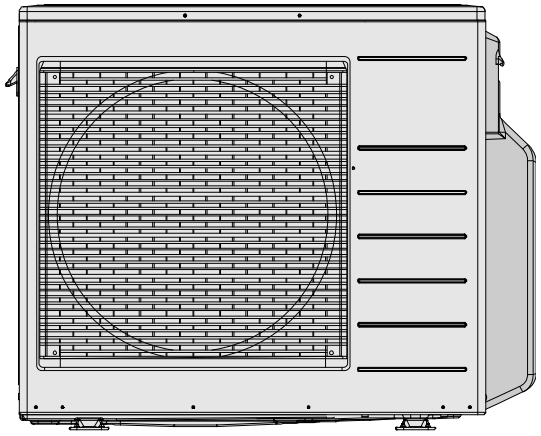
Order No: PAPAMY2408057CE

Service Manual

Air Conditioner



Outdoor Unit
CU-2Z50ABEC
CU-3Z75ABEC

Destination
Europe

Please file and use this manual together with the service manual for Model No. CS-HZ25ZKE, CS-HZ35ZKE, CS-HZ25ZKE-5, CS-HZ25ZKE-H, CS-HZ35ZKE-H, CS-HZ25ZKE-5-H, CS-Z20ZKEW, CS-Z25ZKEW, CS-Z35ZKEW, CS-Z50ZKEW, CS-NZ25YKE-1, CS-NZ35YKE-1, CS-NZ50YKE-1 Order No. PAPAMY2306064CE, PAPAMY2301042CE, PAPAMY2406046CE

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the products dealt with in this service information by anyone else could result in serious injury or death.

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

⚠ PRECAUTION OF LOW TEMPERATURE

In order to avoid frostbite, be assured of no refrigerant leakage during the installation or repairing of refrigerant circuit.

⚠ CAUTION

R32 REFRIGERANT – This Air Conditioner contains and operates with refrigerant R32.
THIS PRODUCT MUST ONLY BE INSTALLED OR SERVICED BY QUALIFIED PERSONNEL.
Refer to Commonwealth, State, Territory and local legislation, regulations, codes, installation & operation manuals, before the installation, maintenance and/or service of this product.

Panasonic®

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- Specifications, designs and contents in this Service Manual are subject to change without notice.

1. Safety Precautions

- Read the following “SAFETY PRECAUTIONS” carefully before installation.
- Electrical work must be installed by a licensed electrician. Be sure to use the correct rating of the power plug and main circuit for the model to be installed.
- The caution items stated here must be followed because these important contents are related to safety. The meaning of each indication used is as below. Incorrect installation due to ignoring of the instruction will cause harm or damage, and the seriousness is classified by the following indications.

⚠ **WARNING**	This indication shows the possibility of causing death or serious injury.
⚠ **CAUTION**	This indication shows the possibility of causing injury or damage to properties only.

The items to be followed are classified by the symbols:

⃠	Symbol with white background denotes item that is PROHIBITED.
❗ ⏚	Symbol with dark background denotes item that must be carried out.

- Carry out test running to confirm that no abnormality occurs after the installation. Then, explain to user the operation, care and maintenance as stated in instructions. Please remind the customer to keep the operating instructions for future reference.

	⚠ **WARNING**	
1.	Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer. Any unfit method or using incompatible material may cause product damage, burst and serious injury.	⃠
2.	Do not install outdoor unit near handrail of veranda. When installing air-conditioner unit on veranda of a high rise building, child may climb up to outdoor unit and cross over the handrail causing an accident.	⃠
3.	Do not use unspecified cord, modified cord, joint cord or extension cord for power supply cord. Do not share the single outlet with other electrical appliances. Poor contact, poor insulation or over current will cause electrical shock or fire.	⃠
4.	Do not tie up the power supply cord into a bundle by band. Abnormal temperature rise on power supply cord may happen.	⃠
5.	Do not insert your fingers or other objects into the unit, high speed rotating fan may cause injury.	⃠
6.	Do not sit or step on the unit, you may fall down accidentally.	⃠
7.	Keep plastic bag (packaging material) away from small children, it may cling to nose and mouth and prevent breathing.	⃠
8.	When installing or relocating air conditioner, do not let any substance other than the specified refrigerant, eg. air etc mix into refrigeration cycle (piping). Mixing of air etc. will cause abnormal high pressure in refrigeration cycle and result in explosion, injury etc.	⃠
9.	Do not pierce or burn as the appliance is pressurized. Do not expose the appliance to heat, flame, sparks, or other sources of ignition. Else, it may explode and cause injury or death.	⃠
10.	Do not add or replace refrigerant other than specified type. It may cause product damage, burst and injury etc.	⃠
11.	• For R32/R410A model, use piping, flare nut and tools which is specified for R32/R410A refrigerant. Using of existing (R22) piping, flare nut and tools may cause abnormally high pressure in the refrigerant cycle (piping), and possibly result in explosion and injury. For R32 and R410A, the same flare nut on the outdoor unit side and pipe can be used. • Since the working pressure for R32/R410A is higher than that of refrigerant R22 model, replacing conventional piping and flare nuts on the outdoor unit side are recommended. • If reuse piping is unavoidable, refer to instruction “IN CASE OF REUSING EXISTING REFRIGERANT PIPING” • Thickness of copper pipes used with R32/R410A must be more than 0.8 mm. Never use copper pipes thinner than 0.8 mm. • It is desirable that the amount of residual oil less than 40 mg/10 m.	❗
12.	Engage authorized dealer or specialist for installation. If installation done by the user is incorrect, it will cause water leakage, electrical shock or fire.	❗
13.	For refrigeration system work, install according to this installation instructions strictly. If installation is defective, it will cause water leakage, electrical shock or fire.	❗
14.	Use the attached accessories parts and specified parts for installation. Otherwise, it will cause the set to fall, water leakage, fire or electrical shock.	❗
15.	Install at a strong and firm location which is able to withstand weight of the set. If the strength is not enough or installation is not properly done, the set will drop and cause injury.	❗

	⚠ WARNING	
16.	For electrical work, follow the national regulation, legislation and this installation instructions. An independent circuit and single outlet must be used. If electrical circuit capacity is not enough or defect found in the electrical work, it will cause electrical shock or fire.	
17.	Do not use joint cable for indoor / outdoor connection cable. Use the specified indoor/outdoor connection cable, refer to instruction ⑤ **CONNECT THE CABLE TO THE OUTDOOR UNIT** and connect tightly for indoor/outdoor connection. Clamp the cable so that no external force will have impact on the terminal. If connection or fixing is not perfect, it will cause heat-up or fire at the connection.	
18.	Wire routing must be properly arranged so that control board cover is fixed properly. If control board cover is not fixed perfectly, it will cause fire or electrical shock.	
19.	This equipment is strongly recommended to be installed with Earth Leakage Circuit Breaker (ELCB) or Residual Current Device (RCD), with sensitivity of 30 mA at 0.1 sec or less. Otherwise, it may cause electrical shock and fire in case of equipment breakdown or insulation breakdown.	
20.	During installation, install the refrigerant piping properly before running the compressor. Operation of compressor without fixing refrigeration piping and valves at opened position will cause suck-in of air, abnormal high pressure in refrigeration cycle and result in explosion, injury etc.	
21.	During pump down operation, stop the compressor before removing the refrigeration piping. Removal of refrigeration piping while compressor is operating and valves are opened will cause suck-in of air, abnormal high pressure in refrigeration cycle and result in explosion, injury etc.	
22.	Tighten the flare nut with torque wrench according to specified method. If the flare nut is over-tightened, after a long period, the flare may break and cause refrigerant gas leakage.	
23.	After completion of installation, confirm there is no leakage of refrigerant gas. It may generate toxic gas when the refrigerant contacts with fire.	
24.	Ventilate if there is refrigerant gas leakage during operation. It may cause toxic gas when the refrigerant contacts with fire.	
25.	Be aware that refrigerants may not contain an odour.	
26.	This equipment must be properly earthed. Earth line must not be connected to gas pipe, water pipe, earth of lightning rod and telephone. Otherwise, it may cause electrical shock in case of equipment breakdown or insulation breakdown.	

	⚠ CAUTION	
1.	Do not install the unit in a place where leakage of flammable gas may occur. In case gas leaks and accumulates at surrounding of the unit, it may cause fire.	
2.	Prevent liquid or vapor from entering sumps or sewers since vapor is heavier than air and may form suffocating atmospheres.	
3.	Do not release refrigerant during piping work for installation, re-installation and during repairing refrigeration parts. Take care of the liquid refrigerant, it may cause frostbite.	
4.	Do not install this appliance in a laundry room or other location where water may drip from the ceiling, etc.	
5.	Do not touch the sharp aluminium fin, sharp parts may cause injury.	
6.	Carry out drainage piping as mentioned in installation instructions. If drainage is not perfect, water may enter the room and damage the furniture.	
7.	Select an installation location which is easy for maintenance. Incorrect installation, service or repair of this air conditioner may increase the risk of rupture and this may result in loss damage or injury and/or property.	
8.	Power supply connection to the room air conditioner. Use power supply cord (3 x 2.5 mm^2) type designation 60245 IEC 57 or heavier cord. Connect the power supply cord of the air conditioner to the mains using one of the following method. Power supply point should be in easily accessible place for power disconnection in case of emergency. In some countries, permanent connection of this air conditioner to the power supply is prohibited. 1) Power supply connection to the receptacle using power plug. Use an approved 16 A power plug with earth pin for the connection to the socket. 2) Power supply connection to a circuit breaker for the permanent connection. Use an approved 16 A circuit breaker for the permanent connection. It must be a double pole switch with a minimum 3.0 mm contact gap.	
9.	Installation work. It may need two people to carry out the installation work.	
10.	Keep any required ventilation openings clear of obstruction.	

2. Precaution for Using R32 Refrigerant

- Pay careful attention to the following precaution points and the installation work procedures.

	⚠ WARNING	
1.	The appliance shall be stored, installed and operated in a well ventilated room with indoor floor area larger than A_{min} (m^2) [refer Table A] and without any continuously operating ignition source. Keep away from open flames, any operating gas appliances or any operating electric heater. Else, it may explode and cause injury or death.	❗
2.	The mixing of different refrigerants within a system is prohibited. Models that use refrigerant R32 and R410A have a different charging port thread diameter to prevent erroneous charging with refrigerant R22 and for safety. Therefore, check beforehand. [The charging port thread diameter for R32 and R410A is 12.7 mm (1/2 inch).]	❗
3.	Ensure that foreign matter (oil, water, etc.) does not enter the piping. Also, when storing the piping, securely seal the opening by pinching, taping, etc. (Handling of R32 is similar to R410A.)	❗
4.	Operation, maintenance, repairing and refrigerant recovery should be carried out by trained and certified personnel in the use of flammable refrigerants and as recommended by the manufacturer. Any personnel conducting an operation, servicing or maintenance on a system or associated parts of the equipment should be trained and certified.	❗
5.	Any part of refrigerating circuit (evaporators, air coolers, AHU, condensers or liquid receivers) or piping should not be located in the proximity of heat sources, open flames, operating gas appliance or an operating electric heater.	❗
6.	The user/owner or their authorized representative shall regularly check the alarms, mechanical ventilation and detectors, at least once a year, where as required by national regulations, to ensure their correct functioning.	❗
7.	A logbook shall be maintained. The results of these checks shall be recorded in the logbook.	❗
8.	In case of ventilations in occupied spaces shall be checked to confirm no obstruction.	❗
9.	Before a new refrigerating system is put into service, the person responsible for placing the system in operation should ensure that trained and certified operating personnel are instructed on the basis of the instruction manual about the construction, supervision, operation and maintenance of the refrigerating system, as well as the safety measures to be observed, and the properties and handling of the refrigerant used.	❗
10.	The general requirement of trained and certified personnel are indicated as below: a) Knowledge of legislation, regulations and standards relating to flammable refrigerants; and, b) Detailed knowledge of and skills in handling flammable refrigerants, personal protective equipment, refrigerant leakage prevention, handling of cylinders, charging, leak detection, recovery and disposal; and, c) Able to understand and to apply in practice the requirements in the national legislation, regulations and Standards; and, d) Continuously undergo regular and further training to maintain this expertise.	❗
11.	Air-conditioner piping in the occupied space shall be installed in such a way to protect against accidental damage in operation and service.	❗
12.	Precautions shall be taken to avoid excessive vibration or pulsation to refrigerating piping.	❗
13.	Ensure protection devices, refrigerating piping and fittings are well protected against adverse environmental effects (such as the danger of water collecting and freezing in relief pipes or the accumulation of dirt and debris).	❗
14.	Expansion and contraction of long runs piping in refrigerating systems shall be designed and installed securely (mounted and guarded) to minimize the likelihood hydraulic shock damaging the system.	❗
15.	Protect the refrigerating system from accidental rupture due to moving furniture or reconstruction activities.	❗
16.	To ensure no leaking, field-made refrigerant joints indoors shall be tightness tested. The test method shall have a sensitivity of 5 grams per year of refrigerant or better under a pressure of at least 0,25 times the maximum allowable pressure (>1.04 MPa, max 4.15 MPa). No leak shall be detected.	❗

⚠ CAUTION

1.

General

- Must ensure the installation of pipe-work shall be kept to a minimum. Avoid use dented pipe and do not allow acute bending.
- Must ensure that pipe-work shall be protected from physical damage.
- Must comply with national gas regulations, state municipal rules and legislation. Notify relevant authorities in accordance with all applicable regulations.
- Must ensure mechanical connections be accessible for maintenance purposes.
- In cases that require mechanical ventilation, ventilation openings shall be kept clear of obstruction.
- When disposal of the product, do follow to the precautions in #11 and comply with national regulations.
- In case of field charge, the effect on refrigerant charge caused by the different pipe length has to be quantified, measured and labelled.
  Always contact to local municipal offices for proper handling.
- Ensure the actual refrigerant charge is in accordance with the room size within which the refrigerant containing parts are installed.
- Ensure refrigerant charge not to leak.
- Wear appropriate protective equipment, including respiratory protection, as conditions warrant.
- Keep all sources of ignition and hot metal surfaces away.

2.

Servicing

2-1. Qualification of workers

- Any qualified person who is involved with working on or breaking into a refrigerant circuit should hold a current valid certificate from an industry-accredited assessment authority, which authorizes their competence to handle refrigerants safely in accordance with an industry recognized assessment specification.
- Servicing shall only be performed as recommended by the equipment manufacturer. Maintenance and repair requiring the assistance of other skilled personnel shall be carried out under the supervision of the person competent in the use of flammable refrigerants.
- Servicing shall be performed only as recommended by the manufacturer.
- The system is inspected, regularly supervised and maintained by a trained and certified service personnel who is employed by the person user or party responsible.

2-2. Checks to the area

- Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimised.
  For repair to the refrigerating system, the precautions in #2-3 to #2-7 must be followed before conducting work on the system.

2-3. Work procedure

- Work shall be undertaken under a controlled procedure so as to minimize the risk of a flammable gas or vapour being present while the work is being performed.

2-4. General work area

- All maintenance staff and others working in the local area shall be instructed and supervised on the nature of work being carried out.
- Avoid working in confined spaces. Always ensure away from source, at least 2 meter of safety distance, or zoning of free space area of at least 2 meter in radius.

2-5. Checking for presence of refrigerant

- The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially flammable atmospheres.
- Ensure that the leak detection equipment being used is suitable for use with flammable refrigerants, i.e. non sparking, adequately sealed or intrinsically safe.
- In case of leakage/spillage happened, immediately ventilate area and stay upwind and away from spill/release.
- In case of leakage/spillage happened, do notify persons down wind of the leaking/spill, isolate immediate hazard area and keep unauthorized personnel out.

2-6. Presence of fire extinguisher

- If any hot work is to be conducted on the refrigerating equipment or any associated parts, appropriate fire extinguishing equipment shall be available at hand.
- Have a dry powder or CO_2 fire extinguisher adjacent to the charging area.

2-7. No ignition sources

- No person carrying out work in relation to a refrigerating system which involves exposing any pipe work that contains or has contained flammable refrigerant shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion. He/She must not be smoking when carrying out such work.
- All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which flammable refrigerant can possibly be released to the surrounding space.
- Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks.
- “No Smoking” signs shall be displayed.

2-8. Ventilated area

- Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work.
- A degree of ventilation shall continue during the period that the work is carried out.
- The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

⚠ CAUTION

2.

2-9. Checks to the refrigerating equipment

- Where electrical components are being changed, they shall be fit for the purpose and to the correct specification.
- At all times the manufacturer's maintenance and service guidelines shall be followed.
- If in doubt consult the manufacturer's technical department for assistance.
- The following checks shall be applied to installations using flammable refrigerants.
  - The actual refrigerant charge is in accordance with the room size within which the refrigerant containing parts are installed.
  - The ventilation machinery and outlets are operating adequately and are not obstructed.
  - If an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant.
  - Marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected.
  - Refrigerating pipe or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are properly protected against being so corroded.

2-10. Checks to electrical devices

- Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures.
- Initial safety checks shall include but not limit to:-
  - That capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking.
  - That there is no live electrical components and wiring are exposed while charging, recovering or purging the system.
  - That there is continuity of earth bonding.
- At all times the manufacturer's maintenance and service guidelines shall be followed.
- If in doubt consult the manufacturer's technical department for assistance.
- If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with.
- If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used.
- The owner of the equipment must be informed or reported so all parties are advised thereinafter.

3.

Repairs to sealed components

- During repairs to sealed components, all electrical supplies shall be disconnected from the equipment being worked upon prior to any removal of sealed covers, etc.
- If it is absolutely necessary to have an electrical supply to equipment during servicing, then a permanently operating form of leak detection shall be located at the most critical point to warn of a potentially hazardous situation.
- Particular attention shall be paid to the following to ensure that by working on electrical components, the casing is not altered in such a way that the level of protection is affected. This shall include damage to cables, excessive number of connections, terminals not made to original specification, damage to seals, incorrect fitting of glands, etc.
- Ensure that apparatus is mounted securely.
- Ensure that seals or sealing materials have not degraded such that they no longer serve the purpose of preventing the ingress of flammable atmospheres.
- Replacement parts shall be in accordance with the manufacturer's specifications.

NOTE:	- The use of silicon sealant may inhibit the effectiveness of some types of leak detection equipment. - Intrinsically safe components do not have to be isolated prior to working on them.

4.

Repair to intrinsically safe components

- Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use.
- Intrinsically safe components are the only types that can be worked on while live in the presence of a flammable atmosphere.
- The test apparatus shall be at the correct rating.
- Replace components only with parts specified by the manufacturer. Unspecified parts by manufacturer may result ignition of refrigerant in the atmosphere from a leak.

5.

Cabling

- Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects.
- The check shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.

6.

Detection of flammable refrigerants

- Under no circumstances shall potential sources of ignition be used in the searching or detection of refrigerant leaks.
- A halide torch (or any other detector using a naked flame) shall not be used.
- The following leak detection methods are deemed acceptable for all refrigerant systems.
  - No leaks shall be detected when using detection equipment with a sensitivity of 5 grams per year of refrigerant or better under a pressure of at least 0,25 times the maximum allowable pressure (>1.04 MPa, max 4.15 MPa) for example, a universal sniffer.
  - Electronic leak detectors may be used to detect flammable refrigerants, but the sensitivity may not be adequate, or may need re-calibration.
    (Detection equipment shall be calibrated in a refrigerant-free area.)
  - Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used.
  - Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed and the appropriate percentage of gas (25 % maximum) is confirmed.
  - Leak detection fluids are also suitable for use with most refrigerants, for example, bubble method and fluorescent method agents. The use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work.
  - If a leak is suspected, all naked flames shall be removed/extinguished.
  - If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak. The precautions in #7 must be followed to remove the refrigerant.

⚠ CAUTION

Removal and evacuation

- When breaking into the refrigerant circuit to make repairs - or for any other purpose - conventional procedures shall be used.
  However, it is important that best practice is followed since flammability is a consideration.
  The following procedure shall be adhered to:

• remove refrigerant -> • purge the circuit with inert gas -> • evacuate -> • purge with inert gas -> • open the circuit by cutting or brazing

7.

- The refrigerant charge shall be recovered into the correct recovery cylinders.
- The system shall be purged with OFN to render the appliance safe. (remark: OFN = oxygen free nitrogen, type of inert gas)
- This process may need to be repeated several times.
- Compressed air or oxygen shall not be used for this task.
- Purging shall be achieved by breaking the vacuum in the system with OFN and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum.
- This process shall be repeated until no refrigerant is within the system.
- When the final OFN charge is used, the system shall be vented down to atmospheric pressure to enable work to take place.
- This operation is absolutely vital if brazing operations on the pipe work are to take place.
- Ensure that the outlet for the vacuum pump is not close to any potential ignition sources and there is ventilation available.

Charging procedures

- In addition to conventional charging procedures, the following requirements shall be followed.
  - Ensure that contamination of different refrigerants does not occur when using charging equipment.
  - Hoses or lines shall be as short as possible to minimize the amount of refrigerant contained in them.
  - Cylinders shall be kept in an appropriate position according to the instructions.
  - Ensure that the refrigerating system is earthed prior to charging the system with refrigerant.
  - Label the system when charging is complete (if not already).
  - Extreme care shall be taken not to over fill the refrigerating system.

8.

- Prior to recharging the system it shall be pressure tested with OFN (refer to #7).
- The system shall be leak tested on completion of charging but prior to commissioning.
- A follow up leak test shall be carried out prior to leaving the site.
- Electrostatic charge may accumulate and create a hazardous condition when charging and discharging the refrigerant. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before charging/discharging.

Decommissioning

- Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its details.
- It is recommended good practice that all refrigerants are recovered safely.
- Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to re-use of recovered refrigerant.
- It is essential that electrical power is available before the task is commenced.
  a) Become familiar with the equipment and its operation.
  b) Isolate system electrically.
  c) Before attempting the procedure ensure that:

9.

• mechanical handling equipment is available, if required, for handling refrigerant cylinders; • all personal protective equipment is available and being used correctly; • the recovery process is supervised at all times by a competent person; • recovery equipment and cylinders conform to the appropriate standards.

  d) Pump down refrigerant system, if possible.
  e) If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
  f) Make sure that cylinder is situated on the scales before recovery takes place.
  g) Start the recovery machine and operate in accordance with instructions.
  h) Do not over fill cylinders. (No more than 80 % volume liquid charge).
  i) Do not exceed the maximum working pressure of the cylinder, even temporarily.
  j) When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.
  k) Recovered refrigerant shall not be charged into another refrigerating system unless it has been cleaned and checked.
- Electrostatic charge may accumulate and create a hazardous condition when charging or discharging the refrigerant. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before charging/discharging.

⚠ CAUTION	
10.	Labelling • Equipment shall be labelled stating that it has been de-commissioned and emptied of refrigerant. • The label shall be dated and signed. • Ensure that there are labels on the equipment stating the equipment contains flammable refrigerant.
11.	Recovery • When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely. • When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. • Ensure that the correct number of cylinders for holding the total system charge are available. • All cylinders to be used are designated for the recovered refrigerant and labelled for that refrigerant (i.e. special cylinders for the recovery of refrigerant). • Cylinders shall be complete with pressure relief valve and associated shut-off valves in good working order. • Recovery cylinders are evacuated and, if possible, cooled before recovery occurs. • The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of concerning the equipment that is at hand and shall be suitable for the recovery of flammable refrigerants. • In addition, a set of calibrated weighing scales shall be available and in good working order. • Hoses shall be complete with leak-free disconnect couplings and in good condition. • Before using the recovery machine, check that it is in satisfactory working order, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of a refrigerant release. Consult manufacturer if in doubt. • The recovered refrigerant shall be returned to the refrigerant supplier in the correct recovery cylinder, and the relevant Waste Transfer Note arranged. • Do not mix refrigerants in recovery units and especially not in cylinders. • If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant. • The evacuation process shall be carried out prior to returning the compressor to the suppliers. • Only electric heating to the compressor body shall be employed to accelerate this process. • When oil is drained from a system, it shall be carried out safely.

3. Specifications

3.1 CU-2Z50ABEC

Item			Unit	Outdoor Unit
Indoor Unit Combination				2.5kW + 2.5kW
Power Source				1 Phase, 230V, 50Hz (Power supply from outdoor unit)
Cooling Operation	Capacity		kW	5.30 (2.11 ~ 7.50)
			BTU/h	18100 (7200 ~ 25600)
	Electrical Data	Running Current	A	5.40
		Power Input	kW	1.20 (0.36 ~ 2.00)
		EER	W/W	4.42 (5.86 ~ 3.75)
		Class		A
	Annual Energy Consumption (A.E.C)		kWh	600
	ERP	Pdesign	kWh	5.30
		SEER	W/W	8.00
		Annual Consumption	kWh	232
		Class		A++
	Power Factor		%	97
	Noise	Sound Pressure Level	dB(A) (H/L)	49 / 11
		Sound Power Level	dB (H/L)	63 / 58
Heating Operation	Capacity		kW	6.40 (1.70 ~ 8.70)
			BTU/h	21800 (5800 ~ 29700)
	Electrical Data	Running Current	A	6.00
		Power Input	kW	1.36 (0.32 ~ 2.40)
		COP	W/W	4.71 (5.31 ~ 3.63)
		Class		A
	ERP	Pdesign	kW	5.20
		Tbivalent	°C	-10
		SCOP	W/W	4.60
		Annual Consumption	kWh	1583
		Class		A++
	Power Factor		%	99
	Noise	Sound Pressure Level	dB(A) (H/L)	49 / 44
		Sound Power Level	dB (H/L)	63 / 58
Extra Low Temp.	Capacity		kW	7.40
	Input Power		W	2740
	COP		W/W	2.70
Maximum Current			A	15.6
Maximum Input Power			W	3.59k
Starting Current			A	6.0
Dimension	Height		mm	795
	Width		mm	875 + (95)
	Depth		mm	320
Net Weight			kg	58
Pipe Length Range (1 room)			m	3 ~ 25
Maximum Pipe Length (Total Room)			m	50

Item			Unit	Outdoor Unit	
Piping	Standard Length		m	5	
	Height Difference		m	15	
	Add. Gas Amount		g/m	20	
	Pipe Length for Add. Gas		m	30	
Refrigerant Pipe Diameter	Liquid Side		mm (inch)	6.35 (1/4)	
	Gas Side		mm (inch)	9.52 (3/8)	
Compressor	Type			Hermetic Motor / Rotary	
	Motor Type			Synchronous Electric Motor (6-poles)	
	Rated Output		W	1.50k	
Fan Motor	Type			Propeller Fan	
	Motor Type			DC Motor (8-poles)	
	Rated Output		W	60	
Fan Speed	High (Cooling / Heating)		RPM	610 / 530	
Heat Exchanger	Type			Plate fin configuration forced draft type	
	Tube Material			Copper	
	Fin Material			Aluminum (Blue Coat)	
	Row / Stage			2 / 36	
	FPI			19	
Air Flow	High (Cooling / Heating)		m^3/min (ft^3/min)	46.8 (1655) / 40.3 (1425)	
Refrigerant Control Device				Expansion Valve	
Refrigerant Oil			cm^3	FW50S (800)	
Refrigerant (R32)			g	1.92k	
				Dry Bulb	Wet Bulb
Outdoor Operation Range	Cooling	Maximum	°C (°F)	46 (114.8)	26 (78.8)
		Minimum	°C (°F)	-10 (14.0)	-
	Heating	Maximum	°C (°F)	24 (75.2)	18 (64.4)
		Minimum	°C (°F)	-25 (-13.0)	-

Note

- Specifications are subject to change without notice for further improvement.

3.2 CU-3Z75ABEC

Item			Unit	Outdoor Unit
Indoor Unit Combination				2.5kW + 2.5kW + 2.5kW
Power Source				1 Phase, 230V, 50Hz (Power supply from outdoor unit)
Cooling Operation	Capacity		kW	7.50 (2.11 ~ 8.80)
			BTU/h	25600 (7200 ~ 30000)
	Electrical Data	Running Current	A	8.30
		Power Input	kW	1.90 (0.38 ~ 2.42)
		EER	W/W	3.95 (5.55 ~ 3.64)
		Class		A
	Annual Energy Consumption (A.E.C)		kWh	950
	ERP	Pdesign	kWh	7.50
		SEER	W/W	8.00
		Annual Consumption	kWh	328
		Class		A++
	Power Factor		%	100
	Noise	Sound Pressure Level	dB(A) (H/L)	49 / 44
		Sound Power Level	dB (H/L)	63 / 58
Heating Operation	Capacity		kW	8.60 (1.70 ~ 10.60)
			BTU/h	29300 (5800 ~ 36100)
	Electrical Data	Running Current	A	8.30
		Power Input	kW	1.91 (0.32 ~ 2.86)
		COP	W/W	4.50 (5.31 ~ 3.71)
		Class		A
	ERP	Pdesign	kW	5.70
		Tbivalent	°C	-10
		SCOP	W/W	4.60
		Annual Consumption	kWh	1735
		Class		A++
	Power Factor		%	100
	Noise	Sound Pressure Level	dB(A) (H/L)	53 / 48
		Sound Power Level	dB (H/L)	67 / 62
Extra Low Temp.	Capacity		kW	7.80
	Input Power		W	2860
	COP		W/W	2.73
Maximum Current			A	15.9
Maximum Input Power			W	3.66k
Starting Current			A	8.3
Dimension	Height		mm	795
	Width		mm	875 + (95)
	Depth		mm	320
Net Weight			kg	62
Pipe Length Range (1 room)			m	3 ~ 25
Maximum Pipe Length (Total Room)			m	60

Item			Unit	Outdoor Unit	
Piping	Standard Length		m	5	
	Height Difference		m	15	
	Add. Gas Amount		g/m	20	
	Pipe Length for Add. Gas		m	30	
Refrigerant Pipe Diameter	Liquid Side		mm (inch)	6.35 (1/4)	
	Gas Side		mm (inch)	9.52 (3/8)	
Compressor	Type			Hermetic Motor / Rotary	
	Motor Type			Synchronous Electric Motor (6-poles)	
	Rated Output		W	1.50k	
Fan Motor	Type			Propeller Fan	
	Motor Type			DC Motor (8-poles)	
	Rated Output		W	60	
Fan Speed	High (Cooling / Heating)		RPM	640 / 650	
Heat Exchanger	Type			Plate fin configuration forced draft type	
	Tube Material			Copper	
	Fin Material			Aluminum (Blue Coat)	
	Row / Stage			2:0.5 / 36:32	
	FPI			19:19	
Air Flow	High (Cooling / Heating)		m^3/min (ft^3/min)	47.9 (1690) / 48.8 (1720)	
Refrigerant Control Device				Expansion Valve	
Refrigerant Oil			cm^3	FW50S (800)	
Refrigerant (R32)			g	2.42k	
				Dry Bulb	Wet Bulb
Outdoor Operation Range	Cooling	Maximum	°C (°F)	46 (114.8)	26 (78.8)
		Minimum	°C (°F)	-10 (14.0)	-
	Heating	Maximum	°C (°F)	24 (75.2)	18 (64.4)
		Minimum	°C (°F)	-25 (-13.0)	-

Note

- Specifications are subject to change without notice for further improvement.

- **Multi Split Combination Possibility:**
  - A single outdoor unit enables air conditioning of up to two separate rooms for CU-2Z50ABEC.
  - A single outdoor unit enables air conditioning of up to three separate rooms for CU-3Z75ABEC.

CONNECTABLE INDOOR UNIT			OUTDOOR UNIT				
			CU-2Z50ABEC		CU-3Z75ABEC		
TYPE \ ROOM			A	B	A	B	C
Wall	2.0kW	CS-Z20ZKEW	●	●	●	●	●
	2.5kW	CS-Z25ZKEW CS-HZ25ZKE CS-HZ25ZKE-H CS-HZ25ZKE-5 CS-HZ25ZKE-5-H CS-NZ25YKE-1	●	●	●	●	●
	3.5kW	CS-Z35ZKEW CS-HZ35ZKE CS-HZ35ZKE-H CS-NZ35YKE-1	●	●	●	●	●
	5.0kW	CS-Z50ZKEW CS-NZ50YKE-1	●	-	●	●	-
Capacity range of connectable indoor units			From 4.0kW to 8.5kW		From 4.5kW to 11.0kW		
Pipe length	1 room maximum pipe length (m)		3 ~ 25		3 ~ 25		
	Allowable elevation (m)		15		15		
	Total allowable pipe length (m)		50		60		
	Total pipe length for maximum chargeless length (m)		30		30		
	Additional gas amount over chargeless length (g/m)		20		20		

Note: "●" : Available

Remarks for CU-2Z50ABEC

1. At least two indoor units must be connected.
2. The total nominal cooling capacity of indoor unit that will be connected to outdoor unit must be within connectable capacity range of indoor unit. (as shown in the table above)
   Example: The indoor units' combination below is possible to connect to CU-2Z50ABEC. (Total nominal capacity of indoor units is between 4.0kW to 8.5kW)
   1) Two CS-HZ25ZKE only. (Total nominal cooling capacity is 5.0kW)

Remarks for CU-3Z75ABEC

1. At least two indoor units must be connected.
2. The total nominal cooling capacity of indoor unit that will be connected to outdoor unit must be within connectable capacity range of indoor unit. (as shown in the table above)
   Example: The indoor units' combination below is possible to connect to CU-3Z75ABEC. (Total nominal capacity of indoor units is between 4.5kW to 11.0kW)
   1) Two CS-HZ35ZKE only. (Total nominal cooling capacity is 7.0kW)

Note*: Above outdoor unit is contains and operates with refrigerant R32 gas.

Type of Indoor : CS-HZxxxKE/-H/-5/-5-H wall mount series

Outdoor unit	Indoor unit capacity		Total	Cooling Capacity (kW)					Input Power (W)		EER		ANNUAL ENERGY CONSUMPTION (kWh)	Current, 230V (A)	ERP				MOISTURE REMOVAL VOLUME l/h
	Cooling			Room A	Room B	Room C	Total	min ~ max	Rating	min ~ max	W/W	CLASS			Pdesign (kW)	SEER W/W	SEER CLASS	ANNUAL CONSUMPTION (kWh)	
CU-2Z50ABEC	1 Room	2.5	2.5	2.50			2.50	1.8 ~ 2.9	470	340 ~ 620	5.32	A	235	2.3	-	-	-	-	1.5
		3.5	3.5	3.50			3.50	1.8 ~ 3.8	880	340 ~ 990	3.98	A	440	4.3	-	-	-	-	2.0
	2 Room	2.5 + 2.5	5.0	2.65	2.65		5.30	2.1 ~ 7.5	1200	360 ~ 2000	4.42	A	600	5.4	5.3	8.00	A++	232	1.6 + 1.6
		2.5 + 3.5	6.0	2.21	3.09		5.30	2.1 ~ 7.5	1170	360 ~ 1970	4.53	A	585	5.3	5.3	8.00	A++	232	1.4 + 1.7
		3.5 + 3.5	7.0	2.65	2.65		5.30	2.1 ~ 7.5	1160	360 ~ 1960	4.57	A	580	5.2	5.3	8.00	A++	232	1.6 + 1.6

Type of Indoor : CS-ZxxxKEW/NZxxxKE-1 wall mount series

Outdoor unit	Indoor unit capacity		Total	Cooling Capacity (kW)					Input Power (W)		EER		ANNUAL ENERGY CONSUMPTION (kWh)	Current, 230V (A)	ERP				MOISTURE REMOVAL VOLUME l/h
	Cooling			Room A	Room B	Room C	Total	min ~ max	Rating	min ~ max	W/W	CLASS			Pdesign (kW)	SEER W/W	SEER CLASS	ANNUAL CONSUMPTION (kWh)	
CU-2Z50ABEC	1 Room	2.0	2.0	2.00			2.00	1.8 ~ 2.5	400	340 ~ 520	5.00	A	200	2.0	-	-	-	-	1.3
		2.5	2.5	2.50			2.50	1.8 ~ 2.9	470	340 ~ 620	5.32	A	235	2.3	-	-	-	-	1.5
		3.5	3.5	3.50			3.50	1.8 ~ 3.8	880	340 ~ 990	3.98	A	440	4.3	-	-	-	-	2.0
		5.0	5.0	5.00			5.00	1.9 ~ 5.7	1420	340 ~ 1820	3.52	A	710	6.6	-	-	-	-	2.7
	2 Room	2.0 + 2.0	4.0	2.00	2.00		4.00	2.1 ~ 6.9	940	360 ~ 1910	4.26	A	470	4.2	4.0	8.00	A++	175	1.3 + 1.3
		2.0 + 2.5	4.5	2.00	2.50		4.50	2.1 ~ 7.0	1100	360 ~ 1920	4.09	A	550	5.0	4.5	8.00	A++	197	1.3 + 1.5
		2.0 + 3.5	5.5	1.93	3.37		5.30	2.1 ~ 7.5	1240	360 ~ 2040	4.27	A	620	5.6	5.3	8.00	A++	232	1.2 + 1.9
		2.0 + 5.0	7.0	1.51	3.79		5.30	2.1 ~ 7.8	1210	360 ~ 2240	4.38	A	605	5.4	5.3	8.00	A++	232	1.0 + 2.2
		2.5 + 2.5	5.0	2.65	2.65		5.30	2.1 ~ 7.5	1260	360 ~ 2060	4.21	A	630	5.7	5.3	8.00	A++	232	1.6 + 1.6
		2.5 + 3.5	6.0	2.21	3.09		5.30	2.1 ~ 7.5	1230	360 ~ 2030	4.31	A	615	5.5	5.3	8.00	A++	232	1.4 + 1.7
		2.5 + 5.0	7.5	1.77	3.53		5.30	2.1 ~ 7.8	1200	360 ~ 2200	4.42	A	600	5.4	5.3	8.00	A++	232	1.1 + 2.0
		3.5 + 3.5	7.0	2.65	2.65		5.30	2.1 ~ 7.5	1220	360 ~ 2020	4.34	A	610	5.5	5.3	8.00	A++	232	1.6 + 1.6
		3.5 + 5.0	8.5	2.18	3.12		5.30	2.1 ~ 7.8	1190	360 ~ 2180	4.45	A	595	5.4	5.3	8.00	A++	232	1.4 + 1.8

Type of Indoor : CS-HZxxxKE/-H/-5/-5-H wall mount series

Outdoor unit	Indoor unit capacity		Total	Heating Capacity (kW)					Input Power (W)		COP		ANNUAL ENERGY CONSUMPTION (kWh)	Current, 230V (A)	ERP				MOISTURE REMOVAL VOLUME l/h
	Heating			Room A	Room B	Room C	Total	min ~ max	Rating	min ~ max	W/W	CLASS			Pdesign (kW)	SCOP W/W	SCOP CLASS	ANNUAL CONSUMPTION (kWh)	
CU-2Z50ABEC	1 Room	2.5	2.5	3.60			3.60	1.2 ~ 4.3	940	300 ~ 1190	3.83	A	470	4.7	-	-	-	-	
		3.5	3.5	4.50			4.50	1.2 ~ 5.8	1230	300 ~ 1950	3.66	A	615	6.0	-	-	-	-	
	2 Room	2.5 + 2.5	5.0	3.20	3.20		6.40	1.7 ~ 8.7	1360	320 ~ 2400	4.71	A	680	6.0	5.2	4.60	A++	1583	
		2.5 + 3.5	6.0	2.67	3.73		6.40	1.7 ~ 8.7	1340	320 ~ 2370	4.78	A	670	5.9	5.2	4.60	A++	1583	
		3.5 + 3.5	7.0	3.20	3.20		6.40	1.7 ~ 8.7	1330	320 ~ 2360	4.81	A	665	5.9	5.2	4.60	A++	1583	

Type of Indoor : CS-ZxxxKEW/NZxxxKE-1 wall mount series

Outdoor unit	Indoor unit capacity		Total	Heating Capacity (kW)					Input Power (W)		COP		ANNUAL ENERGY CONSUMPTION (kWh)	Current, 230V (A)	ERP				MOISTURE REMOVAL VOLUME l/h
	Heating			Room A	Room B	Room C	Total	min ~ max	Rating	min ~ max	W/W	CLASS			Pdesign (kW)	SCOP W/W	SCOP CLASS	ANNUAL CONSUMPTION (kWh)	
CU-2Z50ABEC	1 Room	2.0	2.0	3.20			3.20	1.2 ~ 4.1	810	300 ~ 1160	3.95	A	405	4.0	-	-	-	-	
		2.5	2.5	3.60			3.60	1.2 ~ 4.3	940	300 ~ 1190	3.83	A	470	4.7	-	-	-	-	
		3.5	3.5	4.50			4.50	1.2 ~ 5.8	1230	300 ~ 1950	3.66	A	615	6.0	-	-	-	-	
		5.0	5.0	6.80			6.80	1.2 ~ 7.7	2100	300 ~ 2520	3.24	C	1050	9.7	-	-	-	-	
	2 Room	2.0 + 2.0	4.0	3.15	3.15		6.30	1.7 ~ 8.3	1550	320 ~ 2450	4.06	A	775	6.8	5.1	4.40	A+	1623	
		2.0 + 2.5	4.5	2.84	3.56		6.40	1.7 ~ 8.6	1540	320 ~ 2500	4.16	A	770	6.8	5.1	4.40	A+	1623	
		2.0 + 3.5	5.5	2.33	4.07		6.40	1.7 ~ 8.7	1530	320 ~ 2440	4.18	A	765	6.8	5.1	4.40	A+	1623	
		2.0 + 5.0	7.0	1.83	4.57		6.40	1.7 ~ 8.8	1440	320 ~ 2480	4.44	A	720	6.4	5.1	4.40	A+	1623	
		2.5 + 2.5	5.0	3.20	3.20		6.40	1.7 ~ 8.7	1530	320 ~ 2440	4.18	A	765	6.8	5.1	4.40	A+	1623	
		2.5 + 3.5	6.0	2.67	3.73		6.40	1.7 ~ 8.7	1520	320 ~ 2430	4.21	A	760	6.7	5.1	4.40	A+	1623	
		2.5 + 5.0	7.5	2.13	4.27		6.40	1.7 ~ 8.8	1430	320 ~ 2470	4.48	A	715	6.3	5.1	4.40	A+	1623	
		3.5 + 3.5	7.0	3.20	3.20		6.40	1.7 ~ 8.7	1510	320 ~ 2420	4.24	A	755	6.7	5.1	4.40	A+	1623	
		3.5 + 5.0	8.5	2.64	3.76		6.40	1.7 ~ 8.8	1420	320 ~ 2460	4.51	A	710	6.3	5.1	4.40	A+	1623	

Type of Indoor : CS-HZxxxKE/-H/-5/-5-H wall mount series

Outdoor unit	Indoor unit capacity		Total	Cooling Capacity (kW)					Input Power (W)		EER		ANNUAL ENERGY CONSUMPTION (kWh)	Current, 230V (A)	ERP				MOISTURE REMOVAL VOLUME l/h
	Cooling			Room A	Room B	Room C	Total	min ~ max	Rating	min ~ max	W/W	CLASS			Pdesign (kW)	SEER W/W	SEER CLASS	ANNUAL CONSUMPTION (kWh)	
CU-3Z75ABEC	1 Room	2.5	2.5	2.50			2.50	1.8 ~ 2.9	470	340 ~ 620	5.32	A	235	2.3	-	-	-	-	1.5
		3.5	3.5	3.50			3.50	1.8 ~ 3.8	880	340 ~ 990	3.98	A	440	4.3	-	-	-	-	2.0
	2 Room	2.5 + 2.5	5.0	2.50	2.50		5.00	2.1 ~ 7.5	1110	380 ~ 2450	4.50	A	555	4.8	5.00	7.20	A++	243	1.5 + 1.5
		2.5 + 3.5	6.0	2.50	3.50		6.00	2.1 ~ 7.6	1480	380 ~ 2460	4.05	A	740	6.5	6.00	7.20	A++	292	1.5 + 2.0
		3.5 + 3.5	7.0	3.50	3.50		7.00	2.1 ~ 7.7	1840	380 ~ 2410	3.80	A	920	8.0	7.00	7.20	A++	340	2.0 + 2.0
	3 Room	2.5 + 2.5 + 2.5	7.5	2.50	2.50	2.50	7.50	2.1 ~ 8.8	1900	380 ~ 2420	3.95	A	950	8.3	7.50	8.00	A++	328	1.5 + 1.5 + 1.5
		2.5 + 2.5 + 3.5	8.5	2.21	2.21	3.09	7.50	2.1 ~ 8.8	1880	380 ~ 2330	3.99	A	940	8.2	7.50	8.00	A++	328	1.4 + 1.4 + 1.7
		2.5 + 3.5 + 3.5	9.5	1.99	2.76	2.76	7.50	2.1 ~ 8.9	1860	410 ~ 2340	4.03	A	930	8.1	7.50	8.00	A++	328	1.3 + 1.6 + 1.6
		3.5 + 3.5 + 3.5	10.5	2.50	2.50	2.50	7.50	2.1 ~ 9.0	1830	410 ~ 2340	4.10	A	915	8.0	7.50	8.00	A++	328	1.5 + 1.5 + 1.5

Type of Indoor : CS-ZxxxKEW/NZxxxKE-1 wall mount series

Outdoor unit	Indoor unit capacity		Total	Cooling Capacity (kW)					Input Power (W)		EER		ANNUAL ENERGY CONSUMPTION (kWh)	Current, 230V (A)	ERP				MOISTURE REMOVAL VOLUME l/h
	Cooling			Room A	Room B	Room C	Total	min ~ max	Rating	min ~ max	W/W	CLASS			Pdesign (kW)	SEER W/W	SEER CLASS	ANNUAL CONSUMPTION (kWh)	
CU-3Z75ABEC	1 Room	2.0	2.0	2.00			2.00	1.8 ~ 2.5	400	340 ~ 520	5.00	A	200	2.0	-	-	-	-	1.3
		2.5	2.5	2.50			2.50	1.8 ~ 2.9	470	340 ~ 620	5.32	A	235	2.3	-	-	-	-	1.5
		3.5	3.5	3.50			3.50	1.8 ~ 3.8	880	340 ~ 990	3.98	A	440	4.3	-	-	-	-	2.0
		5.0	5.0	5.00			5.00	1.9 ~ 5.7	1420	340 ~ 1820	3.52	A	710	6.6	-	-	-	-	2.7
	2 Room	2.0 + 2.0	4.0	2.00	2.00		4.00	2.1 ~ 7.0	930	380 ~ 2110	4.30	A	465	4.1	-	-	-	-	1.3 + 1.3
		2.0 + 2.5	4.5	2.00	2.50		4.50	2.1 ~ 7.0	960	380 ~ 2070	4.69	A	480	4.2	4.50	7.20	A++	219	1.3 + 1.5
		2.0 + 3.5	5.5	2.00	3.50		5.50	2.1 ~ 7.6	1360	380 ~ 2300	4.04	A	680	5.9	5.50	7.20	A++	267	1.3 + 2.0
		2.0 + 5.0	7.0	2.00	5.00		7.00	2.2 ~ 8.3	1880	400 ~ 2340	3.72	A	940	8.2	7.00	7.20	A++	340	1.3 + 2.7
		2.5 + 2.5	5.0	2.50	2.50		5.00	2.1 ~ 7.5	1170	380 ~ 2290	4.27	A	585	5.1	5.00	7.20	A++	243	1.5 + 1.5
		2.5 + 3.5	6.0	2.50	3.50		6.00	2.1 ~ 7.6	1560	380 ~ 2300	3.85	A	780	6.8	6.00	7.20	A++	292	1.5 + 2.0
		2.5 + 5.0	7.5	2.50	5.00		7.50	2.1 ~ 8.3	2090	370 ~ 2340	3.59	A	1045	9.1	7.50	7.20	A++	365	1.5 + 2.7
		3.5 + 3.5	7.0	3.50	3.50		7.00	2.1 ~ 7.7	1910	380 ~ 2260	3.66	A	955	8.3	7.00	7.20	A++	340	2.0 + 2.0
		3.5 + 5.0	8.5	3.09	4.41		7.50	2.2 ~ 8.4	2010	400 ~ 2340	3.73	A	1005	8.8	7.50	7.20	A++	365	1.7 + 2.4
		5.0 + 5.0	10.0	3.75	3.75		7.50	2.3 ~ 8.9	1930	460 ~ 2350	3.89	A	965	8.4	7.50	7.20	A++	365	2.2 + 2.2
	3 Room	2.0 + 2.0 + 2.0	6.0	2.00	2.00	2.00	6.00	2.1 ~ 8.8	1340	380 ~ 2270	4.48	A	670	5.9	6.00	8.00	A++	263	1.3 + 1.3 + 1.3
		2.0 + 2.0 + 2.5	6.5	2.00	2.00	2.50	6.50	2.1 ~ 8.8	1650	380 ~ 2270	3.94	A	825	7.2	6.50	8.00	A++	284	1.3 + 1.3 + 1.5
		2.0 + 2.0 + 3.5	7.5	2.00	2.00	3.50	7.50	2.1 ~ 8.8	1940	380 ~ 2190	3.87	A	970	8.5	7.50	8.00	A++	328	1.3 + 1.3 + 2.0
		2.0 + 2.0 + 5.0	9.0	1.67	1.67	4.17	7.50	2.2 ~ 9.4	1750	480 ~ 2290	4.29	A	875	7.6	7.50	8.00	A++	328	1.1 + 1.1 + 2.4
		2.0 + 2.5 + 2.5	7.0	2.00	2.50	2.50	7.00	2.1 ~ 8.8	1850	380 ~ 2270	3.78	A	925	8.1	7.00	8.00	A++	306	1.3 + 1.5 + 1.5
		2.0 + 2.5 + 3.5	8.0	1.88	2.34	3.28	7.50	2.1 ~ 8.8	1940	380 ~ 2190	3.87	A	970	8.5	7.50	8.00	A++	328	1.2 + 1.5 + 1.9
		2.0 + 2.5 + 5.0	9.5	1.58	1.97	3.95	7.50	2.2 ~ 9.4	1750	480 ~ 2290	4.29	A	875	7.6	7.50	8.00	A++	328	1.0 + 1.3 + 2.3
		2.0 + 3.5 + 3.5	9.0	1.67	2.92	2.92	7.50	2.1 ~ 8.9	1900	410 ~ 2200	3.95	A	950	8.3	7.50	8.00	A++	328	1.1 + 1.7 + 1.7
		2.0 + 3.5 + 5.0	10.5	1.43	2.50	3.57	7.50	2.2 ~ 9.4	1750	480 ~ 2240	4.29	A	875	7.6	7.50	8.00	A++	328	0.9 + 1.5 + 2.1
		2.5 + 2.5 + 2.5	7.5	2.50	2.50	2.50	7.50	2.1 ~ 8.8	1940	380 ~ 2270	3.87	A	970	8.5	7.50	8.00	A++	328	1.5 + 1.5 + 1.5
		2.5 + 2.5 + 3.5	8.5	2.21	2.21	3.09	7.50	2.1 ~ 8.8	1940	380 ~ 2190	3.87	A	970	8.5	7.50	8.00	A++	328	1.4 + 1.4 + 1.7
		2.5 + 2.5 + 5.0	10.0	1.88	1.88	3.75	7.50	2.2 ~ 9.4	1750	480 ~ 2290	4.29	A	875	7.6	7.50	8.00	A++	328	1.2 + 1.2 + 2.2
		2.5 + 3.5 + 3.5	9.5	1.99	2.76	2.76	7.50	2.1 ~ 8.9	1900	410 ~ 2200	3.95	A	950	8.3	7.50	8.00	A++	328	1.3 + 1.6 + 1.6
		2.5 + 3.5 + 5.0	11.0	1.71	2.39	3.41	7.50	2.2 ~ 9.4	1750	480 ~ 2240	4.29	A	875	7.6	7.50	8.00	A++	328	1.1 + 1.5 + 2.0
		3.5 + 3.5 + 3.5	10.5	2.50	2.50	2.50	7.50	2.1 ~ 9.0	1850	410 ~ 2200	4.05	A	925	8.1	7.50	8.00	A++	328	1.5 + 1.5 + 1.5

