**STERILIZATION AND BACTERIOLOGICAL OVENS - FURNACES**

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<td>Cooled incubators</td>
<td>159 to 161</td>
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<tr>
<td>Electric muffle furnaces</td>
<td>162 to 164</td>
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“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*
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.**
- **CO₂ Incubators.**
- **Precise refrigerators and cooled incubators.**
- **More than 70 models with capacities from 19 to 720 litres.**
- **Controllable temperatures from −10 to 250 °C and 400 °C.**
- **Analogue or digital control through a microprocessor for temperature and time.**
- **Wide range of accessories for varying applications.**

**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 °C and 180 °C 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 CO₂ ovens:**

Essential element in laboratories for research, cell biology, molecular biology, different cancer sorts and general pharmaceutical laboratories.
### OVENS, INCUBATORS AND FURNACES

#### Summary table of the different models

<table>
<thead>
<tr>
<th>Model Range</th>
<th>Sterilizers/Incubator</th>
<th>Models</th>
<th>Control</th>
<th>Capacity</th>
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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.

MODEL

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<th>Part No.</th>
<th>Capacity (litres)</th>
<th>Height / Width / Depth (interior) cm</th>
<th>Height / Width / Depth (exterior) cm</th>
<th>Power W</th>
<th>Weight Kg</th>
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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

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Capacity (litres)</th>
<th>Height / Width / Depth (interior) cm</th>
<th>Height / Width / Depth (exterior) cm</th>
<th>Power W</th>
<th>Weight Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000787</td>
<td>19</td>
<td>25 32 23</td>
<td>37 54 34</td>
<td>770</td>
<td>19</td>
</tr>
</tbody>
</table>

Ovens, Incubators and Furnaces 137
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 knob.
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

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Capacity litres</th>
<th>Height / Width / Depth (interior) cm</th>
<th>Height / Width / Depth (exterior) cm</th>
<th>Shelf Positions</th>
<th>Power W</th>
<th>Weight Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000381</td>
<td>126</td>
<td>45 70 40</td>
<td>66 94 54</td>
<td>8</td>
<td>3000</td>
<td>65</td>
</tr>
</tbody>
</table>

ACCESSORIES
Accessories must be factory installed.

<table>
<thead>
<tr>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000002 Timer switch 0-120 minutes.</td>
</tr>
<tr>
<td>2000003 Timer switch 0-12 hours.</td>
</tr>
<tr>
<td>2000009 24 hour programmer with continuous on/off cycling up to every 15 minutes.</td>
</tr>
</tbody>
</table>

SPARES
Part No.
2000081 Shelf guides x 2.
2000091 Shelf.
Each shelf requires 2 guides.
OVENS AND INCUBATORS PREMIER RANGE

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**

**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.
8. Fan assisted convection models have a turbo fan.
9. All incubators for bacteriology and cell culture have a second inner door of tempered glass.
10. Adjustable guide and shelf positions.

Technology from J. P. Selecta:
- Adjustable guide and shelf positions.
- Double seal around the chamber to provide a gentle but effective seal.
- Floating spring door that adjusts the pressure and absorbs the thermal expansion.
- 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.
3. Temperature control thermostat.
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

<table>
<thead>
<tr>
<th>Models</th>
<th>CONTERM</th>
<th>DIGITHEAT</th>
<th>DIGITRONIC</th>
<th>INCUBAT</th>
<th>INCUDIGIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE</td>
<td>Drying Oven</td>
<td>Drying Oven</td>
<td>Universal</td>
<td>Bacteriological Incubator</td>
<td>Bacteriological Incubator</td>
</tr>
<tr>
<td>CONTROL</td>
<td>Temperature</td>
<td>Temperature + time</td>
<td>Temperature + time</td>
<td>Temperature</td>
<td>Temperature + time</td>
</tr>
<tr>
<td>DISPLAY</td>
<td>Analogue</td>
<td>Digital</td>
<td>Digital</td>
<td>Analogue</td>
<td>Digital</td>
</tr>
<tr>
<td>AIR</td>
<td>Convection</td>
<td>Convection</td>
<td>Fan assisted</td>
<td>Convection</td>
<td>Convection</td>
</tr>
<tr>
<td>CIRCULATION</td>
<td>natural</td>
<td>natural</td>
<td>natural</td>
<td>natural</td>
<td>natural</td>
</tr>
</tbody>
</table>

ACCESSORIES

Part No. 2000002 Timer switch 0-120 minutes.
Suitable for CONTERM.

