

APPLICATION GUIDE



PROVIDING **GLOBAL SYSTEM** SOLUTIONS

**COMPACTAIR
LVCK / LVHK**

Congratulations you have made a wise choice and we feel sure that it will meet your expectations

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Lennox have been providing environmental solutions since 1895, our range of COMPACTAIR continues to meet the standards that have made LENNOX a household name. Flexible design solutions to meet YOUR needs and uncompromising attention to detail. Engineered to last, simple to maintain and Quality that comes as standard. Information on local contacts at www.lennox europe.com.

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GENERAL DESCRIPTION

The vertical air conditioning units, range COMPACTAIR cooling only or heat pump are air conditioning unit, of the air to air type, designed for small and medium shopping center and housing.

The unit consists on an outdoor section and an indoor one and they may be supplied either as a compact unit or as a remote split and multi-split systems.

It is also possible supply the outdoor section alone, to match with other type of indoor unit that customer needs. They are designed for installation indoors or outdoors, and adequated to work in air ducts both sections. A wide range of optionals, completed-factory assembled are also available.

FURNITURE

Made of galvanized steel sheeting with epoxy painted finish, weather proofed with high resistant to corrosion. The units are provided with metal profiles, capable of withstanding the unit and able as well of installing the unit mounted on the floor.

The panels are easily inter exchangeable, giving several air discharge alternatives.

Both sections are thermoacoustic insulated. An insulation with a mesh protection is used for indoor units with an M1 and F1 classification, certifying that the material is auto-extinguishable and avoiding smoke formed, which may get inside the room to be aconditioned.

For outdoor units, the insulation is auto-extinguishable and has a M1 classification.

COMPRESSORS

All units are provided with hermetically sealed compressors, scroll type, cooled by exhaust gas, with internal thermal insulation inside the engine, so no other additional protection is required. The compressor is fitted on vibration mountings both inside and outside.

The compressors have a screwed connection into the pipe thus they can be more easily to assembled (except 22E-44D models, which are welded) In heat pump units the compressors are provided as standard with a crankcase heater an is an option for cooling only units, to assist evaporation of the coolant retained by the oil in the compressor so that a suitable lubrication can take place.

AIR FILTER

Washable air filter; auto extinguishable material with M1 classification.

FANS

Inner sections are supplied with one or two "E" or "D" centrifugal fans respectively, fans are fitted with a common axle activated through an adjustable and variable pulley belt pulley with one activating motor. The outer fans are centrifugal type with built-in motor, except for models 32E-38E-64D-76D which have one or two centrifugal fans powered by one single motor built in with transmission by belts to one single axle.

HEAT EXCHANGERS

Made of copper tubing with aluminum corrugated swirl fins, they are designed and specially dimensioned to obtain the maximum output so as to prevent ice forming in the outer heater, extending the operating cycles to a maximum obtaining maximum output and exchange on reducing the frequency of defrosting.

COOLING CIRCUIT

Made of welded dehumidifying copper tube with plugged valves in the suction and liquid lines on both indoor and outdoor sections.

The units are supplied with high and low pressure switch, with automatic reset.

Silencer fitted on the compressor discharge, and expansion system through a reducing valves. The heat pump units are equipped with dehumidifying filter to avoid liquid getting on the compressor, four way valve for reversing cycle, and one way valves.

SWITCHBOARD

Designed according to EN 60204-1 normative. With protective fuses for compressors and fans, except for the ones adjustable and variable activating motor which are supplied with an external thermic relay.

The units have a built printed circuit board which controls the unit.

GENERAL DESCRIPTION

CONTROL

These units range are available in two different versions, depending on the digital thermostat supplied with the unit: These versions are:

- 1- **Standard unit version, supplied with two wires connection digital thermostat.**
- 2- **VFC unit version, with possibility to install a BMS "building management systems"**

1- Standard unit version, digital thermostat with two wires connection.

Control made up with a printed control board and with a walled terminal thermostat to be placed in the room to be aconditioned; with ambient sensor inside the terminal for the regulation of the system.

With LCD display with **alarm visualization, exclusive connection with two wires between terminal thermostat and electrical box** at the unit, possibility to adjust internal parameters, automatic restarting and intelligent defrosting control adapted to ambient conditions and room demand at each moment (for heat pump units)

Digital thermostat corresponding to the standard unit version, with two wires connection.



Climatic 10

2- VFC unit version, with possibility to install a BMS "building management systems"

Control made up with a printed control board.

In both unit versions through the voltage free contacts supplied on, lets you to obtain the following functions:

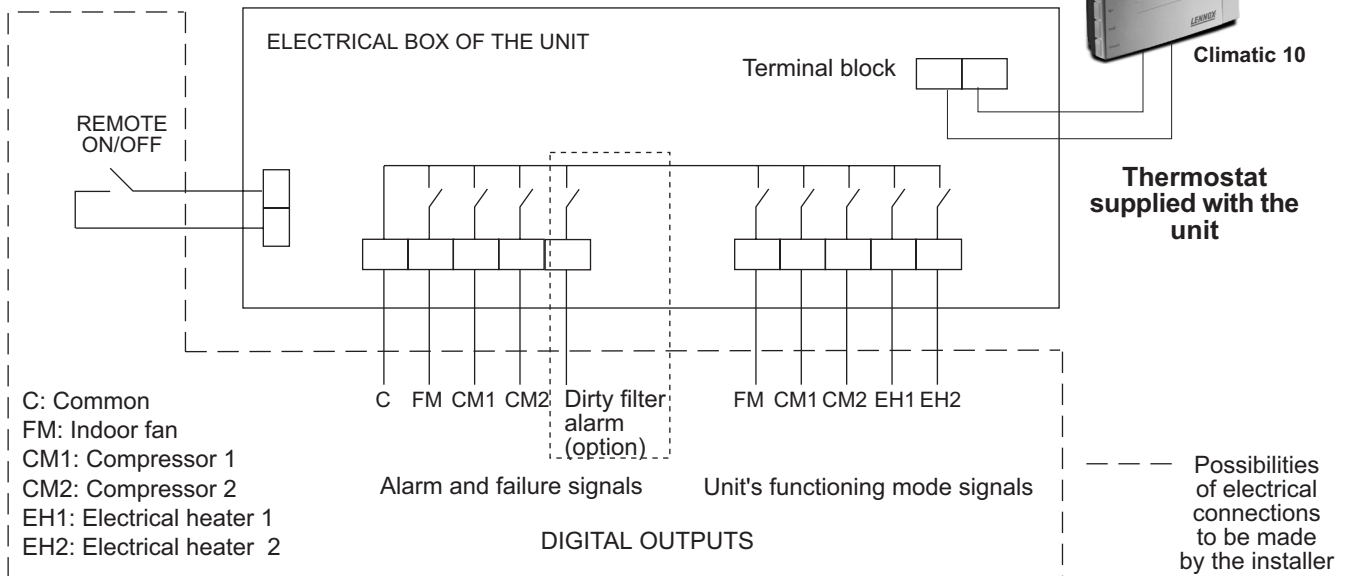
- To obtain the alarm signal of the units such as, fan OFF, compressor OFF...
- To know the unit function MODE; Unit running on fan, cooling or heating mode, compressor ON....

Also the VFC unit version, lets you make the connection from the printed control board at the electrical box of the unit, to manage the signals functioning of the unit, fan, cooling, heating, step 1, step 2 etc... to a BMS system "building management systems", and the connections will be the digital outputs of BMS system.

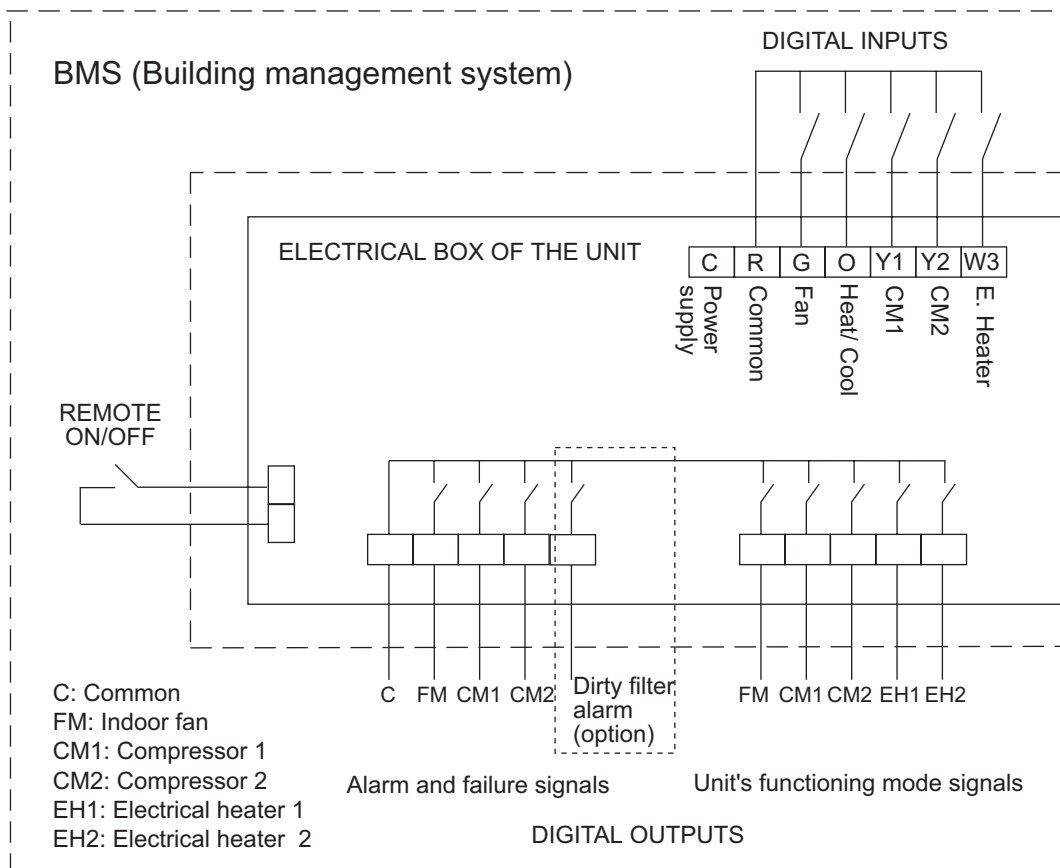
GENERAL DESCRIPTION

The following outlines, shows, what we explain before, and corresponding of a double circuit units "D". For more details see electrical connections on this manual.

Outline of the Voltage free contact available for the standard unit version



Outline of the Voltage free contact available for the VFC unit version



GENERAL DESCRIPTION

OPTIONS

OPTIONALS	STANDARD VERSION	VFC VERSION	Remarks
Condensing pressure control ON/OFF	X	X	
Proportional condensing pressure control	X	X	Not available with kit vertical discharge on outdoor unit.
Main switch only for 400V-III	X	X	
Return lock three phases	X	X	
Crankcase heater	X	X	For cooling only units, as standard on heat pump.
"Soft starter" 400V-III	X (except 100D)	X (except 100D)	Not available for 100D models, and only for 400V-III units.
Hot gas by pass	X (except 86D-100D)	X (except 86D-100D)	Not available for 86D-100D models.
Kit vertical discharge for outdoor units	X	X	Not available with kit proportional winter control.
Kit static pressure 350Pa (Air discharge) outdoor units	X	X	Available only for 22E-24E-28E-44D-48D-56D models.
Programmable thermostat	X	NO	
Ambient remote sensor kit	X	X (Only with freecooling)	
Duct remote sensor kit	X	STD (Only with freecooling)	
Electrical heater	X	X	
Hot water coil	X (except 86D-100D)	X (except 86D-100D)	Not available for 86D-100D models.
Kit freecooling thermostatic without return fan supplied with sensor incorporated in the thermostat	X	NO	Thermostatic freecooling supplied with sensor incorporated inside the thermostat.
Kit freecooling thermostatic with return fan supplied with sensor incorporated in the thermostat	X	NO	Thermostatic freecooling supplied with sensor incorporated inside the thermostat.
Kit freecooling enthalpic without return fan supplied with wit duct sensor	NO	X	Enthalpic freecooling supplies with duct sensor.
Kit freecooling enthalpic with return fan supplied with wit duct sensor	NO	X	Enthalpic freecooling supplies with duct sensor.
Kit sensor incorporated at thermostat for freecooling	NO	X	Option for freecooling.
Kit more static pressure indoor unit 400 Pa	X	X	
180° turn of indoor unit	X (only units "D")	X (only units "D")	Only for packaged, double circuit units "D".
Dirt filter indication	X	X	
Precoated coil	X	X	Outdoor unit.

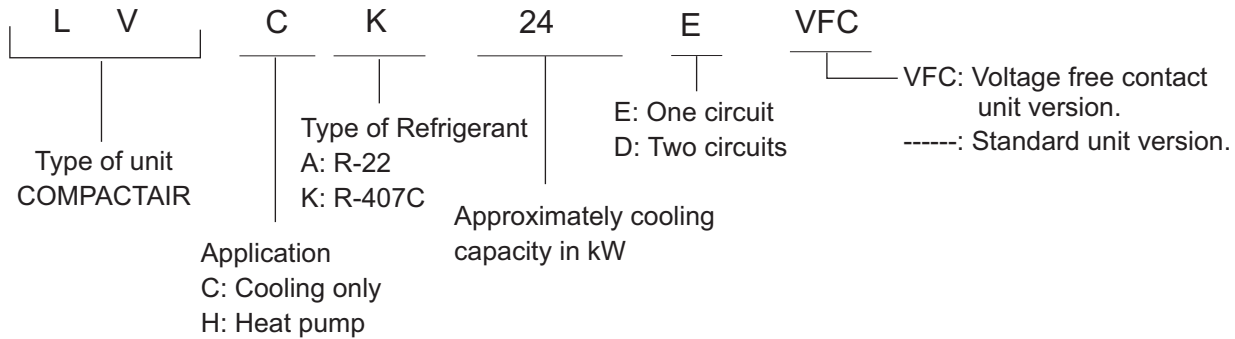
STD: as standard.

X: available.

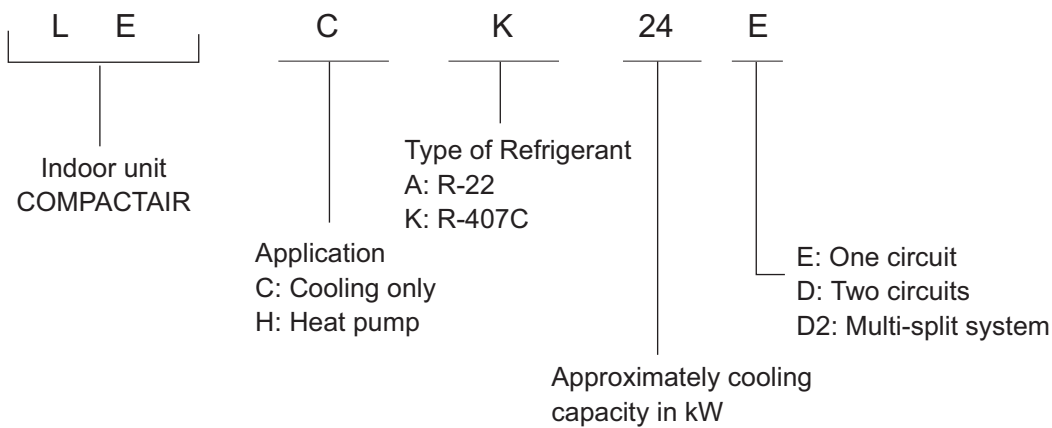
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DENOMINATION

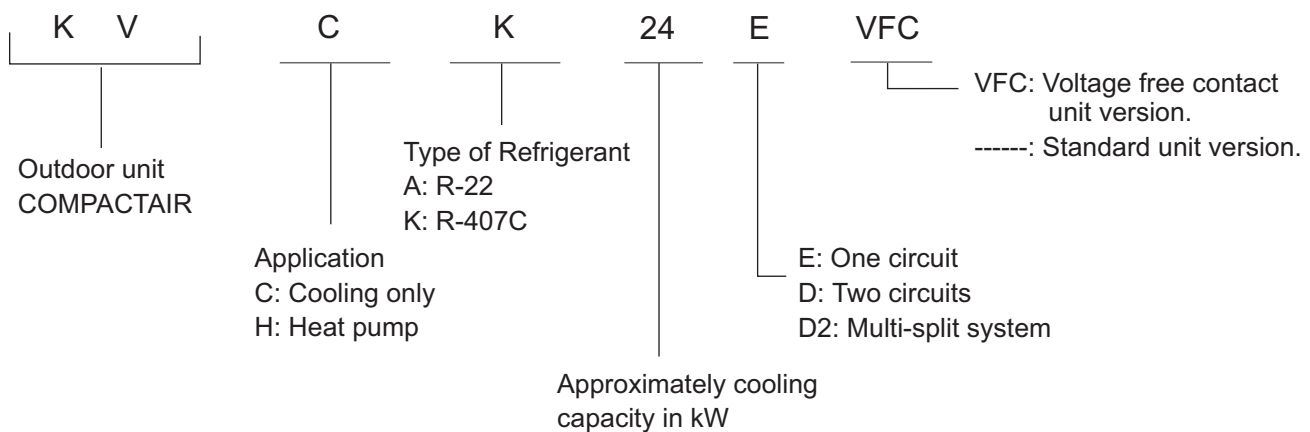
PACKAGED UNITS



INDOOR UNIT



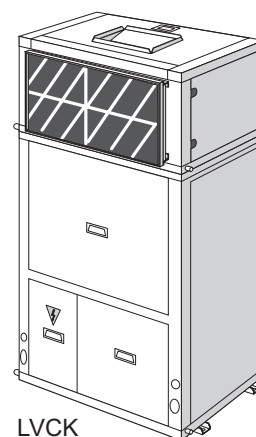
OUTDOOR UNIT



RANGE PRODUCT UNITS COOLING ONLY WITH REFRIGERANT R-407C

PACKAGED SYSTEM

MODEL	V / Ph / 50 Hz	NOMINAL CAPACITY kW	NOMINAL CONSUMPTION kW
		COOLING	COOLING
LVCK 22E	230-400V/3Ph	19,50	8,50
LVCK 24E	230-400V/3Ph	22,00	9,50
LVCK 28E	230-400V/3Ph	26,50	11,50
LVCK 32E	230-400V/3Ph	28,70	13,00
LVCK 38E	230-400V/3Ph	36,50	16,00
LVCK 44D	230-400V/3Ph	39,00	17,00
LVCK 48D	230-400V/3Ph	44,00	19,00
LVCK 56D	230-400V/3Ph	53,00	23,00
LVCK 64D	230-400V/3Ph	57,40	26,00
LVCK 76D	230-400V/3Ph	73,00	32,00

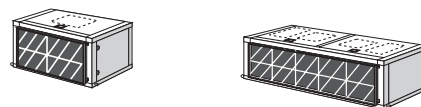


LVCK

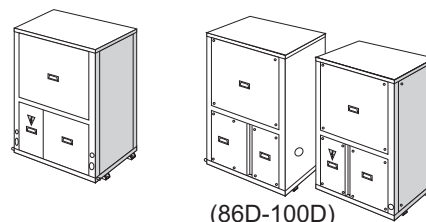
SPLIT SYSTEM

OUTDOOR UNIT	INDOOR UNIT	V / Ph / 50 Hz	NOMINAL CAPACITY kW	NOMINAL CONSUMPTION kW
			COOLING	COOLING
KVCK 22E	LECK 22E	230-400V/3Ph	19,50	8,50
KVCK 24E	LECK 24E	230-400V/3Ph	22,00	9,50
KVCK 28E	LECK 28E	230-400V/3Ph	26,50	11,50
KVCK 32E	LECK 32E	230-400V/3Ph	28,70	13,00
KVCK 38E	LECK 38E	230-400V/3Ph	36,50	16,00
KVCK 44D	LECK 44D	230-400V/3Ph	39,00	17,00
KVCK 48D	LECK 48D	230-400V/3Ph	44,00	19,00
KVCK 56D	LECK 56D	230-400V/3Ph	53,00	23,00
KVCK 64D	LECK 64D	230-400V/3Ph	57,40	26,00
KVCK 76D	LECK 76D	230-400V/3Ph	73,00	32,00
KVCK 86D	LECK 86D	230-400V/3Ph	83,00	38,70
KVCK 100D	LECK 100D	230-400V/3Ph	98,50	47,00

INDOOR UNIT LECK



OUTDOOR UNIT KVCK

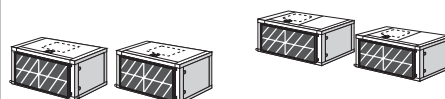


(86D-100D)

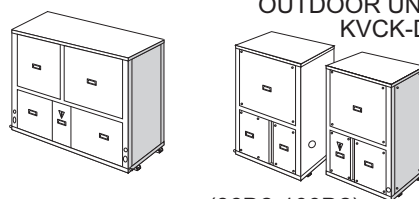
MULTI-SPLIT SYSTEM

OUTDOOR UNIT	INDOOR UNIT	V / Ph / 50 Hz	NOMINAL CAPACITY kW	NOMINAL CONSUMPTION kW
			COOLING	COOLING
KVCK 44D2	2 x LECK 22E	230-400V/3Ph	39,00	17,00
KVCK 48D2	2 x LECK 24E	230-400V/3Ph	44,00	19,00
KVCK 56D2	2 x LECK 28E	230-400V/3Ph	53,00	23,00
KVCK 64D2	2 x LECK 32E	230-400V/3Ph	57,40	26,00
KVCK 76D2	2 x LECK 38E	230-400V/3Ph	73,00	32,00
KVCK 86D2	2 x LECK 43E	230-400V/3Ph	83,00	38,70
KVCK 100D2	2 x LECK 50E	230-400V/3Ph	98,50	47,00

INDOOR UNIT LECK



OUTDOOR UNIT KVCK-D2



(86D2-100D2)

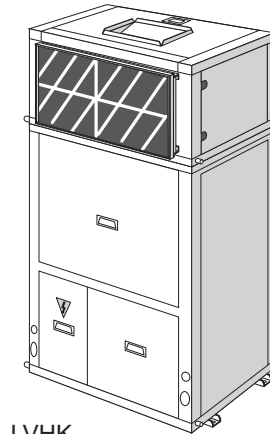
OUTDOOR UNIT

It is also possible; supply just the outdoor section to match with other type of indoor unit. For selection, see performances on table capacities.

RANGE PRODUCT UNITS HEAT PUMP WITH REFRIGERANT R-407C

PACKAGED SYSTEM

MODEL	V / Ph / 50 Hz	NOMINAL CAPACITY kW		NOMINAL CONSUMPTION kW	
		COOLING	H.PUMP	COOLING	H.PUMP
LVHK 22E	230-400V/3Ph	19,50	20,20	8,50	7,70
LVHK 24E	230-400V/3Ph	22,00	22,50	9,50	8,60
LVHK 28E	230-400V/3Ph	26,50	27,00	11,50	10,00
LVHK 32E	230-400V/3Ph	28,70	30,30	13,00	11,50
LVHK 38E	230-400V/3Ph	36,50	36,90	16,00	13,60
LVHK 44D	230-400V/3Ph	39,00	40,40	17,00	15,40
LVHK 48D	230-400V/3Ph	44,00	45,00	19,00	17,20
LVHK 56D	230-400V/3Ph	53,00	54,00	23,00	20,00
LVHK 64D	230-400V/3Ph	57,40	60,60	26,00	23,00
LVHK 76D	230-400V/3Ph	73,00	73,80	32,00	27,20

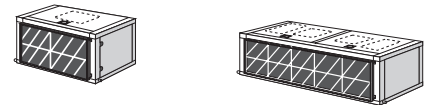


LVHK

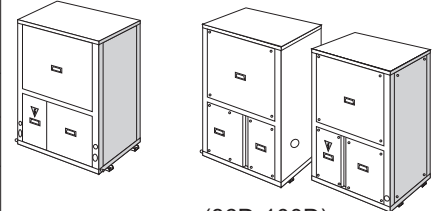
SPLIT SYSTEM

OUTDOOR UNIT	INDOOR UNIT	V / Ph / 50 Hz	NOMINAL CAPACITY kW		NOMINAL CONSUMPTION kW	
			COOLING	H.PUMP	COOLING	H.PUMP
KVHK 22E	LEHK 22E	230-400V/3Ph	19,50	20,20	8,50	7,70
KVHK 24E	LEHK 24E	230-400V/3Ph	22,00	22,50	9,50	8,60
KVHK 28E	LEHK 28E	230-400V/3Ph	26,50	27,00	11,50	10,00
KVHK 32E	LEHK 32E	230-400V/3Ph	28,70	30,30	13,00	11,50
KVHK 38E	LEHK 38E	230-400V/3Ph	36,50	36,90	16,00	13,60
KVHK 44D	LEHK 44D	230-400V/3Ph	39,00	40,40	17,00	15,40
KVHK 48D	LEHK 48D	230-400V/3Ph	44,00	45,00	19,00	17,20
KVHK 56D	LEHK 56D	230-400V/3Ph	53,00	54,00	23,00	20,00
KVHK 64D	LEHK 64D	230-400V/3Ph	57,40	60,60	26,00	23,00
KVHK 76D	LEHK 76D	230-400V/3Ph	73,00	73,80	32,00	27,20
KVHK 86D	LEHK 86D	230-400V/3Ph	83,00	89,00	38,70	34,90
KVHK 100D	LEHK 100D	230-400V/3Ph	98,50	102,00	47,00	40,80

INDOOR UNIT LEHK



OUTDOOR UNIT KVHK

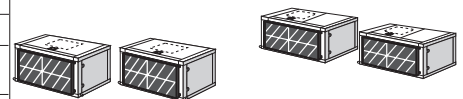


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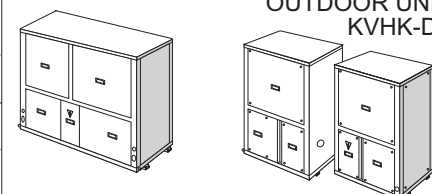
MULTI-SPLIT SYSTEM

OUTDOOR UNIT	INDOOR UNIT	V / Ph / 50 Hz	NOMINAL CAPACITY kW		NOMINAL CONSUMPTION kW	
			COOLING	H.PUMP	COOLING	H.PUMP
KVHK 44D2	2 x LEHK 22E	230-400V/3Ph	39,00	40,40	17,00	15,40
KVHK 48D2	2 x LEHK 24E	230-400V/3Ph	44,00	45,00	19,00	17,20
KVHK 56D2	2 x LEHK 28E	230-400V/3Ph	53,00	54,00	23,00	20,00
KVHK 64D2	2 x LEHK 32E	230-400V/3Ph	57,40	60,60	26,00	23,00
KVHK 76D2	2 x LEHK 38E	230-400V/3Ph	73,00	73,80	32,00	27,20
KVHK 86D2	2 x LEHK 43E	230-400V/3Ph	83,00	89,00	38,70	34,90
KVHK 100D2	2 x LEHK 50E	230-400V/3Ph	98,50	102,00	47,00	40,80

INDOOR UNIT LEHK



OUTDOOR UNIT KVHK-D2

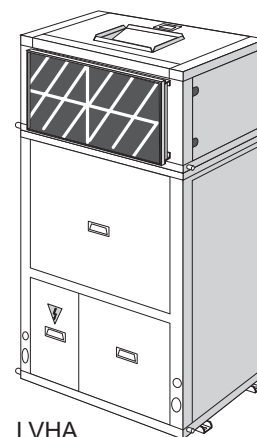


(86D2-100D2)

RANGE PRODUCT UNITS HEAT PUMP WITH REFRIGERANT R-22

PACKAGED SYSTEM

MODEL	V / Ph / 50 Hz	NOMINAL CAPACITY kW		NOMINAL CONSUMPTION kW	
		COOLING	H.PUMP	COOLING	H.PUMP
LVHA 22E	230-400V/3Ph	19,20	20,40	8,21	7,40
LVHA 24E	230-400V/3Ph	21,50	22,70	9,11	8,30
LVHA 28E	230-400V/3Ph	26,00	27,30	11,00	9,20
LVHA 32E	230-400V/3Ph	28,10	30,90	12,51	10,70
LVHA 38E	230-400V/3Ph	35,80	37,60	15,39	12,50
LVHA 44D	230-400V/3Ph	38,40	40,80	16,43	14,80
LVHA 48D	230-400V/3Ph	43,00	45,40	18,22	16,60
LVHA 56D	230-400V/3Ph	52,00	54,60	22,00	18,40
LVHA 64D	230-400V/3Ph	56,20	61,80	25,02	21,40
LVHA 76D	230-400V/3Ph	71,60	75,20	30,78	25,00

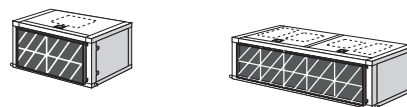


LVHA

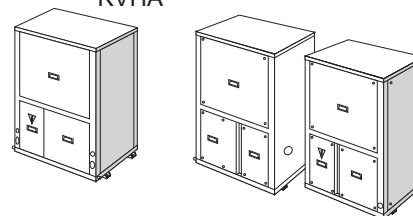
SPLIT SYSTEM

OUTDOOR UNIT	INDOOR UNIT	V / Ph / 50 Hz	NOMINAL CAPACITY kW		NOMINAL CONSUMPTION kW	
			COOLING	H.PUMP	COOLING	H.PUMP
KVHA 22E	LEHA 22E	230-400V/3Ph	19,20	20,40	8,21	7,40
KVHA 24E	LEHA 24E	230-400V/3Ph	21,50	22,70	9,11	8,30
KVHA 28E	LEHA 28E	230-400V/3Ph	26,00	27,30	11,00	9,20
KVHA 32E	LEHA 32E	230-400V/3Ph	28,10	30,90	12,51	10,70
KVHA 38E	LEHA 38E	230-400V/3Ph	35,80	37,60	15,39	12,50
KVHA 44D	LEHA 44D	230-400V/3Ph	38,40	40,80	16,43	14,80
KVHA 48D	LEHA 48D	230-400V/3Ph	43,00	45,40	18,22	16,60
KVHA 56D	LEHA 56D	230-400V/3Ph	52,00	54,60	22,00	18,40
KVHA 64D	LEHA 64D	230-400V/3Ph	56,20	61,80	25,02	21,40
KVHA 76D	LEHA 76D	230-400V/3Ph	71,60	75,20	30,78	25,00
KVHA 86D	LEHA 86D	230-400V/3Ph	81,30	90,50	37,20	32,10
KVHA 100D	LEHA 100D	230-400V/3Ph	96,50	104,00	45,20	38,00

INDOOR UNIT LEHA



OUTDOOR UNIT KVHA

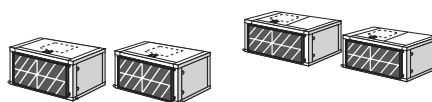


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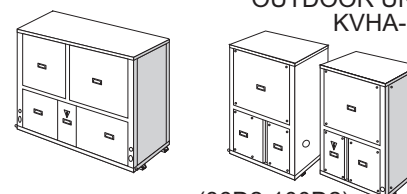
MULTI-SPLIT SYSTEM

OUTDOOR UNIT	INDOOR UNIT	V / Ph / 50 Hz	NOMINAL CAPACITY kW		NOMINAL CONSUMPTION kW	
			COOLING	H.PUMP	COOLING	H.PUMP
KVHA 44D2	2 x LEHA 22E	230-400V/3Ph	38,40	40,80	16,43	14,80
KVHA 48D2	2 x LEHA 24E	230-400V/3Ph	43,00	45,40	18,22	16,60
KVHA 56D2	2 x LEHA 28E	230-400V/3Ph	52,00	54,60	22,00	18,40
KVHA 64D2	2 x LEHA 32E	230-400V/3Ph	56,20	61,80	25,02	21,40
KVHA 76D2	2 x LEHA 38E	230-400V/3Ph	71,60	75,20	30,78	25,00
KVHA 86D2	2 x LEHA 43E	230-400V/3Ph	81,30	90,50	37,20	32,10
KVHA 100D2	2 x LEHA 50E	230-400V/3Ph	96,50	104,00	45,20	38,00

INDOOR UNITS LEHA



OUTDOOR UNIT KVHA-D2

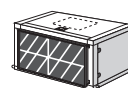
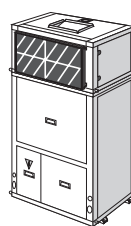


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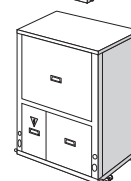
PHYSICAL DATA

PACKAGED AND SPLIT SYSTEM

PACKAGED UNIT



INDOOR UNIT



OUTDOOR UNIT

SET			LVCK/LVHK LVHA 22E	LVCK/LVHK LVHA 24E	LVCK/LVHK LVHA 28E	LVCK/LVHK LVHA 32E	LVCK/LVHK LVHA 38E	
Cooling capacity	(*)	LVCK/LVHK kW	19,50	22,00	26,50	28,70	36,50	
		LVHA kW	19,20	21,50	26,00	28,10	35,80	
Heating capacity	(**)	LVHK kW	20,20	22,50	27,00	30,30	36,90	
		LVHA kW	20,40	22,70	27,30	30,90	37,60	
DIMENSIONS								
		Height	mm.	2040	2040	2040	2040	2105
		Width	mm.	1285	1285	1285	1285	1410
		Depth	mm.	803	803	803	803	803
NET WEIGHT		LVCK	Kg	310	370	385	390	505
		LVHK/LVHA	Kg	315	375	390	395	510
OUTDOOR UNIT								
COMPRESSOR	Nr / Type		1 / Scroll	1 / Scroll	1 / Scroll	1 / Scroll	1 / Scroll	
FAN								
		Max. air flow	m ³ /h.	7550	7350	7100	8000	11000
		Min. air flow	m ³ /h.	5600	5600	5600	6500	9000
		Max available pressure	(1) Pa	170	160	140	300	300
NET WEIGHT		KVCK	Kg	205	265	275	280	360
		KVHK/KVHA	Kg	210	270	280	285	365
DIMENSIONS								
		Height	mm.	1375	1375	1375	1375	1440
		Width	mm.	1285	1285	1285	1285	1410
		Depth	mm.	803	803	803	803	803
REFRIGERANT CONNECTION								
		Liquid		5/8"	5/8"	5/8"	5/8"	3/4"
		Gas		7/8"	1-1/8"	1-1/8"	1-1/8"	1-3/8"
INDOOR UNIT								
FAN								
		Max. air flow	m ³ /h.	4700	5100	5850	6000	7300
		Min. air flow	m ³ /h.	3500	3900	4500	4750	5800
		Max available pressure	(1) Pa	205	195	250	220	240
NET WEIGHT			Kg	105	105	110	110	145
DIMENSIONS								
		Height	mm.	665	665	665	665	665
		Width	mm.	1285	1285	1285	1285	1410
		Depth	mm.	803	803	803	803	803
REFRIGERANT CONNECTION								
		Liquid		5/8"	5/8"	5/8"	5/8"	3/4"
		Gas		7/8"	1-1/8"	1-1/8"	1-1/8"	1-3/8"

(*) Air intake temperature in the indoor exchanger: 27°C DB/19°C WB

(*) Air intake temperature in the outdoor exchanger: 35°C DB

(**) Air intake temperature in the indoor exchanger: 20°C DB

(**) Air intake temperature in the outdoor exchanger: 7°C DB / 6°C WB

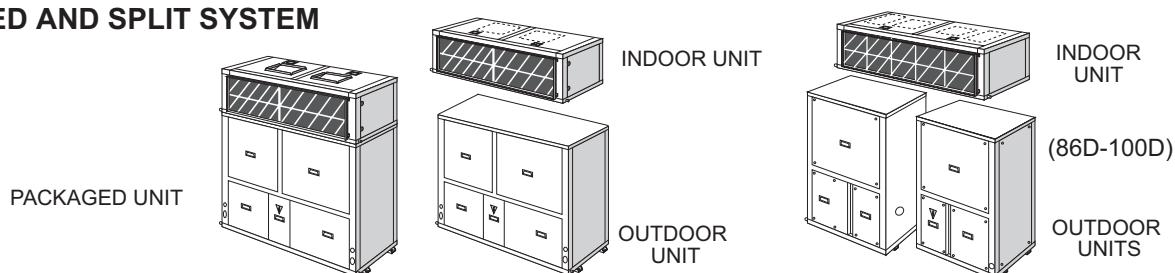
DB.- Dry bulb temperature

WB.- Wet bulb temperature

(1) With admissible minimum air flow.

PHYSICAL DATA

PACKAGED AND SPLIT SYSTEM



SET			LVCK LVHK LVHA 44D	LVCK LVHK LVHA 48D	LVCK LVHK LVHA 56D	LVCK LVHK LVHA 64D	LVCK LVHK LVHA 76D	INT + EXT 86D	INT + EXT 100D
Cooling capacity	(*)	LVCK/LVHK kW	39,00	44,00	53,00	57,40	73,00	83,00	98,50
		LVHA kW	38,40	43,00	52,00	56,20	71,60	81,30	96,50
Heating capacity	(**)	LVHK kW	40,40	45,00	54,00	60,60	73,80	89,00	102,00
		LVHA kW	40,80	45,40	54,60	61,80	75,20	90,50	104,00
DIMENSIONS									
		Height	mm.	2045	2045	2045	2045	2110	2110
		Width	mm.	2340	2340	2340	2340	2590	3140
		Depth	mm.	803	803	803	803	803	803
NET WEIGHT									
		LVCK	Kg	620	740	780	785	935	1120
		LVHK/LVHA	Kg	630	750	790	795	945	1205
OUTDOOR UNIT									
				KVCK KVHK KVHA 44D	KVCK KVHK KVHA 48D	KVCK KVHK KVHA 56D	KVCK KVHK KVHA 64D	KVCK KVHK KVHA 76D	KVCK KVHK KVHA 86D
COMPRESSOR	Nr / Type		2 / Scroll	2 / Scroll	2 / Scroll	2 / Scroll	2 / Scroll	2 / Scroll	4 / Scroll
FAN									
		Max. air flow	m ³ /h.	15100	14700	14200	16000	22000	26000
		Min. air flow	m ³ /h.	11200	11200	11200	13000	18000	21000
		Max available pressure	(1) Pa	170	160	140	300	300	270
NET WEIGHT									
		KVCK	Kg	400	520	540	545	670	850
		KVHK/KVHA	Kg	410	530	550	555	680	860
DIMENSIONS									
		Height	mm.	1380	1380	1380	1380	1445	2 x 1445
		Width	mm.	2340	2340	2340	2340	2590	2 x 1570
		Depth	mm.	803	803	803	803	803	2 x 803
REFRIGERANT CONNECTION									
		Liquid		2 x 5/8"	2 x 5/8"	2 x 5/8"	2 x 5/8"	2 x 3/4"	2 x 7/8"
		Gas		2 x 7/8"	2 x 1-1/8"	2 x 1-1/8"	2 x 1-1/8"	2 x 1-3/8"	2 x 1-5/8"
INDOOR UNIT									
				LECK LEHK LEHA 44D	LECK LEHK LEHA 48D	LECK LEHK LEHA 56D	LECK LEHK LEHA 64D	LECK LEHK LEHA 76D	LECK LEHK LEHA 86D
FAN									
		Max. air flow	m ³ /h.	9400	10200	11700	12000	14600	17500
		Min. air flow	m ³ /h.	7000	7800	9000	9500	11600	14500
		Max available pressure	(1) Pa	205	195	250	220	240	270
NET WEIGHT									
			Kg	220	220	240	240	265	270
DIMENSIONS									
		Height	mm.	665	665	665	665	665	665
		Width	mm.	2340	2340	2340	2340	2590	3140
		Depth	mm.	803	803	803	803	803	803
REFRIGERANT CONNECTION									
		Liquid		2 x 5/8"	2 x 5/8"	2 x 5/8"	2 x 5/8"	2 x 3/4"	2 x 7/8"
		Gas		2 x 7/8"	2 x 1-1/8"	2 x 1-1/8"	2 x 1-1/8"	2 x 1-3/8"	2 x 1-5/8"

(*) Air intake temperature in the indoor exchanger: 27°C DB/19°C WB

(*) Air intake temperature in the outdoor exchanger: 35°C DB

(**) Air intake temperature in the indoor exchanger: 20°C DB

(**) Air intake temperature in the outdoor exchanger: 7°C DB / 6°C WB

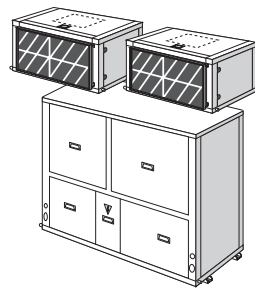
DB.- Dry bulb temperature

WB.- Wet bulb temperature

(1) With admissible minimum air flow.

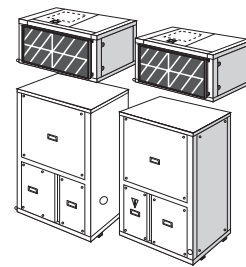
PHYSICAL DATA

MULTI-SPLIT SYSTEM



INDOOR
UNITS

OUTDOOR
UNITS



INDOOR
UNITS

(86D2-100D2)

OUTDOOR
UNITS

OUTDOOR UNIT		KVCK KVHK KVHA 44D2	KVCK KVHK KVHA 48D2	KVCK KVHK KVHA 56D2	KVCK KVHK KVHA 64D2	KVCK KVHK KVHA 76D2	KVCK KVHK KVHA 86D2	KVCK KVHK KVHA 100D2
COMPRESSOR	Nr / Type	2 / Scroll	2 / Scroll	2 / Scroll	2 / Scroll	2 / Scroll	2 / Scroll	4 / Scroll
FAN								
	Max. air flow	m³/h. 15100	14700	14200	16000	22000	26000	28000
	Min. air flow	m³/h. 11200	11200	11200	13000	18000	21000	23000
	Max available pressure	(1) Pa 170	160	140	300	300	270	360
NET WEIGHT	KVCK	Kg 400	520	540	545	670	850	900
	KVHK/KVHA	Kg 410	530	550	555	680	860	910
DIMENSIONS								
	Height	mm. 1380	1380	1380	1380	1445	2 x 1445	2 x 1445
	Width	mm. 2340	2340	2340	2340	2590	2 x 1570	2 x 1570
	Depth	mm. 803	803	803	803	803	2 x 803	2 x 803
REFRIGERANT CONNECTION								
	Liquid	2 x 5/8"	2 x 5/8"	2 x 5/8"	2 x 5/8"	2 x 3/4"	2 x 7/8"	2 x 7/8"
	Gas	2 x 7/8"	2 x 1-1/8"	2 x 1-1/8"	2 x 1-1/8"	2 x 1-3/8"	2 x 1-5/8"	2 x 1-5/8"
INDOOR UNIT		2 x LECK 2 x LEHK 2 x LEHA 22E	2 x LECK 2 x LEHK 2 x LEHA 24E	2 x LECK 2 x LEHK 2 x LEHA 28E	2 x LECK 2 x LEHK 2 x LEHA 32E	2 x LECK 2 x LEHK 2 x LEHA 38E	2 x LECK 2 x LEHK 2 x LEHA 43E	2 x LECK 2 x LEHK 2 x LEHA 50E
FAN								
	Max. air flow	m³/h. 2 x 4700	2 x 5100	2 x 5850	2 x 6000	2 x 7300	2 x 8750	2 x 9000
	Min. air flow	m³/h. 2 x 3500	2 x 3900	2 x 4500	2 x 4750	2 x 5800	2 x 6500	2 x 7250
	Max available pressure	(1) Pa 2 x 205	2 x 195	2 x 250	2 x 220	2 x 240	2 x 290	2 x 300
NET WEIGHT	Kg	2 x 105	2 x 105	2 x 110	2 x 110	2 x 145	2 x 280	2 x 305
DIMENSIONS								
	Height	mm. 2 x 665	2 x 665	2 x 665	2 x 665	2 x 665	2 x 665	2 x 665
	Width	mm. 2 x 1285	2 x 1285	2 x 1285	2 x 1285	2 x 1410	2 x 1570	2 x 1570
	Depth	mm. 2 x 803	2 x 803	2 x 803	2 x 803	2 x 803	2 x 803	2 x 803
REFRIGERANT CONNECTION								
	Liquid	2 x 5/8"	2 x 5/8"	2 x 5/8"	2 x 5/8"	2 x 3/4"	2 x 7/8"	2 x 7/8"
	Gas	2 x 7/8"	2 x 1-1/8"	2 x 1-1/8"	2 x 1-1/8"	2 x 1-3/8"	2 x 1-5/8"	2 x 1-5/8"

(*) Air intake temperature in the indoor exchanger: 27°C DB/19°C WB

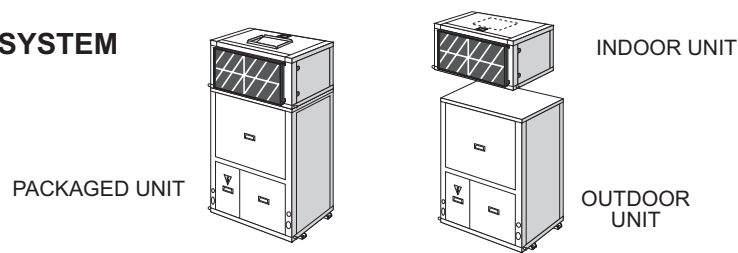
(*) Air intake temperature in the outdoor exchanger: 35°C DB

DB.- Dry bulb temperature
WB.- Wet bulb temperature

(1) With admissible minimum air flow.