Type of Indoor : CS-HZxxxKE/-H/-5/-5-H wall mount series

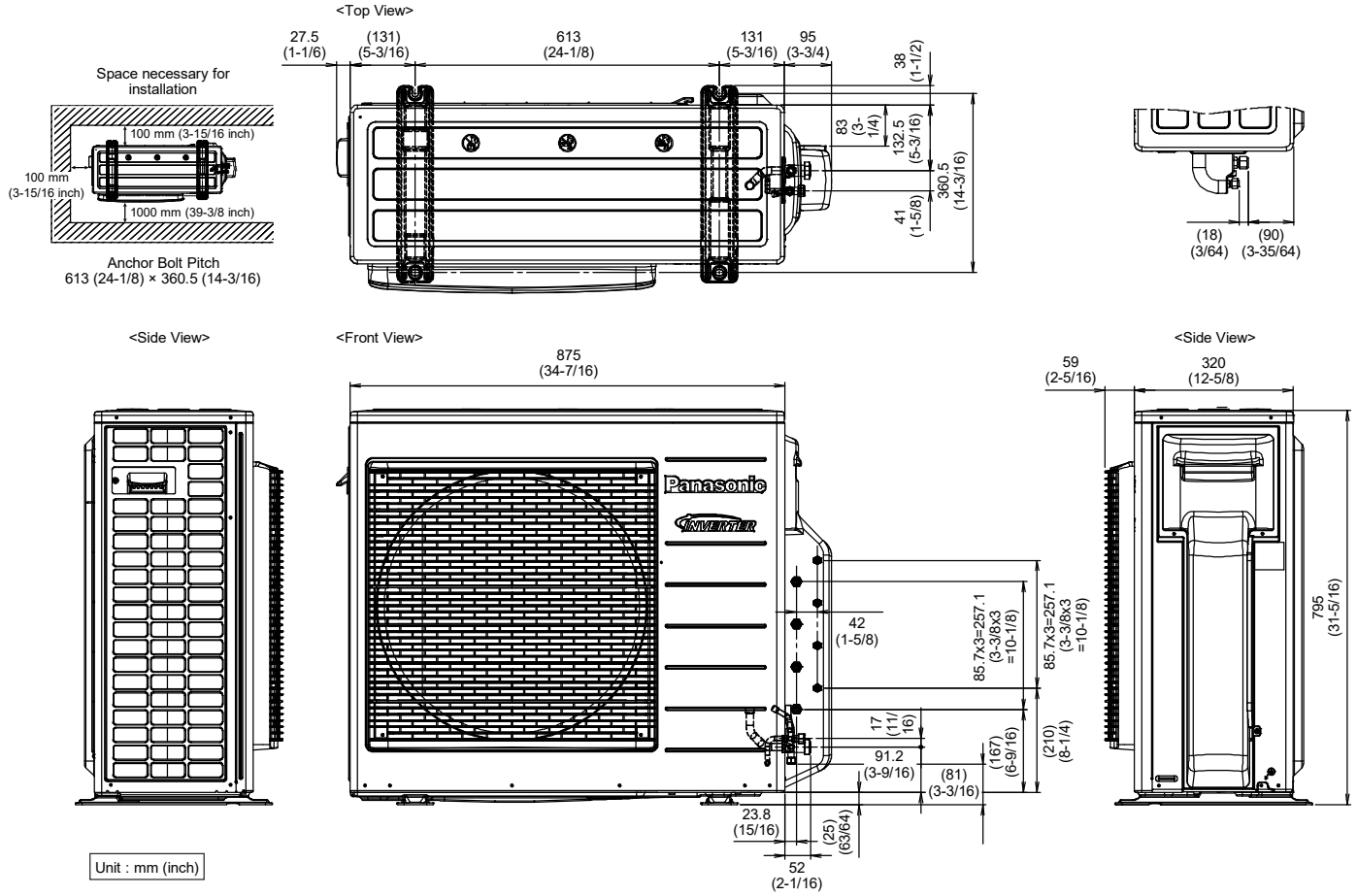
Outdoor unit	Indoor unit capacity		Total	Heating Capacity (kW)					Input Power (W)		COP		ANNUAL ENERGY CONSUMPTION (kWh)	Current, 230V (A)	ERP				MOISTURE REMOVAL VOLUME l/h
	Heating			Room A	Room B	Room C	Total	min ~ max	Rating	min ~ max	W/W	CLASS			Pdesign (kW)	SCOP W/W	SCOP CLASS	ANNUAL CONSUMPTION (kWh)	
CU-3Z75ABEC	1 Room	2.5	2.5	3.60			3.60	1.2 ~ 4.3	940	300 ~ 1190	3.83	A	470	4.7	-	-	-	-	
		3.5	3.5	4.50			4.50	1.2 ~ 5.8	1230	300 ~ 1950	3.66	A	615	6.0	-	-	-	-	
	2 Room	2.5 + 2.5	5.0	3.65	3.65		7.30	1.4 ~ 10.0	1500	330 ~ 2990	4.87	A	750	6.5	5.70	4.60	A++	1735	
		2.5 + 3.5	6.0	3.42	4.78		8.20	1.4 ~ 10.1	1870	320 ~ 2990	4.39	A	935	8.1	5.70	4.60	A++	1735	
		3.5 + 3.5	7.0	4.30	4.30		8.60	1.4 ~ 10.2	1980	330 ~ 2990	4.34	A	990	8.6	5.70	4.60	A++	1735	
	3 Room	2.5 + 2.5 + 2.5	7.5	2.87	2.87	2.87	8.60	1.7 ~ 10.6	1910	320 ~ 2860	4.50	A	955	8.3	5.70	4.60	A++	1735	
		2.5 + 2.5 + 3.5	8.5	2.53	2.53	3.54	8.60	1.7 ~ 10.6	1900	320 ~ 2830	4.53	A	950	8.3	5.70	4.60	A++	1735	
		2.5 + 3.5 + 3.5	9.5	2.26	3.17	3.17	8.60	1.7 ~ 10.7	1870	330 ~ 2850	4.60	A	935	8.1	5.70	4.60	A++	1735	
		3.5 + 3.5 + 3.5	10.5	2.87	2.87	2.87	8.60	1.7 ~ 10.7	1820	320 ~ 2830	4.73	A	910	7.9	5.70	4.60	A++	1735	

Type of Indoor : CS-ZxxxKEW/NZxxxKE-1 wall mount series

Outdoor unit	Indoor unit capacity		Total	Heating Capacity (kW)					Input Power (W)		COP		ANNUAL ENERGY CONSUMPTION (kWh)	Current, 230V (A)	ERP				MOISTURE REMOVAL VOLUME l/h
	Heating			Room A	Room B	Room C	Total	min ~ max	Rating	min ~ max	W/W	CLASS			Pdesign (kW)	SCOP W/W	SCOP CLASS	ANNUAL CONSUMPTION (kWh)	
CU-3Z75ABEC	1 Room	2.0	2.0	3.20			3.20	1.2 ~ 4.1	810	300 ~ 1160	3.95	A	405	4.0	-	-	-	-	
		2.5	2.5	3.60			3.60	1.2 ~ 4.3	940	300 ~ 1190	3.83	A	470	4.7	-	-	-	-	
		3.5	3.5	4.50			4.50	1.2 ~ 5.8	1230	300 ~ 1950	3.66	A	615	6.0	-	-	-	-	
		5.0	5.0	6.80			6.80	1.2 ~ 7.7	2100	300 ~ 2520	3.24	C	1050	9.7	-	-	-	-	
	2 Room	2.0 + 2.0	4.0	3.25	3.25		6.50	1.4 ~ 10.0	1620	330 ~ 3420	4.01	A	810	7.0	-	-	-	-	
		2.0 + 2.5	4.5	3.07	3.83		6.90	1.4 ~ 10.0	1790	330 ~ 3330	3.85	A	895	7.8	5.60	4.40	A+	1782	
		2.0 + 3.5	5.5	2.84	4.96		7.80	1.4 ~ 10.0	2090	320 ~ 3240	3.73	A	1045	9.1	5.60	4.40	A+	1782	
		2.0 + 5.0	7.0	2.46	6.14		8.60	1.4 ~ 10.4	2310	290 ~ 3140	3.72	A	1155	10.0	5.60	4.40	A+	1782	
		2.5 + 2.5	5.0	3.65	3.65		7.30	1.4 ~ 10.0	1930	330 ~ 3180	3.78	A	965	8.4	5.60	4.40	A+	1782	
		2.5 + 3.5	6.0	3.42	4.78		8.20	1.4 ~ 10.1	2230	320 ~ 3180	3.68	A	1115	9.7	5.60	4.40	A+	1782	
		2.5 + 5.0	7.5	2.87	5.73		8.60	1.4 ~ 10.4	2310	290 ~ 3140	3.72	A	1155	10.0	5.60	4.40	A+	1782	
		3.5 + 3.5	7.0	4.30	4.30		8.60	1.4 ~ 10.2	2370	330 ~ 3180	3.63	A	1185	10.3	5.60	4.40	A+	1782	
		3.5 + 5.0	8.5	3.54	5.06		8.60	1.4 ~ 10.5	2250	280 ~ 3120	3.82	A	1125	9.8	5.60	4.40	A+	1782	
		5.0 + 5.0	10.0	4.30	4.30		8.60	1.4 ~ 10.7	1990	260 ~ 3020	4.32	A	995	8.6	5.60	4.40	A+	1782	
	3 Room	2.0 + 2.0 + 2.0	6.0	2.87	2.87	2.87	8.60	1.7 ~ 10.6	2020	320 ~ 3220	4.26	A	1010	8.8	5.60	4.60	A++	1704	
		2.0 + 2.0 + 2.5	6.5	2.65	2.65	3.31	8.60	1.7 ~ 10.6	2020	320 ~ 3160	4.26	A	1010	8.8	5.60	4.60	A++	1704	
		2.0 + 2.0 + 3.5	7.5	2.29	2.29	4.01	8.60	1.7 ~ 10.6	2000	320 ~ 3080	4.30	A	1000	8.7	5.60	4.60	A++	1704	
		2.0 + 2.0 + 5.0	9.0	1.91	1.91	4.78	8.60	1.6 ~ 10.8	1860	310 ~ 2780	4.62	A	930	8.1	5.60	4.60	A++	1704	
		2.0 + 2.5 + 2.5	7.0	2.46	3.07	3.07	8.60	1.7 ~ 10.6	2020	320 ~ 3070	4.26	A	1010	8.8	5.60	4.60	A++	1704	
		2.0 + 2.5 + 3.5	8.0	2.15	2.69	3.76	8.60	1.7 ~ 10.6	2000	320 ~ 2940	4.30	A	1000	8.7	5.60	4.60	A++	1704	
		2.0 + 2.5 + 5.0	9.5	1.81	2.26	4.53	8.60	1.6 ~ 10.8	1860	310 ~ 2780	4.62	A	930	8.1	5.60	4.60	A++	1704	
		2.0 + 3.5 + 3.5	9.0	1.91	3.34	3.34	8.60	1.7 ~ 10.7	1980	330 ~ 2960	4.34	A	990	8.6	5.60	4.60	A++	1704	
		2.0 + 3.5 + 5.0	10.5	1.64	2.87	4.10	8.60	1.6 ~ 10.8	1850	310 ~ 2760	4.65	A	925	8.0	5.60	4.60	A++	1704	
		2.5 + 2.5 + 2.5	7.5	2.87	2.87	2.87	8.60	1.7 ~ 10.6	2020	320 ~ 2920	4.26	A	1010	8.8	5.60	4.60	A++	1704	
		2.5 + 2.5 + 3.5	8.5	2.53	2.53	3.54	8.60	1.7 ~ 10.6	2000	320 ~ 2850	4.30	A	1000	8.7	5.60	4.60	A++	1704	
		2.5 + 2.5 + 5.0	10.0	2.15	2.15	4.30	8.60	1.6 ~ 10.8	1860	310 ~ 2780	4.62	A	930	8.1	5.60	4.60	A++	1704	
		2.5 + 3.5 + 3.5	9.5	2.26	3.17	3.17	8.60	1.7 ~ 10.7	1980	330 ~ 2870	4.34	A	990	8.6	5.60	4.60	A++	1704	
		2.5 + 3.5 + 5.0	11.0	1.96	2.74	3.91	8.60	1.6 ~ 10.8	1850	310 ~ 2760	4.65	A	925	8.0	5.60	4.60	A++	1704	
		3.5 + 3.5 + 3.5	10.5	2.87	2.87	2.87	8.60	1.7 ~ 10.7	1920	320 ~ 2850	4.48	A	960	8.3	5.60	4.60	A++	1704	

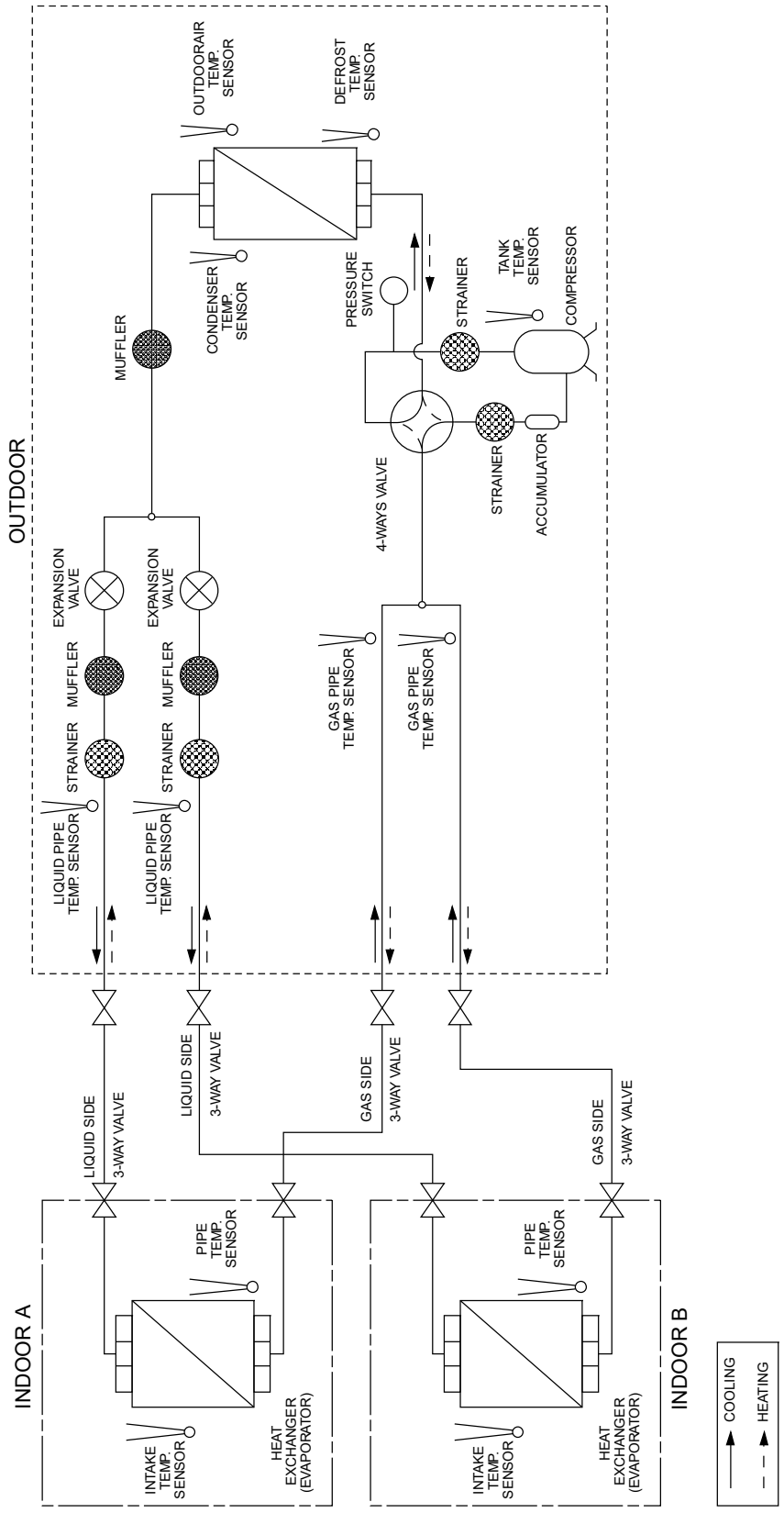
- Specifications are subject to change without notice for further improvement.

4. Dimensions

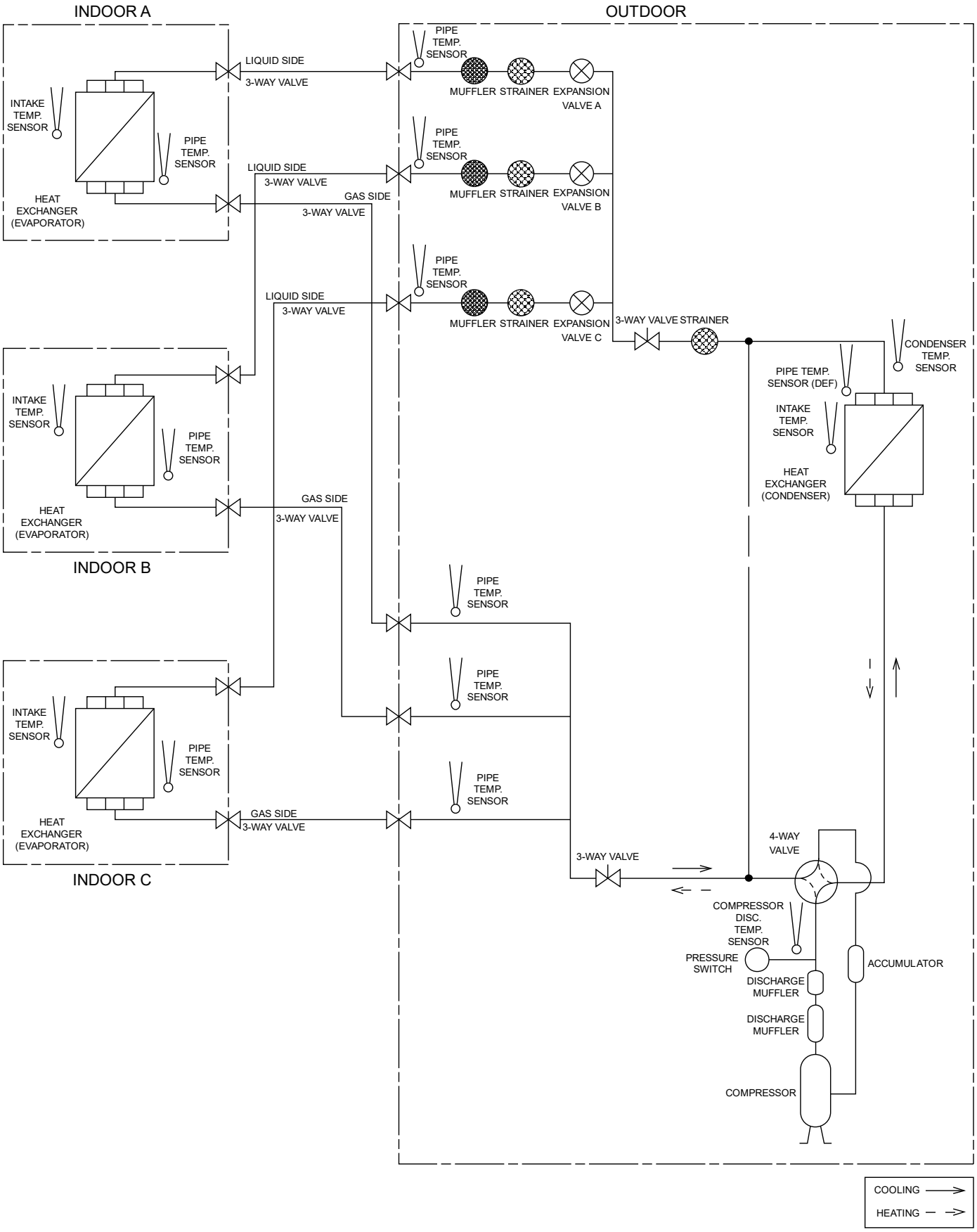


5. Refrigeration Cycle Diagram

5.1 CU-2Z50ABEC

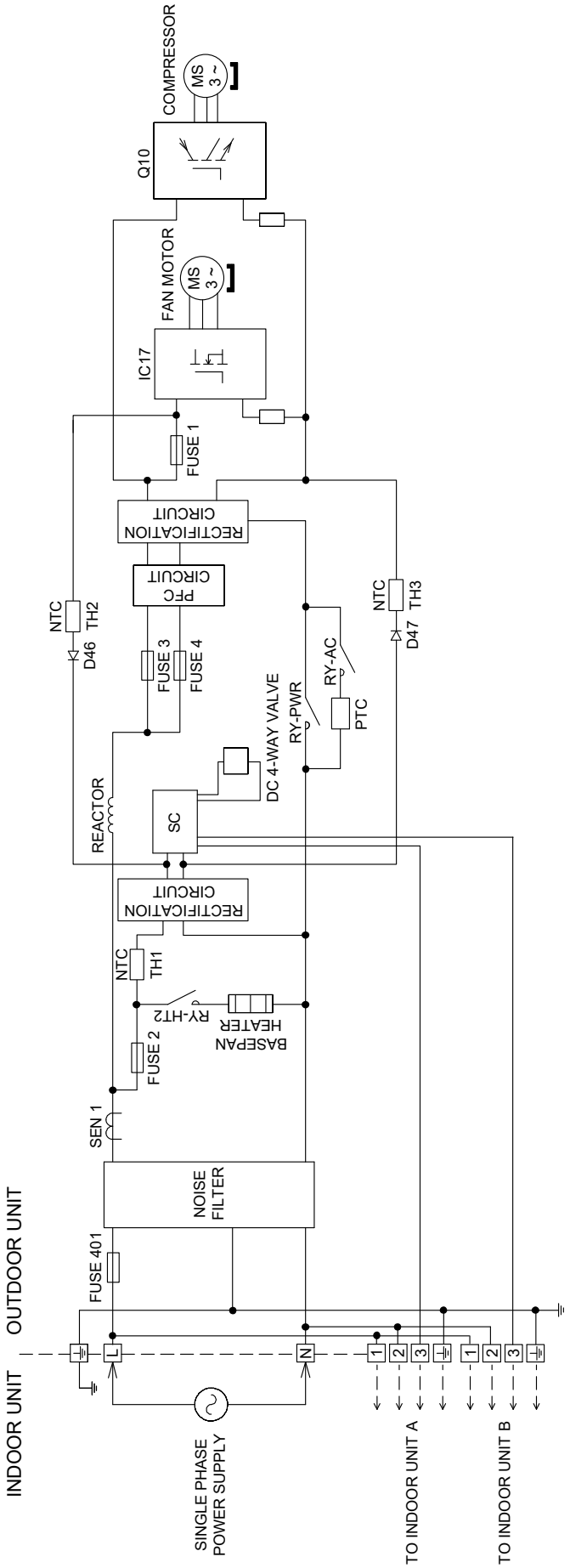


5.2 CU-3Z75ABEC

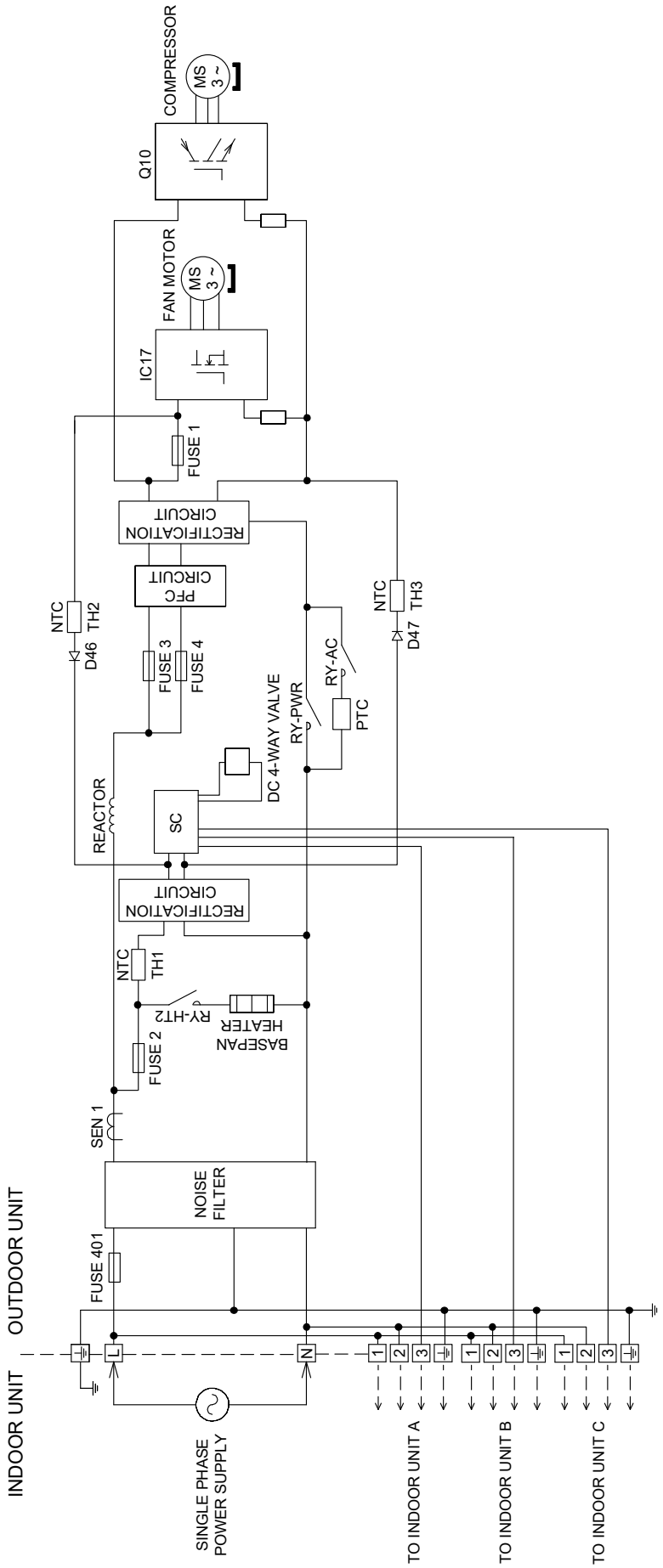


6. Block Diagram

6.1 CU-2Z50ABEC

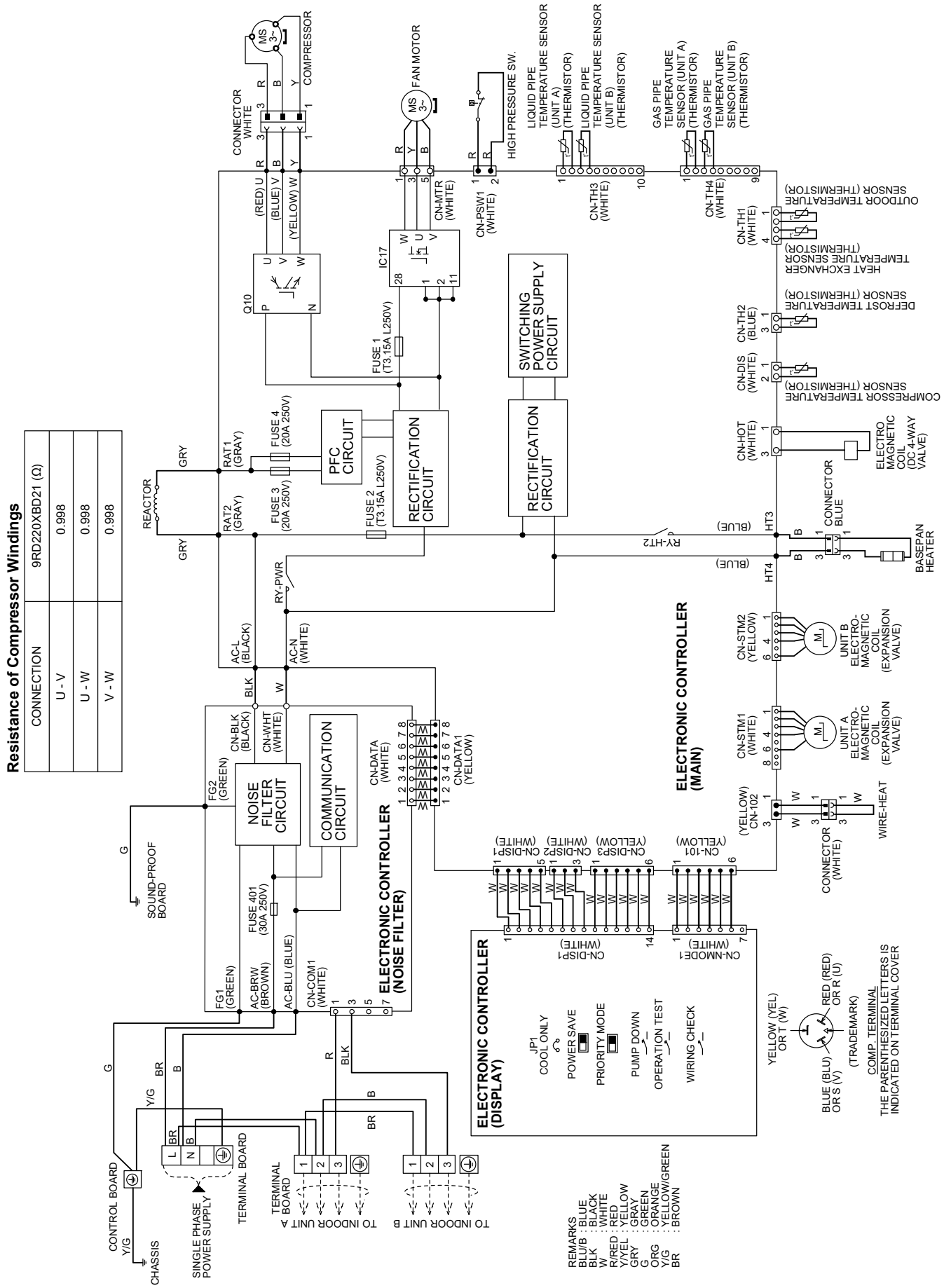


6.2 CU-3Z75ABEC

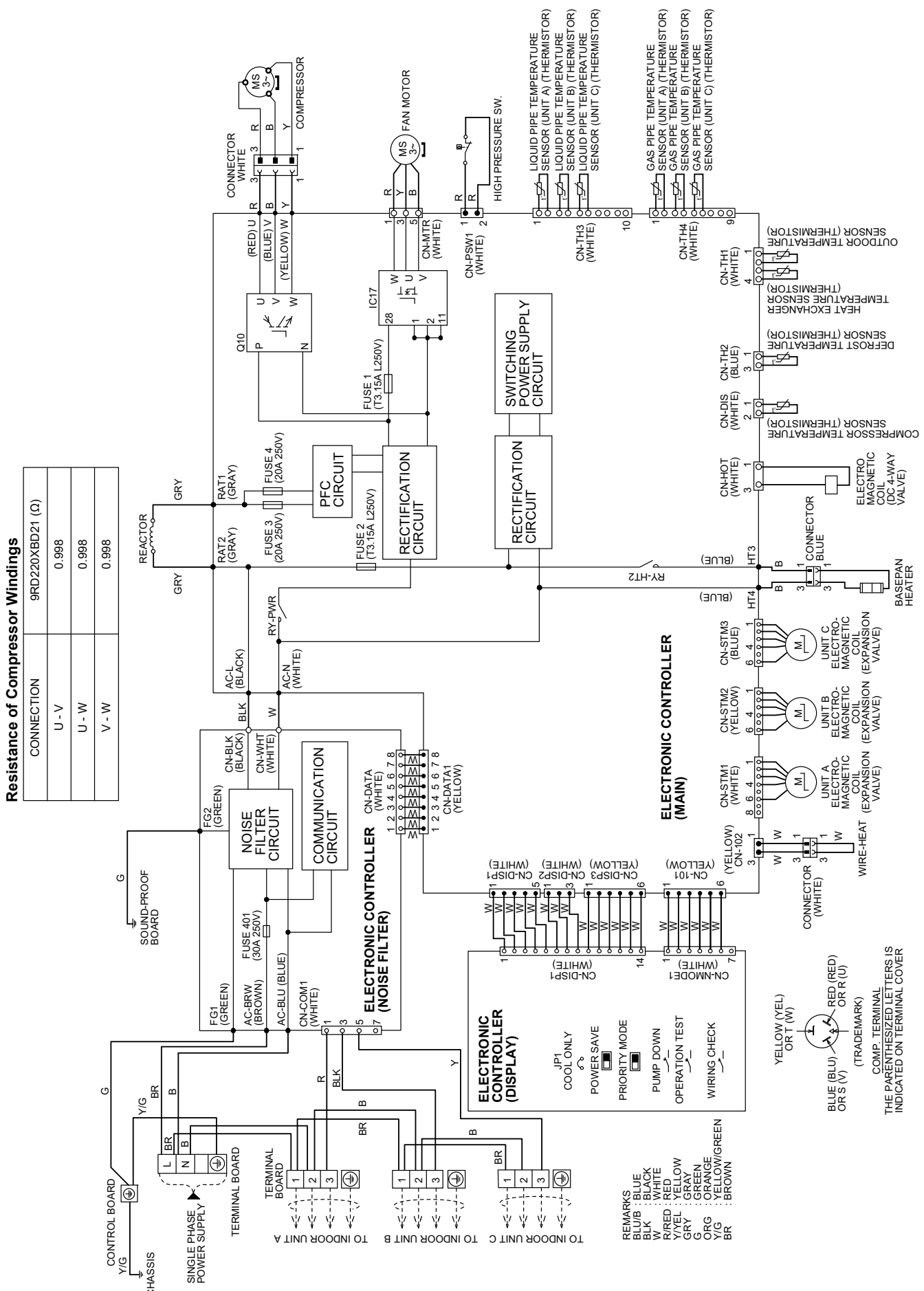


7. Wiring Connection Diagram

7.1 CU-2Z50ABEC

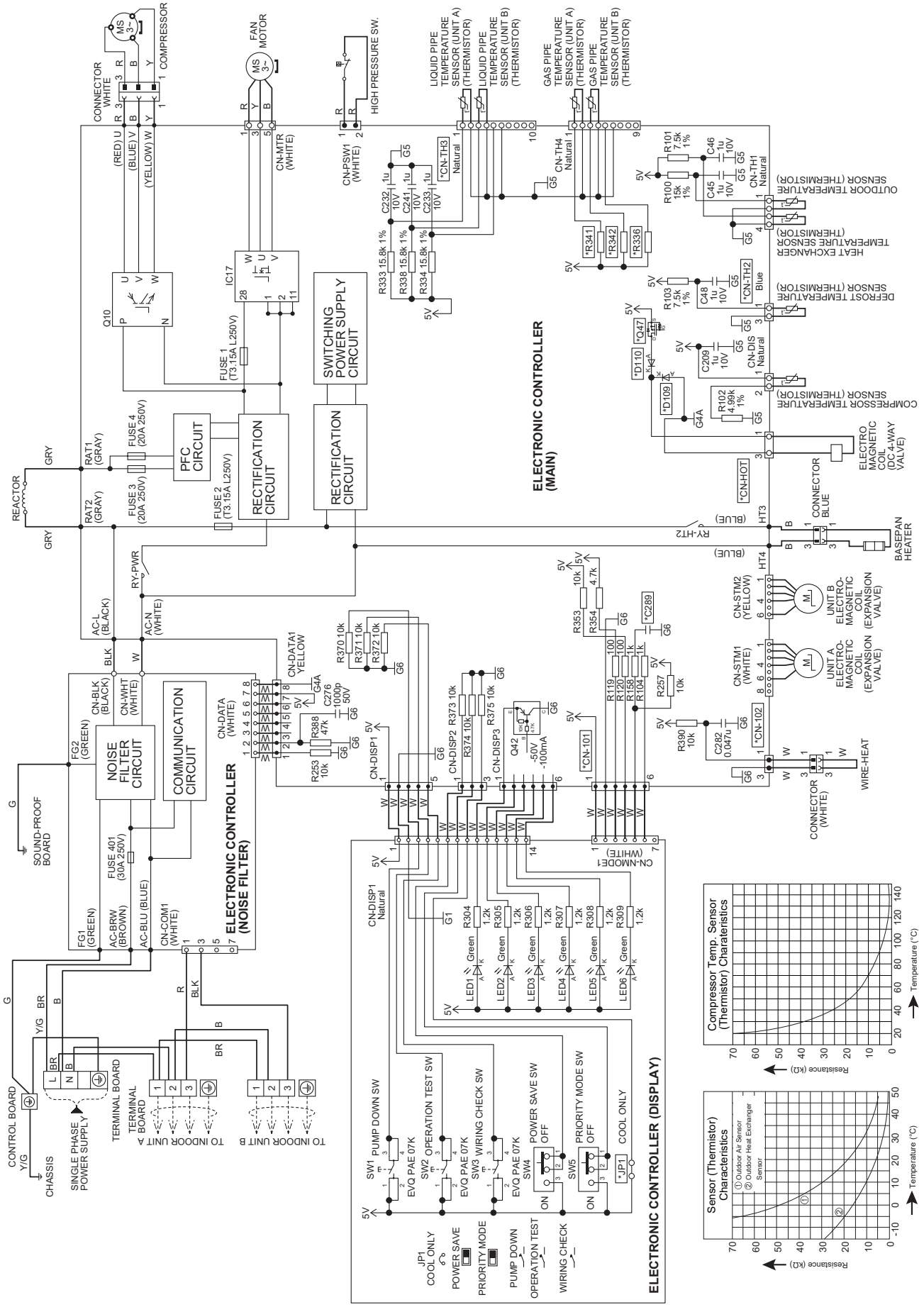


7.2 CU-3Z75ABEC

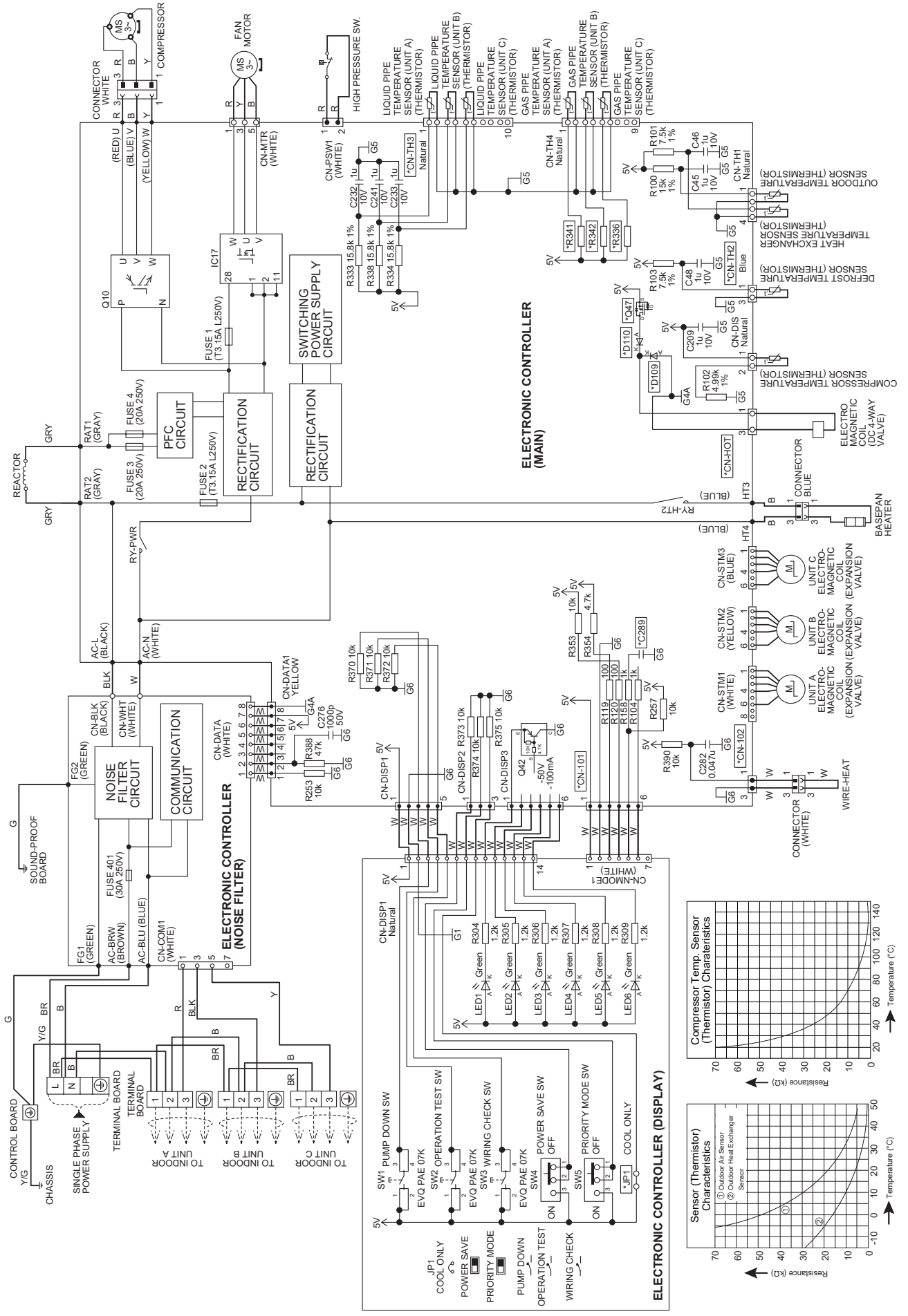


8. Electronic Circuit Diagram

8.1 CU-2Z50ABEC

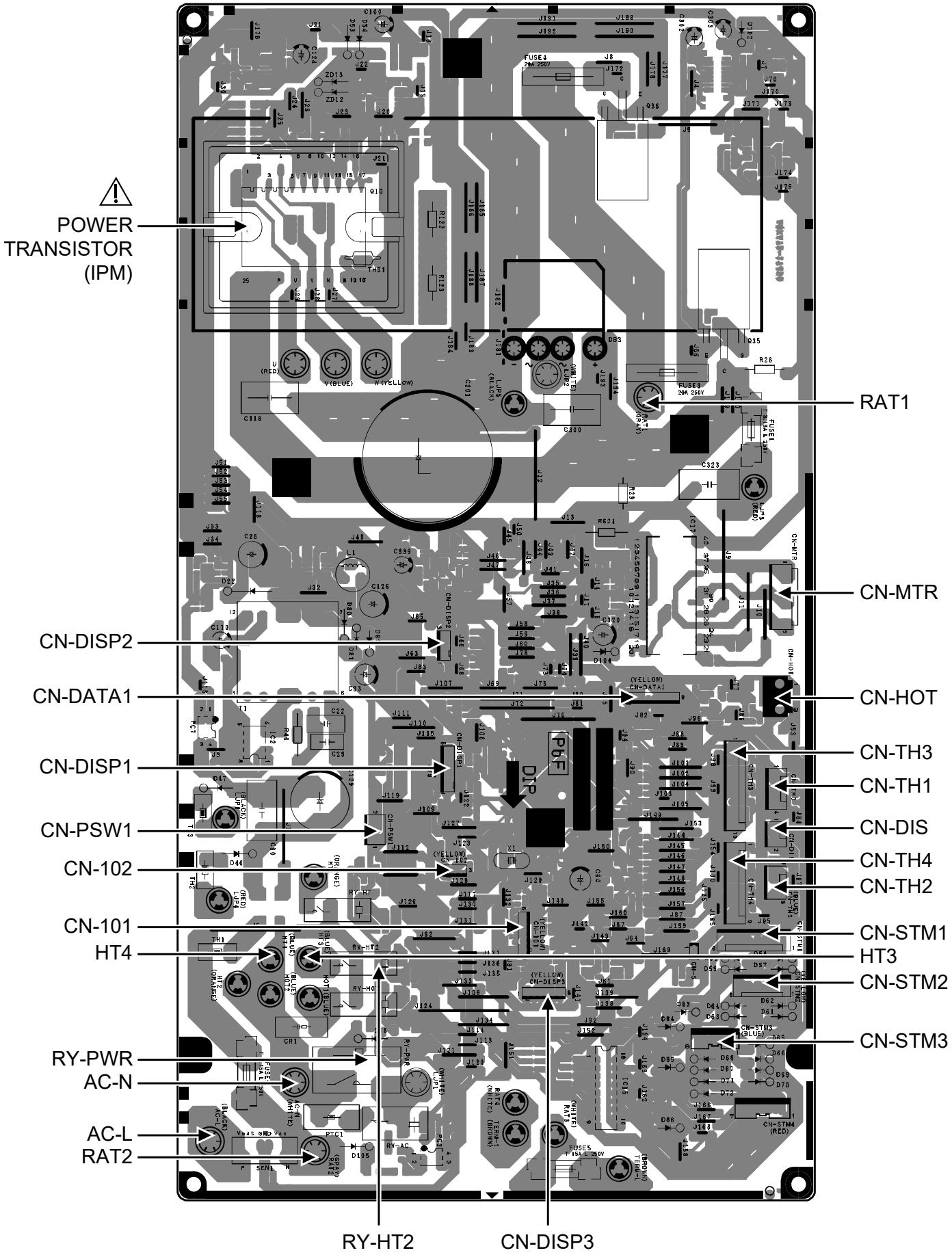


8.2 CU-3Z75ABEC

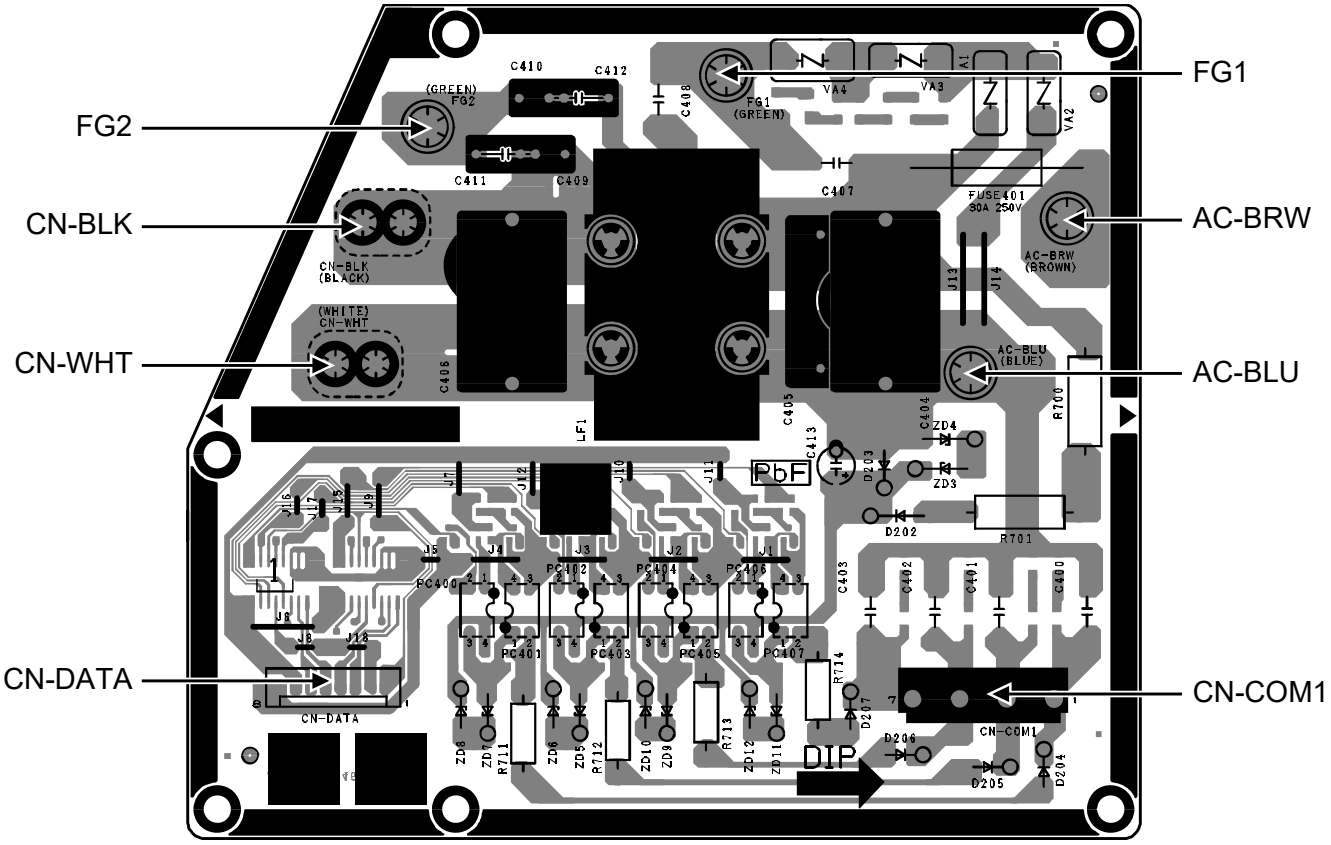


9. Printed Circuit Board

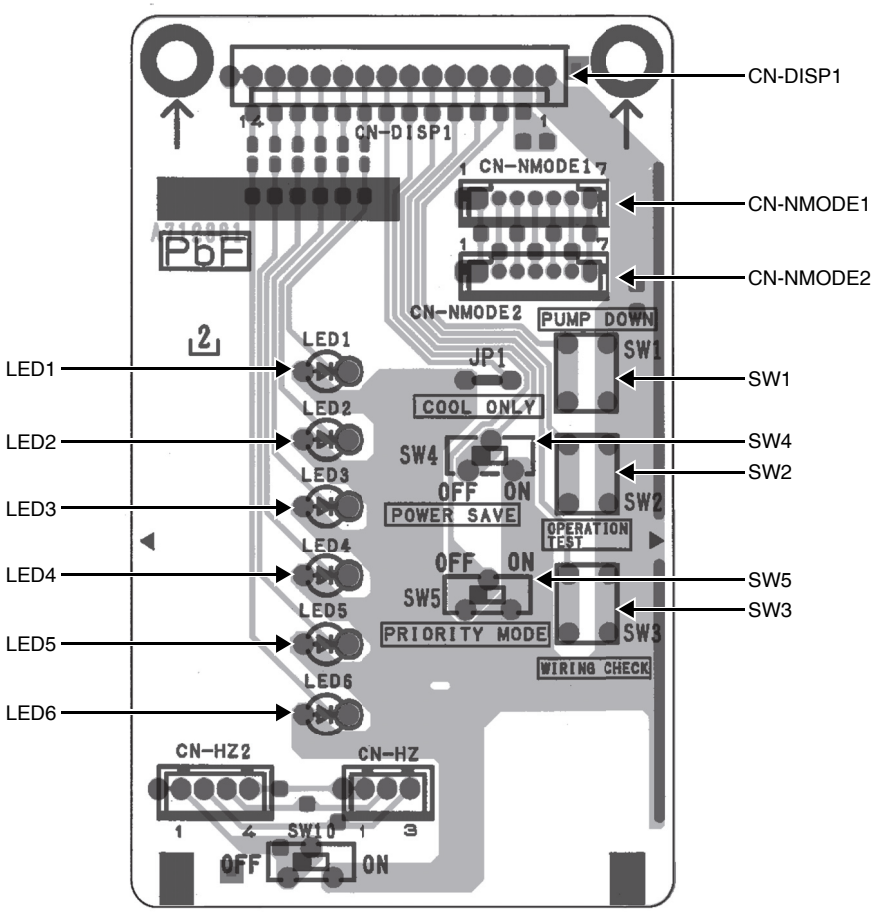
9.1 Main Printed Circuit Board



9.2 Noise Filter Printed Circuit Board



9.3 Display Printed Circuit Board



10. Installation Instruction

10.1 Select the Best Location

10.1.1 Outdoor Unit

- If an awning is built over the unit to prevent direct sunlight or rain, be careful that heat radiation from the condenser is not obstructed.
- There should not be any animal or plant which could be affected by hot air discharged.
- Keep the spaces indicated by arrows from wall, ceiling, fence or other obstacles.
- Do not place any obstacles which may cause a short circuit of the discharged air.

