

Incubator Oven

Controller SMART-Lab™ Jog-Dial

Anytime - Anywhere connected laboratory



SMART-Lab™ Controller



- full touch screen TFT LCD:
- WiRe™ app service, remote control system
- variable program settings
- self-diagnosis and interactive temperature graph
- automatic data recording and password protection
- data transfer to PC by USB memory
- digital calibration (offset function)
- min-/max-temperature memory & program function
- push-alarm service to smartphone or tablet PC

more information on 8 - 11

SMART-Lab devices

Incubator	Oven
SWIG 70°C, 32 / 50 / 105 / 155 l - page 59	SWON 230°C, 32/50/105/155 l - page 77
SWIF 70°C, 50/105/155 l - page 61	SWOF 250°C, 50/105/155 l - page 79
SWIR 0-60°C, refrigerated - page 65	SWOV 200°C, 18.6/30/70 l, 750mmHg - page 81
STH -20/-40°C, 98% rel. hum. - page 72	
STH-E -20°C, 95% rel. hum. - page 73	
SWGC Illumination, 95% rel. hum. - page 74	

Jog-Dial controller

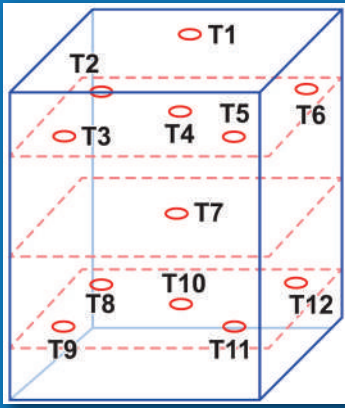
- ergonomic design for easy and convenient usage
- 2-way Jog-Dial knob provides simple setting of required temperature and time
- high quality illuminated LCD
- „MAIN“ and „SUB“ button to access all menus



Incubator	Oven
WIG 70°C, 32 / 50 / 105 / 155 l on page 58	WON 230°C, 32/50/105/155 l on page 76
WIF 70°C, 50/105/155 l on page 60	WOF 250°C, 50/105/155 l on page 78
WIR 0-60°C, refrigerated on page 64	WOV 200°C, 18.6/30/70 l, 750mmHg on page 80

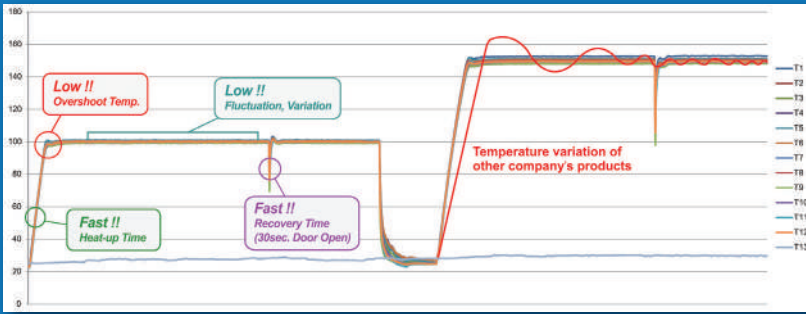
Incubator Oven

General information



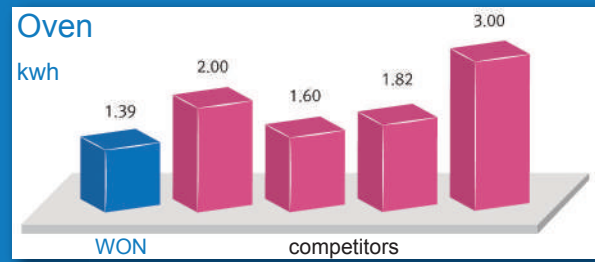
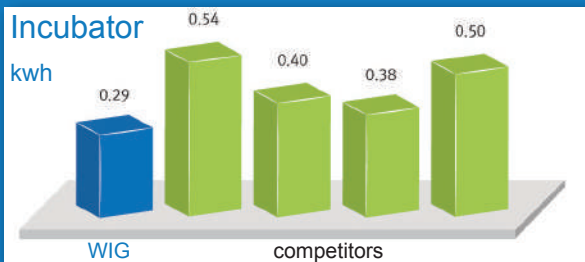
Temperature uniformity successfully tested by ASTM standards

All incubators and ovens are thoroughly tested, using 12 temperature sensors and the latest instruments to obtain validation, which corresponds to international standards.



