



MEDICAL COOLING & HEATING SYSTEMS

**ultra low freezer series**



**ULT 470**



**EF 600**



**EE 150**

## ULT serie -86



ULT 730

### -86 ultra low freezers:

- Ultra low freezers have net volume of 470 and 730 liters.
- The temperature set value can be adjusted the range of -50°C and -86°C on the device's screen.
- The device roll out from our factory by being set to -86°C.
- The inner surface of the device is made of cr-ni alloyed stainless steel material. The outer surface is made of sheet material painted with antibacterial electrostatic powder paint.
- The thermostat which sends data to the control panel of the device, measures with sensitivity of 0.1°C.
- The inner cabin is cooled by the static direct cooling method with the cooling pipes surrounding the cabin.
- The device has cascade cooling system.
- The temperature/time graph of the last 140 minutes can be seen on the screen of the device.
- The device has usb port for recording temperature data. 30 days of temperature data can be recorded to usb memory.
- Pt100 temperature sensor is used in the device.
- 12 cm polyurethane foam is used for good insulation in the device.
- There are two sealing gaskets in order to improve the insulation on the door part of the device.
- Insulating material covers are used in the cubicle of the device, so that the temperature in the cabin does not rise too much when the door of the device is opened.
- Covers with insulating material are used in the cell of the device so that the temperature inside the cabinet does not rise too much when the door of the device is opened.
- The device is microprocessor controlled.
- Every step is done with encryption method in order to prevent unauthorized people from using the device.
- There are 2 free wheels and 2 stoppers wheels for easy transport of the device.
- There is an automatically charged accumulator system on the control panel of the device. This system ensures that the digital control panel continues to operate for 72 hours in case of power failure.
- The device gives warning with visual and audible warning signals when the upper and lower temperature limits are exceeded, when the door of the device is left open, when there is a power cut or low voltage problem while the ultra low freezers are operating. It sends the error codes to the screen, the thermal printer and the files received from the usb.



YULT 300



MODEL		ULT 200	ULT 470	ULT 730	YULT 300
Temperature Range	°C	-50°C/-86°C	-50°C/-86°C	-50°C/-86°C	-50°C/-86°C
Set Point	°C	-80°C	-80°C	-80°C	-80°C
Internal Dimensions (W*d*h) Mm		670*595*550	670*595*1205	750*750*1280	1057*515*612 Mm
External Dimensions (W*d*h) Mm		910*870*1300	910*870*1930	990*1000*1980	1300*755*828 Mm
Screen		5,5" Touch Tft Screen	5,5" Touch Tft Screen	5,5" Touch Tft Screen	5,5" Touch Tft Screen /lcd
Net Volume (L)		288 Liter	470 Liter	730 Liter	267 Liter
Insulating Material		Cfc-free Polyurethane Foam	Cfc-free Polyurethane Foam	Cfc-free Polyurethane Foam	Cfc-free Polyurethane Foam
Temperature Sensor		Pt100	Pt100	Pt100	Pt100
Gas		R404a/r508b	R404a/r508b	R404a/r508b	R404a/r508b
Alarm System		Audio And Visual	Audio And Visual	Audio And Visual	Audio And Visual
Control System		Microprocessor Controlled	Microprocessor Controlled	Microprocessor Controlled	Microprocessor Controlled
Wheels		2 Free Wheels / 2 Stopper Wheels	2 Free Wheels / 2 Stopper Wheels	2 Free Wheels / 2 Stopper Wheels	2 Free Wheels / 2 Stopper Wheels
Graphic Screen		Yes	Yes	Yes	Yes
Internal Surface		Cr-ni Stainless Alloy	Cr-ni Stainless Alloy	Cr-ni Stainless Alloy	Cr-ni Stainless Alloy
External Surface		Electrostatic Powder Painted Stainless Steel	Electrostatic Powder Painted Stainless Steel	Electrostatic Powder Painted Stainless Steel	Electrostatic Powder Painted Stainless Steel
Number Of Shelves		Cr-ni Alloy Stainless Steel 4 Shelves (Optionally Can Be Increased)	Cr-ni Alloy Stainless Steel 4 Shelves (Optionally Can Be Increased)	Cr-ni Alloy Stainless Steel 4 Shelves (Optionally Can Be Increased)	Cr-ni Alloy Stainless Steel 4 Shelves (Optionally Can Be Increased)

