



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 911 | 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 556A | Strasbourg | 1845 | A | DH3 |
| LH 5515 | Darmstadt | 1845 | A | DH3 |
| LH 547 | Düsseldorf | 1845 | A | 321 |
| LH 521 | Hamburg | 1845 | A | 320 |
| LH 3000 | Oelo | 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 5659 | Paderb./Lippel | 1850 | A | DH3 |
| DL 7166 | Köln/Bonn | 1855 | D | 733 |
| DL 7096 | Düsseldorf | 1855 | D | 733 |
| LH 4514 | Birmingham | 1855 | B | 142 |
| LH 922 | München/Osnabr. | 1855 | A | 733 |
| LH 4542 | Manchester | 1855 | A | 142 |
| LH 5179 | 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 934 | 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 5686 | Turin | 1910 | A | 142 |
| LH 5386 | Genf | 1910 | B | 146 |
| LH 5594 | Florenz | 1910 | A | 142 |
| LH 882 | Düsseldorf | 1910 | A | 733 |
| LH 3448 | Málaga | 1910 | A | 733 |
| LH 5512 | Göteborg | 1915 | B | CRJ |
| LH 5512 | 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 | Brüssel | 1920 | B | 319 |
| LH 433 | Amsterdam | 1920 | A | 733 |
| LH 433 | Paris | 1920 | A | 320 |
| LH 433 | Düsseldorf | 1925 | A | 733 |
| LH 433 | Hamburg | 1930 | A | AT3 |
| LH 433 | Frankfurt | 1930 | D | 735 |
| LH 433 | Strasbourg | 1935 | A | AT3 |
| LH 433 | Leipzig | 1935 | A | AT3 |
| LH 433 | Pico | 1935 | C | 320 |
| LH 433 | Turk | 1935 | A | D38 |
| SK 564 | 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 |
| DL 7114 | Hamburg | 1955 | D | 735 |
| LH 273 | Frankfurt/Main | 1955 | A | A88 |
| DL 4609 | Berlin/Tegel | 1955 | D | 735 |
| KL 1798 | Amsterdam | 2000 | D | F70 |

Rev. 02 - 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.



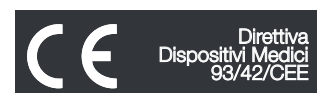
frimed has always been oriented to a constant improvement of the business process in order to satisfy the client, to involve its staff and to have a relationship of mutual satisfaction with suppliers. The commitment undertaken in this direction has enabled the company to achieve an important goal the 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.





index

| | |
|--------------------------------------|----|
| PRODUCT | 6 |
| LABORATORY AND PHARMACY REFRIGERATOR | 14 |
| BLOOD BANK REFRIGERATOR | 20 |
| LABORATORY FREEZER -25° -30°C | 24 |
| LABORATORY DEEP FREEZER -40°C | 28 |
| PLASMA FREEZER -40°C | 30 |
| COMBINED REFRIGERATOR AND FREEZER | 34 |
| COMBINED REFRIGERATOR | 38 |



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.

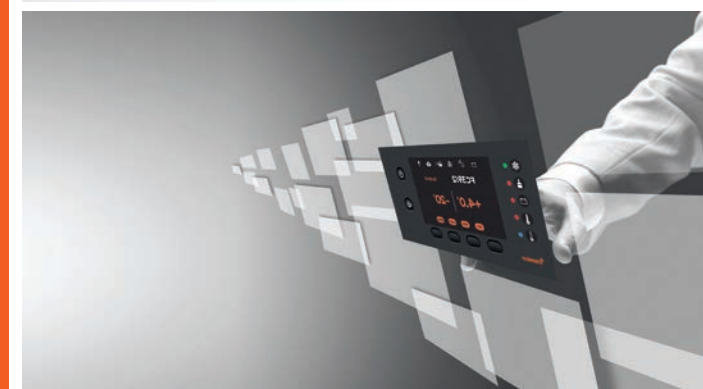
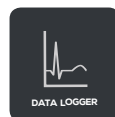
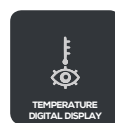
Remote contact (dry, volt-free) to connect the equipment to an external alarm.

