



# 20<sup>16</sup>/<sub>17</sub> / POL-EKO-APARATURA products



POL-EKO-APARATURA has been present in the Polish market for 26 years.

Highest quality equipment and service we provide ensures your satisfaction. Our wide range of products and professional solutions will suit the most demanding customers.

We remain open to assist in choosing the right product for your needs, as well as to provide you with customized solutions.

We are your partner in lab analysis and technological processes.

Thank you for your confidence.

POL-EKO-APARATURA team.



# Laboratory freezers

## Application

- long-term storage of samples and biological material for research
- storage of easily decomposing material (e.g. solid state)
- freeze resistance tests (e.g. of building materials: concrete, wood etc.)
- pre-freezing
- plasma storage



Laboratory freezers can freeze and store frozen samples.

## 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](http://www.polekolab.pl).

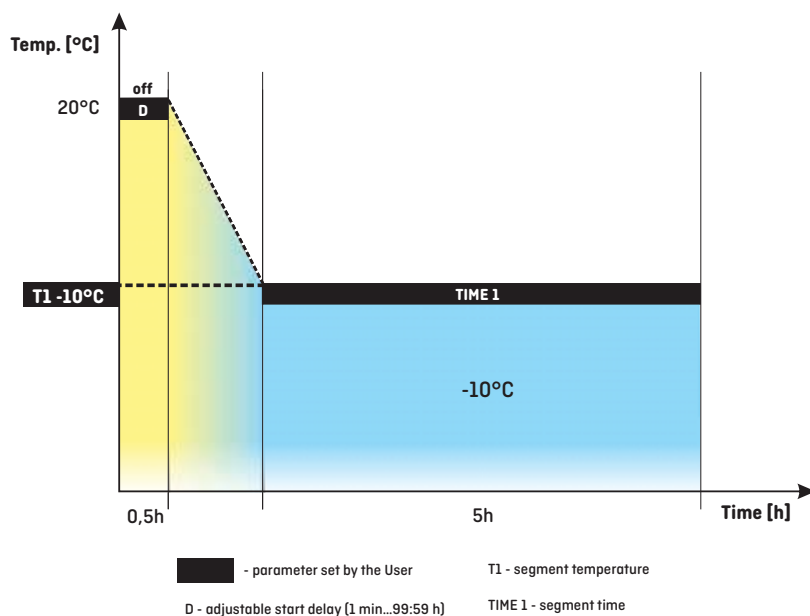


The COMFORT and PREMIUM models are equipped with a PID microprocessor controller with an LCD graphic display and illuminated touch buttons.

### Controller advantages

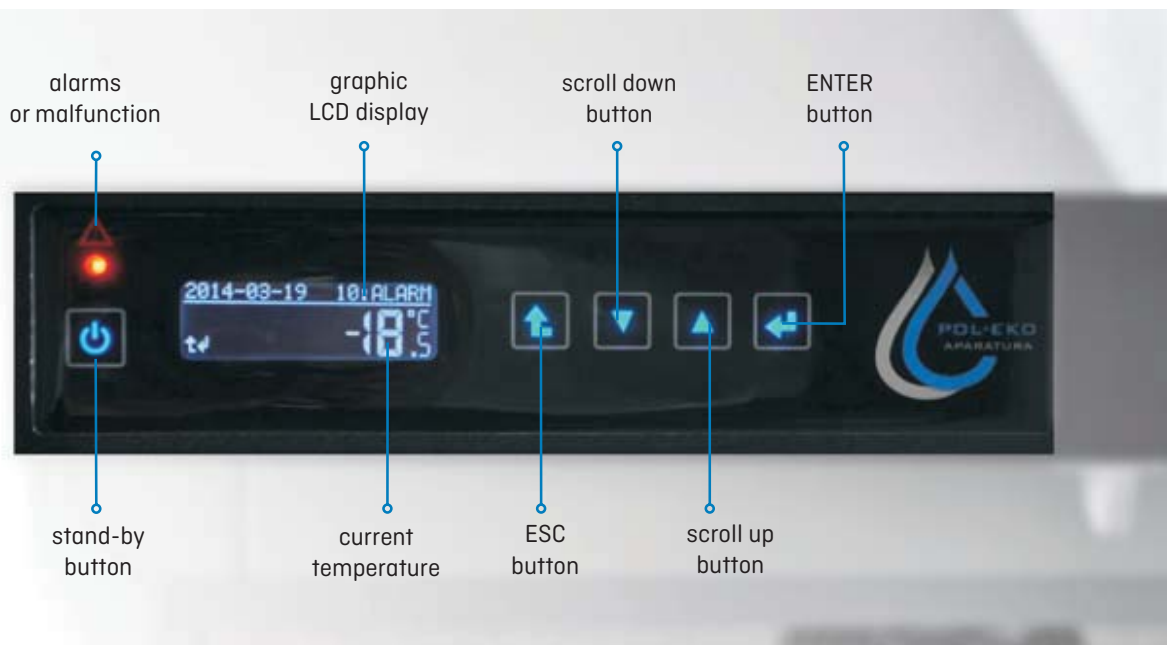
- temperature control
- operating with temperature priority
- adjustable start delay feature (1 min...99:59 h)
- loop function up to 99 times or endless
- overview of set and current parameters while operating
- recording of min, average and max temperature value for each segment
- audible and visual temperature alarm
- 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
- natural (ZLN-T) or forced (ZLW-T) air convection

