STERILIZATION AND BACTERIOLOGICAL OVENS - FURNACES

"The key to quality is found in the personal commitment of each and every one within a company and by the management taking the lead."
Eugenio d'Ors

LABORATORY OVENS AND INCUBATORS

Leading edge technology. Maximum Precision.

Drying and sterilization ovens:

Drying: For all drying processes of diverse laboratory material or glass material in general, printed circuits, granule and powder, etc.

Sterilization: They guarantee microorganisms destruction, either pathogen ones or not, which will be over or inside the material. They allow sterilization of powder and non-volatile viscose substances. For a good sterilization, a temperature between 160 ºC and 180 ºC and 2 hours exposition is usually required.

Vacuum drying ovens:

They are developed for applications of thermal and drying treatments of heat-sensitive products.

Bacteriological culture ovens:

For microorganisms or culture incubation in clinical diagnosis, in sanitary or nutritious industry. The samples are preserved at a determined temperature and period of time.

Cooled low temperature ovens:

For microorganisms or culture incubation, in clinical diagnosis, in sanitary or nutritious industry. The samples are preserved at a determined temperature and period of time.

Anaerobic cell and tissue cultures for CO_2 ovens:

Essential element in laboratories for research, cell biology, molecular biology, different cancer sorts and general pharmaceutical laboratories.

Conforms to the international directives for safety and precision.
MODEL RANGE:

- ***Drying and sterilization.***
- ***Universal: Programmed for cultures and sterilization.***
- ***Vacuum drying.***
- ***Bacteriological cultures.***
- ***Low temperature- High Precision Peltier systems.***
- ***CO_2 Incubators.***
- ***Precise refrigerators and cooled incubators.***
- ***More than 70 models with capacities from 19 to 720 litres.***
- ***Controllable temperatures from −10 to 250 ºC and 400 ºC.***
- ***Analogue or digital control through a microprocessor for temperature and time.***
- ***Wide range of accessories for varying applications.***

OVENS, INCUBATORS AND FURNACES

Summary table of the different models

QUICK OVERVIEW

MODEL RANGE STERILIZERS POUPINEL	MODELS	CONTROL	CAPACITY					Safety	RS-232	USB
			2.5 litres	19 litres						
100 ... 250 °C	DRYTIME	ANALOGUE	2000911	-				YES	-	-
60 ... 250 °C	DRYTERM	ANALOGUE	-	2000787				YES	-	-
GLASS DRYING			126 litres							
40 ... 170 °C	DRYGLASS	ANALOGUE	2000381					YES	-	-
CONVECTION NATURAL			19 litres	36 litres	52 litres	80 litres	150 litres			
40 ... 250 °C	CONTERM	ANALOGUE	2000208	2000209	2000200	2000210	2000201	YES		-
Ambient+5 ... 250 °C	DIGITHEAT-TFT	TFT Touch screen µ	2001251	2001252	2001253	2001254	2001255	YES	YES	YES
FORCED AIR, FAN CONVECTION BENCH TOP				33 litres	47 litres	76 litres	145 litres			
Ambient+5 ... 250 °C	DIGITRONIC-TFT	TFT Touch screen µ		2005163	2005165	2005167	2005169	YES	YES	YES
Ambient+5 ... 250 °C	DIGITRONIC-TFT glass door	TFT Touch screenµ		2005164	2005166	2005168	2005170	YES	YES	YES
FORCED AIR, FAN CONVECTION FLOOR STANDING			216 litres	288 litres	400 litres	720 litres				
Ambient+5 ... 250 °C	DRYBIG 230/400V III PHASES	DIGITAL µ	2002961	2002971	2003721	2003741		YES	YES	YES
Ambient+5 ... 250 °C	DRYBIG 230V I PHASE	DIGITAL µ	2002962	2002972	-	-		YES	YES	YES
HIGH TEMPERATURE			80 litres							
60 ... 400 °C	HIGHTEMP 230/400V III PHASES	DIGITAL µ	2001406					YES	-	-
VACUUM OVEN			3 litres	47 litres						
35 ... 200 °C	VACIOTEM T	DIGITAL µ	-	4001489				YES	YES	YES
35 ... 200 °C	VACIOTEM TV	DIGITAL µ	-	4001490				YES	YES	YES
Ambient+5 ... 170 °C	VACUO-TEMP	DIGITAL	4000474					YES	-	-
DESICCATOR			55 litres							
			1001403					YES	-	-
INCUBATION CHAMBER			110 litres							
Ambient+5 ... 57 °C	BOXCULT	DIGITAL	3000957					YES	-	-
INCUBATORS BENCH TOP			19 litres	36 litres	52 litres	80 litres	150 litres			
Ambient+5 ... 80 °C	INCUBAT	ANALOGUE	2000205	2000206	2001615	2000207	2000994	YES	-	-
Ambient+5 ... 80 °C	INCUDIGIT-TFT	TFT Touch screen µ	2001256	2001257	2001258	2001259	2001260	YES	YES	YES
INCUBATORS LARGE AND FLOOR STANDING			288 litres	400 litres	720 litres					
Ambient+5 ... 80 °C	INCUBIG-TFT	TFT Touch screen µ	2000238	2000239	2000240			YES	YES	YES
LOW TEMPERATURE CABINETS			36 litres	80 litres	150 litres					
5 ... 60 °C	PREBATEM-TFT	TFT Touch screen µ	2000963	2000964	2000965			YES	YES	YES
CO_2 INCUBATOR					150 litres					
Ambient+5 ... 50 °C	INCUBATOR CO_2	DIGITAL µ			4002628			YES	YES	YES
WITH REFRIGERATION			160 litres	319 litres	442 litres	600 litres				
+5 ... 65 °C	HOTCOLD-S	DIGITAL µ	2101618	-	-	-		YES	-	-
0 ... 50 °C	HOTCOLD A-B-C	DIGITAL µ	-	2101502	2101503	2101504		YES	YES	YES
-10 ... 50 °C	HOTCOLD UB - UC	DIGITAL µ		-	2101505	2101506		YES	YES	YES
5 ... 50 °C	HOTCOLD GL	DIGITAL µ	-	-	-	2101507		YES	YES	YES

MUFFLE FURNACE			3 litres	3.6 litres	8 litres	9 litres				
Up to ... 1150 °C	SELECT-HORN-TFT	TFT Touch screen	-	2000366	-	2000367		YES	YES	YES
Up to ... 1100 °C	R	TFT Touch screen	2000368	-	2000369	-		YES	-	-

µ: with microprocessor.

Poupinel dry heat sterilizer “Drytime”

ADJUSTABLE TEMPERATURES FROM 100 °C UP TO 250 °C.
STABILITY: ±6 °C.

APPLICATIONS

For quick surgical sterilization of diverse instruments surgical odontological, etc.

FEATURES

Heating by shielded elements in the base which provide a rapid temperature rise.
Flap door.
Inner chamber in AISI 304 stainless steel.
Removable tank with extraction clamps.
Epoxy-coated outer casing.

SAFETY

Over temperature cut out incorporated. EN.61010 Standard.

CONTROL PANEL

Mains switch.
Mains indicator lamp.
Hydraulic thermostat for temperature control.
Timer 0 to 120 min. with automatic off.
Analogue temperature reading thermometer.

Part No. 00009096

MODEL

Part No.	Capacity litres	Height / Width / Depth (interior) cm	Height / Width / Depth (exterior) cm	Power W	Weight Kg
2000911	2.5	5 30 16	17 40 32	430	8

Poupinel dry heat sterilizer “Dryterm”

ADJUSTABLE TEMPERATURES FROM 60 °C UP TO 250 °C.
STABILITY: ±10 °C.

APPLICATIONS

For surgical sterilization of diverse instruments surgical odontological,etc.

FEATURES

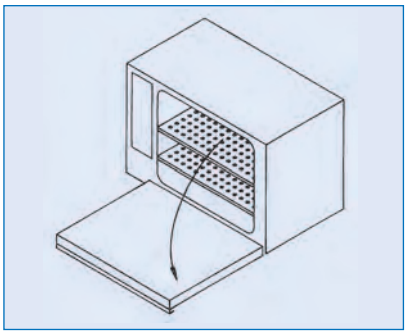
Heating by shielded elements in the base that provides a rapid rise in temperature.
Flap door.
Inner chamber made of AISI 304 stainless steel, complete with a heater cover, three shelf runners and two perforated shelves 10 mm high.
Epoxy-coated outer casing.

SAFETY

Over temperature cut out incorporated. EN.61010 Standard.

CONTROL PANEL

Hydraulic thermostat temperature control.
Locking device for thermostat knob.
Timer 0 to 120 min. with automatic switch off.
Heater “ON” indicator.
Analogue temperature reading thermometer.



MODEL

Part No.	Capacity litres	Height / Width / Depth (interior) cm	Height / Width / Depth (exterior) cm	Power W	Weight Kg
2000787	19	25 32 23	37 54 34	770	19

Glass drying oven “Dryglass”

FAN ASSISTED AIR CIRCULATION.
ADJUSTABLE TEMPERATURE FROM 40 °C TO 170 °C.

SAFETY:
EN.61012 STANDARD OVER TEMPERATURE SAFETY CUT OUT FITTED.
DIN 12880. STANDARD (CLASS 2 AND 3.1) ADJUSTABLE SAFETY THERMOSTAT FITTED.

FEATURES

Hydraulic thermostat for temperature control.
Air circulation by turbo fan.
Inner chamber made of AISI 304 stainless steel with shelf runners.
Removable tempered glass sliding doors.
Ventilation port for steam.
Epoxy coated external case.

STANDARD EQUIPMENT

2 shelves and 4 shelf guides.

CONTROL PANEL

Dual heating power selector switch.
Mains indicator lamp.
Hydraulic thermostat for temperature control.
Locking system of thermostat knop.
Heater “ON” operation indicator lamp.
Analogue thermometer.
Adjustable over temperature safety thermostat, that cuts off the power if the control thermostat fails, manual reset with “on” indicator lamp.

MODEL

Part No.	Capacity litres	Height / Width / Depth (interior) cm	Height / Width / Depth (exterior) cm	Shelf Positions	Power W	Weight Kg
2000381	126	45 70 40	66 94 54	8	3000	65

ACCESSORIES

Accessories must be factory installed.

Part No.

2000002 **Timer switch** 0-120 minutes.
2000003 **Timer switch** 0-12 hours.

2000009 **24 hour programmer** with continuous on/off cycling up to every 15 minutes.

SPARES

Part No.
2000081 **Shelf guides** x 2.
2000091 **Shelf.**
Each shelf requires 2 guides.

OVENS AND INCUBATORS PREMIER RANGE

PREMIER SERIE

MODELS:
- NATURAL AIR CONVECTION, DRYING AND STERILIZATION.
- FAN ASSISTED CIRCULATION, UNIVERSAL APPLICATIONS.
- NATURAL AIR CONVECTION, BACTERIOLOGY AND INCUBATION.

CONTROL: ANALOGUE OR DIGITAL MICROPROCESSOR CONTROL OF TEMPERATURE AND TIME, MODEL DEPENDENT.
COMPLIES WITH THE STANDARDS: DIN 50011 - DIN 58945. REQUIRED FOR HEATING, STABILITY AND HOMOGENEITY.

SAFETY:
STANDARD EN.61010. INCORPORATED FIXED OVER TEMPERATURE DEVICE .
STANDARD DIN 12880. (CLASS 2 AND 3.1)SAFETY THERMOSTAT CONTROLLER FITTED.

