



## MEDICAL REFRIGERATORS

LABORATORY AND PHARMACY  
REFRIGERATOR  
BLOOD BANK  
REFRIGERATOR  
LABORATORY FREEZER  
**DEEP FREEZER**  
PLASMA FREEZER  
COMBINED  
REFRIGERATOR  
AND FREEZER  
**COMBINED REFRIGERATOR**



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Flight No.	Destination	Schedule	Hall	Type
LH 458	London/Heathrow	1810	B	321
LH 895	Hannover	1810	A	320
LH 811	Köln/Bonn	1815	A	320
LH 833	Düsseldorf	1815	A	735
LH 233	Berlin/Tegel	1820	A	321
FU 546	Nizza	1830	D	CRJ
LO 354	Warschau	1830	D	EM4
OS 116	Wien	1835	A	735
SR 557	Zürich	1835	D	320
LH 227	Frankfurt/Main	1840	A	315
OU 437	Zagreb	1840	B	320
LH 555A	Strasbourg	1845	A	DH3
LH 555B	Darmstadt	1845	A	DH3
LH 555C	Düsseldorf	1845	A	321
LH 555D	Hamburg	1845	A	320
LH 555E	Olo	1850	B	735
LH 5104	Helsinki	1850	B	142
DL 7520	Berlin/Tegel	1850	D	733
LH 1061	Nürnberg	1850	A	AT3
LH 925	Bremen	1850	A	710
LH 9599	Paderborn/Lippel	1850	A	DH3
DI 7166	Köln/Bonn	1855	D	733
DI 7096	Düsseldorf	1855	D	733
LH 4514	Birmingham	1855	B	142
LH 922	München/Osnabr.	1855	A	733
LH 4512	Manchester	1855	A	142
LH 5170	Leipzig/Halle	1855	A	F50
LH 3672	Zürich	1900	B	F50
LH 4160	Paris/CDG	1900	A	735
LH 5822	Marseille	1900	A	CRJ
LH 4432	Brüssel	1900	A	735
LH 5760	Nizza	1900	A	CRJ
ZK 034	Graz	1900	A	J31
LH 5886	Amsterdam	1900	A	142
IB 3531	Madrid	1905	D	320
LH 3212	Prag	1905	B	F50
LH 5076	Warschau	1905	B	CRJ
LH 4040	London/Heathrow	1910	B	733
LH 3832	Bologna-Napoli	1910	A	733
LH 5384	Wien	1910	A	CRJ
LH 5886	Turin	1910	A	142
LH 5386	Genf	1910	B	146
LH 5894	Florenz	1910	A	142
LH 882	Düsseldorf	1910	A	733
LH 3448	Málaga	1910	A	733
LH 5812	Göteborg	1915	B	CRJ
LH 5812	Lyon	1915	A	CRJ
LH 895	Hannover	1915	A	733
LH 433	Köln/Bonn	1915	A	320
LH 433	Frankfurt/ARN	1915	B	319
LH 433	Berlin/Tegel	1915	A	321
LH 433	Madrid	1920	A	733
LH 433	Wien	1920	A	733
LH 433	London	1920	B	319
LH 433	Barcelona	1920	A	733
LH 433	Thien	1920	A	320
LH 433	Hamburg	1925	A	320
LH 433	Düsseldorf	1925	A	733
LH 433	Hest	1930	A	AT3
LH 433	Brüssel	1930	D	735
LH 433	Prora	1935	A	AT3
LH 433	Medig	1935	A	AT3
LH 433	Pico	1935	C	320
LH 433	Turk	1935	A	D38
LH 433	Kopenhagen	1940	B	M80
EN 2681	Genoa	1945	A	AT3
EN 2677	Pisa	1945	A	AT3
EN 2705	Mallorca/Bergamo	1945	A	AT3
EAE 108	Mönchengladbach	1945	A	AT3
EN 9193	Ancona	1945	A	AT3
LH 244	Berlin/Tegel	1945	A	733
DI 7114	Hamburg	1955	D	735
LH 273	Frankfurt/Main	1955	A	A88
DI 4609	Berlin/Tegel	1955	D	735
KL 1798	Amsterdam	2000	D	F70

Rev. 08 - 10. 2019  
Should it be necessary of useful without undermining any model essential features,  
technical and stylistic characteristics are subject to be changed without manufacturer's  
previous notice. Pictures don't necessarily show product in standard version.



as established in 1997,  
as result of twenty year experience of its owners  
in medical refrigeration field.

