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

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

ECO - basic version

Equipment available in ECO version

- Incubators (CL)
- Drying ovens (SL)

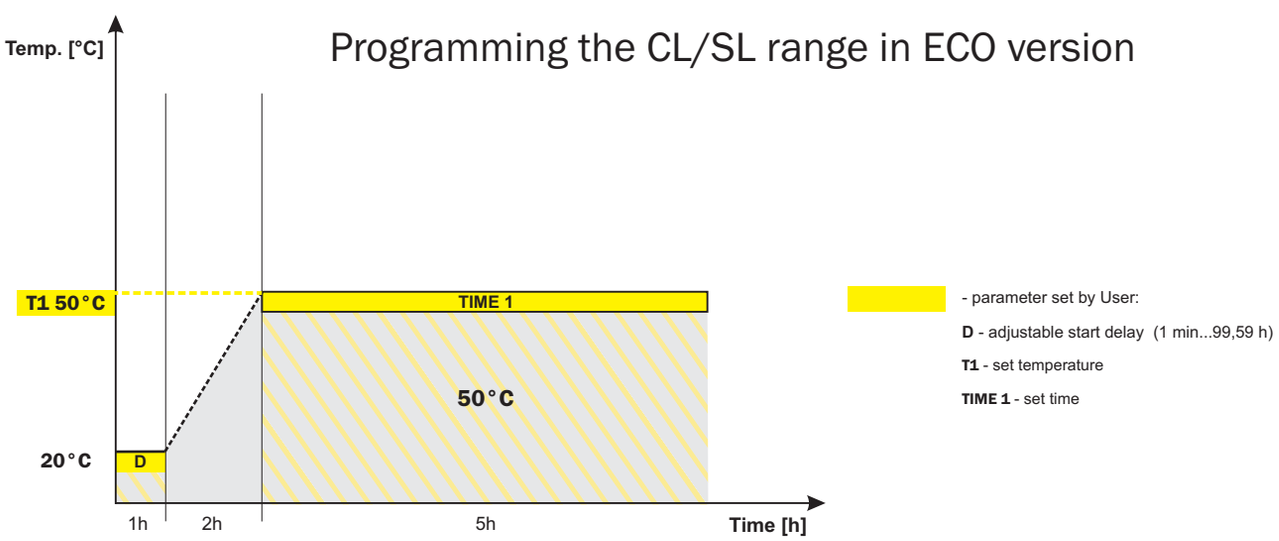
ECO - basic version

- combination of basic parameters and indispensable accessories
- designed for simple application
- very attractive price

Program possibilities

- single segment temperature-time profile
- temperature program priority
- adjustable start delay feature (from 1 min to 99,59 h)
- adjustable time of holding set temperature (from 1 min to 99,59 h), or continuous operating
- 1 user program memory
- overview of parameters during operating time

Programming the CL/SL range in ECO version



Standard equipment

- stainless steel interior
- housing, depending on model: powder coated sheet or stainless steel linen finish (**INOX/G)**
- forced or natural air convection (depending on model)
- automatic fan shut down after completing the program
- solid door
- manual air-flap control, adjustable
- LCD time and temperature display (except models SL/CL 15 and 32 with LED display)
- microprocessor time and temperature control
- temperature sensor fail alarm
- power failure control system
- real time clock
- sound alarm
- RS 232 interface
- self-check function (auto control)
- manufacturer's test certificate
- operation manual in English and English menu (other languages on request)
- stainless steel wire shelves (1-6 pieces, depending on model) with slides set
- over temperature protection according to DIN 12880: 1.0 class

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)

