



SELF-CONTAINED ICE MAKER

INSTRUCTION MANUAL

(original instructions)

FOR END USER

HOSHIZAKI CHINA CORPORATION

No.15 Qingqiu Street,Suzhou Industrial Park,Suzhou,215126 China

**FM-120KS-HC
FM-120KS-HCN
FM-120KS-50-HC
FM-120KS-50-HCN
CM-110KS-HC
CM-100KS-50-HC**

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IMPORTANT SAFETY INFORMATION

Throughout this manual, notices appear to bring your attention to situations which could result in death, serious injury, or damage to the unit.

⚠WARNING	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
⚠CAUTION	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE	Indicates a hazardous situation which, if not avoided, could result in damage to the unit.
⚠HYGIENE	Indicates important precautions for hygiene and food safety.
IMPORTANT	Indicates important information about the use and care of the unit.

This icemaker uses HFC-free refrigerant (propane) and HFC-free foam insulation that are non-ozone-depleting and environmentally sustainable materials having very low global warming potential.

⚠WARNING
This icemaker contains flammable refrigerant in its cooling unit; installation, handling, servicing and disposal must therefore only be carried out by authorized technicians.
The refrigerant contained in this icemaker is flammable and sealed in the refrigeration system. Although the refrigerant does not leak out under normal usage, take utmost care when handling this icemaker so as not to cause any damages to the system.
In the case of accidental damage to the refrigeration system causing refrigerant leak: * Do not create a source of ignition in the area. * Do not operate electrical switches or plugs in the area. * Do not use naked flame. * Immediately ventilate the area by opening doors and/or windows. * Call service engineer.
This is a commercial icemaker, and should be destined only to be used for the purpose for which it has been expressly designed. Any other use should be considered improper and therefore dangerous. The manufacturer will not be held liable or responsible for any damage caused by improper, incorrect and unreasonable use.
The installation, and relocation if necessary, must be carried out by qualified personnel, in accordance with current regulations, according to the manufacturer's instructions.
Keep ventilation openings, in the appliance enclosure or in the built-in structure, clear of obstruction.
Do not use mechanical devices or other means to accelerate the defrosting process, other than those recommended by the manufacturer.
Do not damage the refrigerant circuit.
Do not use electrical appliances inside the food storage compartments of the appliance.
Do not store explosive substances such as aerosol can with a flammable propellant in this appliance.

ENGLISH

The use of any electrical appliance involves the observance of some fundamental rules. In particular:

- *Instances of high humidity and moisture increase the risk of electrical short circuits and potential electrical shocks. If in doubt, disconnect the icemaker.
- *Do not damage the power cord or pull it in order to disconnect the icemaker from the electrical supply network.
- *If the supply cord is damaged, it must be replaced by a replacement cord available from Hoshizaki Parts/Service Centres.
- *Do not touch the electrical parts or operate the switches with damp hands.
- *This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, it can however be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge providing they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- *Children shall not play with the appliance.
- *Cleaning and user maintenance shall not be made by children without supervision.
- *Do not attempt to modify the icemaker. Only qualified personnel may disassemble or repair the appliance.

When positioning the appliance, ensure the supply cord is not trapped or damaged.

Do not locate multiple portable socket-outlets or portable power supplies at the rear of the appliance.



The meaning of this ISO 7010 W021 symbol is:
Warning: Risk of fire / flammable materials

IMPORTANT

This booklet is an integral and essential part of the product and should be kept and preserved by the user.

Please read carefully the guidelines and warnings contained herein as they are intended to provide the user with essential information for the continued safe use and maintenance of the product. In addition, it provides GUIDANCE ONLY to the user on the correct services and site location of the icemaker.