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.

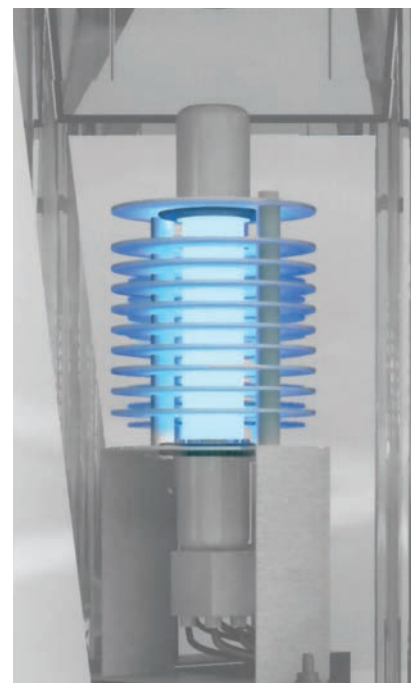
The rays of light from the UV lamp react with the nano Nickel HCT™ catalyst producing catalytic molecules. The catalytic molecules detect and destroy the carbon-based molecules by converting them into harmless carbon dioxide and water.

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

FREEZER

LABORATORY

-25°-30° C FROM 100 TO 1400 LT.

SB-CV-AF 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 on SB-AF models and 80 mm insulation on CV models obtained by injection of high density ecological polyurethane CFC-free foam for excellent product preservation and energy saving.

DOOR

Self-closing solid door with 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

SB-CV models standard equipped with either Scotch-Brite stainless steel shelves, removable and adjustable in height or Scotch-Brite stainless steel drawers with telescopic ball-bearing slides and plexiglas frontal side. AF models standard equipped with Scotch-Brite stainless steel shelves, removable and adjustable in height.

TEMPERATURE RANGE

Between -10°C and -25°C. Factory preset to -22°C (SB-AF models).

Between -10°C and -32°C. Factory preset to -30°C (CV and BL models of AF-SB).

Digital adjustable temperature with an increment of 0.1°C.

REFRIGERATION SYSTEM

Completely sealed, silent and highly efficient hermetic compressor and ventilated air condenser. Static evaporator for SB-CV models. Forced-air cooling system for AF models conceived to achieve maximum temperature uniformity and stability inside the refrigerator even in case of frequent door openings. Evaporator fan shuts off during door opening. CFC-free refrigerant R452a or CFC/HCFC-free natural refrigerant R290 on request.

DEFROSTING

Manual defrost on SB-CV models. Fully automatic defrosting cycle and auto-evaporation of condensed water on AF 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. Download of data on USB pen drive.



STANDARD

- Shelves or drawers (SB-CV models). Shelves on AF models.
- Four one-way wheels with stabilizing adjustable feet.
- Power cord 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 contact (dry, volt-free) for alarm.
- Data Logger with USB port.
- Memory of latest alarms visible on screen.
- Power failure alarm at electricity recovery.

OPTIONAL ACCESSORIES

- Scotch-Brite stainless steel sliding drawers with telescopic ball-bearing slides and plexiglas frontal side (AF models).
- 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.
- Digital humidity sensor.
- Test hole (Ø 25 mm).
- Electric digital key lock.
- Power supply 115V/60Hz.
- Insulation of 80 mm for AF models.





