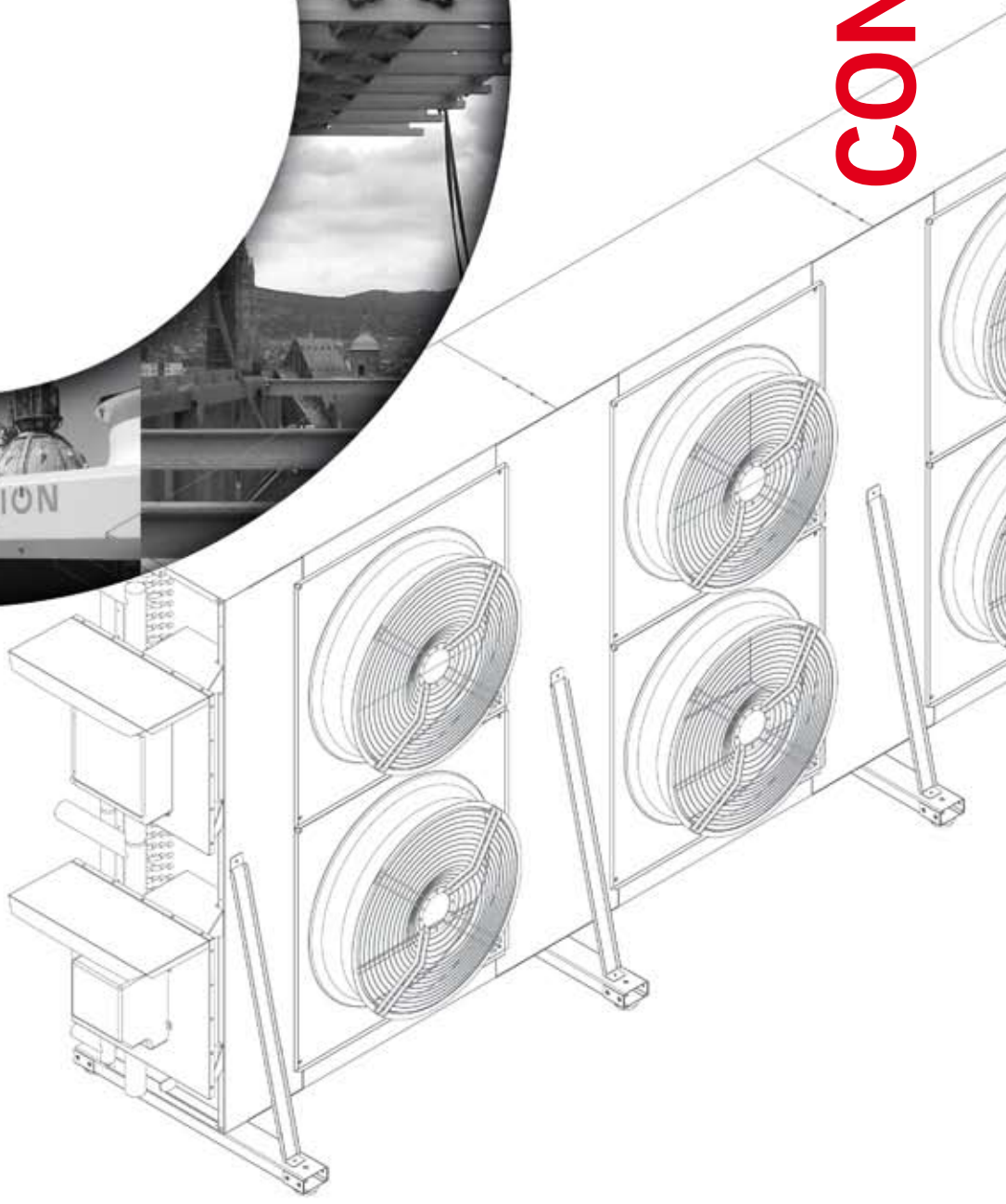
CONDENSERS



REFRION
a better innovation

CONDENSERS

Condensers

Condensers lend themselves to a variety of applications such as commercial and industrial cooling and refrigeration.
Particular attention was paid to providing accessories.

The casing is built using modular components in warm galvanized steel, powder painted (standard colour: RAL 9002) and resistant to corrosive agents up to corrosion class C5.
The cuvettes are protected by a safety panel attached to the structure.
All operations necessary for manufacturing components (punching, drilling, bending) are performed prior to painting: maximum protection against rust is thus guaranteed.

Mounting elements (screws, threaded inserts, rivets, washers and nuts) are all in stainless steel.
Casings are designed to be stable and resistant and in dimensions suitable for common means of ground transportation.

TWO TYPES OF FANS CAN BE INSTALLED IN CONDENSERS:

- Standard AC 3-phase or single-phase, thermally protected, permanently lubricated, statically and dynamically balanced.
- EC brushless / energy saving, which ensure optimal performance as well as extremely low noise and power consumption levels.

All electrical components are certified and comply with the most rigid European safety standards.

REFRION AIR CONDENSER CAPACITY IS TESTED AT:

- Room temperature (TE) = 25°C.
- Condensation temperature = 40°C.
- Refrigerant: R404A.

SAFETY TESTS

Numerous tests, both electrical and operational, are performed with the goal of assessing the conformity of dry coolers and all their components as per the following safety standards:

- MD Directive 2006/42/EC (Machinery Directive).
- PED Directive 97/23/EC (Pressure Equipments Directive).
- RoHS Directive 2002/95/EC (Restriction of Hazardous Substances Directive).
- EMC Directive 2004/108/EC (Electromagnetic Compatibility Directive).
- LVD Directive 2006/95/EC (Low voltage Directive).
- ErP Directive 2009/125/EC (Eco-Design Directive).
- EN 327:2002 (Air Cooled refrigerant Condensers Performances).
- EN ISO 13857:2008 (Fan Guards).

COILS

The coil is built using grooved copper pipes with a nominal diameter of 3/8", 7 mm e 12 mm arranged in a staggered pitch and high efficiency aluminium fins separated by 2.1 mm. Tiles are in warm galvanized steel while sides are in aluminium to prevent pipe damage due to thermal expansion. Circuits are designed for counter flow. Collectors are in copper. Dry air tests conform with the provisions of the PED Directive 97/23/EC.

Energy consumption

MODULAR

Modular NM-NMEC 2.80

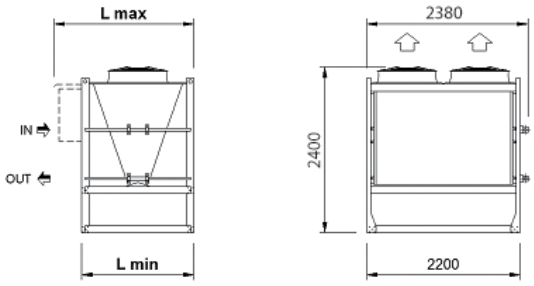
With Refrion the future is here. Refrion has launched the first copper-free air condensers, which allow for maximum flexibility and shortened delivery times. As compared with devices of equal capacity and efficiency, the new range of modular Refrion products is distinguished by smaller sizes and lighter weight. These innovations allow for not only saving space and thus reducing installation costs, but they also decrease transport costs. The standardization of components and the use of materials already present in the warehouse makes the production phase extremely fast and shortens delivery times.

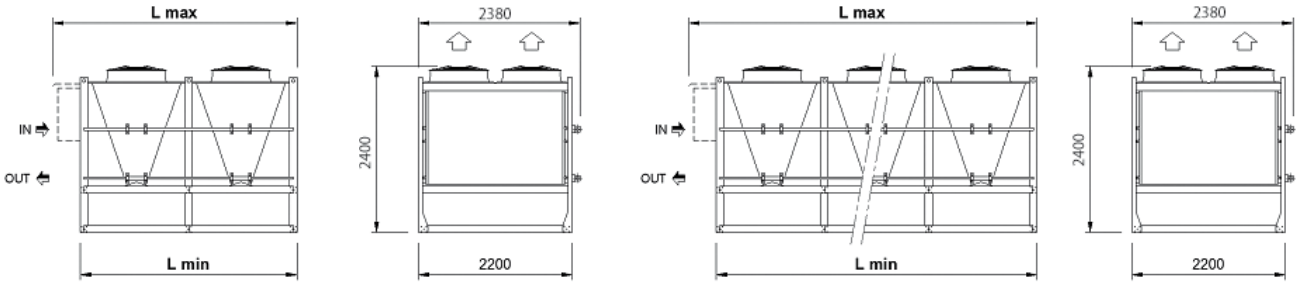
BENEFITS

- Coils manufactured with round-shaped pipes in copper.
- Enhance thermal exchange capacity.
- Significantly reduce the amount of refrigerant required.
- Enhance protection from corrosive agents.
- Completely recyclable components.
- Capacity range (1 to 6 modules) from 45 to 1090 kW.

MODULAR NM-NMEC 2.80

Technical data





NM 21 80 **NMEC 21** 80	Coil rows	2	3	4	5	6
	Dry weight [kg]	630	639,9	649,8	659,7	669,6
	Internal volume [dm3]	17,3	25,9	34,6	43,2	51,9
	L min - L max [mm]	1605 - 2000				
NM 22 80 **NMEC 22** 80	Coil rows	2	3	4	5	6
	Dry weight [kg]	1260	1279,8	1299,6	1319,4	1339,2
	Internal volume [dm3]	34,6	51,8	69,2	86,4	103,8
	L min - L max [mm]	3105 - 3500				
NM 23 80 **NMEC 23** 80	Coil rows	2	3	4	5	6
	Dry weight [kg]	1890	1919,7	1949,4	1979,1	2008,8
	Internal volume [dm3]	51,9	77,7	103,8	129,6	155,7
	L min - L max [mm]	4605 - 5000				
NM 24 80 **NMEC 24** 80	Coil rows	2	3	4	5	6
	Dry weight [kg]	2520	2559,6	2599,2	2638,8	2678,4
	Internal volume [dm3]	69,2	103,6	138,4	172,8	207,6
	L min - L max [mm]	6105 - 6500				
NM 25 80 **NMEC 25** 80	Coil rows	2	3	4	5	6
	Dry weight [kg]	3150	3199,5	3249	3298,5	3348
	Internal volume [dm3]	86,5	129,5	173	216	259,5
	L min - L max [mm]	7605 - 8000				
NM 26 80 **NMEC 26** 80	Coil rows	2	3	4	5	6
	Dry weight [kg]	3780	3839,4	3898,8	3958,2	4017,6
	Internal volume [dm3]	103,8	155,4	207,6	259,2	311,4
	L min - L max [mm]	9105 - 9500				

MODULAR NM-NMEC 2.80

Performances

Model AC/EC	Capacity	DbA	Energy rating
NM 21 80	89,3 188,3 (0 – 1300)	76 90 (0 – 100)	E D C B A A+ A++
NMEC 21 80	44,3 219,8 (0 – 1300)	58 90 (0 – 100)	E D C B A A+ A++
NM 22 80	178,6 376,6 (0 – 1300)	79 93 (0 – 100)	E D C B A A+ A++
NMEC 22 80	88,6 439,6 (0 – 1300)	62 94 (0 – 100)	E D C B A A+ A++
NM 23 80	267,9 564,9 (0 – 1300)	81 95 (0 – 100)	E D C B A A+ A++
NMEC 23 80	132,9 659,4 (0 – 1300)	63 95 (0 – 100)	E D C B A A+ A++
NM 24 80	357,2 753,2 (0 – 1300)	82 96 (0 – 100)	E D C B A A+ A++
NMEC 24 80	177,2 879,2 (0 – 1300)	65 97 (0 – 100)	E D C B A A+ A++
NM 25 80	446,5 941,5 (0 – 1300)	83 97 (0 – 100)	E D C B A A+ A++
NMEC 25 80	221,5 1099 (0 – 1300)	65 97 (0 – 100)	E D C B A A+ A++
NM 26 80	535,8 1129,8 (0 – 1300)	84 98 (0 – 100)	E D C B A A+ A++
NMEC 26 80	265,8 1318,8 (0 – 1300)	66 98 (0 – 100)	E D C B A A+ A++

MODULAR NM-NMEC 2.80

Table of codes

		EXCHANGER TYPE
N	N	Round shape 7 mm diam. copper tube
		DESIGN
M	M	V Shape “Modular”
		FAN TYPE / PERFORMANCE / CONFIGURATION
5C	5C	EC / High Power
	4C	EC / Standard
	3C	EC / Low
	4D	AC / Standard / Delta
	4Y	AC / Standard / Star
	3D	AC / Low / Delta
	3Y	AC / Low / Star
		ROWS OF FANS
2	2	2
		FANS PER ROW
6	1..6	1 / 2 / 3 / 4 / 5 / 6
		DIAMETER OF THE FANS
80	80	800 mm
.		
		COIL ROWS
6	6	6
–		
		SPEED RATE (EC FANS ONLY)
100%	30%..100%	30% / 40% / 50% / 60% / 70% / 80% / 90% / 100%

Multiple choice One only choice

HORIZONTAL / VERTICAL

Horizontal/Vertical Air Flow

The H and V Models marked Refrion entrance on the condenser market and represent the beginning of the company's production activities. The entire range has always been synonymous with versatility and flexibility, and it has now been completely redesigned with the aim of extending its offer while reducing delivery times and shipping costs. The casing is produced using pre-painted aluminium sheet metal (colour: RAL 9002). Mounting elements (screws, threaded inserts, rivets, washers and nuts) are all in stainless steel. Casings are designed to be stable and resistant and in dimensions suitable for common means of ground transportation. The coil is built using smooth copper pipes with a nominal diameter of 3/8", 7mm and 12mm arranged in a staggered pitch and high efficiency aluminium fins separated by 2.1 mm. Tiles are in warm galvanized steel while sides are in aluminium to prevent pipe damage due to thermal expansion. Circuits are designed for counter flow. Collectors are in copper. Dry air tests conform with the provisions of the PED Directive 97/23/EC.