Table A

Model	Maximum Total Piping Length for add. Gas (m)	Additional Refrigerant (g/m)	Max. Refrigerant Charge m_c (kg)	Wall Mounted Indoor Amin (m^2)
CU-2Z50***	30	20	2.32	5.60
CU-3Z75***	30	20	3.02	8.62

(*) Systems with total refrigerant charge, m_c , lower than 1.84 kg are not subjected to any room area requirements.

- If total piping length of all indoor units exceed the maximum total length listed above, additionally charge with 20 g of refrigerant (R32) for each additional meter of piping.

$$A_{min} = (m_c / (2.5 \times (LFL)^{(5/4)} \times h_0))^{2}$$ ** not less than safety factor margin

A_{min} = Required minimum room area, in m^2

m_c = Refrigerant charge in appliance, in kg

LFL = Lower flammability limit (0.307 kg/m^3)

h_0 = Installation height of the appliance (1.8 m for wall mounted).

SF = Safety factor with a value of 0.75

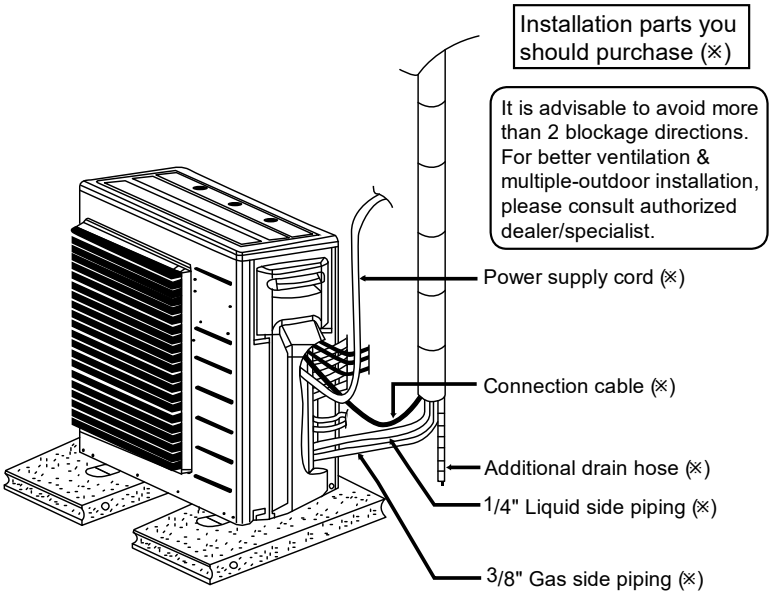
** The required minimum room area, A_{min}, shall also be governed by the safety factor margin formula below :

$$A_{min} = m_c / (SF \times LFL \times h_0)$$

The higher value shall be taken when determining the room area.

10.1.2 Outdoor Unit Installation Diagram

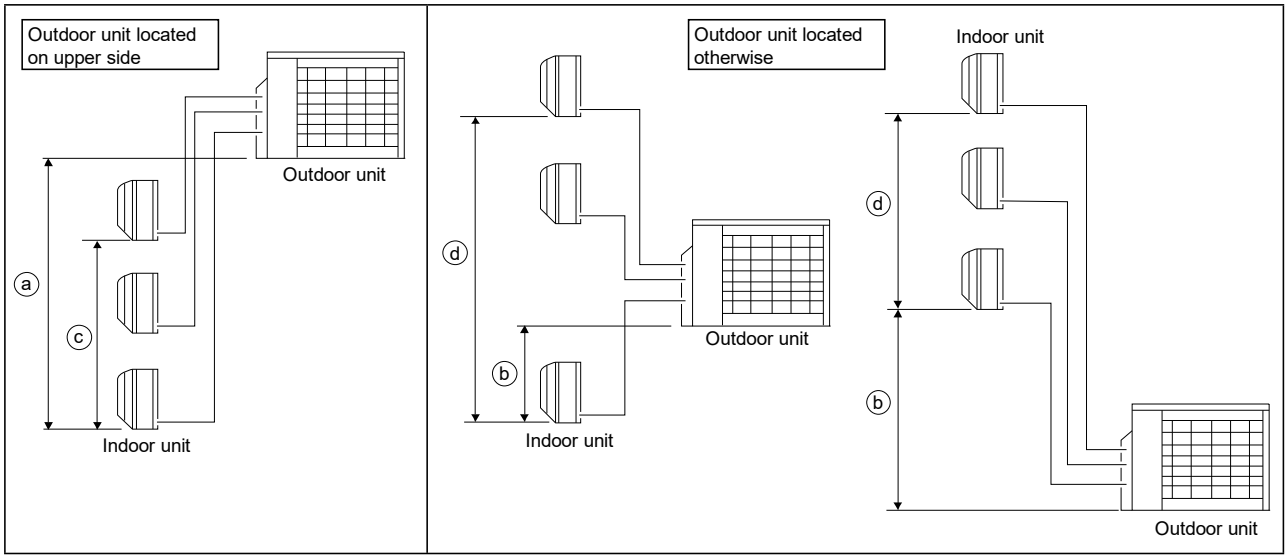
Refrigerant piping size	
Outdoor Unit	CU-2Z50***, CU-3Z75***
Liquid - side	ø 6.35 t0.8
Gas - side	ø 9.52 t0.8



- This illustration is for explanation purposes only.

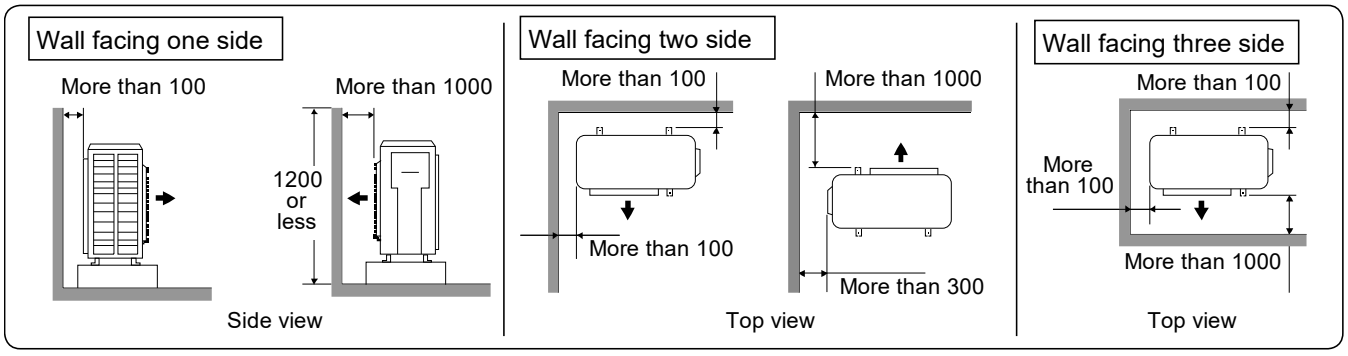
* Note:
Respective indoor unit installation procedure shall refer to instruction manual provided in the indoor unit packaging.

Allowable piping length				
Outdoor Unit			CU-2Z50***	CU-3Z75***
Allowable piping length of each indoor unit (min. ~ max.)			3 m ~ 25 m	3 m ~ 25 m
Allowable total piping length of all indoor unit			50 m or less	60 m or less
Height difference between indoor and outdoor unit	Outdoor unit located on upper side	ⓐ	15 m or less	15 m or less
	Outdoor unit located otherwise	ⓑ	7.5 m or less	7.5 m or less
Height difference between indoor unit	Outdoor unit located on upper side	ⓒ	7.5 m or less	7.5 m or less
	Outdoor unit located otherwise	ⓓ	15 m or less	15 m or less



Outdoor Unit Installation Guidelines

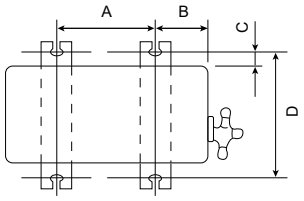
- Where a wall or other obstacle is in the path of outdoor unit's intake or exhaust airflow, follow the installation guidelines below.
- For any of the below installation patterns, the wall height on the exhaust side should be 1200 mm or less.



Unit : mm

10.2 Install the Outdoor Unit

- After selecting the best location, start installation to Indoor/Outdoor Unit Installation Diagram.
  1. Fix the unit on concrete or rigid frame firmly and horizontally by bolt nut (ø10 mm).
  2. When installing at roof, please consider strong wind and earthquake.
     Please fasten the installation stand firmly with bolt or nails.



Model	A	B	C	D
CU-2Z50***, CU-3Z75***	613 mm	131 mm	24 mm	360.5 mm

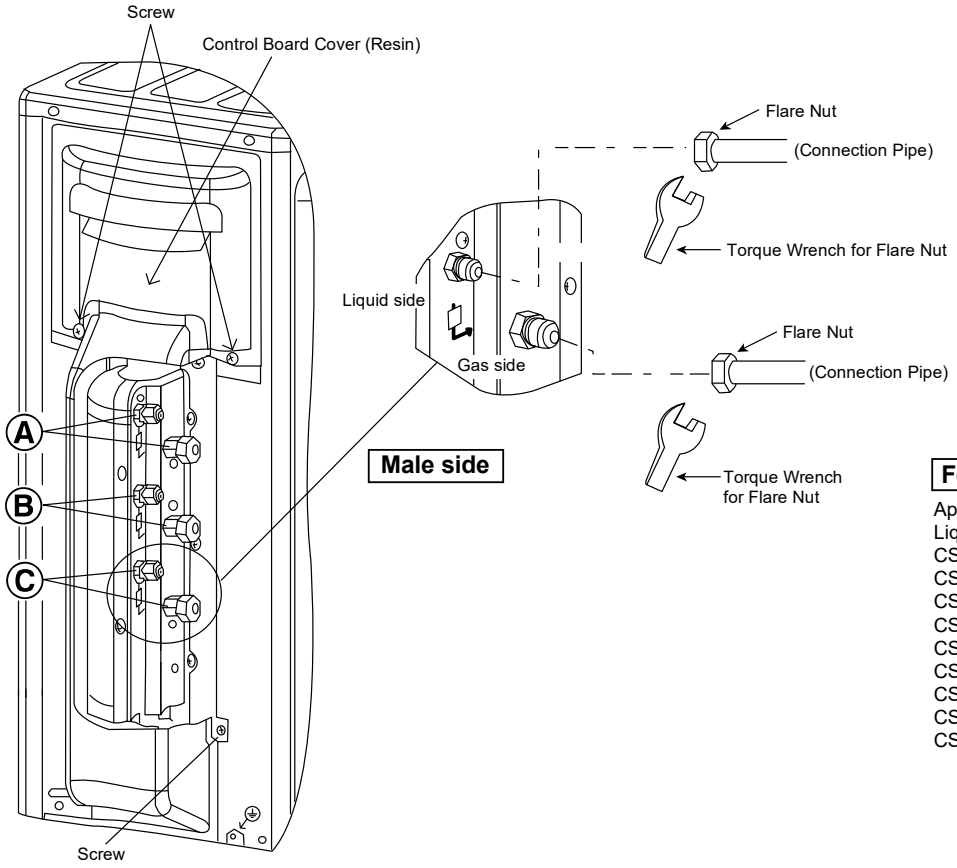
10.3 Connect the Piping

- Remove the control board cover (resin) from the unit by loosening three screws.

10.3.1 Connecting the Piping to Outdoor Unit

Decide piping length and then cut by using pipe cutter. Remove burrs from cut edge. Make flare after inserting the flare nut (locate at valve) onto the copper pipe. Align center of piping to valves and then tighten with torque wrench to the specified torque as stated in the table.

⚠ CAUTION	
⃠ Do not overtighten, over tightening may cause gas leakage.	
Piping size	Torque
1/4" [6.35 mm]	[18 N•m (1.8 kgf•m)]
3/8" [9.52 mm]	[42 N•m (4.3 kgf•m)]
1/2" [12.7 mm]	[55 N•m (5.6 kgf•m)]
5/8" [15.88 mm]	[65 N•m (6.6 kgf•m)]
3/4" [19.05 mm]	[100 N•m (10.2 kgf•m)]



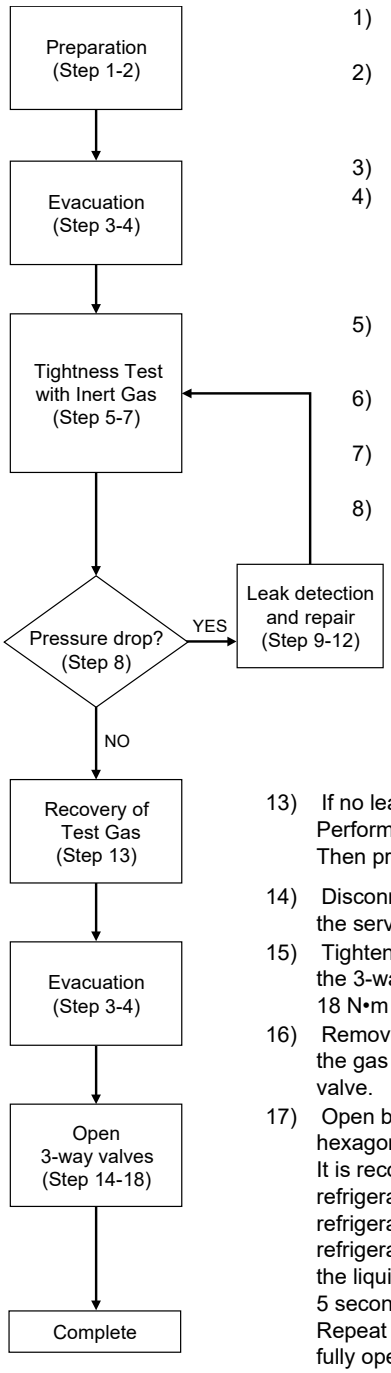
Female side

Applicable to
Liquid and Gas side of
CS-HZ25***,
CS-HZ35***,
CS-NZ25***,
CS-NZ35***,
CS-NZ50***,
CS-Z20****,
CS-Z25****,
CS-Z35****,
CS-Z50****

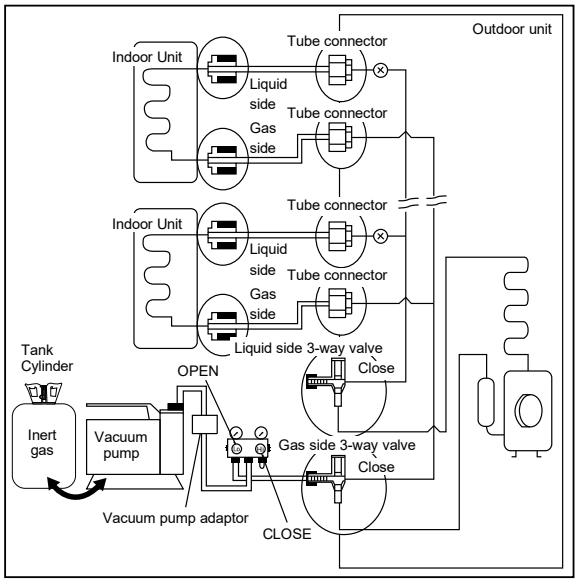
10.4 Air Tightness Test on the Refrigerating System

⃠	Do not purge the air with refrigerants but use a vacuum pump to vacuum the installation.
❗	There is no extra refrigerant in the outdoor unit for air purging.

- Before system is charged with refrigerant and before the refrigerating system is put into operation, below site test procedure and acceptance criteria shall be verified by the certified technicians, and/or the installer.
- Be sure to check whole system for gas leakage.



1) Connect a charging hose with a push pin to the Low side of a charging set and the service port of the gas side 3-way valve.
2) Attach the gauge manifold set correctly and tightly. Make sure that both valves of the manifold gauge (low pressure and high pressure) is in close position.
3) Connect the center hose of the manifold gauge to a vacuum pump.
4) Turn on the power switch of the vacuum pump, then turn open the low side manifold gauge valve and make sure that the needle in the gauge moves from 0 cmHg (0 MPa) to –76 cmHg (–0.1 MPa) or vacuum until 500 microns is achieved. This process continues for approximately ten minutes. Then close the low side manifold gauge valve.
5) Remove the vacuum pump from the centre hose and connect the center hose to cylinder of any applicable inert gas as test gas.
6) Charge test gas into the system and wait until the pressure within the system to reach min. 1.04 MPa (10.4 barg).
7) Wait and monitor the pressure reading on the gauges. Check if there is any pressure drop. Waiting time depends on the size of the system.
8) If there is any pressure drop, perform step 9-12. If there is no pressure drop, perform step 13.
9) Use Gas Leak Detector to check for leaks. Must use the detection equipment with a sensitivity of 5 grams per year of test gas or better.
10) Move the probe along the air conditioning system to check for leaks, and mark for repair.
11) Any leak detected and marked shall be repaired.
12) After repair, repeat evacuation steps 3-4 and tightness test steps 5-7. Check the pressure drop as in step 8.
13) If no leak, recover the test gas. Perform evacuation of steps 3-4. Then proceed to step 14.
14) Disconnect the charging hose from the service port of the 3-way valve.
15) Tighten the service port caps of the 3-way valve at a torque of 18 N•m with a torque wrench.
16) Remove the valve caps of both of the gas side and liquid side 3-way valve.
17) Open both of the valves, using a hexagonal wrench (4 mm). It is recommended to allow refrigerant slowly flow into the refrigerant system to prevent refrigerant freezing. Slightly open the liquid side 3-way valve for 5 seconds then close the valve. Repeat this action for 3 cycles then fully open the valve.

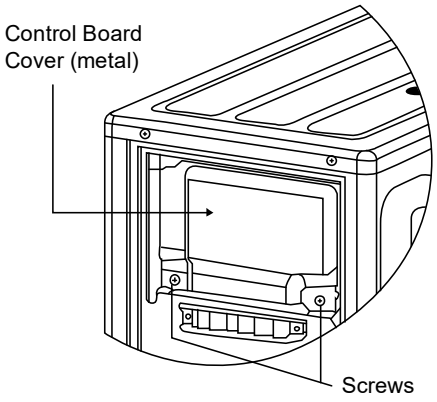


18) Mount back the valve caps onto both the 3-way valve to complete this process.

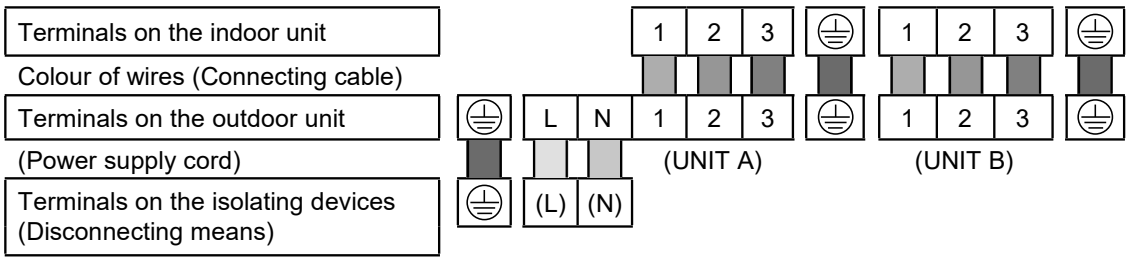
Notes:
Recommended use of any of the following leak detector,
I) Universal Sniffer leak detector
II) Electronic halogen leak detector
III) Ultrasonic Leak Detector

10.5 Connect the Cable to the Outdoor Unit

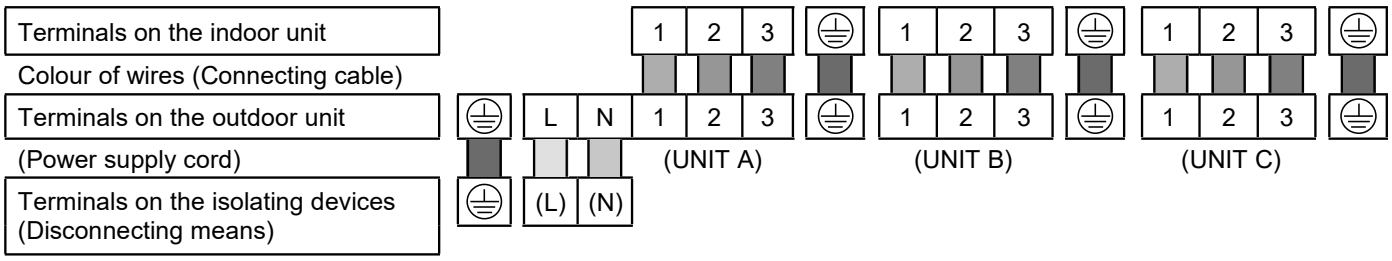
1. Remove the control board cover metal from the unit by loosening two screws.
2. Cable connection to the power supply through isolating Devices (Disconnecting means).
   - Connect approved type polychloroprene sheathed **power supply cord** 3 x 2.5 mm^2 60245 IEC 57 type designation or heavier cord to the terminal board, and connect the others end of the cord to Isolating Devices (Disconnecting means).
3. **Connection cable** between indoor unit and outdoor unit shall be approved polychloroprene sheathed 4 x 1.5 mm^2 flexible cord, type designation 60245 IEC 57 or heavier cord.
   Allowable connection cable length of each indoor unit shall be 30 m or less.
4. Connect the power supply cord and connecting cable between indoor unit and outdoor unit according to the diagram as shown.



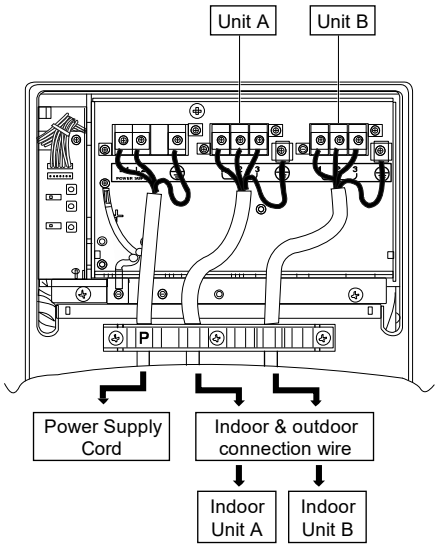
CU-2Z50***



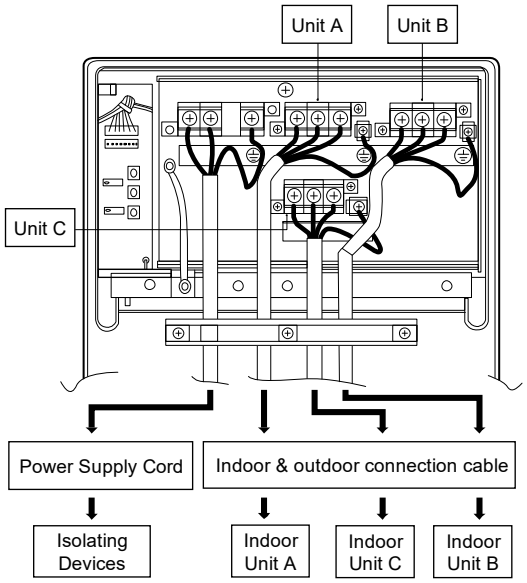
CU-3Z75***



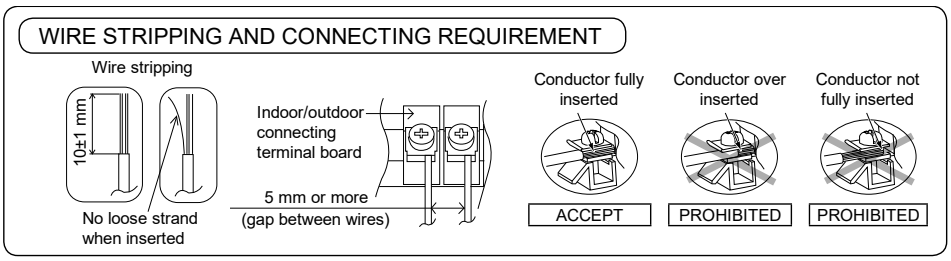
CU-2Z50***



CU-3Z75***



5. For wire stripping and connection requirement, refer to the diagram below.
6. Secure the power supply cord and connecting cables onto the control board with the holder.
7. Attach the control board cover back to the original position with screw.



This equipment must be properly earthed.

- Note: Isolating Devices (Disconnecting means) should have minimum 3.0 mm contact gap.
- Earth wire shall be Yellow/Green (Y/G) in colour and longer than other AC wires for safety reason.

10.6 Heat Insulation

1. Please carry out insulation at pipe connection portion as mentioned in Indoor/Outdoor Unit Installation Diagram. Please wrap the insulated piping end to prevent water from going inside the piping.
2. If drain hose or connecting piping is in the room (where dew may form), please increase the insulation by using POLY-E FOAM with thickness 6 mm or above.

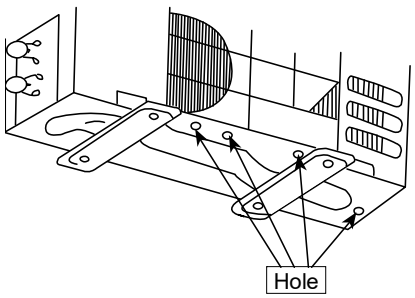
❗	Refrigerant tubing shall be protected against mechanical damage.

⚠ **CAUTION**	Use a material with good heat-resistant properties as the heat insulation for the pipes. Be sure to insulate both the gas-side and liquid-side pipes. If the pipes are not adequately insulated, condensation or water leakages may occur.

Liquid-side pipes	Material shall withstand 120°C or higher
Gas-side pipes	

10.6.1 Outdoor Unit Drain Water

- Water will drip from the basepan hole area during defrost function.
- To avoid water dripping, do not stand or place objects at this area.

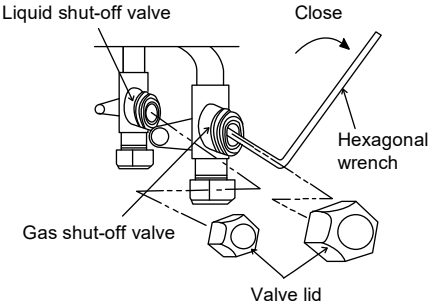


10.6.2 Pump Down Operation

- Operate the pump down according to the following procedures.
  1. Confirm the valve on the liquid side and gas side is open.
  2. Press PUMP DOWN switch (SW1) on the display printed circuit board for more than 5 seconds. Pump down (cooling) operation is performed for 15 minutes.
  3. Set the liquid side 3 way valve to close position and wait until the pressure gauge indicates 0.01 MPa (0.1 kg/cm^{2}G).
  4. Immediate set the gas side valve to close position and then press the PUMP DOWN switch (SW1) to stop the pump down operation.
     Note: Pump down operation will stop automatically after 15 minutes if PUMP DOWN switch (SW1) is not pressed again.
     Pump down operation is not started within 3 minutes after compressor is stopped.

LED	2	3	4	5	Message
Status	O	O	O	O	Pump down operation progress
	O	O	O		3 minutes before operation end
	O	O			2 minutes before operation end
	O				1 minute before operation end
					Pump down operation end

O: Flashing

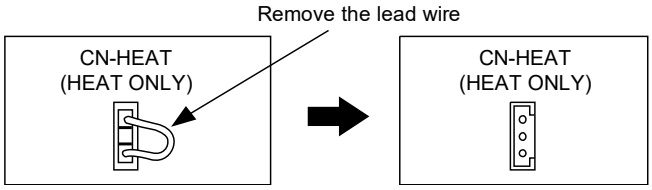


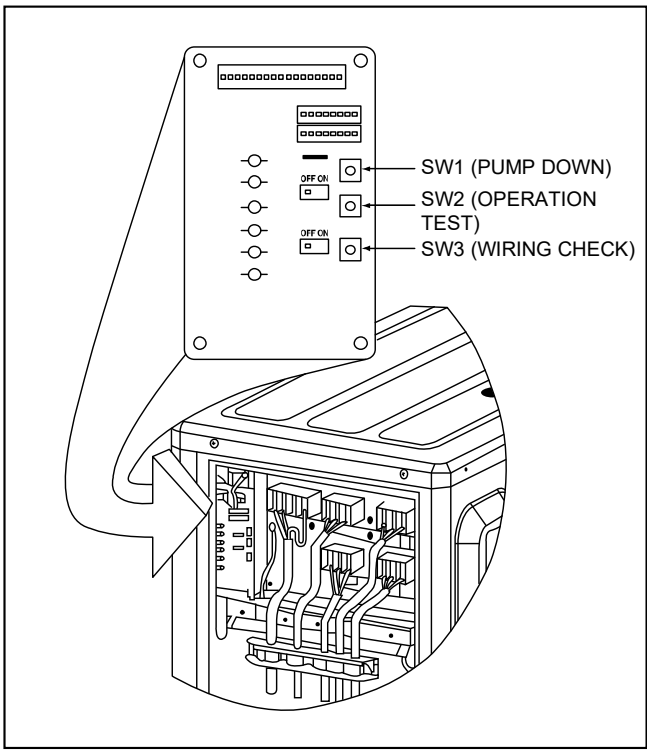
10.6.3 Heating Only Operation

- Setting of Heating only operation.

The equipment can be set to heating only operation by some setting on the Outdoor unit main circuit board.

[Setting method]
Switch off power supply to the outdoor unit, unplug and remove the lead wire on CN-HEAT





10.6.4 Wiring Error Check

This product capable to correct the wiring error automatically by following procedures.

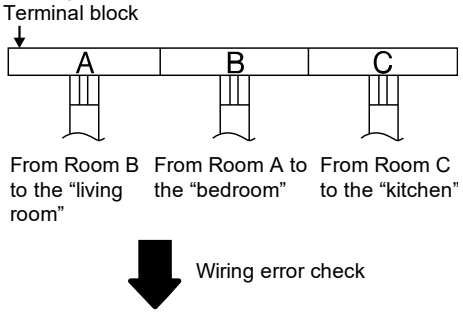
1. Confirm the valve on the liquid side and gas side is open.
2. Press WIRING CHECK switch (SW3) on the display printed circuit board for more than 10 seconds to start wiring check operation.
3. Wiring check process will complete in approximately 20-25 minutes. However, wiring check operation will not start within 3 minutes after compressor is stopped. When outdoor air temperature is less than 5 °C or unit has abnormality, wiring check will not start. (See NOTE 2)

The LED 2 to 6 in display printed circuit board inside the outdoor unit indicate whether correction is possible or not and the status of the correction, as shown in the table below.

LED	2	3	4	5	6	Message
ROOM	A	B	C	-	-	
Status	All flashing					Automatic correction impossible
	LED 2, 4, 6 and LED 3, 5 alternatively flashing					Wiring check in progress
	Flashing one after another					Automatic correction completed
	Other than above					Unit has abnormally (Note 4)

If automatic correct is impossible, check the indoor unit wiring and piping manually.

Wiring automatic correct example



LED lighting sequence after a wiring correction.
Order of LED flashing: 3--> 2--> 4

10.6.5 Note

1. For two rooms, LED 4 is not illuminated after wiring operation complete.
2. If the outdoor air temperature is less than 5 °C or unit has abnormality, wiring operation will not start.
3. After wiring check operation is complete, LED indication will illuminated until normal operation starts.
4. Follow the product diagnosis procedure. (Check the diagnostic label at the control board cover.)
5. When LED 1 only illuminate, indicates that outdoor unit is operating normally.

10.6.6 In Case of Reusing Existing Refrigerant Piping

☐ Observe the followings to decide reusing the existing refrigerant piping.
Poor refrigerant piping could result in product failure.

- In the circumstances listed below, do not reuse any refrigerant piping. Instead, make sure to install a new piping.
  - Heat insulation is not provided for either liquid-side or gas-side piping or both.
  - The existing refrigerant pipe has been left in an open condition.
  - The diameter and thickness of the existing refrigerant piping does not meet the requirement.
  - The piping length and elevation does not meet the requirement.

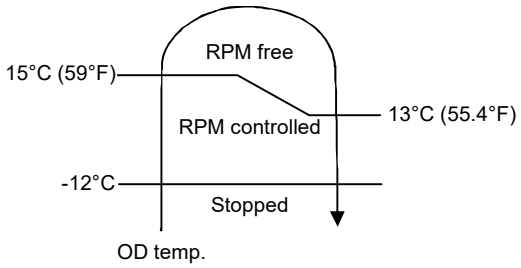
  Perform proper pump down before reuse piping.
- In the circumstances listed below, clean it thoroughly before reuse.
  - Pump down operation cannot be performed for the existing air-conditioner.
  - The compressor has a failure history.
  - Oil color is darken. (ASTM 4.0 and above).
  - The existing air-conditioner is gas/oil heat pump type.
- Do not reuse the flare to prevent gas leak. Make sure to install a new flare.
- If there is a welded part on the existing refrigerant piping, conduct a gas leak check on the welded part.
- Replace deteriorated heat insulating material with a new one.
  Heat insulating material is required for both liquid-side and gas-side piping.

11. Operation Control

11.1 Cooling Operation

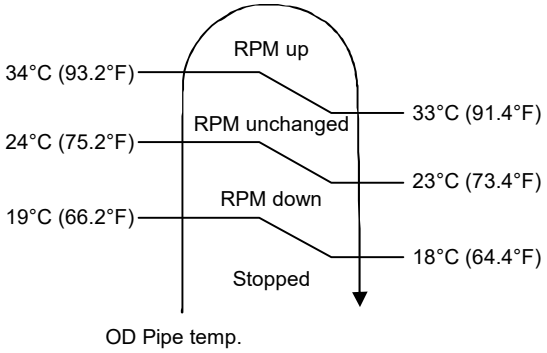
11.1.1 Outdoor Fan Control

- When cooling operation is enabled, based on outdoor ambient temperature, fan motor control will be adjusted according to figure below:



11.1.2 Annual Cooling Control

- This control is to enable cooling operation when outdoor ambient temperature is low.
- Control start conditions:
  - Cooling operation is activated with compressor ON.
  - Outdoor ambient temperature is less than 15°C (59°F)
- Control contents:
  - When the above conditions are fulfilled, based on outdoor pipe temperature, the outdoor fan motor will operate according to figure below:



- To improve the judgment accuracy during annual cooling control, outdoor ambient temperature sampling for 2 minutes will be activated every 35 minutes under designated fan speed.
- Control stop conditions:
  - When either one of the start conditions are not complied.

11.1.3 Cooling Powerful Operation 1

- During cooling operation, this control is to concentrate outdoor unit capability to the powerful operation enabled indoor unit by temporary stop the capability supply to low load demand indoor units.
- Operation start condition:
  - Powerful operation ON for targeted indoor unit
- Operation content:
  - If other indoor units (where Powerful operation are OFF) achieve setting temperature continuously for 1 minute after received powerful command from indoor unit, then capability supply to other indoor units are stopped for minimum 3 minutes.
    Capability supply stop period follows powerful operation period.
- Operation stops when comply either one of the following conditions:
  - When other indoor units (where Powerful operation are OFF) is demand for capacity.
  - When the powerful operation is OFF for all indoor units.
  - When Quiet operation received from 1 indoor unit.
  - When protection control starts.

11.2 Outdoor Quiet Cooling Operation Control

- Purpose
  Provide quiet cooling operation when only 1 indoor in operation.

- Start Condition
  - Indoor fan speed is lower than Lo fan.
  - Only 1 or all operation indoor unit.
  - Not in any cooling overload zone.
  - Not during annual cooling
  - Not initial frequency operation.
  - Not during starting control.
  - During cool mode

  All conditions above are satisfied and function selection enable.

- Control Contents
  Compressor frequency and outdoor fan speed maximum limit is set. Adjust accordingly.

	Compressor frequency	Outdoor fan speed
Cool	#55%	#-120 rpm

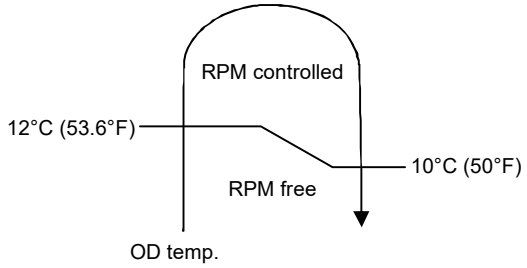
- Cancel Condition
  - Indoor fan speed is equal or higher than Lo fan.
  - In any cooling overload zone.
  - During annual cooling
  - Initial frequency operation.
  - During starting control.

  When any above is satisfied.

11.3 Heating Operation

11.3.1 Outdoor Fan Control

- When heating operation is enabled, based on outdoor ambient temperature, fan motor control will be adjusted according to figure below for Heating overload control:



11.3.2 Heating Room Temp Sampling Control

- To improve the judgment accuracy, indoor room temperature sampling starts when any indoor unit has stopped capability supplied (heating thermo-off) during heating operation with compressor ON, outdoor unit will send signal to all thermo-off indoor units to ON fan motor and get room temperature sample.
- To prevent discharge temperature drop at indoor units which is ON when sampling the room temperature of heating thermo-off units, the compressor frequency is increased accordingly.
- However, if indoor room temperature is much higher compare to remote control setting temperature, before thermo-off, sampling of corresponding indoor unit will be cancelled.

11.3.3 Powerful Operation 2

- During cooling / heating operation, this control is to provide fast cooling / heating operation compare to normal operation.
- Operation start if all condition below are complied:
  - Powerful operation ON for indoor unit.
  - Not under Annual Cooling control.
- Operation content:
  - Outdoor fan speed will adjust automatically.
  - Compressor frequency will adjust automatically.
- Operation stop when comply either one of the follow conditions:
  - When the powerful operation is OFF for all indoor units.
  - When annual cooling control activated.

11.4 Outdoor Quiet Heating Operation Control

- Purpose
  Provide quiet heating operation when only 1 indoor in operation.

- Start Condition
  - Indoor fan speed is lower than Lo fan.
  - Only 1 or all operation indoor unit.
  - Not in any heating overload zone.
  - Not initial frequency operation.
  - Not during starting control.

  All conditions above are satisfied and function selection enable.

- Control Contents
  Compressor frequency and outdoor fan speed maximum limit is set. Adjust accordingly.

	Compressor frequency	Outdoor fan speed
Heat	#75%	#-90 rpm

- Cancel Condition
  - Indoor fan speed is equal or higher than Lo fan.
  - In any heating overload zone.
  - Initial frequency operation.
  - During starting control.

  When any above is satisfied.

12. Simultaneous Operation Control

- Operation modes which can be selected using the remote control unit:
  - Automatic, Cooling, Dry, Heating and e-ion operation mode.
- Types of operation modes which can be performed simultaneously
  - Cooling operation and Cooling, Dry or e-ion operation.
  - Heating operation and Heating operation.
- Types of operation modes which cannot be performed simultaneously
  - During cooling operation, heating operation is impossible at another indoor unit in another room.
  - The priority is given to cooling operation if the cooling mode is selected first. In another room where heating mode is selected afterward, the POWER LED blinks to indicate the heating operation is in standby condition, where the fan is stopped hence no discharged air.
  - During heating operation, cooling operation is impossible at another indoor unit in another room.
  - The priority is given to heating operation if the heating mode is selected first. In another room where cooling mode is selected afterward, the POWER LED blinks to indicate the cooling operation is in standby condition, where the fan is stopped hence no discharged air.
- Operation mode priority control
  - The operation mode designated first by the indoor unit has priority.
  - If the priority indoor unit stops operation or initiates the fan operation, the priority is transferred to other indoor units.

"Waiting" denotes the standby status in which the POWER LED blinks (ON for 2.5 seconds and OFF for 0.5 seconds) and the fan is stopped.

Priority Unit (1st ON) \ ROOM A / ROOM B		Non Priority Unit (2nd ON)			
		Cooling	Dry	Heating	e-ion
Priority Unit (1st ON)	Cooling	C / C	D / C	Waiting / C	E / C
	Dry	C / D	D / D	Waiting / D	E / D
	Heating	Waiting / H	Waiting / H	H / H	Stop / H
	e-ion	C / E	D / E	H / Stop	E / E

In the e-ion mode, priority is transferred to a non-priority unit.
Note

- C: Cooling operation mode
- D: Dry operation mode
- H: Heating operation mode
- E: e-ion operation mode

13. Protection Control

13.1 Freeze Prevention Control (Cool)

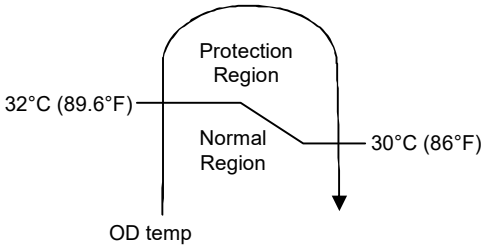
- When received freeze prevention signal from indoor unit, the compressor frequency changes according to indoor heat exchanger temperature.
- When indoor unit request capability OFF due to freeze condition, immediately the capability supply to targeted indoor unit stops.

13.2 Dew Prevention Control (Cool)

- When received dew prevention signal from indoor unit, which according to indoor intake temperature and indoor heat exchanger temperature the compressor frequency changes.

13.3 Electronic Parts Temperature Rise Protection 1 (Cool)

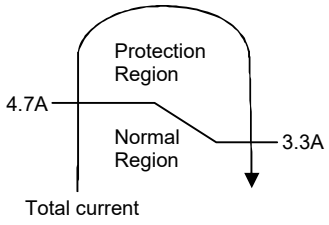
- This control prevents electronic parts temperature rise during cooling overload condition.
- Start conditions:
  - Outdoor ambient temperature is at protection region as shown in figure below:



  - Outdoor unit total current is above 1.99A
- Control content
  - Outdoor fan speed is adjusted accordingly.
- Control stop condition
  - When outdoor ambient temperature is back to normal region.
- During this control, outdoor fan speed does not reduce for Quiet operation.

13.4 Electronic Parts Temperature Rise Protection 2 (Cool)

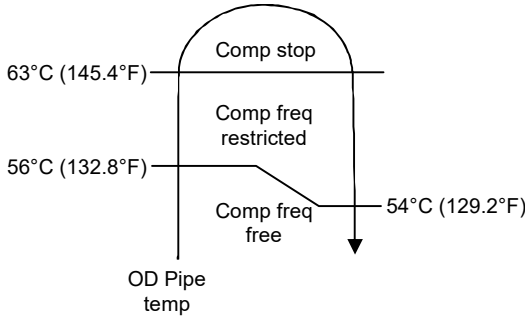
- This control prevents electronic parts temperature rise during cooling/dry operation.
- Start conditions:
  - Total current is at protection region as shown in figure below:



- Control content
  - Outdoor fan speed is adjusted accordingly.
- Control stop conditions
  - When total current is back to normal region.
- During this control, outdoor fan speed does not reduce for Quiet operation.

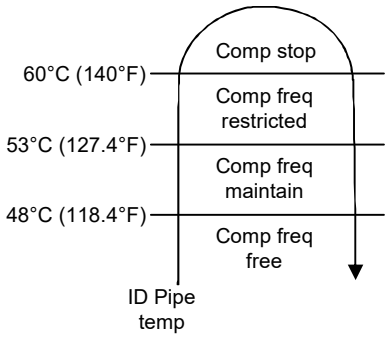
13.5 Cooling Overload Control (Cool)

- This control detect outdoor pipe temperature and perform the compressor frequency restriction during cooling operation.

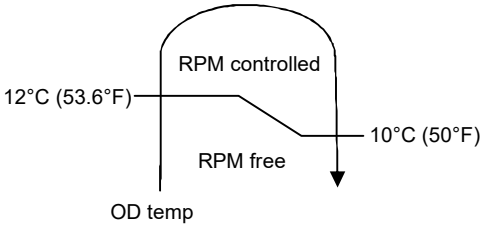


13.6 Heating Overload Control (Heat)

- This control detect indoor pipe temperature and perform the compressor frequency restriction during heating operation.

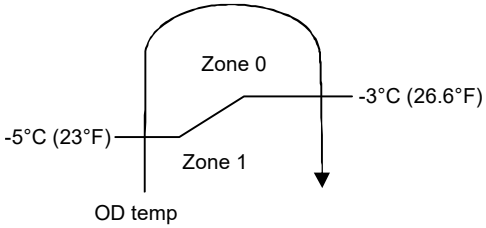


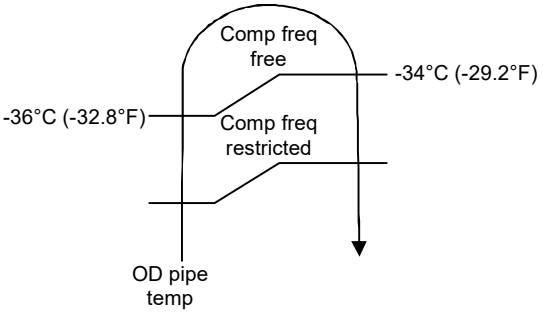
- This control detect outdoor ambient temperature and perform the fan speed adjustment during heating operation.



