Equipped touch controller with improved functionality and convenience.

Lab Companion Oven Series

> Excellent visibility and easy control with a 5-inch touch screen. (OF4-P/V)

> Available to manually set a fan speed and ramping rates according to the properties of samples. (OF4-P/V)

> Data storage and transmission using internal memory and USB ports. (OF4-P/V)

Watch our company

JEIO TECH

What is new with the Forced Convection Oven of Lab Companion?

Intuitive touch screen controller

· Improved user convenience with a highly visible touch screen display.
· Data storage and transmission using internal memory (54 units) and USB ports. (OF4-P/V)
· Graph generation to visualize both stored and real-time data. (OF4-P/V)
· Ramping rates (°C/min) flexibly adjustable for each application (OF4-P/V)

### Flexible 3-step fan speed adjustment according to the properties of samples

· Opti-flow™ is an optimized function for samples that generate particles during drying. Even if Forced Convection Oven, it allows prevent floating dust particles in the chamber like a Natural convection oven. (experimentally tested and verified using calcium carbonate specimens)

Opti-flow™ level 3
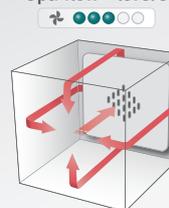
Opti-flow™ level 5

Drying of samples that may generate dust particles floating in the air
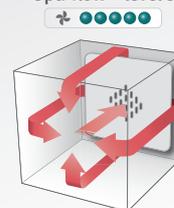
Capable of drying at the fastest rate because dust is not generated

Safe release of hazardous fumes generated during the drying operation

· Compact models designed to be used in a fume hood available. (OF4-03)
· Upper vent hole that can be connected to local ventilation equipment.

Ventilation inside a fume hood (OF4-03)   Ventilation using an arm hood

Improved test safety and convenience

· Hands-free door system to allow users to easily open the door while carrying samples with both hands.
· Device surface does not overheat even in operation at the highest temperature (<70°C)
· Two units can be stacked to improve space efficiency. ; a forced convection oven and a natural convection oven are available to stack together. (Option)

Safety
<70°C

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Lab Companion Forced Convection Oven

Three product lines classified by different controller types

Advanced control features, also easy program settings OF4-P

· Easy and flexible test settings allowing up to 10 steps and 10 programs.
· More accurate temperature experiments with setting the starting temperature.
· Scheduler function to operate at scheduled times.
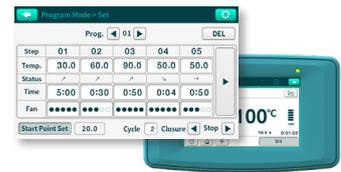
Advanced controller with a wide 5-inch display OF4-V

· Fan speed optimization technology that allows the device to function not only as a forced convection oven but also as a natural convection oven.
· Graph generation to visualize both stored and real-time data.

Standard controller with a 3.5-inch display OF4-S

· 3.5-inch touch display and provide the same temperature uniformity performance as advanced/programmable types.
· Safety features equivalent to the Advanced Type. (including circuit breakers and overheating prevention devices)

Product Selection Guide

Model	OF4-P	OF4-V	OF4-S
Internal volume (L / cu ft)	26 / 0.92, 61 / 2.15, 112 / 3.96, 147 / 5.19		
Temperature range (℃ / °F)	Amb.+10 ~ 250 / Amb.+18 ~ 482		
Max. fluctuation at 100℃ (±℃ / ±°F)	0.3 / 0.54		
Max. variation at 100℃ (±℃ / ±°F)	1.9 / 2.52		
Heater (120/230VAC) (W)	1400		
Wait ON / Wait OFF timer	99hr 59min		
Circuit breaker	O		
Vent hole	2 ea		
Controller	5 inch TFT Color LCD	5 inch TFT Color LCD	3.5 inch TFT Color LCD
Programmable	10 program, 10 step	-	-
Scheduler	O	-	-
Data storage	O	O	-
Fan speed adjustable	O	O	-
Recommended temperature	O	O	-
Graph	O	O	-
Setting the ramp rate	O	O	-
Recently event record	36 ea	36 ea	12 ea
Communication interface	Standard: USB-B, RS-232 Option: BMS	Standard: USB-B, RS-232 Option: BMS	Option: USB-B, RS-232, BMS

