



## **HEATING MANTLES**

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## **HOT PLATES**

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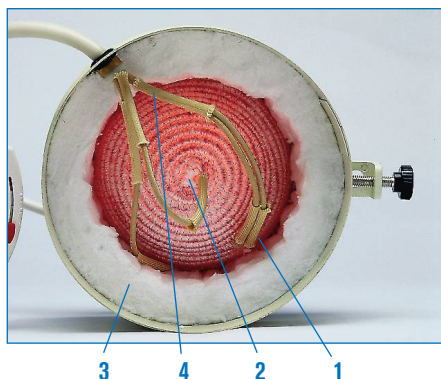
*"The first requisite for success is the ability to apply your physical and mental energies to one problem incessantly without growing weary."  
Thomas Edison*



# HEATING MANTLES FOR FLASKS

## SAFETY:

FOLLOWING CE STANDARDS, IN THE CASE OF LIQUID SPILLS AN EARTH WIRE IS WOVEN INTO THE MANTLE TO PREVENT ELECTRIC SHOCKS.



### COMMON FEATURES

1. Hand woven mineral wool with flexible braiding, which adapts snugly around the flask, with drain hole, replaceable.
  2. The heating element is distributed homogeneously throughout the mantle. Connectors and cables are protected by mineral fibre tubes. Efficient low power consumption of 1 w/cm<sup>2</sup>. Maximum mantle temperature of 400 °C.
  3. Double walled fibre wool thermally insulated casing.
  4. Pure Nickel connection terminals protected by mineral fibre tubing that prevent the deterioration of the contact due to high temperature.
- Support for retort bar.

### APPLICATIONS

For digestion distillation, extraction, evaporation and boiling processes.



### MODELS SELECTION SUMMARY TABLE

Capacity ml	Ø flask mm	Fibroman C 2 positions	Fibroman D Woven	Fibroman O Funnel hole	Agiman Woven	Fibroman HT-W Electronic regulator	Micro for Kjeldahl banks	No. Places	For Kjeldahl/Soxhlet banks	No. Places
100	65	3003141	-	-	-	3031470	6014204	4	-	-
100	65	-	-	-	-	-	6014206	6	-	-
250	83	3003142	3004192	-	3000447	3031471	-	-	-	-
500	102	3003145	3004195	-	3000448	3031472	-	-	6003294	4
500	102	-	-	-	-	-	-	-	6003296	6
1000	132	3031410	3041910	3049110	3000449	3031473	-	-	-	-
2000	164	3031420	3041920	3049120	3000450	3031474	-	-	-	-
3000	190	3031430	-	-	-	-	-	-	-	-
5000	222	3031450	-	3049150	-	-	-	-	-	-
10000	290	3314100	-	3491100	-	-	-	-	-	-
20000	365	3314200	-	3491200	-	-	-	-	-	-





## Heating mantle for flasks "Fibroman-C"

DUAL HEATING POWER. TEMPERATURES UP TO 400 °C.

*With power heating switch selector*

### FEATURES

Two position isolated rocker switch heating control with power on indicator lamp.

### TECHNICAL DESCRIPTION

- DUR ALLOY aluminium exterior case with epoxy coating.
- Suspended mineral wool woven heating mantle.
- Heating element homogeneously distributed throughout the woven mantle.
- Thermally insulated case, mineral wool fibre insulation.
- Nickel connectors.
- Retort stand clamp at the back of the unit.
- To prevent breakage or spills a drain hole is provided at the bottom of the mantle.
- Safety earth connection.

### MODELS

Part No.	Flask capacity ml	Flask Ø approx. mm	Ø / Height (exterior) cm		Power W	Weight Kg
3003141	100	65	16	11	130	1
3003142	250	83	18	11	130	1,1
3003145	500	102	20	12	270	1,2
3031410	1000	132	22	13,5	410	1,4
3031420	2000	170	26	14	530	2
3031430	3000	190	29	18	620	2,2
3031450	5000	222	33	19	840	3,2
3314100	10000	290	38	22	2250	4,7
3314200*	20000	365	48	26	2300	11

\* The mantle part no. 3314200 supplied without the 2 position controller and switch. See Accessories on (page 30) and Regulators and controllers (pages 293 and 294).



### CROSS SECTION OF HEATED FLASKS

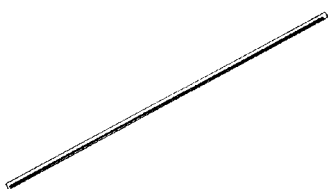


Position I  
50% power output.



Position II  
100% power output.

### ACCESSORY



Support bar Dur-Aluminium of  
12 Ø x 700 mm long.  
Part No. **6000270**





## Heating mantles for flasks "Fibroman HT-W"

FOR ADJUSTABLE TEMPERATURES FROM AMBIENT +5 °C TO 400 °C.

STABILITY  $\pm 0,5$  TO 1 °C ACCORDING TO TEMPERATURE.

ELECTRONIC REGULATION OF TEMPERATURE WITH DOUBLE SCREEN TO SHOW THE PRESENT TEMPERATURE AND THE PROGRAMMED ONE.

*Maximum precision in temperature control and energy saving*

*Includes "TC" temperature sensor, conectable to case directly*

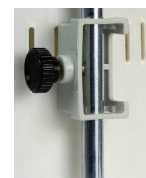


### FEATURES

External case made of AISI 304 stainless steel.  
Heating elements homogeneously distributed inside of the mineral wool woven and thermically insulated.  
Pure nickel connection terminals.  
Temperature control system by inner thermocouple.  
TC probe connector included in the equipment for the liquid temperature control inside the flask.  
Device to hold support bar.

### CONTROL PANEL

On / Off switch.  
Digital display indicating set and real temperature.  
Heating operating led.  
Push button ▲ increase temperature.  
Push button ▼ decrease temperature.  
Side: TC probe connector for the liquid real temperature.



*Device that allows to hold the rod has supported.*

### MODELS

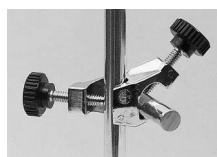
Part No.	Flask Capacity ml	Ø Flask mm	Height / Width / Depth (exterior) cm	Ø Sensor TC mm	Lenght mm	Stability °C	Power W	Weight Kg
3031470	100	65 to 67	13 22 26	4	170	$\pm 0,5$ to 1	130	1,5
3031471	250	83 to 87	13 26 29	4	170	$\pm 0,5$ to 1	216	3
3031472	500	102 to 105	13 26 29	4	170	$\pm 0,5$ to 1	220	3,5
3031473	1000	132 to 139	14 30 33	4	170	$\pm 0,5$ to 1	500	4
3031474	2000	164 to 170	16 31 34	4	200	$\pm 0,5$ to 1	760	5

Note: the heating mantles are supplied with TC probe connected to the case.

### ACCESSORIES



Support bar Dur-Aluminium,  
12 mm Ø x 700 mm long.  
Part No. 6000270



Double bosshead.  
Part No. 1000069



Spring clamp to hold thermometers.  
Part No. 7000025



Clamp to support and hold condensers or other glassware.  
Part No. 7000161



## Heating mantle for flasks “Fibroman-D”

### FEATURES

Soft mantle made with a double woven mineral wool. A mains switch and safety earth are also fitted. The mantle can be supported by a retort ring or tripod stand.

### MODELS

Part No.	Flask capacity ml	Ø / Height (exterior) cm		Power W	Weight Kg
3004192	250	15	6.5	130	0.8
3004195	500	17	7	270	0.9
3041910	1000	20	8.5	410	1
3041920	2000	24	11	530	1.5

See accessories (page 230) and controller (pages 293 and 294).

### ACCESSORIES

Retort Part No.	Tripod Ring Part No.	Mantle Part No.
7041921	7041922	3004192
7041951	7041952	3004195
7419101	7419102	3041910
7419201	7419202	3041920



## Heating mantle for flasks and funnels “Fibroman-O”

WITH TRIPOD SUPPORT STAND.

### APPLICATIONS

Suitable for round bottom flasks, decanting funnels and reaction flasks with a bottom drain.

### FEATURES

- Woven mineral fibre mantle.
- Epoxy coated exterior.
- On/Off switch.
- Safety earth.

### MODELS

Part No.	Flask capacity ml	Ø / Height (Exterior dims.) cm		Ø cm Bottom hole	Tripod Height cm	Power W	Weight Kg
3049110	1000	24	10.5	8	34	410	1.5
3049120	2000	28.5	12	8	36	530	2.5
3049150	5000	37.5	17.5	9	38	840	3.5
3491100	10000	43.5	20	9	43	1400	5
3491200	20000	48	25	12	36	2300	13

Due to its capacity the part no. 3491200, 20000 ml capacity is manufactured in a cylindrical case. See accessories (page 230) and controller (pages 293 and 294).



## Heating mantle for flasks

ADAPTABLE FOR THE “AGIMAN” STIRRER UNIT.

### MODELS

Part No.	Flask capacity ml	Ø / Height (Exterior dims.) cm		Power W	Weight Kg
3000447	250	15	6.5	130	0.8
3000448	500	17	7	270	0.9
3000449	1000	20	8.5	410	1
3000450	2000	24	11	530	1.5

### ACCESSORIES

**Mantle magnetic stirrer “Agiman”.** With interchangeable mantle adapters. Electronic control of stir speed (up to 1600 r.p.m.). Part No. **7000446** See page 26. With connection at the back for an electronic contact thermometer “Sensoterm” or digital electronic regulator “Electemp-TFT”. See controller (pages 293 and 294).



Stirring mantle with adapter device.



Stirring mantle, complete.





