



Lab Companion Oven Series

- Forced Convection Oven - Program / Advanced / Standard type (OF4-P / OF4-V / OF4-S) 4P
- Natural Convection Oven - Advanced / Standard type (ON4-V / ON4-S) 10P
- Vacuum Oven (OV4) 15P



About Us



Preview of Lab Companion Ovens

Intuitive touch screen controller

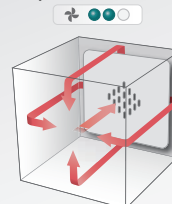
- Improved convenience with intuitive touch screen
- Data storage and exported to PC with USB
- Visualize data with real-time graph
- Ramp Control™ function to control the rate of temperature rise (program/advanced model)



Flexible 3-step fan speed adjustment (OF4-P/V)

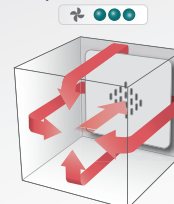
- Opti-flow™ is an optimized function for samples that generate particles during drying. Even if Forced Convection Oven, it allows prevent floating dust particles in the chamber like a Natural convection oven. (experimentally tested and verified using calcium carbonate specimens)

Opti-flow™ level 2



Drying dusty samples

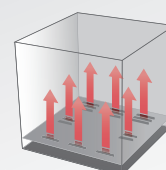
Opti-flow™ level 3



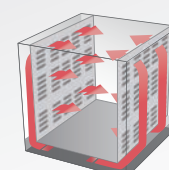
Max-speed drying without dust

Temperature uniformity with multi-path airflow (ON4)

- Temperature stability is enhanced by using convection through a perforated multi-path on the sides
- Uniform temperature distribution through airflow optimized for uniform heat transfer (within $\pm 3.6^\circ\text{C}$ at 100°C)



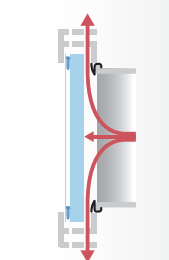
Single-path :
irregular heat transfer



Multi-path :
uniform heat transfer

Ensuring user safety and convenience

- Device surface does not overheat even at max temperature ($<70^\circ\text{C}$)
- Door buffer system that maintains stable vacuum condition and ensures user safety in case of explosion (OV4)
- Hands-free door and double-stackable (stacking set : option) enhance convenience and space efficiency



In case of explosion

Product Selection Guide

General Applications

Forced Convection Oven

- Aging & curing, Agricultural genetics, Degradation/Digestion of proteins and starches, Universal & General drying and Heating, QC/Batch testing, Stability testing, Sterilization, etc.



Natural Convection Oven

- Annealing, Plant tissue drying, Drug metabolism, Purified chemical precipitation, Universal & General drying and Heating, Serum protein analysis, Sterilization, etc.



Vacuum Oven

- Agricultural genetics, Annealing, Desiccating, Outgassing, Vacuum embedding, Volatile Resin & polymer test, etc.



Specification Overview

Model	OF4	ON4	OV4
Model type (by function)	Program / Advanced / Standard	Advanced / Standard	Advanced / Standard
Model type (by size)	03 / 05 / 10 / 15	03 / 05 / 10 / 15	30 / 65
Model type (by window)	Solid / Window		Window
Internal volume (L / cu ft)	26, 61, 112, 147 / 0.92, 2.15, 3.96, 5.19	26, 58, 110, 147 / 0.92, 2.05, 3.86, 5.19	28, 65 / 1, 2.3
Temperature range (°C / °F)	Amb. + 10 to 250 / Amb. + 18 to 482	Amb. + 15 to 250 / Amb. + 27 to 482	Amb. +15 to 250 / Amb. +27 to 482
Max. fluctuation at 100°C (±°C / ±°F)	0.3 / 0.54	0.5 / 0.9	0.2 / 0.36
Max. variation at 100°C (±°C / ±°F)	1.9 / 3.42	3.6 / 6.48	1.5 / 2.7
Max. heat up time at 100°C (±°C / ±°F)	15 mins	39 mins ¹⁾	90 mins
Max. recovery time at 100°C (±°C / ±°F)	4 mins	19 mins	-
Wait On/Off timer	99hr 59min		
Vent hole	2ea		-
Controller	5 / 3.5 inch TFT Color LCD		

1) Heating time(ON4) is defined as the time taken to reach 98% of the set temperature.

Model naming rules for product selection

Example OF4 - 03/05/10/15 P/V/S W Internal volume Program / Advanced / Standard type With or without the window
 OV4 - 30/60 /S Internal volume (no mark) Advanced / Standard type

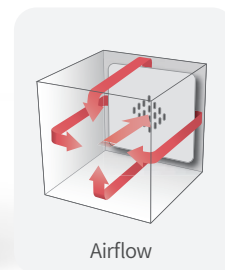
Forced Convection Oven, Program type (OF4-P)



OF4-10P

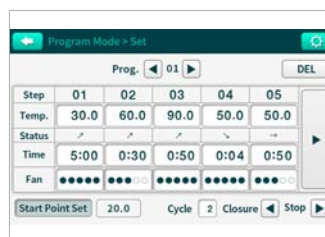


OF4-10PW

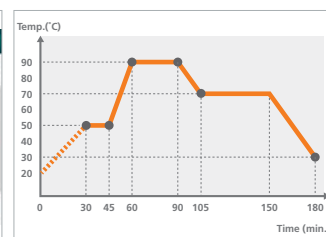


Easy Program Setting for Anyone

- User interface that shows temperature and fan speed in a single view
- Flexible program setting; upto 10 programs, 10 steps, 99 times repeatable
- Customizable; Set start temp., temp per step, time, Opti-flow™



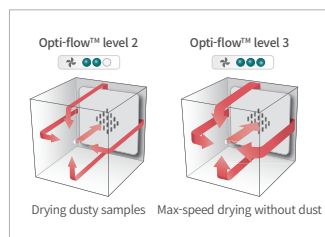
Intuitive program setting interface



Flexible program setting according to application

Convenient Structural Functions

- 「Opti-flow™」, the fan speed control function based on sample and testing conditions
- Double stackable with stacking set (option) maximizes space utilization (-05 / -15 models only)
- 「Hands-free™」 door allows both hands free while holding samples



Fan speed control with Opti-flow™



Increased space utilization by double stacking (stacking set : option)
(※ When double stacking, the minimum control temperature of the upper chamber may be limited.)