GAMMA LIGHT 350-500 mm

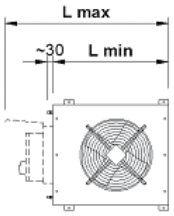
The coil is built using smooth copper pipes with a nominal diameter of 7mm arranged in a staggered pitch and high efficiency aluminium fins separated by 2.1 mm. Tiles are in warm galvanized steel while sides are in aluminium to prevent pipe damage due to thermal expansion. Circuits are designed for counter flow. Collectors are in copper. The casing is produced using pre-painted aluminium sheet metal (colour: RAL 9010).

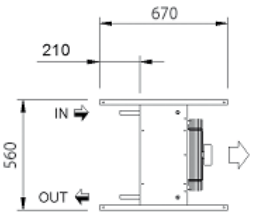
MAIN FEATURES

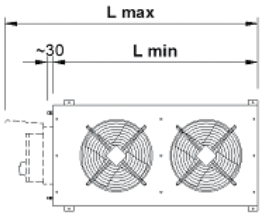
- Coils manufactured with round-shaped pipes in copper.
- Coils manufactured with circuits completely drainable independently of the choice of the air flow.
- Fluids: R404A, R134a, R410A, R407C.
- Capacity: up to 1340 KW.
- Standard AC fans Ø 350/450/500/630/800/900/1000 mm.
- EC Energy saving fans Ø 800/900/1000 mm.
- Quiet and ultra-quiet versions.
- Option to choose the airflow of the unit also on side (Ø 500/630/800/900/1000 mm).
- Option to install the Spray Adiabatic System (Hydrophilic fin block included).

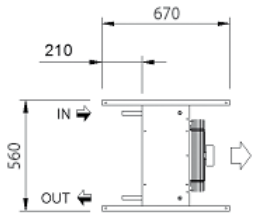
HORIZONTAL-AIR FLOW NHM 1.35 NHM 2.35

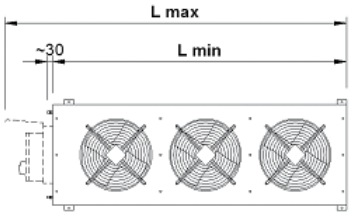
Technical data

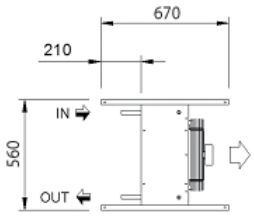


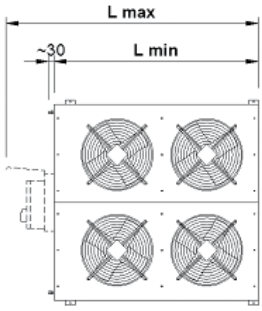


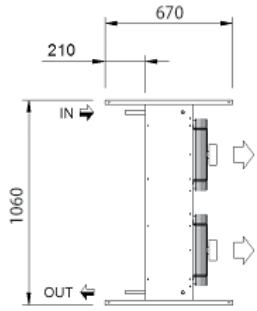


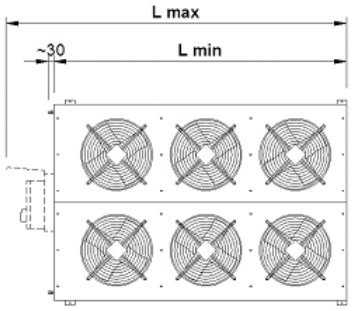


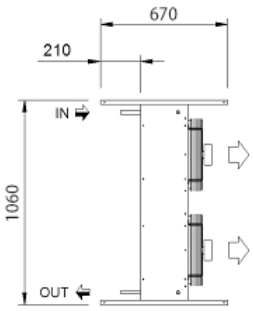












NHM 11 35	Coil rows	1	2	3	4	5	6
	Dry weight [kg]		13	15	17	19	
	Internal volume [dm3]		0,8	1,2	1,6	2	
	L min - L max [mm]	610 - 860					
NHM 12 35	Coil rows	1	2	3	4	5	6
	Dry weight [kg]		24	28	32	36	
	Internal volume [dm3]		1,6	2,4	3,2	4,1	
	L min - L max [mm]	1070 - 1330					
NHM 13 35	Coil rows	1	2	3	4	5	6
	Dry weight [kg]			41	47	53	
	Internal volume [dm3]			3,6	4,9	6,1	
	L min - L max [mm]	1540 - 1800					
NHM 22 35	Coil rows	1	2	3	4	5	6
	Dry weight [kg]			56	64	72	
	Internal volume [dm3]			4,9	6,5	8,1	
	L min - L max [mm]	1070 - 1330					
NHM 23 35	Coil rows	1	2	3	4	5	6
	Dry weight [kg]			82	94	110	
	Internal volume [dm3]			7,3	9,7	12,2	
	L min - L max [mm]	1540 - 1800					

HORIZONTAL-AIR FLOW NHM 1.35 NHM 2.35

Performances

Model AC/EC	Capacity	DbA	Energy rating
NHM 11 35	5,3 9,3 (0 – 180)	60 70 (0 – 100)	E D C B A A+ A++
NHM 12 35	10,9 18,7 (0 – 180)	63 73 (0 – 100)	E D C B A A+ A++
NHM 13 35	19,1 27,8 (0 – 180)	65 75 (0 – 100)	E D C B A A+ A++
NHM 22 35	26,1 38,4 (0 – 180)	66 76 (0 – 100)	E D C B A A+ A++
NHM 23 35	38,2 56,8 (0 – 180)	68 78 (0 – 100)	E D C B A A+ A++

HORIZONTAL-AIR FLOW NHM 1.35 NHM 2.35

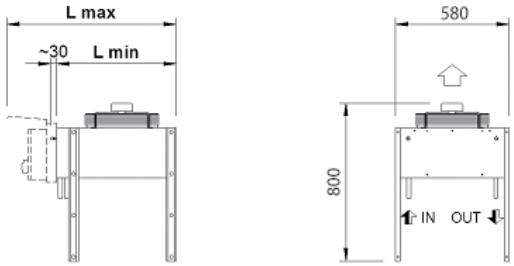
Table of codes

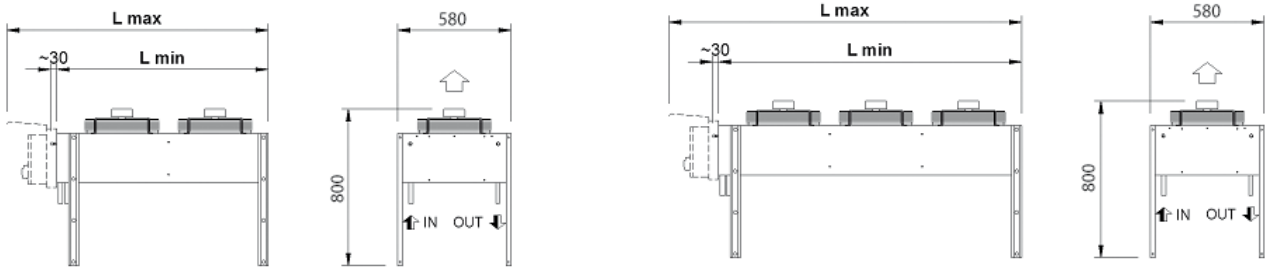
N	N	**EXCHANGER TYPE** Round shape 7 mm diam. copper tube
H	H	**DESIGN** Horizontal Air Flow
4M	4M	**FAN TYPE / PERFORMANCE / CONFIGURATION** Single-Phase / Standard
	3M	Single-Phase / Low
2	1.2	**ROWS OF FANS** 1 / 2
3	1..3	**FANS PER ROW** 1 / 2 / 3
35	35	**DIAMETER OF THE FANS** 350 mm
.		
5	2..5	**COIL ROWS** 2 / 3 / 4 / 5

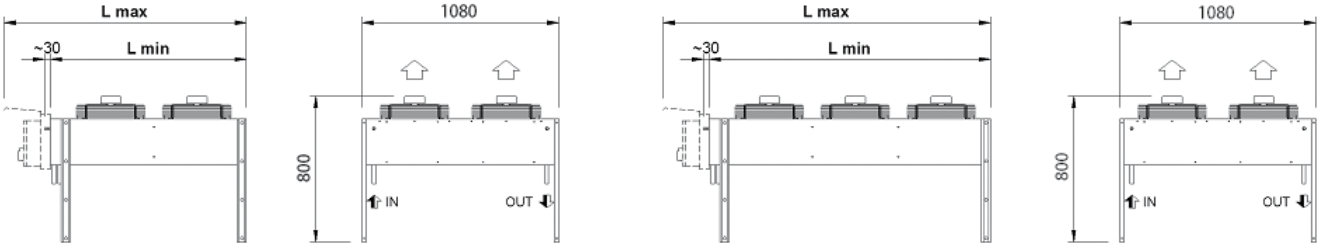
Multiple choice One only choice

VERTICAL-AIR FLOW NVM 1.35 NVM 2.35

Technical data







NVM 11 35	**Coil rows**	1	**2**	**3**	**4**	**5**	6
	Dry weight [kg]		**13**	**15**	**17**	**19**	
	Internal volume [dm3]		**0,8**	**1,2**	**1,6**	**2**	
	L min - L max [mm]	**610 - 860**					
NVM 12 35	**Coil rows**	1	**2**	**3**	**4**	**5**	6
	Dry weight [kg]		**24**	**28**	**32**	**36**	
	Internal volume [dm3]		**1,6**	**2,4**	**3,2**	**4,1**	
	L min - L max [mm]	**1070 - 1330**					
NVM 13 35	**Coil rows**	1	2	**3**	**4**	**5**	6
	Dry weight [kg]			**41**	**47**	**53**	
	Internal volume [dm3]			**3,6**	**4,9**	**6,1**	
	L min - L max [mm]	**1540 - 1800**					
NVM 22 35	**Coil rows**	1	2	**3**	**4**	**5**	6
	Dry weight [kg]			**56**	**64**	**72**	
	Internal volume [dm3]			**4,9**	**6,5**	**8,1**	
	Lmin - Lmax [mm]	**1540**					
NVM 23 35	**Coil rows**	1	2	**3**	**4**	**5**	6
	Dry weight [kg]			**82**	**94**	**110**	
	Internal volume [dm3]			**7,3**	**9,7**	**12,2**	
	L min - L max [mm]	**1540 - 1800**					

VERTICAL-AIR FLOW NVM 1.35 NVM 2.35

Performances

Model AC/EC	Capacity	DbA	Energy rating
NVM 11 35	5,3 9,3 (0 – 180)	60 70 (0 – 100)	E D C B A A+ A++
NVM 12 35	10,9 18,7 (0 – 180)	63 73 (0 – 100)	E D C B A A+ A++
NVM 13 35	19,1 27,8 (0 – 180)	66 76 (0 – 100)	E D C B A A+ A++
NVM 22 35	26,1 38,4 (0 – 180)	67 77 (0 – 100)	E D C B A A+ A++
NVM 23 35	38,2 56,8 (0 – 180)	69 79 (0 – 100)	E D C B A A+ A++

