



# ENRICO BRUNO s.r.l.

## Scientific Laboratory Instruments

Vers. 01/25



ENRICO BRUNO srl produces, distributes and offers technical assistance by more than 50 years on a wide range of scientific laboratory instruments.

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Our production program, focused on the thermal control sector, is comprehensive of thermostatic ovens, incubators, refrigerated incubators, water baths, water distillers.

Only the best raw materials are employed for our products, since we exclusively adopt stainless steel both for the internal than in the external parts of the constructions.

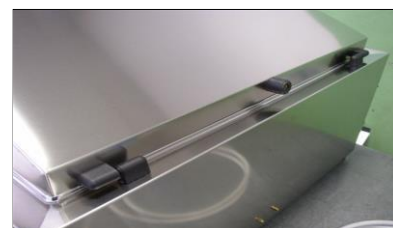
Within this range of products we are in condition to supply productions on Customer's demand, according to specific technical requirement or dimensions.

The quality of the raw materials and the reliability of the construction allow to grant, for our productions, a long lifetime and a high countervalue for purchase.

If your Company deals with scientific instruments and our products portfolio is relevant for you, please don't hesitate and contact us, we shall be pleased to inform you about any commercial detail you can expect from us.

# BS/DG THERMOSTATIC WATER BATH

THERMOSTATIC WATER BATH WITH DIGITAL PID  
CONTROLLER



## Key Features

- Full stainless steel AISI 304 construction, allows maximum corrosion resistance and easy cleaning .
- Pressed tank with round corners to assure the maximum hygiene and easy cleaning
- Insulated chamber between the tank and the external stainless steel walls (insulation by high quality mineral fiber), to assure a true thermal insulation, to avoid useless leakage of electric power and to reproduce isothermal conditions within all the tank.
- Half circular armoured resistors placed to cover all the tank's bottom area, to allow the maximum thermal uniformity, with perforated covering false bottom.
- Temperature probes fixed within the tank, into the water, to provide for the most exact water temperature reading by the digital thermal controller
- Equipped with water tap to allow complete water drain, except for model BS1 DG.
- Rubber antiskid feet adjustable in height.

## Standard thermal equipment

- Digital P.I.D. controller with autotuning, NTC probe
- Temperature range: from + 5°C above ambient up to boiling water (cover is needed in this case)
- Visualized resolution: three digits (0,1°C), double display (set point, measured temperature)
- Double over temperature protection system:
  - a) Safety independent thermal controller (class 3.1 – DIN 12880), is activated in case of default of the main digital controller or of the main probe, with visual alarm
  - b) Safety device with adjustable entry point related to set point (at 1,5°C fixed beyond set point, class 2 – DIN 12880), in case of default of the main digital controller, with visual alarm
- Temperature uniformity in the tank:  $\pm 0,25^{\circ}\text{C}$  at  $80^{\circ}\text{C}$
- Thermal Accuracy (time):  $\pm 0,20^{\circ}\text{C}$  at  $80^{\circ}\text{C}$
- Manufactured is in compliance with the DIRECTIVES of the EUROPEAN COUNCIL 2006/42/CE (Machinery Directive), 2014/35/UE (Low Voltage Directive), 2014/30/UE (EMC Directive) and standards EN 6101-1:(2001).
- Factory temperature calibration certificate (standard 1 measure)

## Optional

8826001	ELECTRIC WATER MIXER (shaft with stirring fan) Please note: this optional accessory is composed by a stainless steel box dim. mm 185x85x68 placed on the tank in side position; the shaft with the stirring fan is contained within a stainless steel protection dim. mm 60x60 placed into the tank along the short side in central position.		
8843002	Digital Timer 99h 59' integrated in the digital PID controller (count down – continuous mode)		
0101021	Factory temperature calibration certificate by thermometric chain Accredia certified (standard 1 measure)		
Antidropping stainless steel Cover double inclination		Test tubes stainless steel Racks, three levels dim. mm 295 x 145 (any bath can contain so many as the model number: BS...)	
8822001	mod. BS1 separate	8827206	Test tubes rack 18 places, hole $\varnothing$ mm 30
8822501	mod. BS1 hinged	8827554	Test tubes rack 55 places, hole $\varnothing$ mm 17
8822002	mod. BS2 separate	8827602	Test tubes rack 60 places, hole $\varnothing$ mm 13
8822502	mod. BS2 hinged		
8822003	mod. BS3 separate		
8822503	mod. BS3 hinged		
8822505	mod. BS5 hinged		On request test tubes racks with holes of different diameters