Leading edge technology

Detailed longitudinal cross section.

COMMON FEATURES

Construction.

1. External case treated with a corrosive resistant epoxy coating.
2. Internal part: Easy to clean AISI 304 stainless steel double chamber, self adjusting door seal and adjustable shelves and guides.
3. Control panel: independent insulated control panel to facilitate all types of instruments, controls and regulators.
4. Adjustable air inlet.
5. Flexible floating door seal, self adjusting that maintains the best possible seal.

Technical Properties.

6. Excellent thermal qualities of the insulation has the optimum performance according to heater capacity and power consumption, with minimal external temperature loss.
7. Independent heating chamber for the heating elements to obtain an even heat distribution and rapid temperature equilibrium and stabilization.

Fan assisted convection models have a turbo fan.
All incubators for bacteriology and cell culture have a second inner door of tempered glass.

Technology from J. P. Selecta:

8. **Adjustable guide and shelf positions.**
9. **Double seal around the chamber to provide a gentle but effective seal.**
10. **Floating spring door that adjusts the pressure and absorbs the thermal expansion.**
11. **Adjustable door pressure system closure.**

Internal tempered glass door.

NOTE:
For all models, the values for stability and homogeneity shown are based on temperature conditions with the ventilation closed.
The optimum homogenization of temperature within the chamber is based on a reasonable load that does not surpass more than 70 % of the volume of the chamber. The graphic results shown for temperature for each model are based on the above criteria.

CONTROL PANELS

Models with Analogue control.

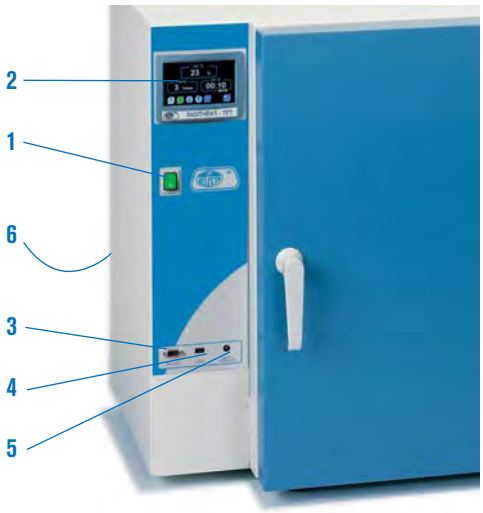
1. Main switch.
2. "On" indicator lamp.
3. Temperature control thermostat.
4. Heating "ON" indicator lamp.
5. Analogue thermometer temperature indicator.
6. Vacant positions for additional accessories.
7. Controllable safety thermostat that disconnects power to the heater in case of a fault in the main thermostat, manual reset (Directive DIN12880.2 class 2 and 3.1) and function signal lamp.

Models with 4.3 inches TFT touch screen.

1. Main switch.
2. TFT touch screen:

Visual audible alarm .
Clock calendar.
Single or cyclic On / Off programming.
Up to 10 work programs.
Up to 6 segments per program.
Stability time in each segment (from 1 min to 99h) .
Alarms and events storage.
Probe error detection.
Self Diagnostics.
Ramps between segments.
Door open alarm.
Network failure detection and saving.
Over temperature and low temperature alarms and memorization (date, start time, end time and temperature).
Safety thermostat (TS) by software.
Mechanic safety thermostat (TS).
PC software.
User manual on screen.
Temperature control auto-tuning.
Configurable parameters: Date / time, temperature correction , data collection interval, language (English, Spanish and French) , °C / °F selection , over temperature and low temperature limit.

3. **RS-232 output.**
4. **USB output.**
5. **Security thermostat.**
6. **Ethernet output para for LAN connection.**



MODEL SUMMARY TABLE

Models	CONTERM	DIGITHEAT	DIGITRONIC	INCUBAT	INCUDIGIT
TYPE	**Drying Oven**	**Drying Oven**	**Universal**	**Bacteriological Incubator**	**Bacteriological Incubator**
CONTROL	**Temperature**	**Temperature + time**	**Temperature + time**	**Temperature**	**Temperature + time**
DISPLAY	**Analogue**	**Digital**	**Digital**	**Analogue**	**Digital**
AIR	**Convection**	**Convection**	**Fan assisted**	**Convection**	**Convection**
CIRCULATION	**natural**	**natural**		**natural**	**natural**
CAPACITY LITRES	**19 - 36 - 52 - 80 - 150**	**19 - 36 - 52 - 80 - 150**	**33 - 47 - 76 - 145**	**19 - 36 - 52 - 80 - 150**	**19 - 36 - 52 - 80 - 150**

ACCESSORIES

Part No.
2000002 **Timer switch** 0-120 minutes.
Suitable for **CONTERM**.
2000003 **Timer switch** 0-12 hours.
Suitable for **CONTERM** and **INCUBAT.**

2000009 **24 hour programmer** with continuous on/off cycling up to every 15 minutes.
Suitable for **CONTERM** and **INCUBAT.**

Part No.
2000016 **Digital printer for time and temperature** with numerical printout on continuous paper roll, with print intervals from 1 minute to 99 hours.
Suitable for **DIGITHEAT**, **DIGITRONIC** and **INCUDIGIT.**

Optional communication modules
Part No. 2101623 Module for Wifi network.
Part No. 2101624 Module for Bluetooth.
Part No. 2101625 Module RF.
Part No. 2101626 RS-232 to RS-485 converter.
Suitable for **DIGITHEAT**, **DIGITRONIC** and **INCUDIGIT.**

DRYING AND STERILIZATION OVENS

Drying and sterilization ovens "Conterm"

NATURAL CONVECTION.
TEMPERATURE THERMOSTAT CONTROL WITH ANALOGUE THERMOMETER.
FOR ADJUSTABLE TEMPERATURES FROM 40 °C UP TO 250 °C.
STABILITY: ±0.3 °C UP TO 150 °C. HOMOGENEITY: ±3,25 °C UP TO 150 °C.

SAFETY:
STANDARD EN.61010. INCORPORATED FIXED OVER TEMPERATURE DEVICE .
STANDARD DIN 12880. (CLASS 2 AND 3.1) SAFETY THERMOSTAT CONTROLLER FITTED.

FEATURES, CONTROL PANEL, SAFETY, STANDARD AND ACCESSORIES (see pages 139 and 140).

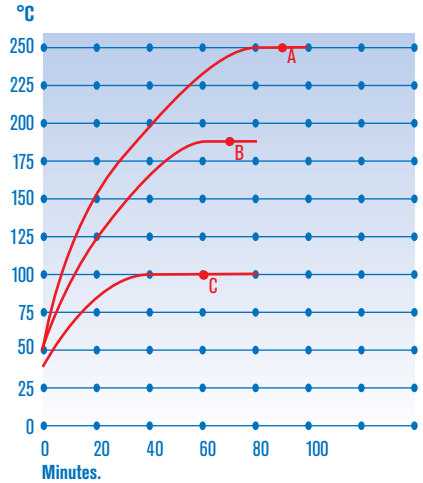
Models Conterm, Part No. 2000208, 2000209 and 2000210.

Model Conterm type Poupinel, Part No. 2000200 and 2000201.

STANDARD EQUIPMENT
2 shelves and 4 shelf guides.

MODELS

Part No.	Capacity litres	Height / Width / Depth (interior) cm	Height / Width / Depth (exterior) cm	Shelf Positions	Power W	Weight Kg
2000208	19	30 25 25	50 60 44	5	640	27
2000209	36	40 30 30	60 65 49	7	950	35
2000200	52	33 47 33	53 82 52	5	1075	44
2000210	80	50 40 40	70 74 59	8	1230	54
2000201	150	50 60 50	70 95 68	8	2150	76



Performance graph of temperature and time.
A. Set at 250 °C: 1 h 30'.
B. Set at 180 °C: 1 h 12'.
C. Set at 100 °C: 1 h.

ACCESSORIES
Accessories must be installed in the factory.

Part No.
2000002 **Timer switch** 0-120 minutes.
2000003 **Timer switch** 0-12 hours.

2000009 **24 hour programmer** with continuous on/off cycling up to every 15 minutes.

SPARES
Shelves and guides.

Oven Part No.	2000208	2000209	2000200	2000210	2000201
Guides set (2 units)	2000011	2000012	2000012	2000013	2000015
Shelves	2000021	2000022	2000024	2000023	2000025

Each shelf requires two guides (one set).

Drying and sterilization ovens “Digitheat-TFT”

NATURAL CONVECTION.
MICROPROCESSOR CONTROL WITH TFT TOUCH SCREEN.
ADJUSTABLE TEMPERATURE FROM AMBIENT +5 °C UP TO 250 °C.
STABILITY: ±0.3 °C, UP TO 150 °C. HOMOGENEITY: ±3,25 °C, UP TO 150 °C.
SET ERROR: ±2 % OF THE WORKING TEMPERATURE. RESOLUTION: 1 °C.

PREMIER SERIE

REGULATION B SYSTEM

NEW DESIGN

SAFETY:
STANDARD EN.61010. INCORPORATED FIXED OVER TEMPERATURE DEVICE .
STANDARD DIN 12880. (CLASE 2 AND 3.1)CONTROLLABLE SAFETY THERMOSTAT FITTED.

Reaches working temperature with minimum delay

USB

RS232

FEATURES, CONTROL PANEL, SAFETY, STANDARD AND ACCESSORIES (see pages 139 and 140).

Model Digitheat type Poupinel, Part No. 2001253 and 2001255.

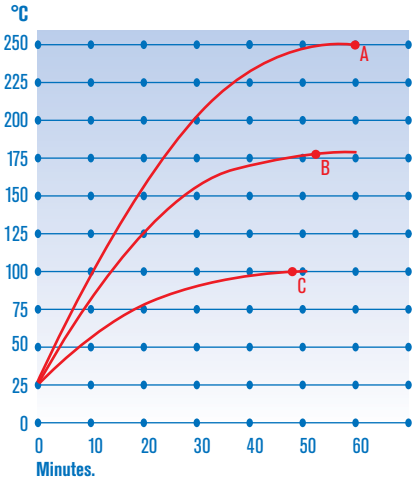
Model Digitheat, Part No. 2001251, 2001252 and 2001254.

STANDARD EQUIPMENT

2 shelves and 4 shelf guides.

MODELS

Part No.	Capacity litres	Height / Width / Depth (interior) cm	Height / Width / Depth (exterior) cm	Shelf Positions	Power W	Weight Kg
2001251	19	30 25 25	50 60 44	5	600	24
2001252	36	40 30 30	60 65 49	7	900	35
2001253	52	33 47 33	53 82 52	5	1000	44
2001254	80	50 40 40	70 74 59	8	1200	59
2001255	150	50 60 50	70 95 68	8	2100	73



Performance graph of temperature and time.
A. Set at 250 °C: 60'.
B. Set at 180 °C: 54'.
C. Set at 100 °C: 48'.

ACCESSORIES

2000016 Digital printer for time and temperature with numerical printout on continuous paper roll, with print intervals from 1 minute to 99 hours.

SPARES

Shelves and guides.

Oven Part No.	2001251	2001252	2001253	2001254	2001255
Guides set (2 units)	2000011	2000012	2000012	2000013	2000015
Shelves	2000021	2000022	2000024	2000023	2000025

Each shelf requires two guides (one set).