Model naming rules for product selection OF4 - 03/05/10/15 P/V/S W

Internal volume   Program / Advanced / Standard type
With or without the window
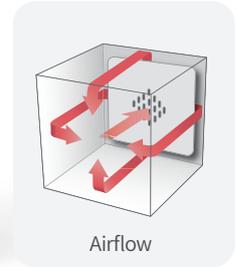
Lab Comapanion Forced Convection Oven
## Program type (Model: OF4-P)

OF4-10P

OF4-10PW

Airflow

Easy setting program temperature for everyone

· User interface that provides a quick view of temperature changes (heating, stable, and cooling) and fan speed also.
· Set various test condition using 10 programs and 10 steps, which can be repeated up to 99 times.
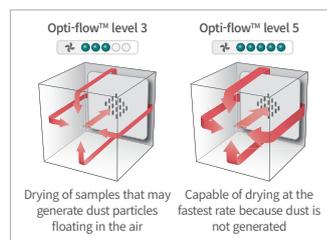· Start temperature, temperature and time for each step, and Opti-flow™ all adjustable as desired.
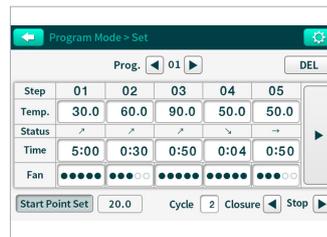
Easy and intuitive program setting interface
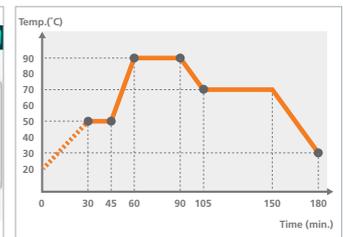
Program setting can be flexibly adjusted according to each test requirement

Structural and functional features for improved user convenience

· Opti-flow™, a function to flexibly adjust the fan speed according to the specimen type and test conditions.
· Stacking Kit (optional) ensuring the safe fitting of one unit to another, thus doubling the amount of work done in a given area for improved space efficiency.
· Hands-free™ door system to allow users to easily open the door while carrying samples with both hands.

Opti-flow™ level 3 | Opti-flow™ level 5

Drying of samples that may generate dust particles floating in the air | Capable of drying at the fastest rate because dust is not generated

Fan speed can be adjusted manually according

Two-unit stacking for improved space efficiency (option)

Real-time monitoring to check status of device

· BMS communication port that helps monitor the device temperature on the building management system, enabling quick response in case of abnormality. (option)
· Monitor and control via mobile app anytime, anywhere with LC Connected. (mobile monitoring system) (option)

BMS communication port that helps enable quick response through continuous monitoring (option)

Real-time monitoring and control via mobile (option)

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◪ Convenient checking for the test progress and data

· RS-232/USB port and compatible software provided to enable easy device control and data management using PC.
· Test data is automatically saved and easily downloaded via USB; easy to edit and use. (in CSV format)
· 36 latest events, such as errors and door opened or closed, automatically recorded, helping user obtain feedback on experimental results.
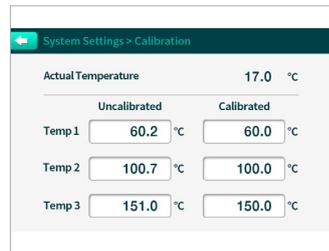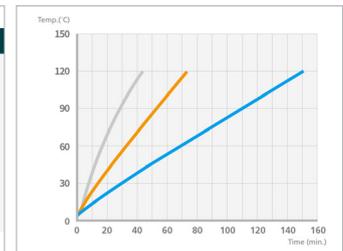
Data storage using USB ports