Part No. 2000003 Timer switch 0-12 hours.
Suitable for CONTERM and INCUBAT.

Part No. 2000009 24 hour programmer with continuous on/off cycling up to every 15 minutes.
Suitable for CONTERM and INCUBAT.

Part No. 2000015 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).

STANDARD EQUIPMENT
2 shelves and 4 shelf guides.

MODELS

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Capacity (litres)</th>
<th>Height (interior) cm</th>
<th>Height (exterior) cm</th>
<th>Shelf Positions</th>
<th>Power W</th>
<th>Weight Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000208</td>
<td>19</td>
<td>30</td>
<td>50</td>
<td>5</td>
<td>640</td>
<td>27</td>
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<tr>
<td>2000209</td>
<td>36</td>
<td>30</td>
<td>60</td>
<td>7</td>
<td>950</td>
<td>35</td>
</tr>
<tr>
<td>2000200</td>
<td>52</td>
<td>33</td>
<td>53</td>
<td>5</td>
<td>1075</td>
<td>44</td>
</tr>
<tr>
<td>2000210</td>
<td>80</td>
<td>50</td>
<td>70</td>
<td>8</td>
<td>1230</td>
<td>54</td>
</tr>
<tr>
<td>2000201</td>
<td>150</td>
<td>60</td>
<td>70</td>
<td>8</td>
<td>2150</td>
<td>76</td>
</tr>
</tbody>
</table>

ACCESSORIES
Accessories must be installed in the factory.

Part No. 2000002 Timer switch 0-120 minutes.
Part No. 2000003 Timer switch 0-12 hours.
Part No. 2000009 24 hour programmer with continuous on/off cycling up to every 15 minutes.

SPARES
Shelves and guides.

<table>
<thead>
<tr>
<th>Oven Part No.</th>
<th>2000208</th>
<th>2000209</th>
<th>2000210</th>
<th>2000200</th>
<th>2000201</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guides set (2 units)</td>
<td>2000011</td>
<td>2000012</td>
<td>2000012</td>
<td>2000013</td>
<td>2000015</td>
</tr>
<tr>
<td>Shelves</td>
<td>2000021</td>
<td>2000022</td>
<td>2000024</td>
<td>2000023</td>
<td>2000025</td>
</tr>
</tbody>
</table>

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.

Safety:

Standard EN 61010. Incorporated fixed over temperature device.

Standard DIN 12880. (Clase 2 and 3.1) Controllable safety thermostat fitted.

Features, control panel, safety, standard and accessories (see pages 139 and 140).

Standard equipment

2 shelves and 4 shelf guides.

Models

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

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.

<table>
<thead>
<tr>
<th>Oven Part No.</th>
<th>2001251</th>
<th>2001252</th>
<th>2001253</th>
<th>2001254</th>
<th>2001255</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guides set (2 units)</td>
<td>2000011</td>
<td>2000012</td>
<td>2000012</td>
<td>2000013</td>
<td>2000015</td>
</tr>
<tr>
<td>Shelves</td>
<td>2000021</td>
<td>2000022</td>
<td>2000024</td>
<td>2000023</td>
<td>2000025</td>
</tr>
</tbody>
</table>

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.

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.
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).

Temperature ramps graphic.
Model Digitronic with solid metal door. Part No. 2005163 and 2005167.
(With toughened glass window door. Part No. 2005164 and 2005168).
**STANDARD EQUIPMENT**

2 shelves and 4 shelf guides.