Supervise Equipment in Real Time

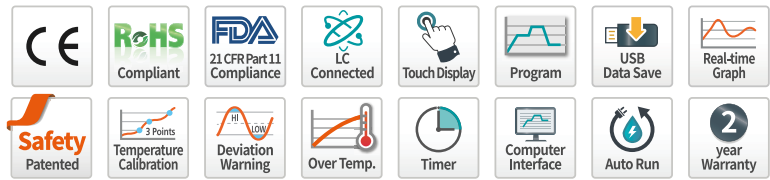
- Monitor the temperature on BMS (Building Management System) for quick responses to abnormalities (option)
- Monitor and control anywhere, anytime with LC GreenBox (Mobile Monitoring System, option)



Timely responses via BMS-connected monitoring (BMS port: option)



Real-time monitoring via mobile devices (LC GreenBox: option)

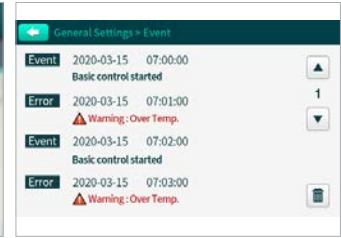


Convenient Experiment and Data Checking

- Supports RS-232/USB port and software, making easy operation and data management from PC
- Test data are automatically stored and easily exported via USB; easy to edit data (in CSV format)
- Logs 36 recent events, including errors, opened door, etc
- Integrated with 21 CFR Part 11 compliant LC DataKeeper, suitable for GMP audits (option)



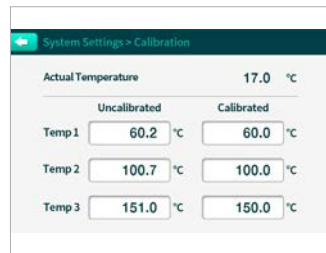
Data storage using USB ports



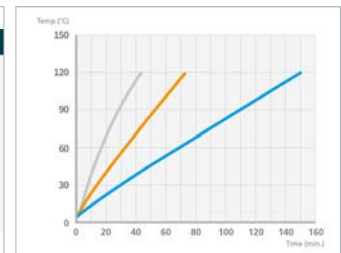
Store recent 36 events

Reliable Temperature Control Performance

- Wide temperature range of up to 250°C
- Temperature accuracy for wide range by 3-point calibration
- 「Ramp Control™」, function that controls the rate of temperature rise by setting ramping rate(°C/min) per experiment
- Uniform temperature distribution through airflow optimized for uniform heat transfer (within $\pm 1.9^{\circ}\text{C}$ at 100°C)



Accurate temperature control with 3-point calibration



Ramp Control™ per experiment condition

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 ($\pm^{\circ}\text{C}$ / $\pm^{\circ}\text{F}$)	0.3 / 0.54	0.3 / 0.54	0.3 / 0.54	0.3 / 0.54
	Variation at 100°C ($\pm^{\circ}\text{C}$ / $\pm^{\circ}\text{F}$)	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	Opti-flow™: Three-step wind speed setting			
	Recommended temperature	Three frequently used temperature settings			
	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
	Quantity of shelves (Standard / max.)	2 / 4	2 / 5	2 / 8	2 / 9
Shelves	Max. Load per shelf (kg / lbs)	20 / 44.09			
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) Data measured at fan speed 3, with possible increase of Fluctuation and Variation values at fan speeds 1 and 2 (According to DIN 12880, pre-2013)
 2) Data measured at fan speed 3, with possible decreases in Air change at fan speeds 1 and 2. (According to ASTM D 5374, reapproved 1999)

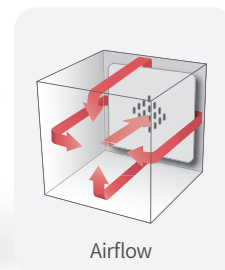
Forced Convection Oven, Advanced type (OF4-V)



OF4-10V



OF4-10VW

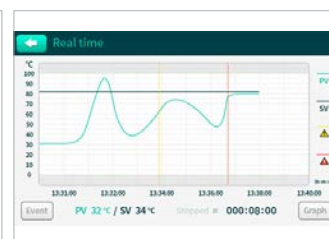


Large touch-screen controller providing intuitive information

- 5-Inch touch controller that enables intuitive control
- Events and alerts in a single view with real-time graph
- Three frequent temperatures automatically suggested
- 'Wait on / Wait off' timer function



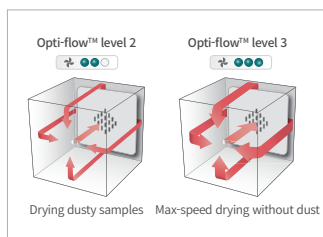
5-inch touch screen controller



Graphs for real-time process monitoring

Convenient Structural Functions

- 「Opti-flow™」, the fan speed control function based on sample and testing conditions
- Double stackable with stacking set (option) maximizes space utilization (-05 / -15 models only)
- 「Hands-free™」 door allows both hands free while holding samples



Fan speed control with Opti-flow™



Increased space utilization by double stacking (stacking set : option)
(※ When double stacking, the minimum control temperature of the upper chamber may be limited.)