Green product

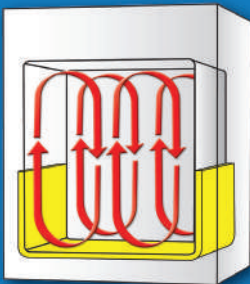
All incubators and ovens achieve minimum power consumption by using heating elements consuming minimum power adjusted for the capacity and temperature of the chamber.



Incubator air-flow

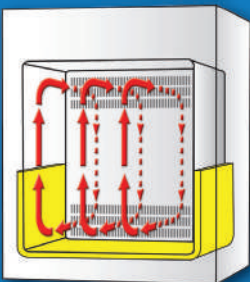
Gravity-air

The incubators gravity-air flow is established by creating radiant and conductive heat on three sides of the chamber (bottom, left and right side).



Forced-air

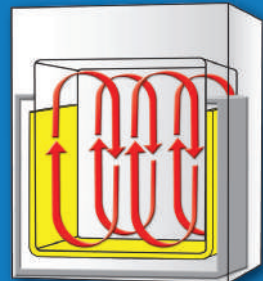
The incubators forced-air flow is established by a three sided heating element in combination with a very effective fan placed in an air-flow room for best temperature uniformity in the whole chamber.



Oven air-flow

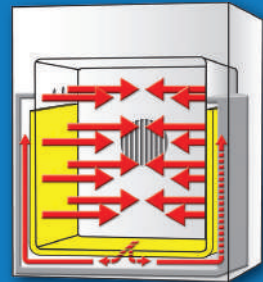
Gravity-air

The ovens gravity-air flow is established by heating up air in a pre-heating zone by heating elements on the bottom, left and right side. The pre-heated air will be restrictively provided into the chamber.



Forced-air

The ovens forced-air flow is established by a very effective fan installed in the rear of the chamber sucking air from the chamber into the pre-heating zone where heating elements on the bottom, left and right side heat up air. The pre-heated air is uniformly and quickly provided into the chamber by a special side and bottom structure.



Oven | gravity-air

Jog-Dial controller, gravity-air convection, up to 230°C, 32 / 50 / 105 / 155 l



Gravity-air
3-sided heater



Wise remote



Jog-Dial controller

WON 230°C, 32/50/105/155 l

Ideal for:

- drying, baking, conditioning, curing, pre-heating and aging

Features:

- optimized air flow by gravity-air mechanism
- 3-side heating ensures temperature uniformity and accuracy
- ambient +5°C to 230°C range, fluctuation of $\pm 0.5^\circ\text{C}$ at 100°C
- RS232C interface for monitoring and controlling (WireRemote)
- stainless steel chamber
- powder-coated steel body and glass wool insulation
- available with viewing window (WON-W models)
- new compact body design
- storage function for set values of temperature and timer
- backlight LCD display
- 2x stainless steel wire shelves included
- CE & UL/CUL certified and unique serial number for tracing

Safety mechanism:

- locking mode
- overheat and over-current protection
- sensor error detection

Controller:

- **Jog-Dial controller (PID)** with 2-way knob (turn and push), digital LCD with backlight, and two durable setting buttons

IQ | OQ
available
page 12 for details



WON-W105 with viewing window
and 2x wire shelves (included)