| MODEL | SB10B | SB10BL | CV3 | CV4 | CV5 |
|--|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| TECHNICAL DATA | | | | | |
| Capacity (LT) | 100 | 100 | 160 | 220 | 250 |
| Factory set (°C) | -22 | -30 | -30 | -30 | -30 |
| Temp. range (°C) | -10 / -25 | -10 / -32 | -10 / -32 | -10 / -32 | -10 / -32 |
| Cooling type | Static evaporator | Static evaporator | Static evaporator | Static evaporator | Static evaporator |
| Defrost | Manual | Manual | Manual | Manual | Manual |
| CFC-Free Refrigerant gas | R452a or R290 | R452a or R290 | R452a or R290 | R452a or R290 | R452a or R290 |
| Noise level (db) | <45 | <45 | <45 | <45 | <45 |
| CONTROL PANEL | LCD TOUCH 4.3" MICROPROCESSOR | LCD TOUCH 4.3" MICROPROCESSOR | LCD TOUCH 4.3" MICROPROCESSOR | 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 | optional | optional | optional |
| Full recording memory | ✓ | ✓ | ✓ | ✓ | ✓ |
| SMS alarm message | optional | optional | optional | optional | optional |
| FUNCTIONS | | | | | |
| Password protected use | ✓ | ✓ | ✓ | ✓ | ✓ |
| Remote alarm | ✓ | ✓ | ✓ | ✓ | ✓ |
| Data logger | ✓ | ✓ | ✓ | ✓ | ✓ |
| Humidity probe | optional | optional | optional | optional | optional |
| RS232-RS485 serial port | ✓ | ✓ | ✓ | ✓ | ✓ |
| 4-20 mA converter module | ✓ | ✓ | ✓ | ✓ | ✓ |
| ELECTRICAL DATA | | | | | |
| Supply voltage (V/Hz) | 230/50-230/60 | 230/50-230/60 | 230/50-230/60 | 230/50-230/60 | 230/50-230/60 |
| Max absorbed current (W) | 345 | 345 | 450 | 450 | 450 |
| INTERNAL EQUIPMENT | | | | | |
| Drawers | 2 | 2 | 3 | 4 | 5 |
| Shelves in alternative | 2 | 2 | 3 | 4 | 5 |
| OPTIONAL ACCESSORIES | | | | | |
| 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 | CE | CE | CE |
| DIMENSIONS (WxDxH - MM)/KG | | | | | |
| External Dimensions/weight | 600x600x860-66 | 600x600x860-66 | 640x620x1400-95 | 640x620x1600-111 | 640x620x1800-125 |
| Packing Dimensions/weight (carton box) | 700x700x1030-73 | 700x700x1030-73 | 700x700x1530-105 | 700x700x1780-121 | 700x700x1930-135 |



| CV6 | AF70B | AF70BL | AF140B | AF140BL |
|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 320 | 700 | 700 | 1400 | 1400 |
| -30 | -22 | -30 | -22 | -30 |
| -10 / -32 | -10 / -25 | -10 / -32 | -10 / -25 | -10 / -32 |
| Static evaporator | Forced air cooling | Forced air cooling | Forced air cooling | Forced air cooling |
| Manual | Automatic | Automatic | Automatic | Automatic |
| R452a or R290 | R452a or R290 | RR452a or R290 | R452a or R290 | R452a or R290 |
| <45 | <50 | <50 | <60 | <60 |
| LCD TOUCH 4.3" MICROPROCESSOR | 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 |
| ✓ | ✓ | ✓ | ✓ | ✓ |
| ✓ | ✓ | ✓ | ✓ | ✓ |
| ✓ | ✓ | ✓ | ✓ | ✓ |
| 230/50-230/60 | 230/50-230/60 | 230/50-230/60 | 230/50-230/60 | 230/50-230/60 |
| 450 | 530 | 887 | 614 | 1084 |
| 6 | optional - max 7 | optional - max 7 | optional - max 14 | optional - max 14 |
| 6 | 4 | 4 | 8 | 8 |
| ✓ | ✓ | ✓ | ✓ | ✓ |
| ✓ | ✓ | ✓ | ✓ | ✓ |
| ✓ | ✓ | ✓ | ✓ | ✓ |
| ✓ | ✓ | ✓ | ✓ | ✓ |
| ✓ | ✓ | ✓ | ✓ | ✓ |
| ✓ | ✓ | ✓ | ✓ | ✓ |
| ✓ | ✓ | ✓ | ✓ | ✓ |
| ✓ | ✓ | ✓ | ✓ | ✓ |
| ✓ | ✓ | ✓ | ✓ | ✓ |
| CE | CE | CE | CE | CE |
| 640x620x2000-136 | 700x800x1990-150 | 700x800x1990-150 | 1400x800x1990-229 | 1400x800x1990-229 |
| 700x700x2130-146 | 750x850x2150-162 | 750x850x2150-162 | 1500x900x2170-249 | 1500x900x2170-249 |

specifications