VERTICAL-AIR FLOW NVM 1.35 NVM 2.35

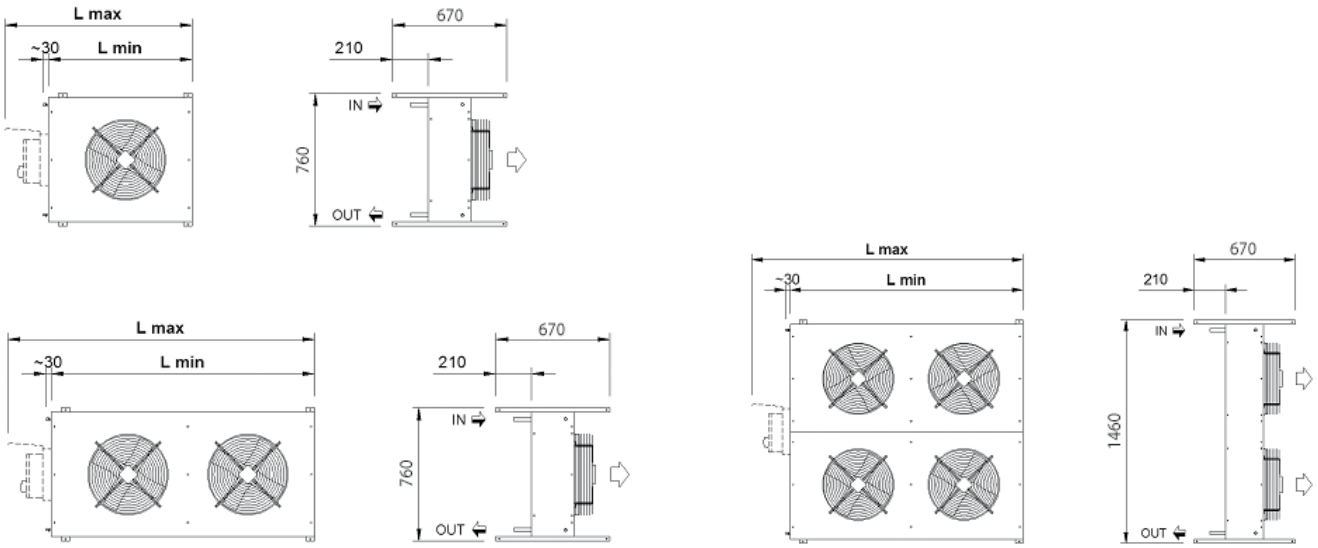
Table of codes

N	N	**EXCHANGER TYPE** Round shape 7 mm diam. copper tube
V	V	**DESIGN** Vertical Air Flow
4M	4M	**FAN TYPE / PERFORMANCE / CONFIGURATION** Single-Phase / Standard
	3M	Single-Phase / Low
2	1.2	**ROWS OF FANS** 1 / 2
3	1..3	**FANS PER ROW** 1 / 2 / 3
35	35	**DIAMETER OF THE FANS** 350 mm
.		
5	2..5	**COIL ROWS** 2 / 3 / 4 / 5

Multiple choice One only choice

HORIZONTAL-AIR FLOW NHM 1.45 NHM 2.45

Technical data



NHM 11 45	**Coil rows**	1	2	3	4	5	6
	Dry weight [kg]		31	34	37	40	
	Internal volume [dm3]		1,7	2,6	3,4	4,3	
	L min - L max [mm]	840 - 1100					
NHM 12 45	**Coil rows**	1	2	3	4	5	6
	Dry weight [kg]		56	62	68	74	
	Internal volume [dm3]		3,4	5,1	6,8	8,5	
	L min - L max [mm]	1540 - 1800					
NHM 22 45	**Coil rows**	1	2	3	4	5	6
	Dry weight [kg]		115	125	140	150	
	Internal volume [dm3]		6,8	10,3	13,7	17,1	
	L min - L max [mm]	1540 - 1800					

HORIZONTAL-AIR FLOW NHM 1.45 NHM 2.45

Performances

Model AC/EC	Capacity	DbA	Energy rating
NHM 11 45	10,2 24 0 180	61 72 0 100	
NHM 12 45	20,2 48,1 0 180	64 75 0 100	
NHM 22 45	41,7 96,1 0 180	68 78 0 100	

HORIZONTAL-AIR FLOW NHM 1.45 NHM 2.45

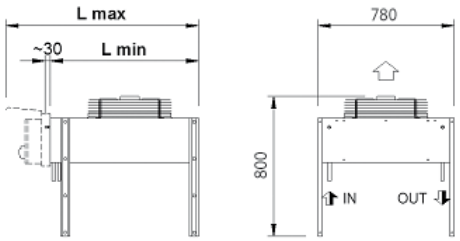
Table of codes

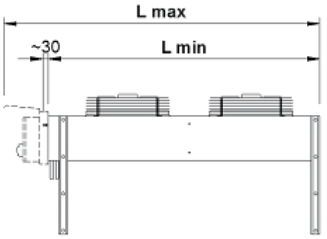
N	N	**EXCHANGER TYPE** Round shape 7 mm diam. copper tube
H	H	**DESIGN** Horizontal Air Flow
4M	4M	**FAN TYPE / PERFORMANCE / CONFIGURATION** Single-Phase / Standard
	3M	Single-Phase / Low
	2M	Single-Phase / Quiet
2	1.2	**ROWS OF FANS** 1 / 2
2	1.2	**FANS PER ROW** 1 / 2
45	45	**DIAMETER OF THE FANS** 450 mm
.		
5	2..5	**COIL ROWS** 2 / 3 / 4 / 5

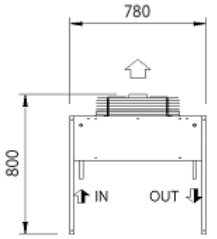
Multiple choice One only choice

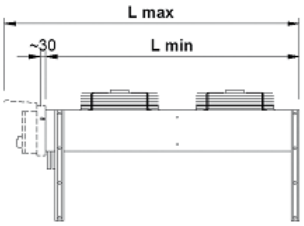
VERTICAL-AIR FLOW NVM 1.45 NVM 2.45

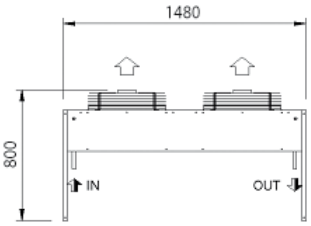
Technical data











NVM 11 45	**Coil rows**	1	**2**	**3**	**4**	**5**	6
	Dry weight [kg]		**31**	**34**	**37**	**40**	
	Internal volume [dm3]		**1,7**	**2,6**	**3,4**	**4,3**	
	L min - L max [mm]	**840 - 1100**					
NVM 12 45	**Coil rows**	1	**2**	**3**	**4**	**5**	6
	Dry weight [kg]		**56**	**62**	**68**	**74**	
	Internal volume [dm3]		**3,4**	**5,1**	**6,8**	**8,5**	
	L min - L max [mm]	**1540 - 1800**					
NVM 22 45	**Coil rows**	1	**2**	**3**	**4**	**5**	6
	Dry weight [kg]		**115**	**125**	**140**	**150**	
	Internal volume [dm3]		**6,8**	**10,3**	**13,7**	**17,1**	
	L min - L max [mm]	**1540 - 1800**					

VERTICAL-AIR FLOW NVM 1.45 NVM 2.45

Performances

Model AC/EC	Capacity	DbA	Energy rating
NHM 11 45	10,2 24 0 180	61 72 0 100	
NHM 12 45	20,2 48,1 0 180	64 75 0 100	
NHM 22 45	41,7 96,1 0 180	68 78 0 100	

VERTICAL-AIR FLOW NVM 1.45 NVM 2.45

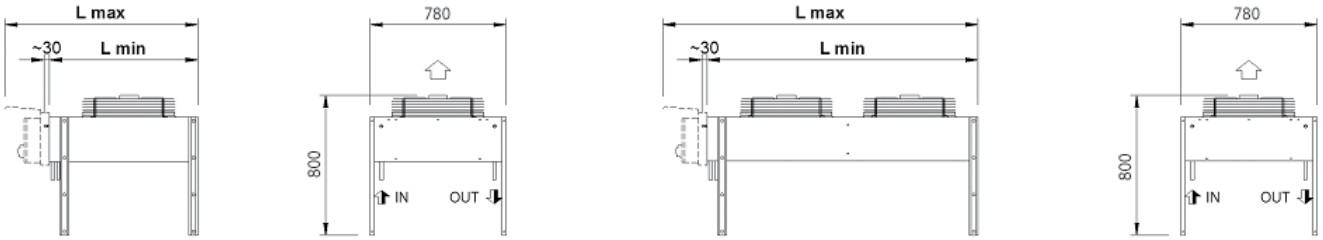
Table of codes

N	N	**EXCHANGER TYPE** Round shape 7 mm diam. copper tube
V	V	**DESIGN** Vertical Air Flow
4M	4M	**FAN TYPE / PERFORMANCE / CONFIGURATION** Single-Phase / Standard
	3M	Single-Phase / Low
	2M	Single-Phase / Quiet
2	1.2	**ROWS OF FANS** 1 / 2
2	1.2	**FANS PER ROW** 1 / 2
45	45	**DIAMETER OF THE FANS** 450 mm
5	2..5	**COIL ROWS** 2 / 3 / 4 / 5

Multiple choice One only choice

VERTICAL-AIR FLOW NVM 1.50

Technical data



NVM 11 50	Coil rows	1	2	3	4	5	6
	Dry weight [kg]			41	44	47	
	Internal volume [dm3]			2,6	3,4	4,3	
	L min - L max [mm]	840 - 1100					

NVM 12 50	Coil rows	1	2	3	4	5	6
	Dry weight [kg]		70	76	82	88	
	Internal volume [dm3]		3,4	5,1	6,8	8,5	
	L min - L max [mm]	1540 - 1800					

VERTICAL-AIR FLOW NVM 1.50

Performances

Model AC/EC	Capacity	DbA	Energy rating
NVM 11 50	14,6 — 23,8 (0 — 180)	60 — 73 (0 — 100)	
NVM 12 50	23,4 — 48,1 (0 — 180)	63 — 76 (0 — 100)	

VERTICAL-AIR FLOW NVM 1.50

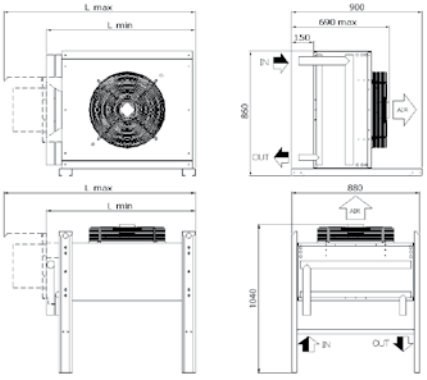
Table of codes

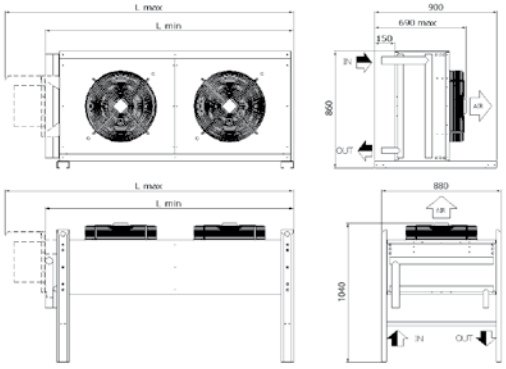
N	N	**EXCHANGER TYPE** Round shape 7 mm diam. copper tube
V	V	**DESIGN** Vertical Air Flow
4M	4M	**FAN TYPE / PERFORMANCE / CONFIGURATION** Single-Phase / Standard
	2M	Single-Phase / Quiet
1	1	**ROWS OF FANS** 1
2	1.2	**FANS PER ROW** 1 / 2
50	50	**DIAMETER OF THE FANS** 500 mm
.		
5	2..5	**COIL ROWS** 2 / 3 / 4 / 5

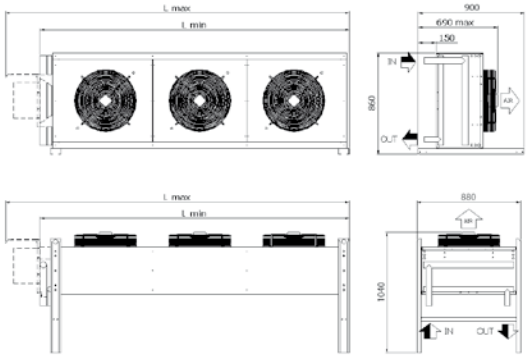
Multiple choice One only choice

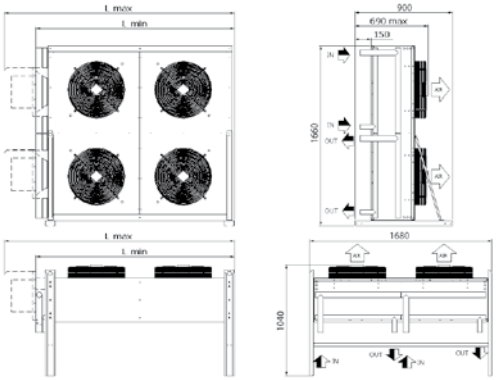
HORIZONTAL/VERTICAL-NEW SERIES NA 1.50 K-KAM 1.50 K-KAM 2.50