**MODELS**

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

* 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.

**Accessories**

Preparation of furnaces for drying moisture saturated samples. (Airds, 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”

**SAFETY:**

**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.
10. Ventilator with adjustable outlet of 120 Ø mm.
13. Flexible silicon door gasket around the entrance of the chamber.

**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

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Voltage</th>
<th>Capacity litres</th>
<th>Heating rate to reach 100 ºC, minutes</th>
<th>Recovery time* minutes</th>
<th>Air exchanges per hour</th>
<th>Height / Width / Depth (interior) cm</th>
<th>Height / Width / Depth (exterior) cm</th>
<th>Number of shelf positions</th>
<th>Power W</th>
<th>Weight Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002961</td>
<td>230 / 400 three phase</td>
<td>216</td>
<td>16</td>
<td>10</td>
<td>12</td>
<td>60 60 60</td>
<td>87 112 84</td>
<td>6</td>
<td>4000</td>
<td>150</td>
</tr>
<tr>
<td>2002962</td>
<td>230 single phase</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2002971</td>
<td>230 / 400 three phase</td>
<td>288</td>
<td>18</td>
<td>10</td>
<td>11</td>
<td>80 60 60</td>
<td>107 112 84</td>
<td>8</td>
<td>5000</td>
<td>161</td>
</tr>
<tr>
<td>2002972</td>
<td>230 single phase</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

DOUBLE DOOR CABINET

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Voltage</th>
<th>Capacity litres</th>
<th>Heating rate to reach 100 ºC, minutes</th>
<th>Recovery time* minutes</th>
<th>Air exchanges per hour</th>
<th>Height / Width / Depth (interior) cm</th>
<th>Height / Width / Depth (exterior) cm</th>
<th>Number of shelf positions</th>
<th>Power W</th>
<th>Weight Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003721</td>
<td>230 / 400 three phase</td>
<td>400</td>
<td>18</td>
<td>13</td>
<td>6</td>
<td>100 80 50</td>
<td>128 132 74</td>
<td>10</td>
<td>5250</td>
<td>200</td>
</tr>
<tr>
<td>2003741</td>
<td>230 / 400 three phase</td>
<td>720</td>
<td>19</td>
<td>13</td>
<td>6</td>
<td>120 100 60</td>
<td>150 152 80</td>
<td>12</td>
<td>6000</td>
<td>264</td>
</tr>
</tbody>
</table>

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 ºC.

Performance graph of temperature and time.

A. Set at 250 ºC: 1 h 6’.
B. Set at 180 ºC: 42’.
C. Set at 100 ºC: 24’.

ACCESSORIES

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

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.

SPARES

Shelves.

<table>
<thead>
<tr>
<th>Oven Part No.</th>
<th>2002961/62</th>
<th>2002971/72</th>
<th>2003721</th>
<th>2003741</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shelves</td>
<td>2000062</td>
<td>2000062</td>
<td>2000063</td>
<td>2000064</td>
</tr>
</tbody>
</table>
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 1 2880. ADJUSTABLE OVER TEMPERATURE THERMOSTAT FITTED.

**FEATURE**
Digital electronic temperature control. Independent control box chamber thermally 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).

**MODEL**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Voltage</th>
<th>Capacity</th>
<th>Height / Width / Depth (interior) cm shelf</th>
<th>Height / Width / Depth (exterior) cm</th>
<th>Nº of shelf positions</th>
<th>Power W</th>
<th>Weight Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001406</td>
<td>230 / 400</td>
<td>three phase</td>
<td>80 / 50 / 40</td>
<td>80 / 120 / 61</td>
<td>4</td>
<td>4000</td>
<td>158</td>
</tr>
</tbody>
</table>