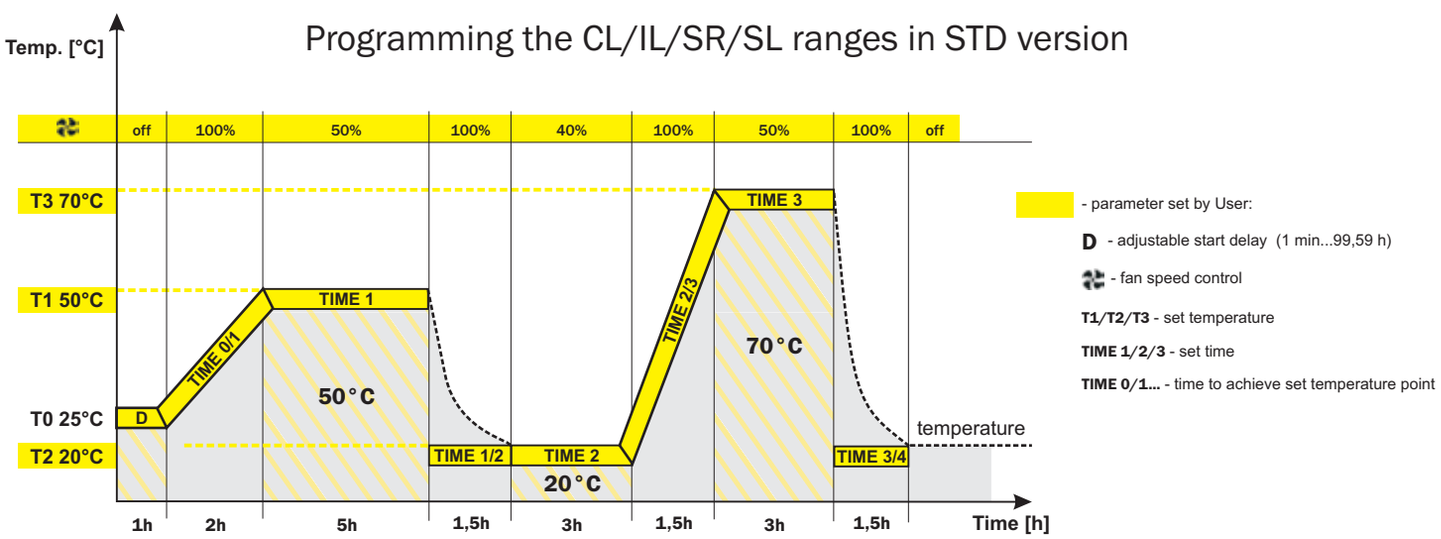
STD-standard version

- 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)

Programming the CL/IL/SR/SL ranges in STD version



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

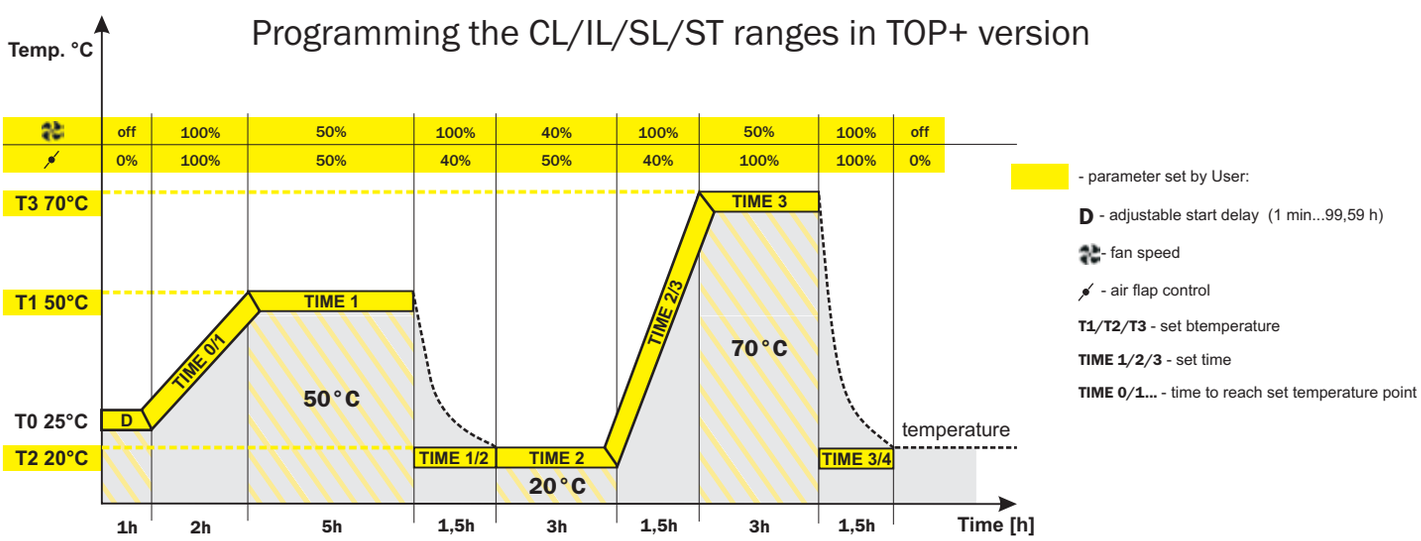
- Incubators (CL 53-1000)
- Cooled incubators (IL)
- Drying ovens (SL 53-1000)
- Climatic chambers (KK)
- Thermostatic cabinets (ST)

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 proffesional 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.

Programming the CL/IL/SL/ST ranges in TOP+ version



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

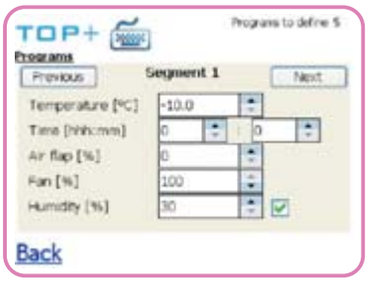
GLP supporting functions:

- 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

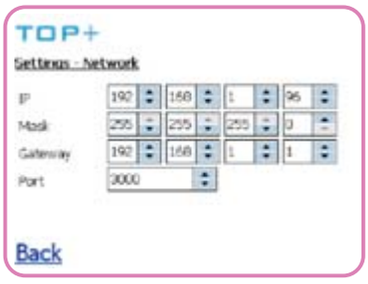


Program settings

Administrator panel settings

Administrator panel settings

Administrator panel settings



Administrator panel settings

Measurement recording

TOP+ - professional version

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

Laboratory incubators

Application

- incubation of samples for microbiological examinations
- analysis of thermal resistance of samples subjected to higher temperatures (e.g. pigments and lacquers)
- antibody testing
- bacterial research
- chemical storage
- crystallization studies
- cultivating thermophilic bacteria
- denaturalizing tests for food industry
- microbiological determinations
- pharmaceutical stability testing

