



# 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.



# Laboratory refrigerators

## Application

- storage of water and sewage samples, piezometer leachate
- storage of AAS, GC or HPLC calibration standards
- storage of reagents
- chemical storage
- storage of medicines and vaccines



**Laboratory refrigerators** are equipped with a cooling system and can provide a stable temperature between 0°C ... +15°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).

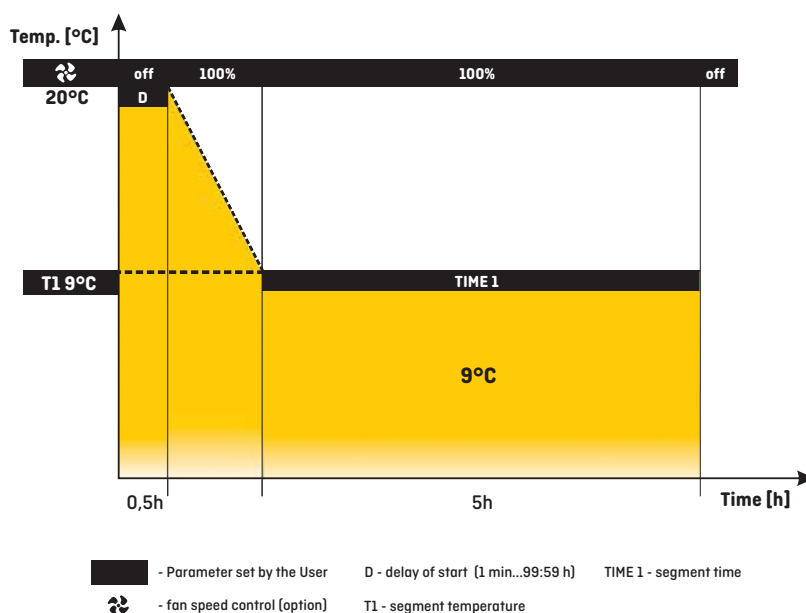


The **BASIC, COMFORT, PREMIUM** models are equipped with a PID microprocessor controller with an LCD graphic display and illuminated touch buttons.

#### Controller advantages

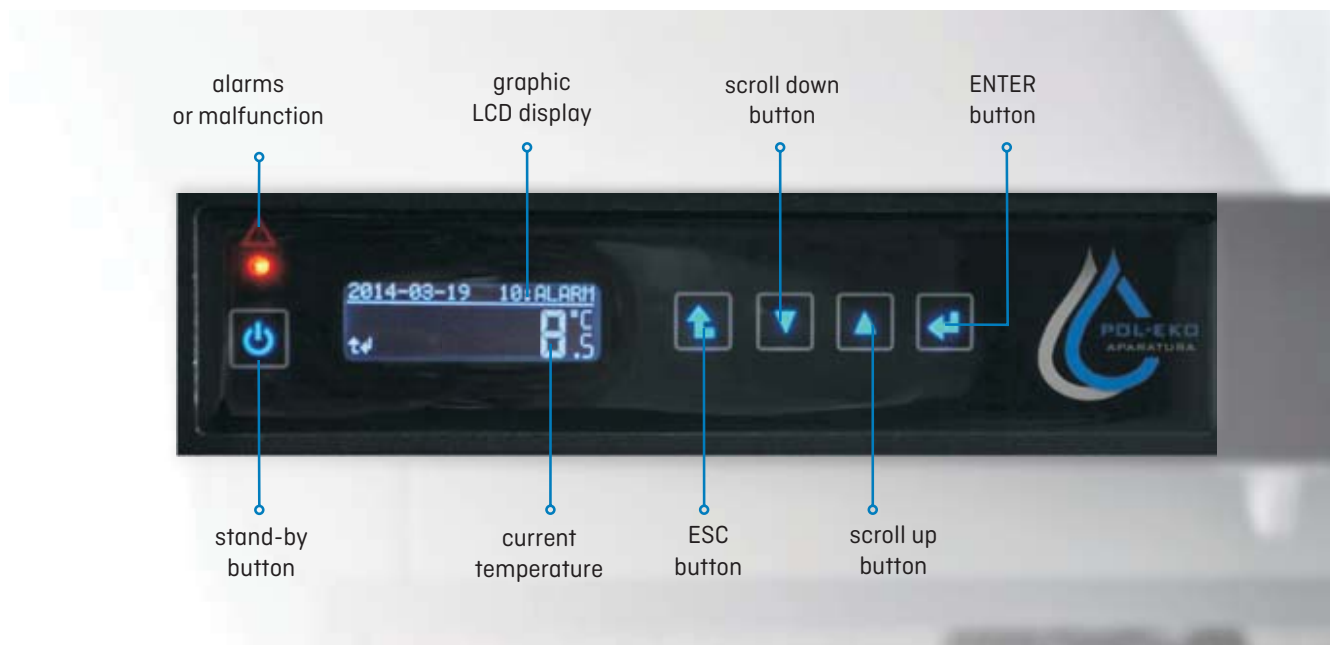
- temperature control
- adjustable start delay feature (1 min...99:59 h)
- adjustable hold at set point time for temperature from 1 min to 31 days or continuous operating
- operating with temperature priority mode
- overview of set and current parameters while operating
- recording of min, average and max temperature value for each segment
- operating with temperature priority mode
- defrosting function
- audible and visual temperature alarm
- temperature sensor fail alarm
- power failure control system (program continued after restoring power)
- real-time clock
- auto-diagnostic function
- internal memory to store up to 2046 data records
- forced air convection with optional fan speed control (50-100%)
- automatic fan shut-down after completing the program

