

# Laboratory Industrial OVENS



**JSR**

[주] 제이에스리서치  
JS Research Inc.

# Ovens

## SELECTION GUIDE

## LABORATORY INDUSTRIAL

## Wide range of Choice

### JSOF-Series Forced Convection Oven



- ▶ Max. 250 °C
- ▶ Constant Temperature
- ▶ Timer On / Off
- ▶ RS-232C or 485 [OPTION]
- ▶ Program Controller
- 5 PTN 80 SEG [OPTION]



MODEL	CAPACITY	TEMPERATURE	ACCURACY
JSOF-050	48 L	amb. + 10 °C ~ 250 °C	± 0.2 °C
JSOF-100	100 L		± 0.3 °C
JSOF-150	151 L		± 0.3 °C
JSOF-250	252 L		± 0.3 °C

### JSON-Series Gravity Convection Oven



- ▶ Max. 250 °C
- ▶ Constant Temperature
- ▶ Timer On / Off
- ▶ RS-232C or 485 [OPTION]
- ▶ Program Controller
- 5 PTN 80 SEG [OPTION]



MODEL	CAPACITY	TEMPERATURE	ACCURACY
JSON-050	48 L	amb. + 10 °C ~ 250 °C	± 0.3 °C
JSON-100	100 L		± 0.3 °C
JSON-150	151 L		± 0.5 °C
JSON-250	252 L		± 0.5 °C

### JSOF-T Series Upright Convection Oven



- ▶ Max. 250 °C
- ▶ Constant Temperature
- ▶ Timer On / Off
- ▶ RS-232C or 485 [OPTION]
- ▶ Program Controller
- 5 PTN 80 SEG [OPTION]



MODEL	CAPACITY	TEMPERATURE	ACCURACY
JSOF-250T	250 L	amb. + 10 °C ~ 250 °C	± 0.3 °C
JSOF-400T	372 L		± 0.3 °C
JSOF-700T	655 L		± 0.3 °C

### JSOF-S Series Dry Heat Sterilizer

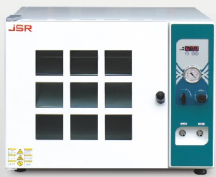


- ▶ Max. 250 °C
- ▶ Constant Temperature
- ▶ Timer On / Off



MODEL	CAPACITY	TEMPERATURE	ACCURACY
JSOF-030S	33 L	amb. + 10 °C ~ 250 °C	± 0.2 °C
JSOF-050S	48 L		± 0.2 °C
JSON-030S	33 L		± 0.3 °C
JSON-050S	48 L		± 0.3 °C

## JSVO-Series Vacuum Oven



- ▶ Max. 250 °C
- ▶ Constant Temperature
- ▶ Timer On / Off
- ▶ 760 mmHg Vacuum



MODEL	CAPACITY	TEMPERATURE	ACCURACY
JSVO-30T	27 L	amb. + 10 °C	± 2.0 °C
JSVO-60T	64 L	~ 250 °C	± 2.0 °C

## JSOF-H Series 350 °C Hi-Temp Oven



- ▶ Max. 350 °C
- ▶ Constant Temperature
- ▶ Timer On / Off
- ▶ RS-232C or 485 [OPTION]
- ▶ Program Controller  
5 PTN 80 SEG [OPTION]



MODEL	CAPACITY	TEMPERATURE	ACCURACY
JSOF-030H	27 L	amb. + 10 °C ~ 350 °C	± 0.2 °C
JSOF-100H	96 L		± 0.3 °C
JSOF-150H	150 L		± 0.3 °C

## JSCO-Series HEPA Filter Clean Air Oven



- ▶ H14 (ISO Class5) 99.995% efficiency HEPA Filter
- ▶ Max. 250 °C
- ▶ Program Controller  
5 PTN 80 SEG
- ▶ RS-232C or 485 [OPTION]



MODEL	CAPACITY	TEMPERATURE	ACCURACY
JSCO-150T	168 L	amb. + 10 °C ~ 250 °C	± 0.3 °C
JSCO-300T	336 L		± 0.3 °C
JSCO-1200T	1200 L		± 0.5 °C

## JSOF-W JSIO-Series Industrial Oven



- ▶ Max. 250 °C
- ▶ Constant Temperature
- ▶ Timer On / Off
- ▶ RS-232C or 485 [OPTION]
- ▶ Program Controller  
5 PTN 80 SEG [OPTION]



