

 Made in Poland. Established 1990.



# 20<sup>16</sup>/<sub>17</sub> / POL-EKO-APARATURA products



POL-EKO-APARATURA has been present in the Polish market for 26 years.

Highest quality equipment and service we provide ensures your satisfaction. Our wide range of products and professional solutions will suit the most demanding customers.

We remain open to assist in choosing the right product for your needs, as well as to provide you with customized solutions.

We are your partner in lab analysis and technological processes.

Thank you for your confidence.

POL-EKO-APARATURA team.

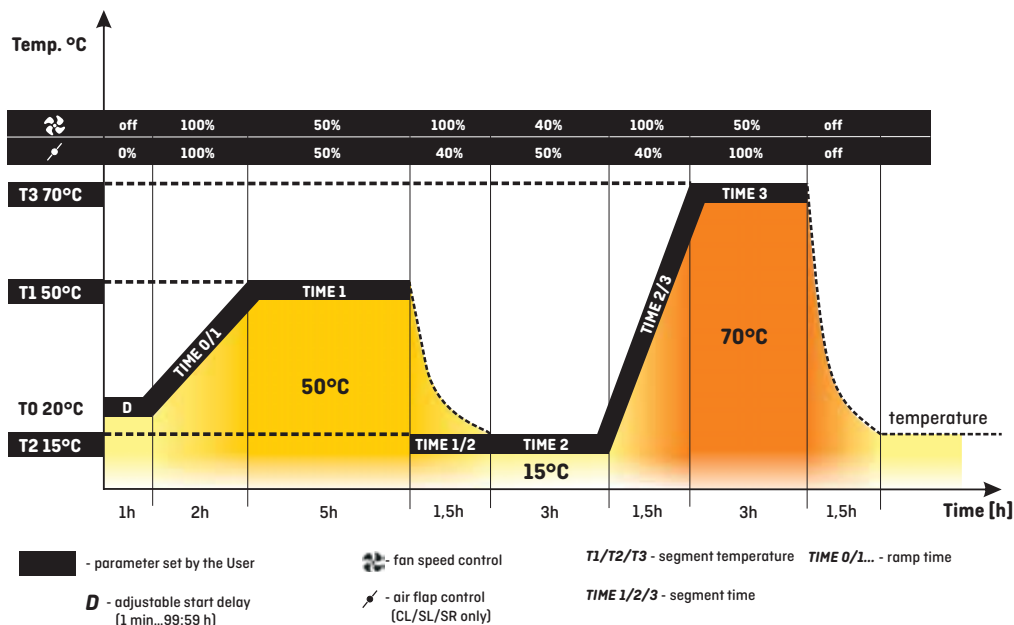


# Drying ovens, incubators, cooled incubators

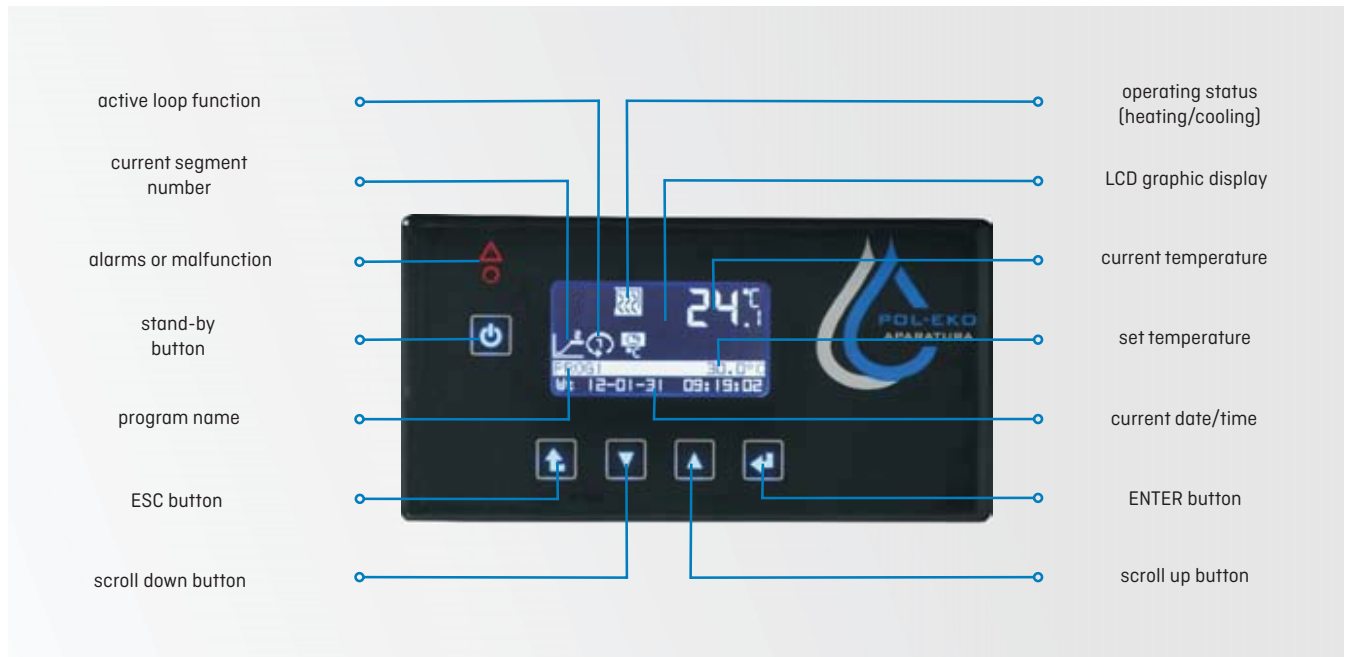
All the units in the STD version are equipped with a PID microprocessor controller with an LCD graphic display and illuminated touch buttons.