Universal precision ovens “Digitronic-TFT”

FAN ASSISTED CIRCULATION.
BACTERIOLOGICAL ASSAYS, DRYING PROCESSES AND STERILIZATION.
MICROPROCESSOR CONTROL WITH TFT TOUCH SCREEN.
ADJUSTABLE TEMPERATURES FROM AMBIENT +5 °C UP TO 250 °C.
STABILITY: ±0.3 °C, UP TO 100 °C. HOMOGENEITY: ±1 °C, UP TO 100 °C.
SET ERROR: ±2% OF THE WORKING TEMPERATURE. RESOLUTION: 1 °C.

PREMIER SERIE

REGULATION B SYSTEM

NEW DESIGN

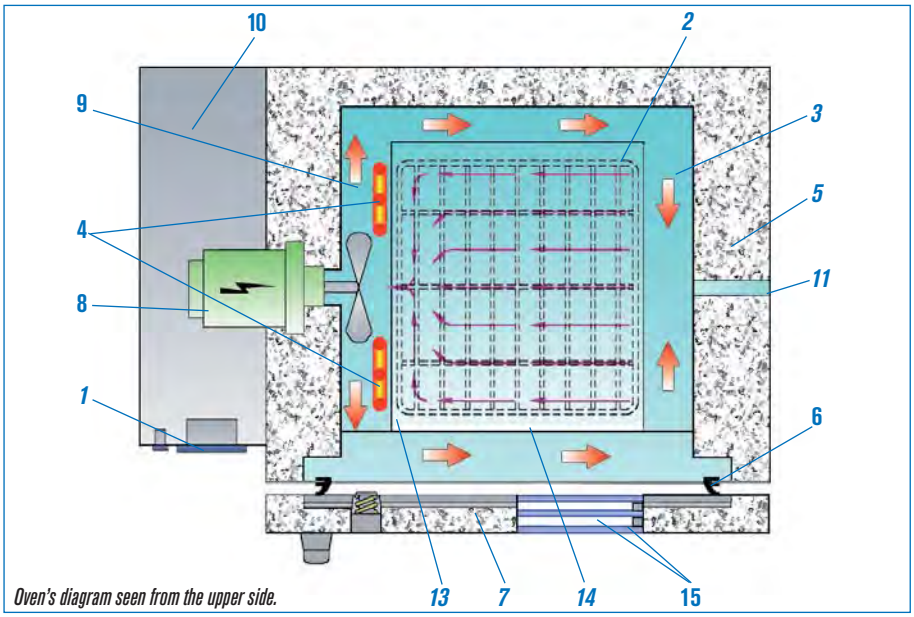
SAFETY:
EN.61012 STANDARD OVER TEMPERATURE SAFETY CUT OUT FITTED.
ADJUSTABLE OVER TEMPERATURE SAFETY THERMOSTAT DIN 12880. (CLASS 2 AND 3.1) FITTED.

Multipurpose oven. Fast response and recuperation of temperature.

FEATURES

1. TFT touch screen.
2. Inner chamber made of AISI 304 stainless steel.
3. Pre-mixing chamber made of AISI 304 stainless steel.
4. Homogeneously distributed shielded heating elements with complete air circulation throughout.
5. Low external temperature due to excellent thermal insulation.
6. Flexible silicon door gasket around the entrance of the chamber.
7. Excellent door seal due to the floating inner door that adjusts and absorbs the thermal expansion.
8. Turbo fan made of AISI 304 stainless steel that makes to circulate the air at the working temperature.
9. Diagram showing the air flow from the pre-mixing chamber around the heating elements prior to entry to the oven’s chamber.
10. Independent insulated control box.
11. Epoxy coated outer case.
12. Ventilator with adjustable outlet (access at the back of the unit).
13. Adjustable height positions for guides and shelves.
14. Shelves made of AISI 304 stainless steel.
15. Toughened double safety glass door for viewing the contents of the oven without having to open the door. (Model dependent).

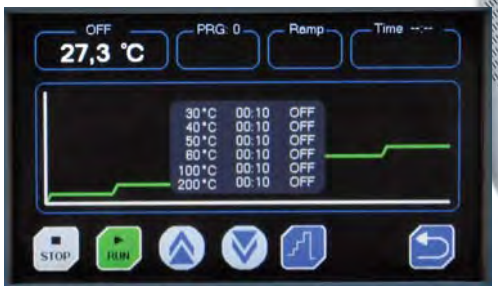
CONTROL PANEL, SAFETY, STANDARD AND ACCESSORIES (see pages 139 and 140).



Oven’s diagram seen from the upper side.

USB

RS232



Temperature ramps graphic.


Model Digitronic with solid metal door. Part No. 2005163 and 2005167. (With toughened glass window door. Part No. 2005164 and 2005168).

Model Digitronic type Poupinel, door with toughened double glass window Part No. 2005166 and 2005170.

Model Digitronic type Poupinel, Part No. 2005165 and 2005169.

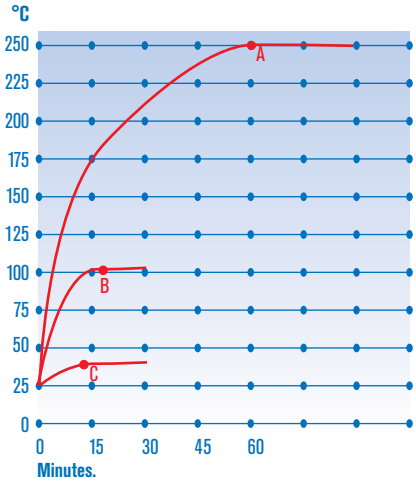
STANDARD EQUIPMENT

2 shelves and 4 shelf guides.

MODELS

Part No.	Capacity litres	Door Type	Heating rate to 100 °C minutes	Recovery time* minutes	Complete air exchange per hour	Height / Width / Depth (interior) cm	Height / Width / Depth (exterior) cm	Shelf Positions	Power W	Weight Kg
2005163	33	metal	15	7	16	40 28 30	60 65 55	7	1200	38
2005164	33	glass	15	7	16	40 28 30	60 65 55	7	1200	40
2005165	47	metal	16	7	16	33 45 32	53 81 58	5	1200	46
2005166	47	glass	16	7	16	33 45 32	53 81 58	5	1200	50
2005167	76	metal	17	9	14	50 38 40	70 75 65	8	1600	58
2005168	76	glass	17	9	14	50 38 40	70 75 65	8	1600	64
2005169	145	metal	17	10	12	50 58 50	70 95 72	8	2000	74
2005170	145	glass	17	10	12	50 58 50	70 95 72	8	2000	79

* Recovery time: the door was opened for 1 minute. After that, this is the time to recover the set temperature to 100 °C.



Note: The stability and homogeneity curves for time and temperature shown on the graph apply to models that have a metal door.

Performance graph of temperature and time.
A. Set at 250 °C: 60'.
B. Set at 100 °C: 18'.
C. Set at 37 °C: 12'.

SPARES

Shelves and guides.

Oven Part No.	2005163 2005164	2005165 2005166	2005167 2005168	2005169 2005170
Guides (2) (Set)	2000012	2000033	2000013	2000015
Shelves	2000072	2000073	2000074	2000075

Each shelf requires two guides i.e. one set.

ACCESSORIES

Preparation of furnaces for drying moisture saturated samples. (Arids, muds, sands ...)
When adding turbine, the number of renewals of the air inside the furnace per hour multiplies by 10.
Must be factory installed
Part No. 2000095

Drying and sterilization ovens “Dry-Big”

FAN ASSISTED CIRCULATION.
DIGITAL CONTROL AND DISPLAY OF TEMPERATURE AND TIME
ADJUSTABLE TEMPERATURES FROM 40 °C UP TO 250 °C
STABILITY: ±0.4 °C, UP TO 100 °C. HOMOGENEITY: ±2 °C, UP TO 100 °C
SET ERROR : ±2.5% OF THE WORKING TEMPERATURE. RESOLUTION: 1 °C

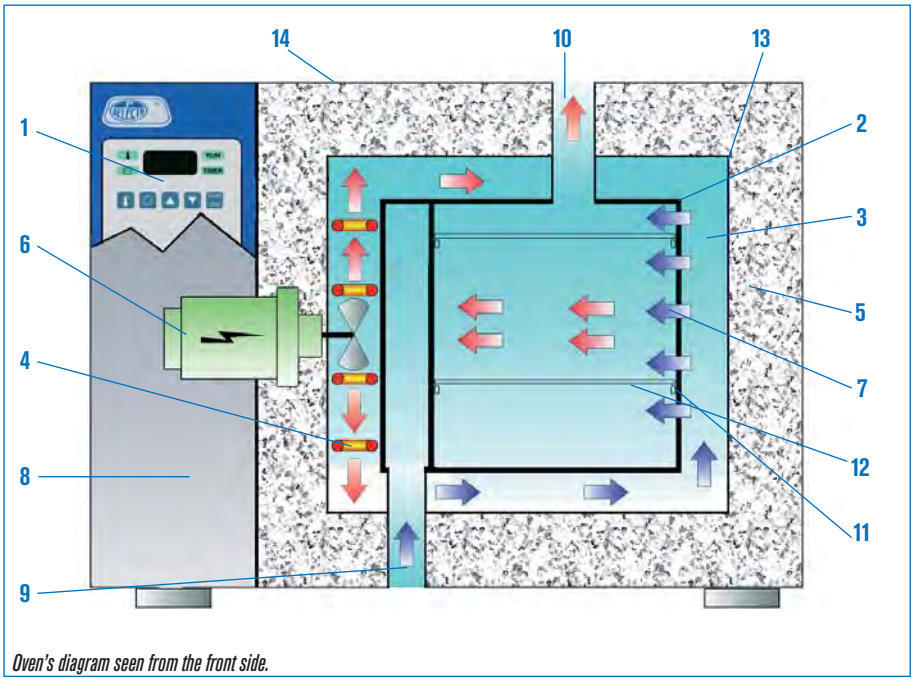
RS232

SAFETY:
STANDARD EN.61010. FIXED OVER TEMPERATURE DEVICE FITTED.
STANDARD DIN 12880. (CLASS 2 AND 3.1)ADJUSTABLE SAFETY THERMOSTAT FITTED.

Fast working and recovery temperature

FEATURES

1. Microprocessor controlled with digital display of temperature and time, pre-programmable time start and run time once the set temperature has been achieved through the Pt100 temperature sensor.
2. Inner chamber made of AISI 304 stainless steel.
3. Pre mixing chamber made of AISI 304 stainless steel.
4. Shielded heating elements with complete air circulation, homogeneously distributed throughout.
5. Low external temperature due to excellent thermal insulation.
6. Ventilation fan to force the air to circulate in the oven.
7. Diagram showing the air flow from the premixing chamber round the heating elements to the oven chamber.
8. Independent insulated control box.
9. Air inlet.
10. Ventilator with adjustable outlet of 120 Ø mm.
11. Shelf guides.
12. Shelves made of AISI304 stainless steel.
13. Flexible silicon door gasket around the entrance of the chamber.
14. Epoxy coated outer case.



Oven’s diagram seen from the front side.

CONTROL PANEL

1. Illuminated mains switch.
2. Temperature mode indicator.
3. Time mode indicator.
4. Display for temperature and time.
5. Operating, Status mode.
6. Delay time state indicator.
7. Push button temperature selector.
8. Push button time selector.
9. Push button “increase” value or parameter.
10. Push button “decrease” value or parameter.
11. Push button Stop/Start.
12. Set temperature.
13. Set run time: time period from 1 minute to 9 hours 59 minutes, or up to 99.9 hours, once the set temperature value has been reached.
14. Set wait time before starting the run, time period from: 1 to 24 hours.
15. RS-232 Interface output to a computer, for printer or USB adapter.
16. Adjustable safety thermostat that overrides the microprocessor in case of failure, with manual reset and indicator lamp.