## EF serie -40



**YEF 300**



**EF 150**



**EF 300**



**EF 600**

**Our laboratory freezers are produced with 3 different capacity option.**

- The outer surface of the device is made of galvanized steel, painted with electrostatic paint to protect against rust. The inner surface is produced of stainless steel.
- The device operates with 195-230 V/50 Hz network voltage.
- The door of the device comes with a high density polyurethane filling insulation, which has a heating surface and magnetic seal rings to provide impermeability.
- The inner shelf system has been produced of stainless steel material. It has been designed ergonomically for speeding up the air circulation.
- The deep freezer provides the opportunity to store between -20°C /-40°C.
- The insulation of the deep freezer is provided with a high density of polyurethane material.
- The device works smooth and quietly.
- The lightening of the inner cabin of the device is carried out with LED lights.
- The user-friendly digital control panel, which carried out with a micro processor, enables to keep the data in memory for 30 days.
- There is a USB socket to transfer the cabinet temperature information to the computer

when requested. In this way, the 10 year old temperature records can be transferred to the PC in excel format.

- There is an accumulator system charged automatically at the control panel of the device. This system allows the control panel and thermal printer (if available) to operate for 24 hours when the electricity cuts off.
- The freezer alerts you with visual and audio signals when the lower and upper temperature limits are exceeded, the door of the device is left open, low voltage and/or electricity cut off problems occurs.
- The refrigerant and the insulation of the deep freezer do not contain CFC gas which is harmful for the OZONE.
- There are two braked and two regular castors on the device that provide easy portability.
- As per request of the user, a thermal printer can be installed at the device. The numerical printout of the recorded data can be taken with the thermal printer.
- All medical devices produced by Emsaş A.S. are guaranteed for 2 years.
- All our products are produced in line with the ISO 9001:2008, TSE service place competence certificates. Our deep freezers have CE certificates.

MODEL		YEF 300	EF 150	EF 300	EF 600
Temperature Sensor		-5°C/-45°C	PT 100	PT 100	PT 100
Temperature Adjustment Range	°C	-40°C	-20/-40 °C	-20/-40 °C	-20/-40 °C
Cooling System		R404a	R404A	R404A	R404A
Alarm (temperature, Open Door, Electricity)		Audio And Visual	Visual and Audio	Visual and Audio	Visual and Audio
Insulation mm		100	100	100	80
Digital Microprocessor Control		+	+	+	+
Thermal Printer		Optional	Optional	Optional	Optional
PC Connection		Ntc	USB	USB	USB
Voltage		230 V - 50 Hz	230 V - 50 Hz	230 V - 50 Hz	230 V - 50 Hz
Internal Surface Structure		Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
External Surface Structure		Epoxy-Polyester Electrostatic Painted Stainless Steel	Epoxy-Polyester Electrostatic Painted Stainless Steel	Epoxy-Polyester Electrostatic Painted Stainless Steel	Epoxy-Polyester Electrostatic Painted Stainless Steel
External Dimensions	WxLxH mm	1300*755*828 Mm	600x650x1700	765x820x2000	923x820x2000
Internal Dimensions	WxLxH mm	1086*558*660 Mm	450x460x1000	565x540x1190	753x630x1427
Packed Dimensions	WxLxH mm	1310*755*828 Mm	610x700x1800	775x865x2020	943x840x2020
Gross Volume	L	340	207	363	677
Net Volume	L	335	180	320	590
Weight	Kg	150	120	165	200