## Banks of heating mantles for digestion, Kjeldahl, Soxhlet extraction and round bottle flasks

CONTROLLABLE MANTLE TEMPERATURE UP TO 550 °C.

### FEATURES

Independent heating control for each position.  
2 height and angle adjustable bars to support condensers or other glassware for digestion or extraction.  
External case made of AISI 304 stainless steel.  
Safety earth strip fitted.

### CONTROL PANEL

Temperature control with a pulsed energy regulator. An indicator lamp shows when the mantle is on.

### MODELS

Part No.	For flasks	Flask volume ml	No. of places	Height / Width / Depth (exterior) cm	Power W	Weight Kg
6003294	Kjeldahl / Soxhlet	300-500	4	18 76 25	1500	12
6003296	Kjeldahl / Soxhlet	300-500	6	18 105 25	2200	16
6014204	Micro-Kjeldahl	100	4	16 59 21	510	9
6014206	Micro-Kjeldahl	100	6	16 81 21	900	12

Supplied with: 2 bars and 4 clamps for Kjeldahl/Soxhlet models.  
1 bar and 2 clamps for Micro-Kjeldahl models.

### ACCESSORIES (DIGESTION)



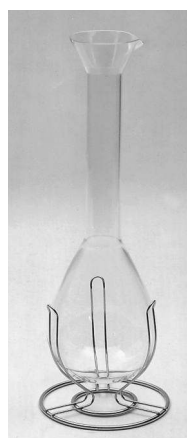
**Fume extractor tube clips** made of AISI 304 stainless steel.  
Part No.

6000008 For bank of Macro-Kjeldahl.  
6000009 For bank of Micro-Kjeldahl



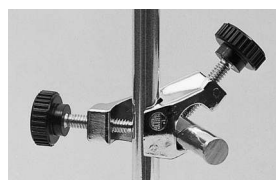
**Borosilicate glass fume extractor tubes.**

Part No.  
1000104 For: Bank Macro-Kjeldahl, 4 positions.  
1000106 For: Bank Macro-Kjeldahl, 6 positions.  
1042044 For: Bank Micro-Kjeldahl, 4 positions.  
1042066 For: Bank Micro-Kjeldahl, 6 positions.



**Kjeldahl flask support** made of AISI304 stainless steel. Flasks 300-500 ml.  
Part No. 1000002

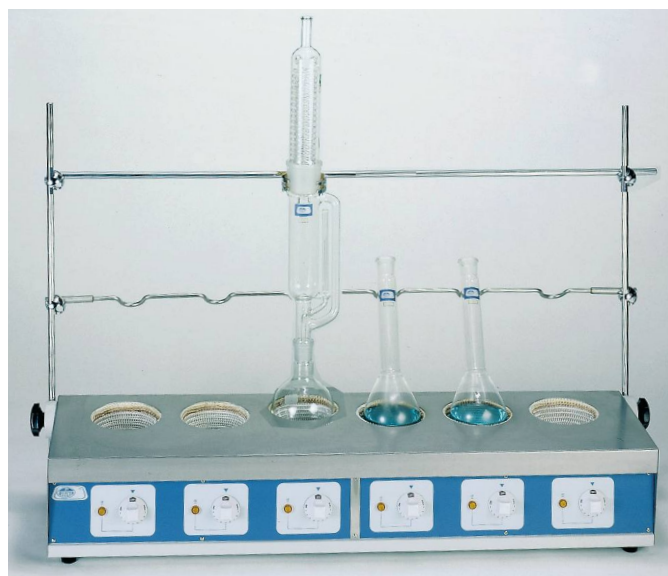
### ACCESSORIES EXTRACTION



**Double nut boss head.**  
Part No. 1000069



**Clamp for holding condensers.**  
Part No. 7000403



### EXTRACTION AND NEUTRALIZATION OF GASSES.

Reduces water wastage.



“Scrubber”

Re-circulation pump

Designed to neutralize and absorb fumes generated in the Kjeldahl digestion process.

Composed of a “Scrubber unit” that blocks the passage and neutralizes the condensed acids, and a re-circulating water pump that produces sufficient vacuum to aspirate the vapours.

No mains water connection required. Prevents waste contamination.  
Low noise level (<65dBA).

Re-circulating pump made from chemically resistant materials.

It is essential to put the “Scrubber” unit together with the neutralizer solution between the digestion block and the re-circulating pump.

### “Scrubber” unit

Part No.	Height / Width / Depth (exterior) cm	Weight Kg
4001611	32 31 16	2

It is supplied with 3 Kg. acid vapours neutralizer solution.

### Re-circulating water vacuum pump.

Part No.	Height / Width / Depth (exterior) cm	Vacuum level bar	Pump rate litre/minute	Weight Kg
4001612	44 39 28	0.98	10	10

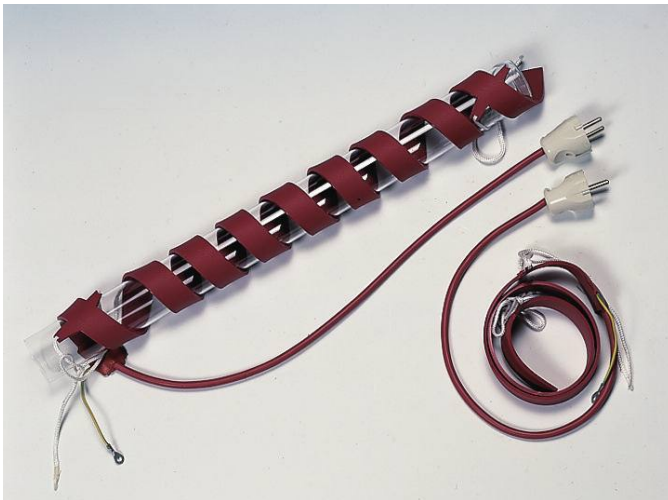
### Spare part

3 Kg. acid vapours neutralizer solution. Part No. 4001610



## Heating tapes

HEATING TAPE SURFACE TEMPERATURE UP TO 210 °C. CONFORMS TO VDE EN 60335-A.



### FEATURES

Heating elements distributed homogeneously between flexible moulded sheets of silicon.

### APPLICATIONS

Used for heating small areas such as heating ducts for distillation, valves and pipes etc.

### MODELS

Part No.	Length m	Width mm	Power W
3003178	0.80	25	180
3031710	1	25	210
3031715	1.5	25	265



## Flexible heating cord



### FEATURES

For tape surface temperatures up to 180 °C. Thermally insulated using flexible silicon tube.

### APPLICATIONS

For heating small areas such as heating ducts, distillation, valves and pipes etc.

### MODELS

Part No.	Length m	Ø Cord mm	Power W
1000781	1.5	3	45
1000782	3	3	90
1000783	6	3	180
1000784	12	3	360



## Large surface area heating mats

MAT SURFACE TEMPERATURES UP TO 210 °C.  
CONFORMS TO VDE STANDARD EN 60335-A.



### FEATURES

The heating element is insulated and distributed homogeneously between two sheets of flexible moulded silicon.

Heating Power: 0.39 W cm<sup>2</sup>.

Mat surface temperature up to 210 °C.

Held in place by hooked spring fittings.

### APPLICATIONS

Suitable for heating drums up to 200 litres Ø 60 cm.

Total: 3 bands of 171 cm in length x 15 cm wide.

Power consumption 3000 W.

Part No. 4000200

### ACCESSORIES

Controller (pages 293 and 294).






# HOTPLATES



## Round Hotplates

HOTPLATE TEMPERATURE UP TO 400 °C. WITH 6 PLACE HEATING POWER CONTROLLER.

### FEATURES

Cast steel plate with embedded heating elements throughout the plate surface. 

Fast heating rate at maximum power setting.

Enamelled outer casing that is resistant to high temperatures and corrosive agents.

### CONTROL PANEL

Controller 6 position power settings.



### MODELS

Part No.	Plate Ø cm	Height / Width / Depth (exterior) cm	Power W	Weight Kg
1000718	12	8 20 20	800	2.1
1000442	15	8 22 22	1600	3
1000443	19	8 26 26	2100	4.5





## Hotplate double circular “Duplac”

FOR PLATE TEMPERATURES UP TO 400 °C.

### FEATURES

Hot plate with non warping cast steel plate with embedded heating elements throughout the hot plate surface. 

Independent plate temperature control is maintained by pulsed energy controllers. The exterior is epoxy covered steel.

### CONTROL PANEL

Two temperature energy controllers.

Two indicator lamps function when the heaters are on.

### MODEL

Part No.	Plate Ø cm	Height / Width / Depth (exterior) cm	Power W	Weight Kg
<b>4000634</b>	19	15 47 24	1750	8.5



## Ceramic top hotplates “Ceramic-plac”

ADJUSTABLE HOT PLATE TEMPERATURE UP TO 400 °C. MAXIMUM SUPPORTABLE WEIGHT: 40 KG.

### SAFETY

CONFORMS TO THE EN 61010 STANDARD, OVER TEMPERATURE CUT-OUT FITTED.

**Excellent resistance to chemicals. Unaffected by thermal shock**



### FEATURES AND ADVANTAGES



The “CERAMIC-PLAC” has the following features and advantages:

- Flat, smooth surface.
- Excellent resistance to chemical agents.
- High heating power within the heated area that permits extreme temperature within a short heat up time.
- Excellent thermal qualities and penetration of infrared radiation.
- Easy to clean.

### FEATURES

- External case of AISI 304 stainless steel.
- Heating elements mounted on ceramic fibre thus making an insulated compact block.
- Temperature energy control from 6 % to 70 % of nominal power. (Model Part No. 3000919 and 3000920).
- Hydraulic thermostat temperature control up to 400 °C (Model Part No. 3000921).