Laboratory incubators

Advantages

- available in ECO, STD and TOP+ versions
  - CL 15 and 32 in ECO version only
- capacity from 15 to 1005 litres
- stainless steel interior
- housing, depending on model: powder coated sheet or stainless steel linen finish (**INOX/G)**
- forced or natural air convection (depending on the model)
- fan speed regulation from 0 to 100% for CLW 53, 115 and 240; from 10 to 100% for CLW 400, 750 and 1000
- heating system (temperature in the chamber cannot be lower than ambient temperature)
- CLW 750, CLW 1000 models equipped with wheels
- LCD time and temperature display in ECO and STD version (except CL 15 and 32 with LED display); LCD touch screen in TOP+ version
- microprocessor time and temperature control
- temperature sensor fail alarm
- power failure control system
- real time clock
- sound alarm
- self-check function (auto control)

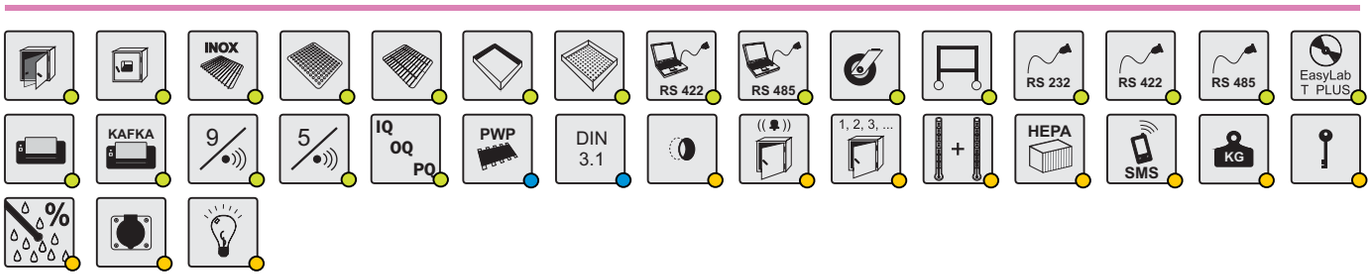
Program possibilities

- ECO version
- STD version
- TOP+ version

Standard equipment

- solid door
- RS 232 interface; RS 232 cable must be purchased additionally (RSK)
- stainless steel wire shelves (1-6 pieces, depending on the 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: 1.0 class in ECO version, 2.0 class in STD version, 3.1 class in TOP+ version

Options and accesories



for ECO, STD and TOP+ 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

Laboratory incubators

Available options

CL*/A - door with viewing window
CL*/C - internal glass door
CL*/W - reinforced version
(available for 240, 400, 750, 1000 versions)
PW - reinforced shelf

Parameter \ Model		CL 15	CL 32	CL 53	CL 115	CL 240	CL 400	CL 750	CL 1000
air convection		natural (CLN)	natural (CLN) / forced (CLW)				forced (CLW)		
chamber capacity[1]	[l]	15	32	56	112	245	424	749	1005
	[cu ft]	0,5	1,1	2	3,9	8,6	15	26,4	35,5
door type		solid	solid / door with viewing window or double[3] (option)						
temperature range	[°C]	5° above ambient temperature...+100° (+70° for ECO version)							
	[°F]	41° above ambient temperature...+212° (+158° for ECO version)							
controller		microprocessor with external display							
interior		acid-proof stainless steel according to DIN 1.4301							
housing		powder coated sheet / stainless steel linen finish (INOX)							
overall dims [mm]	width	440	520	590	650	815	1015	1255	1255
	height	520	600	700	845	1140	1380	1620	2030
	depth	350	435	560	650	710	710	810	810
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	10	10
	PW shelf	-	-	50	50	100	100	100	100
max unit workload [kg]	-	20	30	40	60	90	120	140	180
	W version	-	-	80	120	300	300	300	300
nominal power [W]		300	400	400	400	800	1200	1800	1800
weight [kg]		27	35	50	65	126	174	260	330
temperature resolution [°C]		every 0,1							
temperature fluctuation[2] at +37°C [°C]	CLN	±0,5	±0,5	±0,2	±0,2	±0,2	-	-	-
	CLW	-	±0,2	±0,2	±0,2	±0,2	±0,2	±0,2	±0,2
over temperature protection		class 1.0 in ECO/2.0 in STD/3.1 in TOP+							
voltage 50 /60 Hz [V]		110-120/220-240							
shelves fitted / max		1/2	1/3	2/5	2/7	3/10	3/14	5/16	6/22
warranty		24 months							
manufacturer		POL-EKO-APARATURA							

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

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