Supervise Equipment in Real Time

- Monitor the temperature on BMS (Building Management System) for quick responses to abnormalities (option)
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Timely responses via BMS-connected monitoring (BMS port: option)



Real-time monitoring via mobile devices (LC GreenBox: option)

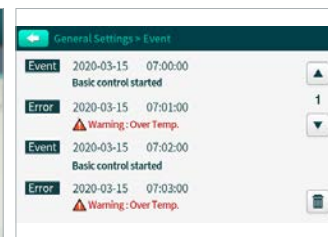


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Data storage using USB ports



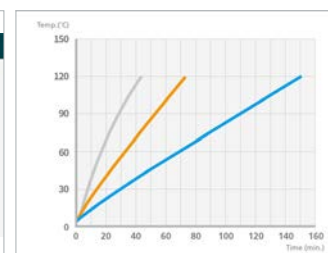
Store recent 36 events

Reliable Temperature Control Performance

- Wide temperature range of up to 250°C
- Temperature accuracy for wide range by 3-point calibration
- 「Ramp Control™」, function that controls the rate of temperature rise by setting ramping rate(°C/min) per experiment
- Uniform temperature distribution through airflow optimized for uniform heat transfer (within $\pm 1.9^{\circ}\text{C}$ at 100°C)



Accurate temperature control with 3-point calibration



Ramp Control™ per experiment condition

Specification (OF4-V)

Model	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 ($\pm^{\circ}\text{C}$ / $\pm^{\circ}\text{F}$)	0.3 / 0.54	0.3 / 0.54	0.3 / 0.54	0.3 / 0.54
	Variation at 100°C ($\pm^{\circ}\text{C}$ / $\pm^{\circ}\text{F}$)	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	Opti-flow™: Three-step wind speed setting			
	Recommended temperature	Three frequently used temperature settings			
	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)	20 / 44.09			
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) Data measured at fan speed 3, with possible increase of Fluctuation and Variation values at fan speeds 1 and 2 (According to DIN 12880, pre-2013)
 2) Data measured at fan speed 3, with possible decreases in Air change at fan speeds 1 and 2. (According to ASTM D 5374, reapproved 1999)

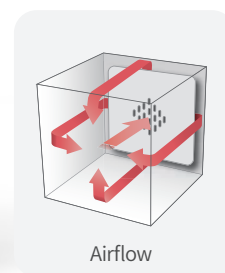
Forced Convection Oven, Standard type (OF4-S)



OF4-10S



OF4-10SW



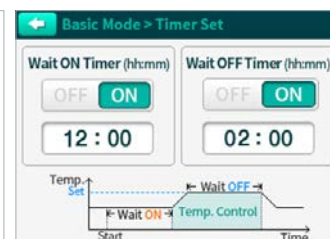
Airflow

Intuitive Touch Controller

- Intuitive interface with 3.5-inch touch screen
- 'Wait on / Wait off' timer function



3.5-Inch touch controller



Wait on & Wait off Timer

Reliable Temperature Control Performance

- Wide temperature range of up to 250°C
- Temperature accuracy for wide range by 3-point calibration
- The upper and lower temperature limits can be set, enabling alerts for deviations to trigger quick actions
- Uniform temperature distribution through airflow optimized for uniform heat transfer (within $\pm 1.9^{\circ}\text{C}$ at 100°C)

System Settings > Calibration		
Actual Temperature	17.0 °C	
	Uncalibrated	Calibrated
Temp 1	60.2 °C	60.0 °C
Temp 2	100.7 °C	100.0 °C
Temp 3	151.0 °C	150.0 °C

Accurate temperature control with 3-point calibration

System Settings > Alarm	
High Deviation Temp.	+ 5.0 °C
Low Deviation Temp.	- 5.0 °C
High Temperature	270.0 °C
Door Open Alarm Delay	1 min

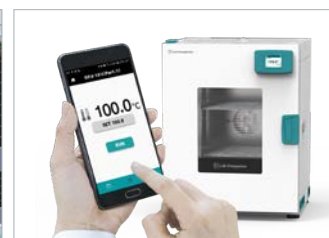
Settings for temperature deviation

Convenient Experiment and Data Checking

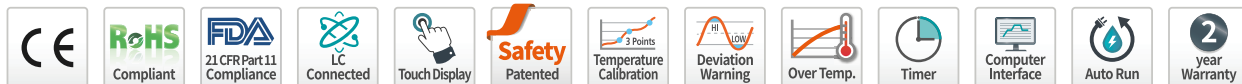
- Support RS-232/USB port and software making easy operation and data management from PC (option)
- Monitor and control anywhere, anytime with LC GreenBox (Mobile Monitoring System, option)
- Monitor the temperature on BMS (Building Management System) for quick responses to abnormalities. (option)



Control via connecting the PC



Real-time monitoring and control via mobile (option)

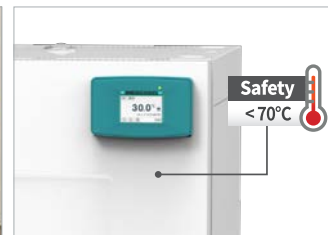


Ensuring User Safety

- Effectively removes fumes from the inside of the chamber via the top vent hole (OF4-03)
- Safe surface even when operating at max temperatures (less than 70°C at 250°C)
- Implemented with the top-rated overheating prevention system (Patent 10-0397583)
- Over Temperature Limiter
- Complaint to IEC Class II protection standards and temperature protection in line with DIN 12880 Class 3.1



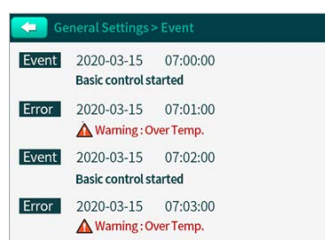
Removes fume from the inside of the chamber



Safe surface even at maximum temperature

Convenient Structure and Functions

- Logs the last 12 events, including run times, stops, and errors
- Double stackable with stacking set (option) maximizes space utilization (-05 / -15 models only)
- 「Hands-free™」 door allows both hands free while holding samples



Logs the recent 12 events



Increased space utilization by double stacking (stacking set : option)
(※ When double stacking, the minimum control temperature of the upper chamber may be limited.)