STANDARD EQUIPMENT

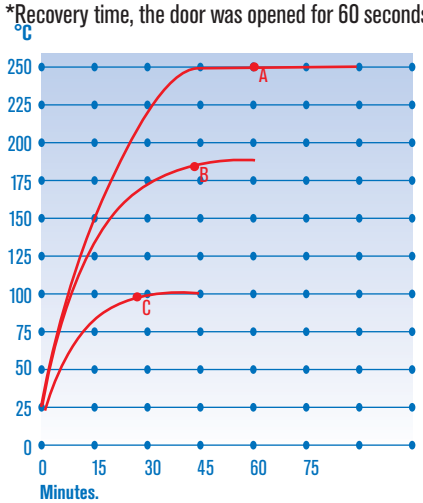
2 Shelves.

MODELS

Part No.	Voltage	Capacity litres	Heating rate to reach 100 °C, minutes	Recovery time* minutes	Air exchanges per hour	Height / Width / Depth (interior) cm	Height / Width / Depth (exterior) cm	Number of shelf positions	Power W	Weight Kg
2002961	230 / 400 three phase	216	16	10	12	60 60 60	87 112 84	6	4000	150
2002962	230 single phase									
2002971	230 / 400 three phase	288	18	10	11	80 60 60	107 112 84	8	5000	161
2002972	230 single phase									
DOUBLE DOOR CABINET										
2003721	230 / 400 three phase	400	18	13	6	100 80 50	128 132 74	10	5250	200
2003741	230 / 400 three phase	720	19	13	6	120 100 60	150 152 80	12	6000	264

Energy saving, three phase units are recommended.

*Recovery time, the door was opened for 60 seconds, time taken to recover to the set temperature of 100 °C.



Performance graph of temperature and time.
A. Set at 250 °C: 1 h 6'.
B. Set at 180 °C: 42'.
C. Set at 100 °C: 24'.

SPARES

Shelves.

Oven Part No.	2002961/62	2002971/72	2003721	2003741
Shelves	2000062	2000062	2000063	2000064

ACCESSORIES

4120131 USB adapter model.
Pen-Drive included (Memory board) for data storage.

Accessories that must be installed in the factory :

2000016 Digital printer for time and temperature with numerical printout on continuous paper roll, with print intervals from 1 minute to 99 hours.

2000007 Digital programmable microprocessor. Capacity: 10 programs of 100 segments. Programmable timer: up to 99 hours 59' 59''. Program repetition: up to 99 times. Programs can also be linked for up to 4 stages.
RS-232 interface for data download to a printer or computer.

High temperature oven “Hightemp”

FAN CONVECTION.
DIGITAL CONTROL AND DISPLAY OF TEMPERATURE AND TIME.
ADJUSTABLE TEMPERATURES FROM 60 °C UP TO 400 °C.
STABILITY: ±1 °C, UP TO 300 °C. HOMOGENEITY: ±3 °C, UP TO 300 °C
SET ERROR : ±2 % OF THE WORKING TEMPERATURE.

SAFETY:
STANDARD DIN 12880. ADJUSTABLE OVER TEMPERATURE THERMOSTAT FITTED.

FEATURE

Digital electronic temperature control. Independent control box chamber thermaly insulated.
Shielded heating elements.
Fan circulation motor with thermal cut out, motor operates independently from the heating elements,the motor can be activated during the cooling cycle.
Inner chamber in AISI 304 heat resistant stainless steel with a high tolerance against corrosion and high temperatures.
Fixed position shelf guides.
Ventilation device with adjustable outlet.
Epoxy-coated outer casing.

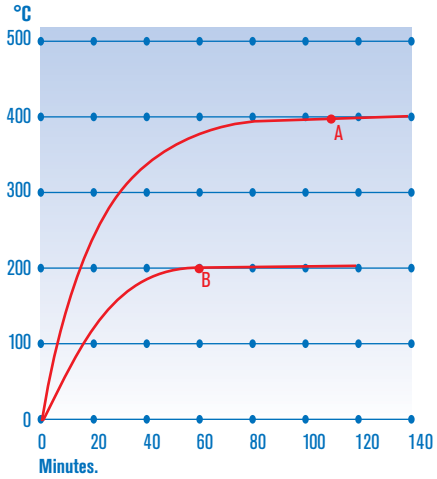
STANDARD EQUIPMENT

2 shelves made of AISI 304 stainless steel.

CONTROL PANEL

Main switch.
Mains indicator lamp.
Heater switch.
Heater operation indicator lamp.
Digital electronic temperature control.

Electronic safety thermostat with a K type probe that cuts off power to the heating elements in case of a controller fault. (standard to DIN 12.880 class 2).



Performance graph of temperature and time.
A. Set at 400 °c: 1h 50'.
B. Set at 200 °c: 1h.

ACCESSORIES. Shelves made of AISI 304 stainless steel. Part No. 2000071

MODEL

Part No.	Voltage	Capacity litres	Height / Width / Depth (interior) cm shelf			Height / Width / Depth (exterior) cm			Nº of shelf positions	Power W	Weight Kg
2001406	230 / 400 three phase	80	50	40	40	80	120	61	4	4000	158

ACCESSORIES

Accessories that must be installed in factory.

Part No.

2000002 **Timer switch** 0-120 minutes.

2000003 **Timer switch** 0-12 hours.

2000009 **24 hour programmer** with continuous on/off cycling up to every 15 minutes.

Vacuum drying oven "Vaciotem-TV"

DIGITAL TEMPERATURE CONTROL, ELECTRONIC VACUUM PRESSURE DISPLAY AND TIMER.
CONTROLLABLE TEMPERATURE FROM 35 °C TO 200 °C
STABILITY ±1 °C, UP TO 100 °C. HOMOGENEITY ±3 °C, UP TO 100 °C. SET ERROR ±2 °C. RESOLUTION 1 °C.

USB

RS232

SAFETY:
OVER TEMPERATURE CUT OUT FITTED IN ACORDANCE WITH THE EN.61010 STANDARD.
DIN 12880. STANDARD ADJUSTABLE SAFETY THERMOSTAT FITTED.

FEATURE

Digital electronic control of: temperature, vacuum pressure and pre-selected programmable timer.
Temperature sensor Pt100
Automatic air inlet at the end of the operation cycle.
Heating element placed evenly around the chamber.
Chamber made of AISI 304 stainless steel.
Trays made of anodised aluminium.
Door with hardened glass window, which sits on to a silicon gasket that absorbs any contractions and expansions that may occur.
Vacuum port with bleed valve.
Air valve at the front.
Vacuum pump connection at the back.
Epoxy covered outer case.
RS-232 Interface output for parameters to a computer, printer or USB adapter.

CONTROL PANEL

1. RS232 interface.
2. Air inlet.
3. Air inlet valve.
5. Vacuum pressure indicator lamp.
6. Air inlet valve indicator lamp, end of cycle.
7. Running indicator lamp.
8. Under vacuum indicator lamp.
9. Digital vacuum display in mbar.
10. Push button to select vacuum.
11. Push button to select electronic valve at the end of the cycle.
12. Push button to increase value.
13. Push button to decrease value.
14. Push button to STOP/START.
15. Indicator of mode temperature.
16. Indicator of mode time.
17. Indicator of operating.
18. Indicator of mode waiting time.
19. Digital display of temperature or time.
20. Push button to select temperature.
21. Push button to select time.
22. Push button to increase value.
23. Push button to decrease value.
24. Push button to STOP/START.
25. Mains switch.
26. Safety thermostat in operation.

BACK

27. Air inlet.
28. Pump power connection.
29. Vacuum connection.
30. Adjustable safety thermostat

MODEL

Part No.	Vacuum Max.	Capacity litres	Ø / Depth (interior) cm	Height / Width / Depth (exterior) cm	Shelves	Power W	Weight Kg
4001490	10^{-2} mm Hg	47	34 52	54 76 70	2	2000	73

Note: To obtain the optimum homogeneity at the set temperature, the load should not surpass more than 70 % of the volume of the chamber.

ACCESSORIES

4120131 USB adapter model. Pen-Drive included (Memory board) for data storage.

Accessories see page 150

SPARE PARTS

Shelves. (2)
Part No. 2000030

Vacuum oven “Vaciotem-T”

DIGITAL TEMPERATURE AND TIMER CONTROL.
CONTROLLABLE TEMPERATURE FROM 35 °C TO 200 °C.
STABILITY ±1 °C, UP TO 100 °C. HOMOGENEITY ±2 °C, UP TO 100 °C. SET ERROR ±1 °C. RESOLUTION 1 °C.

USB

RS232

SAFETY:
OVER TEMPERATURE CUT OUT FITTED IN ACORDANCE WITH THE EN.61010 STANDARD.
DIN 12880. STANDARD ADJUSTABLE SAFETY THERMOSTAT FITTED.

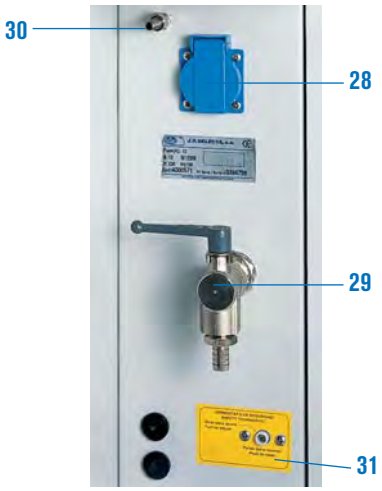
FEATURE

Digital electronic control of temperature and pre-selected programmable timer.
Running time range: from 1 minute to 9hrs 59 min. or 99.9 hrs.
Pre-program start time, (wait time range): 1 hr to 24 hrs
Temperature sensor Pt100
Heating element placed evenly around the chamber.
Chamber made from AISI 304 stainless steel.
Trays made from anodised aluminium.
Door with hardened glass window, which sits on to a silicon gasket that absorbs any contractions and expansions that may occur.
Vacuum port with bleed valve
Air valve at the front
Vacuum pump connection at the back.
Epoxy covered outer case.
RS-232 Interface output of parameters for a computer, printer or USB adapter.

CONTROL PANEL

1. RS 232 connector.
2. Air inlet.
3. Air inlet valve.
4. Vacuum gauge.
15. Temperature mode indicator.
16. Time mode indicator.
17. Operation indicator.
18. Waiting time indicator.
19. Time and temperature digital display.
20. Push button to select temperature.
21. Push button to select time.
22. Push button to increase value.
23. Push button to reduce value.
24. Push button to STOP/START.
25. Mains switch.
26. Safety thermostat indicator lamp.
27. Vacuum pump control switch.

BACK
28. Vacuum pump power connection.
29. Vacuum connection.
30. Air inlet.
31. Adjustable safety thermostat.



MODEL

Part No.	Vacuum Max.	Capacity litres	Ø / Depth (interior) cm	Height / Width / Depth (exterior) cm	Shelves	Power W	Weight Kg
4001489	10^{-2} mm Hg	47	34 52	54 76 70	2	2000	73

Note: To obtain the optimum homogeneity at the set temperature, the load should not surpass more than 70 % of the volume of the chamber.