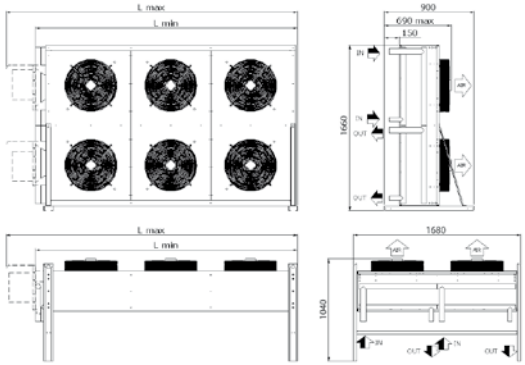
Technical data











Technical data

NA 11 50	Coil rows	1	2	3	4	5	6
	Dry weight [kg]		77	81	84	88	92
	Internal volume [dm3]		1,9	2,9	3,9	4,9	5,8
	L min - L max [mm]	1025 - 1320					
NA 12 50	Coil rows	1	2	3	4	5	6
	Dry weight [kg]		123	130	137	144	152
	Internal volume [dm3]		3,9	5,8	7,8	9,7	11,7
	L min - L max [mm]	1825 - 2120					
KA 13 50 **KAM 13** 50	Coil rows	1	2	3	4	5	6
	Dry weight [kg]		173	186	199	212	226
	Internal volume [dm3]		9,3	14	18,7	23,3	28
	L min - L max [mm]	2625 - 2920					
KA 22 50 **KAM 22** 50	Coil rows	1	2	3	4	5	6
	Dry weight [kg]		218	239	261	279	299
	Internal volume [dm3]		14,3	21,5	28,7	35,9	43
	L min - L max [mm]	1825 - 2120					
KA 23 50 **KAM 23** 50	Coil rows	1	2	3	4	5	6
	Dry weight [kg]		306	336	367	395	425
	Internal volume [dm3]		21,5	32,3	43	53,8	64,6
	L min - L max [mm]	2625 - 2920					

HORIZONTAL/VERTICAL-NEW SERIES NA 1.50 K-KAM 1.50 K-KAM 2.50

Performances

Model AC/EC	Capacity	DbA	Energy rating
NA 11 50	10,4 – 29,3 (0 – 180)	62 – 83 (0 – 100)	E D C B A A+ A++
NA 12 50	20,9 – 58,6 (0 – 180)	65 – 86 (0 – 100)	E D C B A A+ A++
KA 13 50	31,7 – 85,6 (0 – 180)	67 – 88 (0 – 100)	E D C B A A+ A++
KAM 13 50	45,9 – 75,1 (0 – 180)	76 – 93 (0 – 100)	E D C B A A+ A++
KA 22 50	45,9 – 123,9 (0 – 180)	68 – 89 (0 – 100)	E D C B A A+ A++
KAM 22 50	65,3 – 108,9 (0 – 180)	77 – 84 (0 – 100)	E D C B A A+ A++
KA 23 50	68,4 – 185 (0 – 180)	69 – 90 (0 – 100)	E D C B A A+ A++
KAM 23 50	99 – 162,5 (0 – 180)	78 – 85 (0 – 100)	E D C B A A+ A++

HORIZONTAL/VERTICAL-NEW SERIES NA-NAM 1.50 KA-KAM 2.50

Table of codes

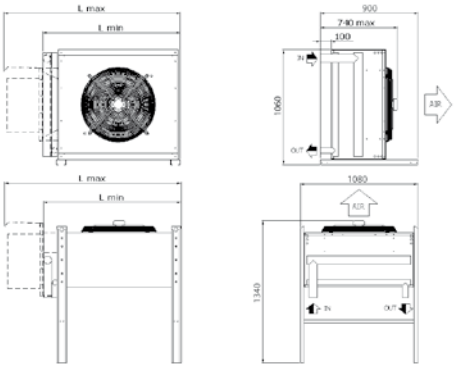
		EXCHANGER TYPE
N	K	Round shape 10 mm diam. copper tube
	N	TRound shape 7 mm diam. copper tube
		DESIGN
A	A	H-Flow / V-Flow Standard Module
		TIPOLOGIA VENTOLA / RUMOROSITÀ / CONFIGURAZIONE
4D	4D	AC / Standard / Delta
	4Y	AC / Standard / Star
	3D	AC / Low / Delta
	3Y	AC / Low / Star
	2D	AC / Quiet / Delta
	2Y	AC / Quiet / Star
	4M	Single-Phase / Standard
	3M	Single-Phase / Low
	2M	Single-Phase / Quiet
		ROWS OF FANS
2	1.2	1 / 2
		FANS PER ROW
3	1..3	1 / 2 / 3
		DIAMETER OF THE FANS
50	50	500 mm
.		
		COIL ROWS
6	2..6	2 / 3 / 4 / 5 / 6

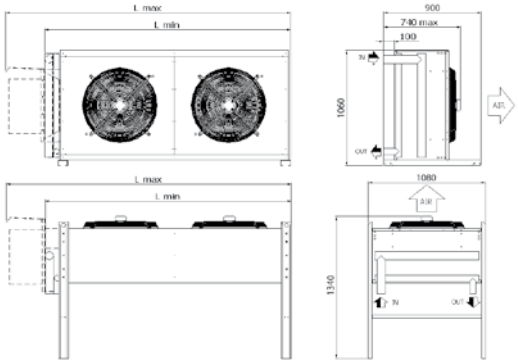
Multiple choice One only choice

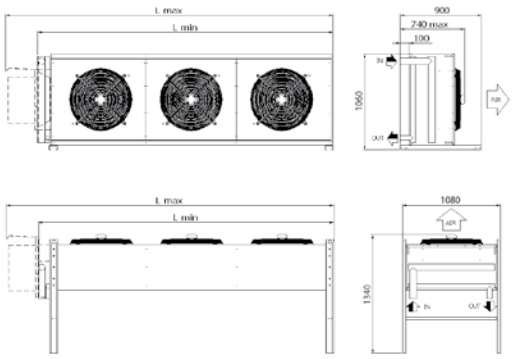
HORIZONTAL/VERTICAL
NEW SERIES

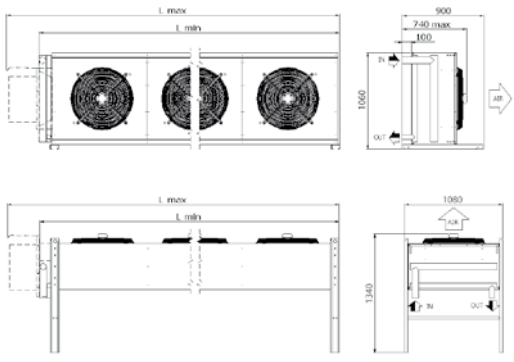
NA-NAM 1.63 KA-KAM 1.63 KA-KAM 2.63

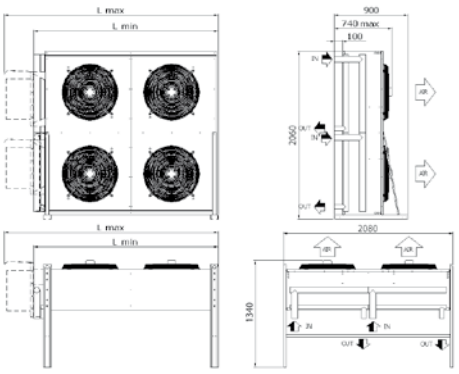
Technical data

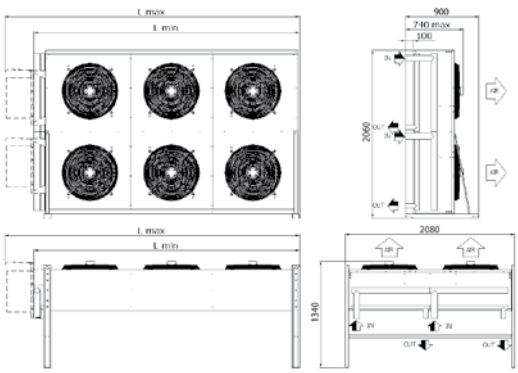


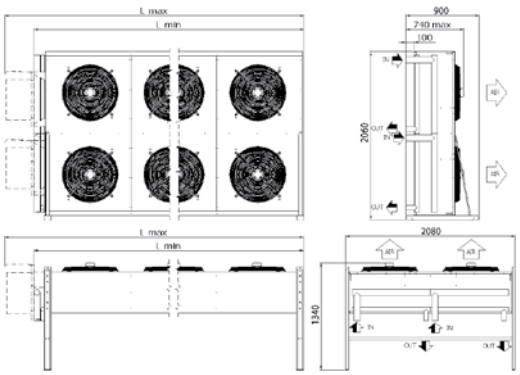












Technical data

NA 11 63 **NAM 11** 63	Coil rows	2	3	4	5	6
	Dry weight [kg]	107	113	119	124	130
	Internal volume [dm3]	3	4,6	6,1	7,6	9,1
	L min - L max [mm]	1260 - 1620				
NA 12 63 **NAM 12** 63	Coil rows	2	3	4	5	6
	Dry weight [kg]	181	192	203	214	226
	Internal volume [dm3]	6,1	9,1	12,1	15,2	18,2
	L min - L max [mm]	2260 - 2620				
KA 13 63 **KAM 13** 63	Coil rows	2	3	4	5	6
	Dry weight [kg]	259	280	301	321	341
	Internal volume [dm3]	14,8	22,2	29,6	37	44,4
	L min - L max [mm]	3260 - 3620				
KA 14 63 **KAM 14** 63	Coil rows	2	3	4	5	6
	Dry weight [kg]	344	371	399	426	454
	Internal volume [dm3]	19,7	29,6	39,5	49,3	59,2
	L min - L max [mm]	4260 - 4620				
KA 15 63 **KAM 15** 63	Coil rows	2	3	4	5	6
	Dry weight [kg]	419	455	488	519	554
	Internal volume [dm3]	24,7	37	49,3	61,7	74
	L min - L max [mm]	5260 - 5620				
KA 22 63 **KAM 22** 63	Coil rows	2	3	4	5	6
	Dry weight [kg]	324	352	370	393	419
	Internal volume [dm3]	19,7	29,6	39,5	49,3	59,2
	L min - L max [mm]	2260 - 2620				
KA 23 63 **KAM 23** 63	Coil rows	2	3	4	5	6
	Dry weight [kg]	456	498	541	577	623
	Internal volume [dm3]	29,6	44,4	59,2	74	88,8
	L min - L max [mm]	3260 - 3620				
KA 24 63 **KAM 24** 63	Coil rows	2	3	4	5	6
	Dry weight [kg]	604	659	719	770	827
	Internal volume [dm3]	39,5	59,2	78,9	98,7	118,4
	L min - L max [mm]	4260 - 4620				
KA 25 63 **KAM 25** 63	Coil rows	2	3	4	5	6
	Dry weight [kg]	742	814	879	941	1012
	Internal volume [dm3]	49,3	74	98,7	123,3	148
	L min - L max [mm]	5260 - 5620				

HORIZONTAL/VERTICAL-NEW SERIES NA-NAM 1.63 KA-KAM 1.63 KA-KAM 2.63

Performances

Model AC/EC	Capacity	DbA	Energy rating
NA 11 63	10,9 – 36,3 (0 – 400)	57 – 76 (0 – 100)	E D C B A A+ A++
NAM 11 63	21,8 – 35,5 (0 – 400)	71 – 76 (0 – 100)	E D C B A A+ A++
NA 12 63	21,8 – 73,3 (0 – 400)	60 – 79 (0 – 100)	E D C B A A+ A++
NAM 12 63	42,8 – 71,5 (0 – 400)	74 – 79 (0 – 100)	E D C B A A+ A++
KA 13 63	31,3 – 108,3 (0 – 400)	61 – 80 (0 – 100)	E D C B A A+ A++
KAM 13 63	66,4 – 106 (0 – 400)	75 – 80 (0 – 100)	E D C B A A+ A++
KA 14 63	41,8 – 143,8 (0 – 400)	63 – 82 (0 – 100)	E D C B A A+ A++
KAM 14 63	90,6 – 140,6 (0 – 400)	77 – 82 (0 – 100)	E D C B A A+ A++
KA 15 63	52,2 – 181,3 (0 – 400)	64 – 83 (0 – 100)	E D C B A A+ A++
KAM 15 63	108,9 – 177,3 (0 – 400)	78 – 83 (0 – 100)	E D C B A A+ A++

HORIZONTAL/VERTICAL-NEW SERIES NA-NAM 1.63 KA-KAM 1.63 KA-KAM 2.63

Performances

Model AC/EC	Capacity	DbA	Energy rating
KA 22 63	41,7 — 144,5 (0 — 400)	62 — 81 (0 — 100)	E D C B A A+ A++
KAM 22 63	88,2 — 140,6 (0 — 400)	76 — 81 (0 — 100)	E D C B A A+ A++
KA 23 63	62,6 — 217,9 (0 — 400)	64 — 83 (0 — 100)	E D C B A A+ A++
KAM 23 63	132,4 — 212 (0 — 400)	78 — 83 (0 — 100)	E D C B A A+ A++
KA 24 63	83,6 — 289,1 (0 — 400)	65 — 84 (0 — 100)	E D C B A A+ A++
KAM 24 63	180,5 — 281,3 (0 — 400)	79 — 84 (0 — 100)	E D C B A A+ A++
KA 25 63	104,4 — 364,6 (0 — 400)	66 — 85 (0 — 100)	E D C B A A+ A++
KAM 25 63	216,7 — 354,7 (0 — 400)	80 — 85 (0 — 100)	E D C B A A+ A++

