

## Application

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

Cooled incubators can store samples in a stable environment regardless of ambient conditions, as the temperature range is  $-10\dots+100^{\circ}\text{C}$ .



## Advantages

- available in STD and TOP+ versions
- chamber capacity from 56 to 749 litres
- stainless steel interior
- housing: powder coated sheet or stainless steel
- lining finish (**INOX/G**) (depending on model)
- forced air convection
- fan speed control from 10 to 100%
- heating and cooling systems to hold set temperature regardless of ambient conditions
- thermal insulation - polyurethane foam
- ILW 750 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

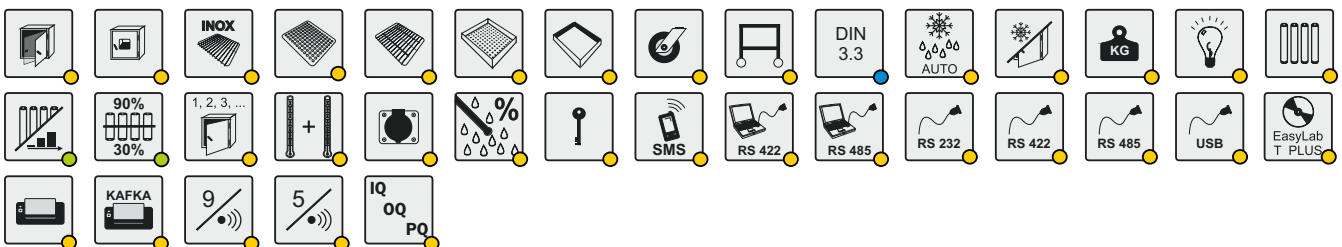
## Program possibilities

- 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 (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, 3.3 class in TOP+ version
- open door alarm
- access port for external sensor (diameter: 30 mm)

## Options and accessories



● for STD only

● for STD and TOP+

● for TOP+ only



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](http://www.polekolab.com).



