

Incubators, cooled incubators, drying ovens, sterilizers, climatic chambers

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Laboratory incubators (**CL**) and drying ovens (**SL**) are available in 3 versions: **ECO**, **STD** and **TOP+**, cooled incubators (**IL**) and climatic chambers (**KK**) in **STD** and **TOP+** versions, and sterilizers (**SR**) in **STD** version only.

ECO (CL/SL 15,32)



ECO, STD



TOP+



displays



fan



stainless steel interior



CLW 53 STD

STD - standard version

Equipment available in STD version

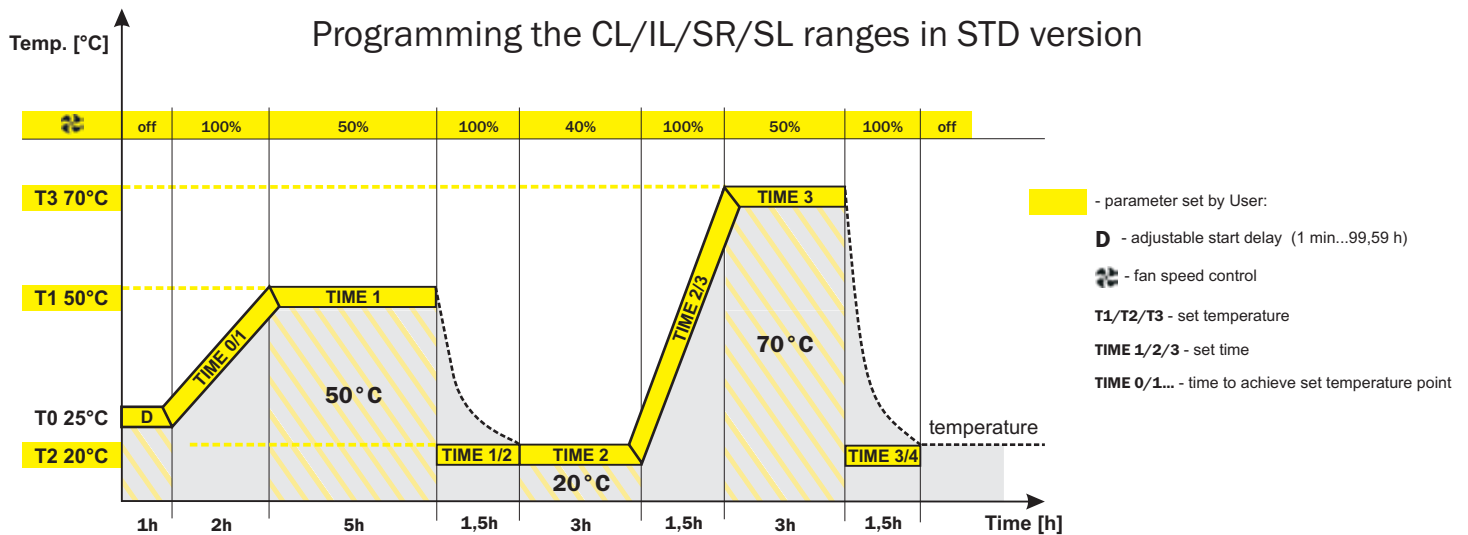
- Incubators (CL 53-1000)
- Cooled incubators (IL)
- Drying ovens (SL 53-1000)
- Sterilizers (SR)
- Climatic chambers (KK)

STD-standard version

- extended programming possibilities
- wide range of optional equipment
- affordable price

Program possibilities

- six segment temperature-time profile
- program priority: temperature for CL/IL/SL/SR and time for KK
- 3 user programs memory
- cycle run of the program
- adjustable heating up/cooling down system
- adjustable start delay feature (from 1 min to 99,59 h)
- adjustable hold at set point (from 1 min to 999 h), or continuous operating (temperature; humidity in KK; light with FOT and FIT options)
- overview of parameters during operating time
- recording min, average and max temperature (and humidity in KK) value for each segment
- over temperature (and humidity in KK) sound alarm
- fan speed regulation (for instruments with forced air convection)