13.7 Extreme Low Temperature Compressor Low Pressure Protection Control (Heat)

- This control is to prevent low pressure drops too low during extremely low outdoor ambient temperature to improve the compressor reliability.
- During heating operation, when outdoor ambient temperature is in Zone 1, this control will be activated. Compressor frequency restriction will be based on outdoor piping temperature.





13.8 Deice Control

- When outdoor pipe temperature and outdoor air temperature is low, deice operation starts where indoor fan motor and outdoor fan motor stop, indoor unit horizontal vane close and operation LED blink with compressor ON.

13.9 Time Delay Safety Control (Restart Control)

- The compressor will not restart within three minutes after compressor is stopped.
- This control is not applicable if the power supply reset or after deice condition.

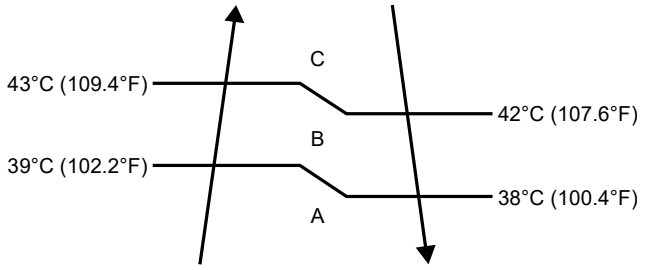
13.10 30 seconds Force Operation

- Once the compressor starts operation, it will not stop its operation for 30 seconds in order to cycle back compressor oil.
- However, it can be stopped using remote control or Auto OFF/ON button at indoor unit.

13.11 Total Current Control

- By referring to table below, during normal (default) operation, the running current refer to Hi values and during Power Save Mode, the running current refer to Lo values.
- When the outdoor unit total running current (AC) exceeds X value, compressor frequency will decrease.
- If the running current does not exceed X value for 5 seconds, compressor frequency will increase.
- However, if total outdoor unit running current exceeds Y value, compressor will be stopped immediately for 3 minutes.

Model		2Z50ABEC (A)		3Z75ABEC (A)	
		Hi	Lo	Hi	Lo
Cool (X)	A	14.03	8.78	14.03	8.78
	B	12.58	8.78	12.58	8.78
	C	12.58		12.58	
Heat (X)		15.03	8.78	15.03	8.78
Y		17.47		17.47	



13.12 IPM (Power Transistor) Protection Control

- Overheating Prevention Control
  - If IPM temperature rises to 80°C (176°F), outdoor fan speed will be increased.
  - When the IPM temperature rises to 95°C (203°F), compressor operation will stop immediately.
  - Compressor operation restarts when temperature decreases to 90°C.
  - If IPM temperature detected less than -30°C (-54°F), IPM is judged as open circuit (“F96” is indicated).
- DC peak current control
  - When IPM DC current exceeds set value of 30.0 ± 3.0 A, the compressor will stop.
  - If the DC peak current detected within 30 seconds after operation starts, compressor will restart after 1 minute.
  - If the DC peak current detected 30 seconds or more after operation starts, compressor will restart after 2 minutes.
  - Within 30 seconds after compressor restarts, if the DC peak current is exceeded set value continuously for 7 times, all indoor and outdoor relays will be cut off (“F99” is indicated).
- Error reset can be done by power supply reset.

13.13 Compressor Protection Control (Gas Leak Detection Control 1)

- Control start conditions
  - For 5 minutes, the compressor continuously operates and total current is low.
  - During Cooling or Soft Dry operation:
    Indoor intake temperature — indoor piping temperature is below 4°C (7.2°F).
  - During Heating operation:
    Indoor pipe temperature — indoor intake temperature is below 3°C (5.4°F).
  - Not during deice control.
  - Compressor ON with maximum frequency.
- Control content
  - Compressor stops (and restart after 3 minutes)
  - If the conditions above happen 4 times within 60 minutes, the unit will stop operation (“F91” is indicated).

13.14 Compressor Protection Control (Gas Leak Detection Control 2)

- This control detect gas leakage condition to prevent compressor damage.
- Control start condition
  - All connected indoor units capability supply ON.
  - Compressor ON with maximum frequency.
  - Not during annual cooling.
  - Compressor discharge temperature high.
- Control content
  - Compressor OFF during this control (“F91” is memorized in EEPROM)
  - If the above conditions happen 2 times within 60 minutes, indoor units’ Timer LED will blinks (“F91” is indicated at all indoor units)

13.15 Valve Close Detection Control

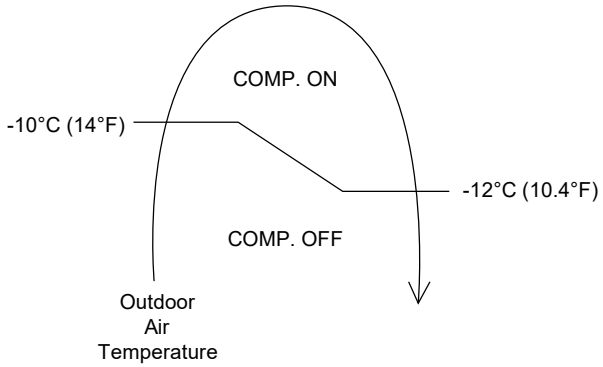
- This control detects 3-way valve close condition to prevent damage to refrigerant cycle.
- Start conditions:
  - For all connected indoor units, if Indoor intake temperature — indoor piping temperature are between -2°C (-3.6°F) and 2°C (3.6°F) continuously for 5 minutes after compressor ON at first cooling operation.
  - The first cooling operation is defined as cooling operation is ON for less than 8 minutes after new installation or after pump down.
- Control content
  - During this control, compressor stop, indoor units’ Timer LED will blink. (“F91” is indicated at indoor units)
- Error reset can be done by power supply reset or reset by using remote control.

13.16 Compressor Discharge High Pressure Protection Control

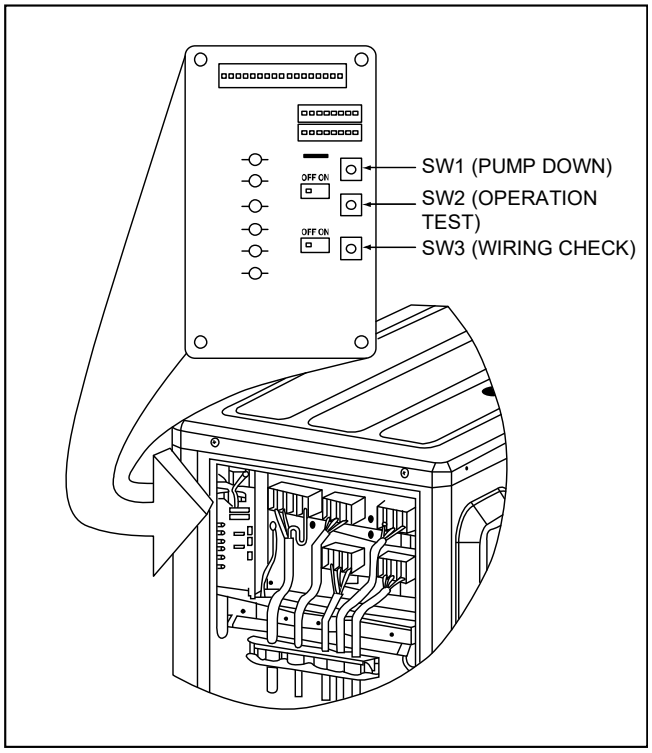
- This control protect by using high pressure switch during operation.
- Start conditions
  - High pressure switch is activated (from normally close to open) when outdoor operation mode is cooling or heating during compressor running.
- Control 1 content
  - Compressor stop when high pressure switch is opened and restart after high pressure switch closed. If this condition happen 4 times within 30 minutes, “F94” is indicated.
  - After 30 minutes, counter is reset if this condition does not happen for 4 times.
- Control 1 stop conditions
  - Power supply reset
  - Reset by using remote control

13.17 Cooling Outdoor Air Temperature Control (Cool)

- The compressor will be stopped to avoid compressor overloading.



14. Servicing Mode

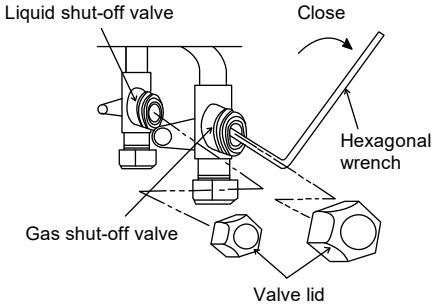


14.1 Pump Down Operation

- Operate the pump down according to the following procedures.
  1. Confirm the valve on the liquid side and gas side is open.
  2. Press PUMP DOWN switch (SW1) on the display printed circuit board for more than 5 seconds. Pump down (cooling) operation is performed for 15 minutes.
  3. Set the liquid side 3 way valve to close position and wait until the pressure gauge indicates 0.01 MPa (0.1 kg/cm^{2}G).
  4. Immediate set the gas side valve to close position and then press the PUMP DOWN switch (SW1) to stop the pump down operation.
     Note: Pump down operation will stop automatically after 15 minutes if PUMP DOWN switch (SW1) is not pressed again.
     Pump down operation is not started within 3 minutes after compressor is stopped.

LED	2	3	4	5	Message
Status	O	O	O	O	Pump down operation progress
	O	O	O		3 minutes before operation end
	O	O			2 minutes before operation end
	O				1 minute before operation end
					Pump down operation end

O: Flashing



14.2 Test Run Operation

- Test operation can be carried out using TEST OPERATION switch (SW2) on the Display PCB inside the outdoor unit.
- For Cooling test, press the TEST OPERATION switch (SW2) for 5 seconds or more but less than 10 seconds, LED1 and LED 2 will illuminate when shift into cooling test operation.
- For Heating test, press the TEST OPERATION switch (SW2) for more than 10 seconds, LED 1 and LED 3 will illuminate when shift into heating test operation.
- Press the TEST OPERATION switch (SW2) again to cancel test operation.

14.3 Wiring Error Check

This product capable to correct the wiring error automatically by following procedures.

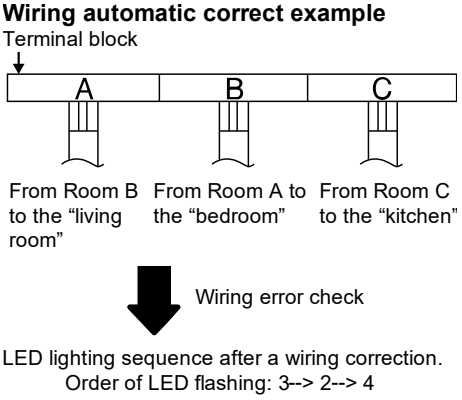
1. Confirm the valve on the liquid side and gas side is open.
2. Press WIRING CHECK switch (SW3) on the display printed circuit board for more than 10 seconds to start wiring check operation.
3. Wiring check process will complete in approximately 20-25 minutes. However, wiring check operation will not start within 3 minutes after compressor is stopped. When outdoor air temperature is less than 5 °C or unit has abnormality, wiring check will not start. (See NOTE 2)

The LED 2 to 6 in display printed circuit board inside the outdoor unit indicate whether correction is possible or not and the status of the correction, as shown in the table below.

LED	2	3	4	5	6	Message
ROOM	A	B	C	-	-	
Status	All flashing					Automatic correction impossible
	LED 2, 4, 6 and LED 3, 5 alternatively flashing					Wiring check in progress
	Flashing one after another					Automatic correction completed
	Other than above					Unit has abnormally (Note 4)

If automatic correct is impossible, check the indoor unit wiring and piping manually.

Wiring automatic correct example



LED lighting sequence after a wiring correction.
Order of LED flashing: 3--> 2--> 4

14.4 Note

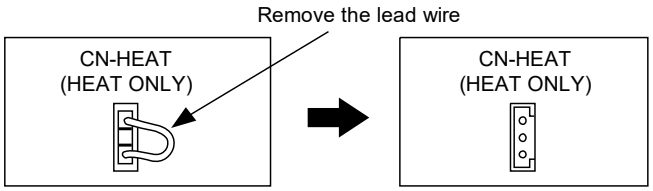
1. For two rooms, LED 4 is not illuminated after wiring operation complete.
2. If the outdoor air temperature is less than 5 °C or unit has abnormality, wiring operation will not start.
3. After wiring check operation is complete, LED indication will illuminated until normal operation starts.
4. Follow the product diagnosis procedure. (Check the diagnostic label at the control board cover.)
5. When LED 1 only illuminate, indicates that outdoor unit is operating normally.

14.5 Heating Only Operation

- Setting of Heating only operation.

The equipment can be set to heating only operation by some setting on the Outdoor unit main circuit board.

[Setting method]
Switch off power supply to the outdoor unit, unplug and remove the lead wire on CN-HEAT



15. Troubleshooting Guide

15.1 Self Diagnosis Function

- The display screen of wireless remote control unit and the self-diagnosis LEDs (green) on the outdoor printed circuit board in the outdoor unit can be used to identify the location of the problem.
  Refer to the table below to identify and solve the cause of the problem, and then re-start the air conditioner system.
- If the problem is solved and operation returns to normal.
  LED 1 illuminates and others LED are off.

Diagnosis display	Abnormality or protection control	LED 6	LED 5	LED 4	LED 3	LED 2	LED 1	Abnormality judgement	Protection operation	Problem	Check location
H11	Indoor/outdoor abnormal communication						○	After operation for 1 minute	Indoor fan only operation can start by entering into force cooling operation	Indoor/outdoor communication not establish	• Indoor/outdoor wire terminal • Indoor/outdoor PCB • Indoor/outdoor connection wire
H12	Indoor unit capacity unmatched					○		90s after power supply	—	Total indoor capability more than maximum limit or less than minimum limit, or number of indoor unit less than two.	• Indoor/outdoor connection wire • Indoor/outdoor PCB • Specification and combination table in catalogue
H15	Compressor temperature sensor abnormality					○	○	Continuous for 5s	—	Compressor temperature sensor open or short circuit	• Compressor temperature sensor lead wire and connector
H16	Outdoor current transformer (CT) abnormality				○		○	—	—	Current transformer faulty or compressor faulty	• Outdoor PCB faulty or compressor faulty
H27	Outdoor air temperature sensor abnormality				○	○		Continuous for 5s	—	Outdoor air temperature sensor open or short circuit	• Outdoor air temperature sensor lead wire and connector
H28	Outdoor heat exchanger temperature sensor 1 abnormality				○	○	○	Continuous for 5s	—	Outdoor heat exchanger temperature sensor 1 open or short circuit	• Outdoor heat exchanger temperature sensor 1 lead wire and connector
H32	Outdoor heat exchanger temperature sensor 2 abnormality			○				Continuous for 5s	—	Outdoor heat exchanger temperature sensor 2 open or short circuit	• Outdoor heat exchanger temperature sensor 2 lead wire and connector
H33	Indoor / outdoor misconnection abnormality			○			○	—	—	Indoor and outdoor rated voltage different	• Indoor and outdoor units check
H36	Outdoor gas pipe temperature sensor abnormality			○		○		Continuous for 5s	Heating protection operation only	Outdoor gas pipe temperature sensor open or short circuit	• Outdoor gas pipe temperature sensor lead wire and connector
H37	Outdoor liquid pipe temperature sensor abnormality			○		○	○	Continuous for 5s	Cooling protection operation only	Outdoor liquid pipe temperature sensor open or short circuit	• Outdoor liquid pipe temperature sensor lead wire and connector

Diagnosis display	Abnormality or protection control	LED 6	LED 5	LED 4	LED 3	LED 2	LED 1	Abnormality judgement	Protection operation	Problem	Check location
H64	Outdoor high pressure sensor abnormality			○	○			Continuous for 1 minutes	—	High pressure sensor open circuit during compressor stop	• High pressure sensor • Lead wire and connector
H97	Outdoor fan motor mechanism lock			○	○		○	2 times happen within 30 minutes	—	Outdoor fan motor lock or feedback abnormal	• Outdoor fan motor lead wire and connector • Fan motor lock or block
H98	Indoor high pressure protection			○	○	○		—	—	Indoor high pressure protection (Heating)	• Check indoor heat exchanger • Air filter dirty • Air circulation short circuit
H99	Indoor operating unit freeze protection			○	○	○		—	—	Indoor freeze protection (Cooling)	• Check indoor heat exchanger • Air filter dirty • Air circulation short circuit
F11	4-way valve switching abnormality			○	○	○	○	4 times happen within 30 minutes	—	4-way valve switching abnormal	• 4-way valve • Lead wire and connector.
F17	Indoor standby units freezing abnormality		○					3 times happen within 40 minutes	—	Wrong wiring and connecting pipe, expansion valve leakage.	• Check indoor/ outdoor connection wire and pipe • Indoor heat exchanger sensor lead wire and connector • Expansion valve lead wire and connector.
F90	Power factor correction (PFC) circuit protection		○				○	4 times happen within 20 minutes	—	Power factor correction circuit abnormal	• Outdoor PCB faulty
F91	Refrigeration cycle abnormality		○			○		4 times happen within 60 minutes	—	Refrigeration cycle abnormal	• Insufficient refrigerant or valve close
F93	Compressor abnormal revolution		○			○	○	4 times happen within 20 minutes	—	Compressor abnormal revolution	• Power transistor module faulty or compressor lock
F94	Compressor discharge pressure overshoot protection		○		○			4 times happen within 30 minutes	—	Compressor discharge pressure overshoot	• Check refrigeration system
F95	Outdoor cooling high pressure protection		○		○		○	4 times happen within 20 minutes	—	Cooling high pressure protection	• Check refrigeration system • Outdoor air circuit
F96	Power transistor module overheating protection		○		○	○		4 times happen within 30 minutes	—	Power transistor module overheat	• PCB faulty • Outdoor air circuit (fan motor)

Diagnosis display	Abnormality or protection control	LED 6	LED 5	LED 4	LED 3	LED 2	LED 1	Abnormality judgement	Protection operation	Problem	Check location
F97	Compressor overheating protection		○		○	○	○	3 times happen within 30 minutes	—	Compressor overheat	• Insufficient refrigerant
F98	Total running current protection		○	○				3 times happen within 20 minutes	—	Total current protection	• Check refrigeration system • Power source or compressor lock
F99	Outdoor direct current (DC) peak detection		○	○			○	Continuous happen for 7 times	—	Power transistor module current protection	• Power transistor module faulty or compressor lock

LED 1 illuminate is indicated that outdoor unit is operating normally. If the LED 1 is switched off or flashing, check the power supply and self-diagnosis indication.

● ------ Illuminate
○ ------ Flashing
Blank ------ OFF

16. Disassembly and Assembly Instructions

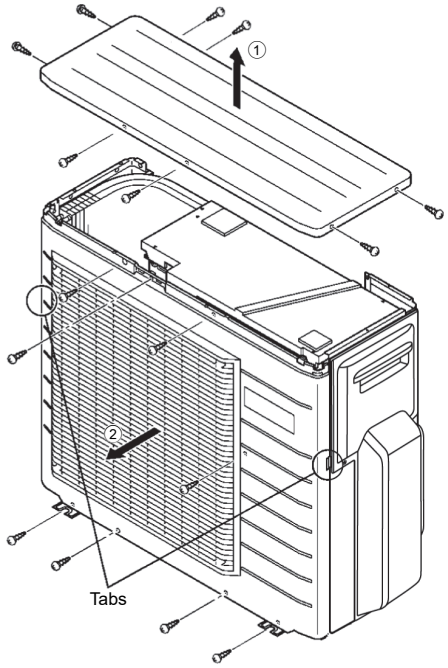
> ⚠ **WARNING**
>
> High voltages are generated in the electrical parts area by the capacitor. Ensure that the capacitor has discharged sufficiently before proceeding with repair work. Failure to heed this caution may result in electric shocks.

16.1 Outdoor Unit Removal Procedure

⚠ Caution! When handling electronic controller, be careful of electrostatic discharge.

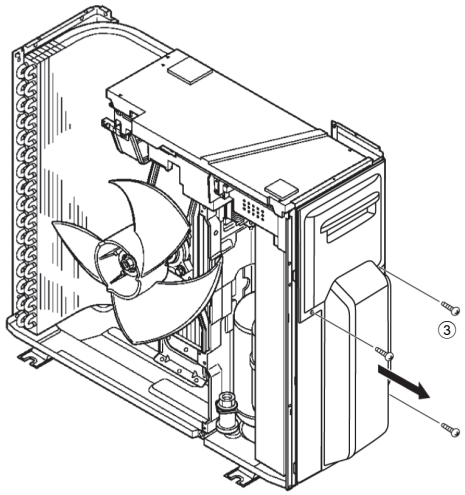
16.1.1 Removing the Cabinet Top Plate and Cabinet Front Plate

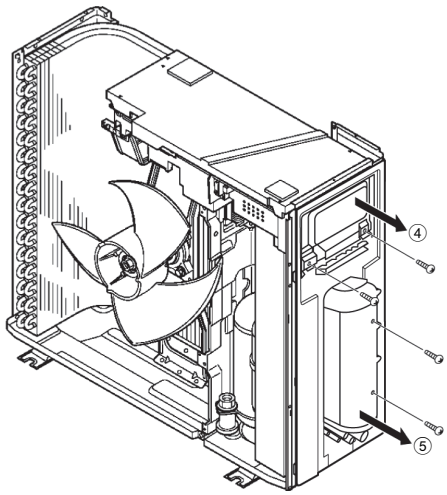
1. Remove the cabinet top plate (remove the 8 screws).
2. Remove the 8 screws (1 on the center, 3 at the top and 4 at the bottom) securing the cabinet front plate, release the 2 hooks (1 each at the left and right), and pull the cabinet front plate toward front side.



16.1.2 Remove the Control Board Cover and Particular Plates

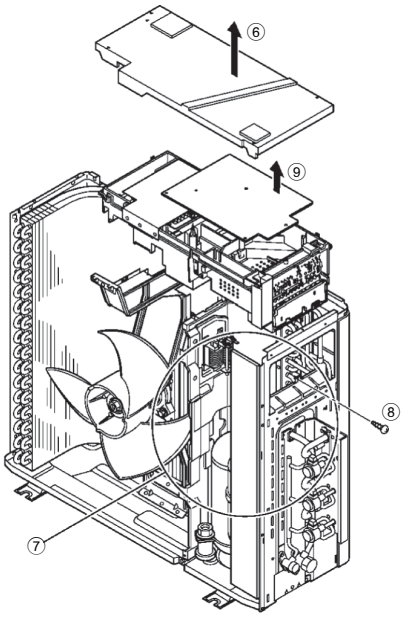
3. Remove the control board cover (remove 3 screws).
4. Remove the particular plate (remove 2 screws).
5. Remove the particular plate (remove 2 screws).





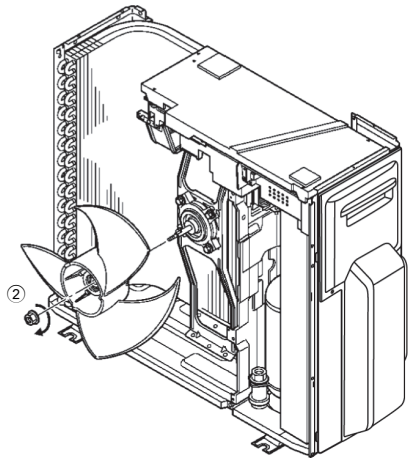
16.1.3 Removing the Control P.C. Board

6. Remove the drip proof cover.
7. Disconnect the connectors (lead wires of the compressor, sensor, and others).
8. Remove the screw at the right side of the control box, and pull out the entire control box.
9. Release the control P.C. Board tab to remove the control P.C. Board.

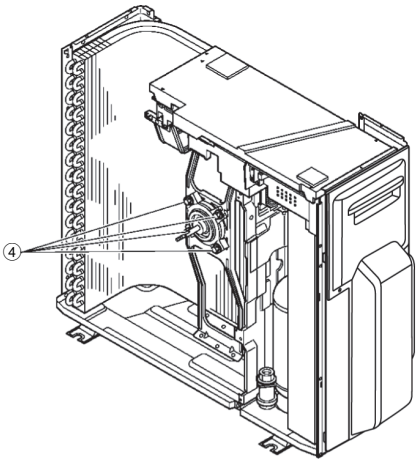


16.1.4 Removing the Propeller Fan and Fan Motor

1. Follow the steps in 16.1.1 for removing the cabinet top plate and cabinet front plate.
2. Remove the propeller fan by removing the nut turning clockwise at its center.



3. Disconnect the fan motor connector from the control P.C. Board.
4. Loosen the 4 fan motor mounting screws then remove the fan motor.



17. Technical Data

Technical data provided are based on the air conditioner running under free frequency.

17.1 Cooling Capacity

17.1.1 CU-2Z50ABEC CS-HZxxxKEW

[50 Hz, 230 V]

Combination (Capacity)	Outdoor Air Temp. °C DB	Indoor Air Temp. °C											
		27/16		27/17.5		27/18		27/19		27/22		27/24	
		Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power
2.5	22	2.26	0.20	2.39	0.19	2.44	0.19	2.53	0.19	3.30	0.29	3.81	0.36
	25	2.38	0.32	2.55	0.31	2.60	0.31	2.71	0.31	3.38	0.38	3.82	0.43
	29	2.50	0.46	2.68	0.45	2.74	0.45	2.86	0.45	3.42	0.49	3.79	0.51
	32	2.54	0.55	2.72	0.54	2.78	0.54	2.91	0.54	3.40	0.56	3.72	0.57
	35	2.54	0.63	2.72	0.62	2.78	0.62	2.90	0.62	3.33	0.63	3.62	0.63
	40	2.47	0.74	2.62	0.73	2.67	0.73	2.77	0.73	3.12	0.72	3.36	0.72
	43	2.38	0.79	2.50	0.79	2.54	0.79	2.61	0.79	2.94	0.77	3.16	0.76
	46	2.26	0.82	2.33	0.83	2.35	0.83	2.40	0.83	2.71	0.81	2.92	0.81
3.5	22	2.96	0.31	3.14	0.31	3.20	0.31	3.31	0.30	4.32	0.46	4.99	0.57
	25	3.12	0.50	3.34	0.50	3.41	0.50	3.55	0.49	4.43	0.61	5.01	0.68
	29	3.27	0.73	3.51	0.72	3.59	0.72	3.74	0.71	4.48	0.78	4.97	0.82
	32	3.33	0.88	3.57	0.87	3.65	0.87	3.81	0.86	4.45	0.89	4.88	0.92
	35	3.33	1.00	3.57	1.00	3.64	0.99	3.80	0.99	4.36	1.00	4.74	1.01
	40	3.24	1.18	3.43	1.17	3.50	1.17	3.62	1.17	4.09	1.15	4.40	1.14
	43	3.12	1.26	3.27	1.25	3.32	1.25	3.42	1.25	3.85	1.23	4.14	1.22
	46	2.96	1.32	3.05	1.32	3.08	1.32	3.15	1.32	3.55	1.30	3.82	1.29
2.5 + 2.5	22	7.66	1.30	7.89	1.28	7.97	1.27	8.12	1.25	8.94	1.24	9.48	1.23
	25	7.57	1.47	7.84	1.47	7.92	1.47	8.10	1.47	8.93	1.48	9.48	1.49
	29	7.39	1.69	7.67	1.70	7.77	1.71	7.96	1.72	8.78	1.75	9.32	1.77
	32	7.19	1.83	7.48	1.85	7.57	1.86	7.76	1.87	8.56	1.90	9.09	1.92
	35	6.94	1.96	7.22	1.98	7.31	1.99	7.50	2.00	8.26	2.02	8.76	2.03
	40	6.41	2.13	6.66	2.14	6.74	2.14	6.90	2.15	7.55	2.13	7.98	2.11
	43	6.03	2.21	6.24	2.21	6.30	2.21	6.44	2.20	7.01	2.14	7.38	2.10
	46	5.59	2.28	5.75	2.26	5.81	2.25	5.91	2.23	6.38	2.12	6.69	2.04
2.5 + 3.5	22	7.66	1.28	7.89	1.26	7.97	1.25	8.12	1.24	8.94	1.22	9.48	1.21
	25	7.57	1.45	7.84	1.45	7.92	1.45	8.10	1.45	8.93	1.46	9.48	1.47
	29	7.39	1.66	7.67	1.68	7.77	1.68	7.96	1.69	8.78	1.72	9.32	1.74
	32	7.19	1.80	7.48	1.82	7.57	1.83	7.76	1.85	8.56	1.87	9.09	1.89
	35	6.94	1.93	7.22	1.95	7.31	1.96	7.50	1.97	8.26	1.99	8.76	2.00
	40	6.41	2.10	6.66	2.11	6.74	2.11	6.90	2.12	7.55	2.09	7.98	2.08
	43	6.03	2.18	6.24	2.18	6.30	2.17	6.44	2.17	7.01	2.11	7.38	2.07
	46	5.59	2.25	5.75	2.22	5.81	2.21	5.91	2.20	6.38	2.08	6.69	2.01

Combination (Capacity)	Outdoor Air Temp. °C DB	Indoor Air Temp. °C											
		27/16		27/17.5		27/18		27/19		27/22		27/24	
		Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power
3.5 + 3.5	22	7.66	1.27	7.89	1.25	7.97	1.24	8.12	1.23	8.94	1.22	9.48	1.21
	25	7.57	1.44	7.84	1.44	7.92	1.44	8.10	1.44	8.93	1.45	9.48	1.46
	29	7.39	1.65	7.67	1.67	7.77	1.68	7.96	1.69	8.78	1.71	9.32	1.73
	32	7.19	1.79	7.48	1.81	7.57	1.82	7.76	1.84	8.56	1.86	9.09	1.88
	35	6.94	1.92	7.22	1.94	7.31	1.95	7.50	1.96	8.26	1.98	8.76	1.99
	40	6.41	2.09	6.66	2.10	6.74	2.10	6.90	2.11	7.55	2.08	7.98	2.07
	43	6.03	2.17	6.24	2.16	6.30	2.16	6.44	2.16	7.01	2.10	7.38	2.06
	46	5.59	2.24	5.75	2.21	5.81	2.20	5.91	2.18	6.38	2.07	6.69	2.00

Q = Capacity (kW)
Input Power = Input Power (kW)

17.1.2 CU-2Z50ABEC CS-ZxxxKEW CS-NZxxxKEW

[50 Hz, 230 V]

Combination (Capacity)	Outdoor Air Temp. °C DB	Indoor Air Temp. °C											
		27/16		27/17.5		27/18		27/19		27/22		27/24	
		Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power
2.0	22	1.95	0.17	2.06	0.16	2.10	0.16	2.18	0.16	2.84	0.24	3.28	0.30
	25	2.06	0.26	2.19	0.26	2.24	0.26	2.33	0.26	2.91	0.32	3.30	0.36
	29	2.15	0.38	2.31	0.38	2.36	0.38	2.46	0.37	2.95	0.41	3.27	0.43
	32	2.19	0.46	2.35	0.46	2.40	0.45	2.51	0.45	2.93	0.47	3.21	0.48
	35	2.19	0.53	2.35	0.52	2.40	0.52	2.50	0.52	2.87	0.53	3.12	0.53
	40	2.13	0.62	2.26	0.62	2.30	0.62	2.38	0.61	2.69	0.61	2.90	0.60
	43	2.05	0.66	2.15	0.66	2.19	0.66	2.25	0.66	2.53	0.65	2.72	0.64
	46	1.95	0.69	2.01	0.69	2.03	0.69	2.07	0.69	2.34	0.68	2.52	0.68
2.5	22	2.26	0.20	2.39	0.19	2.44	0.19	2.53	0.19	3.30	0.29	3.81	0.36
	25	2.38	0.32	2.55	0.31	2.60	0.31	2.71	0.31	3.38	0.38	3.82	0.43
	29	2.50	0.46	2.68	0.45	2.74	0.45	2.86	0.45	3.42	0.49	3.79	0.51
	32	2.54	0.55	2.72	0.54	2.78	0.54	2.91	0.54	3.40	0.56	3.72	0.57
	35	2.54	0.63	2.72	0.62	2.78	0.62	2.90	0.62	3.33	0.63	3.62	0.63
	40	2.47	0.74	2.62	0.73	2.67	0.73	2.77	0.73	3.12	0.72	3.36	0.72
	43	2.38	0.79	2.50	0.79	2.54	0.79	2.61	0.79	2.94	0.77	3.16	0.76
	46	2.26	0.82	2.33	0.83	2.35	0.83	2.40	0.83	2.71	0.81	2.92	0.81
3.5	22	2.96	0.31	3.14	0.31	3.20	0.31	3.31	0.30	4.32	0.46	4.99	0.57
	25	3.12	0.50	3.34	0.50	3.41	0.50	3.55	0.49	4.43	0.61	5.01	0.68
	29	3.27	0.73	3.51	0.72	3.59	0.72	3.74	0.71	4.48	0.78	4.97	0.82
	32	3.33	0.88	3.57	0.87	3.65	0.87	3.81	0.86	4.45	0.89	4.88	0.92
	35	3.33	1.00	3.57	1.00	3.64	0.99	3.80	0.99	4.36	1.00	4.74	1.01
	40	3.24	1.18	3.43	1.17	3.50	1.17	3.62	1.17	4.09	1.15	4.40	1.14
	43	3.12	1.26	3.27	1.25	3.32	1.25	3.42	1.25	3.85	1.23	4.14	1.22
	46	2.96	1.32	3.05	1.32	3.08	1.32	3.15	1.32	3.55	1.30	3.82	1.29
5.0	22	4.44	0.58	4.70	0.57	4.79	0.57	4.97	0.56	6.48	0.85	7.48	1.05
	25	4.69	0.93	5.00	0.91	5.11	0.91	5.32	0.90	6.64	1.11	7.52	1.25
	29	4.91	1.34	5.26	1.32	5.38	1.32	5.62	1.31	6.72	1.43	7.45	1.51
	32	4.99	1.61	5.35	1.59	5.47	1.59	5.71	1.58	6.68	1.64	7.32	1.68
	35	5.00	1.84	5.35	1.83	5.47	1.83	5.70	1.82	6.55	1.84	7.11	1.85
	40	4.86	2.16	5.15	2.16	5.25	2.15	5.44	2.15	6.14	2.12	6.61	2.10
	43	4.68	2.31	4.91	2.31	4.98	2.31	5.13	2.31	5.78	2.27	6.21	2.24
	46	4.44	2.42	4.58	2.43	4.63	2.43	4.72	2.43	5.33	2.39	5.73	2.37
2.0 + 2.0	22	7.04	1.24	7.26	1.22	7.33	1.21	7.47	1.20	8.22	1.19	8.72	1.18
	25	6.97	1.41	7.21	1.41	7.29	1.41	7.45	1.41	8.21	1.42	8.72	1.42
	29	6.80	1.61	7.06	1.63	7.15	1.63	7.32	1.64	8.07	1.67	8.58	1.69
	32	6.62	1.75	6.88	1.77	6.97	1.78	7.14	1.79	7.88	1.82	8.36	1.83
	35	6.39	1.87	6.64	1.89	6.73	1.90	6.90	1.91	7.59	1.93	8.06	1.94
	40	5.90	2.03	6.12	2.04	6.20	2.05	6.35	2.05	6.95	2.03	7.34	2.01
	43	5.55	2.11	5.74	2.11	5.80	2.11	5.93	2.10	6.45	2.04	6.79	2.00
	46	5.15	2.18	5.29	2.15	5.34	2.15	5.44	2.13	5.87	2.02	6.15	1.95

Combination (Capacity)	Outdoor Air Temp. °C DB	Indoor Air Temp. °C											
		27/16		27/17.5		27/18		27/19		27/22		27/24	
		Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power
2.0 + 2.5	22	7.14	1.24	7.36	1.22	7.43	1.22	7.58	1.20	8.34	1.19	8.85	1.18
	25	7.07	1.42	7.31	1.41	7.40	1.41	7.56	1.41	8.33	1.42	8.85	1.43
	29	6.90	1.62	7.16	1.64	7.25	1.64	7.43	1.65	8.19	1.68	8.70	1.70
	32	6.71	1.76	6.98	1.78	7.07	1.78	7.25	1.80	7.99	1.83	8.49	1.84
	35	6.48	1.88	6.74	1.90	6.83	1.91	7.00	1.92	7.70	1.94	8.17	1.95
	40	5.99	2.05	6.21	2.05	6.29	2.06	6.44	2.06	7.05	2.04	7.45	2.03
	43	5.63	2.13	5.82	2.12	5.88	2.12	6.01	2.11	6.54	2.05	6.89	2.01
	46	5.22	2.19	5.37	2.17	5.42	2.16	5.52	2.14	5.95	2.03	6.24	1.96
2.0 + 3.5	22	7.66	1.32	7.89	1.30	7.97	1.29	8.12	1.28	8.94	1.27	9.48	1.26
	25	7.57	1.50	7.84	1.50	7.92	1.50	8.10	1.50	8.93	1.51	9.48	1.52
	29	7.39	1.72	7.67	1.74	7.77	1.74	7.96	1.75	8.78	1.78	9.32	1.80
	32	7.19	1.87	7.48	1.89	7.57	1.90	7.76	1.91	8.56	1.94	9.09	1.96
	35	6.94	1.99	7.22	2.02	7.31	2.02	7.50	2.04	8.26	2.06	8.76	2.07
	40	6.41	2.17	6.66	2.18	6.74	2.19	6.90	2.19	7.55	2.17	7.98	2.15
	43	6.03	2.26	6.24	2.25	6.30	2.25	6.44	2.25	7.01	2.18	7.38	2.14
	46	5.59	2.33	5.75	2.30	5.81	2.29	5.91	2.27	6.38	2.16	6.69	2.08
2.0 + 5.0	22	7.96	1.45	8.20	1.43	8.28	1.42	8.45	1.41	9.30	1.39	9.86	1.38
	25	7.88	1.65	8.15	1.65	8.24	1.65	8.42	1.65	9.29	1.66	9.86	1.67
	29	7.68	1.89	7.98	1.91	8.08	1.91	8.27	1.93	9.13	1.96	9.70	1.98
	32	7.48	2.05	7.78	2.07	7.88	2.08	8.07	2.10	8.90	2.13	9.45	2.15
	35	7.22	2.19	7.51	2.22	7.61	2.22	7.80	2.24	8.59	2.26	9.11	2.27
	40	6.67	2.39	6.92	2.40	7.01	2.40	7.18	2.41	7.85	2.38	8.30	2.36
	43	6.27	2.48	6.49	2.47	6.56	2.47	6.70	2.47	7.29	2.40	7.68	2.35
	46	5.82	2.56	5.98	2.53	6.04	2.52	6.15	2.50	6.63	2.37	6.95	2.28
2.5 + 2.5	22	7.66	1.33	7.89	1.31	7.97	1.31	8.12	1.29	8.94	1.28	9.48	1.27
	25	7.57	1.52	7.84	1.52	7.92	1.52	8.10	1.52	8.93	1.53	9.48	1.54
	29	7.39	1.74	7.67	1.76	7.77	1.76	7.96	1.77	8.78	1.80	9.32	1.82
	32	7.19	1.88	7.48	1.91	7.57	1.91	7.76	1.93	8.56	1.96	9.09	1.98
	35	6.94	2.01	7.22	2.04	7.31	2.04	7.50	2.06	8.26	2.08	8.76	2.09
	40	6.41	2.19	6.66	2.20	6.74	2.21	6.90	2.21	7.55	2.19	7.98	2.17
	43	6.03	2.28	6.24	2.28	6.30	2.27	6.44	2.27	7.01	2.20	7.38	2.16
	46	5.59	2.35	5.75	2.32	5.81	2.31	5.91	2.30	6.38	2.18	6.69	2.10
2.5 + 3.5	22	7.66	1.31	7.89	1.29	7.97	1.29	8.12	1.27	8.94	1.26	9.48	1.25
	25	7.57	1.50	7.84	1.50	7.92	1.50	8.10	1.49	8.93	1.51	9.48	1.51
	29	7.39	1.71	7.67	1.73	7.77	1.73	7.96	1.75	8.78	1.77	9.32	1.79
	32	7.19	1.86	7.48	1.88	7.57	1.89	7.76	1.90	8.56	1.93	9.09	1.95
	35	6.94	1.99	7.22	2.01	7.31	2.02	7.50	2.03	8.26	2.05	8.76	2.06
	40	6.41	2.16	6.66	2.17	6.74	2.18	6.90	2.18	7.55	2.16	7.98	2.14
	43	6.03	2.25	6.24	2.24	6.30	2.24	6.44	2.24	7.01	2.17	7.38	2.13
	46	5.59	2.32	5.75	2.29	5.81	2.28	5.91	2.26	6.38	2.15	6.69	2.07

Combination (Capacity)	Outdoor Air Temp. °C DB	Indoor Air Temp. °C											
		27/16		27/17.5		27/18		27/19		27/22		27/24	
		Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power
2.5 + 5.0	22	7.96	1.42	8.20	1.40	8.28	1.40	8.45	1.38	9.30	1.37	9.86	1.36
	25	7.88	1.62	8.15	1.62	8.24	1.62	8.42	1.62	9.29	1.63	9.86	1.64
	29	7.68	1.86	7.98	1.87	8.08	1.88	8.27	1.89	9.13	1.92	9.70	1.94
	32	7.48	2.01	7.78	2.04	7.88	2.04	8.07	2.06	8.90	2.09	9.45	2.11
	35	7.22	2.15	7.51	2.18	7.61	2.18	7.80	2.20	8.59	2.22	9.11	2.23
	40	6.67	2.34	6.92	2.35	7.01	2.36	7.18	2.36	7.85	2.34	8.30	2.32
	43	6.27	2.44	6.49	2.43	6.56	2.43	6.70	2.42	7.29	2.35	7.68	2.31
	46	5.82	2.51	5.98	2.48	6.04	2.47	6.15	2.45	6.63	2.33	6.95	2.24
3.5 + 3.5	22	7.66	1.31	7.89	1.29	7.97	1.28	8.12	1.27	8.94	1.25	9.48	1.24
	25	7.57	1.49	7.84	1.49	7.92	1.49	8.10	1.49	8.93	1.50	9.48	1.51
	29	7.39	1.70	7.67	1.72	7.77	1.73	7.96	1.74	8.78	1.77	9.32	1.78
	32	7.19	1.85	7.48	1.87	7.57	1.88	7.76	1.89	8.56	1.92	9.09	1.94
	35	6.94	1.98	7.22	2.00	7.31	2.01	7.50	2.02	8.26	2.04	8.76	2.05
	40	6.41	2.15	6.66	2.16	6.74	2.16	6.90	2.17	7.55	2.15	7.98	2.13
	43	6.03	2.24	6.24	2.23	6.30	2.23	6.44	2.23	7.01	2.16	7.38	2.12
	46	5.59	2.31	5.75	2.28	5.81	2.27	5.91	2.25	6.38	2.14	6.69	2.06
3.5 + 5.0	22	7.96	1.41	8.20	1.39	8.28	1.38	8.45	1.37	9.30	1.35	9.86	1.34
	25	7.88	1.61	8.15	1.61	8.24	1.61	8.42	1.61	9.29	1.62	9.86	1.63
	29	7.68	1.84	7.98	1.86	8.08	1.86	8.27	1.87	9.13	1.91	9.70	1.93
	32	7.48	1.99	7.78	2.02	7.88	2.03	8.07	2.04	8.90	2.07	9.45	2.09
	35	7.22	2.13	7.51	2.16	7.61	2.16	7.80	2.18	8.59	2.20	9.11	2.21
	40	6.67	2.32	6.92	2.33	7.01	2.34	7.18	2.34	7.85	2.32	8.30	2.30
	43	6.27	2.41	6.49	2.41	6.56	2.41	6.70	2.40	7.29	2.33	7.68	2.29
	46	5.82	2.49	5.98	2.46	6.04	2.45	6.15	2.43	6.63	2.31	6.95	2.22

Q = Capacity (kW)
Input Power = Input Power (kW)

17.1.3 CU-3Z75ABEC CS-HZxxxKEW

[50 Hz, 230 V]

Combination (Capacity)	Outdoor Air Temp. °C DB	Indoor Air Temp. °C											
		27/16		27/17.5		27/18		27/19		27/22		27/24	
		Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power
2.5	22	2.26	0.20	2.39	0.19	2.44	0.19	2.53	0.19	3.30	0.29	3.81	0.36
	25	2.38	0.32	2.55	0.31	2.60	0.31	2.71	0.31	3.38	0.38	3.82	0.43
	29	2.50	0.46	2.68	0.45	2.74	0.45	2.86	0.45	3.42	0.49	3.79	0.51
	32	2.54	0.55	2.72	0.54	2.78	0.54	2.91	0.54	3.40	0.56	3.72	0.57
	35	2.54	0.63	2.72	0.62	2.78	0.62	2.90	0.62	3.33	0.63	3.62	0.63
	40	2.47	0.74	2.62	0.73	2.67	0.73	2.77	0.73	3.12	0.72	3.36	0.72
	43	2.38	0.79	2.50	0.79	2.54	0.79	2.61	0.79	2.94	0.77	3.16	0.76
	46	2.26	0.82	2.33	0.83	2.35	0.83	2.40	0.83	2.71	0.81	2.92	0.81
3.5	22	2.96	0.31	3.14	0.31	3.20	0.31	3.31	0.30	4.32	0.46	4.99	0.57
	25	3.12	0.50	3.34	0.50	3.41	0.50	3.55	0.49	4.43	0.61	5.01	0.68
	29	3.27	0.73	3.51	0.72	3.59	0.72	3.74	0.71	4.48	0.78	4.97	0.82
	32	3.33	0.88	3.57	0.87	3.65	0.87	3.81	0.86	4.45	0.89	4.88	0.92
	35	3.33	1.00	3.57	1.00	3.64	0.99	3.80	0.99	4.36	1.00	4.74	1.01
	40	3.24	1.18	3.43	1.17	3.50	1.17	3.62	1.17	4.09	1.15	4.40	1.14
	43	3.12	1.26	3.27	1.25	3.32	1.25	3.42	1.25	3.85	1.23	4.14	1.22
	46	2.96	1.32	3.05	1.32	3.08	1.32	3.15	1.32	3.55	1.30	3.82	1.29
2.5 + 2.5	22	7.66	1.59	7.89	1.56	7.97	1.55	8.12	1.54	8.94	1.52	9.48	1.51
	25	7.57	1.81	7.84	1.80	7.92	1.80	8.10	1.80	8.93	1.82	9.48	1.83
	29	7.39	2.07	7.67	2.09	7.77	2.09	7.96	2.11	8.78	2.14	9.32	2.16
	32	7.19	2.24	7.48	2.27	7.57	2.28	7.76	2.30	8.56	2.33	9.09	2.35
	35	6.94	2.40	7.22	2.42	7.31	2.43	7.50	2.45	8.26	2.47	8.76	2.49
	40	6.41	2.61	6.66	2.62	6.74	2.63	6.90	2.63	7.55	2.60	7.98	2.58
	43	6.03	2.71	6.24	2.71	6.30	2.70	6.44	2.70	7.01	2.62	7.38	2.57
	46	5.59	2.80	5.75	2.76	5.81	2.75	5.91	2.73	6.38	2.59	6.69	2.50
2.5 + 3.5	22	7.76	1.59	7.99	1.57	8.07	1.56	8.23	1.54	9.06	1.53	9.61	1.52
	25	7.68	1.81	7.94	1.81	8.03	1.81	8.21	1.81	9.05	1.83	9.61	1.83
	29	7.49	2.08	7.77	2.10	7.87	2.10	8.06	2.12	8.89	2.15	9.45	2.17
	32	7.29	2.25	7.58	2.28	7.67	2.29	7.87	2.30	8.67	2.34	9.21	2.36
	35	7.03	2.41	7.32	2.43	7.41	2.44	7.60	2.46	8.37	2.48	8.88	2.50
	40	6.50	2.62	6.75	2.63	6.83	2.64	6.99	2.64	7.65	2.61	8.09	2.59
	43	6.11	2.72	6.32	2.72	6.39	2.71	6.53	2.71	7.10	2.63	7.48	2.58
	46	5.67	2.81	5.83	2.77	5.88	2.76	5.99	2.74	6.46	2.60	6.78	2.51
3.5 + 3.5	22	7.86	1.56	8.10	1.54	8.18	1.53	8.34	1.51	9.18	1.50	9.73	1.48
	25	7.78	1.78	8.05	1.78	8.14	1.77	8.31	1.77	9.17	1.79	9.73	1.80
	29	7.59	2.03	7.88	2.05	7.97	2.06	8.17	2.07	9.01	2.11	9.57	2.13
	32	7.38	2.20	7.68	2.23	7.77	2.24	7.97	2.26	8.79	2.29	9.33	2.31
	35	7.13	2.36	7.41	2.38	7.51	2.39	7.70	2.41	8.48	2.43	8.99	2.45
	40	6.58	2.57	6.83	2.58	6.92	2.58	7.08	2.59	7.75	2.56	8.20	2.54
	43	6.19	2.67	6.40	2.66	6.47	2.66	6.61	2.65	7.19	2.58	7.58	2.53
	46	5.74	2.75	5.91	2.72	5.96	2.71	6.07	2.69	6.55	2.55	6.87	2.46

