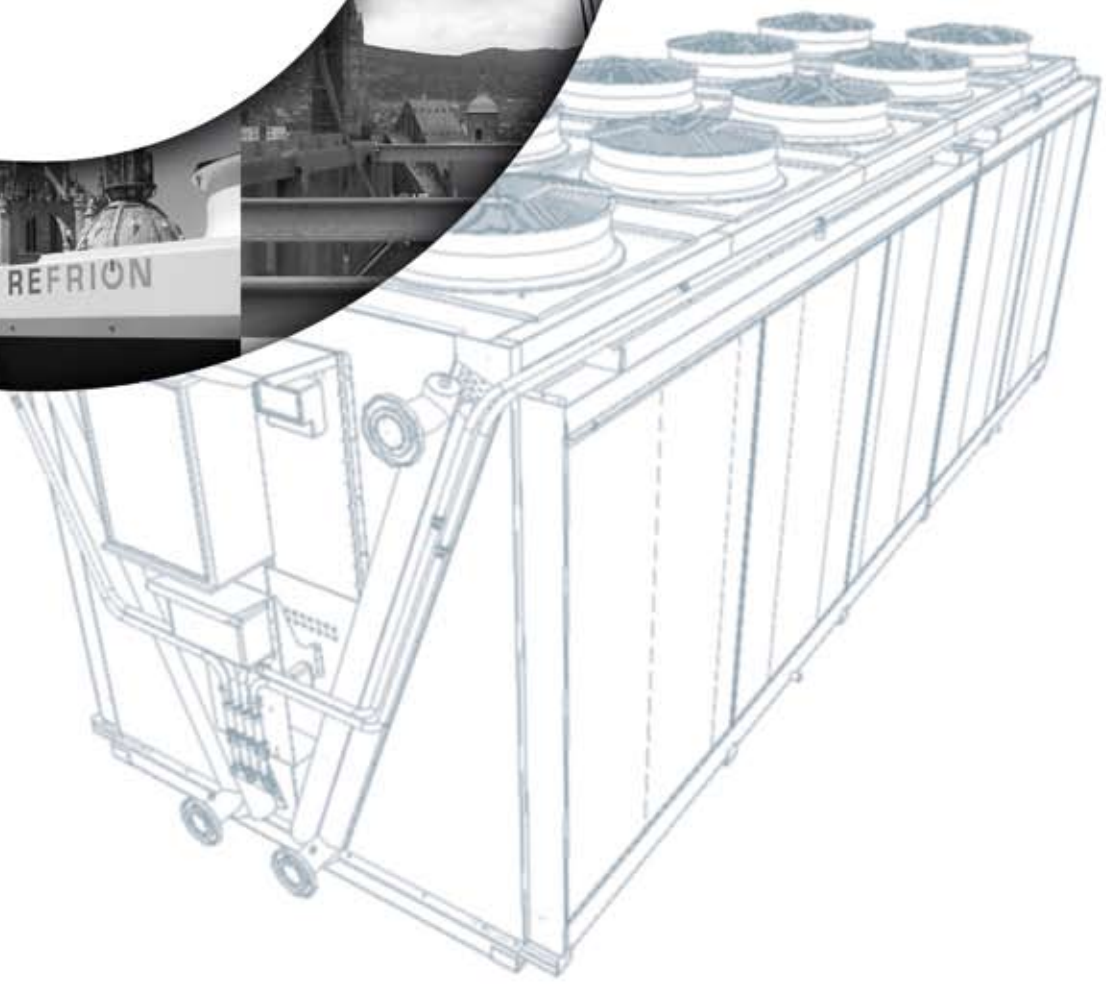
DRY COOLER



REFRION
a better innovation

DRY COOLER

Dry Cooler

Dry coolers are commonly used in the refrigeration and cooling sectors and in all industrial processes that require the cooling of water or blends of different fluids.

The casing is built using modular components in warm galvanized steel, powder painted (standard colour: RAL 9002) and corrosion resistant. Elbows 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 ensured. 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 MOUNTED IN DRY COOLERS:

- 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 levels and power consumption.

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

REFRION DRY COOLER CAPACITY IS TESTED AT:

- Room temperature (TE) = 25°C.
- Inlet fluid temperature (TWE) = 40°C.
- Outlet fluid temperature (TWU) = 35°C.
- Refrigerant fluid: water.

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 1048:2000 (Air Cooled Liquid Coolers Performances).
- EN ISO 13857:2008 (Fan Guards).

COILS

- Copper OVAL-SHAPED pipes with a nominal diameter of 12 mm are arranged in a staggered pitch and high efficiency aluminium fins are separated by 2.1 mm. Tiles are in warm galvanized steel while sides are in aluminium to prevent pipe damage due to thermal expansion. Copper collectors are equipped with floating stainless steel flanges. Dry air tests comply with the provisions of the PED Directive 97/23/EC.

- ROUND copper pipes with a nominal diameter of 7mm, 10mm, 12mm and 5/8" are arranged in a staggered pitch and high efficiency aluminium fins are separated by 2.1 mm. Tiles are in warm galvanized steel while sides are in aluminium to prevent pipe damage due to thermal expansion. Copper collectors are equipped with floating stainless steel flanges. Dry air tests conform with the provisions of the PED Directive 97/23/EC.

Energy consumption

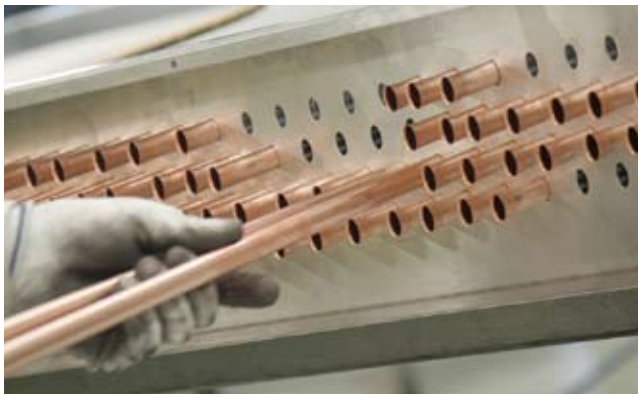
MODULAR

Modular EM-EMEC 2.80

Modular heat exchangers are REFRION's response to the needs of a market that is demanding ever-shorter production and delivery times without cost increases.
As compared with devices of equal capacity and efficiency, the new range of modular Refrion devices is characterized by smaller sizes and lighter weights. These innovations allow for not only saving space and thus reducing installation costs, but they also decrease transport costs.
Standardization of components speeds up the production phase, which is performed with materials already present in the warehouse, and shortens delivery times.

BENEFITS OF REFRION MODULAR DRY COOLERS

- Use Plasticoil heat exchangers with recyclable plastic caps.
- Maximum efficiency in heat exchange.
- Reduced weight.
- Reduced maintenance costs.
- Exclusive use of recyclable materials.
- Thermal capacity range (from 1 to 6 modules): from 20 to 1080 kW.



PLASTICOIL FINNED EXCHANGER

The coil is built using ALUMINIUM OVAL-SHAPED PIPES with a nominal diameter of 12 mm arranged in a staggered pitch and high efficiency aluminium fins separated by 2.1 mm.

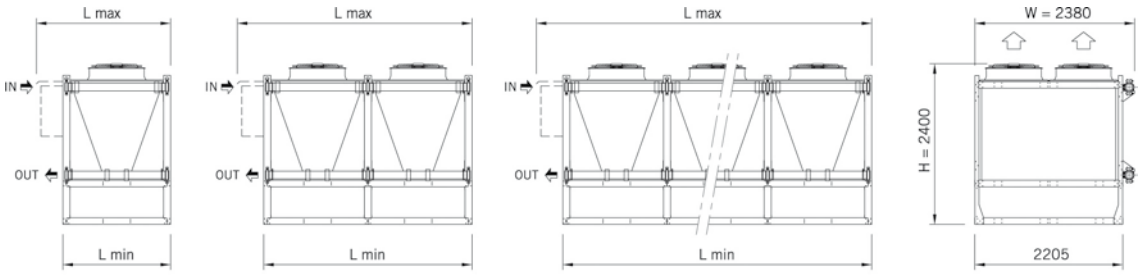
The manifolds are built with CAPS IN RECYCLABLE PLASTIC mechanically attached to sides. Connections are quick with grooved holes. Dry air tests comply with the provisions of the PED Directive 97/23/EC.

Available on demand.

MODULAR EM-EMEC 2.80

Technical data

Modular EM



EM 21 80 EMEC 21 80	Coil rows	2	3	4	5	6
	Dry weight [kg]		570	630		
	Internal volume [dm3]		50	67		
	L min - L max [mm]	1605 - 2000				
EM 22 80 EMEC 22 80	Coil rows	2	3	4	5	6
	Dry weight [kg]		1140	1260		
	Internal volume [dm3]		100	134		
	L min - L max [mm]	3105 - 3500				
EM 23 80 EMEC 23 80	Coil rows	2	3	4	5	6
	Dry weight [kg]		1710	1890		
	Internal volume [dm3]		151	201		
	L min - L max [mm]	4605 - 5000				
EM 24 80 EMEC 24 80	Coil rows	2	3	4	5	6
	Dry weight [kg]		2280	2520		
	Internal volume [dm3]		201	268		
	L min - L max [mm]	6105 - 6500				
EM 25 80 EMEC 25 80	Coil rows	2	3	4	5	6
	Dry weight [kg]		2850	3150		
	Internal volume [dm3]		251	334		
	L min - L max [mm]	7605 - 8000				
EM 26 80 EMEC 26 80	Coil rows	2	3	4	5	6
	Dry weight [kg]		3420	3780		
	Internal volume [dm3]		301	401		
	L min - L max [mm]	9105 - 9500				

MODULAR EM-EMEC 2.80

Performances

Model AC/EC	Capacity	DbA	Energy rating
EM 21 80	100 168 (0 – 1800)	76 90 (0 – 100)	E D C B A A+ A++
EMEC 21 80	46,5 180 (0 – 1800)	58 91 (0 – 100)	E D C B A A+ A++
EM 22 80	200 336 (0 – 1800)	79 93 (0 – 100)	E D C B A A+ A++
EMEC 22 80	93 360 (0 – 1800)	62 95 (0 – 100)	E D C B A A+ A++
EM 23 80	300 504 (0 – 1800)	81 95 (0 – 100)	E D C B A A+ A++
EMEC 23 80	139,5 540 (0 – 1800)	63 96 (0 – 100)	E D C B A A+ A++
EM 24 80	400 672 (0 – 1800)	82 96 (0 – 100)	E D C B A A+ A++
EMEC 24 80	186 720 (0 – 1800)	68 98 (0 – 100)	E D C B A A+ A++
EM 25 80	500 840 (0 – 1800)	83 97 (0 – 100)	E D C B A A+ A++
EMEC 25 80	232,5 900 (0 – 1800)	65 98 (0 – 100)	E D C B A A+ A++
EM 26 80	599 1008 (0 – 1800)	84 98 (0 – 100)	E D C B A A+ A++
EMEC 26 80	279 1080 (0 – 1800)	66 99 (0 – 100)	E D C B A A+ A++

MODULAR EM-EMEC 2.80

Table of codes

E	E	**EXCHANGER TYPE** Oval shape copper tube
M	M	**DESIGN** V Shape “Modular”
5C	5C	**FAN TYPE / PERFORMANCE / CONFIGURATION** 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
2	2	**ROWS OF FANS** 2
6	1..6	**FANS PER ROW** 1 / 2 / 3 / 4 / 5 / 6
80	80	**DIAMETER OF THE FANS** 800 mm
.		
3	3.4	**COIL ROWS** 3 / 4
/		
2	2..14	**NO. OF CIRCUITS** 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 11 / 12 / 13 / 14
–		
100%	30%..100%	**SPEED RATE (EC FANS ONLY)** 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's entrance on the dry cooler 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.

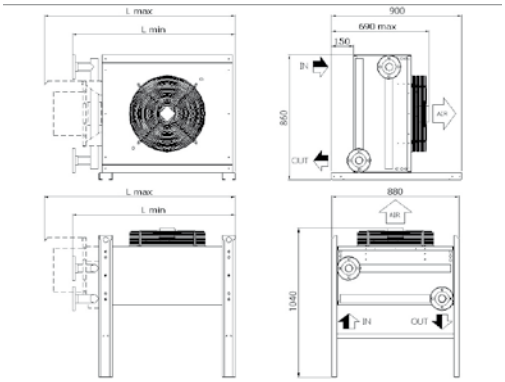
The casing is built using pre-painted aluminium sheet metal (colour: RAL 9002). Mounting elements (screws, threaded inserts, rivets, washers and nuts) are all in stainless steel.
Manufacturing methods allow for solutions that focus on saving on transport costs.

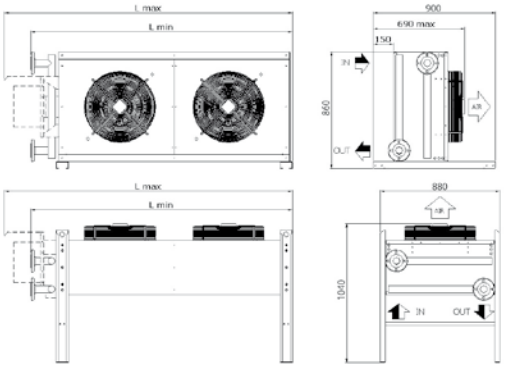
MAIN FEATURES

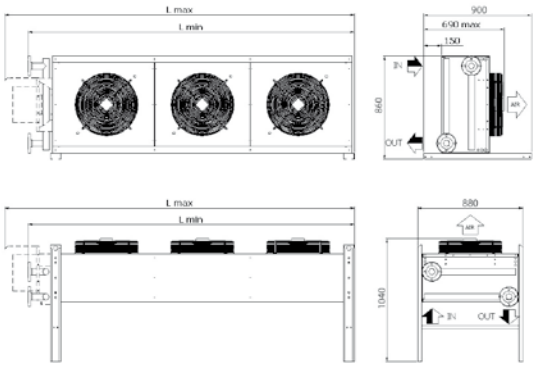
- Coils manufactured with round or oval-shaped pipes in copper.
- Coils manufactured with circuits completely drainable independently of the choice of the air flow.
- Fluids: Water - Water/Ethylene Glycol - Water/ Propylene Glycol
- Capacity: up to 1282 kW.
- Classic AC fans with diameters of Ø 500/630/800/900/1000mm or EC energy saving fans with diameters of Ø 800/900/1000mm.
- Quiet and ultra-quiet versions.
- Option to choose the airflow of the unit also once on site.
- Option to install the Spray Adiabatic System (Hydrophilic fin block included).

