

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 can store samples in a higher temperature of up to 100°C.



Advantages

- available in STD and TOP+ versions
- capacity from 15 to 1005 litres
- stainless steel interior
- housing: powder coated sheet or stainless steel linen finish (**INOX/G**) (depending on model)
- forced or natural air convection (depending on model)
- fan speed regulation from 0 to 100% for CLW 15, 32, 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)
- CL 750 and 1000 models equipped with wheels
- LCD graphic display in STD version **New!**
LCD touch screen in TOP+ version
- illuminated touch buttons in STD version **New!**
- microprocessor temperature controller
- temperature sensor fail alarm
- power failure control system
- real time clock
- sound alarm
- self-check function (auto control)
- test results memory

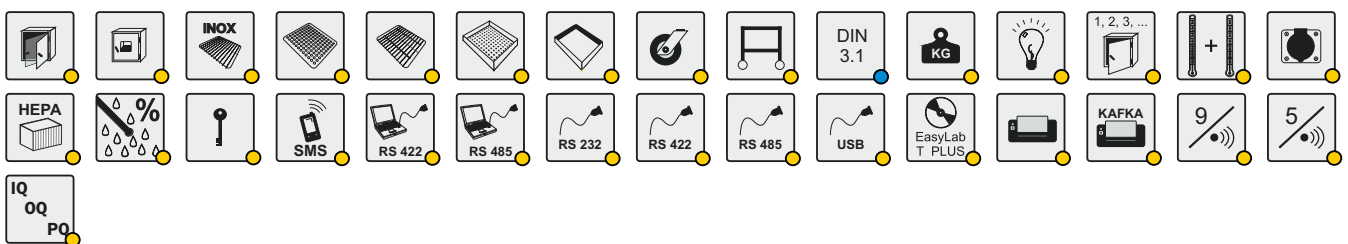
Program possibilities

- STD version
- TOP+ version

Standard equipment

- solid door
- RS 232 interface and USB port **New!**; RS 232 or USB cable must be purchased additionally (RSK or USBK)
- stainless steel wire shelves (1-6 pieces, depending on model) with slides set
- manufacturer's test certificate at +37 °C
- open door alarm
- air-flap diameter 37 mm for CL 15, 32, 53 and 115; 60 mm for CL 240, 400, 750 and 1000
- operation manual in English and English menu (other languages on request)
- over temperature protection according to DIN 12880: 2.0 class in STD version, 3.1 class in TOP+ version
- access port for external sensor (diameter: 30 mm)

Options and accessories



● for STD only

● for STD and TOP+











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.polekolab.com.



Available options

- CL*/A** - door with viewing window
- CL*/C** - internal glass door
- CL*/W** - reinforced version
- 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) / 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 or double ³ (option)	solid / door with viewing window or double ³ (option)					
temperature range	[°C]		5° above ambient temperature...+100°							
	[°F]		9° above ambient temperature...+212°							
controller			microprocessor with external LCD graphic 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		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 version		-	-	50	50	100	100	100	100
max unit workload [kg]	-		20	30	40	60	90	120	140	-
	W 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 ² at +37°C [°C]	CLN		±0,5	±0,5	±0,2	±0,2	±0,2	-	-	-
	CLW		±0,5	±0,2	±0,2	±0,2	±0,2	±0,2	±0,2	±0,2
over temperature protection			class 2.0 according to DIN 12880 in STD / class 3.1 (option) / class 3.1 in TOP+ version							
voltage 50 / 60 Hz [V]			115/230							
shelves fitted / max ⁴			1/2	1/3	2/5	2/7	3/10	3/14	5/16	6/22
warranty			24 months							
manufacturer			POLEKO-APARATURA							

* - dims of power cable (50 mm) not included

1 - working capacity of chamber can be smaller

2 - fluctuation measured in centre of the chamber

3 - additional internal glass door

4 - "fitted" - number of shelves fitted, included in price, "max" - number of shelves which can be fitted