Specification (OF4-S)

Model	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	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 / 28.66 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)	20 / 44.09			
Number of air change per hour at 100°C		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

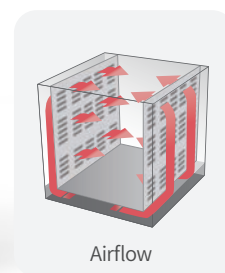
Natural Convection Oven, Advanced type (ON4-V)



ON4-10V



ON4-10VW



Intuitive Touch Controller

- Intuitive interface with 5-inch display
- Events and alerts in a single view with real-time graph
- Three frequent temperatures automatically suggested
- 'Wait on / Wait off' timer function



Large intuitive display



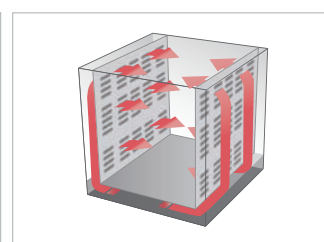
Graphs for real-time process monitoring

Convenient Structural Functions

- Designed with a depth of less than 750 mm, making it easy and stable on a lab table
- Uniform and stable temperature distribution with multi-path airflow improves reliability of experiment data



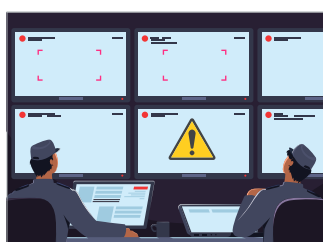
Depth of less than 750 mm allows stable positioning on lab table



Uniform temperature control with multi-path airflow

Supervise Equipment with Real-time Monitoring

- Monitor the temperature on BMS (Building Management System) for quick responses to abnormalities. (option)
- Monitor and control anywhere, anytime with LC GreenBox (Mobile Monitoring System, option)



Timely responses via BMS-connected monitoring (BMS port: option)



Real-time monitoring via mobile devices (LC GreenBox: option)

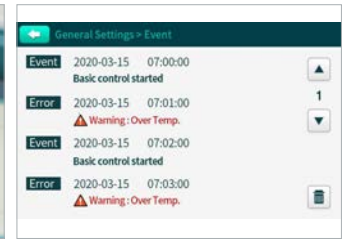


Convenient Experiment and Data Checking

- Support RS-232/USB port and software making easy operation and data management from PC
- Test data are automatically stored and easily exported via USB; easy to edit data (in CSV format)
- Logs 36 recent events, including errors, opened door, etc
- Integrated with 21 CFR Part 11 compliant LC DataKeeper, suitable for GMP audits (option)



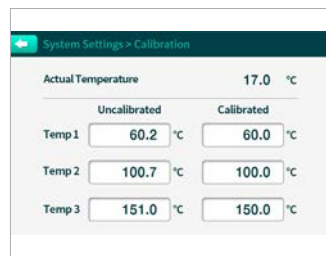
Data storage using USB ports



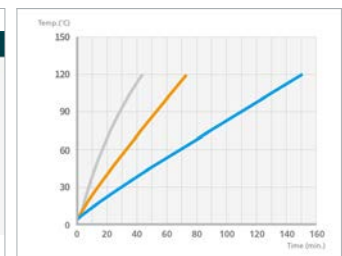
Store recent 36 events

Reliable Temperature Control Performance

- Wide temperature range of up to 250°C
- Temperature accuracy for wide range by 3-point calibration
- 「 Ramp Control™ 」, function that controls the rate of temperature rise by setting ramping rate(°C/min) per experiment
- Uniform temperature distribution through airflow optimized for uniform heat transfer (within $\pm 3.6^{\circ}\text{C}$ at 100°C)



Accurate temperature control with 3-point calibration



Ramp Control™ per experiment condition

Specification

Model	Solid door (without window)	ON4-03V	ON4-05V	ON4-10V	ON4-15V
	Window door	ON4-03VW	ON4-05VW	ON4-10VW	ON4-15VW
Chamber volume (L / cu ft)		26 / 0.92	58 / 2.05	110 / 3.88	147 / 5.19
Temperature	Range (°C / °F)	Amb.+15 ~ 250°C / Amb.+27 ~ 482°F			
	Fluctuation at 100°C (°C / °F)	±0.4 / ±0.72	±0.5 / ±0.9	±0.5 / ±0.9	±0.5 / ±0.9
	Variation at 100°C(°C / °F)	±2.8 / ±5.04	±2.6 / ±4.68	±3.6 / ±6.48	±3.5 / ±6.3
	Heating time to 100°C (min.) ¹⁾	25	39	22	21
	Recovery time at 100°C (min.)	17	19	10	9
Control panel		5 inch TFT Color LCD			
Communication interface		USB-B, RS-232			
Function	Recently event record	36 ea			
	Recommended temperature	Suggest three frequently used temperature			
	Graph	Available viewing stored and real-time graphs			
	Data storage	Save your experiment data (in CSV format)			
	Temp. ramping rate (°C/min. °F/min)	0 to 2.2 0 to 3.96	0 to 2 0 to 3.6	0 to 4.4 0 to 7.92	0 to 2.6 0 to 4.68
Dimensions	Interior (W x D x H, mm / inch)	273 x 270 x 350 / 10.75 x 10.63 x 13.78	340 x 390 x 422 / 13.4 x 15.35 x 16.61	441 x 420 x 597 / 17.36 x 16.54 x 23.5	500 x 446 x 659 / 19.69 x 17.56 x 25.95
	Exterior (W x D x H, mm / inch)	478 x 527 x 604 / 18.8 x 20.75 x 23.78	558 x 648 x 684 / 21.97 x 25.5 x 26.93	663 x 677 x 859 / 26.1 x 26.65 x 33.82	728 x 704 x 914 / 28.66 x 27.7 x 36.0
	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)	20 / 44.09			
Number of air change per hour at 100°C		16			
Electrical requirements	230V, 50/60Hz, A	3.2	3.5	5.7	7.4
Cat. No.	Solid door (without window)	AAH111105K	AAH111115K	AAH111125K	AAH111135K
	Window door	AAH112105K	AAH112115K	AAH112125K	AAH112135K
Electrical requirements	120V, 60Hz, A	6	6.7	10.9	14.2
Cat. No.	Solid door (without window)	AAH111106U	AAH111116U	AAH111126U	AAH111136U
	Window door	AAH112106U	AAH112116U	AAH112126U	AAH112136U

1) Heating time is defined as the time taken to reach 98% of the set temperature.