Combination (Capacity)	Outdoor Air Temp. °C DB	Indoor Air Temp. °C											
		27/16		27/17.5		27/18		27/19		27/22		27/24	
		Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power
2.5 + 2.5 + 2.5	22	8.98	1.57	9.26	1.54	9.35	1.53	9.53	1.52	10.49	1.50	11.13	1.49
	25	8.89	1.78	9.20	1.78	9.30	1.78	9.50	1.78	10.48	1.80	11.12	1.80
	29	8.67	2.04	9.00	2.06	9.11	2.07	9.33	2.08	10.30	2.12	10.94	2.14
	32	8.44	2.21	8.77	2.24	8.89	2.25	9.11	2.27	10.04	2.30	10.67	2.32
	35	8.14	2.37	8.47	2.39	8.58	2.40	8.80	2.42	9.69	2.44	10.28	2.46
	40	7.52	2.58	7.81	2.59	7.91	2.59	8.10	2.60	8.86	2.57	9.37	2.55
	43	7.07	2.68	7.32	2.67	7.40	2.67	7.56	2.67	8.22	2.59	8.66	2.54
	46	6.56	2.76	6.75	2.73	6.81	2.72	6.94	2.70	7.48	2.56	7.85	2.47
2.5 + 2.5 + 3.5	22	8.98	1.51	9.26	1.49	9.35	1.48	9.53	1.46	10.49	1.45	11.13	1.44
	25	8.89	1.72	9.20	1.72	9.30	1.72	9.50	1.72	10.48	1.73	11.12	1.74
	29	8.67	1.97	9.00	1.99	9.11	1.99	9.33	2.00	10.30	2.04	10.94	2.06
	32	8.44	2.13	8.77	2.16	8.89	2.17	9.11	2.18	10.04	2.22	10.67	2.24
	35	8.14	2.28	8.47	2.30	8.58	2.31	8.80	2.33	9.69	2.35	10.28	2.36
	40	7.52	2.48	7.81	2.49	7.91	2.50	8.10	2.50	8.86	2.48	9.37	2.46
	43	7.07	2.58	7.32	2.57	7.40	2.57	7.56	2.57	8.22	2.49	8.66	2.44
	46	6.56	2.66	6.75	2.63	6.81	2.62	6.94	2.60	7.48	2.46	7.85	2.38
2.5 + 3.5 + 3.5	22	9.08	1.52	9.36	1.49	9.45	1.48	9.64	1.47	10.61	1.45	11.25	1.44
	25	8.99	1.72	9.30	1.72	9.40	1.72	9.61	1.72	10.59	1.74	11.25	1.75
	29	8.77	1.97	9.10	1.99	9.22	2.00	9.44	2.01	10.42	2.05	11.07	2.07
	32	8.53	2.14	8.87	2.17	8.99	2.18	9.21	2.19	10.16	2.23	10.79	2.25
	35	8.24	2.29	8.57	2.31	8.68	2.32	8.90	2.34	9.80	2.36	10.39	2.37
	40	7.61	2.49	7.90	2.50	7.99	2.51	8.19	2.52	8.96	2.49	9.47	2.47
	43	7.15	2.59	7.40	2.58	7.48	2.58	7.64	2.58	8.32	2.50	8.76	2.45
	46	6.64	2.67	6.83	2.64	6.89	2.63	7.02	2.61	7.57	2.47	7.94	2.39
3.5 + 3.5 + 3.5	22	9.19	1.52	9.47	1.49	9.56	1.48	9.75	1.47	10.73	1.45	11.38	1.44
	25	9.09	1.72	9.40	1.72	9.51	1.72	9.72	1.72	10.71	1.74	11.38	1.75
	29	8.87	1.97	9.21	1.99	9.32	2.00	9.55	2.01	10.53	2.05	11.19	2.07
	32	8.63	2.14	8.97	2.17	9.09	2.18	9.32	2.19	10.27	2.23	10.91	2.25
	35	8.33	2.29	8.66	2.31	8.78	2.32	9.00	2.34	9.91	2.36	10.51	2.37
	40	7.70	2.49	7.99	2.50	8.08	2.51	8.28	2.52	9.06	2.49	9.58	2.47
	43	7.23	2.59	7.48	2.58	7.57	2.58	7.73	2.58	8.41	2.50	8.86	2.45
	46	6.71	2.67	6.90	2.64	6.97	2.63	7.10	2.61	7.65	2.47	8.02	2.39

Q = Capacity (kW)
Input Power = Input Power (kW)

17.1.4 CU-3Z75ABEC CS-ZxxxKEW CS-NZxxxKEW

[50 Hz, 230 V]

Combination (Capacity)	Outdoor Air Temp. °C DB	Indoor Air Temp. °C											
		27/16		27/17.5		27/18		27/19		27/22		27/24	
		Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power
2.0	22	1.95	0.17	2.06	0.16	2.10	0.16	2.18	0.16	2.84	0.24	3.28	0.30
	25	2.06	0.26	2.19	0.26	2.24	0.26	2.33	0.26	2.91	0.32	3.30	0.36
	29	2.15	0.38	2.31	0.38	2.36	0.38	2.46	0.37	2.95	0.41	3.27	0.43
	32	2.19	0.46	2.35	0.46	2.40	0.45	2.51	0.45	2.93	0.47	3.21	0.48
	35	2.19	0.53	2.35	0.52	2.40	0.52	2.50	0.52	2.87	0.53	3.12	0.53
	40	2.13	0.62	2.26	0.62	2.30	0.62	2.38	0.61	2.69	0.61	2.90	0.60
	43	2.05	0.66	2.15	0.66	2.19	0.66	2.25	0.66	2.53	0.65	2.72	0.64
	46	1.95	0.69	2.01	0.69	2.03	0.69	2.07	0.69	2.34	0.68	2.52	0.68
2.5	22	2.26	0.20	2.39	0.19	2.44	0.19	2.53	0.19	3.30	0.29	3.81	0.36
	25	2.38	0.32	2.55	0.31	2.60	0.31	2.71	0.31	3.38	0.38	3.82	0.43
	29	2.50	0.46	2.68	0.45	2.74	0.45	2.86	0.45	3.42	0.49	3.79	0.51
	32	2.54	0.55	2.72	0.54	2.78	0.54	2.91	0.54	3.40	0.56	3.72	0.57
	35	2.54	0.63	2.72	0.62	2.78	0.62	2.90	0.62	3.33	0.63	3.62	0.63
	40	2.47	0.74	2.62	0.73	2.67	0.73	2.77	0.73	3.12	0.72	3.36	0.72
	43	2.38	0.79	2.50	0.79	2.54	0.79	2.61	0.79	2.94	0.77	3.16	0.76
	46	2.26	0.82	2.33	0.83	2.35	0.83	2.40	0.83	2.71	0.81	2.92	0.81
3.5	22	2.96	0.31	3.14	0.31	3.20	0.31	3.31	0.30	4.32	0.46	4.99	0.57
	25	3.12	0.50	3.34	0.50	3.41	0.50	3.55	0.49	4.43	0.61	5.01	0.68
	29	3.27	0.73	3.51	0.72	3.59	0.72	3.74	0.71	4.48	0.78	4.97	0.82
	32	3.33	0.88	3.57	0.87	3.65	0.87	3.81	0.86	4.45	0.89	4.88	0.92
	35	3.33	1.00	3.57	1.00	3.64	0.99	3.80	0.99	4.36	1.00	4.74	1.01
	40	3.24	1.18	3.43	1.17	3.50	1.17	3.62	1.17	4.09	1.15	4.40	1.14
	43	3.12	1.26	3.27	1.25	3.32	1.25	3.42	1.25	3.85	1.23	4.14	1.22
	46	2.96	1.32	3.05	1.32	3.08	1.32	3.15	1.32	3.55	1.30	3.82	1.29
5.0	22	4.44	0.58	4.70	0.57	4.79	0.57	4.97	0.56	6.48	0.85	7.48	1.05
	25	4.69	0.93	5.00	0.91	5.11	0.91	5.32	0.90	6.64	1.11	7.52	1.25
	29	4.91	1.34	5.26	1.32	5.38	1.32	5.62	1.31	6.72	1.43	7.45	1.51
	32	4.99	1.61	5.35	1.59	5.47	1.59	5.71	1.58	6.68	1.64	7.32	1.68
	35	5.00	1.84	5.35	1.83	5.47	1.83	5.70	1.82	6.55	1.84	7.11	1.85
	40	4.86	2.16	5.15	2.16	5.25	2.15	5.44	2.15	6.14	2.12	6.61	2.10
	43	4.68	2.31	4.91	2.31	4.98	2.31	5.13	2.31	5.78	2.27	6.21	2.24
	46	4.44	2.42	4.58	2.43	4.63	2.43	4.72	2.43	5.33	2.39	5.73	2.37
2.0 + 2.0	22	7.14	1.37	7.36	1.35	7.43	1.34	7.58	1.32	8.34	1.31	8.85	1.30
	25	7.07	1.56	7.31	1.55	7.40	1.55	7.56	1.55	8.33	1.57	8.85	1.57
	29	6.90	1.78	7.16	1.80	7.25	1.80	7.43	1.81	8.19	1.84	8.70	1.86
	32	6.71	1.93	6.98	1.95	7.07	1.96	7.25	1.98	7.99	2.01	8.49	2.03
	35	6.48	2.06	6.74	2.09	6.83	2.09	7.00	2.11	7.70	2.13	8.17	2.14
	40	5.99	2.25	6.21	2.26	6.29	2.26	6.44	2.27	7.05	2.24	7.45	2.23
	43	5.63	2.34	5.82	2.33	5.88	2.33	6.01	2.32	6.54	2.26	6.89	2.21
	46	5.22	2.41	5.37	2.38	5.42	2.37	5.52	2.35	5.95	2.23	6.24	2.15

Combination (Capacity)	Outdoor Air Temp. °C DB	Indoor Air Temp. °C											
		27/16		27/17.5		27/18		27/19		27/22		27/24	
		Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power
2.0 + 2.5	22	7.14	1.34	7.36	1.32	7.43	1.31	7.58	1.30	8.34	1.28	8.85	1.27
	25	7.07	1.53	7.31	1.52	7.40	1.52	7.56	1.52	8.33	1.54	8.85	1.54
	29	6.90	1.75	7.16	1.76	7.25	1.77	7.43	1.78	8.19	1.81	8.70	1.83
	32	6.71	1.89	6.98	1.92	7.07	1.92	7.25	1.94	7.99	1.97	8.49	1.99
	35	6.48	2.02	6.74	2.05	6.83	2.05	7.00	2.07	7.70	2.09	8.17	2.10
	40	5.99	2.21	6.21	2.22	6.29	2.22	6.44	2.22	7.05	2.20	7.45	2.18
	43	5.63	2.29	5.82	2.29	5.88	2.28	6.01	2.28	6.54	2.21	6.89	2.17
	46	5.22	2.36	5.37	2.33	5.42	2.33	5.52	2.31	5.95	2.19	6.24	2.11
2.0 + 3.5	22	7.76	1.49	7.99	1.47	8.07	1.46	8.23	1.44	9.06	1.43	9.61	1.42
	25	7.68	1.70	7.94	1.69	8.03	1.69	8.21	1.69	9.05	1.71	9.61	1.72
	29	7.49	1.94	7.77	1.96	7.87	1.97	8.06	1.98	8.89	2.01	9.45	2.03
	32	7.29	2.10	7.58	2.13	7.67	2.14	7.87	2.15	8.67	2.19	9.21	2.21
	35	7.03	2.25	7.32	2.27	7.41	2.28	7.60	2.30	8.37	2.32	8.88	2.33
	40	6.50	2.45	6.75	2.46	6.83	2.46	6.99	2.47	7.65	2.44	8.09	2.43
	43	6.11	2.55	6.32	2.54	6.39	2.54	6.53	2.53	7.10	2.46	7.48	2.41
	46	5.67	2.63	5.83	2.59	5.88	2.58	5.99	2.56	6.46	2.43	6.78	2.35
2.0 + 5.0	22	8.47	1.52	8.73	1.49	8.82	1.48	8.99	1.47	9.89	1.45	10.49	1.44
	25	8.38	1.72	8.67	1.72	8.77	1.72	8.96	1.72	9.88	1.74	10.49	1.75
	29	8.18	1.97	8.49	1.99	8.60	2.00	8.80	2.01	9.71	2.05	10.32	2.07
	32	7.96	2.14	8.27	2.17	8.38	2.18	8.59	2.19	9.47	2.23	10.06	2.25
	35	7.68	2.29	7.99	2.31	8.09	2.32	8.30	2.34	9.14	2.36	9.69	2.37
	40	7.10	2.49	7.37	2.50	7.46	2.51	7.64	2.52	8.35	2.49	8.83	2.47
	43	6.67	2.59	6.90	2.58	6.98	2.58	7.13	2.58	7.76	2.50	8.17	2.45
	46	6.19	2.67	6.37	2.64	6.43	2.63	6.54	2.61	7.06	2.47	7.40	2.39
2.5 + 2.5	22	7.66	1.48	7.89	1.46	7.97	1.45	8.12	1.44	8.94	1.42	9.48	1.41
	25	7.57	1.69	7.84	1.69	7.92	1.69	8.10	1.69	8.93	1.70	9.48	1.71
	29	7.39	1.93	7.67	1.95	7.77	1.96	7.96	1.97	8.78	2.00	9.32	2.02
	32	7.19	2.10	7.48	2.12	7.57	2.13	7.76	2.15	8.56	2.18	9.09	2.20
	35	6.94	2.24	7.22	2.26	7.31	2.27	7.50	2.29	8.26	2.31	8.76	2.32
	40	6.41	2.44	6.66	2.45	6.74	2.45	6.90	2.46	7.55	2.43	7.98	2.42
	43	6.03	2.54	6.24	2.53	6.30	2.53	6.44	2.52	7.01	2.45	7.38	2.40
	46	5.59	2.61	5.75	2.58	5.81	2.57	5.91	2.55	6.38	2.42	6.69	2.34
2.5 + 3.5	22	7.76	1.49	7.99	1.47	8.07	1.46	8.23	1.44	9.06	1.43	9.61	1.42
	25	7.68	1.70	7.94	1.69	8.03	1.69	8.21	1.69	9.05	1.71	9.61	1.72
	29	7.49	1.94	7.77	1.96	7.87	1.97	8.06	1.98	8.89	2.01	9.45	2.03
	32	7.29	2.10	7.58	2.13	7.67	2.14	7.87	2.15	8.67	2.19	9.21	2.21
	35	7.03	2.25	7.32	2.27	7.41	2.28	7.60	2.30	8.37	2.32	8.88	2.33
	40	6.50	2.45	6.75	2.46	6.83	2.46	6.99	2.47	7.65	2.44	8.09	2.43
	43	6.11	2.55	6.32	2.54	6.39	2.54	6.53	2.53	7.10	2.46	7.48	2.41
	46	5.67	2.63	5.83	2.59	5.88	2.58	5.99	2.56	6.46	2.43	6.78	2.35

Combination (Capacity)	Outdoor Air Temp. °C DB	Indoor Air Temp. °C											
		27/16		27/17.5		27/18		27/19		27/22		27/24	
		Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power
2.5 + 5.0	22	8.47	1.52	8.73	1.49	8.82	1.48	8.99	1.47	9.89	1.45	10.49	1.44
	25	8.38	1.72	8.67	1.72	8.77	1.72	8.96	1.72	9.88	1.74	10.49	1.75
	29	8.18	1.97	8.49	1.99	8.60	2.00	8.80	2.01	9.71	2.05	10.32	2.07
	32	7.96	2.14	8.27	2.17	8.38	2.18	8.59	2.19	9.47	2.23	10.06	2.25
	35	7.68	2.29	7.99	2.31	8.09	2.32	8.30	2.34	9.14	2.36	9.69	2.37
	40	7.10	2.49	7.37	2.50	7.46	2.51	7.64	2.52	8.35	2.49	8.83	2.47
	43	6.67	2.59	6.90	2.58	6.98	2.58	7.13	2.58	7.76	2.50	8.17	2.45
	46	6.19	2.67	6.37	2.64	6.43	2.63	6.54	2.61	7.06	2.47	7.40	2.39
3.5 + 3.5	22	7.86	1.46	8.10	1.44	8.18	1.43	8.34	1.42	9.18	1.40	9.73	1.39
	25	7.78	1.67	8.05	1.66	8.14	1.66	8.31	1.66	9.17	1.68	9.73	1.69
	29	7.59	1.91	7.88	1.93	7.97	1.93	8.17	1.94	9.01	1.98	9.57	2.00
	32	7.38	2.07	7.68	2.09	7.77	2.10	7.97	2.12	8.79	2.15	9.33	2.17
	35	7.13	2.21	7.41	2.23	7.51	2.24	7.70	2.26	8.48	2.28	8.99	2.29
	40	6.58	2.41	6.83	2.42	6.92	2.42	7.08	2.43	7.75	2.40	8.20	2.38
	43	6.19	2.50	6.40	2.50	6.47	2.49	6.61	2.49	7.19	2.42	7.58	2.37
	46	5.74	2.58	5.91	2.55	5.96	2.54	6.07	2.52	6.55	2.39	6.87	2.30
3.5 + 5.0	22	8.57	1.52	8.83	1.49	8.92	1.48	9.10	1.47	10.01	1.45	10.62	1.44
	25	8.48	1.72	8.78	1.72	8.87	1.72	9.07	1.72	10.00	1.74	10.62	1.75
	29	8.28	1.97	8.59	1.99	8.70	2.00	8.91	2.01	9.83	2.05	10.44	2.07
	32	8.05	2.14	8.37	2.17	8.48	2.18	8.70	2.19	9.59	2.23	10.18	2.25
	35	7.77	2.29	8.09	2.31	8.19	2.32	8.40	2.34	9.25	2.36	9.81	2.37
	40	7.18	2.49	7.46	2.50	7.55	2.51	7.73	2.52	8.46	2.49	8.94	2.47
	43	6.75	2.59	6.98	2.58	7.06	2.58	7.22	2.58	7.85	2.50	8.27	2.45
	46	6.27	2.67	6.44	2.64	6.50	2.63	6.62	2.61	7.14	2.47	7.49	2.39
5.0 + 5.0	22	9.08	1.52	9.36	1.50	9.45	1.49	9.64	1.47	10.61	1.46	11.25	1.45
	25	8.99	1.73	9.30	1.73	9.40	1.73	9.61	1.73	10.59	1.74	11.25	1.75
	29	8.77	1.98	9.10	2.00	9.22	2.01	9.44	2.02	10.42	2.05	11.07	2.08
	32	8.53	2.15	8.87	2.18	8.99	2.18	9.21	2.20	10.16	2.23	10.79	2.26
	35	8.24	2.30	8.57	2.32	8.68	2.33	8.90	2.35	9.80	2.37	10.39	2.38
	40	7.61	2.50	7.90	2.51	7.99	2.52	8.19	2.53	8.96	2.50	9.47	2.48
	43	7.15	2.60	7.40	2.60	7.48	2.59	7.64	2.59	8.32	2.51	8.76	2.46
	46	6.64	2.68	6.83	2.65	6.89	2.64	7.02	2.62	7.57	2.49	7.94	2.40
2.0 + 2.0 + 2.0	22	8.98	1.47	9.26	1.45	9.35	1.44	9.53	1.42	10.49	1.41	11.13	1.40
	25	8.89	1.67	9.20	1.67	9.30	1.67	9.50	1.67	10.48	1.68	11.12	1.69
	29	8.67	1.92	9.00	1.93	9.11	1.94	9.33	1.95	10.30	1.98	10.94	2.01
	32	8.44	2.08	8.77	2.10	8.89	2.11	9.11	2.13	10.04	2.16	10.67	2.18
	35	8.14	2.22	8.47	2.24	8.58	2.25	8.80	2.27	9.69	2.29	10.28	2.30
	40	7.52	2.42	7.81	2.43	7.91	2.43	8.10	2.44	8.86	2.41	9.37	2.39
	43	7.07	2.51	7.32	2.51	7.40	2.50	7.56	2.50	8.22	2.43	8.66	2.38
	46	6.56	2.59	6.75	2.56	6.81	2.55	6.94	2.53	7.48	2.40	7.85	2.31

Combination (Capacity)	Outdoor Air Temp. °C DB	Indoor Air Temp. °C											
		27/16		27/17.5		27/18		27/19		27/22		27/24	
		Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power
2.0 + 2.0 + 2.5	22	8.98	1.47	9.26	1.45	9.35	1.44	9.53	1.42	10.49	1.41	11.13	1.40
	25	8.89	1.67	9.20	1.67	9.30	1.67	9.50	1.67	10.48	1.68	11.12	1.69
	29	8.67	1.92	9.00	1.93	9.11	1.94	9.33	1.95	10.30	1.98	10.94	2.01
	32	8.44	2.08	8.77	2.10	8.89	2.11	9.11	2.13	10.04	2.16	10.67	2.18
	35	8.14	2.22	8.47	2.24	8.58	2.25	8.80	2.27	9.69	2.29	10.28	2.30
	40	7.52	2.42	7.81	2.43	7.91	2.43	8.10	2.44	8.86	2.41	9.37	2.39
	43	7.07	2.51	7.32	2.51	7.40	2.50	7.56	2.50	8.22	2.43	8.66	2.38
	46	6.56	2.59	6.75	2.56	6.81	2.55	6.94	2.53	7.48	2.40	7.85	2.31
2.0 + 2.0 + 3.5	22	8.98	1.42	9.26	1.40	9.35	1.39	9.53	1.37	10.49	1.36	11.13	1.35
	25	8.89	1.61	9.20	1.61	9.30	1.61	9.50	1.61	10.48	1.62	11.12	1.63
	29	8.67	1.85	9.00	1.87	9.11	1.87	9.33	1.88	10.30	1.91	10.94	1.94
	32	8.44	2.00	8.77	2.03	8.89	2.04	9.11	2.05	10.04	2.08	10.67	2.10
	35	8.14	2.14	8.47	2.17	8.58	2.17	8.80	2.19	9.69	2.21	10.28	2.22
	40	7.52	2.33	7.81	2.34	7.91	2.35	8.10	2.35	8.86	2.33	9.37	2.31
	43	7.07	2.42	7.32	2.42	7.40	2.42	7.56	2.41	8.22	2.34	8.66	2.30
	46	6.56	2.50	6.75	2.47	6.81	2.46	6.94	2.44	7.48	2.32	7.85	2.23
2.0 + 2.0 + 5.0	22	9.59	1.48	9.89	1.46	9.98	1.45	10.18	1.44	11.20	1.42	11.88	1.41
	25	9.49	1.69	9.82	1.69	9.93	1.69	10.15	1.69	11.19	1.70	11.88	1.71
	29	9.26	1.93	9.62	1.95	9.73	1.96	9.97	1.97	11.00	2.00	11.69	2.02
	32	9.01	2.10	9.37	2.12	9.49	2.13	9.73	2.15	10.73	2.18	11.39	2.20
	35	8.70	2.24	9.05	2.26	9.17	2.27	9.40	2.29	10.35	2.31	10.98	2.32
	40	8.04	2.44	8.34	2.45	8.44	2.45	8.65	2.46	9.46	2.43	10.01	2.42
	43	7.56	2.54	7.82	2.53	7.90	2.53	8.07	2.52	8.78	2.45	9.26	2.40
	46	7.01	2.61	7.21	2.58	7.28	2.57	7.41	2.55	7.99	2.42	8.38	2.34
2.0 + 2.5 + 2.5	22	8.98	1.47	9.26	1.45	9.35	1.44	9.53	1.42	10.49	1.41	11.13	1.40
	25	8.89	1.67	9.20	1.67	9.30	1.67	9.50	1.67	10.48	1.68	11.12	1.69
	29	8.67	1.92	9.00	1.93	9.11	1.94	9.33	1.95	10.30	1.98	10.94	2.01
	32	8.44	2.08	8.77	2.10	8.89	2.11	9.11	2.13	10.04	2.16	10.67	2.18
	35	8.14	2.22	8.47	2.24	8.58	2.25	8.80	2.27	9.69	2.29	10.28	2.30
	40	7.52	2.42	7.81	2.43	7.91	2.43	8.10	2.44	8.86	2.41	9.37	2.39
	43	7.07	2.51	7.32	2.51	7.40	2.50	7.56	2.50	8.22	2.43	8.66	2.38
	46	6.56	2.59	6.75	2.56	6.81	2.55	6.94	2.53	7.48	2.40	7.85	2.31
2.0 + 2.5 + 3.5	22	8.98	1.42	9.26	1.40	9.35	1.39	9.53	1.37	10.49	1.36	11.13	1.35
	25	8.89	1.61	9.20	1.61	9.30	1.61	9.50	1.61	10.48	1.62	11.12	1.63
	29	8.67	1.85	9.00	1.87	9.11	1.87	9.33	1.88	10.30	1.91	10.94	1.94
	32	8.44	2.00	8.77	2.03	8.89	2.04	9.11	2.05	10.04	2.08	10.67	2.10
	35	8.14	2.14	8.47	2.17	8.58	2.17	8.80	2.19	9.69	2.21	10.28	2.22
	40	7.52	2.33	7.81	2.34	7.91	2.35	8.10	2.35	8.86	2.33	9.37	2.31
	43	7.07	2.42	7.32	2.42	7.40	2.42	7.56	2.41	8.22	2.34	8.66	2.30
	46	6.56	2.50	6.75	2.47	6.81	2.46	6.94	2.44	7.48	2.32	7.85	2.23

Combination (Capacity)	Outdoor Air Temp. °C DB	Indoor Air Temp. °C											
		27/16		27/17.5		27/18		27/19		27/22		27/24	
		Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power
2.0 + 2.5 + 5.0	22	9.59	1.48	9.89	1.46	9.98	1.45	10.18	1.44	11.20	1.42	11.88	1.41
	25	9.49	1.69	9.82	1.69	9.93	1.69	10.15	1.69	11.19	1.70	11.88	1.71
	29	9.26	1.93	9.62	1.95	9.73	1.96	9.97	1.97	11.00	2.00	11.69	2.02
	32	9.01	2.10	9.37	2.12	9.49	2.13	9.73	2.15	10.73	2.18	11.39	2.20
	35	8.70	2.24	9.05	2.26	9.17	2.27	9.40	2.29	10.35	2.31	10.98	2.32
	40	8.04	2.44	8.34	2.45	8.44	2.45	8.65	2.46	9.46	2.43	10.01	2.42
	43	7.56	2.54	7.82	2.53	7.90	2.53	8.07	2.52	8.78	2.45	9.26	2.40
	46	7.01	2.61	7.21	2.58	7.28	2.57	7.41	2.55	7.99	2.42	8.38	2.34
2.0 + 3.5 + 3.5	22	9.08	1.42	9.36	1.40	9.45	1.40	9.64	1.38	10.61	1.37	11.25	1.36
	25	8.99	1.62	9.30	1.62	9.40	1.62	9.61	1.62	10.59	1.63	11.25	1.64
	29	8.77	1.86	9.10	1.87	9.22	1.88	9.44	1.89	10.42	1.92	11.07	1.94
	32	8.53	2.01	8.87	2.04	8.99	2.04	9.21	2.06	10.16	2.09	10.79	2.11
	35	8.24	2.15	8.57	2.18	8.68	2.18	8.90	2.20	9.80	2.22	10.39	2.23
	40	7.61	2.34	7.90	2.35	7.99	2.36	8.19	2.36	8.96	2.34	9.47	2.32
	43	7.15	2.44	7.40	2.43	7.48	2.43	7.64	2.42	8.32	2.35	8.76	2.31
	46	6.64	2.51	6.83	2.48	6.89	2.47	7.02	2.45	7.57	2.33	7.94	2.24
2.0 + 3.5 + 5.0	22	9.59	1.45	9.89	1.43	9.98	1.42	10.18	1.41	11.20	1.39	11.88	1.38
	25	9.49	1.65	9.82	1.65	9.93	1.65	10.15	1.65	11.19	1.66	11.88	1.67
	29	9.26	1.89	9.62	1.91	9.73	1.91	9.97	1.93	11.00	1.96	11.69	1.98
	32	9.01	2.05	9.37	2.07	9.49	2.08	9.73	2.10	10.73	2.13	11.39	2.15
	35	8.70	2.19	9.05	2.22	9.17	2.22	9.40	2.24	10.35	2.26	10.98	2.27
	40	8.04	2.39	8.34	2.40	8.44	2.40	8.65	2.41	9.46	2.38	10.01	2.36
	43	7.56	2.48	7.82	2.47	7.90	2.47	8.07	2.47	8.78	2.40	9.26	2.35
	46	7.01	2.56	7.21	2.53	7.28	2.52	7.41	2.50	7.99	2.37	8.38	2.28
2.5 + 2.5 + 2.5	22	8.98	1.47	9.26	1.45	9.35	1.44	9.53	1.42	10.49	1.41	11.13	1.40
	25	8.89	1.67	9.20	1.67	9.30	1.67	9.50	1.67	10.48	1.68	11.12	1.69
	29	8.67	1.92	9.00	1.93	9.11	1.94	9.33	1.95	10.30	1.98	10.94	2.01
	32	8.44	2.08	8.77	2.10	8.89	2.11	9.11	2.13	10.04	2.16	10.67	2.18
	35	8.14	2.22	8.47	2.24	8.58	2.25	8.80	2.27	9.69	2.29	10.28	2.30
	40	7.52	2.42	7.81	2.43	7.91	2.43	8.10	2.44	8.86	2.41	9.37	2.39
	43	7.07	2.51	7.32	2.51	7.40	2.50	7.56	2.50	8.22	2.43	8.66	2.38
	46	6.56	2.59	6.75	2.56	6.81	2.55	6.94	2.53	7.48	2.40	7.85	2.31
2.5 + 2.5 + 3.5	22	8.98	1.42	9.26	1.40	9.35	1.39	9.53	1.37	10.49	1.36	11.13	1.35
	25	8.89	1.61	9.20	1.61	9.30	1.61	9.50	1.61	10.48	1.62	11.12	1.63
	29	8.67	1.85	9.00	1.87	9.11	1.87	9.33	1.88	10.30	1.91	10.94	1.94
	32	8.44	2.00	8.77	2.03	8.89	2.04	9.11	2.05	10.04	2.08	10.67	2.10
	35	8.14	2.14	8.47	2.17	8.58	2.17	8.80	2.19	9.69	2.21	10.28	2.22
	40	7.52	2.33	7.81	2.34	7.91	2.35	8.10	2.35	8.86	2.33	9.37	2.31
	43	7.07	2.42	7.32	2.42	7.40	2.42	7.56	2.41	8.22	2.34	8.66	2.30
	46	6.56	2.50	6.75	2.47	6.81	2.46	6.94	2.44	7.48	2.32	7.85	2.23

Combination (Capacity)	Outdoor Air Temp. °C DB	Indoor Air Temp. °C											
		27/16		27/17.5		27/18		27/19		27/22		27/24	
		Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power
2.5 + 2.5 + 5.0	22	9.59	1.48	9.89	1.46	9.98	1.45	10.18	1.44	11.20	1.42	11.88	1.41
	25	9.49	1.69	9.82	1.69	9.93	1.69	10.15	1.69	11.19	1.70	11.88	1.71
	29	9.26	1.93	9.62	1.95	9.73	1.96	9.97	1.97	11.00	2.00	11.69	2.02
	32	9.01	2.10	9.37	2.12	9.49	2.13	9.73	2.15	10.73	2.18	11.39	2.20
	35	8.70	2.24	9.05	2.26	9.17	2.27	9.40	2.29	10.35	2.31	10.98	2.32
	40	8.04	2.44	8.34	2.45	8.44	2.45	8.65	2.46	9.46	2.43	10.01	2.42
	43	7.56	2.54	7.82	2.53	7.90	2.53	8.07	2.52	8.78	2.45	9.26	2.40
	46	7.01	2.61	7.21	2.58	7.28	2.57	7.41	2.55	7.99	2.42	8.38	2.34
2.5 + 3.5 + 3.5	22	9.08	1.42	9.36	1.40	9.45	1.40	9.64	1.38	10.61	1.37	11.25	1.36
	25	8.99	1.62	9.30	1.62	9.40	1.62	9.61	1.62	10.59	1.63	11.25	1.64
	29	8.77	1.86	9.10	1.87	9.22	1.88	9.44	1.89	10.42	1.92	11.07	1.94
	32	8.53	2.01	8.87	2.04	8.99	2.04	9.21	2.06	10.16	2.09	10.79	2.11
	35	8.24	2.15	8.57	2.18	8.68	2.18	8.90	2.20	9.80	2.22	10.39	2.23
	40	7.61	2.34	7.90	2.35	7.99	2.36	8.19	2.36	8.96	2.34	9.47	2.32
	43	7.15	2.44	7.40	2.43	7.48	2.43	7.64	2.42	8.32	2.35	8.76	2.31
	46	6.64	2.51	6.83	2.48	6.89	2.47	7.02	2.45	7.57	2.33	7.94	2.24
2.5 + 3.5 + 5.0	22	9.59	1.45	9.89	1.43	9.98	1.42	10.18	1.41	11.20	1.39	11.88	1.38
	25	9.49	1.65	9.82	1.65	9.93	1.65	10.15	1.65	11.19	1.66	11.88	1.67
	29	9.26	1.89	9.62	1.91	9.73	1.91	9.97	1.93	11.00	1.96	11.69	1.98
	32	9.01	2.05	9.37	2.07	9.49	2.08	9.73	2.10	10.73	2.13	11.39	2.15
	35	8.70	2.19	9.05	2.22	9.17	2.22	9.40	2.24	10.35	2.26	10.98	2.27
	40	8.04	2.39	8.34	2.40	8.44	2.40	8.65	2.41	9.46	2.38	10.01	2.36
	43	7.56	2.48	7.82	2.47	7.90	2.47	8.07	2.47	8.78	2.40	9.26	2.35
	46	7.01	2.56	7.21	2.53	7.28	2.52	7.41	2.50	7.99	2.37	8.38	2.28
3.5 + 3.5 + 3.5	22	9.19	1.42	9.47	1.40	9.56	1.40	9.75	1.38	10.73	1.37	11.38	1.36
	25	9.09	1.62	9.40	1.62	9.51	1.62	9.72	1.62	10.71	1.63	11.38	1.64
	29	8.87	1.86	9.21	1.87	9.32	1.88	9.55	1.89	10.53	1.92	11.19	1.94
	32	8.63	2.01	8.97	2.04	9.09	2.04	9.32	2.06	10.27	2.09	10.91	2.11
	35	8.33	2.15	8.66	2.18	8.78	2.18	9.00	2.20	9.91	2.22	10.51	2.23
	40	7.70	2.34	7.99	2.35	8.08	2.36	8.28	2.36	9.06	2.34	9.58	2.32
	43	7.23	2.44	7.48	2.43	7.57	2.43	7.73	2.42	8.41	2.35	8.86	2.31
	46	6.71	2.51	6.90	2.48	6.97	2.47	7.10	2.45	7.65	2.33	8.02	2.24

Q = Capacity (kW)
Input Power = Input Power (kW)

17.2 Heating Capacity

17.2.1 CU-2Z50ABEC CS-HZxxxKEW

[50 Hz, 230 V]

Combination (Capacity)	Indoor Air Temp. °C DB	Outdoor Air Temp. °C																			
		24/18.5		16/15		11/10		7/6		0/-1		-5/-6		-10/-11		-15/-16		-21/-		-26/-	
		Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power
2.5	16	5.08	0.78	5.00	0.86	4.78	1.03	4.58	1.14	4.29	1.22	3.90	1.25	3.53	1.21	3.11	1.12	3.66	1.05	3.06	0.99
	18	4.81	0.79	4.74	0.87	4.59	1.05	4.44	1.16	4.20	1.25	3.86	1.28	3.51	1.24	3.11	1.15	3.66	1.08	3.06	1.02
	20	4.54	0.80	4.47	0.88	4.40	1.07	4.30	1.19	4.12	1.28	3.81	1.31	3.49	1.28	3.11	1.18	3.66	1.11	3.06	1.04
	21	4.44	0.81	4.37	0.89	4.33	1.09	4.24	1.20	4.07	1.28	3.81	1.33	3.46	1.29	3.07	1.19	3.61	1.12	3.02	1.05
	22	4.34	0.82	4.27	0.91	4.25	1.10	4.18	1.22	4.03	1.31	3.74	1.34	3.43	1.30	3.03	1.21	3.57	1.13	2.98	1.06
	24	4.13	0.85	4.07	0.93	4.10	1.13	4.06	1.24	3.94	1.33	3.67	1.36	3.36	1.33	2.96	1.23	3.48	1.16	2.91	1.09
3.5	16	6.85	1.28	6.74	1.40	6.45	1.70	6.18	1.87	5.79	2.00	5.26	2.05	4.76	1.99	4.20	1.84	4.94	1.73	4.13	1.62
	18	6.49	1.29	6.39	1.42	6.19	1.73	5.99	1.91	5.67	2.05	5.20	2.10	4.73	2.04	4.20	1.89	4.94	1.77	4.13	1.66
	20	6.13	1.31	6.03	1.44	5.94	1.76	5.80	1.95	5.55	2.10	5.14	2.15	4.71	2.09	4.19	1.93	4.93	1.82	4.12	1.71
	21	5.99	1.32	5.90	1.46	5.84	1.78	5.72	1.97	5.49	2.10	5.14	2.17	4.67	2.11	4.14	1.96	4.87	1.84	4.07	1.72
	22	5.85	1.35	5.76	1.48	5.73	1.80	5.64	1.99	5.43	2.14	5.05	2.19	4.62	2.13	4.09	1.98	4.81	1.86	4.02	1.74
	24	5.57	1.39	5.49	1.53	5.53	1.85	5.48	2.04	5.31	2.18	4.95	2.24	4.53	2.18	3.99	2.02	4.69	1.90	3.92	1.78
2.5 + 2.5	16	11.01	1.97	10.85	2.16	10.35	2.30	9.70	2.35	6.31	2.04	8.08	2.63	7.78	2.44	6.42	2.08	5.71	1.84	4.33	1.54
	18	10.93	2.04	10.77	2.25	10.10	2.34	9.28	2.36	5.91	2.05	7.52	2.66	7.35	2.50	6.30	2.17	5.87	1.96	4.46	1.64
	20	10.73	2.16	10.57	2.38	9.63	2.40	8.70	2.40	5.53	2.07	7.37	2.70	7.16	2.56	6.40	2.30	5.80	2.16	4.40	1.80
	21	10.74	2.16	10.57	2.38	9.63	2.40	8.70	2.40	5.53	2.07	7.37	2.70	7.32	2.56	6.40	2.26	5.64	2.17	4.28	1.81
	22	10.61	2.21	10.45	2.43	9.41	2.43	8.53	2.42	5.55	2.07	7.37	2.70	7.16	2.56	6.30	2.27	5.64	2.17	4.28	1.81
	24	10.37	2.30	10.22	2.53	8.98	2.49	8.19	2.45	5.49	2.09	7.37	2.71	7.06	2.56	6.21	2.27	5.64	2.20	4.28	1.83
2.5 + 3.5	16	11.01	1.94	10.85	2.14	10.35	2.27	9.70	2.32	6.31	2.01	8.08	2.60	7.78	2.41	6.42	2.06	5.71	1.82	4.33	1.52
	18	10.93	2.02	10.77	2.22	10.10	2.31	9.28	2.33	5.91	2.02	7.52	2.63	7.35	2.47	6.30	2.14	5.87	1.94	4.46	1.62
	20	10.73	2.14	10.57	2.35	9.63	2.37	8.70	2.37	5.53	2.04	7.37	2.66	7.16	2.53	6.40	2.23	5.80	2.10	4.40	1.75
	21	10.74	2.13	10.57	2.35	9.63	2.37	8.70	2.37	5.53	2.04	7.37	2.66	7.32	2.53	6.40	2.23	5.64	2.14	4.28	1.79
	22	10.61	2.18	10.45	2.40	9.41	2.40	8.53	2.39	5.55	2.05	7.37	2.66	7.16	2.53	6.30	2.24	5.64	2.14	4.28	1.79
	24	10.37	2.28	10.22	2.50	8.98	2.46	8.19	2.42	5.49	2.06	7.37	2.67	7.06	2.53	6.21	2.24	5.64	2.17	4.28	1.81
3.5 + 3.5	16	11.01	1.94	10.85	2.13	10.35	2.26	9.70	2.31	6.31	2.00	8.08	2.59	7.78	2.40	6.42	2.05	5.71	1.81	4.33	1.51
	18	10.93	2.01	10.77	2.21	10.10	2.30	9.28	2.33	5.91	2.01	7.52	2.62	7.35	2.46	6.30	2.13	5.87	1.93	4.46	1.61
	20	10.73	2.13	10.57	2.34	9.63	2.36	8.70	2.36	5.53	2.03	7.37	2.65	7.16	2.51	6.40	2.22	5.80	2.09	4.40	1.74
	21	10.74	2.12	10.57	2.34	9.63	2.36	8.70	2.36	5.53	2.03	7.37	2.65	7.32	2.51	6.40	2.22	5.64	2.14	4.28	1.78
	22	10.61	2.17	10.45	2.39	9.41	2.39	8.53	2.38	5.55	2.04	7.37	2.65	7.16	2.52	6.30	2.23	5.64	2.14	4.28	1.78
	24	10.37	2.27	10.22	2.49	8.98	2.45	8.19	2.41	5.49	2.05	7.37	2.66	7.06	2.52	6.21	2.23	5.64	2.16	4.28	1.80

Q = Capacity (kW)
Input Power = Input Power (kW)

17.2.2 CU-2Z50ABEC CS-ZxxxKEW CS-NZxxxKEW

[50 Hz, 230 V]

* To achieve this capacity for ZxxxKEW models, please enable Nordic cold draught control using the service mode

Combination (Capacity)	Indoor Air Temp. °C DB	Outdoor Air Temp. °C																			
		24/18.5		16/15		11/10		7/6		0/-1		-5/-6		-10/-11		-15/-16		-21/-		-26/-	
		Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power
2.0	16	4.84	0.76	4.77	0.83	4.56	1.01	4.37	1.11	4.09	1.19	3.72	1.22	3.36	1.18	2.97	1.09	3.49	1.03	2.92	0.97
	18	4.58	0.77	4.52	0.84	4.38	1.03	4.23	1.14	4.01	1.22	3.68	1.25	3.35	1.21	2.97	1.12	3.49	1.05	2.92	0.99
	20	4.33	0.78	4.27	0.85	4.20	1.05	4.10	1.16	3.92	1.25	3.64	1.28	3.33	1.24	2.97	1.15	3.49	1.08	2.91	1.01
	21	4.24	0.79	4.17	0.87	4.13	1.06	4.04	1.17	3.88	1.25	3.64	1.29	3.30	1.26	2.93	1.16	3.44	1.09	2.88	1.03
	22	4.14	0.80	4.07	0.88	4.05	1.07	3.99	1.19	3.84	1.27	3.57	1.31	3.27	1.27	2.89	1.18	3.40	1.10	2.84	1.04
	24	3.94	0.83	3.88	0.91	3.91	1.10	3.87	1.21	3.75	1.30	3.50	1.33	3.20	1.29	2.82	1.20	3.31	1.13	2.77	1.06
2.5	16	5.08	0.78	5.00	0.86	4.78	1.03	4.58	1.14	4.29	1.22	3.90	1.25	3.53	1.21	3.11	1.12	3.66	1.05	3.06	0.99
	18	4.81	0.79	4.74	0.87	4.59	1.05	4.44	1.16	4.20	1.25	3.86	1.28	3.51	1.24	3.11	1.15	3.66	1.08	3.06	1.02
	20	4.54	0.80	4.47	0.88	4.40	1.07	4.30	1.19	4.12	1.28	3.81	1.31	3.49	1.28	3.11	1.18	3.66	1.11	3.06	1.04
	21	4.44	0.81	4.37	0.89	4.33	1.09	4.24	1.20	4.07	1.28	3.81	1.33	3.46	1.29	3.07	1.19	3.61	1.12	3.02	1.05
	22	4.34	0.82	4.27	0.91	4.25	1.10	4.18	1.22	4.03	1.31	3.74	1.34	3.43	1.30	3.03	1.21	3.57	1.13	2.98	1.06
	24	4.13	0.85	4.07	0.93	4.10	1.13	4.06	1.24	3.94	1.33	3.67	1.36	3.36	1.33	2.96	1.23	3.48	1.16	2.91	1.09
3.5	16	6.85	1.28	6.74	1.40	6.45	1.70	6.18	1.87	5.79	2.00	5.26	2.05	4.76	1.99	4.20	1.84	4.94	1.73	4.13	1.62
	18	6.49	1.29	6.39	1.42	6.19	1.73	5.99	1.91	5.67	2.05	5.20	2.10	4.73	2.04	4.20	1.89	4.94	1.77	4.13	1.66
	20	6.13	1.31	6.03	1.44	5.94	1.76	5.80	1.95	5.55	2.10	5.14	2.15	4.71	2.09	4.19	1.93	4.93	1.82	4.12	1.71
	21	5.99	1.32	5.90	1.46	5.84	1.78	5.72	1.97	5.49	2.10	5.14	2.17	4.67	2.11	4.14	1.96	4.87	1.84	4.07	1.72
	22	5.85	1.35	5.76	1.48	5.73	1.80	5.64	1.99	5.43	2.14	5.05	2.19	4.62	2.13	4.09	1.98	4.81	1.86	4.02	1.74
	24	5.57	1.39	5.49	1.53	5.53	1.85	5.48	2.04	5.31	2.18	4.95	2.24	4.53	2.18	3.99	2.02	4.69	1.90	3.92	1.78
5.0	16	9.09	1.65	8.95	1.81	8.56	2.19	8.20	2.41	7.69	2.59	6.98	2.64	6.31	2.57	5.58	2.38	6.56	2.23	5.48	2.10
	18	8.61	1.67	8.48	1.83	8.22	2.23	7.95	2.47	7.53	2.65	6.90	2.71	6.28	2.63	5.57	2.44	6.55	2.29	5.48	2.15
	20	8.13	1.69	8.01	1.86	7.88	2.27	7.70	2.52	7.37	2.71	6.83	2.78	6.25	2.70	5.57	2.50	6.55	2.35	5.47	2.20
	21	7.96	1.71	7.83	1.89	7.75	2.30	7.59	2.55	7.29	2.71	6.83	2.81	6.19	2.73	5.50	2.53	6.47	2.37	5.41	2.23
	22	7.77	1.74	7.65	1.92	7.61	2.33	7.49	2.58	7.21	2.77	6.70	2.84	6.13	2.76	5.43	2.55	6.39	2.40	5.34	2.25
	24	7.40	1.80	7.29	1.98	7.34	2.39	7.27	2.63	7.05	2.82	6.58	2.89	6.01	2.81	5.29	2.61	6.22	2.45	5.20	2.30
2.0 + 2.0	16	10.51	2.01	10.35	2.21	9.88	2.35	9.25	2.40	6.02	2.08	7.71	2.69	7.42	2.50	6.13	2.13	5.45	1.88	4.13	1.57
	18	10.43	2.09	10.27	2.29	9.64	2.38	8.86	2.41	5.63	2.09	7.17	2.72	7.02	2.55	6.01	2.22	5.60	2.00	4.25	1.67
	20	10.24	2.21	10.08	2.43	9.19	2.45	8.30	2.45	5.28	2.11	7.03	2.75	6.83	2.61	6.11	2.31	5.53	2.17	4.20	1.81
	21	10.24	2.20	10.08	2.43	9.19	2.45	8.30	2.45	5.28	2.11	7.03	2.75	6.98	2.61	6.11	2.31	5.38	2.22	4.08	1.85
	22	10.12	2.26	9.97	2.48	8.98	2.48	8.14	2.47	5.30	2.12	7.03	2.75	6.83	2.61	6.01	2.31	5.38	2.22	4.08	1.85
	24	9.89	2.35	9.75	2.59	8.57	2.54	7.82	2.50	5.24	2.13	7.03	2.76	6.74	2.62	5.92	2.32	5.38	2.25	4.08	1.87
2.0 + 2.5	16	10.89	2.05	10.72	2.25	10.24	2.40	9.59	2.44	6.23	2.12	7.99	2.74	7.69	2.55	6.35	2.17	5.65	1.92	4.28	1.60
	18	10.81	2.13	10.64	2.34	9.98	2.43	9.18	2.46	5.84	2.13	7.43	2.77	7.27	2.60	6.22	2.26	5.81	2.04	4.40	1.70
	20	10.61	2.25	10.45	2.48	9.52	2.50	8.60	2.50	5.47	2.15	7.29	2.81	7.08	2.66	6.33	2.36	5.73	2.21	4.35	1.84
	21	10.61	2.25	10.45	2.48	9.52	2.50	8.60	2.50	5.47	2.15	7.29	2.81	7.23	2.66	6.33	2.36	5.58	2.26	4.23	1.89
	22	10.49	2.30	10.33	2.53	9.31	2.53	8.43	2.52	5.49	2.16	7.29	2.81	7.08	2.67	6.22	2.36	5.58	2.26	4.23	1.89
	24	10.25	2.40	10.10	2.64	8.88	2.59	8.10	2.55	5.42	2.17	7.29	2.82	6.98	2.67	6.14	2.37	5.58	2.29	4.23	1.91
2.0 + 3.5	16	11.01	2.00	10.85	2.20	10.35	2.34	9.70	2.39	6.31	2.07	8.08	2.68	7.78	2.48	6.42	2.12	5.71	1.88	4.33	1.56
	18	10.93	2.08	10.77	2.28	10.10	2.37	9.28	2.40	5.91	2.08	7.52	2.71	7.35	2.54	6.30	2.21	5.87	2.00	4.46	1.66
	20	10.73	2.20	10.57	2.42	9.63	2.44	8.70	2.44	5.53	2.10	7.37	2.74	7.16	2.60	6.40	2.30	5.80	2.16	4.40	1.80
	21	10.74	2.19	10.57	2.42	9.63	2.44	8.70	2.44	5.53	2.10	7.37	2.74	7.32	2.60	6.40	2.30	5.64	2.21	4.28	1.84
	22	10.61	2.25	10.45	2.47	9.41	2.47	8.53	2.46	5.55	2.11	7.37	2.74	7.16	2.60	6.30	2.30	5.64	2.21	4.28	1.84
	24	10.37	2.34	10.22	2.58	8.98	2.53	8.19	2.49	5.49	2.12	7.37	2.75	7.06	2.61	6.21	2.31	5.64	2.24	4.28	1.86