Constant research and development, along with  
professional and serious attitude have enabled **frimed**  
to design and manufacture highly reliable refrigerators  
and freezers to be used in hospital, laboratory,  
industrial biomedical and pharmaceutical fields as well  
as scientific field in general.

In few years our appliances have become well known  
and are now appreciated and chosen in many countries  
all over the world.





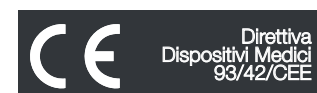
**frimed** has always been oriented to a constant improvement of the business process in order to satisfy the client, to involve its staff and to have a relationship of mutual satisfaction with suppliers. The commitment undertaken in this direction has enabled the company to achieve an important goal the certification of Quality Management System ISO 9001 which is a guarantee of reliability and professional attitude.



Further Quality Management System ISO 14001: certification confirms **frimed** serious commitment to minimize the environmental impact of procedures, products and services and attests the reliability of the Environmental Management System applied.



In 2010 **frimed** also achieved the certification of Quality Management System according to ISO 13485 (Medical Devices) and, at the same time, the CE certification according to Medical Device Directives 93/42/EEC for the marking of Blood Bank refrigerators (class IIa) for hospital use.





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## ENERGY SAVING AND ENVIROMENT PROTECTION TECHNOLOGY

### LED LIGHTING

All our cabinets with positive temperature are internally equipped with LED lights. LED lighting is the solution for reducing energy use, because it allows saving energy up to 70% compared with fluorescent lamps. LED lights have high performance, bright colour and provide beneficial environmental impact with longer life and therefore less landfill waste.

### LOW EMISSIVITY GLASS

This technology applied to all models with glass door significantly improves performance of insulation allowing energy saving.

### CFC-FREE THERMO INSULATION

Insulation of all cabinets is done by means of ecological CFC-free polyurethane foam. Insulation thickness of 60mm for all refrigerator models and 80,100 mm for freezer models grants highly insulating performance.



### ENVIROMENT FRIENDLY REFRIGERANT GAS NATURAL GAS R290

CFC- free R452a gas is used in all compressors of frimed models. In addition we also offer compressors with natural gas R290 on all our models.

### ENERGY SAVING DEFROST CYCLE

In all ventilated refrigerators, defrosting cycles are performed only when necessary.

### HOT GAS DEFROSTING

for ventilated freezer AF70B and AF140B with a very short cycle with no need of electric resistance.

### HIGH PERFORMANCE MOTOR

fan granting energy saving thanks to new technology. Besides, **frimed** mainboard makes condenser fan work only when necessary.



## TECHNICAL HIGHLIGHTS

### STRUCTURE

External structure in hot-dip galvanised steel, anti-corrosion treated and PVC film coated. Stainless steel internal structure.

### INSULATION

Insulation of 60mm, 80mm, 100mm obtained by injection of high density ecological polyurethane CFC-free foam for excellent product preservation and best energy saving.

### DOOR

Self-closing door with removable magnetic gasket on four sides for perfect closing. Right hand opening or left hand on request.

### LOCK WITH KEY

To use the appliance under supervision. Optional electric digital key lock.

### LED LIGHTING

LED light with automatic switch at door opening. Manual switch on control panel.

### SHELVES

In Scotch-Brite stainless steel. Adjustable in height.