**ACCESSORIES**
Accessories that must be installed in factory.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000002</td>
<td>Timer switch</td>
<td>0-120 minutes</td>
</tr>
<tr>
<td>2000003</td>
<td>Timer switch</td>
<td>0-12 hours</td>
</tr>
<tr>
<td>2000009</td>
<td>24 hour programmer</td>
<td>with continuous on/off cycling up to every 15 minutes</td>
</tr>
</tbody>
</table>

**ACCESSORIES.** Shelves made of AISI 304 stainless steel. Part No. 20000071

Performance graph of temperature and time.
A. Set at 400 °c: 1h 50'.
B. Set at 200 °c: 1h.
Vacuum drying oven “Vaciotem-TV”

**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.

**SAFETY:**

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

**CONTROL PANEL**

1. RS232 interface.
2. Air inlet.
3. Air inlet valve.
4. Vacuum pressure indicator lamp.
5. Air inlet valve indicator lamp, end of cycle.
6. Running indicator lamp.
7. Under vacuum indicator lamp.
8. Digital vacuum display in mbar.
9. Push button to select vacuum.
10. Push button to select electronic valve at the end of the cycle.
11. Push button to increase value.
12. Push button to decrease value.
13. Push button to STOP/START.
15. Indicator of mode time.
16. Indicator of operating.
17. Indicator of mode waiting time.
18. Digital display of temperature or time.
19. Push button to STOP/START.
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.
27. Air inlet.
28. Pump power connection.
29. Vacuum connection.
30. Adjustable safety thermostat.

**BACK**

**MODEL**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Vacuum Max.</th>
<th>Capacity litres</th>
<th>Ø / Depth (interior) cm</th>
<th>Height / Width / Depth (exterior) cm</th>
<th>Shelves</th>
<th>Power W</th>
<th>Weight Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>4001490</td>
<td>10⁻² mm Hg</td>
<td>47</td>
<td>34 52</td>
<td>54 76 70</td>
<td>2</td>
<td>2000</td>
<td>73</td>
</tr>
</tbody>
</table>

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.

**SPARE PARTS**

- Shelves. (2)
  - Part No. 2000030

Accessories see page 150
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.

SAFETY:
OVER TEMPERATURE CUT OUT FITTED IN ACCORDANCE 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

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Vacuum</th>
<th>Capacity</th>
<th>Ø / Depth</th>
<th>Height / Width / Depth</th>
<th>Shelves</th>
<th>Power</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>4001489</td>
<td>47 mm Hg</td>
<td>litres</td>
<td>(interior) cm</td>
<td>(exterior) cm</td>
<td>2</td>
<td>2000</td>
<td>73</td>
</tr>
</tbody>
</table>

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.

SPARE PARTS
Shelves. (2)
Part No. 2000030

Ovens, Incubators and Furnaces 149
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

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Pump rate m³/h</th>
<th>Vacuum limit mbar</th>
<th>Height / Width / Depth (exterior) cm</th>
<th>r.p.m.</th>
<th>Power W</th>
<th>Weight Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>5900621</td>
<td>3.6</td>
<td>0.06</td>
<td>27 35 14</td>
<td>1400</td>
<td>180</td>
<td>11</td>
</tr>
</tbody>
</table>

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.
Pit 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

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Vacuum Max</th>
<th>Usable volume litres</th>
<th>Ø heating plate cm</th>
<th>Height / Width / Depth (exterior) cm</th>
<th>Power W</th>
<th>Weight Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>4000474</td>
<td>10⁻² mm Hg</td>
<td>3</td>
<td>23.5</td>
<td>17 28 34</td>
<td>540</td>
<td>9</td>
</tr>
</tbody>
</table>

Supplied complete with bell jar and silicon seal.

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

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.

STANDARD EQUIPMENT
2 shelves and 4 shelf guides.

MODELS

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

ACCESSORIES

Accessories must be factory installed.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000009</td>
<td>24 hour programmer with continuous on/off cycling up to every 15 minutes.</td>
<td></td>
</tr>
<tr>
<td>2000003</td>
<td>Timer switch 0-12 hours.</td>
<td></td>
</tr>
</tbody>
</table>

SPARES

Shelves and guides.