ELECTRICAL DATA

PACKAGED AND SPLIT SYSTEM



R-407C
R-22

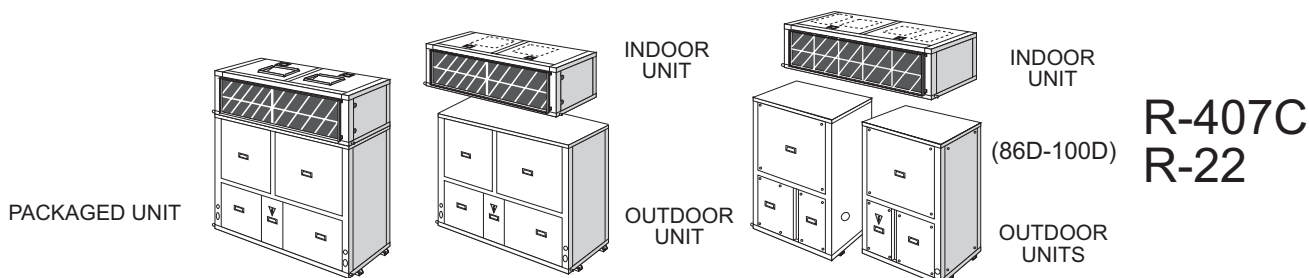
UNIT MODELS		LVCK 22E LVHK 22E LVHA 22E	LVCK 24E LVHK 24E LVHA 24E	LVCK 28E LVHK 28E LVHA 28E	LVCK 32E LVHK 32E LVHA 32E	LVCK 38E LVHK 38E LVHA 38E
Voltage	V/f (50 Hz)	230V-400V/ 3Ph				
Maximum absorbed power	kW	11,1	12,2	14,9	17,2	20,4
Maximum current	A	33,1/19,1	35,0/20,2	41,1/23,7	51,5/29,7	64,8/36,4
Start up current	A	188,7/107,2	176,7/105,2	222,6/130,3	239,0/135,7	297,7/168,8

UNIT MODELS		KVCK 22E KVHK 22E KVHA 22E	KVCK 24E KVHK 24E KVHA 24E	KVCK 28E KVHK 28E KVHA 28E	KVCK 32E KVHK 32E KVHA 32E	KVCK 38E KVHK 38E KVHA 38E
Voltage	V/f (50 Hz)	230V-400V/ 3Ph				
Maximum absorbed power	kW	9,8	10,8	13,4	15,4	18,4
Maximum current	A	28,8/16,6	30,7/17,7	34,9/20,1	45,3/26,1	58,6/32,8
Start up current	A	184,4/104,7	172,4/102,7	216,4/126,7	232,8/132,1	291,5/165,2

UNIT MODELS		LECK 22E LEHK 22E LEHA 22E	LECK 24E LEHK 24E LEHA 24E	LECK 28E LEHK 28E LEHA 28E	LECK 32E LEHK 32E LEHA 32E	LECK 38E LEHK 38E LEHA 38E
Voltage	V/f (50 Hz)	230V-400V/ 3Ph				
Maximum absorbed power	kW	1,3	1,4	1,5	1,8	2
Maximum current	A	4,3/2,5	4,3/2,5	6,2/3,6	6,2/3,6	6,2/3,6
Start up current	A	20,4/11,8	20,4/11,8	32,5/18,8	32,5/18,8	32,5/18,8

ELECTRICAL DATA

PACKAGED AND SPLIT SYSTEM



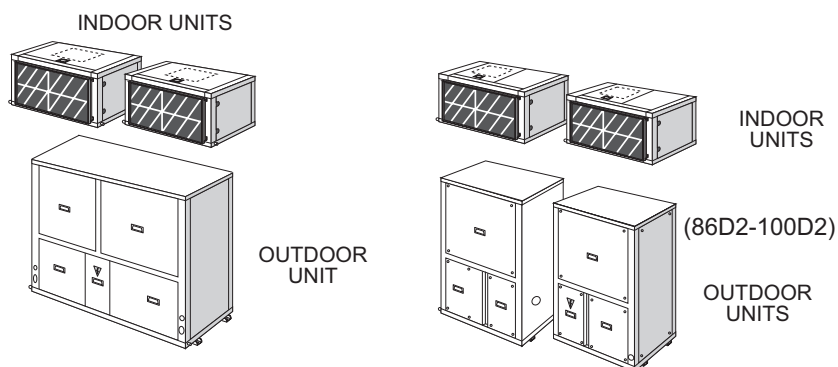
UNIT MODELS		LVCK 44D LVHK 44D LVHA 44D	LVCK 48D LVHK 48D LVHA 48D	LVCK 56D LVHK 56D LVHA 56D	LVCK 64D LVHK 64D LVHA 64D	LVCK 76D LVHK 76D LVHA 76D	INT + EXT 86D	INT + EXT 100D
Voltage	V/f (50 Hz)	230V-400V/ 3Ph						
Maximum absorbed power	kW	22,2	24,4	29,7	34,4	40,7	51,1	60,1
Maximum current	A	66,4/38,3	70,2/40,5	82,3/47,4	103,1/59,4	129,6/72,8	158,7/90,1	175,8/101,3
Start up current	A	222,0 126,4	211,9 125,5	263,8 154,0	290,6 165,4	362,5 205,2	435,1 249,1	357,8 207,7

UNIT MODELS		KVCK 44D KVHK 44D KVHA 44D	KVCK 48D KVHK 48D KVHA 48D	KVCK 56D KVHK 56D KVHA 56D	KVCK 64D KVHK 64D KVHA 64D	KVCK 76D KVHK 76D KVHA 76D	KVCK 86D KVHK 86D KVHA 86D	KVCK 100D KVHK 100D KVHA 100D
Voltage	V/f (50 Hz)	230V-400V/ 3Ph						
Maximum absorbed power	kW	19,6	21,6	26,7	30,8	36,7	46,1	54,6
Maximum current	A	57,6/33,2	61,4/35,4	69,8/40,2	90,6/52,2	117,1/65,6	138,1/78,2	155,2/89,4
Start up current	A	213,2 121,3	203,1 120,4	251,3 146,8	278,1 158,2	350,0 198,0	414,5 237,2	337,2 195,8

UNIT MODELS		LECK 44D LEHK 44D LEHA 44D	LECK 48D LEHK 48D LEHA 48D	LECK 56D LEHK 56D LEHA 56D	LECK 64D LEHK 64D LEHA 64D	LECK 76D LEHK 76D LEHA 76D	LECK 86D LEHK 86D LEHA 86D	LECK 100D LEHK 100D LEHA 100D
Voltage	V/f (50 Hz)	230V-400V/ 3Ph						
Maximum absorbed power	kW	2,6	2,8	3	3,6	4	5	5,5
Maximum current	A	8,8/5,1	8,8/5,1	12,5/7,2	12,5/7,2	12,5/7,2	20,6/11,9	20,6/11,9
Start up current	A	46,7/27	46,7/27	64,7/37,4	64,7/37,4	64,7/37,4	131/76	131/76

ELECTRICAL DATA

MULTI-SPLIT SYSTEM



R-407C
R-22

UNIT MODELS		KVCK KVHK KVHA 44D2	KVCK KVHK KVHA 48D2	KVCK KVHK KVHA 56D2	KVCK KVHK KVHA 64D2	KVCK KVHK KVHA 76D2	KVCK KVHK KVHA 86D2	KVCK KVHK KVHA 100D2
Voltage	V/f (50 Hz)	230V-400V/ 3Ph						
Maximum absorbed power	kW	19,6	21,6	26,7	30,8	36,7	46,1	54,6
Maximum current	A	57,6/33,2	61,4/35,4	69,8/40,2	90,6/52,2	117,1/65,6	138,1/78,2	155,2/89,4
Start up current	A	213,2 121,3	203,1 120,4	251,3 146,8	278,1 158,2	350,0 198,0	414,5 237,2	337,2 195,8

UNIT MODELS		2 x LECK 2 x LEHK 2 x LEHA 22E	2 x LECK 2 x LEHK 2 x LEHA 24E	2 x LECK 2 x LEHK 2 x LEHA 28E	2 x LECK 2 x LEHK 2 x LEHA 32E	2 x LECK 2 x LEHK 2 x LEHA 38E	2 x LECK 2 x LEHK 2 x LEHA 43E	2 x LECK 2 x LEHK 2 x LEHA 50E
Voltage	V/f (50 Hz)	230V-400V/ 3Ph						
Maximum absorbed power	kW	2,6	2,8	3	3,6	4	5	5,5
Maximum current	A	8,8/5,1	8,8/5,1	12,5/7,2	12,5/7,2	12,5/7,2	20,6/11,9	20,6/11,9
Start up current	A	46,7/27	46,7/27	64,7/37,4	64,7/37,4	64,7/37,4	131/76	131/76

FAN PERFORMANCES

STANDARD OUTDOOR FAN PERFORMANCES

22E

	AIR FLOW IN M ³ /H	5600	6325	7050	7550
AVAILABLE STATIC PRESSURE Pa.		170	120	50	0

24E

	AIR FLOW IN M ³ /H	5600	6325	6800	7350
AVAILABLE STATIC PRESSURE Pa.		160	110	50	0

28E

	AIR FLOW IN M ³ /H	5600	6125	6650	7100
AVAILABLE STATIC PRESSURE Pa.		140	90	50	0

32E

AIR FLOW	R.P.M.	M ³ /H	6500	7000	7500	8000
PULLEY CLOSED	1140	300*	275*	225*	●	
1 TURN	1070	230*	200*	140*	85*	
2 TURNS	995	175*	140*	75*	25*	
3 TURNS	920	115*	75*	20*	—	

38E

AIR FLOW	R.P.M.	M ³ /H	9000	9600	10300	11000
PULLEY CLOSED	1000	300*	270*	●	●	
1 TURN	930	250*	200*	165*	110*	
2 TURNS	870	160*	120*	70*	25*	
3 TURNS	800	90*	40*	0*	—	

44D/D2

	AIR FLOW IN M ³ /H	11.200	12.650	14.100	15.100
AVAILABLE STATIC PRESSURE Pa.		170	120	50	0

48D/D2

	AIR FLOW IN M ³ /H	11.200	12.650	13.600	14.700
AVAILABLE STATIC PRESSURE Pa.		160	110	50	0

56D/D2

	AIR FLOW IN M ³ /H	11.200	12.250	13.300	14.200
AVAILABLE STATIC PRESSURE Pa.		140	90	50	0

64D/D2

AIR FLOW	R.P.M.	M ³ /H	13000	14000	15000	16000
PULLEY CLOSED	1140	300*	275*	225*	●	
1 TURN	1070	230*	200*	140*	85*	
2 TURNS	995	175*	140*	75*	25*	
3 TURNS	920	115*	75*	20*	—	

76D/D2

AIR FLOW	R.P.M.	M ³ /H	18000	19200	20600	22000
PULLEY CLOSED	1000	300*	270*	●	●	
1 TURN	930	250*	200*	165*	110*	
2 TURNS	870	160*	120*	70*	25*	
3 TURNS	800	90*	40*	0*	—	

86D/D2

AIR FLOW	R.P.M.	M ³ /H	21000	23000	25000	26000
PULLEY CLOSED	1010	270*	205*	135*	●	
1 TURN	995	190*	125*	55*	25*	
2 TURNS	900	140*	70*	0*	—	
3 TURNS	845	85*	15*	—	—	

100D/D2

AIR FLOW	R.P.M.	M ³ /H	23000	24600	26200	28000
PULLEY CLOSED	1120	360*	305*	240*	165*	
1 TURN	1080	290*	245*	190*	100*	
2 TURNS	1030	230*	170*	110*	20*	
3 TURNS	980	180*	120*	60*	0*	

(*) AVAILABLE STATIC PRESSURE Pa.

(●) WRONG STATUS ON ACCOUNT OF MOTOR POWER LIMIT.

NOTE: The unit leaves factory with pulley two turns closed.

FAN PERFORMANCES

STANDARD INDOOR FAN PERFORMANCES

		22E					24E						
AIR FLOW		R.P.M.	M ³ /H	3500	3900	4300	4700	R.P.M.	M ³ /H	3900	4300	4700	5100
PULLEY POSITION	PULLEY CLOSED	890	205*	195*	165*	130*	890	195*	165*	130*	85*		
	1 TURN	840	165*	150*	125*	90*	840	150*	125*	90*	50*		
	2 TURNS	790	130*	115*	90*	55*	790	115*	90*	55*	15*		
	3 TURNS	740	105*	80*	60*	20*	740	80*	60*	20*	___		

		28E				32E							
AIR FLOW		R.P.M.	M ³ /H	4500	4950	5400	5850	R.P.M.	M ³ /H	4750	5250	5750	6000
PULLEY POSITION	PULLEY CLOSED	1010	250*	200*	95*	30*	1010	220*	175*	115*	70*		
	1 TURN	955	190*	145*	40*	___	955	165*	115*	50*	0*		
	2 TURNS	900	145*	100*	0*	___	900	125*	65*	0*	___		
	3 TURNS	845	105*	55*	___	___	845	80*	25*	___	___		

		38E				43E							
AIR FLOW		R.P.M.	M ³ /H	5800	6400	7000	7300	R.P.M.	M ³ /H	6500	7250	8000	8750
PULLEY POSITION	PULLEY CLOSED	1010	240*	200*	●	●	1140	290*	245*	185*	135*		
	1 TURN	955	190*	150*	100*	●	1070	235*	185*	125*	95*		
	2 TURNS	900	150*	110*	65*	40*	995	180*	125*	60*	0*		
	3 TURNS	845	105*	60*	15*	0*	920	140*	85*	20*	___		

		50E				44D							
AIR FLOW		R.P.M.	M ³ /H	7250	8000	8750	9000	R.P.M.	M ³ /H	7000	7800	8600	9400
PULLEY POSITION	PULLEY CLOSED	1140	300*	245*	185*	●	890	205*	195*	165*	130*		
	1 TURN	1070	230*	170*	100*	75*	840	165*	150*	125*	90*		
	2 TURNS	995	150*	105*	35*	10*	790	130*	115*	90*	55*		
	3 TURNS	920	70*	35*	___	___	740	105*	80*	60*	20*		

		48D				56D							
AIR FLOW		R.P.M.	M ³ /H	7800	8600	9400	10200	R.P.M.	M ³ /H	9000	9900	10800	11700
PULLEY POSITION	PULLEY CLOSED	890	195*	165*	130*	85*	1010	250*	200*	95*	30*		
	1 TURN	840	150*	125*	90*	50*	955	190*	145*	40*	___		
	2 TURNS	790	115*	90*	55*	15*	900	145*	100*	0*	___		
	3 TURNS	740	80*	60*	20*	___	845	105*	55*	___	___		

(*) AVAILABLE STATIC PRESSURE Pa.

(●) WRONG STATUS ON ACCOUNT OF MOTOR POWER LIMIT.

NOTE: The unit leaves factory with pulley two turns closed.

FAN PERFORMANCES

STANDARD INDOOR FAN PERFORMANCES

		64D					76D						
AIR FLOW		RPM	M³/H	9500	10500	11500	12000	RPM	M³/H	11600	12800	14000	14600
PULLEY POSITION	PULLEY CLOSED	1010	220*	175*	115*	70*	1010	240*	200*	●	●		
	1 TURN	955	165*	115*	50*	0*	955	190*	150*	100*	●		
	2 TURNS	900	125*	65*	0*	—	900	150*	110*	65*	40*		
	3 TURNS	845	80*	25*	—	—	845	105*	60*	15*	0*		

		86D				100D							
AIR FLOW		RPM	M³/H	13000	14500	16000	17500	RPM	M³/H	14500	16000	17500	18000
PULLEY POSITION	PULLEY CLOSED	1055	270*	225*	165*	115*	1120	280*	225*	165*	●		
	1 TURN	1010	235*	185*	125*	95*	1080	235*	175*	105*	80*		
	2 TURNS	965	195*	145*	85*	35*	1030	195*	135*	65*	30*		
	3 TURNS	920	160*	110*	45*	—	980	145*	90*	20*	0*		

(*) AVAILABLE STATIC PRESSURE Pa.

(●) WRONG STATUS ON ACCOUNT OF MOTOR POWER LIMIT.

NOTE: The unit leaves factory with pulley two turns closed.

FAN PERFORMANCES

INDOOR FAN PERFORMANCES WITH KIT HIGH STATIC PRESSURE TO 400 Pa (OPTION)

		22E					24E						
AIR FLOW		R.P.M.	M ³ /H	3500	3900	4300	4700	R.P.M.	M ³ /H	3900	4300	4700	5100
PULLEY POSITION	PULLEY CLOSED	1140	420*	405*	385*	360*		1140	405*	385*	360*	●	
	1 TURN	1070	360*	340*	315*	290*		1070	340*	315*	290*	●	
	2 TURNS	995	290*	275*	250*	205*		995	275*	250*	205*	195*	
	3 TURNS	920	240*	215*	190*	160*		920	215*	190*	160*	130*	

		28E					32E						
AIR FLOW		R.P.M.	M ³ /H	4500	4950	5400	5850	R.P.M.	M ³ /H	4750	5250	5750	6000
PULLEY POSITION	PULLEY CLOSED	1200	410*	390*	320*	290*		1200	400*	365*	300*	270*	
	1 TURN	1125	340*	305*	240*	210*		1125	330*	290*	220*	190*	
	2 TURNS	1050	275*	240*	165*	130*		1050	265*	225*	145*	110*	
	3 TURNS	970	215*	175*	100*	60*		970	205*	160*	80*	40*	

		38E					43E						
AIR FLOW		R.P.M.	M ³ /H	5800	6400	7000	7300	R.P.M.	M ³ /H	6500	7250	8000	8750
PULLEY POSITION	PULLEY CLOSED	1200	400*	385*	●	●		1200	410*	390*	325*	●	
	1 TURN	1125	320*	305*	260*	●		1125	340*	315*	240*	205*	
	2 TURNS	1050	270*	235*	180*	●		1050	270*	245*	165*	130*	
	3 TURNS	970	220*	185*	110*	95*		970	215*	185*	105*	60*	

		50E					44D						
AIR FLOW		R.P.M.	M ³ /H	7250	8000	8750	9000	R.P.M.	M ³ /H	7000	7800	8600	9400
PULLEY POSITION	PULLEY CLOSED	1200	380*	315*	●	●		1140	420*	405*	385*	360*	
	1 TURN	1125	305*	230*	195*	●		1070	360*	340*	315*	290*	
	2 TURNS	1050	235*	155*	120*	65*		995	290*	275*	250*	205*	
	3 TURNS	970	175*	95*	50*	—		920	240*	215*	190*	160*	

		48D					56D						
AIR FLOW		R.P.M.	M ³ /H	7800	8600	9400	10200	R.P.M.	M ³ /H	9000	9900	10800	11700
PULLEY POSITION	PULLEY CLOSED	1140	405*	385*	360*	●		1200	410*	390*	320*	290*	
	1 TURN	1070	340*	315*	290*	●		1125	340*	305*	240*	210*	
	2 TURNS	995	275*	250*	205*	195*		1050	275*	240*	165*	130*	
	3 TURNS	920	215*	190*	160*	130*		970	215*	175*	100*	60*	

(*) AVAILABLE STATIC PRESSURE Pa.

(●) WRONG STATUS ON ACCOUNT OF MOTOR POWER LIMIT.

NOTE: The unit leaves factory with pulley two turns closed.

FAN PERFORMANCES

INDOOR FAN PERFORMANCES WITH KIT HIGH STATIC PRESSURE TO 400 Pa (OPTION)

		64D					76D						
AIR FLOW		RPM.	M³/H	9500	10500	11500	12000	RPM.	M³/H	11600	12800	14000	14600
PULLEY POSITION	PULLEY CLOSED	1200	400*	365*	300*	●	1200	400*	385*	●	●		
	1 TURN	1125	330*	290*	220*	190*	1125	320*	305*	260*	●		
	2 TURNS	1050	265*	225*	145*	110*	1050	270*	235*	180*	●		
	3 TURNS	970	205*	160*	80*	40*	970	220*	185*	110*	95*		

		86D					100D						
AIR FLOW		RPM.	M³/H	13000	14500	16000	17500	RPM.	M³/H	14500	16000	17500	18000
PULLEY POSITION	PULLEY CLOSED	1200	410*	390*	●	●	1200	380*	315*	●	●		
	1 TURN	1150	365*	345*	265*	●	1150	335*	255*	●	●		
	2 TURNS	1100	315*	295*	215*	●	1100	285*	205*	●	●		
	3 TURNS	1050	270*	245*	165*	130*	1050	235*	155*	120*	●		

(*) AVAILABLE STATIC PRESSURE Pa.

(●) WRONG STATUS ON ACCOUNT OF MOTOR POWER LIMIT.

NOTE: The unit leaves factory with pulley two turns closed.

FAN PERFORMANCES

OUTDOOR FAN PERFORMANCES WITH KIT HIGH STATIC PRESSURE TO 350 Pa (OPTION)

		22E					24E						
AIR FLOW		R.P.M.	M ³ /H	5600	6325	7050	7550	R.P.M.	M ³ /H	5600	6325	6800	7350
PULLEY POSITION	PULLEY CLOSED	1140	365*	330*	290*	●		1140	365*	325*	290*	●	
	1 TURN	1070	290*	255*	210*	195*		1070	290*	250*	210*	195*	
	2 TURNS	995	240*	195*	165*	135*		995	240*	190*	165*	135*	
	3 TURNS	920	185*	145*	105*	70*		920	185*	140*	105*	70*	

		28E					44D/D2						
AIR FLOW		R.P.M.	M ³ /H	5600	6125	6650	7100	R.P.M.	M ³ /H	11200	12650	14100	15100
PULLEY POSITION	PULLEY CLOSED	1140	365*	325*	290*	270*		1140	365*	330*	●	●	
	1 TURN	1070	290*	250*	210*	195*		1070	290*	255*	210*	●	
	2 TURNS	995	240*	190*	165*	135*		995	240*	195*	165*	135*	
	3 TURNS	920	185*	140*	105*	70*		920	185*	145*	105*	70*	

		48D/D2					56D/D2						
AIR FLOW		R.P.M.	M ³ /H	11200	12650	13600	14700	R.P.M.	M ³ /H	11200	12250	13300	14200
PULLEY POSITION	PULLEY CLOSED	1140	365*	330*	290*	●		1140	365*	330*	290*	●	
	1 TURN	1070	290*	255*	210*	●		1070	290*	255*	210*	195*	
	2 TURNS	995	240*	195*	165*	135*		995	240*	195*	165*	135*	
	3 TURNS	920	185*	145*	105*	70*		920	185*	145*	105*	70*	

(*) AVAILABLE STATIC PRESSURE Pa.

(●) WRONG STATUS ON ACCOUNT OF MOTOR POWER LIMIT.

NOTE: The unit leaves factory with pulley two turns closed.

TECHNICAL DATA

SOUND PRESSURE / SOUND POWER LEVELS FOR INDOOR UNIT

UNIT MODELS		LECK 22E LEHK 22E LEHA 22E	LECK 24E LEHK 24E LEHA 24E	LECK 28E LEHK 28E LEHA 28E	LECK 32E LEHK 32E LEHA 32E	LECK 38E LEHK 38E LEHA 38E	LECK 43E LEHK 43E LEHA 43E
Sound pressure level (Lp) (1)	dBA	58	59	59	60	61	62
Sound power level (Lw)	dBA	80	81	82	85	86	87

UNIT MODELS		LECK 50E LEHK 50E LEHA 50E	LECK 44D LEHK 44D LEHA 44D	LECK 48D LEHK 48D LEHA 48D	LECK 56D LEHK 56D LEHA 56D	LECK 64D LEHK 64D LEHA 64D	LECK 76D LEHK 76D LEHA 76D
Sound pressure level (Lp) (1)	dBA	62	58	59	59	61	62
Sound power level (Lw)	dBA	88	83	84	85	88	89

UNIT MODELS		LECK 86D LEHK 86D LEHA 86D	LECK 100D LEHK 100D LEHA 100D
Sound pressure level (Lp) (1)	dBA	63	64
Sound power level (Lw)	dBA	90	91

(1) Sound pressure level estimated and radiated by indoor fan to the room with normal absorption, measured 2m from the indoor discharge and the unit installed with intake and discharge ducts according with the unit size.

SOUND PRESSURE / SOUND POWER LEVELS FOR OUTDOOR UNIT

UNIT MODELS		KVCK 22E KVHK 22E KVHA 22E	KVCK 24E KVHK 24E KVHA 24E	KVCK 28E KVHK 28E KVHA 28E	KVCK 32E KVHK 32E KVHA 32E	KVCK 38E KVHK 38E KVHA 38E	KVCK 44D KVHK 44D KVHA 44D
Sound pressure level (Lp) (1)	dBA	51	51	51	51	51	51
Sound power level (Lw)	dBA	82	82	82	84	85	85

UNIT MODELS		KVCK 48D KVHK 48D KVHA 48D	KVCK 56D KVHK 56D KVHA 56D	KVCK 64D KVHK 64D KVHA 64D	KVCK 76D KVHK 76D KVHA 76D	KVCK 86D KVHK 86D KVHA 86D	KVCK 100D KVHK 100D KVHA 100D
Sound pressure level (Lp) (1)	dBA	51	51	52	53	54	55
Sound power level (Lw)	dBA	85	85	87	88	91	92

(1) Sound pressure level estimated and radiated by outdoor fan to free field measured 10m from the unit, and the unit installed with intake and discharge ducts according with the unit size.

COOLING CAPACITIES

R-407C

PACKAGED SYSTEM LVCK / LVHK
 SPLIT SYSTEM KVCK + LECK / KVHK+ LEHK
 MULTI-SPLIT SYSTEM KVCK-D2 + 2 x LECK / KVHK - D2 + 2 x LEHK

MODEL 22E

MODEL 24E

AIR ENTRY TEMPERATURE INDOOR UNIT	CAPACITY IN kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C DRY BULB					AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C DRY BULB				
		25°C	30°C	35°C	40°C	45°C	25°C	30°C	35°C	40°C	45°C
21°C DB	TOTAL	18,04	17,42	16,76	16,05	15,26	20,46	19,73	18,96	18,17	17,33
	SENSIBLE	14,06	13,76	13,45	13,11	12,74	15,66	15,30	14,93	14,55	14,16
15°C WB	POWER INPUT	7,27	7,75	8,29	8,90	9,60	8,22	8,75	9,35	10,01	10,73
	24°C DB	TOTAL	19,46	18,81	18,11	17,35	16,51	22,03	21,25	20,43	19,58
17°C WB	SENSIBLE	15,13	14,83	14,51	14,17	13,80	16,81	16,45	16,08	15,69	15,30
	POWER INPUT	7,35	7,84	8,38	9,00	9,69	8,28	8,82	9,43	10,10	10,83
27°C DB	TOTAL	21,00	20,30	19,50	18,75	17,85	23,72	22,88	22,00	21,10	20,16
	SENSIBLE	16,16	15,86	15,55	15,20	14,83	17,92	17,55	17,18	16,80	16,40
19°C WB	POWER INPUT	7,45	7,94	8,50	9,11	9,80	8,35	8,89	9,50	10,19	10,93
	29°C DB	TOTAL	22,65	21,91	21,12	20,25	19,29	25,54	24,65	23,72	22,75
21°C WB	SENSIBLE	16,18	15,89	15,57	15,22	14,84	17,93	17,56	17,19	16,80	16,40
	POWER INPUT	7,55	8,05	8,60	9,22	9,92	8,42	8,97	9,59	10,28	11,04
32°C DB	TOTAL	24,42	23,63	22,78	21,85	20,82	27,50	26,54	25,54	24,50	23,42
	SENSIBLE	17,17	16,87	16,55	16,21	15,83	18,99	18,62	18,25	17,86	17,46
23°C WB	POWER INPUT	7,67	8,17	8,73	9,36	10,06	8,50	9,06	9,69	10,39	11,16

MODEL 28E

MODEL 32E

AIR ENTRY TEMPERATURE INDOOR UNIT	CAPACITY IN kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C DRY BULB					AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C DRY BULB				
		25°C	30°C	35°C	40°C	45°C	25°C	30°C	35°C	40°C	45°C
21°C DB	TOTAL	24,80	23,87	22,91	21,93	20,93	26,93	25,92	24,88	23,81	22,72
	SENSIBLE	19,20	18,75	18,29	17,83	17,36	20,98	20,49	19,99	19,49	18,98
15°C WB	POWER INPUT	9,77	10,47	11,24	12,09	13,02	11,01	11,82	12,72	13,71	14,79
	24°C DB	TOTAL	26,65	25,66	24,64	23,60	22,53	28,91	27,84	26,73	25,60
17°C WB	SENSIBLE	20,60	20,15	19,69	19,23	18,76	22,51	22,02	21,52	21,02	20,50
	POWER INPUT	9,88	10,58	11,37	12,23	13,18	11,13	11,96	12,87	13,87	14,97
27°C DB	TOTAL	28,62	27,57	26,50	25,39	24,24	31,03	29,89	28,70	27,51	26,27
	SENSIBLE	21,96	21,51	21,05	20,58	20,11	23,99	23,50	23,00	22,50	21,98
19°C WB	POWER INPUT	9,99	10,70	11,50	12,38	13,35	11,26	12,10	13,00	14,05	15,17
	29°C DB	TOTAL	30,75	29,64	28,49	27,30	26,09	33,31	32,09	30,84	29,56
21°C WB	SENSIBLE	21,93	21,48	21,03	20,56	20,09	23,95	24,46	22,96	22,46	21,95
	POWER INPUT	10,11	10,84	11,65	12,54	13,53	11,41	12,26	13,20	14,24	15,38
32°C DB	TOTAL	33,02	31,83	30,60	29,34	28,04	35,73	34,43	33,11	31,74	30,33
	SENSIBLE	23,22	22,77	22,32	21,85	21,38	25,35	24,87	24,37	23,87	23,36
23°C WB	POWER INPUT	10,24	10,98	11,81	12,72	13,72	11,56	12,43	13,38	14,44	15,61

MODEL 38E

MODEL 44D / 44D2 (MULTI)

AIR ENTRY TEMPERATURE INDOOR UNIT	CAPACITY IN kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C DRY BULB					AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C DRY BULB				
		25°C	30°C	35°C	40°C	45°C	25°C	30°C	35°C	40°C	45°C
21°C DB	TOTAL	34,27	33,00	31,68	30,30	28,85	36,07	34,85	33,53	32,10	30,52
	SENSIBLE	26,78	26,17	25,54	24,88	24,20	28,13	27,53	26,90	26,22	25,48
15°C WB	POWER INPUT	13,39	14,40	15,51	16,72	18,01	14,46	15,41	16,49	17,71	19,08
	24°C DB	TOTAL	36,76	35,41	34,01	32,54	31,01	38,92	37,62	36,22	34,70
17°C WB	SENSIBLE	28,72	28,11	27,47	26,82	26,14	30,27	29,67	29,03	28,35	27,60
	POWER INPUT	13,59	14,61	15,75	16,98	18,30	14,62	15,59	16,67	17,90	19,28
27°C DB	TOTAL	39,43	37,99	36,50	34,94	33,32	41,99	40,61	39,00	37,49	35,70
	SENSIBLE	30,60	29,98	29,35	28,70	28,02	32,33	31,74	31,10	30,41	29,66
19°C WB	POWER INPUT	13,81	14,85	16,00	17,25	18,60	14,81	15,78	17,00	18,11	19,49
	29°C DB	TOTAL	42,32	40,78	39,19	37,53	35,81	45,30	43,83	42,24	40,50
21°C WB	SENSIBLE	30,54	29,93	29,29	28,64	27,97	32,38	31,78	31,14	30,45	29,70
	POWER INPUT	14,06	15,11	16,28	17,56	18,93	15,02	16,00	17,11	18,35	19,74
32°C DB	TOTAL	45,39	43,75	42,05	40,30	38,47	48,85	47,27	45,57	43,71	41,65
	SENSIBLE	32,34	31,73	31,09	30,45	29,78	34,35	33,75	33,11	32,42	31,66
23°C WB	POWER INPUT	14,32	15,39	16,58	17,88	19,28	15,26	16,25	17,36	18,61	20,00

Nominal capacities

DB - Dry Bulb
 WB - Wet Bulb

COOLING CAPACITIES

R-407C

PACKAGED SYSTEM LVCK / LVHK
 SPLIT SYSTEM KVCK + LECK / KVHK+ LEHK
 MULTI-SPLIT SYSTEM KVCK-D2 + 2 x LECK / KVHK - D2 + 2 x LEHK

MODEL 48D / 48D2 (MULTI)

MODEL 56D / 56D2 (MULTI)

AIR ENTRY TEMPERATURE INDOOR UNIT	CAPACITY IN kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C DRY BULB					AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C DRY BULB				
		25°C	30°C	35°C	40°C	45°C	25°C	30°C	35°C	40°C	45°C
21°C DB	TOTAL	40,92	39,45	37,93	36,33	34,67	49,60	47,74	45,84	43,88	41,87
	SENSIBLE	31,32	30,60	29,87	29,11	28,32	38,39	37,50	36,59	35,66	34,72
15°C WB	POWER INPUT	16,62	17,70	18,91	20,25	21,70	19,55	20,94	22,49	24,18	26,04
	TOTAL	44,06	42,49	40,86	39,17	37,39	53,30	51,32	49,30	47,21	45,07
24°C DB	SENSIBLE	33,61	32,89	32,15	31,39	30,60	41,20	40,30	39,39	38,46	37,51
	POWER INPUT	16,74	17,84	19,06	20,42	21,90	19,75	21,17	22,74	24,46	26,36
17°C WB	TOTAL	47,44	45,76	44,00	42,21	40,32	57,26	55,16	53,00	50,78	48,50
	SENSIBLE	35,83	35,11	34,36	33,60	32,80	43,91	43,01	42,10	41,17	40,22
27°C DB	POWER INPUT	16,88	17,98	19,00	20,60	22,10	19,97	21,41	23,00	24,76	26,69
	TOTAL	51,09	49,29	47,43	45,50	43,48	61,52	59,28	56,98	54,62	52,18
29°C DB	SENSIBLE	35,85	35,12	34,37	33,60	32,81	43,86	42,97	42,05	41,12	40,17
	POWER INPUT	17,03	18,14	19,40	20,79	22,32	20,21	21,67	23,30	25,09	27,05
21°C WB	TOTAL	54,99	53,07	51,08	49,01	46,85	66,04	63,66	61,22	58,70	56,10
	SENSIBLE	37,98	37,24	36,49	35,72	34,92	46,44	45,55	44,64	43,71	42,76
32°C DB	POWER INPUT	17,19	18,31	19,58	21,00	22,56	20,48	21,96	23,61	25,44	27,44
	TOTAL	54,99	53,07	51,08	49,01	46,85	66,04	63,66	61,22	58,70	56,10
23°C WB	SENSIBLE	37,98	37,24	36,49	35,72	34,92	46,44	45,55	44,64	43,71	42,76
	POWER INPUT	17,19	18,31	19,58	21,00	22,56	20,48	21,96	23,61	25,44	27,44

MODEL 64D / 64D2 (MULTI)

MODEL 76D / 76D2 (MULTI)

AIR ENTRY TEMPERATURE INDOOR UNIT	CAPACITY IN kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C DRY BULB					AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C DRY BULB				
		25°C	30°C	35°C	40°C	45°C	25°C	30°C	35°C	40°C	45°C
21°C DB	TOTAL	53,86	51,83	49,76	47,63	45,44	68,54	66,01	63,37	60,61	57,71
	SENSIBLE	41,96	40,98	39,99	38,98	37,95	53,56	52,34	51,07	49,76	48,40
15°C WB	POWER INPUT	22,03	23,65	25,44	27,41	29,58	26,78	28,80	31,03	33,45	36,03
	TOTAL	57,82	55,67	53,47	51,20	48,87	73,52	70,82	68,01	65,09	62,02
24°C DB	SENSIBLE	45,02	44,04	43,05	42,04	41,01	57,44	56,21	54,95	53,64	52,28
	POWER INPUT	22,27	23,91	25,73	27,74	29,94	27,19	29,23	31,50	33,97	36,60
17°C WB	TOTAL	62,06	59,78	57,40	55,02	52,54	78,87	75,99	73,00	69,89	66,65
	SENSIBLE	47,97	47,00	46,00	44,99	43,96	61,20	59,97	58,70	57,39	56,04
27°C DB	POWER INPUT	22,53	24,20	26,00	28,09	30,34	27,63	29,70	32,00	34,52	37,21
	TOTAL	66,62	64,19	61,69	59,12	56,47	84,63	81,56	78,38	75,07	71,63
29°C DB	SENSIBLE	47,89	46,92	45,93	44,92	43,89	61,09	59,85	58,59	57,29	55,95
	POWER INPUT	22,81	24,51	26,40	28,48	30,76	28,12	30,22	32,56	35,12	37,87
21°C WB	TOTAL	71,45	68,87	66,21	63,48	60,65	90,79	87,50	84,11	80,59	76,94
	SENSIBLE	50,71	49,74	48,75	47,74	46,72	64,69	63,45	62,19	60,89	59,56
32°C DB	POWER INPUT	23,12	24,85	26,77	28,89	31,22	28,66	30,79	33,17	35,77	38,58
	TOTAL	71,45	68,87	66,21	63,48	60,65	90,79	87,50	84,11	80,59	76,94
23°C WB	SENSIBLE	50,71	49,74	48,75	47,74	46,72	64,69	63,45	62,19	60,89	59,56
	POWER INPUT	23,12	24,85	26,77	28,89	31,22	28,66	30,79	33,17	35,77	38,58

MODEL 86D / 86D2 (MULTI)

MODEL 100D / 100D2 (MULTI)

AIR ENTRY TEMPERATURE INDOOR UNIT	CAPACITY IN kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C DRY BULB					AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C DRY BULB				
		25°C	30°C	35°C	40°C	45°C	25°C	30°C	35°C	40°C	45°C
21°C DB	TOTAL	77,46	74,76	72,00	69,15	66,23	92,33	89,01	85,63	82,17	78,65
	SENSIBLE	58,28	56,96	55,61	54,23	52,83	68,89	67,26	65,61	63,94	62,25
15°C WB	POWER INPUT	33,43	35,72	38,26	41,07	44,19	40,26	43,10	46,24	49,70	53,48
	TOTAL	83,31	80,45	77,52	74,52	72,47	99,22	95,69	92,09	88,41	85,87
24°C DB	SENSIBLE	62,40	61,07	59,72	58,35	57,49	73,68	72,04	70,39	68,71	67,63
	POWER INPUT	33,72	36,03	38,61	41,48	43,47	40,67	43,56	46,75	50,27	52,68
17°C WB	TOTAL	89,60	86,56	83,00	80,30	77,96	106,61	102,86	98,50	95,11	92,14
	SENSIBLE	66,38	65,05	63,70	62,34	61,43	78,30	76,66	75,00	73,32	72,16
27°C DB	POWER INPUT	34,03	36,37	38,70	41,92	43,90	41,12	44,05	47,00	50,89	53,30
	TOTAL	96,40	93,17	89,89	86,56	83,87	114,57	110,58	106,50	102,33	98,85
29°C DB	SENSIBLE	66,38	65,05	63,71	62,37	61,40	78,26	76,62	74,96	73,27	72,02
	POWER INPUT	34,37	36,75	39,42	42,40	44,37	41,61	44,60	47,91	51,57	53,95
21°C WB	TOTAL	103,65	100,23	96,76	93,26	90,17	123,05	118,81	114,46	110,01	105,94
	SENSIBLE	70,17	68,84	67,52	66,19	65,17	82,64	81,01	79,35	77,67	76,31
32°C DB	POWER INPUT	34,74	37,16	39,88	42,92	44,87	42,15	45,20	48,58	52,31	54,65
	TOTAL	103,65	100,23	96,76	93,26	90,17	123,05	118,81	114,46	110,01	105,94
23°C WB	SENSIBLE	70,17	68,84	67,52	66,19	65,17	82,64	81,01	79,35	77,67	76,31
	POWER INPUT	34,74	37,16	39,88	42,92	44,87	42,15	45,20	48,58	52,31	54,65

Nominal capacities

DB - Dry Bulb
 WB - Wet Bulb

COOLING CAPACITIES

R-22

**PACKAGED SYSTEM LVHA
SPLIT SYSTEM KVHA + LEHA
MULTI-SPLIT SYSTEM KVHA - D2 + 2 x LEHA**

MODEL 22E

MODEL 24E

AIR ENTRY TEMPERATURE INDOOR UNIT		CAPACITY IN kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C DRY BULB					AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C DRY BULB				
			25°C	30°C	35°C	40°C	45°C	25°C	30°C	35°C	40°C	45°C
21°C DB	15°C WB	TOTAL	17,66	17,14	16,57	15,92	15,18	19,80	19,19	18,57	17,93	17,27
		SENSIBLE	13,84	13,58	13,31	13,00	12,64	15,37	15,07	14,77	14,46	14,15
		POWER INPUT	7,17	7,58	8,03	8,54	9,11	8,01	8,47	9,00	9,59	10,24
24°C DB	17°C WB	TOTAL	18,96	18,41	17,81	17,13	16,32	21,25	20,60	19,94	19,26	18,57
		SENSIBLE	14,85	14,60	14,33	14,02	13,66	16,49	16,19	15,89	15,58	15,26
		POWER INPUT	7,25	7,67	8,13	8,65	9,22	8,08	8,55	9,08	9,67	10,34
27°C DB	19°C WB	TOTAL	20,33	19,77	19,20	18,41	17,53	22,81	22,12	21,50	20,70	19,96
		SENSIBLE	15,83	15,58	15,27	15,00	14,63	17,57	17,27	17,06	16,66	16,35
		POWER INPUT	7,34	7,76	8,21	8,76	9,34	8,15	8,63	9,11	9,77	10,45
29°C DB	21°C WB	TOTAL	21,79	21,20	20,54	19,77	18,78	24,49	23,76	23,01	22,24	21,47
		SENSIBLE	15,79	15,55	15,28	14,97	14,59	17,55	17,25	16,94	16,64	16,33
		POWER INPUT	7,44	7,87	8,35	8,88	9,46	8,24	8,73	9,27	9,88	10,56
32°C DB	23°C WB	TOTAL	23,32	22,71	22,02	21,18	20,04	26,28	25,50	24,71	23,90	23,07
		SENSIBLE	16,71	16,48	16,21	15,90	15,48	18,58	18,28	17,98	17,67	17,37
		POWER INPUT	7,55	7,98	8,47	9,01	9,59	8,34	8,83	9,38	10,01	10,70