Detailed description of parameters on page 82.





## Control panel



## Standard features:

- temperature range 0...+15°C
- quality control protocol (at +4°C)
- operation manual in English
- available menu languages: Czech, English, Estonian, French, German, Italian, Latvian, Polish, Portuguese, Russian, Spanish
- over temperature protection 1.0 class for BASIC and COMFORT models and 2.0 for PREMIUM models according to DIN 12880
- open door alarm
- wheels in standard for models CHL 1200 and 1450

RS 232 and USB ports for data transfer

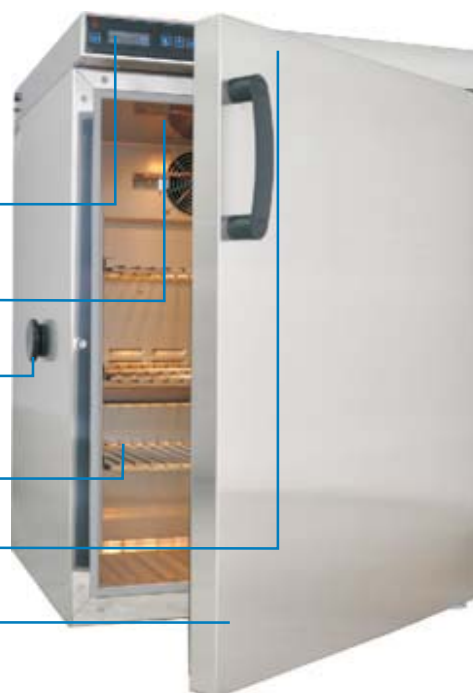
internal LED light

access port: (Ø 30 mm)

wire shelves with slides set for BASIC and stainless steel  
wire shelves for COMFORT and PREMIUM models

door lock

solid door



### PREMIUM TOP+ version

All the units in 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

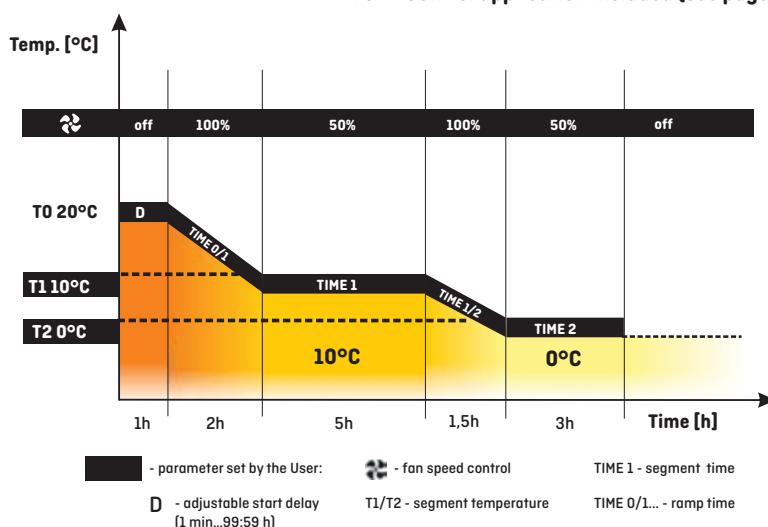
- multi-segment temperature-time profile (up to 100)
- loop function up to 99 times or endless
- adjustable start delay feature (from 1 min to 99:59 h or date/time)
- Administrator function to manage User accounts
- adjustable hold at set point time for temperature from 1 min to 999:59 h or continuous operating
- access control via login
- 7-days programming
- temperature calibration
- 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
- defrosting function
- temperature sensor fail alarm
- power failure control system (program continued after restoring power)
- digital timer
- real-time clock
- auto-diagnostic function
- forced air convection with fan speed control (50-100%)
- automatic fan shut-down after completing the program