HORIZONTAL/VERTICAL AIR FLOW TA-TAM 1.50 VA-VAM 1.50

Technical data







TA 11 50 **TAM 11** 50	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**77**	**80**	**84**	**88**	**91**
	Internal volume [dm3]	**1,9**	**2,9**	**3,9**	**4,9**	**5,8**
	Lmin - Lmax [mm]	**1125 - 1320**				
TA 12 50 **TAM 12** 50	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**123**	**129**	**136**	**143**	**150**
	Internal volume [dm3]	**3,9**	**5,8**	**7,8**	**9,7**	**11,7**
	Lmin - Lmax [mm]	**1925 - 2120**				
VA 13 50 **VAM 13** 50	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**174**	**183**	**198**	**209**	**222**
	Internal volume [dm3]	**9,5**	**14,2**	**18,9**	**23,6**	**28,4**
	Lmin - Lmax [mm]	**2725 - 2920**				

HORIZONTAL/VERTICAL AIR FLOW TA-TAM 1.50 VA-VAM 1.50

Performances

Model AC/EC	Capacity	DbA	Energy rating
TA 11 50	7,9 25,6 (0 – 180)	62 83 (0 – 100)	
TAM 11 50	10,8 22,8 (0 – 180)	71 78 (0 – 100)	
TA 12 50	15,6 50,6 (0 – 180)	65 86 (0 – 100)	
TAM 12 50	21,7 45,2 (0 – 180)	74 81 (0 – 100)	
VA 13 50	26,4 77,9 (0 – 180)	67 88 (0 – 100)	
VAM 13 50	37,4 68,3 (0 – 180)	76 83 (0 – 100)	

HORIZONTAL/VERTICAL AIR FLOW TA-TAM 1.50 VA-VAM 1.50

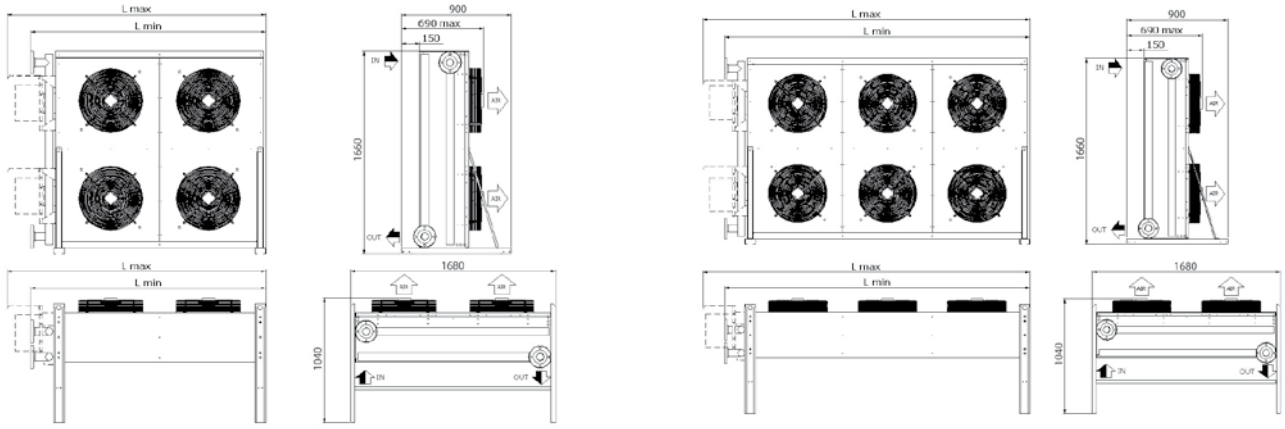
Table of codes

		EXCHANGER TYPE
V	T	Round shape 7 mm diam. copper tube
	V	Round shape 10 mm diam. copper tube
		DESIGN
A	A	H-FLOW / V-FLOW Standard Module
		FAN TYPE / PERFORMANCE / CONFIGURATION
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
1	1	1
		FANS PER ROW
3	1..3	1 / 2 / 3
		DIAMETER OF THE FANS
50	50	500 mm
.		
		COIL ROWS
4	2..6	2 / 3 / 4 / 5 / 6
/		
		NO. OF CIRCUITS
2	2..14	2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 11 / 12 / 13 / 14

Multiple choice One only choice

HORIZONTAL/VERTICAL AIR FLOW VA-VAM 2.50

Technical data

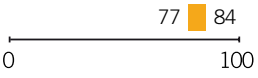
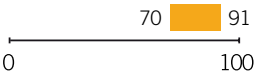
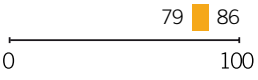


VA 22 50 **VAM 22** 50	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**216**	**232**	**249**	**266**	**281**
	Internal volume [dm3]	**12,8**	**19,3**	**25,7**	**32,1**	**38,5**
	Lmin - Lmax [mm]	**1925 - 2120**				

VA 23 50 **VAM 23** 50	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**301**	**325**	**350**	**375**	**401**
	Internal volume [dm3]	**19,3**	**28,9**	**38,5**	**48,2**	**57,8**
	Lmin - Lmax [mm]	**2725 - 2920**				

HORIZONTAL/VERTICAL AIR FLOW VA-VAM 2.50

Performances

Model AC/EC	Capacity	DbA	Energy rating
VA 22 50			
VAM 22 50			
VA 23 50			
VAM 23 50			

HORIZONTAL/VERTICAL AIR FLOW VA-VAM 2.50

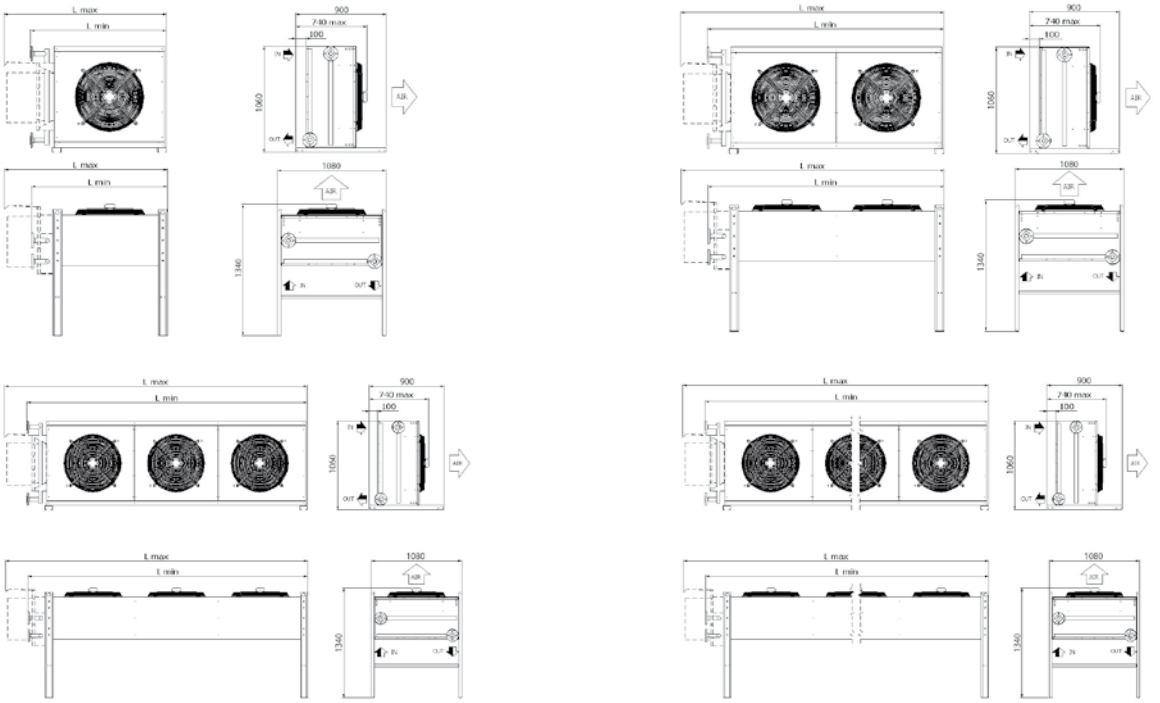
Table of codes

		EXCHANGER TYPE
V	V	Round shape 10 mm diam. copper tube
		Design
A	A	H-FLOW / V-FLOW Standard Module
		FAN TYPE / PERFORMANCE / CONFIGURATION
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	2	2
		FANS PER ROW
3	2.3	2 / 3
		DIAMETER OF THE FANS
50	50	500 mm
.		
		COIL ROWS
4	2..6	2 / 3 / 4 / 5 / 6
/		
		NO. OF CIRCUITS
2	2..14	2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 11 / 12 / 13 / 14

Multiple choice One only choice

HORIZONTAL/VERTICAL AIR FLOW VA-VAM 1.63 EA-EAM 1.63

Technical data



VA 11 63 **VAM 11** 63	Coil rows	2	3	4	5	6
	Dry weight [kg]	109	116	123	128	135
	Internal volume [dm3]	5	7,5	10	12,5	15
	L min - L max [mm]	1395 - 1620				
VA 12 63 **VAM 12** 63	Coil rows	2	3	4	5	6
	Dry weight [kg]	185	198	213	225	237
	Internal volume [dm3]	10	15	20	25	30
	L min - L max [mm]	2395 - 2620				
EA 13 63 **EAM 13** 63	Coil rows	2	3	4	5	6
	Dry weight [kg]	267	292	309	333	355
	Internal volume [dm3]	16,8	25,2	33,6	42	50,4
	L min - L max [mm]	3395 - 3620				
EA 14 63 **EAM 14** 63	Coil rows	2	3	4	5	6
	Dry weight [kg]	352	384	417	445	468
	Internal volume [dm3]	22,4	33,6	44,8	56	67,2
	L min - L max [mm]	4395 - 4620				
EA 15 63 **EAM 15** 63	Coil rows	2	3	4	5	6
	Dry weight [kg]	427	465	505	540	575
	Internal volume [dm3]	28	42	56	70	84,1
	L min - L max [mm]	5395 - 5620				

HORIZONTAL/VERTICAL AIR FLOW VA-VAM 1.63 EA-EAM 1.63

Performances

Model AC/EC	Capacity	DbA	Energy rating
VA 11 63	9,9 — 33,6 (0 — 180)	57 — 76 (0 — 100)	
VAM 11 63	18 — 32,9 (0 — 180)	71 — 76 (0 — 100)	
VA 12 63	20,5 — 66,9 (0 — 180)	60 — 79 (0 — 100)	
VAM 12 63	36 — 65,4 (0 — 180)	74 — 79 (0 — 100)	
EA 13 63	33 — 103,6 (0 — 180)	61 — 80 (0 — 100)	
EAM 13 63	54,7 — 100,5 (0 — 180)	75 — 80 (0 — 100)	
EA 14 63	44,4 — 139,3 (0 — 180)	63 — 82 (0 — 100)	
EAM 14 63	71,2 — 135,2 (0 — 180)	77 — 82 (0 — 100)	
EA 15 63	54,5 — 171,4 (0 — 180)	64 — 83 (0 — 100)	
EAM 15 63	90,3 — 166,3 (0 — 180)	78 — 83 (0 — 100)	

HORIZONTAL/VERTICAL AIR FLOW VA-VAM 1.63 EA-EAM 1.63

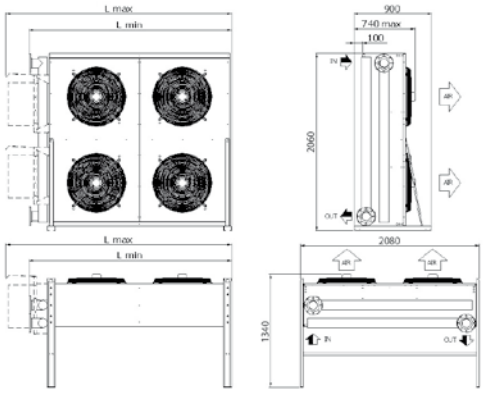
Table of codes

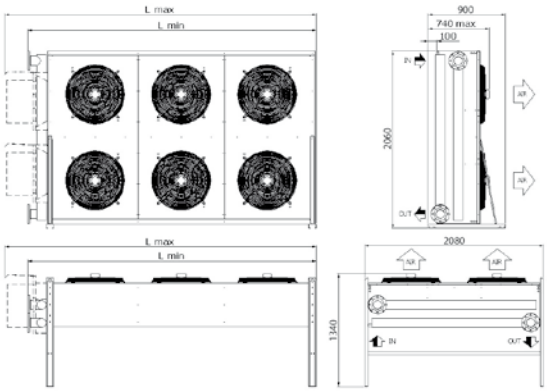
		EXCHANGER TYPE
E	E	Oval shape copper tube
	V	Round shape 10 mm diam. copper tube
		DESIGN
A	A	H-FLOW / V-FLOW Standard Module
		FAN TYPE / PERFORMANCE / CONFIGURATION
4D	4D	AC / Standard / Delta
	4Y	AC / Standard / Star
	3D	AC / Low / Delta
	3Y	AC / Low / Star
	2D	AC / Quiet / Delta
	2Y	AC / Quiet / Star
	4M	Single-Phase / Standard
	3M	Single-Phase / Low
		ROWS OF FANS
1	1	1
		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
/		
		NO. OF CIRCUITS
2	2..14	2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 11 / 12 / 13 / 14