MODEL 28E

MODEL 32E

AIR ENTRY TEMPERATURE INDOOR UNIT		CAPACITY IN kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C DRY BULB					AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C DRY BULB				
			25°C	30°C	35°C	40°C	45°C	25°C	30°C	35°C	40°C	45°C
21°C DB	15°C WB	TOTAL	24,52	23,74	22,91	22,02	21,04	26,29	25,43	24,51	23,52	22,43
		SENSIBLE	19,08	18,70	18,31	17,88	17,43	20,58	20,17	19,73	19,26	18,75
		POWER INPUT	9,35	9,98	10,67	11,43	12,26	10,61	11,33	12,13	13,00	13,95
24°C DB	17°C WB	TOTAL	26,26	25,42	24,53	23,57	22,52	28,13	27,20	26,22	25,15	23,65
		SENSIBLE	20,44	20,06	19,66	19,23	18,77	22,04	21,63	21,19	20,71	20,01
		POWER INPUT	9,46	10,10	10,80	11,57	12,42	10,74	11,48	12,28	13,17	14,52
27°C DB	19°C WB	TOTAL	28,10	27,20	26,00	25,21	24,09	30,07	29,08	28,10	26,87	25,33
		SENSIBLE	21,75	21,37	20,96	20,53	20,06	23,45	23,03	22,59	22,11	21,42
		POWER INPUT	9,58	10,23	11,00	11,73	12,58	10,89	11,63	12,51	13,35	14,74
29°C DB	21°C WB	TOTAL	30,06	29,09	28,06	26,95	25,74	32,14	31,07	29,93	28,70	27,13
		SENSIBLE	21,67	21,29	20,88	20,44	19,97	23,35	22,93	22,48	22,00	21,34
		POWER INPUT	9,71	10,37	11,09	11,89	12,76	11,04	11,80	12,63	13,54	14,97
32°C DB	23°C WB	TOTAL	32,13	31,08	29,97	28,77	26,60	34,31	33,16	31,94	30,61	29,02
		SENSIBLE	22,91	22,52	22,11	21,67	21,00	24,68	24,25	23,80	23,31	22,68
		POWER INPUT	9,86	10,52	11,26	12,06	160,95	11,21	11,97	12,82	13,74	15,22

MODEL 38E

MODEL 44D / 44D2 (MULTI)

AIR ENTRY TEMPERATURE INDOOR UNIT		CAPACITY IN kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C DRY BULB					AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C DRY BULB				
			25°C	30°C	35°C	40°C	45°C	25°C	30°C	35°C	40°C	45°C
21°C DB	15°C WB	TOTAL	33,46	32,39	31,22	29,93	28,48	35,32	34,27	33,13	31,84	30,35
		SENSIBLE	26,28	25,76	25,21	24,59	23,92	27,68	27,17	26,61	25,99	25,29
		POWER INPUT	12,90	13,80	14,79	15,86	16,99	14,34	15,16	16,07	17,10	18,23
24°C DB	17°C WB	TOTAL	35,76	34,61	33,36	31,98	30,01	37,91	36,82	35,62	34,26	32,64
		SENSIBLE	28,13	27,61	27,05	26,43	25,52	29,71	29,20	28,66	28,04	27,32
		POWER INPUT	13,11	14,02	15,03	16,12	17,74	14,51	15,34	16,27	17,30	18,45
27°C DB	19°C WB	TOTAL	38,21	36,97	35,80	34,14	32,14	40,65	39,53	38,40	36,82	35,05
		SENSIBLE	29,92	29,39	28,82	28,21	27,32	31,65	31,16	30,54	30,00	29,26
		POWER INPUT	13,35	14,27	15,39	16,39	18,07	14,69	15,54	16,43	17,53	18,69
29°C DB	21°C WB	TOTAL	40,83	39,49	38,03	36,44	34,41	43,57	42,40	41,08	39,53	37,55
		SENSIBLE	29,79	29,26	28,68	28,06	27,21	31,58	31,10	30,57	29,95	29,18
		POWER INPUT	13,61	14,54	15,57	16,69	18,43	14,89	15,75	16,71	17,77	18,93
32°C DB	23°C WB	TOTAL	43,60	42,14	40,57	38,86	36,82	46,63	45,42	44,03	42,35	40,07
		SENSIBLE	31,49	30,94	30,37	29,74	28,92	33,42	32,95	32,42	31,80	30,97
		POWER INPUT	13,89	14,83	15,87	17,01	18,81	15,11	15,98	16,95	18,03	19,19

Nominal capacities

DB - Dry Bulb
WB - Wet Bulb

COOLING CAPACITIES

**PACKAGED SYSTEM LVHA
SPLIT SYSTEM KVHA + LEHA
MULTI-SPLIT SYSTEM KVHA - D2 + 2 x LEHA**

R-22

MODEL 48D / 48D2 (MULTI)

MODEL 56D / 56D2 (MULTI)

AIR ENTRY TEMPERATURE INDOOR UNIT	CAPACITY IN kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C DRY BULB					AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C DRY BULB				
		25°C	30°C	35°C	40°C	45°C	25°C	30°C	35°C	40°C	45°C
21°C DB	TOTAL	39,60	38,38	37,14	35,86	34,55	49,05	47,49	45,82	44,03	42,09
	SENSIBLE	30,74	30,15	29,54	28,93	28,30	38,16	37,41	36,61	35,76	34,85
15°C WB	POWER INPUT	16,10	17,04	18,09	19,28	20,60	18,61	19,86	21,24	22,76	24,41
	TOTAL	42,51	41,21	39,88	38,53	37,14	52,52	50,84	49,05	47,13	45,05
24°C DB	SENSIBLE	32,98	32,38	31,77	31,16	30,53	40,88	40,12	39,32	38,46	37,54
	POWER INPUT	16,24	17,19	18,26	19,46	20,79	18,83	20,10	21,51	23,04	24,72
17°C WB	TOTAL	45,62	44,24	43,00	41,40	39,93	56,20	54,39	52,00	50,41	48,18
	SENSIBLE	35,14	34,54	34,12	33,32	32,69	43,50	42,73	41,92	41,06	40,13
27°C DB	POWER INPUT	16,40	17,36	18,22	19,65	21,01	19,07	20,36	22,00	23,35	25,05
	TOTAL	48,98	47,51	46,01	44,49	42,94	60,12	58,18	56,11	53,90	51,49
29°C DB	SENSIBLE	35,09	34,49	33,89	33,27	32,65	43,35	42,57	41,75	40,88	39,95
	POWER INPUT	16,58	17,55	18,64	19,87	21,24	19,34	20,65	22,09	23,67	25,40
21°C WB	TOTAL	52,57	51,00	49,41	47,79	46,15	64,26	62,16	59,94	57,55	53,20
	SENSIBLE	37,16	36,56	36,96	35,35	34,73	45,82	45,04	44,21	43,34	42,00
32°C DB	POWER INPUT	16,77	16,76	18,87	20,12	21,51	19,63	20,95	22,41	24,02	320,44
	TOTAL										
23°C WB	SENSIBLE										
	POWER INPUT										

MODEL 64D / 64D2 (MULTI)

MODEL 76D / 76D2 (MULTI)

AIR ENTRY TEMPERATURE INDOOR UNIT	CAPACITY IN kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C DRY BULB					AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C DRY BULB				
		25°C	30°C	35°C	40°C	45°C	25°C	30°C	35°C	40°C	45°C
21°C DB	TOTAL	52,58	50,87	49,02	47,03	44,85	66,92	64,78	62,44	59,85	56,97
	SENSIBLE	41,15	40,33	39,45	38,51	37,49	52,55	51,52	50,41	49,18	47,82
15°C WB	POWER INPUT	21,22	22,67	24,26	26,00	27,89	25,79	27,59	29,58	31,71	33,97
	TOTAL	56,25	54,41	52,44	50,30	47,29	71,53	69,22	66,71	63,95	60,02
24°C DB	SENSIBLE	44,08	43,25	42,36	41,42	40,01	56,26	55,22	54,09	52,86	51,03
	POWER INPUT	21,48	22,95	24,57	26,34	29,04	26,23	28,05	30,06	32,23	35,48
17°C WB	TOTAL	60,14	58,16	56,20	53,75	50,67	76,43	73,94	71,60	68,28	64,28
	SENSIBLE	46,89	46,05	45,16	44,20	42,84	59,83	58,78	57,64	56,40	54,63
27°C DB	POWER INPUT	21,77	23,26	25,02	26,69	29,47	26,70	28,54	30,78	32,79	36,14
	TOTAL	64,28	62,15	59,87	57,40	54,26	81,67	78,98	76,06	72,89	68,83
29°C DB	SENSIBLE	46,69	45,85	44,95	43,98	42,67	59,57	58,50	57,35	56,11	54,41
	POWER INPUT	22,08	23,59	25,25	27,07	29,94	27,22	29,08	31,14	33,38	36,85
21°C WB	TOTAL	68,63	66,33	63,87	61,21	58,04	87,20	84,28	81,14	77,73	73,64
	SENSIBLE	49,34	48,49	47,59	46,61	45,35	62,96	61,88	60,72	59,47	57,84
32°C DB	POWER INPUT	22,42	23,95	25,63	27,48	30,44	27,78	29,66	31,75	34,02	37,61
	TOTAL										
23°C WB	SENSIBLE										
	POWER INPUT										

MODEL 86D / 86D2 (MULTI)

MODEL 100D / 100D2 (MULTI)

AIR ENTRY TEMPERATURE INDOOR UNIT	CAPACITY IN kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C DRY BULB					AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C DRY BULB				
		25°C	30°C	35°C	40°C	45°C	25°C	30°C	35°C	40°C	45°C
21°C DB	TOTAL	75,54	73,28	70,86	68,21	65,29	89,98	87,19	84,21	80,99	77,49
	SENSIBLE	56,96	55,85	54,66	53,39	51,99	67,54	66,17	64,71	63,16	61,47
15°C WB	POWER INPUT	32,13	34,16	36,39	38,86	41,58	38,79	41,32	44,09	47,13	50,45
	TOTAL	80,96	78,54	75,94	73,13	70,05	96,34	93,35	90,15	86,70	82,94
24°C DB	SENSIBLE	60,87	59,75	58,56	57,28	55,88	72,12	70,72	69,25	67,67	65,97
	POWER INPUT	32,46	34,51	36,78	39,29	42,05	39,24	41,81	44,63	47,72	51,09
17°C WB	TOTAL	86,73	84,13	81,30	78,36	75,10	103,11	99,89	96,50	92,74	88,69
	SENSIBLE	64,64	63,50	62,30	61,02	59,64	76,50	75,09	73,60	72,01	70,29
27°C DB	POWER INPUT	32,81	34,88	37,20	39,74	42,56	39,74	42,34	45,20	48,36	51,78
	TOTAL	92,91	90,11	87,13	83,94	80,50	110,34	106,87	103,16	99,16	94,80
29°C DB	SENSIBLE	64,48	63,33	62,12	60,84	59,47	76,27	74,84	73,33	71,72	69,99
	POWER INPUT	33,19	35,29	37,62	40,22	43,09	40,28	42,93	45,84	49,04	52,52
21°C WB	TOTAL	99,44	96,42	93,23	89,84	86,19	117,96	114,21	110,21	105,90	101,19
	SENSIBLE	68,03	66,87	65,66	64,38	63,03	80,39	78,95	77,43	75,80	74,06
32°C DB	POWER INPUT	33,61	35,73	38,10	40,73	43,66	40,87	43,56	46,52	49,76	53,30
	TOTAL										
23°C WB	SENSIBLE										
	POWER INPUT										

Nominal capacities

DB - Dry Bulb
WB - Wet Bulb

R-407C / R-22

CALCULATION OF COOLING CAPACITY DEPENDING ON AIR FLOW

Data based on the following nominal indoor fan air flow:

MODELS	22E	24E	28E	32E	38E	43E	50E	44D	48D	56D	64D	76D	86D	100D
INDOOR AIR FLOW M ³ /H	4300	4700	5400	5750	7000	8000	8750	8600	9400	10800	11500	14000	16000	17500

CORRECTION COEFFICIENT TO FIX TO THE CAPACITY OF DIFFERENT INDOOR AIR FLOW .

MODELS 22E-24E-28E-32E-38E-43E-50E 44D-48D-56D-64D-76D-86D-100D					
	% NOMINAL AIR FLOW				
	70%	80%	90%	100%	110%
Total capacity	0,96	0,97	0,98	1	1,01
Sensible capacity	0,9	0,93	0,96	1	1,03
Power input	0,98	0,99	1	1	1,01

Data based on the following nominal outdoor fan air flow:

MODELS	22E	24E	28E	32E	38E	44D 44D2	48D 48D2	56D 56D2	64D 64D2	76D 76D2	86D 86D2	100D 100D2
OUTDOOR AIR FLOW M ³ /H	7050	6800	6650	8000	11000	14100	13600	13300	16000	22000	25000	28000

CORRECTION COEFFICIENT TO FIX TO THE CAPACITY OF DIFFERENT OUTDOOR AIR FLOW .

MODELS 22E-24E-28E-32E-38E 44D-48D-56D-64D-76D-86D-100D 44D2-48D2-56D2-64D2-76D2-86D2-100D2					
	% NOMINAL AIR FLOW				
	70%	80%	90%	100%	110%
Total capacity	0,98	0,99	0,99	1	1
Sensible capacity	0,98	0,99	0,99	1	1
Power input	1,02	1,01	1,01	1	0,99

HEATING CAPACITIES

PACKAGED SYSTEM LVHK
SPLIT SYSTEM KVHK + LEHK
MULTI-SPLIT SYSTEM KVHK - D2 + 2 x LEHK

R-407C

MODEL 22E

MODEL 24E

AIR ENTRY TEMPERATURE INDOOR UNIT	kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C WET BULB							AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C WET BULB						
		-8°C	-4°C	0°C	6°C	10°C	14°C	18°C	-8°C	-4°C	0°C	6°C	10°C	14°C	18°C
15°C DB	Total capacity	13,89	15,65	17,47	20,58	22,94	25,55	28,42	15,85	17,56	19,45	22,67	25,14	28,63	30,95
	Power input	6,49	6,63	6,79	7,07	7,30	7,56	7,87	7,35	7,56	7,79	8,18	8,49	8,95	9,27
18°C DB	Total capacity	13,99	15,60	17,39	20,48	22,82	25,41	28,26	15,84	17,54	19,40	22,57	25,00	28,43	30,72
	Power input	6,69	6,83	7,00	7,29	7,53	7,80	8,12	7,60	7,82	8,06	8,47	8,80	9,28	9,62
20°C DB	Total capacity	13,97	15,56	17,35	20,20	22,74	25,32	28,14	15,84	17,52	19,37	22,50	24,91	28,30	30,56
	Power input	6,83	6,98	7,15	7,70	7,69	7,97	8,30	7,78	8,00	8,25	8,60	9,01	9,51	9,86
24°C DB	Total capacity	13,94	15,50	17,29	20,28	22,58	25,12	27,89	15,84	17,50	19,31	22,40	24,75	28,05	30,25
	Power input	7,12	7,28	7,46	7,78	8,04	8,34	8,68	8,14	8,38	8,65	9,11	9,47	9,99	10,36
27°C DB	Total capacity	13,93	15,47	17,20	20,18	22,45	24,95	27,67	15,84	17,48	19,28	22,32	24,62	27,87	30,02
	Power input	7,36	7,53	7,72	8,05	8,32	8,63	8,99	8,42	8,68	8,96	9,45	9,82	10,38	10,76

MODEL 28E

MODEL 32E

AIR ENTRY TEMPERATURE INDOOR UNIT	kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C WET BULB							AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C WET BULB						
		-8°C	-4°C	0°C	6°C	10°C	14°C	18°C	-8°C	-4°C	0°C	6°C	10°C	14°C	18°C
15°C DB	Total capacity	19,00	21,02	23,27	27,19	30,22	34,54	37,44	21,26	23,54	26,09	30,56	34,04	39,03	42,39
	Power input	8,49	8,70	8,94	9,36	9,70	10,22	10,58	9,72	9,94	10,20	10,65	11,01	11,55	11,94
18°C DB	Total capacity	18,98	20,98	23,21	27,07	30,06	34,32	37,17	21,24	23,50	26,03	30,43	33,86	38,78	42,09
	Power input	8,81	9,03	9,28	9,73	10,09	10,63	11,01	10,10	10,34	10,61	11,09	11,47	12,04	12,45
20°C DB	Total capacity	18,98	20,97	23,18	27,00	29,96	34,17	37,00	21,24	23,49	25,99	30,30	33,75	38,62	41,90
	Power input	9,03	9,27	9,53	10,00	10,36	10,92	11,32	10,37	10,62	10,90	11,50	11,79	12,39	12,81
24°C DB	Total capacity	19,01	20,96	23,13	26,89	29,78	33,91	36,68	21,28	23,49	25,95	30,24	33,56	38,33	41,54
	Power input	9,50	9,75	10,04	10,54	10,94	11,54	11,96	10,93	11,21	11,51	12,05	12,48	13,11	13,56
27°C DB	Total capacity	19,05	20,98	23,12	26,82	29,67	33,73	36,45	21,33	23,51	25,94	30,17	33,44	38,13	41,29
	Power input	9,87	10,14	10,45	10,98	11,40	12,03	12,47	11,38	11,67	12,00	12,57	13,02	13,69	14,17

MODEL 38E

MODEL 44D / 44D2 (MULTI)

AIR ENTRY TEMPERATURE INDOOR UNIT	kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C WET BULB							AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C WET BULB						
		-8°C	-4°C	0°C	6°C	10°C	14°C	18°C	-8°C	-4°C	0°C	6°C	10°C	14°C	18°C
15°C DB	Total capacity	25,48	28,39	31,61	37,16	41,45	47,61	51,78	27,78	31,30	34,94	41,16	45,88	51,10	56,84
	Power input	11,24	11,59	11,98	12,66	13,20	14,00	14,58	12,98	13,26	13,58	14,14	14,60	15,12	15,74
18°C DB	Total capacity	25,46	28,35	31,53	37,00	41,23	47,29	51,39	27,98	31,20	34,78	40,96	45,64	50,82	56,52
	Power input	11,73	12,10	12,50	13,21	13,77	14,61	15,21	13,38	13,66	14,00	14,58	15,06	15,60	16,24
20°C DB	Total capacity	25,45	28,33	31,49	36,90	41,09	47,08	51,14	27,94	31,12	34,70	40,40	45,48	50,64	56,28
	Power input	12,06	12,45	12,87	13,60	14,18	15,04	15,65	13,66	13,96	14,30	15,40	15,70	15,94	16,60
24°C DB	Total capacity	25,44	28,28	31,40	36,72	40,82	46,68	50,64	27,88	31,00	34,58	40,56	45,16	50,24	55,78
	Power input	12,76	13,17	13,63	14,41	15,02	15,94	16,59	14,24	14,56	14,92	15,56	16,08	16,68	17,36
27°C DB	Total capacity	25,42	28,24	31,33	36,58	40,61	46,38	50,27	27,86	30,94	34,40	40,36	44,90	49,90	55,34
	Power input	13,30	13,74	14,22	15,05	15,69	16,65	17,32	14,72	15,06	15,44	16,10	16,64	17,32	17,98

Nominal capacities

DB - Dry Bulb
 WB - Wet Bulb

HEATING CAPACITIES

R-407C

PACKAGED SYSTEM LVHK
 SPLIT SYSTEM KVHK + LEHK
 MULTI-SPLIT SYSTEM KVHK - D2 + 2 x LEHK

MODEL 48D / 48D2 (MULTI)

MODEL 56D / 56D2 (MULTI)

AIR ENTRY TEMPERATURE INDOOR UNIT	kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C WET BULB							AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C WET BULB						
		-8°C	-4°C	0°C	6°C	10°C	14°C	18°C	-8°C	-4°C	0°C	6°C	10°C	14°C	18°C
15°C DB	Total capacity	31,71	35,13	38,89	45,34	50,27	57,25	61,91	38,00	42,04	46,55	54,39	60,44	69,09	74,89
	Power input	14,70	15,12	15,57	16,36	16,98	17,90	18,54	16,98	17,40	17,88	18,72	19,40	20,43	21,16
18°C DB	Total capacity	31,69	35,07	38,79	45,15	50,00	56,86	61,43	37,96	41,96	46,42	54,15	60,12	68,64	74,35
	Power input	15,20	15,64	16,12	16,95	17,60	18,56	19,23	17,62	18,07	18,57	19,46	20,18	21,26	22,03
20°C DB	Total capacity	31,68	35,05	38,74	45,00	49,83	56,60	61,12	37,96	41,93	46,35	54,00	59,92	68,35	74,00
	Power input	15,55	16,01	16,50	17,20	18,03	19,02	19,72	18,06	18,53	19,05	20,00	20,73	21,84	22,63
24°C DB	Total capacity	31,67	35,00	38,63	44,80	49,49	56,10	60,50	38,01	41,92	46,26	53,77	59,57	67,82	73,35
	Power input	16,27	16,76	17,30	18,22	18,93	19,99	20,72	19,00	19,51	20,08	21,08	21,88	23,07	23,91
27°C DB	Total capacity	31,67	34,97	38,55	44,63	49,25	55,73	60,05	38,10	41,95	46,24	53,64	59,34	67,46	72,90
	Power input	16,84	17,36	17,92	18,89	19,65	20,75	21,52	19,74	20,29	20,89	21,96	22,80	24,06	24,93

MODEL 64D / 64D2 (MULTI)

MODEL 76D/76D2 (MULTI)

AIR ENTRY TEMPERATURE INDOOR UNIT	kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C WET BULB							AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C WET BULB						
		-8°C	-4°C	0°C	6°C	10°C	14°C	18°C	-8°C	-4°C	0°C	6°C	10°C	14°C	18°C
15°C DB	Total capacity	42,51	47,07	52,19	61,12	68,07	78,05	84,79	50,96	56,79	63,22	74,31	82,90	95,22	103,56
	Power input	19,43	19,88	20,39	21,29	22,02	23,11	23,88	22,48	23,18	23,96	25,31	26,39	28,01	29,16
18°C DB	Total capacity	42,48	47,00	52,05	60,87	67,72	77,55	84,19	50,92	56,70	63,06	74,01	82,46	94,58	102,78
	Power input	20,20	20,69	21,22	22,17	22,94	24,09	24,90	23,45	24,19	25,01	26,42	27,55	29,23	30,42
20°C DB	Total capacity	42,49	46,97	51,99	60,60	67,50	77,24	83,81	50,91	56,66	62,97	73,80	82,18	94,16	102,27
	Power input	20,74	21,24	21,80	23,00	23,58	24,77	25,61	24,12	24,89	25,73	27,20	28,35	30,08	31,31
24°C DB	Total capacity	42,56	46,97	51,90	60,47	67,12	76,65	83,08	50,87	56,56	62,79	73,44	81,63	93,35	101,28
	Power input	21,86	22,42	23,03	24,10	24,95	26,23	27,12	25,52	26,35	27,25	28,82	30,05	31,88	33,17
27°C DB	Total capacity	42,66	47,02	51,88	60,33	66,88	76,26	82,58	50,84	56,49	62,65	73,17	81,23	92,75	100,54
	Power input	22,76	23,35	24,00	25,14	26,05	27,39	28,33	26,60	27,48	28,44	30,09	31,38	33,30	34,64

MODEL 86D / 86D2 (MULTI)

MODEL 100D / 100D2 (MULTI)

AIR ENTRY TEMPERATURE INDOOR UNIT	kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C WET BULB							AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C WET BULB						
		-8°C	-4°C	0°C	6°C	10°C	14°C	18°C	-8°C	-4°C	0°C	6°C	10°C	14°C	18°C
15°C DB	Total capacity	62,05	68,91	76,50	89,47	99,29	110,14	122,05	71,09	78,87	87,51	102,38	113,75	126,39	140,35
	Power input	29,95	30,70	31,52	32,91	34,00	35,24	36,67	35,18	36,00	36,90	38,47	39,72	41,18	42,87
18°C DB	Total capacity	62,15	68,97	76,48	89,27	98,95	109,61	121,32	71,16	78,92	87,51	102,23	113,45	125,90	139,61
	Power input	31,07	31,87	32,73	34,20	35,33	36,63	38,11	36,52	37,38	38,34	40,00	41,32	42,84	44,60
20°C DB	Total capacity	62,24	69,03	76,49	89,00	98,76	109,31	120,89	71,25	79,00	87,55	102,00	113,31	125,63	139,18
	Power input	31,85	32,68	33,57	34,90	36,27	37,60	39,13	37,44	38,35	39,35	40,80	42,43	44,00	45,82
24°C DB	Total capacity	62,48	69,22	76,60	89,09	98,49	108,83	120,18	71,54	79,27	87,77	102,22	113,17	125,24	138,48
	Power input	33,47	34,37	35,35	36,99	38,25	39,67	41,31	39,38	40,38	41,46	43,33	44,79	46,46	48,39
27°C DB	Total capacity	62,70	0,00	76,74	89,09	98,37	108,57	119,76	71,85	0,00	88,03	102,37	113,18	125,07	138,06
	Power input	34,74	0,00	36,76	38,51	39,84	41,34	43,06	40,92	0,00	43,15	45,14	46,68	48,44	50,44

Nominal capacities

DB - Dry Bulb
 WB - Wet Bulb

HEATING CAPACITIES

R-22

**PACKAGED SYSTEM LVHA
SPLIT SYSTEM KVHA + LEHA
MULTI-SPLIT SYSTEM KVHK - D2 + 2 x LEHA**

MODEL 22E

MODEL 24E

AIR ENTRY TEMPERATURE INDOOR UNIT	kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C WET BULB							AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C WET BULB						
		-8°C	-4°C	0°C	6°C	10°C	14°C	18°C	-8°C	-4°C	0°C	6°C	10°C	14°C	18°C
15°C DB	Total capacity	13,79	15,52	17,30	20,28	22,47	24,74	27,27	15,91	17,70	19,63	22,86	25,31	28,77	31,09
	Power input	6,25	6,38	6,54	6,81	7,02	7,23	7,49	7,30	7,46	7,64	7,92	8,14	8,47	8,72
18°C DB	Total capacity	13,89	15,47	17,21	20,18	22,36	24,64	27,18	15,90	17,67	19,57	22,76	25,17	28,58	30,88
	Power input	6,41	6,54	6,71	6,98	7,20	7,42	7,69	7,51	7,68	7,86	8,16	8,39	8,74	9,00
20°C DB	Total capacity	13,87	15,42	17,16	20,40	22,28	24,57	27,09	15,90	17,66	19,54	22,70	25,08	28,47	30,74
	Power input	6,52	6,66	6,82	7,40	7,32	7,56	7,84	7,66	7,84	8,02	8,30	8,57	8,93	9,19
24°C DB	Total capacity	13,83	15,34	17,08	19,95	22,12	24,40	26,90	15,92	17,64	19,49	22,59	24,93	28,25	30,49
	Power input	6,73	6,88	7,05	7,35	7,59	7,84	8,14	7,98	8,17	8,37	8,70	8,96	9,34	9,62
27°C DB	Total capacity	13,81	15,29	16,96	19,83	21,98	24,24	26,70	15,94	17,65	19,47	22,53	24,84	28,11	30,32
	Power input	6,90	7,06	7,24	7,55	7,80	8,20	8,38	8,25	8,45	8,66	9,00	9,27	9,67	9,96

MODEL 28E

MODEL 32E

AIR ENTRY TEMPERATURE INDOOR UNIT	kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C WET BULB							AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C WET BULB						
		-8°C	-4°C	0°C	6°C	10°C	14°C	18°C	-8°C	-4°C	0°C	6°C	10°C	14°C	18°C
15°C DB	Total capacity	18,86	20,95	23,26	27,23	30,27	34,55	37,39	21,67	24,00	26,61	31,16	34,70	39,79	43,23
	Power input	7,96	8,13	8,32	8,64	8,90	9,27	9,54	8,92	9,12	9,36	9,77	10,10	10,60	10,96
18°C DB	Total capacity	18,85	20,92	23,21	27,14	30,13	34,34	37,13	21,64	23,94	26,51	31,00	34,49	39,50	42,88
	Power input	8,24	8,42	8,62	8,96	9,22	9,62	9,89	9,24	9,46	9,71	10,14	10,49	11,02	11,39
20°C DB	Total capacity	18,84	20,90	23,18	27,30	30,04	34,20	36,95	21,62	23,90	26,45	30,90	34,34	39,30	42,64
	Power input	8,44	8,63	8,83	9,20	9,45	9,86	10,14	9,47	9,70	9,95	10,70	10,76	11,31	11,69
24°C DB	Total capacity	18,83	20,88	23,13	26,96	29,87	33,93	36,60	21,58	23,82	26,32	30,67	34,04	38,87	42,13
	Power input	8,85	9,05	9,27	9,65	9,94	10,37	10,66	9,94	10,19	10,46	10,95	11,34	11,92	12,33
27°C DB	Total capacity	18,83	20,86	23,09	26,88	29,73	33,72	36,34	21,56	23,76	26,22	30,49	33,80	38,54	41,73
	Power input	9,17	9,39	9,62	10,02	10,33	10,77	11,08	10,31	10,57	10,87	11,39	11,80	12,40	12,83

MODEL 38E

MODEL 44D / 44D2 (MULTI)

AIR ENTRY TEMPERATURE INDOOR UNIT	kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C WET BULB							AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C WET BULB						
		-8°C	-4°C	0°C	6°C	10°C	14°C	18°C	-8°C	-4°C	0°C	6°C	10°C	14°C	18°C
15°C DB	Total capacity	25,98	28,95	32,23	37,88	42,26	48,54	52,80	27,58	31,04	34,60	40,56	44,93	49,47	54,55
	Power input	10,31	10,64	10,99	11,61	12,11	12,85	13,38	12,49	12,77	13,08	13,62	14,04	14,47	14,99
18°C DB	Total capacity	25,94	28,88	32,12	37,69	42,00	48,17	52,35	27,79	30,93	34,43	40,36	44,71	49,27	54,35
	Power input	10,73	11,06	11,44	12,09	12,60	13,37	13,92	12,81	13,08	13,41	13,96	14,40	14,85	15,39
20°C DB	Total capacity	25,90	28,83	32,04	37,60	41,81	47,91	52,03	27,74	30,84	34,33	40,80	44,56	49,13	54,19
	Power input	11,01	11,36	11,74	12,50	12,94	13,73	14,29	13,03	13,32	13,64	14,80	15,05	15,11	15,67
24°C DB	Total capacity	25,80	28,68	31,84	37,24	41,40	47,34	51,36	27,67	30,68	34,15	39,91	44,24	48,80	53,80
	Power input	11,60	11,97	12,38	13,10	13,65	14,49	15,07	13,46	13,76	14,10	14,70	15,18	15,69	16,27
27°C DB	Total capacity	25,69	28,55	31,66	36,97	41,05	46,87	50,81	27,63	30,57	33,92	39,66	43,96	48,48	53,41
	Power input	12,05	12,45	12,88	13,63	14,21	15,08	15,69	13,81	14,12	14,48	15,10	15,60	16,39	16,75

Nominal capacities

DB - Dry Bulb
WB - Wet Bulb

HEATING CAPACITIES

R-22

PACKAGED SYSTEM LVHA
SPLIT SYSTEM KVHA + LEHA
MULTI-SPLIT SYSTEM KVHK - D2 + 2 x LEHA

MODEL 48D / 48D2 (MULTI)

MODEL 56D / 56D2 (MULTI)

AIR ENTRY TEMPERATURE INDOOR UNIT	kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C WET BULB							AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C WET BULB						
		-8°C	-4°C	0°C	6°C	10°C	14°C	18°C	-8°C	-4°C	0°C	6°C	10°C	14°C	18°C
15°C DB	Total capacity	31,83	35,41	39,26	45,72	50,61	57,53	62,18	37,73	41,89	46,51	54,46	60,54	69,11	74,79
	Power input	14,59	14,93	15,27	15,84	16,29	16,95	17,43	15,92	16,26	16,64	17,28	17,79	18,54	19,07
18°C DB	Total capacity	31,81	35,34	39,14	45,51	50,34	57,16	61,75	37,70	41,84	46,42	54,27	60,26	68,69	74,26
	Power input	15,01	15,36	15,73	16,32	16,79	17,49	17,99	16,49	16,85	17,24	17,92	18,45	19,23	19,78
20°C DB	Total capacity	31,80	35,31	39,08	45,40	50,17	56,93	61,48	37,68	41,81	46,36	54,60	60,08	68,41	73,91
	Power input	15,31	15,67	16,05	16,60	17,15	17,87	18,39	16,88	17,25	17,66	18,40	18,91	19,71	20,27
24°C DB	Total capacity	31,83	35,29	38,99	45,18	49,87	56,51	60,97	37,66	41,75	46,26	53,92	59,73	67,85	73,20
	Power input	15,96	16,35	16,74	17,40	17,91	18,68	19,24	17,69	18,10	18,54	19,30	19,88	20,73	21,32
27°C DB	Total capacity	31,88	35,29	38,95	45,06	49,68	56,22	60,63	37,65	41,73	46,19	53,76	59,47	67,44	72,67
	Power input	16,50	16,90	17,31	18,00	18,54	19,35	19,93	18,33	18,77	19,24	20,04	20,66	21,55	22,16

MODEL 64D / 64D2 (MULTI)

MODEL 76D / 76D2 (MULTI)

AIR ENTRY TEMPERATURE INDOOR UNIT	kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C WET BULB							AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C WET BULB						
		-8°C	-4°C	0°C	6°C	10°C	14°C	18°C	-8°C	-4°C	0°C	6°C	10°C	14°C	18°C
15°C DB	Total capacity	43,34	48,00	53,21	62,32	69,41	79,58	86,45	51,96	57,90	64,46	75,77	84,52	97,08	105,59
	Power input	17,83	18,25	18,71	19,54	20,20	21,20	21,92	20,63	21,27	21,99	23,23	24,22	25,70	26,76
18°C DB	Total capacity	43,28	47,88	53,03	62,00	68,98	79,00	85,76	51,87	57,76	64,24	75,39	84,00	96,34	104,70
	Power input	18,48	18,92	19,41	20,29	20,98	22,03	22,78	21,45	22,13	22,87	24,17	25,20	26,74	27,83
20°C DB	Total capacity	43,23	47,80	52,90	61,80	68,69	78,59	85,28	51,80	57,65	64,08	75,20	83,62	96,34	104,07
	Power input	18,93	19,39	19,90	21,40	21,53	22,61	23,38	22,02	22,72	23,49	25,00	25,88	27,46	28,58
24°C DB	Total capacity	43,16	47,64	52,64	61,33	68,08	77,75	84,27	51,60	57,37	63,68	74,49	82,79	94,68	102,72
	Power input	19,87	20,37	20,93	21,90	22,68	23,83	24,65	23,19	23,95	24,77	26,19	27,31	28,97	30,15
27°C DB	Total capacity	43,12	47,53	52,44	60,98	67,60	77,08	83,47	51,38	57,09	63,32	73,95	82,10	93,75	101,62
	Power input	20,61	21,15	21,74	22,77	23,59	24,81	25,66	24,09	24,89	25,76	27,26	28,43	30,16	31,38

MODEL 86D / 86D2 (MULTI)

MODEL 100D / 100D2 (MULTI)

AIR ENTRY TEMPERATURE INDOOR UNIT	kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C WET BULB							AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C WET BULB						
		-8°C	-4°C	0°C	6°C	10°C	14°C	18°C	-8°C	-4°C	0°C	6°C	10°C	14°C	18°C
15°C DB	Total capacity	63,06	70,03	77,74	90,92	100,91	111,93	124,03	72,55	80,50	89,31	104,49	116,09	128,99	143,24
	Power input	27,52	28,21	28,96	30,24	31,24	32,38	33,69	32,72	33,48	34,32	35,79	36,95	38,30	39,87
18°C DB	Total capacity	63,10	70,02	77,65	90,64	100,46	111,29	123,18	72,56	80,47	89,23	104,24	115,68	128,37	142,36
	Power input	28,46	29,19	29,98	31,32	32,36	33,55	34,91	33,86	34,66	35,55	37,09	38,31	39,72	41,36
20°C DB	Total capacity	63,12	70,01	77,58	90,50	100,16	110,86	122,61	72,58	80,47	89,18	104,00	115,41	127,96	141,77
	Power input	29,11	29,87	30,69	32,10	33,15	34,37	35,77	34,64	35,48	36,40	38,00	39,26	40,71	42,39
24°C DB	Total capacity	63,16	69,97	77,43	90,06	99,56	110,01	121,49	72,63	80,48	89,10	103,78	114,89	127,15	140,59
	Power input	30,46	31,28	32,17	33,66	34,81	36,10	37,59	36,28	37,19	38,20	39,92	41,26	42,80	44,57
27°C DB	Total capacity	63,16	0,00	77,31	89,75	99,09	109,37	120,65	72,69	0,00	89,07	103,57	114,50	126,53	139,68
	Power input	31,51	0,00	33,34	34,93	36,13	37,50	39,05	37,57	0,00	39,62	41,44	42,86	44,47	46,31

Nominal capacities

DB - Dry Bulb
WB - Wet Bulb

CALCULATION OF HEATING CAPACITY DEPENDING ON AIR FLOW

Data based on the following nominal indoor fan air flow:

MODELS	22E	24E	28E	32E	38E	43E	50E	44D	48D	56D	64D	76D	86D	100D
INDOOR AIR FLOW M ³ /H	4300	4700	5400	5750	7000	8000	8750	8600	9400	10800	11500	14000	16000	17500

CORRECTION COEFFICIENT TO FIX TO THE CAPACITY OF DIFFERENT INDOOR AIR FLOW .

MODELS 22E-24E-28E-32E-38E-43E-50E 44D-48D-56D-64D-76D-86D-100D					
	% NOMINAL AIR FLOW				
	70%	80%	90%	100%	110%
Total capacity	0,97	0,98	0,99	1	1,01
Power input	1,03	1,02	1,01	1	0,99

Data based on the following nominal outdoor fan air flow:

MODELS	22E	24E	28E	32E	38E	44D 44D2	48D 48D2	56D 56D2	64D 64D2	76D 76D2	86D 86D2	100D 100D2
OUTDOOR AIR FLOW M ³ /H	7050	6800	6650	8000	11000	14100	13600	13300	16000	22000	25000	28000

CORRECTION COEFFICIENT TO FIX TO THE CAPACITY OF DIFFERENT OUTDOOR AIR FLOW .