Features		
interior	plastic (ZLN 75, 145, 180)	1.
	aluminum	2.
	stainless steel (ST/CHL INOX; ZLN 85+; ZLN-T)	3.
housing	powder coated sheet	4.
	stainless steel (ST/CHL INOX; ZLN 85+, ZLN-T INOX)	5.
air convection	natural	6.
	forced	7.
fan speed control	0...100% (CL/SL 15...240, SR 53...240)	8.
	10...100% (CL/SL/SR 400-1000)	9.
automatic fan shut down after completing the program		10.
automatic air-flap control (adjustable)		11.
system	heating	12.
	cooling	13.
defrosting function		14.
automatic defrosting function		15.
external display	graphic LCD	16.
	5.7" LCD touch screen	17.
microprocessor temperature (humidity in KK; light with FIT and FOT options) controller		18.
temperature-time profile (humidity in KK; light with FIT and FOT options)	1 segment	19.
	6 segment	20.
	multi-segment (max 10 000)	21.
program priority	temperature	22.
	time (ST and IL in STD with FOT/FIT option)	23.
cycle run of the program		24.
user programs memory	1	25.
	3	26.
	20	27.
start delay	1 min...99:59 h	28.
	date/time	29.
adjustable heating up time	1 min...99:59 h	30.
adjustable hold at set point (temperature; humidity in KK; light with FIT and FOT options)	1 min...99:59 h	31.
	1 min...999:59 h	32.
	1 min...31 days	33.
overview of set parameters during operating time		34.
recording min, average and max temperature (and humidity in KK) value for each segment (unavailable for ZLN 75, 145, 180)		35.
over/under temperature and humidity sound alarm (and humidity in KK)		36.
over/under temperature protection class according to DIN 12880		37.
temperature sensor fail alarm (and humidity sensor fail alarm in KK)		38.
power failure control system		39.
real time clock		40.
sound alarm		41.
test results memory		42.
access port for external sensor (diameter: 30 mm) (option for ZLN 75, 145, 180)		43.
door lock (option for ZLN 75, 145, 180)		44.
open door alarm		45.
interface / port	RS 232	46.
	USB	47.
Ethernet connection and remote control via Internet		48.
self-check function (auto control)		49.
Administrator function		50.
access control via login		51.
e-mail info		52.
manufacturer's test certificate (for: ZL at -10 °C; CHL at +4 °C; KK at +25 °C and 60% rH; ST, CL, IL at +37 °C; SL at +105 °C; SR at +170 °C)		53.
24 months warranty		54.
CE mark		55.
manufacturer's certificate PN-EN ISO 9001		56.

	ST		CHL		ZL	CL		IL		SL		SR STD	KK TOP+
	P*	TOP+	P*	TOP+		STD	TOP+	STD	TOP+	STD	TOP+		
1.					•								
2.	•	•	•	•									
3.	•	•	•	•	•	•	•	•	•	•	•	•	•
4.	•	•	•	•	•	•	•	•	•	•	•	•	•
5.	•	•	•	•	•	•	•	•	•	•	•	•	•
6.					•	•	•			•	•	•	
7.	•	•	•	•		•	•	•	•	•	•	•	•
8.						•	•			•	•	•	
9.	o	•	o	•		•	•	•	•	•	•	•	•
10.	•	•	•	•		•	•	•	•	•	•	•	•
11.						•	•			•	•	•	
12.	•	•				•	•	•	•	•	•	•	•
13.	•	•	•	•	•			•	•				•
14.	•	•	•	•									
15.	o	o	o	o				o	o				•
16.	•		•		•	•		•		•		•	
17.		•		•			•		•		•		•
18.	•	•	•	•	•	•	•	•	•	•	•	•	•
19.			•		•								
20.	•					•		•		•		•	
21.		•		•			•		•		•		•
22.	•	•	•	•	•	•	•	•	•	•	•	•	•
23.	•	•		•			•	•	•		•		•
24.	•	•		•		•	•	•	•	•	•	•	•
25.			•		•								
26.	•					•		•		•			
27.		•		•			•		•		•		•
28.	•	•	•	•	•	•	•	•	•	•	•	•	•
29.		•		•		•	•	•	•	•	•	•	•
30.		•		•		•	•	•	•	•	•	•	•
31.	•	•	•	•	•	•	•	•	•	•	•	•	•
32.		•		•		•	•	•	•	•	•	•	•
33.	•		•										
34.	•	•	•	•	•	•	•	•	•	•	•	•	•
35.	•	•	•	•	•	•	•	•	•	•	•	•	•
36.	•	•	•	•	•	•	•	•	•	•	•	•	•
37.	1.0	3.3	1.0	3.2		2.0	3.1	2.0	3.3	2.0	3.1	2.0	3.3
38.	•	•	•	•	•	•	•	•	•	•	•	•	•
39.	•	•	•	•	•	•	•	•	•	•	•	•	•
40.	•	•	•	•	•	•	•	•	•	•	•	•	•
41.	•	•	•	•	•	•	•	•	•	•	•	•	•
42.	•	•	•	•	•	•	•	•	•	•	•	•	•
43.	•	•	•	•	•	•	•	•	•	•	•	•	•
44.	•	•	•	•	•	o	o	o	o	o	o	o	o
45.	•	•	•	•	•	•	•	•	•	•	•	•	•
46.	•	•	•	•	•	•	•	•	•	•	•	•	•
47.	•	•	•	•	•	•	•	•	•	•	•	•	•
48.		•		•			•		•		•		•
49.	•	•	•	•	•	•	•	•	•	•	•	•	•
50.		•		•			•		•		•		•
51.		•		•			•		•		•		•
52.		•		•			•		•		•		•
53.	•	•	•	•	•	•	•	•	•	•	•	•	•
54.	•	•	•	•	•	•	•	•	•	•	•	•	•
55.	•	•	•	•	•	•	•	•	•	•	•	•	•
56.	•	•	•	•	•	•	•	•	•	•	•	•	•