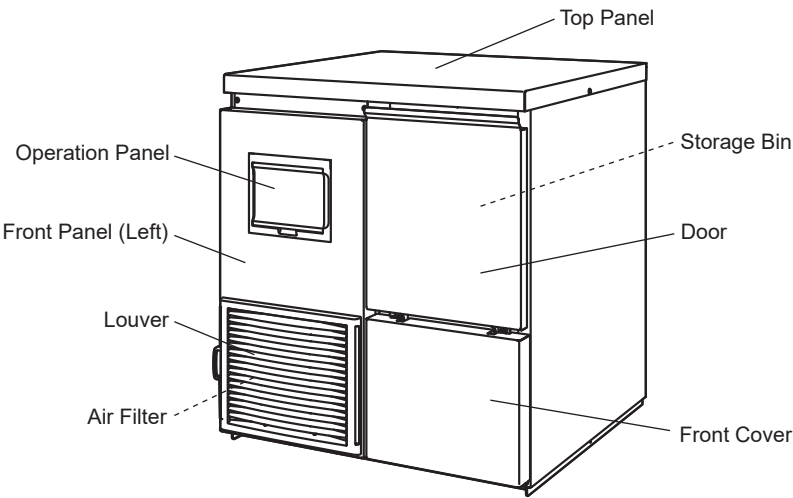
Please preserve this booklet for any further consultation that may be necessary.

Please see this product's installation manual for correct installation of the product.

These products are IP20 rated.

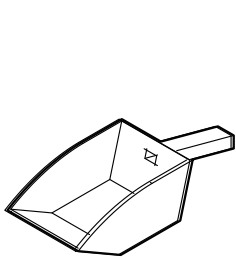
I. INSTALLATION INSTRUCTIONS

1. CONSTRUCTION

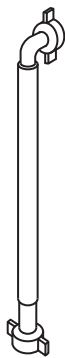


2. ACCESSORIES

	FM-120KS-HC	FM-120KS-HCN	FM-120KS-50-HC	FM-120KS-50-HCN	CM-110KS-HC	CM-110KS-50-HC
SCOOP	1	1	1	1	1	1
INLET HOSE	1	1	1	1	1	1
OUTLET HOSE	1	1	1	1	1	1
LEG	4	4	4	4	4	4
COVER - CONNECTOR	1	1	1	1	1	1
POWER CORD	1	1	1	1	1	1



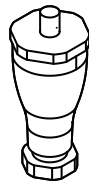
SCOOP



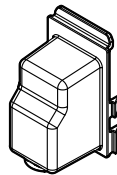
INLET HOSE



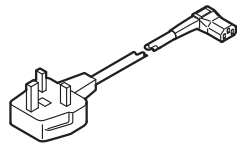
OUTLET HOSE



LEG



COVER - CONNECTOR



POWER CORD

ENGLISH

3. LOCATION

⚠WARNING

This icemaker is not intended for outdoor use.

The icemaker should not be located next to ovens, grills or other high heat producing equipment.

This appliance is not suitable for installation in an area where a water jet could be used.

⚠CAUTION

The location should provide a firm and level foundation for the icemaker.

NOTICE

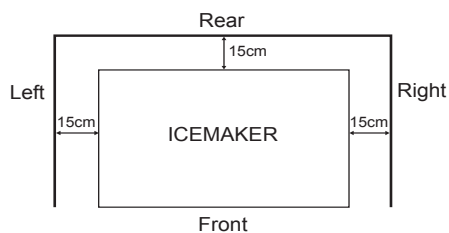
Do not place anything on top of the icemaker or in front of the louver.

IMPORTANT

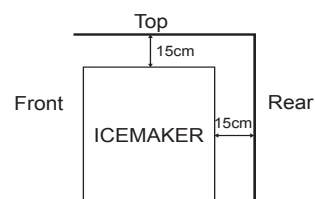
Normal operating ambient temperature should be within 5°C to 40°C. Water connection is cold water only. Operation of the icemaker, for extended periods, outside of these normal temperature ranges may affect production capacity.

Allow the clearance specified below for proper air circulation and ease of maintenance and/or service should they be required.

Top View



Side View



In some high humidity environments, condensation may form inside the machine and drip onto the floor. Do not install where the floor can be affected by water.