Up to 36 latest events automatically recorded

◪ Reliable temperature control performance based on stable control mechanisms

· Wide temperature range of up to 250°C.
· Three-point temperature calibration that ensures high-temperature accuracy over a wide temperature range.
· Ramping rates (°C/min) flexibly adjustable for each test performed.
· Excellent temperature distribution through the formation of optimal airflow for uniform heat transfer.
(±1.9°C or below at 100°C)

Three-point temperature calibration that ensures precise temperature control

Ramping rates adjusted for each test performed

Specification (OF4-P)

Model	Solid door (without window)	OF4-03P	OF4-05P	OF4-10P	OF4-15P
	Window door	OF4-03PW	OF4-05PW	OF4-10PW	OF4-15PW
Chamber volume (L / cu ft)		26 / 0.92	61 / 2.15	112 / 3.96	147 / 5.19
Temperature[1]	Range (°C / °F)	Amb. + 10~250 / Amb. + 18 ~ 482			
	Fluctuation at 100°C (±°C / ±°F)	0.3 / 0.54	0.3 / 0.54	0.3 / 0.54	0.3 / 0.54
	Variation at 100°C (±°C / ±°F)	1.4 / 2.52	1.9 / 3.42	1.7 / 3.06	1.5 / 2.70
	Heating time to 100°C (min)	8	10	14	15
	Recovery time at 100°C (min)	4	4	4	4
Control panel		5 inch TFT Color LCD			
Communication interface		USB-B, RS-232			
Function	Program setting	10 program, 10 step, start temp.			
	Scheduler	Set day, time, and program No.			
	Recently event record	36 ea			
	Fan speed adjustable	Three-step wind speed settings			
	Recommended temperature	Three frequently used temperature settings suggested			
	Graph	Available checking the stored and real-time data as graphs			
	Data storage	Save the test data in CSV format			
	Temp. ramping rate (°C/min. / °F/min.)	0~13 / 0~23.4	0~9 / 0~16.2	0~6 / 0~10.8	0~5 / 0~9
Dimensions	Interior (W x D x H, mm / inch)	300 x 210 x 400 / 11.80 x 8.27 x 15.75	380 x 330 x 480 / 14.97 x 13.0 x 18.90	485 x 350 x 655 / 19.09 x 13.78 x 25.79	550 x 376 x 710 / 21.65 x 14.80 x 27.95
	Exterior (W x D x H, mm / inch)	478 x 527 x 604 / 18.82 x 20.75 x 23.78	558 x 648 x 684 / 21.97 x 25.51 x 26.93	663 x 677 x 859 / 26.1 x 26.65 x 33.82	728 x 704 x 914 / 28.66 x 27.72 x 35.98
	Net weight (kg / lbs)	33 / 72.8	53 / 116.8	63 / 138.9	73 / 160.9
Shelves	Quantity of shelves (Standard / max.)	2 / 4	2 / 5	2 / 8	2 / 9
	Max. Load per shelf (kg / lbs)	30 / 66.1			
Number of air change per hour at 100°C[2]		123	22	18	11
Electrical requirements (230V, 50/60Hz, A)		6.4			
Cat. No.	Solid door (without window)	AAH12915K	AAH12925K	AAH12935K	AAH12945K
	Window door	AAH12955K	AAH12965K	AAH12975K	AAH12985K
Electrical requirements (120V, 60Hz, A)		12.3			
Cat. No.	Solid door (without window)	AAH12916U	AAH12926U	AAH12936U	AAH12946U
	Window door	AAH12956U	AAH12966U	AAH12976U	AAH12986U