• - standard equipment
o - option
* - basic version of thermostatic cabinets and laboratory refrigerators

Options and accessories	ST		CHL		ZL	CL		IL		SL		SR	KK	Order no.
	P ⁶	TOP+	P ⁶	TOP+		STD	TOP+	STD	TOP+	STD	TOP+	STD	TOP+	
internal glass door ^{1,5}	•	•	•	•		•	•	•	•				s	*/C
external glass door ^{1,8}	•	•	•	•									•	*/A
door with viewing window ^{4,7}						•	•	•	•	•	•	•	•	*/A
internal socket ^{1,5}	•	•	•	•		•	•	•	•					GNZ
interior lighting ^{1,4,5}	•	•	•	•	•	•	•	•	•	•	•	•	•	OWW
door lock ^{1,12}	s	s	s	s	s	•	•	•	•	•	•	•	•	ZKL
wire shelf ¹	•	•	•	•										*/P
stainless steel wire shelf ^{1,9}	•	•	•	•	•	•	•	•	•	•	•	•	•	*/P INOX
perforated shelf ¹	•	•	•	•	•	•	•	•	•	•	•	•	•	*/PP
glass shelf ³					•									*/PS
reinforced shelf	•	•	•	•	•	•	•	•	•	•	•	•	•	*/PW
extended temperature range to +70 °C ¹	•													ST/70
reinforced version ¹²					•	•	•	•	•	•	•	•		*/W
low temperature version ^{1,10}			•					•	•					*/T
photoperiodic system - FOT ¹	•							•	•					*/FOT
phytotron system - FIT ¹¹		•							•				•	*/FIT
automatic defrosting function	•	•	•	•				•	•				s	*PLUS
over temperature protection system according to DIN 12880 ¹	3.3	s (3.3)	3.2	s (3.2)		3.1	s (3.1)	3.3	s (3.3)	3.1	s (3.1)	3.1	s (3.3)	*/**
stainless steel cuvettes	•	•	•	•	•	•	•	•	•	•	•	•	•	KUW GN */*
stainless steel drawers	•	•	•	•	•	•	•	•	•	•	•	•	•	*/SW
humidity measurement ⁵		•		•		•	•	•	•					PHR
door openings counter ¹	•	•	•	•	•	•	•	•	•	•	•	•	•	LOD
fan speed control	•	s	•	s		s	s	s	s	s	s	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-T PLUS software	•	•	•	•	•	•	•	•	•	•	•	•	•	EasyLab-T PLUS
dot printer	•	•	•	•	•	•	•	•	•	•	•	•	•	EPSON
"Kafka" thermal printer	•	•	•	•	•	•	•	•	•	•	•	•	•	KAFKA
calibration at 9 points ¹	•	•	•	•	•	•	•	•	•	•	•	•	•	BRT/9/L
chamber calibration at 5 points on 1 shelf ¹	•	•	•	•	•	•	•	•	•	•	•	•	•	BRT/5/L
IQ, OQ, PQ qualification ¹	•	•	•	•	•	•	•	•	•	•	•	•	•	IQ/OQ/PQ
SMS Info ^{1,12}	•	•	•	•	•	•	•	•	•	•	•	•	•	SMS INFO
container for deionised water													•	KK/Z
container for waste water													•	KK/K
water level sensor													•	KK/CP
FIT panels independent control ¹¹		•							•				•	FIT/R3

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

** - 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 ZL 75, 145, 180

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 - basic version of thermostatic and laboratory refrigerators

7 - for KK 115, 240, 400, 750

8 - for KK 500, 700, 1200

9 - for ZLN 85+

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

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

12 - except ZL 75, 145, 180

s - standard equipment

• - available option