“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 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.

- 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.
# Ovens, Incubators and Furnaces

## Summary table of the different models

<table>
<thead>
<tr>
<th>Model Range</th>
<th>Sterilizers POUPINEL</th>
<th>Models</th>
<th>Control</th>
<th>Capacity</th>
<th>Safety</th>
<th>RS-232</th>
</tr>
</thead>
<tbody>
<tr>
<td>STERILIZERS</td>
<td>100 ... 250 °C DRYTIME</td>
<td>ANALOGUE</td>
<td>2.5 litres</td>
<td>YES</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>200 ... 100 °C DRYTERM</td>
<td>ANALOGUE</td>
<td>200 litres</td>
<td>YES</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>40 ... 170 °C DRYGLASS</td>
<td>ANALOGUE</td>
<td>2000381</td>
<td>YES</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>CONVECTION</td>
<td>100 ... 250 °C CONTERM</td>
<td>ANALOGUE</td>
<td>2000208</td>
<td>YES</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>40 ... 200 °C DIGITRONIC</td>
<td>DIGITAL</td>
<td>2000149</td>
<td>YES</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>35 ... 200 °C VACIOTEM T</td>
<td>DIGITAL</td>
<td>4000148</td>
<td>YES</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>35 ... 200 °C VACIOTEM TV</td>
<td>DIGITAL</td>
<td>4000149</td>
<td>YES</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 ... 60 °C PREBATEM</td>
<td>DIGITAL</td>
<td>2000961</td>
<td>YES</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 ... 50 °C HOTCOLD GL</td>
<td>DIGITAL</td>
<td>2101507</td>
<td>YES</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MUFFLE FURNACE</td>
<td></td>
<td>3.6 litres</td>
<td>YES</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Up to ... 1150 °C SELECT-HORN</td>
<td>DIGITAL</td>
<td>2000366</td>
<td>YES</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

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
<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>2000911</td>
<td>2.5</td>
<td>5 30 16</td>
<td>17 40 32</td>
<td>430</td>
<td>8</td>
</tr>
</tbody>
</table>

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>
Glass drying oven “Dryglass”

Fan assisted air circulation.
Adjustable temperature from 40 °C to 170 °C.

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>

Safety:
- EN 61012 standard over temperature safety cut out fitted.
- DIN 12880.2 standard (Class 2 and 3.1) adjustable safety thermostat fitted.

Accessories:
Accessories must be factory installed.

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

Spare parts:
- Part No. 200002 Timer switch 0-120 minutes.
- Part No. 200003 Timer switch 0-12 hours.
- Part No. 200009 24 hour programmer with continuous on/off cycling up to every 15 minutes.

Ovens, Incubators and Furnaces
OVENS AND INCUBATORS SERIES 2000

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 12880.2. (CLASS 2 AND 3.1) SAFETY THERMOSTAT CONTROLLER FITTED.

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.

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.

Technology from J. P. Selecta:
8. Locking device in analogue temperature controls.
10. Double seal around the chamber to provide a gentle but effective seal.
11. Floating spring door that adjusts the pressure and absorbs the thermal expansion.
12. Adjustable door pressure system closure.
**CONTROL PANELS**

Models with Analogue control.
1. Mains switch.
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 microprocessor control and digital display.
1. Mains switch with “ON” indicator.
2. Temperature mode indicator.
3. Time mode indicator.
4. Display for temperature and time.
5. Operating, “RUN” 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 Start / Stop.
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 for a computer, printer or USB adapter.
16. Controllable safety thermostat (that disconnects power to the heater in case of a fault in microprocessor), manual reset and function signal lamp.

**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. 4120131** USB adapter model. Pen-Drive included (Memory board) for data storage. Only for RS-232 outlet ovens.
- **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.
- **Part No. 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. Suitable for DIGITRONIC.
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: ±0.5 °C UP TO 100 °C. HOMOGENEITY: ±1 °C UP TO 100 °C.

**SAFETY:**

STANDARD EN.61010. INCORPORATED FIXED OVER TEMPERATURE DEVICE.

STANDARD DIN 12880.2. (CLASS 2 AND 3.1) SAFETY THERMOSTAT CONTROLLER FITTED.

FEATURES, CONTROL PANEL, SAFETY, STANDARD AND ACCESSORIES (see pages 134 and 135).