Standard equipment

- stainless steel interior
- housing, depending on model: powder coated sheet, stainless steel linen finish (INOX/G) or polished (INOX/S)
- solid door
- forced or natural air convection (depending on model)
- automatic fan shut down after completing the program
- manual air-flap control, adjustable (CL/SL)
- automatic air-flap control in SR
- LCD time and temperature display
- microprocessor time, temperature (and humidity in KK; light with FIT option) control
- temperature (and humidity in KK) sensor fail alarm
- power failure control system
- real time clock
- sound alarm
- RS 232 interface
- self-check function (auto control)
- automatic defrosting in KK range
- manufacturer's test certificate
- operation manual in English and English menu (other languages on request)
- stainless steel wire shelves (2-6 pieces, depending on model) with slides set
- over temperature protection according to DIN 12880:
 - 1.0 class in CL/IL/SL/SR/KK;
 - 2.0 class in CL/IL/SL/SR;
 - 3.3 class in KK

TOP+ - professional version

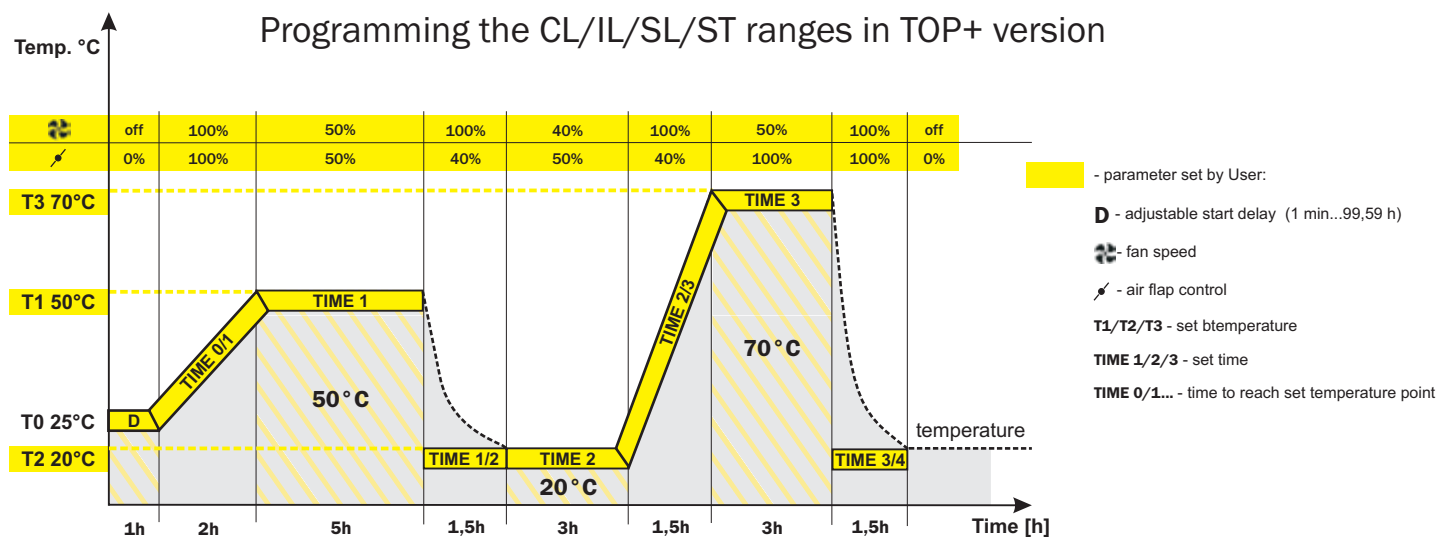
Equipment available in TOP+ version

- Incubators (CL 53-1000)
- Cooled incubators (IL)
- Drying ovens (SL 53-1000)
- Climatic chambers (KK)
- Thermostatic cabinets (ST)

TOP+ - professional version

World's first full colour touch screen thermostatic equipment with Ethernet network connection!

To meet the expectations of the most demanding customers, POL-EKO-APARATURA has introduced a new professional range of ovens, incubators, cooled incubators and climatic chambers called "TOP+". First in the market to feature Ethernet network connection which allows to connect several units and program, monitor or record their parameters on any computer inside a laboratory or remotely via internet. Equipped with a full colour, transparent 5.7" LCD touch screen, easy-to-use intuitive software, USB slot for data transfer make the operating comfortable. The large size of the display enables the user to view the unit's current parameters and program stage with only one touch of the screen.