ACCESSORIES

4120131 USB adapter model. Pen-Drive included (Memory board) for data storage.

Accessories see page 150

SPARE PARTS

Shelves. (2)
Part No. 2000030

VACUUM EQUIPMENT ACCESSORIES FOR VACIOTEM-T AND VACIOTEM-TV

Vacuum pump "VACUM-10 Pa"

ROTARY VEIN PUMP WITH ANTI RETURN VALVE PREVENTS OIL FLOW BACK, SUITABLE FOR GENERAL LABORATORY APPLICATIONS. OVER TEMPERATURE MOTOR PROTECTION CUT-OUT AND MAIN ON/OFF SWITCH. RECOMMENDED FOR THE "VACIOTEM T AND TV" AND THE DESICCATOR "VACUO-TEMP".

FEATURE

Heat resistant veins and internal joints
Aspiration inlet flange: 16 mm Ø.
High oil volume and forced lubrication.
Exhaust filter and ballast.
Shock absorber mounted.
Free from vibrations
Low noise level (62db).
Maximum working temperature 60 °C.
Portable, with lifting handle included.

MODEL

Part No.	Pump rate m^3/h	Vacuum limit mbar	Height / Width / Depth (exterior) cm	r.p.m.	Power W	Weight Kg
5900621	3,6	0.06	27 35 14	1400	180	11

Heated vacuum desiccator "Vacuo-Temp"

WITH TEMPERATURE THERMIC LIMITER.
TIME AND TEMPERATURE DIGITAL ELECTRONIC CONTROL.
ADJUSTABLE TEMPERATURE FROM AMBIENT +5 °C TO 170 °C.
STABILITY: ±1 °C. RESOLUTION: 1 °C.
TIME FROM 1' TO 999', OR CONTINUOUS.

FEATURES

AISI 304 stainless steel outer casing.
Polished aluminium alloy flat surface plate with an effective vacuum seal.
Tempered glass bell jar with silicon gasket seal.
Shielded heating element.
Pt 100 temperature probe.
Vacuum pump connection at the back of the unit.
Vacuum bleed valve.

CONTROL PANEL

Main switch.
Analogue vacuum gauge.
Digital time & temperature display.
Overheating alarm.
Visualized parameter indicator.
Push button for the visualized parameter.
Push button to increase the parameter.
Push button to decrease the parameter.
Button On-Off.

MODEL

Part No.	Vacuum Max	Usable volume litres	Ø heating plate cm	Heigth / Width / Depth (exterior) cm	Power W	Weight Kg
4000474	10^{-2} mm Hg	3	23.5	17 28 34	540	9

Supplied complete with bell jar and silicon seal.

SPARES

Tempered glass bell 15 cm high and 23 cm Ø. Part No. 4000475
Silicon seal. Part No. 4000476

Desiccator for materials

WITH HYDROMETER CONTROL.

APPLICATIONS

Cabinet with protection against humidity and dust for anhydrous, biological and chemical preservation of samples.

FEATURE

Made of robust transparent 12mm thick methacrylate.
The door has a silicon seal and magnetic catch.
Volume: 55 Litres.
Dimensions 50 cm high x 38 cm wide x 29 cm deep.
Supplied complete with three perforated shelves and a stainless steel AISI 304 tray to hold desiccating material.
Part No. 1001403

BACTERIOLOGICAL INCUBATORS

PREMIER SERIE

REGULATION A SYSTEM

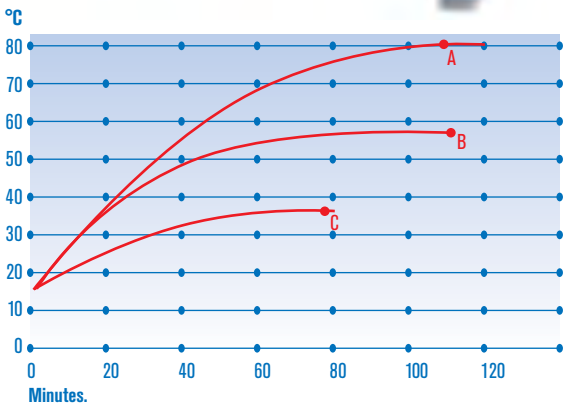
Bacteriological incubators "Incubat"

NATURAL CONVECTION.
TEMPERATURE THERMOSTAT CONTROL WITH ANALOGUE THERMOMETER.
ADJUSTABLE TEMPERATURES FROM AMBIENT +5 °C UP TO 80 °C.
STABILITY: ±0.1 °C, UP TO 37 °C. HOMOGENEITY: ±0.5 °C, UP TO 37 °C
INTERNAL GLASS DOOR.

FEATURES, CONTROL PANEL, STANDARD AND ACCESSORIES (see pages 139 and 140).

SAFETY:
OVER TEMPERATURE CUT OUT INCORPORATED ACCORDING TO THE EN.61010 STANDARD.
ADJUSTABLE SAFETY THERMOSTAT DIN 12880. FITTED.

Horizontal model. Part No. 2001615



Performance graph of temperature and time.
A. Set at 80 °C: 1 h 54'.
B. Set at 56 °C: 1 h 46'.
C. Set at 37 °C: 1 h 18'.

STANDARD EQUIPMENT

2 shelves and 4 shelf guides.

MODELS

Part No.	Capacity litres	Height / Width / Depth (interior) cm			Height / Width / Depth (exterior) cm			Shelves positions	Power W	Weight Kg
2000205	19	30	25	25	51	57	49	5	165	26
2000206	36	40	30	30	60	62	54	7	245	36
2001615	52	33	47	33	53	79	57	5	275	46
2000207	80	50	40	40	70	72	64	8	315	54
2000994	150	50	60	50	70	92	74	8	535	78

SPARES

Shelves and guides.

Oven Part No.	2000205	2000206	2001615	2000207	2000994
Set guides (2 units)	2000011	2000012	2000012	2000013	2000015
Shelves	2000021	2000022	2000024	2000023	2000025

Each shelve requires two guides (one set).

ACCESSORIES

Accessories must be factory installed.

Part No.
2000003 **Timer switch** 0-12 hours.

2000009 **24 hour programmer** with continuous on/off cycling up to every 15 minutes.

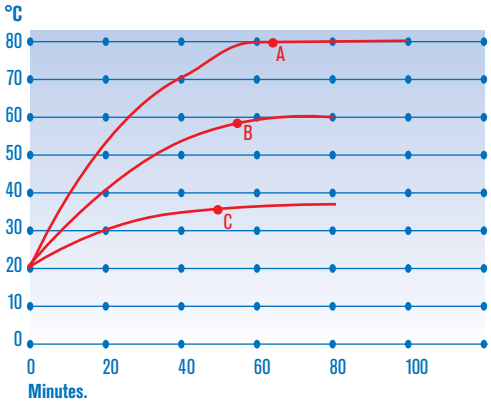
Digital bacteriological incubators “Incudigit-TFT”

NATURAL CONVECTION.
DIGITAL CONTROL AND DISPLAY OF TEMPERATURE AND TIME.
ADJUSTABLE TEMPERATURE FROM AMBIENT +5 °C UP TO 80 °C.
STABILITY: ±0.1 °C, UP TO 37 °C. HOMOGENEITY: ±0.5 °C, UP TO 37 °C.
SET ERROR: ±2% OF THE WORKING TEMPERATURE, RESOLUTION 0.1 °C
INTERNAL TEMPERED GLASS DOOR.
DOUBLE CHAMBER, MINIMUM RISK OF SAMPLE CONTAMINATION.
INSIDE WITHOUT OPENINGS AND WITH ROUNDED CORNERS. EASY TO CLEAN.

FEATURES, CONTROL PANEL, STANDARD AND ACCESSORIES (see pages 139 and 140).

SAFETY:
OVER TEMPERATURE CUT OUT INCORPORATED ACCORDING TO THE EN.61010 STANDARD.
ADJUSTABLE SAFETY THERMOSTAT DIN 12880. FITTED.

Horizontal model. Part No. 2001258



Performance graph of temperature and time.
A. Set at 80 °C: 1 h 12'.
B. Set at 56 °C: 54'.
C. Set at 37 °C: 48'.

STANDARD EQUIPMENT

2 shelves and 4 shelf guides.

MODELS

Part No.	Capacity litres	Height / Width / Depth (interior) cm			Height / Width / Depth (exterior) cm			Shelves positions	Power W	Weight Kg
2001256	19	30	25	25	51	57	49	5	150	26
2001257	36	40	30	30	60	62	54	7	225	36
2001258	52	33	47	33	53	79	57	5	250	46
2001259	80	50	40	40	70	72	64	8	300	54
2001260	150	50	60	50	70	92	74	8	525	75

SPARES

Shelves and guides.

Oven Part No.	2001256	2001257	2001258	2001259	2001260
Guides (2) (Set)	2000011	2000012	2000012	2000013	2000015
Shelves	2000021	2000022	2000024	2000023	2000025

Each self requires two guides i.e. one set.

ACCESSORIES

must be factory installed.

2000016 **Digital printer for time and temperature** with numerical printout on continuous paper roll, with print intervals from 1 minute to 99 hours.

Incubators for bacteriology and cell culture "Incubig-TFT"

NATURAL CONVECTION.
MICROPROCESSOR CONTROL AND DIGITAL DISPLAY OF TEMPERATURE AND TIME.
ADJUSTABLE TEMPERATURE FROM AMBIENT +5 °C TO 80 °C.
STABILITY: ±0.1 °C, UP TO 37 °C. HOMOGENEITY: ±0.5 °C, UP TO 37 °C.
SET ERROR: ±2% OF THE WORKING TEMPERATURE, RESOLUTION 0.1 °C
INTERNAL TEMPERED GLASS DOOR.

PREMIER SERIE

REGULATION B SYSTEM

NEW DESIGN

USB

RS232

SAFETY:
STANDARD EN.61010 OVER TEMPERATURE CUT OUT FITTED.
STANDARD DIN 12880. ADJUSTABLE SAFETY THERMOSTAT FITTED.

Capacities up to 720 litres

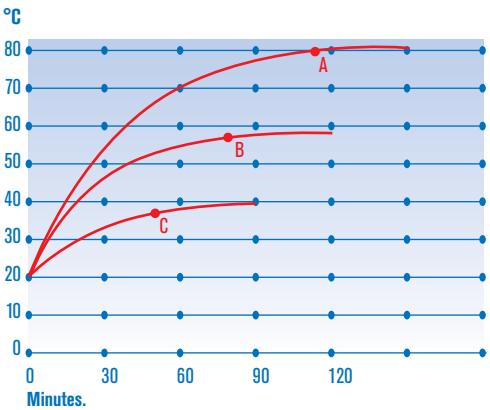
FEATURE

Microprocessor control and 4.3 inches TFT touch screen display.
Large surface area heating elements.
Inner chamber made of AISI 304 stainless steel.
Double door, interior door of tempered glass that allows the user to see the contents of the chamber without opening the door.
Adjustable air vent.
Epoxy covered external case.

STANDARD EQUIPMENT

For Part No. 2000238, 2 shelves and 4 shelf guides.
For Part No. 2000239 and 2000240, 2 shelves.

Model Part No. 2000238.



Performance graph of temperature and time.
A. Set at 80 °C: 1 h 45'.
B. Set at 56 °C: 1 h 10'.
C. Set at 37 °C: 54'.

Note: To obtain the optimum homogeneity at the set temperature, the load should not surpass more than 70 % of the volume of the chamber.