---

**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 (interior) 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 25 25</td>
<td>50 60 44</td>
<td>5</td>
<td>840</td>
<td>27</td>
</tr>
<tr>
<td>2000209</td>
<td>36</td>
<td>40 30 30</td>
<td>60 65 49</td>
<td>7</td>
<td>950</td>
<td>35</td>
</tr>
<tr>
<td>2000200</td>
<td>52</td>
<td>33 47 33</td>
<td>53 82 52</td>
<td>5</td>
<td>1075</td>
<td>44</td>
</tr>
<tr>
<td>2000210</td>
<td>80</td>
<td>50 40 40</td>
<td>70 74 59</td>
<td>8</td>
<td>1230</td>
<td>54</td>
</tr>
<tr>
<td>2000201</td>
<td>150</td>
<td>50 60 50</td>
<td>70 95 68</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>Guides set (2 units)</th>
<th>Shelves</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000208</td>
<td>2000011 2000012</td>
<td>2000021</td>
</tr>
<tr>
<td>2000209</td>
<td>2000012 2000013</td>
<td>2000022</td>
</tr>
<tr>
<td>2000200</td>
<td>2000013 2000015</td>
<td>2000023</td>
</tr>
<tr>
<td>2000210</td>
<td>2000011 2000012</td>
<td>2000024</td>
</tr>
<tr>
<td>2000201</td>
<td>2000012 2000013</td>
<td>2000023</td>
</tr>
</tbody>
</table>

Each shelves requires two guides (one set).
Drying and sterilization ovens “Digitheat”

**NATURAL CONVECTION.**

**DIGITAL CONTROL AND DISPLAY OF TEMPERATURE AND TIME.**

**ADJUSTABLE TEMPERATURE FROM AMBIENT +5 °C UP TO 250 °C.**

**STABILITY: ±0.25 °C, UP TO 100 °C. HOMOGENEITY: ±1 °C, UP TO 100 °C.**

**SET ERROR: ±2 % OF THE WORKING TEMPERATURE. RESOLUTION: 1 °C.**

**SAFETY:**

**STANDARD EN.61010. INCORPORATED FIXED OVER TEMPERATURE DEVICE.**

**STANDARD DIN 12880.2. (CLASE 2 AND 3.1) CONTROLLABLE SAFETY THERMOSTAT FITTED.**

Reaches working temperature with minimum delay

FEATURES, CONTROL PANEL, SAFETY, STANDARD AND ACCESSORIES (see pages 134 and 135).

RS-232 Interface output for a computer, printer or USB adapter.

**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>2001241</td>
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<td>30 25 25</td>
<td>50 60 44</td>
<td>5</td>
<td>600</td>
<td>24</td>
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<tr>
<td>2001242</td>
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<td>40 30 30</td>
<td>60 65 49</td>
<td>7</td>
<td>900</td>
<td>35</td>
</tr>
<tr>
<td>2001243</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>2001244</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>2001245</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>

**ACCESSORIES**

**4120131 USB adapter model.**

Pen-Drive included (Memory board) for data storage.

Accessories must be factory installed:

<table>
<thead>
<tr>
<th>Part No.</th>
<th>2000016 Digital printer for time and temperature with numerical printout on continuous paper roll, with print intervals from 1 minute to 99 hours.</th>
</tr>
</thead>
</table>

**SPARES**

Shelves and guides.

<table>
<thead>
<tr>
<th>Oven Part No.</th>
<th>2001241</th>
<th>2001242</th>
<th>2001243</th>
<th>2001244</th>
<th>2001245</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 self requires two guides (one set).
Universal precision ovens “Digitronic”

**FAN ASSISTED CIRCULATION.**

**BACTERIOLOGICAL ASSAYS, DRYING PROCESSES AND STERILIZATION.**

**MICROPROCESSOR CONTROL AND DIGITAL DISPLAY OF TEMPERATURE AND TIME.**

**ADJUSTABLE TEMPERATURES FROM AMBIENT +5 °C UP TO 250 °C.**

**STABILITY: ±0.25 °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 12.880.2 (CLASS 2 AND 3.1) FITTED.

---

**Multipurpose oven. Fast response and recuperation of temperature.**

**FEATURES**

1. Microprocessor control with Digital display of temperature with pre-set programmable run time and pre-set temperature monitoring using a Pt 100 sensor probe.
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. Control panel with additional locations for mounting accessories.
12. Epoxy coated outer case.
13. Ventilator with adjustable outlet (access at the back of the unit).
16. 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 134 and 135).**

---

RS-232 for data download to a printer or computer or USB adapter.