## EE serie -30



**EE 150**



**EE 300**



**EE 600**

### Our laboratory freezers are produced with 3 different capacity option.

- The outer surface of the device is made of galvanized steel, painted with electrostatic paint to protect against rust. The inner surface is produced of stainless steel.
- The device operates with 195-230 V/50 Hz network voltage.
- The door of the device comes with a high density polyurethane filling insulation, which has a heating surface and magnetic seal rings to provide impermeability.
- The inner shelf system has been produced of stainless steel material. It has been designed in ergonomics for speeding up the air circulation.
- The deep freezer provides the opportunity to store between -5°C /-30°C.
- The insulation of the deep freezer is provided with a high density of polyurethane material.
- The device works smooth and quietly.
- There is a filter warning indicator showing the air filter status on the front control panel of the device. The air filter is easily removable and washable.
- The device has full automatic defrost system in order to protect the productivity of the cooling evaporator.
- The lightening of the inner cabin of the device is carried out with LED lights.
- A user-friendly digital control panel with a micro processor has been used on the device. This system can keep the data in memory for 30 days.

- There is a USB socket to transfer the cabinet temperature information to the computer when requested. In this way, the 10 year old temperature records can be transferred to the PC in excel format.
- The thermostat at the control panel of the device can make measurements with 0.1 degree sensitivity.
- There is an accumulator system charged automatically at the control panel of the device. This system allows the control panel and thermal printer (if available) to operate for 24 hours when the electricity cuts off.
- The freezer alerts you with visual and audio signals when the lower and upper temperature limits are exceeded, the door of the device is left open, low voltage and/or electricity cut off problems occurs.
- The refrigerant and the insulation of the deep freezer do not contain CFC gas which is harmful for the OZONE.
- There are two braked and two regular castors on the device that provide easy portability.
- As per request of the user, a thermal printer can be installed at the device. The numerical printout of the recorded data can be taken with the thermal printer.
- All medical devices produced by Emsas are guaranteed for 2 years.
- All our products are produced in line with the ISO 9001:2008, TSE service place competence certificates. Our deep freezers have CE certificates.

MODEL	EE 150	EE 300	EE 600
Cooling System	Direct Air Cooling	Direct Air Cooling	Direct Air Cooling
Temperature Sensor	PT 100	PT 100	PT 100
Temperature Adjustment Range °C	-5/-30 °C	-5/-30 °C	-5/-30 °C
Cooling Gas	R404A	R404A	R404A
Alarm (temperature, Open Door, Electricity)	Visual and Audio	Visual and Audio	Visual and Audio
Insulation mm	100	100	100
Digital Microprocessor Control	+	+	+
Thermal Printer	Optional	Optional	Optional
PC Connection	USB	USB	USB
Internal Surface Structure	Stainless Steel	Stainless Steel	Stainless Steel
External Surface Structure	Epoxy-Polyester Electrostatic Painted Stainless Steel	Epoxy-Polyester Electrostatic Painted Stainless Steel	Epoxy-Polyester Electrostatic Painted Stainless Steel
External Dimensions W x L x H mm	600x650x1700	765x820x2000	923x820x2000
Internal Dimensions W x L x H mm	450x460x1000	565x540x1190	753x630x1427
Packed Dimensions W x L x H mm	610x700x1800	775x865x2020	943x840x2020
Gross Volume L	207	363	677
Net Volume L	180	320	590
Weight Kg	120	165	200





**EMSAŞ** SINCE 1975 <sup>®</sup>

BREAST MILK STORAGE

WATERBATH-ETUV

COOLED INCUBATOR

LABORATORY - PHARMACY REFRIGERATOR

DEEP FREEZER

BLOOD BANK REFRIGERATOR

PLATELET THROMBOCYTE AGITATOR - INCUBATOR

PLASMA THAWER

quality &  
safe protection



## EKT serie

Our laboratory refrigerators are produced with 7 different capacity option.

