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- Medical refrigerator is intended for transportation of plasma and blood; transportation and storage of vaccines, blood serum and medicines; transportation of organs; transportation between laboratories of bacteria and viruses cultures; heating ampoules to 36 °C prior to introduction to vein of ampoules content.

- The operating principle of vehicular medical refrigerator is based on the use of thermoelectric Peltier effect.

#### **Appearance of vehicular medical refrigerator**



- Design of vehicular medical refrigerator is elaborated with regard to requirements to medical equipment. The refrigerator case is sealed. It is made of polished stainless steel on the outside and special plastic inside, which allows easy disinfection of cooling chamber. The refrigerator can be used for assembling on a specialized transport. Electric power supply to the refrigerator is from any vehicle consumer mains: 12 V, 24 V, 110 V. The refrigerator efficiency is achieved by computer optimization of its design, using high-performance two-stage thermoelectric modules Altec-11, intensification of heat exchange in cooling chamber and liquid-to-air heat exchange with the ambient air. As compared to the existing analogues, this refrigerator has increased volume and cooling depth. At ambient temperature +20 °C the temperature minus 30 °C is achieved in a 64 l chamber.

- The refrigerator can be operated at ambient temperatures up to +50 °C, which allows its use in tropical latitudes. It is also resistant to direct solar rays, increased humidity and even atmospheric precipitates.

- Owing to the absence of freon cooling, there is no danger of freon leakage to the environment due to casual loss of sealing in cooling system.

- The refrigerator provides for digital temperature indication and its automatic maintenance on the required level. Cooling system assures isothermality in cooling chamber volume on the level of  $\pm 0.5$  °C.
- The refrigerator is resistant to transport shaking.
- The referred advantages of this refrigerator expand its application area as compared to the existing analogs. The refrigerator is ecologically clean, high-performance and efficient.

### Specifications

№	Parameter name, measurement unit	Value
1.	Dimensions of cooling chamber, mm	400x355x455
2.	Outer dimensions of case, mm	870x555x600
3.	Maximum ambient temperature, °C	+50
4.	Temperature in chamber volume at ambient temperature: +50 °C +20 °C	-10 °C -30 °C
5.	Accuracy of temperature control inside chamber, °C	$\pm 0.5$
6.	Temperature difference in chamber, not over, °C	$\pm 0.5$
7.	Electric voltage, V	12, 24, 110
8.	Maximum electric power requirement, W	500
9.	Refrigerator weight, kgr	53

**Orders and additional information:** General P.O. Box 86, Chernivtsi, 58002, Ukraine; e-mail: [ite@inst.cv.ua](mailto:ite@inst.cv.ua); fax: (380-3722)-41917; phone: (380-3722)-41917; <http://ite.inst.cv.ua>