Model Digitronic with solid metal door. Part No. 2005131 and 2005141.
(With toughened glass window door. Part No. 2005132 and 2005142).
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</th>
<th>Recovery time*</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>2005131</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>
</tr>
<tr>
<td>2005132</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>2005151</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>2005152</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>2005141</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>2005142</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>2005161</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>
</tr>
<tr>
<td>2005162</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.

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

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

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 and guides.

<table>
<thead>
<tr>
<th>Oven Part No.</th>
<th>2005131</th>
<th>2005151</th>
<th>2005141</th>
<th>2005161</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guides (2) (Set)</td>
<td>2000012</td>
<td>2000033</td>
<td>2000010</td>
<td>2000015</td>
</tr>
<tr>
<td>Shelves</td>
<td>2000072</td>
<td>2000073</td>
<td>2000074</td>
<td>2000075</td>
</tr>
</tbody>
</table>

Each self requires two guides i.e. one set.
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: ±0.25 °C, UP TO 100 °C. HOMOGENEITY: ±1.2 °C, UP TO 100 °C**
**SET ERROR : ±2.5% OF THE WORKING TEMPERATURE. RESOLUTION: 1 °C**

**SAFETY:**
**STANDARD EN.61010. FIXED OVER TEMPERATURE DEVICE FITTED.**
**STANDARD DIN 12880.2. (CLASS 2 AND 3.1)ADJUSTABLE SAFETY THERMOSTAT FITTED.**

---

**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.

---

**Fast working and recovery temperature**

---

Oven's diagram seen from the front side.
## 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 °C, 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</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>three phase</td>
<td>216</td>
<td></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>
</tr>
<tr>
<td>2002962</td>
<td>230 single phase</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>150</td>
</tr>
<tr>
<td>2002971</td>
<td>230 / 400</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>288</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>three phase</td>
<td>288</td>
<td></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>
</tr>
<tr>
<td>2002972</td>
<td>230 single phase</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>161</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 °C, 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</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>400</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>three phase</td>
<td>400</td>
<td></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>
</tr>
<tr>
<td>2003741</td>
<td>230 / 400</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>720</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>three phase</td>
<td>720</td>
<td></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>
</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 °C.

### ACCESSORIES

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

### 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>

**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'.

**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”**

**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 310 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 310 stainless steel.

**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 310 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.

**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>Part No.</th>
<th>Voltage</th>
<th>Capacity (liters)</th>
<th>Height / Width / Depth (exterior) cm</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>2000007</td>
<td>Digital programmable microprocessor</td>
<td>10 programs of 100 segments. 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.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000002</td>
<td>Timer switch 0-120 minutes.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000003</td>
<td>Timer switch 0-12 hours.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000009</td>
<td>24 hour programmer with continuous on/off cycling up to every 15 minutes.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ACCESSORIES**

- Shelves made of AISI 310 stainless steel. Part No. 2000071

**SQAURE**

- 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 12880.2 ADJUSTABLE OVER TEMPERATURE THERMOSTAT FITTED.
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 ±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 12880.2 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.
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 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 select temperature.
20. Push button to select time.
21. Push button to increase value.
22. Push button to decrease value.
23. Push button to STOP/START.
24. Mains switch.
25. Indicator of waiting time.
26. Safety thermostat in operation.
27. Air inlet.
28. Pump power connection.
29. Vacuum connection.
30. Adjustable safety thermostat

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.

Accessories see page 145
**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 12880.2 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.
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 Max.</th>
<th>Capacity (litres)</th>
<th>D / Depth (interior) cm</th>
<th>Height / Width / Depth (interior) cm</th>
<th>Shelves</th>
<th>Power (W)</th>
<th>Weight (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4001489</td>
<td>10⁻¹ mm Hg</td>
<td>47</td>
<td>34</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.
Accessories see page 145
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
- Shock absorber mounted.
- Aspiration inlet flange: 16 mm Ø.
- Free from vibrations
- High oil volume and forced lubrication.
- Low noise level (62db).
- Exhaust filter and ballast.
- Maximum working temperature 60 °C.
- Portable, with lifting handle included.
- Maximum working temperature 60 °C.

**MODEL**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Pump rate m³/h</th>
<th>Vacuum limit mbar</th>
<th>Height / Width / Depth r.p.m.</th>
<th>Power W</th>
<th>Weight Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>5900621</td>
<td>1.8</td>
<td>0.06</td>
<td>25 32 15</td>
<td>1400 W</td>
<td>180</td>
</tr>
</tbody>
</table>

Vacuum pump connection Kit

**Description**
Prevents the oil from the pump to penetrate the tube and consequently to go into the vacuum oven chamber or vacuum desiccator.

