

Drying ovens, incubators, cooled incubators

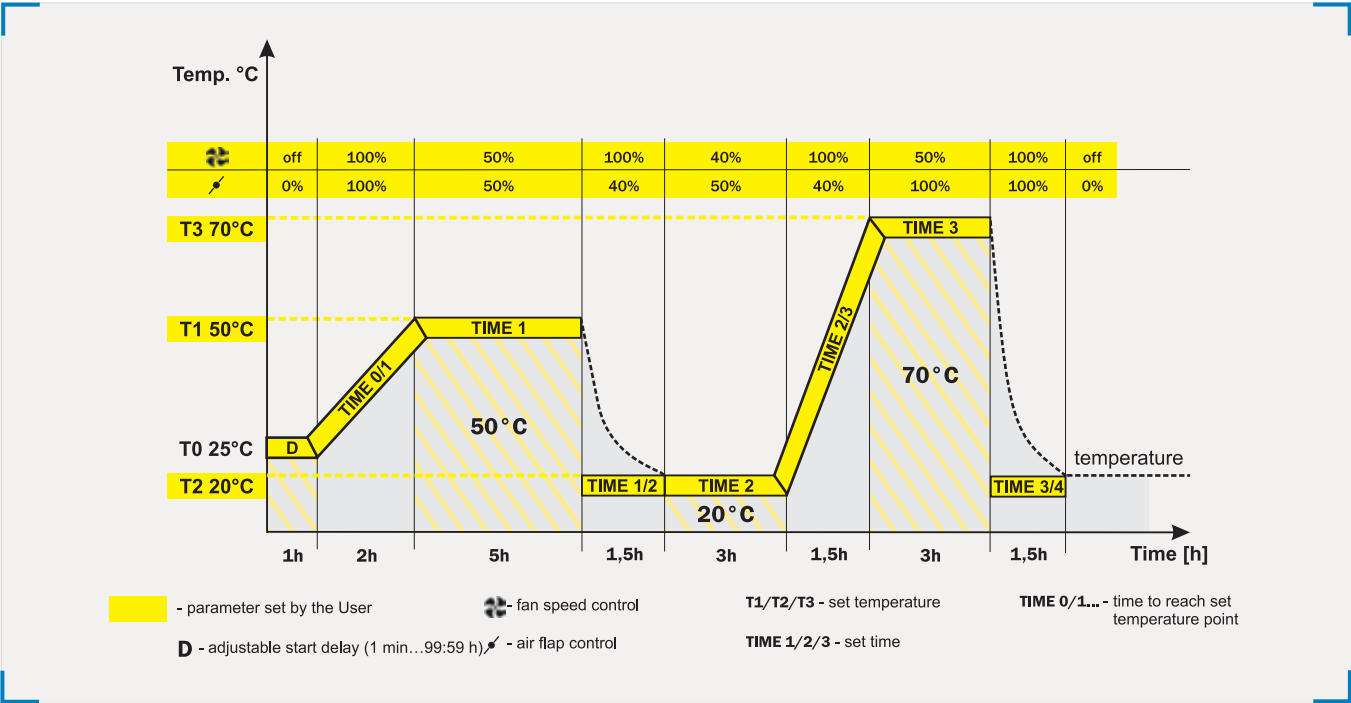
STD version

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

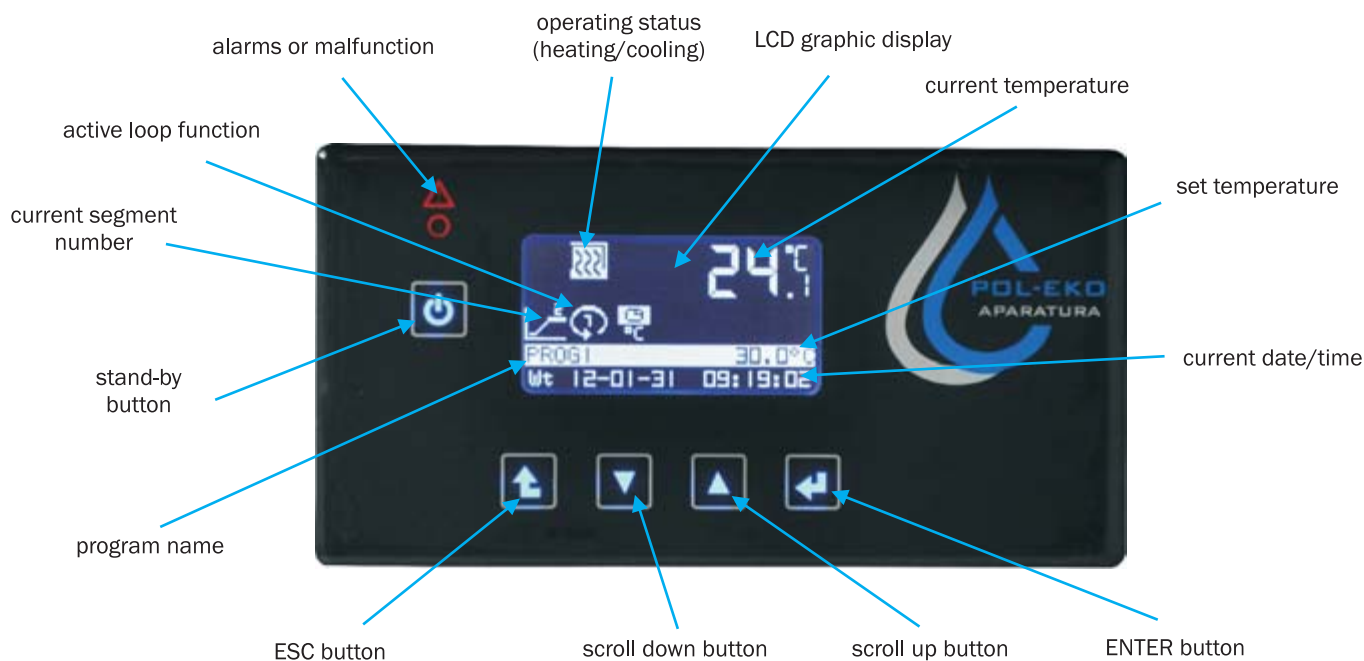
Controller advantages

- six-segment temperature-time profile
- 3 user programs memory
- loop function up to 99 times or endless
- 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 31 days / 1 min to 999 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 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
- automatic fan shut-down after completing the program
- automatic air-flap control (CL/SL)
- natural (SL/CL) or forced (SL/CL/IL) air convection with fan speed control

Detailed description of parameters on page 56.

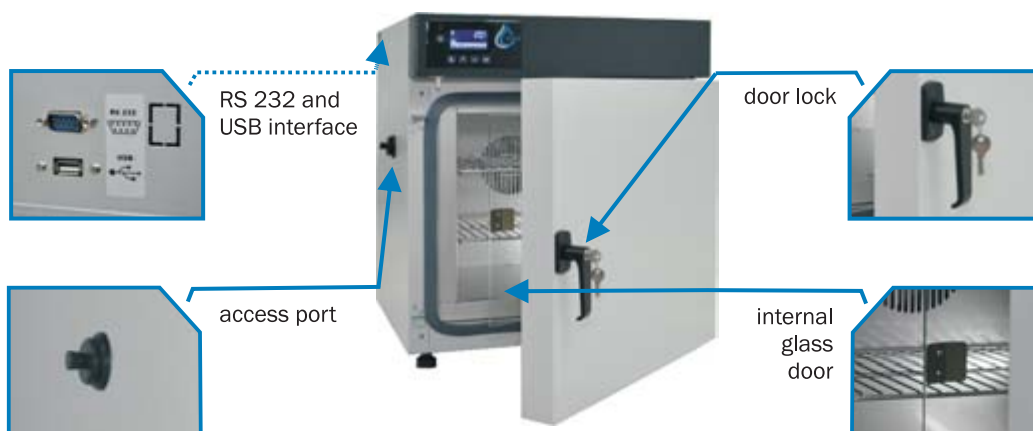


Control Panel



Standard features

- solid door
- internal glass door for CL and IL
- temperature range: SL (+5°C above ambient temp. ... 300°C), CL (+5°C above ambient temp. ... +100°C), IL (0°C up to 70°C / optionally -10°C up to 70°C)
- RS232 and USB interface allow to download relevant program data with the free EasyLab Basic software available on the website or the EasyLab Professional software (see page 68); cables to be ordered separately (RSK or USBK option)
- wire stainless steel shelves
- quality control protocol
- English instruction manual
- available menu languages: Czech, English, Estonian, French, German, Italian, Polish, Portuguese, Russian, Spanish
- temperature protection class 2.0 to DIN 12880
- door lock
- open door alarm
- access port: Ø30 mm for models 53-1000 or Ø9 mm for models 15-32
- wheels in standard for models 750-1000



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.