### MODELS

Part No.	Heating Zones	Heating area in cm	Height / Width / Depth (exterior) cm	Power W	Weight Kg	Control system
<b>3000919</b>	1	18 Ø	10 28 33	1800	5.5	Energy controller
<b>3000920</b>	2	14 Ø + 14 x 14 	10 27 47	2200	7.5	With individual energy controllers for each zone
<b>3000921</b>	1	30 x 30 	10 49 49	3700	11	With hydraulic thermostat



## Hotplate-Rectangular "Combiplac"

PLATE TEMPERATURE ADJUSTABLE UP TO 400 °C.



### FEATURES

Electronic energy temperature control.  
The non warping steel hotplate has heating elements embedded throughout the hotplate surface maintaining the heat distribution.   
The main case is made of AISI 304 stainless steel.

### CONTROL PANEL

Main power switch with "ON" indicator lamp.  
Electronic energy control from 0 to 100 %.  
An indicator lamp shows when the unit is hot.  
Connector at the back for the external digital thermometer, "Sensoterm" or "Electemp-TFT".  
See Regulators and Controllers (pages 293 and 294).

### MODELS

Part No.	Width / Depth (plate) cm	Height / Width / Depth (exterior) cm	Power W	Weight Kg
<b>3000156</b>	20 40	12 22 55	2300	9
<b>3000718</b>	30 30	13 33 46	2800	13



### ACCESSORIES

**Sand bath adapters.** Made entirely of AISI 310 stainless steel, removable for easy cleaning.

Part No.	Hotplate Part No.	Height/Width/Depth (Sand tray dims) cm
<b>6000719</b>	3000156	5.5 20 40
<b>6000720</b>	3000718	5.5 31 31



## Hotplate-Circular "Combiplac"

PLATE TEMPERATURE ADJUSTABLE UP TO 400 °C.



### FEATURES

Electronic energy controller and embedded heating element throughout the non warping steel hotplate surface.   
A retort bar can be located in a hole at the back of the unit.  
The main case is made of AISI 304 stainless steel.

### CONTROL PANEL

Main power switch with "ON" indicator lamp.  
Temperature controlled by a 0 - 100 % energy controller.  
A lamp indicates when the hot plate is "ON".  
A Thermometer "Sensoterm" or "Electemp-TFT" that can be added and are listed as accessories.  
See section Regulators and Controllers (288 and 289).



### MODELS

Part No.	Plate Ø cm	Height / Width / Depth (exterior) cm	Power W	Weight Kg
<b>3002301</b>	12	10 16 27	550	2
<b>3002302</b>	19	13 21 30	950	3

### ACCESSORIES

Suitable for the 12 cm Ø hotplates only Part No.3002301:

**Bath** of AISI 304 stainless steel of 140 mm Ø x 75mm high, with concentric reduction ring lid, Suitable for water, oil or sand. Part No. **7002510**

**Round bottom flask adapter** made of aluminium and suitable for Kjeldahl flasks of 50 to 100 ml and 50 to 100 ml round bottom flasks. Part No. **1002290**

**Round bottom flask adapter** made of aluminium and suitable for Kjeldahl flasks of 300 to 800 ml and round bottom flasks of 250 to 500 ml. Part No. **1002280**

**Support rod** of 12mm Ø and 500 mm high, fits on to the main body of the hotplate. Suitable for the circular Combiplacs 3002301 and 3002302. Part No. **1000725**



### Electronic contact thermometers with digital readout "Sensoterm".

With Pt100 sensor with stainless steel AISI 304 sheath.

Part No. **1001009**

Features. See Regulators and Controllers (pages 293 and 294).



### Electronic temperature controller "Electemp-TFT"

Part No.	Height / Width / Depth (exterior) cm	Max power (at 230 V) W	Weight Kg
<b>3000897</b>	10.5 13.5 21	3100	1.250

Features. See Regulators and Controllers (see pages 293 and 294).







## Rectangular precision hotplate "Plactronic"

ADJUSTABLE TEMPERATURE FROM AMBIENT +5 UP TO 200 °C STABILITY  $\pm 0.5$  °C.  
 WITH ELECTRONIC DIGITAL TEMPERATURE AND TIME CONTROL DISPLAY.  
 SUITABLE FOR THERMAL TESTS (NOT SUITABLE FOR BOILING TESTS).  
 SURFACE PLATE COATED WITH P.T.F.E. FOR PROTECTION AGAINST CHEMICALS.

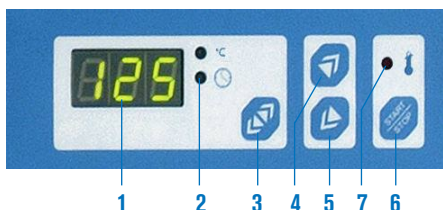
### FEATURES

Digitalelectronic temperature and timer control. and Digital display (3 digits).  
 Display resolution: 1°C.  
 Temperature probe Pt 100.  
 DUR aluminium alloy hotplate's coated with P.T.F.E., with heating elements embedded in the plate surface.  
 Main case, heater element and protective grill, made of AISI 304 stainless steel.

### SAFETY:

CONFORMS TO EN61010. OVER TEMPERATURE SAFETY CUTOUT FITTED.

### Maximum precision



### CONTROL PANEL

1. Digital display of temperature and time.
2. Indicator lamp to show the parameters (temperature or time).
3. Push button to select visualised parameter.
4. Push button to increase parameter value.
5. Push button to decrease parameter value.
6. Push button start and stop.
7. Indicator alarm if the plate is over temperature.



### MODELS

Part No.	Width / Depth (plate) cm	Height / Width / Depth (exterior) cm	Power W	Weight Kg
6155100	24 24	13 25 42	700	7.5
6156100	20 40	13 22 57	800	8
6157100	25 60	13 27 77	1000	16.5



## Rectangular hotplate "Placfin"

ADJUSTABLE HOT PLATE TEMPERATURE FROM AMBIENT +5 °C UP TO 130 °C. STABILITY  $\pm 3$  °C.  
 SUITABLE FOR THERMAL TESTS (BUT NOT BOILING).

### FEATURES

Temperature control by a hydraulic thermostat.  
 Protected thermometer from 0 °C to 130 °C.  
 Hotplate surface protected by chemically treated aluminium, with heating elements distributed throughout the hotplate's surface.  
 Enamelled external case, resistant against corrosive chemicals.

### CONTROL PANEL

Hydraulic thermostat control, synchronised with an indicator lamp when in operation.

### MODEL

Part No.	Width / Depth (plate) cm	Height / Width / Depth (exterior) cm	Power W	Weight Kg
7000497	23 22	11 22 30	1500	3.7



### ACCESSORY

Slide support adapter made of AISI 304 stainless steel. Capacity: up to 18 slide of 76 x 255 mm (in a horizontal position).  
 Part No. 7000498





## Bank of circular hotplates “Uniplac”

ADJUSTABLE TEMPERATURE HOTPLATE UP TO 400 °C.  
SUITABLE FOR KJELDAHL DIGESTION ASSAYS AND SOXHLET EXTRACTION.

### FEATURES

Independent hotplate control using pulsed energy regulators.  
Cast steel hotplates with embedded heating elements distributed throughout the hotplate's surface.  
Adjustable height and angle stand bars for supporting condensers and other glass-ware etc.  
External case made of AISI 304 stainless steel.

### CONTROL PANEL

Independent temperature control for each position.  
- Temperature control by pulsed energy regulators.  
- Indicator lamps showing when the hotplate is on.

### MODELS

Part No.	No. of places	Plate Ø cm	Height / Width / Depth (exterior) cm			Power W	Weight Kg
6002314	4	12	23	77	27	2200	15
6002316	6	12	23	105	27	3300	22



### ACCESSORIES

**Bath** of AISI 304 stainless steel of 140 mm Ø x 75mm high, with concentric reduction ring lid, Suitable for water, oil or sand.  
Part No. **7002510**



**Round bottom flask adapter** made of aluminium and suitable for Kjeldahl flasks of 50 to 100 ml and 50 to 100 ml round bottom flasks.  
Part No. **1002290**



**Round bottom flask adapter** made of aluminium and suitable for Kjeldahl flasks of 300 to 800 ml and round bottom flasks of 250 to 500 ml.  
Part No. **1002280**



### ACCESSORIES FOR KJELDAHL DIGESTION

**Kjeldahl support Bar** for Kjeldahl flasks, made of AISI 304 stainless steel.  
Part No. **6023141** 4 places  
Part No. **6023161** 6 places



**Clamp for Kjeldahl condenser tubes** made of AISI 304 stainless steel.  
Part No. **6000008**



**Borosilicate glass fume tube.**  
Part No. **1000104** 4 place  
Part No. **1000106** 6 place



### EXTRACTION AND NEUTRALIZING SYSTEM FOR GASES AND VAPOURS. Prevents water wastage.



“Scrubber”

Recirculating pump.

Features (see page 251).

### Models

#### Unit “Scrubber”

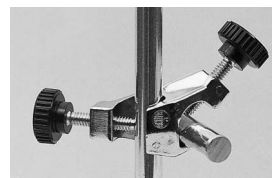
Part No.	Height / Width / Depth (exterior) cm			Weight Kg
4001611	32	31	16	2

It is supplied with 3 Kg. acid vapours neutralizer solution.

#### Water recirculating vacuum pump

Part No.	Height / Width / Depth (exterior) cm			Vacuum level bar	Vacuum pump rate litres/minute	Weight Kg
4001612	44	39	28	0.98	10	10

### ACCESSORIES SOXHLET EXTRACTION



Boss head for supporting clamps.  
Part No. **1000069**



Clamp for flasks or condenser tubes.  
Part No. **7000403**



# Monitor and Control Apparatus



## Electronic controller "Electemp-TFT"

### FEATURES

Reading temperature range: -150 °C to 1300 °C  
Stability: ±0.1 °C.  
Resolution: ±0.1 °C Pt 100 / ±1 °C K Type probe.