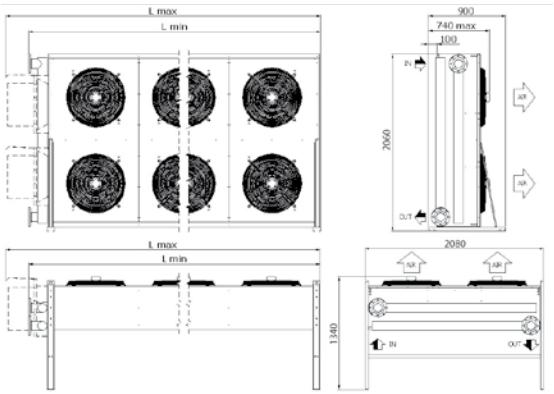
Multiple choice One only choice

HORIZONTAL/VERTICAL AIR FLOW EA-EAM 2.63

Technical data







EA 22 63 **EAM 22** 63	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**335**	**369**	**398**	**430**	**460**
	Internal volume [dm3]	**22,8**	**34,1**	**45,5**	**56,9**	**68,3**
	L min - L max [mm]	**2395 - 2620**				
EA 23 63 **EAM 23** 63	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**482**	**526**	**566**	**605**	**648**
	Internal volume [dm3]	**34,1**	**51,2**	**68,3**	**85,4**	**102,4**
	L min - L max [mm]	**3395 - 3620**				
EA 24 63 **EAM 24** 63	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**631**	**688**	**758**	**812**	**851**
	Internal volume [dm3]	**45,5**	**68,3**	**91,1**	**113,8**	**136,6**
	L min - L max [mm]	**4395 - 4620**				
EA 25 63 **EAM 25** 63	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**764**	**835**	**919**	**986**	**1057**
	Internal volume [dm3]	**56,9**	**85,4**	**113,8**	**142,3**	**170,7**
	L min - L max [mm]	**5395 - 5620**				

HORIZONTAL/VERTICAL AIR FLOW EA-EAM 2.63

Performances

Model AC/EC	Capacity	DbA	Energy rating
EA 22 63	44,4 — 139,1 (0 — 350)	62 — 81 (0 — 100)	E D C B A A+ A++
EAM 22 63	72,9 — 135,7 (0 — 350)	76 — 81 (0 — 100)	E D C B A A+ A++
EA 23 63	65,2 — 205 (0 — 350)	64 — 83 (0 — 100)	E D C B A A+ A++
EAM 23 63	108,5 — 199,9 (0 — 350)	78 — 83 (0 — 100)	E D C B A A+ A++
EA 24 63	88,2 — 276,6 (0 — 350)	65 — 84 (0 — 100)	E D C B A A+ A++
EAM 24 63	144 — 269,8 (0 — 350)	79 — 84 (0 — 100)	E D C B A A+ A++
EA 25 63	109,6 — 343,8 (0 — 350)	66 — 85 (0 — 100)	E D C B A A+ A++
EAM 25 63	182,6 — 335,3 (0 — 350)	80 — 85 (0 — 100)	E D C B A A+ A++

HORIZONTAL/VERTICAL AIR FLOW EA-EAM 2.63

Table of codes

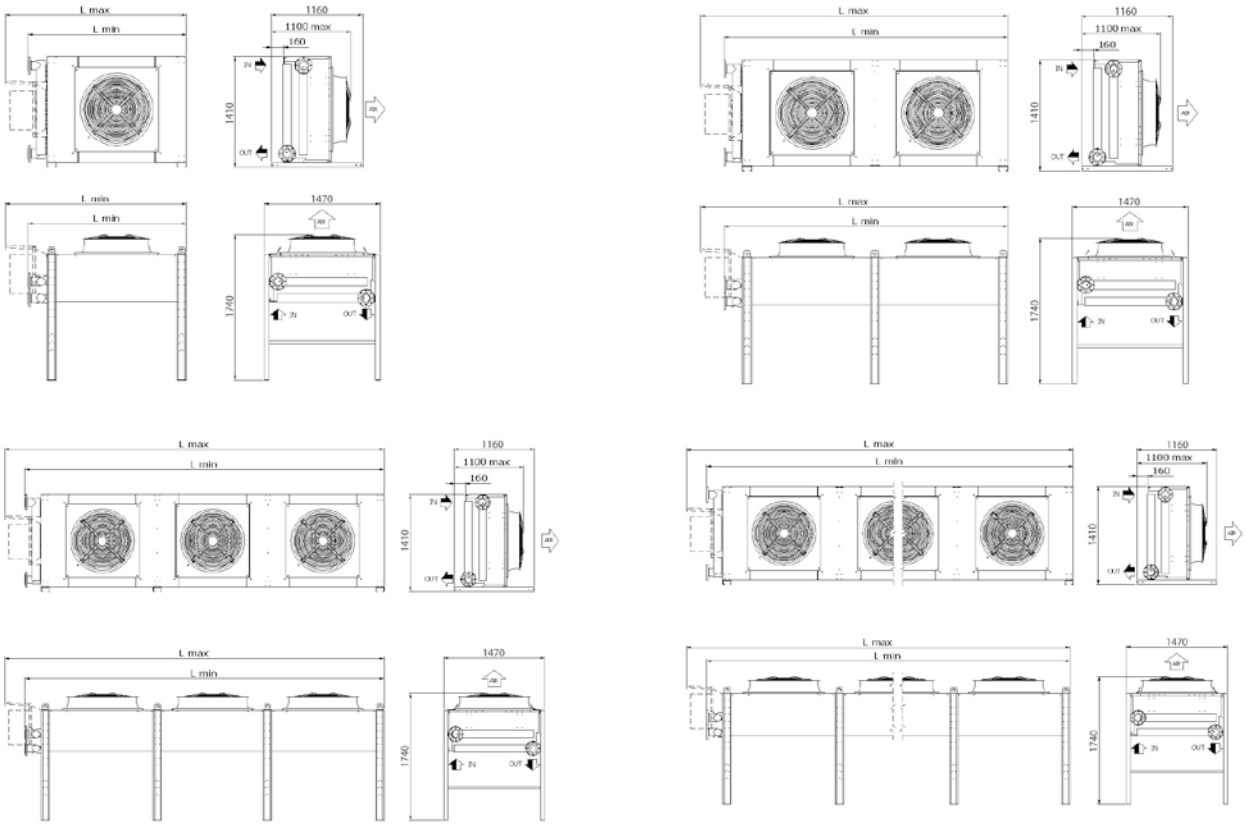
		EXCHANGER TYPE
E	E	Oval shape copper tube
		DESIGN
A	A	H-FLOW / V-FLOW Standard Module
		FAN TYPE / PERFORMANCE / CONFIGURATION
4D	4D	AC / Standard / Delta
	4Y	AC / Standard / Star
	3D	AC / Low / Delta
	3Y	AC / Low / Star
	2D	AC / Quiet / Delta
	2Y	AC / Quiet / Star
	4M	Single-Phase / Standard
	3M	Single-Phase / Low
		ROWS OF FANS
2	2	2
		FANS PER ROW
5	2..5	2 / 3 / 4 / 5
		DIAMETER OF THE FANS
63	63	630 mm
.		
		COIL ROWS
6	2..6	2 / 3 / 4 / 5 / 6
/		
		NO. OF CIRCUITS
2	2..14	2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 11 / 12 / 13 / 14

Multiple choice One only choice

HORIZONTAL/VERTICAL AIR FLOW

VA-VAEC 1.80/90/10 EA-EAEC 1.80/90/10 UA-UAEC 1.80/90/10

Technical data



VA 11 80/90/10 **VAEC 11** 80/90/10	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**283**	**298**	**309**	**322**	**335**
	Internal volume [dm3]	**9,7**	**14,5**	**19,4**	**24,2**	**29,1**
	L min - L max [mm]	**2045 - 2300**				
UA 11 80/90/100 **UAEC 11** 80/90/10	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**293**	**314**	**332**	**351**	**368**
	Internal volume [dm3]	**15,4**	**23,1**	**30,8**	**38,5**	**46,2**
	L min - L max [mm]	**2045 - 2300**				

HORIZONTAL/VERTICAL AIR FLOW

VA-VAEC 1.80/90/10 EA-EAEC 1.80/90/10 UA-UAEC 1.80/90/10

Technical data

EA 12 80/90/10 **EAEC 12** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	473	688	535	555	584
	Internal volume [dm3]	21,9	32,8	43,7	54,6	65,6
	L min - L max [mm]	3645 - 3900				
UA 12 80/90/10 **UAEC 12** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	485	520	560	594	633
	Internal volume [dm3]	30,8	46,2	61,6	76,9	92,3
	L min - L max [mm]	3645 - 3900				
EA 13 80/90/10 **EAEC 13** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	694	740	782	824	872
	Internal volume [dm3]	32,8	49,2	65,6	82	98,3
	L min - L max [mm]	5245 - 5500				
UA 13 80/90/10 **UAEC 13** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	719	777	832	883	936
	Internal volume [dm3]	46,2	69,3	92,3	115,4	138,5
	L min - L max [mm]	5245 - 5500				
EA 14 80/90/10 **EAEC 14** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	877	937	993	1047	1109
	Internal volume [dm3]	43,7	65,6	87,4	109,3	131,1
	L min - L max [mm]	6845 - 7100				
UA 14 80/90/10 **UAEC 14** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	911	986	1059	1137	1210
	Internal volume [dm3]	61,6	92,3	123,1	153,9	184,7
	L min - L max [mm]	6845 - 7100				
EA 15 80/90/10 **EAEC 15** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	1088	1161	1231	1299	1374
	Internal volume [dm3]	54,6	82	109,3	136,6	163,9
	L min - L max [mm]	8445 - 8700				
UA 15 80/90/10 **UAEC 15** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	1131	1223	1314	1410	1501
	Internal volume [dm3]	76,9	115,4	153,9	192,4	130,8
	L min - L max [mm]	8445 - 8700				

HORIZONTAL/VERTICAL AIR FLOW

VA-VAEC 1.80/90/10 EA-EAEC 1.80/90/10 UA-UAEC 1.80/90/10

Performances

Model AC/EC	Capacity	DbA	Energy rating
VA 11 80/90/10	31,4 92,1 (0 – 480)	69 95 (0 – 100)	E D C B A A+ A++
VAEC 11 80/90/10	17,1 87,9 (0 – 480)	50 92 (0 – 100)	E D C B A A+ A++
UA 11 80/90/10	29,4 87,4 (0 – 480)	69 95 (0 – 100)	E D C B A A+ A++
UAEC 11 80/90/10	16,5 81,7 (0 – 480)	50 92 (0 – 100)	E D C B A A+ A++
EA 12 80/90/10	64,1 185,5 (0 – 480)	72 98 (0 – 100)	E D C B A A+ A++
EAEC 12 80/90/10	37,2 182,3 (0 – 480)	52 95 (0 – 100)	E D C B A A+ A++
UA 12 80/90/10	58,9 174,8 (0 – 480)	72 98 (0 – 100)	E D C B A A+ A++
UAEC 12 80/90/10	33 165 (0 – 480)	53 95 (0 – 100)	E D C B A A+ A++
EA 13 80/90/10	96,4 279 (0 – 480)	73 99 (0 – 100)	E D C B A A+ A++
EAEC 13 80/90/10	55,3 274,1 (0 – 480)	54 97 (0 – 100)	E D C B A A+ A++

HORIZONTAL/VERTICAL AIR FLOW

VA-VAEC 1.80/90/10 EA-EAEC 1.80/90/10 UA-UAEC 1.80/90/10

Performances

Model AC/EC	Capacity	DbA	Energy rating
UA 13 80/90/10	88,3 – 262,3 (0 – 480)	73 – 99 (0 – 100)	E D C B A A+ A++
UAEC 13 80/90/10	49,7 – 247,5 (0 – 480)	55 – 97 (0 – 100)	E D C B A A+ A++
EA 14 80/90/10	130,4 – 376,8 (0 – 480)	75 – 101 (0 – 100)	E D C B A A+ A++
EAEC 14 80/90/10	73,5 – 370,3 (0 – 480)	55 – 98 (0 – 100)	E D C B A A+ A++
UA 14 80/90/10	114,8 – 341,9 (0 – 480)	75 – 101 (0 – 100)	E D C B A A+ A++
UAEC 14 80/90/10	66 – 322,2 (0 – 480)	56 – 98 (0 – 100)	E D C B A A+ A++
EA 15 80/90/10	164,5 – 474,8 (0 – 480)	76 – 102 (0 – 100)	E D C B A A+ A++
EAEC 15 80/90/10	92,6 – 466,5 (0 – 480)	56 – 99 (0 – 100)	E D C B A A+ A++
UA 15 80/90/10	145,7 – 433,2 (0 – 480)	76 – 102 (0 – 100)	E D C B A A+ A++
UAEC 15 80/90/10	83,1 – 408,6 (0 – 480)	57 – 99 (0 – 100)	E D C B A A+ A++