BS Model Code	Internal upper dimensions tank (mm)			External dimensions (mm)			Capacity litres		Weight Kg	Power (230V 50-60 Hz) (*) (**)
	W	D	H	W	D	H	Net	Total		
BS 1 DG 9025010	300	150	160	370	220	350	7	9	7	400
BS 2 DG 9025020	329	300	160	400	370	350	15	18	11	900
BS 3 DG 9025030	500	300	160	575	370	350	21	28	15	1300
BS 5 DG 9025050	620	500	160	695	575	350	48	58	19	2500

(\*) except for stirring motor code 8826001 = 50 Hz

(\*\*) on request execution 115 V



WATER MIXER VERSION  
 Cod. 8826001

# D - WATER DISTILLER

WATER DISTILLER



Over 50 years in cooperation with the health world, the scientific research, the environmental and quality control world

## Key Features

- Full stainless steel AISI 304 “Scotch Brite” construction, allows maximum corrosion resistance and easy cleaning.
- Upper cooling body easily detachable by the lower boiling chamber in order to proceed to periodic cleaning and descaling .
- Pre-warming of feeding water by the cooling dome, in order to reduce energy consumption
- Rubber antiskid feet adjustable in height

## Standard equipment

- Safety line breaking switch
- Safety water level device, in case of water failure in the boiling chamber or insufficient entry flow breaks the warming process (automatic reset)
- Incoloy armoured resistors for maximum long lasting life.
- Feeding water tap factory pre-regulated (adjustable incase of different pipes pressure)
- Complete with plastic tubes for water draining and distilled water output
- Manufactured in compliance with Directions of the European Council 2006/42/CE (Machinery), 2014/35/UE (Low Voltage Directive), 2014/30/UE (EMC Directive) and standards EN 6101-1:(2001).

## Optional

Code	Description
8831520	Automatic cycle Water Softener with ionic exchange resins, electronic controller programming regeneration mode, capacity resins 10 lt, In/Out connections 3/4" - Alim. 230V
8832485	Feeding Water Tube length m 2 with double filet 3/4"
8832489	Kit Nr. 2 water softener supply hoses and distiller connection with threaded fittings plus drain hoses

Technical Data	Mod. D5 Cod. 9031005	Mod. D5/T Cod. 9031105	Mod. D10/T Cod. 9031110
Hour Production litres (Approx.)	5	6	10
Conductivity uS / cm (approximate, with tap water feeding)	3	3	3
Electric Supply V / 50 - 60 Hz (**)	230	400 three phase	400 three phase
Power W	4100	4800	7500
Absorption A	18	7	11
Safety Line Breaking Switch	Bipolar 20 A	3P - 16 A	3P - 16 A
Plug CE (A)	32	16	16
Dimensions (mm) WxDxH Total width with draining tube mm 490	450x370x750	450x370x750	450x370x750
Weight (Kg)	23	24	24

(\*\*) on request other voltage

# SCN/DG – SCF/DG

THERMOSTATIC OVENS  
NATURAL AIR CONVECTION / FORCED AIR CIRCULATION

FOR DRYING, STERILISATION JOBS, TESTS ON MATERIALS  
WITH DIGITAL PID CONTROLLER





Over 50 years in cooperation with the health world, the scientific research, the environmental and quality control world

## Key Features

- Full stainless steel construction, internal walls AISI 430, external structure AISI 304 “Scotch Brite”, allows maximum corrosion resistance and easy cleaning
- Internal chamber with laminar air circulation and uniform warmth distribution offered by two lateral convection ducts with perforated walls and by resistors position in pre-warming chamber
- Motor with fan for air circulation fixed in lateral position, allows an horizontal and diagonal air flow among all the volume of the chamber (only mod. SCF/DG)
- Thermal insulation by high quality mineral fiber in adequate thickness.
- Front door with thermal insulation (one or two according to the model), with silicone rubber gasket.
- Perforated stainless steel AISI 430 lean shelves, extractable and fixable on different heights.
- Pass-through port (on the back wall) for exhaust air external probes (as standard mod. SCN, on request mod. SCF)
- Rubber antiskid feet adjustable in height.