Standard equipment

- stainless steel interior
- housing, depending on model: powder coated sheet, stainless steel linen finish (**INOX/G**) or polished (**INOX/S**)
- solid door
- forced or natural air convection (depending on model)
- automatic fan shut down after completing the program
- automatic air-flap control, adjustable (CL/SL)
- full colour, transparent 5.7" LCD touch screen
- microprocessor time, temperature (and humidity in KK; light with FIT option)
- temperature (and humidity in KK) sensor fail alarm
- power failure control system
- real time clock
- sound alarm
- USB slot
- RS 232 interface
- self-check function (auto control)
- automatic defrosting in KK range
- manufacturer's test certificate
- operation manual in English and English menu (other languages on request)
- stainless steel wire shelves (2-6 pieces, depending on model) with slides set
- over temperature protection according to DIN 12880: 1.0 class in CL/IL/SL/KK; 3.1 class in CL/SL; 3.3 class in IL/KK
- Ethernet connection
- TOP+ Control software, temperature (and humidity in KK, light with FIT option) control and monitoring via PC

TOP+ - professional version

Advanced program possibilities of the “TOP+” range:

- administrator function that allows to manage user accounts
- access control via login
- nine segment temperature-time profile or 7 days programming
- automatic air-flap control (each 10% regulation)
- cycle run of the program
- adjustable heating up / cooling down system
- adjustable start delay feature (from 1 min to 99,59 h)
- adjustable hold at set point (from 1 min to 999 h), or continuous operating (temperature; humidity in KK; light with FOT and FIT options)
- overview of parameters during operating time
- recording min, average and max temperature (and humidity in KK) value for each segment
- over temperature (and humidity in KK) sound alarm
- fan speed regulation (for instruments with forced air convection)



5.7" LCD touch screen panel

GLP supporting functions:

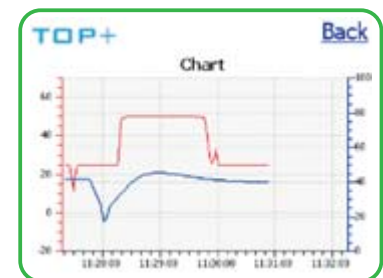
- password protected settings
- 20 user programs memory
- measurement memory with possibility of displaying the values in tabular or graphic form
- measurement data saving on external memory through the USB port



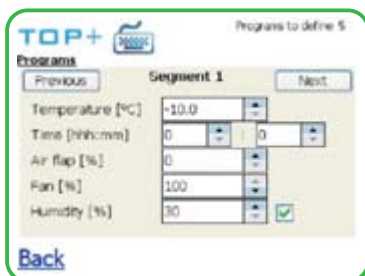
Main screen



User's menu



Temperature chart



Program settings



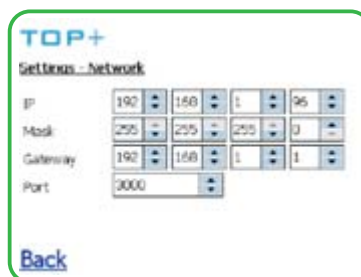
Administrator panel settings



Administrator panel settings



Administrator panel settings



Administrator panel settings

Date	Temperature	Humidity	Program
2010-05-27 11:09:03	25.3	42.2	SimpleProg
2010-05-27 11:09:03	25.2	42.2	SimpleProg
2010-05-27 11:40:03	25.3	43.2	SimpleProg
2010-05-27 11:40:03	25.3	43.1	SimpleProg
2010-05-27 11:40:03	25.3	43	SimpleProg

Measurement recording

TOP+ Control

To facilitate the configuration of complex programs, a TOP+ Control software has been introduced. Moreover, the user is able to program and control the “TOP+” equipment with ease from any corner of the world by accessing the unit via Internet!