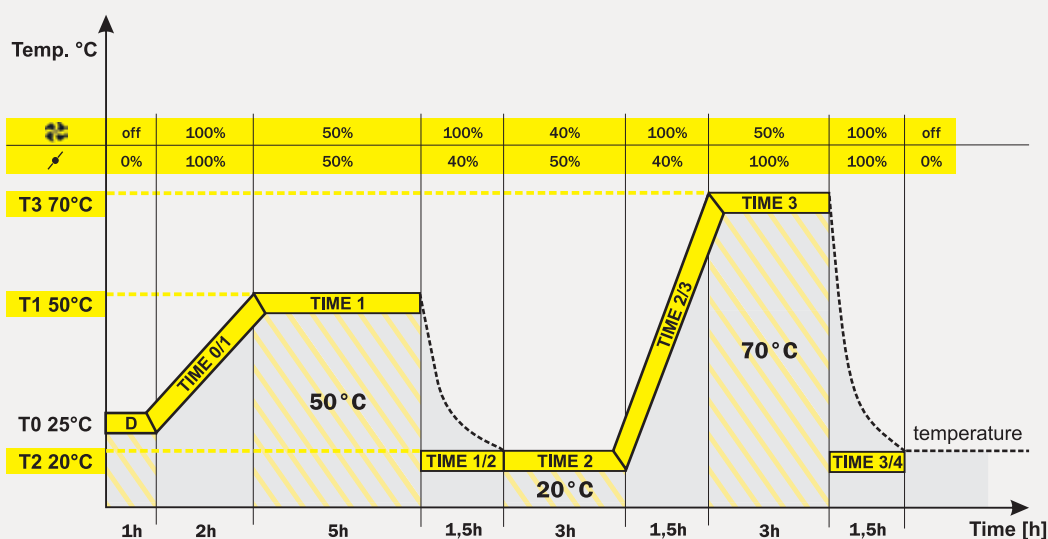
Controller advantages

- Administrator function to manage User accounts
- access control via login
- 7 days programming
- 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)
- adjustable hold at set point time for temperature and lighting (for IL/FOT) from 1 min to 31 days / 1 min to 999h, 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
- defrosting function (for IL)
- temperature sensor fail alarm
- power failure control system (program continued after restoring power)
- digital timer
- real time clock
- auto-diagnostic function
- automatic fan shut-down after completing the program
- automatic air-flap control (CL/SL)

Detailed description of parameters on page 56.

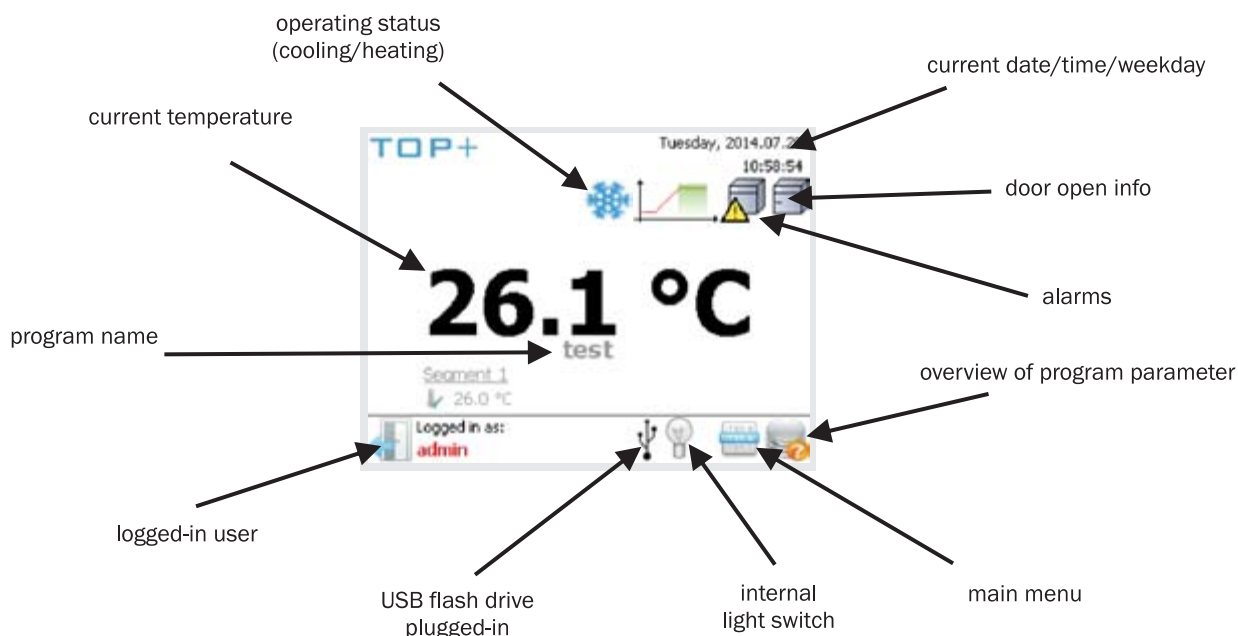
GLP supporting functions:

- 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
- TOP+ control software (see page 69)



 - parameter set by the User
 - fan speed control
 T1/T2/T3 - set temperature
 TIME 0/1... - time to reach set temperature point
 D - adjustable start delay (1 min...99:59 h)
 - air flap control
 TIME 1/2/3 - time

Control panel



Standard features

- solid door
- internal glass door for CL and IL
- 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)
- RS232 interface, USB port to allow direct recording and data transfer onto a flash drive; data can also be downloaded with the free TOP+ Control software (see page 69) or the EasyLab Professional software (see page 68); cables to be ordered separately (RSK or USBK option)
- Ethernet port for remote control, Ethernet cable
- TOP+ Control software
- wire stainless steel shelves
- quality control protocol
- 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
- door lock
- open door alarm
- access port: Ø30 mm



Laboratory Incubators

Application

- incubation of samples for microbiological determinations
- analysis of thermal resistance of samples subjected to higher temperatures
- antibodies tests
- bacteria tests
- crystallization observations
- cultivation of thermophilic microorganisms
- pharma stability tests
- food industry denaturalizing tests

Laboratory incubators are ideal for incubation of samples at temperatures above ambient up to +100°C.









+5°C above ambient temp... +100 °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.

Model		CL 15		CL 32		CL 53		CL 115		CL 240		CL 400		CL 750		CL 1000	
																	
Parametr		natural (CLN) / forced (CLW)										forced (CLW)					
air convection																	
chamber capacity ¹ [l]		15		32		56		112		245		424		749		1005	
door type		solid				solid/door with viewing window (option)											
temperature range		+5 °C above ambient temperature ...+100 °C															
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 ² [mm]	width	515		595		595		655		815		1015		1260		1260	
	height	550		630		700		845		1130		1375		1590		2000	
	depth	440		495		600		700		760		760		865		865	
internal dims [mm]	width	320		400		395		460		600		800		1040		1040	
	height	240		320		395		540		800		1040		1200		1610	
	depth	180		240		360		450		510		510		600		600	
max shelf workload [kg]	-	10		10		10		10		10		10		-		-	
	PW ³ version	-		-		50		50		100		100		100		100	
max unit workload [kg]	-	20		30		40		60		90		120		140		-	
	W ⁴ version	-		-		80		120		300		300		300		300	
nominal power [W]		300		300		400		400		800		1200		1800		1800	
weight [kg]		27		35		50		65		126		174		260		330	
temperature resolution [°C]		every 0,1															
temperature fluctuation ⁵ at +37 °C [°C]	CLN	±0,1		±0,1		±0,1		±0,1		±0,1		-		-		-	
	CLW	±0,1		±0,1		±0,1		±0,1		±0,1		±0,2		±0,2		±0,2	
temperature variation ⁶ at +37 °C [°C]	CLN	±0,3		±0,3		±0,6		±0,9		±1,0		-		-		-	
	CLW	±0,2		±0,2		±0,3		±0,3		±0,5		±0,5		±0,5		±0,6	
over temperature protection		class 2.0 according to DIN 12880 / class 3.1 (option) / 3.1 in TOP+															
voltage*		230V 50Hz															
shelves fitted		1		1		2		2		3		3		5		6	
warranty		24 months															
manufacturer		POL-EKO-APARATURA															