MODELS 22E-24E-28E-32E-38E 44D-48D-56D-64D-76D-86D-100D 44D2-48D2-56D2-64D2-76D2-86D2-100D2					
	% NOMINAL AIR FLOW				
	70%	80%	90%	100%	110%
Total capacity	0,98	0,99	0,99	1	1
Power input	0,98	0,99	0,99	1	1

COOLING CAPACITIES

**OUTDOOR UNITS
COOLING CYCLE**

R-407C

MODEL KVCK 22E

MODEL KVCK 24E

EVAPORATING TEMPERATURE DEW POINT	kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C					AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C				
		25°	30°	35°C	40°C	45°C	25°	30°	35°C	40°C	45°C
0°C	Total Capacity	17,17	16,14	15,07	13,97	12,83	19,02	17,88	16,74	15,61	14,49
	Power Input	5,89	6,33	6,83	7,39	8,02	6,54	7,02	7,54	8,09	8,68
5 °C	Total Capacity	20,63	19,44	18,21	16,94	15,61	22,64	21,31	19,99	18,68	17,37
	Power Input	6,13	6,57	7,07	7,63	8,25	6,73	7,22	7,76	8,34	8,96
7°C	Total Capacity	22,13	20,87	19,57	18,22	16,81	24,21	22,80	21,40	20,01	18,63
	Power Input	6,24	6,68	7,18	7,74	8,36	6,82	7,31	7,85	8,44	9,07
10°C	Total Capacity	26,17	24,72	23,23	21,67	20,05	28,46	26,85	25,23	23,63	22,04
	Power Input	6,56	7,00	7,50	8,06	8,67	7,05	7,55	8,12	8,73	9,39
15°C	Total Capacity	28,80	27,23	25,61	23,93	22,18	31,24	29,49	27,75	26,02	24,31
	Power Input	6,78	7,23	7,73	8,28	8,89	7,20	7,72	8,29	8,92	9,60

MODEL KVCK 28E

MODEL KVCK 32E

EVAPORATING TEMPERATURE DEW POINT	kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C					AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C				
		25°	30°	35°C	40°C	45°C	25°	30°	35°C	40°C	45°C
0°C	Total Capacity	22,86	21,48	20,14	18,82	17,53	26,37	24,78	23,22	21,70	20,21
	Power Input	7,84	8,45	9,11	9,84	10,61	9,03	9,74	10,50	11,33	12,23
5 °C	Total Capacity	27,17	25,58	24,02	22,47	20,95	31,31	29,48	27,68	25,89	24,13
	Power Input	8,10	8,73	9,43	10,18	10,99	9,34	10,08	10,87	11,74	12,67
7°C	Total Capacity	29,02	27,35	25,69	24,06	22,43	33,44	31,51	29,60	27,71	25,84
	Power Input	8,22	8,86	9,56	10,32	11,15	9,48	10,22	11,03	11,91	12,86
10°C	Total Capacity	34,01	32,11	30,22	28,34	26,47	39,15	36,97	34,79	32,62	30,46
	Power Input	8,54	9,21	9,93	10,73	11,58	9,87	10,64	11,48	12,39	13,38
15°C	Total Capacity	37,23	35,20	33,18	31,16	29,15	42,85	40,51	38,17	35,85	33,53
	Power Input	8,76	9,44	10,19	11,00	11,88	10,13	10,92	11,78	12,72	13,73

MODEL KVCK 38E

MODEL KVCK 44D

EVAPORATING TEMPERATURE DEW POINT	kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C					AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C				
		25°	30°	35°C	40°C	45°C	25°	30°	35°C	40°C	45°C
0°C	Total Capacity	32,57	30,56	28,55	26,55	24,54	34,34	32,27	30,14	27,94	25,67
	Power Input	10,86	11,69	12,58	13,52	14,47	11,79	12,66	13,65	14,77	16,03
5 °C	Total Capacity	38,55	36,25	33,95	31,65	29,37	41,26	38,88	36,43	33,88	31,23
	Power Input	11,36	12,22	13,14	14,12	15,14	12,26	13,15	14,14	15,25	16,50
7°C	Total Capacity	41,15	38,71	36,28	33,87	31,47	44,26	41,74	39,13	36,43	33,63
	Power Input	11,58	12,45	13,39	14,38	15,43	12,48	13,37	14,36	15,47	16,72
10°C	Total Capacity	48,16	45,39	42,63	39,88	37,15	52,34	49,45	46,45	43,34	40,09
	Power Input	12,20	13,09	14,07	15,11	16,20	13,11	14,01	15,00	16,11	17,34
15°C	Total Capacity	52,73	49,76	46,81	43,87	40,96	57,60	54,46	51,21	47,85	44,36
	Power Input	12,63	13,54	14,53	15,60	16,72	13,56	14,45	15,45	16,56	17,78

COOLING CAPACITIES

**OUTDOOR UNITS
COOLING CYCLE**

R-407C

MODEL KVCK 48D

MODEL KVCK 56D

EVAPORATING TEMPERATURE DEW POINT	kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C					AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C				
		25°	30°	35°C	40°C	45°C	25°	30°	35°C	40°C	45°C
0°C	Total Capacity	38,05	35,76	33,48	31,22	28,97	45,73	42,97	40,27	37,64	35,05
	Power Input	13,09	14,04	15,07	16,18	17,36	15,67	16,90	18,23	19,67	21,22
5 °C	Total Capacity	45,29	42,63	39,99	37,36	34,75	54,34	51,17	48,04	44,95	41,89
	Power Input	13,46	14,44	15,52	16,67	17,91	16,20	17,47	18,85	20,35	21,97
7°C	Total Capacity	48,43	45,61	42,81	40,02	37,26	58,05	54,70	51,39	48,11	44,87
	Power Input	13,63	14,62	15,71	16,88	18,15	16,43	17,72	19,12	20,65	22,29
10°C	Total Capacity	59,93	53,69	50,47	47,26	44,08	68,01	64,22	60,44	56,68	52,94
	Power Input	14,09	15,11	16,23	17,46	18,77	17,08	18,41	19,87	21,45	23,17
15°C	Total Capacity	62,47	58,97	55,50	52,04	48,61	74,46	70,40	66,35	62,32	58,31
	Power Input	14,40	15,44	16,59	17,84	19,19	17,52	18,88	20,37	22,00	23,76

MODEL KVCK 64D

MODEL KVCK 76D

EVAPORATING TEMPERATURE DEW POINT	kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C					AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C				
		25°	30°	35°C	40°C	45°C	25°	30°	35°C	40°C	45°C
0°C	Total Capacity	52,73	49,55	46,44	43,40	40,42	65,14	61,13	57,11	53,09	49,08
	Power Input	18,06	19,47	21,01	22,67	24,45	21,72	23,39	25,17	27,03	28,95
5 °C	Total Capacity	62,62	58,96	55,35	51,79	48,26	77,11	72,50	67,90	63,31	58,74
	Power Input	18,69	20,15	21,75	23,48	25,34	22,72	24,43	26,28	28,24	30,28
7°C	Total Capacity	66,88	63,02	59,20	55,42	51,68	82,29	77,42	72,57	67,74	62,93
	Power Input	18,97	20,45	22,07	23,83	25,73	23,16	24,89	26,77	28,77	30,85
10°C	Total Capacity	78,31	73,93	69,58	65,24	60,92	96,31	90,77	85,25	79,76	74,31
	Power Input	19,74	21,28	22,96	24,79	26,76	24,40	26,19	28,13	30,21	32,39
15°C	Total Capacity	85,70	81,01	76,35	71,70	67,07	105,47	99,52	93,61	87,75	81,93
	Power Input	20,27	21,84	23,56	25,44	27,46	25,25	27,07	29,06	31,20	33,44

MODEL KVCK 86D

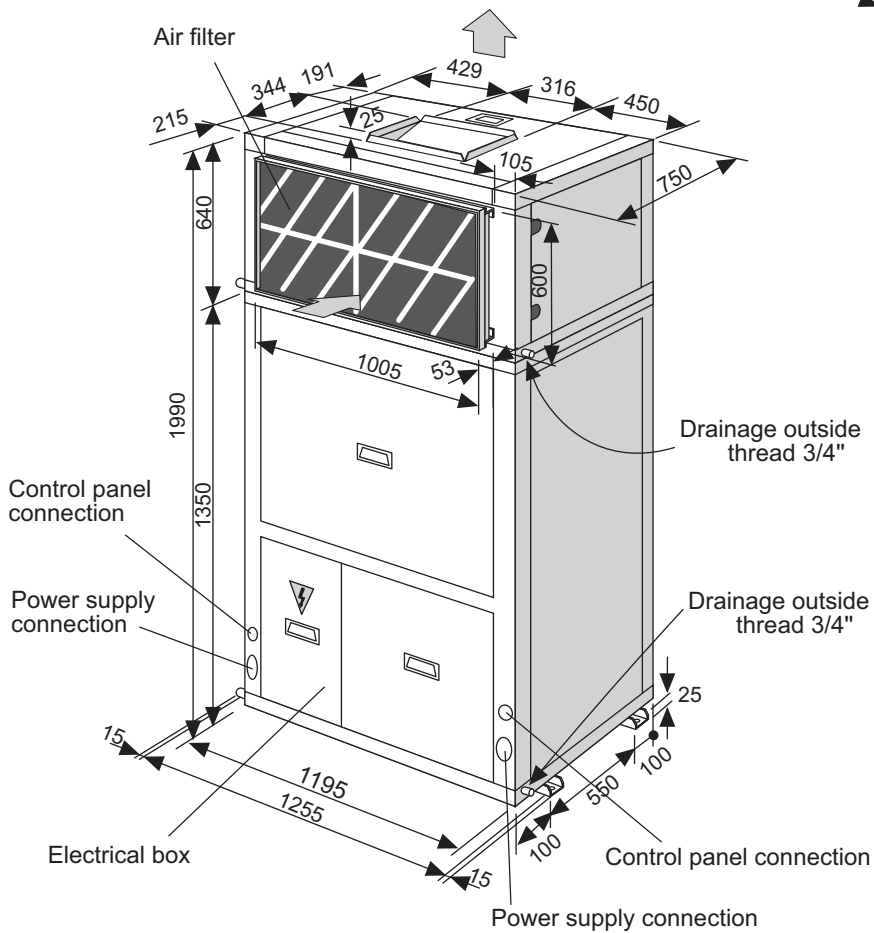
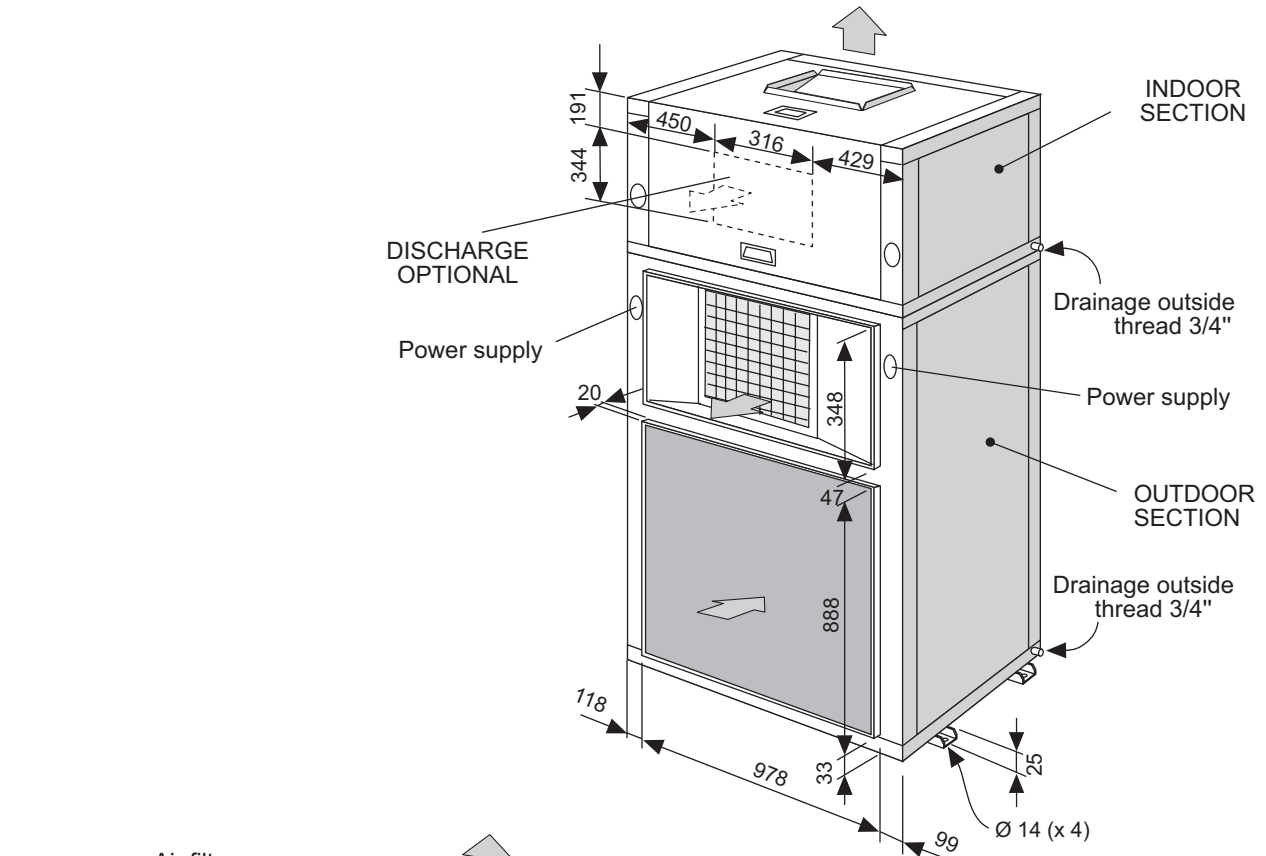
MODEL KVCK 100D

EVAPORATING TEMPERATURE DEW POINT	kW	AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C					AIR ENTRY TEMPERATURE INTO THE OUTDOOR UNIT °C				
		25°	30°	35°C	40°C	45°C	25°	30°	35°C	40°C	45°C
0°C	Total Capacity	77,91	73,13	68,35	63,58	58,81	90,14	84,70	79,37	74,14	69,02
	Power Input	26,62	28,57	30,67	32,87	35,14	32,98	35,46	38,16	41,08	44,21
5 °C	Total Capacity	92,35	86,86	81,37	75,91	70,47	106,93	100,67	94,47	88,35	82,30
	Power Input	27,73	29,73	31,91	34,23	36,64	34,15	36,72	39,53	42,57	45,85
7°C	Total Capacity	98,62	92,81	87,02	81,26	75,54	114,15	107,53	100,99	94,50	88,08
	Power Input	28,22	30,25	32,46	34,81	37,27	34,66	37,28	40,13	43,22	46,55
10°C	Total Capacity	115,60	108,98	102,39	95,84	89,32	133,50	126,00	118,53	111,09	103,68
	Power Input	29,62	31,70	33,98	36,43	39,00	36,10	38,82	41,78	45,00	48,47
15°C	Total Capacity	126,71	119,59	112,53	105,51	98,56	145,99	137,96	129,97	122,00	114,06
	Power Input	30,57	32,69	35,02	37,52	40,17	37,08	39,86	42,90	46,20	49,77

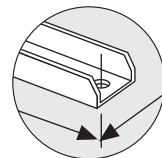
NOTE: Capacity tables for outdoor nominal air flow indicates on page 27.
For any other air flow apply the correction coefficients show on the same page.

PACKAGED UNITS DIMENSIONS

MODELS LVCK/LVHK/LVHA 22E-24E-28E-32E

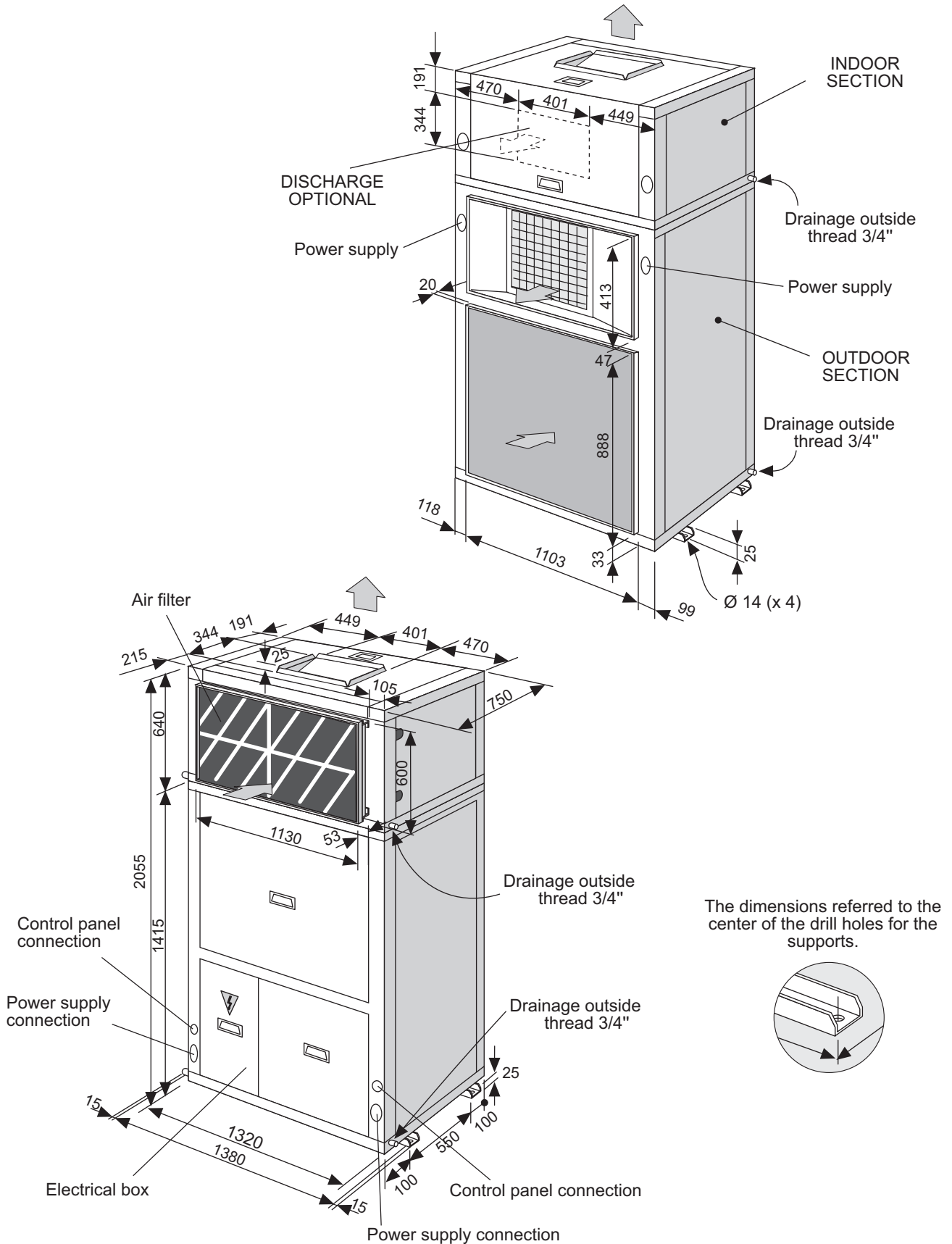


The dimensions referred to the center of the drill holes for the supports.



