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

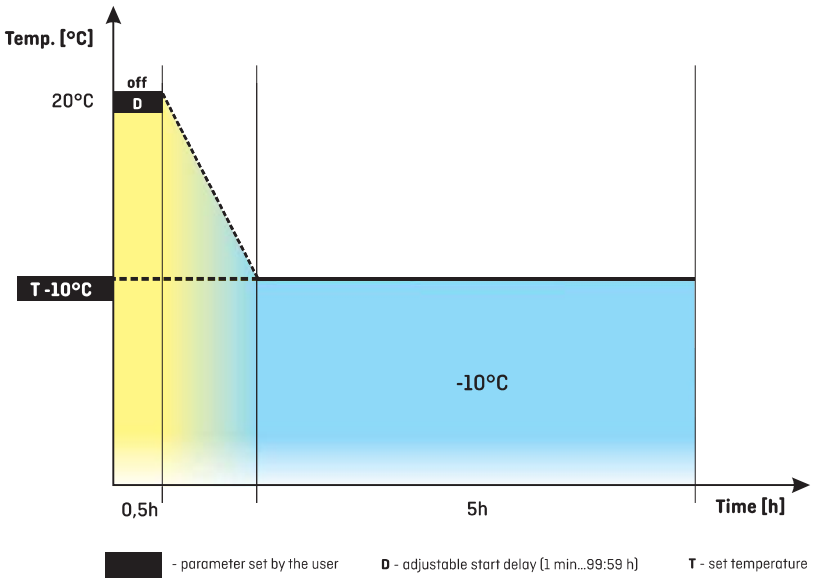
All thermostatic equipment manufactured by POL-EKO-APARATURA can be provided with Calibration Certificate issued by accredited Measurement Laboratory. Detailed information on accreditation is available on website: www.pol-eko.eu.

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

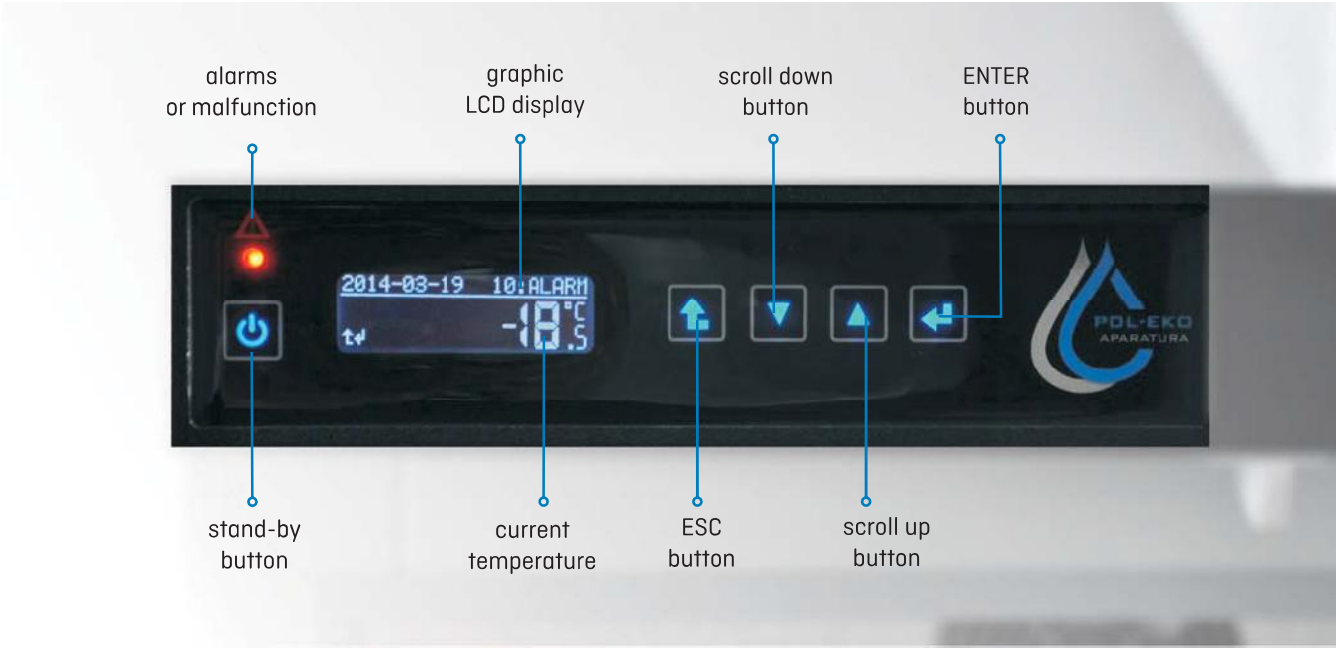
Controller advantages

- 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 80.