<table>
<thead>
<tr>
<th>Oven Part No.</th>
<th>2000205</th>
<th>2000206</th>
<th>2001615</th>
<th>2000207</th>
<th>2000994</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set guides (2 units)</td>
<td>2000011</td>
<td>2000012</td>
<td>2000012</td>
<td>2000013</td>
<td>2000015</td>
</tr>
<tr>
<td>Shelves</td>
<td>2000021</td>
<td>2000022</td>
<td>2000024</td>
<td>2000023</td>
<td>2000025</td>
</tr>
</tbody>
</table>

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’.
Digital bacteriological incubators “Incudigit-TFT”

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.

Standard equipment
2 shelves and 4 shelf guides.

models

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

Spares
Shelves and guides.

<table>
<thead>
<tr>
<th>Oven Part No.</th>
<th>2001256</th>
<th>2001257</th>
<th>2001258</th>
<th>2001259</th>
<th>2001260</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guides (2) (Set)</td>
<td>2000011</td>
<td>2000012</td>
<td>2000012</td>
<td>2000013</td>
<td>2000015</td>
</tr>
<tr>
<td>Shelves</td>
<td>2000021</td>
<td>2000022</td>
<td>2000024</td>
<td>2000023</td>
<td>2000025</td>
</tr>
</tbody>
</table>

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.

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’.

Ovens, Incubators and Furnaces
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.

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.

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.
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

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Type</th>
<th>Capacity litres</th>
<th>Height / Width / Depth (interior) cm</th>
<th>Nº of shelf guides</th>
<th>Power W</th>
<th>Weight Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000238</td>
<td>1 door</td>
<td>288</td>
<td>97</td>
<td>91</td>
<td>76</td>
<td>8</td>
</tr>
<tr>
<td>2000239</td>
<td>2 door</td>
<td>400</td>
<td>130</td>
<td>114</td>
<td>75</td>
<td>10</td>
</tr>
<tr>
<td>2000240</td>
<td>2 door</td>
<td>720</td>
<td>152</td>
<td>134</td>
<td>85</td>
<td>12</td>
</tr>
</tbody>
</table>

ACCESSORY

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

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

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.

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

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Margin Tª °C</th>
<th>Height / Width / Depth (Exterior) cm</th>
<th>Height / Width / Depth (interior) cm</th>
<th>Power W</th>
<th>Weight Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>4002629</td>
<td>Amb +5 to 60</td>
<td>45</td>
<td>25</td>
<td>2</td>
<td>32</td>
</tr>
</tbody>
</table>

Spare parts and guides.

Shelves and guides:

<table>
<thead>
<tr>
<th>Oven Part No.</th>
<th>2000238</th>
<th>2000239</th>
<th>2000240</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shelves</td>
<td>2002372</td>
<td>2000063</td>
<td>2000064</td>
</tr>
<tr>
<td>Guides (2) (Set)</td>
<td>2002371</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

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

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.

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.
10. Shelves of AISI 304 stainless steel.
11. Epoxy coated outer case.

PERFORMANCE

<table>
<thead>
<tr>
<th>Specification</th>
<th>at 10 °C</th>
<th>at 37 °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability</td>
<td>±0.5 °C</td>
<td>±0.1 °C</td>
</tr>
<tr>
<td>Homogeneity</td>
<td>±0.1 °C</td>
<td>±0.3 °C</td>
</tr>
<tr>
<td>Set error</td>
<td>±0.25 °C</td>
<td>±0.20 °C</td>
</tr>
</tbody>
</table>

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.

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

STANDARD EQUIPMENT
2 shelves and 4 shelf guides.

MODELS

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

Graph of temperature ramps

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”

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.