Detailed description of parameters on page 82.

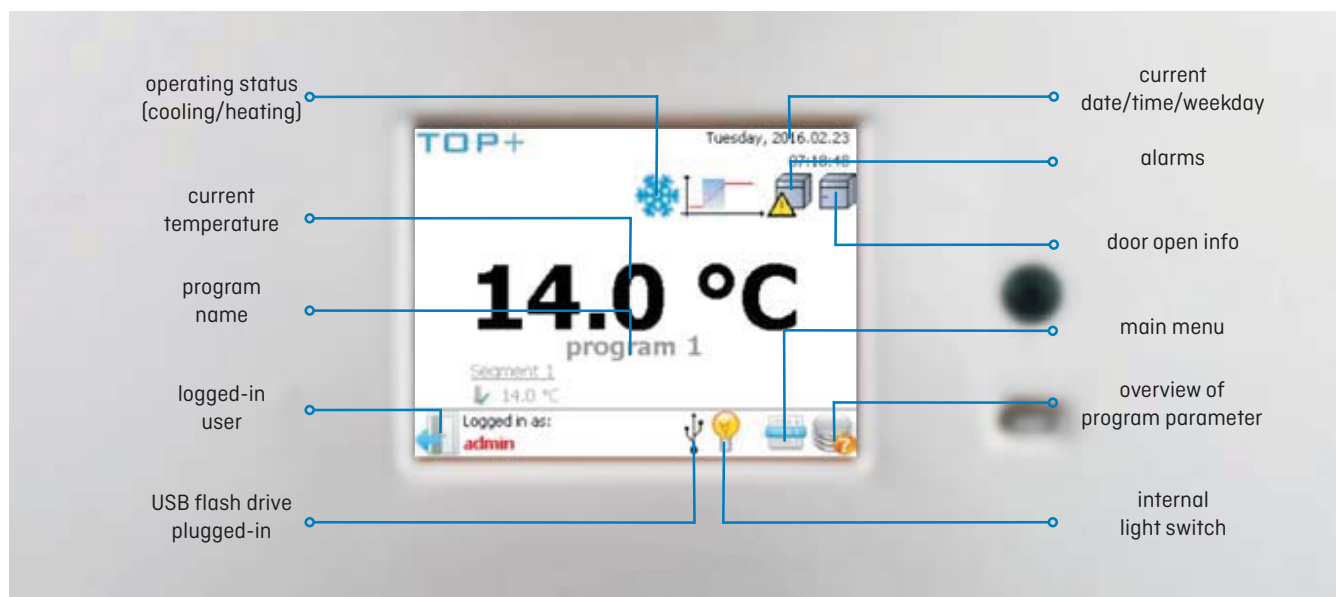
### GLP supporting functions

- 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 into a flash drive
- events registry

TOP+ Control application included (see page 68).



## Control panel



## Standard features

- temperature range 0...+15°C
- Ethernet cable
- TOP+ Control software
- quality control protocol (at +4°C)
- English instruction manual
- available menu languages: English, Estonian, French, German, Hungarian, Italian, Latvian, Polish, Portuguese, Romanian, Russian, Spanish
- temperature protection 3.2 class to DIN 12880
- open door alarm
- wheels in standard for models CHL 1200 and 1450