Avoid prolonged exposure of the appliance to direct sunlight.

4. ELECTRICAL CONNECTIONS

⚠WARNING

THIS APPLIANCE MUST BE EARTHED

This icemaker requires an earth that meets the national and local electrical code requirements.

Disconnect the main power supply before any maintenance, repairs or cleaning is undertaken.

* Usually an electrical permit and services of a licensed electrician are required.

5. WATER SUPPLY AND DRAIN CONNECTIONS

⚠WARNING

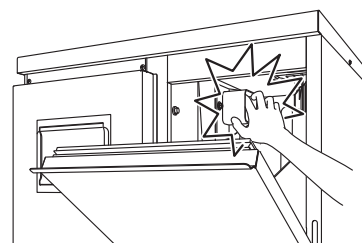
Connect to potable cold water supply only.

- * The connections to the mains water supply must be made in accordance with the countries' current requirements of the Water Supply or Water Fittings Regulations.
- * Icemaking water must be potable water. Where scaling can be caused by water quality, installation of an external filter or softener is recommended. Contact your local water treatment professional or Hoshizaki service agent.
- * A plumbing permit and services of a licensed plumber may be required in some areas.
- * Please see the installation manual for full details regarding installation.
- * The rated water supply temperature is 5 - 35°C at a rated pressure of 0.05 - 0.8 MPa (0.5 - 8 bar) with a required flow rate of 3.8L/min.

II. OPERATING INSTRUCTIONS

⚠CAUTION

Do not step into the storage bin, or put your hands into the machine compartment inside the storage bin. Children can get trapped inside, or the icemaking mechanism may suddenly move, resulting in injury.



NOTICE

All parts are factory-adjusted. Improper adjustments may result in failure.

If the unit is turned off, wait for at least 3 minutes before restarting the icemaker to prevent damage to the compressor.

⚠HYGIENE

This icemaker is designed to produce edible ice. To keep the icemaker hygienic:

- * Wash your hands before removing ice. Use the plastic scoop provided (accessory).
- * The storage bin is for ice use only. Do not store anything else in the bin nor use other electrical appliances in the bin.
- * Clean the storage bin before use (see "III. 1. CLEANING").
- * Keep the scoop clean. Clean it by using a neutral cleaner and rinse thoroughly.
- * Close the door after removing ice to prevent entrance of dirt, dust or insects into the storage bin.

ENGLISH

1. START UP

The installer will normally commission the icemaker to start the automatic icemaking process. To ensure continuous operation, make sure that:

- * The water supply tap is on, and
- * The icemaker is connected to the power supply.

To start the icemaking process, check the position of the operation switch on the operation panel:

“OFF” position - Move it to the “ON” position.

“ON” position - Press the ice button.

2. SHUT DOWN

Press the stop button on the operation panel. The “STOP” and “DRAIN” modes light up on the display. Then, only the “DRAIN” mode goes off.

3. PREPARING THE ICEMAKER FOR LONG STORAGE

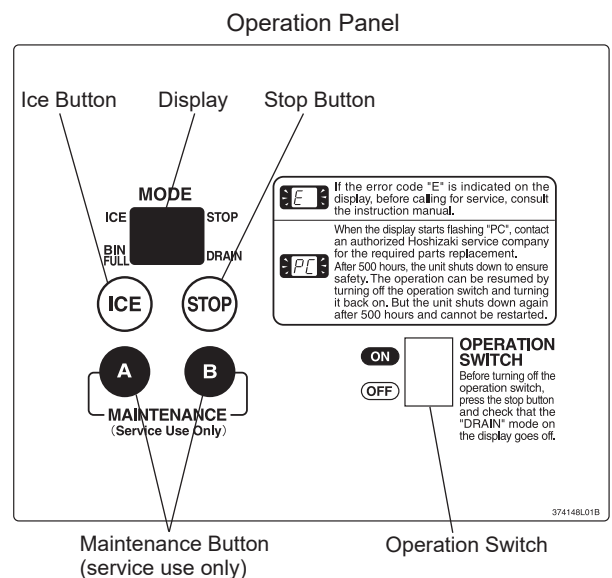
NOTICE

This icemaker will not work at subfreezing temperatures. To prevent damage to the water supply line, drain the icemaker when air temperature is below zero.