MODEL

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Capacity</th>
<th>Height / Width / Depth (interior) cm</th>
<th>Height / Width / Depth (exterior) cm</th>
<th>Power W</th>
<th>Weight Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>3000957</td>
<td>110</td>
<td>50 47 47</td>
<td>61 51 51</td>
<td>220</td>
<td>18</td>
</tr>
</tbody>
</table>

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

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

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

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

Orbital & shaker stirrer “Rotabit” part number 3000974 with incubation chamber “Boxcult”
**CO₂ Incubators for anaerobic cell and tissue cultures “Incubator CO₂”**

**MICROPROCESSOR CONTROL WITH DIGITAL DISPLAY OF TEMPERATURE AND CO₂.**

**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.**

**CO₂ RANGE: FROM 0 TO 20%. STABILITY: ±0.3%. RESOLUTION: 0.1%**

**SAFETY:**

STANDARD DIN 12880. DOUBLE INDEPENDENT OVER TEMPERATURE SAFETY THERMOSTAT.

CO₂ DEVIATION FROM SET VALUE. OPEN DOOR INDICATOR, ELECTRICAL FAULT INDICATOR. LOW CO₂ PRESSURE.

**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 CO₂ 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 CO₂, 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.
4. Printer (Optional)
5. Main On switch.

**MODEL**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Capacity</th>
<th>Height/Width/Depth (interior) cm</th>
<th>Height/Width/Depth (exterior) cm</th>
<th>Shelf guide positions</th>
<th>Power W</th>
<th>Weight Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>4002628</td>
<td>150</td>
<td>65 50 46</td>
<td>95 65 73</td>
<td>9</td>
<td>800</td>
<td>110</td>
</tr>
</tbody>
</table>

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, CO₂, time and status.
(Needs to be factory fitted.)
Part No. 4001676

Fyrite CO₂ analyser.
Monitor for checking the CO₂ % 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.
FLAP 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.

MODELS

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Capacity litres</th>
<th>Height / Width / Depth (interior) cm</th>
<th>Height / Width / Depth (exterior) cm</th>
<th>Power W</th>
<th>Weight Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000376</td>
<td>3.6</td>
<td>10 15 24</td>
<td>52 54 56</td>
<td>2500</td>
<td>54</td>
</tr>
<tr>
<td>2000377</td>
<td>9.0</td>
<td>15 20 30</td>
<td>58 59 65</td>
<td>3000</td>
<td>70</td>
</tr>
</tbody>
</table>

Supplied complete with support tray, made from annealed steel.

TEMPERATURE RANGES

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).

SPA:RES
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.

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.

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.

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 Height / Width / Depth Height / Width / Depth Power Weight
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.

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).

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

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
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
<table>
<thead>
<tr>
<th>Part No.</th>
<th>Capacity litres</th>
<th>Height / Width / Depth (interior) cm</th>
<th>Height / Width / Depth (exterior) cm</th>
<th>Power W</th>
<th>Voltage V</th>
<th>Weight Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-30 L</td>
<td>2200853</td>
<td>30</td>
<td>27.5 24 43</td>
<td>63 87 84</td>
<td>4600</td>
<td>230 120</td>
</tr>
</tbody>
</table>

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.

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
<table>
<thead>
<tr>
<th>Part No.</th>
<th>Capacity litres</th>
<th>Height / Width / Depth (interior) cm</th>
<th>Height / Width / Depth (exterior) cm</th>
<th>Power W</th>
<th>Voltage V</th>
<th>Weight Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-3 L</td>
<td>2200850</td>
<td>3</td>
<td>11.5 12.5 20º</td>
<td>43 34 47</td>
<td>1700</td>
<td>230 18</td>
</tr>
<tr>
<td>N-8 L</td>
<td>2200851</td>
<td>8.2</td>
<td>14 20 30</td>
<td>50 44 53</td>
<td>1800</td>
<td>220 33</td>
</tr>
<tr>
<td>N-13 L</td>
<td>2200852</td>
<td>13</td>
<td>18 22.5 36</td>
<td>55 50 70</td>
<td>1800</td>
<td>230 38</td>
</tr>
<tr>
<td>N-22 L</td>
<td>2200854</td>
<td>22</td>
<td>15.5 27.5 50</td>
<td>61 60 89</td>
<td>3000</td>
<td>230 58</td>
</tr>
<tr>
<td>N-80 L</td>
<td>2200855</td>
<td>80</td>
<td>48 40 40</td>
<td>157 94 98</td>
<td>7500</td>
<td>400 / 3 N 170</td>
</tr>
</tbody>
</table>