## Controller advantages

- six-segment temperature-time profile
- loop function up to 99 times or endless
- 3 user programs memory
- adjustable start delay feature (from 1 min to 99:59 h)
- adjustable hold at set point time for temperature and lighting (for IL/FOT) from 1 min to 100 days, or continuous operating
- adjustable ramps
- overview of set and current parameters while operating
- recording of min, average and max temperature value for each segment
- possibility of temperature calibration by the user
- audible and visual temperature alarm
- operating with temperature priority
- temperature sensor fail alarm
- power failure control system (program continued after restoring power)
- digital timer
- real time clock
- auto-diagnostic function
- internal memory to store up to 2046 data records
- natural (SL/SR/CL) or forced (SL/SR/CL/IL) air convection with fan speed control (for CLW/SLW/SRW 15-115 0 ... 100%, CLW/SLW/SRW 180-1000 and ILW 10 ... 100%)
- automatic fan shut-down after completing the program
- automatic air-flap control (CL/SL/SR)



### Control panel



### Standard features

- temperature range: SL (+5°C above ambient temp. ... +300°C), SR (+5°C above ambient temp. ... +250°C), CL (+5°C above ambient temp. ... +100°C), IL (0°C up to 70°C / optionally -10°C up to 70°C)
- quality control protocol (at +37°C for CL/IL, at +105°C for SL, at +170°C for SR)
- English instruction manual
- available menu languages: Czech, English, Estonian, French, German, Italian, Polish, Portuguese, Russian, Spanish
- temperature protection class 2.0 to DIN 12880
- open door alarm
- wheels in standard for models 750, 1000, ILW 400