HORIZONTAL/VERTICAL AIR FLOW

VA-VAEC, EA-EAEC, UA-UAEC 1A.80/90/10

Table of codes

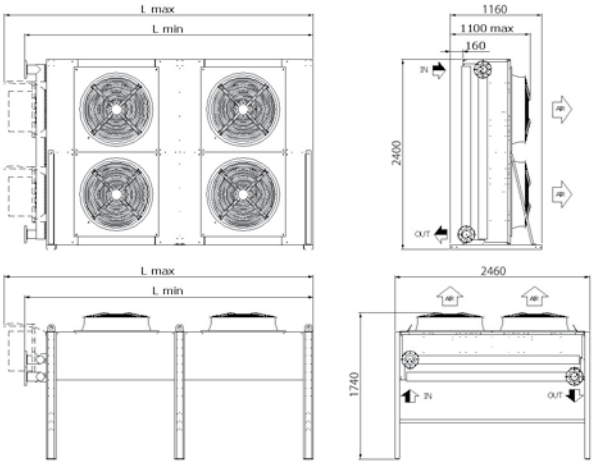
E	E	**EXCHANGER TYPE**
	E	Oval shape copper tube
	U	Round shape 5/8" diam. copper tube
	V	Round shape 10 mm diam. copper tube
A	A	**DESIGN**
	A	H-FLOW / V-FLOW Standard Module
5C	5C	**FAN TYPE / PERFORMANCE / CONFIGURATION**
	5C	EC / High Power
	4C	EC / Standard
	3C	EC / Low
	4D	AC / Standard / Delta
	4Y	AC / Standard / Star
	3D	AC / Low / Delta
	3Y	AC / Low / Star
1	1	**ROWS OF FANS**
	1	1
5	1..5	**FANS PER ROW**
	1..5	1 / 2 / 3 / 4 / 5
80	80	**DIAMETER OF THE FANS**
	80	800 mm
	90	800 mm
.	10	1000 mm
6	2..6	**COIL ROWS**
	2..6	2 / 3 / 4 / 5 / 6
/		
2	2..14	**NO. OF CIRCUITS**
	2..14	2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 11 / 12 / 13 / 14
–		
100%	30%..100%	**SPEED RATE (EC FANS ONLY)**
	30%..100%	30% / 40% / 50% / 60% / 70% / 80% / 90% / 100%

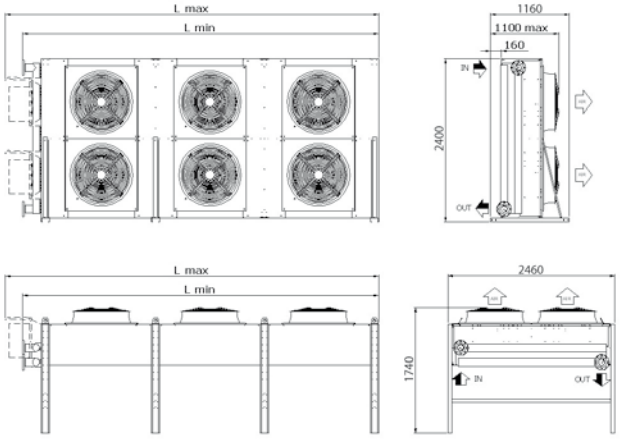
Multiple choice One only choice

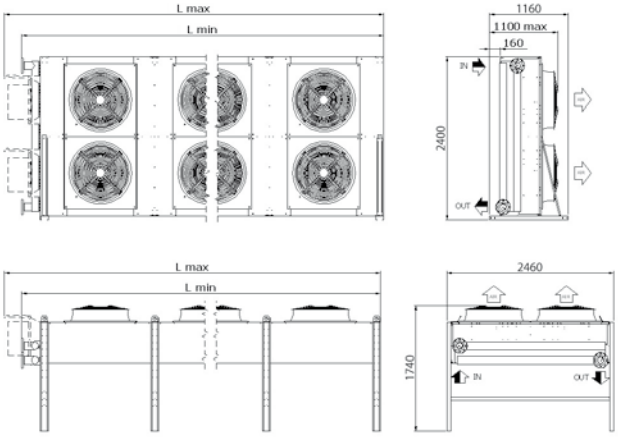
HORIZONTAL/VERTICAL AIR FLOW

EA-EAEC 2.80/90/10 UA-UAEC 2.80/90/10

Technical data







EA 22 80/90/100 **EAEC 22** 80/90/100	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**770**	**836**	**889**	**920**	**984**
	Internal volume [dm3]	**40,9**	**61,4**	**81,8**	**102,3**	**122,7**
	L min - L max [mm]	**3645 - 3900**				
UA 22 80/90/100 **UAEC 22** 80/90/100	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**791**	**863**	**931**	**993**	**1060**
	Internal volume [dm3]	**56,6**	**84,9**	**113,3**	**141,6**	**169,9**
	L min - L max [mm]	**3645 - 3900**				
EA 23 80/90/10 **EAEC 23** 80/90/10	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**1123**	**1214**	**1292**	**1366**	**1444**
	Internal volume [dm3]	**61,4**	**92**	**122,7**	**153,4**	**184,1**
	L min - L max [mm]	**5245 - 5500**				
UA 23 80/90/10 **UAEC 23** 80/90/10	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**1168**	**1280**	**1380**	**1470**	**1571**
	Internal volume [dm3]	**84,9**	**127,4**	**169,9**	**212,4**	**254,8**
	L min - L max [mm]	**5245 - 5500**				

HORIZONTAL/VERTICAL AIR FLOW VA-VAEC, EA-EAEC, UA-UAEC 2A.80/90/10

Technical data

EA 80/90/10 **EAEC** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	1431	1547	1651	1749	1852
	Internal volume [dm3]	81,8	122,7	163,6	204,5	245,4
	L min - L max [mm]	6845 - 7100				
UA 80/90/10 **UAEC** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	1491	1636	1769	1897	2029
	Internal volume [dm3]	113,3	169,9	226,5	283,2	339,8
	L min - L max [mm]	6845 - 7100				
EA 80/90/10 **EAEC** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	1761	1902	2031	2153	2281
	Internal volume [dm3]	102,3	153,4	204,5	255,7	306,8
	L min - L max [mm]	8445 - 8700				
UA 80/90/10 **UAEC** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	1836	2013	2178	2338	2503
	Internal volume [dm3]	141,6	212,4	283,2	353,9	424,7
	L min - L max [mm]	8445 - 8700				
EA 80/90/100 **EAEC** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	2083	2250	2404	2550	2703
	Internal volume [dm3]	122,7	184,1	245,4	306,8	368,2
	L min - L max [mm]	10045 - 10300				
UA 80/90/100 **UAEC** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	2174	2384	2581	2773	2970
	Internal volume [dm3]	169,9	254,8	339,8	424,7	509,7
	L min - L max [mm]	10045 - 10300				
EA 80/90/100 **EAEC** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	2431	2623	2803	2973	3150
	Internal volume [dm3]	143,2	214,8	286,4	357,9	429,5
	L min - L max [mm]	11645 - 11900				
UA 80/90/100 **UAEC** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	2537	2780	3010	3233	3463
	Internal volume [dm3]	198,2	297,3	396,4	495,5	594,6
	L min - L max [mm]	11645 - 11900				

HORIZONTAL/VERTICAL AIR FLOW VA-VAEC, EA-EAEC, UA-UAEC 2A.80/90/10

Performances

Model AC/EC	Capacity	DbA	Energy rating
EA 22 80/90/10	122,9 — 354,4 (0 — 1300)	74 — 100 (0 — 100)	E D C B A A+ A++
EAEC 22 80/90/10	72,3 — 350,8 (0 — 1300)	55 — 98 (0 — 100)	E D C B A A+ A++
UA 22 80/90/10	112,4 — 328,9 (0 — 1300)	74 — 100 (0 — 100)	E D C B A A+ A++
UAEC 22 80/90/10	63,9 — 313,8 (0 — 1300)	55 — 98 (0 — 100)	E D C B A A+ A++
EA 23 80/90/10	184,9 — 532,9 (0 — 1300)	76 — 102 (0 — 100)	E D C B A A+ A++
EAEC 23 80/90/10	108,1 — 527,4 (0 — 1300)	57 — 100 (0 — 100)	E D C B A A+ A++
UA 23 80/90/10	168,7 — 493,5 (0 — 1300)	76 — 102 (0 — 100)	E D C B A A+ A++
UAEC 23 80/90/10	96,3 — 470,7 (0 — 1300)	56 — 100 (0 — 100)	E D C B A A+ A++
EA 24 80/90/10	250,2 — 719,9 (0 — 1300)	77 — 103 (0 — 100)	E D C B A A+ A++
EAEC 24 80/90/10	143,7 — 712,4 (0 — 1300)	58 — 101 (0 — 100)	E D C B A A+ A++
UA 24 80/90/10	219,2 — 643,2 (0 — 1300)	77 — 103 (0 — 100)	E D C B A A+ A++
UAEC 24 80/90/10	127,9 — 612,6 (0 — 1300)	58 — 101 (0 — 100)	E D C B A A+ A++

HORIZONTAL/VERTICAL AIR FLOW EA-EAEC 2.80/90/10 UA-UAEC 2.80/90/10

Performances

Model AC/EC	Capacity	DbA	Energy rating
EA 25 80/90/10	315,6 907,1 (0 – 1300)	78 104 (0 – 100)	E D C B A A+ A++
EAEC 25 80/90/10	181 897,6 (0 – 1300)	59 102 (0 – 100)	E D C B A A+ A++
UA 25 80/90/10	278,2 815 (0 – 1300)	78 104 (0 – 100)	E D C B A A+ A++
UAEC 25 80/90/10	156,6 776,9 (0 – 1300)	59 102 (0 – 100)	E D C B A A+ A++
EA 26 80/90/10	381,1 1094,5 (0 – 1300)	79 105 (0 – 100)	E D C B A A+ A++
EAEC 26 80/90/10	218,3 1083 (0 – 1300)	60 103 (0 – 100)	E D C B A A+ A++
UA 26 80/90/10	337,4 987 (0 – 1300)	79 105 (0 – 100)	E D C B A A+ A++
UAEC 26 80/90/10	189,6 941,5 (0 – 1300)	59 103 (0 – 100)	E D C B A A+ A++
EA 27 80/90/10	446,6 1281,9 (0 – 1300)	80 106 (0 – 100)	E D C B A A+ A++
EAEC 27 80/90/10	255,6 1268,4 (0 – 1300)	60 103 (0 – 100)	E D C B A A+ A++
UA 27 80/90/10	396,6 1159,1 (0 – 1300)	80 106 (0 – 100)	E D C B A A+ A++
UAEC 27 80/90/10	222,7 1106,3 (0 – 1300)	60 103 (0 – 100)	E D C B A A+ A++

HORIZONTAL/VERTICAL AIR FLOW EA-EAEC 2.80/90/10 UA-UAEC 2.80/90/10

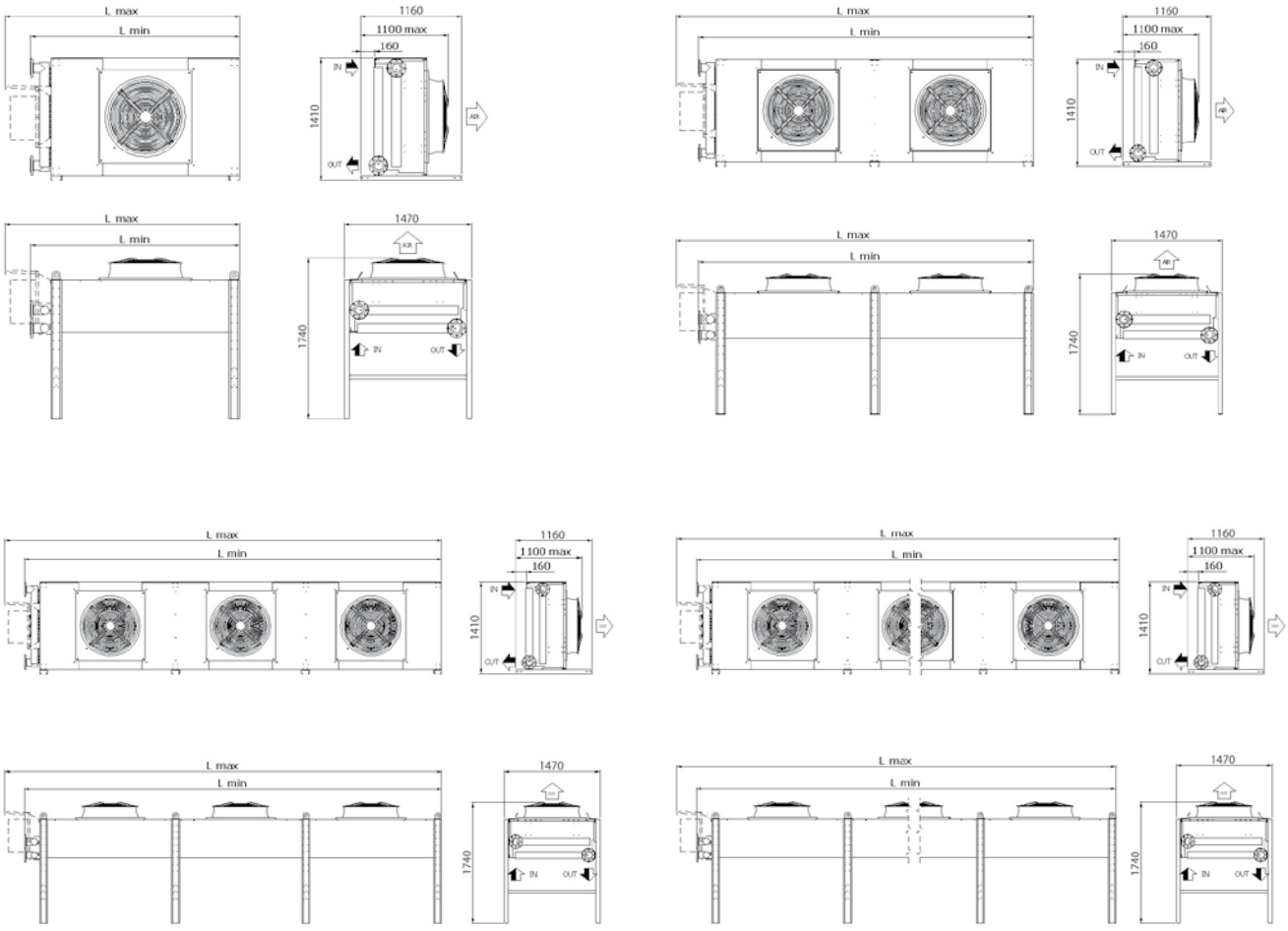
Table of codes

		EXCHANGER TYPE
E	E	Oval shape copper tube
	U	Round shape 5/8” 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
		ROWS OF FANS
2	2	2
		FANS PER ROW
7	2..7	1 / 2 / 3 / 4 / 5 / 6 / 7
		DIAMETER OF THE FANS
80	80	800 mm
	90	800 mm
	10	1000 mm
.		
		COIL ROWS
6	2..6	2 / 3 / 4 / 5 / 6
/		
		NO. OF CIRCUITS
2	2..14	2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 11 / 12 / 13 / 14
–		
		PEED RATE (EC FANS ONLY)
100%	30%..100%	30% / 40% / 50% / 60% / 70% / 80% / 90% / 100%