Table of codes

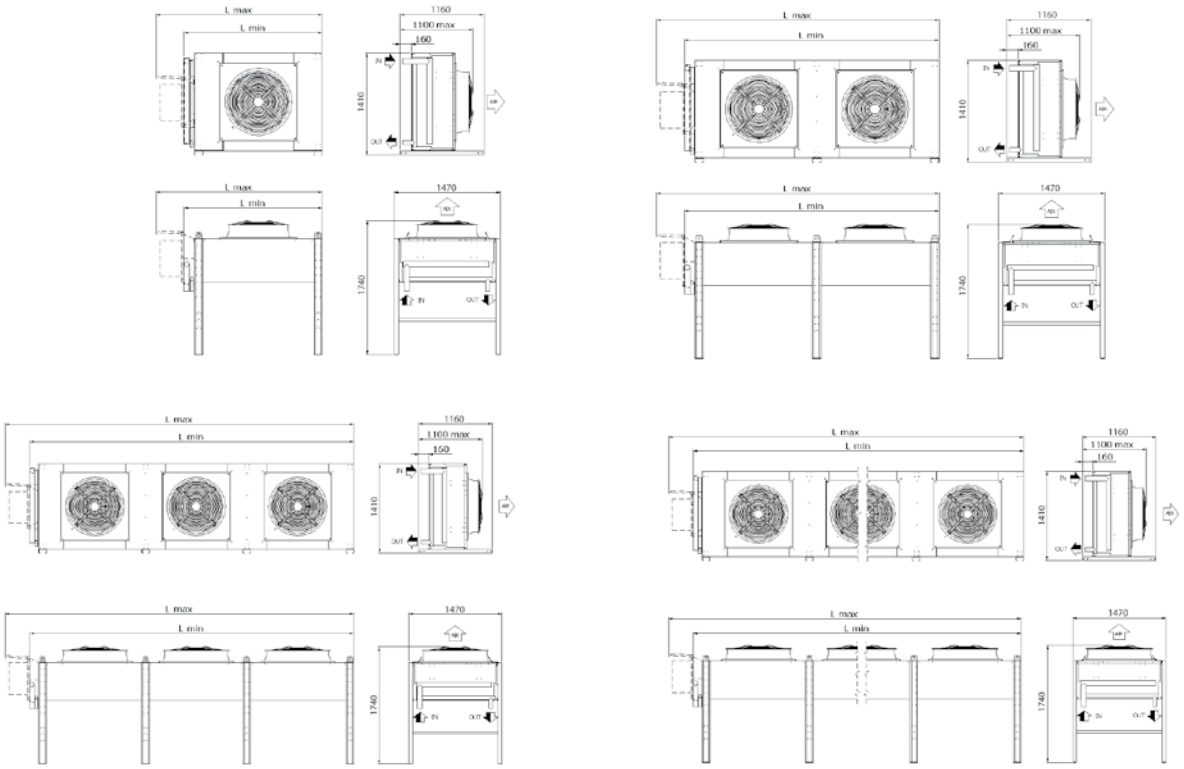
		EXCHANGER TYPE
K	K	Round shape 10 mm diam. copper tube
	N	TRound shape 7 mm diam. copper tube
		DESIGN
A	A	H-Flow / V-Flow Standard Module
		TIPOLOGIA VENTOLA / RUMOROSITÀ / CONFIGURAZIONE
4D	4D	AC / Standard / Delta
	4Y	AC / Standard / Star
	3D	AC / Low / Delta
	3Y	AC / Low / Star
	2D	AC / Quiet / Delta
	2Y	AC / Quiet / Star
	4M	Single-Phase / Standard
	3M	Single-Phase / Low
		ROWS OF FANS
2	1.2	1 / 2
		FANS PER ROW
5	1..5	1 / 2 / 3 / 4 / 5
		DIAMETER OF THE FANS
63	63	630 mm
.		
		COIL ROWS
6	2..6	2 / 3 / 4 / 5 / 6

Multiple choice One only choice

HORIZONTAL/VERTICAL-NEW SERIES STD. MODULE

KA-KAEC 1.80/90/10 CA-CAEC 1.80/90/10

Technical data



KA 11 80/90/10 **KAEC 11** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	283	297	311	325	338
	Internal volume [dm3]	9,6	14,3	19,1	23,9	28,7
	L min - L max [mm]	1910 - 2300				
KA 12 80/90/10 **KAEC 12** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	463	490	518	547	574
	Internal volume [dm3]	19,1	28,7	38,3	47,8	57,4
	L min - L max [mm]	3510 - 3900				
KA 13 80/90/10 **KAEC 13** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	685	727	771	806	846
	Internal volume [dm3]	28,7	43	57,4	71,7	86,1
	L min - L max [mm]	5110 - 5500				
CA 14 80/90/10 **CAEC 14** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	873	931	990	1047	1107
	Internal volume [dm3]	48,9	73,3	97,8	122,2	146,6
	L min - L max [mm]	6710 - 7100				
CA 15 80/90/10 **CAEC 15** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	1090	1165	1231	1302	1377
	Internal volume [dm3]	61,1	91,6	122,2	152,7	183,3
	L min - L max [mm]	8310 - 8700				

HORIZONTAL/VERTICAL-NEW SERIES STD. MODULE

KA-KAEC 1.80/90/10 CA-CAEC 1.80/90/10

Performances

Model AC/EC	Capacity	DbA	Energy rating
KA 11 80/90/10	38,4 97,3 (0 – 500)	69 95 (0 – 100)	E D C B A A+ A++
KAEC 11 80/90/10	19,1 99 (0 – 500)	50 93 (0 – 100)	E D C B A A+ A++
KA 12 80/90/10	75,7 193,4 (0 – 500)	72 98 (0 – 100)	E D C B A A+ A++
KAEC 12 80/90/10	38,2 198,1 (0 – 500)	53 96 (0 – 100)	E D C B A A+ A++
KA 13 80/90/10	116,7 296,8 (0 – 500)	74 100 (0 – 100)	E D C B A A+ A++
KAEC 13 80/90/10	57,3 304,1 (0 – 500)	54 97 (0 – 100)	E D C B A A+ A++
CA 14 80/90/10	156,1 387,8 (0 – 500)	75 101 (0 – 100)	E D C B A A+ A++
CAEC 14 80/90/10	75,8 383,9 (0 – 500)	56 98 (0 – 100)	E D C B A A+ A++
CA 15 80/90/10	188,8 477,6 (0 – 500)	76 102 (0 – 100)	E D C B A A+ A++
CAEC 15 80/90/10	94,4 488,9 (0 – 500)	57 100 (0 – 100)	E D C B A A+ A++

HORIZONTAL/VERTICAL-NEW SERIES STD. MODULE

KA-KAEC 1.80/90/10 CA-CAEC 1.80/90/10

Table of codes

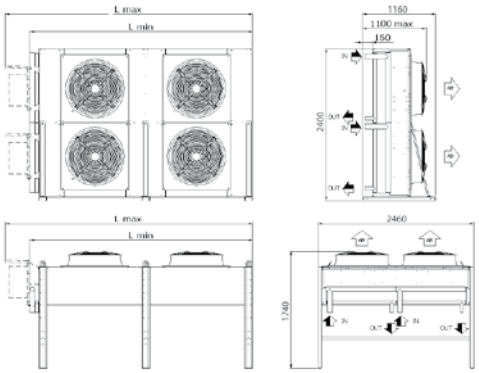
		EXCHANGER TYPE
K	C	Round shape 12 mm diam. copper tube
	K	Round shape 10 mm diam. copper tube
		DESIGN
A	A	H-Flow / V-Flow Standard Module
		FAN TYPE / PERFORMANCE / CONFIGURATION
5C	5C	EC / High Power
	4C	EC / Standard
	3C	EC / Low
	4D	AC / Standard / Delta
	4Y	AC / Standard / Star
	3D	AC / Low / Delta
	3Y	AC / Low / Star
	2D	AC / Quiet / Delta
	2Y	AC / Quiet / Star
		ROWS OF FANS
1	1	1
		FANS PER ROW
5	1..5	1 / 2 / 3 / 4 / 5
		DIAMETER OF THE FANS
	80	800 mm
90	90	900 mm
	10	1000 mm
.		
		COIL ROWS
6	2..6	2 / 3 / 4 / 5 / 6
–		
		SPEED RATE (EC FANS ONLY)
100%	30%..100%	30% / 40% / 50% / 60% / 70% / 80% / 90% / 100%

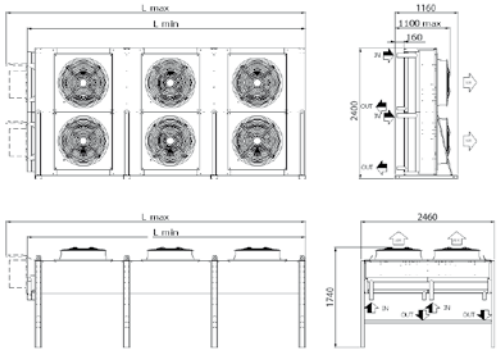
Multiple choice One only choice

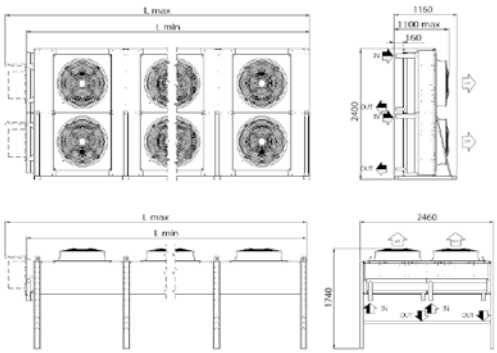
HORIZONTAL/VERTICAL
NEW SERIES STD. MODULE

KA-KAEC 2.80/90/10 CA-CAEC 2.80/90/10

Technical data







KA 22 80/90/10 **KAEC 22** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	743	793	844	895	947
	Internal volume [dm3]	35,4	53,1	70,8	88,5	106,2
	L min - L max [mm]	3510 - 3900				
KA 23 80/90/10 **KAEC 23** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	1098	1178	1258	1317	1394
	Internal volume [dm3]	53,1	79,6	106,2	132,7	159,3
	L min - L max [mm]	5110 - 5500				
CA 24 80/90/10 **CAEC 24** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	1415	1527	1635	1740	1850
	Internal volume [dm3]	90,1	135,2	180,2	225,3	270,3
	L min - L max [mm]	6710 - 7100				
CA 25 80/90/10 **CAEC 25** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	1757	1898	2018	2150	2286
	Internal volume [dm3]	112,6	169	225,3	281,6	337,9
	L min - L max [mm]	8310 - 8700				
CA 26 80/90/10 **CAEC 26** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	2082	2249	2409	2568	2724
	Internal volume [dm3]	135,2	202,8	270,3	337,9	405,5
	L min - L max [mm]	9910 - 10300				
CA 27 80/90/10 **CAEC 27** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	2432	2626	2812	2997	3179
	Internal volume [dm3]	157,7	236,6	315,4	394,3	473,1
	L min - L max [mm]	11510 - 11900				

HORIZONTAL/VERTICAL-NEW SERIES STD. MODULE

KA-KAEC 2.80/90/10 CA-CAEC 2.80/90/10

Performances

Model AC/EC	Capacity	DbA	Energy rating
KA 22 80/90/10	145,6 365,7 (0 – 1500)	74 100 (0 – 100)	E D C B A A+ A++
KAEC 22 80/90/10	72,8 378,9 (0 – 1500)	55 98 (0 – 100)	E D C B A A+ A++
KA 23 80/90/10	224,5 561,5 (0 – 1500)	76 102 (0 – 100)	E D C B A A+ A++
KAEC 23 80/90/10	109,2 555,2 (0 – 1500)	56 100 (0 – 100)	E D C B A A+ A++
CA 24 80/90/10	298,8 728,3 (0 – 1500)	77 103 (0 – 100)	E D C B A A+ A++
CAEC 24 80/90/10	145 731,9 (0 – 1500)	58 101 (0 – 100)	E D C B A A+ A++
CA 25 80/90/10	361,4 898,7 (0 – 1500)	78 104 (0 – 100)	E D C B A A+ A++
CAEC 25 80/90/10	180,6 932,4 (0 – 1500)	58 102 (0 – 100)	E D C B A A+ A++
CA 26 80/90/10	440,1 1092 (0 – 1500)	79 105 (0 – 100)	E D C B A A+ A++
CAEC 26 80/90/10	217,1 1133,2 (0 – 1500)	59 103 (0 – 100)	E D C B A A+ A++
CA 27 80/90/10	519 1285,3 (0 – 1500)	80 106 (0 – 100)	E D C B A A+ A++
CAEC 27 80/90/10	253,6 1334 (0 – 1500)	60 103 (0 – 100)	E D C B A A+ A++