Combination (Capacity)	Indoor Air Temp. °C DB	Outdoor Air Temp. °C																			
		24/18.5		16/15		11/10		7/6		0/-1		-5/-6		-10/-11		-15/-16		-21/-		-26/-	
		Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power
2.0 + 5.0	16	11.14	2.03	10.97	2.24	10.47	2.38	9.81	2.42	6.38	2.10	8.18	2.72	7.87	2.53	6.50	2.15	5.78	1.91	4.38	1.59
	18	11.06	2.11	10.89	2.32	10.22	2.41	9.39	2.44	5.97	2.12	7.61	2.75	7.44	2.58	6.37	2.24	5.94	2.03	4.51	1.69
	20	10.85	2.24	10.69	2.46	9.74	2.48	8.80	2.48	5.59	2.13	7.46	2.78	7.24	2.64	6.47	2.34	5.87	2.20	4.45	1.83
	21	10.86	2.23	10.69	2.46	9.74	2.48	8.80	2.48	5.59	2.13	7.46	2.78	7.40	2.64	6.47	2.34	5.71	2.24	4.33	1.87
	22	10.73	2.28	10.57	2.51	9.52	2.51	8.63	2.50	5.62	2.14	7.46	2.79	7.24	2.64	6.37	2.34	5.71	2.24	4.33	1.87
	24	10.49	2.38	10.33	2.62	9.08	2.57	8.29	2.53	5.55	2.16	7.46	2.80	7.14	2.65	6.28	2.35	5.71	2.27	4.33	1.89
2.5 + 2.5	16	11.01	2.00	10.85	2.20	10.35	2.34	9.70	2.39	6.31	2.07	8.08	2.68	7.78	2.48	6.42	2.12	5.71	1.88	4.33	1.56
	18	10.93	2.08	10.77	2.28	10.10	2.37	9.28	2.40	5.91	2.08	7.52	2.71	7.35	2.54	6.30	2.21	5.87	2.00	4.46	1.66
	20	10.73	2.20	10.57	2.42	9.63	2.44	8.70	2.44	5.53	2.10	7.37	2.74	7.16	2.60	6.40	2.30	5.80	2.16	4.40	1.80
	21	10.74	2.19	10.57	2.42	9.63	2.44	8.70	2.44	5.53	2.10	7.37	2.74	7.32	2.60	6.40	2.30	5.64	2.21	4.28	1.84
	22	10.61	2.25	10.45	2.47	9.41	2.47	8.53	2.46	5.55	2.11	7.37	2.74	7.16	2.60	6.30	2.30	5.64	2.21	4.28	1.84
	24	10.37	2.34	10.22	2.58	8.98	2.53	8.19	2.49	5.49	2.12	7.37	2.75	7.06	2.61	6.21	2.31	5.64	2.24	4.28	1.86
2.5 + 3.5	16	11.01	1.99	10.85	2.19	10.35	2.33	9.70	2.38	6.31	2.06	8.08	2.67	7.78	2.47	6.42	2.11	5.71	1.87	4.33	1.56
	18	10.93	2.07	10.77	2.27	10.10	2.36	9.28	2.39	5.91	2.07	7.52	2.70	7.35	2.53	6.30	2.20	5.87	1.99	4.46	1.66
	20	10.73	2.19	10.57	2.41	9.63	2.43	8.70	2.43	5.53	2.09	7.37	2.73	7.16	2.59	6.40	2.29	5.80	2.15	4.40	1.79
	21	10.74	2.18	10.57	2.41	9.63	2.43	8.70	2.43	5.53	2.09	7.37	2.73	7.32	2.59	6.40	2.29	5.64	2.20	4.28	1.83
	22	10.61	2.24	10.45	2.46	9.41	2.46	8.53	2.45	5.55	2.10	7.37	2.73	7.16	2.59	6.30	2.29	5.64	2.20	4.28	1.83
	24	10.37	2.33	10.22	2.57	8.98	2.52	8.19	2.48	5.49	2.11	7.37	2.74	7.06	2.60	6.21	2.30	5.64	2.23	4.28	1.86
2.5 + 5.0	16	11.14	2.03	10.97	2.23	10.47	2.37	9.81	2.42	6.38	2.10	8.18	2.71	7.87	2.52	6.50	2.14	5.78	1.90	4.38	1.58
	18	11.06	2.10	10.89	2.31	10.22	2.40	9.39	2.43	5.97	2.11	7.61	2.74	7.44	2.57	6.37	2.23	5.94	2.02	4.51	1.68
	20	10.85	2.23	10.69	2.45	9.74	2.47	8.80	2.47	5.59	2.13	7.46	2.77	7.24	2.63	6.47	2.33	5.87	2.19	4.45	1.82
	21	10.86	2.22	10.69	2.45	9.74	2.47	8.80	2.47	5.59	2.13	7.46	2.77	7.40	2.63	6.47	2.33	5.71	2.24	4.33	1.86
	22	10.73	2.28	10.57	2.50	9.52	2.50	8.63	2.49	5.62	2.13	7.46	2.78	7.24	2.63	6.37	2.33	5.71	2.24	4.33	1.86
	24	10.49	2.37	10.33	2.61	9.08	2.56	8.29	2.52	5.55	2.15	7.46	2.78	7.14	2.64	6.28	2.34	5.71	2.26	4.33	1.89
3.5 + 3.5	16	11.01	1.98	10.85	2.18	10.35	2.32	9.70	2.37	6.31	2.05	8.08	2.66	7.78	2.46	6.42	2.10	5.71	1.86	4.33	1.55
	18	10.93	2.06	10.77	2.27	10.10	2.35	9.28	2.38	5.91	2.06	7.52	2.68	7.35	2.52	6.30	2.19	5.87	1.98	4.46	1.65
	20	10.73	2.18	10.57	2.40	9.63	2.42	8.70	2.42	5.53	2.08	7.37	2.72	7.16	2.58	6.40	2.28	5.80	2.14	4.40	1.79
	21	10.74	2.17	10.57	2.40	9.63	2.42	8.70	2.42	5.53	2.08	7.37	2.72	7.32	2.58	6.40	2.28	5.64	2.19	4.28	1.83
	22	10.61	2.23	10.45	2.45	9.41	2.45	8.53	2.44	5.55	2.09	7.37	2.72	7.16	2.58	6.30	2.28	5.64	2.19	4.28	1.83
	24	10.37	2.32	10.22	2.56	8.98	2.51	8.19	2.47	5.49	2.10	7.37	2.73	7.06	2.58	6.21	2.29	5.64	2.22	4.28	1.85
3.5 + 5.0	16	11.14	2.02	10.97	2.22	10.47	2.36	9.81	2.41	6.38	2.09	8.18	2.70	7.87	2.51	6.50	2.13	5.78	1.89	4.38	1.58
	18	11.06	2.09	10.89	2.30	10.22	2.39	9.39	2.42	5.97	2.10	7.61	2.73	7.44	2.56	6.37	2.23	5.94	2.01	4.51	1.68
	20	10.85	2.22	10.69	2.44	9.74	2.46	8.80	2.46	5.59	2.12	7.46	2.76	7.24	2.62	6.47	2.32	5.87	2.18	4.45	1.81
	21	10.86	2.21	10.69	2.44	9.74	2.46	8.80	2.46	5.59	2.12	7.46	2.76	7.40	2.62	6.47	2.32	5.71	2.23	4.33	1.86
	22	10.73	2.27	10.57	2.49	9.52	2.49	8.63	2.48	5.62	2.12	7.46	2.77	7.24	2.62	6.37	2.32	5.71	2.23	4.33	1.86
	24	10.49	2.36	10.33	2.60	9.08	2.55	8.29	2.51	5.55	2.14	7.46	2.77	7.14	2.63	6.28	2.33	5.71	2.25	4.33	1.88

Q = Capacity (kW)
Input Power = Input Power (kW)

17.2.3 CU-3Z75ABEC CS-HZxxxKEW

[50 Hz, 230 V]

Combination (Capacity)	Indoor Air Temp. °C DB	Outdoor Air Temp. °C																			
		24/18.5		16/15		11/10		7/6		0/-1		-5/-6		-10/-11		-15/-16		-21/-		-26/-	
		Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power
2.5	16	5.08	0.78	5.00	0.86	4.78	1.03	4.58	1.14	4.29	1.22	3.90	1.25	3.53	1.21	3.11	1.12	3.66	1.05	3.06	0.99
	18	4.81	0.79	4.74	0.87	4.59	1.05	4.44	1.16	4.20	1.25	3.86	1.28	3.51	1.24	3.11	1.15	3.66	1.08	3.06	1.02
	20	4.54	0.80	4.47	0.88	4.40	1.07	4.30	1.19	4.12	1.28	3.81	1.31	3.49	1.28	3.11	1.18	3.66	1.11	3.06	1.04
	21	4.44	0.81	4.37	0.89	4.33	1.09	4.24	1.20	4.07	1.28	3.81	1.33	3.46	1.29	3.07	1.19	3.61	1.12	3.02	1.05
	22	4.34	0.82	4.27	0.91	4.25	1.10	4.18	1.22	4.03	1.31	3.74	1.34	3.43	1.30	3.03	1.21	3.57	1.13	2.98	1.06
	24	4.13	0.85	4.07	0.93	4.10	1.13	4.06	1.24	3.94	1.33	3.67	1.36	3.36	1.33	2.96	1.23	3.48	1.16	2.91	1.09
3.5	16	6.85	1.28	6.74	1.40	6.45	1.70	6.18	1.87	5.79	2.00	5.26	2.05	4.76	1.99	4.20	1.84	4.94	1.73	4.13	1.62
	18	6.49	1.29	6.39	1.42	6.19	1.73	5.99	1.91	5.67	2.05	5.20	2.10	4.73	2.04	4.20	1.89	4.94	1.77	4.13	1.66
	20	6.13	1.31	6.03	1.44	5.94	1.76	5.80	1.95	5.55	2.10	5.14	2.15	4.71	2.09	4.19	1.93	4.93	1.82	4.12	1.71
	21	5.99	1.32	5.90	1.46	5.84	1.78	5.72	1.97	5.49	2.10	5.14	2.17	4.67	2.11	4.14	1.96	4.87	1.84	4.07	1.72
	22	5.85	1.35	5.76	1.48	5.73	1.80	5.64	1.99	5.43	2.14	5.05	2.19	4.62	2.13	4.09	1.98	4.81	1.86	4.02	1.74
	24	5.57	1.39	5.49	1.53	5.53	1.85	5.48	2.04	5.31	2.18	4.95	2.24	4.53	2.18	3.99	2.02	4.69	1.90	3.92	1.78
2.5 + 2.5	16	12.52	1.68	12.33	1.85	11.64	1.95	10.94	2.95	7.28	1.71	9.17	2.19	8.83	2.02	7.66	1.75	6.56	1.53	4.98	1.28
	18	12.43	1.75	12.24	1.92	11.35	1.98	10.47	2.97	6.82	1.72	8.53	2.21	8.34	2.07	7.51	1.82	6.75	1.63	5.12	1.36
	20	12.33	1.81	12.15	1.99	11.07	2.01	10.00	2.99	6.36	1.73	8.48	2.24	8.23	2.11	7.36	1.89	6.67	1.78	5.06	1.48
	21	12.21	1.84	12.02	2.04	10.83	2.03	9.81	3.01	6.38	1.73	8.48	2.24	8.12	2.11	7.63	1.90	6.67	1.76	4.92	1.50
	22	12.06	1.89	11.88	2.08	10.58	2.06	9.62	3.03	6.41	1.74	8.37	2.24	8.12	2.12	7.51	1.90	6.49	1.80	4.92	1.50
	24	11.79	1.97	11.61	2.17	10.10	2.11	9.24	3.08	6.33	1.75	8.37	2.25	8.01	2.12	7.40	1.91	6.49	1.83	4.92	1.52
2.5 + 3.5	16	12.64	1.68	12.45	1.85	11.76	1.95	11.05	2.95	7.35	1.71	9.26	2.19	8.91	2.02	7.74	1.75	6.63	1.53	5.03	1.28
	18	12.55	1.75	12.36	1.92	11.47	1.98	10.57	2.97	6.89	1.72	8.62	2.21	8.42	2.07	7.58	1.82	6.82	1.63	5.17	1.36
	20	12.46	1.81	12.27	1.99	11.18	2.01	10.10	2.99	6.42	1.73	8.56	2.24	8.31	2.11	7.43	1.89	6.73	1.78	5.11	1.48
	21	12.33	1.84	12.14	2.04	10.93	2.03	9.91	3.01	6.45	1.73	8.56	2.24	8.20	2.11	7.71	1.90	6.73	1.76	4.97	1.50
	22	12.18	1.89	12.00	2.08	10.69	2.06	9.72	3.03	6.47	1.74	8.45	2.24	8.20	2.12	7.59	1.90	6.55	1.80	4.97	1.50
	24	11.91	1.97	11.73	2.17	10.20	2.11	9.33	3.08	6.40	1.75	8.45	2.25	8.09	2.12	7.48	1.91	6.55	1.83	4.97	1.52
3.5 + 3.5	16	12.77	1.68	12.58	1.85	11.87	1.95	11.16	2.95	7.42	1.71	9.35	2.19	9.00	2.02	7.82	1.75	6.70	1.53	5.08	1.28
	18	12.67	1.75	12.49	1.92	11.58	1.98	10.68	2.97	6.95	1.72	8.70	2.21	8.51	2.07	7.66	1.82	6.89	1.63	5.22	1.36
	20	12.58	1.81	12.39	1.99	11.29	2.01	10.20	2.99	6.48	1.73	8.65	2.24	8.39	2.11	7.50	1.89	6.80	1.78	5.16	1.48
	21	12.45	1.84	12.26	2.04	11.04	2.03	10.01	3.01	6.51	1.73	8.65	2.24	8.28	2.11	7.79	1.90	6.80	1.76	5.02	1.50
	22	12.30	1.89	12.12	2.08	10.79	2.06	9.81	3.03	6.54	1.74	8.53	2.24	8.28	2.12	7.66	1.90	6.62	1.80	5.02	1.50
	24	12.02	1.97	11.84	2.17	10.30	2.11	9.42	3.08	6.46	1.75	8.53	2.25	8.17	2.12	7.55	1.91	6.62	1.83	5.02	1.52
2.5 + 2.5 + 2.5	16	10.17	1.62	11.41	1.56	11.08	2.79	11.59	2.88	10.25	2.77	8.75	2.70	7.95	2.57	7.08	2.28	6.11	1.89	4.73	1.59
	18	10.10	1.68	11.32	1.62	10.81	2.84	11.10	2.90	9.60	2.79	8.14	2.73	7.51	2.63	6.94	2.37	6.28	2.01	4.86	1.69
	20	10.02	1.74	11.24	1.68	10.54	2.88	10.60	2.86	8.95	2.80	8.09	2.76	7.41	2.69	6.80	2.47	6.20	2.20	4.80	1.85
	21	9.92	1.77	11.12	1.72	10.31	2.92	10.40	2.94	8.99	2.80	8.09	2.76	7.31	2.69	7.06	2.47	6.20	2.18	4.67	1.87
	22	9.80	1.82	10.99	1.75	10.08	2.95	10.20	2.96	9.03	2.82	7.98	2.77	7.31	2.69	6.94	2.48	6.03	2.23	4.67	1.87
	24	9.58	1.89	10.74	1.83	9.61	3.02	9.79	3.01	8.92	2.84	7.98	2.77	7.21	2.70	6.84	2.48	6.03	2.26	4.67	1.90
2.5 + 2.5 + 3.5	16	10.17	1.58	11.41	1.52	11.08	2.73	11.59	2.81	10.25	2.71	8.75	2.64	7.95	2.51	7.08	2.22	6.11	1.85	4.73	1.55
	18	10.10	1.64	11.32	1.58	10.81	2.77	11.10	2.83	9.60	2.72	8.14	2.66	7.51	2.57	6.94	2.32	6.28	1.97	4.86	1.65
	20	10.02	1.70	11.24	1.64	10.54	2.81	10.60	2.83	8.95	2.74	8.09	2.69	7.41	2.63	6.80	2.47	6.20	2.20	4.80	1.85
	21	9.92	1.73	11.12	1.68	10.31	2.85	10.40	2.87	8.99	2.74	8.09	2.70	7.31	2.63	7.06	2.41	6.20	2.13	4.67	1.83
	22	9.80	1.77	10.99	1.71	10.08	2.88	10.20	2.89	9.03	2.76	7.98	2.70	7.31	2.63	6.94	2.42	6.03	2.18	4.67	1.83
	24	9.58	1.85	10.74	1.78	9.61	2.95	9.79	2.93	8.92	2.77	7.98	2.71	7.21	2.63	6.84	2.42	6.03	2.20	4.67	1.85

Combination (Capacity)	Indoor Air Temp. °C DB	Outdoor Air Temp. °C																			
		24/18.5		16/15		11/10		7/6		0/-1		-5/-6		-10/-11		-15/-16		-21/-		-26/-	
		Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power
2.5 + 3.5 + 3.5	16	10.27	1.59	11.52	1.53	11.19	2.75	11.70	2.83	10.35	2.73	8.83	2.65	8.02	2.53	7.15	2.24	6.16	1.86	4.77	1.56
	18	10.19	1.65	11.43	1.59	10.91	2.79	11.20	2.85	9.69	2.74	8.22	2.68	7.58	2.59	7.01	2.33	6.34	1.98	4.91	1.67
	20	10.11	1.71	11.35	1.65	10.64	2.83	10.70	2.85	9.03	2.75	8.17	2.71	7.48	2.64	6.86	2.43	6.26	2.16	4.85	1.82
	21	10.01	1.74	11.22	1.69	10.41	2.87	10.50	2.89	9.07	2.75	8.17	2.72	7.38	2.65	7.12	2.43	6.26	2.14	4.71	1.84
	22	9.89	1.79	11.10	1.72	10.17	2.90	10.29	2.91	9.11	2.77	8.06	2.72	7.38	2.65	7.01	2.43	6.09	2.19	4.71	1.84
	24	9.67	1.86	10.84	1.80	9.70	2.97	9.88	2.95	9.00	2.79	8.06	2.73	7.28	2.65	6.91	2.44	6.09	2.22	4.71	1.87
3.5 + 3.5 + 3.5	16	10.27	1.58	11.52	1.52	11.19	2.73	11.70	2.81	10.35	2.71	8.83	2.64	8.02	2.51	7.15	2.22	6.16	1.85	4.77	1.55
	18	10.19	1.64	11.43	1.58	10.91	2.77	11.20	2.83	9.69	2.72	8.22	2.66	7.58	2.57	7.01	2.32	6.34	1.97	4.91	1.65
	20	10.11	1.70	11.35	1.64	10.64	2.81	10.70	2.83	9.03	2.74	8.17	2.69	7.48	2.63	6.86	2.41	6.26	2.15	4.85	1.81
	21	10.01	1.73	11.22	1.68	10.41	2.85	10.50	2.87	9.07	2.74	8.17	2.70	7.38	2.63	7.12	2.41	6.26	2.13	4.71	1.83
	22	9.89	1.77	11.10	1.71	10.17	2.88	10.29	2.89	9.11	2.76	8.06	2.70	7.38	2.63	7.01	2.42	6.09	2.18	4.71	1.83
	24	9.67	1.85	10.84	1.78	9.70	2.95	9.88	2.93	9.00	2.77	8.06	2.71	7.28	2.63	6.91	2.42	6.09	2.20	4.71	1.85

Q = Capacity (kW)
Input Power = Input Power (kW)

17.2.4 CU-3Z75ABEC CS-ZxxxKEW CS-NZxxxKEW

[50 Hz, 230 V]

* To achieve this capacity for ZxxxKEW models, please enable Nordic cold draught control using the service mode

Combination (Capacity)	Indoor Air Temp. °C DB	Outdoor Air Temp. °C																			
		24/18.5		16/15		11/10		7/6		0/-1		-5/-6		-10/-11		-15/-16		-21/-		-26/-	
		Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power
2.0	16	4.84	0.76	4.77	0.83	4.56	1.01	4.37	1.11	4.09	1.19	3.72	1.22	3.36	1.18	2.97	1.09	3.49	1.03	2.92	0.97
	18	4.58	0.77	4.52	0.84	4.38	1.03	4.23	1.14	4.01	1.22	3.68	1.25	3.35	1.21	2.97	1.12	3.49	1.05	2.92	0.99
	20	4.33	0.78	4.27	0.85	4.20	1.05	4.10	1.16	3.92	1.25	3.64	1.28	3.33	1.24	2.97	1.15	3.49	1.08	2.91	1.01
	21	4.24	0.79	4.17	0.87	4.13	1.06	4.04	1.17	3.88	1.25	3.64	1.29	3.30	1.26	2.93	1.16	3.44	1.09	2.88	1.03
	22	4.14	0.80	4.07	0.88	4.05	1.07	3.99	1.19	3.84	1.27	3.57	1.31	3.27	1.27	2.89	1.18	3.40	1.10	2.84	1.04
	24	3.94	0.83	3.88	0.91	3.91	1.10	3.87	1.21	3.75	1.30	3.50	1.33	3.20	1.29	2.82	1.20	3.31	1.13	2.77	1.06
2.5	16	5.08	0.78	5.00	0.86	4.78	1.03	4.58	1.14	4.29	1.22	3.90	1.25	3.53	1.21	3.11	1.12	3.66	1.05	3.06	0.99
	18	4.81	0.79	4.74	0.87	4.59	1.05	4.44	1.16	4.20	1.25	3.86	1.28	3.51	1.24	3.11	1.15	3.66	1.08	3.06	1.02
	20	4.54	0.80	4.47	0.88	4.40	1.07	4.30	1.19	4.12	1.28	3.81	1.31	3.49	1.28	3.11	1.18	3.66	1.11	3.06	1.04
	21	4.44	0.81	4.37	0.89	4.33	1.09	4.24	1.20	4.07	1.28	3.81	1.33	3.46	1.29	3.07	1.19	3.61	1.12	3.02	1.05
	22	4.34	0.82	4.27	0.91	4.25	1.10	4.18	1.22	4.03	1.31	3.74	1.34	3.43	1.30	3.03	1.21	3.57	1.13	2.98	1.06
	24	4.13	0.85	4.07	0.93	4.10	1.13	4.06	1.24	3.94	1.33	3.67	1.36	3.36	1.33	2.96	1.23	3.48	1.16	2.91	1.09
3.5	16	6.85	1.28	6.74	1.40	6.45	1.70	6.18	1.87	5.79	2.00	5.26	2.05	4.76	1.99	4.20	1.84	4.94	1.73	4.13	1.62
	18	6.49	1.29	6.39	1.42	6.19	1.73	5.99	1.91	5.67	2.05	5.20	2.10	4.73	2.04	4.20	1.89	4.94	1.77	4.13	1.66
	20	6.13	1.31	6.03	1.44	5.94	1.76	5.80	1.95	5.55	2.10	5.14	2.15	4.71	2.09	4.19	1.93	4.93	1.82	4.12	1.71
	21	5.99	1.32	5.90	1.46	5.84	1.78	5.72	1.97	5.49	2.10	5.14	2.17	4.67	2.11	4.14	1.96	4.87	1.84	4.07	1.72
	22	5.85	1.35	5.76	1.48	5.73	1.80	5.64	1.99	5.43	2.14	5.05	2.19	4.62	2.13	4.09	1.98	4.81	1.86	4.02	1.74
	24	5.57	1.39	5.49	1.53	5.53	1.85	5.48	2.04	5.31	2.18	4.95	2.24	4.53	2.18	3.99	2.02	4.69	1.90	3.92	1.78
5.0	16	9.09	1.65	8.95	1.81	8.56	2.19	8.20	2.41	7.69	2.59	6.98	2.64	6.31	2.57	5.58	2.38	6.56	2.23	5.48	2.10
	18	8.61	1.67	8.48	1.83	8.22	2.23	7.95	2.47	7.53	2.65	6.90	2.71	6.28	2.63	5.57	2.44	6.55	2.29	5.48	2.15
	20	8.13	1.69	8.01	1.86	7.88	2.27	7.70	2.52	7.37	2.71	6.83	2.78	6.25	2.70	5.57	2.50	6.55	2.35	5.47	2.20
	21	7.96	1.71	7.83	1.89	7.75	2.30	7.59	2.55	7.29	2.71	6.83	2.81	6.19	2.73	5.50	2.53	6.47	2.37	5.41	2.23
	22	7.77	1.74	7.65	1.92	7.61	2.33	7.49	2.58	7.21	2.77	6.70	2.84	6.13	2.76	5.43	2.55	6.39	2.40	5.34	2.25
	24	7.40	1.80	7.29	1.98	7.34	2.39	7.27	2.63	7.05	2.82	6.58	2.89	6.01	2.81	5.29	2.61	6.22	2.45	5.20	2.30
2.0 + 2.0	16	12.52	1.93	12.33	2.12	11.64	2.23	10.94	3.37	7.28	1.96	9.17	2.51	8.83	2.31	7.66	2.00	6.56	1.75	4.98	1.46
	18	12.43	2.00	12.24	2.20	11.35	2.26	10.47	3.39	6.82	1.97	8.53	2.53	8.34	2.36	7.51	2.08	6.75	1.86	5.12	1.55
	20	12.33	2.07	12.15	2.28	11.07	2.30	10.00	3.42	6.36	1.98	8.48	2.56	8.23	2.42	7.36	2.17	6.67	2.04	5.06	1.70
	21	12.21	2.11	12.02	2.33	10.83	2.33	9.81	3.45	6.38	1.98	8.48	2.56	8.12	2.42	7.63	2.17	6.67	2.02	4.92	1.72
	22	12.06	2.16	11.88	2.38	10.58	2.36	9.62	3.47	6.41	1.99	8.37	2.57	8.12	2.42	7.51	2.17	6.49	2.06	4.92	1.72
	24	11.79	2.26	11.61	2.48	10.10	2.41	9.24	3.52	6.33	2.01	8.37	2.57	8.01	2.42	7.40	2.18	6.49	2.09	4.92	1.74
2.0 + 2.5	16	12.52	1.88	12.33	2.06	11.64	2.17	10.94	3.28	7.28	1.91	9.17	2.44	8.83	2.25	7.66	1.95	6.56	1.71	4.98	1.42
	18	12.43	1.95	12.24	2.14	11.35	2.20	10.47	3.31	6.82	1.92	8.53	2.47	8.34	2.30	7.51	2.03	6.75	1.81	5.12	1.51
	20	12.33	2.02	12.15	2.22	11.07	2.24	10.00	3.33	6.36	1.93	8.48	2.49	8.23	2.35	7.36	2.11	6.67	1.98	5.06	1.65
	21	12.21	2.05	12.02	2.27	10.83	2.27	9.81	3.35	6.38	1.93	8.48	2.50	8.12	2.35	7.63	2.11	6.67	1.96	4.92	1.67
	22	12.06	2.11	11.88	2.32	10.58	2.29	9.62	3.38	6.41	1.94	8.37	2.50	8.12	2.36	7.51	2.12	6.49	2.01	4.92	1.67
	24	11.79	2.20	11.61	2.42	10.10	2.35	9.24	3.43	6.33	1.95	8.37	2.51	8.01	2.36	7.40	2.12	6.49	2.03	4.92	1.69
2.0 + 3.5	16	12.52	1.83	12.33	2.01	11.64	2.11	10.94	3.19	7.28	1.85	9.17	2.37	8.83	2.19	7.66	1.89	6.56	1.66	4.98	1.38
	18	12.43	1.89	12.24	2.08	11.35	2.15	10.47	3.22	6.82	1.86	8.53	2.40	8.34	2.24	7.51	1.97	6.75	1.77	5.12	1.47
	20	12.33	1.96	12.15	2.16	11.07	2.18	10.00	3.24	6.36	1.87	8.48	2.43	8.23	2.29	7.36	2.05	6.67	1.93	5.06	1.61
	21	12.21	2.00	12.02	2.21	10.83	2.20	9.81	3.26	6.38	1.87	8.48	2.43	8.12	2.29	7.63	2.06	6.67	1.91	4.92	1.63
	22	12.06	2.05	11.88	2.26	10.58	2.23	9.62	3.29	6.41	1.89	8.37	2.43	8.12	2.29	7.51	2.06	6.49	1.95	4.92	1.63
	24	11.79	2.14	11.61	2.35	10.10	2.28	9.24	3.34	6.33	1.90	8.37	2.44	8.01	2.30	7.40	2.06	6.49	1.98	4.92	1.65

Combination (Capacity)	Indoor Air Temp. °C DB	Outdoor Air Temp. °C																			
		24/18.5		16/15		11/10		7/6		0/-1		-5/-6		-10/-11		-15/-16		-21/-		-26/-	
		Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power
2.0 + 5.0	16	13.02	1.77	12.82	1.95	12.11	2.05	11.37	3.09	7.57	1.80	9.54	2.30	9.18	2.12	7.97	1.83	6.83	1.61	5.18	1.34
	18	12.92	1.84	12.73	2.02	11.81	2.08	10.89	3.12	7.09	1.81	8.87	2.33	8.67	2.17	7.81	1.91	7.02	1.71	5.33	1.43
	20	12.83	1.90	12.64	2.09	11.51	2.11	10.40	3.14	6.61	1.82	8.81	2.35	8.56	2.22	7.65	1.99	6.93	1.87	5.26	1.56
	21	12.69	1.94	12.50	2.14	11.26	2.14	10.20	3.16	6.64	1.82	8.81	2.35	8.44	2.22	7.94	1.99	6.93	1.85	5.12	1.58
	22	12.54	1.99	12.36	2.19	11.01	2.16	10.00	3.19	6.67	1.83	8.70	2.36	8.44	2.22	7.81	2.00	6.75	1.89	5.12	1.58
	24	12.26	2.07	12.08	2.28	10.50	2.21	9.61	3.23	6.59	1.84	8.70	2.36	8.33	2.22	7.70	2.00	6.75	1.92	5.12	1.60
2.5 + 2.5	16	12.52	1.79	12.33	1.97	11.64	2.07	10.94	3.13	7.28	1.82	9.17	2.33	8.83	2.15	7.66	1.86	6.56	1.63	4.98	1.36
	18	12.43	1.86	12.24	2.05	11.35	2.11	10.47	3.16	6.82	1.83	8.53	2.36	8.34	2.20	7.51	1.94	6.75	1.73	5.12	1.44
	20	12.33	1.93	12.15	2.12	11.07	2.14	10.00	3.18	6.36	1.84	8.48	2.38	8.23	2.25	7.36	2.01	6.67	1.89	5.06	1.58
	21	12.21	1.96	12.02	2.17	10.83	2.16	9.81	3.20	6.38	1.84	8.48	2.38	8.12	2.25	7.63	2.02	6.67	1.88	4.92	1.60
	22	12.06	2.01	11.88	2.21	10.58	2.19	9.62	3.23	6.41	1.85	8.37	2.39	8.12	2.25	7.51	2.02	6.49	1.92	4.92	1.60
	24	11.79	2.10	11.61	2.31	10.10	2.24	9.24	3.27	6.33	1.87	8.37	2.39	8.01	2.25	7.40	2.03	6.49	1.94	4.92	1.62
2.5 + 3.5	16	12.64	1.79	12.45	1.97	11.76	2.07	11.05	3.13	7.35	1.82	9.26	2.33	8.91	2.15	7.74	1.86	6.63	1.63	5.03	1.36
	18	12.55	1.86	12.36	2.05	11.47	2.11	10.57	3.16	6.89	1.83	8.62	2.36	8.42	2.20	7.58	1.94	6.82	1.73	5.17	1.44
	20	12.46	1.93	12.27	2.12	11.18	2.14	10.10	3.18	6.42	1.84	8.56	2.38	8.31	2.25	7.43	2.01	6.73	1.89	5.11	1.58
	21	12.33	1.96	12.14	2.17	10.93	2.16	9.91	3.20	6.45	1.84	8.56	2.38	8.20	2.25	7.71	2.02	6.73	1.88	4.97	1.60
	22	12.18	2.01	12.00	2.21	10.69	2.19	9.72	3.23	6.47	1.85	8.45	2.39	8.20	2.25	7.59	2.02	6.55	1.92	4.97	1.60
	24	11.91	2.10	11.73	2.31	10.20	2.24	9.33	3.27	6.40	1.87	8.45	2.39	8.09	2.25	7.48	2.03	6.55	1.94	4.97	1.62
2.5 + 5.0	16	13.02	1.77	12.82	1.95	12.11	2.05	11.37	3.09	7.57	1.80	9.54	2.30	9.18	2.12	7.97	1.83	6.83	1.61	5.18	1.34
	18	12.92	1.84	12.73	2.02	11.81	2.08	10.89	3.12	7.09	1.81	8.87	2.33	8.67	2.17	7.81	1.91	7.02	1.71	5.33	1.43
	20	12.83	1.90	12.64	2.09	11.51	2.11	10.40	3.14	6.61	1.82	8.81	2.35	8.56	2.22	7.65	1.99	6.93	1.87	5.26	1.56
	21	12.69	1.94	12.50	2.14	11.26	2.14	10.20	3.16	6.64	1.82	8.81	2.35	8.44	2.22	7.94	1.99	6.93	1.85	5.12	1.58
	22	12.54	1.99	12.36	2.19	11.01	2.16	10.00	3.19	6.67	1.83	8.70	2.36	8.44	2.22	7.81	2.00	6.75	1.89	5.12	1.58
	24	12.26	2.07	12.08	2.28	10.50	2.21	9.61	3.23	6.59	1.84	8.70	2.36	8.33	2.22	7.70	2.00	6.75	1.92	5.12	1.60
3.5 + 3.5	16	12.77	1.79	12.58	1.97	11.87	2.07	11.16	3.13	7.42	1.82	9.35	2.33	9.00	2.15	7.82	1.86	6.70	1.63	5.08	1.36
	18	12.67	1.86	12.49	2.05	11.58	2.11	10.68	3.16	6.95	1.83	8.70	2.36	8.51	2.20	7.66	1.94	6.89	1.73	5.22	1.44
	20	12.58	1.93	12.39	2.12	11.29	2.14	10.20	3.18	6.48	1.84	8.65	2.38	8.39	2.25	7.50	2.01	6.80	1.89	5.16	1.58
	21	12.45	1.96	12.26	2.17	11.04	2.16	10.01	3.20	6.51	1.84	8.65	2.38	8.28	2.25	7.79	2.02	6.80	1.88	5.02	1.60
	22	12.30	2.01	12.12	2.21	10.79	2.19	9.81	3.23	6.54	1.85	8.53	2.39	8.28	2.25	7.66	2.02	6.62	1.92	5.02	1.60
	24	12.02	2.10	11.84	2.31	10.30	2.24	9.42	3.27	6.46	1.87	8.53	2.39	8.17	2.25	7.55	2.03	6.62	1.94	5.02	1.62
3.5 + 5.0	16	13.14	1.76	12.95	1.93	12.22	2.03	11.48	3.07	7.64	1.79	9.63	2.29	9.27	2.11	8.05	1.82	6.89	1.60	5.23	1.33
	18	13.05	1.82	12.85	2.01	11.92	2.07	10.99	3.10	7.16	1.80	8.96	2.31	8.76	2.16	7.88	1.90	7.09	1.70	5.38	1.42
	20	12.95	1.89	12.76	2.08	11.62	2.10	10.50	3.12	6.67	1.80	8.90	2.34	8.64	2.20	7.72	1.98	7.00	1.86	5.31	1.55
	21	12.82	1.93	12.62	2.13	11.37	2.12	10.30	3.14	6.70	1.80	8.90	2.34	8.53	2.21	8.02	1.98	7.00	1.84	5.17	1.57
	22	12.66	1.97	12.48	2.17	11.11	2.15	10.10	3.17	6.73	1.82	8.78	2.34	8.53	2.21	7.89	1.98	6.81	1.88	5.17	1.57
	24	12.38	2.06	12.19	2.26	10.60	2.20	9.70	3.21	6.65	1.83	8.78	2.35	8.41	2.21	7.77	1.99	6.81	1.91	5.17	1.59
5.0 + 5.0	16	13.39	1.70	13.19	1.87	12.46	1.97	11.70	2.97	7.79	1.73	9.81	2.21	9.44	2.04	8.20	1.76	7.02	1.55	5.33	1.29
	18	13.30	1.77	13.10	1.94	12.15	2.00	11.20	3.00	7.29	1.74	9.13	2.24	8.92	2.09	8.03	1.84	7.22	1.65	5.48	1.37
	20	13.20	1.83	13.00	2.01	11.84	2.03	10.70	3.02	6.80	1.75	9.07	2.26	8.81	2.13	7.87	1.91	7.13	1.80	5.41	1.50
	21	13.06	1.86	12.86	2.06	11.58	2.05	10.50	3.04	6.83	1.75	9.07	2.26	8.69	2.13	8.17	1.92	7.13	1.78	5.27	1.52
	22	12.91	1.91	12.71	2.10	11.32	2.08	10.29	3.06	6.86	1.76	8.95	2.27	8.69	2.14	8.04	1.92	6.94	1.82	5.27	1.52
	24	12.61	1.99	12.43	2.19	10.80	2.13	9.88	3.11	6.78	1.77	8.95	2.27	8.57	2.14	7.92	1.92	6.94	1.84	5.27	1.54

Combination (Capacity)	Indoor Air Temp. °C DB	Outdoor Air Temp. °C																			
		24/18.5		16/15		11/10		7/6		0/-1		-5/-6		-10/-11		-15/-16		-21/-		-26/-	
		Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power
2.0 + 2.0 + 2.0	16	10.17	1.78	11.41	1.72	11.08	3.08	11.59	3.17	10.25	3.06	8.75	2.98	7.95	2.84	7.08	2.51	6.11	2.09	4.73	1.76
	18	10.10	1.85	11.32	1.79	10.81	3.13	11.10	3.20	9.60	3.07	8.14	3.01	7.51	2.90	6.94	2.62	6.28	2.22	4.86	1.87
	20	10.02	1.92	11.24	1.85	10.54	3.18	10.60	3.22	8.95	3.09	8.09	3.04	7.41	2.97	6.80	2.72	6.20	2.43	4.80	2.04
	21	9.92	1.95	11.12	1.89	10.31	3.21	10.40	3.24	8.99	3.09	8.09	3.05	7.31	2.97	7.06	2.73	6.20	2.40	4.67	2.07
	22	9.80	2.00	10.99	1.93	10.08	3.25	10.20	3.27	9.03	3.11	7.98	3.05	7.31	2.97	6.94	2.73	6.03	2.46	4.67	2.07
	24	9.58	2.09	10.74	2.02	9.61	3.33	9.79	3.32	8.92	3.13	7.98	3.06	7.21	2.98	6.84	2.74	6.03	2.49	4.67	2.09
2.0 + 2.0 + 2.5	16	10.17	1.75	11.41	1.69	11.08	3.02	11.59	3.11	10.25	3.00	8.75	2.92	7.95	2.78	7.08	2.46	6.11	2.05	4.73	1.72
	18	10.10	1.82	11.32	1.75	10.81	3.07	11.10	3.14	9.60	3.02	8.14	2.95	7.51	2.85	6.94	2.57	6.28	2.18	4.86	1.83
	20	10.02	1.88	11.24	1.82	10.54	3.12	10.60	3.16	8.95	3.03	8.09	2.99	7.41	2.91	6.80	2.67	6.20	2.38	4.80	2.00
	21	9.92	1.92	11.12	1.86	10.31	3.15	10.40	3.18	8.99	3.03	8.09	2.99	7.31	2.91	7.06	2.68	6.20	2.36	4.67	2.03
	22	9.80	1.97	10.99	1.90	10.08	3.19	10.20	3.21	9.03	3.05	7.98	2.99	7.31	2.92	6.94	2.68	6.03	2.41	4.67	2.03
	24	9.58	2.05	10.74	1.98	9.61	3.27	9.79	3.25	8.92	3.08	7.98	3.00	7.21	2.92	6.84	2.69	6.03	2.44	4.67	2.05
2.0 + 2.0 + 3.5	16	10.17	1.71	11.41	1.65	11.08	2.95	11.59	3.03	10.25	2.93	8.75	2.85	7.95	2.71	7.08	2.40	6.11	2.00	4.73	1.68
	18	10.10	1.77	11.32	1.71	10.81	2.99	11.10	3.06	9.60	2.94	8.14	2.88	7.51	2.78	6.94	2.50	6.28	2.12	4.86	1.79
	20	10.02	1.84	11.24	1.77	10.54	3.04	10.60	3.08	8.95	2.96	8.09	2.91	7.41	2.84	6.80	2.61	6.20	2.32	4.80	1.95
	21	9.92	1.87	11.12	1.81	10.31	3.08	10.40	3.10	8.99	2.96	8.09	2.91	7.31	2.84	7.06	2.61	6.20	2.30	4.67	1.98
	22	9.80	1.92	10.99	1.85	10.08	3.11	10.20	3.13	9.03	2.98	7.98	2.92	7.31	2.84	6.94	2.61	6.03	2.35	4.67	1.98
	24	9.58	2.00	10.74	1.93	9.61	3.19	9.79	3.17	8.92	3.00	7.98	2.93	7.21	2.85	6.84	2.62	6.03	2.38	4.67	2.00
2.0 + 2.0 + 5.0	16	10.36	1.54	11.62	1.49	11.29	2.66	11.81	2.74	10.44	2.64	8.92	2.57	8.10	2.45	7.22	2.17	6.22	1.80	4.82	1.52
	18	10.29	1.60	11.54	1.54	11.02	2.70	11.31	2.76	9.78	2.65	8.30	2.60	7.65	2.51	7.07	2.26	6.40	1.92	4.95	1.61
	20	10.21	1.66	11.45	1.60	10.74	2.74	10.80	2.78	9.12	2.67	8.24	2.63	7.55	2.56	6.93	2.35	6.32	2.09	4.89	1.76
	21	10.10	1.69	11.33	1.63	10.50	2.78	10.59	2.80	9.16	2.67	8.24	2.63	7.45	2.56	7.19	2.36	6.32	2.08	4.76	1.78
	22	9.98	1.73	11.20	1.67	10.27	2.81	10.39	2.82	9.20	2.69	8.14	2.63	7.45	2.56	7.07	2.36	6.15	2.12	4.76	1.78
	24	9.76	1.80	10.95	1.74	9.79	2.88	9.98	2.86	9.09	2.71	8.14	2.64	7.35	2.57	6.97	2.37	6.15	2.15	4.76	1.81
2.0 + 2.5 + 2.5	16	10.17	1.70	11.41	1.64	11.08	2.94	11.59	3.02	10.25	2.92	8.75	2.84	7.95	2.70	7.08	2.39	6.11	1.99	4.73	1.67
	18	10.10	1.76	11.32	1.70	10.81	2.98	11.10	3.05	9.60	2.93	8.14	2.87	7.51	2.77	6.94	2.50	6.28	2.12	4.86	1.78
	20	10.02	1.83	11.24	1.77	10.54	3.03	10.60	3.07	8.95	2.95	8.09	2.90	7.41	2.83	6.80	2.60	6.20	2.31	4.80	1.95
	21	9.92	1.86	11.12	1.81	10.31	3.07	10.40	3.09	8.99	2.95	8.09	2.91	7.31	2.83	7.06	2.60	6.20	2.29	4.67	1.97
	22	9.80	1.91	10.99	1.84	10.08	3.10	10.20	3.12	9.03	2.97	7.98	2.91	7.31	2.83	6.94	2.60	6.03	2.34	4.67	1.97
	24	9.58	1.99	10.74	1.92	9.61	3.18	9.79	3.16	8.92	2.99	7.98	2.92	7.21	2.84	6.84	2.61	6.03	2.37	4.67	2.00
2.0 + 2.5 + 3.5	16	10.17	1.63	11.41	1.57	11.08	2.81	11.59	2.90	10.25	2.79	8.75	2.72	7.95	2.59	7.08	2.29	6.11	1.91	4.73	1.60
	18	10.10	1.69	11.32	1.63	10.81	2.86	11.10	2.92	9.60	2.81	8.14	2.75	7.51	2.65	6.94	2.39	6.28	2.03	4.86	1.71
	20	10.02	1.75	11.24	1.69	10.54	2.90	10.60	2.94	8.95	2.82	8.09	2.78	7.41	2.71	6.80	2.49	6.20	2.22	4.80	1.86
	21	9.92	1.78	11.12	1.73	10.31	2.94	10.40	2.96	8.99	2.82	8.09	2.78	7.31	2.71	7.06	2.49	6.20	2.20	4.67	1.89
	22	9.80	1.83	10.99	1.77	10.08	2.97	10.20	2.98	9.03	2.84	7.98	2.79	7.31	2.71	6.94	2.49	6.03	2.24	4.67	1.89
	24	9.58	1.91	10.74	1.84	9.61	3.04	9.79	3.03	8.92	2.86	7.98	2.79	7.21	2.72	6.84	2.50	6.03	2.27	4.67	1.91
2.0 + 2.5 + 5.0	16	10.36	1.54	11.62	1.49	11.29	2.66	11.81	2.74	10.44	2.64	8.92	2.57	8.10	2.45	7.22	2.17	6.22	1.80	4.82	1.52
	18	10.29	1.60	11.54	1.54	11.02	2.70	11.31	2.76	9.78	2.65	8.30	2.60	7.65	2.51	7.07	2.26	6.40	1.92	4.95	1.61
	20	10.21	1.66	11.45	1.60	10.74	2.74	10.80	2.78	9.12	2.67	8.24	2.63	7.55	2.56	6.93	2.35	6.32	2.09	4.89	1.76
	21	10.10	1.69	11.33	1.63	10.50	2.78	10.59	2.80	9.16	2.67	8.24	2.63	7.45	2.56	7.19	2.36	6.32	2.08	4.76	1.78
	22	9.98	1.73	11.20	1.67	10.27	2.81	10.39	2.82	9.20	2.69	8.14	2.63	7.45	2.56	7.07	2.36	6.15	2.12	4.76	1.78
	24	9.76	1.80	10.95	1.74	9.79	2.88	9.98	2.86	9.09	2.71	8.14	2.64	7.35	2.57	6.97	2.37	6.15	2.15	4.76	1.81