### Touch screen

- Main On/Off switch.
  - Acoustic and visual alarm.
  - Clock calendar.
  - Up to 10 work programs.
  - Up to 6 segments per program.
  - Stability time in each segment (from 1 min to 99h).
  - Ramps between segments.
  - Alarms and events storage.
  - Probe error detection.
  - Self Diagnostics.
  - 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.
  - RS-232 and USB output.
  - 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.
- Cool/heat regulation.

### CONTROL PANEL

Setpoint temperature and time indicator.  
Temperature limit indicator.  
Timer virtual pushbutton.  
Reverse virtual pushbutton.  
Start virtual pushbutton.  
Stop virtual pushbutton.  
Programming virtual pushbutton.

### BACK PANEL

Power output (SCHUKO plug) 3100 W at 230 V.  
Protection fuse.  
Pt100 probe connection.  
K type probe connection.

### APPLICATIONS

Digital thermometer from -150 °C to 1300 °C.  
To control and display temperature in any equipment with temperature control system, that uses a contact thermometer, such as: Baths, Immersion thermostats, Hotplates and Hotplate stirrers, Heating and cooling equipments, etc... (temperature from ambient +5 °C to 1300 °C).  
Can also be used by a immersion thermostat controlling a heater element. (maximum power 3100 W).



### MODEL

Part No.	Height / Width / Depth cm (exterior)	Max. power W (at 230 V)	Weight Kg
<b>3000897</b>	<b>10.5 13.5 21</b>	<b>3100</b>	<b>1.250</b>

### ACCESSORIES

**Pt 100 probe.** Immersion dimensions: 4 mm Ø, 130 mm length. Cable: 150 cm length.  
Part No. **1000893**  
**Type K probe.** Immersion dimensions: 2 mm Ø, 150 mm length. Cable: 150 cm length.  
Part No. **1000895**



## Electronic contact thermometer "Sensoterm II"

DIGITAL DISPLAY, PT 1000 PROBE, AISI 304 STAINLESS STEEL.  
STABILITY ±1 °C, ±1 DIGIT. RESOLUTION ±1 °C.

ONLY SUITABLE FOR INSTRUMENTS  
THAT CAN USE AN ELECTRICAL CONTACT  
THERMOMETER.

### FEATURES

Advantages include a separate temperature probe that maintain the main body away from steam and other vapours. Safer than a glass contact thermometer, eliminating the risk of broken it and a mercury spillage.  
Main body made of ABS plastic.

### TECHNICAL DATA

Temperature range: from -50 °C to 300 °C.  
Temperature probe: 3.5 mm Ø x 250 mm immersion.  
Temperature Display: 8 mm high LCD display.  
Ambient working range: 0 to 60 °C and a relative humidity of 80 %.

### MODEL

Part No.	Height / Width / Depth cm (exterior)	Weight Kg
<b>1001009</b>	<b>13 7 2.4</b>	<b>0.250</b>



Instruments that can use the electronic controller "Electemp-TFT" and the electronic contact thermometer "Sensoterm".



Sand Bath  
"Combiplac-Sand"  
Parts No. 6000708 and 6000709.



Hotplate - Rectangular  
"Combiplac"  
Parts No. 3000156 and 3000718.



Hotplate - Circular  
"Combiplac"  
Parts No. 3002301 and 3002302.



Magnetic Stirrers "Agimatic"  
Parts No. 7000271, 7000273,  
7000272, 7000280, 7000281,  
7000837 and 7000838.



## Electronic temperature controller "Electemp-B"

ADJUSTABLE TEMPERATURE FROM 0 °C TO 310 °C.

NEW DESIGN

### FEATURES

Regulates the power to the heating element by pulsing electronic circuit, free of noise and interferences

### APPLICATIONS

Regulates the power of temperature in ovens baths, radiators, hotplates, etc.

### CONTROL PANEL

Temperature display indicator.  
Set temperature display indicator.  
Set value increase/decrease button.

### BACK OF CONTROLLER

Output of power (Schuko plug system).  
Protection fuse.  
Connection for a PT100 probe (included)



"Electemp-B" application to a hotplate, showing the unit connected with an electronic contact thermometer.

### MODEL

Part No.	Height / Width / Depth cm (exterior)	Max. power W (at 230 Vav)	Max. power W (at 110 Vav)	Weight Kg
3000896	15 15.5 19	2500	1700	1.2

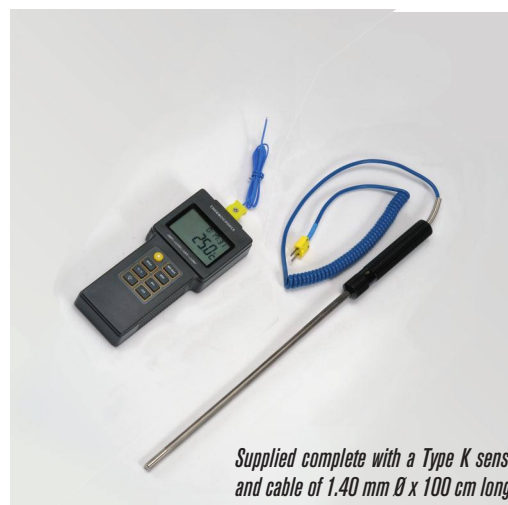
## COMECTA Digital thermometer "TC-9226-A"

### FEATURES

Main body made of PVC with anti-slide for better stability.  
Temperature range from -200 °C to 1370 °C (-328 to 2498 °F).  
Reads °C or °F, reading within 1 second.  
Memorizes the last 10 temperature readings. Displays the reading for 3 seconds. It is possible to hold the reading on the screen.  
Switches off automatically after 1 hour (if it is in a continuous mode).  
LCD with back light illumination.  
Low battery power indicator.  
Powered by 3 x 1.5V "AAA" batteries".  
Compatible with most Type K sensors.  
Operating conditions: from -10 to 50 °C.  
Dimensions: (height x width x depth): 17 x 7 x 3 cm. Weight 150g.

MODEL	Part No.	Temp. range °C	Resolution °C	Precision °C
GT-9226-A	5903030	-200 to 1370	0.1	from -200 to -50: ±2 from -50 to 740: ±1 from 740 to 1370: ±2

The precision figures supplied are based on a measurement range from 18 to 28 °C (does not include the sensor error).



Supplied complete with a Type K sensor and cable of 1.40 mm Ø x 100 cm long.

### ACCESSORY

Sensor type K of 8 mm Ø x 30 cm length. Part No. 5903025

## COMECTA Digital Humidity meter with Thermometer "HT-305E"

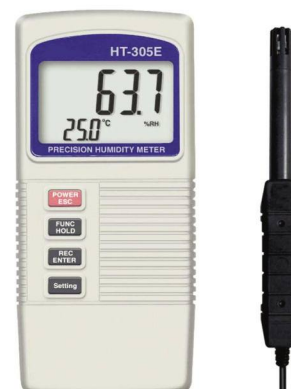
### FEATURES

Temperature range from 0 °C to 60 °C.  
Humidity range from 10% to 95% RH.  
Digital Display °C or in °F Fast response: 0.4".  
Power: battery 9 V.  
Dimensions: (height x width x depth): 3.2 x 6 x 13.25 cm.  
Weight: 264 g.

Part No. 5903023

Supplied complete with humidity / temperature sensor, protective cover and carry case.

MODEL	Part No.	Temp. range °C	Resolution °C	Precision °C	Humidity range %	Humidity resolution %	Humidity precision %
HT-305E	5903023	from 0 to 50	0.1	±0.8	from 10 to 95	0.1	> 70%: ±3% +1% < 70%: ±3%







## Ink Printer "Microprinter"

### APPLICATIONS

Small ribbon printer (not thermal) with paper roll 2 1/4" (56 mm) wide.  
Interface connection: RS232.  
Applications: Measuring equipment, pH meters, conductivity meters, spectrophotometers, etc.  
Includes interface cable and power transformer 5V - 3A and cable.

### MODEL

Part No.	Height / Width / Depth cm	Power supply	Weight Kg
4120113	4 16 10	DC 5V 3A	1



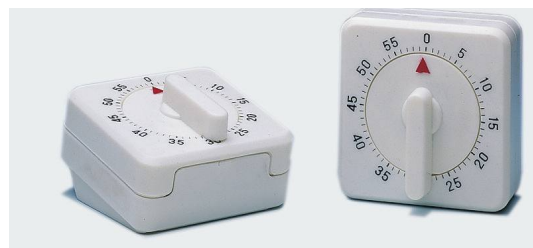
## Automatic programmer "Promat" 24 H

Connects and disconnects electrical power by a pre-programmed timer switch.  
Adjustable timer: Cycles up to 24 hours, with controllable connection disconnection up to every 15 minutes.  
Manual interrupt setting to disconnect the program, luminous indicator shows when power is being applied.  
Maximum current: 16 Amp.  
Part No. 1000500



## COMECTA Timer alarm "Relavis"

Audible sound when the program time has lapsed.  
Time setting from 0 to 60 minutes in 1 minute intervals.  
Part No. 5900499



## COMECTA Digital alarm timer "Count Down-Up"

Maximum count time 99 min. 59 sec. Timer: count-down and count-up.  
Portable: table top with magnetic holder or clip if used on a pocket or overall.  
Audible alarm fitted.  
Part No. 5900500



## COMECTA Digital Chronometer "Diamond"

Maximum timer: 23 hr 59 min 59 sec. Division 1/100 seconds. Control: LAP/SPLIT (timer: split time and accumulative time).  
Date incorporated.  
Audible Alarm (duration 60 seconds).  
Audible Alarm "snooze" function (once pressed the stop alarm goes off every 5 minutes until it is completely shut off).  
Part No. 5900501



## COMECTA Thermometer reader "Micro-Temp"

SUITABLE FOR MEASURING TEMPERATURE FROM -50 °C TO +300 °C OR FROM -58 °F TO +527 °F.