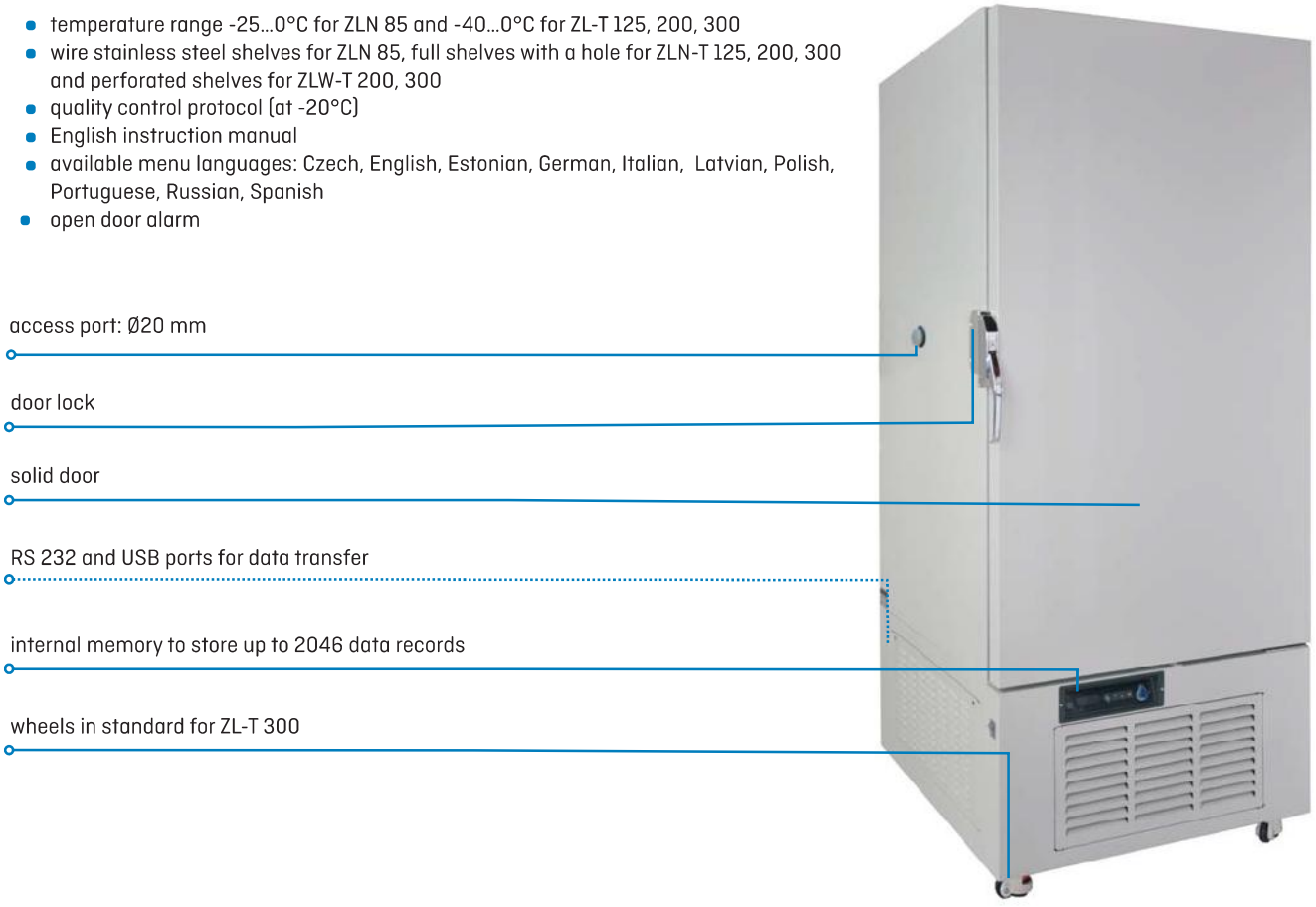


Control panel



Standard features

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



Parameter		ZLN 85	ZLN-T 125	ZLN-T 200	ZLN-T 300	ZLW-T 200	ZLW-T 300
air convection		natural				forced	
chamber capacity [l]		85	130	210	310	210	310
working capacity [l]		73	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	acid-proof stainless steel to DIN 1.4301					
	PREM/S	acid-proof 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[1] [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	380	520	520	520	520	520
	F' depth	400	530	530	530	530	530
	G depth	230	-	-	-	-	-
	H height	380	-	-	-	550	900