Models Part No. 2000239 and 2000240.

CONTROL PANEL

4.3 inches TFT touch screen models:

1. Main switch.
2. TFT touch screen:

Visual audible alarm.
Clock calendar.
Single or cyclic On / Off programming.
Up to 10 work programs.
Up to 6 segments per program.
Stability time in each segment (from 1 min to 99h) .
Alarms and events storage.
Probe error detection.
Self Diagnostics.
Ramps between segments.
Door open alarm.
Network failure detection and saving.
Over temperature and low temperature alarms and memorization (date, start time, end time and temperature).
Safety thermostat (TS) by software.
Mechanic safety thermostat (TS).
USB and RS -232 output.
PC software.
User manual on screen.
Temperature control auto-tuning.
Configurable parameters: Date / time, temperature correction , data collection interval, language (English, Spanish and French) , °C / °F selection , over temperature and low temperature limit.

3. **RS-232 output.**
4. **USB output.**
5. **Security thermostat.**
6. **Ethernet output para for LAN connection.**

MODELS

Part No.	Type	Capacity litres	Height / Width / Depth (interior) cm	Height / Width / Depth (exterior) cm	Nº of shelf guides	Power W	Weight Kg
2000238	1 door	288	80 60 60	97 91 76	8	570	87
2000239	2 door	400	100 80 50	130 114 75	10	1100	160
2000240	2 door	720	120 100 60	152 134 85	12	1600	225

ACCESSORY

4120131 **USB adapter model.**
Pen-Drive included (Memory board) for data storage.

Accessories must be factory installed.

2000016 **Digital printer for time and temperature** with numerical printout on continuous paper roll, with print intervals from 1 minute to 99 hours.

SPARES

Shelves and guides.

Oven Part No.	2000238	2000239	2000240
Shelves	2002372	2000063	2000064
Guides (2) (Set)	2002371	-	-

Each self requires two guides i.e. one set.

Incubator for Petri capsules

NATURAL CONVECTION.
MICROPROCESSOR REGULATION AND TEMPERATURE DIGITAL CONTROL.
FOR ADJUSTABLE TEMPERATURES FROM AMBIENT +5°C TO 60°C.
STABILITY: ±0,1°C TO 37°C. HOMOGENEITY: ±0,1°C TO 37 °C. SETPOINT ERROR: ±0,1°C. RESOLUTION: 0,1°C.

Small size. Culture visual control. Transportable.

APPLICATIONS

Specially designed for bacteria and fungi cultures in Petri capsules at the same temperature of human body.

FEATURES

Culture surface 320 x 220 mm (Inner height: 20mm)
Culture visual monitoring.
Transparent cover.
Easy access to samples.
Approximate capacity: (single level) (mm)
15 Petri capsules of Ø55.
10 Petri capsules of Ø80.
7 Petri capsules of Ø90.
6 Petri capsules of Ø100.
3 Petri capsules of 120x120.
2 Petri capsules of Ø140.

MODEL

Part No.	Margin T° °C	Height / Width / Depth (Exterior) cm	Height / Width / Depth (interior) cm	Power W.	Weight Kg
4002629	Amb +5 to 60	7 45 25	2 32 22	300	3.5

Cooled low temperature incubator “Prebatem-TFT”

FORCED AIR FAN CIRCULATION.
MICROPROCESSOR CONTROLLED WITH DIGITAL DISPLAY
ADJUSTABLE TEMPERATURES FROM 5 °C UP TO 60 °C. RESOLUTION 0.1 °C
SEMICONDUCTOR HEATING AND COOLING SYSTEM.
QUIET-STABLE - FREE FROM VIBRATIONS - VERY ACCURATE - LOW POWER CONSUMPTION.
INNER TEMPERED GLASS DOOR.

PREMIER SERIE

REGULATION B SYSTEM

NEW DESIGN

USB

RS232

SAFETY: **CONFORMS TO THE DIN 50011 STANDARD FOR TEMPERATURE STABILITY AND HOMOGENEITY.**
CONFORMS TO THE DIN 12880.STANDARD ADJUSTABLE SAFETY THERMOSTAT FITTED.

Leading edge technology, Peltier effect. No compressor.

APPLICATIONS

Biotechnology, Bacteriology, Plasma fractionation, Biology, Enzymatic test, Research, Serum studies, metrology, Botany, Phytopharmacy, Cosmetics, Water analysis and Agricultural research, feeding, new techniques for protein crystallization.

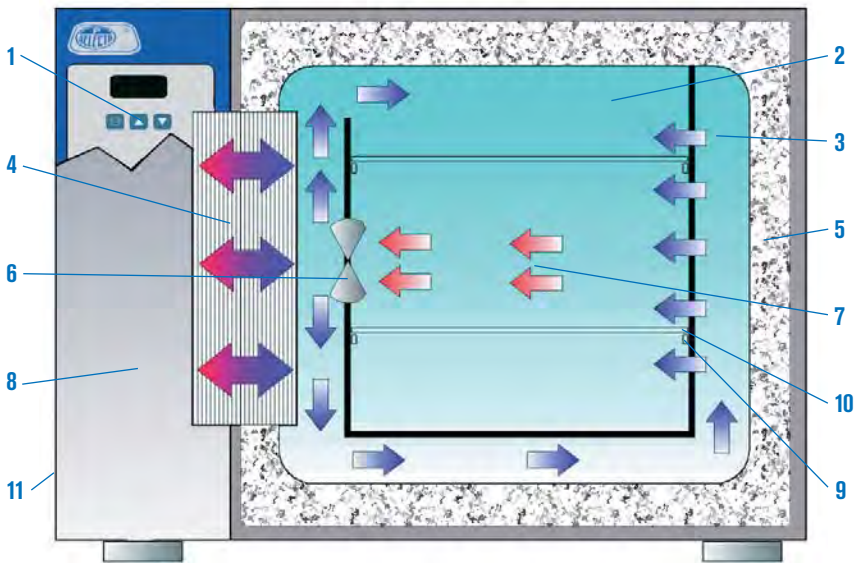
PERFORMANCE

	Specification	
	at 10 °C	at 37 °C
Stability	±0.5 °C	±0.1 °C
Homogeneity	±0.1 °C	±0.3 °C
Set error	±0.25 °C	±0.20 °C

FEATURE

1 .4.3 inches TFT touch screen.
2. Inner chamber and elements made of AISI 304 stainless steel.
3. Premixing temperature chamber.
4. Semiconductor- static radiator for heating and cooling.
5. Excellent thermal insulation within the chamber.
6. Turbo fan to make the air circulate.
7. Diagram showing the homogeneous air flow from the premixing chamber of the semiconductor cooling / heating system.
8. Independent insulated control box .
9. Support rack for trays.
10. Shelves of AISI 304 stainless steel.
11. Epoxy coated outer case.

Oven’s diagram seen from the front side.



Forced air passes through the heat exchanger chamber prior to entering the main cabinet chamber.

Cross section of the circulation of air maintaining the temperature in the cabinet below ambient by the use of an electronic heat exchanger rather than a compressor.

CONTROL PANEL

1. Main switch.
2. TFT touch screen:
Visual audible alarm.
Clock calendar.
Single or cyclic On / Off programming.
Up to 10 work programs.
Up to 6 segments per program.
Stability time in each segment (from 1 min to 99h) .
Alarms and events storage.
Probe error detection.
Self Diagnostics.
Ramps between segments.
Door open alarm.
Network failure detection and saving.
Over temperature and low temperature alarms and memorization (date, start time, end time and temperature).

Safety thermostat (TS) by software.
Mechanic safety thermostat (TS).
USB and RS -232 output.
PC software.
User manual on screen.
Configurable parameters: Date / time, temperature correction , data collection interval, language (English, Spanish and French) , °C / °F selection , over temperature and low temperature limit.
3. **RS-232 output.**
4. **USB output.**
5. **Security thermostat.**
6. **Ethernet output para for LAN connection.**

CONTROL PANEL

Main switch.
Mains indicator lamp.
Microprocessor control and digital temperature display.
Adjustable safety thermostat.

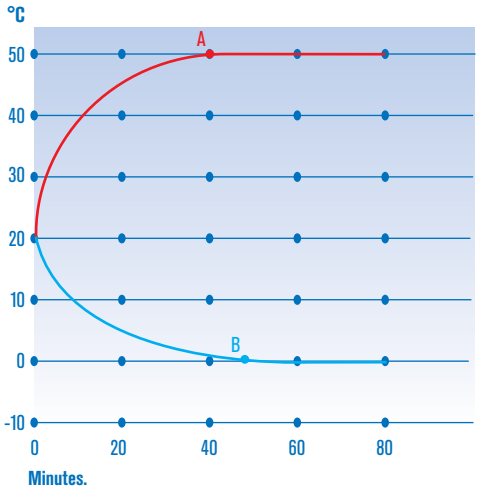
Graph of temperature ramps

STANDARD EQUIPMENT

2 shelves and 4 shelf guides.

MODELS

Part No.	Capacity litres	Height / Width / Depth (interior) cm	Height / Width / Depth (exterior) cm	Shelf guides	Power consumption W/hr. at 5 °C	at 40 °C	Power W	Weight Kg
2000963	36	40 30 30	60 65 49	7	70	50	310	54
2000964	80	50 40 40	70 75 59	8	75	55	310	73
2000965	150	50 60 50	70 95 68	8	90	60	310	94



Performance graph of temperature and time.
A. Set at 50 °C: 40'.
B. Set at 0 °C: 48'.

Note: To obtain the optimum homogeneity at the set temperature, the load should not surpass more than 70 % of the volume of the chamber.

ACCESSORIES

Accessories must be factory installed.

Digital printer for time and temperature with numerical printout on continuous paper roll, with print intervals from 1 minute to 99 hours.
Part No. 2000016

Optional communication modules
Part No. 2101623 Module for Wifi network.
Part No. 2101624 Module for Bluetooth.
Part No. 2101625 Module RF.
Part No. 2101626 RS-232 to RS-485 converter.

SPARES

Shelves and guides.

Oven Part No.	2000963	2000964	2000965
Guides (2) (Set)	2000012	2000013	2000015
Shelves	2000022	2000023	2000025

Each self requires two guides i.e. one set.

Incubation chamber “Boxcult”

FAN CONVECTION.
ADJUSTABLE TEMPERATURES FROM AMBIENT +5 °C UP TO 57 °C.
STABILITY: ±0.25 °C, UP TO 37 °C HOMOGENEITY: ±1 °C, UP TO 37 °C.
SET ERROR: ±2 % OF THE WORKING TEMPERATURE. RESOLUTION 0.1 °C.

SAFETY:
SAFETY STANDARD EN 61010. OVER TEMPERATURE SAFETY THERMOSTAT FITTED.

FEATURE

Made of transparent methacrylate that allows the user to see inside the incubator during operation. To facilitate the access to the working area the unit has a wide front door, and a removable base made of AISI 304 stainless steel. The fan convection circulation system ensures an even and rapid recovery of temperature.
A 30 mm Ø port at the rear can be used to connect power to apparatus inside the chamber.
Supplied as accessories, the removable base allows the Boxcult to be mounted on the “Rotabit” reciprocal / orbital shaker. (described in the stirrer section.)
The metallic top of the chamber includes the heating elements, air circulation fan and temperature control.

CONTROL PANEL

Main switch.
Digital electronic temperature control.