RS232 and USB ports for data transfer

access port: Ø30 mm for models 53-1000 or Ø9 mm for models 15-32

wire stainless steel shelves

solid door, internal glass door for CL and IL

door lock



### TOP+ version

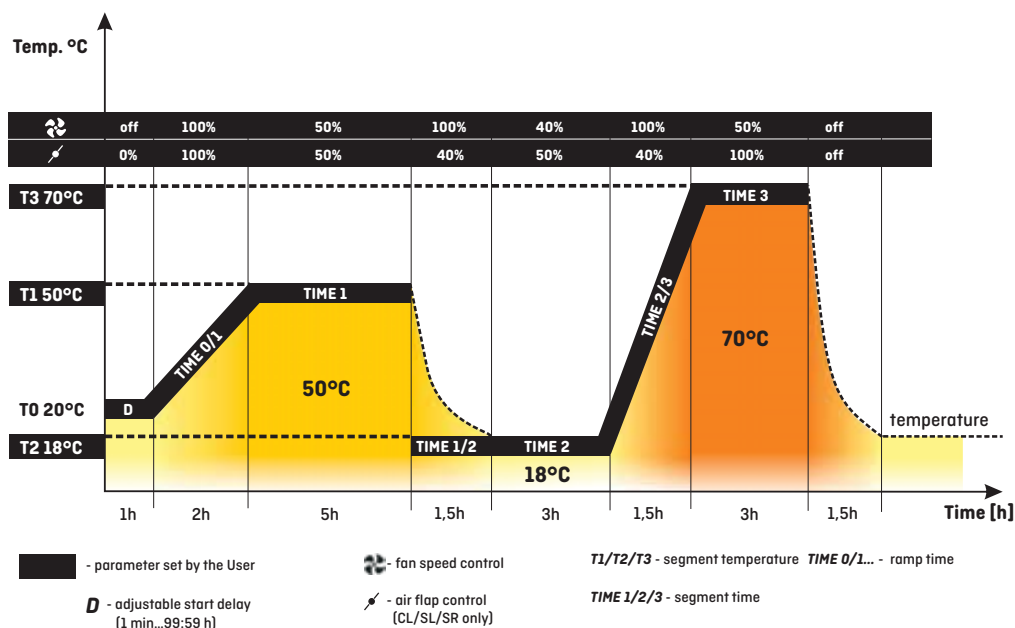
All the units in the TOP+ version are equipped with a PID microprocessor controller with a large (5,7") full colour touch screen, intuitive menu and user friendly software. They can be connected to Ethernet network for remote control from any computer, being one of the greatest advantages.

### Controller advantages

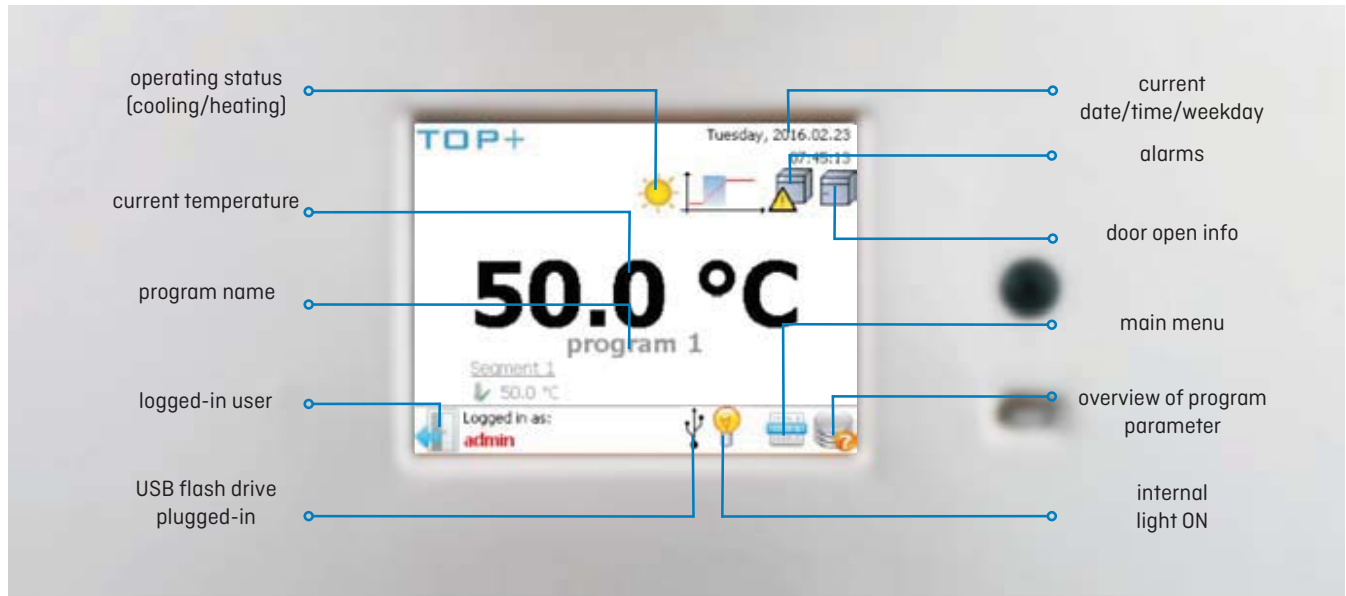
- multi-segment temperature-time profile (up to 100)
- Administrator function to manage User accounts
- adjustable start delay feature (from 1 min to 99:59 h)
- access control via login
- 7 days programming
- loop function up to 99 times or endless
- adjustable hold at set point time for temperature and lighting (for IL/FIT) from 1 min to 999:59 h, or continuous operating
- adjustable ramps
- overview of set and current parameters while operating
- recording of min, average and max temperature value for each segment
- possibility of temperature calibration by the User
- audible and visual temperature alarm
- operating in temperature or time priority mode
- temperature sensor fail alarm
- power failure control system (program continued after restoring power)
- digital timer
- real time clock
- auto-diagnostic function
- natural (SL/CL) or forced (SL/CL/IL) air convection with fan speed control for CLW/SLW 53/115 0...100%; CLW/SLW 180-1000 and ILW 10...100%
- automatic fan shut-down after completing the program
- automatic air-flap control (CL/SL)