HORIZONTAL/VERTICAL-NEW SERIES STD. MODULE

KA-KAEC 2.80/90/10 CA-CAEC 2.80/90/10

Table of codes

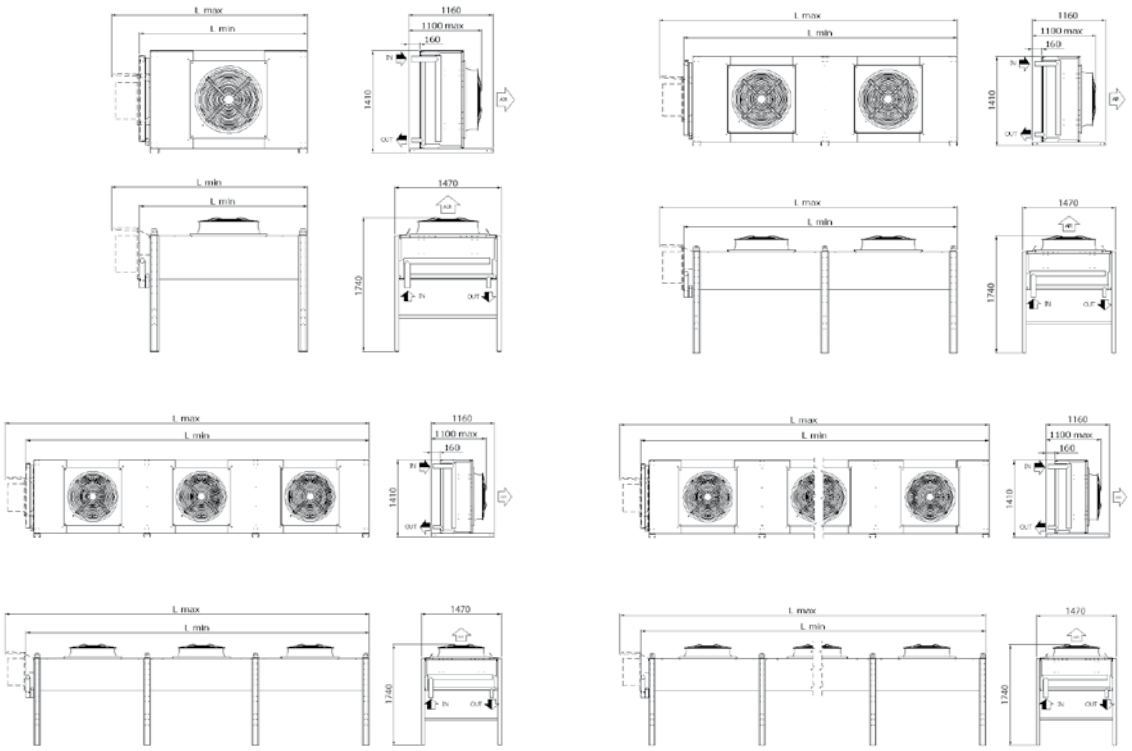
		EXCHANGER TYPE
	C	Round shape 12 mm diam. copper tube
K	K	Round shape 10 mm diam. copper tube
		DESIGN
A	A	H-Flow / V-Flow Standard Module
		FAN TYPE / PERFORMANCE / CONFIGURATION
5C	5C	EC / High Power
	4C	EC / Standard
	3C	EC / Low
	4D	AC / Standard / Delta
	4Y	AC / Standard / Star
	3D	AC / Low / Delta
	3Y	AC / Low / Star
	2D	AC / Quiet / Delta
	2Y	AC / Quiet / Star
		ROWS OF FANS
2	2	2
		FANS PER ROW
7	2..7	2 / 3 / 4 / 5 / 6 / 7
		DIAMETER OF THE FANS
	80	800 mm
90	90	900 mm
	10	1000 mm
.		
		COIL ROWS
6	2..6	2 / 3 / 4 / 5 / 6
–		
		SPEED RATE (EC FANS ONLY)
100%	30%..100%	30% / 40% / 50% / 60% / 70% / 80% / 90% / 100%

Multiple choice One only choice

HORIZONTAL/VERTICAL-NEW SERIES LONG MODULE

KB-KBEC 1.80/90/10 CB-CBEC 1.80/90/10

Technical data



KB 11 80/90/10 **KBEC 11** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	280	298	314	331	337
	Internal volume [dm3]	12	17,9	23,9	29,9	35,9
	L min - L max [mm]	2310 - 2700				
KB 12 80/90/10 **KBEC 12** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	516	550	584	620	653
	Internal volume [dm3]	23,9	35,9	47,8	59,8	71,7
	L min - L max [mm]	4310 - 4700				
KB 13 80/90/10 **KBEC 13** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	765	817	871	921	971
	Internal volume [dm3]	35,9	53,8	71,7	89,7	107,6
	L min - L max [mm]	6310 - 6700				
CB 14 80/90/10 **CBEC 14** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	985	1060	1126	1197	1272
	Internal volume [dm3]	61,1	91,6	122,2	152,7	183,3
	L min - L max [mm]	8310 - 8700				
CB 15 80/90/10 **CBEC 15** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	1207	1299	1388	1478	1567
	Internal volume [dm3]	76,4	114,6	152,7	190,9	229,1
	L min - L max [mm]	10310 - 10700				

HORIZONTAL/VERTICAL-NEW SERIES LONG MODULE

KB-KBEC 1.80/90/10 CB-CBEC 1.80/90/10

Performances

Model AC/EC	Capacity	DbA	Energy rating
KB 11 80/90/10	42,8 — 112,9 (0 — 600)	69 — 95 (0 — 100)	E D C B A A+ A++
KBEC 11 80/90/10	21,4 — 114,1 (0 — 600)	50 — 93 (0 — 100)	E D C B A A+ A++
KB 12 80/90/10	85,5 — 225,8 (0 — 600)	72 — 98 (0 — 100)	E D C B A A+ A++
KBEC 12 80/90/10	42,7 — 228,2 (0 — 600)	53 — 96 (0 — 100)	E D C B A A+ A++
KB 13 80/90/10	125,6 — 333,8 (0 — 600)	74 — 100 (0 — 100)	E D C B A A+ A++
KBEC 13 80/90/10	64,1 — 337,3 (0 — 600)	54 — 97 (0 — 100)	E D C B A A+ A++
CB 14 80/90/10	168,4 — 442,4 (0 — 600)	75 — 101 (0 — 100)	E D C B A A+ A++
CBEC 14 80/90/10	84,6 — 446,9 (0 — 600)	56 — 99 (0 — 100)	E D C B A A+ A++
CB 15 80/90/10	214,1 — 559,5 (0 — 600)	76 — 102 (0 — 100)	E D C B A A+ A++
CBEC 15 80/90/10	105,9 — 565,4 (0 — 600)	57 — 100 (0 — 100)	E D C B A A+ A++

HORIZONTAL/VERTICAL-NEW SERIES LONG MODULE

KB-KBEC 1.80/90/10 CB-CBEC 1.80/90/10

Table of codes

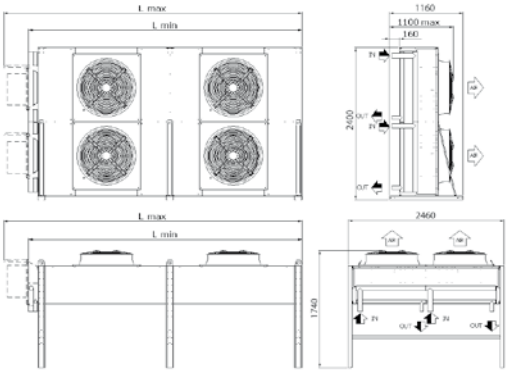
		EXCHANGER TYPE
C	C	Round shape 12 mm diam. copper tube
	K	Round shape 10 mm diam. copper tube
		DESIGN
B	B	H-Flow / V-Flow Long Module
		FAN TYPE / PERFORMANCE / CONFIGURATION
5C	5C	EC / High Power
	4C	EC / Standard
	3C	EC / Low
	4D	AC / Standard / Delta
	4Y	AC / Standard / Star
	3D	AC / Low / Delta
	3Y	AC / Low / Star
	2D	AC / Quiet / Delta
	2Y	AC / Quiet / Star
		ROWS OF FANS
1	1	1
		FANS PER ROW
5	1..5	1 / 2 / 3 / 4 / 5
		DIAMETER OF THE FANS
	80	800 mm
90	90	900 mm
	10	1000 mm
.		
		COIL ROWS
6	2..6	2 / 3 / 4 / 5 / 6
–		
		SPEED RATE (EC FANS ONLY)
100%	30%..100%	30% / 40% / 50% / 60% / 70% / 80% / 90% / 100%

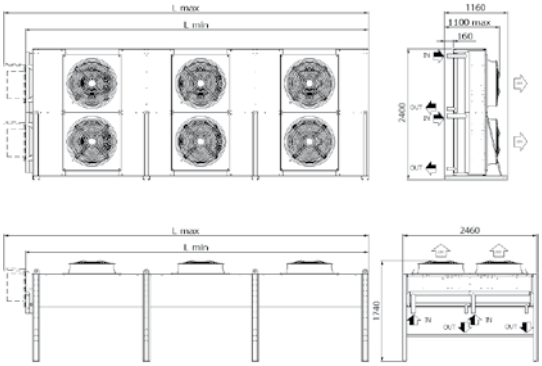
Multiple choice One only choice

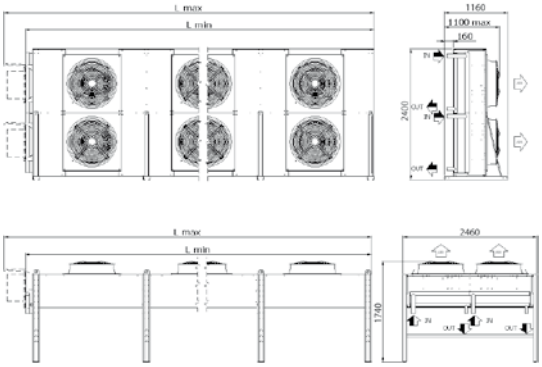
HORIZONTAL/VERTICAL
NEW SERIES LONG MODULE

KB-KBEC 2.80/90/10 CB-CBEC 2.80/90/10

Technical data







KB 22 80/90/10 **KBEC 22** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	821	883	946	1009	1073
	Internal volume [dm3]	44,2	66,4	88,5	110,6	132,7
	L min - L max [mm]	4310 - 4700				
KB 23 80/90/10 **KBEC 23** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	1215	1313	1411	1490	1593
	Internal volume [dm3]	66,4	99,6	132,7	165,9	199,1
	L min - L max [mm]	6310 - 6700				
CB 24 80/90/10 **CBEC 24** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	1586	1726	1847	1978	2114
	Internal volume [dm3]	112,6	169	225,3	281,6	337,9
	L min - L max [mm]	8310 - 8700				
CB 25 80/90/10 **CBEC 25** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	1953	2127	2294	2459	2621
	Internal volume [dm3]	140,8	211,2	281,6	352	422,4
	L min - L max [mm]	10310 - 10700				
CB 26 80/90/10 **CBEC 26** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	2313	2519	2719	2917	3112
	Internal volume [dm3]	169	253,4	337,9	422,4	506,9
	L min - L max [mm]	12310 - 12700				

HORIZONTAL/VERTICAL-NEW SERIES LONG MODULE

KB-KBEC 2.80/90/10 CB-CBEC 2.80/90/10

Performances

Model AC/EC	Capacity	DbA	Energy rating
KB 22 80/90/10	165,4 431,5 (0 – 1500)	74 100 (0 – 100)	E D C B A A+ A++
KBEC 22 80/90/10	82,5 439,2 (0 – 1500)	55 98 (0 – 100)	E D C B A A+ A++
KB 23 80/90/10	242,9 636,4 (0 – 1500)	76 102 (0 – 100)	E D C B A A+ A++
KBEC 23 80/90/10	123,7 648,9 (0 – 1500)	57 100 (0 – 100)	E D C B A A+ A++
CB 24 80/90/10	324,1 839,9 (0 – 1500)	77 103 (0 – 100)	E D C B A A+ A++
CBEC 24 80/90/10	163,1 857,7 (0 – 1500)	58 101 (0 – 100)	E D C B A A+ A++
CB 25 80/90/10	412,1 1065 (0 – 1500)	78 104 (0 – 100)	E D C B A A+ A++
CBEC 25 80/90/10	204,3 1085,3 (0 – 1500)	59 102 (0 – 100)	E D C B A A+ A++
CB 26 80/90/10	500,2 1290,3 (0 – 1500)	79 105 (0 – 100)	E D C B A A+ A++
CBEC 26 80/90/10	245,5 1313 (0 – 1500)	60 103 (0 – 100)	E D C B A A+ A++

HORIZONTAL/VERTICAL-NEW SERIES LONG MODULE

KB-KBEC 2.80/90/10 CB-CBEC 2.80/90/10

Table of codes

		EXCHANGER TYPE
C	C	Round shape 12 mm diam. copper tube
	K	Round shape 10 mm diam. copper tube
		DESIGN
B	B	H-Flow / V-Flow Long Module
		FAN TYPE / PERFORMANCE / CONFIGURATION
5C	5C	EC / High Power
	4C	EC / Standard
	3C	EC / Low
	4D	AC / Standard / Delta
	4Y	AC / Standard / Star
	3D	AC / Low / Delta
	3Y	AC / Low / Star
	2D	AC / Quiet / Delta
	2Y	AC / Quiet / Star
		ROWS OF FANS
2	2	2
		FANS PER ROW
6	2..6	2 / 3 / 4 / 5 / 6
		DIAMETER OF THE FANS
	80	800 mm
90	90	900 mm
	10	1000 mm
.		
		COIL ROWS
6	2..6	2 / 3 / 4 / 5 / 6
–		
		SPEED RATE (EC FANS ONLY)
100%	30%..100%	30% / 40% / 50% / 60% / 70% / 80% / 90% / 100%

Multiple choice One only choice

TOWER

TOWER KT-KTEC 1.80/90/10

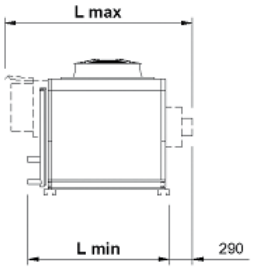
The Tower series combines significant power per unit of occupied surface area with a lower height. In order to provide for the most diverse architectural needs, Refrion designed the Tower series that, while maintaining unaltered performance levels, reduces the space required for operation and thus allows installation even in the most extreme conditions.