1) This data was measured when the fan speed was set to Step 5. If the fan speed is set to Step 1 or Step 3, the fluctuation and variation values will increase. (According to DIN 12880, before 2013)
2) This data was measured when the fan speed was set to Step 5. If the fan speed is set to Step 1 or Step 3, the number of air changes may decrease. (According to ASTM D 5374, reapproved 1999)
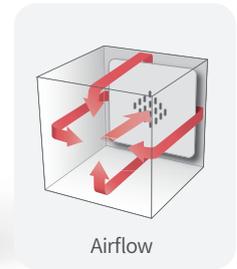
Lab Comapanion Forced Convection Oven
## Advanced type (Model: OF4-V)

OF4-10V

OF4-10VW

Airflow

Wide touch-screen controller that provides the device information intuitively

- 5-Inch TFT touch controller that enables intuitive control of the device.
- Real-time graphs that allow users to view events and alarms at a glance so that the test progress can be easily and intuitively monitored.
- Auto 3 temperature recommendation based on operating history without any recording or storage.
- Wait on/Wait off timer setting allowing efficient test schedule management.
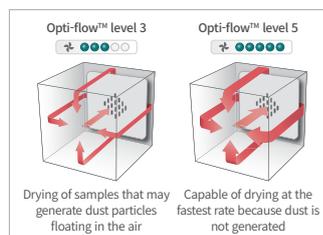- Ramping rates (°C/min) flexibly adjustable for each test performed.

5-Inch TFT touch controller
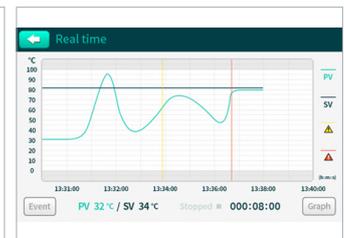
Graphs that allow users to monitor the test progress at a glance

Structural and functional features for improved user convenience

- Opti-flow™, a function to flexibly adjust the fan speed according to the specimen type and test conditions
- Stacking Kit (option) ensuring the safe fitting of one unit to another, thus doubling the amount of work done in a given area for improved space efficiency.
- Hands-free™ door system to allow users to easily open the door while carrying samples with both hands.

Opti-flow™ level 3 / Opti-flow™ level 5
Drying of samples that may generate dust particles floating in the air / Capable of drying at the fastest rate because dust is not generated
Fan speed can be adjusted manually according to the sample properties

Two-unit stacking for improved space efficiency (option)

Real-time monitoring to check status of device

- BMS communication port that helps monitor the device temperature on the building management system, enabling quick response in case of abnormality. (option)
- Monitor and control via mobile app anytime, anywhere with LC Connected. (mobile monitoring system) (option)

BMS communication port that helps enable quick response through continuous monitoring (option)

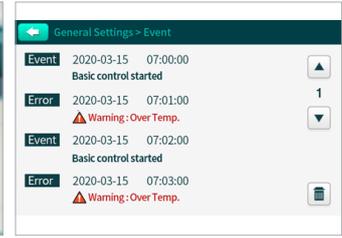Real-time monitoring and control via mobile (option)

Convenient checking for the test progress and data

· RS-232/USB port and compatible software provided to enable easy device control and data management using PC.
· Test data is automatically saved and easily downloaded via USB; easy to edit and use. (in CSV format)
· 36 latest events, such as errors and door opened or closed, automatically recorded, helping user obtain feedback on experimental results.
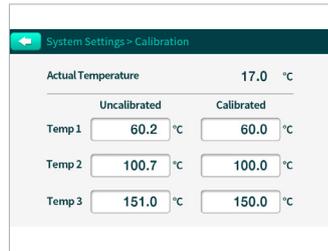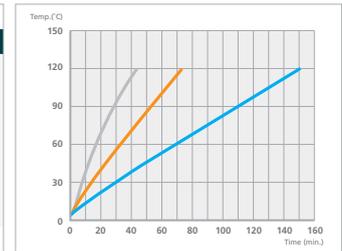
Data storage using USB ports