※ Technical data according to DIN 12880

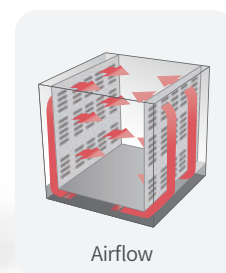
Natural Convection Oven, Standard type (ON4-S)



ON4-10S



ON4-10SW



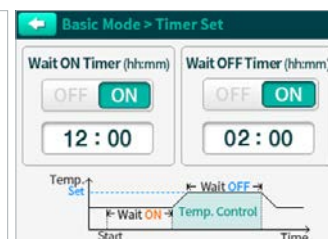
Airflow

Intuitive Touch Controller

- Intuitive interface with 3.5-inch display
- 'Wait on / Wait off' timer function



3.5-inch touch display



Wait on & Wait off timer

Reliable Temperature Control Performance

- Wide temperature range of up to 250°C
- Temperature accuracy for wide range by 3-point calibration
- The upper and lower temperature limits can be set, enabling alerts for deviations to trigger quick actions
- Uniform temperature distribution through airflow optimized for uniform heat transfer (within $\pm 3.6^{\circ}\text{C}$ at 100°C)

System Settings > Calibration		
Actual Temperature	17.0 °C	
	Uncalibrated	Calibrated
Temp 1	60.2 °C	60.0 °C
Temp 2	100.7 °C	100.0 °C
Temp 3	151.0 °C	150.0 °C

Accurate temperature control with 3-point calibration

System Settings > Alarm	
High Deviation Temp.	+ 5
Low Deviation Temp.	- 5
High Temperature	270
Door Open Alarm Delay	5 min

Settings for temperature deviation

Convenient Experiment and Data Checking

- Support RS-232/USB port and software making easy operation and data management from PC (option)
- Monitor and control anywhere, anytime with LC GreenBox (Mobile Monitoring System, option)
- Monitor the temperature on BMS (Building Management System) for quick responses to abnormalities. (option)
- Integrated with 21 CFR Part 11 compliant LC DataKeeper, suitable for GMP audits (option)



Manipulation via PC (option)



Real-time monitoring via mobile devices (LC GreenBox: option)

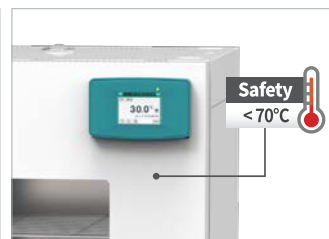


Ensuring User Safety

- Effectively removes fumes from the inside of the chamber via the top vent hole (ON4-03)
- Safe surface even when operating at max temperatures (less than 70°C at 250°C)
- Implemented with the top-rated overheating prevention system (Patent 10-0397583)
- Over Temperature Limiter
- Complaint to IEC Class II protection standards and temperature protection in line with DIN 12880 Class 3.1



Removes fume from the inside of the chamber



Safe surface even at maximum temperature

Convenient Structure and Functions

- Logs the last 12 events, including run times, stops, and errors
- Double stackable with stacking set (option) maximizes space utilization (-05 / -15 models only)
- 「Hands-free™」 door allows both hands free while holding samples



Logs the recent 12 events



Increased space utilization by double stacking (stacking set : option)
(※ When double stacking, the minimum control temperature of the upper chamber may be limited.)

Specification

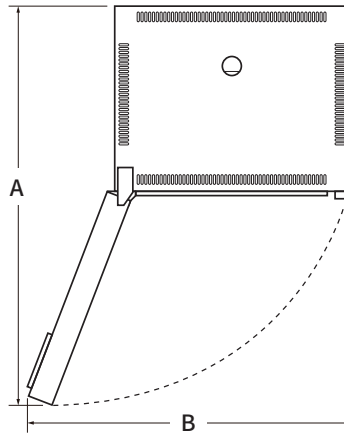
Model	Solid door (without window)	ON4-03S	ON4-05S	ON4-10S	ON4-15S
	Window door	ON4-03SW	ON4-05SW	ON4-10SW	ON4-15SW
Chamber volume (L / cu ft)		26 / 0.92	58 / 2.05	110 / 3.88	147 / 5.19
Temperature	Range (°C / °F)	Amb.+15 ~ 250°C / Amb.+27 ~ 482°F			
	Fluctuation at 100°C (°C / °F)	±0.4 / ±0.72	±0.5 / ±0.9	±0.5 / ±0.9	±0.5 / ±0.9
	Variation at 100°C (°C / °F)	±2.8 / ±5.04	±2.6 / ±4.68	±3.6 / ±6.48	±3.5 / ±6.3
	Heating time to 100°C (min.) ¹⁾	25	39	22	21
	Recovery time at 100°C (min.)	17	19	10	9
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)	273 x 270 x 350 / 10.75 x 10.63 x 13.78	340 x 390 x 422 / 13.4 x 15.35 x 16.61	441 x 420 x 597 / 17.36 x 16.54 x 23.5	500 x 446 x 659 / 19.69 x 17.56 x 25.95
	Exterior (W x D x H, mm / inch)	478 x 527 x 604 / 18.8 x 20.75 x 23.78	558 x 648 x 684 / 21.97 x 25.5 x 26.93	663 x 677 x 859 / 26.1 x 26.65 x 33.82	728 x 704 x 914 / 28.66 x 27.7 x 36.0
	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)	20 / 44.09			
Number of air change per hour at 100°C		16			
Electrical requirements	230V, 50/60Hz, A	3.2	3.5	5.7	7.4
Cat. No.	Solid door (without window)	AAH15045K	AAH15065K	AAH15075K	AAH15085K
	Window door	AAH15145K	AAH15165K	AAH15175K	AAH15185K
Electrical requirements	120V, 60Hz, A	6	6.7	10.9	14.2
Cat. No.	Solid door (without window)	AAH15046U	AAH15066U	AAH15076U	AAH15086U
	Window door	AAH15146U	AAH15166U	AAH15176U	AAH15186U

1) Heating time is defined as the time taken to reach 98% of the set temperature.