## Standard thermal equipment

- Digital P.I.D. controller with autotuning, PT100 probe
- Temperature range: from +10°C above ambient up to + 250°C
- Visualized resolution: three digits (1°C), double display (set point, measured temperature) (on request resolution 0,1°C)
- Double overtemperature protection system:
  - a) Safety independent adjustable thermal controller (3.1 class – DIN 12880), is activated in case of default of the main digital controller or of the main probe, with visual alarm
  - b) Safety device with adjustable entry point related to set point (fixed 5°C beyond set point), in case of default of the main digital controller, with visual alarm
- Temperature uniformity in the chamber:
  - ± 2,0°C at 150°C (model SCN)
  - ± 1,5°C at 150°C (model SCF)
- Thermal Accuracy (time):
  - ± 0,3°C at 150°C
- Manufactured in compliance with the DIRECTIVES of the EUROPEAN COUNCIL 2006/42/CE (Machinery Directive), 2014/35/UE (Low Voltage Directive), 2014/30/UE (EMC Directive) and standards EN 6101-1:(2001).
- Factory temperature calibration certificate (standard 1 measure for 3 points of the chamber)



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## Optional

Code	Description																																								
8843001	Digital Timer 99h 59' (integrated in the digital PID controller), count down – continuous modes																																								
8843201	Programmer 8 segments (4 ramps + 4 permanencies) / Digital Timer 99h, 59'.																																								
8843203	Programmer 8 programs up to 12 segments (6 ramps + 6 permanencies) / Digital Timer 99h, 59'.																																								
8843224	3.5" color touch screen programmer, LED backlight, max. 24 segments, 20 programs, hour/ minute and minute/second setting, delayed start, program repeat, exportable stored data, micro USB port, SD card slot																																								
8843251	Programmer 200 segments, 90 programs in memory, Real Time Clock, with USB port																																								
8844101	USB port with RS 485 converter, for data recording (management software occurs)																																								
8845315	Digital daily / weekly Timer 24 h / week days, allows working cycles on 24h o weekly basis																																								
8849318	Acoustic / Visual end of cycle indicator (with pilot light). (Code 8843001 or code 8843201 is needed)																																								
8845340	Videographic colours Recorder 5,7" TFT IP65 LCD display, internal memory data storage and compact flash 512 MB, USB port, independent PT100 probe, complete with data analysis software																																								
8853624	By-pass duct for external thermometric probes																																								
0101051	Factory temperature calibration certificate by thermometric chain Accredia certified (standard 1 measure for 3 points of the chamber)																																								
	<table border="1"> <thead> <tr> <th></th> <th>Stainless Steel AISI 304Floor Stand</th> <th>Supplementary Perforated Stainless Steel Shelves AISI 430</th> <th>Temperature Upgrade Kit Max +300°C</th> </tr> <tr> <th>Model</th> <th>Code</th> <th>Code</th> <th>Code</th> </tr> </thead> <tbody> <tr> <td>SCN/SCF 21 DG</td> <td>8853202</td> <td>8853502</td> <td>-</td> </tr> <tr> <td>SCN/SCF 40 DG</td> <td>8853204</td> <td>8853504</td> <td>8851304</td> </tr> <tr> <td>SCN/SCF 58 DG</td> <td>8853206</td> <td>8853506</td> <td>8851306</td> </tr> <tr> <td>SCN/SCF 96 DG</td> <td>8853210</td> <td>8853510</td> <td>8851310</td> </tr> <tr> <td>SCN/SCF 162 DG</td> <td>8853216</td> <td>8853516</td> <td>8851316</td> </tr> <tr> <td>SCN/SCF 245 DG</td> <td>8853225</td> <td>8853525</td> <td>8851325</td> </tr> <tr> <td>SCN/SCF 400 DG</td> <td>8853240</td> <td>8853540</td> <td>8851340</td> </tr> <tr> <td>SCN/SCF 760 DG</td> <td>-</td> <td>8853575</td> <td>-</td> </tr> </tbody> </table>		Stainless Steel AISI 304Floor Stand	Supplementary Perforated Stainless Steel Shelves AISI 430	Temperature Upgrade Kit Max +300°C	Model	Code	Code	Code	SCN/SCF 21 DG	8853202	8853502	-	SCN/SCF 40 DG	8853204	8853504	8851304	SCN/SCF 58 DG	8853206	8853506	8851306	SCN/SCF 96 DG	8853210	8853510	8851310	SCN/SCF 162 DG	8853216	8853516	8851316	SCN/SCF 245 DG	8853225	8853525	8851325	SCN/SCF 400 DG	8853240	8853540	8851340	SCN/SCF 760 DG	-	8853575	-
	Stainless Steel AISI 304Floor Stand	Supplementary Perforated Stainless Steel Shelves AISI 430	Temperature Upgrade Kit Max +300°C																																						
Model	Code	Code	Code																																						
SCN/SCF 21 DG	8853202	8853502	-																																						
SCN/SCF 40 DG	8853204	8853504	8851304																																						
SCN/SCF 58 DG	8853206	8853506	8851306																																						
SCN/SCF 96 DG	8853210	8853510	8851310																																						
SCN/SCF 162 DG	8853216	8853516	8851316																																						
SCN/SCF 245 DG	8853225	8853525	8851325																																						
SCN/SCF 400 DG	8853240	8853540	8851340																																						
SCN/SCF 760 DG	-	8853575	-																																						