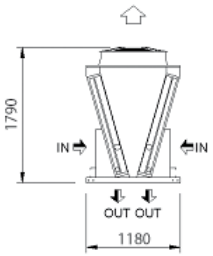
MAIN FEATURES

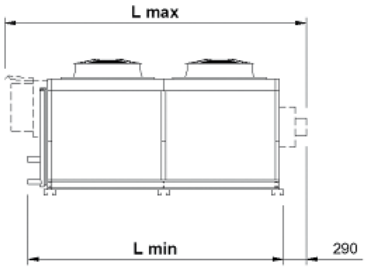
- Compact V shape.
- Coils manufactured with round-shaped pipes in copper.
- Fluids: R404A, R134a, R410A, R407C.
- Capacity: up to 960 kW.
- Classic AC or EC energy saving fans Ø 800/900/1000 mm.
- Quiet and ultra-quiet versions.
- Option to install the Spray Adiabatic System (Hydrophilic fin block included).

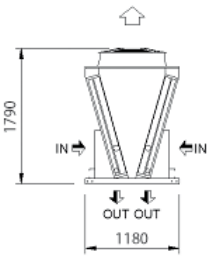
TOWER KT-KTEC 1.80/90/10

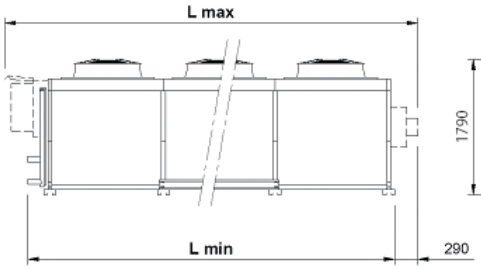
Technical data

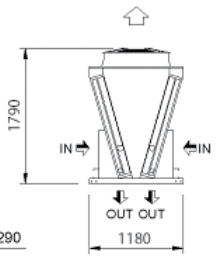












KT 11 80/90/100 **KTEC 11** 80/90/100	Coil rows	1	2	3	4	5	6
	Dry weight [kg]		235	255	280	305	335
	Internal volume [dm3]		17,8	26,7	35,6	44,5	53,4
	L min - L max [mm]	1775 - 2335					
KT 12 80/90/100 **KTEC 12** 80/90/100	Coil rows	1	2	3	4	5	6
	Dry weight [kg]		470	515	560	610	670
	Internal volume [dm3]		35,6	53,4	71,3	89,1	106,9
	L min - L max [mm]	3200 - 3760					
KT 13 80/90/100 **KTEC 13** 80/90/100	Coil rows	1	2	3	4	5	6
	Dry weight [kg]		665	730	815	900	965
	Internal volume [dm3]		53,4	80,2	106,9	133,6	160,3
	L min - L max [mm]	4600 - 5160					
KT 14 80/90/100 **KTEC 14** 80/90/100	Coil rows	1	2	3	4	5	6
	Dry weight [kg]		860	945	1055	1170	1255
	Internal volume [dm3]		71,3	106,9	142,5	178,1	213,8
	L min - L max [mm]	6000 - 6560					
KT 15 80/90/100 **KTEC 15** 80/90/100	Coil rows	1	2	3	4	5	6
	Dry weight [kg]		1055	1155	1295	1435	1540
	Internal volume [dm3]		89,1	133,6	178,1	222,7	267,2
	L min - L max [mm]	7400 - 7960					
KT 16 80/90/100 **KTEC 16** 80/90/100	Coil rows	1	2	3	4	5	6
	Dry weight [kg]		1250	1395	1545	1690	1835
	Internal volume [dm3]		106,9	160,3	213,8	267,2	320,6
	L min - L max [mm]	8800 - 9360					
KT 17 80/90/100 **KTEC 17** 80/90/100	Coil rows	1	2	3	4	5	6
	Dry weight [kg]			1630	1800	1970	2140
	Internal volume [dm3]			187	249,4	311,7	374,1
	L min - L max [mm]	10200 - 10760					

TOWER KT-KTEC 1.80/90/10

Performances

Model AC/EC	Capacity	DbA	Energy rating
KT 11 80/90/100	50,2 – 136,1 (0 – 1000)	72 – 98 (0 – 100)	E D C B A A+ A++
KTEC 11 80/90/100	23 – 132,3 (0 – 1000)	53 – 95 (0 – 100)	E D C B A A+ A++
KT 12 80/90/100	100,3 – 272,2 (0 – 1000)	75 – 101 (0 – 100)	E D C B A A+ A++
KTEC 12 80/90/100	46,1 – 264,7 (0 – 1000)	56 – 98 (0 – 100)	E D C B A A+ A++
KT 13 80/90/100	150,5 – 408,3 (0 – 1000)	77 – 103 (0 – 100)	E D C B A A+ A++
KTEC 13 80/90/100	69,4 – 397,1 (0 – 1000)	58 – 100 (0 – 100)	E D C B A A+ A++
KT 14 80/90/100	203,5 – 534,6 (0 – 1000)	78 – 104 (0 – 100)	E D C B A A+ A++
KTEC 14 80/90/100	92,2 – 534 (0 – 1000)	59 – 101 (0 – 100)	E D C B A A+ A++
KT 15 80/90/100	248,1 – 675,6 (0 – 1000)	79 – 105 (0 – 100)	E D C B A A+ A++
KTEC 15 80/90/100	115,9 – 657,1 (0 – 1000)	60 – 102 (0 – 100)	E D C B A A+ A++
KT 16 80/90/100	301 – 816,6 (0 – 1000)	80 – 106 (0 – 100)	E D C B A A+ A++
KTEC 16 80/90/100	137 – 794,2 (0 – 1000)	61 – 103 (0 – 100)	E D C B A A+ A++
KT 17 80/90/100	401 – 957,5 (0 – 1000)	80 – 106 (0 – 100)	E D C B A A+ A++
KTEC 17 80/90/100	167,1 – 931,1 (0 – 1000)	61 – 104 (0 – 100)	E D C B A A+ A++

TOWER KT-KTEC 1.80/90/10

Table of codes

		EXCHANGER TYPE
K	K	Round shape 10 mm diam. copper tube
		DESIGN
T	T	V Shape “Tower”
		FAN TYPE / PERFORMANCE / CONFIGURATION
5C	5C	EC / High Power
	4C	EC / Standard
	3C	EC / Low
	4D	AC / Standard / Delta
	4Y	AC / Standard / Star
	3D	AC / Low / Delta
	3Y	AC / Low / Star
	2D	AC / Quiet / Delta
	2Y	AC / Quiet / Star
		ROWS OF FANS
1	1	1
		FANS PER ROW
7	1..7	1 / 2 / 3 / 4 / 5 / 6 / 7
		DIAMETER OF THE FANS
	80	800 mm
90	90	900 mm
	10	1000 mm
.		
		COIL ROWS
6	2..6	2 / 3 / 4 / 5 / 6
–		
		SPEED RATE (EC FANS ONLY)
100%	30%..100%	30% / 40% / 50% / 60% / 70% / 80% / 90% / 100%

Multiple choice One only choice

WALL

WALL KK-KKEC 1.80/90

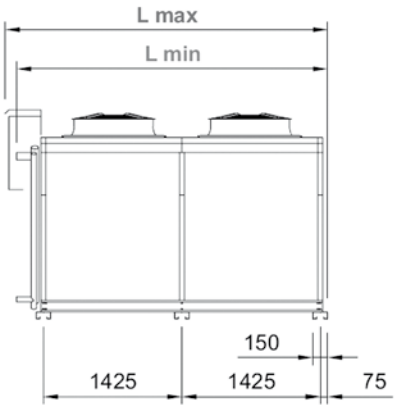
The new Wall model is the answer to the more and more particular demands from the market. A new product, to offer a solution to the problems of space and efficiency.

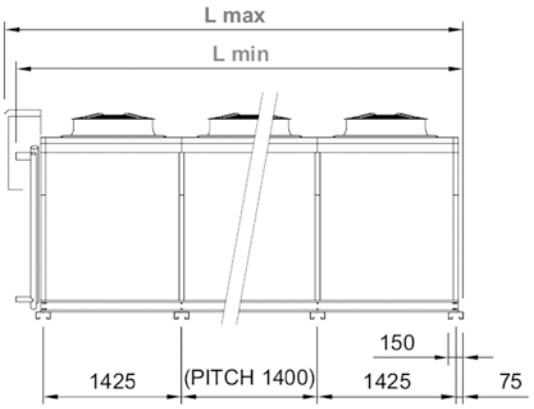
MAIN FEATURES

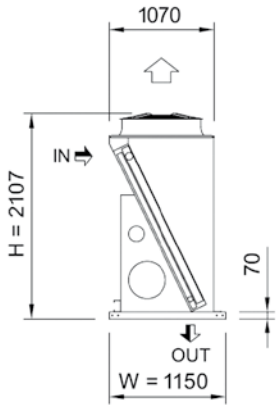
- Compact V shape.
- Coils manufactured with round -shaped pipes in copper.
- Fluids: R404A, R134a, R410A, R407C.
- Capacity: up to 825 kW.
- Classic AC or EC energy saving fans Ø 800/900 mm.
- Quiet and ultra-quiet versions.
- Option to install the Spray Adiabatic System (Hydrophilic fin block included).

WALL KK-KKEC 1.80/90

Technical data







KK 12 80/90 **KKEC 12** 80/90	Coil rows	1	2	3	4	5	6
	Dry weight [kg]		485	515	550	585	622,5
	Internal volume [dm3]		25,5	38,2	50,9	63,6	76,4
	L min - L max [mm]	3250 - 3315					
KK 13 80/90 **KKEC 13** 80/90	Coil rows	1	2	3	4	5	6
	Dry weight [kg]		695	740	797,5	855	902,5
	Internal volume [dm3]		38,2	57,3	76,4	95,5	114,5
	L min - L max [mm]	4600 - 4715					
KK 14 80/90 **KKEC 14** 80/90	Coil rows	1	2	3	4	5	6
	Dry weight [kg]		902,5	970	1040	1107,5	1175
	Internal volume [dm3]		50,9	76,4	101,8	127,3	152,7
	L min - L max [mm]	4650 - 4715					
KK 15 80/90 **KKEC 15** 80/90	Coil rows	1	2	3	4	5	6
	Dry weight [kg]		1110	1195	1280	1365	1447,5
	Internal volume [dm3]		63,6	95,5	127,3	159,1	190,9
	L min - L max [mm]	4650 - 4715					
KK 16 80/90 **KKEC 16** 80/90	Coil rows	1	2	3	4	5	6
	Dry weight [kg]		1317,5	1420	1522,5	1625	1727,5
	Internal volume [dm3]		76,4	114,5	152,7	190,9	229,1
	L min - L max [mm]	6050 - 6115					
KK 17 80/90 **KKEC 17** 80/90	Coil rows	1	2	3	4	5	6
	Dry weight [kg]			1657,5	1777,5	1895	2015
	Internal volume [dm3]			133,6	178,2	222,7	267,2
	L min - L max [mm]	6050 - 6115					

WALL KK-KKEC 1.80/90

Performances

Model AC/EC	Capacity	DbA	Energy rating
KK 12 80/90	89,6 — 233,3 (0 — 900)	76 — 101 (0 — 100)	E D C B A A+ A++
KKEC 12 80/90	42,4 — 229,4 (0 — 900)	56 — 94 (0 — 100)	E D C B A A+ A++
KK 13 80/90	134,4 — 349,9 (0 — 900)	77 — 102 (0 — 100)	E D C B A A+ A++
KKEC 13 80/90	63,6 — 344,1 (0 — 900)	57 — 96 (0 — 100)	E D C B A A+ A++
KK 14 80/90	173,9 — 457 (0 — 900)	79 — 104 (0 — 100)	E D C B A A+ A++
KKEC 14 80/90	84,7 — 449,4 (0 — 900)	59 — 97 (0 — 100)	E D C B A A+ A++
KK 15 80/90	221,3 — 578,4 (0 — 900)	80 — 105 (0 — 100)	E D C B A A+ A++
KKEC 15 80/90	106 — 568,8 (0 — 900)	60 — 98 (0 — 100)	E D C B A A+ A++
KK 16 80/90	268,8 — 699,8 (0 — 900)	80 — 105 (0 — 100)	E D C B A A+ A++
KKEC 16 80/90	126,9 — 688,2 (0 — 900)	60 — 99 (0 — 100)	E D C B A A+ A++
KK 17 80/90	363,2 — 821,2 (0 — 900)	81 — 106 (0 — 100)	E D C B A A+ A++
KKEC 17 80/90	148,2 — 807,5 (0 — 900)	61 — 100 (0 — 100)	E D C B A A+ A++