max shelf workload[2] [kg]	-	10	10	10	10	10	10
	PW[3] version	-	50	50	50	50	50
max unit workload [kg]	-	30	50	65	80	65	80
	W[4] 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					

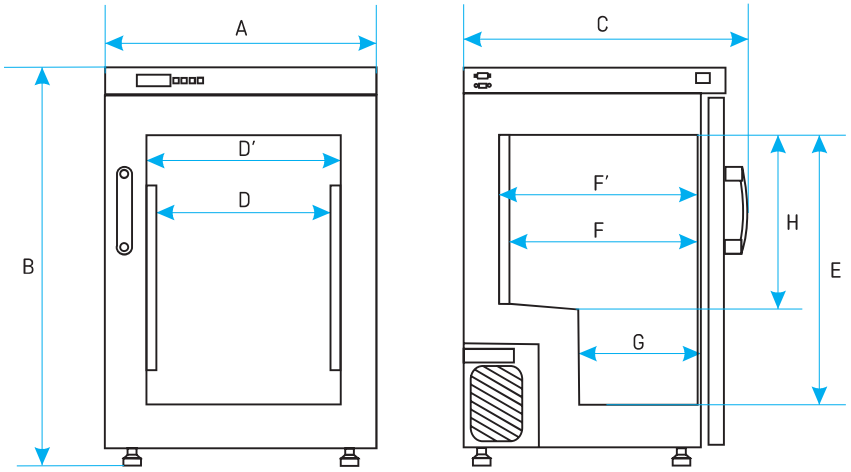
all the above technical data refer to standard units (without optional accessories)

* also available: 230V 60Hz, 115V 60Hz, 3P 230V 60Hz (according to model)
1 - depth doesn't include 50 mm of power cable
2 - on uniformly loaded surface
3 - reinforced shelf
4 - reinforced version

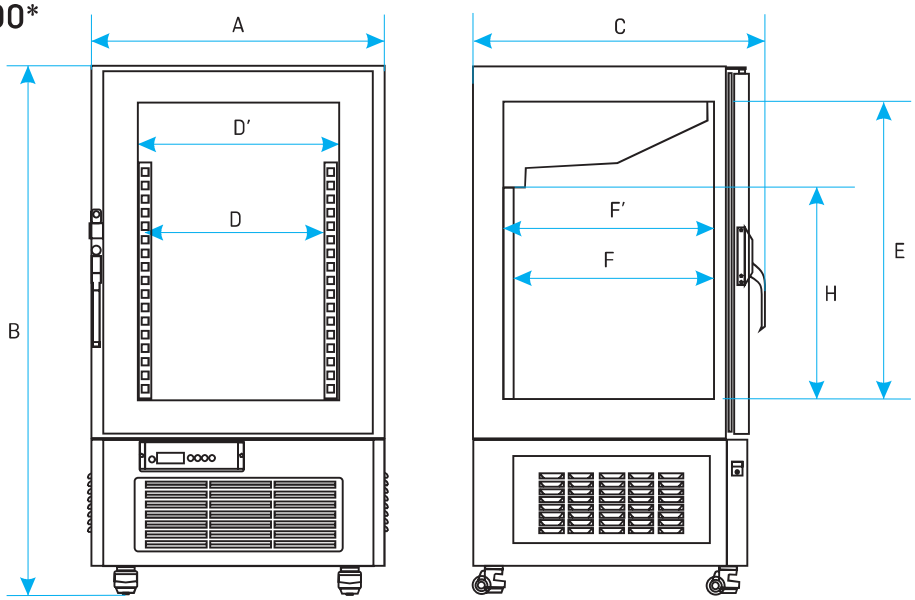
ZLN 85 Laboratory freezer can be combined as a double chamber unit with ST cooled incubator or CHL refrigerator types 2 and 3.