Detailed description of parameters on page 82.





### Control panel



### Standard features

- temperature range -25...0°C for ZLN 85 and -40...0°C for ZLN-T 125, 200, 300
- wire stainless steel shelves for ZLN 85 and perforated stainless steel for ZLN-T 125, 200, 300
- quality control protocol (at -20°C)
- English instruction manual
- available menu languages: Czech, English, Estonian, French, German, Italian, Latvian, Polish, Portuguese, Russian, Spanish
- open door alarm

access port: Ø20 mm

door lock







solid door

RS 232 and USB ports for data transfer

internal memory to store up to 2046 data records

wheels in standard for ZLN-T 300



		ZLN 85	ZLN-T 125	ZLN-T 200	ZLN-T 300	ZLW-200 <i>new!</i>	ZLW-300 <i>new!</i>
Parameter							
air convection		natural				forced	
chamber capacity [l]		95	130	210	310	210	310
working capacity [l]		76	109	180	262	140	213
door type		solid					
temperature range [°C]		-25...0			-40...0		
temperature resolution [°C]		every 0,1					
controller		microprocessor with external LCD graphic display					
interior	COMF	stainless steel to DIN 1.4016					
	COMF/S	stainless steel to DIN 1.4016					
	PREM	stainless steel to DIN 1.4301					
	PREM/S	stainless steel to DIN 1.4301					
housing	COMF	powder coated sheet					
	COMF/S	polished stainless steel					
	PREM	powder coated sheet					
	PREM/S	polished stainless steel					
overall dims <sup>1</sup> [mm]	A width	610	660	760	760	760	760
	B height	880	1190	1380	1730	1380	1730
	C depth	650	800	800	800	800	800
internal dims [mm]	D width	380	370	450	450	450	450
	D+ width	420	420	520	520	520	520
	E height	590	600	770	1120	770	1120
	F depth	400	520	520	520	520	520
	F+ depth	440	530	530	530	530	530
	G depth	230	-	-	-	-	-
	I depth	210	-	-	-	-	-
	J depth	-	-	-	-	600	910
max shelf workload <sup>2</sup> [kg]	-	10	10	10	10	-	-
	Pw <sup>3</sup> version	-	50	50	50	-	-
max unit workload [kg]	-	30	50	65	80	-	-
	W <sup>4</sup> version	-	100	130	160	160	160
nominal power [W]		200	450	470	470	500	500
weight [kg]		60	90	120	185	120	185
power supply*		230 V 50 Hz					
shelves fitted/max		2/4	2/3	2/4	3/6	2/4	3/6
warranty		24 months					
manufacturer		POL-EKO-APARATURA					

all the above technical data refer to standard units (without optional accessories)