On request:

- Serial interface RS485 – RS232
- Management software (reporting, graphics, alarms, running process visualization)
- 4 wheels Kit for floor stand (n.2 with brake)

*We produce ovens on special measures and/or Customer demand and for continuous from 250 to 350°C*

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SCN Natural air convection	Internal Dimensions (mm)			External dimensions (except for opening knob) (mm)			Cap.  Litres	Shelves supplied/ max  n.	Doors  n.	Weight  Kg	Power (230V 50-60Hz) (**)  W
	W	H	D	W	H	D					
Model											
Code											
SCN 21 DG 9051002	310	260	250	610	575	385	20	1 / 5	1	25	800
SCN 40 DG 9051004	430	310	300	730	610	460	40	1 / 6	1	36	1000
SCN 58 DG 9051006	460	360	350	760	660	490	58	2 / 8	1	42	1200
SCN 96 DG 9051010	540	440	420	840	760	530	100	2 / 9	1	58	1500
SCN 162 DG 9051016	600	600	450	900	900	565	162	2 / 9	1	70	2000
SCN 245 DG 9051025	650	700	550	950	1020	680	250	2 / 10	1	78	2400
SCN 400 DG 9051040	830	830	580	1130	1130	715	400	2 / 10	2	90	2800
SCN 760 DG 9051075	1000	1200	630	1300	1520	760	756	3 / 18	2	127	4100 (400V 3ph+N – 50-60Hz)

(\*\*) on request execution 115 V

SCF Forced air circulation	Internal Dimensions (mm)			External dimensions (except for opening knob) (mm)			Cap.  Litres	Shelves supplied/ max  n.	Doors  n.	Weight  Kg	Power (230V- 50Hz) (**)  W
	W	H	D	W	H	D					
Model											
Code											
SCF 21 DG 9054002	310	260	250	610	575	385	20	1 / 5	1	26	800
SCF 40 DG 9054004	430	310	300	730	610	460	40	1 / 6	1	37	1000
SCF 58 DG 9054006	460	360	350	760	660	490	58	2 / 8	1	43	1200
SCF 96 DG 9054010	540	440	420	840	760	530	100	2 / 9	1	60	1500
SCF 162 DG 9054016	600	600	450	900	900	565	162	2 / 9	1	72	2000
SCF 245 DG 9054025	650	700	550	950	1020	680	250	2 / 10	1	80	2400
SCF 400 DG 9054040	830	830	580	1130	1130	715	400	2 / 10	2	92	2800
SCF 760 DG 9054075	1000	1200	630	1300	1520	760	756	3 / 18	2	131	4100 (400V 3ph+N – 50-60Hz)