Device manager



Login window



Program selection



Status



Temperature and humidity chart



Measurement recording



Program settings



Program statistic

Cooled incubators

Application

- microbiological research
- plant growing, microorganisms and insects breeding at specified temperature
- samples incubation



Cooled incubators

Advantages

- available in STD and TOP+ versions
- chamber capacity from 56 to 749 litres
- stainless steel interior
- housing, depending on model: powder coated sheet or stainless steel linen finish (**INOX/G**)
- forced air convection
- fan speed regulation from 10 to 100%
- heating and cooling systems to hold set temperature regardless of ambient conditions
- thermal insulation - polyurethane foam
- ILW 400 and ILW 750 models equipped with wheels
- LCD time and temperature display in STD version; LCD touch screen in TOP+ version
- microprocessor time and temperature controller
- temperature sensor fail alarm
- power failure control system
- real time clock
- sound alarm
- self-check function (auto control)

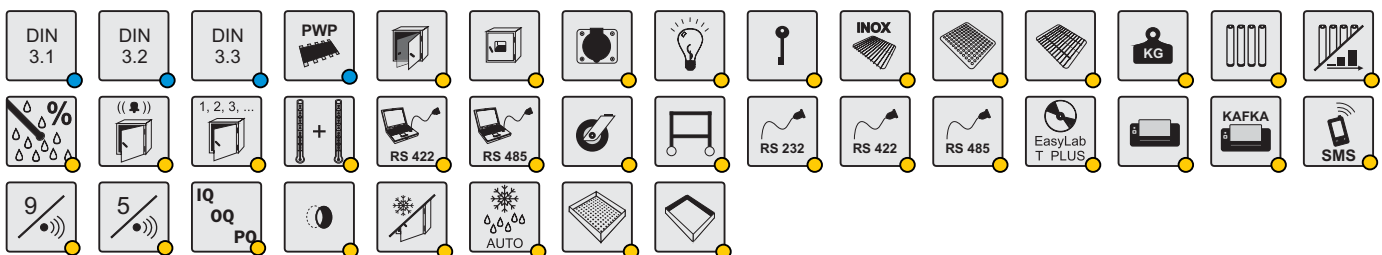
Program possibilities

- STD version
- TOP+ version

Standard equipment

- solid door
- RS 232 interface; RS 232 cable must be purchased additionally (RSK)
- stainless steel wire shelves (2-6 pieces, depending on model) with slides set
- manufacturer's test certificate at +37 °C
- operation manual in English and English menu (other languages on request)
- over temperature protection according to DIN 12880: 2.0 class in STD version and 3.3 class in TOP+ version

Options and accesories



● for STD only

● for STD and TOP+



All POL-EKO-APARATURA products can be provided with IQ, OQ, PQ qualifications








All POL-EKO-APARATURA products can be supplied with a calibration certificate issued by an accredited Measurement Laboratory. Further information is available on our website: www.pol-eko.eu

Cooled incubators



Available options

- IL*/A** - door with viewing window
- IL*/C** - internal glass door
- IL*/W** - reinforced version
- PW** - reinforced shelf
- IL*/T** - extended temperature range to -10 °C
- FOT** - photoperiodic system

Parameter		Model	ILW 53	ILW 115	ILW 240	ILW 400	ILW 750
							
air convection			forced				
chamber capacity ¹	[l]		56	112	245	424	749
	[cu ft]		2	3,9	8,6	15	26,4
door type			solid / door with viewing window or double ³ (option)				
temperature range	[°C]		0...+70 (+100 in TOP+ version) / -10...+70 (+100 in TOP+ version) (option)				
	[°F]		+32...+158 (+212 in TOP+ version) / +14...+158 (+212 in TOP+ version) (option)				
controller			microprocessor with external display				
interior			acid-proof stainless steel according to DIN 1.4301				
housing			powder coated sheet / stainless steel linen finish (INOX/G)				
overall dims [mm]	width		590	650	815	1015	1255
	height		950	1095	1420	1750	1900
	depth		560	650	710	710	810
internal dims [mm]	width		395	460	600	800	1040
	height		395	540	800	1040	1200
	depth		360	450	510	510	600
max shelf workload [kg]	-		10	10	10	10	10
	PW shelf		50	50	100	100	100
max unit workload [kg]	-		40	60	90	120	140
	W version		80	120	300	300	300
nominal power [W]			400	400	800	1200	1800
weight [kg]			69	90	140	185	275
temperature resolution [°C]			every 0,1				
temperature fluctuation ² at +37 °C [°C]			±0,2	±0,2	±0,2	±0,2	±0,2
over temperature protection			class 2.0 in STD/3.3 in TOP+				
voltage 50/60 Hz [V]			110-120/220-240				
shelves fitted / max			2/5	2/7	3/10	3/14	5/16
warranty			24 months				
manufacturer			POLEKO-APARATURA				