Applications: process control, laboratories, pharmacies, food processes and agriculture in general.  
Digital screen readout in °C or °F.  
Stainless steel penetration probe of 3.5 mm Ø x 120 mm long.  
Retention memory of minimum and maximum data readout.  
Disconnects automatically after 1 hour.  
Powered by a 5V - 3A battery.

### MODEL

Part No.	Precision	Resolution
5903029	±1 °C / 1 °F	0.1 °C / 0.1 °F

Comes complete with protective cover and support clip.





## GLASS THERMOMETERS

### COMMON FEATURES

All thermometers are made of glass rod or with an opal scale, with a reinforced bulb.  
 A wide selection of scales and temperature ranges is available.  
 Scales etched in acid and graduated with indelible ink.  
 Resistant to most chemical agents.  
 All thermometers are supplied with a protective plastic cover.



## Solid stem Thermometers



Yellow backed, mercury filled.

Part No.	Range °C	Division scale °C	Total length cm
1090100	-10 +100	1/1	30
1092050*	0 +50	0.1	45

\* White back.



White back, with red liquid content.

Suitable for measuring samples where mercury is not permitted.  
 E.g. food products, drinks, etc.

Part No.	Range °C	Division scale °C	Total length cm
1001257	-10 +100	1/1	30

Yellow backed with suspension ring, mercury filled.

Part No.	Range °C	Division scale °C	Immersion length cm	Total length cm
1001299	0 +200	1/1	5	25
3009200	0 +200	1/1	15	34
1009100	0 +60	0.5	15	30



## Enclosed scale thermometers

With prismatic capillary, with easy to read scale. Contains mercury.



Part No.	Range °C	Division scale °C	Immersion length cm	Total length cm
1095060	-10 +50	1/1	3	30
1095100	-10 +100	1/1	3	30
1095150	-10 +150	1/1	3	30
1095250	-10 +250	1/1	3	30
1095360	-10 +360	1/1	3	30
1096050	-10 +50	0.5	3	30
1096100	-10 +100	0.5	3	30
1097050	-10 +50	0,1	3	45
1000100	-10 +100	1/1	13	25
1000872	-10 +120	1/1	15	33

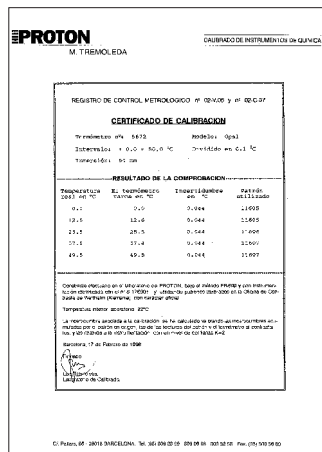


## Precision thermometers

Mercury thermometers.

Complete with **calibration certificate** PROTON registration control no. 02-C.37 and 02-V.06 (Meteorological control).

Traceable certificate indicating the proof of continued quality of workmanship against different temperatures, with method and conditions of measurement against known traceable standards.



Part No.	Range °C	Division scale °C	Type	Total length cm
1001258	-10 +100	1/1	solid stem	30
1001259	-10 +250	1/1	solid stem	30
1001260	-10 +50	0.5	solid stem	30
1001261	-10 +100	0.5	solid stem	30
1001262	0 +50	0.1	solid stem	45
1001263	-10 +100	1/1	enclosed scale	30
1001264	-10 +250	1/1	enclosed scale	30
1001265	-10 +50	0.5	enclosed scale	30
1001266	-10 +100	0.5	enclosed scale	30
1001267	-10 +50	0.1	enclosed scale	45

Case with 7 glass rod mercury thermometers, white back, scale in 0.1 °C.

Range °C*	Total length
-30 +20	45 cm
0 +50	45 cm
+50 +100	45 cm
+100 +150	45 cm
+150 +200	45 cm
+200 +250	45 cm
+250 +300	45 cm

\*One thermometer per range.

Part No.

1001268 with calibration certificate PROTON.

1001298 without calibration certificate.



## Electric contact thermometers

Adjustable temperature setting with the use of a dial on the top of the thermometer. To provide better mercury flow, the capillary interior is filled with an inert gas. Supplied complete with a 100 cm cable with the appropriate connection on the end.

Part No.	Range °C	Division scale °C	Immersion length cm	Total length cm
3521015	0 +100	1/1	15	39
3522015	0 +200	2/1	15	39
3523015	0 +300	5/1	15	39
3352604	0 +60	1/1	4	28
3352104	0 +100	1/1	4	28
3352204	0 +200	2/1	4	28



## Pocket infrared thermometer

Thermometer to measure temperature remotely used in laboratories. These contactless thermometers are used to measure temperatures of any liquid, solid or semi-solid. It includes calibration certificate. It uses two LR44 batteries.

Part No.	Range °C	Total length cm
1097100	-33 +220	6,8



NEW





## Universal reactor for laboratory "RV-12"

ADAPTABLE TO ALL NORMALIZED GLASS ELEMENTS WITH 100 MM MOUTH.

REACTOR CAPACITY: 6 OR 12 LITRES.

### APPLICATIONS

Universal reactor suitable for all laboratory and pilot plant's operations.

### FEATURES

Standard mouth for connection to DN100 glass reactor's covers.

Reactor in AISI 316 stainless steel, with a capacity of 12 litres and with a drain tap.

### STANDARD EQUIPMENT

- Standard support.** Part No. **1001748**
- Reactor** in stainless steel AISI 316, capacity: 12 litres with drain tap. External sizes: Height 38cm x 25cm Ø. Weight: 4.5 Kg Part No. **1001746** or 6 litres with drain tap. External sizes: Height 28cm x 25cm Ø. Weight: 3 Kg. Part No. **1001726**.
- Clamp with support ring** for the reactor. Part No. **1001747** + **1001974** for 10-20 litres.

### COMPLEMENTOS

- Addition graduated **funnel** of 250 ml. PTFE frosted wrench 29/32. Part No. **1001795**.
  - Frame** for stirrer clamping. Part No. **1001770**
  - HEI-Torque stirrer** with adjustable speed. Part No. **5016041**
  - PTFE stirrer guide.** Part No. **1001788**
  - Double effect **Refrigerant** "Dimroth". 30 cm de length. Part No. **1001792**
  - Electronic regulator ELECTEMP-TFT.** Part No. **3000897** with connector for internal emperature control, if the heating mantle is used.
  - Support plate** with bosshead for Electemp-TFT regulator. Part No. **1001750**
  - Pt100 probe** Part No. **1001749** 400 mm length x Ø 4 mm, with connection cable to Electemp-TFT regulator.
  - 5 mouths cove** type UK. Part No. **1001790**
  - Ring holder** with double bosshead for heating mantle. Part No. **1001751**
  - Heating mantle** with double heating element for temperatures up to 400°C. Power consumption 1400W. Part No. **3001752**
  - Double bosshead MAXIM.** Part No. **7000408** and clamp for refrigerant. Part No. **1001765**
  - Anchor shape stirring shaft**, Ø 9,5 mm in PTFE. (length 65 x shovel width 10 cm). Part No. **1001822**
  - Helix shape stirring shaft**, Ø 9,5 mm in PTFE. and PTFE shovel (length 65 x shovel width 7cm). Part No. **1001789**
  - Folding shovels stirring shaft**, Ø 9,5 mm in PTFE. (length 65 x shovel width 7cm). Part No. **1001859**
  - Clamp resistance** with internal ceramic insulation and AISI 304 stainless steel exterior. 400°C, 1500W power consumption. Part No. **1001947**
  - High vacuum grease.** Dow Corning. -40 to +200°C. For pressures up to 10-6 mm Hg use. Part No. **1001915**
  - PTFE expansion/contraction bellows** for coupling between mouth and coolant. Part No. **1001825**
  - Faucet** in PTFE frosted 29/32. Part No. **1001793**
  - Adapter set for PT100 probe.** Frosted 14/23. Part No. **1001933**
  - Adjust 29/32 to olive 12mm** for coolant and funnel. Part No. **1001794**
  - Stopper 29/32** for lid and funnel. Part No. **1001796**
- For DN150 type GR reactors:
- Standard support** for frame and clamp. Part No. **1001748**
  - Clamp** for DN150 type GR reactors subjection. Part No. **1001787**
  - Frame for clamp** Supplied with two AISI 304 stainless steel bars Ø 20mm and 500 mm length. Part No. **1001767**