▲HYGIENE

When shutting down the icemaker for two or more days, drain the icemaker to prevent contamination in the water circuit.

- 1) Follow the instructions in “2. SHUT DOWN”.
- 2) Move the operation switch to the “OFF” position.
- 3) Close the water supply tap.
- 4) Remove the inlet hose from the water tap, and drain the hose.
- 5) Disconnect/isolate the power supply.
- 6) Remove all ice from the storage bin, and clean the bin.
- 7) Ask for draining of the icemaker by professional qualified personnel.
- 8) To restart the icemaker, follow the instructions in “1. START UP”.



III. MAINTENANCE

1. CLEANING

▲WARNING

Before carrying out any cleaning or maintenance operations, unplug the icemaker from the electrical supply network.

This appliance must not be cleaned by use of a water jet.

▲CAUTION

When using a neutral cleaner or sodium hypochlorite, thoroughly read and understand the instructions provided to prevent potential health problems.

NOTICE

Ask a trained service person to clean and sanitize the icemaker water system at least twice a year and to check and clean the condenser at least once a year.

To prevent possible damage, do not clean the plastic parts with water above 40°C or in a dishwasher.

[a] Machine and Bin Exterior

Wipe the exterior at least once per week with a clean, soft cloth. Use a damp cloth containing a neutral cleaner to wipe off grease or dirt.

[b] Scoop and Storage Bin Handle Cleaning/Sanitisation (Daily)

1) Either mix 1 litre of water with 4 ml of 5.25% sodium hypochlorite solution in a suitable container, or the recommended Hoshizaki sanitiser as directed.

2) Soak the scoop in the solution for more than 3 minutes. Rinse thoroughly, and shake to remove surplus liquid.

Note: Using a cloth to dry may re-contaminate.

3) Use a neutral cleaner to wash the storage bin handle. Rinse thoroughly.

4) Soak a clean cloth with the sanitising solution, and wipe the handle. Use fresh water and a clean cloth to rinse/dry.

[c] Storage Bin Interior Cleaning/Sanitisation (Weekly)

1) Open the storage bin door, and remove all ice.

2) Slightly warp the slope to release it from the left and right shafts.

3) Remove the drain cap located in the base of the storage bin.

4) Wash the bin liner, slope and drain cap with a neutral non-abrasive cleaner. Rinse thoroughly.

Note: Take care not to damage the bin control actuator at the top of the bin.

5) Either mix 5 litres of water with 18 ml of 5.25% sodium hypochlorite solution in a suitable container, or the recommended Hoshizaki sanitiser as directed.

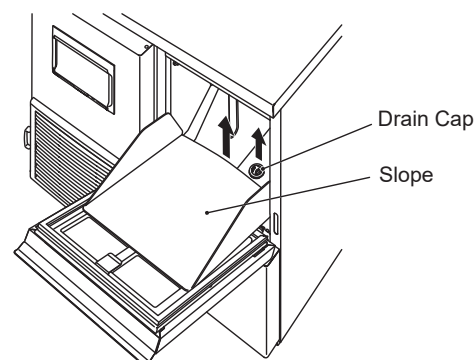
6) Soak a clean sponge or cloth with the solution, and wipe the bin liner surfaces, slope and drain cap.

7) Refit the slope and drain cap.

8) Wipe the surface of the bin door with the solution. Close the bin door.

9) The remaining solution can be used to sanitise utensils.

Note: Do not wipe dry or rinse after sanitising, but allow to air dry.