Up to 36 latest events automatically recorded

Reliable temperature control performance based on stable control mechanisms

· Wide temperature range of up to 250°C.
· Three-point temperature calibration that ensures high-temperature accuracy over a wide temperature range.
· Ramping rates (°C/min) flexibly adjustable for each test performed.
· Excellent temperature distribution through the formation of optimal airflow for uniform heat transfer. (±1.9°C or below at 100°C)

Three-point temperature calibration that ensures precise temperature control

Ramping rates adjusted for each test performed

Specification (OF4-V)

Model		OF4-03V	OF4-05V	OF4-10V	OF4-15V
	Solid door (without window)	OF4-03V	OF4-05V	OF4-10V	OF4-15V
	Window door	OF4-03VW	OF4-05VW	OF4-10VW	OF4-15VW
Chamber volume (L / cu ft)		26 / 0.92	61 / 2.15	112 / 3.96	147 / 5.19
Temperature[1]	Range (°C / °F)	Amb. + 10~250 / Amb. + 18 ~ 482			
	Fluctuation at 100°C (±°C / ±°F)	0.3 / 0.54	0.3 / 0.54	0.3 / 0.54	0.3 / 0.54
	Variation at 100°C (±°C / ±°F)	1.4 / 2.52	1.9 / 3.42	1.7 / 3.06	1.5 / 2.70
	Heating time to 100°C (min)	8	10	14	15
	Recovery time at 100°C (min)	4	4	4	4
Control panel		5 inch TFT Color LCD			
Communication interface		USB-B, RS-232			
Function	Recently event record	36 ea			
	Fan speed adjustable	Three-step wind speed settings			
	Recommended temperature	Three frequently used temperature settings suggested			
	Graph	Available checking the stored and real-time data as graphs			
	Data storage	Save the test data in CSV format			
	Temp. ramping rate (°C/min. / °F/min.)	0~13 / 0~23.4	0~9 / 0~16.2	0~6 / 0~10.8	0~5 / 0~9
Dimensions	Interior (W x D x H, mm / inch)	300 x 210 x 400 / 11.80 x 8.27 x 15.75	380 x 330 x 480 / 14.97 x 13.0 x 18.90	485 x 350 x 655 / 19.09 x 13.78 x 25.79	550 x 376 x 710 / 21.65 x 14.80 x 27.95
	Exterior (W x D x H, mm / inch)	478 x 527 x 604 / 18.82 x 20.75 x 23.78	558 x 648 x 684 / 21.97 x 25.51 x 26.93	663 x 677 x 859 / 26.1 x 26.65 x 33.82	728 x 704 x 914 / 28.66 x 27.72 x 35.98
	Net weight (kg / lbs)	33 / 72.8	53 / 116.8	63 / 138.9	73 / 160.9
Shelves	Quantity of shelves (standard / max.)	2 / 4	2 / 5	2 / 8	2 / 9
	Max. Load per shelf (kg / lbs)	30 / 66.1			
Number of air change per hour at 100°C[2]		123	22	18	11
Electrical requirements (230V, 50/60Hz, A)		6.4			
Cat. No.	Solid door (without window)	AAH12715K	AAH12725K	AAH12735K	AAH12745K
	Window door	AAH12815K	AAH12825K	AAH12835K	AAH12845K
Electrical requirements (120V, 60Hz, A)		12.3			
Cat. No.	Solid door (without window)	AAH12716U	AAH12726U	AAH12736U	AAH12746U
	Window door	AAH12816U	AAH12826U	AAH12836U	AAH12846U