Multiple choice One only choice

HORIZONTAL/VERTICAL AIR FLOW EB-EBEC 1.80/90/10 UB-UBEC 1.80/90/10

Technical data



HORIZONTAL/VERTICAL AIR FLOW EB-EBEC 1.80/90/10 UB-UBEC 1.80/90/10

Technical data

EB 11 80/90/10 **EBEC 11** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	285	305	322	339	361
	Internal volume [dm3]	13,7	20,5	27,3	34,1	41
	L min - L max [mm]	2445 - 2700				
UB 11 80/90/10 **UBEC 11** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	293	317	341	363	387
	Internal volume [dm3]	19,2	28,9	38,5	48,1	57,7
	L min - L max [mm]	2445 - 2700				
EB 12 80/90/10 **EBEC 12** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	527	566	602	636	678
	Internal volume [dm3]	27,3	41	54,6	68,3	82
	L min - L max [mm]	4445 - 4700				
UB 12 80/90/10 **UBEC 12** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	542	587	634	685	730
	Internal volume [dm3]	38,5	57,7	76,9	96,2	115,4
	L min - L max [mm]	4445 - 4700				
EB 13 80/90/10 **EBEC 13** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	773	830	883	934	993
	Internal volume [dm3]	41	61,5	82	102,4	122,9
	L min - L max [mm]	6445 - 6700				
UB 13 80/90/10 **UBEC 13** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	806	876	945	1019	1087
	Internal volume [dm3]	57,7	86,6	115,4	144,3	173,1
	L min - L max [mm]	6445 - 6700				
EB 14 80/90/10 **EBEC 14** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	983	1057	1127	1194	1270
	Internal volume [dm3]	54,6	82	109,3	136,6	163,9
	L min - L max [mm]	8445 - 8700				
UB 14 80/90/10 **UBEC 14** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	1026	1119	1210	1305	1396
	Internal volume [dm3]	76,9	115,4	153,9	192,4	230,8
	L min - L max [mm]	8445 - 8700				
EB 15 80/90/10 **EBEC 15** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	1203	1294	1380	1465	1557
	Internal volume [dm3]	68,3	102,4	136,6	170,7	204,9
	L min - L max [mm]	10445 - 10700				
UB 15 80/90/10 **UBEC 15** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	1257	1371	1485	1602	1715
	Internal volume [dm3]	96,2	144,3	192,4	240,5	288,5
	L min - L max [mm]	10445 - 10700				

HORIZONTAL/VERTICAL AIR FLOW EB-EBEC 1.80/90/10 UB-UBEC 1.80/90/10

Performances

Model AC/EC	Capacity	DbA	Energy rating
EB 11 80/90/10	36,6 – 108,1 (0 – 550)	69 – 95 (0 – 100)	E D C B A A+ A++
EBEC 11 80/90/10	19,8 – 104,6 (0 – 550)	49 – 92 (0 – 100)	E D C B A A+ A++
UB 11 80/90/10	33,1 – 101,1 (0 – 550)	69 – 95 (0 – 100)	E D C B A A+ A++
UBEC 11 80/90/10	17,9 – 98,4 (0 – 550)	50 – 92 (0 – 100)	E D C B A A+ A++
EB 12 80/90/10	71,6 – 211,9 (0 – 550)	72 – 98 (0 – 100)	E D C B A A+ A++
EBEC 12 80/90/10	39,6 – 205 (0 – 550)	52 – 95 (0 – 100)	E D C B A A+ A++
UB 12 80/90/10	65,4 – 200,1 (0 – 550)	72 – 98 (0 – 100)	E D C B A A+ A++
UBEC 12 80/90/10	35,8 – 194,8 (0 – 550)	53 – 95 (0 – 100)	E D C B A A+ A++
EB 13 80/90/10	109,9 – 324,3 (0 – 550)	73 – 99 (0 – 100)	E D C B A A+ A++
EBEC 13 80/90/10	59,4 – 313,8 (0 – 550)	54 – 97 (0 – 100)	E D C B A A+ A++

HORIZONTAL/VERTICAL AIR FLOW EB-EBEC 1.80/90/10 UB-UBEC 1.80/90/10

Performances

Model AC/EC	Capacity	DbA	Energy rating
UB 13 80/90/10	96,2 – 295,1 (0 – 550)	73 – 99 (0 – 100)	E D C B A A+ A++
UBEC 13 80/90/10	53,3 – 287,3 (0 – 550)	55 – 97 (0 – 100)	E D C B A A+ A++
EB 14 80/90/10	148,2 – 436,8 (0 – 550)	75 – 101 (0 – 100)	E D C B A A+ A++
EBEC 14 80/90/10	80 – 422,5 (0 – 550)	55 – 98 (0 – 100)	E D C B A A+ A++
UB 14 80/90/10	130,9 – 400,3 (0 – 550)	75 – 101 (0 – 100)	E D C B A A+ A++
UBEC 14 80/90/10	71,7 – 389,7 (0 – 550)	56 – 98 (0 – 100)	E D C B A A+ A++
EB 15 80/90/10	186,6 – 549,3 (0 – 550)	76 – 102 (0 – 100)	E D C B A A+ A++
EBEC 15 80/90/10	100,6 – 531,3 (0 – 550)	56 – 99 (0 – 100)	E D C B A A+ A++
UB 15 80/90/10	165,6 – 505,7 (0 – 550)	76 – 102 (0 – 100)	E D C B A A+ A++
UBEC 15 80/90/10	88,2 – 492,2 (0 – 550)	57 – 99 (0 – 100)	E D C B A A+ A++

HORIZONTAL/VERTICAL AIR FLOW EB-EBEC 1.80/90/10 UB-UBEC 1.80/90/10

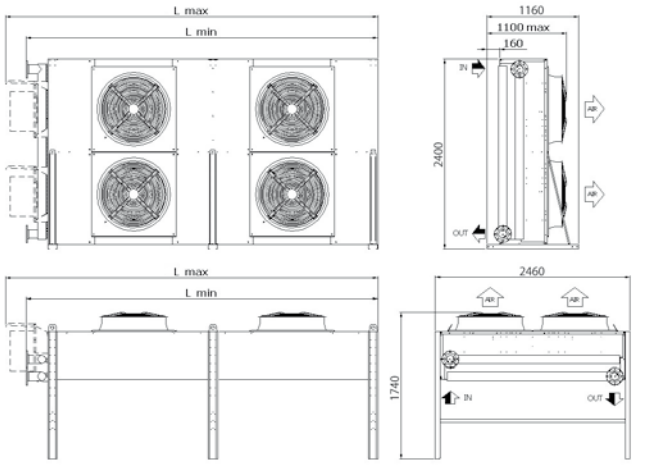
Table of codes

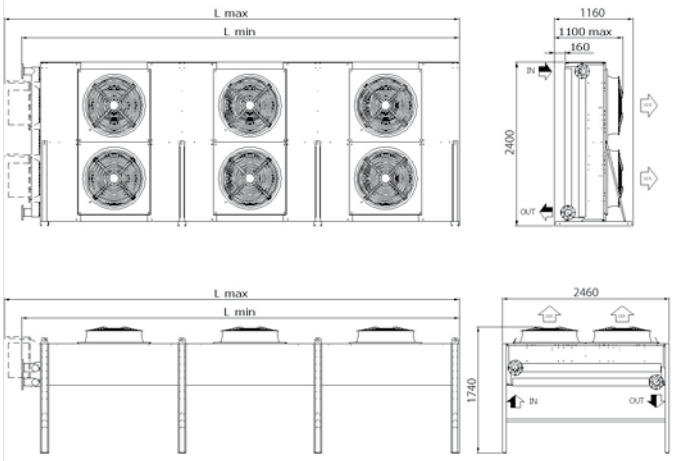
E	**E**	**EXCHANGER TYPE**
	U	Oval shape copper tube
		Round shape 5/8" diam. copper tube
B	**B**	**DESIGN**
		H-FLOW / V-FLOW Long Module
5C	**5C**	**FAN TYPE / PERFORMANCE / CONFIGURATION**
	4C	EC / High Power
	3C	EC / Standard
	4D	EC / Low
	4Y	AC / Standard / Delta
	3D	AC / Standard / Star
	3Y	AC / Low / Delta
		AC / Low / Star
1	**1**	**ROWS OF FANS**
		1
5	**1..5**	**FANS PER ROW**
		1 / 2 / 3 / 4 / 5
80	**80**	**DIAMETER OF THE FANS**
	90	800 mm
	10	800 mm
.		1000 mm
6	**2..6**	**COIL ROWS**
		2 / 3 / 4 / 5 / 6
/		
2	**2..14**	**NO. OF CIRCUITS**
		2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 11 / 12 / 13 / 14
–		
100%	**30%..100%**	**SPEED RATE (EC FANS ONLY)**
		30% / 40% / 50% / 60% / 70% / 80% / 90% / 100%

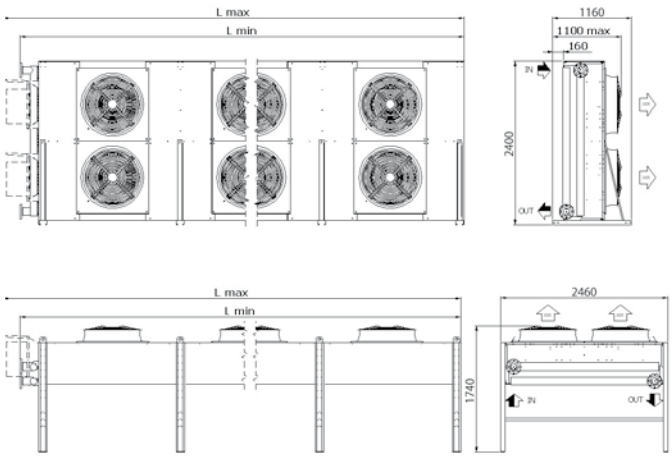
Multiple choice One only choice

HORIZONTAL/VERTICAL AIR FLOW EB-EBEC 2.80/90/10 UB-UBEC 2.80/90/10

Technical data







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HORIZONTAL/VERTICAL AIR FLOW EB-EBEC 2.80/90/10 UB-UBEC 2.80/90/10

Technical data

EB 22 80/90/10 **EBEC 22** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	849	927	993	1055	1120
	Internal volume [dm3]	51,1	76,7	102,3	127,8	153,4
	L min - L max [mm]	4445 - 4700				
UB 22 80/90/10 **UBEC 22** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	878	966	1050	1141	1225
	Internal volume [dm3]	70,8	106,2	141,6	177	212,4
	L min - L max [mm]	4445 - 4700				
EB 23 80/90/10 **EBEC 23** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	1241	1351	1448	1541	1637
	Internal volume [dm3]	76,7	115,1	153,4	191,8	230,1
	L min - L max [mm]	6445 - 6700				
UB 23 80/90/10 **UBEC 23** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	1298	1434	1558	1679	1803
	Internal volume [dm3]	106,2	159,3	212,4	265,5	318,6
	L min - L max [mm]	6445 - 6700				
EB 24 80/90/10 **EBEC 24** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	1589	1731	1860	1982	2109
	Internal volume [dm3]	102,3	153,4	204,5	255,7	306,8
	L min - L max [mm]	8445 - 8700				
UB 24 80/90/10 **UBEC 24** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	1665	1842	2007	2167	2332
	Internal volume [dm3]	141,6	212,4	283,2	353,9	424,7
	L min - L max [mm]	8445 - 8700				
EB 25 80/90/10 **EBEC 25** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	1954	2127	2288	2440	2598
	Internal volume [dm3]	127,8	191,8	255,7	319,6	383,5
	L min - L max [mm]	10445 - 10700				
UB 25 80/90/10 **UBEC 25** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	2048	2266	2472	2671	2877
	Internal volume [dm3]	177	265,5	353,9	442,4	530,9
	L min - L max [mm]	10445 - 10700				
EB 26 80/90/10 **EBEC 26** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	2311	2515	2708	2889	3079
	Internal volume [dm3]	153,4	230,1	306,8	383,5	460,2
	L min - L max [mm]	12445 - 12700				
UB 26 80/90/10 **UBEC 26** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	2424	2683	2929	3168	3414
	Internal volume [dm3]	212,4	318,6	424,7	530,9	637,1
	L min - L max [mm]	12445 - 12700				

HORIZONTAL/VERTICAL AIR FLOW EB-EBEC 2.80/90/10 UB-UBEC 2.80/90/10

Performances

Model AC/EC	Capacity	DbA	Energy rating
EB 22 80/90/10	138,2 — 407,2 (0 — 1300)	74 — 100 (0 — 100)	E D C B A A+ A++
EBEC 22 80/90/10	77,5 — 395,5 (0 — 1300)	55 — 98 (0 — 100)	E D C B A A+ A++
UB 22 80/90/10	125,9 — 380,2 (0 — 1300)	74 — 100 (0 — 100)	E D C B A A+ A++
UBEC 22 80/90/10	69,7 — 372,7 (0 — 1300)	56 — 98 (0 — 100)	E D C B A A+ A++
EB 23 80/90/10	212,2 — 623,4 (0 — 1300)	76 — 102 (0 — 100)	E D C B A A+ A++
EBEC 23 80/90/10	116,4 — 605,4 (0 — 1300)	57 — 100 (0 — 100)	E D C B A A+ A++
UB 23 80/90/10	185,1 — 560,4 (0 — 1300)	76 — 102 (0 — 100)	E D C B A A+ A++
UBEC 23 80/90/10	103,6 — 549,4 (0 — 1300)	57 — 100 (0 — 100)	E D C B A A+ A++
EB 24 80/90/10	286,3 — 839,7 (0 — 1300)	77 — 103 (0 — 100)	E D C B A A+ A++
EBEC 24 80/90/10	156,7 — 815,3 (0 — 1300)	58 — 101 (0 — 100)	E D C B A A+ A++