Combination (Capacity)	Indoor Air Temp. °C DB	Outdoor Air Temp. °C																			
		24/18.5		16/15		11/10		7/6		0/-1		-5/-6		-10/-11		-15/-16		-21/-		-26/-	
		Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power
2.0 + 3.5 + 3.5	16	10.27	1.64	11.52	1.58	11.19	2.83	11.70	2.92	10.35	2.81	8.83	2.74	8.02	2.61	7.15	2.31	6.16	1.92	4.77	1.61
	18	10.19	1.70	11.43	1.64	10.91	2.88	11.20	2.94	9.69	2.83	8.22	2.77	7.58	2.67	7.01	2.41	6.34	2.04	4.91	1.72
	20	10.11	1.76	11.35	1.70	10.64	2.92	10.70	2.96	9.03	2.84	8.17	2.80	7.48	2.73	6.86	2.50	6.26	2.23	4.85	1.88
	21	10.01	1.80	11.22	1.74	10.41	2.96	10.50	2.98	9.07	2.84	8.17	2.80	7.38	2.73	7.12	2.51	6.26	2.21	4.71	1.90
	22	9.89	1.84	11.10	1.78	10.17	2.99	10.29	3.00	9.11	2.86	8.06	2.80	7.38	2.73	7.01	2.51	6.09	2.26	4.71	1.90
	24	9.67	1.92	10.84	1.85	9.70	3.06	9.88	3.05	9.00	2.88	8.06	2.81	7.28	2.74	6.91	2.52	6.09	2.29	4.71	1.92
2.0 + 3.5 + 5.0	16	10.36	1.53	11.62	1.48	11.29	2.64	11.81	2.72	10.44	2.62	8.92	2.55	8.10	2.43	7.22	2.15	6.22	1.79	4.82	1.50
	18	10.29	1.59	11.54	1.53	11.02	2.68	11.31	2.74	9.78	2.64	8.30	2.58	7.65	2.49	7.07	2.24	6.40	1.90	4.95	1.60
	20	10.21	1.64	11.45	1.59	10.74	2.72	10.80	2.76	9.12	2.65	8.24	2.61	7.55	2.54	6.93	2.33	6.32	2.08	4.89	1.75
	21	10.10	1.67	11.33	1.62	10.50	2.76	10.59	2.78	9.16	2.65	8.24	2.61	7.45	2.54	7.19	2.34	6.32	2.06	4.76	1.77
	22	9.98	1.72	11.20	1.66	10.27	2.79	10.39	2.80	9.20	2.67	8.14	2.62	7.45	2.55	7.07	2.34	6.15	2.11	4.76	1.77
	24	9.76	1.79	10.95	1.73	9.79	2.86	9.98	2.84	9.09	2.69	8.14	2.62	7.35	2.55	6.97	2.35	6.15	2.13	4.76	1.79
2.5 + 2.5 + 2.5	16	10.17	1.62	11.41	1.56	11.08	2.79	11.59	2.88	10.25	2.77	8.75	2.70	7.95	2.57	7.08	2.28	6.11	1.89	4.73	1.59
	18	10.10	1.68	11.32	1.62	10.81	2.84	11.10	2.90	9.60	2.79	8.14	2.73	7.51	2.63	6.94	2.37	6.28	2.01	4.86	1.69
	20	10.02	1.74	11.24	1.68	10.54	2.88	10.60	2.92	8.95	2.80	8.09	2.76	7.41	2.69	6.80	2.47	6.20	2.20	4.80	1.85
	21	9.92	1.77	11.12	1.72	10.31	2.92	10.40	2.94	8.99	2.80	8.09	2.76	7.31	2.69	7.06	2.47	6.20	2.18	4.67	1.87
	22	9.80	1.82	10.99	1.75	10.08	2.95	10.20	2.96	9.03	2.82	7.98	2.77	7.31	2.69	6.94	2.48	6.03	2.23	4.67	1.87
	24	9.58	1.89	10.74	1.83	9.61	3.02	9.79	3.01	8.92	2.84	7.98	2.77	7.21	2.70	6.84	2.48	6.03	2.26	4.67	1.90
2.5 + 2.5 + 3.5	16	10.17	1.58	11.41	1.52	11.08	2.73	11.59	2.81	10.25	2.71	8.75	2.64	7.95	2.51	7.08	2.22	6.11	1.85	4.73	1.55
	18	10.10	1.64	11.32	1.58	10.81	2.77	11.10	2.83	9.60	2.72	8.14	2.66	7.51	2.57	6.94	2.32	6.28	1.97	4.86	1.65
	20	10.02	1.70	11.24	1.64	10.54	2.81	10.60	2.85	8.95	2.74	8.09	2.69	7.41	2.63	6.80	2.47	6.20	2.20	4.80	1.85
	21	9.92	1.73	11.12	1.68	10.31	2.85	10.40	2.87	8.99	2.74	8.09	2.70	7.31	2.63	7.06	2.41	6.20	2.13	4.67	1.83
	22	9.80	1.77	10.99	1.71	10.08	2.88	10.20	2.89	9.03	2.76	7.98	2.70	7.31	2.63	6.94	2.42	6.03	2.18	4.67	1.83
	24	9.58	1.85	10.74	1.78	9.61	2.95	9.79	2.93	8.92	2.77	7.98	2.71	7.21	2.63	6.84	2.42	6.03	2.20	4.67	1.85
2.5 + 2.5 + 5.0	16	10.36	1.54	11.62	1.49	11.29	2.66	11.81	2.74	10.44	2.64	8.92	2.57	8.10	2.45	7.22	2.17	6.22	1.80	4.82	1.52
	18	10.29	1.60	11.54	1.54	11.02	2.70	11.31	2.76	9.78	2.65	8.30	2.60	7.65	2.51	7.07	2.26	6.40	1.92	4.95	1.61
	20	10.21	1.66	11.45	1.60	10.74	2.74	10.80	2.78	9.12	2.67	8.24	2.63	7.55	2.56	6.93	2.35	6.32	2.09	4.89	1.76
	21	10.10	1.69	11.33	1.63	10.50	2.78	10.59	2.80	9.16	2.67	8.24	2.63	7.45	2.56	7.19	2.36	6.32	2.08	4.76	1.78
	22	9.98	1.73	11.20	1.67	10.27	2.81	10.39	2.82	9.20	2.69	8.14	2.63	7.45	2.56	7.07	2.36	6.15	2.12	4.76	1.78
	24	9.76	1.80	10.95	1.74	9.79	2.88	9.98	2.86	9.09	2.71	8.14	2.64	7.35	2.57	6.97	2.37	6.15	2.15	4.76	1.81
2.5 + 3.5 + 3.5	16	10.27	1.59	11.52	1.53	11.19	2.75	11.70	2.83	10.35	2.73	8.83	2.65	8.02	2.53	7.15	2.24	6.16	1.86	4.77	1.56
	18	10.19	1.65	11.43	1.59	10.91	2.79	11.20	2.85	9.69	2.74	8.22	2.68	7.58	2.59	7.01	2.33	6.34	1.98	4.91	1.67
	20	10.11	1.71	11.35	1.65	10.64	2.83	10.70	2.87	9.03	2.75	8.17	2.71	7.48	2.64	6.86	2.43	6.26	2.16	4.85	1.82
	21	10.01	1.74	11.22	1.69	10.41	2.87	10.50	2.89	9.07	2.75	8.17	2.72	7.38	2.65	7.12	2.43	6.26	2.14	4.71	1.84
	22	9.89	1.79	11.10	1.72	10.17	2.90	10.29	2.91	9.11	2.77	8.06	2.72	7.38	2.65	7.01	2.43	6.09	2.19	4.71	1.84
	24	9.67	1.86	10.84	1.80	9.70	2.97	9.88	2.95	9.00	2.79	8.06	2.73	7.28	2.65	6.91	2.44	6.09	2.22	4.71	1.87
2.5 + 3.5 + 5.0	16	10.36	1.53	11.62	1.48	11.29	2.64	11.81	2.72	10.44	2.62	8.92	2.55	8.10	2.43	7.22	2.15	6.22	1.79	4.82	1.50
	18	10.29	1.59	11.54	1.53	11.02	2.68	11.31	2.74	9.78	2.64	8.30	2.58	7.65	2.49	7.07	2.24	6.40	1.90	4.95	1.60
	20	10.21	1.64	11.45	1.59	10.74	2.72	10.80	2.76	9.12	2.65	8.24	2.61	7.55	2.54	6.93	2.33	6.32	2.08	4.89	1.75
	21	10.10	1.67	11.33	1.62	10.50	2.76	10.59	2.78	9.16	2.65	8.24	2.61	7.45	2.54	7.19	2.34	6.32	2.06	4.76	1.77
	22	9.98	1.72	11.20	1.66	10.27	2.79	10.39	2.80	9.20	2.67	8.14	2.62	7.45	2.55	7.07	2.34	6.15	2.11	4.76	1.77
	24	9.76	1.79	10.95	1.73	9.79	2.86	9.98	2.84	9.09	2.69	8.14	2.62	7.35	2.55	6.97	2.35	6.15	2.13	4.76	1.79

Combination (Capacity)	Indoor Air Temp. °C DB	Outdoor Air Temp. °C																			
		24/18.5		16/15		11/10		7/6		0/-1		-5/-6		-10/-11		-15/-16		-21/-		-26/-	
		Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power	Total Q	Input Power
3.5 + 3.5 + 3.5	16	10.27	1.58	11.52	1.52	11.19	2.73	11.70	2.81	10.35	2.71	8.83	2.64	8.02	2.51	7.15	2.22	6.16	1.85	4.77	1.55
	18	10.19	1.64	11.43	1.58	10.91	2.77	11.20	2.83	9.69	2.72	8.22	2.66	7.58	2.57	7.01	2.32	6.34	1.97	4.91	1.65
	20	10.11	1.70	11.35	1.64	10.64	2.81	10.70	2.85	9.03	2.74	8.17	2.69	7.48	2.63	6.86	2.41	6.26	2.15	4.85	1.81
	21	10.01	1.73	11.22	1.68	10.41	2.85	10.50	2.87	9.07	2.74	8.17	2.70	7.38	2.63	7.12	2.41	6.26	2.13	4.71	1.83
	22	9.89	1.77	11.10	1.71	10.17	2.88	10.29	2.89	9.11	2.76	8.06	2.70	7.38	2.63	7.01	2.42	6.09	2.18	4.71	1.83
	24	9.67	1.85	10.84	1.78	9.70	2.95	9.88	2.93	9.00	2.77	8.06	2.71	7.28	2.63	6.91	2.42	6.09	2.20	4.71	1.85

Q = Capacity (kW)
Input Power = Input Power (kW)

18. Service Data

Service Data provided are based on the air conditioner running under rated frequency during forced cooling / forced heating mode.

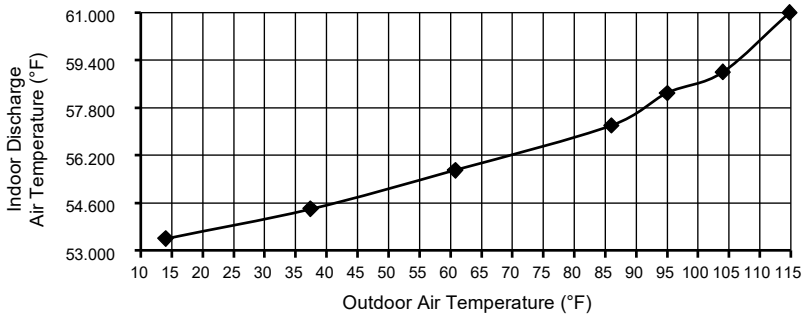
18.1 Operation Characteristics (CU-2Z50ABEC)

18.1.1 One Indoor Unit Operation

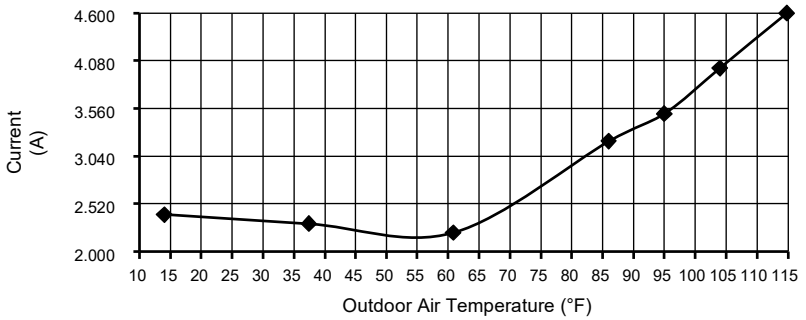
- Cooling Characteristic

[Condition] Room temperature: 27°C (DBT), 19°C (WBT)
Operation condition: High fan speed
Piping length: 5 m
Voltage: 230V, 50Hz

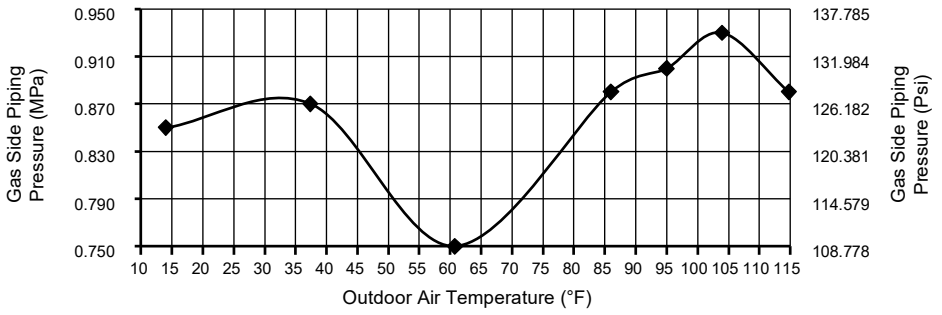
A) Indoor unit capacity: Cooling (2.0), CS-Z20ZKEW, CS-NZ20ZKE



Outdoor Air Temperature (°F)	Indoor Discharge Air Temperature (°F)
14	53.4
37.4	54.4
60.8	55.7
86	57.2
95	58.3
104	59.0
114.8	61.0



Outdoor Air Temperature (°F)	Current (A)
	230V
14	2.4
37.4	2.3
60.8	2.2
86	3.2
95	3.5
104	4.0
114.8	4.6

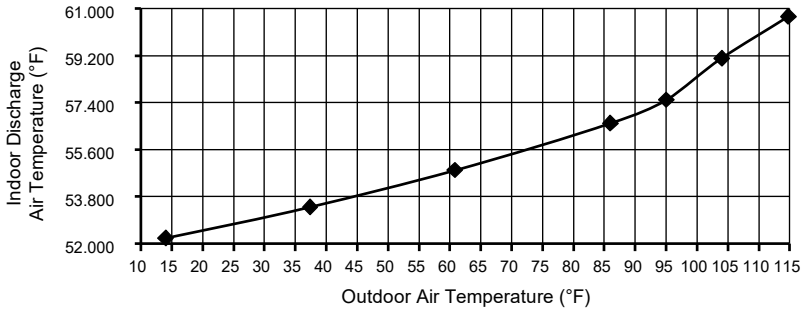


Outdoor Air Temperature (°F)	Gas Side Piping Pressure	
	(MPa)	(Psi)
14	0.85	123.282
37.4	0.87	126.182
60.8	0.75	108.778
86	0.88	127.633
95	0.90	130.533
104	0.93	134.885
114.8	0.88	127.633

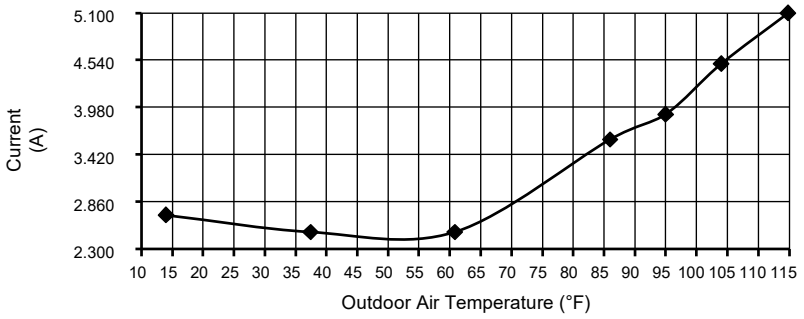
- Cooling Characteristic

[Condition] Room temperature: 27°C (DBT), 19°C (WBT)
Operation condition: High fan speed
Piping length: 5 m
Voltage: 230V, 50Hz

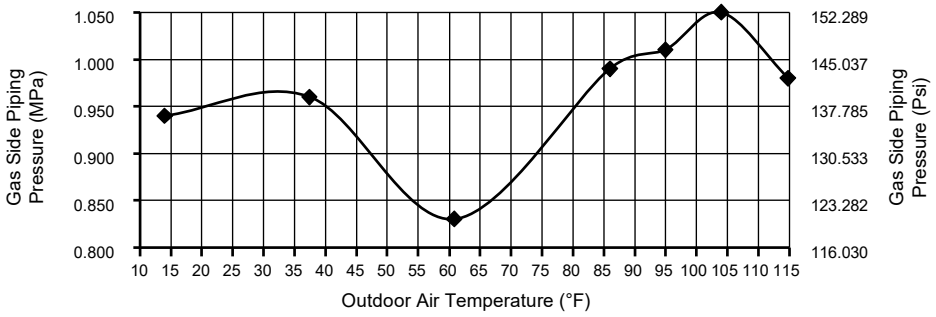
B) Indoor unit capacity: Cooling (2.5), CS-Z25ZKEW, CS-HZ25ZKE, CS-NZ25YKE



Outdoor Air Temperature (°F)	Indoor Discharge Air Temperature (°F)
14	52.2
37.4	53.4
60.8	54.8
86	56.6
95	57.5
104	59.1
114.8	60.7



Outdoor Air Temperature (°F)	Current (A)
	230V
14	2.7
37.4	2.5
60.8	2.5
86	3.6
95	3.9
104	4.5
114.8	5.1

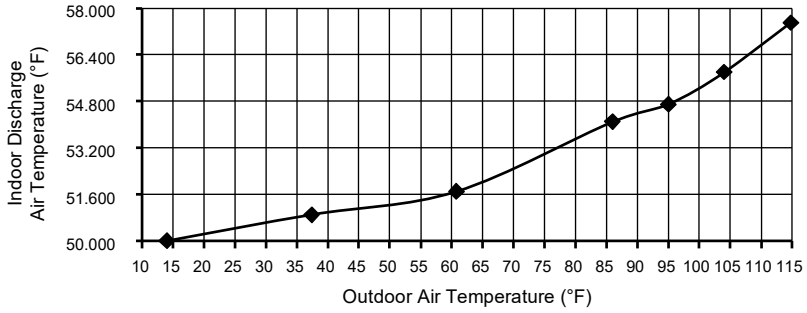


Outdoor Air Temperature (°F)	Gas Side Piping Pressure	
	(MPa)	(Psi)
14	0.94	136.335
37.4	0.96	139.236
60.8	0.83	120.381
86	0.99	143.587
95	1.01	146.488
104	1.05	152.289
114.8	0.98	142.136

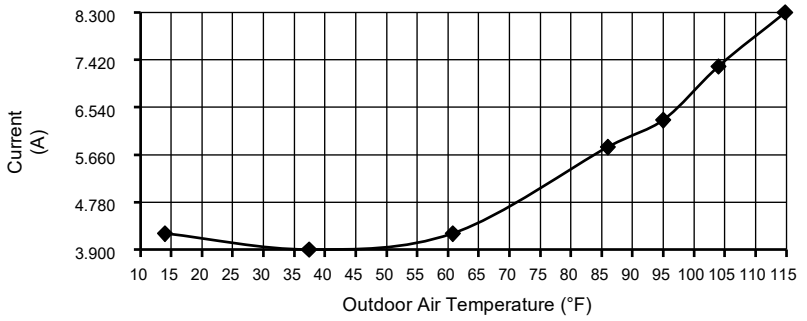
- Cooling Characteristic

[Condition] Room temperature: 27°C (DBT), 19°C (WBT)
Operation condition: High fan speed
Piping length: 5 m
Voltage: 230V, 50Hz

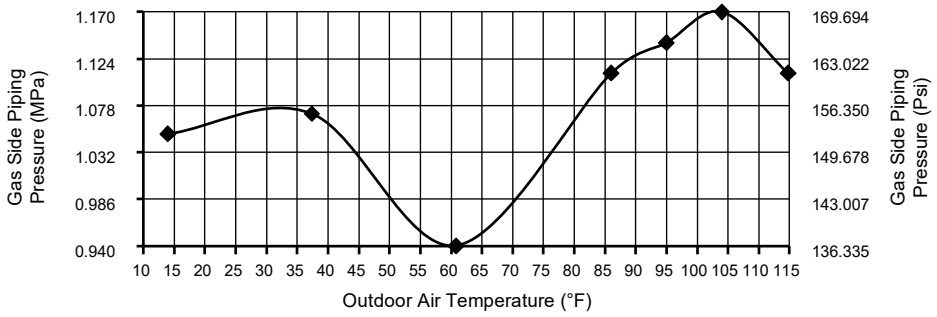
C) Indoor unit capacity: Cooling (3.5), CS-Z35ZKEW, CS-HZ35ZKE, CS-NZ35YKE



Outdoor Air Temperature (°F)	Indoor Discharge Air Temperature (°F)
14	50.0
37.4	50.9
60.8	51.7
86	54.1
95	54.7
104	55.8
114.8	57.5



Outdoor Air Temperature (°F)	Current (A)
	230V
14	4.2
37.4	3.9
60.8	4.2
86	5.8
95	6.3
104	7.3
114.8	8.3

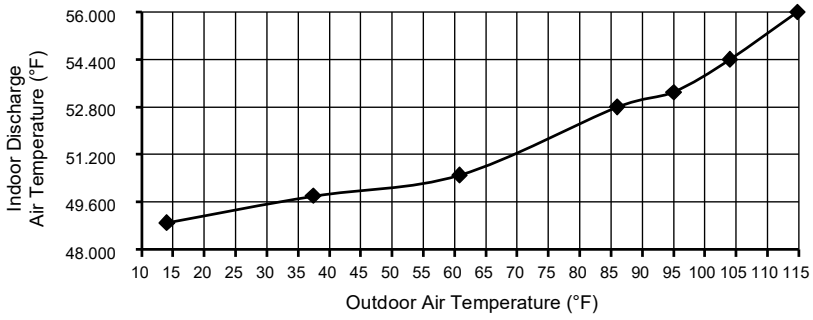


Outdoor Air Temperature (°F)	Gas Side Piping Pressure	
	(MPa)	(Psi)
14	1.05	152.289
37.4	1.07	155.190
60.8	0.94	136.335
86	1.11	160.991
95	1.14	165.343
104	1.17	169.694
114.8	1.11	160.991

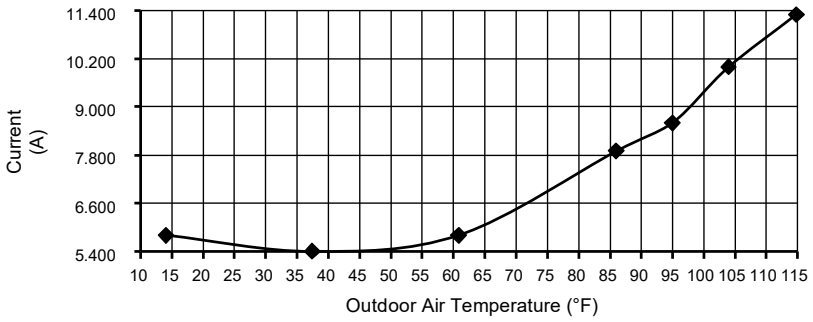
- Cooling Characteristic

[Condition] Room temperature: 27°C (DBT), 19°C (WBT)
Operation condition: High fan speed
Piping length: 5 m
Voltage: 230V, 50Hz

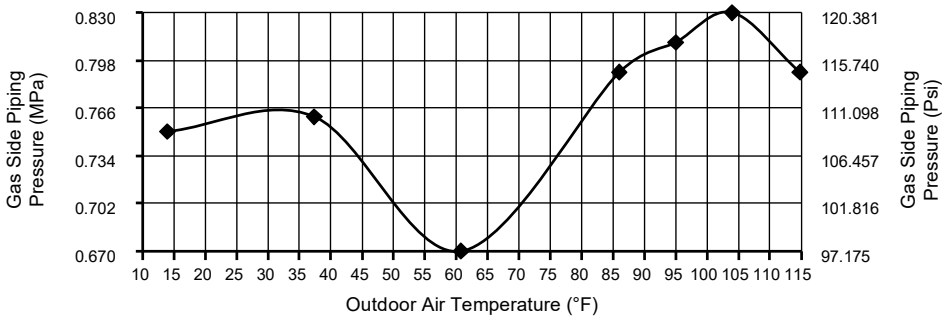
D) Indoor unit capacity: Cooling (5.0), CS-Z50ZKEW, CS-NZ50YKE



Outdoor Air Temperature (°F)	Indoor Discharge Air Temperature (°F)
14	48.9
37.4	49.8
60.8	50.5
86	52.8
95	53.3
104	54.4
114.8	56.0



Outdoor Air Temperature (°F)	Current (A)
	230V
14	5.8
37.4	5.4
60.8	5.8
86	7.9
95	8.6
104	10.0
114.8	11.3

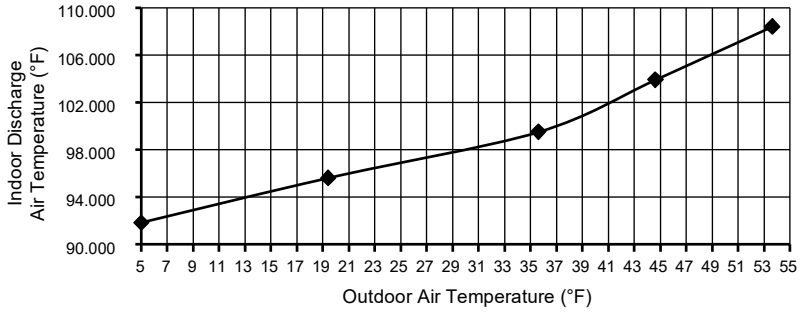


Outdoor Air Temperature (°F)	Gas Side Piping Pressure	
	(MPa)	(Psi)
14	0.75	108.778
37.4	0.76	110.228
60.8	0.67	97.175
86	0.79	114.579
95	0.81	117.480
104	0.83	120.381
114.8	0.79	114.579

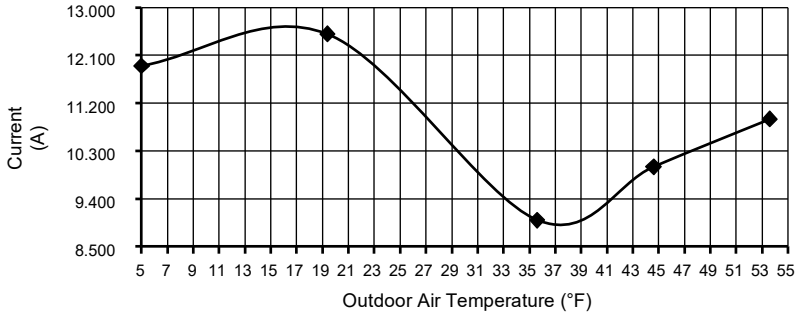
- Heating Characteristic

[Condition] Room temperature: 20°C (DBT), 12°C (WBT)
Operation condition: High fan speed
Piping length: 5 m
Voltage: 230V, 50Hz

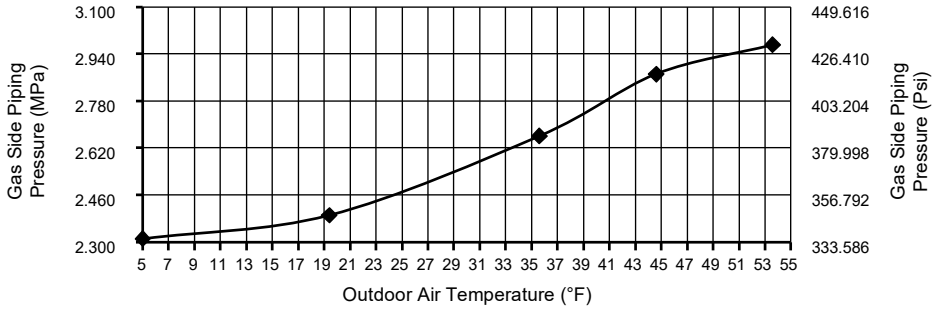
A) Indoor unit capacity: Heating (2.0), CS-Z20ZKEW, CS-NZ20ZKE



Outdoor Air Temperature (°F)	Indoor Discharge Air Temperature (°F)
5	91.8
19.4	95.6
35.6	99.5
44.6	103.9
53.6	108.4



Outdoor Air Temperature (°F)	Current (A)
	230V
5	11.9
19.4	12.5
35.6	9.0
44.6	10.0
53.6	10.9

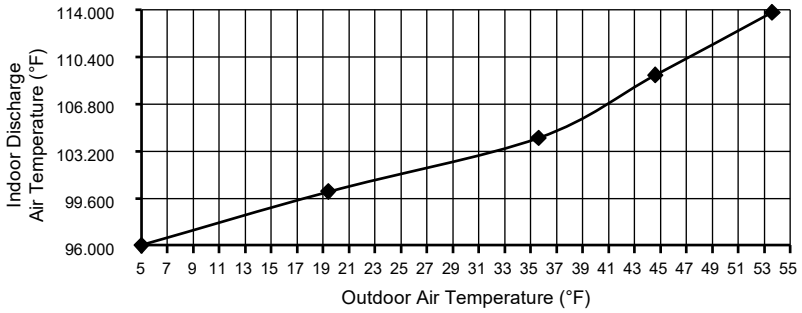


Outdoor Air Temperature (°F)	Gas Side Piping Pressure	
	(MPa)	(Psi)
5	2.31	335.037
19.4	2.39	346.640
35.6	2.66	385.800
44.6	2.87	416.258
53.6	2.97	430.762

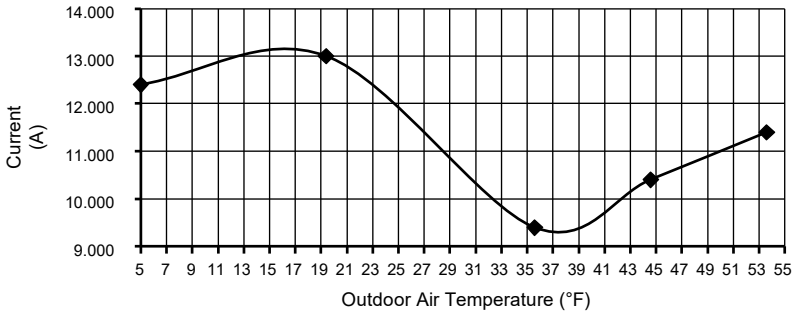
- Heating Characteristic

[Condition] Room temperature: 20°C (DBT), 12°C (WBT)
Operation condition: High fan speed
Piping length: 5 m
Voltage: 230V, 50Hz

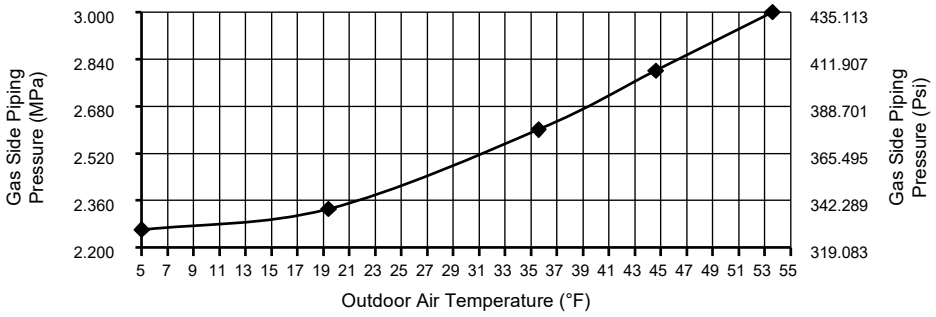
B) Indoor unit capacity: Heating (2.5), CS-Z25ZKEW, CS-HZ25ZKE, CS-NZ25YKE



Outdoor Air Temperature (°F)	Indoor Discharge Air Temperature (°F)
5	96.0
19.4	100.1
35.6	104.2
44.6	109.0
53.6	113.8



Outdoor Air Temperature (°F)	Current (A)
	230V
5	12.4
19.4	13.0
35.6	9.4
44.6	10.4
53.6	11.4

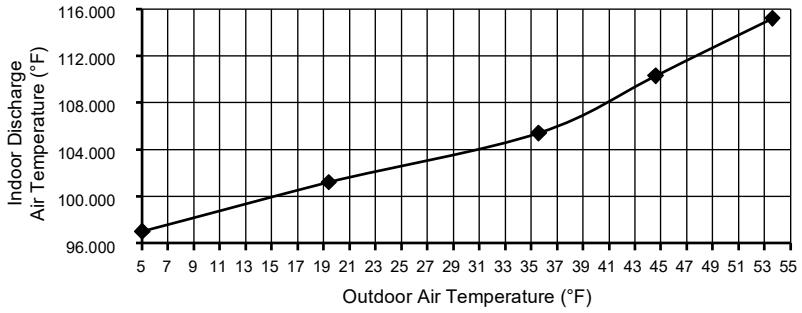


Outdoor Air Temperature (°F)	Gas Side Piping Pressure	
	(MPa)	(Psi)
5	2.26	327.785
19.4	2.33	337.937
35.6	2.60	377.098
44.6	2.80	406.105
53.6	3.00	435.113

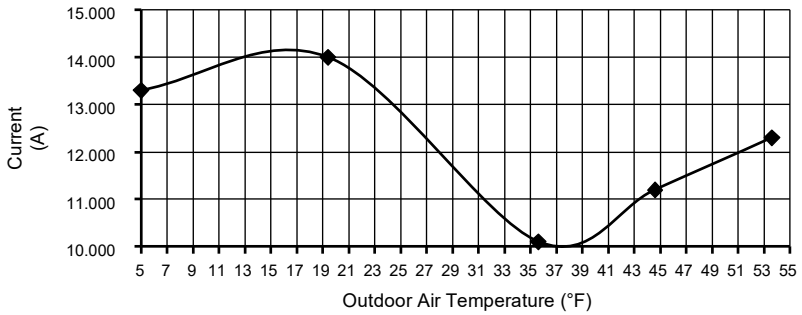
- Heating Characteristic

[Condition] Room temperature: 20°C (DBT), 12°C (WBT)
Operation condition: High fan speed
Piping length: 5 m
Voltage: 230V, 50Hz

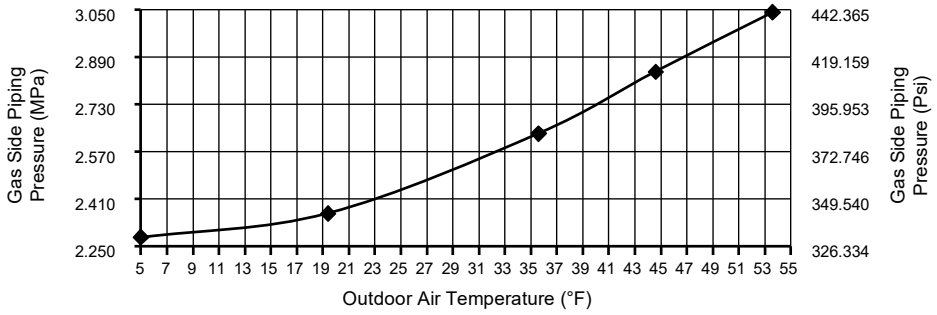
C) Indoor unit capacity: Heating (3.5), CS-Z35ZKEW, CS-HZ35ZKE, CS-NZ35YKE



Outdoor Air Temperature (°F)	Indoor Discharge Air Temperature (°F)
5	97.0
19.4	101.2
35.6	105.4
44.6	110.3
53.6	115.2



Outdoor Air Temperature (°F)	Current (A)
	230V
5	13.3
19.4	14.0
35.6	10.1
44.6	11.2
53.6	12.3

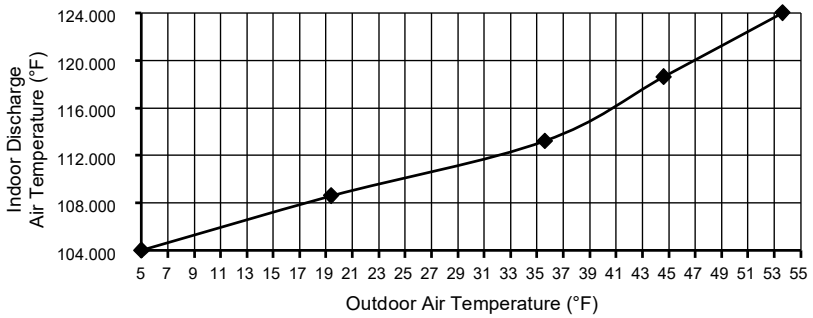


Outdoor Air Temperature (°F)	Gas Side Piping Pressure	
	(MPa)	(Psi)
5	2.28	330.686
19.4	2.36	342.289
35.6	2.63	381.449
44.6	2.84	411.907
53.6	3.04	440.914

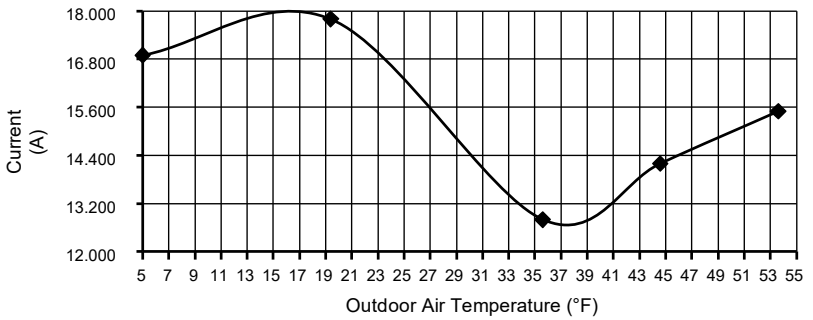
- Heating Characteristic

[Condition] Room temperature: 20°C (DBT), 12°C (WBT)
Operation condition: High fan speed
Piping length: 5 m
Voltage: 230V, 50Hz

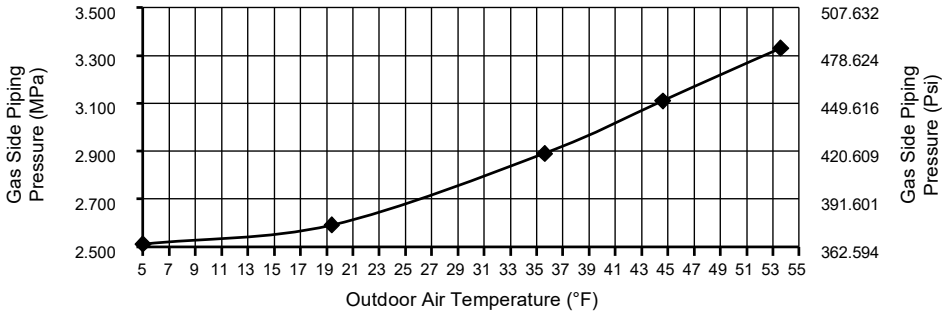
D) Indoor unit capacity: Heating (5.0), CS-Z50ZKEW, CS-NZ50YKE



Outdoor Air Temperature (°F)	Indoor Discharge Air Temperature (°F)
5	104.0
19.4	108.6
35.6	113.2
44.6	118.6
53.6	124.0



Outdoor Air Temperature (°F)	Current (A)
	230V
5	16.9
19.4	17.8
35.6	12.8
44.6	14.2
53.6	15.5



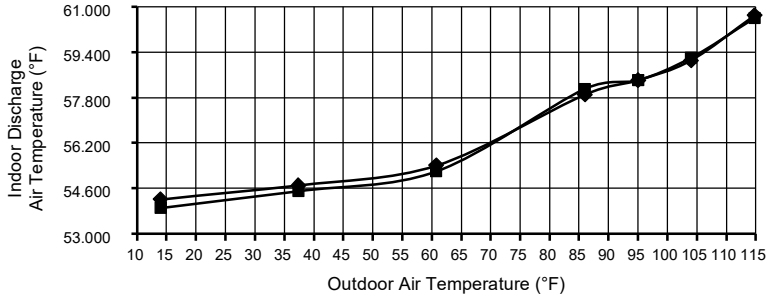
Outdoor Air Temperature (°F)	Gas Side Piping Pressure	
	(MPa)	(Psi)
5	2.51	364.044
19.4	2.59	375.647
35.6	2.89	419.159
44.6	3.11	451.067
53.6	3.33	482.975

18.1.2 Two Indoor Unit Operation

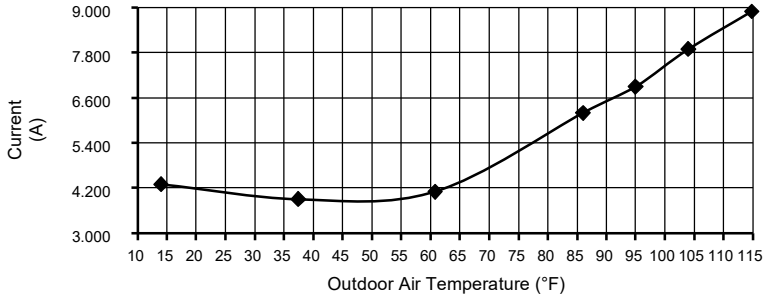
- Cooling Characteristic

[Condition] Room temperature: 27°C (DBT), 19°C (WBT)
Operation condition: High fan speed
Piping length: 5 m
Voltage: 230V, 50Hz

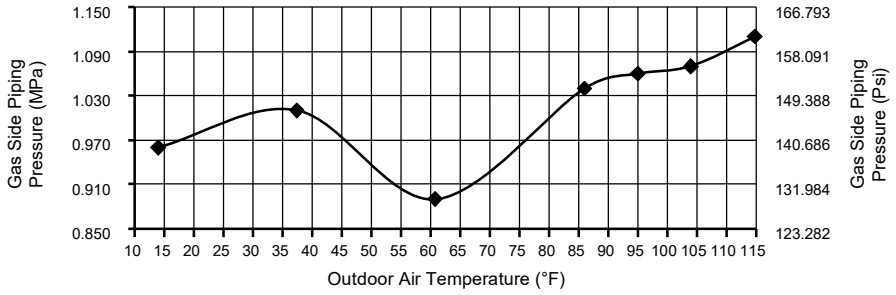
A) Indoor unit capacity: Cooling (2.5 + 2.5), (CS-Z25ZKEW x2, CS-HZ25ZKE x2, CS-NZ25YKE x2)



Outdoor Air Temperature (°F)	Indoor Discharge Air Temperature (°F)	
	XZ9AKUAW	XZ9AKUAW
14	54.2	53.9
37.4	54.7	54.5
60.8	55.4	55.2
86	57.9	58.1
95	58.4	58.4
104	59.1	59.2
114.8	60.7	60.6



Outdoor Air Temperature (°F)	Current (A)
	230V
14	4.3
37.4	3.9
60.8	4.1
86	6.2
95	6.9
104	7.9
114.8	8.9

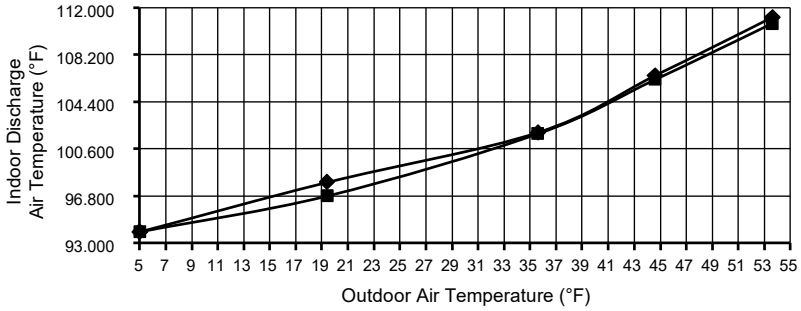


Outdoor Air Temperature (°F)	Gas Side Piping Pressure	
	(MPa)	(Psi)
14	0.96	139.236
37.4	1.01	146.488
60.8	0.89	129.083
86	1.04	150.839
95	1.06	153.740
104	1.07	155.190
114.8	1.11	160.991

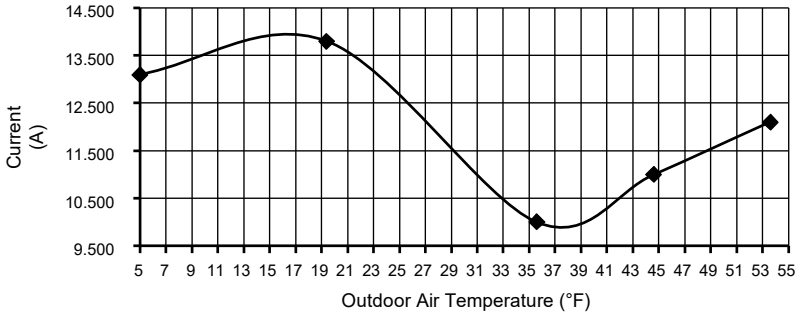
- Heating Characteristic

[Condition] Room temperature: 20°C (DBT), 12°C (WBT)
Operation condition: High fan speed
Piping length: 5 m
Voltage: 230V, 50Hz

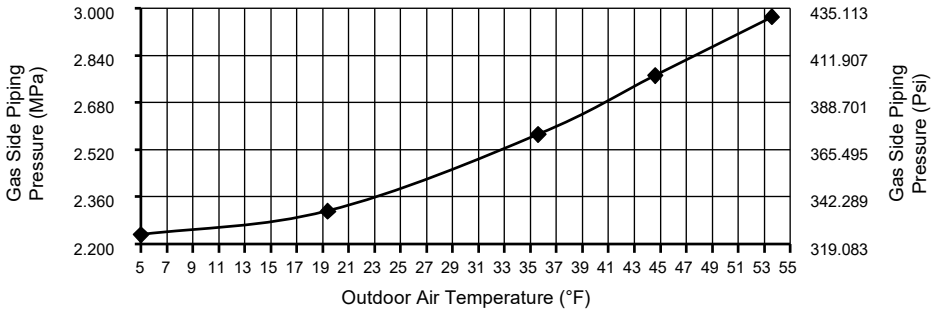
A) Indoor unit capacity: Heating (2.5 + 2.5), (CS-Z25ZKEW x2, CS-HZ25ZKE x2, CS-NZ25YKE x2)



Outdoor Air Temperature (°F)	Indoor Discharge Air Temperature (°F)	
	XZ9AKUAW	XZ9AKUAW
5	93.9	93.9
19.4	97.9	96.8
35.6	101.9	101.8
44.6	106.5	106.2
53.6	111.2	110.7



Outdoor Air Temperature (°F)	Current (A)
	230V
5	13.1
19.4	13.8
35.6	10.0
44.6	11.0
53.6	12.1



Outdoor Air Temperature (°F)	Gas Side Piping Pressure	
	(MPa)	(Psi)
5	2.23	323.434
19.4	2.31	335.037
35.6	2.57	372.746
44.6	2.77	401.754
53.6	2.97	430.762

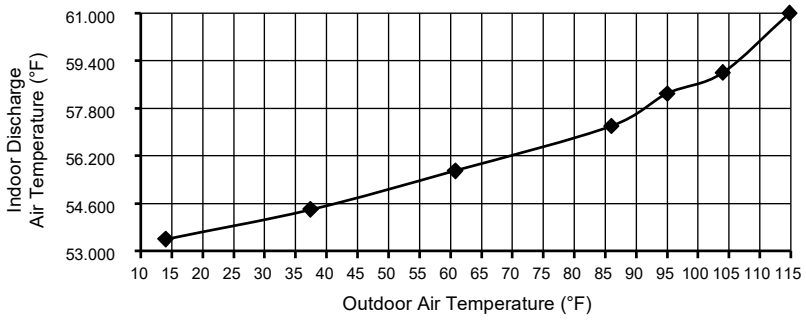
18.2 Operation Characteristics (CU-3Z75ABEC)

18.2.1 One Indoor Unit Operation

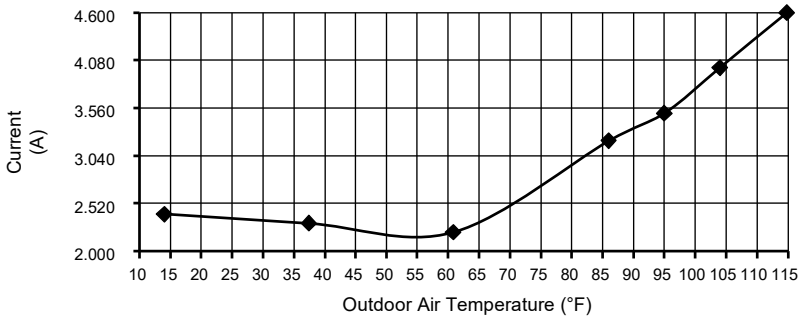
- Cooling Characteristic

[Condition] Room temperature: 27°C (DBT), 19°C (WBT)
Operation condition: High fan speed
Piping length: 5 m
Voltage: 230V, 50Hz

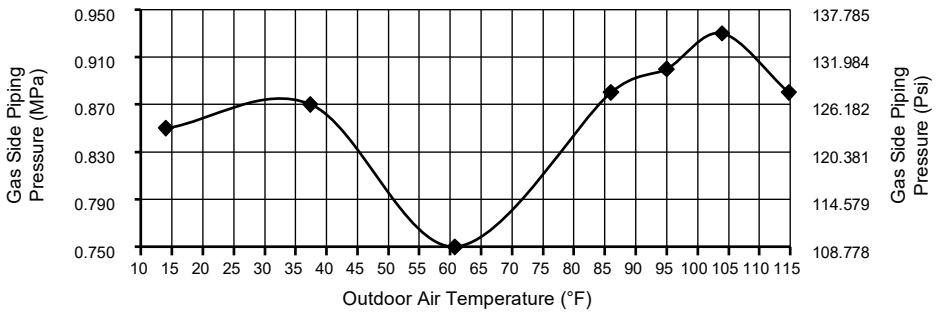
A) Indoor unit capacity: Cooling (2.0), CS-Z20ZKEW, CS-NZ20ZKE



Outdoor Air Temperature (°F)	Indoor Discharge Air Temperature (°F)
14	53.4
37.4	54.4
60.8	55.7
86	57.2
95	58.3
104	59.0
114.8	61.0



Outdoor Air Temperature (°F)	Current (A)
	230V
14	2.4
37.4	2.3
60.8	2.2
86	3.2
95	3.5
104	4.0
114.8	4.6

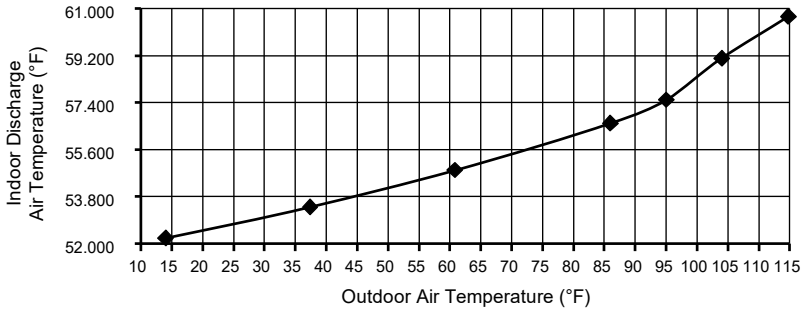


Outdoor Air Temperature (°F)	Gas Side Piping Pressure	
	(MPa)	(Psi)
14	0.85	123.282
37.4	0.87	126.182
60.8	0.75	108.778
86	0.88	127.633
95	0.90	130.533
104	0.93	134.885
114.8	0.88	127.633

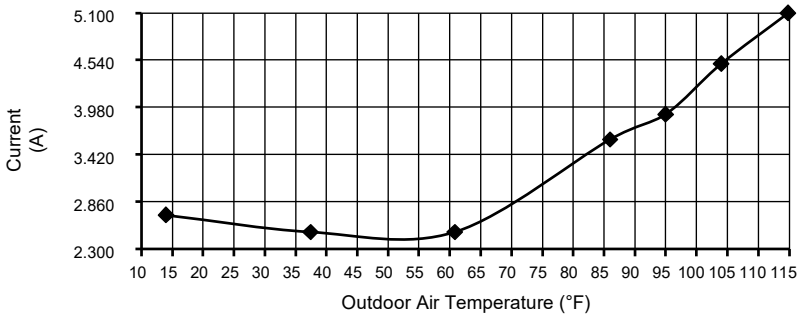
- Cooling Characteristic

[Condition] Room temperature: 27°C (DBT), 19°C (WBT)
Operation condition: High fan speed
Piping length: 5 m
Voltage: 230V, 50Hz