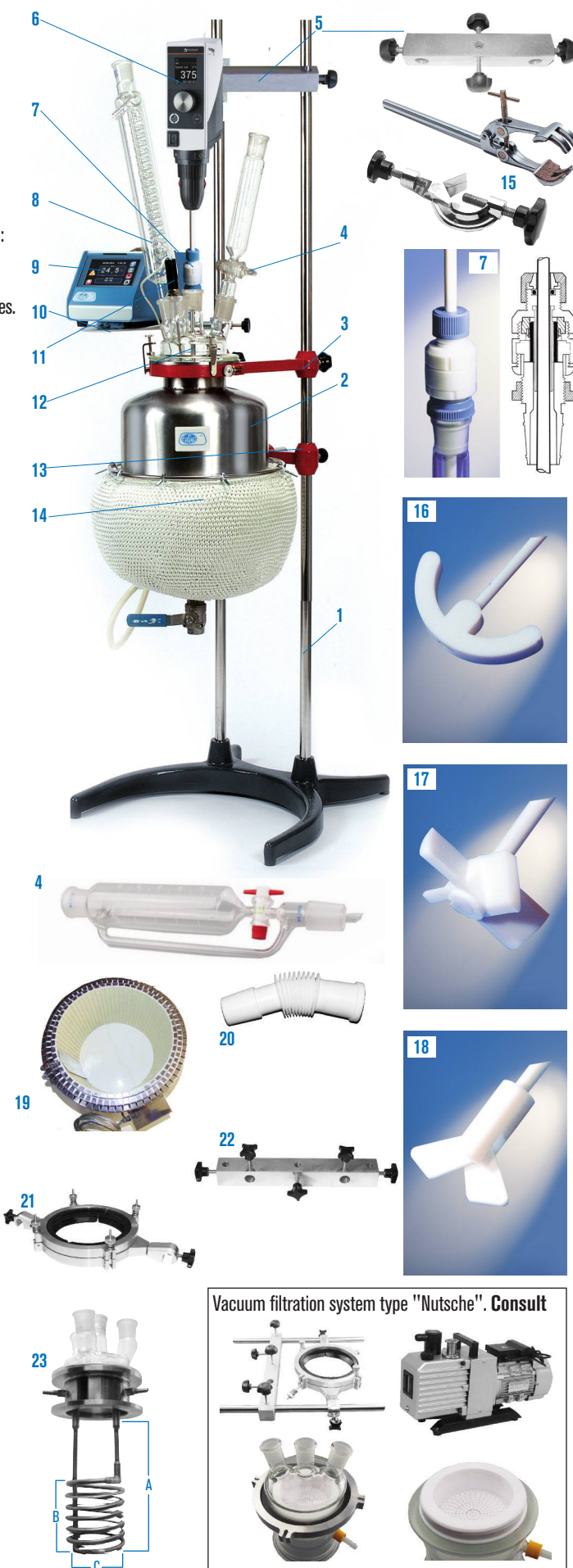
### OPTIONAL

**23.** AISI 304 stainless steel device, with double standard mouth and coil for heating or cooling the liquid inside the reactor. Coil measures: **A:** 26 cm. **B:** 15 cm. **C:** 10 cm. Part No. **1001755**

This device can be coupled to the universal reactor Part No. **1001746**.

Note: To be able to hold the Part No. **1001755** to the reactor, a ring holder Part No. **1001758** and a clamp bracket set Part No. **1001852** is necessary.

Note: By using the coil (**23**) laboratory tests have been carried out with silicone oil "47 V50" (Part No. **1000027** 4 litres) and with **Ultraterm-TFT-200** thermostaat. Part No. **3000554** (See page. 101) reaching temperatures up to 170°C in 35' inside the reactor properly insulated with "durablanket120". With the methanol fluid transmitter liquid and the **Frigiterm-TFT-30** thermostat. Part No. **3000553** (See page. 101) temperatures up to -21°C have been reached in 57' inside the isolated reactor with "durablanket120".





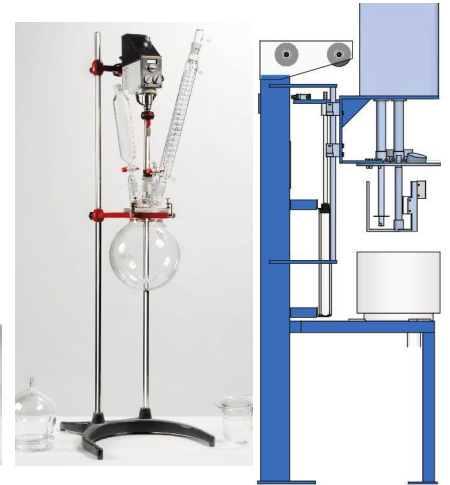
## Customizable reactors on demand

FOR LABORATORY AND PILOT PLANT WITH HEATING AND COOLING SYSTEMS  
 BOROSILICATE GLASS 3.3. CAPACITY: FROM 0,5 UP TO 100 LITRES.  
 AISI 304 - 316 - 316L STAINLESS STEEL LITRES CAPACITY: FROM 12 UP TO 100 LITRES.

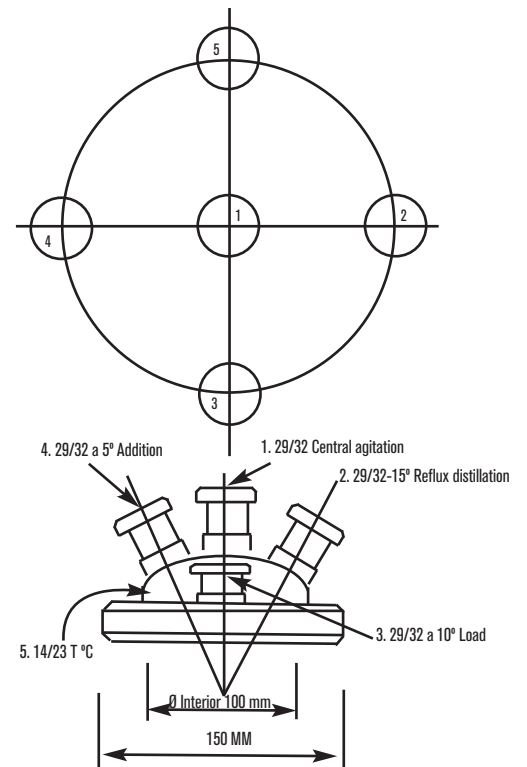
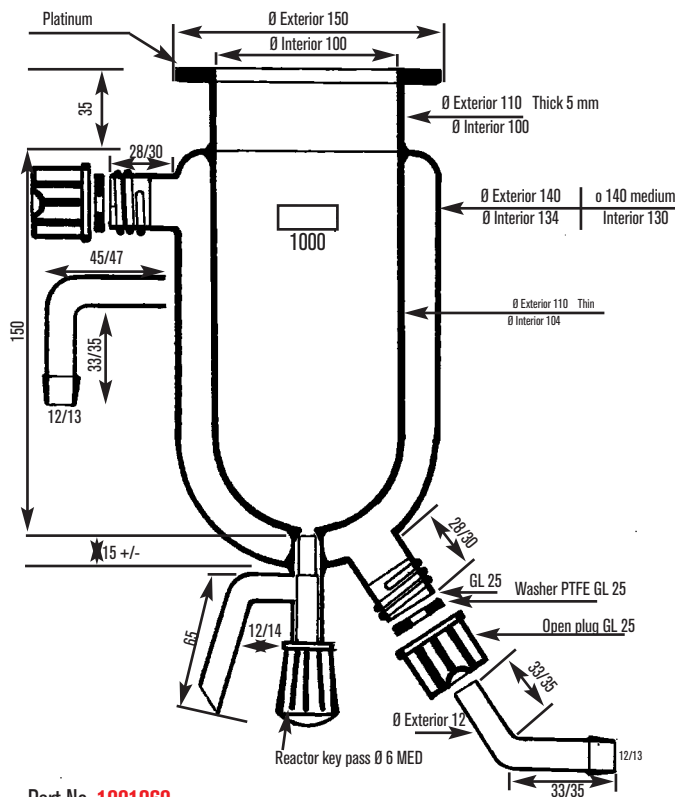
**Borosilicate glass 3.3:** Spherical, cylindrical and thermostatic with or without PTFE release valve with temperature control accessories, PH, oxygen, turbidity, etc. Heidolph stirring systems and variable PTFE blades.

**Aisi 304 - 316 - 316 L :** Cylindrical and thermostatic with or without release valve. With temperature control accessories, PH, oxygen, turbidity, etc.

Fixed and variable stirring systems of different powers according to viscosity and density, combined with stirring elements, dispersers and emulsifiers micronizers and helical.  
**REQUEST INFORMATION.**



## Parts and assembly of reactors. Ø 100 UK



- Reactor 0,5 liters. Part No. **1001960**
- Reactor 1 liters. Part No. **1001880**
- Reactor 2 liters. Part No. **1001879**
- Reactor 10 liters. Part No. **1001961**

Reactor cover 5 mouths. Part No. **1001790**  
 Reactor cover 5 mouths. Part No. **1001892** With SAV thread.





## Reactor for pilot plant "RE-605" and "RE-620"

CAPACITY UP TO 20 LITRES  
FOR ATMOSPHERIC PRESSURE OR VACUUM

NEW

### APPLICATIONS

This equipment is designed for reflux and distillation operations with a stirring element, for all laboratory's pilot plant operations and small productions.

### FEATURES

Reactor module built-in, base made of glazed steel in epoxy and tubular structure in stainless steel AISI 304, equipped with an engine group stirring and a reaction jacketed borosilicate glass 3.3 with graduation to temper, for a volume of 4-20 liters in "RE-620" model and 1-5 liters in "RE-605" model.

Stirring anchor blade and elements in contact with the liquid or reaction steam, composed of borosilicate glass and PTFE.

Addition and reflux models.

Optional:

- Configurations for distillation can be supplied.
- Amber glass finish.
- Voltage 110V / 60 Hz.

### CONTROL PANEL

Main switch ON / OFF.

Regulator knob for stirring speed from 0 to 500 rpm.

Temperature and RPM digital indicator

### MODELS

Part No.	Total dimensions Height / Width / Depth	Reactor capacity	Operating temperature	Power W	Weight Kg
1001710	130 70 35	5	-50 °C to 200 °C	90	10
1001711	180 62 50	20	-50 °C to 200 °C	250	68



"RE-605" model  
5 litres.