Model	WON-32	WON-50	WON-105 / WON-W105*	WON-155 / WON-W155*
Capacity	32 l	50 l	105 l	155 l
Temperature range, variation & sensor	room temperature +5°C - 230°C, variation: $\pm 1.2^\circ\text{C}$ at 100°C, $\pm 2.2^\circ\text{C}$ at 150°C, sensor: PT 100			
Temperature fluctuation	$\pm 0.5^\circ\text{C}$ at 100°C, $\pm 0.6^\circ\text{C}$ at 150°C			$\pm 0.5^\circ\text{C}$ at 100°C, $\pm 0.8^\circ\text{C}$ at 150°C
Heating power	500 W	650 W	1.4 kW	1.6 kW
Heat-up time	30 min to 100°C, 43 min to 150°C	30 min to 100°C, 45 min to 150°C		35 min to 100°C, 50 min to 150°C
Recovery time (door open 30 sec)	8 min to 100°C, 10 min to 150°C		12 min to 100°C, 10 min to 150°C	
Timer & alarm	99hr 59 min (delay & continuous run)			
Control resolution	$\pm 0.1^\circ\text{C}$			
Shelves	2 x stainless steel wire shelves included, load per shelf 16 kg			
Ventilation	1x hole \varnothing 35 mm ventilation hole with stainless steel cap		2x hole \varnothing 35 mm ventilation hole with stainless steel cap	
Internal dimensions (W x D x H)	310x290x360 mm	370x350x420 mm	485x409x535 mm	550x474x600 mm
External dimensions (W x D x H) & net weight	458x557x664 mm, 36 kg	518x647x724 mm, 44 kg	653x712x882 mm, 79 kg	718x777x947 mm, 78 kg
Packing size & gross weight	562x664x747 mm, 43 kg	622x754x807 mm, 59 kg	743x819x1068 mm, 79 kg	808x884x1133 mm, 92 kg
Power supply	1 Phase AC 120V, 60 Hz or AC 230V, 50/60 Hz			
Power consumption	502 W	674 W	1390 W	1566 W
Energy consumption at 100°C/ at 150°C	90 Wh / 181 Wh	117 Wh / 230 Wh	187 Wh / 337 Wh	204 Wh / 398 Wh
Order number 230V	DH.WON05032	DH.WON05050	DH.WON05105	DH.WON05155
Order number 120V	DH.WON06032	DH.WON06050	DH.WON06105	DH.WON06155
Order number built-in viewing window 230 V	-	-	DH.WON07105	DH.WON07155
Order number built-in viewing window 120 V	-	-	DH.WON08105	DH.WON08155

* built-in viewing window model

Accessories: Suitable shelves can be found on page 86

Oven | gravity-air

SMART-Lab™ controller, gravity-air convection, up to 230°C, 32 / 50 / 105 / 155 l



Gravity-air
3-sided heater



SMART-Lab™ controller



WiRe™ app service

SWON 230°C, 32/50/105/155 l

Ideal for:

- drying, baking, conditioning, curing, pre-heating and aging

Features:

- optimized air flow by gravity-air mechanism
- 3-side heating ensures temperature uniformity and accuracy
- ambient +5°C to 230°C range, fluctuation of $\pm 0.5^\circ\text{C}$ at 100°C
- stainless steel chamber
- powder-coated steel body and glass wool insulation
- available with viewing window (SWON-W models)
- new compact body design
- storage function for set values of temperature and timer
- 2x stainless steel wire shelves included
- CE & UL/CUL certified and unique serial number for tracing

Safety mechanism:

- push alarm service to your smartphone
- locking mode
- overheat and over-current protection
- sensor error detection

Controller:

- **Smart-Lab™ controller** with 4" full touch screen TFT LCD:
 - ◆ WiRe™ app service, remote control system
 - ◆ variable program settings
 - ◆ self-diagnostic function
 - ◆ automatic data recording
 - ◆ data transfer to PC by USB memory
 - ◆ Internet connectivity with WiFi

IQ | OQ
available
page 12 for details



SWON-W105 with viewing window
and 2x wire shelves (included)

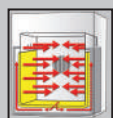
Model	SWON-32	SWON-50	SWON-105 / SWON-W105*	SWON-155 / SWON-W155*
Capacity	32 l	50 l	105 l	155 l
Temperature range, variation & sensor	room temperature +5°C - 230°C, variation: $\pm 1.2^\circ\text{C}$ at 100°C, $\pm 2.2^\circ\text{C}$ at 150°C, sensor: PT 100			
Temperature fluctuation	$\pm 0.5^\circ\text{C}$ at 100°C, $\pm 0.6^\circ\text{C}$ at 150°C			$\pm 0.5^\circ\text{C}$ at 100°C, $\pm 0.8^\circ\text{C}$ at 150°C
Heating power	500 W	650 W	1.4 kW	1.6 kW
Heat-up time	30 min to 100°C, 43 min to 150°C	30 min to 100°C, 45 min to 150°C		35 min to 100°C, 50 min to 150°C
Recovery time (door open 30 sec)	8 min to 100°C, 10 min to 150°C		12 min to 100°C, 10 min to 150°C	
Timer & alarm	99hr 59 min (delay & continuous run)			
Control resolution	$\pm 0.1^\circ\text{C}$			
Shelves	2 x stainless steel shelves included, load per shelf 16 kg			
Ventilation	1x hole \varnothing 35 mm ventilation hole with stainless steel cap		2x hole \varnothing 35 mm ventilation hole with stainless steel cap	
Internal dimensions (W x D x H)	310x290x360 mm	370x350x420 mm	485x409x535 mm	550x474x600 mm
External dimensions (W x D x H), net weight	458x557x664 mm, 36kg	518x647x724 mm, 44kg	653x712x882 mm, 69kg	718x777x947 mm, 78kg
Packing size & gross weight	562x664x747 mm, 43kg	622x754x807 mm, 59kg	743x819x1068 mm, 79kg	808x884x1133 mm, 92kg
Power supply	1 Phase AC 120V, 60 Hz or AC 230V, 50/60 Hz			
Power consumption	502 W	674 W	1390 W	1566 W
Energy consumption at 100°C/ at 150°C	90 Wh / 181 Wh	117 Wh / 230 Wh	187 Wh / 337 Wh	204 Wh / 398 Wh
Order number 230V	DH.SWON05032	DH.SWON05050	DH.SWON05105	DH.SWON05155
Order number 120V	DH.SWON06032	DH.SWON06050	DH.SWON06105	DH.SWON06155
Order number built-in viewing window 230 V	-	-	DH.SWON07105	DH.SWON07155
Order number built-in viewing window 120 V	-	-	DH.SWON08105	DH.SWON08155