[d] Storage Bin Door

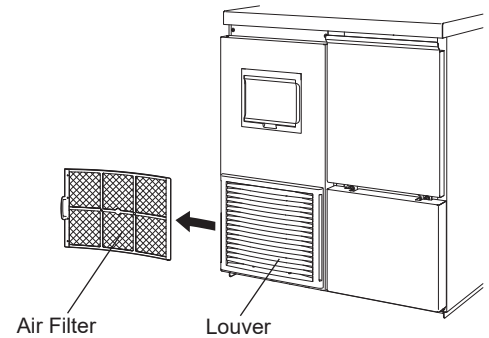
Clean the storage bin door at least once a week, using a neutral non-abrasive cleaner. Rinse thoroughly after cleaning and sanitise as required.

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[e] Air Filter

Plastic mesh air filters remove dirt or dust from the air, and keep the condenser from getting clogged. If the filters get clogged, the icemaker's performance will be reduced. Remove and clean the air filter(s) at least twice per month:

- 1) Slide the air filter off the louver.
- 2) Clean the air filter by using a vacuum cleaner. When severely clogged, use warm water and a neutral cleaner to wash the air filter.
- 3) Rinse and dry the air filter thoroughly.



NOTICE

After cleaning, be sure to place the air filter back in position.

2. INSPECTION AND MAINTENANCE

NOTICE

To achieve optimum icemaker performance, the following parts need periodic inspection and maintenance:

- Extruding head (upper bearing)
- Housing (lower bearing)
- Mechanical seal

[a] Inspection

These parts should be inspected after two years from installation or 10,000 hours of operation, whichever comes first, and once a year afterwards. Replacement of these parts is required if wear exceeds factory recommendations.

Their service life, however, depends on water quality and environment. More frequent inspection and maintenance are recommended in bad or severe water conditions.

Consult with your local Hoshizaki service agent about inspection and maintenance service.

[b] Replacement

The extruding head (upper bearing) and mechanical seal must be replaced after four years from installation or 20,000 hours of operation, whichever comes first, to prevent the risk of serious accidents or failures. Contact your local Hoshizaki service agent for replacement.

When the total operating time reaches 20,000 hours, the display flashes "PC". Then, after 500 hours, the unit shuts down to ensure safety. Contact your local Hoshizaki service agent for replacement as soon as the display starts flashing.

Once the unit shuts down after 500 hours, the operation can be resumed by turning off the operation switch and turning it back on. But the unit shuts down again after 500 hours. To resume the operation, contact your local Hoshizaki service agent for the required replacement.

Replacement of the housing (lower bearing) may be required depending on water quality and wear condition.

3. BEFORE CALLING FOR SERVICE

[a] Error Code Indication

If the error code "E" is indicated on the display, before calling for service, check the following.

Code	Remedy
E0	Possibility of water leaks. Turn OFF operation switch, and turn it ON again. If error code appears again, call for service.
E1	Low ice production. Turn OFF operation switch, and turn it ON again. If error code appears again, call for service.
E2	Water supply circuit failure. Turn OFF operation switch, and turn it ON again. If error code appears again, call for service.
E3	Gear motor failure. Turn OFF operation switch, and turn it ON again after 10 minutes. If error code appears again, call for service.
E4	Abnormal high side pressure. Clean air filter. Check that icemaker is properly installed according to installation manual. Turn OFF operation switch, and turn it ON again. If error code appears again, call for service.
E5	Electric circuit failure. Turn OFF operation switch, and turn it ON again. If error code appears again, call for service.
E8	Compressor could be overheated. Check that icemaker is properly installed according to installation manual. Turn OFF operation switch, and turn it ON again after 10 minutes. If error code appears again, call for service.
EA	Electric circuit failure. Turn OFF operation switch, and turn it ON again. If error code appears again, call for service.
Eb	Electric circuit failure. Turn OFF operation switch, and turn it ON again. If error code appears again, call for service.
EC	Electric circuit failure. Turn OFF operation switch, and turn it ON again. If error code appears again, call for service.
EE	Gear motor failure. Turn OFF operation switch, and turn it ON again. If error code appears again, call for service.
EF	Supply voltage is too low. Check that voltage is in required range and icemaker is not sharing a single receptacle with other appliances. Turn OFF operation switch, and turn it ON again. If error code appears again, call for service.
EH	Electric circuit failure. Turn OFF operation switch, and turn it ON again. If error code appears again, call for service.
EL	Bin control switch has failed. Turn OFF operation switch, and turn it ON again. If error code appears again, call for service.
En	Electric circuit failure. Turn OFF operation switch, and turn it ON again. If error code appears again, call for service.
EU	Controller board failure. Turn OFF operation switch, and turn it ON again. If error code appears again, call for service.

