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## Specifications

Model		FZ-T-10000-H-VIII-VPO-PC
Lamp system		Halogen
Number of lamp and mirror		4 pieces
Number of mirror		4 pieces
Atmospheric pressure	Pressure	0.95 MPa
	Vacuum	$6.7 \times 10^{-3} \text{ Pa}$ ( $5 \times 10^{-5} \text{ Torr}$ )
Chamber (Quartz tube)	Normal pressure	$\phi$ 50 mm / 365 mm long / 2 mm thick
	High pressure	$\phi$ 50 mm / 365 mm long / 5 mm thick
Sealing for shafts		O-Ring Sealing Type
Max. temperature		2,200°C
Normal temperature		1,850°C
Lamp power		1,200W (300W x 4 lamps)
		4,000W (1,000W x 4 lamps)
		6,000W (1,500W x 4 lamps)
Mirror stage/Shaft		Mirror stage and upper shaft transfer vertically
Max difference of temperature around the rod surface		< 30°C
Lamp cooling		Air
Mirror cooling		Air
Max. crystal length (mm)		150
Max. feed length(mm)		150
Growth rare slow move		0.01~300mm/hr
Growth rate fast move		6~150mm/min
Shaft rotation rate		5~100rpm
Monitoring		CCD camera and LCD
Control system	Computer	LabVIEW / Windows 10 (with remote control function)
	Manual	Hand-control-box
Atmosphere gas flow control		① 5L/min Ar flow meter(*1) ② 500cc/min Oxygen flow meter ③ 10L/min Air flow meter with compressor
Utility	Electricity	3-phase 200V, 40A
	Water	3~5L/min
Size (mm)		Main body W850×D760×H1950
		Control box W605×D760×H1700

Remarks:

1. Alternative lamp power (option): 150W / 500W / 750W
2. (\*1) It is possible to change other type of gas and flow amount.
3. Warranty:

Crystal Systems Corporation warrants for one (1) year from the date of installation, except for abnormal use. Glassware such as (1) lamp (2) mirror (3) quartz tube are out of warranty.

**SUPER HIGH TEMPERATURE XENON TYPE**

# *Optical floating zone furnace*

**Model : FZ-T-12000-X-VIII-VPO-PC**



**Optical floating zone furnace**

**Crystal Systems Corporation**

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## Specifications

Model		FZ-T-12000-X-VIII-VPO-PC			
Type of lamp		Xenon			
Number of lamp		4 pieces			
Number of mirror		4 pieces			
Max. atmosphere	Pressure	0.95 MPa			
	Vacuum	$6.7 \times 10^{-3}$ Pa ( $5 \times 10^{-5}$ Torr)			
Chamber (Quartz tube)	Normal pressure	$\phi$ 50mm / 395 mm long / 2 mm thick			
	High pressure	$\phi$ 50mm / 395 mm long / 5 mm thick			
Sealing		Shafts and Quartz tube sealed with O-Ring			
Max. temperature		3,000 °C			
Temperature in normal use		2,800 °C			
Lamp power		12,000W (3,000W $\times$ 4 lamps)			
Max. difference of temperature around the rod surface		< 50°C			
Lamp cooling		Air			
Mirror cooling		Air			
Quartz tube seal cooling		Water			
Shaft moving		Upper/Lower shafts transfer vertically			
Max. crystal length (mm)		150			
Max. feed length (mm)		150			
Growth rate slow move		0.01 ~ 300mm/hr			
Growth rate fast move		6 ~ 150mm/min			
Shaft rotation rate		5 ~ 100 rpm			
Monitoring		CCD camera and LCD			
Operation (handling)	Computer	Windows 10 / LabVIEW with remote control function			
	Manual	Hand-control-box			
Atmosphere gas flow control		① Ar 5 L/min Float flow meter *1&2 ② O <sub>2</sub> 500cc/min Float flow meter ③ Air 10L/min Float flow meter			
Output voltage stability		Less than $\pm 0.4\%$ against $\pm 10\%$ of source			
Utility	Electricity	3-phase / 200V / 100A			
	Water	5L / min			
Size	(mm)	Main body	Control box	Power box	
		Width	1,020	605	800
		Depth	760	760	700
		Height	2,250	1,640	1,800

Remarks:

1. Above specifications may be changed without announcement.
2. \*1. It's possible to change another type of gas and flow rate.
3. \*2. It's possible to change to MFC from flow meter with additional charge.

## Attachments

- 1) Xenon lamp max. power 3000W ----- 8 pieces
- 2) Quartz tube (Normal pressure) ----- 2 pieces  
    (High pressure) ----- 2 pieces
- 3) O-ring (P-50,V-50 for quartz tube) ----- each 4 pieces
- 4) Seed holding jig ----- 2 pieces
- 5) Feed holding jig ----- 2 pieces
- 6) Tool box ----- 1 box

## Warranty

Crystal Systems Corporation warrants for one (1) year from the date of installation, except for abnormal use. However, glassware such as (1) lamp (2) mirror and (3) quartz tube are out of warranty.

## 北京众星联恒科技有限公司

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