1 - working capacity of chamber can be smaller
 2 - fluctuation measured in centre of the chamber
 3 - glass inside, solid outside

Parameters list
Parameters list

Features		
interior	plastic (ZLN 75, 145, 180)	1.
	aluminum	2.
	stainless steel (ST/CHL 500, 700, 1200 INOX ; ZLN 125, 200, 300)	3.
housing	powder coated sheet	4.
	stainless steel (ST/CHL 500, 700, 1200 INOX ; ZLN 125, 200, 300 INOX)	5.
air convection	natural	6.
	forced	7.
fan speed regulation	0...100%	8.
	10...100% (CL/SL/SR 400/750/1000)	9.
automatic fan shut down after completing the program		10.
air-flap control (flap diameter 37 mm)	manual	11.
	automatic	12.
system	heating	13.
	cooling (ST/CHL/IL/KK)	14.
defrosting function		15.
automatic defrosting function		16.
external display	(CL/SL 15 , 32) LED	17.
	LCD	18.
	5.7" LCD touch screen	19.
microprocessor control of time and temperature (and humidity in KK; light with FIT option)		20.
temperature-time profile (and humidity in KK)	1 segment	21.
	6 segment	22.
	9 segment	23.
program priority	temperature	24.
	time (ST and IL in STD with FOT/FIT option)	25.
cycle run of the program		26.
user programs memory	1	27.
	3	28.
	20	29.
start delay	1 min...99,59 h	30.
	date/time	31.
adjustable heating up time	1 min...99,59 h	32.
adjustable hold at set point (temperature; humidity in KK)	1 min...99,59 h	33.
	1 min...999,59 h	34.
overview of parameters during operating time		35.
recording the min, average and max temperature (and humidity in KK) value for each segment		36.
over/under temperature and humidity sound alarm (humidity in KK)		37.
over temperature protection 1.0 class according to DIN 12880		38.
over/under temperature protection according to DIN 12880	class:	39.
temperature sensor fail alarm (and humidity sensor fail alarm in KK)		40.
power failure control system		41.
real time clock		42.
sound alarm		43.
interface	RS 232	44.
Ethernet connection and remote control via Internet		45.
measurement memory		46.
self-check function (auto control)		47.
Administrator function		48.
access control via login		49.
manufacturer's test certificate	at -10 °C	50.
	at +4 °C	51.
	at +25 °C and 60% rH	52.
	at +37 °C	53.
	at +105 °C	54.
	at +170 °C	55.
24 months warranty		56.
CE mark		57.
manufacturer's certificates PN-EN ISO 9001, PN-N 18001		58.

Parameters list

	ST		CHL	ZL	CL			IL		SL			SR	KK	
	P*	TOP+			ECO	STD	TOP+	STD	TOP+	ECO	STD	TOP+	STD	STD	TOP+
1.				•											
2.	•	•	•												
3.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
4.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
5.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
6.				•	•	•	•			•	•	•	•		
7.	•	•	•		•	•	•	•	•	•	•	•	•	•	•
8.						•	•				•	•	•	•	•
9.		•				•	•	•	•		•	•	•		
10.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
11.					•	•				•	•				
12.							•					•	•		
13.	•	•			•	•	•	•	•	•	•	•	•	•	•
14.	•	•	•	•				•	•					•	•
15.	•		•												
16.														•	•
17.				•	•					•					
18.	•		•		•	•		•		•	•		•	•	
19.		•					•		•			•			•
20.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
21.			•	•	•					•					
22.	•					•		•			•		•	•	
23.		•					•		•			•			•
24.	•	•	•	•	•	•	•	•	•	•	•	•	•		•
25.	•	•					•	•	•			•		•	•
26.	•	•				•	•	•	•		•	•	•	•	•
27.			•	•	•					•					
28.	•					•		•			•			•	
29.		•					•		•			•	•		•
30.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
31.		•				•	•	•	•		•	•	•	•	•
32.		•				•	•	•	•		•	•	•	•	•
33.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
34.						•	•	•			•	•	•	•	•
35.				•	•	•	•	•		•	•	•	•	•	•
36.	•	•	•			•	•	•	•		•	•	•	•	•
37.	•	•	•	•		•	•	•	•	•		•	•	•	•
38.	•	•	•		•	•	•	•	•	•	•	•	•	•	•
39.		3.3				2.0	3.1	2.0	3.3		2.0	3.1	2.0	3.3	3.3
40.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
41.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
42.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
43.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
44.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
45.		•					•		•			•			•
46.		•					•		•			•			•
47.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
48.		•					•		•			•			•
49.		•					•		•			•			•
50.				•											
51.			•												
52.														•	•
53.	•	•			•	•	•	•	•						
54.										•	•	•			
55.													•		
56.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
57.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
58.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