WALL KK-KKEC 1.80/90

Table of codes

		EXCHANGER TYPE
K	K	Round shape 10 mm diam. copper tube
		DESIGN
K	K	Wall
		FAN TYPE / PERFORMANCE / CONFIGURATION
5C	5C	EC / High Power
	4C	EC / Standard
	3C	EC / Low
	4D	AC / Standard / Delta
	4Y	AC / Standard / Star
	3D	AC / Low / Delta
	3Y	AC / Low / Star
		ROWS OF FANS
1	1	1
		FANS PER ROW
7	1..7	1 / 2 / 3 / 4 / 5 / 6 / 7
		DIAMETER OF THE FANS
80	80	800 mm
	90	900 mm
.		
		COIL ROWS
6	2..6	2 / 3 / 4 / 5 / 6
–		
		SPEED RATE (EC FANS ONLY)
100%	30%..100%	30% / 40% / 50% / 60% / 70% / 80% / 90% / 100%

Multiple choice One only choice

COMBO

COMBO KK-KKEC 2.80/90

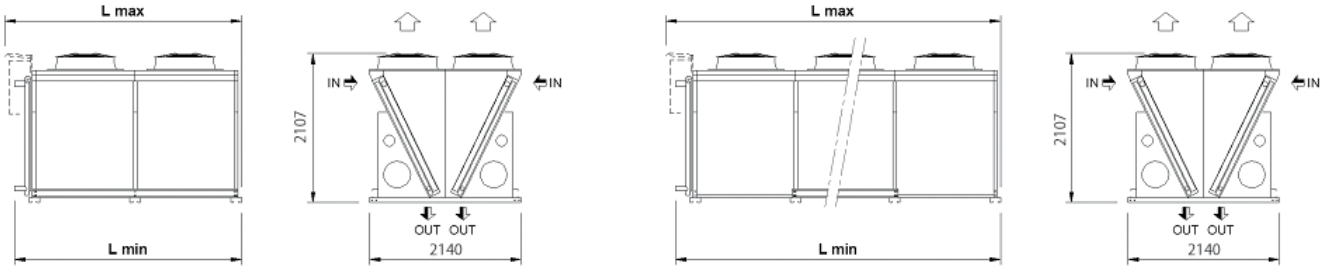
The new Combo model is the most powerful device transportable via container. Combo combines standards of power and transportability with excellent results.

MAIN FEATURES

- Compact V shape.
- Coils manufactured with round-shaped pipes in copper.
- Fluids: R404A, R134a, R410A, R407C.
- Capacity: up to 1650 kW.
- Classic AC or EC energy saving fans Ø 800/900 mm.
- Quiet and ultra-quiet versions.
- Option to install the Spray Adiabatic System (Hydrophilic fin block included).

COMBO KK-KKEC 2.80/90

Technical data



KK 22 80/90 **KKEC 22** 80/90	Coil rows	1	2	3	4	5	6
	Dry weight [kg]		970	1030	1100	1170	1245
	Internal volume [dm3]		50,9	76,3	101,8	127,2	152,7
	L min - L max [mm]	3200 - 3315					
KK 23 80/90 **KKEC 23** 80/90	Coil rows	1	2	3	4	5	6
	Dry weight [kg]		1390	1480	1595	1710	1805
	Internal volume [dm3]		76,3	114,5	152,7	190,9	229
	L min - L max [mm]	4600 - 4715					
KK 24 80/90 **KKEC 24** 80/90	Coil rows	1	2	3	4	5	6
	Dry weight [kg]		1805	1940	2080	2215	2350
	Internal volume [dm3]		101,8	152,7	203,6	254,5	305,4
	L min - L max [mm]	6000 - 6115					
KK 25 80/90 **KKEC 25** 80/90	Coil rows	1	2	3	4	5	6
	Dry weight [kg]		2220	2390	2560	2730	2895
	Internal volume [dm3]		127,2	190,9	254,5	318,1	381,7
	L min - L max [mm]	7400 - 7515					
KK 26 80/90 **KKEC 26** 80/90	Coil rows	1	2	3	4	5	6
	Dry weight [kg]		2635	2840	3045	3250	3455
	Internal volume [dm3]		152,7	229	305,4	381,7	458,1
	L min - L max [mm]	8800 - 8915					
KK 27 80/90 **KKEC 27** 80/90	Coil rows	1	2	3	4	5	6
	Dry weight [kg]			3315	3555	3790	4030
	Internal volume [dm3]			267,2	356,3	445,3	534,4
	L min - L max [mm]	10200 - 10315					

COMBO KK-KKEC 2.80/90

Performances

Model AC/EC	Capacity	DbA	Energy rating
KK 22 80/90	179,2 — 466,5 (0 — 1800)	79 — 104 (0 — 100)	E D C B A A+ A++
KKEC 22 80/90	84,7 — 458,7 (0 — 1800)	59 — 97 (0 — 100)	E D C B A A+ A++
KK 23 80/90	268,8 — 699,8 (0 — 1800)	80 — 105 (0 — 100)	E D C B A A+ A++
KKEC 23 80/90	127,1 — 688,1 (0 — 1800)	60 — 99 (0 — 100)	E D C B A A+ A++
KK 24 80/90	347,8 — 913,9 (0 — 1800)	82 — 107 (0 — 100)	E D C B A A+ A++
KKEC 24 80/90	169,4 — 898,8 (0 — 1800)	62 — 100 (0 — 100)	E D C B A A+ A++
KK 25 80/90	442,6 — 1156,7 (0 — 1800)	83 — 108 (0 — 100)	E D C B A A+ A++
KKEC 25 80/90	211,9 — 1137,5 (0 — 1800)	63 — 101 (0 — 100)	E D C B A A+ A++
KK 26 80/90	537,6 — 1399,6 (0 — 1800)	83 — 108 (0 — 100)	E D C B A A+ A++
KKEC 26 80/90	253,8 — 1376,3 (0 — 1800)	63 — 102 (0 — 100)	E D C B A A+ A++
KK 27 80/90	726,3 — 1642,3 (0 — 1800)	84 — 109 (0 — 100)	E D C B A A+ A++
KKEC 27 80/90	296,3 — 1615 (0 — 1800)	64 — 103 (0 — 100)	E D C B A A+ A++

COMBO KK-KKEC 2.80/90

Table of codes

		EXCHANGER TYPE
K	K	Round shape 10 mm diam. copper tube
		DESIGN
K	K	V Shape “Combo”
		FAN TYPE / PERFORMANCE / CONFIGURATION
5C	5C	EC / High Power
	4C	EC / Standard
	3C	EC / Low
	4D	AC / Standard / Delta
	4Y	AC / Standard / Star
	3D	AC / Low / Delta
	3Y	AC / Low / Star
	2D	AC / Quiet / Delta
	2Y	AC / Quiet / Star
		ROWS OF FANS
2	2	2
		FANS PER ROW
7	1..7	1 / 2 / 3 / 4 / 5 / 6 / 7
		DIAMETER OF THE FANS
	80	800 mm
90	90	900 mm
.		**COIL ROWS**
6	2..6	2 / 3 / 4 / 5 / 6
–		**SPEED RATE (EC FANS ONLY)**
100%	30%..100%	30% / 40% / 50% / 60% / 70% / 80% / 90% / 100%

Multiple choice One only choice

CENTRIFUGAL CH 1.50

Strong, compact and stackable. Designed and produced according to modular logic. Built with double wall panels in galvanized steel, the interspaces are filled with rock wool so as to enhance noise reduction and heat transmission. Powder painted (standard colour: RAL 9002). The coil is built using round copper pipes with a nominal diameter of 12 mm arranged in a staggered pitch and high efficiency aluminium fins separated by 2.1 mm. Tiles are in warm galvanized steel while sides are in aluminium to prevent pipe damage due to thermal expansion. Collectors are in copper and have quick connections with grooved holes. .Dry air tests comply with the provisions of the PED Directive 97/23/EC

RADIAL FAN MOTORS

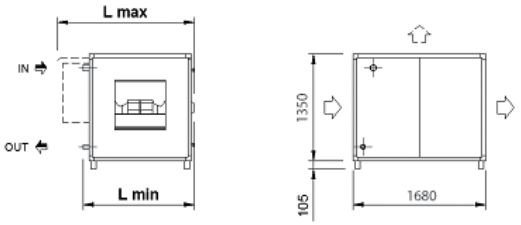
Power supply: 3-phase 400V ±10% / 50Hz; 2 speeds: high (delta connection) or low (star connection); Residual static pressure 200 Pa. IP44/54 closed type, external rotor motor with anti-humidity protective coating and thermal contacts housed in the windings. IP44/54 connector block. 100% adjustable voltage. Rectangular, single and double casing pipes in galvanized steel. Casing in galvanized steel sheet metal, single and double spiral suction. Fan with backward curved blades in marine aluminium fitted to the rotor of an electric motor, balanced on two levels in compliance with quality grade G2,5 DIN / ISO 1940. With maintenance-free ball bearings, it is closed on both sides and permanently sealed. Power and sound pressure reference levels (free field conditions) for each fan are declared by the fan manufacturer according to EN13487 standards. Sound levels are calculated in - and thus refer to - free field conditions on a reflective plane with reference areas in the shape of a parallelepiped, in conformity with standard EN 13487.

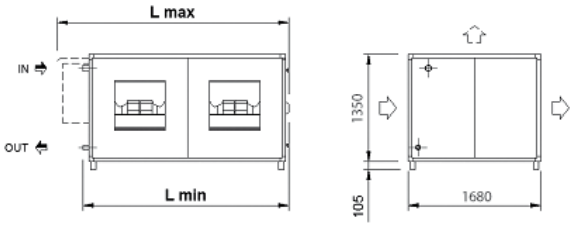
MAIN FEATURES

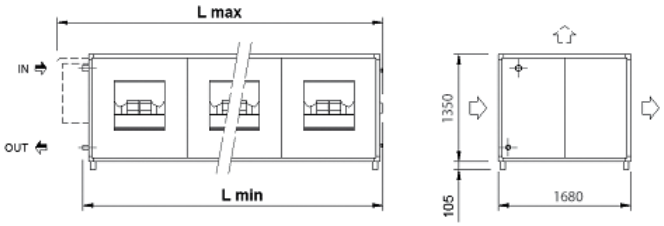
- High efficiency thermal exchange coil.
- Radial fan motor with extremely high static pressure.
- Reduced noise emissions ensured by double, sound-insulating, fire-retardant panels built in galvanized steel.
- Capacity: from 40 to 285 kW.

CENTRIFUGAL CH 1.50

Technical data



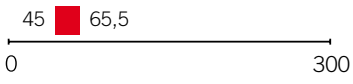
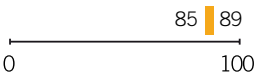
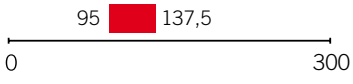
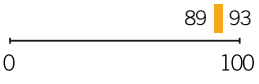
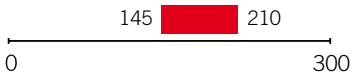
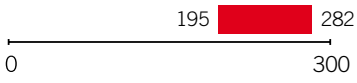




CH 11 50	Coil rows	2	3	4	5	6
	Dry weight [kg]			435		455
	Internal volume [dm3]			14		20
	L min - L max [mm]	1400 - 1725				
CH 12 50	Coil rows	2	3	4	5	6
	Dry weight [kg]			740		785
	Internal volume [dm3]			29		44
	L min - L max [mm]	2600 - 2925				
CH 13 50	Coil rows	2	3	4	5	6
	Dry weight [kg]			1080		1145
	Internal volume [dm3]			45		67
	L min - L max [mm]	3800 - 4125				
CH 14 50	Coil rows	2	3	4	5	6
	Dry weight [kg]			1475		1570
	Internal volume [dm3]			60		91
	L min - L max [mm]	5000 - 5325				

CENTRIFUGAL CH 1.50

Performances

Model AC/EC	Capacity	DbA	Energy rating
CH 11 50			
CH 12 50			
CH 13 50			
CH 14 50			

CENTRIFUGAL CH 1.50

Table of codes

C	C	**EXCHANGER TYPE** Round shape 12 mm diam. copper tube
H	H	**DESIGN** Horizontal Air Flow
RD	RD	**FAN TYPE / PERFORMANCE / CONFIGURATION** AC / Radial / Delta
	RY	AC / Radial / Star
1	1	**ROWS OF FANS** 1
4	1..4	**FANS PER ROW** 1 / 2 / 3 / 4
50	50	**DIAMETER OF THE FANS** 500 mm
.		
4	4.6	**COIL ROWS** 4 / 6

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