

# 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

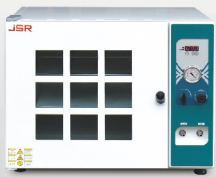


- ▶ Max. 250 °C
- ▶ Constant Temperature
- ▶ Timer On / Off



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

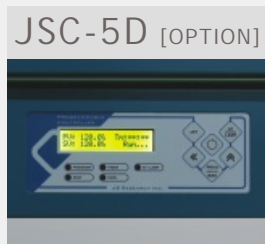
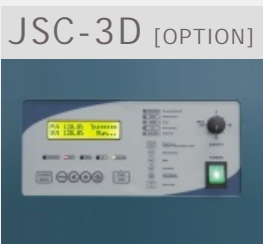
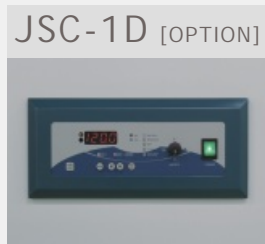
# Ovens

## FEATURE

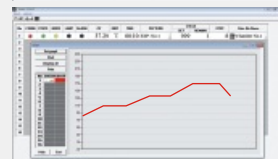
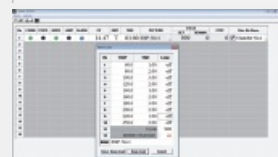
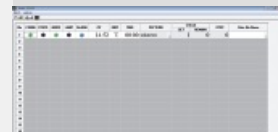
# PRECISION CONTROL HIGH PERFORMANCE Standards & Options

## 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

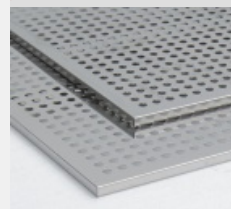
## ▶ 최고온도알람기능 : 작동한계 온도 +1°C 초과시 히터 차단

## ▶ 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

# Laboratory







## STANDARD OVENS

# FORCED CONVECTION

## Mechanical Circulation



JSOF-150 Forced Convection Oven with programmable controller and RS-232C Serial Port



-  Max 250 °C
-  Constant Temperature Controller
-  Timer On / Off 
-  [OPTION] RS-232C Serial Computer Interface
-  [OPTION] Program Controller with PC Control Software

## Forced Convection Oven

JSOF-Series Forced Convection Ovens utilize a motorized fan to force air circulates across heating element to supply hot air into the chamber. The fan allows more consistent temperature distribution of the chamber for applications in which good temperature uniformity or faster heat up and short drying time are needed.

## Specifications

Heating	Forced Air Convection
Temp. Range	ambient + 10 °C ~ 250 °C
Accuracy	± 0.2 °C at 120°C (JSOF-100)
Uniformity	± 1.0 °C at 120°C (JSOF-100)
Control	Microprocessor PID Control Auto START / STOP Timer
Sensor	Class A Pt-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 Including Stainless Steel Wire Shelf
Electric	220 ± 10% VAC 50/60Hz 1-Phase

Plug config.  or 

## Control Accuracy

- ± 0.1 °C Digital PID Controller with automatic START/STOP timer max. 99min 59sec / 99hr 59min / 99 day 23hr
- Temperature calibration, auto-tuning function
- Class A Pt-100 Ω sensor
- 정밀한 PID 컨트롤러는 온도를 ± 0.1 °C 단위로 제어
- 예약 / 정지 타이머 내장 99분 59초 / 99시간 59분 / 99일 23시간
- 온도보정, 오토튜닝 기능 내장
- Class A Pt-100 Ω 온도 센서

## Performance

- ▶ Forced air convection for fast drying application
- ▶ Aero-dynamic chamber design with circulation blower to achieve superior thermal uniformity
- ▶ Separate heating compartment located on back wall prevents contamination and maintenance free
- ▶ 50mm thick high thermal efficiency mineral wool with woven aluminum barrier sheet save energy and less dust

- ▶ 강제 공기 순환 가열방식으로 신속한 건조성능
- ▶ 공기 역학적 설계와 강력한 블로어로 공기 흐름이 원활하여 오븐내부의 온도 균일성이 뛰어남
- ▶ 가열챔버가 후면에 별도로 위치하여 액체 흘림으로 인한 오염과 고장이 적음
- ▶ 50mm 두께의 고효율 단열재는 알루미늄 피복층이 있어 에너지 소비가 적고 분진이 없음

## Convenience

- ▶ Double layered tempered safety glass window for easy observation of samples under testing
- ▶ Stainless Steel 304 Chamber with seamless round cornered edge allows easy cleaning and prevent leakage
- ▶ Removable and height adjustable shelf by 25mm spacing
- ▶ Easy to open and air-tight one touch door latch
- ▶ Opening size adjustable ventilation damper
- ▶ Non-contact door switch cut-off heater and blower

- ▶ 이중 강화유리 도어 투시창으로 도어를 열지 않고 샘플 관찰
- ▶ 챔버의 코너는 이음새 없이 라운드 처리 되어 있어 세척이 간편하고 오염 방지
- ▶ 25mm 간격으로 높이 조절 가능한 선반
- ▶ 원터치 방식의 도어 잠금 장치
- ▶ 수분 및 증기를 배출할 수 있는 배기구 장착
- ▶ 비접촉식 도어센서 장착, 도어 개방 시 히터 및 팬 동작 정지

## Ordering Information

	JSOF-050	JSOF-100	JSOF-150	JSOF-250
Chamber Volume (Capacity)	48 L	100 L	151 L	252 L
Dimensions Inner	400 x 300 x 400	500 x 400 x 500	560 x 450 x 600	600 x 600 x 700
W x D x H mm Outer	560 x 605 x 710	660 x 705 x 810	720 x 755 x 910	760 x 905 x 1010
Window	W150 x H290	W150 x H360	W150 x H410	W150 x H460
Temperature Range	ambient +10 °C to 250 °C			
Accuracy at 120°C	± 0.2 °C	± 0.3 °C	± 0.3 °C	± 0.3 °C
Uniformity at 120°C	± 1.0 °C	± 1.3 °C	± 1.5 °C	± 1.8 °C
Heat up time to 120°C	10 min.	10 min.	10 min.	10 min.
No. of Shelves / Maximum No.	2 / 12	2 / 16	2 / 20	3 / 24
No. of Ventilation damper	1	1	1	1
Heater Capacity	1.0 kW	1.5 kW	1.7 kW	2.5 kW
Power Rating	4.7 Amp	7.0 Amp	7.9 Amp	11.5 Amp
Power Plug	CEE 7/7 Schuko			

## Safety

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

## Options

Art No.	Descriptions
OEC-001	JSC-1D Digital PID Controller /w RS-232C Interface, PC Software
OEC-003	JSC-3D Programmable Controller 1 Pattern 11 Segments /w RS-232C Interface, PC Software
OEC-005	JSC-5D Programmable Controller 5 Patterns 80 Segments

## Accessories

Art No.	Descriptions
	Perforated Shelf, Stainless Steel 304
PHS-A03	for JSOF-050 W370 x D280 mm
PHS-A05	for JSOF-100 W470 x D380 mm
PHS-A07	for JSOF-150 W530 x D430 mm
PHS-A09	for JSOF-250 W570 x D580 mm
	Wire Shelf, Stainless Steel 304
PHS-B03	for JSOF-050 W370 x D280 mm
PHS-B05	for JSOF-100 W470 x D380 mm
PHS-B07	for JSOF-150 W530 x D430 mm
PHS-B09	for JSOF-250 W570 x D580 mm
PHS-A99	Shelf Support, Set of 4