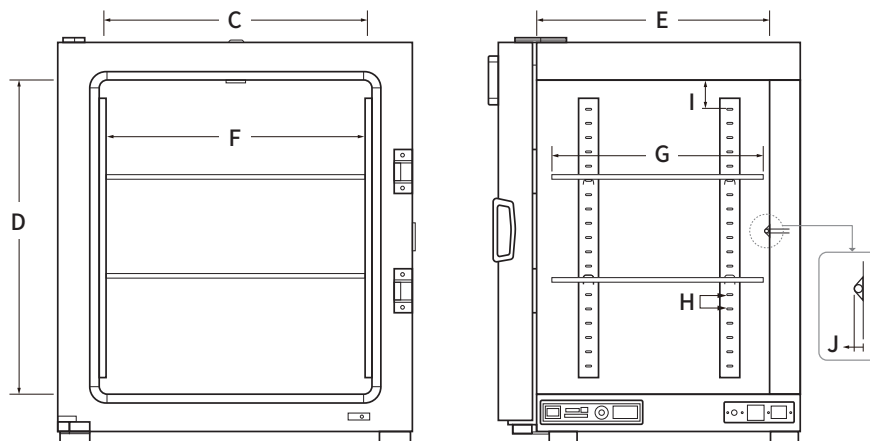
※ Technical data according to DIN 12880

Dimensions (OF4/ON4)

Exterior



Interior



(unit: mm / inch)

Model	OF4-03	ON4-03	OF4-05	ON4-05	OF4-10	ON4-10	OF4-15	ON4-15
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 width¹⁾	300 / 11.8	273 / 10.7	380 / 15.0	340 / 13.4	485 / 19.1	441 / 17.4	550 / 21.7	500 / 19.7
D: Interior height¹⁾	400 / 15.7	350 / 13.8	480 / 18.9	422 / 16.6	655 / 25.8	597 / 23.5	710 / 28.0	659 / 25.9
E: Interior depth¹⁾	210 / 8.3	270 / 10.6	330 / 13.0	390 / 15.4	350 / 13.8	420 / 16.5	376 / 14.8	446 / 17.6
F: Shelf width	266 / 10.5		346 / 13.6		451 / 17.8		516 / 20.3	
G: Shelf 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 shelf and interior ceiling¹⁾	80 / 3.1	50 / 2.0	90 / 3.5	60 / 2.4	88 / 3.5	57 / 2.2	85 / 3.3	59 / 2.3
J: Space for sensor installation	3.8 / 0.15		3.8 / 0.15		3.8 / 0.15		3.8 / 0.15	

1) ON4 uses a multi-path convection method, which causes differences in internal dimensions.

Vacuum Oven (OV-4)



OV4-30

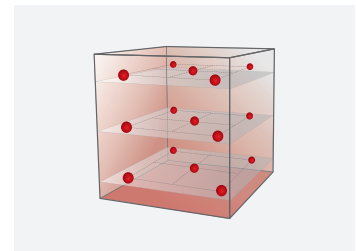


OV4-65

Why choose Lab Companion vacuum oven?

Precise temperature control

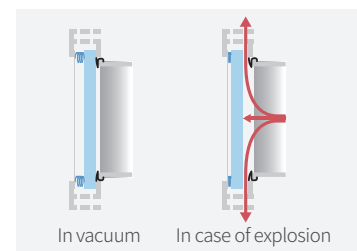
- Temperature variation up to $\pm 1.5^{\circ}\text{C}$ at 100°C according to DIN 12880:2007
- Actual experiment area is expanded by excellent temperature uniformity
- 3-point calibration improves temperature accuracy in the entire area



Variation less than $\pm 1.5^{\circ}\text{C}$ at 100°C

Ensuring User Safety

- Door buffer system that maintains stable vacuum condition. In case of explosion, internal pressure is discharged via the upper/lower exhaust ports
- Safety cover applied to protect users in case of broken tempered glass
- The surface remains safe at high temperatures to prevent burns when viewing through the window



Door Buffer System

Convenient Structural Functions

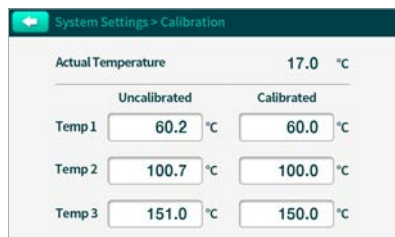
- Color touch display, easy operating controller
- Test data are automatically stored and easily exported via USB; easy to edit data in CSV format (except for OV-S type)
- Events and alerts in a single view with real-time graph (except for OV-S type)
- Limits the rate of temperature rise with [Ramp Control™] function (except for OV-S type)



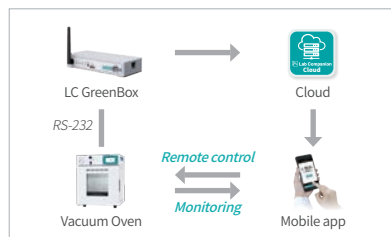
Intuitive touch controller

Main Features

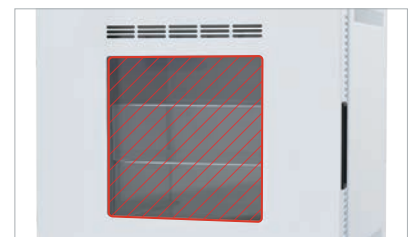
- Temp. range of up to 250°C / 482 °F
- 3-Point Calibration for improved temperature accuracy
- BMS port for equipment monitoring and quick action in case of issues
- LC GreenBox, the mobile monitoring system anytime and anywhere (option)
- Polycarbonate cover protects users from glass breakage
- Records recent events like door open and errors for experiment feedback
- Silicone (standard) or Viton (option) gasket for high sealing



3-point calibration for accuracy



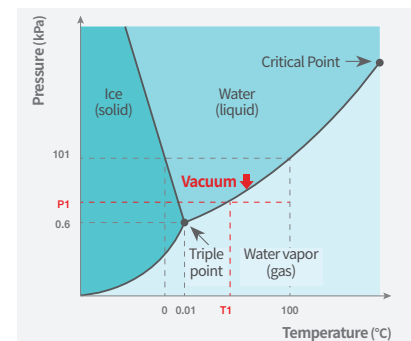
LC GreenBox



Safe cover from breakage

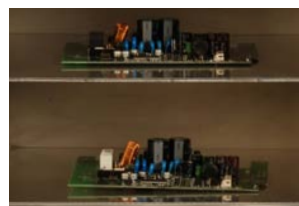
When dry in a vacuum?