### GLP supporting functions

- password protected settings
- 20 user programs memory
- internal memory to store up to 4100 data records for each User, possibility to overview the values on the display or a PC computer in tabular or graphic form
- USB port to allow direct data recording or transfer onto a flash drive
- events registry



### Control panel



### Standard features

- temperature range: SL (+5°C above ambient temp. ... +300°C), CL (+5°C above ambient temp. ...+100°C), IL (0°C up to 100°C / optionally -10°C up to 100°C)
- Ethernet cable
- TOP+ Control software
- USB port to allow direct recording and data transfer onto a flash drive
- quality control protocol (at +37°C for CL/IL, at +105°C for SL)
- English instruction manual
- available menu languages: English, Estonian, French, German, Hungarian, Italian, Latvian, Polish, Portuguese, Romanian, Russian, Spanish
- temperature protection class 3.3 (IL), class 3.1 (CL/SL) to DIN 12880
- open door alarm
- wheels in standard for models 750, 1000

RS232 interface

Ethernet port for remote control

access port: Ø30 mm

wire stainless steel shelves

solid door, internal glass door for CL and IL

door lock



# Drying ovens

## Application

- thermal resistance analysis of building materials
- electronic and electro-technical components
- tests of properties of products subjected to high temperatures
- drying of wires of papermaking machines
- drying of laboratory glass
- general aging and curing
- preheating
- digestion of proteins
- plant tissues drying
- drug metabolism
- paper drying












**Drying ovens** are designed to provide high temperatures up to 300°C.

## Calibration



All thermostatic equipment manufactured by POL-EKO-APARATURA can be provided with Calibration Certificate issued by accredited Measurement Laboratory. Detailed information on accreditation of POL-EKO Laboratorium Pomiarowe is available on website: [www.polekolab.pl](http://www.polekolab.pl).

		SL 15	SL 32	SL 53	SL 115	SL 180	SL 240	SL 400	SL 750	SL 1000
<b>Parameter</b>										
air convection		natural (SLN) / forced (SLW)						forced (SLW)		
chamber capacity <sup>1</sup> [l]		15	32	56	112	180	245	424	749	1005
door type		solid			solid/door with viewing window (option)					
temperature range		+5°C above ambient temperature ...+300°C								
temperature resolution [°C]		every 0,1								
controller		microprocessor with external LCD graphic display								
interior		acid-proof stainless steel to DIN 1.4301								
housing	-	powder coated sheet								
	INOX/G	stainless steel linen finish								
overall dims <sup>2</sup> [mm]	A width	510	590	590	650	650	810	1010	1260	1260
	B height	550	630	700	850	1030	1200	1430	1600	2000
	C depth	440	500	600	700	760	760	750	850	850
internal dims [mm]	D width	320	400	400	460	470	600	800	1040	1040
	E height	230	320	390	540	720	800	1040	1200	1610
	F depth	200	250	360	450	560	510	510	600	600
max shelf workload <sup>5</sup> [kg]	-	10	10	25	25	25	25	25	-	-
	PW <sup>3</sup> version	-	-	50	50	50	100	100	100	100
max unit workload [kg]	-	20	30	40	60	75	90	120	140	-
	W <sup>4</sup> version	-	-	80	120	120	300	300	300	300
nominal power [W]		600	1100	1600	2400	2400	3000	3900	5400	5400
weight [kg]		27	35	50	65	94	126	174	260	330
over temperature protection		class 2.0 according to DIN 12880 / class 3.1 (option) / 3.1 in TOP+								
power supply*		230 V 50 Hz						400 3/N		
shelves fitted/max		1/2	1/3	2/5	2/7	3/9	3/10	3/14	5/16	6/22
warranty		24 months								
manufacturer		POL-EKO-APARATURA								

all the above technical data refer to standard units (without optional accessories)