[b] No Error Code Indication

If the icemaker does not work properly or does not work at all and no error code is indicated on the display, before calling for service, check that:

- * The power is supplied to the unit.
- * The water is turned on.
- * The air filter is clean.

For further assistance or advice, contact your local Hoshizaki service agent.

4. DISPOSAL

Comply with local regulations regarding disposal of this appliance and its refrigerant gas. Before you scrap the appliance, take off the door to prevent children trapped.

Correct disposal of this product:

This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmental safe recycling.



5. WARRANTY

Hoshizaki warrants to the original owner/user that all Hoshizaki branded products shall be free of defects in material and/or workmanship for the duration of the “warranty period”. The warranty shall be effective for two years from the date of installation. Hoshizaki’s liability under the terms of the warranty are limited and shall exclude routine servicing, cleaning, essential maintenance and/or repairs occasioned by misuse and installations not in accordance with Hoshizaki guidelines.

Warranty repairs should be completed by an approved Hoshizaki dealer or service agency using genuine Hoshizaki components.

To obtain full details of your warranty and approved service agency, please contact your dealer/supplier, or the nearest Hoshizaki Service office:

Asia, Oceania

Hoshizaki Singapore
TEL: +65 6225 2612
FAX: +65 6225 3219
sales@hoshizaki.com.sg(Sales)
serviceadmin@hoshizaki.com.sg(Technical support)

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FAX: +852 2866 2109

SPECIFICATIONS

Model	FM-120KS-HC	FM-120KS-HCN
Type	Air-cooled, flake ice	Air-cooled, nugget ice
Power Supply	1 phase 220-240V 50Hz	1 phase 220-240V 50Hz
Electric Consumption	353W	353W
Ice Production per 24h	137kg (ambient 10°C, water 10°C)	118kg (ambient 10°C, water 10°C)
Dimensions	640mm(W) x 600mm(D) x 800(798-833) mm(H)	640mm(W) x 600mm(D) x 800(798-833) mm(H)
Refrigerant	R290, 85g	R290, 85g
Insulation Foam Blowing Agent	Cyclopentane	Cyclopentane
Weight	Net: 62kg (Gross: 76kg)	Net: 62kg (Gross: 76kg)
Ambient Temp	5 - 40°C	5 - 40°C
Water Supply Temp	5 - 35°C	5 - 35°C
Water Supply Pressure	0.05 - 0.8 MPa (0.5 - 8 bar)	0.05 - 0.8 MPa (0.5 - 8 bar)
Voltage Range	Rated voltage $\pm$ 6%	Rated voltage $\pm$ 6%

Model	FM-120KS-50-HC	FM-120KS-50-HCN
Type	Air-cooled, flake ice	Air-cooled, nugget ice
Power Supply	1 phase 220-240V 50Hz	1 phase 220-240V 50Hz
Electric Consumption	353W	353W
Ice Production per 24h	137kg (ambient 10°C, water 10°C)	118kg (ambient 10°C, water 10°C)
Dimensions	940mm(W) x 600mm(D) x 800(798-833) mm(H)	940mm(W) x 600mm(D) x 800(798-833) mm(H)
Refrigerant	R290, 85g	R290, 85g
Insulation Foam Blowing Agent	Cyclopentane	Cyclopentane
Weight	Net: 72kg (Gross: 88kg)	Net: 72kg (Gross: 88g)
Ambient Temp	5 - 40°C	5 - 40°C
Water Supply Temp	5 - 35°C	5 - 35°C
Water Supply Pressure	0.05 - 0.8 MPa (0.5 - 8 bar)	0.05 - 0.8 MPa (0.5 - 8 bar)
Voltage Range	Rated voltage $\pm$ 6%	Rated voltage $\pm$ 6%