### DRAWERS (STANDARD ON BLOOD BANK REFRIGERATORS)

Sliding drawers in Scotch-Brite stainless steel. Plexiglas frontal side. Optional plexiglas dividers.

### REFRIGERATION SYSTEM

Completely sealed, silent and highly efficient hermetic compressor and ventilated air condenser. Internal ventilated or static evaporator. CFC-free refrigerant.

### DEFROSTING

Fully automatic defrosting cycle with auto-evaporation of condensed water, or manual defrosting cycle.

### DATA LOGGER

Electronic data logger with download of data on USB pen drive.

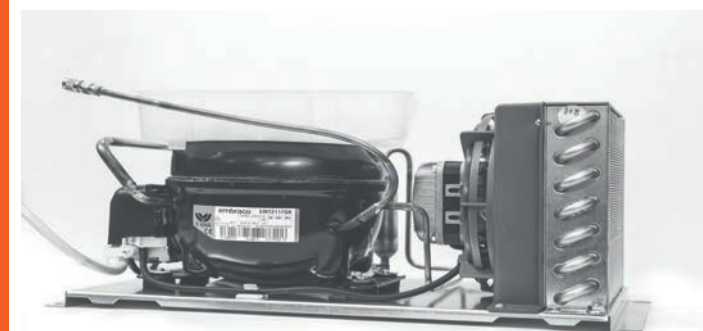
### TEMPERATURE CHART RECORDER (STANDARD ON BLOOD BANK REFRIGERATORS)

Weekly temperature recording system working with 1,5V battery. It is equipped with 52 disks and an ink pen.

### CASTORS WITH FRONTAL BRAKES (OPTIONAL)

### TEST HOLE (OPTIONAL)

Ø 25 mm sidewall test hole for custom probe.



## CONTROL PANEL

Microprocessor control panel with **colour 4.3" LCD touch screen and keys**.

Setting and visualization with **0.1°C resolution**.

Display showing cabinet temperature, set point, date, hour, equipment model and electronic accessories.

Continuous temperature monitoring.

Real time temperature graph on display (to be activated by user).

**Password protected** power switch and settings.

Digital **humidity sensor** (optional).

**RS232/RS485** ports.

Digital calibration of probes.

**In/out 4-20 mA** converter module.

**Safety thermostat**.

Two independent **PT1000** probes, the first one to set and detect temperature, the other one to manage the alarm system and display temperature.

**Visual and audible alarms** through buzzer sound, general alarm warning light and specific alarm warning icon on display.

Alarms of high and low temperature, open door, condenser efficiency, damaged probes, power failure at electricity recovery, power failure with recording of data and alarms generated by back-up battery (standard only on blood bank refrigerator and plasma freezer), damaged or flat battery.

Memory of latest alarms shown on display.

**Back-up Battery** to show temperature on display and to manage the alarm system in case of power failure.

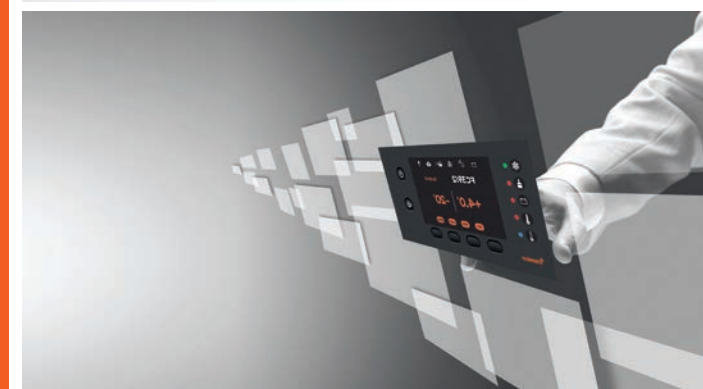
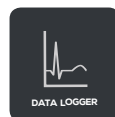
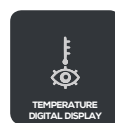
**Remote contact** (dry, volt-free) to connect the equipment to an external alarm.