\* - 230V 60Hz, 115V 60Hz also available

1 - working capacity of chamber can be smaller

2 - depth doesn't include 50 mm of power cable

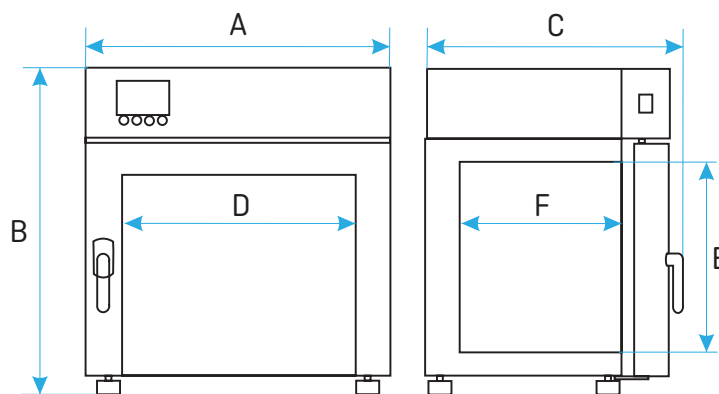
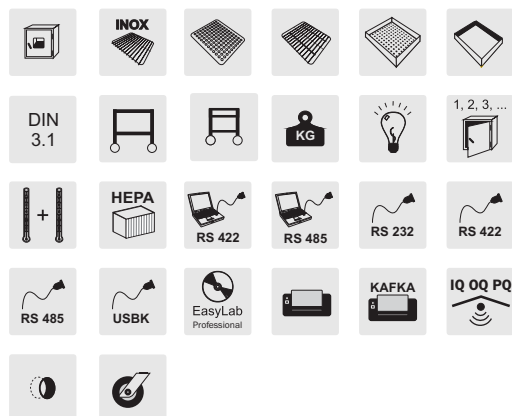
3 - reinforced shelf

4 - reinforced version

5 - on a uniformly loaded surface

All data on temperature stability and uniformity available on [www.pol-eko.eu](http://www.pol-eko.eu).

Options and accessories (icon description see pages 80-81)





## Drying ovens with nitrogen blow

The European norm ISO 589:2003 Hard Coal - Determination of Total Moisture ensures samples are dried between 105°C - 110°C in a drying oven featuring nitrogen blow possibility with flow equal to about 15x capacity of the oven per hour.

### Available models

- SLWN1 - laboratory oven with dry nitrogen blow system of the chamber; the kit includes connections, valves and a laboratory rotameter (which can be calibrated)
- SLWN2 - laboratory oven with dry nitrogen blow system of the chamber; the kit includes connections, valves and a tech rotameter (which cannot be calibrated)

The nitrogen bottle is not supplied.

	SLWN1 53 SLWN2 53	SLWN1 115 SLWN2 115	SLWN1 240 SLWN2 240
chamber capacity <sup>1</sup> [l]	56	112	245

1 - working capacity of chamber can be smaller

For dimensions see page 52 (models SLW 53, 115, 240)



### Calibration

- Calibration in air in 9 points (corners + geometrical center) of the chamber at 1 selected by the Customer temperature in accredited laboratory. Calibration is confirmed by 'Calibration certificate'.
- Calibration in nitrogen in 9 points (corners + geometrical center) of the chamber at 1 selected by the Customer temperature in accredited laboratory. Calibration is confirmed by 'Calibration certificate'.
- Calibration of laboratory rotameter in 3 points temperature in accredited laboratory. Calibration is confirmed by 'Calibration certificate'.

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**DISTRIBUIDOR EXCLUSIVO EN ESPAÑA  
DE LA MARCA:**

## 20<sup>16</sup><sub>17</sub>

### **POL-EKO-APARATURA**

*manufacturer of controlled environment  
equipment for laboratory analysis  
and technological processes,  
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KNICK, THERMO SCIENTIFIC, WTW.*

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