Options and accessories (icon description see pages 78-79)

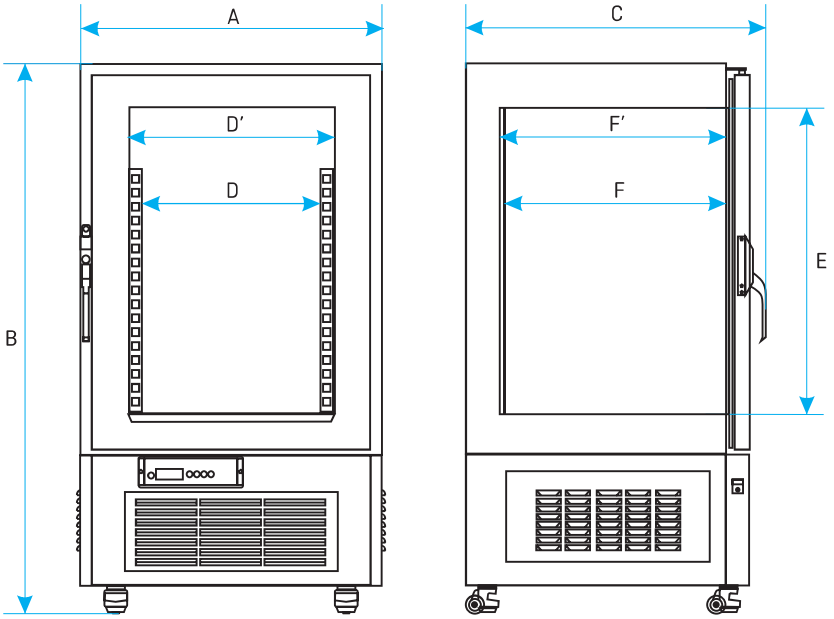
ZLN 85



ZLW-T 200/300*

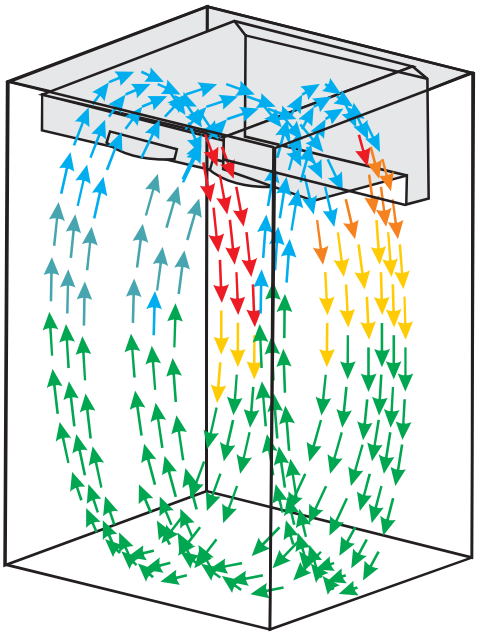


ZLN-T/125/200/300*

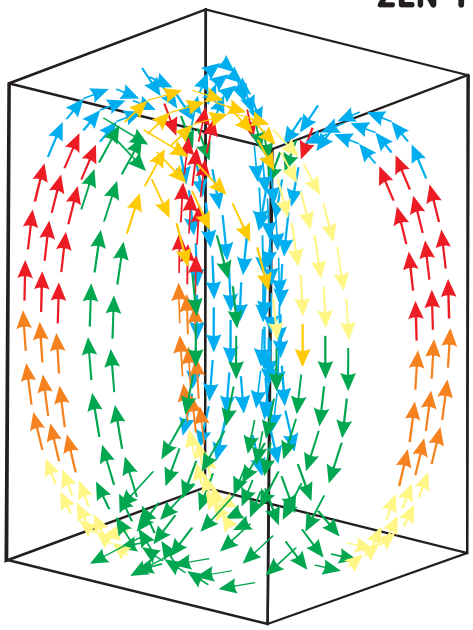


* Wheels in standard for ZL-T 300.

ZLW-T 200



ZLN-T 200



Freezers with forced air convection are “no frost” freezers. The basic principle of this system is to manage humidity inside the unit and prevent frost formation on the walls. The fan in the chamber forces mechanically 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 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 the fan and dehumidification of the chamber air, the stored samples may dry up. This can be easily prevented by proper packing of material
- Louder operation unit (due to fan)
- Higher power consumption (due to fan operation)