(\*\*) on request other voltage/tension

# TA/DG

THERMOSTATIC INCUBATORS  
WITH WATER JACKET

FOR BACTERIOLOGICAL APPLICATIONS

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## Key Features

- Internal chamber with double walls by polished copper allowing a perfect and uniform warmth distribution. The water jacket all around the internal chamber enables an exceptional thermal steadiness
- External structure polished stainless steel AISI 304
- Thermal insulation by high quality mineral fiber in adequate thickness
- Double kind front door, external stainless steel with thermal insulation, internal tempered glass to allow visual inspection without thermal alterations
- Air ventilation hole device
- Glass condensers for a complete steam recovery, with water gauge
- Perforated stainless steel AISI 430 shelves, extractable
- Rubber antiskid feet

## Standard thermal equipment

- Digital P.I.D. microprocessor controller with autotuning, PT100 probe
- Temperature range: from +5°C beyond ambient up to +70°C
- Visualized resolution: three digits (0,1°C), double display (set point, measured temperature)
- Standard safety overtemperature protection system, with adjustable entry point related to set point (fixed 1,5°C beyond set point), with automatical intervention with visual alarm (Class 2 – DIN 12880)
- Temperature uniformity in the chamber:  $\pm 0,25^{\circ}\text{C}$  at 37°C
- Thermal Accuracy (time):  $\pm 0,15^{\circ}\text{C}$  at 37°C
- Manufactured in compliance with the DIRECTIVES of the EUROPEAN COUNCIL 2006/42/CE (Machinery Directive), 2014/35/UE (Low Voltage Directive), 2014/30/UE (EMC Directive) and standards EN 6101-1:(2001).
- Factory temperature calibration certificate (standard 1 measure for 3 points of the chamber)

## Optional

Code	Description
8843001	Digital Timer 99h 59' (integrated in the digital PID controller), count down – continuous modes
8853292	Stainless Steel AISI 304 Floor Stand
0101051	Factory temperature calibration certificate by thermometric chain Accredia certified (standard 1 measure for 3 points of the chamber)

On request:

- Serial interface RS485 – RS232
- USB Port
- Management software (reporting, graphics, alarms, running process visualization)

TA	Internal Dimensions (mm)			External Dimensions (mm)			Cap.	Shelves	Doors	Weight	Power (230 V 50 Hz) (**)
	W	H	D	W	H	D					
Model							Litres	n.	n.	Kg	W
Code											
TA 19 DG	300	250	250	490	380	425	19	1	1	25	150
9068002											

(\*\*) on request other voltage / tension

# TS/DG – TSF/DG

THERMOSTATIC INCUBATORS FOR BACTERIOLOGY  
NATURAL AIR CONVECTION/FORCED AIR CIRCULATION

WITH DIGITAL PID CONTROLLER

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## Key Features

- Full stainless steel construction: internal walls AISI 430, external structure AISI 304 “Scotch Brite”, allows maximum corrosion resistance and easy cleaning
- Internal chamber with laminar air circulation and uniform warmth distribution offered by two lateral convection ducts with perforated walls and by resistors position in pre-warming chamber
- Motor with fan for air circulation fixed in lateral position, allows an horizontal and diagonal air flow among all the volume of the chamber (only model TSF/DG)
- Thermal insulation by high quality mineral fiber in adequate thickness
- Double kind front door (one or two according to the model), external stainless steel with thermal insulation, internal tempered glass to allow visual inspections without thermal modifications
- Perforated stainless steel AISI 430 shelves, extractable and fixable on different heights
- Pass-through port (on the back wall) for exhaust air external probes (as standard mod. TS, on request mod. TSF)
- Rubber antiskid feet adjustable in height

## Standard thermal equipment

- Digital P.I.D controller with autotuning. PT100 probe
- Temperature range: from + 5°C beyond ambient up to + 80°C
- Visualized resolution: three digits (0,1°C), double display (set point, measured temperature)
- Double overtemperature protection system:
  - a) Safety independent adjustable thermal controller (class 3.1 – DIN 12880), is activated in case of default of the main digital controller or of the main probe, with visual alarm
  - b) Safety device with adjustable entry point related to set point (fixed 1,5°C beyond set point), in case of default of the main digital controller, with visual alarm
- Temperature uniformity in the chamber:
 