Vacuum drying is used to dry samples which can be deformed when drying at high temperatures, maintaining original shape, or to dry faster than standard ovens. When the pressure is reduced with a vacuum pump, the vaporization proceeds at a temperature lower than the boiling point of water, allowing drying at a lower temperature than normal drying conditions. For example, if the pressure is reduced to the pressure of 'P1' in the graph on the right, the phase changes to water vapor at the temperature of 'T1', which is lower than the boiling point.



Vapor pressure curve

- Moisture removal from food such as dairy products.
- Moisture removal from sensitive products such as electronics.
- Drying process for the prevention of oxidation.
- Removing residual moisture to relieve capillary action.
- Defined heating protocols with temperature ramping under vacuum.



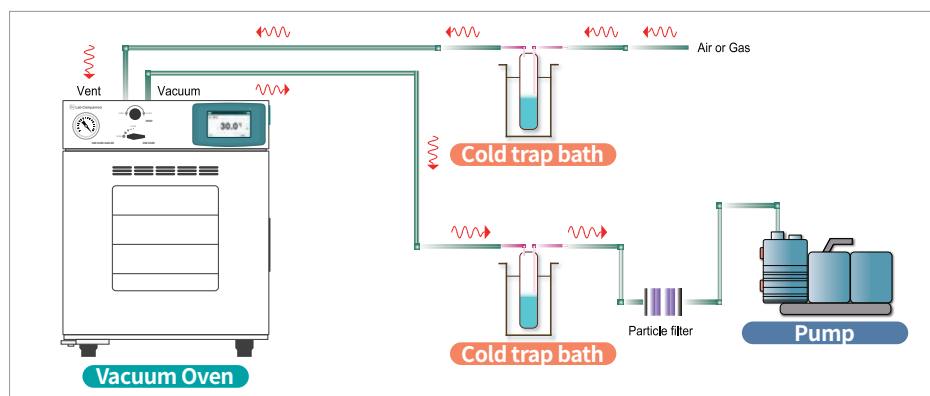


Vacuum Drying Setup

Basic configuration : **Vacuum Oven** + **Pump** + **Cold trap bath**

Pump : Diaphragm Pump or Rotary Pump(oil pump). (If use Rotary Pump, oil and oil mist trap is needed)

Cold trap bath : During vacuum formation, it prevents the inflow of solvent and moisture with rotary pump and particle filter.
When releasing the vacuum, it prevents moisture ingress.
(Connect two glass traps to one cold trap bath to remove moisture from both sides.)



Vacuum Oven Table (OVT, option)

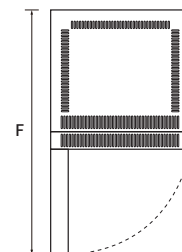
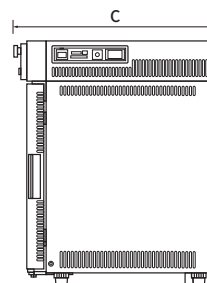
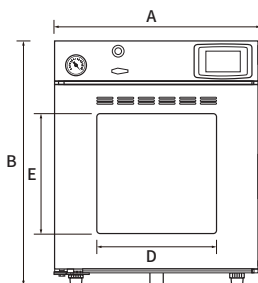


A dedicated table for vacuum drying setup (option)

Dimensions

(Unit: mm / inch)

Model	OV4-30	OV4-65
A	537 / 21.1	636 / 25.0
B	655 / 25.8	755 / 29.7
C	522 / 20.6	622 / 24.5
D	270 / 10.6	359 / 14.1
E	270 / 10.6	370 / 14.6
F	1009 / 39.7	1208 / 47.6

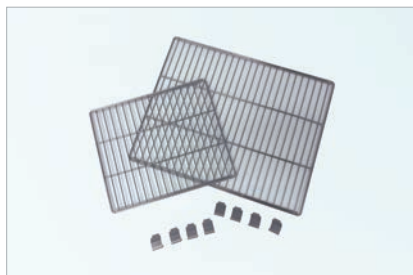


Specification

Model		OV4-30	OV4-30S*	OV4-65	OV4-65S*
Control panel		5 inch	3.5 inch	5 inch	3.5 inch
Chamber volume (L / cu ft)		28 / 1		65 / 2.3	
Temperature	Range (°C / °F)	Amb. +15 to 250 / Amb. +27 to 482		Amb. +15 to 250 / Amb. +27 to 482	
	Variation at 100°C (±°C / °F)	1.5 / 2.7		1.5 / 2.7	
	Fluctuation at 100°C (±°C / °F)	0.2 / 0.36		0.2 / 0.36	
	Heating up time to 100°C (min.)	70		90	
Dimensions	Interior (W x D x H, mm / inch)	302 x 305 x 302 / 11.9 x 12 x 11.9		402 x 405 x 402 / 15.8 x 15.9 x 15.8	
	Exterior (W x D x H, mm / inch)	537 x 522 x 655 / 21.1 x 20.6 x 25.8		636 x 622 x 755 / 25.0 x 24.5 x 29.7	
	Net weight (kg / lbs)	69 / 152.1		107 / 235.9	
Shelves	Quantity of shelves (standard/max.)	2 / 3		3 / 4	
	Max. Load per shelf (kg / lbs)	20 / 44.1		20 / 44.1	
Material		Body: Stainless Steel, Shelf: Aluminum		Body: Stainless Steel, Shelf: Aluminum	
Electrical requirements (230V, 50/60Hz, A)		5.7		6.7	
Cat. No.		AAH13315K	AAH13335K	AAH13325K	AAH13345K
Electrical requirements (120V, 60Hz, A)		10.2		11.7	
Cat. No.		AAH13316U	AAH13336U	AAH13326U	AAH13346U

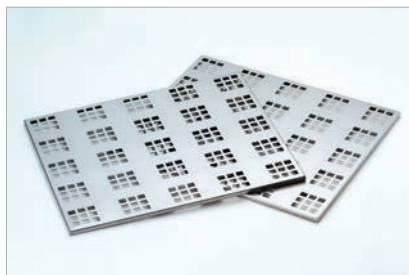
*Some convenience features are excluded for OV4-30S, OV4-65S models. (real-time graphs, data storage, etc.)