* built-in viewing window model

Accessories: Suitable shelves can be found on page 86

Oven | forced-air

Jog-Dial controller, forced-air convection, up to 250°C, 50 / 105 / 155 l



Forced-air
3-sided heater



Wise remote



Jog-Dial controller

WOF 250°C, 50/105/155 l

Ideal for:

- drying, baking, conditioning, curing, pre-heating and aging

Features:

- optimized air flow by forced-air mechanism
- 3-side heating ensures temperature uniformity and accuracy
- ambient +5°C to 250°C range, fluctuation of $\pm 0.3^\circ\text{C}$ at 100°C
- RS232C interface for monitoring and controlling (WireRemote)
- stainless steel chamber
- powder-coated steel body and glass wool insulation
- available with viewing window (WOF-W models)
- new compact body design
- storage function for set values of temperature and timer
- backlight LCD display
- 2x stainless steel wire shelves included
- CE & UL/CUL certified and unique serial number for tracing

Safety mechanism:

- locking mode
- overheat and over-current protection
- sensor error detection

Controller:

- **Jog-Dial controller (PID)** with 2-way knob (turn and push), digital LCD with backlight, and two durable setting buttons

IQ | OQ
available
page 12 for details



WOF-W105 with viewing window
and 2x wire shelves (included)

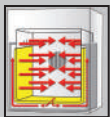
Model	WOF-50	WOF-105 / WOF-W105*	WOF-155 / WOF-W155*
Capacity	50 l	105 l	155 l
Temperature range, fluctuation & sensor	range: room temperature +5°C - 250°C, fluctuation: $\pm 0.3^\circ\text{C}$ at 100°C, $\pm 0.5^\circ\text{C}$ at 150°C, PT 100		
Temperature variation	$\pm 1^\circ\text{C}$ at 100°C, 1.8°C at 150°C		$\pm 1^\circ\text{C}$ at 100°C, $\pm 2^\circ\text{C}$ at 150°C
Heating power	650 W	1.4 kW	1.6 kW
Heat-up time	25 min to 100°C, 45 min to 150°C	25 min to 100°C, 40 min to 150°C	
Recovery time (door open 30 sec)	8 min to 100°C, 8 min to 150°C	6 min to 100°C, 6 min to 150°C	
Timer & alarm	99hr 59 min (delay & continuous run)		
Control resolution	$\pm 0.1^\circ\text{C}$		
Shelves	2 x stainless steel wire shelves included, load per shelf 16 kg		
Ventilation	1 x hole \varnothing 35 mm ventilation hole with stainless steel cap	2 x hole \varnothing 35 mm ventilation hole with stainless steel cap	
Internal dimensions (W x D x H)	370 x 345 x 420 mm	485 x 415 x 535 mm	550 x 480 x 600 mm
External dimensions (W x D x H), net weight	518 x 647 x 724 mm, 44 kg	653 x 712 x 882 mm, 69 kg	718 x 777 x 947 mm, 78 kg
Packing size & gross weight	622 x 754 x 807 mm, 59 kg	743 x 819 x 1068 mm, 79 kg	808 x 884 x 1133 mm, 92 kg
Power supply	1 Phase AC 120V, 60 Hz or AC 230V, 50/60 Hz		
Power consumption	674 W	1390 W	1566 W
Energy consumption at 100°C/ at 150°C	117 Wh / 230 Wh	187 Wh / 337 Wh	204 Wh / 398 Wh
Order number 230V	DH.WOF05050	DH.WOF05105	DH.WOF05155
Order number 120V	DH.WOF06050	DH.WOF06105	DH.WOF06155
Order number built-in viewing window 230 V	-	DH.WOF07105	DH.WOF07155
Order number built-in viewing window 120 V	-	DH.WOF08105	DH.WOF08155