- The outer surface of the device is made of galvanized steel, painted with electrostatic paint to protect against rust. The inner surface is produced of stainless steel.
- The device operates with 195-230 V/50 Hz network voltage.
- The door of the device has double thermal glazing, it can be locked and has magnetic seal rings. Thus, it provides an opportunity to trace the stocks.
- There is a plastic covered wire shelves in the device that can be adjusted according to the user request.
- Operates between +0/+15°C and it is set to +4°C.
- Provides equal temperature distribution with the strengthened fan system it contains..
- In order to prevent the temperature rising up speedily , Interior fans shut down when door is opened
- Works smoothly and quietly.
- In order to protect the productivity of the device cooling evaporator, there is full- automatic defrosting system.
- The lightening of the inner cabin of the device is carried out with LED lightening.
- A user-friendly digital control panel with a micro processor has been used on the device. This system can keep the data in memory for 30 days.
- There is a USB socket to transfer the cabinet temperature information to the computer when requested. In this way, the 10 year old temperature records can be transferred to the PC in excel format.
- The thermostat at the control panel of the device can make measurements with 0.1 degree sensitivity.
- There is an accumulator system charged automatically at the control panel of the device. This system allows the control panel and thermal printer (if available) to operate for 24 hours when the electricity cuts off.
- While the refrigerator is working the device gives alerts with the visual and audio signal when the lower and upper temperature limits are exceeded, the door of the device is left open, and there is electricity cut off or low voltage problems.
- The cooling system and the insulation system of the device do not contain CFC gas that is harmful for OZONE.
- High quality well known brand compressor is used which is hermetically sealed and air-cooled
- There are two braked and two regular castors under the device that provide easy portability.
- Our devices can be connected to heat tracking system.
- All medical devices produced by Emsaş A.Ş. are guaranteed for 2 years.
- As per the request of the user, a thermal printer can be installed at the device. The numerical and graphical printout of the data recorded with the thermal printer can be taken.
- All of our products are produced in line with the ISO 9001:2008, TSE service place competence certificates. The device has CE certificates and barcode.

## EKT-B serie (block door)

EKT-B Serie has same features with EKT Serie only the difference; door system is designed as polyurethane pressed block (solid) door.

MODEL		EKT 80	EKT 150	EKT 160	EKT 175	EKT 250	EKT 425	EKT 725	EKT 1450
		EKT-B 80	EKT-B 150	EKT-B 160	EKT-B 175	EKT-B 250	EKT-B 425	EKT-B 725	EKT-B 1450
Temperature Range	°C	0 / +15°C	0 / +15°C	0 / +15°C	0 / +15°C	0 / +15°C	0 / +15°C	0 / +15°C	0 / +15°C
Set Point	°C	+4 °C	+4 °C	+4 °C	+4 °C	+4 °C	+4 °C	+4 °C	+4 °C
Wire Shelves		2	2	2	3	3	5	5	12
Digital Microprocessor Control		+	+	+	+	+	+	+	+
Thermal Printer		Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Alarm (temperature, Open Door, Electricity)		+	+	+	+	+	+	+	+
Interior Lighting		+	+	+	+	+	+	+	+
External Dimensions	WxLxH mm	450 x 655 x 765	765x825x870	600 x 655 x 1170	600 x 640 x 1430	600 x 592 x 1610	600 x 640 x 2000	765 x 820 x 2000	1450 x 820 x 2000
Internal Dimensions	WxLxH mm	370 x 365 x 520	660x380x620	516 x 535 x 595	516 x 543 x 797	514 x 547 x 1070	516 x 543 x 1390	660 x 712 x 1347	1370 x 712 x 1346
Gross Volume	L	70,50	188	165	223	300	390	638	1312
Net Volume	L	65	155	160	200	260	350	580	1166
Weight	Kg	50	80	100	100	110	147	160	250
Door Lock		+	+	+	+	+	+	+	+
Castors (2 Braked, 2 Regular)		+	+	+	+	+	+	+	+
SMS and E-Mail Module		Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional