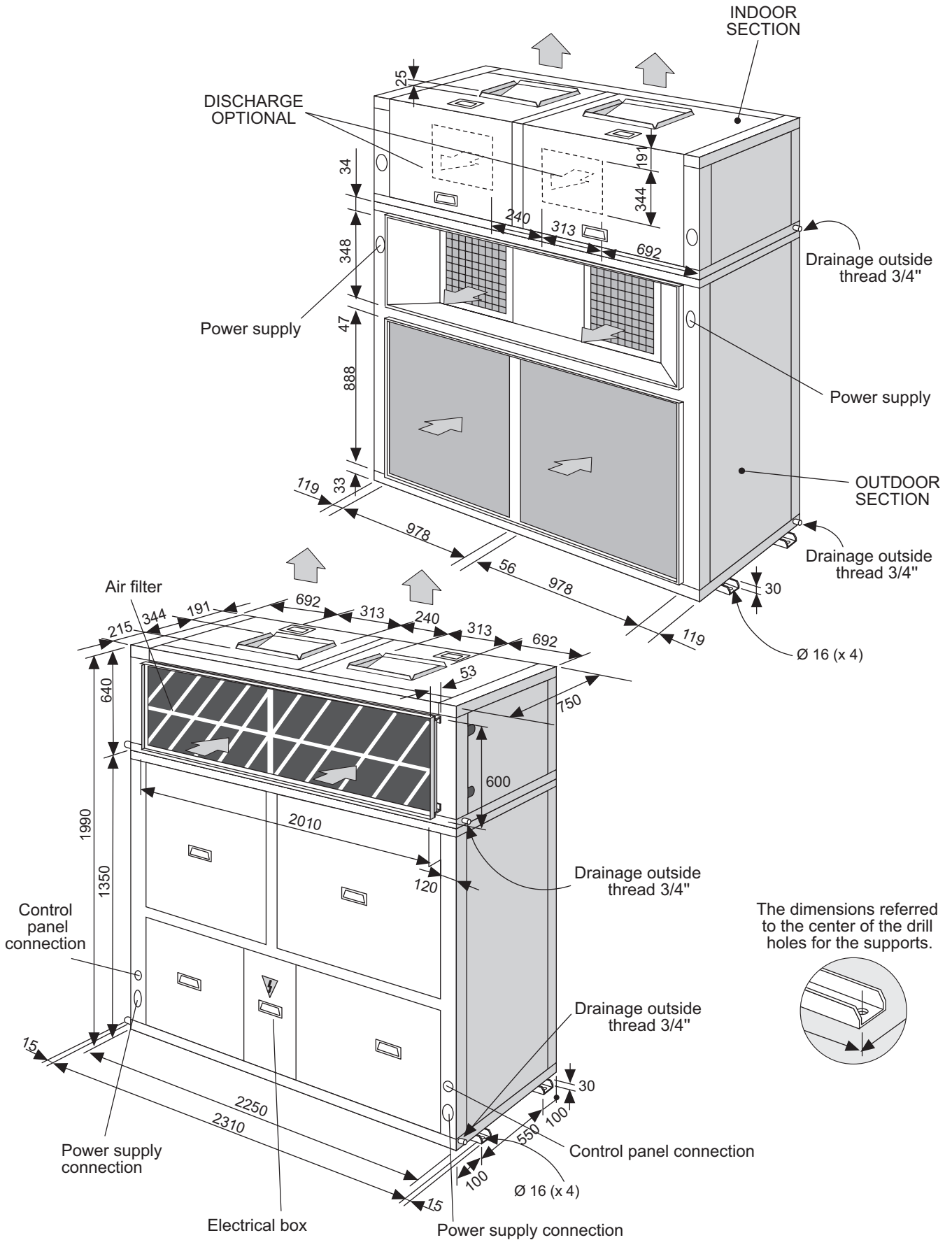
PACKAGED UNITS DIMENSIONS

MODEL LVCK/LVHK/LVHA 38E



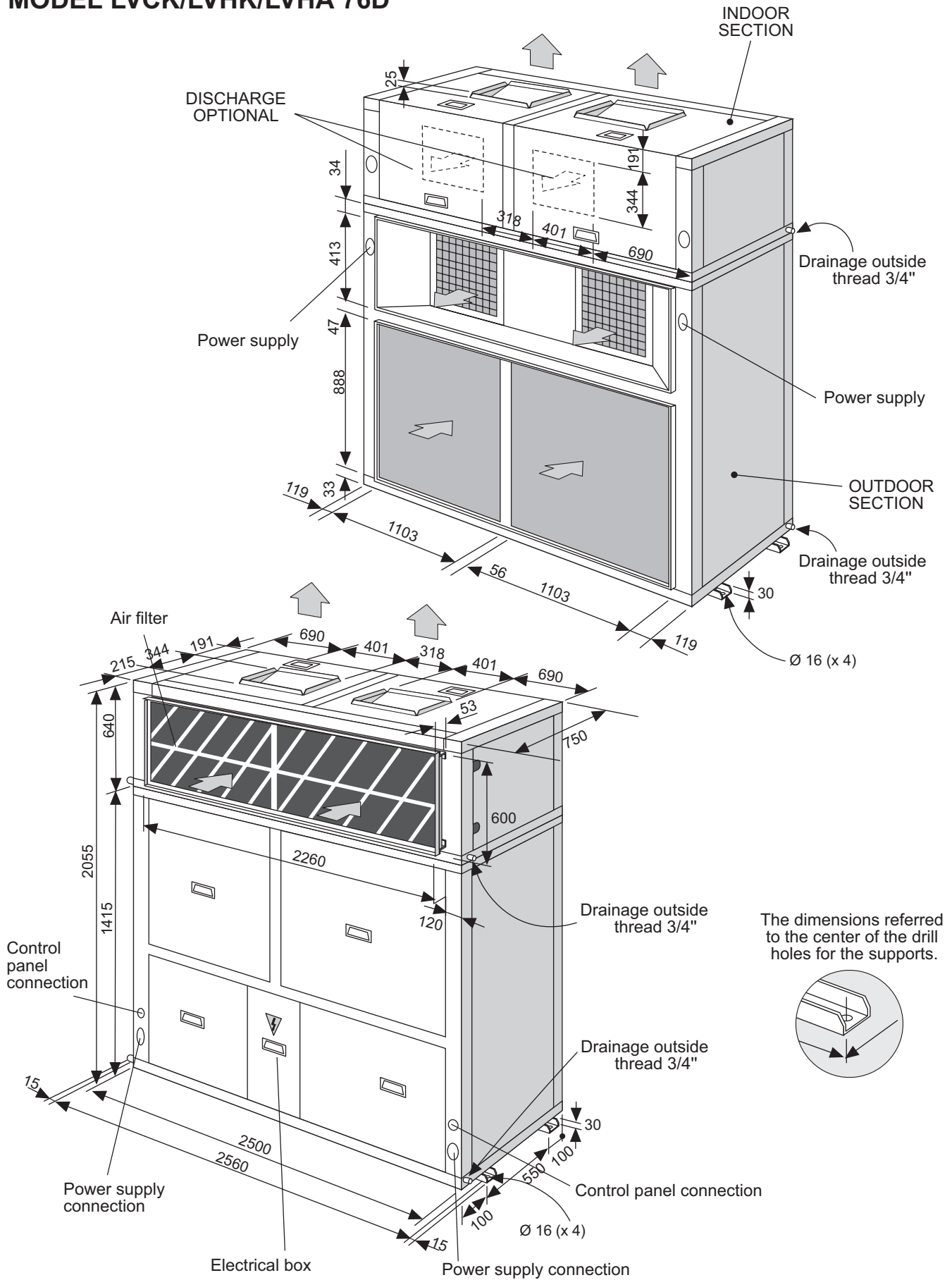
PACKAGED UNITS DIMENSIONS

MODELS LVCK/LVHK/LVHA 44D-48D-56D-64D



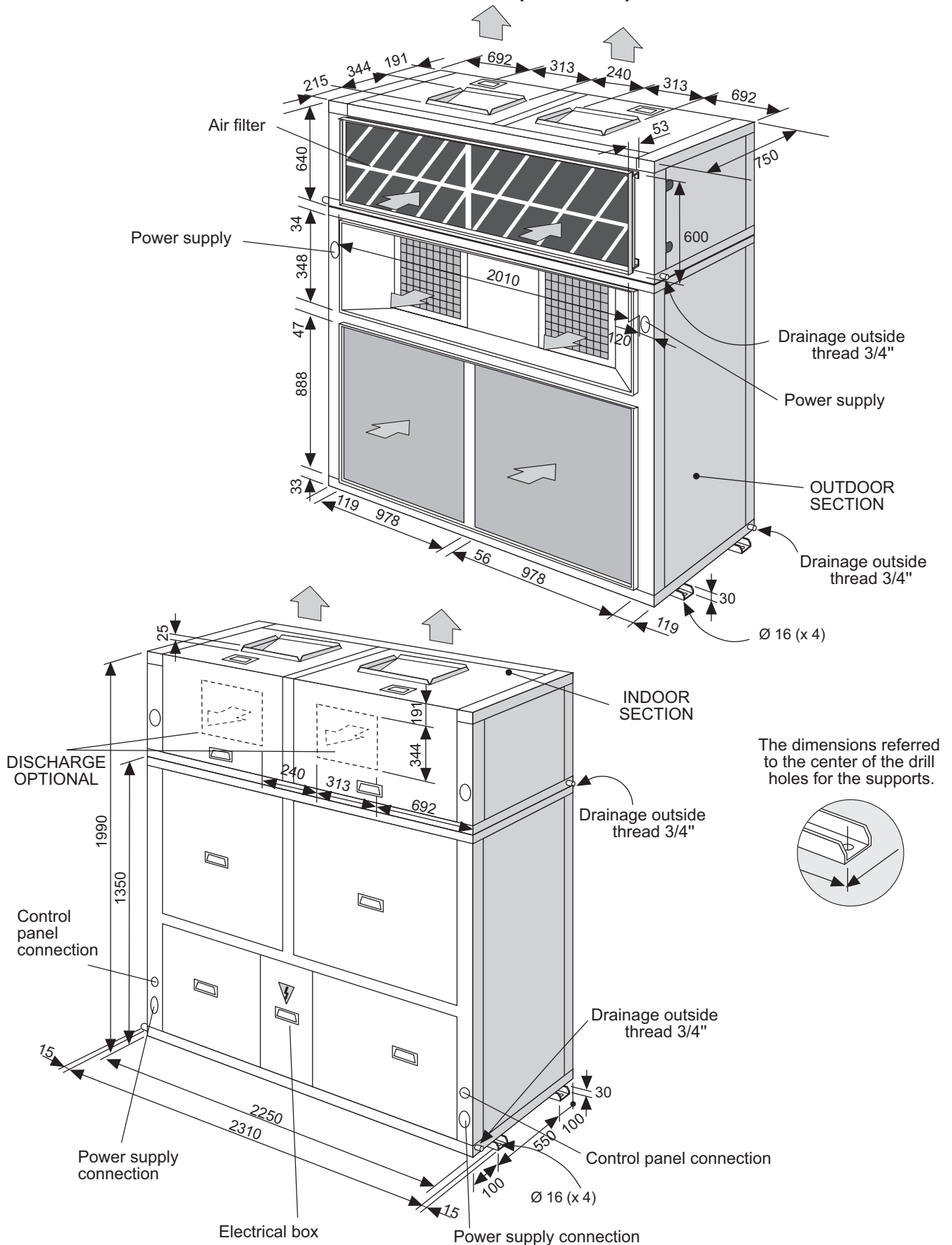
PACKAGED UNITS DIMENSIONS

MODEL LVCK/LVHK/LVHA 76D



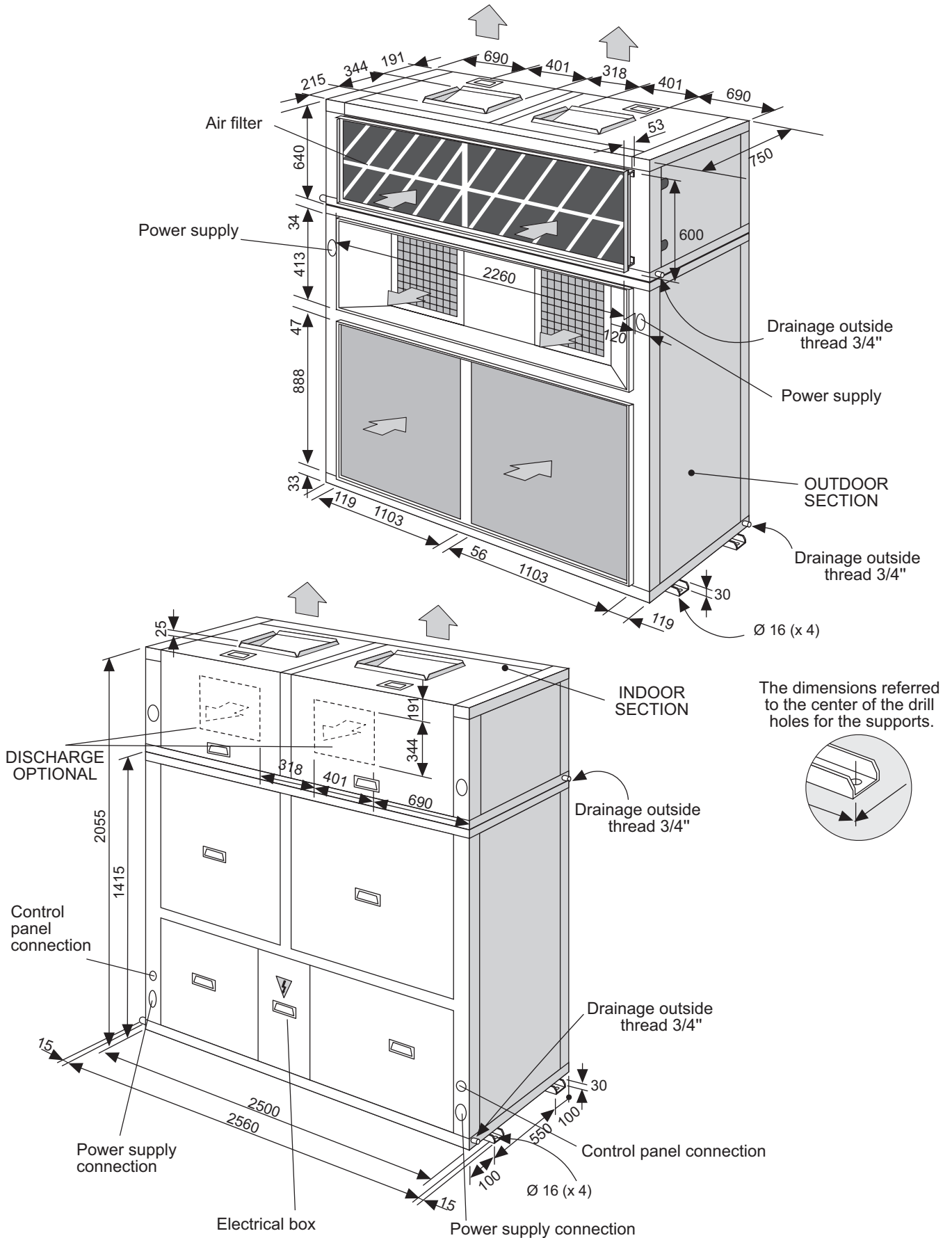
PACKAGED UNITS DIMENSIONS

**MODELS LVCK/LVHK/LVHA 44D-48D-56D-64D
WITH KIT 180° TURN FOR INDOOR UNIT (OPTION)**



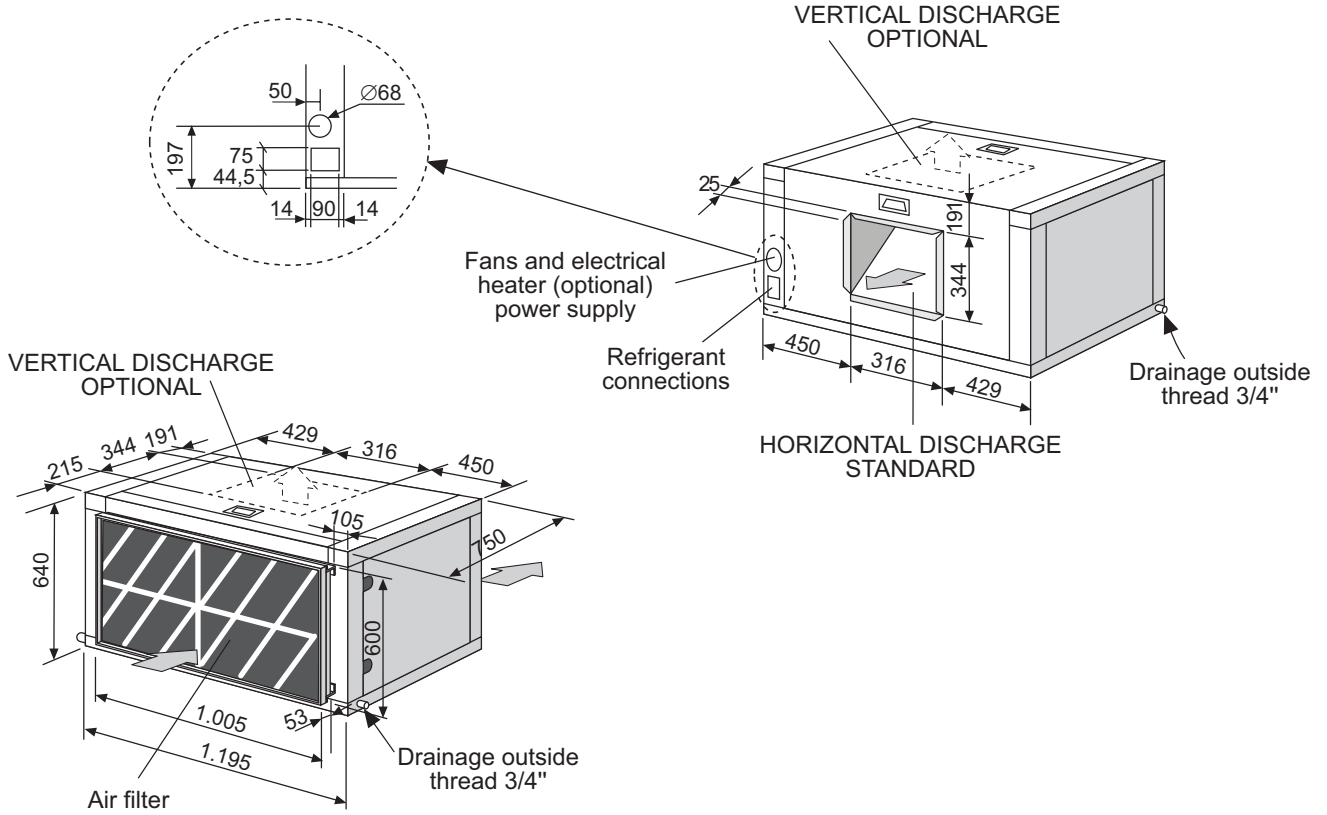
PACKAGED UNITS DIMENSIONS

**MODEL LVCK/LVHK/LVHA 76D
WITH KIT 180° TURN FOR INDOOR UNIT (OPTION)**

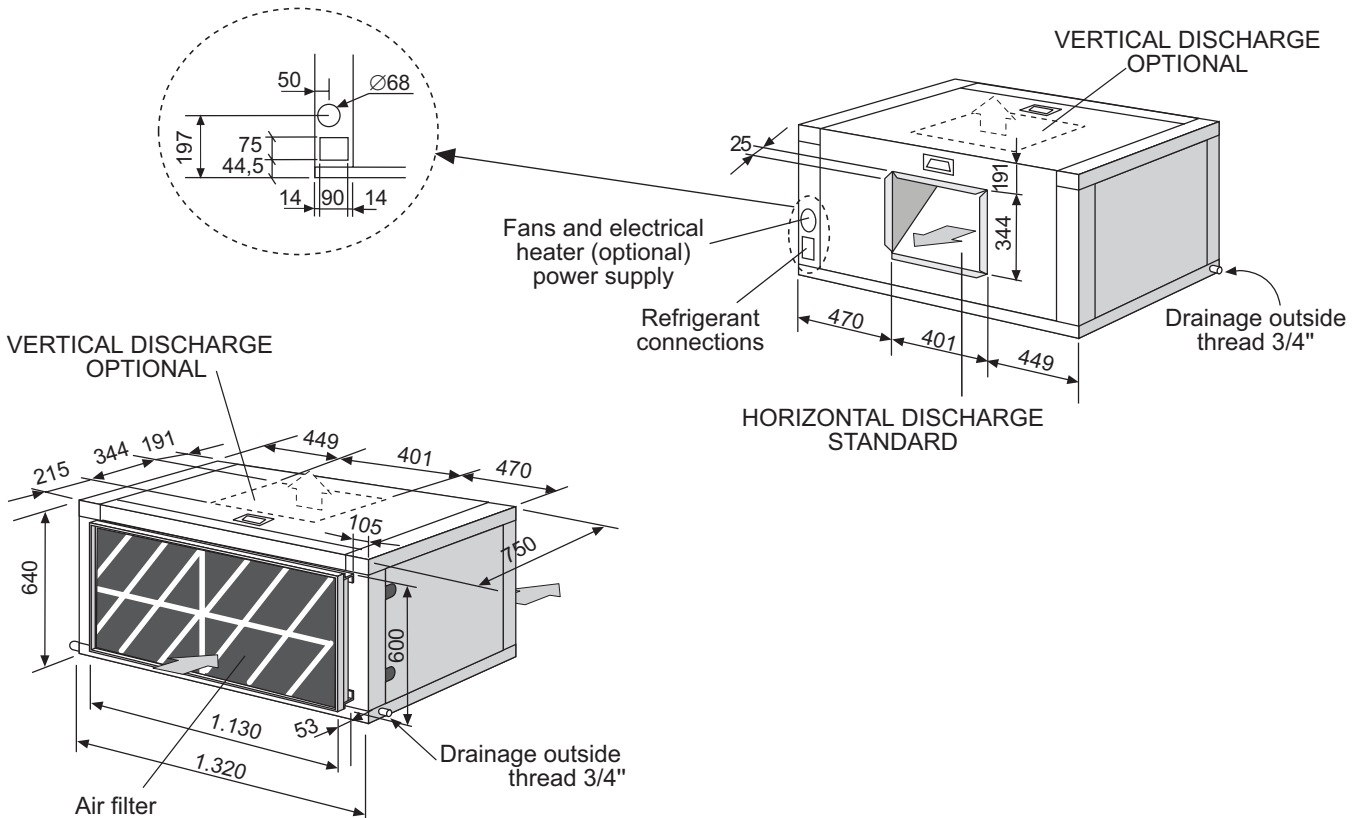


INDOOR SPLIT UNITS DIMENSIONS

MODELS LECK/LEHK/LEHA 22E-24E-28E-32E

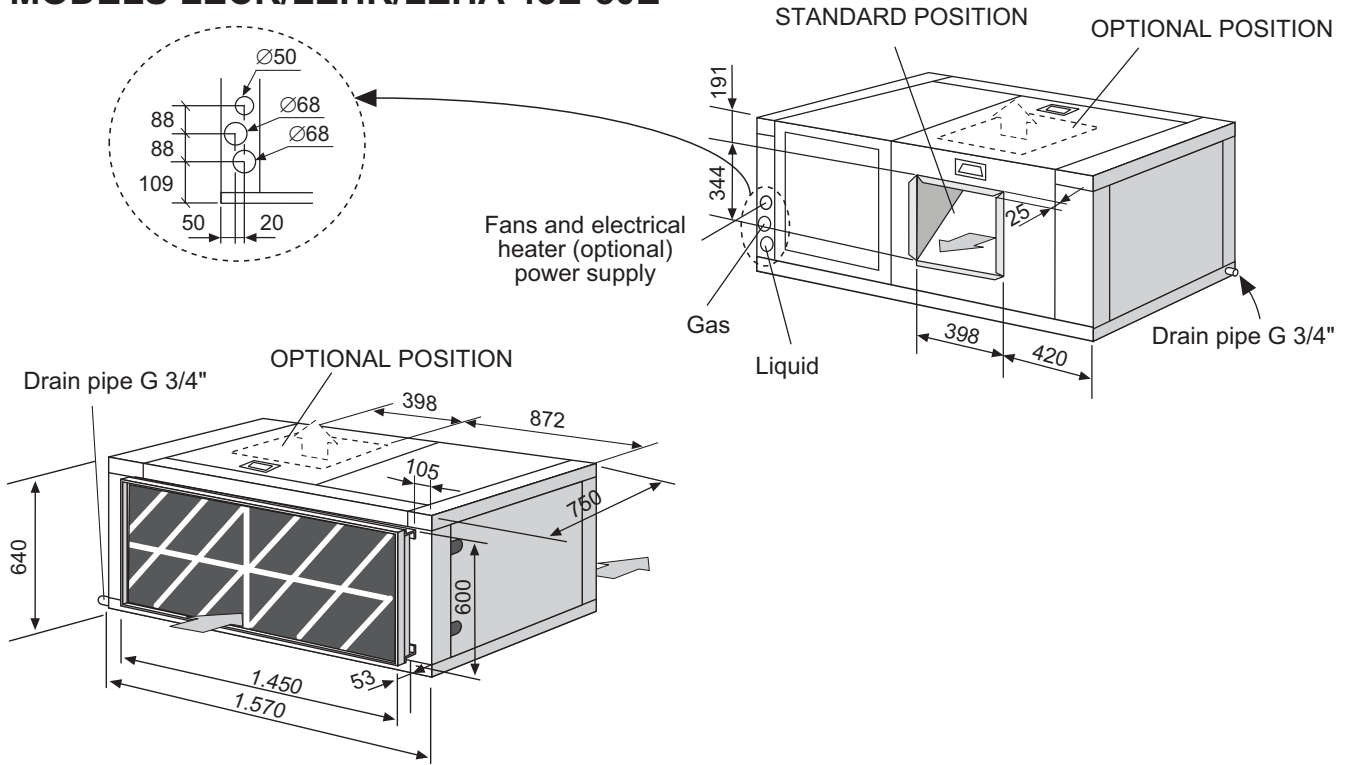


MODEL LECK/LEHK/LEHA 38E

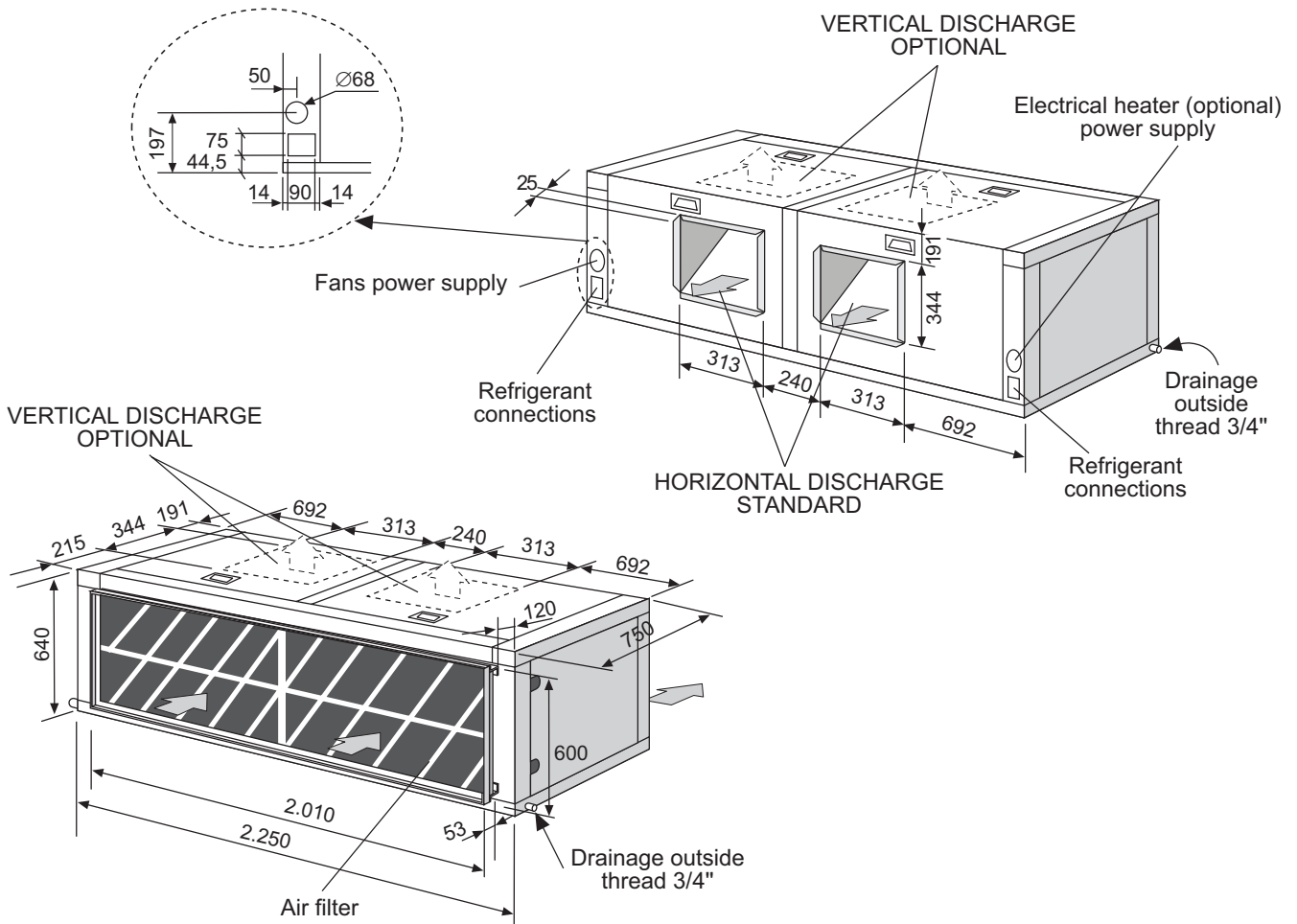


INDOOR SPLIT UNITS DIMENSIONS

MODELS LECK/LEHK/LEHA 43E-50E

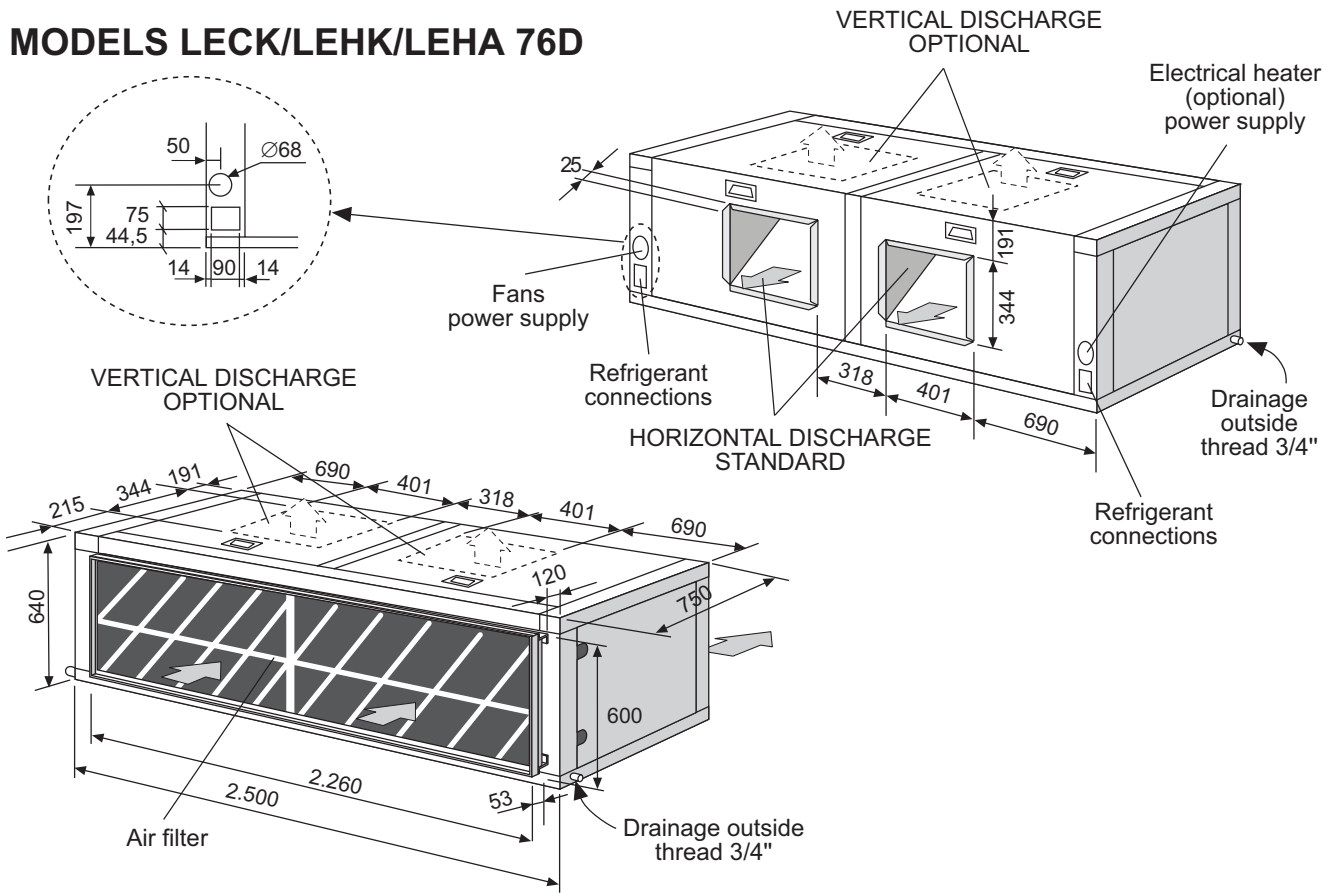


MODELS LECK/LEHK/LEHA 44D-48D-56D-64D

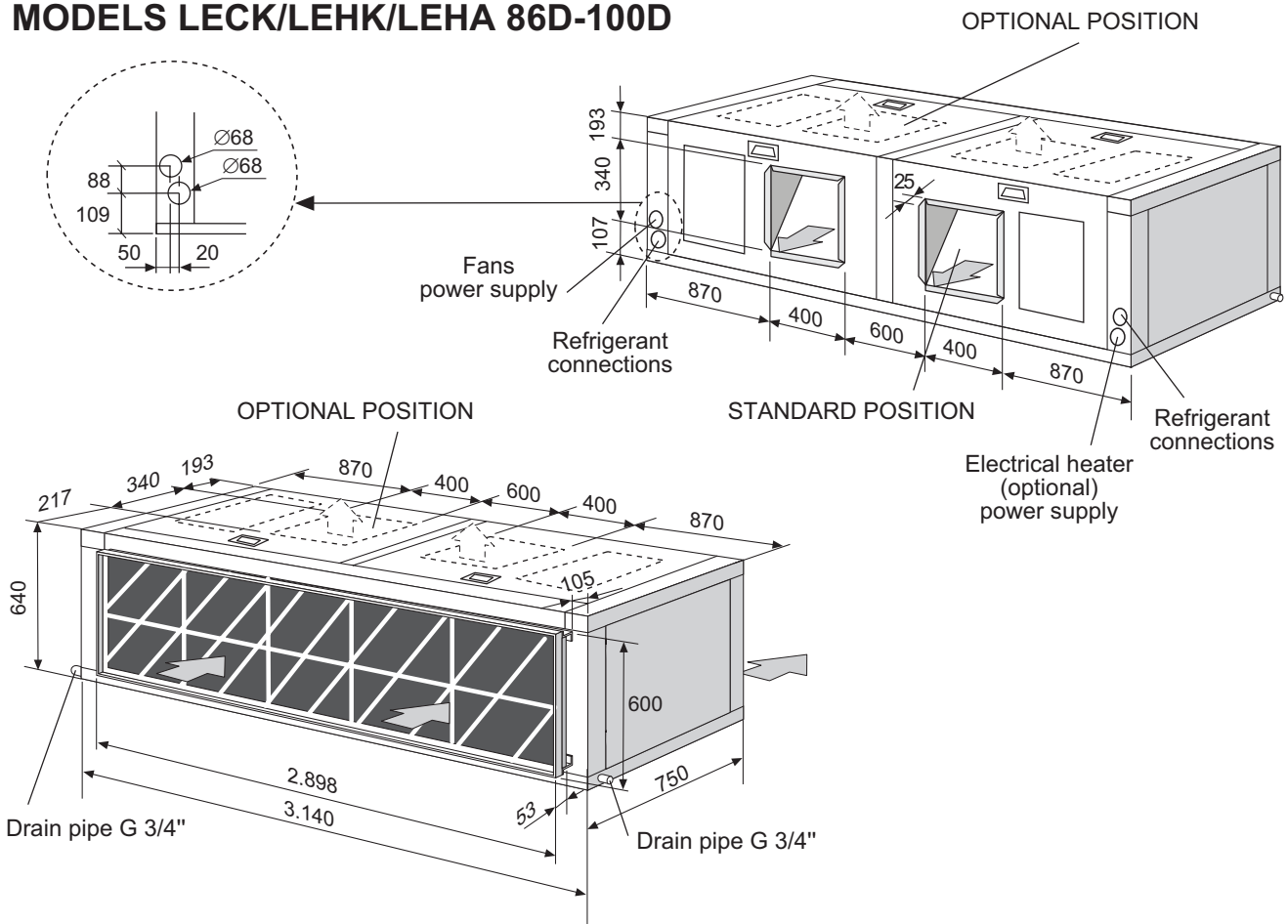


INDOOR SPLIT UNITS DIMENSIONS

MODELS LECK/LEHK/LEHA 76D

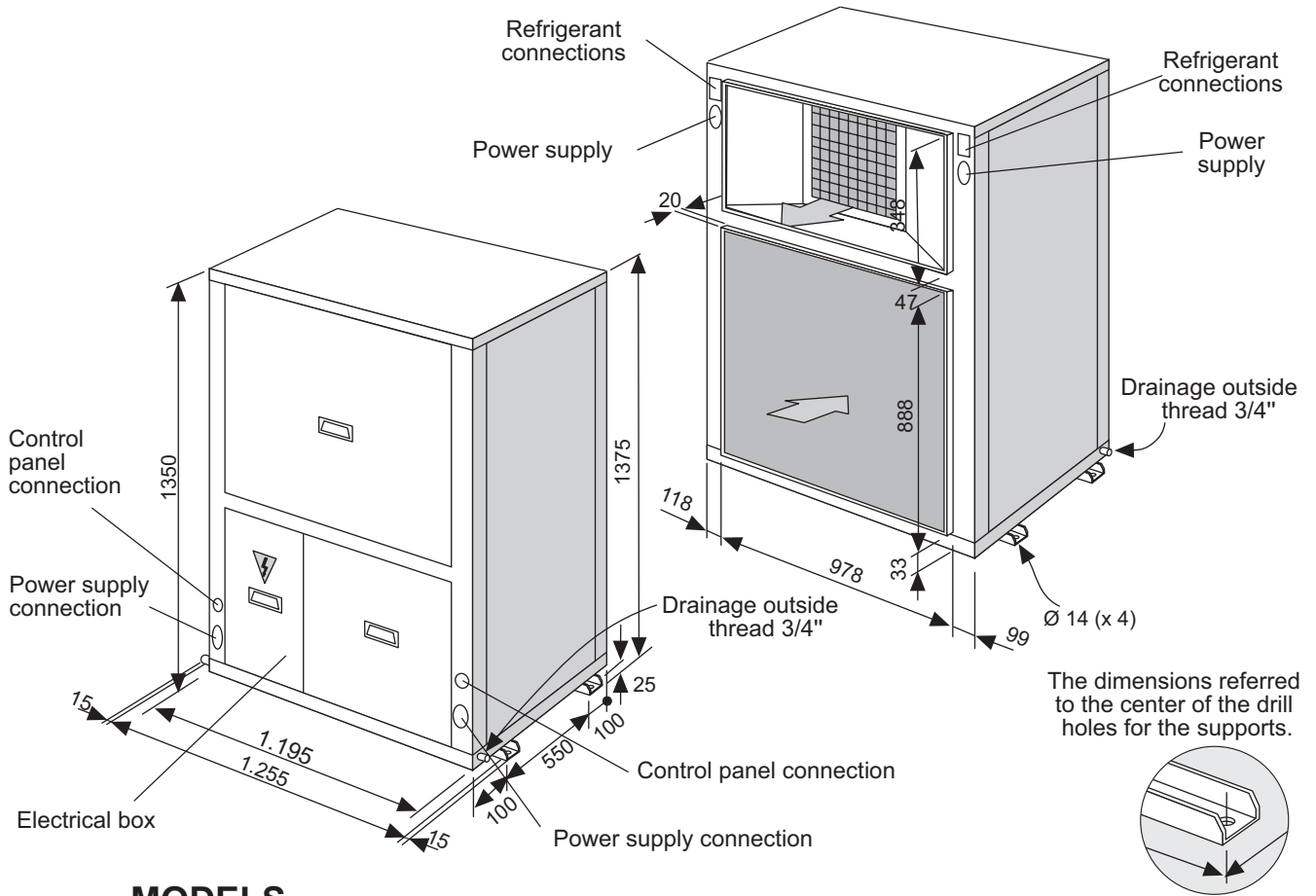


MODELS LECK/LEHK/LEHA 86D-100D

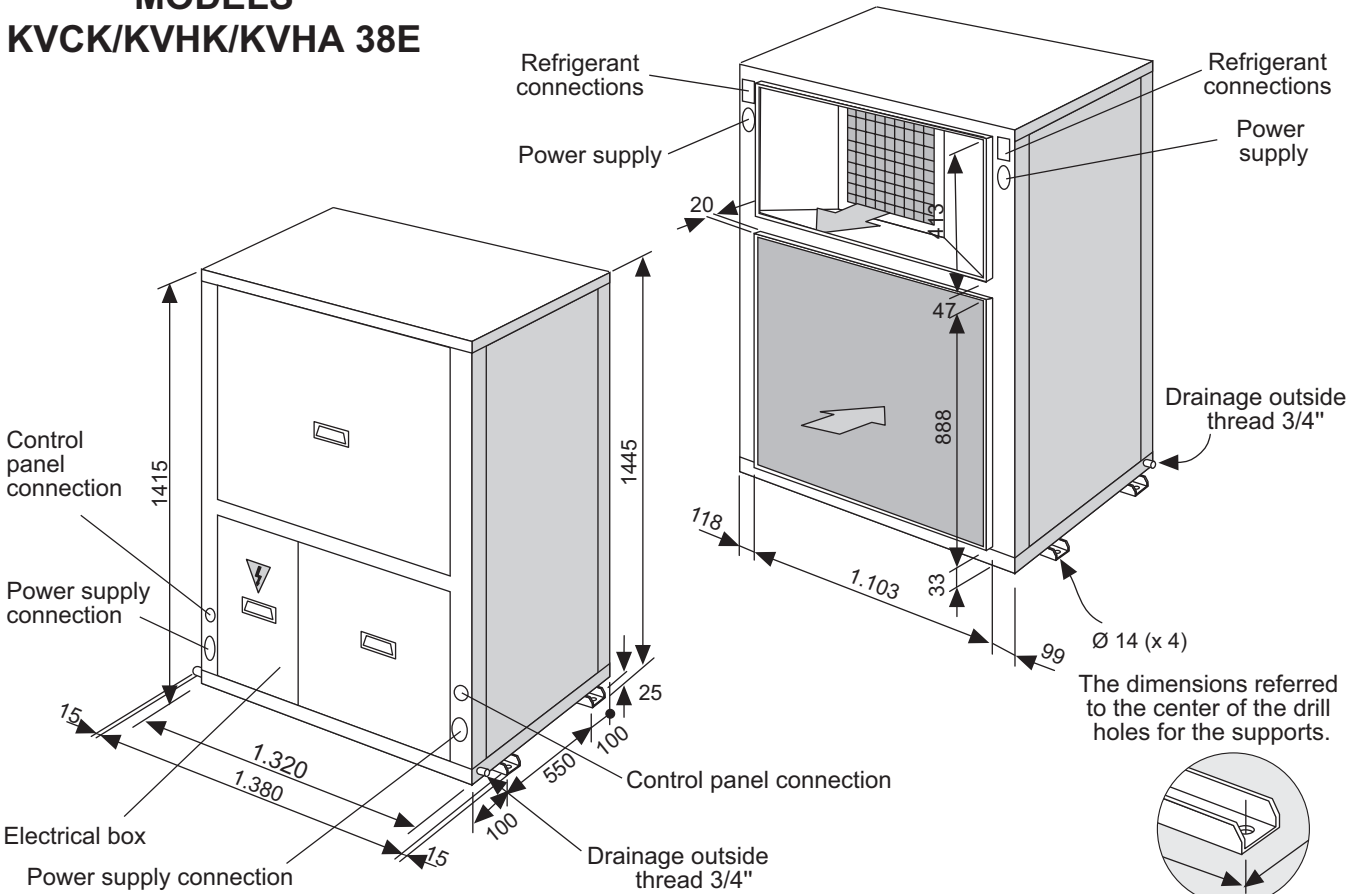


OUTDOOR SPLIT UNITS DIMENSIONS

MODELS KVCK/KVHK/KVHA 22E-24E-28E-32E

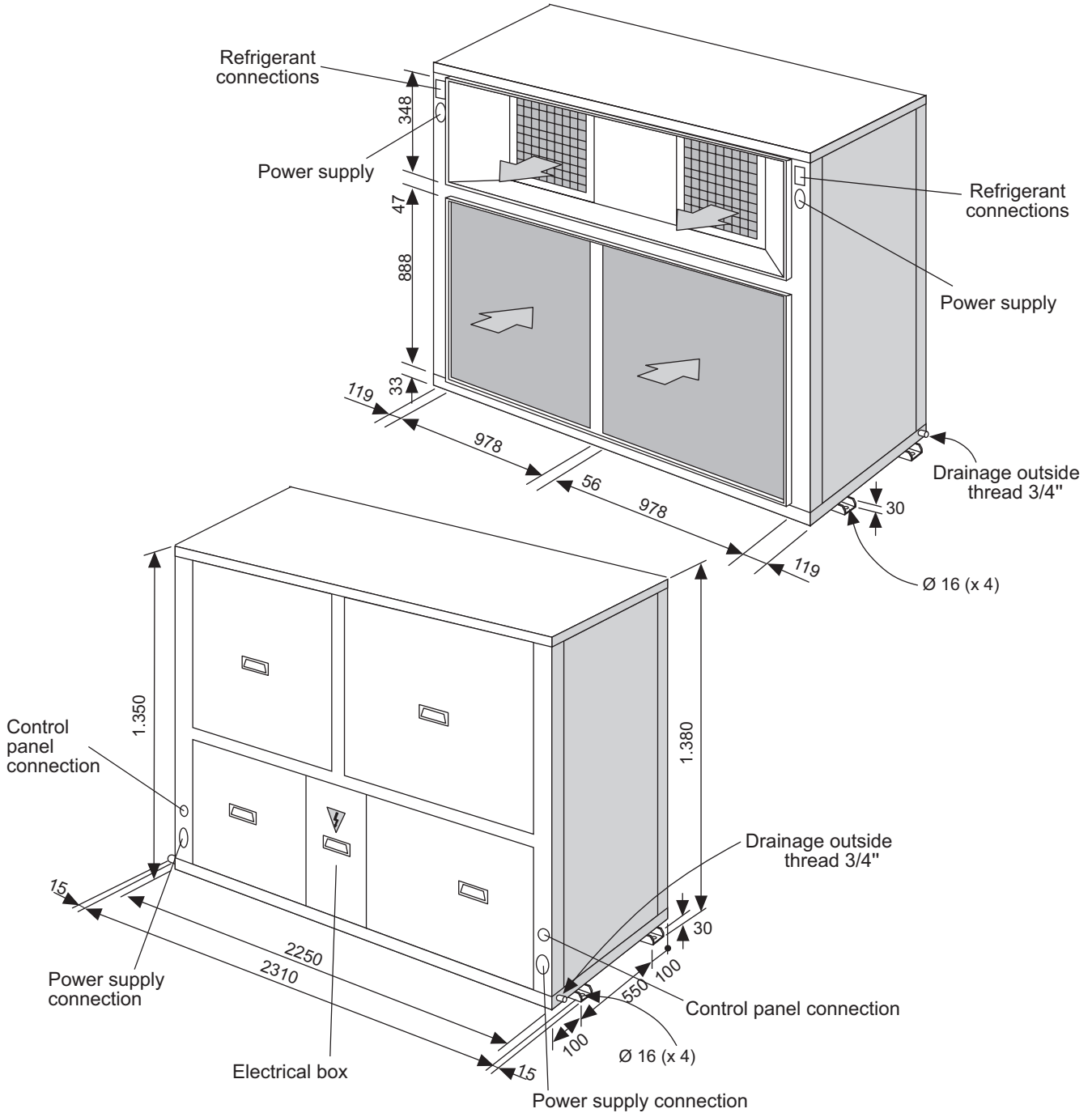


MODELS KVCK/KVHK/KVHA 38E

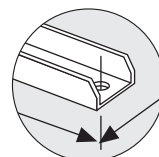


OUTDOOR SPLIT AND MULTI-SPLIT UNITS DIMENSIONS

**MODELS KVCK/KVHK/KVHA 44D-48D-56D-64D
44D2-48D2-56D2-64D2**

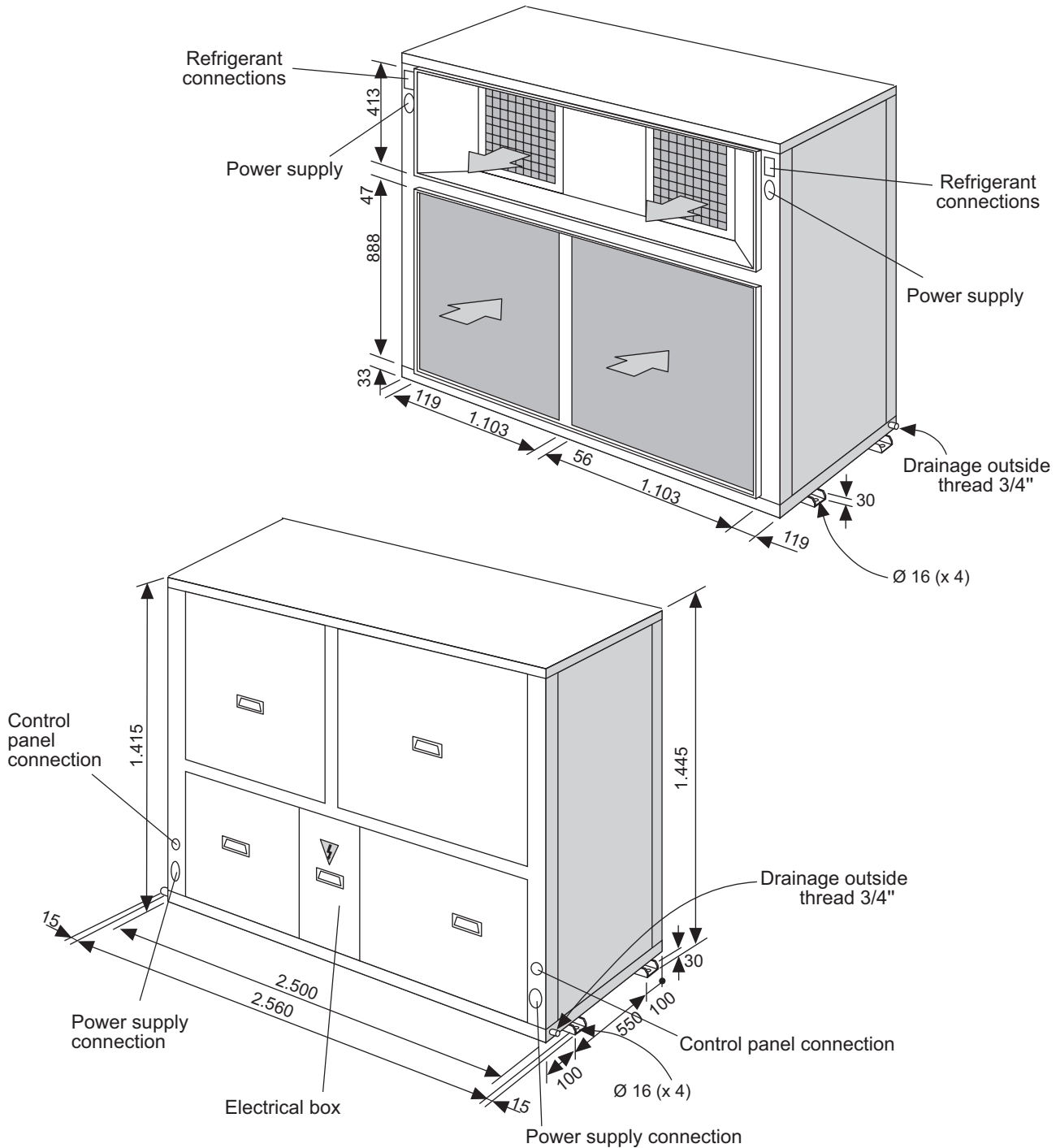


The dimensions referred to the center of the drill holes for the supports.

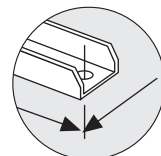


OUTDOOR SPLIT AND MULTI-SPLIT UNITS DIMENSIONS

MODEL KVCK/KVHK/KVHA 76D-76D2

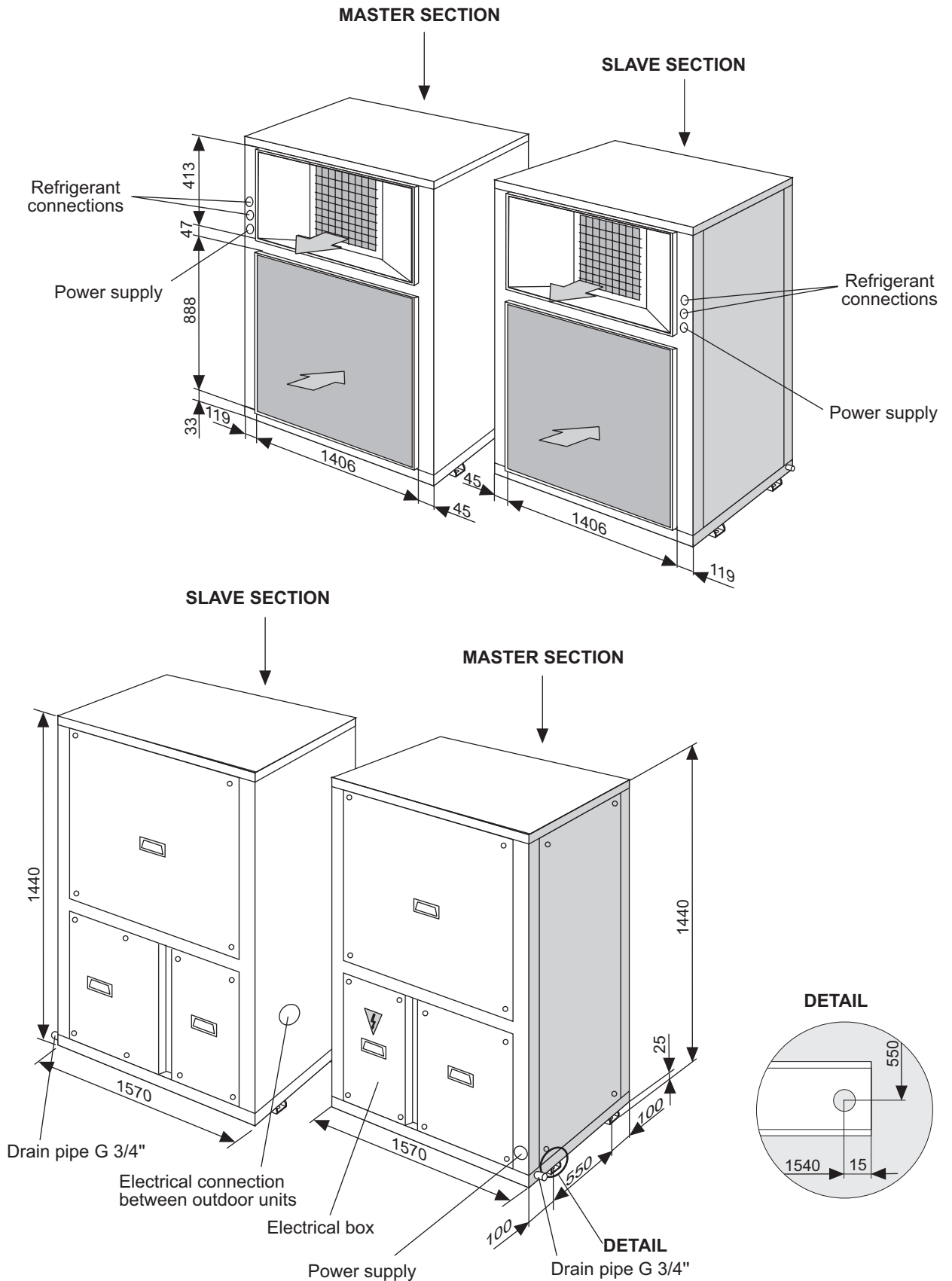


The dimensions referred to the center of the drill holes for the supports.



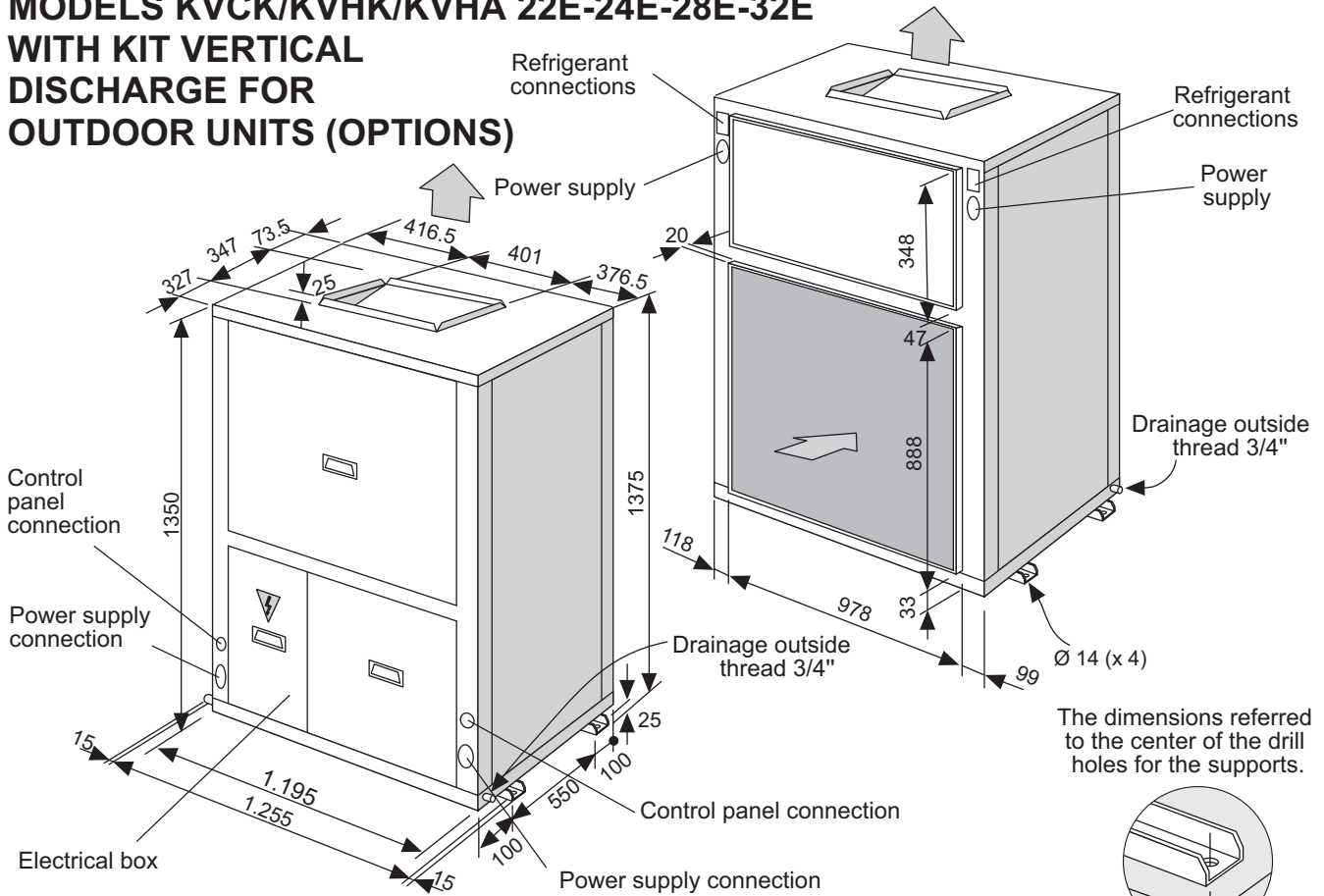
OUTDOOR SPLIT AND MULTI-SPLIT UNITS DIMENSIONS

MODEL KVCK/KVHK/KVHA 86D-100D-86D2-100D2

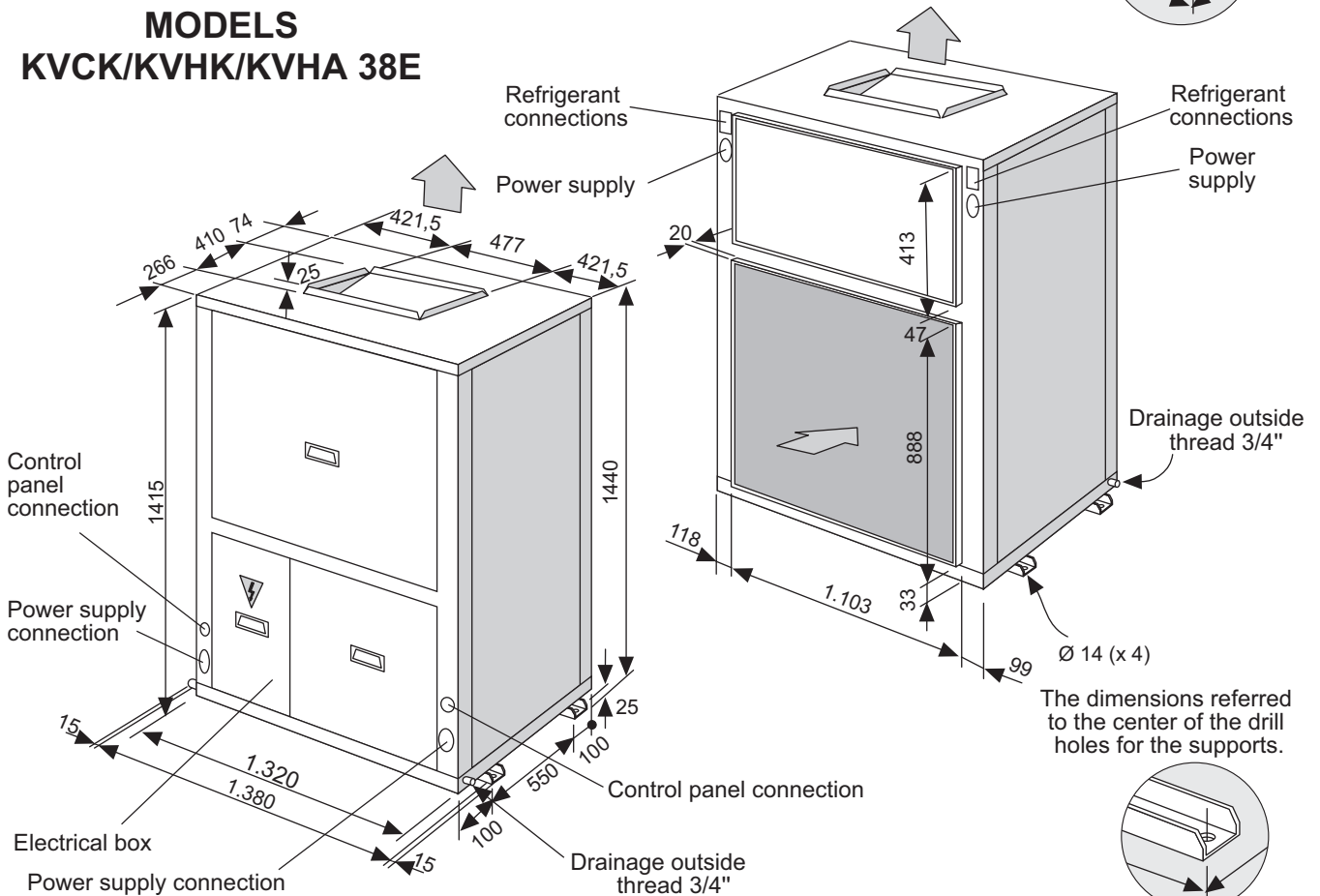


OUTDOOR SPLIT UNITS DIMENSIONS

**MODELS KVCK/KVHK/KVHA 22E-24E-28E-32E
WITH KIT VERTICAL
DISCHARGE FOR
OUTDOOR UNITS (OPTIONS)**

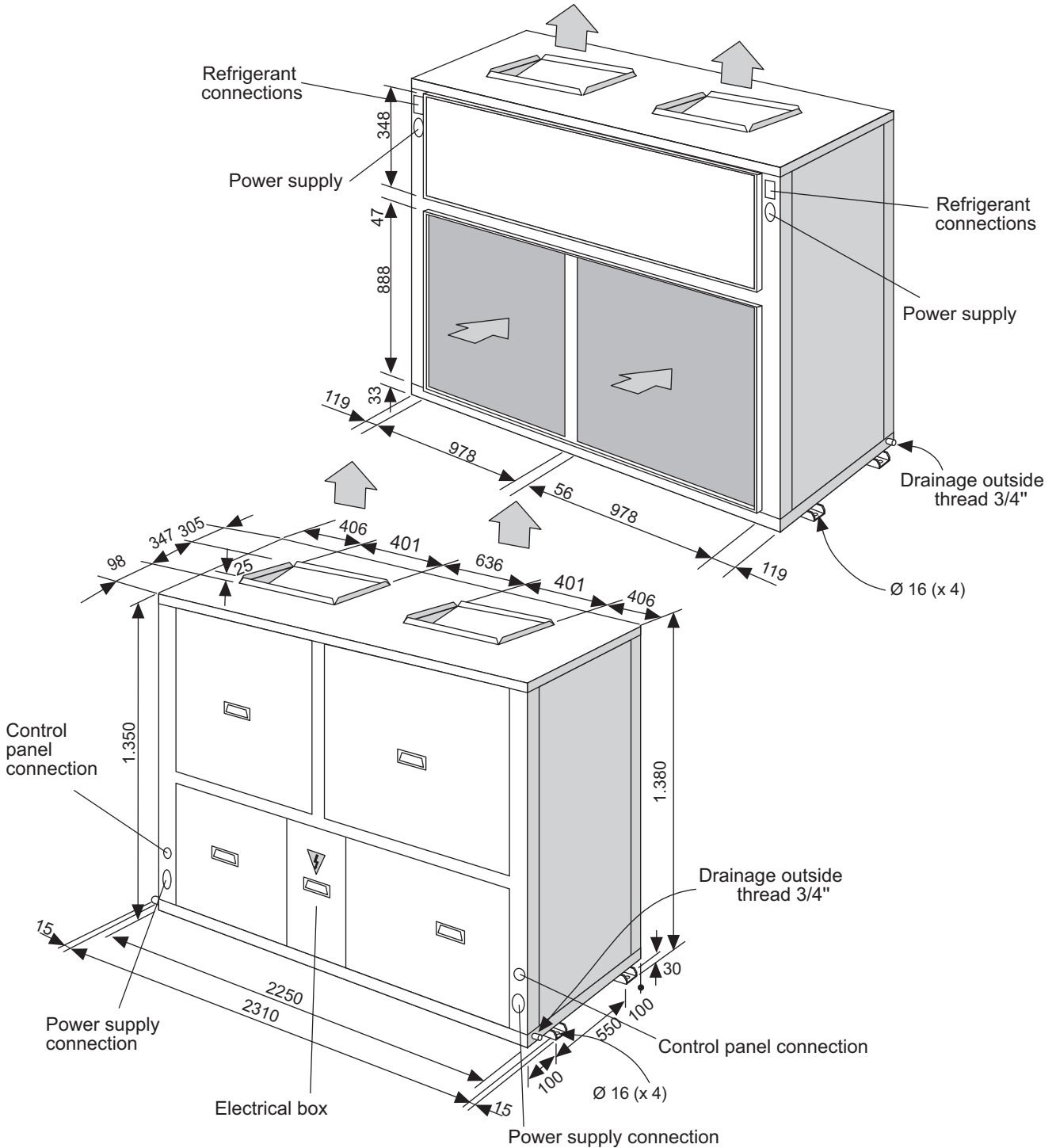


**MODELS
KVCK/KVHK/KVHA 38E**

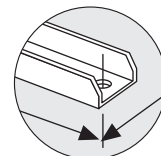


OUTDOOR SPLIT AND MULTI-SPLIT UNITS DIMENSIONS

MODELS KVCK/KVHK/KVHA 44D-48D-56D-64D-44D2-48D2-56D2-64D2
WITH KIT VERTICAL DISCHARGE FOR OUTDOOR UNITS (OPTIONS)

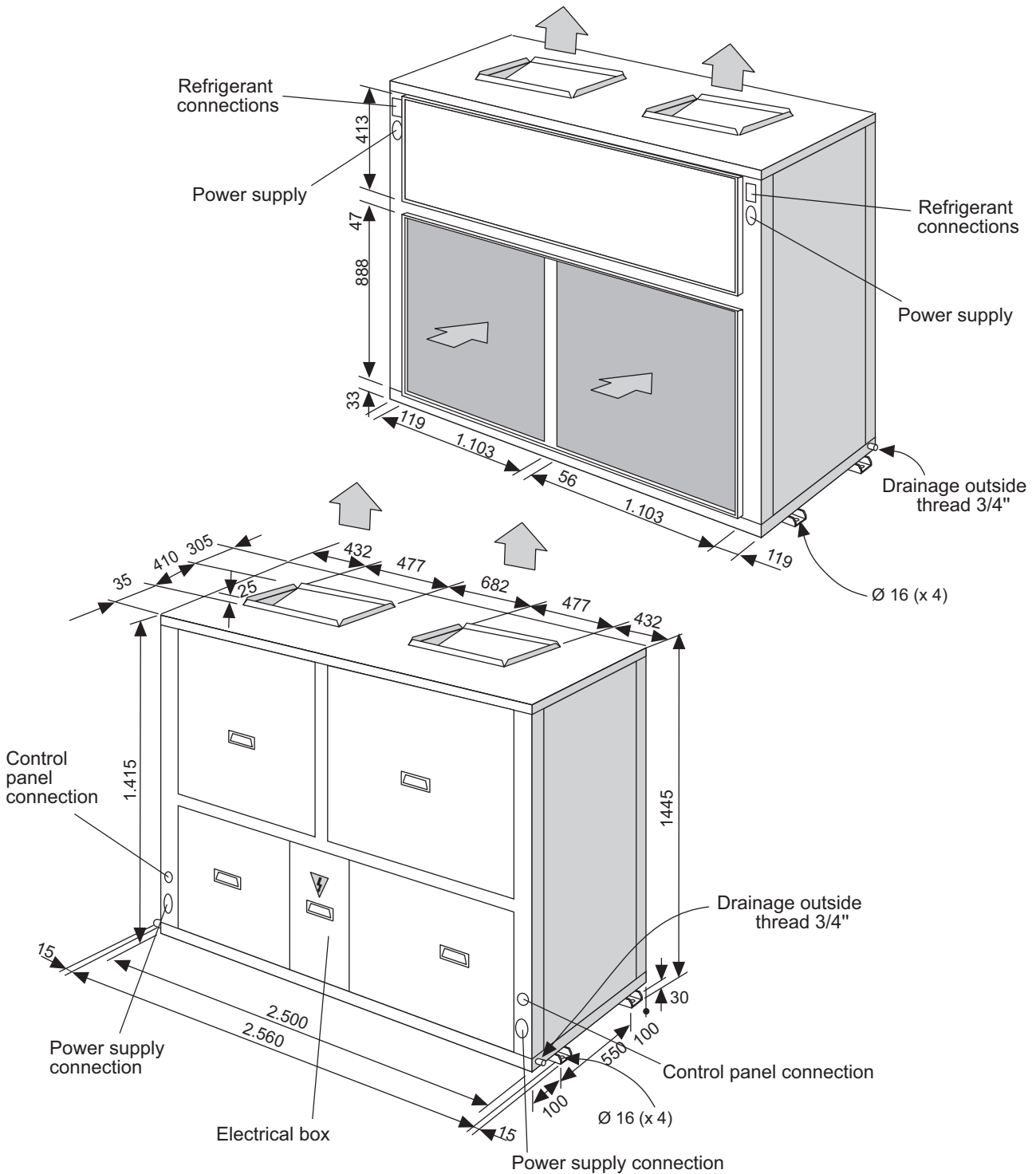


The dimensions referred to the center of the drill holes for the supports.