	± 0,5°C at 37°C (model TS)
	± 0,4°C at 37°C (model TSF)
- Thermal Accuracy (time):
 

	± 0,2°C at 37°C
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- Manufactured in compliance with the DIRECTIVES of the EUROPEAN COUNCIL 2006/42/CE (Machinery Directive), 2014/35/UE (Low Voltage Directive), 2014/30/UE (EMC Directive) and standards EN 6101-1:(2001).
- Factory temperature calibration certificate (standard 1 measure for 3 points of the chamber)



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## Optional

Code	Description	
8843001	Digital Timer 99h 59' (integrated in the digital PID controller), count down – continuous modes	
8843201	Programmer 8 segments (4 ramps + 4 permanencies) / Digital Timer 99h, 59'.	
8843203	Programmer 8 programs up to 12 segments (6 ramps + 6 permanencies) / Digital Timer 99h, 59'.	
8843224	3.5 "color touch screen programmer, LED backlight, max. 24 segments, 20 programs, hour/minute and minute/second setting, delayed start, program repeat, exportable stored data, micro USB port, SD card slot	
8844101	USB port with RS 485 converter, for data recording (management software occurs)	
8849324	Overtemperature Acoustic / Visual Alarm Lamp (rather than standard visual alarm lamp)	
8864623	Forced ventilation speed continuous regulator (Min-Max)	
8867106	By pass duct for external thermometric probes	
0101051	Factory temperature calibration certificate by thermometric chain Accredia certified (standard 1 measure for 3 points of the chamber)	
	Stainless Steel AISI 304 Floor Stand	Supplementary perforated Stainless Steel Shelves AISI 430
Model	Codes	Codes
TS/TSF 21 DG	8853202	8853502
TS/TSF 40 DG	8853204	8853504
TS/TSF 58 DG	8853206	8853506
TS/TSF 96 DG	8853210	8853510
TS/TSF 162 DG	8853216	8853516
TS/TSF 245 DG	8853225	8853525
TS/TSF 400 DG	8853240	8853540
TS/TSF 760 DG	-	8853575

On request:

- Serial interface RS485 – RS232
- Management software (reporting, graphics, alarms, running process visualization)
- 4 wheels kit for floor stand (n.2 with brake)





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TS Natural air convection	Internal Dimensions (mm)			External Dimensions (except for opening knob) (mm)			Cap.  Litres	Shelves supplied /max  n.	Doors  n.	Weight  Kg	Power (230V 50-60Hz) (**)  W
	Model  Code	W	H	D	W	H					
TS 21 DG 9061002	310	260	250	610	575	385	20	1 / 5	1	25	200
TS 40 DG 9061004	430	310	300	730	610	455	40	1 / 6	1	36	270
TS 58 DG 9061006	460	360	350	760	660	485	58	2 / 8	1	42	320
TS 96 DG 9061010	540	440	420	840	760	525	100	2 / 9	1	59	400
TS 162 DG 9061016	600	600	450	900	900	560	162	2 / 9	1	71	450
TS 245 DG 9061025	650	700	550	950	1020	675	250	2 / 10	1	79	650
TS 400 DG 9061040	830	830	580	1130	1130	710	400	2 / 10	2	91	750
TS 760 DG 9061075	1000	1200	630	1300	1520	750	756	3 / 18	2	127	1280

(\*\*) on request execution 115 V

TSF Forced air circulation	Internal Dimensions (mm)			External Dimensions (except for opening knob) (mm)			Cap.  Litres	Shelves supplied /max  n.	Doors  n.	Weight  Kg	Power (230 V 50 Hz) (**)  W
	Model  Code	W	H	D	W	H					
TSF 21 DG 9064002	310	260	250	610	575	385	20	1 / 5	1	26	200
TSF 40 DG 9064004	430	310	300	730	610	455	40	1 / 6	1	37	270
TSF 58 DG 9064006	460	360	350	760	660	485	58	2 / 8	1	43	320
TSF 96 DG 9064010	540	440	420	840	760	525	100	2 / 9	1	61	400
TSF 162 DG 9064016	600	600	450	900	900	560	162	2 / 9	1	73	450
TSF 245 DG 9064025	650	700	550	950	1020	675	250	2 / 10	1	81	650
TSF 400 DG 9064040	830	830	580	1130	1130	710	400	2 / 10	2	93	750
TSF 760 DG 9064075	1000	1200	630	1300	1520	750	756	3 / 18	2	132	1280