OPTIONAL  
THERMAL  
PRINTER



OPTIONAL  
BASKET



OPTIONAL  
CHROME  
SHELF



**EKT serie**



**EKT80** 65 L

**EKT150** 150 L

**EKT150** 160L

**EKT-B Serie**



**EKT-B 80**  
65 L

**EKT-B 150**  
155 L

**EKT-B 160**  
160 L



**EKT 175** 200 L

**EKT 250** 260 L

**EKT 425** 350 L



**EKT-B 175**  
200 L

**EKT-B 250**  
260 L

**EKT-B 425**  
350 L



**EKT 725** 580 L

**EKT 1450** 1166 L



**EKT2x725** 600 L

**EKT-B 1450** 1166 L



Factory Adress: Muradiye Sanayi Bölgesi Muradiye Mahallesi  
28 Sokak No:6 Yunusemre - MANİSA / TURKEY  
Factory Phone: +90 (236) 214 03 96 - 97 - 98 Fax: +90 (236) 214 07 06  
İzmir Phone: +90 (232) 479 55 22 - 479 55 23  
E-mail: [export1@emsas-as.com.tr](mailto:export1@emsas-as.com.tr)



[www.kandolabi.com](http://www.kandolabi.com)

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ISO 9001:2008

ISO 13485



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MEDICAL COOLING & HEATING SYSTEMS

2019

## EC CERTIFICATE AT SERTİFİKA

According to Annex V of the Directive 93/42/EEC on Medical Devices  
93/42/AT Tıbbi Cihaz Yönetmeliği Ek V'e göre

### Production Quality Assurance System Üretim Kalite Güvencesi

Certificate Number: 2195-MED-1732001  
Sertifika Numarası

**Manufacturer:** EMSAŞ ELEKTRİK MALZEMELERİ SAN. TİC. A.Ş.  
*Üretici* İnönü Mahallesi 28 Sokak Muradiye Köyü Muradiye Bucağı 6 Dış Kapı No  
Merkez / Manisa TÜRKİYE

**Product(s):** Product specifications are given on the following page(s).  
*Ürün(ler)* Ürün detayları ilerleyen sayfa(lar)da belirtilmiştir.

**Model(s):** Product models are given on the following page(s).  
*Model(ler)* Ürün modelleri ilerleyen sayfa(lar)da belirtilmiştir.

**Reference Report No:** MM0648-P004-R01, MM0648-P004-R02  
*Referans Rapor No*

Szutest, Notified Body 2195, declares that the aforementioned manufacturer has implemented a quality assurance system according to Annex V, Section 3 of the directive 93/42/EEC on medical devices. This quality assurance system covers those aspects of manufacturing concerned with securing and maintaining safe conditions of the respective product(s) and conforms to the provisions of this Directive. The approved quality system is subject to surveillance pursuant to Annex V, Section 4 of Directive 93/42/EEC and unannounced audits.

Szutest must be informed of any significant changes in the design and/or construction of the product(s). For class I devices with sterile conditions the quality management system evaluation is restricted to the aspects of manufacture concerned with securing and maintaining sterile conditions. For class I devices with measuring function the quality management system evaluation is restricted to the aspects of manufacture concerned with the conformity of the devices with metrological requirements.

2195 kimlik numaralı Onaylanmış Kuruluş Szutest, yukarıda belirtilen üreticinin 93/42/AT Tıbbi Cihaz Yönetmeliği EK V bölüm 3'üne göre bir kalite yönetim sistemi uyguladığını, bu yönetim sisteminin yönetmeliğin sadece bahsi geçen ürünün üretiminin güvenlik koşullarını sağlama ve devam ettirme ile ilgili gerekliliklerin karşıladığını beyan eder. Onaylanan bu kalite yönetim sistemi, 93/42/AT Tıbbi Cihaz Yönetmeliği EK V, bölüm 4'e göre periyodik olarak gözetime ve habersiz saha denetimlerine tabidir.