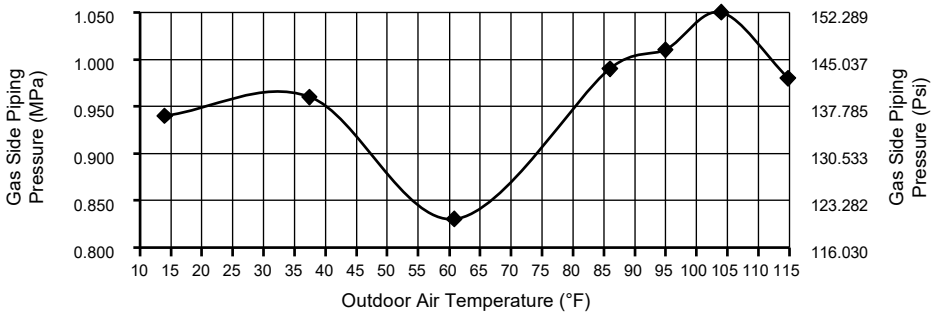
B) Indoor unit capacity: Cooling (2.5), CS-Z25ZKEW, CS-HZ25ZKE, CS-NZ25YKE



Outdoor Air Temperature (°F)	Indoor Discharge Air Temperature (°F)
14	52.2
37.4	53.4
60.8	54.8
86	56.6
95	57.5
104	59.1
114.8	60.7



Outdoor Air Temperature (°F)	Current (A)
	230V
14	2.7
37.4	2.5
60.8	2.5
86	3.6
95	3.9
104	4.5
114.8	5.1

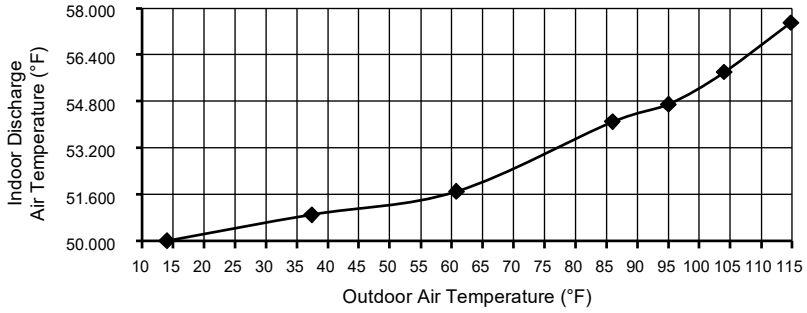


Outdoor Air Temperature (°F)	Gas Side Piping Pressure	
	(MPa)	(Psi)
14	0.94	136.335
37.4	0.96	139.236
60.8	0.83	120.381
86	0.99	143.587
95	1.01	146.488
104	1.05	152.289
114.8	0.98	142.136

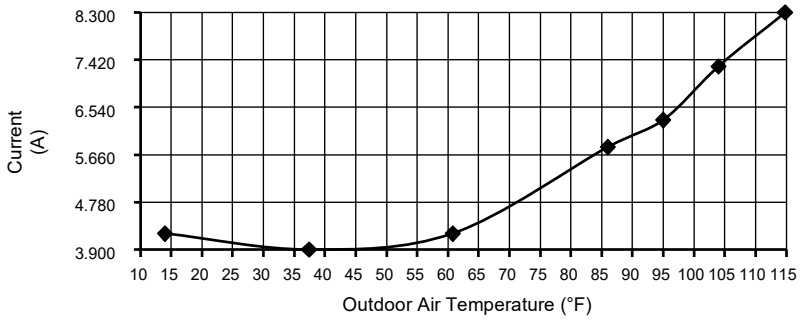
- Cooling Characteristic

[Condition] Room temperature: 27°C (DBT), 19°C (WBT)
Operation condition: High fan speed
Piping length: 5 m
Voltage: 230V, 50Hz

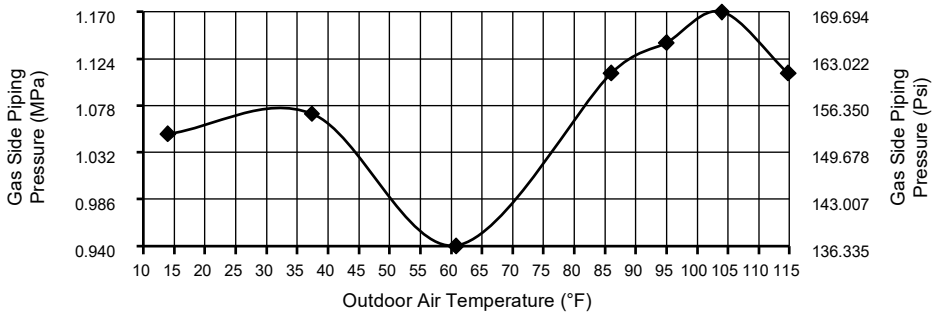
C) Indoor unit capacity: Cooling (3.5), CS-Z35ZKEW, CS-HZ35ZKE, CS-NZ35YKE



Outdoor Air Temperature (°F)	Indoor Discharge Air Temperature (°F)
14	50.0
37.4	50.9
60.8	51.7
86	54.1
95	54.7
104	55.8
114.8	57.5



Outdoor Air Temperature (°F)	Current (A)
	230V
14	4.2
37.4	3.9
60.8	4.2
86	5.8
95	6.3
104	7.3
114.8	8.3

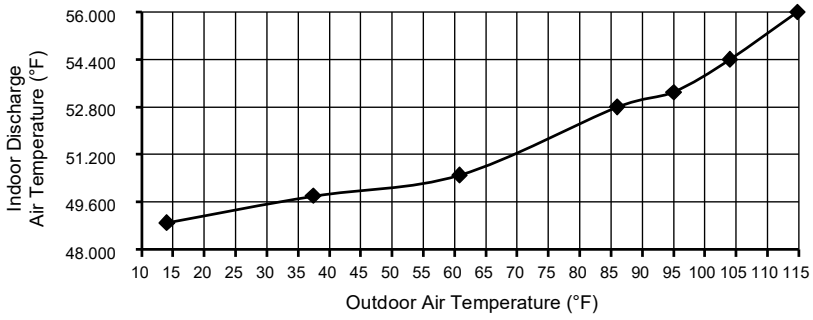


Outdoor Air Temperature (°F)	Gas Side Piping Pressure	
	(MPa)	(Psi)
14	1.05	152.289
37.4	1.07	155.190
60.8	0.94	136.335
86	1.11	160.991
95	1.14	165.343
104	1.17	169.694
114.8	1.11	160.991

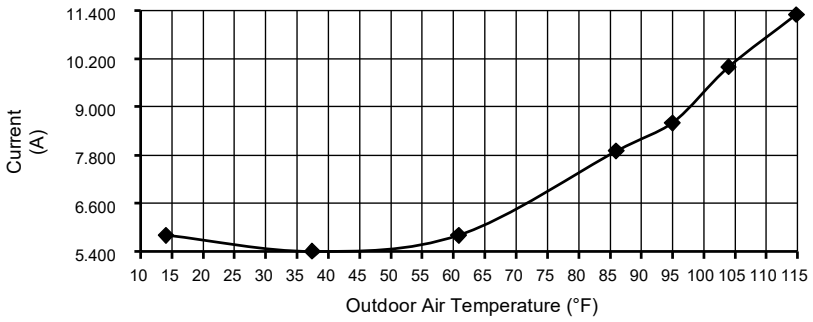
- Cooling Characteristic

[Condition] Room temperature: 27°C (DBT), 19°C (WBT)
Operation condition: High fan speed
Piping length: 5 m
Voltage: 230V, 50Hz

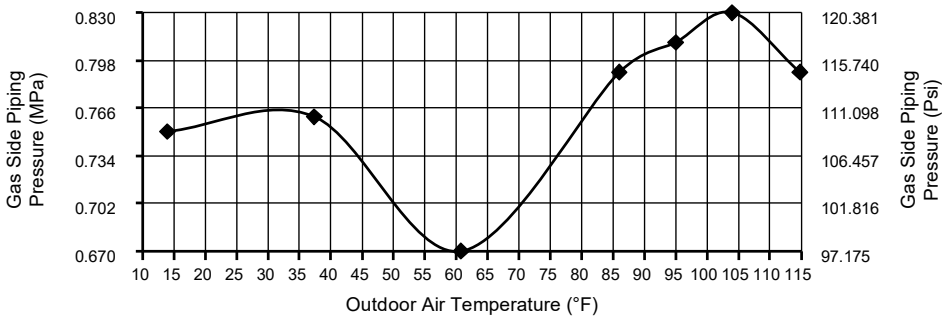
D) Indoor unit capacity: Cooling (5.0), CS-Z50ZKEW, CS-NZ50YKE



Outdoor Air Temperature (°F)	Indoor Discharge Air Temperature (°F)
14	48.9
37.4	49.8
60.8	50.5
86	52.8
95	53.3
104	54.4
114.8	56.0



Outdoor Air Temperature (°F)	Current (A)
	230V
14	5.8
37.4	5.4
60.8	5.8
86	7.9
95	8.6
104	10.0
114.8	11.3

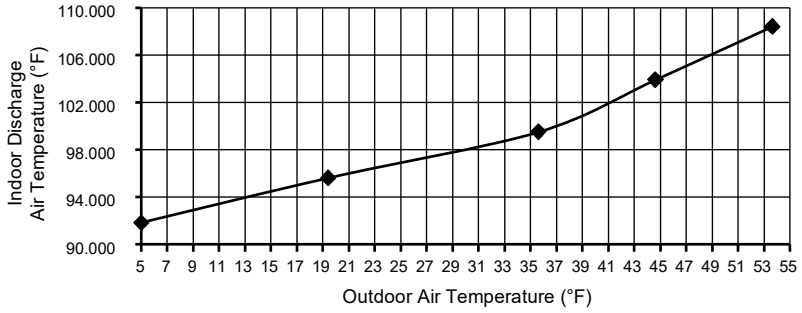


Outdoor Air Temperature (°F)	Gas Side Piping Pressure	
	(MPa)	(Psi)
14	0.75	108.778
37.4	0.76	110.228
60.8	0.67	97.175
86	0.79	114.579
95	0.81	117.480
104	0.83	120.381
114.8	0.79	114.579

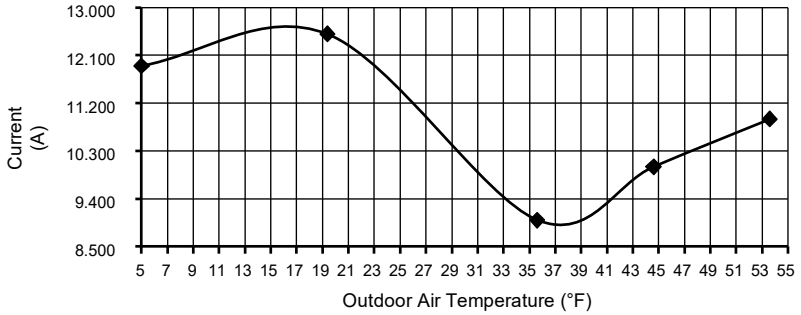
- Heating Characteristic

[Condition] Room temperature: 20°C (DBT), 12°C (WBT)
Operation condition: High fan speed
Piping length: 5 m
Voltage: 230V, 50Hz

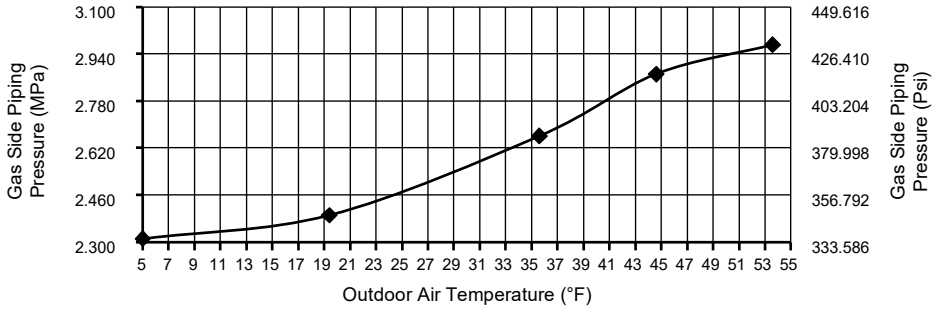
A) Indoor unit capacity: Heating (2.0), CS-Z20ZKEW, CS-NZ20ZKE



Outdoor Air Temperature (°F)	Indoor Discharge Air Temperature (°F)
5	91.8
19.4	95.6
35.6	99.5
44.6	103.9
53.6	108.4



Outdoor Air Temperature (°F)	Current (A)
	230V
5	11.9
19.4	12.5
35.6	9.0
44.6	10.0
53.6	10.9

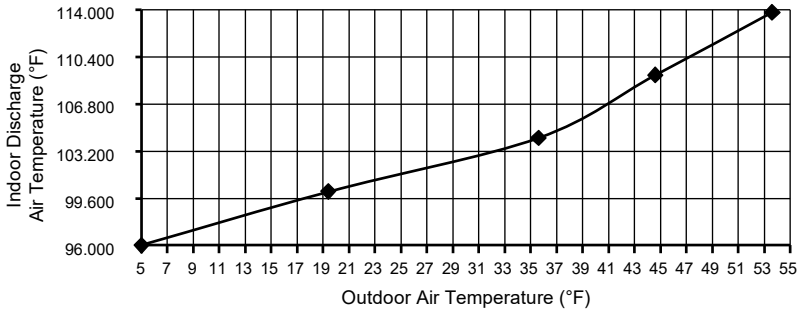


Outdoor Air Temperature (°F)	Gas Side Piping Pressure	
	(MPa)	(Psi)
5	2.31	335.037
19.4	2.39	346.640
35.6	2.66	385.800
44.6	2.87	416.258
53.6	2.97	430.762

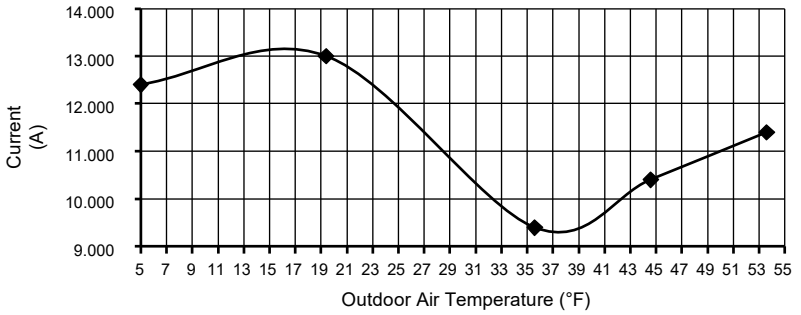
- Heating Characteristic

[Condition] Room temperature: 20°C (DBT), 12°C (WBT)
Operation condition: High fan speed
Piping length: 5 m
Voltage: 230V, 50Hz

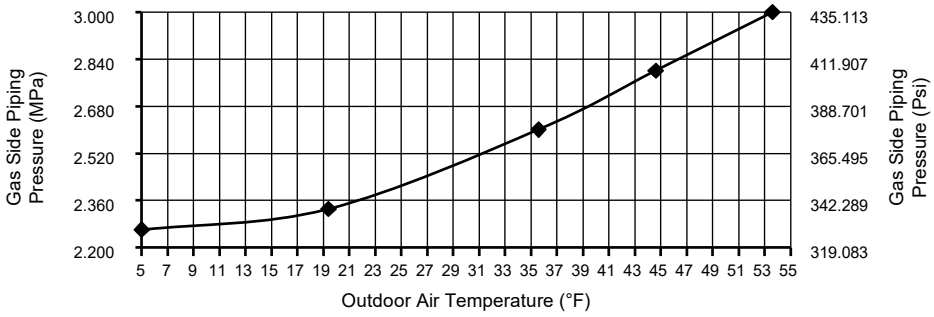
B) Indoor unit capacity: Heating (2.5), CS-Z25ZKEW, CS-HZ25ZKE, CS-NZ25YKE



Outdoor Air Temperature (°F)	Indoor Discharge Air Temperature (°F)
5	96.0
19.4	100.1
35.6	104.2
44.6	109.0
53.6	113.8



Outdoor Air Temperature (°F)	Current (A)
	230V
5	12.4
19.4	13.0
35.6	9.4
44.6	10.4
53.6	11.4

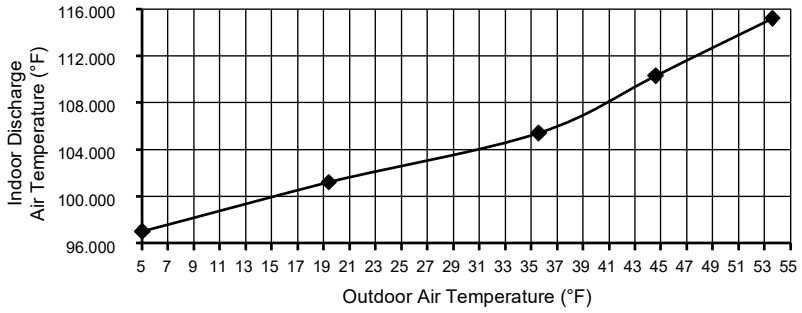


Outdoor Air Temperature (°F)	Gas Side Piping Pressure	
	(MPa)	(Psi)
5	2.26	327.785
19.4	2.33	337.937
35.6	2.60	377.098
44.6	2.80	406.105
53.6	3.00	435.113

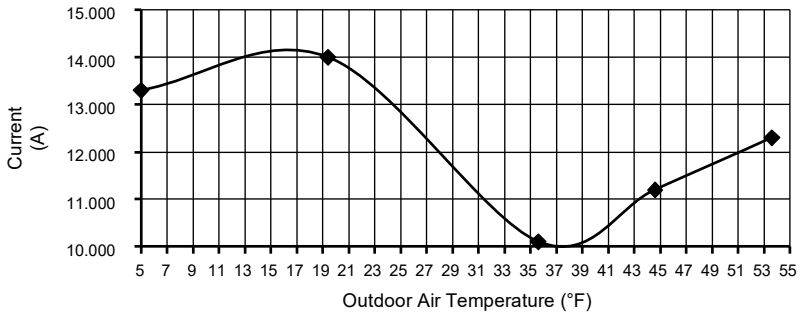
- Heating Characteristic

[Condition] Room temperature: 20°C (DBT), 12°C (WBT)
Operation condition: High fan speed
Piping length: 5 m
Voltage: 230V, 50Hz

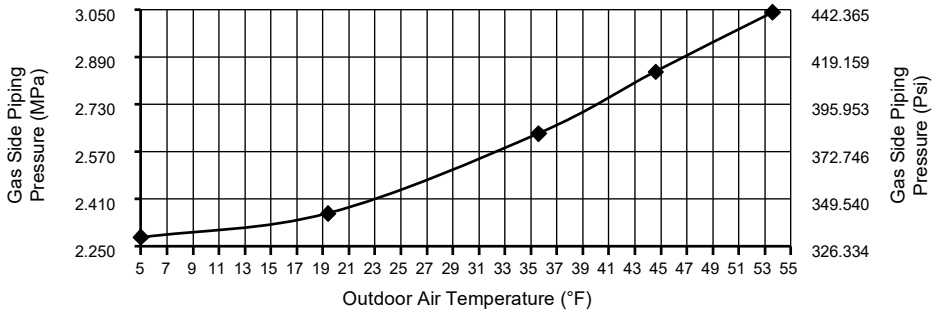
C) Indoor unit capacity: Heating (3.5), CS-Z35ZKEW, CS-HZ35ZKE, CS-NZ35YKE



Outdoor Air Temperature (°F)	Indoor Discharge Air Temperature (°F)
5	97.0
19.4	101.2
35.6	105.4
44.6	110.3
53.6	115.2



Outdoor Air Temperature (°F)	Current (A)
	230V
5	13.3
19.4	14.0
35.6	10.1
44.6	11.2
53.6	12.3

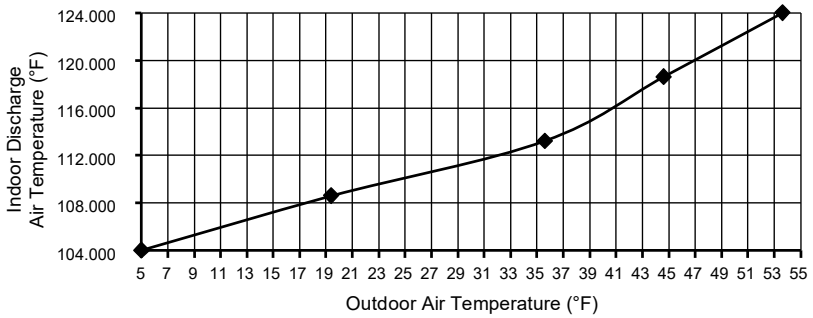


Outdoor Air Temperature (°F)	Gas Side Piping Pressure	
	(MPa)	(Psi)
5	2.28	330.686
19.4	2.36	342.289
35.6	2.63	381.449
44.6	2.84	411.907
53.6	3.04	440.914

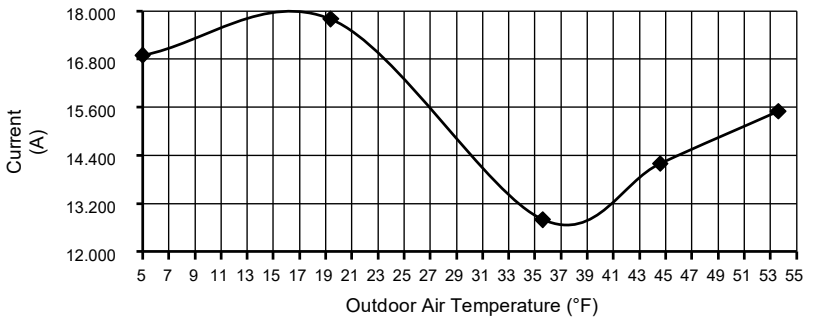
- Heating Characteristic

[Condition] Room temperature: 20°C (DBT), 12°C (WBT)
Operation condition: High fan speed
Piping length: 5 m
Voltage: 230V, 50Hz

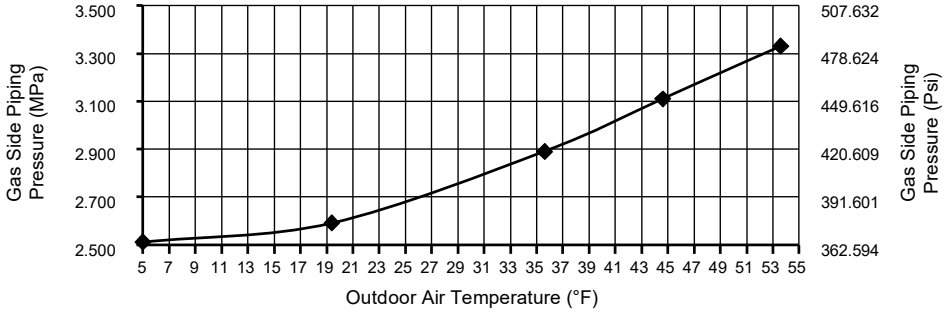
D) Indoor unit capacity: Heating (5.0), CS-Z50ZKEW, CS-NZ50YKE



Outdoor Air Temperature (°F)	Indoor Discharge Air Temperature (°F)
5	104.0
19.4	108.6
35.6	113.2
44.6	118.6
53.6	124.0



Outdoor Air Temperature (°F)	Current (A)
	230V
5	16.9
19.4	17.8
35.6	12.8
44.6	14.2
53.6	15.5



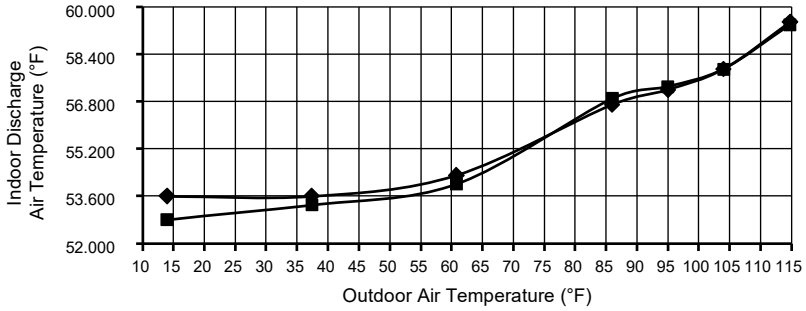
Outdoor Air Temperature (°F)	Gas Side Piping Pressure	
	(MPa)	(Psi)
5	2.51	364.044
19.4	2.59	375.647
35.6	2.89	419.159
44.6	3.11	451.067
53.6	3.33	482.975

18.2.2 Two Indoor Unit Operation

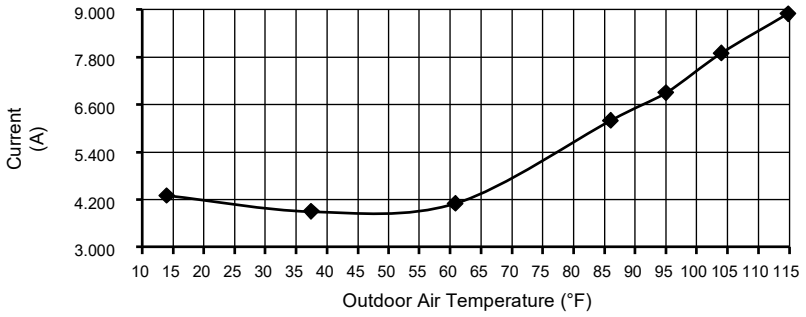
- Cooling Characteristic

[Condition] Room temperature: 27°C (DBT), 19°C (WBT)
Operation condition: High fan speed
Piping length: 5 m
Voltage: 230V, 50Hz

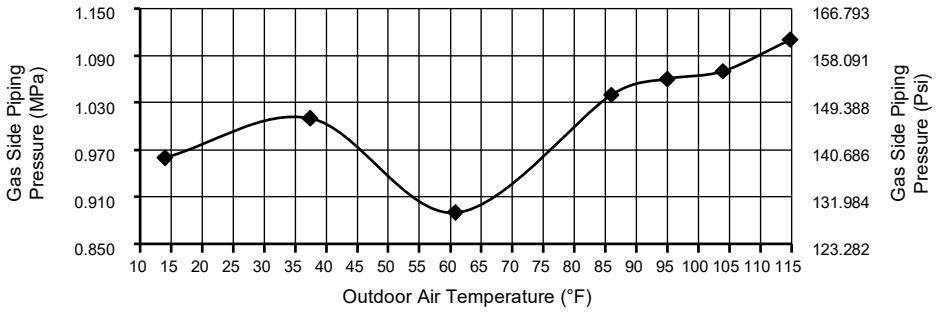
A) Indoor unit capacity: Cooling (2.5 + 2.5), (CS-Z25ZKEW x2, CS-HZ25ZKE x2, CS-NZ25YKE x2)



Outdoor Air Temperature (°F)	Indoor Discharge Air Temperature (°F)	
	XZ9AKUAW	XZ9AKUAW
14	53.6	52.8
37.4	53.6	53.3
60.8	54.3	54.0
86	56.7	56.9
95	57.2	57.3
104	57.9	57.9
114.8	59.5	59.4



Outdoor Air Temperature (°F)	Current (A)
	230V
14	4.3
37.4	3.9
60.8	4.1
86	6.2
95	6.9
104	7.9
114.8	8.9

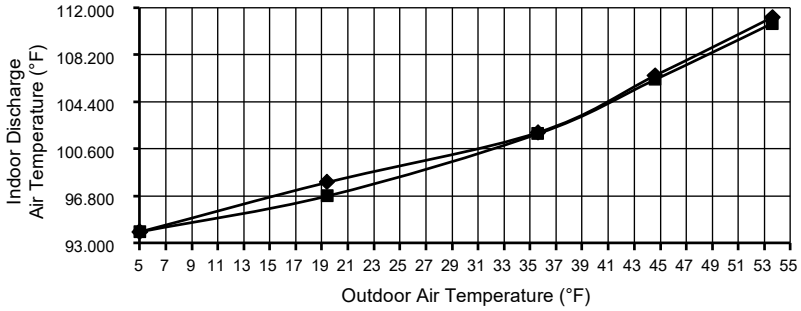


Outdoor Air Temperature (°F)	Gas Side Piping Pressure	
	(MPa)	(Psi)
14	0.96	139.236
37.4	1.01	146.488
60.8	0.89	129.083
86	1.04	150.839
95	1.06	153.740
104	1.07	155.190
114.8	1.11	160.991

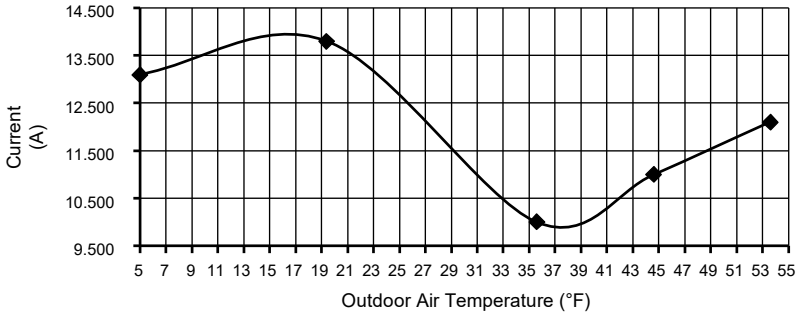
- Heating Characteristic

[Condition] Room temperature: 20°C (DBT), 12°C (WBT)
Operation condition: High fan speed
Piping length: 5 m
Voltage: 230V, 50Hz

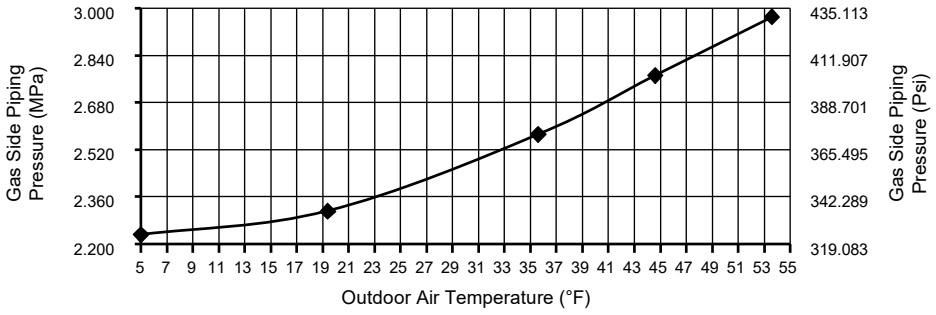
A) Indoor unit capacity: Heating (2.5 + 2.5), (CS-Z25ZKEW x2, CS-HZ25ZKE x2, CS-NZ25YKE x2)



Outdoor Air Temperature (°F)	Indoor Discharge Air Temperature (°F)	
	XZ9AKUAW	XZ9AKUAW
5	93.9	93.9
19.4	97.9	96.8
35.6	101.9	101.8
44.6	106.5	106.2
53.6	111.2	110.7



Outdoor Air Temperature (°F)	Current (A)
	230V
5	13.1
19.4	13.8
35.6	10.0
44.6	11.0
53.6	12.1



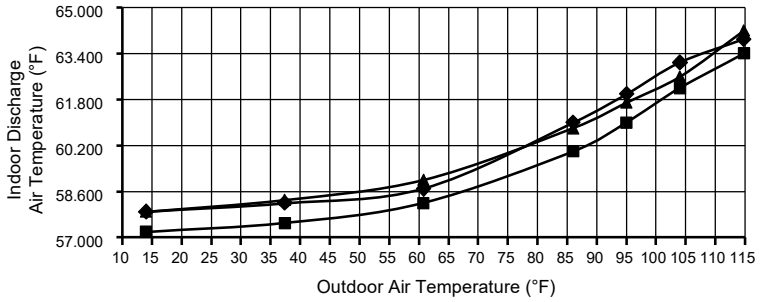
Outdoor Air Temperature (°F)	Gas Side Piping Pressure	
	(MPa)	(Psi)
5	2.23	323.434
19.4	2.31	335.037
35.6	2.57	372.746
44.6	2.77	401.754
53.6	2.97	430.762

18.2.3 Three Indoor Unit Operation

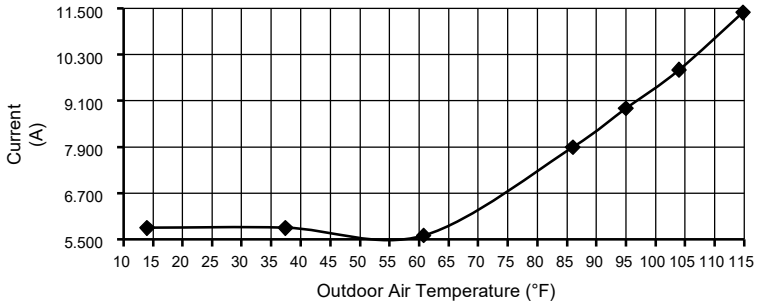
- Cooling Characteristic

[Condition] Room temperature: 27°C (DBT), 19°C (WBT)
Operation condition: High fan speed
Piping length: 5 m
Voltage: 230V, 50Hz

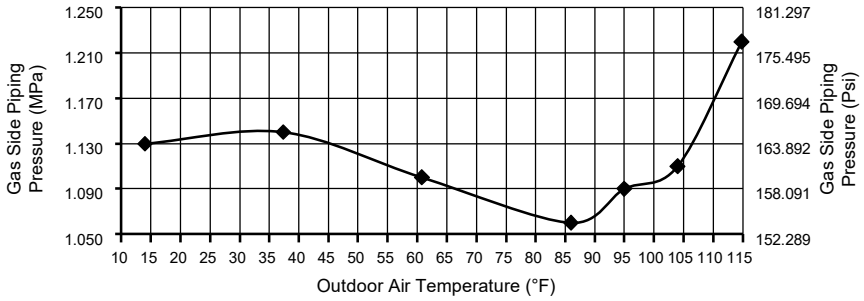
A) Indoor unit capacity: Cooling (2.5 + 2.5 + 2.5), (CS-Z25ZKEW x3, CS-HZ25ZKE x3, CS-NZ25YKE x3)



Outdoor Air Temperature (°F)	Indoor Discharge Air Temperature (°F)		
	MXZ7AKUA	MXZ7AKUA	MXZ7AKUA
14	57.9	57.2	57.9
37.4	58.2	57.5	58.3
60.8	58.7	58.2	59.0
86	61.0	60.0	60.8
95	62.0	61.0	61.7
104	63.1	62.2	62.6
114.8	63.9	63.4	64.2



Outdoor Air Temperature (°F)	Current (A)
	230V
14	5.8
37.4	5.8
60.8	5.6
86	7.9
95	8.9
104	9.9
114.8	11.4

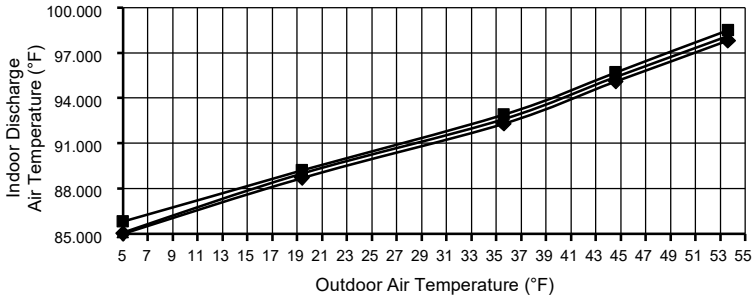


Outdoor Air Temperature (°F)	Gas Side Piping Pressure	
	(MPa)	(Psi)
14	1.13	163.892
37.4	1.14	165.343
60.8	1.10	159.541
86	1.06	153.740
95	1.09	158.091
104	1.11	160.991
114.8	1.22	176.946

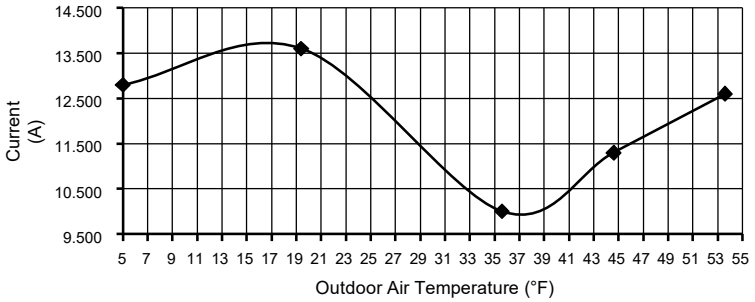
- Heating Characteristic

[Condition] Room temperature: 20°C (DBT), 12°C (WBT)
Operation condition: High fan speed
Piping length: 5 m
Voltage: 230V, 50Hz

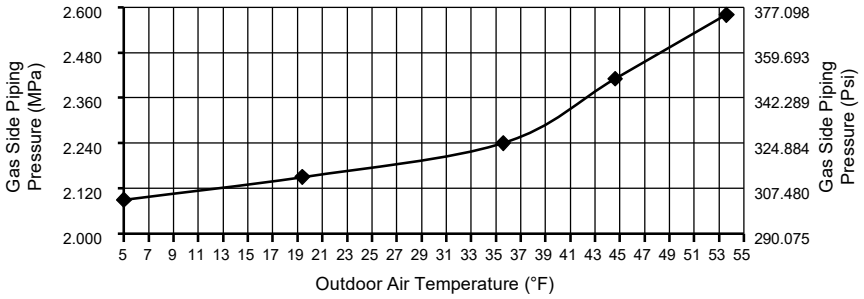
A) Indoor unit capacity: Heating (2.5 + 2.5 + 2.5), (CS-Z25ZKEW x3, CS-HZ25ZKE x3, CS-NZ25YKE x3)



Outdoor Air Temperature (°F)	Indoor Discharge Air Temperature (°F)		
	MXZ7AKUA	MXZ7AKUA	MXZ7AKUA
5	85.0	85.8	85.1
19.4	88.7	89.2	89.0
35.6	92.3	92.9	92.6
44.6	95.1	95.7	95.4
53.6	97.8	98.5	98.1

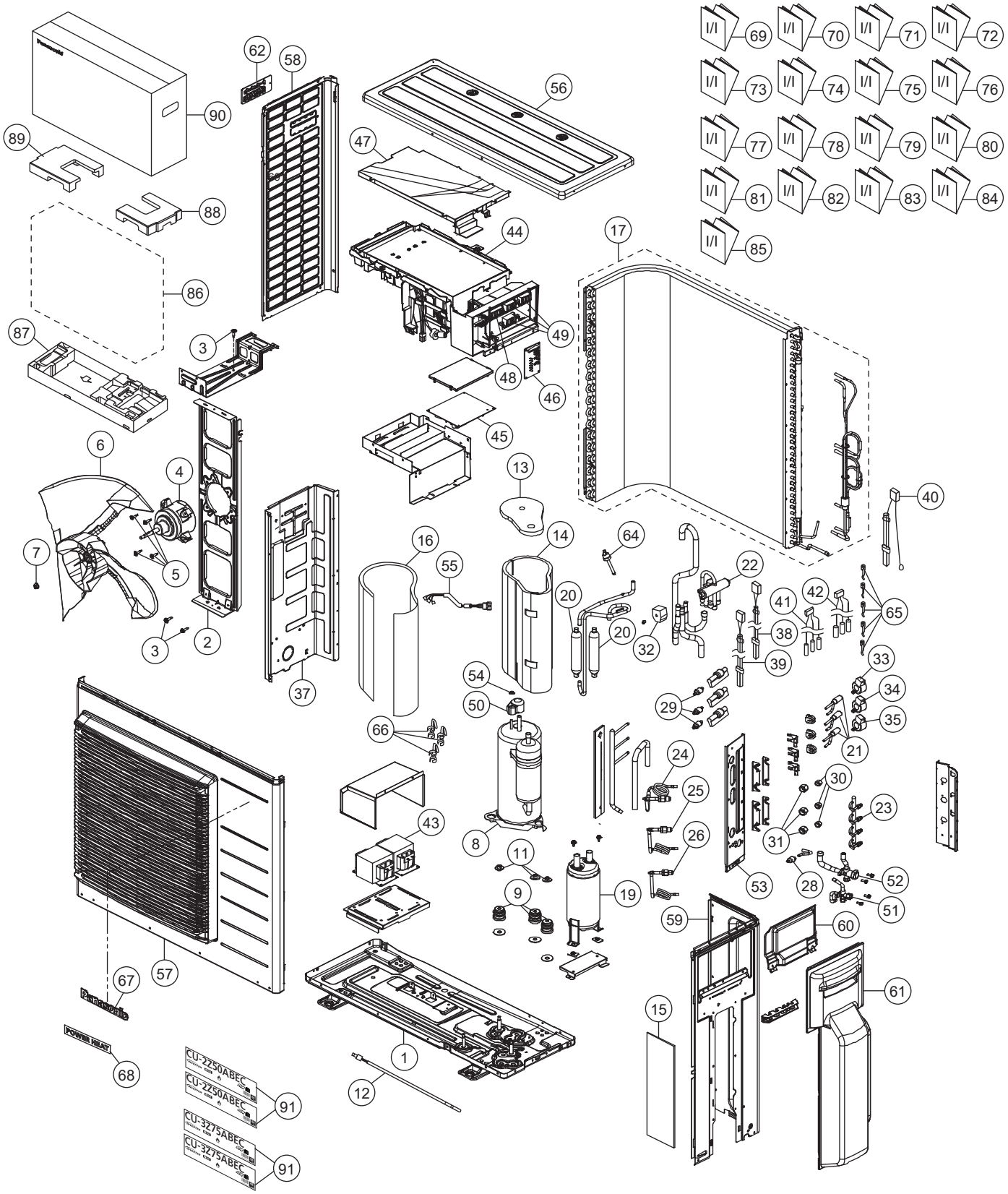


Outdoor Air Temperature (°F)	Current (A)
	230V
5	12.8
19.4	13.6
35.6	10.0
44.6	11.3
53.6	12.6



Outdoor Air Temperature (°F)	Gas Side Piping Pressure	
	(MPa)	(Psi)
5	2.09	303.128
19.4	2.15	311.831
35.6	2.24	324.884
44.6	2.41	349.540
53.6	2.58	374.197

19. Exploded View and Replacement Parts List



Note
The above exploded view is for the purpose of parts disassembly and replacement.
The non-numbered parts are not kept as standard service parts.

SAFETY	REF. NO.	PART NAME & DESCRIPTION	QTY.	CU-2Z50ABEC	CU-3Z75ABEC	REMARK
	1	BASE PAN ASSY	1	ACXD52K05570	←	
	2	FAN MOTOR BRACKET	1	ACXD54-04490	ACXD54-05430	
	3	SCREW - BRACKET FAN MOTOR	3	ACXH55-07140	←	
⚠	4	FAN MOTOR	1	L6CBYYYL0422	←	O
	5	SCREW - FAN MOTOR MOUNT	4	CWH551323	←	
	6	PROPELLER FAN ASSY	1	CWH00K1006	←	
	7	NUT - PROPELLER FAN	1	CWH561092	←	
⚠	8	COMPRESSOR	1	9RD220XBD21	←	O
	9	ANTI - VIBRATION BUSHING	3	CWH50077	←	
	11	NUT - COMPRESSOR MOUNT	3	CWH561096	←	
⚠	12	BASE PAN HEATER	1	CWA341072	←	O
	13	SOUND PROOF MATERIAL - COMP. TOP	1	ACXG30-09050	←	
	14	SOUND PROOF MATERIAL - COMP. BODY	1	ACXG30-16070	←	
	15	SOUND PROOF MATERIAL	1	ACXG30-13150	←	
	16	SOUND PROOF MATERIAL - OUTER LAYER	1	ACXG30-16400	←	
	17	CONDENSER COMPLETE	1	ACXB32C29850	ACXB32C29870	O
	19	ACCUMULATOR	1	ACXB13-01210	←	
	20	DISCHARGE MUFFLER	2	ACXB12-01180	←	
	21	EXPANSION VALVE	2 / 3	CWB051029	←	
	22	4-WAYS VALVE	1	ACXB00-01470	←	O
	23	MANIFOLD TUBE ASSY	1	ACXT07K11790	ACXT07K11820	
	24	TUBE ASSY (LIQUID 1)	1	ACXT00-89800	←	
	25	TUBE ASSY (LIQUID 2)	1	ACXT00-89810	←	
	26	TUBE ASSY (LIQUID 3)	1	-	ACXT00-89840	
	28	STRAINER	1	ACXB11-00570	←	
	29	STRAINER	2 / 3	ACXB11-01560	←	
	30	FLARE NUT (1/4)	2 / 3	CWT251030	←	
	31	FLARE NUT (3/8)	2 / 3	CWT251031	←	
⚠	32	V-COIL COMPLETE (4-WAY VALVE)	1	CWA43C2585	←	O
⚠	33	V-COIL COMPLETE (CN-STM1)	1	CWA43C2334	←	O
⚠	34	V-COIL COMPLETE (CN-STM2)	1	CWA43C2335	←	O
⚠	35	V-COIL COMPLETE (CN-STM3)	1	-	CWA43C2336	O
	37	SOUND PROOF BOARD	1	ACXH15-04410	ACXH15-04420	
⚠	38	SENSOR COMPLETE - CN-DIS	1	ACXA50C18680	←	O
⚠	39	SENSOR COMPLETE - CN-TH2	1	ACXA50C21280	←	O
⚠	40	SENSOR COMPLETE - CN-TH1	1	ACXA50C21290	←	O
⚠	41	SENSOR COMPLETE - CN-TH4	1	ACXA50C21300	ACXA50C21430	O
⚠	42	SENSOR COMPLETE - CN-TH3	1	ACXA50C21420	ACXA50C21440	O
⚠	43	REACTOR	1	G0C392J00029	←	O
⚠	44	ELECTRONIC CONTROLLER - MAIN	1	ACXA74C07090R	ACXA74C07110R	O

SAFETY	REF. NO.	PART NAME & DESCRIPTION	QTY.	CU-2Z50ABEC	CU-3Z75ABEC	REMARK
⚠	45	ELECTRONIC CONT. - NOISE FILTER	1	ACXA73-48520	←	O
⚠	46	ELECTRONIC CONTROLLER - DISPLAY	1	CWA747223	←	O
	47	CONTROL BOARD COVER	1	ACXH13-09170	←	
⚠	48	TERMINAL BOARD ASSY	1	CWA28K1195	←	O
⚠	49	TERMINAL BOARD ASSY	2 / 3	CWA28K1196	←	O
	50	TERMINAL COVER	1	CWH171039A	←	
	51	3-WAY VALVE	1	CWB011601	←	O
	52	3-WAY VALVE	1	CWB011602	←	O
	53	HOLDER COUPLING	1	CWH351258	←	
	54	NUT - TERMINAL COVER	1	CWH7080300J	←	
⚠	55	LEAD WIRE COMP	1	CWA67C7213	←	O
	56	CABINET TOP PLATE	1	CWE031083G	←	
	57	CABINET FRONT PLATE ASSY	1	ACXE06K02360	←	
	58	CABINET SIDE PLATE - LEFT	1	CWE041585G	←	
	59	CABINET SIDE PLATE - RIGHT	1	ACXE04-13890G	←	
	60	CONTROL BOARD COVER	1	CWH131364	←	
	61	CONTROL BOARD COVER CO.	1	ACXH13C06900	←	
	62	HANDLE	1	CWE161010G	←	
⚠	64	PRESSURE SWITCH - CN-PSW1	1	ACXA10-00640	←	O
	65	SPRING FOR SENSOR	4 / 5	CWH711010	←	
	66	HOLDER SENSOR	2 / 3	CWH32074	←	
	67	BADGE - PANASONIC	1	ACXE37-20160	←	
	68	BADGE - POWER HEAT	1	ACXE37-20180	←	
	69	INSTALLATION INSTRUCTION	1	ACXF60-56070	←	
	70	INSTALLATION INSTRUCTION	1	ACXF60-56080	←	
	71	INSTALLATION INSTRUCTION	1	ACXF60-56090	←	
	72	INSTALLATION INSTRUCTION	1	ACXF60-56100	←	
	73	INSTALLATION INSTRUCTION	1	ACXF60-56110	←	
	74	INSTALLATION INSTRUCTION	1	ACXF60-56120	←	
	75	INSTALLATION INSTRUCTION	1	ACXF60-56130	←	
	76	INSTALLATION INSTRUCTION	1	ACXF60-56140	←	
	77	INSTALLATION INSTRUCTION	1	ACXF60-56150	←	
	78	INSTALLATION INSTRUCTION	1	ACXF60-56160	←	
	79	INSTALLATION INSTRUCTION	1	ACXF60-56170	←	
	80	INSTALLATION INSTRUCTION	1	ACXF60-56180	←	
	81	INSTALLATION INSTRUCTION	1	ACXF60-56190	←	
	82	INSTALLATION INSTRUCTION	1	ACXF60-56200	←	
	83	INSTALLATION INSTRUCTION	1	ACXF60-56210	←	
	84	INSTALLATION INSTRUCTION	1	ACXF60-56220	←	
	85	INSTALLATION INSTRUCTION	1	ACXF60-56230	←	

SAFETY	REF. NO.	PART NAME & DESCRIPTION	QTY.	CU-2Z50ABEC	CU-3Z75ABEC	REMARK
	86	BAG	1	CWG861154	←	
	87	BASE BOARD - COMPLETE	1	CWG62C1081	←	
	88	SHOCK ABSORBER - RIGHT	1	CWG712879	←	
	89	SHOCK ABSORBER - LEFT	1	CWG712880	←	
	90	C.C. CASE	1	ACXG50-52323	←	
	91	MODEL LABEL	2	ACXF87-36370	ACXF87-36400	

(Note)
- All parts are supplied from PAPAMY, Malaysia (Vendor Code: 00029488).
- “O” marked parts are recommended to be kept in stock.

[PAPAMY] Printed in Malaysia
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