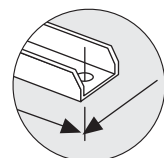


OUTDOOR SPLIT AND MULTI-SPLIT UNITS DIMENSIONS

**MODEL KVCK/KVHK/KVHA 76D-76D2
WITH KIT VERTICAL DISCHARGE FOR OUTDOOR UNITS (OPTIONS)**

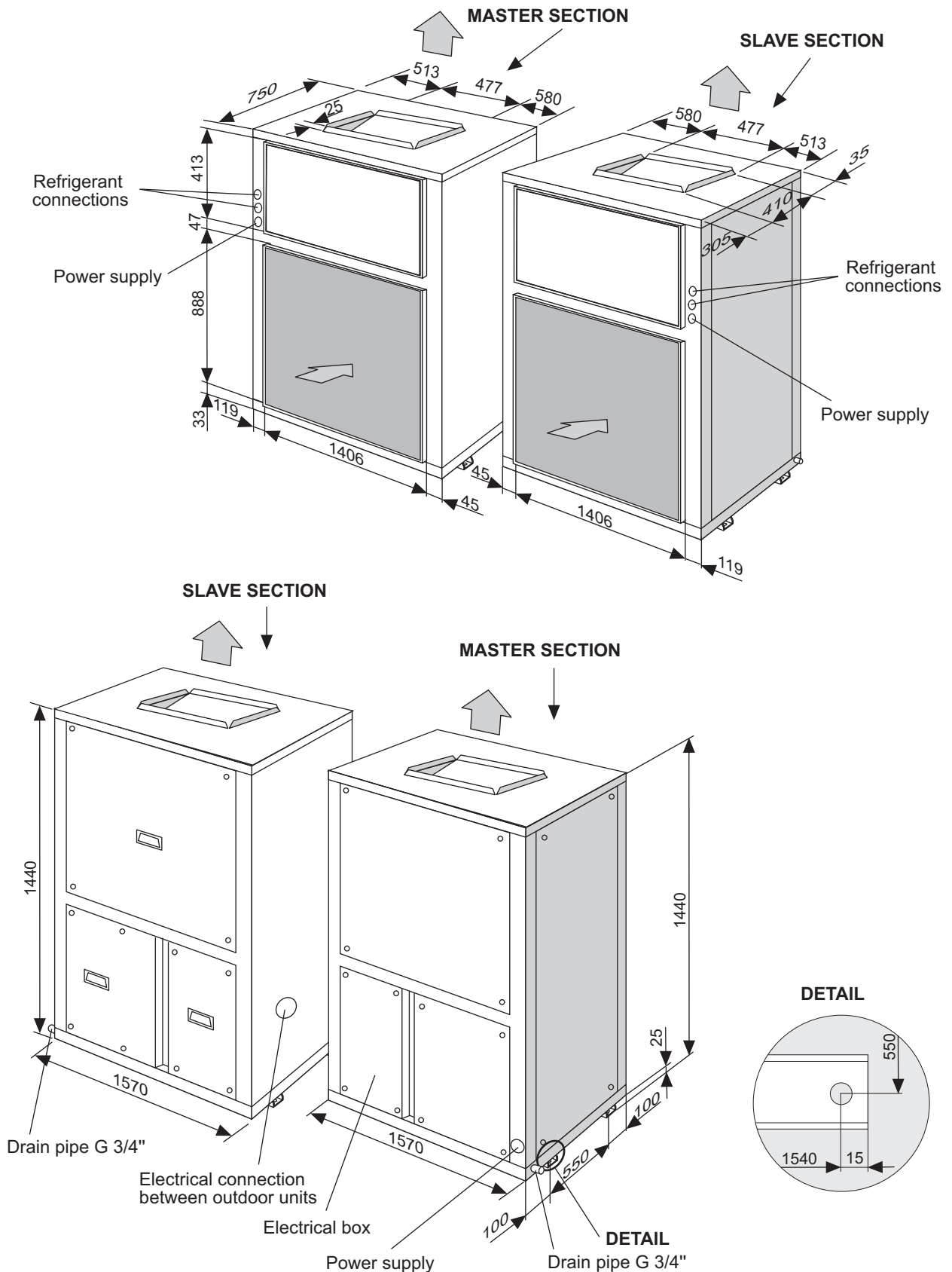


The dimensions referred to the center of the drill holes for the supports.



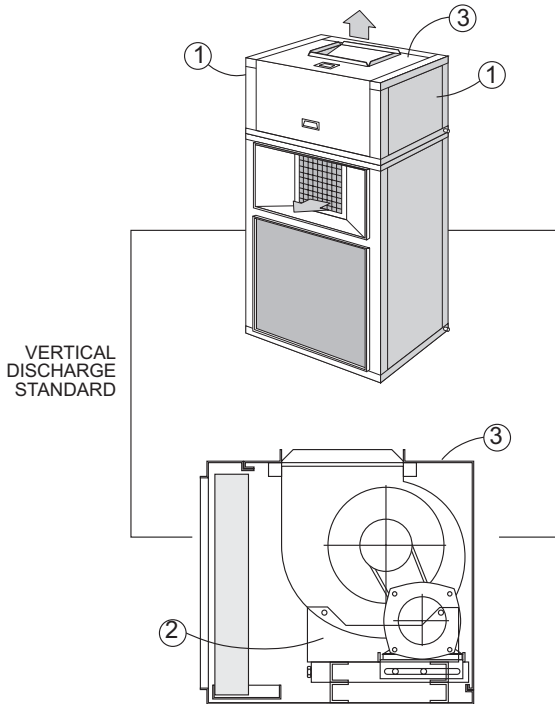
OUTDOOR SPLIT AND MULTI-SPLIT UNITS DIMENSIONS

**MODEL KVCK/KVHK/KVHA 86D-100D-86D2-100D2
WITH KIT VERTICAL DISCHARGE FOR OUTDOOR UNITS (OPTIONS)**

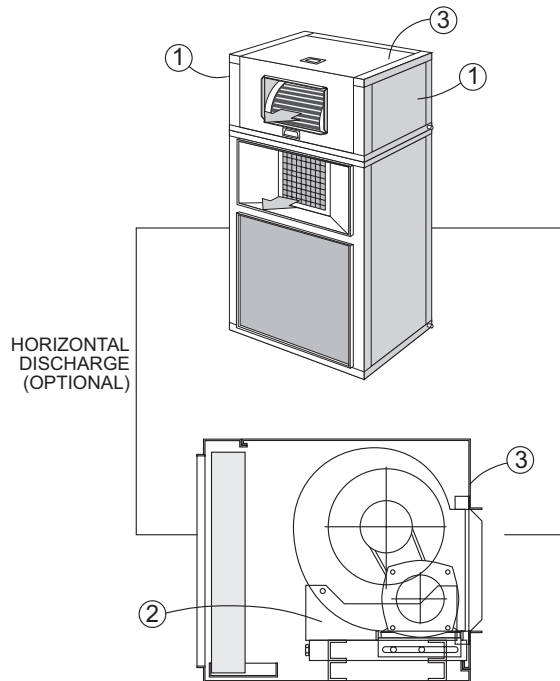


UNITS MODELS LVCK-LVHK-LVHA 22E-24E-28E-32E-38E

DISCHARGE AIR STANDARD
PACKAGED UNITS



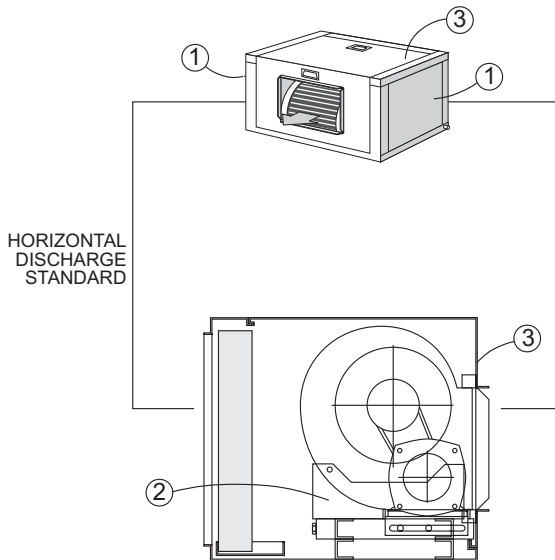
DISCHARGE AIR OPTIONAL
PACKAGED UNITS



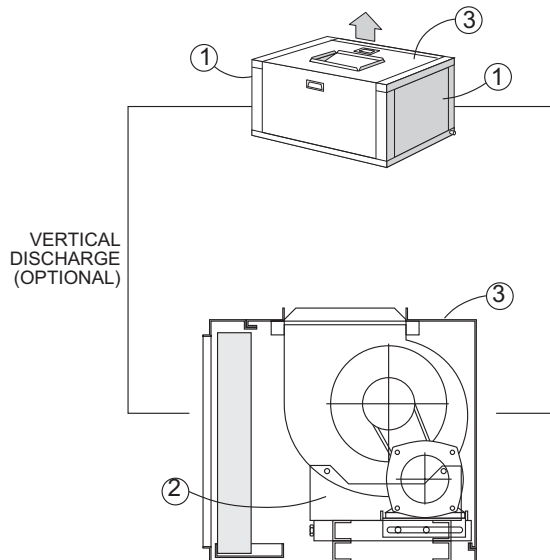
- 1 Check that unit is electrically disconnected.
- 2 Unscrew and remove side covers (1) and (3).
- 3 Loosen the transmission belts and disassemble them.
- 4 Remove the pulley from the fan axle.
- 5 Remove the fan and their supports (2).
- 6 Turn the fan until horizontal discharge position is reached.
- 7 Replace the fan on the supports (2) which should not be moved.
- 8 Place the pulley on the fan axle on the side which coincides with the motor: assemble the belts and align them.
- 9 Tense the belts correctly.
- 10 Replace the upper and lateral covers and screw them down (1) and (3).

UNITS MODELS LECK-LEHK-LEHA 22E-24E-28E-32E-38E-43E-50E

DISCHARGE AIR STANDARD
SPLIT UNITS



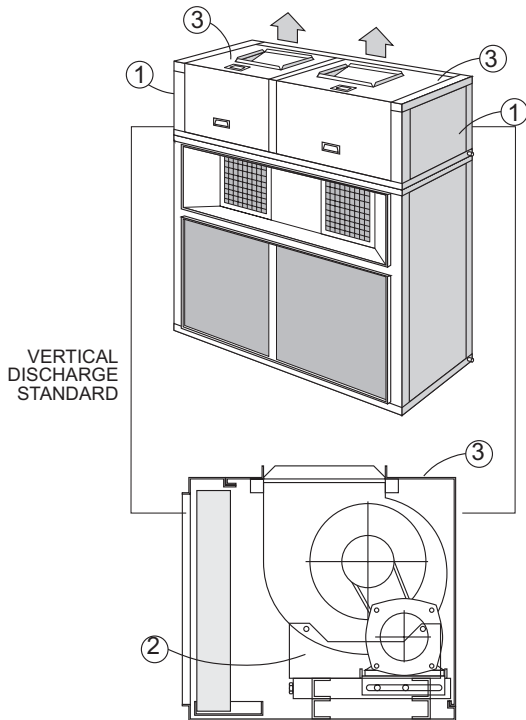
DISCHARGE AIR OPTIONAL
SPLIT UNITS



- 1 Check that unit is electrically disconnected.
- 2 Unscrew and remove side covers (1) and (3).
- 3 Loosen the transmission belts and disassemble them.
- 4 Remove the pulley from the fan axle.
- 5 Remove the fan and their supports (2).
- 6 Turn the fan until horizontal discharge position is reached.
- 7 Replace the fan on the supports (2) which should not be moved.
- 8 Place the pulley on the fan axle on the side which coincides with the motor: assemble the belts and align them.
- 9 Tense the belts correctly.
- 10 Replace the upper and lateral covers and screw them down (1) and (3).

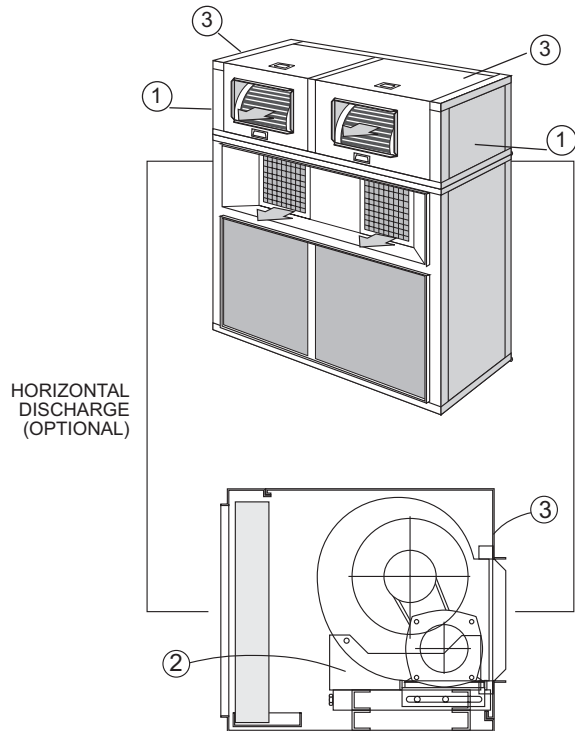
UNITS MODELS LVCK-LVHK-LVHA 44D-48D-56D-64D-76D

DISCHARGE AIR STANDARD
PACKAGED UNIT



VERTICAL
DISCHARGE
STANDARD

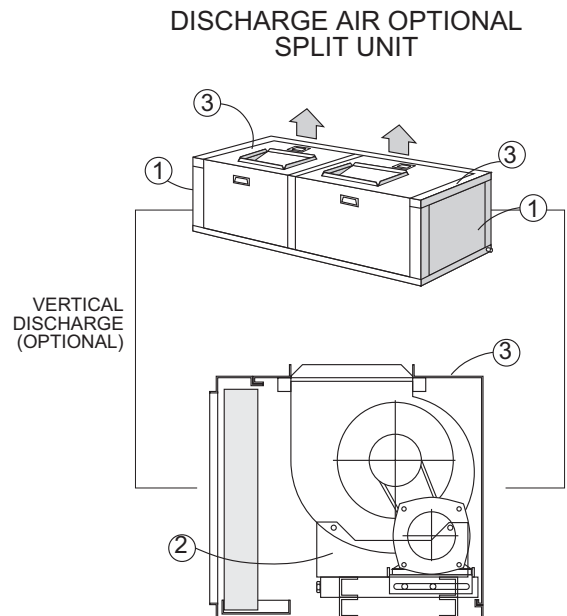
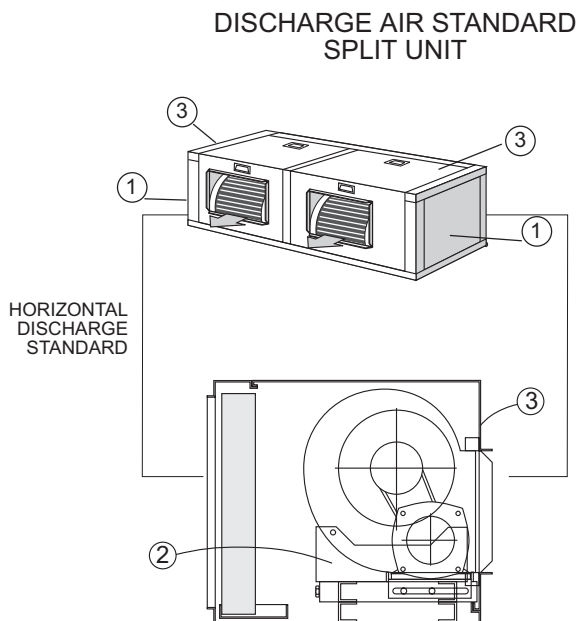
DISCHARGE AIR OPTIONAL
PACKAGED UNIT



HORIZONTAL
DISCHARGE
(OPTIONAL)

- 1 Check that unit is electrically disconnected.
- 2 Unscrew and remove side covers (1) and (3).
- 3 Loosen the transmission belts and disassemble them.
- 4 Remove the pulley from the fan axle.
- 5 Remove the fan and their supports (2).
- 6 Turn the fan until horizontal discharge position is reached.
- 7 Replace the fan on the supports (2) which should not be moved.
- 8 Place the pulley on the fan axle on the side which coincides with the motor: assemble the belts and align them.
- 9 Tense the belts correctly.
- 10 Replace the upper and lateral covers and screw them down (1) and (3).

UNITS MODELS LECK-LEHK-LEHA 44D-48D-56D-64D-76D-86D-100D



- 1 Check that unit is electrically disconnected.
- 2 Unscrew and remove side covers (1) and (3).
- 3 Loosen the transmission belts and disassemble them.
- 4 Remove the pulley from the fan axle.
ATTENTION!! Models 86D-100D; Unscrew the bottom bedplate.
- 5 Remove the fan and their supports (2).
- 6 Turn the fan until horizontal discharge position is reached.
- 7 Replace the fan on the supports (2) which should not be moved.
ATTENTION!! Models 86D-100D; Screw the bottom bedplate.
- 8 Place the pulley on the fan axle on the side which coincides with the motor: assemble the belts and align them.
- 9 Tense the belts correctly.
- 10 Replace the upper and lateral covers and screw them down (1) and (3).

UNIT INSTALLATION

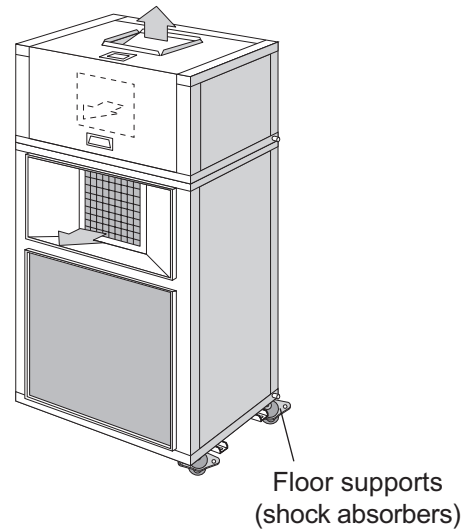
UNIT LOCATION

- The bedplate is made up of two metal channels, capable of with standing the weight of the units.

- If the unit is floor mounted, then the profiles should be isolated with shock absorbing material such as anti-vibration or pads. Keep in mind that fans rotate at approximately 850 rpm.

For the ones with variable pulley belts, see performances tables.

UNIT INSTALLED ON SHOCK ABSORBERS



- The unit is able to work in normal radioelectronics conditions for commercial and residential installations. For any other conditions please consult.

- If the outside temperature in the area where the heat pump unit is to be installed is low or the cycle functioning are too long, it may necessary to install an electrical heater, below the likely coils on the drip tray, which avoids the causing of ice in the coil during defrost cycle.

- If the outdoor unit is going to be installed outside. It may be recommended to install isolation around the panel of electrical box, to make sure it became hermetic.

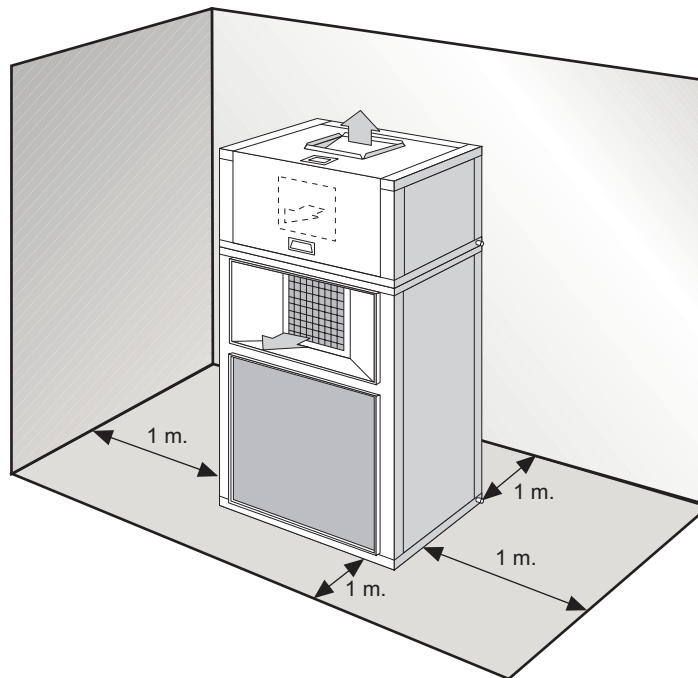
UNIT INSTALLATION

INSTALLATION CLEARANCES

Clearance around the unit for service and maintenance.

SERVICE SPACE

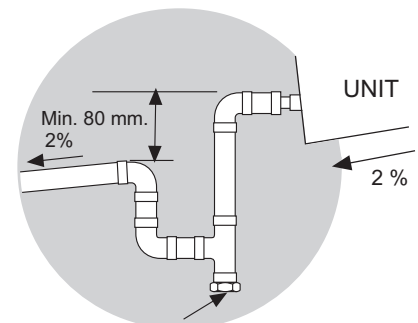
Space should be left free for access or servicing, to ease the installation of cables, drainage connections, electric installation and cleaning filters, as well as easy access to the unit.



DRAINS

All the indoor and outdoor sections of these units have a 3/4" steel threaded drain pipe welded to the condensation tray.

Drainage pipes will be fitted for each tray through a siphon with a height difference of 80 mm. to avoid drainage problems from the depression formed by the fans. The pipes should have an inclination of 2% to ease drainage of condensation.



Inspection and cleaning stopper.

Also slightly tip the unit (2%) toward the drainage side. Check that the condensation trays are clean and free from dirt and other debris from the works and that water drains correctly.

REFRIGERANT CONNECTIONS

SPLIT OR MULTI-SPLIT SYSTEM

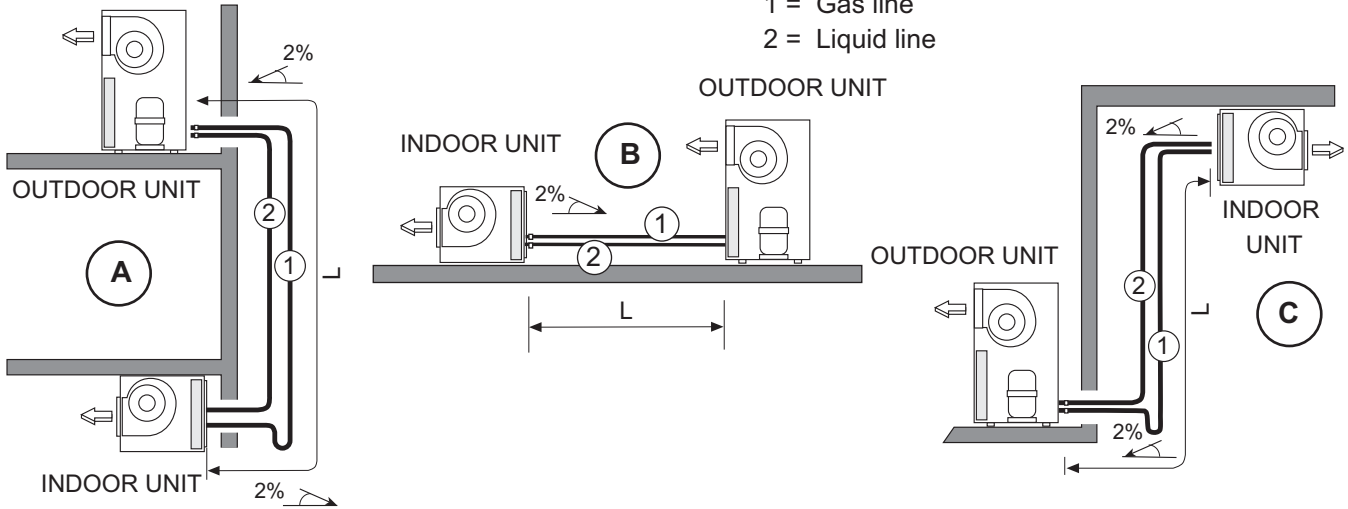
To locate the outdoor and the indoor units, refer to the following information:

A,B,C : Unit positions

L : Total length

1 = Gas line

2 = Liquid line



POSITION A : A siphon suction must be installed on the vertical line of the gas line, and siphons must be installed every 8 meters upward. The minimum speed suction must be below 6m/s.

POSITION B : Tip the lines toward the outdoor unit. Make special attention to line length longer than 10m

POSITION C : Install a siphon at the base of the vertical of the gas line, no more siphons are necessary.

TABLE 1: REFRIGERANT LINES SELECTION

REFRIGERANT LINES			UNIT - MODEL														
			22E	24E	28E	32E	38E	43E	50E	44D 44D2	48D 48D2	56D 56D2	64D 64D2	76D 76D2	86D 86D2	100D 100D2	
Total line length	0 a 10 m.	∅ Liquid	5/8"	5/8"	5/8"	5/8"	3/4"	7/8"	7/8"	7/8"	2x5/8"	2x5/8"	2x5/8"	2x5/8"	2x3/4"	2x7/8"	2x7/8"
		∅ Gas	7/8"	1-1/8"	1-1/8"	1-1/8"	1-3/8"	1-5/8"	1-5/8"	1-5/8"	2x7/8"	2x1-1/8"	2x1-1/8"	2x1-1/8"	2x1-3/8"	2x1-5/8"	2x1-5/8"
	0 a 30 m.	∅ Liquid	5/8"	5/8"	5/8"	3/4"	7/8"	7/8"	7/8"	7/8"	2x5/8"	2x5/8"	2x5/8"	2x3/4"	2x7/8"	2x7/8"	2x7/8"
		∅ Gas	1-1/8"	1-1/8"	1-1/8"	1-3/8"	1-5/8"	1-5/8"	1-5/8"	1-5/8"	2x1-1/8"	2x1-1/8"	2x1-1/8"	2x1-3/8"	2x1-5/8"	2x1-5/8"	2x1-5/8"
	30 a 50 m. 	∅ Liquid	5/8"	3/4"	3/4"	3/4"	7/8"	7/8"	1-1/8"	1-1/8"	2x5/8"	2x3/4"	2x3/4"	2x3/4"	2x7/8"	2x7/8"	2x1-1/8"
		∅ Gas	1-1/8"	1-3/8"	1-3/8"	1-3/8"	1-5/8"	2-1/8"	2-1/8"	2-1/8"	2x1-1/8"	2x1-3/8"	2x1-3/8"	2x1-3/8"	2x1-5/8"	2x2-1/8"	2x2-1/8"
Unit connections	∅ Liquid	5/8"	5/8"	5/8"	5/8"	3/4"	7/8"	7/8"	7/8"	2x5/8"	2x5/8"	2x5/8"	2x5/8"	2x3/4"	2x7/8"	2x7/8"	
	∅ Gas	7/8"	1-1/8"	1-1/8"	1-1/8"	1-3/8"	1-5/8"	1-5/8"	1-5/8"	2x7/8"	2x1-1/8"	2x1-1/8"	2x1-1/8"	2x1-3/8"	2x1-5/8"	2x1-5/8"	
Maximum vertical line length (m.)			16	16	16	16	16	16	16	16	16	16	16	16	16	16	
Maximum number of bends			12	12	12	12	12	12	12	12	12	12	12	12	12	12	

- THE GAS LINE ALWAYS MUST BE INSULATED

- THE HORIZONTAL LINES MUST BE TYPED AT LEAST 2% TOWARD THE OUTDOOR UNIT

- THE MAXIMUM SPEED INSIDE LINES, NOT SHOULD BE MORE THAN 15 m/seg.



Between length of 30 and 50 m superior you have to make a recalculation according to our technical commercial department or distribution itself to maintain determinated aspects how to make the installation (additional charge of oil, solenoid valves etc.....)

SPLIT OR MULTI-SPLIT SYSTEM



PRECAUTIONS TO BE TAKEN IN THE USE OF R-407C Refrigerant

If R-407C Refrigerant is used in the unit, the following precautions characteristic of this gas should be taken:

- The Vacuum Pump must have a Check Valve or Solenoid Valve.
- Pressure Gauges and Hoses for the exclusive use with R-407C Refrigerant should be used.
- The charge should be carried out in the Liquid Phase.
- Always use scales to weight-in charge- Use the Leak Detector exclusive for R-407C Refrigerant.
- Do not use mineral oil, only synthetic oil to ream, expand or make connections.
- Keep pipes wrapped before using them and be very thorough about any possible dirt (dust, filings, burrs, etc.).
- When there is a leak, gather what is left of the charge, create a vacuum in the unit and completely recharge with new R-407C Refrigerant.
- Brazing should always be carried out in a nitrogen atmosphere.
- Reamers should always be well sharpened.

REFRIGERANT CONNECTIONS

TABLE 2: CHARGE OF REFRIGERANT FOR PACKAGED SYSTEM

The units are factory pre-charged with the following refrigerant charge:

Charge of refrigerant (gr) R-22 LVHA									
22E	24E	28E	32E	38E	44D	48D	56D	64D	76D
6000	6800	7900	9100	11300	12000	13600	15800	18200	22600

Charge of refrigerant (gr) R-407C LVCK / LVHK										
	22E	24E	28E	32E	38E	44D	48D	56D	64D	76D
LVCK	5000	5700	6650	7600	9450	10000	11400	13300	15200	18900
LVHK	5500	6300	7400	8500	10500	11000	12600	14800	17000	21000

TABLE 3: CHARGE OF REFRIGERANT FOR SPLIT SYSTEM

Indoor and outdoor units are factory pre-charged with **Nitrogen (N₂)**. The installer should remove this gas and charge the units with the refrigerant R - 22 or R - 407C show on the following table and also the charge per meter line on table 5.

Charge of refrigerant (gr) R-22 for 0 meters of line KVHA + LEHA											
22E	24E	28E	32E	38E	44D	48D	56D	64D	76D	86D	100D
6000	6800	7900	9100	11300	2x6000	2x6800	2x7900	2x9100	2x11300	2x12200	2x13500

Charge of refrigerant (gr) R-407C for 0 meters of line KVCK + LECK											
22E	24E	28E	32E	38E	44D	48D	56D	64D	76D	86D	100D
5000	5700	6650	7600	9450	2x5000	2x5700	2x6650	2x7600	2x9450	2x10500	2x11700

Charge of refrigerant (gr) R-407C for 0 meters of line KVHK + LEHK											
22E	24E	28E	32E	38E	44D	48D	56D	64D	76D	86D	100D
5500	6300	7400	8500	10500	2x5500	2x6300	2x7400	2x8500	2x10500	2x11700	2x13000

TABLE 4: CHARGE OF REFRIGERANT FOR MULTI-SPLIT SYSTEM

Indoor and outdoor units are factory pre-charged with **Nitrogen (N₂)**. The installer should remove this gas and charge the units with the refrigerant R - 22 or R - 407C show on the following table and also the charge per meter line on table 5.

Charge of refrigerant (gr) R-22 KVHA + 2 x LEHA						
44D2	48D2	56D2	64D2	76D2	86D2	100D2
2 x 6000	2 x 6800	2 x 7900	2 x 9100	2 x 11300	2 x 12200	2 x 13500

Charge of refrigerant (gr) R-407C KVCK + 2 x LECK						
44D2	48D2	56D2	64D2	76D2	86D2	100D2
2 x 5000	2 x 5700	2 x 6650	2 x 7600	2 x 9450	2 x 10500	2 x 11700

Charge of refrigerant (gr) R-407C KVHK + 2 x LEHK						
44D2	48D2	56D2	64D2	76D2	86D2	100D2
2 x 5500	2 x 6300	2 x 7400	2 x 8500	2 x 10500	2 x 11700	2 x 13000

REFRIGERANT CONNECTIONS

**TABLE 5: WEIGHT OF REFRIGERANT R-22 OR R-407C PER METER OF LINE
SPLIT SYSTEM:**

	FROM 0 TO 10M			FROM 10 TO 30M			FROM 30 TO 50M		
	Suction	Liquid	gr/m	Suction	Liquid	gr/m	Suction	Liquid	gr/m
MODEL 22E	7/8"	5/8"	151	1-1/8"	5/8"	155	1-1/8"	5/8"	155
MODEL 24E	1-1/8"	5/8"	155	1-1/8"	5/8"	155	1-3/8"	3/4"	232
MODEL 28E	1-1/8"	5/8"	155	1-1/8"	5/8"	155	1-3/8"	3/4"	232
MODEL 32E	1-1/8"	5/8"	155	1-3/8"	3/4"	232	1-3/8"	3/4"	232
MODEL 38E	1-3/8"	3/4"	232	1-5/8"	7/8"	327	1-5/8"	7/8"	327
MODEL 43E	1-5/8"	7/8"	327	1-5/8"	7/8"	327	2-1/8"	7/8"	340
MODEL 50E	1-5/8"	7/8"	327	1-5/8"	7/8"	327	2-1/8"	1-1/8"	581
MODEL 44D / D2	2x7/8"	2x5/8"	151	2x1-1/8"	2x5/8"	155	2x1-1/8"	2x5/8"	155
MODEL 48D / D2	2x1-1/8"	2x5/8"	155	2x1-1/8"	2x5/8"	155	2x1-3/8"	2x3/4"	232
MODEL 56D / D2	2x1-1/8"	2x5/8"	155	2x1-1/8"	2x5/8"	155	2x1-3/8"	2x3/4"	232
MODEL 64D / D2	2x1-1/8"	2x5/8"	155	2x1-3/8"	2x3/4"	232	2x1-3/8"	2x3/4"	232
MODEL 76D / D2	2x1-3/8"	2x3/4"	232	2x1-5/8"	2x7/8"	327	2x1-5/8"	2x7/8"	327
MODEL 86D / D2	2x1-5/8"	2x7/8"	327	2x1-5/8"	2x7/8"	327	2x2-1/8"	2x7/8"	340
MODEL 100D / D2	2x1-5/8"	2x7/8"	327	2x1-5/8"	2x7/8"	327	2x2-1/8"	2x1-1/8"	581

CHARGE OF REFRIGERANT FOR THE SET:

EXAMPLE:

To install a KVHK 38E + LEHK 38E set, with a 22m refrigerant line length between outdoor and indoor unit, then the refrigerant charge must be calculated as follow:

1° Type of refrigerant R-22 or R-407C, in this case, R-407C .

2° The TABLE 5 shows, that for 22m of line length between indoor unit and outdoor unit, the line sizes are, liquid 7/8", and gas 1-5/8".

3° TABLE 5 shows, for line sizes of 7/8"- 1-5/8", the charge per meter line is: 327 gr/m.

4° TABLE 3 shows, charge of refrigerant for the set with 0m of line length is 10.500gr.

5° To determine the charge of the set:

Add charge of the refrigerant lines + charge of refrigerant indoor unit and outdoor unit.

$$\text{Total charge for the set: } (327 \text{ gr/m}) \times 22\text{m} + 10.500 \text{ gr} = 17694 \text{ gr}$$

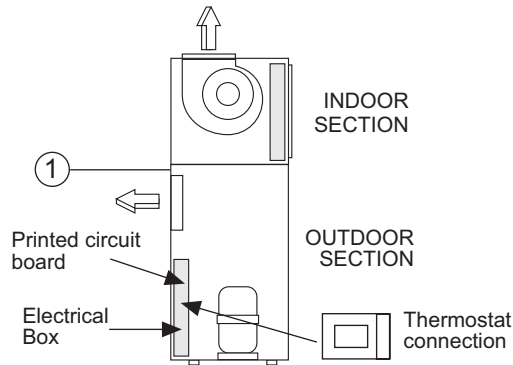
ELECTRICAL CONNECTION

PACKAGED UNIT



- BEFORE MAKING ANY ELECTRICAL CONNECTIONS, BE SURE THAT ALL CIRCUIT BREAKERS ARE OPEN.
- IN ORDER TO CARRY OUT THE ELECTRICAL CONNECTIONS, FOLLOW THE ELECTRICAL DIAGRAM SUPPLIED WITH THE UNIT.

① Power supply to the unit.



POWER SUPPLY 230V THREE-PHASE UNITS	UNIT MODEL	Nr OF CABLES X SECTION (mm ²)	
		① Power supply without electric heater	① Power supply with electric heater
<p>3 ~ 230V - 50 Hz + PE</p>	22E	4 x 10	4 x 25
	24E	4 x 10	4 x 25
	28E	4 x 10	4 x 25
	32E	4 x 16	4 x 35
	38E	4 x 16	4 x 35
	44D	4 x 25	4 x 70
	48D	4 x 25	4 x 70
	56D	4 x 35	4 x 70
	64D	4 x 50	4 x 95
	76D	4 x 50	4 x 95

POWER SUPPLY 400V THREE-PHASE UNITS	UNIT MODEL	Nr OF CABLES X SECTION (mm ²)	
		① Power supply without electric heater	① Power supply with electric heater
<p>3N ~ 400V - 50 Hz + PE</p>	22E	5 x 4	5 x 10
	24E	5 x 4	5 x 10
	28E	5 x 6	5 x 10
	32E	5 x 6	5 x 16
	38E	5 x 10	5 x 16
	44D	5 x 10	5 x 25
	48D	5 x 10	5 x 25
	56D	5 x 16	5 x 35
	64D	5 x 25	5 x 35
	76D	5 x 25	5 x 50

- Connect the power supply cables to the terminals in the electric box through the grommet.
- The sections have been calculated for a length no longer than 50m and a voltage drop of 10V. Do not start the unit if the drop is greater than this.
- The wiring and circuit breakers to be mounted in the installation must comply with the Regulations in force.
- Ground wires must be properly connected and have a greater length than the phase wires.

ELECTRICAL CONNECTION

SPLIT UNIT

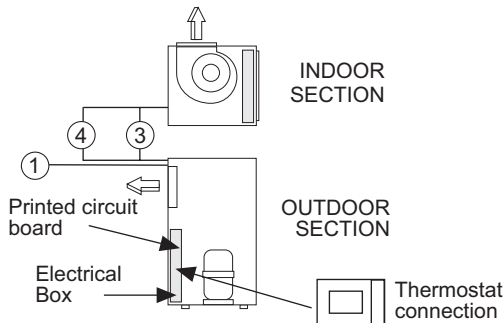


- BEFORE MAKING ANY ELECTRICAL CONNECTIONS, BE SURE THAT ALL CIRCUIT BREAKERS ARE OPEN.
- IN ORDER TO CARRY OUT THE ELECTRICAL CONNECTIONS, FOLLOW THE ELECTRICAL DIAGRAM SUPPLIED WITH THE UNIT.

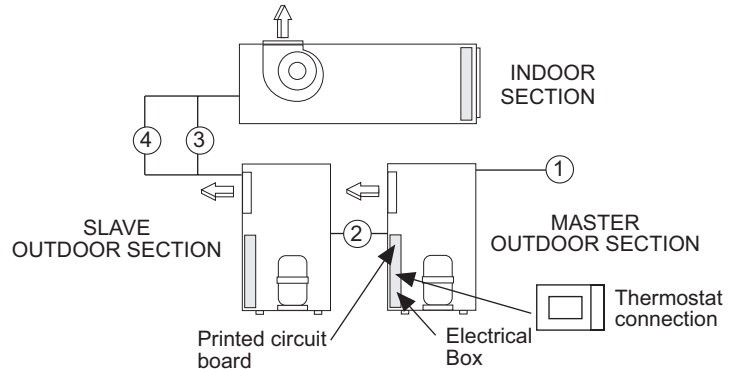
- ① Power supply.
- ② Electrical connection between outdoor units.
- ③ Indoor motor fan electrical connection.
- ④ Electrical heater connection (optional).

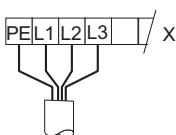
FOR UNITS MODELS:

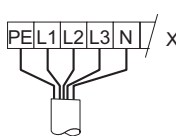
**22E-24E-28E-32E-38E
44D-48D-56D-64D-76D**



86D-100D



POWER SUPPLY 230V THREE-PHASE UNITS  3 ~ 230V - 50 Hz + PE	UNIT MODEL	Nr OF CABLES X SECTION (mm ²)						
		① Power supply WITHOUT electrical heater	① Power supply WITH electrical heater	② Electrical connection between outdoor units		③ Indoor motor fan electrical connection	④ Power supply electrical heater (optional)	
				COOLING	HEATING		1 STAGE	2 STAGES
		22E	4 x 10	4 x 25	—	—	4 x 1,5	4 x 10 + 3 x 1,5
24E	4 x 10	4 x 25	—	—	4 x 1,5	4 x 10 + 3 x 1,5	—	
28E	4 x 10	4 x 25	—	—	4 x 1,5	4 x 10 + 3 x 1,5	—	
32E	4 x 16	4 x 35	—	—	4 x 1,5	4 x 10 + 3 x 1,5	—	
38E	4 x 16	4 x 35	—	—	4 x 1,5	4 x 10 + 3 x 1,5	—	
44D	4 x 25	4 x 70	—	—	4 x 2,5	4 x 16 + 3 x 1,5	2 x (4 x 10) + 4 x 1,5	
48D	4 x 25	4 x 70	—	—	4 x 2,5	4 x 16 + 3 x 1,5	2 x (4 x 10) + 4 x 1,5	
56D	4 x 35	4 x 70	—	—	4 x 2,5	4 x 16 + 3 x 1,5	2 x (4 x 10) + 4 x 1,5	
64D	4 x 50	4 x 95	—	—	4 x 2,5	4 x 16 + 3 x 1,5	2 x (4 x 10) + 4 x 1,5	
76D	4 x 50	4 x 95	—	—	4 x 2,5	4 x 16 + 3 x 1,5	2 x (4 x 10) + 4 x 1,5	
86D	4 x 95	4 x 120	4 x 2,5 4 x 16 10 x 1	4 x 2,5 4 x 16 14 x 1	4 x 2,5	4 x 16 + 3 x 1,5	2 x (4 x 10) + 4 x 1,5	
100D	4 x 95	4 x 150	4 x 2,5 8 x 6 16 x 1	4 x 2,5 8 x 6 20 x 1	4 x 2,5	4 x 16 + 3 x 1,5	2 x (4 x 10) + 4 x 1,5	

POWER SUPPLY 400V THREE-PHASE UNITS  3N ~ 400V - 50 Hz + PE	UNIT MODEL	Nr OF CABLES X SECTION (mm ²)						
		① Power supply WITHOUT electrical heater	① Power supply WITH electrical heater	② Electrical connection between outdoor units		③ Indoor motor fan electrical connection	④ Power supply electrical heater (optional)	
				COOLING	HEATING		1 STAGE	2 STAGES
		22E	5 x 4	5 x 10	—	—	4 x 1,5	4 x 4 + 3 x 1,5
24E	5 x 4	5 x 10	—	—	4 x 1,5	4 x 4 + 3 x 1,5	—	
28E	5 x 6	5 x 10	—	—	4 x 1,5	4 x 4 + 3 x 1,5	—	
32E	5 x 6	5 x 16	—	—	4 x 1,5	4 x 4 + 3 x 1,5	—	
38E	5 x 10	5 x 16	—	—	4 x 1,5	4 x 4 + 3 x 1,5	—	
44D	5 x 10	5 x 25	—	—	4 x 2,5	4 x 6 + 3 x 1,5	2 x (4 x 4) + 4 x 1,5	
48D	5 x 10	5 x 25	—	—	4 x 2,5	4 x 6 + 3 x 1,5	2 x (4 x 4) + 4 x 1,5	
56D	5 x 16	5 x 35	—	—	4 x 2,5	4 x 6 + 3 x 1,5	2 x (4 x 4) + 4 x 1,5	
64D	5 x 25	5 x 35	—	—	4 x 2,5	4 x 6 + 3 x 1,5	2 x (4 x 4) + 4 x 1,5	
76D	5 x 25	5 x 50	—	—	4 x 2,5	4 x 6 + 3 x 1,5	2 x (4 x 4) + 4 x 1,5	
86D	5 x 35	5 x 50	4 x 2,5 4 x 6 10 x 1	4 x 2,5 4 x 6 14 x 1	4 x 2,5	4 x 6 + 3 x 1,5	2 x (4 x 4) + 4 x 1,5	
100D	5 x 50	5 x 70	4 x 2,5 8 x 4 16 x 1	4 x 2,5 8 x 4 20 x 1	4 x 2,5	4 x 6 + 3 x 1,5	2 x (4 x 4) + 4 x 1,5	

- The sections have been calculated for a length no longer than 50m and a voltage drop of 10V.