Accessories for OF4, ON4



Wire shelf (2EA included as standard)

- Stainless Steel
- Uniform temperature distribution based on high air permeability



Perforated shelf

- Stainless Steel
- Robust structure is ideal for heavy load samples



Stacking Set (-05 / -15 models only)

- Double stackable
- Firm stacking allows efficient utilization of space (※ When double stacking, the minimum control temperature of the upper chamber may be limited.)

Model	OF4-03 ON4-03	OF4-05	OF4-10	OF4-15
		ON4-05	ON4-10	ON4-15
Wire shelf	00FDA0009739	00FDA0009738	00FDA0009737	00FDA0009736
		00FDA0009949	00FDA0009950	00FDA0009951
Perforated shelf	AAA125341	AAA125342	AAA125343	AAA125344
		AAA125362	AAA125363	AAA125364
Stacking set	-	AAA125531	-	AAA125532



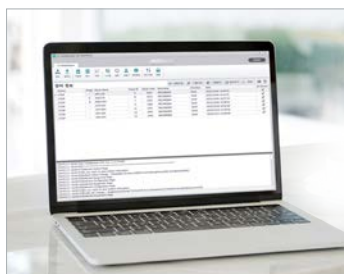
BMS Port

- Real-time equipment monitoring from a central monitoring facility
- Useful for safety management at laboratories that operate multiple devices



Communication Port

- Allows PC-connection control and data extraction via dedicated software
- Standard for OF4-P/V and ON4-V models, Optional for OF4-S and ON4-S models



LC DataKeeper

- High-integrity software compliant with FDA 21 CFR Part 11
- Integrated with JEIOTECH equipment to undergo GMP audits



LC GreenBox

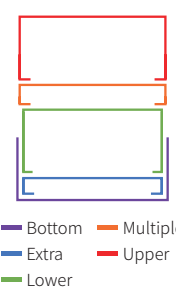
(Mobile Monitoring System)

- Real-time monitoring and control via mobile app
- Can connect up to four devices to a single LC GreenBox
- Communication port connectivity via a RS-232 port

Ports	OF4-P/V, ON4-P/V	OF4-S, ON4-S
BMS Port	AAA125534	
Communication Port	Standard	AAA125533
LC GreenBox	AAHQ1011K	
LC DataKeeper Basic	SSA11001	
LC DataKeeper Pro	SSA11002	

Accessories for OV4

Description		Cat. No.	
		OV4-30/30S	OV4-65/65S
Silicone Gasket	Basic bundle accessory. Silicon gasket for sealing the door.	00FDA0009912	00FDA0009913
Viton Gasket	High chemical resistance.	00FDA0009914	00FDA0009915
LC GreenBox	Mobile connection adapter. Available real-time monitoring and control on Lab Companion mobile app.	AAHQ1011K	

Description	Position (OV4-30 ³⁾)	Material	Cat. No.	
			OV4-30/30S	OV4-65/65S
Bottom shelf, Basic²⁾	 <p> — Bottom — Multiple — Extra — Upper — Lower </p>	Aluminum	AAA13519	AAA13520
		Stainless Steel	AAA13529	AAA13530
Extra shelf, Optional^{1), 4)}		Aluminum	AAA13511	AAA13513
		Stainless Steel	AAA13521	AAA13523
Lower shelf, Basic²⁾		Aluminum	AAA13517	AAA13518
		Stainless Steel	AAA13527	AAA13528
Upper shelf, Basic^{2), 3)}		Aluminum	AAA13512	AAA13514
		Stainless Steel	AAA13522	AAA13524
Multiple shelf, Optional^{1), 4)}		Aluminum	AAA13531	AAA13533
		Stainless Steel	AAA13532	AAA13534
Shelf spacer, Basic²⁾	Insert where the gap occurs	Aluminum	AAA13515	AAA13516
		Stainless Steel	AAA13525	AAA13526

1) You can add an extra shelf or multiple shelf that can be placed at the bottom to experiment with more samples same time, and the value of Variation and Fluctuation may increase slightly.

2) The shelf and shelf spacer are included as bundled accessories, and you can purchase when need to replace them.

3) For OV4-65 models, 2 upper shelves are basic provided.

4) Maximum number of shelf for OV4-30 model : 4 extra shelves / 5 multiple shelves and for OV4-65 model : 4 extra shelves / 8 multiple shelves.

Vacuum Oven System Station (OVT)

Dedicated table for organizing vacuum drying equipment neat and tidy.

A structure designed to place Vacuum Oven on top, Cold Trap Bath and Vacuum Pump on bottom.

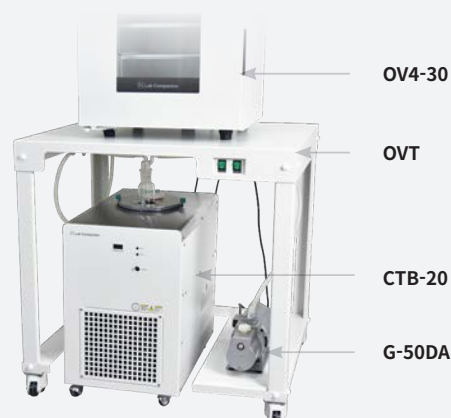


Cat. No.	Description
AAA13551	Vacuum Oven Table (OVT), 910 x 710 x 890 mm

Vacuum Oven System Configuration

Table	Vacuum Oven System Station (OVT)
Vacuum Oven	OV4-30
Cold Trap Bath	CTB-20 with glass trap
Vacuum Pump	G-50DA, 1.3×10^{-1} Pa

※ the above configuration is an example composed of products from JEIOTECH.
Please purchase the model suitable for your desired experiment



Lab Companion Chamber series



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

Lab Companion Korea

Head office & factory

Add. 153, Techno 2-ro, Yuseong-gu, Daejeon, 34025, South Korea

International sales office

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