Incubation chamber “Boxcult” Part No. 3000957 with base Part No.3001172 and support rack with two shelves Part No. 1000973. Supplied as accessories.

MODEL

Part No.	Capacity litres	Height / Width / Depth (interior) cm			Height / Width / Depth (exterior) cm			Power W	Weight Kg
3000957	110	50	47	47	61	51	51	220	18

Supplied without bottom base, or stainless steel rack and shelves.

Orbital & shaker stirrer “Rotabit” part number 3000974 with incubation chamber “Boxcult”

For an easy handling, all control devices are outside the chamber enclosure

ACCESSORIES

Removable bottom base made of AISI 304 stainless steel. Part No. 3001172

Stainless steel rack with 4 shelves positions, each one separated by 9 cm. Comes complete with 2 removable shelves. Useful dim. 43 cm long and 41 cm wide. Part No. 1000973

CO_2 Incubators for anaerobic cell and tissue cultures "Incubator CO_2"

MICROPROCESSOR CONTROL WITH DIGITAL DISPLAY OF TEMPERATURE AND CO_2.
ADJUSTABLE TEMPERATURES FROM AMBIENT +5 °C TO 50 °C
STABILITY: ±0.2 °C, UP TO 37 °C. HOMOGENEITY: ±0.5 °C, UP TO 37°C. RESOLUTION: 0.1 °C.
ALARM RANGE: FROM AMBIENT+5 °C TO 50 °C. RESOLUTION: 0.1 °C.
CO_2 RANGE: FROM 0 TO 20%. STABILITY: ±0.3%. RESOLUTION: 0.1%

USB

RS232

SAFETY:
STANDARD DIN 12880. DOUBLE INDEPENDENT OVER TEMPERATURE SAFETY THERMOSTAT.
CO_2 DEVIATION FROM SET VALUE. OPEN DOOR INDICATOR, ELECTRICAL FAULT INDICATOR. LOW CO_2 PRESSURE.

Infrared CO_2 sensor

Chamber sterilization function

FEATURE

External case of steel coated with epoxy with insulated chamber.
The chamber is made of stainless steel with removable shelf supports and easy clean system.
Two doors; one interior of tempered glass with silicon gasket and a heated external steel door with magnetic seal to prevent condensation on the glass door.
Smooth door action, to prevent jolts or vibrations disturbing the contents of the incubator.
The CO_2 input is by a metal tube of 6 mm Ø x 4 mm at the back of the unit.
RS-232 Interface output for a computer, printer or USB adapter.

CONTROL SYSTEM

Digital electronic control of temperature and CO_2, by a single multilevel control button and LCD screen, that controls all functions within the chamber.

HUMIDITY CONTROL

The humidity level within the chamber is at a constant 98% RH level, that is produced directly by water evaporation previously introduced at the bottom of the chamber.

CONTROL PANEL

1. Visual alarm indicator.
2. LCD display of all parameters.
3. Button single control of multilevel functions.
4. Printer (Optional)
5. Main On switch.

MODEL

Part No.	Capacity litres	Height/Width/Depth (interior) cm	Height/Width/Depth (exterior) cm	Shelf guide positions	Power W	Weight Kg
4002628	150	65 50 46	95 65 73	9	800	110

Comes with two shelves.

ADDITIONAL Shelves stainless steel. Part No. 1001675

ACCESSORIES

USB adapter model.
Pen-Drive included (Memory board) for data storage.
Part No. 4120131

Printer: temperature, CO_2, time and status.
(Needs to be factory fitted.)
Part No. 4001676

Fyrite CO_2 analyser.
Monitor for checking the CO_2 % concentration. The unit has a graduated scale of 0 to 20 %. Reagent valid for 300 analysis. Should not be used with explosive gasses.
Part No. 4000632

Reagent flask 64 ml. Part No. 4000635

Muffle Furnaces

Electric Muffle Furnaces “Select-Horn-TFT”

TEMPERATURE CONTROLLABLE UP TO 1150 °C.
SET ACCURACY: ±1 °C OF THE SET VALUE. RESOLUTION: 1 DIGIT.
DIGITAL ELECTRONIC CONTROLLER FOR TEMPERATURE AND TIME WITH TFT COLOUR TOUCH SCREEN.

SAFETY:
PROBE BREAK DISCONNECTS THE POWER TO THE FURNACE AUTOMATICALLY.
MICROSWITCH THAT DISCONNECTS THE POWER OF THE HEATER ELEMENTS WHEN THE DOOR IS OPEN.
FLIP DOOR THAT CAN ALSO BE USED AS A SUPPORT TRAY AND USER PROTECTED FROM THE HOT INTERNAL SURFACE.

APPLICATIONS
Incineration processes, drying, degradation, re-heating, thermal treatments etc.

FEATURES
Interior chamber constructed from high quality lightweight refractory bricks, with a high alumina content with no asbestos or iron oxide.
Evenly distributed exceptional long life heating elements, annealed frequently at a high fusion point.
Excellent thermal insulation made from Ceramic fibre of low density and thermal conductivity.
Low consumption with maximum performance.
Rapid temperature recovery after the door has been opened.
Flap door with easy to change components.
Support tray made from special steel used as a base to support assay material.
USB and RS-232 output.

CONTROL PANEL
General
Main switch.
TFT touch screen 4.3”.
Clock calendar.
Two working modes, normal or programming.
SPA – FRE – ENG menu.
Self-test on starting.
Temperature control auto-tuning.
°C/°F selection.
Type K probe.
Normal mode
Set point temperature selection
Up ramp or no ramp.
Stability time from 1 min to 99h or continuous.
Programming mode
10 programs capacity.
6 segments per program.
Stability time in each segment from 1 min to 99h (or continuous in the last segment)
Up ramps between segments or no ramps
Daily - weekly On / Off programming.

Temperature ramps graph

Alarms
Network failure detection alarm.
Probe error detection alarm.
Over temperature and low temperature alarms.
Visual audible warning alarms.
Up to 100 alarms storage (date, start time, end time and alarm type).
Datalogging
Datalogging memory up to 15000 data.
Logging interval from 5 seconds to 30 min.
Data download via RS -232 or USB.
PC software for on-line registration (via RS-232).


Image of the flap door system in operation.

MODELS

Part No.	Capacity litres	Height / Width / Width (interior) cm	Height / Width / Depth (exterior) cm	Power W	Weight Kg
2000376	3.6	10 15 24	52 54 56	2500	54
2000377	9	15 20 30	58 59 65	3000	70

Supplied complete with support tray, made from annealed steel.

SPARES
Support tray made from special steel used as a base to support assay material.
Code 0203681 for furnace Part No. 2000366
Code 0203692 for furnace Part No. 2000367

Electric muffle furnaces “R-3 L” and “R-8 L” 1100 °C

FOR TEMPERATURES ADJUSTABLE UP TO 1100 °C.
MICROPROCESSOR CONTROL WITH TFT TOUCH SCREEN.
PRECISION ±2 °C OF THE SET VALUE.
RESOLUTION: 1 DIGIT.

NEW

REGULATION B SYSTEM

USB

FEATURES

Metal external case with vent at the back of the unit. Interior and door made of ceramic fibre, resistant and durable (No asbestos). Heater situated at the side and bottom of the chamber.
USB and RS-232 output.

Temperature ramps graph

CONTROL PANEL

General
Main switch.
TFT touch screen 4.3”.
Clock calendar.
Two working modes, normal or programming.
SPA – FRE – ENG menu.
Self-test on starting.
Temperature control auto-tuning.
ºC/ºF selection.
Type K probe.

Normal mode
Set point temperature selection
Up ramp or no ramp.
Stability time from 1 min to 99h or continuous.

Programming mode
10 programs capacity.
6 segments per program.
Stability time in each segment from 1 min to 99h (or continuous in the last segment)
Up ramps between segments or no ramps
Daily - weekly On / Off programming.

Alarms
Network failure detection alarm.
Probe error detection alarm.
Over temperature and low temperature alarms.
Visual audible warning alarms.
Up to 100 alarms storage (date, start time, end time and alarm type).

Datalogging
Datalogging memory up to 15000 data.
Logging interval from 5 seconds to 30 min.
Data download via RS -232 or USB.
PC software for on-line registration (via RS-232).

MODEL	Part No.	Capacity litres	Height / Width / Depht (interior) cm			Height / Width / Depht (exterior) cm			Power W	Weight Kg
N-3	2000368	3	11.5	12.5	20	43	34	47	1700	18
N-8	2000369	8	13	20	30	51	44	56	1800	28

Supplied complete with a refractory ceramic tray as a base and support for material to be assayed.

ACCESSORIES FOR MUFFLE FURNACES

Adaptable only for "Select-Horn-TFT" furnaces Part No. 2000376 and 2000377
All accessories need to be fitted in the factory prior to delivery.

Exterior exhaust tube.
Located at the furnace back with a ventilator motor to extract gases and vapours.
With an 80 mm Ø hat adapter.
Gases and Vapours can be extracted outside through the connecting tube.
Power consumption: 30 W.
Part No. 2001477

COMPLEMENTS

Gloves Thermal “Kevlar 800”
Conforms to EN 388, EN407 and EN420 standards.
For use with temperatures up to 800 °C, Made from seamless terry knit, with double face fibres, high level of protection against heat and flame.
Length 36 cm, universal fit.
Part No. 5000042

Crucible tongs.
With thermally protected plastic coated handles. With bow, curved tips.
Part No. 1001590 Total length 220 mm.
Part No. 1001591 Total length 330 mm.

Crucibles made of zirconium Zr.
Crucibles made of pure nickel Ni.
Crucibles made of glazed porcelain.
Crucibles made of stainless steel.
Crucibles made of quartz.
(See page 182).

Electric muffle furnace “N-30 L” 1300 °C

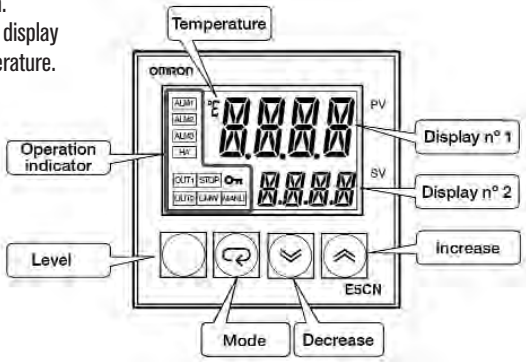
FOR TEMPERATURES ADJUSTABLE UP TO 1300 °C.
ELECTRONIC DIGITAL TEMPERATURE CONTROL.
PRECISION ±2 °C OF THE SET VALUE.
RESOLUTION: 1 DIGIT.

FEATURES

Metal external case with vent at the back of the unit. Interior and door made from ceramic fibre, resistant and durable (No asbestos). Heater situated at the side and bottom of the chamber.

CONTROL PANEL

Illuminated mains On/Off switch.
Temperature control with digital display of both the set and actual temperature.
Programmable in steps of 1 °C.
Fitted with a type K probe.



MODEL	Part No.	Capacity litres	Height / Width / Depht (interior) cm	Height / Width / Depht (exterior) cm	Power W	Voltage V	Weight Kg
N-30 L	2200853	30	27.5 24 43	63 87 84	4600	230	120

Supplied complete with a refractory ceramic tray as a base and support for material to be assayed.

Electric muffle furnaces “N-3 L”, “N-8 L”, “N-13 L”, “N-22 L”and “N-80 L” 1100 °C

FOR TEMPERATURES ADJUSTABLE UP TO 1100 °C.
ELECTRONIC DIGITAL TEMPERATURE CONTROL.
PRECISION ±2 °C OF THE SET VALUE.
RESOLUTION: 1 DIGIT.