MODEL	CAPACITY	TEMPERATURE	ACCURACY
JSOF-400W	2 x 432 L	amb. + 10 °C ~ 250 °C	± 0.3 °C
JSOF-600W	2 x 612 L		± 0.3 °C
JSIO-400T	410 L		± 0.3 °C
JSIO-960T	960 L		± 0.5 °C
JSIO-1400T	1386 L		± 0.5 °C

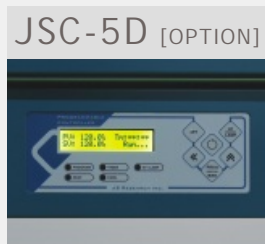
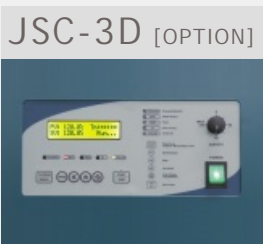
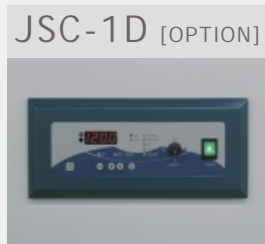
# Ovens

## FEATURE

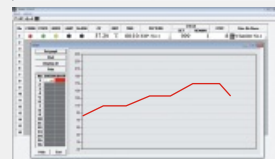
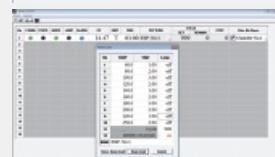
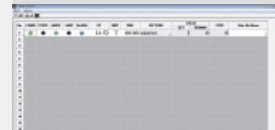
# PRECISION CONTROL HIGH PERFORMANCE Standards & Options

## Controller Guide

	JSC-0D Basic Controller	JSC-1D Digital PID Controller	JSC-3D Programmable Controller	JSC-5D Programmable Controller
Type	Digital PID		16-bit Microprocessor	
Display	LED		2-Line Back light LCD	
Operation	Constant Temperature		Constant Temp. Mode Program Mode	
Accuracy	± 0.1 °C		± 0.1 °C	
Timer	Auto START/STOP		Auto STOP	
Timer Scale	Max. 99min 59sec / 99hr 59min / 99 day 23hr selectable		Max. 99min 59sec / 99hr 59min selectable	
Programming	n/a	n/a	Yes	Yes
Pattern Memory			1 Pattern	5 Patterns
Max. Segment			11 Segments	80 Segments
Max. Repeats			999 or unlimited Segment Skip	999 or unlimited Segment Skip Pattern Link
RS-232C or RS-485	n/a	Yes [OPTION]	Yes [OPTION]	Yes [OPTION]
PC Software	n/a	Yes [OPTION]	Yes [OPTION]	n/a
Calibration	Yes	Yes	Yes	Yes
Auto-tuning	Yes	Yes	Yes	Yes



### ▶ PC Software [OPTION]



- ▶ RS-232C Serial Port Communication
- ▶ Turn On and Off control
- ▶ Temperature and Timer Setting
- ▶ Pattern Programming and uploading
- ▶ Current temperature Graph Rendering
- ▶ Temperature Data Logging
- ▶ Alarm Signal
- ▶ RS-232C 시리얼 포트 통신
- ▶ 작동, 정지 제어
- ▶ 온도 설정, 타이머 설정 기능
- ▶ 패턴 프로그래밍 기능
- ▶ 작동 중 온도 그래프 표시 기능
- ▶ 온도 데이터 수집 및 저장 기능
- ▶ 알람 현황 표시

#### ASCII Data Collection

Date	Time	Temp	Step	Seg	Cycle
2014:01:07	09:00:00	120.00	00:05	03	001/999
2014:01:07	09:00:10	120.01	00:05	03	001/999
2014:01:07	09:00:20	120.01	00:05	03	001/999
2014:01:07	09:00:30	120.00	00:05	03	001/999

# Performance & Convenience

## ▶ Construction



- ▶ Durable epoxy powdercoated metallic casing
- ▶ Ventilation damper
- ▶ 내구성이 뛰어난 에폭시 분체 도장
- ▶ 수분 및 증기 배출 배기구 장착

## ▶ Chamber



- ▶ Corrosion resistant Stainless Steel 304 chamber with seamless round cornered edge allows easy cleaning and prevent leakage
- ▶ 내부식성이 뛰어난 Stainless Steel 304 재질의 챔버 코너는 이음새없이 라운드 처리 되어 있어 세척이 간편