HORIZONTAL/VERTICAL AIR FLOW EB-EBEC 2.80/90/10 UB-UBEC 2.80/90/10

Performances

Model AC/EC	Capacity	DbA	Energy rating
UB 24 80/90/10	251,8 760,5 (0 – 1300)	77 103 (0 – 100)	E D C B A A+ A++
UBEC 24 80/90/10	139,4 745,5 (0 – 1300)	59 101 (0 – 100)	E D C B A A+ A++
EB 25 80/90/10	360,4 1056,2 (0 – 1300)	78 104 (0 – 100)	E D C B A A+ A++
EBEC 25 80/90/10	197 1025,4 (0 – 1300)	59 102 (0 – 100)	E D C B A A+ A++
UB 25 80/90/10	318,6 960,8 (0 – 1300)	78 104 (0 – 100)	E D C B A A+ A++
UBEC 25 80/90/10	171,5 941,7 (0 – 1300)	60 102 (0 – 100)	E D C B A A+ A++
EB 26 80/90/10	434,7 1272,9 (0 – 1300)	79 105 (0 – 100)	E D C B A A+ A++
EBEC 26 80/90/10	237,3 1235,7 (0 – 1300)	60 103 (0 – 100)	E D C B A A+ A++
UB 26 80/90/10	385,5 1161,3 (0 – 1300)	79 105 (0 – 100)	E D C B A A+ A++
UBEC 26 80/90/10	207,3 1138,2 (0 – 1300)	60 103 (0 – 100)	E D C B A A+ A++

Table of codes

		EXCHANGER TYPE
E	E	Oval shape copper tube
	U	Round shape 5/8” 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
		ROWS OF FANS
2	2	2
		FANS PER ROW
6	2..6	2 / 3 / 4 / 5 / 6
		DIAMETER OF THE FANS
80	80	800 mm
	90	800 mm
	10	1000 mm
.		
		COIL ROWS
6	2..6	2 / 3 / 4 / 5 / 6
/		
		NO. OF CIRCUITS
2	2..14	2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 11 / 12 / 13 / 14
–		
		SPEED RATE (EC FANS ONLY)
100%	30%..100%	30% / 40% / 50% / 60% / 70% / 80% / 90% / 100%

Multiple choice One only choice

TOWER

TOWER ET-ETEC 1.80/90/10 UT-UTEC 1.80/90/10

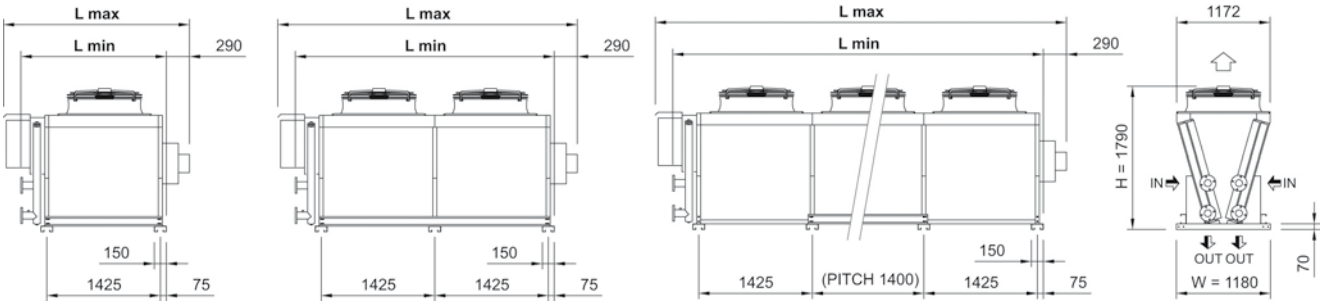
The Tower series combines significant power per unit of occupied surface area with a lower height. In order to provide for the most diverse architectural needs, Refrion designed the Tower series that, while maintaining unaltered performance levels, reduces the space required for operation and thus allows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

MAIN FEATURES

- Compact V shape.
- Coils manufactured with round or oval-shaped pipes in copper.
- Fluids: Water - Water/Ethylene Glycol - Water/Propylene Glycol.
- Capacity: up to 935 kW.
- Classic AC or EC energy saving fans with diameters of Ø 800/900/1000mm.
- Quiet and ultra-quiet versions.
- Option to install the Spray Adiabatic System (Hydrophilic fin block included).
- Option to install the Industrial Adiabatic System (Pads).

TOWER ET-ETEC 1.80/90/10 UT-UTEC 1.80/90/10

Technical data



ET 11 80/90/10 **ETEC 11** 80/90/10	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**240**	**265**	**290**	**315**	**335**
	Internal volume [dm3]	**40,6**	**30,9**	**41,2**	**51,5**	**61,8**
	L min - L max [mm]	**1825 - 2335**				
UT 11 80/90/10 **UTEC 11** 80/90/10	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**252**	**284**			
	Internal volume [dm3]	**28,2**	**44,5**			
	L min - L max [mm]	**1825 - 2335**				
ET 12 80/90/10 **ETEC 12** 80/90/10	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**475**	**525**	**575**	**625**	**670**
	Internal volume [dm3]	**41,2**	**61,8**	**82,4**	**103**	**123,6**
	L min - L max [mm]	**3250 - 3760**				
UT 12 80/90/10 **UTEC 12** 80/90/10	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**509**	**562**			
	Internal volume [dm3]	**56,4**	**88,9**			
	L min - L max [mm]	**3250 - 3760**				
ET 13 80/90/10 **ETEC 13** 80	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**700**	**765**	**830**	**895**	**965**
	Internal volume [dm3]	**61,8**	**92,7**	**123,6**	**154,5**	**185,4**
	L min - L max [mm]	**4650 - 5160**				

TOWER ET-ETEC 1.80/90/10 UT-UTEC 1.80/90/10

Technical data

UT 13 80/90/10 **UTEC 13** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	740	814			
	Internal volume [dm3]	84,6	133,4			
	L min - L max [mm]	4650 - 5160				
ET 14 80/90/10 **ETEC 14** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	890	985	1085	1185	1255
	Internal volume [dm3]	82,4	123,6	164,8	206	247,3
	L min - L max [mm]	6050 - 6560				
UT 14 80/90/10 **UTEC 14** 80	Coil rows	2	3	4	5	6
	Dry weight [kg]	945	1050			
	Internal volume [dm3]	112,7	177,9			
	L min - L max [mm]	6050 - 6560				
ET 15 80/90/10 **ETEC 15** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	1015	1155	1295	1435	1540
	Internal volume [dm3]	103	154,5	206	257,6	309,1
	L min - L max [mm]	7450 - 7960				
UT 15 80/90/10 **UTEC 15** 80	Coil rows	2	3	4	5	6
	Dry weight [kg]	1082	1234			
	Internal volume [dm3]	140,9	222,3			
	L min - L max [mm]	7450 - 7960				
ET 16 80/90/10 **ETEC 16** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	1250	1395	1545	1690	1835
	Internal volume [dm3]	123,6	185,4	247,3	309,1	370,9
	L min - L max [mm]	8850 - 9360				
UT 16 80/90/10 **UTEC 16** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	1328	1491			
	Internal volume [dm3]	169,1	266,8			
	L min - L max [mm]	8850 - 9360				
ET 17 80/90/10 **ETEC 17** 80/90/10	Coil rows		3	4	5	6
	Dry weight [kg]		1630	1800	1970	2140
	Internal volume [dm3]		216,3	288,5	360,6	432,7
	L min - L max [mm]	10250 - 10760				

TOWER ET-ETEC 1.80/90/10 UT-UTEC 1.80/90/10

Performances

Model AC/EC	Capacity	DbA	Energy rating
ET 11 80/90/10	40,9 131,5 (0 – 1000)	70 98 (0 – 100)	E D C B A A+ A++
ETEC 11 80/90/10	21,1 127,3 (0 – 1000)	51 95 (0 – 100)	E D C B A A+ A++
UT 11 80/90/10	35,4 91,4 (0 – 1000)	70 98 (0 – 100)	E D C B A A+ A++
UTEC 11 80	20,8 90,7 (0 – 1000)	51 95 (0 – 100)	E D C B A A+ A++
ET 12 80/90/10	81,8 265,4 (0 – 1000)	73 101 (0 – 100)	E D C B A A+ A++
ETEC 12 80/90/10	42,2 254,7 (0 – 1000)	54 98 (0 – 100)	E D C B A A+ A++
UT 12 80/90/10	70,8 182,8 (0 – 1000)	73 101 (0 – 100)	E D C B A A+ A++
UTEC 12 80/90/10	41,5 181,4 (0 – 1000)	54 98 (0 – 100)	E D C B A A+ A++
ET 13 80/90/10	112,8 398,1 (0 – 1000)	75 103 (0 – 100)	E D C B A A+ A++
ETEC 13 80	63,5 382 (0 – 1000)	56 100 (0 – 100)	E D C B A A+ A++
UT 13 80/90/10	106,7 274,3 (0 – 1000)	75 103 (0 – 100)	E D C B A A+ A++
UTEC 13 80/90/10	62,6 272,1 (0 – 1000)	56 100 (0 – 100)	E D C B A A+ A++

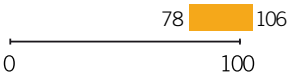
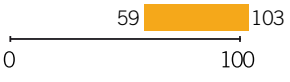
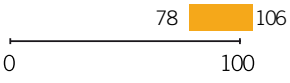
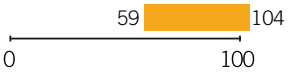
TOWER ET-ETEC 1.80/90/10 UT-UTEC 1.80/90/10

Performances

Model AC/EC	Capacity	DbA	Energy rating
ET 14 80/90/10	161,2 – 524 (0 – 1000)	76 – 104 (0 – 100)	E D C B A A+ A++
ETEC 14 80/90/10	84,6 – 503,1 (0 – 1000)	57 – 101 (0 – 100)	E D C B A A+ A++
UT 14 80/90/10	141,6 – 355,3 (0 – 1000)	76 – 104 (0 – 100)	E D C B A A+ A++
UTEC 14 80	83,3 – 352,4 (0 – 1000)	57 – 101 (0 – 100)	E D C B A A+ A++
ET 15 80/90/10	203,3 – 660,1 (0 – 1000)	77 – 105 (0 – 100)	E D C B A A+ A++
ETEC 15 80/90/10	104,6 – 633,6 (0 – 1000)	58 – 102 (0 – 100)	E D C B A A+ A++
UT 15 80/90/10	178,5 – 451,8 (0 – 1000)	77 – 105 (0 – 100)	E D C B A A+ A++
UTEC 15 80	104 – 448,2 (0 – 1000)	58 – 102 (0 – 100)	E D C B A A+ A++
ET 16 80/90/10	245,5 – 796,3 (0 – 1000)	78 – 106 (0 – 100)	E D C B A A+ A++
ETEC 16 80/90/10	126,1 – 764 (0 – 1000)	59 – 103 (0 – 100)	E D C B A A+ A++

TOWER ET-ETEC 1.80/90/10 UT-UTEC 1.80/90/10

Performances

Model AC/EC	Capacity	DbA	Energy rating
UT 16 80/90/10			
UTEC 16 80/90/10			
ET 17 80/90/10			
ETEC 17 80/90/10			

TOWER ET-ETEC 1.80/90/10 UT-UTEC 1.80/90/10

Table of codes

		EXCHANGER TYPE
E	E	Oval shape copper tube
	U	Round shape 5/8" 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
		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	800 mm
.	10	1000 mm
		COIL ROWS
6	2..6	2 / 3 / 4 / 5 / 6
/		
		NO. OF CIRCUITS
2	2..14	2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 11 / 12 / 13 / 14
–		
		SPEED RATE (EC FANS ONLY)
100%	30%..100%	30% / 40% / 50% / 60% / 70% / 80% / 90% / 100%

Multiple choice One only choice

WALL EK-EKEC 1.80/90 UK-UKEC 1.80/90

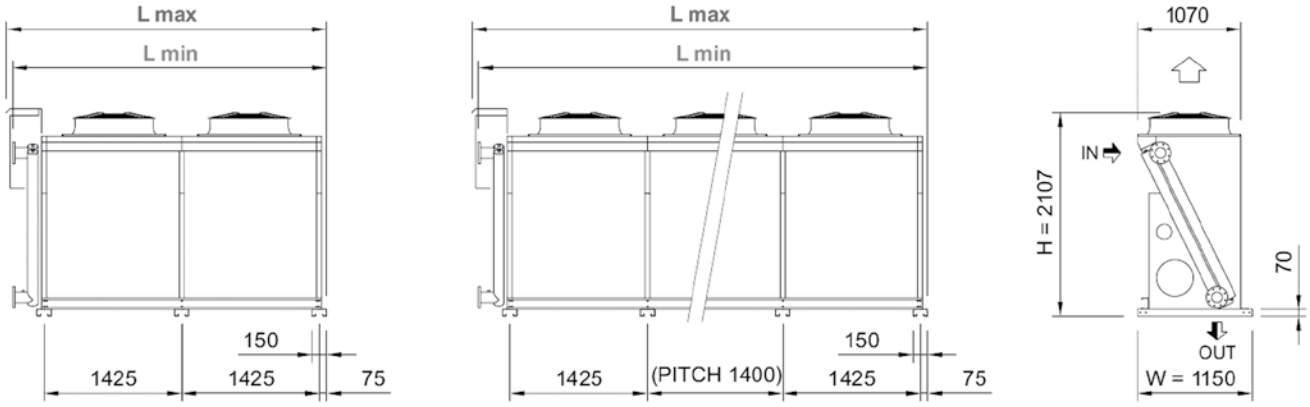
The new Wall is the answer to increasing particular demands from the market. A new product, to offer a solution to the problems of space and efficiency.