**Features**
- Made of an electro-valve and standard vacuum connections type KF DN16 calibrated and switch cable that connects directly to the vacuum oven.
- The vacuum pump is controlled via a Start/Stop switch from the control panel of the vacuum oven, model Vaciotem-T part No. 4001489 and automatically for Vaciotem-TV, part no. 4001490.
- Supplied with a high pressure rubber tube 8 x 15 mm Ø. 2 meters large.

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.

**MODEL**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Vacuum Max</th>
<th>Usable volume litres</th>
<th>Ø heating plate cm</th>
<th>Heigth / Width / Depth (exterior) cm</th>
<th>Power W</th>
<th>Weight Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>4000474</td>
<td>10⁻⁴ 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

Ovens, Incubators and Furnaces
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 134 and 135).

SAFETY:
OVER TEMPERATURE CUT OUT INCORPORATED ACCORDING TO THE EN.61010 STANDARD.
ADJUSTABLE SAFETY THERMOSTAT DIN 12880.3.1 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>50 60 44</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 65 49</td>
<td>7</td>
<td>245</td>
<td>36</td>
</tr>
<tr>
<td>2001615</td>
<td>52</td>
<td>33 47 33</td>
<td>53 82 52</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 74 59</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 95 68</td>
<td>8</td>
<td>535</td>
<td>78</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>2000013</td>
<td>2000015</td>
<td></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 shelve requires two guides (one set).

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'.

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”

Features, control panel, standard and accessories (see pages 134 and 135).

Safety: Over temperature cut out incorporated according to the EN.61010 standard. Adjustable safety thermostat DIN 12880.3.1 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>2001246</td>
<td>19</td>
<td>30 25 25 50 60 44</td>
<td>5</td>
<td>150 26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2001247</td>
<td>36</td>
<td>40 30 30 60 65 49</td>
<td>7</td>
<td>225 36</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2001616</td>
<td>52</td>
<td>33 47 33 53 82 52</td>
<td>5</td>
<td>250 46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2001248</td>
<td>80</td>
<td>50 40 40 70 74 59</td>
<td>8</td>
<td>300 54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2001249</td>
<td>150</td>
<td>50 60 50 70 95 68</td>
<td>8</td>
<td>525 75</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Spares
Shelves and guides.

<table>
<thead>
<tr>
<th>Oven Part No.</th>
<th>2001246</th>
<th>2001247</th>
<th>2001616</th>
<th>2001248</th>
<th>2001249</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 shelf requires two guides i.e. one set.

R.S. 232 Interface output for a computer, printer or USB adapter.

Safety:
Over temperature cut out incorporated according to the EN.61010 standard. Adjustable safety thermostat DIN 12880.3.1 fitted.

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'.

Features:
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.

Accessories:
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.
Incubators for bacteriology and cell culture “Incubig”

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 12880.3.1. Adjustable safety thermostat fitted.

Capacities up to 720 litres

Feature
- Microprocessor control and digital display of the temperature and time.
- 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.
- RS-232 interface output for a computer, printer or USB adapter.

Standard Equipment
For Part No. 2000237, 2 shelves and 4 shelf guides.
For Part No. 2003711 and 2002471, 2 shelves.

Model Part No. 2000237.

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. 2003711 and 2002471.
CONTROL PANEL
1. Illuminated mains switch.
2. Temperature mode indicator.
3. Time mode indicator.
4. Display for temperature and time.
5. Operating, run mode.
6. Delay time indicator.
7. Push button for temperature selection.
8. Push button for time selection.
9. Push button to “increase” value or parameter.
10. Push button to “decrease” value or parameter.
11. Push button to 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. Adjustable safety thermostat. Maintains the temperature in case the microprocessor fails. Indication lamp.

MODELS

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Type</th>
<th>Capacity</th>
<th>Height / Width / Depth (interior) cm</th>
<th>Height / Width / Depth (exterior) cm</th>
<th>Nº of shelf guides</th>
<th>Power W</th>
<th>Weight Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000237</td>
<td>1 door</td>
<td>288</td>
<td>80 60</td>
<td>57 91 76</td>
<td>8</td>
<td>570</td>
<td>87</td>
</tr>
<tr>
<td>2003711</td>
<td>2 door</td>
<td>400</td>
<td>100 80</td>
<td>114 75</td>
<td>10</td>
<td>1100</td>
<td>160</td>
</tr>
<tr>
<td>2002471</td>
<td>2 door</td>
<td>720</td>
<td>120 100</td>
<td>152 134 85</td>
<td>12</td>
<td>1600</td>
<td>225</td>
</tr>
</tbody>
</table>

ACCESSORY

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000016</td>
<td>Digital printer for time and temperature with numerical printout on continuous paper roll, with print intervals from 1 minute to 99 hours.</td>
</tr>
</tbody>
</table>

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.