1) This data was measured when the fan speed was set to Step 5. If the fan speed is set to Step 1 or Step 3, the fluctuation and variation values will increase. (According to DIN 12880, before 2013)
2) This data was measured when the fan speed was set to Step 5. If the fan speed is set to Step 1 or Step 3, the number of air changes may decrease. (According to ASTM D 5374, reapproved 1999)
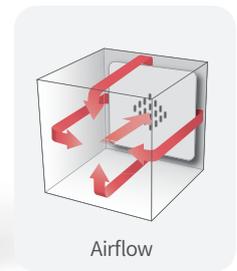
Lab Comapanion Forced Convection Oven
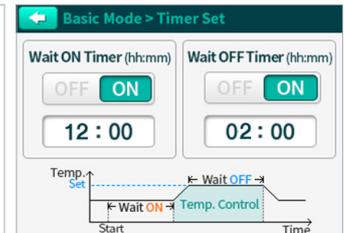## Standard type (Model: OF4-S)

OF4-10S

OF4-10SW

Airflow

Standard type that provides the device information intuitively (OF4-S)

· 3.5-Inch touch controller that enables intuitive control of the device.
· Wait on/Wait off timer setting allowing efficient test schedule management.

3.5-Inch touch controller

Wait on & Wait off Timer

Reliable temperature control performance based on stable control mechanisms

· Wide temperature range of up to 250°C.
· Three-point temperature calibration that ensures high-temperature accuracy over a wide temperature range.
· Available to set the upper and lower temperature limit, alarm activated to quick response when occurring the deviation.
· Excellent temperature distribution through the formation of optimal airflow for uniform heat transfer. (±1.9°C or below at 100°C)

Three-point temperature calibration that ensures precise temperature control

Temperature deviation setting

Convenient checking for the test progress and data

· RS-232/USB port and compatible software provided to enable easy device control and data management using PC. (option)
· Monitor and control via mobile app anytime, anywhere with LC Connected. (mobile monitoring system) (option)
· BMS communication port that helps monitor the device temperature on the building management system. (option)

Control via connecting the PC

Real-time monitoring and control via mobile (option)

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CE | RoHS Compliant | LC Connected | Touch Display | Safety Patented | 3 Points Temperature Calibration | HI LOW Deviation Warning | Over Temp. | Timer | Computer Interface | Auto Run | 2 year Warranty

◪ Various safety features for improved user safety

· The upper vent hole releases effectively fume inside the oven when using local ventilation equipment. (OF4-03)
· Device surface not overheating even in operation at the highest temperature. (70°C or below, at 250°C)
· Top-rated overheating protection system. (registration KR 10-0397583)
· Over temperature limit function.
· Equivalent to IEC protection Class II.

Fumes inside the chamber effectively removed

Safe surface of the device even in operation at the highest temperature

◪ Structural and functional features for improved user convenience

· Recording the 12 most recent events, such as start/stop of operation, the operating time, and error occurrence.
· Stacking Kit (option) ensuring the safe fitting of one unit to another, thus doubling the amount of work done in a given area for improved space efficiency.
· Hands-free™ door system to allow users to easily open the door while carrying samples with both hands.
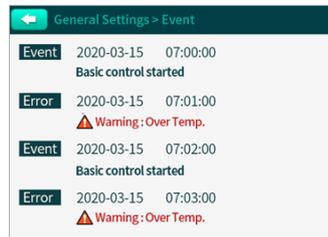

Up to 12 latest events automatically recorded

Two-unit stacking for improved space efficiency (option)

Specification (OF4-S)