MAIN FEATURES

- Compact V shape.
- Coils manufactured with round or oval-shaped pipes in copper.
- Fluids: Water - Water/Ethylene Glycol - Water/Propylene Glycol.
- Capacity: up to 800 kW.
- Classic AC or EC energy saving fans with diameters of Ø 800/900mm.
- Quiet and ultra-quiet versions.
- Option to install the Spray Adiabatic System (Hydrophilic fin block included).
- Option to install the Industrial Adiabatic System (Pads).

WALL EK-EKEC 1.80/90 UK-UKEC 1.80/90

Technical data



EK 12 80/90 **EKEC 12** 80/90	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**490**	**525**	**560**	**595**	**622,5**
	Internal volume [dm3]	**29,5**	**44,2**	**58,9**	**73,6**	**88,3**
	L min - L max [mm]	**3250 - 3315**				
UK 12 80/90 **UKEC 12** 80/90	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**507,5**	**546**			
	Internal volume [dm3]	**40,1**	**63,3**			
	L min - L max [mm]	**3250 - 3315**				
EK 13 80/90 **EKEC 13** 80/90	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**725**	**767,5**	**812,5**	**855**	**910**
	Internal volume [dm3]	**44,2**	**66,3**	**88,3**	**110,4**	**132,5**
	L min - L max [mm]	**4650 - 4715**				
UK 13 80/90 **UKEC 13** 80/90	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**752**	**798**			
	Internal volume [dm3]	**60,15**	**94,9**			
	L min - L max [mm]	**4650 - 4715**				

WALL EK-EKEC 1.80/90 UK-UKEC 1.80/90

Technical data

EK 14 80/90 **EKEC 14** 80/90	Coil rows	2	3	4	5	6
	Dry weight [kg]	935	995	1055	1115	1185
	Internal volume [dm3]	58,9	88,3	117,8	147,2	176,6
	L min - L max [mm]	6050 - 6115				
UK 14 80/90 **UKEC 14** 80/90	Coil rows	2	3	4	5	6
	Dry weight [kg]	971	1037,5			
	Internal volume [dm3]	80,2	126,6			
	L min - L max [mm]	6050 - 6115				
EK 15 80/90 **EKEC 15** 80/90	Coil rows	2	3	4	5	6
	Dry weight [kg]	1110	1195	1280	1365	1447
	Internal volume [dm3]	73,6	110,4	147,2	184	220,8
	L min - L max [mm]	7450 - 7515				
UK 15 80/90 **UKEC 15** 80/90	Coil rows	2	3	4	5	6
	Dry weight [kg]	1151	1243,5			
	Internal volume [dm3]	100,3	158,2			
	L min - L max [mm]	7450 - 7515				
EK 16 80/90 **EKEC 16** 80/90	Coil rows	2	3	4	5	6
	Dry weight [kg]	1320	1420	1522,5	1625	1727,5
	Internal volume [dm3]	88,3	132,5	176,6	220,8	264,9
	L min - L max [mm]	8850 - 8915				
UK 16 80/90 **UKEC 16** 80/900	Coil rows	2	3	4	5	6
	Dry weight [kg]	1370	1480,5			
	Internal volume [dm3]	120,4	189,8			
	L min - L max [mm]	8850 - 8915				
EK 17 80/90 **EKEC 17** 80/90	Coil rows	2	3	4	5	6
	Dry weight [kg]		1657,5	1777,5	1895	2015
	Internal volume [dm3]		154,6	206,1	257,6	309,1
	L min - L max [mm]	10250 - 10315				

WALL EK-EKEC 1.80/90 UK-UKEC 1.80/90

Performances

Model AC/EC	Capacity	DbA	Energy rating
EK 12 80/90	66,7 – 224,6 (0 – 900)	74 – 101 (0 – 100)	E D C B A A+ A++
EKEC 12 80/90	37,2 – 216,8 (0 – 900)	53 – 94 (0 – 100)	E D C B A A+ A++
UK 12 80/90/10	58,2 – 154,1 (0 – 900)	74 – 101 (0 – 100)	E D C B A A+ A++
UKEC 12 80/90	35,4 – 153 (0 – 900)	54 – 94 (0 – 100)	E D C B A A+ A++
EK 13 80/90	98,5 – 332,1 (0 – 900)	75 – 102 (0 – 100)	E D C B A A+ A++
EKEC 13 80/90	55,4 – 329,6 (0 – 900)	55 – 95 (0 – 100)	E D C B A A+ A++
UK 13 80/90/10	87,7 – 231,2 (0 – 900)	75 – 102 (0 – 100)	E D C B A A+ A++
UKEC 13 80/90	53,4 – 229,6 (0 – 900)	56 – 95 (0 – 100)	E D C B A A+ A++
EK 14 80/90	133,4 – 449,05 (0 – 900)	77 – 104 (0 – 100)	E D C B A A+ A++
EKEC 14 80/90	74,35 – 433,5 (0 – 900)	56 – 97 (0 – 100)	E D C B A A+ A++
UK 14 80/90/10	116,3 – 299,1 (0 – 900)	77 – 103 (0 – 100)	E D C B A A+ A++
UKEC 14 80/90	70,9 – 296,9 (0 – 900)	57 – 97 (0 – 100)	E D C B A A+ A++

WALL EK-EKEC 1.80/90 UK-UKEC 1.80/90

Performances

Model AC/EC	Capacity	DbA	Energy rating
EK 15 80/90	168,4 – 566,2 (0 – 900)	78 – 105 (0 – 100)	E D C B A A+ A++
EKEC 15 80/90	91,9 – 564,3 (0 – 900)	57 – 97 (0 – 100)	E D C B A A+ A++
UK 15 80/90/10	141,8 – 380,6 (0 – 900)	78 – 105 (0 – 100)	E D C B A A+ A++
UKEC 15 80/90	88,9 – 377,9 (0 – 900)	58 – 98 (0 – 100)	E D C B A A+ A++
EK 16 80/90	203,35 – 683,25 (0 – 900)	78 – 105 (0 – 100)	E D C B A A+ A++
EKEC 16 80/90	110,85 – 659,1 (0 – 900)	58 – 98 (0 – 100)	E D C B A A+ A++
UK 16 80/90/10	172,05 – 462,3 (0 – 900)	78 – 105 (0 – 100)	E D C B A A+ A++
UKEC 16 80/90	106,25 – 459,1 (0 – 900)	59 – 98 (0 – 100)	E D C B A A+ A++
EK 17 80/90	280,7 – 800,4 (0 – 900)	79 – 106 (0 – 100)	E D C B A A+ A++
EKEC 17 80/90	135,9 – 772 (0 – 900)	59 – 99 (0 – 100)	E D C B A A+ A++

WALL EK-EKEC 1.80/90 UK-UKEC 1.80/90

Table of codes

		EXCHANGER TYPE
E	E	Oval shape copper tube
	U	Round shape 5/8" 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	2..7	2 / 3 / 4 / 5 / 6 / 7
		DIAMETER OF THE FANS
80	80	800 mm
	90	800 mm
.		
		COIL ROWS
6	2..6	2 / 3 / 4 / 5 / 6
/		
		NO. OF CIRCUITS
2	2..14	2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 11 / 12 / 13 / 14
–		
		SPEED RATE (EC FANS ONLY)
100%	30%..100%	30% / 40% / 50% / 60% / 70% / 80% / 90% / 100%

Multiple choice One only choice

COMBO

COMBO EK-EKEC 2.80/90 UK-UKEC 2.80/90

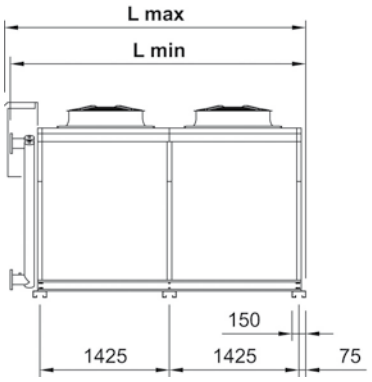
The new Combo model is the most powerful device transportable via container. Combo combines standards of power and transportability with excellent results.

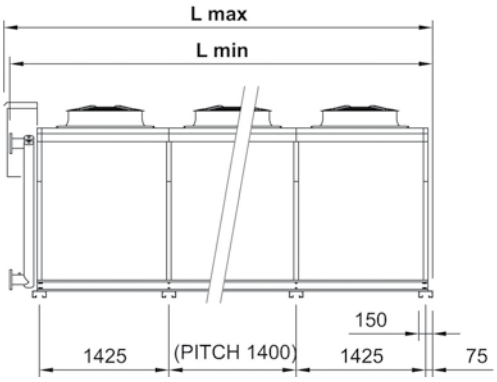
MAIN FEATURES

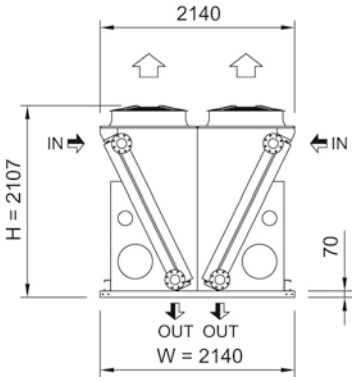
- Coils manufactured with round or oval-shaped pipes in copper.
- Fluids: Water - Water/Ethylene Glycol -Water/Propylene Glycol.
- Capacity: up to 1600 kW.
- Classic AC or EC energy saver fans with diameters of Ø 800/900mm.
- Quiet and ultra-quiet versions.
- Option to install the Spray Adiabatic System (Hydrophilic fin block included).
- Option to install the Industrial Adiabatic System (Pads).

COMBO EK-EKEC 2.80/90 UK-UKEC 2.80/90

Technical data







EK 22 80/90 **EKEC 22** 80/90	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**980**	**1050**	**1120**	**1190**	**1245**
	Internal volume [dm3]	**58,9**	**88,3**	**117,7**	**147,2**	**176,6**
	L min - L max [mm]	**3250 - 3315**				
UK 22 80/90 **UKEC 22** 80/90	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**1015**	**1092**			
	Internal volume [dm3]	**80,2**	**126,5**			
	L min - L max [mm]	**3250 - 3315**				
EK 23 80/90 **EKEC 23** 80/90	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**1450**	**1535**	**1625**	**1710**	**1820**
	Internal volume [dm3]	**88,3**	**132,5**	**176,6**	**220,8**	**264,9**
	L min - L max [mm]	**4650 - 4715**				
UK 23 80/90 **UKEC 23** 80/90	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**1504**	**1596**			
	Internal volume [dm3]	**120,3**	**189,8**			
	L min - L max [mm]	**4650 - 4715**				

COMBO EK-EKEC 2.80/90 UK-UKEC 2.80/90

Technical data

EK 24 80/90 **EKEC 24** 80/90	Coil rows	2	3	4	5	6
	Dry weight [kg]	1870	1990	2110	2230	2370
	Internal volume [dm3]	117,7	176,6	235,5	294,3	353,2
	L min - L max [mm]	6050 - 6115				
UK 24 80/90 **UKEC 24** 80/90	Coil rows	2	3	4	5	6
	Dry weight [kg]	1942	2075			
	Internal volume [dm3]	160,4	253,1			
	L min - L max [mm]	6050 - 6115				
EK 25 80/90 **EKEC 25** 80/90	Coil rows	2	3	4	5	6
	Dry weight [kg]	2220	2390	2560	2730	2895
	Internal volume [dm3]	147,2	220,8	294,3	367,9	441,5
	L min - L max [mm]	7450 - 7515				
UK 25 80/90 **UKEC 25** 80/90	Coil rows	2	3	4	5	6
	Dry weight [kg]	2302	2487			
	Internal volume [dm3]	200,6	316,4			
	L min - L max [mm]	7450 - 7515				
EK 26 80/90 **EKEC 26** 80/90	Coil rows	2	3	4	5	6
	Dry weight [kg]	2640	2840	3045	3250	2970
	Internal volume [dm3]	176,6	264,9	353,2	441,5	529,8
	L min - L max [mm]	8850 - 8915				
UK 26 80/90 **UKEC 26** 80/900	Coil rows	2	3	4	5	6
	Dry weight [kg]	2740	2961			
	Internal volume [dm3]	240,7	379,6			
	L min - L max [mm]	8850 - 8915				
EK 27 80/90 **EKEC 27** 80/90	Coil rows	2	3	4	5	6
	Dry weight [kg]		3315	3555	3790	4030
	Internal volume [dm3]		309,1	412,1	515,1	618,1
	L min - L max [mm]	10250 - 10315				

COMBO EK-EKEC 2.80/90 UK-UKEC 2.80/90

Performances

Model AC/EC	Capacity	DbA	Energy rating
EK 22 80/90	133,4 — 449,1 (0 — 1800)	77 — 104 (0 — 100)	E D C B A A+ A++
EKEC 22 80/90	74,4 — 433,5 (0 — 1800)	56 — 97 (0 — 100)	E D C B A A+ A++
UK 22 80/90/10	116,3 — 308,1 (0 — 1800)	77 — 104 (0 — 100)	E D C B A A+ A++
UKEC 22 80/90	70,8 — 306 (0 — 1800)	57 — 97 (0 — 100)	E D C B A A+ A++
EK 23 80/90	197 — 664,2 (0 — 1800)	78 — 105 (0 — 100)	E D C B A A+ A++
EKEC 23 80/90	110,8 — 659,1 (0 — 1800)	58 — 98 (0 — 100)	E D C B A A+ A++
UK 23 80/90/10	175,3 — 462,3 (0 — 1800)	78 — 105 (0 — 100)	E D C B A A+ A++
UKEC 23 80/90	106,7 — 459,1 (0 — 1800)	59 — 98 (0 — 100)	E D C B A A+ A++
EK 24 80/90	266,8 — 898,1 (0 — 1800)	80 — 107 (0 — 100)	E D C B A A+ A++
EKEC 24 80/90	148,7 — 867 (0 — 1800)	59 — 100 (0 — 100)	E D C B A A+ A++
UK 24 80/90/10	232,6 — 598,1 (0 — 1800)	80 — 106 (0 — 100)	E D C B A A+ A++
UKEC 24 80/90	141,7 — 593,7 (0 — 1800)	60 — 100 (0 — 100)	E D C B A A+ A++