(\*\*) on request other voltage / tension

# TSV/DG

FORCED AIR CIRCULATION THERMOSTATIC INCUBATORS  
VERTICAL LINE

WITH DIGITAL PID THERMAL CONTROLLER  
Vers. 2022.02



Over 50 years in cooperation with the health world, the scientific research, the environmental and quality control world

## Construction features

- AISI 304 stainless steel construction for maximum corrosion resistance and ease of cleaning
- CFC-free polyurethane insulation (density 40 Kg / m<sup>3</sup>)
- Door with low emission "chamber" double-glazed frame, for an immediate visual inspection of the products.
- Motor with fan for forced air circulation, with air distribution channel along the whole height of the chamber.
- Automatic door closing and 90 ° brake for easier access to the chamber
- Door with magnetic gasket on 4 sides
- Reversibility of the door opening direction (on request)
- Perforated shelves in AISI 304 stainless steel, removable and positionable at different heights.
- Unidirectional castors with stabilizing feet (mod. TSV 340 DG - TSV 530 DG), swivel castors (2 with brake - mod. TSV 700 DG)

## Standard thermal equipment

Digital P.I.D. thermal controller with autotuning, with PT100 probe

- Temperature range from + 5 ° C over the ambient temperature to + 70 ° C
- Resolution displayed in three digits (0.1 ° C), double display (set point, detected temperature)
- Double overtemperature protection system as standard:
- Adjustable independent safety thermostat (class 3.1 - DIN 12880), is activated in case of failure of the main digital thermal controller or of the main probe, with visual alarm
- Safety device with variable intervention threshold according to the set point (at 1.5 ° C fixed above the set point), in case of failure of the main digital controller, with visual alarm
  - Temperature uniformity in the cell :  $\pm 0.5^{\circ}\text{C}$  at 37 ° C
  - Temperature control accuracy (time):  $\pm 0.2^{\circ}\text{C}$  at 37 ° C
- Compliant with EUROPEAN COUNCIL DIRECTIVES 2006/42 / EC (Machinery Directive), 2014/35 / EU (Low Voltage), 2014/30/UE (Electromagnetic Compatibility Directive) and the EN 6101-1: (2001) standards.
- Factory temperature calibration certificate (standard 1 measure for 3 points of the chamber)



## Optional accessories

Code	Description
8843001	Digital timer 99h 59 '(integrated in the PID digital thermal controller), count down function - continuous
8843201	8-segment programmer (4 ramps + 4 soaks) digital timer 99h 59 '
8843203	Programmer 8 programs up to 12 segments (6 ramps + 6 soaks), digital timer 99h 59 '
8844101	USB port with RS 485 converter for data recording (supervision software required)
8867106	Pass-through hole for control thermometric probe
8867534	Additional perforated shelves in AISI 304 stainless steel for mod. TSV 340 DG
8867553	Additional perforated shelves in AISI 304 stainless steel for mod. TSV 530 DG
8867570	Additional perforated shelves in AISI 304 stainless steel for mod. TSV 700 DG
0101051	Factory temperature calibration certificate by thermometric chain Accredia certified (standard 1 measure for 3 points of the chamber)

On demand:

- LED lamps for internal lighting with microswitch for switching on when the door is opened
- RS485 - RS232 serial interface
- Supervision software (reporting, graphics, alarms, visualization of ongoing processes)

TSV	Internal dimensions (mm)			External dimensions (mm)			Net capacity	Shelves supplied / max	Weight	Absorbed power (230V 50Hz)
	width	height	depth	width	height	depth	Liters	n.	Kg	W
Item										
Code										
TSV340DG	475	1475	442	555	1944	610	310	3 / 8	98	300
9065034										
TSV530DG	605	1595	487	685	2064	655	470	4 / 10	139	450
9065053										
TSV700DG	565	1555	655	685	2105	850	575	4 / 10	180	600
9065070										