door lock

USB port to allow direct recording and data transfer onto a flash drive

RS 232 interface and LAN port

internal LED light

access port: Ø30 mm

stainless steel wire shelves

solid door









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

8 - two columns with 3 shelves each

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



		CHL 1/1	CHL 1/1/1	CHL 2/2	CHL 2/3	CHL 2/4	CHL 3/3
Parameter							
air convection		forced					
chamber capacity [l]		70/70	70/70/70	150/150	150/200	150/250	200/200
working capacity [l]		55/55	55/55/55	122/122	122/163	122/203	163/163
door type		solid / glass or double <sup>1</sup> (option)					
temperature range [°C]		0...+15					
temperature resolution [°C]		every 0,1					
controller		microprocessor with external LCD graphic display					
interior	BASIC	aluminum					
	COMF	stainless steel to DIN 1.4016					
	COMF/S	stainless steel to DIN 1.4016					
	PREM (TOP+)	stainless steel to DIN 1.4301					
	PREM/S (TOP+)	stainless steel to DIN 1.4301					
housing	BASIC	powder coated sheet					
	COMF	powder coated sheet					
	COMF/S	polished stainless steel					
	PREM (TOP+)	powder coated sheet					
	PREM/S (TOP+)	polished stainless steel					
overall dims <sup>2</sup> [mm]	A width	570	570	620	620	620	620
	B height	1170	1740	1680	1880	2080	2080
	C depth	680	680	650	650	650	650
internal dims <sup>3</sup> [mm]	D width	430	480	480	480	480	480
	D' width	470	520	520	520/520	520/520	520
	E height	430	430	660	660/860	660/1060	860
	F depth	300	420	420	420	420	420
	F' depth	360	480	480	480/480	480/480	480
	G depth	-	320	320	320	320	320
	H height	-	440	640	840	1050	1440
	I height	-	-	-	-	-	-
max shelf workload <sup>4</sup> [kg]	-	10	10	10	10	10	10
	Pw <sup>5</sup> version	on request					
max unit workload [kg]	-	20	20	30	30/40	30/50	40
	W <sup>6</sup> version	on request					
nominal power [W]		320	480	350	350	350	350
weight <sup>7</sup> [kg]		65	98	109	114	124	119
over temperature protection		class 1.0 to DIN 12880 / class 3.2 (option) / class 3.2 in PREM TOP+					
power supply*		230 V 50 Hz					
shelves fitted/max		see table for single chamber models					
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 - additional internal glass door

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

3 - dims of units with double door can be smaller

4 - on uniformly loaded surface

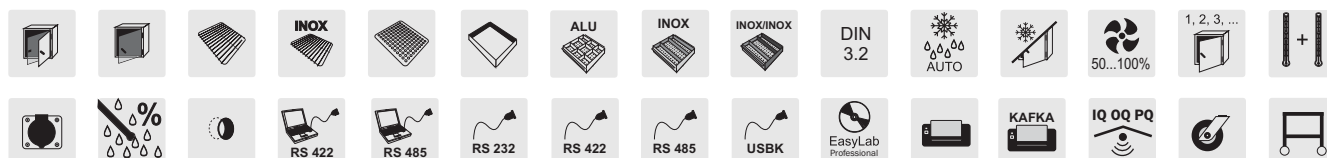
5 - reinforced shelf

6 - reinforced version

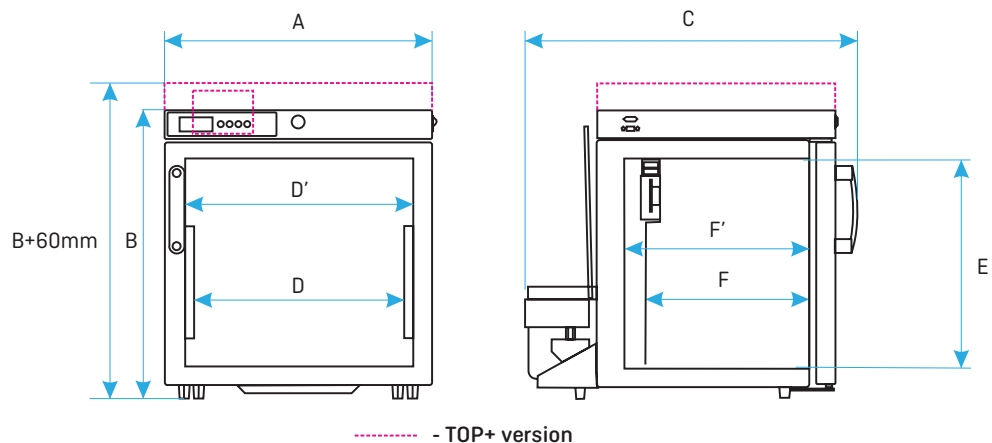
7 - for units in BASIC version with solid door