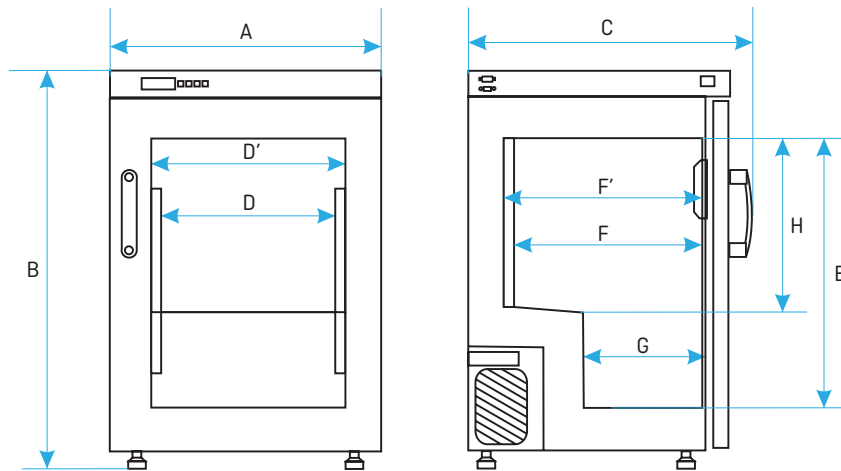
- \* - 230V 60Hz, 115V 60Hz also available
- 1 - depth doesn't include 50 mm of power cable
- 2 - on uniformly loaded surface
- 3 - reinforced shelf
- 4 - reinforced version

All data on temperature stability and uniformity available on [www.pol-eko.eu](http://www.pol-eko.eu).

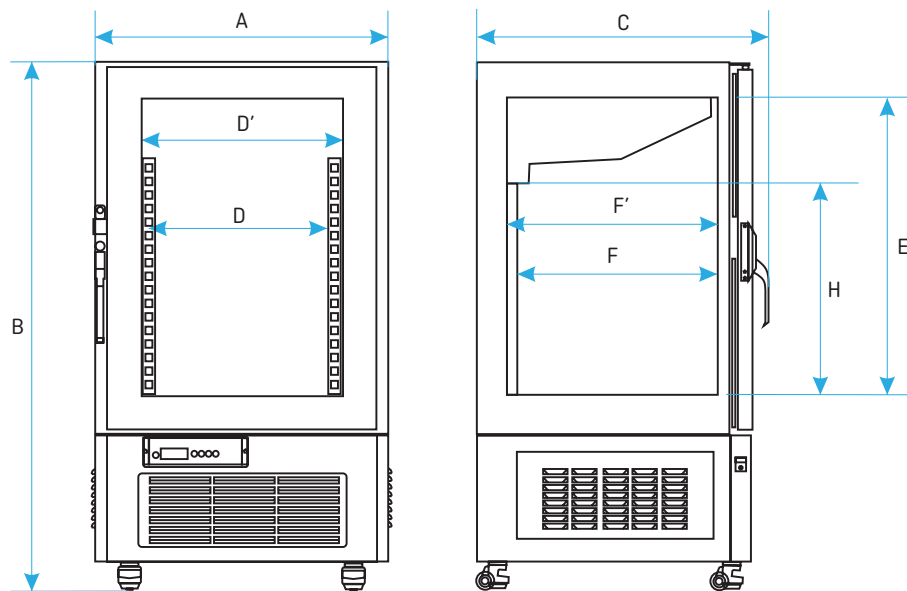
**Options and accessories (icon description see pages 80-81)**