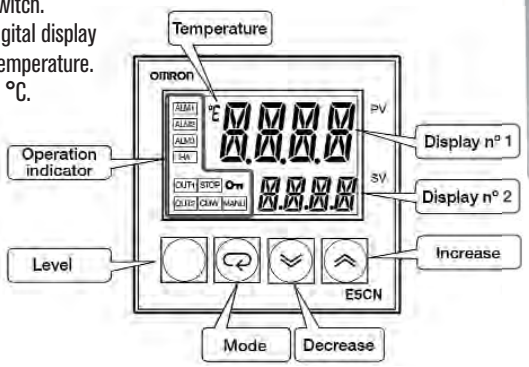
FEATURES

Metal external case with vent at the back of the unit. Interior and door made from ceramic fibre, resistant and durable (No asbestos). Heater situated at the side and bottom of the chamber.

Model N-80 L

CONTROL PANEL

Illuminated mains On/Off switch.
Temperature control with digital display of both the set and actual temperature.
Programmable in steps of 1 °C.
Fitted with a type K probe.



MODELO	Part No.	Capacity litres	Height / Width / Depht (interior) cm	Height / Width / Depht (exterior) cm	Power W	Voltage V	Weight Kg
N-3 L	2200850	3	11,5 12,5 20º	43 34 47	1700	230	18
N-8 L	2200851	8,2	14 20 30	50 44 53	1800	220	33
N-13 L	2200852	13	18 22,5 36	55 50 70	1800	230	38
N-22 L	2200854	22	15,5 27,5 50	61 60 89	3000	230	58
N-80 L	2200855	80	48 40 40	157 94 98	7500	400 / 3 N	170

Supplied complete with a refractory ceramic tray as a base and support for material to be assayed.

Muffle Furnaces

Electric Muffle Furnaces “Select-Horn-TFT”

TEMPERATURE CONTROLLABLE UP TO 1150 °C.
SET ACCURACY: ±1 °C OF THE SET VALUE. RESOLUTION: 1 DIGIT.
DIGITAL ELECTRONIC CONTROLLER FOR TEMPERATURE AND TIME WITH TFT COLOUR TOUCH SCREEN.

SAFETY:
PROBE BREAK DISCONNECTS THE POWER TO THE FURNACE AUTOMATICALLY.
MICROSWITCH THAT DISCONNECTS THE POWER OF THE HEATER ELEMENTS WHEN THE DOOR IS OPEN.
FLIP DOOR THAT CAN ALSO BE USED AS A SUPPORT TRAY AND USER PROTECTED FROM THE HOT INTERNAL SURFACE.

APPLICATIONS
Incineration processes, drying, degradation, re-heating, thermal treatments etc.

FEATURES
Interior chamber constructed from high quality lightweight refractory bricks, with a high alumina content with no asbestos or iron oxide.
Evenly distributed exceptional long life heating elements, annealed frequently at a high fusion point.
Excellent thermal insulation made from Ceramic fibre of low density and thermal conductivity.
Low consumption with maximum performance.
Rapid temperature recovery after the door has been opened.
Flap door with easy to change components.
Support tray made from special steel used as a base to support assay material.
USB and RS-232 output.

CONTROL PANEL
General
Main switch.
TFT touch screen 4.3”.
Clock calendar.
Two working modes, normal or programming.
SPA – FRE – ENG menu.
Self-test on starting.
Temperature control auto-tuning.
°C/°F selection.
Type K probe.
Normal mode
Set point temperature selection
Up ramp or no ramp.
Stability time from 1 min to 99h or continuous.
Programming mode
10 programs capacity.
6 segments per program.
Stability time in each segment from 1 min to 99h (or continuous in the last segment)
Up ramps between segments or no ramps
Daily - weekly On / Off programming.

Temperature ramps graph

Alarms
Network failure detection alarm.
Probe error detection alarm.
Over temperature and low temperature alarms.
Visual audible warning alarms.
Up to 100 alarms storage (date, start time, end time and alarm type).
Datalogging
Datalogging memory up to 15000 data.
Logging interval from 5 seconds to 30 min.
Data download via RS -232 or USB.
PC software for on-line registration (via RS-232).


Image of the flap door system in operation.

MODELS

Part No.	Capacity litres	Height / Width / Width (interior) cm	Height / Width / Depth (exterior) cm	Power W	Weight Kg
2000376	3.6	10 15 24	52 54 56	2500	54
2000377	9	15 20 30	58 59 65	3000	70

Supplied complete with support tray, made from annealed steel.

SPARES
Support tray made from special steel used as a base to support assay material.
Code 0203681 for furnace Part No. 2000366
Code 0203692 for furnace Part No. 2000367

Electric muffle furnaces “R-3 L” and “R-8 L” 1100 °C

FOR TEMPERATURES ADJUSTABLE UP TO 1100 °C.
MICROPROCESSOR CONTROL WITH TFT TOUCH SCREEN.
PRECISION ±2 °C OF THE SET VALUE.
RESOLUTION: 1 DIGIT.

NEW

REGULATION B SYSTEM

USB

FEATURES

Metal external case with vent at the back of the unit. Interior and door made of ceramic fibre, resistant and durable (No asbestos). Heater situated at the side and bottom of the chamber.
USB and RS-232 output.

Temperature ramps graph

CONTROL PANEL

General
Main switch.
TFT touch screen 4.3”.
Clock calendar.
Two working modes, normal or programming.
SPA – FRE – ENG menu.
Self-test on starting.
Temperature control auto-tuning.
ºC/ºF selection.
Type K probe.

Normal mode
Set point temperature selection
Up ramp or no ramp.
Stability time from 1 min to 99h or continuous.

Programming mode
10 programs capacity.
6 segments per program.
Stability time in each segment from 1 min to 99h (or continuous in the last segment)
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Daily - weekly On / Off programming.

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Network failure detection alarm.
Probe error detection alarm.
Over temperature and low temperature alarms.
Visual audible warning alarms.
Up to 100 alarms storage (date, start time, end time and alarm type).

Datalogging
Datalogging memory up to 15000 data.
Logging interval from 5 seconds to 30 min.
Data download via RS -232 or USB.
PC software for on-line registration (via RS-232).

MODEL	Part No.	Capacity litres	Height / Width / Depht (interior) cm			Height / Width / Depht (exterior) cm			Power W	Weight Kg
N-3	2000368	3	11.5	12.5	20	43	34	47	1700	18
N-8	2000369	8	13	20	30	51	44	56	1800	28

Supplied complete with a refractory ceramic tray as a base and support for material to be assayed.

ACCESSORIES FOR MUFFLE FURNACES

Adaptable only for "Select-Horn-TFT" furnaces Part No. 2000376 and 2000377
All accessories need to be fitted in the factory prior to delivery.

Exterior exhaust tube.
Located at the furnace back with a ventilator motor to extract gases and vapours.
With an 80 mm Ø hat adapter.
Gases and Vapours can be extracted outside through the connecting tube.
Power consumption: 30 W.
Part No. 2001477

COMPLEMENTS

Gloves Thermal “Kevlar 800”
Conforms to EN 388, EN407 and EN420 standards.
For use with temperatures up to 800 °C, Made from seamless terry knit, with double face fibres, high level of protection against heat and flame.
Length 36 cm, universal fit.
Part No. 5000042

Crucible tongs.
With thermally protected plastic coated handles. With bow, curved tips.
Part No. 1001590 Total length 220 mm.
Part No. 1001591 Total length 330 mm.

Crucibles made of zirconium Zr.
Crucibles made of pure nickel Ni.
Crucibles made of glazed porcelain.
Crucibles made of stainless steel.
Crucibles made of quartz.
(See page 182).

Electric muffle furnace “N-30 L” 1300 °C

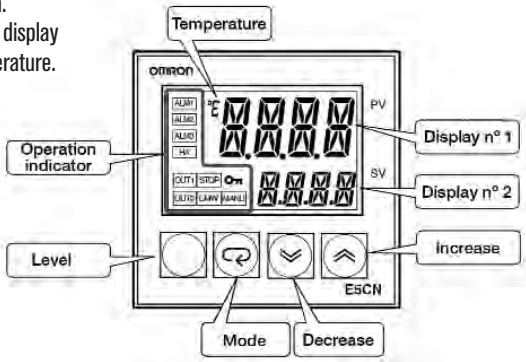
FOR TEMPERATURES ADJUSTABLE UP TO 1300 °C.
ELECTRONIC DIGITAL TEMPERATURE CONTROL.
PRECISION ±2 °C OF THE SET VALUE.
RESOLUTION: 1 DIGIT.

FEATURES

Metal external case with vent at the back of the unit. Interior and door made from ceramic fibre, resistant and durable (No asbestos). Heater situated at the side and bottom of the chamber.

CONTROL PANEL

Illuminated mains On/Off switch.
Temperature control with digital display of both the set and actual temperature.
Programmable in steps of 1 °C.
Fitted with a type K probe.



MODEL	Part No.	Capacity litres	Height / Width / Depht (interior) cm	Height / Width / Depht (exterior) cm	Power W	Voltage V	Weight Kg
N-30 L	2200853	30	27.5 24 43	63 87 84	4600	230	120

Supplied complete with a refractory ceramic tray as a base and support for material to be assayed.

Electric muffle furnaces “N-3 L”, “N-8 L”, “N-13 L”, “N-22 L”and “N-80 L” 1100 °C

FOR TEMPERATURES ADJUSTABLE UP TO 1100 °C.
ELECTRONIC DIGITAL TEMPERATURE CONTROL.
PRECISION ±2 °C OF THE SET VALUE.
RESOLUTION: 1 DIGIT.

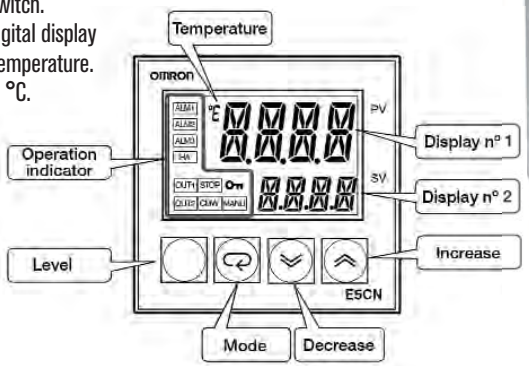
FEATURES

Metal external case with vent at the back of the unit. Interior and door made from ceramic fibre, resistant and durable (No asbestos). Heater situated at the side and bottom of the chamber.

Model N-80 L

CONTROL PANEL

Illuminated mains On/Off switch.
Temperature control with digital display of both the set and actual temperature.
Programmable in steps of 1 °C.
Fitted with a type K probe.



MODELO	Part No.	Capacity litres	Height / Width / Depht (interior) cm	Height / Width / Depht (exterior) cm	Power W	Voltage V	Weight Kg
N-3 L	2200850	3	11,5 12,5 20º	43 34 47	1700	230	18
N-8 L	2200851	8,2	14 20 30	50 44 53	1800	220	33
N-13 L	2200852	13	18 22,5 36	55 50 70	1800	230	38
N-22 L	2200854	22	15,5 27,5 50	61 60 89	3000	230	58
N-80 L	2200855	80	48 40 40	157 94 98	7500	400 / 3 N	170

Supplied complete with a refractory ceramic tray as a base and support for material to be assayed.