**GSM module** to send SMS alarms messages to mobile phones showing date, time, cabinet temperature and type of alarm. Possibility to send SMS messages from mobile phone to check correct functioning of equipment.

**LAN port** to connect one or more appliances via Ethernet on PC to monitor working state.

**USB port** to download temperature data and alarms and to upgrade or reset the appliance.

**Data logger** to record temperatures and alarms. Download data on USB pen drive.





## SHU AIR PURIFIER

A revolution in air sanitization and purification of your refrigerator.

The technology used by SHU quickly and effectively attacks and destroys micro-organisms which are harmful to humans (mould, bacteria, viruses, odours and volatile organic compounds) by taking advantage of extraordinary biochemical processes.

Shu air purifier is the only one currently on the market using "state-of-the-art" technology. This is the latest and most advanced technology which is used in NASA aerospace stations.

This system is capable already in the first 90 minutes of use, of eliminating more than 95% of viruses, bacteria and mould in the environment.

### HOW SHU WORKS

The germicidal UV lamp destroys germs that pass through the UVC light rays.

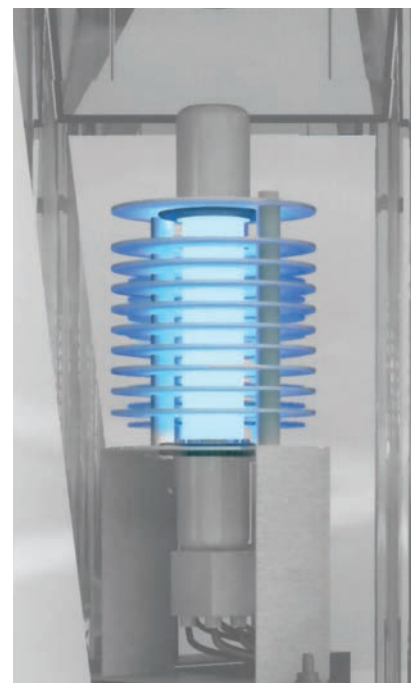
The rays of light from the UV lamp react with the nano Nickel HCT™ catalyst producing catalytic molecules. The catalytic molecules detect and destroy the carbon-based molecules by converting them into harmless carbon dioxide and water.

Unlike other purification systems on the market, SHU is not limited to purifying the air that passes through the catalyst, but also emits a thick layer of molecules into the air (ROS Reactive Oxygen Species) that purifies the air throughout the whole environment.

**SHU, VIA AHPCO TECHNOLOGY,** produces a layer of hydroxide ions, radicals, radical peroxides, hydro peroxides which through the action of light and air humidity, triggers a reaction of decomposition of organic and inorganic substances: only the oxygen and hydrogen molecules remain in the air. It is an absolutely natural phenomenon similar to what occurs during a storm: the air is purified.

### SHU ELIMINATES IN REAL TIME...

Salmonella enterica  
Staphylococcus aureus  
Resistant strains of Staphylococcus aureus:  
Methicillin resistant (MRSA) and CA-MRSA /  
PVL-MRSA  
Vancomycin resistant Enterococcus (VRE)  
Listeria monocytogenes  
Escherichia coli (E. coli O157: H7)  
Campylobacter jejuni  
Acinetobacter baumannii  
HIV 1  
Influenza A  
Avian Influenza  
H1N1 (Human and Swine)  
Herpes Simplex Type 1  
Polio Type 2  
Norovirus and Murine Norovirus  
Rhinovirus



**shu**  
SANITARY HABITAT UNIT



## COMBINED REFRIGERATOR AND FREEZER

### LABORATORY AND PHARMACY

+2°+12°/-10°-30°C FROM 200/100 TO 700/700 LT.

#### FC/2-AF/2 MODELS

##### STRUCTURE

External structure in hot-dip galvanized steel, anti-corrosion treated and PVC film coated. Scotch-Brite stainless steel internal structure.