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

**MODELS**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Capacity</th>
<th>Height / Width / Depth (interior) cm</th>
<th>Height / Width / Depth (exterior) cm</th>
<th>Power W</th>
<th>Weight Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000376</td>
<td>3.6</td>
<td>10 15 24</td>
<td>52 54 56</td>
<td>2500</td>
<td>54</td>
</tr>
<tr>
<td>2000377</td>
<td>9</td>
<td>15 20 30</td>
<td>58 59 65</td>
<td>3000</td>
<td>70</td>
</tr>
</tbody>
</table>

Supplied complete with support tray, made from annealed steel.

**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.

**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).

**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.

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.

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.

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
<table>
<thead>
<tr>
<th>Part No.</th>
<th>Capacity</th>
<th>Height / Width / Depth (interior) cm</th>
<th>Height / Width / Depth (exterior) cm</th>
<th>Power</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-3</td>
<td>2000368</td>
<td>3</td>
<td>11.5 12.5 20</td>
<td>43    34 47</td>
<td>1700</td>
</tr>
<tr>
<td>N-8</td>
<td>2000369</td>
<td>8</td>
<td>13     20</td>
<td>30    44 56</td>
<td>1800</td>
</tr>
</tbody>
</table>

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.

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).

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

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
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.

<table>
<thead>
<tr>
<th>MODEL</th>
<th>Part No.</th>
<th>Capacity (interior)</th>
<th>Height / Width / Depth (interior) cm</th>
<th>Height / Width / Depth (exterior) cm</th>
<th>Power</th>
<th>Voltage</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-30 L</td>
<td>M00853</td>
<td>30</td>
<td>27.5 x 24 x 43</td>
<td>63 x 87 x 84</td>
<td>4600</td>
<td>230</td>
<td>120</td>
</tr>
</tbody>
</table>

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

Muffle Furnaces

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.

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.

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<th>Part No.</th>
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<th>Height / Width / Depth (interior) cm</th>
<th>Height / Width / Depth (exterior) cm</th>
<th>Power</th>
<th>Voltage</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-3 L</td>
<td>M00850</td>
<td>3</td>
<td>11.5 x 12.5 x 20</td>
<td>43 x 34 x 47</td>
<td>1700</td>
<td>230</td>
<td>18</td>
</tr>
<tr>
<td>N-8 L</td>
<td>M00851</td>
<td>8.2</td>
<td>14 x 20 x 30</td>
<td>50 x 44 x 53</td>
<td>1800</td>
<td>220</td>
<td>33</td>
</tr>
<tr>
<td>N-13 L</td>
<td>M00852</td>
<td>13</td>
<td>18 x 22.5 x 36</td>
<td>55 x 50 x 70</td>
<td>1800</td>
<td>230</td>
<td>38</td>
</tr>
<tr>
<td>N-22 L</td>
<td>M00854</td>
<td>22</td>
<td>15.5 x 27.5 x 50</td>
<td>61 x 60 x 89</td>
<td>3000</td>
<td>230</td>
<td>58</td>
</tr>
<tr>
<td>N-80 L</td>
<td>M00855</td>
<td>80</td>
<td>48 x 40 x 40</td>
<td>157 x 94 x 98</td>
<td>7500</td>
<td>400 / 3 N</td>
<td>170</td>
</tr>
</tbody>
</table>

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