"RE-620" model  
20 litres.

Model "RE-620"  
20 litres.

### ACCESORIES

**pH analyser temperature from -10°C up to 140°C.**

**3.5" color touch screen.** 8 digital inputs, 2 configurable analog and 6 relay outputs for signaling and control. Communications: 485 for ARC sensor network. IP-65 box. RS-232 output for connection to a computer. Possibility of performing PID control loops. GSM, RED, TCP / IP modem connections, Probes: O<sub>2</sub>, CON, VCD and Redox.

Part number **4120824** (For measurement and reading only).

Part number **4120823** (For measurement, reading and control).

HT glass sensor pH 0-14 + T° -10 at 100 °C. Part number **4120801**

ARC HT sensor pH 0-14 + T° -10 at 140 °C. Part number **4120822**

Glass sensor adapter for R-605. Part number **4120802**

Glass sensor adapter for R-620. Part number **4120803**

**Digital thermometer "TC-9226-A"**

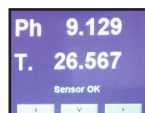
Temperature range: -200 °C. to 1370 °C.

Part No. **5903030**

See page. 294

PTFE expansion/contraction **bellows** for coupling between mouth and coolant Part No. **1002932**

**Stirring rod in the shape of a helix**, Ø 9.5 mm in PTFE. and shovel in PTFE (length 65 x width shovel 7 cm). Part No. **1001789**



### COMMON COMPLEMENTS

**Silicone oil 4 liters.** Temperature up to 300°C. Viscosity 50 mm<sup>2</sup>/s at 25 °C. Melting point 318 °C. Part No. **1000027**

**Peristaltic dosing pump "Peristaltic PR-2003."**

For PH stabilisation (acid-base). Also applicable to dosages in process.

Features: See page. 47. Part No. **4129050**

**Recirculation cryothermostat "CC-505".**

For adjustable temperatures from -50 °C. to 200 °C.

Part No. **5910062**

### FOR REACTOR R-605

**Recirculation thermostat "Ultraterm-TFT-200".**

For adjustable temperatures from ambient +5 °C. to 200 °C.

Part No. **3000545** See page. 101.

**Recirculation cryothermostat "Frigiterm-TFT-30".**

For adjustable temperatures from -30 °C. to 100 °C.

Part No. **3000547** See page. 101.

### FOR REACTOR R-620

**High power recirculation thermostat "Interheater"**

For adjustable temperatures from ambient +5 °C. up to 90 °C.

Part No. **6001491** See page. 105.

**Water refrigerador and recirculator "Unichiller 015"**

For temperatures from -20°C to +40 °C.

Part No. **5910049**





## Reactor for pilot plant “RE-650” and “RE-6100”

**CAPACITY: 50 AND 100 LITERS  
FOR ATMOSPHERIC PRESSURE OR VACUUM**

**NEW**

### APPLICATIONS

This equipment is designed for reflux and distillation operations with a stirring element, for all laboratory's pilot plant operations small and medium productions.

### FEATURES

Reactor module built-in, made of glazed steel in epoxy and structure in stainless steel AISI 304, composed of an engine group stirring and a reaction borosilicate glass 3.3 with graduation and dual Camera to temper, for a volume of 10-50 liters in “RE-650” model and 20-100 liters in “RE-6100” model.

Stirring anchor blade and elements in contact with the liquid or reaction steam, composed of borosilicate glass and PTFE.

Optional:

- Configurations for distillation can be supplied.
- Amber glass finish.
- Voltage 110V / 60 Hz.

### CONTROL PANEL

Main switch ON / OFF.

Regulator knob for stirring speed from 0 to 500 rpm.

Temperature and RPM digital indicator.

### MODELS

Part No.	Total dimensions Height / Width / Depth	Reactor capacity	Operating temperature	Power W	Weight Kg
<b>1001840</b>	268 68 68	50	-50 °C to 200 °C	300	82
<b>1001841</b>	268 68 68	100	-50 °C to 200 °C	500	119

### SPECIAL STIRRING MODELS

Main switch ON / OFF.

Control by variable frequency drive 200-240 VAC (II-III) filter EMC-IP55 and IP66.

Part No.	Working conditions	RPM	Power W	Voltage V
<b>7000386</b>	Atmospheric pressure	0-1450	650	230-400 III 50Hz IP55
<b>7000387</b>	Vacuum pump	0-1450	650	230-400 III 50Hz IP55

### ACCESORIES

**pH analyser temperature from -10°C up to 140°C.**

**3.5" color touch screen.** 8 digital inputs, 2 configurable analog and 6 relay outputs for signaling and control. Communications: 485 for ARC sensor network. IP-65 box. RS-232 output for connection to a computer. Possibility of performing PID control loops. GSM, RED, TCP / IP modem connections. Probes: O<sub>2</sub>, CON, VCD and Redox.

Part number **4120824** (For measurement and reading only).

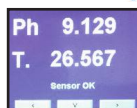
Part number **4120823** (For measurement, reading and control).

HT glass sensor pH 0-14 + T° -10 at 100 °C. Part number **4120801**

ARC HT sensor pH 0-14 + T° -10 at 140 °C. Part number **4120822**

Glass sensor adapter for R-605. Part number **4120802**

Glass sensor adapter for R-620. Part number **4120803**



**Digital thermometer “TC-9226-A”**

Temperature range: -200 °C. to 1370 °C.

Part No. **5903030**

See page. 294



Model “RE-6100”  
100 liters.

### COMMON COMPLEMENTS

**Silicone oil 4 liters.** Temperature up to 300°C. Viscosity 50 mm<sup>2</sup>/s at 25 °C.

Melting point 318 °C. Part No. **1000027**

**Peristaltic dosing pump “Peristaltic PR-2003.”**

For PH stabilisation (acid-base).

Also applicable to dosages in process.

Features: See page. 47. Part No. **4129050**

**Recirculation cryothermostat “CC-505”.**

For adjustable temperatures from -50 °C. to 200 °C.

Part No. **5910062**

**FOR REACTOR R-605:**

**Recirculation thermostat “Ultraterm-TFT-200”.**

For adjustable temperatures from ambient +5 °C. to 200 °C.

Part No. **3000545** See page. 101.

**Recirculation cryothermostat “Frigiterm-TFT-30”.**

For adjustable temperatures from -30 °C. to 100 °C.

Part No. **3000547** See page. 101.

**FOR REACTOR R-620:**

**High power recirculation thermostat “Interheater”**

For adjustable temperatures from ambient +5 °C. up to 90 °C.

Part No. **6001491** See page. 105.

**Water refrigerador and recirculator “Unichiller 015”**

For temperatures from -20°C to +40 °C.

Part No. **5910049**



# Complete molecular distillation "DM-2"

WITH HEATING AND COOLING SYSTEM

NUEVO



## APPLICATIONS

Cannabinoids separation.  
 Thermal separation of chemical compounds sensitive to heat. Organic synthetic material purification.  
 Effective components separation for biological extraction solution. Recycling of industrial waste.  
 Elimination of toxic substances in the food industry. Decolouration of organic compounds and elimination of unusual smell.

## FEATURES

Low operating pressures  
 Short residence time.  
 High evaporation rates.  
 Under incrustation in the evaporator's wall.  
 Magnetic sealed bearing without grease, valves and joints.  
 Perfect for heat-sensitive materials.  
 Operating temperature: up to 200/300°C.  
 Cold operating temperature: -30 °C.  
 Electric requirement: 220V / 50-60Hz.  
 Engine power: 120 W.

## STANDARD EQUIPMENT

1. Jacketed feeding flask with manual feed valve.
2. Stirrer magnetic driving.
3. Glass tank lined with internal condenser.
4. Siphon of dry and cold ice.
5. Heating circulator for jacketed feed container.
6. Heating circulator for coated glass tank. (-30°C.)
7. Heating/ cooling circulator for internal condenser (< 5 pa.)
8. Vacuum pump.
9. Control system.
10. Reception flasks (distilled and residual).

## MODELS

Part No.	Barrel diameter liters	Feeding alimentación (g / hr)	Final Yield liters	Max speed rpm	Supply Voltage	Distillate receiver bottle	Waste receiving the flask	Effective Area
1001962	100	750-1500	3-8	0 a 500	220v/50-60 Hz	2	2	0.15
1001963	150	1500-3000	6-15	0 a 500	220v/50-60 Hz	3	3	0.24

On demand, equipment with other productions / performances is supplied.



## Recirculation thermostat “Ultraterm-TFT-200”

ADJUSTABLE TEMPERATURES  
FROM AMBIENT+5 °C TO 200 °C.

### SAFETY:

STANDARD DIN 12876. SAFETY OVER TEMPERATURE  
THERMOSTAT WITH ADJUSTABLE MANUAL RESET  
LOW LIQUID LEVEL SENSOR PROTECTION.

### FEATURES

Maximum working volume to maintain maximum temperature: 8 litres.  
AISI 304 stainless steel top and lid with an inner tank of AISI 304 stainless steel.  
Complete with a pump for internal and external liquid circulation with inlet and outlet connectors. A cooling coil to maintain ambient temperatures using tap water is also provided.  
A RS-232 interface for print out or computer control comes as standard.  
A drain tap is also fitted.