## ▶ Door Window



- ▶ Double layered glass window for easy observation of samples
- ▶ Non-contact door switch cut-off heater and blower
- ▶ 이중 강화유리 도어 투시창
- ▶ 비접촉식 도어센서 장착, 도어 개방시 히터 및 팬 동작 정지

## ▶ Removable Shelf



- ▶ Removable and height adjustable Stainless Steel Wire Shelf
- ▶ 25mm 간격으로 높이 조절 가능한 스테인레스 스틸 와이어 선반

# Safety



- ▶ DUAL OVER TEMP. CUT-OFF
  - 1) Digital system cut-off heater and AUDIO VISUAL ALARM in case +2°C above set temperature
  - 2) Analog system cut-off heater 10% above set temp.
- ▶ MAX TEMP CUT-OFF heater and AUDIO VISUAL ALARM when +1°C above maximum limit
- ▶ DOOR SENSOR : Non-contact magnetic door switch cut-off heater and/or blower when door opened
- ▶ SENSOR DISCONNECTION ALARM
- ▶ OVER CURRENT CUT-OFF : Electrical Leakage Breaker

### ▶ 이중과열방지장치

- 1) 설정 온도 +2 °C 초과 시 히터 차단 및 시청각 알람
- 2) 콘트롤러 오류로 지정 온도 10% 초과 시 히터 차단

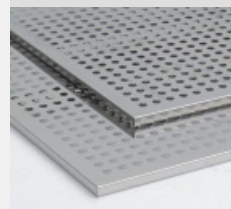
### ▶ 최고온도알람기능 : 작동한계 온도 +1°C 초과시 히터 차단

### ▶ 도어스위치 : 도어를 열면 히터와 팬이 정지하여 열기로 부터 사용자를 보호하고 과열 방지

### ▶ 센서단락알람

### ▶ 누전차단기 : 전기누설 시 주전원 차단

## ▶ Option



- ▶ Stainless Steel 304 Perforated Shelf
- ▶ Stainless Steel 304 타공 선반

# HEPA

## CLEAN AIR OVEN

# H14 (ISO CLASS 5) HEPA FILTER OVEN

## > 99.995 % Efficiency



### Specifications

Heating	Forced Air Convection Horizontal Laminar Flow
Temp. Range	ambient + 10°C ~ 250°C
Accuracy	± 0.3 °C at 120°C (JSCO-150T)
Uniformity	± 5.0 °C at 120°C (JSCO-150T)
Air Filtration	High Temp. H14 (ISOClass 5) HEPA Filter 99.995% > 0.3µm particles
Control	Programmable PID Control 5 Patterns 80 Segments 999 Repeatable
Sensor	Class APt-100 Ω Sensor
Safety	Over-Temperature Cut-Off Over Current Cut-Off
Material	Body : Epoxy Powder Coated Steel Chamber : Stainless Steel 304 Insulation : 50mm Woven Mineral Wool Floor Standing with Caster Including Stainless Steel Perforated Shelf
Electric	220 ± 10% VAC 50/60Hz 1-Phase or 380 ± 10% VAC 50/60Hz 3-Phase 4-Wire

Plug config.



### Clean Air Oven

Clean Air Oven is mechanical convection oven equipped with HEPA Filter Class H14 in laminar air path to remove particles up to 99.995% to keep oven chamber as clean room condition. Designed for applications drying or curing dust sensitive materials such as electronic components or medical parts, semi-conductor chip cleaning, display panel and wafer baking which needs particle free environment during heat treatment.

- Max 250 °C
- [OPTION] Program Controller with PC Control Software
- [OPTION] RS-232C Serial Computer Interface
- HEPA Filtered Laminar Air Flow

### Control Accuracy

- Programmable 16-bit Microprocessor Digital PID control with ±0.1°C resolution
- 5 Patterns memory 80 Segments 999 times repeatable
- Constant Temp. Mode / Program Mode
- Pattern link and Segment skip function
- Automatic STOP timer Max. 99min 59sec / 99hr 59min
- Temperature calibration and auto-tuning function
- Class APt-100 Ω sensor
- 해상도 ±0.1 °C 정밀한 16-bit 프로그램 PID 콘트롤러
- 5패턴 저장 메모리 80세그먼트, 999회 또는무한 반복운전
- 정치운전 또는 프로그램운전 기능
- 작동 중인 패턴 종료 후 다른 패턴으로 링크하여 연속작동
- 현재 작동 중인 세그먼트 건너 뛰기 기능
- 타이머 내장 99분59초 / 99시간59분
- 온도보정, 오토튜닝 기능 내장
- Class A Pt-100 Ω 온도 센서