# TSR/DG

COOLED INCUBATORS  
COMPRESSOR TECHNOLOGY  
FORCED AIR CIRCULATION

WITH DIGITAL PID CONTROLLER  
Vers. 2024.11



## Key features

- Full AISI 304 “Scotch Brite” stainless steel construction: allows maximum corrosion resistance and easy cleaning
- Thermal insulation by high density CFC-free polyurethane
- Thermally insulated AISI 304 stainless steel door, or, on request, version with glass door with alloy frame with double low-emissivity tempered glass to allow visual inspections without thermal alterations
- Automatic door lock with brake at 90° for an easier access to the chamber
- Door with magnetic gasket on the 4 sides
- Perforated stainless steel AISI 304 shelves, extractable and fixable on different heights
- Rubber antiskid feet adjustable in height (mod. TSR 140 DG – TSR 210 DG), one-way castor wheels (mod. TSR 340 DG - TSR 460 DG – TSR 530 DG), pivoting wheels (no. 2 with brake – mod. TSR 700 DG)

## Standard thermal equipment

- Digital PID microprocessor controller with autotuning, PT100 probe
- Temperature range: from + 1°C up to +60°C
- Visualized resolution: three digits (0,1°C), double display (set point + measured temperature)
- Climatic class ISO 4 for optimal working up to environmental temperature of +32°C
- Double static condenser with ventilation group
- Cooling system with ecological coolant R290
- Overtemperature protection system (Class 2 – DIN 12880):
  - Safety device with self-adjustable entry point related to set point (fixed 1,5°C beyond set point), in case of default of the digital controller or of the probe, with visual alarm
- Temperature uniformity in the chamber:       ± 0,5°C at +20°C
- Thermal accuracy (time):                       ± 0,5°C at +20°C
- Manufactured in compliance with the DIRECTIVES of the EUROPEAN COUNCIL 2006/42/CE (Machinery Directive), 2014/35/UE (Low Voltage Directive), 2014/30/UE (EMC Directive) and standards EN 6101-1:(2001).
- Factory temperature calibration certificate (standard 1 measure for 3 points of the chamber)



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## Optionals

8843001	Digital timer 99h 59' (integrated in the digital PID)
8843201	Programmer 8 segments (4 ramps + 4 permanencies) /Digital Timer 99h, 59'.
8843203	Programmer 8 programs up to 12 segments (6 ramps + 6 permanencies) /Digital Timer 99h, 59'.
8844101	USB serial port
8845318	24h/weekly digital timer for managing lighting cycles
8851200	TSS - Independent adjustable temperature controller (Class 3.1 – DIN 12880)
8867106	Passing through hole for thermometric control probe
8867514	Supplementary perforated AISI 304 stainless steel shelves (mod. TSR 140 DG)
8867521	Supplementary perforated AISI 304 stainless steel shelves (mod. TSR 210 DG)
8867534	Supplementary perforated AISI 304 stainless steel shelves (mod. TSR 340 DG)
8867543	Supplementary perforated AISI 304 stainless steel shelves (mod. TSR 460 DG – TSR 530 DG)
8867570	Supplementary perforated AISI 304 stainless steel shelves (mod. TSR 700 DG)
0101051	Factory temperature calibration certificate by thermometric chain Accredia certified (standard 1 measure for 3 points of the chamber)

On request:

- Led lamps kit for internal lighting with microswitch at door's opening
- Management software (reporting, graphics, alarms, running process visualization)

ITEM		Internal dimensions (mm)			External Dimensions (except for opening handle) (mm)			Cap.	Shelves supplied / max	Weight	Power (230V 50 Hz)
BLIND DOOR CODE	DOOR CODE GLASSED	W	H	D	W	H	D	Liters	n.	Kg	W
TSR140DG		540	640	270/382	630	838	567	121	2 / 3	57	400
9067014	9067314										
TSR210DG		480	816	467	600	1469	637	182	2 / 5	105	600
9067021	9067321										
TSR340DG		455	1455	442	555	1944	590	305	3 / 10	128	800
9067034	9067334										
TSR460DG		605	1395	487	685	1864	655	410	3 / 10	130	1000
9067046	9067346										
TSR530DG		605	1595	487	685	2064	655	470	4 / 10	139	1050
9067053	9067353										
TSR700DG		565	1555	655	685	2105	850	575	4 / 10	180	1100
9067070	9067370										

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