### MODEL

Part No.	Capacity litres	Control range °C	Stability °C	Height / Width / Depth (usable) cm	Height / Width / Depth (exterior) cm	Pump Pressure / Flowrate H <sub>2</sub> O	Power W	Weight Kg
3000554	8	From amb. +5 to 200 °C	±0.1	15 20 14	36 28 36	150 mbar-12 l/min	2060	9.5

NEW DESIGN

REGULATION SYSTEM B

RS232

USB



## Refrigerated recirculation baths “Frigiterm-TFT-10-S” and “Frigiterm-TFT-30-S”

ADJUSTABLE TEMPERATURE FROM -10 °C TO 100 °C. STABILITY: 0 °C TO 100 °C, ±0,1 °C / -10 °C, ±0.1 °C.  
ADJUSTABLE TEMPERATURE FROM -30 °C TO 100 °C. STABILITY: 0 °C TO 100 °C, ±0,1 °C / -30 °C, ±0.2 °C.  
SET ERROR : ±1 °C. RESOLUTION: 0.1 °C.

### SAFETY:

STANDARD DIN 12876. SAFETY OVER TEMPERATURE  
THERMOSTAT WITH ADJUSTABLE MANUAL RESET.  
LOW LIQUID LEVEL SENSOR PROTECTION.

### FEATURES

Maximum working volume to maintain maximum temperature: 8 litres.  
AISI 304 stainless steel top and lid with an inner tank of AISI 304 stainless steel.  
Complete with a pump for internal and external liquid circulation with inlet and outlet connectors. A drain tap is placed at the side of the unit.  
A hermetically sealed compressor is mounted on anti-vibration mounts.  
A RS-232 interface for connection to a printer or computer.

### MODELS

	Part No.	Capacity litres	Control range °C	Height / Width / Depth (usable) cm	Height / Width / Depth (exterior) cm	Pump Pressure / Flowrate H <sub>2</sub> O	Power W	Compressor power H.P.	Weight Kg
FRIGITERM-10-S	3000552	8	-10 + 100	12 20 14	66 36 46	150 mbar-12 l/min	1150	1/8	28
FRIGITERM-30-S	3000553	8	-30 + 100	12 20 14	66 36 46	150 mbar-12 l/min	1460	3/8	30

NEW DESIGN

REGULATION SYSTEM B

SANS CFC • SIN CFC • CFC FREE

RS232

USB





## Quantitative filter papers

ASH CONTENT LESS THAN 0.01%. CRITICAL GRAVIMETRIES AND ANALYSIS

Filtration	Basis weight g/m <sup>2</sup>	Thickness mm	Ashes %	Type	Units box
Fast	97	0,200	< 0,01	Flat	100
Medium	97	0,200	< 0,01	Flat	100
Slow	97	0,170	< 0,01	Flat	100

Fast: Ø 70: 5301070. Ø 90: 5301090. Ø 110: 5301110. Ø 125: 5301125. Ø 150: 5301150. Ø 180: 5301180.

Medium: Ø 70: 5302070. Ø 90: 5302090. Ø 110: 5302110. Ø 125: 5302125. Ø 150: 5302150. Ø 180: 5302180.

Slow: Ø 70: 5303070. Ø 90: 5303090. Ø 110: 5303110. Ø 125: 5303125. Ø 150: 5303150. Ø 180: 5303180.



## General use qualitative filter papers

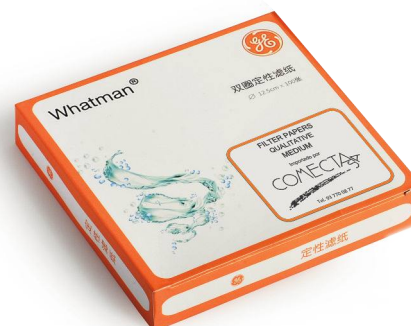
FILTRATIONS FOR ROUTINE ANALYSIS IN ALL KINDS OF LABORATORIES

Filtration	Basis weight g/m <sup>2</sup>	Thickness mm	Ashes %	Type	Units box
Fast	80	0,300	< 0,11	Plano	100
Medium	80	0,150	< 0,11	Plano	100
Slow	80	0,200	< 0,11	Plano	100

Fast: Ø 70: 5304070. Ø 90: 5304090. Ø 110: 5304110. Ø 125: 5304125. Ø 150: 5304150. Ø 180: 5304180.

Medium: Ø 70: 5305070. Ø 90: 5305090. Ø 110: 5305110. Ø 125: 5305125. Ø 150: 5305150. Ø 180: 5305180.

Slow: Ø 70: 5306070. Ø 90: 5306090. Ø 110: 5306110. Ø 125: 5306125. Ø 150: 5306150. Ø 180: 5306180.



## Filter paper reams

PROTECTION AND ABSORPTION IN WORKBENCHES IN ALL KIND OF LABORATORIES

Grade	Basis weight g/m <sup>2</sup>	Thickness mm	Absorption speed* mm/10 min	Moisture resistance kN/m	Units box
1305	73	0.170	75/70	0.290/0.260	500
1510	60	0.130	60/55	0.280/0.230	500

1305: 42 x 52 (cm): 5130502. 32 x 42: 5130501.

1510: 42 x 52(cm): 5151002. 32 x 42: 5151001.



## Absorbent paper with polyethylene

PROTECTION AND ABSORPTION THANKS TO ITS DOUBLE LAYER: ONE OF ABSORBENT PAPER AND THE OTHER OF WATERPROOF POLYETHYLENE

Grade	Basis weight g/m <sup>2</sup>	Thickness mm	Area absorption g water/m <sup>2</sup>
1505	125	0.250	240

1505: 42 x 52 (cm): 5150502. 32 x 42: 5150501. 50 (cm) Width x 50 (meters): 5150503



## Glass microfiber filters without binders

RECOMMENDED IN AIR AND WATER ANALYSIS ACCORDING TO INTERNATIONAL STANDARDS

Grade	Retention $\mu\text{m}$	Basis weight $\text{g/m}^2$	Thickness mm	Retention DOP %	Binders	Units Box
MFV1	1.6	52	0,26	99.998	No	100
MFV3	1.2	52	0,26	99.998	No	100

MFV1: mm  $\emptyset$  47: **5291047**.  $\emptyset$  70: **5291070**.  $\emptyset$  90: **5291090**.  $\emptyset$  110: **5291110**.  $\emptyset$  125: **5291125**.  $\emptyset$  150: **5291150**.

MFV3: mm  $\emptyset$  47: **5293047**.  $\emptyset$  70: **5293070**.  $\emptyset$  90: **5293090**.  $\emptyset$  110: **5293110**.  $\emptyset$  125: **5293125**.  $\emptyset$  150: **5293150**.

## Cellulose extraction cartridges

NOBLE CELLULOSES AND COTTON LINERS TOTALLY FREE FROM IMPURITIES.

FOR REMOVING PAINTINGS, ANIMAL FAT, COSMETICS, VARNISHES, LACQUERS, OIL SEEDS, RESINS AND WOOD FATS, ETC... WALL THICKNESS: BETWEEN 1 AND 2 MM. UNITS PER BOX: 25

Part No.	Interior Dimensions mm $\emptyset$ / L	Part No.	Interior Dimensions mm $\emptyset$ / L	Part No.	Interior Dimensions mm $\emptyset$ / L
<b>5297001</b>	19 x 90	<b>5297005</b>	28 x 100	<b>5297009</b>	33 x 94
<b>5297002</b>	22 x 80	<b>5297006</b>	30 x 80	<b>5297010</b>	33 x 100
<b>5297003</b>	22 x 100	<b>5297007</b>	30 x 100	<b>5297011</b>	35 x 100
<b>5297004</b>	25 x 100	<b>5297008</b>	33 x 80	<b>5297012</b>	43 x 123

## Cellulose Acetate Membrane Filters

LOW PROTEIN ABSORPTION FOR FILTERING DIFFERENT SAMPLES: BIOLOGICAL, AQUEOUS, ALCOHOLS, OILS AND HIDROCARBONS. AVAILABLE IN PORES FROM 0.22 UP TO 5  $\mu\text{m}$  AND IN DIAMETERS FROM 13 UP TO 293 MM.

AVAILABLE ON DEMAND IN  $\emptyset$  13 - 25 - 142 Y 293 MM.

PH COMPATIBILITY: 4-8.

Part No.	Membrane Material	Diameter mm	Pore $\mu\text{m}$	Colour	Surface	Format	Units x box
<b>5297013</b>	Cellulose acetate	47	0.22	White	Flat	Non-Sterile	100
<b>5297014</b>	Cellulose acetate	47	0.45	White	Flat	Non-Sterile	100
<b>5297015</b>	Cellulose acetate	47	0.8	White	Flat	Non-Sterile	100
<b>5297016</b>	Cellulose acetate	47	3.0	White	Flat	Non-Sterile	100
<b>5297017</b>	Cellulose acetate	47	5.0	White	Flat	Non-Sterile	100
<b>5297018</b>	Cellulose acetate	90	0.22	White	Flat	Non-Sterile	100
<b>5297019</b>	Cellulose acetate	90	0.45	White	Flat	Non-Sterile	100
<b>5297020</b>	Cellulose acetate	90	0.8	White	Flat	Non-Sterile	100
<b>5297021</b>	Cellulose acetate	90	3.0	White	Flat	Non-Sterile	100
<b>5297022</b>	Cellulose acetate	90	5.0	White	Flat	Non-Sterile	100

## Glass filtration equipment

### TECHNICAL SPECIFICATIONS

#### Materials:

100% borosilicate glass 3.3 except aluminium clamps.

#### Capacities:

Funnel 300 ml. Filtration flasks 1000 ml.

Plate porosity: Grade 2/3

Sterilization: Autoclave (max. 134°C), dry heat (max. 180°C).

Diameter filters: 47 mm

Output connections to vacuum: Tube 8 - 10 mm. diameter.

Complete equipment. Part No. **5297023**

**Vacuum pumps. See page 48 and 49.**