##### INSULATION

60mm insulation obtained by injection of high density ecological polyurethane CFC-free foam for excellent product preservation and energy saving.

##### DOOR

Self-closing solid or glass door (double insulating – low emissivity glass) for refrigerator compartment and self-closing solid door for freezer compartment. Folding magnetic gasket (easy to replace) on four sides for perfect closing. Right hand opening or left hand on request. Lock with key.

##### SHELVES/DRAWERS

Scotch-Brite stainless steel shelves, removable and adjustable in height in refrigerator compartment. Scotch-Brite stainless steel drawers with telescopic ball-bearing slides and plexiglas frontal side in freezer compartment (shelves on AF/2 models).

##### LIGHT

LED light (energy saving up to 70%, ecological) with automatic switch at door opening in refrigerator compartment. Manual switch on control panel.

##### TEMPERATURE RANGE

Refrigerator compartment: between +2°C and +12°C. Factory preset to +4°C.

Freezer compartment: between -10°C and -30°C. (-25°C on AF140/2 models)

Factory preset to -25°C (-22°C on AF140/2 models).

Digital adjustable temperatures with an increment of 0.1°C.

##### DUAL REFRIGERATION SYSTEM

Two separate completely sealed, silent and highly efficient hermetic compressors and ventilated air condensers (suitable also for tropical countries). Forced-air cooling system in refrigerator compartment conceived to achieve maximum temperature uniformity and stability inside the refrigerator even in case of frequent door openings. Evaporator fan shuts off during door openings. Static evaporator in freezer compartment. Ventilated evaporator for both compartments of model AF140/2. CFC-free refrigerant R452a or CFC/HCFC-free natural refrigerant R290 on request.

##### DEFROSTING

Fully automatic defrosting cycle in refrigerator compartment.

Manual defrost in freezer compartment. Hot gas defrost in freezer compartment of AF140/2 models.

##### CONTROL PANEL AND ALARMS

Microprocessor control panel with colour 4.3" LCD touch screen and keys.

Display with 0.1°C resolution. Temperature monitoring detected by two independent PT1000 probes. Real time temperature graph (to be activated by user).

Optional humidity sensor. RS232/RS 485 port. Digital calibration of probe.

Visual and audible alarms of: high and low temperature (by means of independent probe), open door, condenser efficiency, damaged probes, **power failure at electricity recovery, power failure with recording of data and alarms (by means of optional back-up battery)**, damaged or flat battery. Memory of latest alarms visible on display.

##### DATA LOGGER

Electronic recording system of temperatures and alarms in refrigerator and freezer compartments. Download data on USB pen drive.



#### STANDARD

- Shelves in refrigerator compartment.
- Drawers in freezer compartment (shelves on AF/2 models).
- Four one-way wheels with stabilizing adjustable feet.
- Two power cords with Schuko type plug or British type plug.
- Protection fuses.
- (on power switch and electronic mainboard)
- RFI filter.
- Password protected power switch and settings.
- Electronic control panel with alarm system.
- Remote contacts (dry, volt-free) for alarm
- Two data loggers with USB port to download data.
- Memory of latest alarms visible on screen.
- Power failure alarm at electricity recovery.

#### OPTIONAL ACCESSORIES

- Scotch-Brite stainless steel sliding drawers (see table).
- Kit of dividers for drawer.
- Additional shelf.
- Smooth shelf with borders.
- Castors with frontal brakes.
- Weekly temperature chart recorder.
- Back-up battery.
- GSM module to send SMS alarm messages to mobile phones.
- LAN port to connect the appliance via ethernet on PC.
- Safety thermostat on refrigerator compartment.
- Digital humidity sensor.
- Test hole (Ø 25 mm).
- Electric digital key lock.