ELECTRICAL CONNECTION

MULTI-SPLIT UNIT

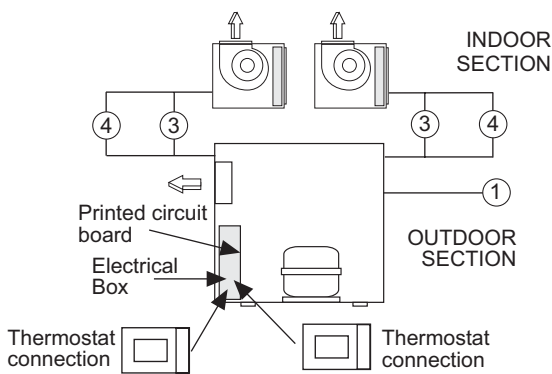


- BEFORE MAKING ANY ELECTRICAL CONNECTIONS, BE SURE THAT ALL CIRCUIT BREAKERS ARE OPEN.
- IN ORDER TO CARRY OUT THE ELECTRICAL CONNECTIONS, FOLLOW THE ELECTRICAL DIAGRAM SUPPLIED WITH THE UNIT.

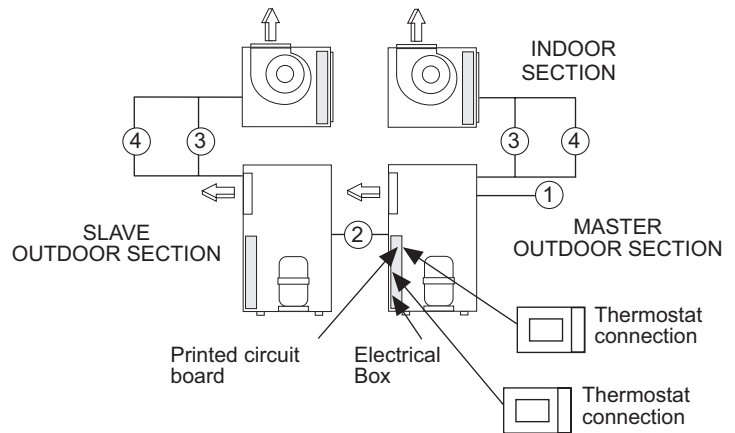
- ① Power supply.
- ② Electrical connection between outdoor units.
- ③ Indoor motor fan electrical connection.
- ④ Electrical heater connection (optional).

FOR UNITS MODELS:

44D2-48D2-56D2-64D2-76D2



86D2-100D2



POWER SUPPLY 230V THREE-PHASE UNITS	UNIT MODEL	Nr OF CABLES X SECTION (mm ²)						
		① Power supply WITHOUT electrical heater	① Power supply WITH electrical heater	② Electrical connection between outdoor units		③ Indoor motor fan electrical connection	④ Power supply electrical heater (optional)	
				COOLING	HEATING		1 STAGE	2 STAGES
		 3 ~ 230V - 50 Hz + PE						
	44D2	4 x 25	4 x 70	—	—	4 x 1,5	4 x 10 + 3 x 1,5	—
	48D2	4 x 25	4 x 70	—	—	4 x 1,5	4 x 10 + 3 x 1,5	—
	56D2	4 x 35	4 x 70	—	—	4 x 1,5	4 x 10 + 3 x 1,5	—
	64D2	4 x 50	4 x 95	—	—	4 x 1,5	4 x 10 + 3 x 1,5	—
	76D2	4 x 50	4 x 95	—	—	4 x 1,5	4 x 10 + 3 x 1,5	—
	86D2	4 x 95	4 x 120	4 x 2,5 4 x 16 10 x 1	4 x 2,5 4 x 16 14 x 1	4 x 2,5	4 x 10 + 3 x 1,5	—
	100D2	4 x 95	4 x 150	4 x 2,5 8 x 6 16 x 1	4 x 2,5 8 x 6 20 x 1	4 x 2,5	4 x 10 + 3 x 1,5	—

POWER SUPPLY 400V THREE-PHASE UNITS	UNIT MODEL	Nr OF CABLES X SECTION (mm ²)						
		① Power supply WITHOUT electrical heater	① Power supply WITH electrical heater	② Electrical connection between outdoor units		③ Indoor motor fan electrical connection	④ Power supply electrical heater (optional)	
				COOLING	HEATING		1 STAGE	2 STAGES
		 3N ~ 400V - 50 Hz + PE						
	44D2	5 x 10	5 x 25	—	—	4 x 1,5	4 x 4 + 3 x 1,5	—
	48D2	5 x 10	5 x 25	—	—	4 x 1,5	4 x 4 + 3 x 1,5	—
	56D2	5 x 16	5 x 35	—	—	4 x 1,5	4 x 4 + 3 x 1,5	—
	64D2	5 x 25	5 x 35	—	—	4 x 1,5	4 x 4 + 3 x 1,5	—
	76D2	5 x 25	5 x 50	—	—	4 x 1,5	4 x 4 + 3 x 1,5	—
	86D2	5 x 35	5 x 50	4 x 2,5 4 x 6 10 x 1	4 x 2,5 4 x 6 14 x 1	4 x 2,5	4 x 4 + 3 x 1,5	—
	100D2	5 x 50	5 x 70	4 x 2,5 8 x 4 16 x 1	4 x 2,5 8 x 4 20 x 1	4 x 2,5	4 x 4 + 3 x 1,5	—

- The sections have been calculated for a length no longer than 50m and a voltage drop of 10V.

ELECTRICAL CONNECTION

VOLTAGE OPERATING LIMITS

MODELS	VOLTAGE	LIMIT
22E/44D	230 V-3Ph-50Hz	198-264 V -3Ph- 50Hz
24E/48D	230 V-3Ph-50Hz	180-242 V -3Ph- 50Hz
28E/56D	400 V-3Ph-50Hz	342-462 V -3Ph- 50Hz
32E/64D	230 V-3Ph-50Hz	198-264 V -3Ph- 50Hz
38E/76D	400 V-3Ph-50Hz	342-462 V -3Ph- 50Hz
86D	230 V-3Ph-50Hz	198-264 V -3Ph- 50Hz
86D	400 V-3Ph-50Hz	342-462 V -3Ph- 50Hz
100D	230 V-3Ph-50Hz	180-242 V -3Ph- 50Hz
100D	400 V-3Ph-50Hz	342-457 V -3Ph- 50Hz

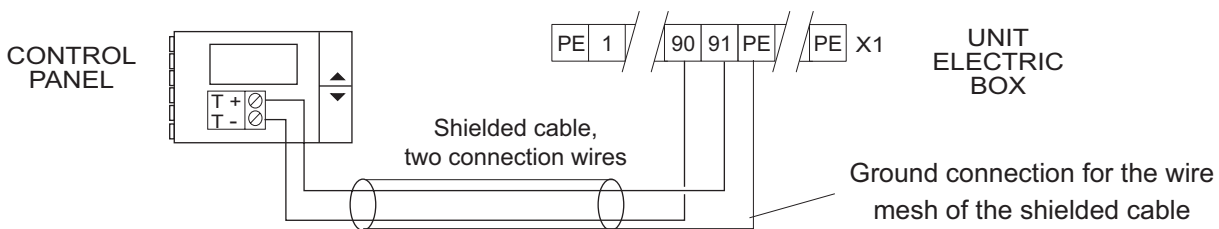
CONTROL PANEL

ELECTRICAL CONNECTION DIGITAL THERMOSTAT, FOR STANDARD UNIT VERSION



IMPORTANT

THE SHIELDED CONNECTION CABLE BETWEEN THE CONTROL PANEL AND THE UNIT MUST BE SEPARATE FROM ANY OTHER TYPE OF ELECTRICAL WIRING. CONNECT IT TO THE ELECTRIC BOX LOCATED IN THE OUTDOOR UNIT.



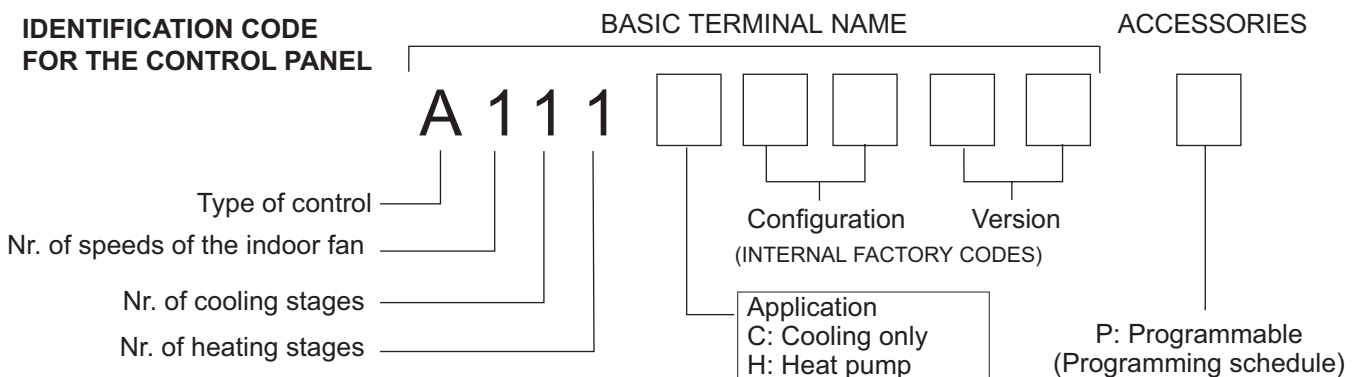
- For securing and connecting the Control Panel, consult the control Panel Manual supplied with the unit.
- Keep in mind that the Control Panel cable is a SHIELDED CABLE and the wire mesh is only grounded through the electric box.
- The T+ and T- polarity must strictly agree with the electrical diagram supplied with the unit.



Since this type of control panel is factory-configured for each application, an identification code located on the control panel of the terminal itself has been given to each panel.

Any query or request for a replacement of the control panel must be accompanied by this identification code.

IDENTIFICATION CODE FOR THE CONTROL PANEL



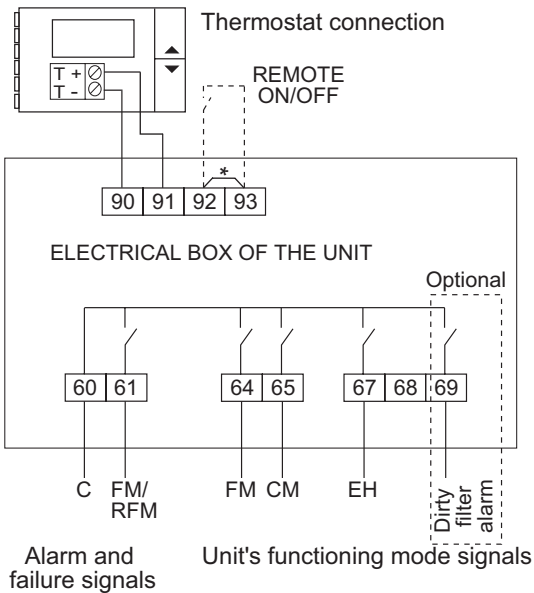
ELECTRICAL CONNECTION

ELECTRICAL CONNECTION " REMOTE SIGNALS"

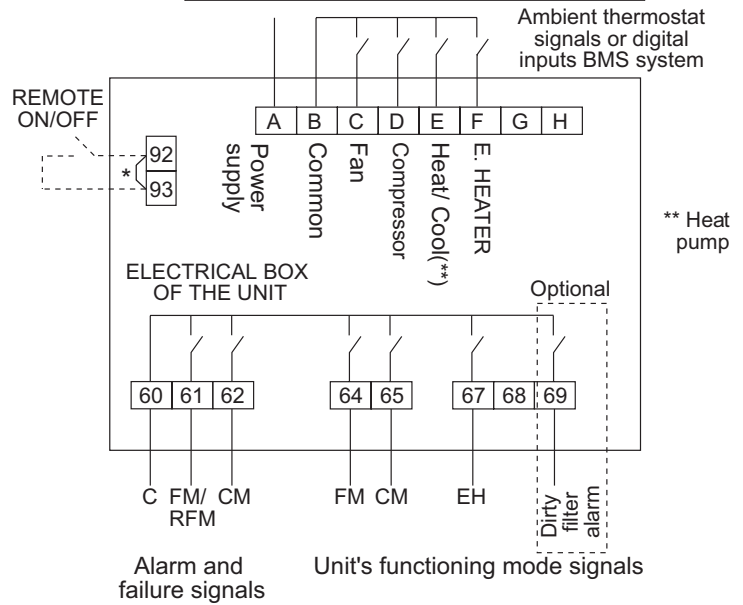
The electrical box of all the range, lets you obtain the following functions:

- Remote ON / OFF.
- Alarm and failure signals for the unit's components: FM, CM.
- The unit's functioning mode signals: FM, CM, EH.
- Dirty air filter indication (option).
- Manage the unit operation, through the supplied thermostat or through the digital inputs for a BMS system (Only for VFC unit version).

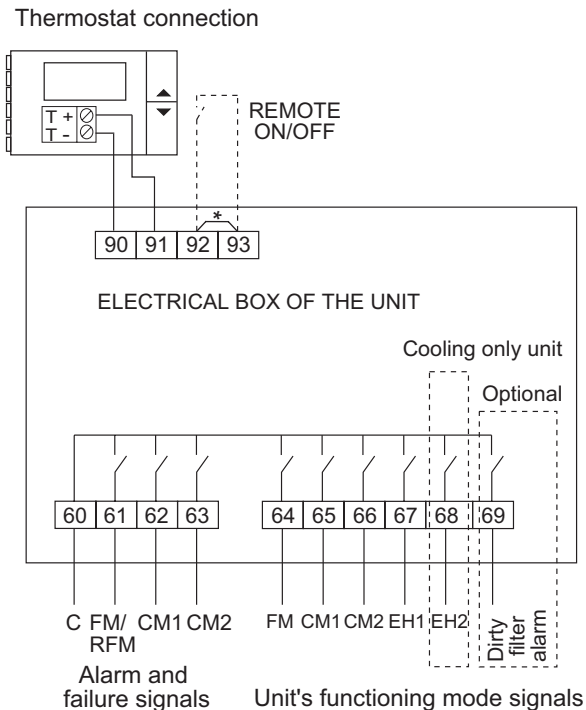
SINGLE CIRCUIT UNIT, STANDARD VERSION



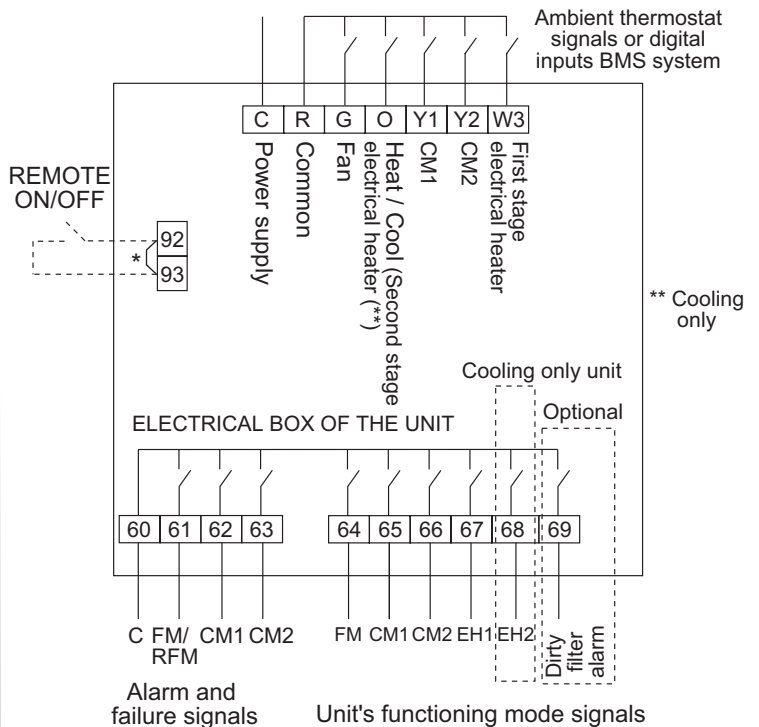
SINGLE CIRCUIT UNIT, VFC VERSION



DOUBLE CIRCUIT UNIT, STANDARD VERSION



DOUBLE CIRCUIT UNIT, VFC VERSION



C: Common
 FM: Indoor fan
 RFM: Return fan motor
 CM: Compressor
 CM1: Compressor 1
 CM2: Compressor 2

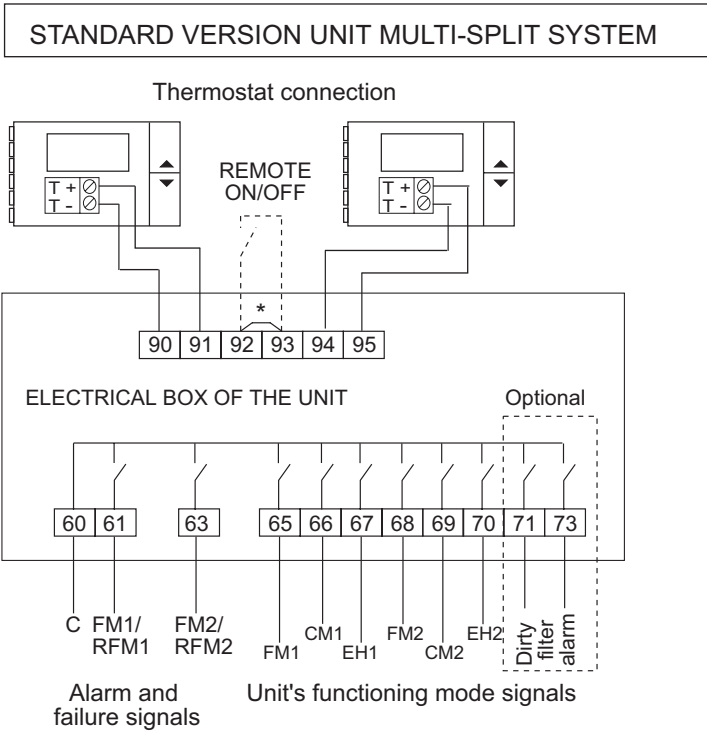
EH1: Electrical heater 1
 EH2: Electrical heater 2

When unit switches off, the system will show CM, CM1 and CM2 failure signal.

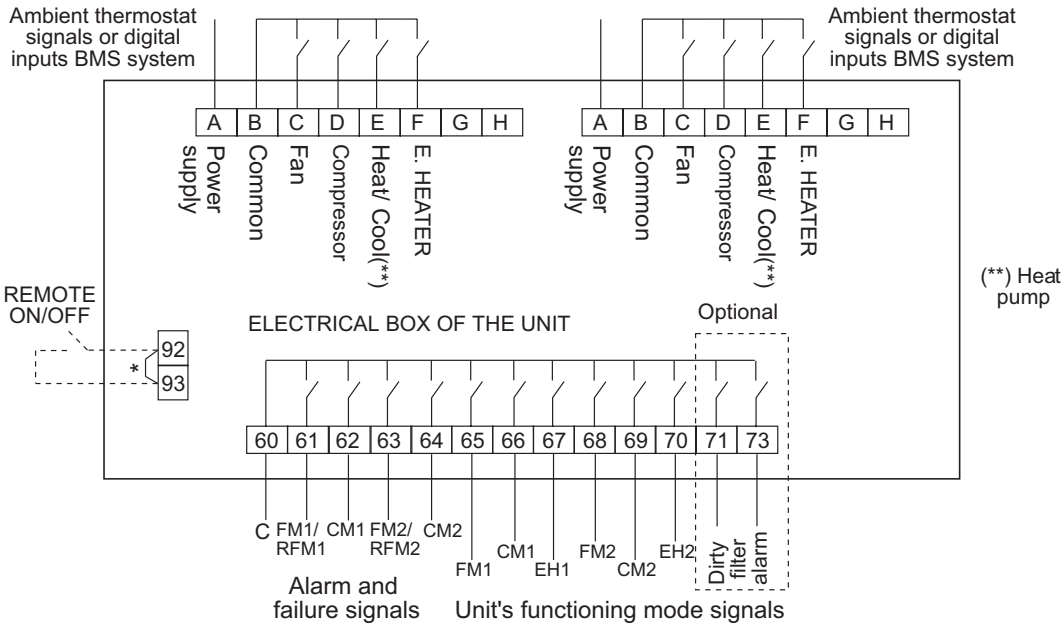
* Remove wire, if ON/OFF remote is used.

ELECTRICAL CONNECTION

ELECTRICAL CONNECTION " REMOTE SIGNALS" MULTI-SPLIT SYSTEMS



VFC VERSION UNIT MULTI-SPLIT SYSTEM



C: Common
 FM: Indoor fan
 RFM: Return fan motor
 CM1: Compressor 1
 CM2: Compressor 2

EH1: Electrical heater 1
 EH2: Electrical heater 2

When unit switches off, the system will show CM1 and CM2 failure signal.

* Remove wire, if ON/OFF remote is used.

OPERATING LIMITS

OPERATING LIMITS FOR (COOLING ONLY) UNITS

		MAXIMUM TEMPERATURES	MINIMUM TEMPERATURES
COOLING CYCLE OPERATION	INDOOR TEMPERATURE	32°C DB / 23°C WB	21°C DB / 15°C WB
	OUTDOOR TEMPERATURE	DEPENDING ON MODEL (TABLE 1)	+ 19°C STANDARD UNIT 0°C WITH OPTIONAL CPC ON/OFF -10°C (*)

(*) With kit hot gas by pass or proportional winter control (options)

OPERATING LIMITS FOR (HEATING PUMP) UNITS

		MAXIMUM TEMPERATURES	MINIMUM TEMPERATURES
COOLING CYCLE OPERATION	INDOOR TEMPERATURE	32°C DB / 23°C WB	21°C DB / 15°C WB
	OUTDOOR TEMPERATURE	DEPENDING ON MODEL (TABLE 1)	+ 19°C STANDARD UNIT 0°C WITH OPTIONAL CPC ON/OFF -10°C (*)
HEATING CYCLE OPERATION	INDOOR TEMPERATURE	27°C DB	15°C DB
	OUTDOOR TEMPERATURE	24°C DB / 18°C WB	-10°C DB / -11°C WB

(*) With kit hot gas by pass or proportional winter control (options)

DB.- Dry Bulb Temperature
WB.- Wet Bulb Temperature

TABLE 1-COOLING CYCLE MAXIMUM OUTDOOR OPERATING TEMPERATURES

MODELS WITH Refrigerant R-407C

MODELS	22E	24E	28E	32E	38E	44D 44D2	48D 48D2	56D 56D2	64D 64D2	76D 76D2	86D 86D2	100D 100D2
With rated outdoor flow	45	45	43	43	42	45	45	43	43	42	42	41
With minimum outdoor flow	43	43	41	40	39	43	43	41	40	39	39	38

MODELS WITH Refrigerant R-22

MODELS	22E	24E	28E	32E	38E	44D 44D2	48D 48D2	56D 56D2	64D 64D2	76D 76D2	86D 86D2	100D 100D2
With rated outdoor flow	48	48	46	46	45	48	48	46	46	45	45	44
With minimum outdoor flow	46	45	44	44	42	46	45	44	44	42	42	41

OPTIONS

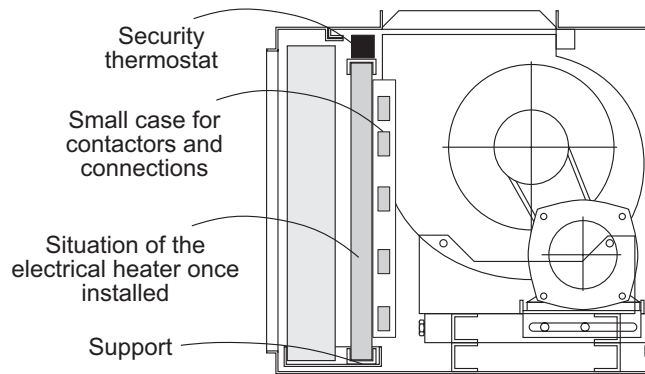
ELECTRICAL HEATER

Made of align shielded elements, supplied mounted on the unit as drawing shows.

All the range has three security elements: 2 security thermostat, one automatic other manual reset and an air flow security pressure switch, which make the electrical heater stops when air flow is not enough.

The electrical heater must be supplied on from the unit's electrical box.

An small case on the electrical heater protects contactors and electrical connections.



MODELS LEC (INDOOR UNIT)	22E-24E-28E-32E-38E			43E-50E		44D-48D-56D-64D-76D				86D-100D			
POWER kW	7,5	11	15	11	15	11	15	20	30	15	22,5	30	
MAXIMUM CURRENT (A)	230 / III	18,8	27,6	37,7	27,6	37,7	27,6	37,7	50,2	75,3	37,7	56,5	75,3
	400 / III	10,8	15,9	21,7	15,9	21,7	15,9	21,7	28,9	43,3	21,7	32,5	43,3
WEIGHTS Kg (*)	10			10		20				30			
STAGES	1			1		1	1 ó 2	2		1	1 ó 2	2	

(*) Add to the unit's weight.

MODELS LEH (INDOOR UNIT)	22E-24E-28E-32E-38E-43E-50E			44D-48D-56D-64D-76D			86D-100D		
POWER kW	7,5	11	15	11	15	20	15	22,5	
MAXIMUM CURRENT (A)	230 / III	18,8	27,6	37,7	27,6	37,7	50,2	37,7	56,5
	400 / III	10,8	15,9	21,7	15,9	21,7	28,9	21,7	32,5
WEIGHTS Kg (*)	10			20			30		
STAGES	1			1			1		

(*) Add to the unit's weight.

DIRTY FILTER INDICATION

To install on the indoor unit.

It is based on an air flow security pressure switch, which detects the available static pressure through the air filter. In case the filters are dirties, the detector is activated, showing an alarm, if the fan is ON.

MAIN SWITCH

The main switch is located on the access panel to the electrical box of the outdoor unit.

The main switch is endowed with a clutch gadget, which allows open the panel of the electrical box, when it is on OFF position.

⚠ ATTENTION! WITH MAIN SWITCH ON. DO NOT REMOVE THE PANEL

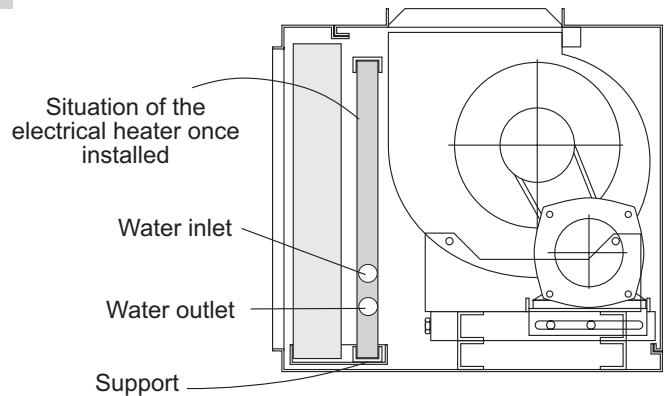
Check to make sure that the main switch is large enough to handle the current for the unit if electric heaters are installed.

OPTIONS

HOT WATER COIL

It based on a refrigerating coil made of copper tubing with aluminum swirl fins with water inlet and outlet connections.

It is supplied mounted inside the unit as picture shows.



MODELS LEC / LEH INDOOR UNIT	DIFFERENCE IN TEMPERATURES BETWEEN HOT WATER INTAKE AND THE AIR WHICH ENTERS THE COIL			WATER FLOW L/H	WATER COIL PRESSURE DROP kPa	AIR PRESSURE DROP Pa (*)	Nr ROWS	WEIGHT Kg	WATER OUTLET DIAMETER Inches
	50°C	60°C	70°C						
22E-24E	29.000	CAPACITY EN W 36.000	44.000	2.200	8	32-40	2	10	3/4"
28E-32E	33.000	CAPACITY EN W 40.000	47.000	2.500	10	32-40	2	10	3/4"
38E	40.000	CAPACITY EN W 48.000	56.000	3.000	15	40	2	12	3/4"
44D-48D	58.000	CAPACITY EN W 62.000	88.000	4.400	8	32-40	2	20	3/4"
56D-64D	66.000	CAPACITY EN W 80.000	94.000	5.000	10	32-40	2	20	3/4"
76D	80.000	CAPACITY EN W 96.000	112.000	6.000	15	39	2	24	3/4"

(*) Nominal air flow volume

PROTECTION AGAINST FREEZING:

- Use glycol water. GLYCOL IS THE ONLY EFFECTIVE PROTECTION AGAINST FREEZING.
- This kit includes a security thermostat with a probe located inside the hot water coil. When the temperature is below 4°C, the unit will stop in order to protect hot water coil and to prevent unit working with very low evaporating temperatures.

Two wires between indoor and outdoor unit have to be added with this option.

Security thermostat working mode:

- *Electrical boxes with Climatic 10 controller:* The security stop valve is 4°C. When the valve is more than 4°C + thermostat differential, you can reset the unit pressing "resume" button in the Climatic 10 terminal.
- *Electrical boxes with VFC:* The security stop valve is 4°C too. When the valve is more than 4°C + thermostat differential, the unit will reset automatically after 5 min of timer.
- Drain the installation. You must ensure that the manual or automatic air vents have been installed on all high points in the system. In order to drain the system check that all the drain cocks have been installed on all low points of the system.



A HEATING COIL FROZEN DUE TO LOW AMBIENT CONDITIONS IS NOT COVERED BY THE WARRANTY.

PHASE SEQUENCER

The phase sequencer is located in the electrical box in the outdoor section, thus assuring that the unit will not begin operation while the phase connection of the compressor is not correct. Should this occur, then just switch two phase connections.

ON/OFF CONDENSATION PRESSURE CONTROL

The condensation pressure control consists of one or two pressure switches, which starts and stops the outdoor fan, regulating the condensation temperature; thus the unit will be able to operate in the cooling cycle when the outdoor temperature is below 19°C, (Until 0°C).

CRANKCASE HEATER (COOLING-ONLY UNITS)

The purpose of the heater is to keep the oil in the compressor at the correct temperature while the compressor is stopped so that it can be properly lubricated when starts again.

When the unit is operating at low outdoor temperatures (below 19°C), it is advisable to fit a crankcase heater.

OPTIONS

COMPRESSOR STARTING CURRENT CONSTRAINED (“SOFT STARTER”) 400V-III

It is an electronic element, which reduces the peak compressor starting current up to 40%

(see pages of electrical data without soft starter)

Not available for 100D units.

Only available for 400V-III units.

MODELS (OUTDOOR UNIT)	WEIGHTS (*)
22E-24E-28E-32E-38E	3
44D/D2-48D/D2-56D/D2 64D/D2-76D/D2-86D/D2	6

(*) Add to the unit's weight.

PROPORTIONAL CONDENSING PRESSURE CONTROL BY DAMPERS

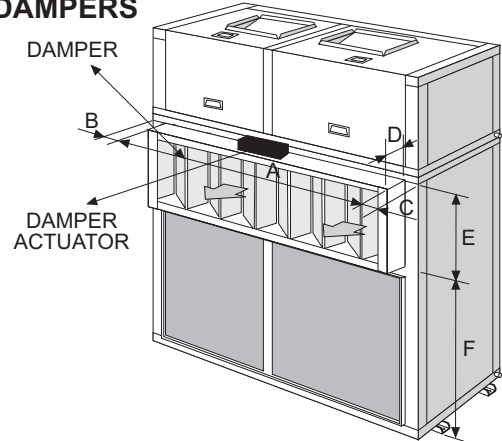
It is based on one or two dampers located on the outdoor unit discharge air, which lets you control condensation temperature through the air flow.

The damper is moving by a servomotor, which receives a proportional signal through a pressure detector.

! This kit is not available with kit vertical discharge outdoor unit at the same time.

Thus the unit will be able to operate in the cooling cycles when the outdoor temperature is until -10°C.

Dimensions of dampers for this kit:



MODELS (OUTDOOR UNIT)	22E-24E-28E-32E	38E	44D-48D-56D-64D 44D2-48D2-56D2-64D2	76D/D2	86D-100D 86D2-100D2
DIMENSIONS	A	970	1095	1949	1339
	B	102,5	102,5	150,5	150,5
	C	122,5	122,5	150,5	80,5
	D	165	165	165	165
	E	342	407	342	407
	F	996,5	996,5	996,5	996,5
WEIGHTS kg (*)	15	20	30	40	50

(*) Add to the unit's weight.

KIT MORE STATIC PRESSURE OF AIR DISCHARGE

It is a specific fan to obtain more available static pressure up to 350Pa for outdoor unit and 400Pa for indoor unit.

See air flow data section for optional fan performances.

Electrical data for these optional fans:

MODELS LEC / H (INDOOR)	22E	24E	28E	32E	38E	43E	50E	44D	48D	56D	64D	76D	86D	100D
POWER (*) kW	0,2	0,4	0,8	1,0	1	0,8	0,8	0,4	0,8	1,5	1,5	1,7	1,5	1,5
MAXIMUM CURRENT (*) (A)	230 / III	0,5	1,0	2,0	2,5	2,0	2,0	1,0	2,0	3,8	3,8	4,3	3,8	3,8
	400 / III	0,3	0,6	1,2	1,4	1,4	1,2	1,2	0,6	1,2	2,2	2,2	2,5	2,2
WEIGHTS Kg (*)	0	0	2	2	0	0	0	5	5	9	9	9	0	0

MODELS KVC / H (OUTDOOR)	22E	24E	28E	32E	38E	44D/D2	48D/D2	56D/D2	64D/D2	76D/D2	86D/D2	100D/D2
POWER (*) kW	0,4	0,6	0,8	—	—	0,8	1,2	1,6	—	—	—	—
MAXIMUM CURRENT (*) (A)	230 / III	1,0	1,5	2,0	—	2,0	3,0	4,0	—	—	—	—
	400 / III	0,6	0,9	1,2	—	1,2	1,7	2,3	—	—	—	—
WEIGHTS Kg (*)	15	15	15	—	—	30	30	30	—	—	—	—

(*) Add to the unit data.

OPTIONS

HOT GAS BYPASS VALVE

The purpose of the BYPASS valve is to make it possible for the unit to operate at low outdoor temperatures (until -10°C), to be used in cooling-only and heat-pump units in cooling cycle.

It regulates the capacity of the compressor by injecting hot gas from the compressor discharge side to the coil.

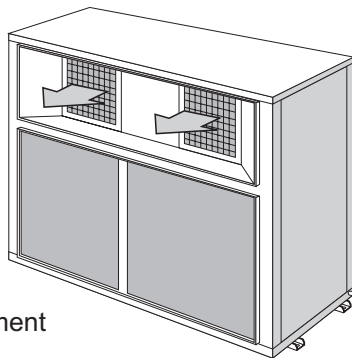
KIT VERTICAL DISCHARGE FOR OUTDOORS UNITS, (only for split and multi-split systems)

It is a set of accessories to adapt casing, making the outdoor air discharge become vertical

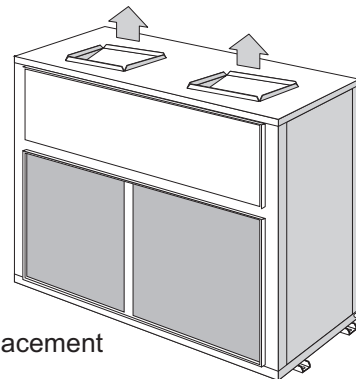
See dimensions section for performances.



This kit is not available with kit proportional condensing pressure control at the same time.



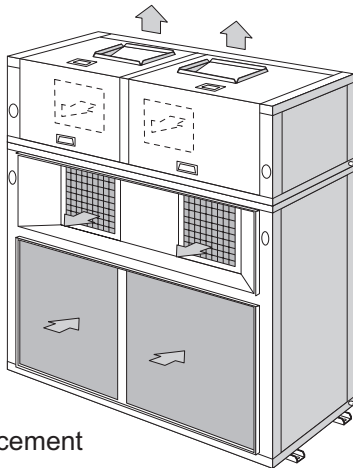
Standard placement



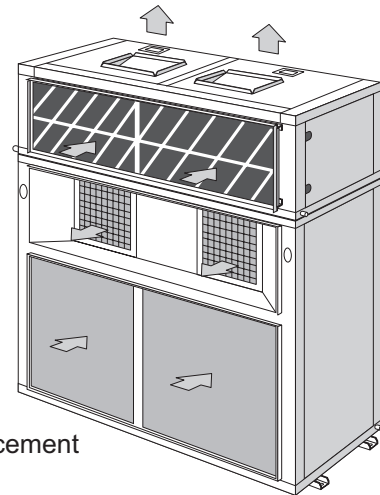
Optional placement

180° TURN OF INDOOR UNIT (Only for package double circuit units “D”)

The unit is supplied such as, the return air to the indoor section and the intake air and discharge air for the outdoor unit are located on the same side of the unit.



Standard placement



Optional placement

CONTROL USING A PROGRAMMABLE CONTROLLER:

With the programmable controller option, the desired temperature can be programmed in the area 24 hours a day, 7 days a week.

REMOTE AMBIENT SENSOR AND REMOTE DUCT SENSOR

These sensors may be used in conjunction with remote controller or allowing the controller to be mounted in a room away from the conditioned space.

- REMOTE DUCT SENSOR: The sensor will be located in the return-air duct, detecting the air temperature of the air being air-conditioned.
- REMOTE AMBIENT SENSOR: The sensor will be placed in the area to be air-conditioned.

PRECOATED COIL (outdoor unit)

Special protection of the aluminum condenser coil fins, to protect it from aggressive external environmental conditions.

OPTIONS

FREECOOLING

1.- DEFINITION

FREE-COOLING is a saving system in the Cooling cycle, this makes the unit take air from the outside to take advantage of its energy, this system acting as a first cold stage.

It is a saving energy system that's why many countries regulations recommended and others put under an obligation to install a freecooling system with the unit.

2.- TYPES OF FREECOOLING.

In order to outside air parameters which has to be measured, the types are:

- **Thermostatic freecooling :**

Measures and compares the outside air temperature with the temperature of the room that has to be aconditioned.

- **Enthalpic freecooling :**

Measures and compares the outside air enthalpy with the return air enthalpy from the room that has to be aconditioned.

The enthalpy measures temperature and humidity of air.

3.- COMPONENTS OF FREECOOLING.

The main components are:

-Electronic control and accessories: Their function is to detect the outside and indoor air conditions through the probes to solve when freecooling should operate.

-The servomotor and system transmission: They manage the opening and closing the dampers.

- Adjustable dampers.

-Mixing section: Where outside and return air are mixed.

Also a return fan is available, which applies an additional static pressure on the suction and return air duct.

For more details about components and drawings see pages 77,78,79,80.

4.- OPERATION

The control compares the values of temperature/enthalpy between outside air and room air through the probes, if it is a negative difference and the security elements allow (discharge temperature probes) then the control acts over the servomotor, which produces the opening of the outside damper and close the return one, entering cool outside air to the room.

The damper regulation is proportional.

If indoor air demand is not great, could be enough only the freecooling to aconditioned the room, if the air demand is greater it is possible need the freecooling working and the unit working on different cooling mode stages.

5.- THERMOSTAT TERMINAL

Depending on the type of freecooling selected, the thermostat and the electrical box supplied with the unit will be different.

With thermostatic freecooling the thermostat supplied has the same characteristics than the one supplied with the standard unit, except because the one for the freecooling is a programmable one.

With enthalpic freecooling the terminal is different than the one supplied with the unit VFC version, its principal characteristics are: OFF, COOL, HEAT, AUTOMATIC.

THERMOSTAT FOR THERMOSTATIC FREECOOLING

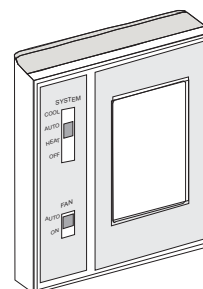
Thermostatic freecooling is supplied with sensor incorporated inside the thermostat.
Remote duct and ambient sensor are available as an option.



Climatic 10

THERMOSTAT FOR ENTHALPIC FREECOOLING

Enthalpic freecooling is supplied with duct sensor.
Remote ambient sensor and sensor incorporated inside the thermostat are available as an option.



OPTIONS

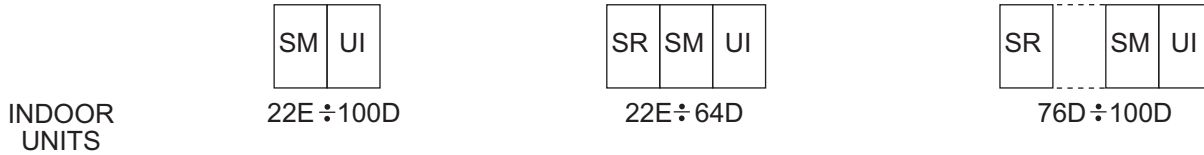
FREECOOLING

6.- SUPPLY AND INSTALLATION

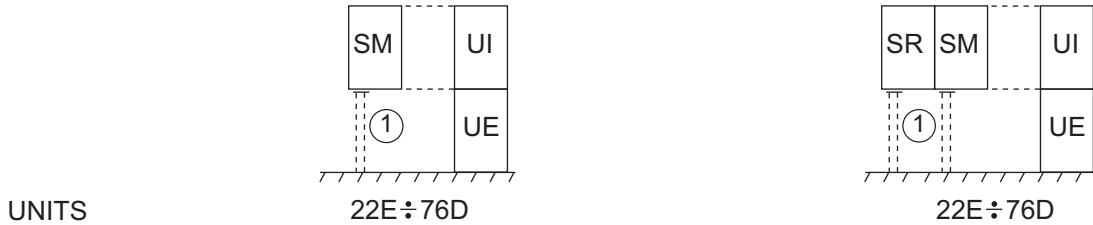
The freecooling system could be supplied mounted or loose, depends on the unit required packaged, split or multi-split.