* - basic version of thermostatic cabinets

Options and accessories

Options and accessories	ST		CHL	ZL	CL			IL		SL			SR	KK		Order no.
	P ₆	TOP+			ECO	STD	TOP+	STD	TOP+	ECO	STD	TOP+	STD	STD	TOP+	
internal glass door ^{1,5}	•	•			•	•	•	•	•					•	•	*/C
external glass door ¹	•		•											•	•	*/A
door with viewing window ⁴		•		•	•	•	•	•	•	•	•	•	•			*/A
internal socket ¹	•	•	•			•	•	•	•							GNZ
interior lighting ^{1,4,5}	•	•	•	•		•	•	•	•		•	•	•	•	•	OWW
door lock ¹	•	•	•	•		•	•	•	•		•	•	•	•	•	ZKL
wire shelf ¹	•		•											•	•	*/P
stainless steel wire shelf ¹	•	•	•		•	•	•	•	•	•	•	•	•	•	•	*/P INOX
perforated shelf ¹		•			•	•	•	•	•	•	•	•	•	•	•	*/PP
glass shelf ³				•												*/PL
reinforced shelf	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	*/PW
extended temperature range to +50 °C ¹	•															ST/50
extended temperature range to +60 °C ¹	•															ST/60
extended temperature range to +70 °C ¹	•															ST/70
reinforced version		•		•		•	•	•	•		•	•	•			*/W
low temperature version ¹			•					•	•							*/T
photoperiodic system - FOT ¹	•							•	•							FOT
phytotron system - FIT	•							•	•					•	•	FIT
automatic defrosting function	•		•					•	•							PLUS
over temperature protection system according to DIN 12880 ¹	2.0 3.1 3.2 3.3		3.2		3.1			3.1 3.2 3.3			3.1		3.1			*/**
stainless steel cuvettes	•	•	•		•	•	•	•	•	•	•	•	•	•	•	KUW
stainless steel drawers	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	*/SW
access port for external sensor ¹	•	•	•	•	•	•	•	•	•		•	•	•	•	•	OCZ
humidity measurement ⁵		•			•	•	•	•	•							PHR
open door alarm ¹	•	•	•	•	•	•	•	•	•		•	•	•	•	•	SOD
door openings counter ¹	•	•	•	•	•	•	•	•	•		•	•	•	•	•	LOD
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
RS 232 cable ¹	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	RSK
RS 422 cable ¹	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	RSK/422
RS 485 cable ¹	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	RSK/485
EasyLab-T PLUS software	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	EasyLab-T
dot printer	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	TM-U210D
"Kafka" thermal printer	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	KAFKA
calibration in 9 points ¹	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	BRT/9
chamber calibration in 5 points on shelf ¹	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	BRT/5
IQ, OQ, PQ qualification ¹	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	IQ/OQ/PQ
SMS Info ¹	•	•	•		•	•	•	•	•		•	•	•	•	•	SMS INFO
container for deionized water														•	•	KK/Z
container for waste water														•	•	KK/K
test's results memory ¹	•		•		•		•				•		•	•		PWP
FIT shelves independent control	•													•	•	FIT/R2

* - model (e.g. ST 1+, IL 53, ZL 75)

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

1 - for double chamber units, the function 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 ZL 75, 145, 180

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

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

6 - basic version of thermostatic cabinets