## Performance

- ▶ Forced air convection through HI-TEMP. H14 (ISO Class 5) HEPA Filter removes particles up to 99.995%
- ▶ HEPA filtered clean horizontal laminar air flow created across the chamber between HEPA Filter installed on the back wall and drawn into the inlet grilles on front door planum keep circulated by powerful sirocco blower prevent cross-contamination and excellent thermal uniformity
- ▶ 50mm thick high thermal efficiency mineral wool with woven aluminum barrier sheet saves energy and less dust

- ▶ 가열된 공기가 고온용 HEPA Filter를 통과하며 0.3um 크기 이상의 입자를 99.995% 여과하여 순환되므로 오븐내부 공기의 청정도 유지
- ▶ 챔버 뒷면의 HEPA 필터를 통과한 여과된 공기는 도어의 흡입 구로 순환 되어 챔버 내부에 수평기류를 형성, 교차오염을 방지하고 균일한 온도 분포를 유지함
- ▶ 50mm 두께의 고효율 단열재는 알미늄 피복층이 있어 에너지 소비가 적고 분진이 없음

## Convenience

- ▶ Floor standing for easy transport and large volume allow more throughput and productivity of sample treatment
- ▶ Stainless Steel 316 (ASTM 316) Chamber [OPTION]
- ▶ Removable and height adjustable shelf by 25mm spacing
- ▶ Outer door with silicone gasket and compression door lock
- ▶ Easy-to-Replace HEPA Filter

- ▶ 바퀴를 장착한 대용량 설계로 대량의 시료를 효율적으로 처리
- ▶ 내부식성이 SUS304에 비해 월등한 SUS316 챔버 [옵션]
- ▶ 25mm 간격으로 높이 조절 가능한 선반
- ▶ 밀착력이 뛰어난 압착식 도어 잠금 장치
- ▶ 교체가 용이한 고온용 HEPA 필터

## Safety

- ▶ DUAL OVER TEMP. CUT-OFF
- ▶ MAX TEMP CUT-OFF
- ▶ SENSOR DISCONNECTION ALARM
- ▶ OVER CURRENT CUT-OFF : Electrical Leakage Breaker

## Options

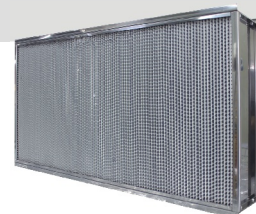
Art No.	Descriptions
OEC-003	JSC-3D Programmable Controller 1 Pattern 11 Segments /w RS-232C Interface, PC Software
OHC-002	Differential Pressure Gauge for monitoring HEPA Filter Pressure Drop
OHM-001	Stainless Steel 316 (ASTM316) Chamber

## Accessories

Art No.	Descriptions
	Perforated Shelf, Stainless Steel 304
PHS-A08	for JSCO-150T W570 x D540mm
PHS-A08	for JSCO-300T W570 x D540mm
PHS-A17	for JSCO-1200T W970 x D980mm
PHS-A99	Shelf Support, Set of 4

## ▶ HEPA Filter

- ▶ HI-TEMP H14 (ISO Class 5) HEPA Filter  
Stainless Steel Frame



## Ordering Information

	JSCO-150T	JSCO-300T	JSCO-1200T
Chamber Volume (Capacity)	168 L	336 L	1200 L
Dimensions Inner	600 x 560 x 500	600 x 560 x 1000	1000 x 1000 x 1200
W x D x H mm Outer	845 x 1100 x 1240	845 x 1100 x 1740	1245 x 1540 x 1940
Clearance	845 x 1110 x 1250	845 x 1110 x 1750	1245 x 1550 x 1950
Temperature Range	ambient +10 °C to 250 °C		
Accuracy at 120°C	± 0.3 °C	± 0.3 °C	± 0.5 °C
Uniformity at 120°C	± 5.0 °C	± 5.0 °C	± 8.0 °C
HEPA Filter	H14 (ISO Class 5) HI-TEMP HEPA Filter Efficiency 99.995% > 0.3 um Particles		
No. of Shelves / Maximum No.	2 / 14	3 / 36	4 / 36
Heater Capacity	2 x 1.0 kW	2 x 2.0 kW	3 x 2.5 kW
Electric Requirement	220 VAC 50/60Hz 1P	220 VAC 50/60Hz 1P	220 VAC 1P or 380 VAC 3P 4W
Power Rating	11.0 Amp	20.2 Amp	
Power Plug	CEE 7/7 Schuko	30 Amp	30 Amp