**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</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
Cooled low temperature incubator “Prebatem”

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 12880.3.1 STANDARD ADJUSTABLE SAFETY THERMOSTAT FITTED.

APPLICATIONS
Biotechnology, Bacteriology, Plasma fractionation,
Biology, Enzymatic test, Research, Serum studies, met-
trology, Botany, Phytopharmacy, Cosmetics, Water
analysis and Agricultural research.

FEATURE
1. Microprocessor control and temperature display.
2. Inner chamber and elements made of AISI 304 stain-
less steel.
3. Premixing temperature chamber.
4. Semiconductor- static radiator for heating and coo-
ling.
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 / he-
ating system.
8. Independent insulated control box.
10. Shelves of AISI 304 stainless steel.
11. Epoxy coated outer case.

J.P. Selecta original technology
13. Flexible silicon door gasket around the entrance of
the chamber.
14. Excellent door seal and thermal insulator.
The floating inner door forms a hermetic seal
every time.
15. Adjustable pressure door lock.
16. Adjustable safety thermostat. Maintains the tempe-
rature in the case if the microprocessor fails. Indication
lamp.
17. Internal tempered glass door.
18. RS-232 Interface output for a computer, printer or
USB adapter.

PERFORMANCE

<table>
<thead>
<tr>
<th>Specification</th>
<th>at 5 °C</th>
<th>at 37 °C</th>
<th>at 60 °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability</td>
<td>±0.05 °C</td>
<td>±0.05 °C</td>
<td>±0.05 °C</td>
</tr>
<tr>
<td>Homogeneity</td>
<td>±0.35 °C</td>
<td>±0.30 °C</td>
<td>±0.75 °C</td>
</tr>
<tr>
<td>Set error</td>
<td>±0.25 °C</td>
<td>±0.20 °C</td>
<td>±0.40 °C</td>
</tr>
</tbody>
</table>

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

RS 232 to download for a computer, printer of all parameters or USB adapter.

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 guides</th>
<th>Power consumption W/hr. at 5 °C</th>
<th>Power W</th>
<th>Weight Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000961</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</td>
</tr>
<tr>
<td>2000962</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</td>
</tr>
<tr>
<td>2001250</td>
<td>150</td>
<td>50 60 50</td>
<td>70 95 68</td>
<td>8</td>
<td>90</td>
<td>80</td>
<td>310</td>
</tr>
</tbody>
</table>

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

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

24 hour programmer with continuous on/off cycling up to every 15 minutes. Part No. 2000009

SPARES
Shelves and guides.

<table>
<thead>
<tr>
<th>Oven Part No.</th>
<th>2000961</th>
<th>2000962</th>
<th>2001250</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guides (2) (Set)</td>
<td>2000012</td>
<td>2000013</td>
<td>2000015</td>
</tr>
<tr>
<td>Shelves</td>
<td>2000022</td>
<td>2000023</td>
<td>2000025</td>
</tr>
</tbody>
</table>

Each self requires two guides i.e. one set.
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 CLASE 3.1. 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 litres</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
PRECISE COOLED INCUBATORS HOTCOLD

HOTCOLD S  CONTROLLABLE TEMPERATURES FROM +5 °C TO 65 °C
HOTCOLD A-B-C  CONTROLLABLE TEMPERATURES FROM 0 °C TO 50 °C
HOTCOLD UB-UC  CONTROLLABLE TEMPERATURES FROM -10 °C TO 50 °C
HOTCOLD GL  CONTROLLABLE TEMPERATURES FROM 0 °C TO 50 °C (Depending on working mode)

SAFETY:
DIN STANDARD 12880.2
SAFETY THERMOSTAT FITTED THAT DISCONNECTS POWER TO THE HEATER IF THE CONTROLLER FAILS. MANUAL RESET.

APPLICATIONS
Enzymatic tests, serum and plasma fractions BOD tests, cosmetics, botany, pharmacy, industry, agriculture, bacteriology, biotechnology and research.