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

1 - working capacity of chamber can be smaller

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

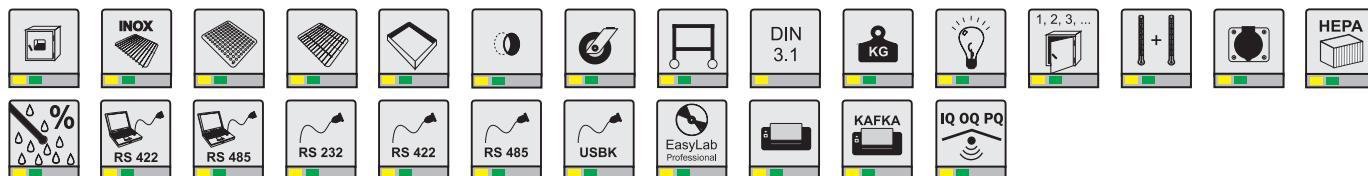
3 - reinforced shelf

4 - reinforced version

5 - fluctuation measured in centre of the chamber

6 - in space

Options and accesories (icon description see page 55)



■ STD

■ TOP+

Options and accessories	CL		Order number
	STD	TOP+	
internal glass door ¹	S	S	*/C
external glass door ^{1,8}			*/A
door with viewing window ^{4,7}	•	•	*/A
internal socket ^{1,5}	•	•	GNZ
internal lighting ^{4,5}	•	•	OWW/OWW LED
wire shelf ^{1,3}			*/P
stainless steel wire shelf ^{1,9}	•	•	*/P INOX
perforated shelf ¹	•	•	*/PP
reinforced shelf	•	•	*/PW
extended temperature range to +70 °C ¹			ST/70
reinforced version	•	•	*/W
low temperature version ^{1,10}			*/T
photoperiodic system - FOT ¹			*/FOT
phytotron system - FIT ¹¹			*/FIT
automatic defrosting function			*PLUS
over temperature protection system to DIN 12880 ¹	3.1	S (3.1)	*/**
stainless steel cuvettes	•	•	KUW GN */*
aluminum drawer with powder coated slides			*/SWP ALU
stainless steel drawer with powder coated slides			*/SWP INOX
stainless steel drawer with stainless steel slides			*/SWPN INOX
humidity measurement ⁵	•	•	PHR
door openings counter ¹	•	•	LOD
fan speed control	S	S	ST/CHL WENT
additional Pt 100 temperature sensor	•	•	PT100
HEPA - fresh air filter	•	•	HEPA
RS 422 interface (instead of RS 232) ¹	•	•	RS422
RS 485 interface (instead of RS 232) ¹	•	•	RS485
wheels	•	•	QLK*
table with wheels ²	•	•	*/S, */INOX
RS 232 cable ¹	•	•	RSK
RS 422 cable ¹	•	•	RSK/422
RS 485 cable ¹	•	•	RSK/485
USB cable ¹	•		USBK
EasyLab Professional software	•	•	EasyLab Profess.
dot printer ¹	•	•	EPSON
thermal printer ¹	•	•	KAFKA
chamber calibration ¹	•	•	BRT/L
IQ, OQ, PQ qualification ¹	•	•	IQ/OQ/PQ
container for deionized water			KK/Z
container for waste water			KK/K
water level sensor			KK/CP
FIT panels independent control ¹¹			FIT/R3
magnetic door lock ¹²			*/ZKM
chart recorder ¹²			*/RK

* - model (e.g. ST1, IL 53)

** - over temperature protection system (e.g. 3.1)

1 - for double chamber units, the option available for both chambers separately

2 - unavailable for 400, 500, 700, 750, 1200, 1000 and 350/350 models, ST/CHL 4 and 5

3 - only for BASIC models

4 - in case of SL range, maximum temperature is reduced to +250°C

option unavailable for CL/SL 15/32

5 - in case of CL/IL in TOP+ version, maximum temperature is reduced to +70°C

6 - models BASIC, COMFORT and PREMIUM

7 - for KK 115, 240, 400, 750

8 - for KK 500, 700, 1200, 1450

9 - for ZLN 85

10 - for CHL 500, 700, 1200, 1450, 350/350

11 - thermostatic cabinets ST 500, 700, 1200, 1450

12 - for ST/CHL 500, 700, 1200, 1450

s - standard equipment

• - available option