

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

### Jog-Dial controller

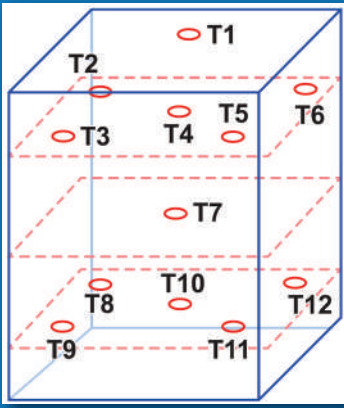
- ergonomic design for easy and convenient usage
- 2-way Jog-Dial knob provides simple setting of required temperature and time
- high quality illuminated LCD
- „MAIN“ and „SUB“ button to access all menus



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

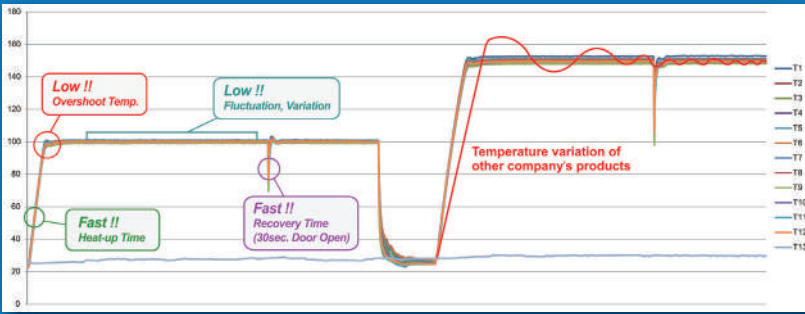
# Incubator Oven

## General information



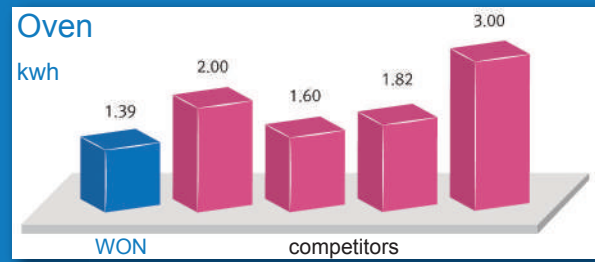
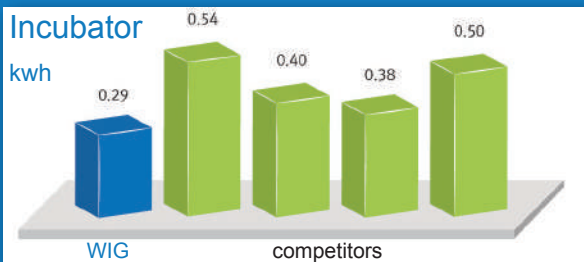
### Temperature uniformity successfully tested by ASTM standards

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

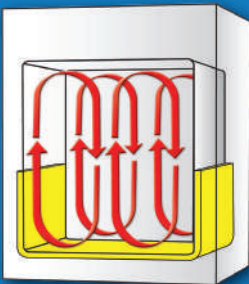
All incubators and ovens achieve minimum power consumption by using heating elements consuming minimum power adjusted for the capacity and temperature of the chamber.



### Incubator air-flow

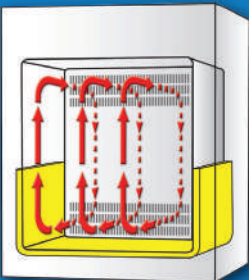
#### Gravity-air

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

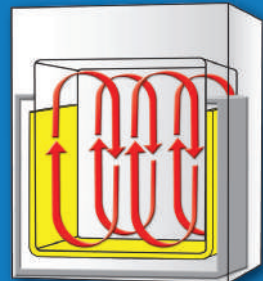
The incubators forced-air flow is established by a three sided heating element in combination with a very effective fan placed in an air-flow room for best temperature uniformity in the whole chamber.



### Oven air-flow

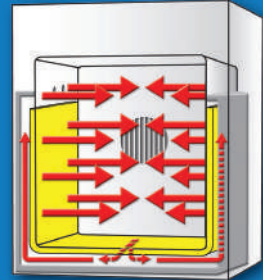
#### Gravity-air

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 ±0.5°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)

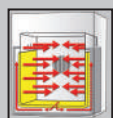
Model	SWON-32	SWON-50	SWON-105 / SWON-W105*	SWON-155 / SWON-W155*
Capacity	32 l	50 l	105 l	155 l
Temperature range, variation & sensor	room temperature +5°C - 230°C, variation: ±1.2°C at 100°C, ±2.2°C at 150°C, sensor: PT 100			
Temperature fluctuation	±0.5°C at 100°C, ±0.6°C at 150°C			±0.5°C at 100°C, ±0.8°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	±0.1°C			
Shelves	2 x stainless steel shelves included, load per shelf 16 kg			
Ventilation	1x hole Ø 35 mm ventilation hole with stainless steel cap		2x hole Ø 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, $1.8^\circ\text{C}$ 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, $1.8^\circ\text{C}$ 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
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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