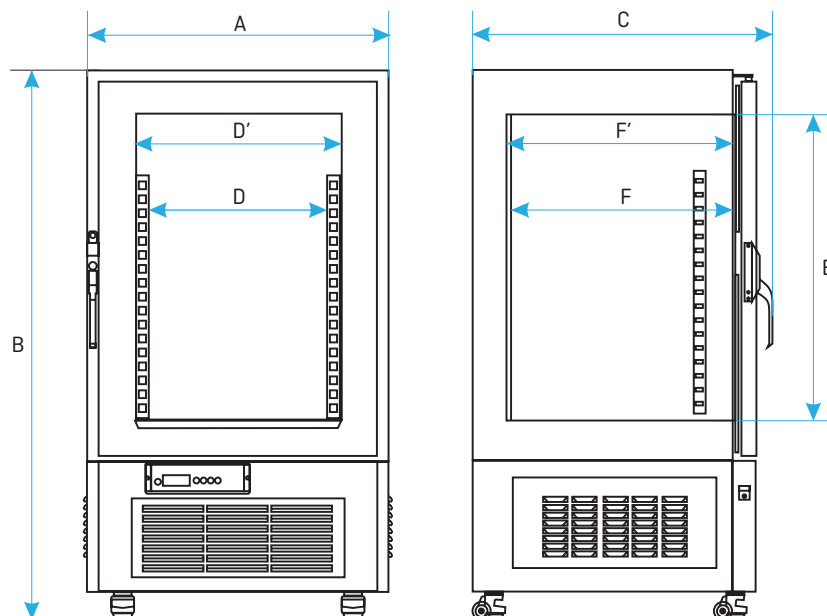
ZLN 85

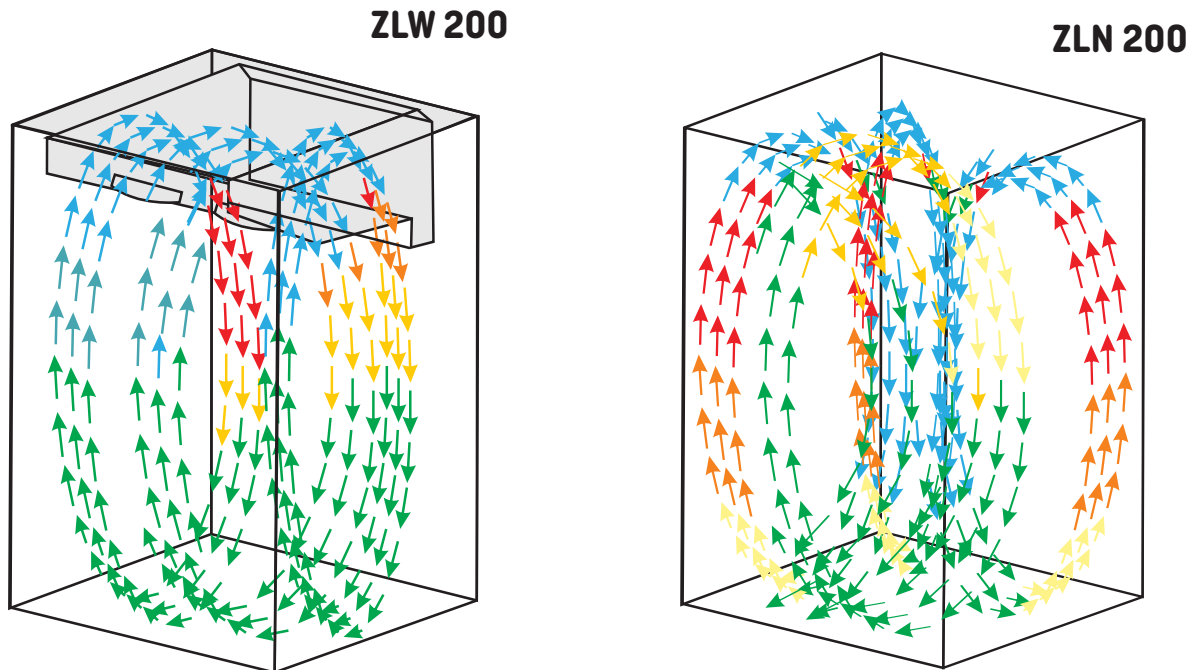


ZLW 200/300



ZLN-T/125/200/300





Freezers with forced air convection are “no frost” freezers. The basic principle of such system is to manage humidity inside the unit and prevent frost formation on the walls. The fan in the chamber mechanically forces the air circulation and ensures continuous air exchange. It blows continuously over the cooling element, the air is cooled down and gets into the chamber through special channels. Humid air converts into frost, but is directed to a special evaporator compartment and settles on the coldest element. The compressor periodically turns off, the frost layer melts down by a heating element and is drained outside as a condensate.

#### Advantages

- Uniform distribution of cool air through the chamber
- No need to defrost the unit
- Faster achieving of set temperature even with a large filling of the chamber
- Stable operation of the unit (in case of natural air convection freezers - the bigger ice layer on the evaporator, the less efficient operation of the unit)

#### Disadvantages in comparison to natural air convection unit

- Due to continuous operation of fan and dehumidification of the chamber air stored samples may be subject to ‘drying up’. This can be easily prevented by proper packing of material
- Louder operation unit (due to fan noise operation)
- Higher power consumption (due to fan operation)



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DE LA MARCA:**

## 20<sup>16</sup><sub>17</sub>

### **POL-EKO-APARATURA**

*manufacturer of controlled environment  
equipment for laboratory analysis  
and technological processes,  
distributor in Poland of:  
KNICK, THERMO SCIENTIFIC, WTW.*

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