Refrigerated cabinet “Hotcold S”

FORCED AIR CIRCULATION.
DIGITAL ELECTRONIC CONTROL OF TEMPERATURE AND TIME, ADJUSTABLE FROM +5 °C TO 65 °C.
STABILITY ±0.1 °C, UP TO 20 °C. HOMOGENEITY ±0.5 °C, UP TO 20 °C. SET ERROR ±2 °C.
RESOLUTION 0.1 °C.

FEATURES
Epoxy coated external case. Interior AISI304 stainless steel. Door with double glazed glass to maintain internal temperature. Illumination switch with internal fluorescent light. Side port for the introduction of external cables probes and tubes etc.
Cooling gas R134a.
4 wheels with brake.

CONTROL SYSTEM
Electronic digital controller for temperature and time. Timer and off programmable from 1' to 99 hrs 59'. Programmable defrost. High and low temperature alarm. Temperature calibration.

CONTROL PANEL
1. Display for temperature / time.
2. Temperature indicator.
3. Time indicator.
4. Alarm indicator.
5. Heater functioning indicator.
6. Push button for set temperature.
7. Push button for set time.
8. Mains switch.
9. Push button to increase value.
10. Push button to decrease value.
11. Push button to confirm value.

STANDARD EQUIPMENT
2 shelves and 4 shelf guides.

MODEL

<table>
<thead>
<tr>
<th>HOTCOLD</th>
<th>Part No.</th>
<th>Range °C</th>
<th>Capacity litres</th>
<th>Height / Width / Depth (interior) cm</th>
<th>Height / Width / Depth (exterior) cm</th>
<th>Number of shelves</th>
<th>Motor HP</th>
<th>Power W</th>
<th>Weight Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>2101618</td>
<td>+5 +65</td>
<td>160</td>
<td>65 / 50 / 43</td>
<td>128 / 63 / 63</td>
<td>10</td>
<td>3/8</td>
<td>400</td>
<td>70</td>
</tr>
</tbody>
</table>

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Precise refrigerated cabinets “Hotcold A-B-C-UB-UC”

FORCED AIR CIRCULATION.
DIGITAL ELECTRONIC CONTROL OF TEMPERATURE AND TIME.
HOTCOLD A-B-C ADJUSTABLE TEMPERATURE FROM 0 °C TO 50 °C.
HOTCOLD UB-UC ADJUSTABLE TEMPERATURE FROM -10 °C TO 50 °C.

SAFETY:
DIN STANDARD 12880.2 SAFETY THERMOSTAT FITTED THAT DISCONNECTS POWER TO THE HEATER IF THE CONTROLLER FAILS. MANUAL RESET.

FEATURES
Exterior case, door and interior made from AISI 304 stainless steel.
Reversible door which can be opened by either side, with easy to change the lock and the joint, manual lockout.
Hermetically sealed compressor with anti vibration mounts with fan forced evaporation unit with ventilated condenser.
Homogeneous internal temperature by forced circulating air.
Refrigerant R134 for models B and C.
Refrigerant R404 for model UB and UC.
Two safety power sockets.

MODELS

<table>
<thead>
<tr>
<th>HOTCOLD</th>
<th>Part No.</th>
<th>Range °C</th>
<th>Capacity litres</th>
<th>Height / Width / Depth (interior) cm</th>
<th>Height / Width / Depth (exterior) cm</th>
<th>Number of shelves</th>
<th>Included shelves</th>
<th>Power W</th>
<th>Power HP</th>
<th>Weight Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2101502</td>
<td>0 +50</td>
<td>319</td>
<td>139 / 48 / 45</td>
<td>198 / 60 / 64</td>
<td>14</td>
<td>3</td>
<td>180</td>
<td>1/5</td>
<td>78</td>
</tr>
<tr>
<td>B</td>
<td>2101503</td>
<td>0 +50</td>
<td>442</td>
<td>126 / 58 / 55</td>
<td>198 / 70 / 71</td>
<td>14</td>
<td>3</td>
<td>200</td>
<td>1/5</td>
<td>89</td>
</tr>
<tr>
<td>C</td>
<td>2101504</td>
<td>0 +50</td>
<td>600</td>
<td>136 / 58 / 69</td>
<td>207 / 70 / 82</td>
<td>14</td>
<td>4</td>
<td>750</td>
<td>3/6</td>
<td>100</td>
</tr>
<tr>
<td>UB</td>
<td>2101505</td>
<td>-10 +50</td>
<td>442</td>
<td>126 / 58 / 55</td>
<td>198 / 70 / 71</td>
<td>14</td>
<td>3</td>
<td>750</td>
<td>1/2</td>
<td>94</td>
</tr>
<tr>
<td>UC</td>
<td>2101506</td>
<td>-10 +50</td>
<td>600</td>
<td>138 / 58 / 69</td>
<td>207 / 70 / 82</td>
<td>14</td>
<td>4</td>
<td>900</td>
<td>1/2</td>
<td>110</td>
</tr>
</tbody>
</table>

NOTE: the HOTCOLD has internal power sockets that allows the use of a non-heating mixer shaker or stirrer or equipment for BOD assays to be powered internally. Alternatively power cables can be fed through external ports at each side of the unit. See chapter Mixers stirrers and shakers.