Model		OF4-03S	OF4-05S	OF4-10S	OF4-15S
	Solid door (without window)	OF4-03S	OF4-05S	OF4-10S	OF4-15S
	Window door	OF4-03SW	OF4-05SW	OF4-10SW	OF4-15SW
Chamber volume (L / cu ft)		26 / 0.92	61 / 2.15	112 / 3.96	147 / 5.19
Temperature[1]	Range (°C / °F)	Amb. + 10~250 / Amb. + 18 ~ 482			
	Fluctuation at 100°C (±°C / ±°F)	0.3 / 0.54	0.3 / 0.54	0.3 / 0.54	0.3 / 0.54
	Variation at 100°C (±°C / ±°F)	1.4 / 2.52	1.9 / 3.42	1.7 / 3.06	1.5 / 2.70
	Heating time to 100°C (min)	8	10	14	15
	Recovery time at 100°C (min)	4	4	4	4
Control panel		3.5 inch TFT Color LCD			
Communication interface		USB-B, RS-232 (option)			
Function	Recently event record	12 ea			
Dimensions	Interior (W x D x H, mm / inch)	300 x 210 x 400 / 11.80 x 8.27 x 15.75	380 x 330 x 480 / 14.97 x 13.0 x 18.90	485 x 350 x 655 / 19.09 x 13.78 x 25.79	550 x 376 x 710 / 21.65 x 14.80 x 27.95
	Exterior (W x D x H, mm / inch)	478 x 527 x 604 / 18.82 x 20.75 x 23.78	558 x 648 x 684 / 21.97 x 25.51 x 26.93	663 x 677 x 859 / 26.1 x 26.65 x 33.82	728 x 704 x 914 / 28.66x 27.72 x 35.98
	Net weight (kg / lbs)	33/72.8	53/116.8	63/138.9	73/160.9
Shelves	Quantity of shelves (Standard / max.)	2/4	2/5	2/8	2/9
	Max. Load per shelf (kg / lbs)	30 / 66.1			
Number of air change per hour at 100°C[2]		123	22	18	11
Electrical requirements (230V, 50/60Hz, A)		6.4			
Cat. No.	Solid door (without window)	AAH14115K	AAH14125K	AAH14135K	AAH14145K
	Window door	AAH14215K	AAH14225K	AAH14235K	AAH14245K
Electrical requirements (120V, 60Hz, A)		12.3			
Cat. No.	Solid door (without window)	AAH14116U	AAH14126U	AAH14136U	AAH14146U
	Window door	AAH14216U	AAH14226U	AAH14236U	AAH14246U

Dimensions

Exterior
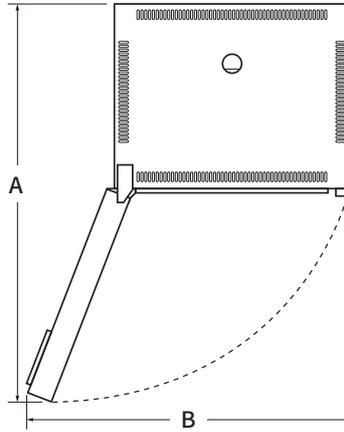
Interior
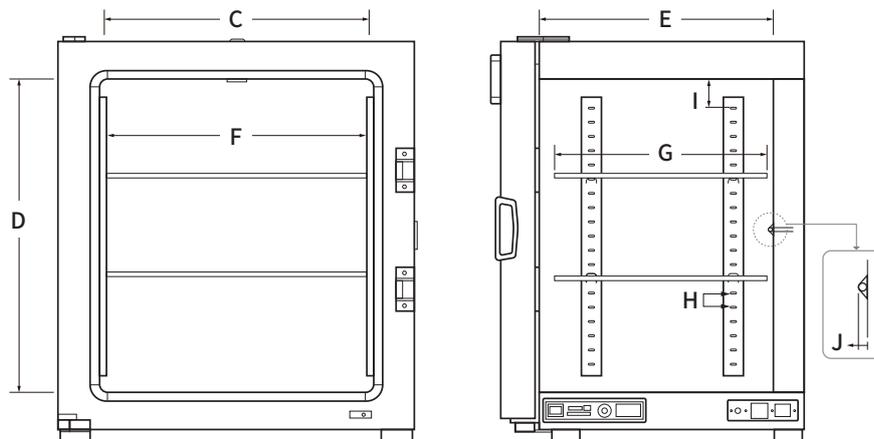
(unit: mm / inch)