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)

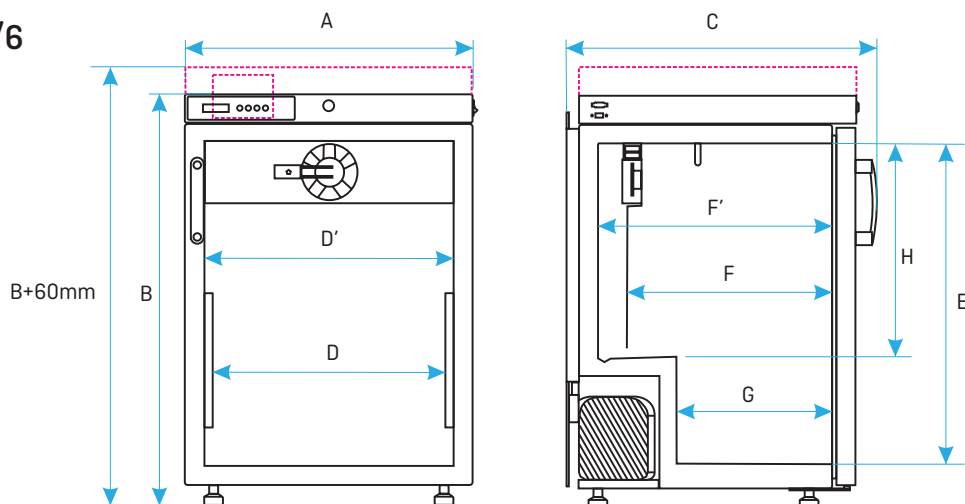


CHL 1



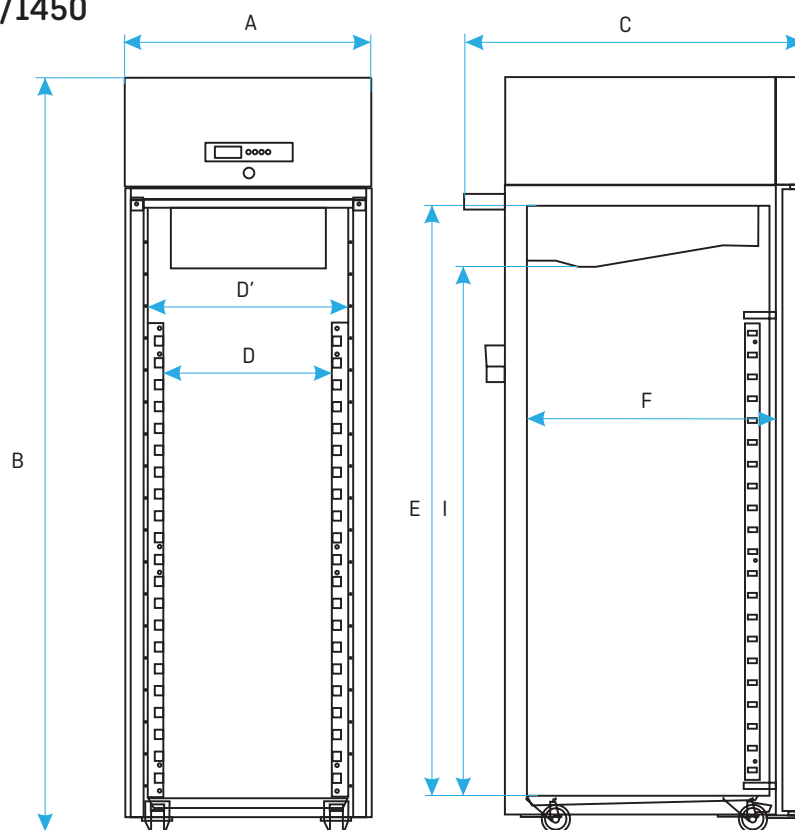
- TOP+ version

CHL 2/3/4/5/6



- TOP+ version

CHL 500/700/1200/1450



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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,  
distributor in Poland of:  
KNICK, THERMO SCIENTIFIC, WTW.*

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