* built-in viewing window model

Accessories: Suitable shelves can be found on page 86

Oven | forced-air

SMART-Lab™ controller, forced-air convection, up to 250°C, 50 / 105 / 155 l



Forced-air
3-sided heater



SMART-Lab™ controller



WiRe™ app service

SWOF 250°C, 50/105/155 l

Ideal for:

- drying, baking, conditioning, curing, pre-heating and aging

Features:

- optimized air flow by forced-air mechanism
- 3-side heating ensures temperature uniformity and accuracy
- ambient +5°C to 250°C range, fluctuation of $\pm 0.3^\circ\text{C}$ at 100°C
- stainless steel chamber
- powder-coated steel body and glass wool insulation
- available with viewing window (SWOF-W models)
- new compact body design
- storage function for the set values of temperature and timer
- 2x stainless steel wire shelves included
- CE & UL/CUL certified and unique serial number for tracing

Safety mechanism:

- push alarm service to your smartphone
- locking mode
- overheat and over-current protection
- sensor error detection

Controller:

- **Smart-Lab™ controller** with 4" full touch screen TFT LCD:
 - ◆ WiRe™ app service, remote control system
 - ◆ variable program settings
 - ◆ self-diagnostic function
 - ◆ automatic data recording
 - ◆ data transfer to PC by USB memory
 - ◆ Internet connectivity with WiFi

IQ | OQ
available
page 12 for details



SWOF-W105 with viewing window
and 2x wire shelves (included)

Model	SWOF-50	SWOF-105 / SWOF-W105*	SWOF-155 / SWOF-W155*
Capacity	50 l	105 l	155 l
Temperature range, fluctuation & sensor	range: room temperature +5°C - 250°C, fluctuation: $\pm 0.3^\circ\text{C}$ at 100°C, $\pm 0.5^\circ\text{C}$ at 150°C, PT 100		
Temperature variation	$\pm 1^\circ\text{C}$ at 100°C, 1.8°C at 150°C		$\pm 1^\circ\text{C}$ at 100°C, $\pm 2^\circ\text{C}$ at 150°C
Heating power	650 W	1.4 kW	1.6 kW
Heat-up time	25 min to 100°C, 45 min to 150°C	25 min to 100°C, 40 min to 150°C	
Recovery time (door open 30 sec)	8 min to 100°C, 8 min to 150°C	6 min to 100°C, 6 min to 150°C	
Timer & alarm	99hr 59 min (delay & continuous run)		
Control resolution	$\pm 0.1^\circ\text{C}$		
Shelves	2 x stainless steel wire shelves included, load per shelf 16 kg		
Ventilation	1 x hole \varnothing 35 mm ventilation hole with stainless steel cap	2 x hole \varnothing 35 mm ventilation hole with stainless steel cap	
Internal dimensions (W x D x H)	370 x 345 x 420 mm	485 x 415 x 535 mm	550 x 480 x 600 mm
External dimensions (W x D x H), net weight	518 x 647 x 724 mm, 44 kg	653 x 712 x 882 mm, 69 kg	718 x 777 x 947 mm, 78 kg
Packing size & gross weight	622 x 754 x 807 mm, 59 kg	743 x 819 x 1068 mm, 79 kg	808 x 884 x 1133 mm, 92 kg
Power supply	1 Phase AC 120V, 60 Hz or AC 230V, 50/60 Hz		
Power consumption	674 W	1390 W	1566 W
Energy consumption at 100°C/ at 150°C	117 Wh / 230 Wh	187 Wh / 337 Wh	204 Wh / 398 Wh
Order number 230V	DH.SWOF05050	DH.SWOF05105	DH.SWOF05155
Order number 120V	DH.SWOF06050	DH.SWOF06105	DH.SWOF06155
Order number built-in viewing window 230 V	-	DH.SWOF07105	DH.SWOF07155
Order number built-in viewing window 120 V	-	DH.SWOF08105	DH.SWOF08155

* built-in viewing window model

Accessories: Suitable shelves can be found on page 86