Model	OF4-03	OF4-05	OF4-10	OF4-15
A: Maximum depth with door opened	868 / 34.2	1060 / 41.7	1185 / 46.7	1271 / 50.0
B: Maximum width with door opened	695 / 27.4	809 / 31.9	958 / 37.7	1050 / 41.3
C: Interior width	300 / 11.8	380 / 15.0	485 / 19.1	550 /21.7
D: Interior height	400 / 15.7	480 / 18.9	655 / 25.8	710 / 28.0
E: Interior depth	210 / 8.3	330 / 13.0	350 / 13.8	376 / 14.8
F: Shelve width	266 / 10.5	346 / 13.6	451 / 17.8	516 / 20.3
G: Shelve depth	195 / 7.7	315 / 12.4	335 / 13.2	361 / 14.2
H: Gap between shelf racks	30 / 1.2	30 / 1.2	30 / 1.2	30 / 1.2
I: Gap between uppermost shelve and interior ceiling	80 / 3.1	90 / 3.5	88 / 3.5	85 / 3.3
J: Space for sensor installation	3.8 / 0.15	3.8 / 0.15	3.8 / 0.15	3.8 / 0.15

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Accessory
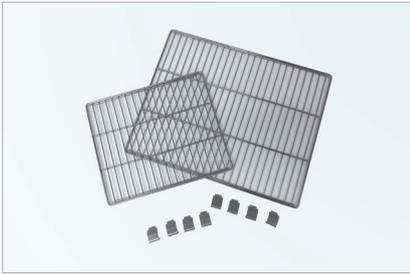
Wire shelf (Include 2ea as standard)
· Stainless Steel
· Excellent air permeability and uniform temperature distribution.
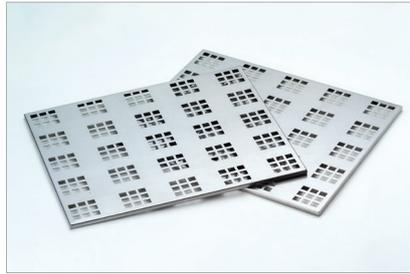
Perforated shelf
· Stainless Steel
· Solid structure makes it suitable for high load samples.

Double-stacked bracket
· Use for stacking 2 units.
· Improve space efficiency with the sturdy stacking.
(※ When install the double-stacked bracket, the temperature control range of the upper oven is decrease (Amb.+30 ~ 250°C / Amb.+54 ~ 482°F)

BMS Port
· Real-time monitoring at a central monitoring facility.
· Easier to ensure safety, especially in labs where multiple units are operated

LC GreenBox (Mobile Monitoring System)
· Remote monitoring and control via mobile application.
· One LC GreenBox can connect up to 4 devices.
· Connect using RS-232 port on the communication port.

Communication Port
· Control PC connection and data by dedicated software.
· Included as default in OF4-P/V and ON4-V and optional for OF4-S and ON4-S

Model	OF4-03	OF4-05	OF4-10	OF4-15
Wire shelf	FDA9739	FDA9738	FDA9737	FDA-9736
Perforated shelf	AAA125341	AAA125342	AAA125343	AAA125344
Double-stacked bracket	AAA125531	AAA125531	AAA125532	AAA125532

Model	OF4-P/V	OF4-S
BMS Port	AAA125534	AAA125534
LC GreenBox	AAAQ1011	AAAQ1011
Communication Port	Standard	AAA125533

Lab Companion Chamber series

Vacuum Oven

Drying under reduced pressure in a uniform variation of ±1.5°C at 100°C

Muffle Furnace

High-temperature experiments at 1100°C

Incubator (Air-jacket)

Most stable control environment

Low Temperature Incubator

Low-temperature culture experiments, including BOD

Incubated Shaker

Up to three units can be stacked for maximized space utilization

Laboratory Refrigerator

Satisfied requirements for pharmaceutical stability of cold storage

Temp. & Humid. Chamber

Temperature and humidity control for environmental reliability tests

Heating & Cooling Chamber

Reliable and excellent temperature uniformity

Industrial Oven

Excellent thermal insulation and sealing structure

Clean Oven

High temperature testing under clean conditions

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