Üretici, ürünlerinin tasarımında ve yapısında gerçekleştirdiği önemli değişiklikleri Szutest'e bildirmek zorundadır. Steril kondisyondaki sınıf I ürünler için kalite yönetim sistemi değerlendirmesi üretimin steril kondisyonun sağlanması ve korunmasıyla limitlidir. Ölçüm fonksiyonlu sınıf I ürünler için Kalite yönetim sistemi değerlendirmesi üretimin cihazların metrolojik şartlara uyumunu sağlamasıyla limitlidir.

**This EC certificate is valid till 2024-05-26.**  
**Bu AT Sertifikası 2024-05-26 tarihine kadar geçerlidir.**

Issue Date/Yayın Tarihi: 2017-11-16  
Revision No./ Revizyon No.: 02 Recertification/Yeniden Belgelendirme  
Revision Date/ Revizyon Tarihi: 2020-03-13

Rukiye BALKAN  
Deputy General Manager  
Genel Müdür Yardımcısı

# SZUTEST

**Certificate Number: 2195-MED-1732001**

*Sertifika Numarası*

**Product specifications:**

*Ürün detayları*

<b>(1) Blood Bank Refrigerator</b> <i>(1) Kan Saklama Dolabı</i>	EKN 25, EKN 50, EKN100, EKN 200, EKN 300, EKN 600, EKN 25 VK, EKN 50 VK, EKN 100 VK, EKN 200 VK, EKN 300 VK, EKN 600 VK
<b>(2) Trombocyte Incubator</b> <i>(2) Trombosit İnkübatörü</i>	ECI-1, ECI-2, ECI-3, ECI-1 VK, ECI-2 VK, ECI-3 VK
<b>(3) Trombocyte Agitator</b> <i>(3) Trombosit Ajitatorü</i>	EAJ-05, EAJ-09, EAJ-L09
<b>(4) Blood Plasma Freezer</b> <i>(4) Plazma Saklama Dolabı</i>	EE 100, EE 150, EE 300, EE 600, EF 100, EF 150, EF 300, EF 600, EE 100 VK, EE 150 VK, EE 300 VK, EE 600 VK, EF 100 VK, EF 150 VK, EF 300 VK, EF 600 VK



**SZUTEST UYGUNLUK DEĞERLENDİRME A.Ş.**

Tatlısu Mahallesi, Akif İnan Sk. No:1 Ümraniye 34774 İSTANBUL / TÜRKİYE

## CERTIFICATE



Medical Devices Quality Management System

CERTIFICATE NO: 32104001

### EMSAŞ ELEKTRİK MALZ. SAN. TİC. A.Ş.

Inönü Mahallesi 28 Sokak Muradiye Köyü Muradiye Bucağı 6 Dış Kapı No Merkez / Manisa  
/TÜRKİYE

EN ISO 13485:2016

Design, Production, Sales and Technical Service of Blood Bank  
Regrigerator, Thrombocyte Incubator, Thrombocyte Agitator, Blood  
Plasma Freezer and Vaccine Refrigerator

Approves that the Medical Devices Quality Management System implemented for above scope.

Issue Date 09.02.2021

Expiry Date 08.02.2024



TÜRKAK BDS NO  
YS-9AA4-4E58



Tıbbi Cihazlar K. Y. S.  
TS EN ISO/IEC 17021  
AB-0044-YS

Deputy General Manager

The certificate inquiry is made by reading the QR codes by mobile devices, providing necessary information on  
<http://public.szutest.com.tr> or by using BDS No on <https://tdbs.turkak.org.tr>.