SPECIFICATIONS

Model	FM-120KS-HC	FM-120KS-HCN
Type	Air-cooled, flake ice	Air-cooled, nugget ice
Power Supply	1 phase 220V 60Hz	1 phase 220V 60Hz
Electric Consumption	335W	335W
Ice Production per 24h	138kg (ambient 10°C, water 10°C)	124kg (ambient 10°C, water 10°C)
Dimensions	640mm(W) x 600mm(D) x 800(798-833) mm(H)	640mm(W) x 600mm(D) x 800(798-833) mm(H)
Refrigerant	R290, 100g	R290, 100g
Insulation Foam Blowing Agent	Cyclopentane	Cyclopentane
Weight	Net: 62kg (Gross: 76kg)	Net: 62kg (Gross: 76kg)
Ambient Temp	5 - 40°C	5 - 40°C
Water Supply Temp	5 - 35°C	5 - 35°C
Water Supply Pressure	0.05 - 0.8 MPa (0.5 - 8 bar)	0.05 - 0.8 MPa (0.5 - 8 bar)
Voltage Range	Rated voltage $\pm$ 4%	Rated voltage $\pm$ 4%

Model	FM-120KS-50-HC	FM-120KS-50-HCN
Type	Air-cooled, flake ice	Air-cooled, nugget ice
Power Supply	1 phase 220V 60Hz	1 phase 220V 60Hz
Electric Consumption	335W	335W
Ice Production per 24h	138kg (ambient 10°C, water 10°C)	124kg (ambient 10°C, water 10°C)
Dimensions	940mm(W) x 600mm(D) x 800(798-833) mm(H)	940mm(W) x 600mm(D) x 800(798-833) mm(H)
Refrigerant	R290, 100g	R290, 100g
Insulation Foam Blowing Agent	Cyclopentane	Cyclopentane
Weight	Net: 72kg (Gross: 88kg)	Net: 72kg (Gross: 88g)
Ambient Temp	5 - 40°C	5 - 40°C
Water Supply Temp	5 - 35°C	5 - 35°C
Water Supply Pressure	0.05 - 0.8 MPa (0.5 - 8 bar)	0.05 - 0.8 MPa (0.5 - 8 bar)
Voltage Range	Rated voltage $\pm$ 4%	Rated voltage $\pm$ 4%

Model	CM-110KS-HC	CM-110KS-50-HC
Type	Air-cooled, cubelet ice	Air-cooled, cubelet ice
Power Supply	1 phase 220V 60Hz	1 phase 220V 60Hz
Electric Consumption	335W	335W
Ice Production per 24h	121kg (ambient 10°C, water 10°C)	121kg (ambient 10°C, water 10°C)
Dimensions	640mm(W) x 600mm(D) x 800(798-833) mm(H)	940mm(W) x 600mm(D) x 800(798-833) mm(H)
Refrigerant	R290, 100g	R290, 100g
Insulation Foam Blowing Agent	Cyclopentane	Cyclopentane
Weight	Net: 62kg (Gross: 76kg)	Net: 72kg (Gross: 88g)
Ambient Temp	5 - 40°C	5 - 40°C
Water Supply Temp	5 - 35°C	5 - 35°C
Water Supply Pressure	0.05 - 0.8 MPa (0.5 - 8 bar)	0.05 - 0.8 MPa (0.5 - 8 bar)
Voltage Range	Rated voltage $\pm$ 4%	Rated voltage $\pm$ 4%