ACCESSORIES
USB adapter model. Pen-Drive included (Memory board) for data storage. Part No. 4120131
Printer shows temperature and time. Needs to be factory fitted. Part No. 2101508

SPARES
Shelves and guides.
Guide set (4 units). 1001801, 1001802, 1001803
Shelves 1001804, 1001805, 1001806
Each self requires 4 guides i.e. one set.
**Precision refrigerated cabinets “Hotcold GL”**

**FORCED AIR CIRCULATION.**
**DIGITAL ELECTRONIC CONTROL OF TEMPERATURE, TIME AND HUMIDITY.**
**SUITABLE FOR TEMPERATURES FROM 5 °C TO 50 °C.**

**SAFETY:**
SAFETY STANDARD: CONFORMS TO THE DIN 12880.2.
ADJUSTABLE OVER TEMPERATURE CUT OUT FITTED THAT CUTS OFF HEATING IF OVER TEMPERATURE FAILS, MANUAL RESET.

**APPLICATIONS**
Refrigerated climate cabinet for botany testing of plants, flowers, seed germination, photosynthesis agriculture, etc. that require control of temperature, humidity, and light.

Specifically designed with four function modes:
- **Mode A:** Refrigerated incubator from 5 °C to 50 °C.
- **Mode B:** Refrigerated incubator with illumination from 10 °C to 50 °C.
- **Mode C:** Refrigerated incubator from 18 °C to 40 °C with an adjustable humidity range from 50 to 98%.
- **Mode D:** Refrigerated incubator with illumination from 18 °C to 40 °C with an adjustable humidity range from 50 to 98%.

**PRECISION TABLE**

<table>
<thead>
<tr>
<th>Component</th>
<th>Mode A</th>
<th>Mode B</th>
<th>Mode C</th>
<th>Mode D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humidity</td>
<td>NO</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Illumination</td>
<td>NO</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>Temperature range</td>
<td>5 / 50 °C</td>
<td>10 / 50 °C</td>
<td>18 / 40 °C</td>
<td>18 / 40 °C</td>
</tr>
<tr>
<td>Stability</td>
<td>±0.5 °C</td>
<td>±0.5 °C</td>
<td>±0.5 °C</td>
<td>±0.5 °C</td>
</tr>
<tr>
<td>Homogeneity</td>
<td>±10 °C</td>
<td>±10 °C</td>
<td>±10 °C</td>
<td>±10 °C</td>
</tr>
<tr>
<td>Resolution</td>
<td>0.1 °C</td>
<td>0.1 °C</td>
<td>0.1 °C</td>
<td>0.1 °C</td>
</tr>
<tr>
<td>Set Error</td>
<td>±10 °C</td>
<td>±10 °C</td>
<td>±10 °C</td>
<td>±10 °C</td>
</tr>
<tr>
<td>Humidity range</td>
<td>-</td>
<td>-</td>
<td>50 / 80% Hr</td>
<td>50 / 80% Hr</td>
</tr>
<tr>
<td>Illumination range (Choice of 3)</td>
<td>-</td>
<td>0 / 4 K / 12 K Lux</td>
<td>-</td>
<td>0 / 4 K / 12 K Lux</td>
</tr>
<tr>
<td>Humidity resolution</td>
<td>-</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>Humidity precision</td>
<td>50 - 75%</td>
<td>-</td>
<td>±3%</td>
<td>±3%</td>
</tr>
<tr>
<td>75 - 80%</td>
<td>-</td>
<td>-</td>
<td>±4%</td>
<td>±4%</td>
</tr>
</tbody>
</table>

**FEATURES**
Exterior case, door and interior made from AISI 304 stainless steel. Reversible door can be fitted to open from either side, with automatic closing if left open. The door interior supplies fluorescent illumination to the chamber, the power of which can be selected as 0 / 4 K or 12 K Lux. Hermetically sealed compressor with anti vibration mounts with fan forced evaporation unit with ventilated condenser. Fan circulated homogeneous temperature.