## 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
- FIT** - phytotron system

Model		ILW 53	ILW 115	ILW 240	ILW 400	ILW 750
air convection		forced				
chamber capacity <sup>1</sup>	[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 <sup>3</sup> (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 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	590	650	815	1015	1260
	height	960	1100	1430	1680	1890
	depth	620	710	770	770	870
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 version	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 <sup>2</sup> at +37 °C [ °C]		±0,2	±0,2	±0,2	±0,2	±0,2
over temperature protection		class 2.0 in STD / class 3.3 (option) / class 3.3 in TOP+ version				
voltage 50 /60 Hz [V]		115/230				
shelves fitted / max <sup>4</sup>		2/5	2/7	3/10	3/14	5/16
warranty		24 months				
manufacturer		POL-EKO-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: <b>ZL</b> at -10 °C; <b>CHL</b> at +4 °C; <b>KK</b> at +25 °C and 60% rH; <b>ST, CL, IL</b> at +37 °C; <b>SL</b> at +105 °C; <b>SR</b> 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 <sup>6</sup>	TOP+	P <sup>6</sup>	TOP+		STD	TOP+	STD	TOP+	STD	TOP+	STD	TOP+	
internal glass door <sup>1,5</sup>	•	•	•	•		•	•	•	•				<b>s</b>	*/C
external glass door <sup>1,8</sup>	•	•	•	•									•	*/A
door with viewing window <sup>4,7</sup>						•	•	•	•	•	•	•	•	*/A
internal socket <sup>1,5</sup>	•	•	•	•		•	•	•	•					GNZ
interior lighting <sup>1,4,5</sup>	•	•	•	•	•	•	•	•	•	•	•	•	•	OWW
door lock <sup>1,12</sup>	<b>s</b>	<b>s</b>	<b>s</b>	<b>s</b>	<b>s</b>	•	•	•	•	•	•	•	•	ZKL
wire shelf <sup>1</sup>	•	•	•	•										*/P
stainless steel wire shelf <sup>1,9</sup>	•	•	•	•	•	•	•	•	•	•	•	•	•	*/P INOX
perforated shelf <sup>1</sup>	•	•	•	•	•	•	•	•	•	•	•	•	•	*/PP
glass shelf <sup>3</sup>					•									*/PS
reinforced shelf	•	•	•	•	•	•	•	•	•	•	•	•	•	*/PW
extended temperature range to +70 °C <sup>1</sup>	•													ST/70
reinforced version <sup>12</sup>					•	•	•	•	•	•	•	•		*/W
low temperature version <sup>1,10</sup>			•					•	•					*/T
photoperiodic system - FOT <sup>1</sup>	•							•	•					*/FOT
phytotron system - FIT <sup>11</sup>		•						•					•	*/FIT
automatic defrosting function	•	•	•	•				•	•				<b>s</b>	*PLUS
over temperature protection system according to DIN 12880 <sup>1</sup>	3.3	<b>s</b> (3.3)	3.2	<b>s</b> (3.2)		3.1	<b>s</b> (3.1)	3.3	<b>s</b> (3.3)	3.1	<b>s</b> (3.1)	3.1	<b>s</b> (3.3)	*/**
stainless steel cuvettes	•	•	•	•	•	•	•	•	•	•	•	•	•	KUW GN */*
stainless steel drawers	•	•	•	•	•	•	•	•	•	•	•	•	•	*/SW
humidity measurement <sup>5</sup>		•		•		•	•	•	•					PHR
door openings counter <sup>1</sup>	•	•	•	•	•	•	•	•	•	•	•	•	•	LOD
fan speed control	•	<b>s</b>	•	<b>s</b>		<b>s</b>	<b>s</b>	<b>s</b>	<b>s</b>	<b>s</b>	<b>s</b>	<b>s</b>	<b>s</b>	ST/CHL WENT
additional Pt 100 temperature sensor		•		•		•	•	•	•	•	•	•	•	PT100
HEPA - fresh air filter						•	•			•	•	•		HEPA
RS 422 interface (instead of RS 232) <sup>1</sup>	•	•	•	•	•	•	•	•	•	•	•	•	•	RS422
RS 485 interface (instead of RS 232) <sup>1</sup>	•	•	•	•	•	•	•	•	•	•	•	•	•	RS485
wheels	•	•	•	•	•	•	•	•	•	•	•	•	•	QLK*
table with wheels <sup>2</sup>	•	•	•	•	•	•	•	•	•	•	•	•	•	*/S, */INOX
RS 232 cable <sup>1</sup>	•	•	•	•	•	•	•	•	•	•	•	•	•	RSK
RS 422 cable <sup>1</sup>	•	•	•	•	•	•	•	•	•	•	•	•	•	RSK/422
RS 485 cable <sup>1</sup>	•	•	•	•	•	•	•	•	•	•	•	•	•	RSK/485
USB cable <sup>1</sup>	•	•	•	•	•	•	•	•	•	•	•	•	•	USBK
EasyLab-T PLUS software	•	•	•	•	•	•	•	•	•	•	•	•	•	EasyLab-T PLUS
dot printer	•	•	•	•	•	•	•	•	•	•	•	•	•	EPSON
"Kafka" thermal printer	•	•	•	•	•	•	•	•	•	•	•	•	•	KAFKA
calibration at 9 points <sup>1</sup>	•	•	•	•	•	•	•	•	•	•	•	•	•	BRT/9/L
chamber calibration at 5 points on 1 shelf <sup>1</sup>	•	•	•	•	•	•	•	•	•	•	•	•	•	BRT/5/L
IQ, OQ, PQ qualification <sup>1</sup>	•	•	•	•	•	•	•	•	•	•	•	•	•	IQ/OQ/PQ
SMS Info <sup>1,12</sup>	•	•	•	•	•	•	•	•	•	•	•	•	•	SMS INFO
container for deionised water													•	KK/Z
container for waste water													•	KK/K
water level sensor													•	KK/CP
FIT panels independent control <sup>11</sup>		•							•				•	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