



TS/TSF Series

Dry incubators



LABORATORY



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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
- By pass duct for introduction of monitoring thermometric probes (for mod. TS/TSF 58 DG and larger ones)
- 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: $\pm 0,5^{\circ}\text{C}$ at 37°C (model TS) $\pm 0,4^{\circ}\text{C}$ at 37°C (model TSF)
- Thermal Accuracy (time): $\pm 0,2^{\circ}\text{C}$ at 37°C
- Manufactured in compliance with Directions of the European Council 2006/42/CE (Machinery), 2006/95/CE (Low Voltage), 2004/108/CE (Electromagnetic Compatibility EMC), norms EN 61010-1:(2001).



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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'. | |
| 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) | |
| | 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 | 8853275 | 8853575 |

On request:

- Factory temperature calibration certificate (standard 1 measure for 3 points in the chamber)
- 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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Specification

| TS Natural air convection | Internal Dimensions (mm) | | | External Dimensions (except for opening knob) (mm) | | | Cap. Litres | Shelves 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 | 560 | 380 | 20 | 1 | 1 | 25 | 200 |
| TS 40 DG 9061004 | 430 | 310 | 300 | 730 | 610 | 455 | 40 | 1 | 1 | 36 | 270 |
| TS 58 DG 9061006 | 460 | 360 | 350 | 760 | 660 | 515 | 58 | 2 | 1 | 42 | 320 |
| TS 96 DG 9061010 | 540 | 440 | 420 | 840 | 760 | 575 | 100 | 2 | 1 | 59 | 400 |
| TS 162 DG 9061016 | 600 | 600 | 450 | 900 | 900 | 605 | 162 | 2 | 1 | 71 | 490 |
| TS 245 DG 9061025 | 650 | 700 | 550 | 950 | 1020 | 675 | 250 | 2 | 1 | 79 | 580 |
| TS 400 DG 9061040 | 830 | 830 | 580 | 1130 | 1130 | 710 | 400 | 2 | 2 | 91 | 750 |
| TS 760 DG 9061075 | 1000 | 1200 | 630 | 1300 | 1500 | 760 | 756 | 3 | 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 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 | 560 | 380 | 20 | 1 | 1 | 26 | 200 |
| TSF 40 DG 9064004 | 430 | 310 | 300 | 730 | 610 | 455 | 40 | 1 | 1 | 37 | 270 |
| TSF 58 DG 9064006 | 460 | 360 | 350 | 760 | 660 | 515 | 58 | 2 | 1 | 43 | 320 |
| TSF 96 DG 9064010 | 540 | 440 | 420 | 840 | 760 | 575 | 100 | 2 | 1 | 61 | 400 |
| TSF 162 DG 9064016 | 600 | 600 | 450 | 900 | 900 | 605 | 162 | 2 | 1 | 73 | 490 |
| TSF 245 DG 9064025 | 650 | 700 | 550 | 950 | 1020 | 675 | 250 | 2 | 1 | 81 | 580 |
| TSF 400 DG 9064040 | 830 | 830 | 580 | 1130 | 1130 | 710 | 400 | 2 | 2 | 93 | 750 |
| TSF 760 DG 9064075 | 1000 | 1200 | 630 | 1300 | 1500 | 760 | 756 | 3 | 2 | 132 | 1280 |

(**) on request other voltage / tension