All operation modes are programmable in up to 5 cycles of which each cycle can be programmed at 1 hour intervals. These cycles can be repeated indefinitely or can be manually terminated. The humidity is constant during the program.

There are 10 Program storage memories of all parameters. The fan, temperature radiator and two thermal safety internal electrical sockets are located in the upper chamber.

Two external ports are located on each side for the introduction of tubes and cables for other diverse applications.
A humidity tray is located at the back of the unit for controlling humidity and is generated through evaporation.
RS-232 Interface output for a computer, printer or USB adapter.

**CONTROL PANEL**
1. Graphic display.
2. Push button increase value.
3. Push button decrease value.
6. Push button, validate set value.
7. Push button set program.
8. Push button start.
10. Printer for time and temperature (Optional). Part No. 2101508, (needs to be factory fitted).

**STANDARD EQUIPMENT**
2 shelves and 8 shelf guides.

**MODEL**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>Part No.</th>
<th>Range °C</th>
<th>Capacity litres</th>
<th>Height / Width / Depth (interior) cm</th>
<th>Number of shelves</th>
<th>Meter HP</th>
<th>Power W</th>
<th>Weight Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>GL</td>
<td>2101507</td>
<td>5 - 50</td>
<td>557</td>
<td>138 / 58 / 69.5</td>
<td>14</td>
<td>3/8</td>
<td>1300</td>
<td>198</td>
</tr>
</tbody>
</table>

**NOTE:** The HOTCOLD has internal power sockets that allow the use of a non-heating mixer shaker or stirrer or equipment for BOD assays to be powered internally. Alternatively power cables can be fed through external ports at each side of the unit. See chapter Mixers stirrers and shakers.

**SPARES**
Part No. 4101533 Guides (4) (Set)
Part No. 4101536 Shelves
Each self requires 4 guides i.e. one set.
Muffe Furnaces

Electric Muffle Furnace “Select-Horn”

TEMPERATURE CONTROLLABLE UP TO 1150 °C.
SET ACCURACY: ±1 °C OF THE SET VALUE. RESOLUTION: 1 DIGIT.
DIGITAL ELECTRONIC CONTROLLER FOR TEMPERATURE AND TIME THAT HAS THE POSSIBILITY TO PROGRAM A SLOP OF 8 SEGMENTS OR TWO SLOPS OF 4 SEGMENTS.

SAFETY:
PROBE BREAK DISCONNECTS THE POWER TO THE FURNACE AUTOMATICALLY.
MICROSITCH 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.

CONTROL PANEL
Mains Switch.
Mains indicator lamp.
Digital electronic controller for temperature and time that has the possibility to program a slope of 8 segments or two slopes of 4 segments.
Simultaneously indication of the actual and set temperature (4 digits).
K-Type Probe.

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>2000366</td>
<td>3.6</td>
<td>10 15 24</td>
<td>52 54 56</td>
<td>2500</td>
<td>54</td>
</tr>
<tr>
<td>2000367</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.
ACCESSORIES. All accessories need to be fitted in the factory prior to delivery.

Programmable Microprocessor.
Capacity: 10 Programs of 10 segments per program.
Run time for 1 program: from 1” to 99 hours.
Program repetition: from 0 to 99 times or cycles.
Precision: ±0.25%.
Part No. 2001227

Exterior exhaust tube.
Located at the back of the furnace 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

ACCESSORIES

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.

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

Crucibles made of zirconium Zr.
Crucibles made of pure nickel Ni.
Crucibles made of glazed porcelain.
Crucibles made of stainless steel.
(See page 176).

Muffle furnace electric “N-8 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 of ceramic fibre, resistant and durable (No asbestos). Heater situated at the side and bottom of the chamber.

CONTROL PANEL
Illuminated main 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 (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>N-8 L</td>
<td>2200851</td>
<td>8.2</td>
<td>14.5 20 40</td>
<td>41 43.5 54</td>
<td>1800</td>
<td>33</td>
</tr>
</tbody>
</table>

Supplied complete with a refractory ceramic tray as a base and support for material to be assayed.
Shelf size: 1 cm height x 16 cm width x 25 cm depth.
Muffle furnace electric “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 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</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 furnace electric “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.

<table>
<thead>
<tr>
<th>MODEL</th>
<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-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</td>
<td>170</td>
</tr>
</tbody>
</table>

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