Configuration of freecooling supply :

- Split and multi-split units:



- Packaged units



SM: Mixing section

SR: Return fan section

UI: Indoor unit.

UE: Outdoor unit.

--- Mechanical installation to be carried out by the installer.

① Freecooling supports, to be carried out by the installer.

The electrical box for the freecooling is supplied apart and has to be fixed by the installer.

7.- FREECOOLING WITH RETURN FAN

If an extra static pressure is required on the return air duct, the freecooling should add a return fan section.

This return fan section includes a discharge damper.

The operation of dampers for this freecooling with return fan is as follow:

As much as the air intake damper opens, that much the by-pass damper closes and the discharge air damper opens, for the air return suction (see drawing).

This means that at the same time is reached a free cooled of the room, the discharge or return air and the air of the room gets removable.

The consumption of the return fan by unit is:

MODELS		22E	24E	28E	32E	38E	43E	50E	44D	48D	56D	64D	76D	86D	100D
POWER kW		1,3	1,4	1,5	1,8	2	2,5	2,8	2,6	2,8	3	3,6	4	5	5,5
MAXIMUM CURRENT (A)	230 / III	4,3	4,3	6,2	6,2	6,2	10,3	10,3	8,8	8,8	12,5	12,5	12,5	20,6	20,6
	400/ III	2,5	2,5	3,6	3,6	3,6	6	6	5,1	5,1	7,2	7,2	7,2	11,9	11,9

OPTIONS

FREECOOLING

Return fan performances for each models are:

		22E					24E						
AIR FLOW		R.P.M.	M ³ /H	3500	3900	4300	4700	R.P.M.	M ³ /H	3900	4300	4700	5100
PULLEY POSITION	PULLEY CLOSED	1010	175*	145*	115*	70*		1010	145*	115*	70*	35*	
	1 TURN	955	135*	105*	70*	35*		955	105*	70*	35*	0*	
	2 TURNS	900	110*	85*	33*	0*		900	85*	33*	0*	—	
	3 TURNS	845	75*	50*	5*	—		845	50*	5*	—	—	

		28E				32E							
AIR FLOW		R.P.M.	M ³ /H	4500	4950	5400	5850	R.P.M.	M ³ /H	4750	5250	5750	6000
PULLEY POSITION	PULLEY CLOSED	1140	175*	130*	85*	30*		1140	160*	80*	35*	0*	
	1 TURN	1070	130*	80*	30*	0*		1070	110*	40*	0*	—	
	2 TURNS	995	80*	30*	0*	—		995	60*	0*	—	—	
	3 TURNS	920	35*	0*	—	—		920	10*	—	—	—	

		38E				43E							
AIR FLOW		R.P.M.	M ³ /H	5800	6400	7000	7300	R.P.M.	M ³ /H	6500	7250	8000	8750
PULLEY POSITION	PULLEY CLOSED	890	210*	183*	145*	125*		1075	320*	275*	215*	165*	
	1 TURN	840	170*	140*	104*	85*		1010	265*	215*	155*	125*	
	2 TURNS	790	130*	95*	45*	35*		995	210*	155*	90*	30*	
	3 TURNS	740	85*	60*	20*	0*		920	170*	115*	50*	0*	

		50E				44D							
AIR FLOW		R.P.M.	M ³ /H	7250	8000	8750	9000	R.P.M.	M ³ /H	7000	7800	8600	9400
PULLEY POSITION	PULLEY CLOSED	1075	310*	255*	195*	●		1010	330*	320*	300*	280*	
	1 TURN	1010	240*	180*	110*	85*		955	290*	275*	250*	230*	
	2 TURNS	995	160*	115*	45*	20*		900	250*	235*	210*	180*	
	3 TURNS	920	80*	45*	—	—		845	200*	195*	150*	130*	

		48D				56D							
AIR FLOW		R.P.M.	M ³ /H	7800	8600	9400	10200	R.P.M.	M ³ /H	9000	9900	10800	11700
PULLEY POSITION	PULLEY CLOSED	1010	320*	300*	280*	●		1010	280*	240*	220*	180*	
	1 TURN	955	275*	250*	230*	185*		955	250*	205*	160*	110*	
	2 TURNS	900	235*	210*	180*	130*		900	195*	160*	110*	70*	
	3 TURNS	845	195*	150*	130*	85*		845	150*	115*	70*	30*	

		64D				76D							
AIR FLOW		R.P.M.	M ³ /H	9500	10500	11500	12000	R.P.M.	M ³ /H	11600	12800	14000	14600
PULLEY POSITION	PULLEY CLOSED	1010	275*	245*	185*	155*		890	200*	175*	140*	120*	
	1 TURN	955	220*	175*	130*	105*		840	160*	135*	100*	90*	
	2 TURNS	900	175*	130*	75*	55*		790	120*	85*	50*	35*	
	3 TURNS	845	125*	85*	30*	20*		740	75*	50*	10*	0*	

		86D				100D							
AIR FLOW		R.P.M.	M ³ /H	13000	14500	16000	17500	R.P.M.	M ³ /H	14500	16000	17500	18000
PULLEY POSITION	PULLEY CLOSED	1055	330*	290*	240*	170*		1055	290*	240*	170*	140*	
	1 TURN	1010	280*	245*	190*	120*		1010	245*	190*	120*	80*	
	2 TURNS	965	245*	210*	155*	90*		965	210*	155*	90*	50*	
	3 TURNS	920	210*	170*	100*	45*		920	170*	100*	45*	0*	

(*) AVAILABLE STATIC PRESSURE Pa.

(●) WRONG STATUS ON ACCOUNT OF MOTOR POWER LIMIT.

NOTE: The unit leaves factory with pulley two turns closed.

OPTIONS

FREECOOLING

8.- SELECTION OF THE UNIT AND FREECOOLING SYSTEM

There are different types of freecooling system , different possibilities of dampers installations, and it could be supplied mounted or loose.

In order to provide the customer the needed one, fill in the following table and send it to the order department:

INSTALLER COMPANY NAME _____ CONTACT PERSON NAME: _____
 TEL.: _____ Fax _____ e-mail _____
 ATTENTION TO : Lennox Refac S.A. CONTACT PERSON NAME: _____
 TEL.: _____ Fax _____ e-mail _____
 ORDER NUMBER: _____

A- Select the unit needed, packaged, split or multi-split:

(If the unit needed is packaged, the freecooling will be supplied loose. If the unit selected is split or multi-split the freecooling will be supplied mounted on the indoor unit, except for the freecooling with return fan on models 76D-86D-100D, which is supplied loose also).

Packaged Split Multi-split

B- Select the air flow drive of the indoor unit required: Horizontal or vertical

Packaged units: As standard vertical air flow drive

Split and multi-split systems: As standard horizontal air flow drive

Vertical Horizontal

C.-Select the type of freecooling thermostatic or enthalpic and the sensor for freecooling management.

Thermostatic freecooling supplied with sensor incorporated inside the thermostat,

Enthalpic freecooling supplied with duct sensor

(If the humidity conditions where the unit is going to be installed have relevance, is convenient to install an enthalpic freecooling)

Thermostatic <input type="checkbox"/>	Remote ambient sensor <input type="checkbox"/>	Enthalpic <input type="checkbox"/>	Remote ambient sensor <input type="checkbox"/>
	Remote duct sensor <input type="checkbox"/>		Sensor incorporated at the thermostat <input type="checkbox"/>

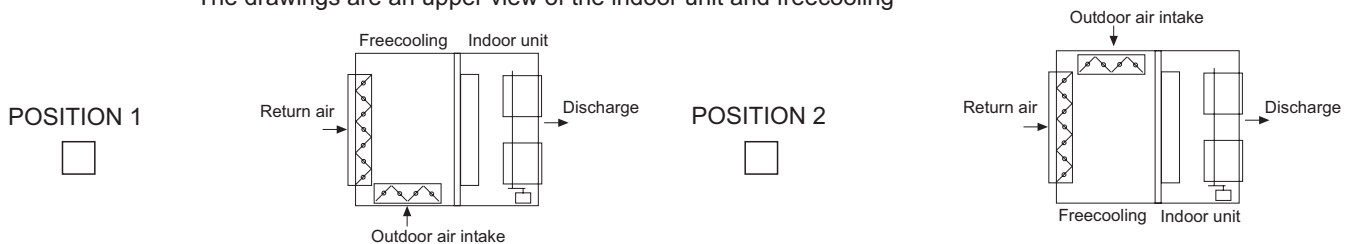
D.- Select if you need return fan with the freecooling

With return fan Without return fan

E.-Select the dampers configuration for the freecooling, as following. (In order to be adapted to the ducts of the installation)

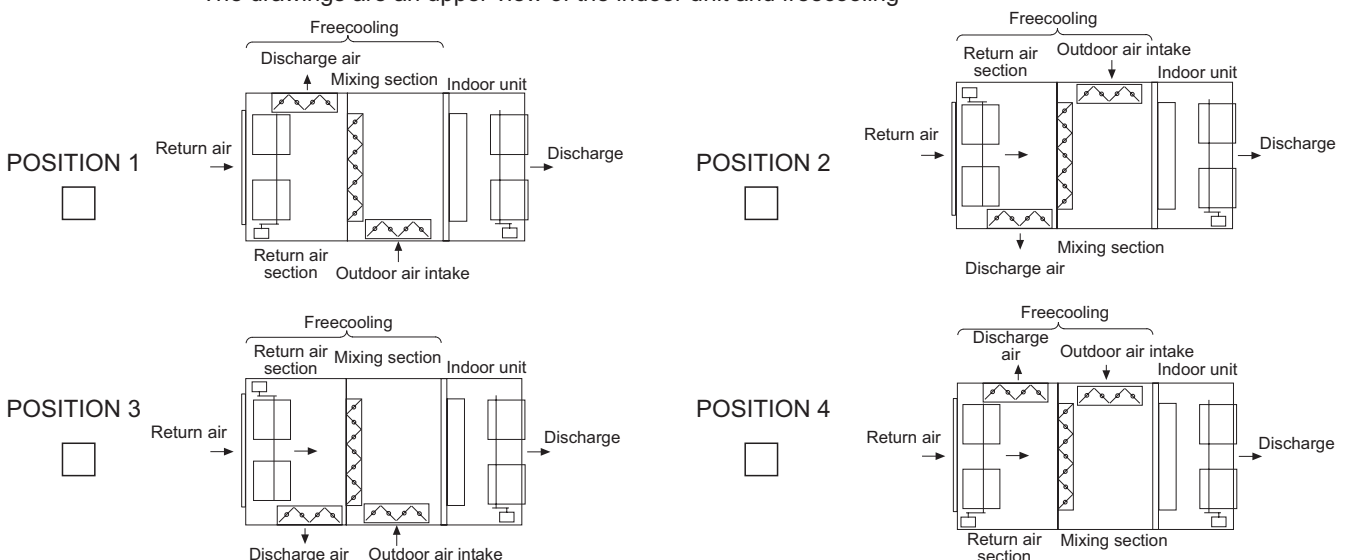
E.1- Freecooling dampers position WITHOUT return fan:

The drawings are an upper view of the indoor unit and freecooling



E.2- Freecooling dampers position WITH return fan:

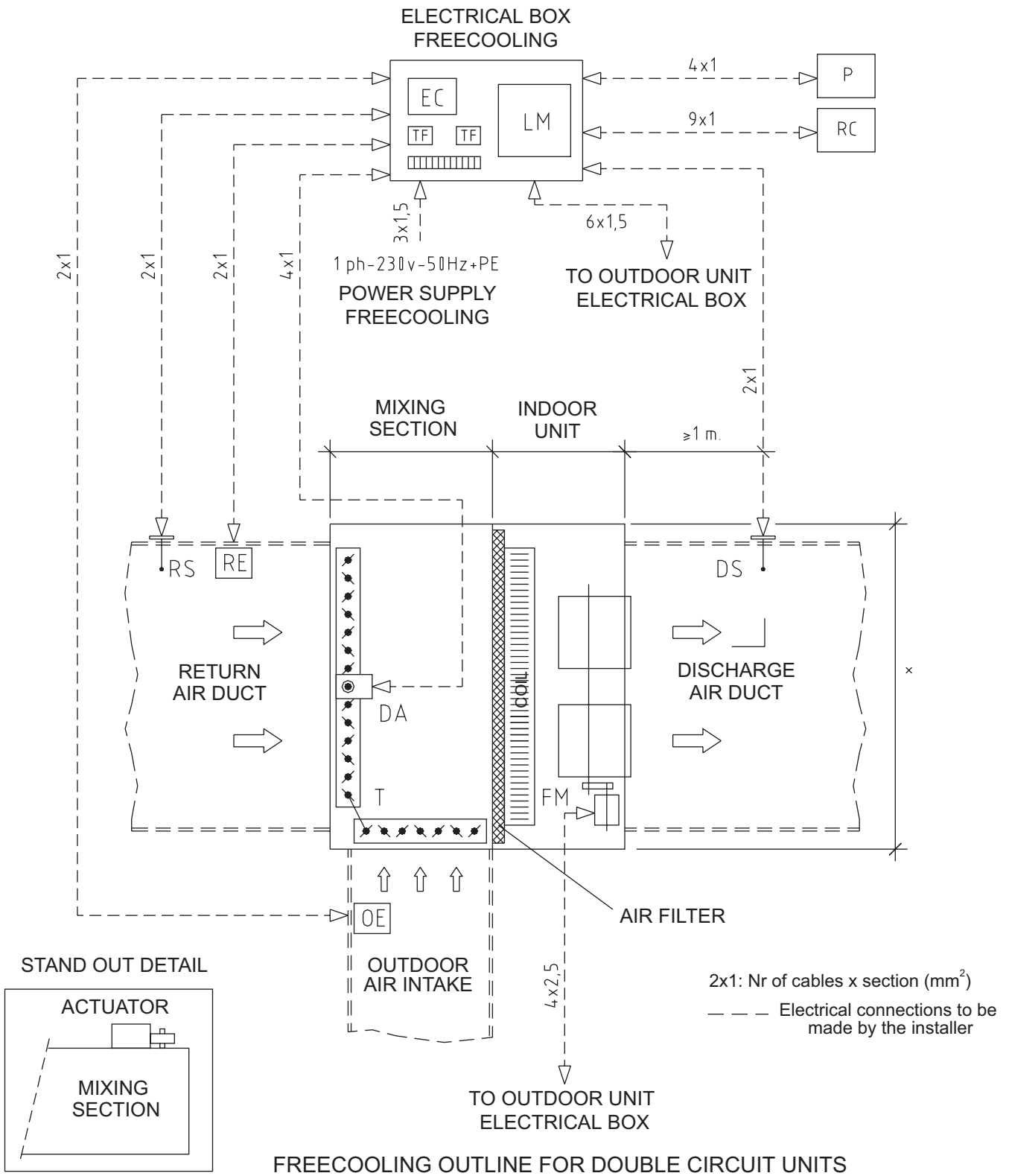
The drawings are an upper view of the indoor unit and freecooling



OPTIONS

FREECOOLING

OUTLINE FOR ENTHALPIC FREECOOLING WITHOUT RETURN FAN



FREECOOLING OUTLINE FOR DOUBLE CIRCUIT UNITS

P - Potentiometer
 EC - Enthalpy measure
 LM - Logic module
 TF - Transformer

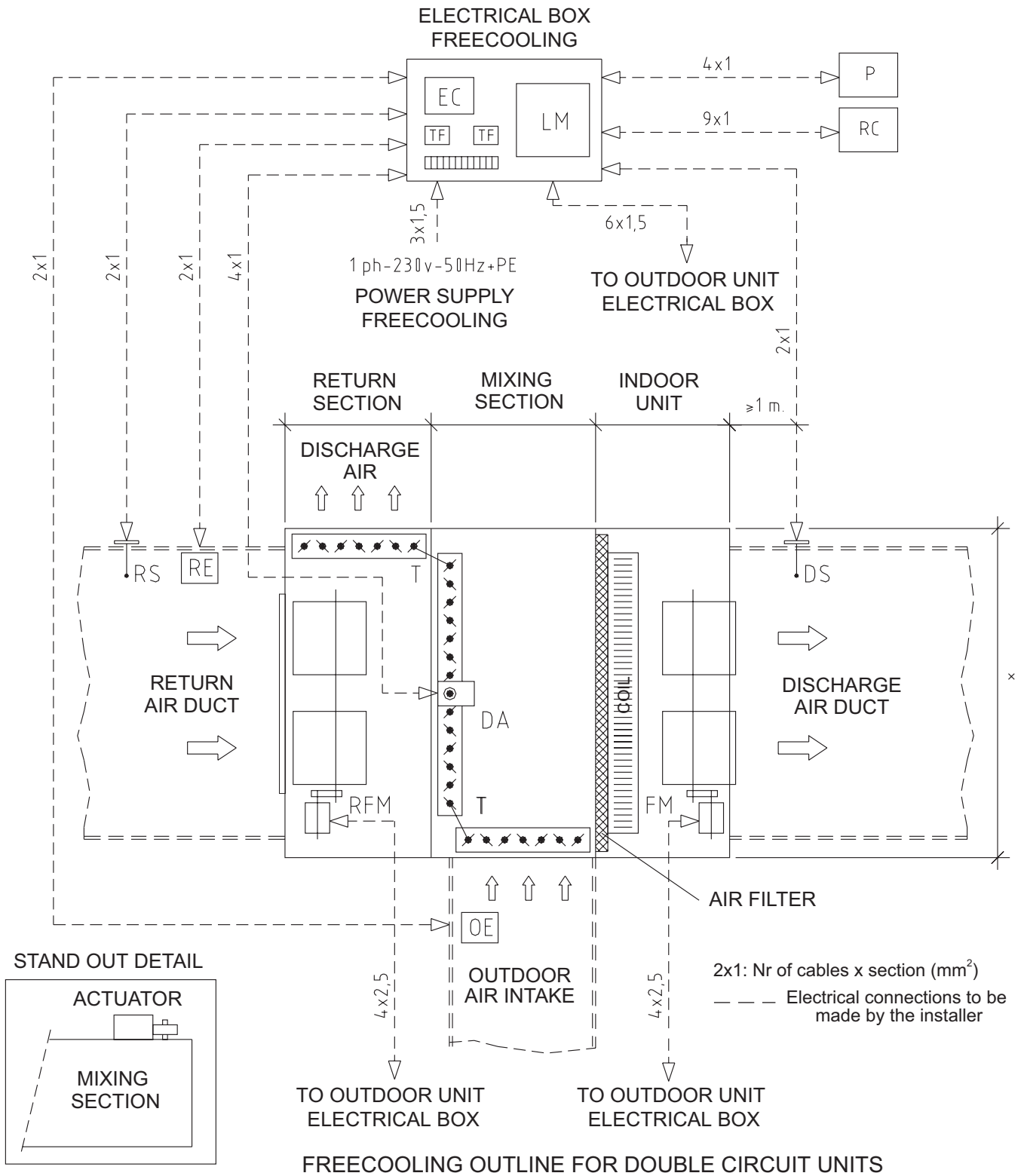
RC - Remote controller
 RE - Return Enthalpy sensor
 RS - Return Temperature sensor
 DS - Discharge Temperature sensor

DA - Damper Actuator
 FM - Discharge fan motor
 OE - Outside enthalpy sensor
 T - Transmission

OPTIONS

FREECOOLING

OUTLINE FOR ENTHALPIC FREECOOLING WITH RETURN FAN



P - Potentiometer
EC - Enthalpy measure
LM - Logic module
TF - Transformer

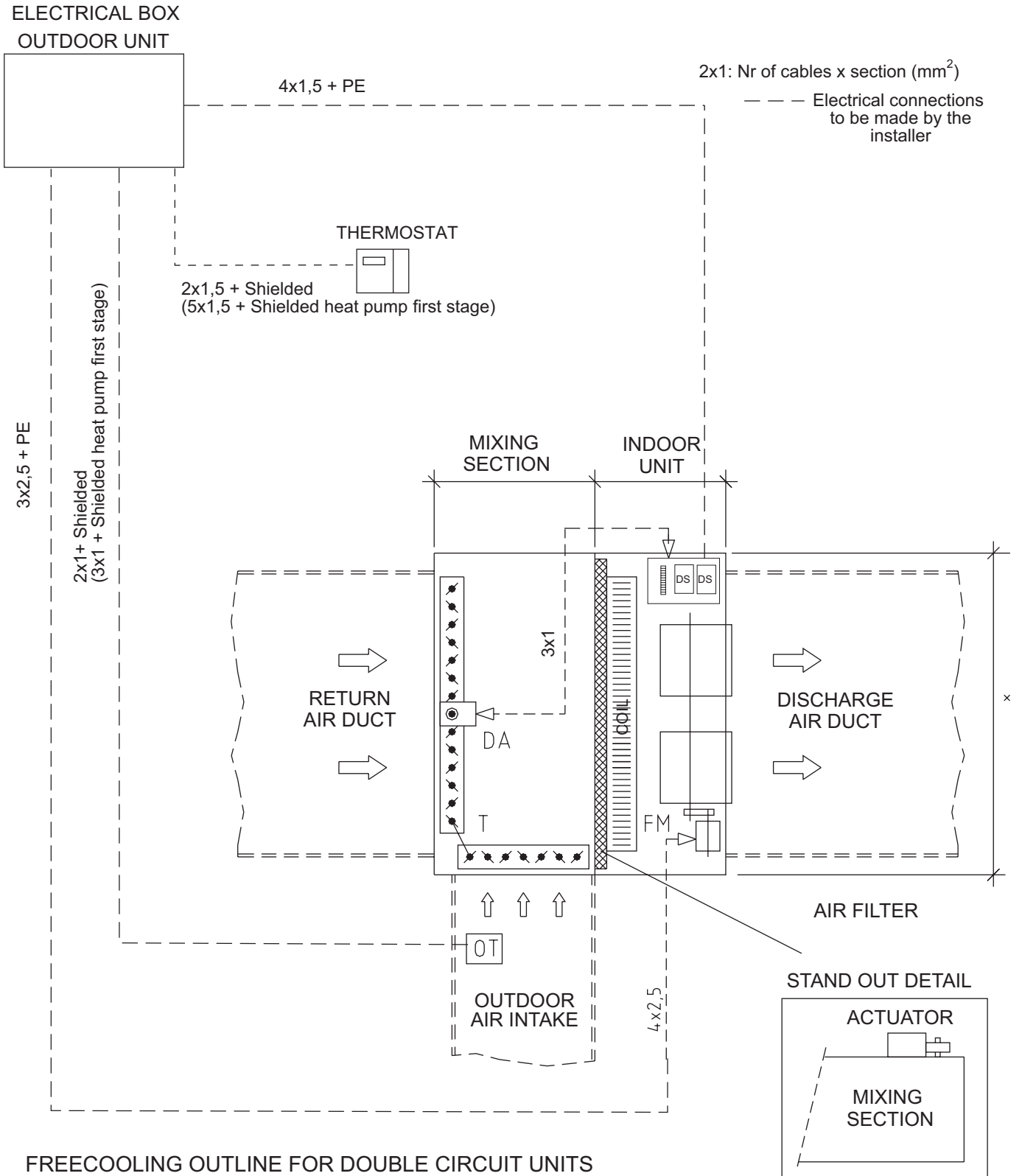
RC - Remote controller
RE - Return Enthalpy sensor
RS - Return Temperature sensor
DS - Discharge Temperature sensor

DA - Damper Actuator
RFM - Return fan motor
FM - Discharge fan motor
OE - Outside enthalpy sensor
T - Transmission

OPTIONS

FREECOOLING

OUTLINE FOR THERMOSTATIC FREECOOLING WITHOUT RETURN FAN



FREECOOLING OUTLINE FOR DOUBLE CIRCUIT UNITS

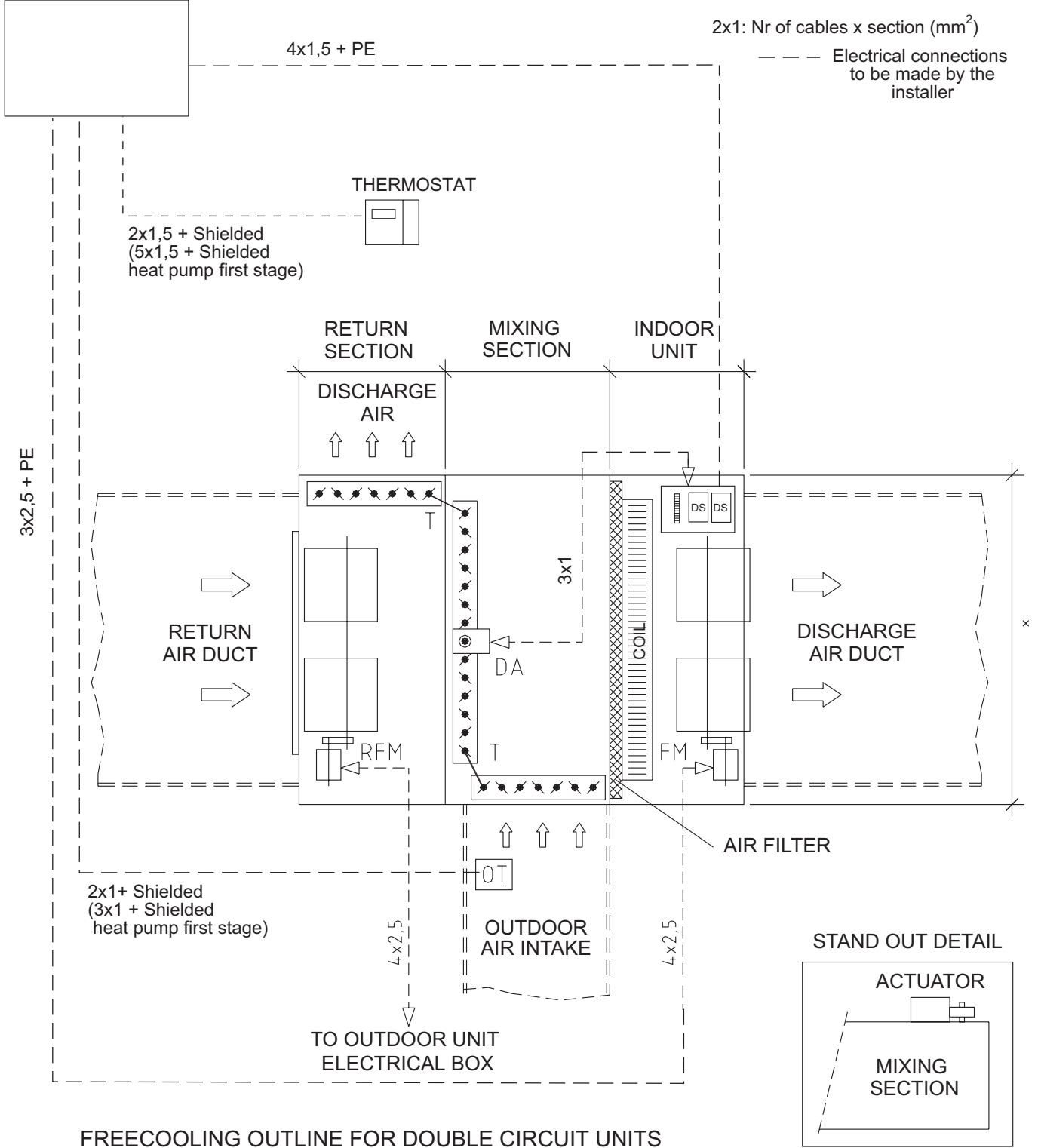
- DS - Discharge Temperature sensor
- DA - Damper Actuator
- FM - Discharge fan motor
- OT - Outside temperature sensor
- T - Transmission

OPTIONS

FREECOOLING

OUTLINE FOR THERMOSTATIC FREECOOLING WITH RETURN FAN

ELECTRICAL BOX
OUTDOOR UNIT



FREECOOLING OUTLINE FOR DOUBLE CIRCUIT UNITS

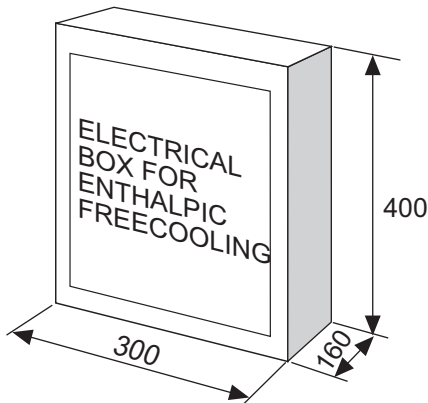
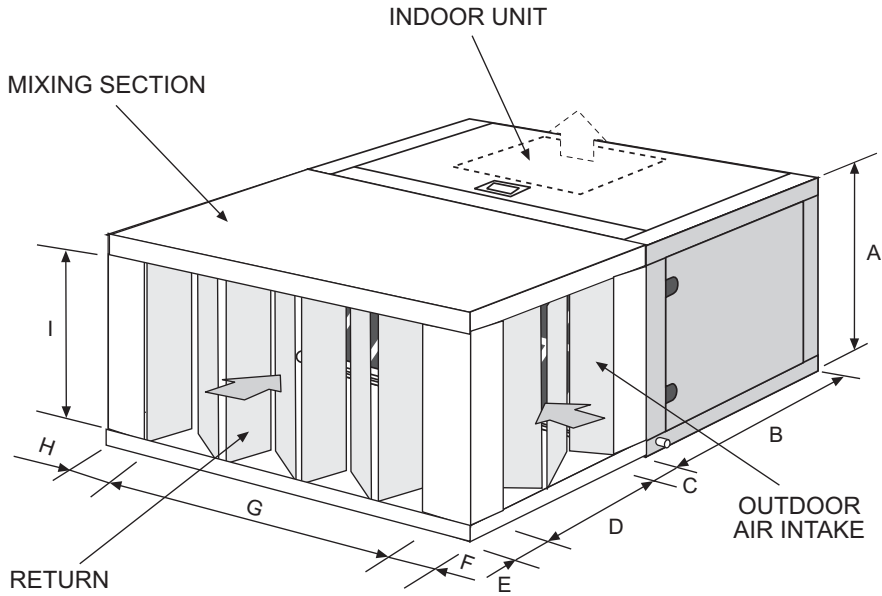
- DS - Discharge Temperature sensor
- DA - Damper Actuator
- RFM - Return fan motor
- FM - Discharge fan motor
- OT - Outside temperature sensor
- T - Transmission

OPTIONS

FREECOOLING

DIMENSIONS FREECOOLING WITHOUT RETURN FAN

MODELS 22E-24E-28E-32E-38E-43E-50E



Electrical box for freecooling is supplied loose inside the mixing section.
Fix by the installer.

The damper position can be different than the picture shows.
See drawings.

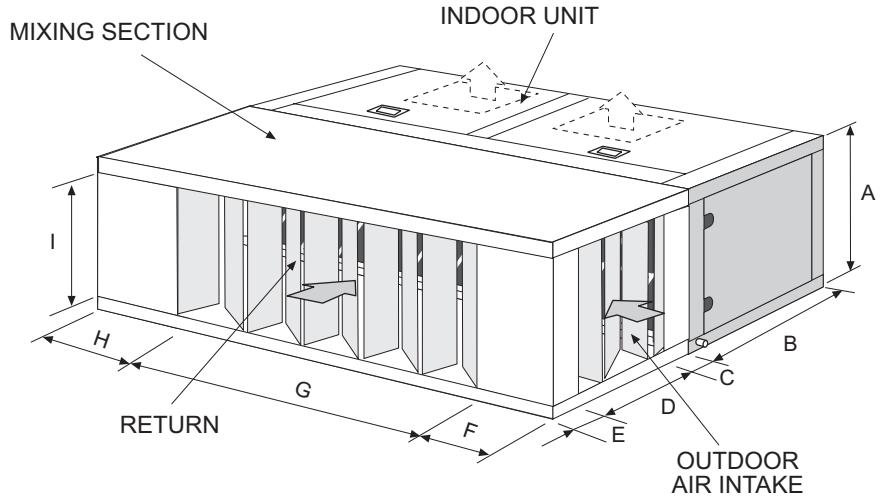
	MODELS 22-24-28-32	MODEL 38	MODELS 43-50
A	640	640	640
B	750	750	750
C	98	73,5	92,5
D	750	750	1015
E	52	76,5	92,5
F	222	222	241
G	750	876	1140
H	222	222	241
I	499	500	530
WEIGHTS Kg	INDOOR UNIT 22-24=105 / 28-32=110	145	43=280 / 50=305
	MIXING SECTION	100	130

OPTIONS

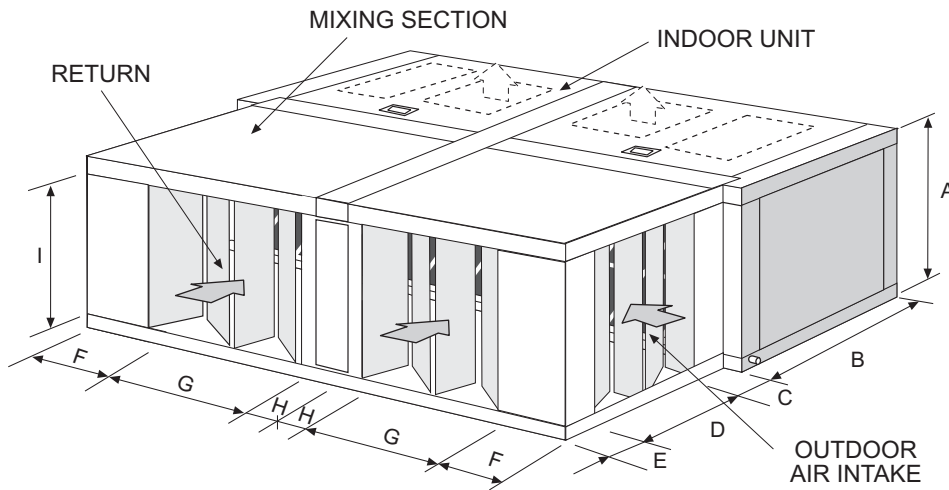
FREECOOLING

DIMENSIONS FREECOOLING WITHOUT RETURN FAN

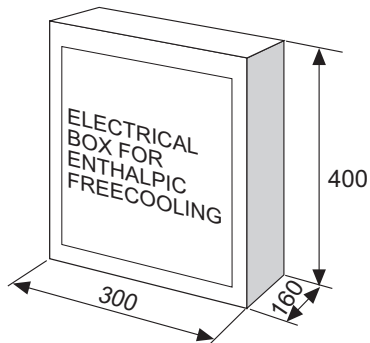
MODELS 44D-48D-56D-64D-76D



MODELS 86D-100D



The damper position can be different than the picture shows.
See drawings.



Electrical box for freecooling is supplied loose inside the mixing section.
Fix by the installer.

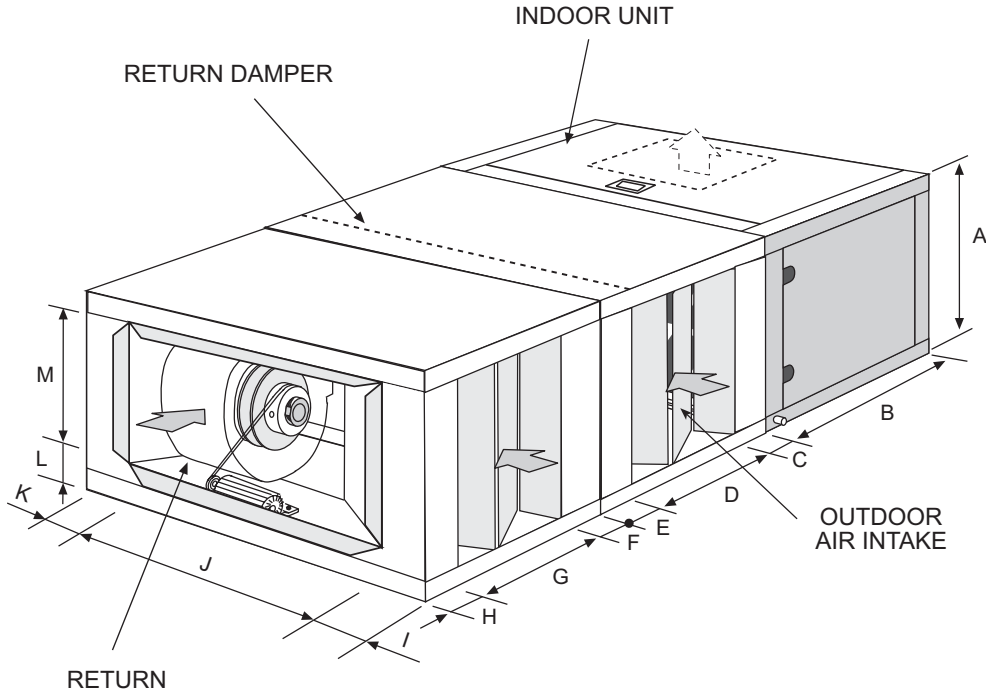
		MODELS 44-48-56-64	MODEL 76	MODELS 86-100
A		640	640	640
B		750	750	750
C		100,5	100,5	50
D		749	749	1000
E		50,5	50,5	150
F		250	312,5	233
G		1750	1875	1125
H		250	312,5	93
I		499	499	550
WEIGHTS Kg	INDOOR UNIT	44-48=220 / 56-64=240	265	86=270 / 100=295
	MIXING SECTION	130	135	250

OPTIONS

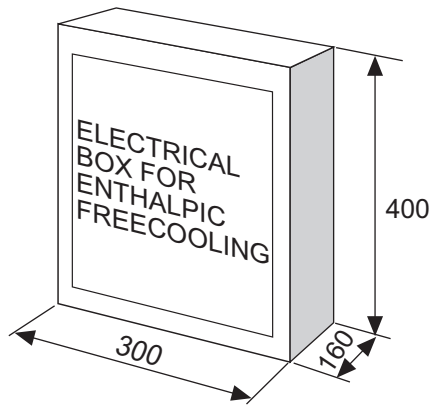
FREECOOLING

DIMENSIONS FREECOOLING WITH RETURN FAN

MODELS 22E-24E-28E-32E-38E-43E-50E



The damper position can be different than the picture shows.
See drawings.



Electrical box for freecooling is supplied loose inside the mixing section.
Fix by the installer.

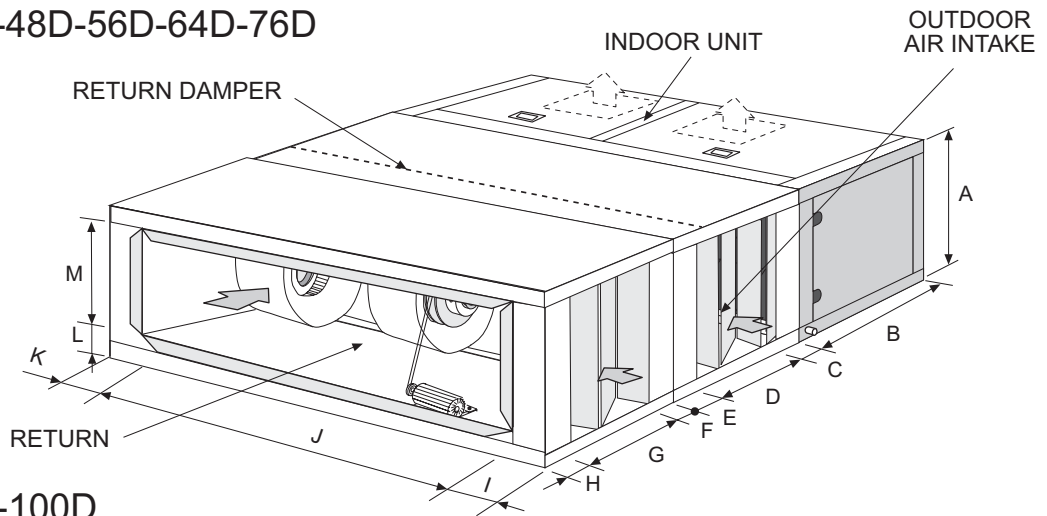
	MODELS 22-24-28-32	MODEL 38	MODELS 43-50	
A	640	640	640	
B	750	750	750	
C	98	73,5	92,5	
D	750	750	1015	
E	52	76,5	92,5	
F	48	48	92,5	
G	750	750	1015	
H	102	102	92,5	
I	186	186	231	
J	822	948	1160	
K	186	186	231	
L	96,5	96,5	96,5	
M	500	500	500	
	INDOOR UNIT	22-24=105 / 28-32=110	145	43=280 / 50=305
WEIGHTS Kg	MIXING SECTION	100	100	130
	RETURN SECTION	22-24=120 / 28-32=125	125	210

OPTIONS

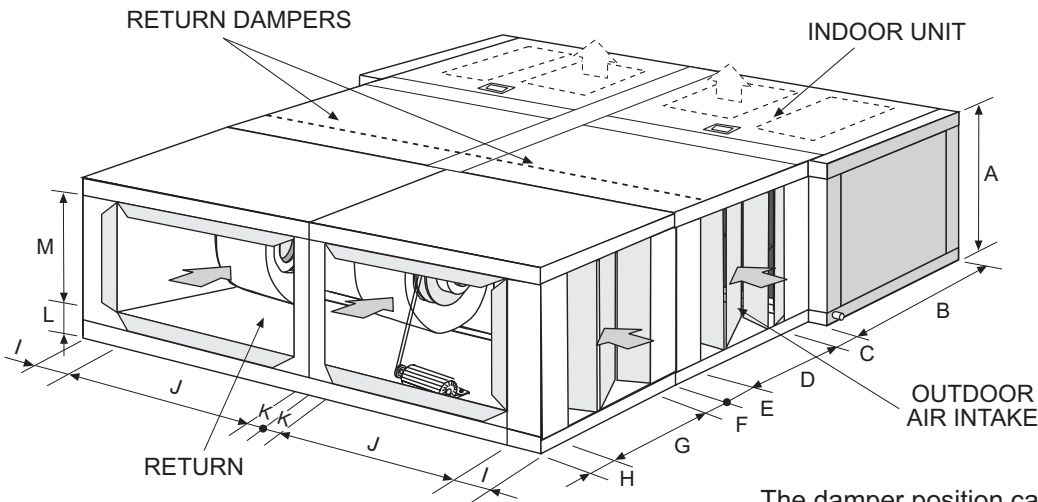
FREECOOLING

DIMENSIONS FREECOOLING WITH RETURN FAN

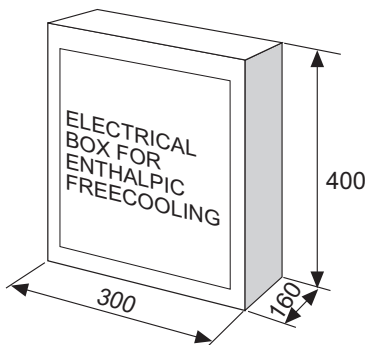
MODELS 44D-48D-56D-64D-76D



MODELS 86D-100D



The damper position can be different than the picture shows. See drawings.



Electrical box for freecooling is supplied loose inside the mixing section.
Fix by the installer.

	MODELS 44-48-56-64	MODEL 76	MODELS 86-100
A	640	640	640
B	750	750	750
C	100,5	100,5	50
D	749	749	1000
E	50,5	50,5	150
F	48	48	45
G	750	750	1010
H	102	102	145
I	186	311	191,5
J	1878	1878	1204,5
K	186	311	15
L	96,5	96,5	88
M	500	500	500
WEIGHTS Kg	INDOOR UNIT	44-48=220 / 56-64=240	265
	MIXING SECTION	130	135
	RETURN SECTION	195	200
			86=270 / 100=295



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