MODEL	FC39/2	FC39V/2
TECHNICAL DATA		
Capacity Refrigerator (LT)	200	200
Capacity Freezer (LT)	100	100
Factory set (°C)	+4 / -25	+4 / -25
Temp. range (°C)	+2 / +12 -10 / -30	+2 / +12 -10 / -30
Cooling type Refrigerator	Forced air cooling	Forced air cooling
Cooling type Freezer	Static evaporator	Static evaporator
Defrost	Refrigerator Automatic Freezer Manual	Refrigerator Automatic Freezer Manual
CFC-Free Refrigerant gas	R452a or R290	R452a or R290
Noise level (db)	<50	<50
CONTROL PANEL	LCD TOUCH 4,3" MICROPROCESSOR	LCD TOUCH 4,3" MICROPROCESSOR
VISUAL AND AUDIBLE ALARMS		
High/Low temperature	✓	✓
Open door	✓	✓
Condenser efficiency	✓	✓
Damaged sensor	✓	✓
Power failure	optional	optional
Full recording memory	✓	✓
SMS alarm message	optional	optional
FUNCTIONS		
Password protected use	✓	✓
Remote alarm	✓	✓
Data logger	✓	✓
Humidity probe	optional	optional
RS232-RS485 serial port	✓	✓
4-20 mA converter module	✓	✓
Safety thermostat	optional	optional
ELECTRICAL DATA		
Supply voltage (V/Hz)	230/50-230/60	230/50-230/60
Max absorbed current (W)	427	427
INTERNAL EQUIPMENT		
Refrigerator compartment	3 shelves	3 shelves
Freezers compartment	2 drawers	2 drawers
OPTIONAL ACCESSORIES		
Drawer in refrig. compartment	max 3	max 3
Kit of dividers for drawer	✓	✓
Castors with frontal brakes	✓	✓
Temp. chart recorder	✓	✓
Back-up battery	✓	✓
GSM module	✓	✓
LAN Port	✓	✓
Port hole	✓	✓
Electric Digital key lock	✓	✓
Power supply 115V/60Hz	✓	✓
CERTIFICATION	CE	CE
DIMENSIONS (WxDXH - MM)/KG		
External Dimensions/weight	600x600x1970-127	600x600x1970-131
Packing Dimensions/weigh (carton box)	700x700x2200-137	700x700x2200-141



AF70/2	AF70V/2	AF140/2	AF140V/2
350	350	700	700
350	350	700	700
+4 / -25	+4 / -25	+4 / -22	+4 / -22
+2 / +12 -10 / -30	+2 / +12 -10 / -30	+2 / +12 -10 / -25	+2 / +12 -10 / -25
Forced air cooling	Forced air cooling	Forced air cooling	Forced air cooling
Static evaporator	Static evaporator	Forced air cooling	Forced air cooling
Refrigerator Automatic Freezer Manual	Refrigerator Automatic Freezer Manual	Refrigerator Automatic Freezer Automatic	Refrigerator Automatic Freezer Automatic
R452a or R290	R452a or R290	R452a or R290	R452a or R290
<50	<50	<52	<52
LCD TOUCH 4,3" MICROPROCESSOR	LCD TOUCH 4,3" MICROPROCESSOR	LCD TOUCH 4,3" MICROPROCESSOR	LCD TOUCH 4,3" MICROPROCESSOR
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
optional	optional	optional	optional
✓	✓	✓	✓
optional	optional	optional	optional
✓	✓	✓	✓
✓	✓	✓	✓
optional	optional	optional	optional
230/50-230/60	230/50-230/60	230/50-230/60	230/50-230/60
350/480	350/480	1100	1100
2 shelves	2 shelves	4 shelves	4 shelves
3 drawers	3 drawers	4 shelves	4 shelves
max 3	max 3	max 7+max7 in freeze	max 7+max7 in freezer
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
CE	CE	CE	CE
700x800x2040-180	700x800x2040-183	1400x800x1990-240	1400x800x1990-265
750x850x2180-193	750x850x2180-198	1500x900x2170-258	1500x900x2170-280

specifications