COMBO EK-EKEC 2.80/90 UK-UKEC 2.80/90

Performances

Model AC/EC	Capacity	DbA	Energy rating
EK 25 80/90	336,7 — 1132,3 (0 — 1800)	81 — 108 (0 — 100)	E D C B A A+ A++
EKEC 25 80/90	183,8 — 1092,5 (0 — 1800)	60 — 100 (0 — 100)	E D C B A A+ A++
UK 25 80/90/10	283,6 — 761,2 (0 — 1800)	81 — 108 (0 — 100)	E D C B A A+ A++
UKEC 25 80/90	177,8 — 755,8 (0 — 1800)	61 — 101 (0 — 100)	E D C B A A+ A++
EK 26 80/90	406,7 — 1366,5 (0 — 1800)	81 — 108 (0 — 100)	E D C B A A+ A++
EKEC 26 80/90	221,7 — 1318,2 (0 — 1800)	61 — 101 (0 — 100)	E D C B A A+ A++
UK 26 80/90/10	344,1 — 924,6 (0 — 1800)	81 — 108 (0 — 100)	E D C B A A+ A++
UKEC 26 80/90	212,5 — 918,2 (0 — 1800)	62 — 101 (0 — 100)	E D C B A A+ A++
EK 27 80/90	561,3 — 1600,8 (0 — 1800)	82 — 109 (0 — 100)	E D C B A A+ A++
EKEC 27 80/90	271,7 — 1543,9 (0 — 1800)	62 — 102 (0 — 100)	E D C B A A+ A++

COMBO EK-EKEC 2.80/90 UK-UKEC 2.80/90

Table of codes

		EXCHANGER TYPE
E	E	Oval shape copper tube
	U	Round shape 5/8" 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
		ROWS OF FANS
2	2	2
		FANS PER ROW
7	2..7	2 / 3 / 4 / 5 / 6 / 7
		DIAMETER OF THE FANS
80	80	800 mm
	90	800 mm
.		
		COIL ROWS
6	2..6	2 / 3 / 4 / 5 / 6
/		
		NO. OF CIRCUITS
2	2..14	2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 11 / 12 / 13 / 14
–		
		SPEED RATE (EC FANS ONLY)
100%	30%..100%	30% / 40% / 50% / 60% / 70% / 80% / 90% / 100%

Multiple choice One only choice

SUPERJUMBO

SUPERJUMBO

ES-ESEC 2.80/90/10 US-USEC 2.80/90/10

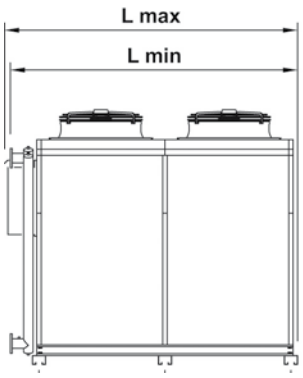
The Superjumbo model represents the most high-performance solution of all Refrion dry coolers.
Superjumbo dry coolers guarantee extremely high efficiency per unit of occupied surface area.

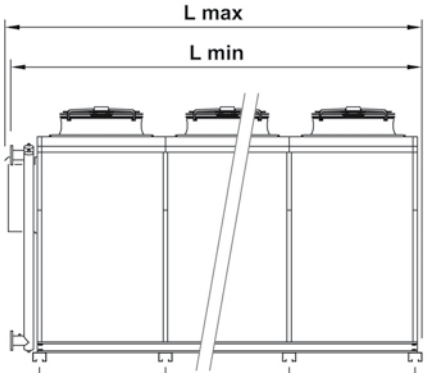
MAIN FEATURES

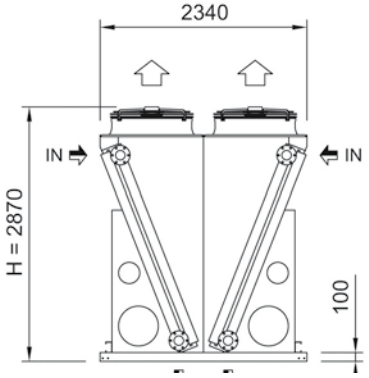
- Coils manufactured with round or oval-shaped pipes in copper.
- Fluids: Water - Water/Ethylene Glycol -Water/Propylene Glycol.
- Capacity: up to 2040 kW.
- Classic AC or EC energy saving fans with diameters of Ø 800/900/1000mm
- Option to install the Spray Adiabatic System (Hydrophilic fin block included).
- Option to install the Industrial Adiabatic System (Pads).

SUPERJUMBO ES-ESEC 2.80/90/10 US-USEC 2.80/90/10

Technical data







ES 22 80/90/10 **ESEC 22** 80/90/10	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**1215**	**1345**	**1470**	**1575**	**1680**
	Internal volume [dm3]	**78,5**	**117,7**	**157**	**196,2**	**235,5**
	L min - L max [mm]	**3250 - 3315**				
US 22 80/90/10 **USEC 22** 80/90/10	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**1262**	**1401**			
	Internal volume [dm3]	**108,4**	**171**			
	L min - L max [mm]	**3250 - 3315**				
ES 23 80/90/10 **ESEC 23** 80/90/10	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**1825**	**2015**	**2205**	**2360**	**2515**
	Internal volume [dm3]	**117,7**	**176,6**	**235,5**	**294,3**	**353,2**
	L min - L max [mm]	**4650 - 4715**				
US 23 80/90/100 **USEC 23** 80/90/100	**Coil rows**	**2**	**3**	**4**	**5**	**6**
	Dry weight [kg]	**1895**	**2096**			
	Internal volume [dm3]	**162,6**	**256,5**			
	L min - L max [mm]	**4650 - 4715**				

SUPERJUMBO ES-ESEC 2.80/90/10 US- USEC 2.80/90/10

Technical data

ES 24 80/90/10 **ESEC 24** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	2255	2510	2760	2960	3180
	Internal volume [dm3]	157	235,5	314	392,5	471
	L min - L max [mm]	6050 - 6115				
US 24 80/90/10 **USEC 24** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	2343	2616			
	Internal volume [dm3]	216,8	342			
	L min - L max [mm]	6050 - 6115				
ES 25 80/90/10 **ESEC 25** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	2720	3035	3350	3615	3875
	Internal volume [dm3]	196,2	294,3	392,5	490,6	588,7
	L min - L max [mm]	7450 - 7515				
US 25 80/90/10 **USEC 25** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	2827	3167			
	Internal volume [dm3]	271	427,5			
	L min - L max [mm]	7450 - 7515				
ES 26 80/90/10 **ESEC 26** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	3165	3545	3920	4235	4550
	Internal volume [dm3]	235,5	353,2	471	588,7	706,4
	L min - L max [mm]	8850 - 8915				
US 26 80/90/10 **USEC 26** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]	3291	3693			
	Internal volume [dm3]	325,2	513			
	L min - L max [mm]	8850 - 8915				
ES 27 80/90/10 **ESEC 27** 80/90/10	Coil rows		3	4	5	6
	Dry weight [kg]		4135	4575	4940	5310
	Internal volume [dm3]		412,1	549,4	686,8	824,2
	L min - L max [mm]	10250 - 10315				
ES 28 80/90/10 **ESEC 28** 80/90/10	Coil rows	2	3	4	5	6
	Dry weight [kg]			5229	5646	6069
	Internal volume [dm3]			628	785	942
	L min - L max [mm]	11650 - 11715				

SUPERJUMBO ES-ESEC 2.80/90/10 US- USEC 2.80/90/10

Performances

Model AC/EC	Capacity	DbA	Energy rating
ES 22 80/90/10	158,5 – 513,3 (0 – 2000)	77 – 104 (0 – 100)	E D C B A A+ A++
ESEC 22 80/90/10	83,2 – 500,2 (0 – 2000)	57 – 101 (0 – 100)	E D C B A A+ A++
US 22 80/90/10	138,6 – 359,3 (0 – 2000)	76 – 104 (0 – 100)	E D C B A A+ A++
USEC 22 80/90/10	82,4 – 365,3 (0 – 2000)	57 – 101 (0 – 100)	E D C B A A+ A++
ES 23 80/90/10	239,5 – 780,1 (0 – 2000)	79 – 106 (0 – 100)	E D C B A A+ A++
ESEC 23 80/90/10	124,7 – 750,4 (0 – 2000)	59 – 103 (0 – 100)	E D C B A A+ A++
US 23 80/90/10	208,9 – 539 (0 – 2000)	78 – 106 (0 – 100)	E D C B A A+ A++
USEC 23 80/90/10	123,6 – 534,4 (0 – 2000)	59 – 103 (0 – 100)	E D C B A A+ A++
ES 24 80/90/10	314,5 – 1026,5 (0 – 2000)	80 – 107 (0 – 100)	E D C B A A+ A++
ESEC 24 80/90/10	166,5 – 988,1 (0 – 2000)	60 – 104 (0 – 100)	E D C B A A+ A++
US 24 80/90/10	277,2 – 698,1 (0 – 2000)	79 – 107 (0 – 100)	E D C B A A+ A++
USEC 24 80/90/10	164,9 – 691,9 (0 – 2000)	61 – 104 (0 – 100)	E D C B A A+ A++

SUPERJUMBO ES-ESEC 2.80/90/10 US- USEC 2.80/90/10

Performances

Model AC/EC	Capacity	DbA	Energy rating
ES 25 80/90/10	396,7 – 1293,3 (0 – 2000)	81 – 108 (0 – 100)	E D C B A A+ A++
ESEC 25 80/90/10	205,9 – 1244,4 (0 – 2000)	61 – 105 (0 – 100)	E D C B A A+ A++
US 25 80/90/10	349,4 – 887,9 (0 – 2000)	80 – 108 (0 – 100)	E D C B A A+ A++
USEC 25 80/90/10	205,9 – 880,2 (0 – 2000)	61 – 105 (0 – 100)	E D C B A A+ A++
ES 26 80/90/10	479 – 1560,2 (0 – 2000)	82 – 109 (0 – 100)	E D C B A A+ A++
ESEC 26 80/90/10	248,3 – 1500,8 (0 – 2000)	62 – 106 (0 – 100)	E D C B A A+ A++
US 26 80/90/10	410,3 – 1078 (0 – 2000)	81 – 109 (0 – 100)	E D C B A A+ A++
USEC 26 80/90/10	247,7 – 1068,9 (0 – 2000)	62 – 106 (0 – 100)	E D C B A A+ A++
ES 27 80/90/10	652,5 – 1827,1 (0 – 2000)	83 – 110 (0 – 100)	E D C B A A+ A++
ESEC 27 80/90/10	309,4 – 1757,1 (0 – 2000)	62 – 107 (0 – 100)	E D C B A A+ A++
ES 28 80/90/10	790,3 – 1974,9 (0 – 2000)	83 – 107 (0 – 100)	E D C B A A+ A++
ESEC 28 80/90/10	353,7 – 2035,6 (0 – 2000)	63 – 107 (0 – 100)	E D C B A A+ A++

SUPERJUMBO ES-ESEC 2.80/90/10 US- USEC 2.80/90/10

Table of codes

		EXCHANGER TYPE
E	E	Oval shape copper tube
	U	Round shape 5/8” diam. copper tube
		DESIGN
S	S	V Shape “Superjumbo”
		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	1
		FANS PER ROW
8	2..8	2 / 3 / 4 / 5 / 6 / 7 / 8
		DIAMETER OF THE FANS
80	80	800 mm
	90	800 mm
	10	1000 mm
.		
		COIL ROWS
6	2..6	2 / 3 / 4 / 5 / 6
/		
		NO. OF CIRCUITS
2	2..14	2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 11 / 12 / 13 / 14
–		
		SPEED RATE (EC FANS ONLY)
100%	30%..100%	30% / 40% / 50% / 60% / 70% / 80% / 90% / 100%

Multiple choice One only choice

CENTRIFUGAL WH 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 conform with the provisions of the PED Directive 97/23/EC.

RADIAL FAN MOTORS

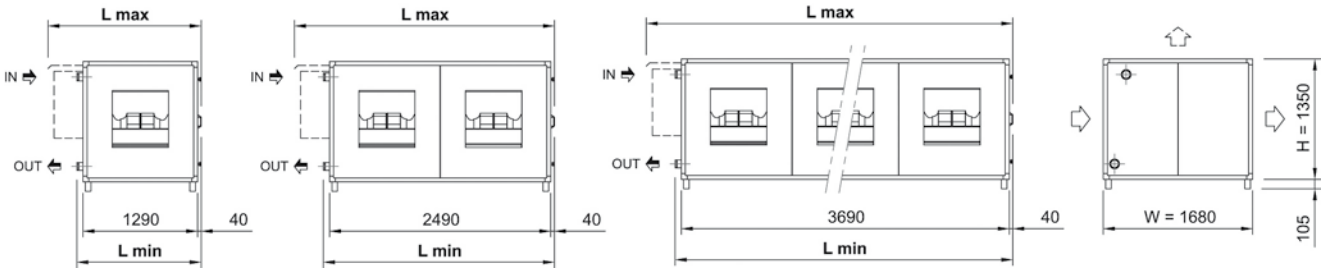
Power supply: 3-phase 400V ±10% / 50Hz; 2 speeds: high (delta connection) or low (star connection); Residual static pressure 200 Pa. IP44/54 closed type, external rotor motor with anti-humidity protective coating and thermal contacts housed in the windings. IP44/54 connector block. 100% adjustable voltage. 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 240 kW.

CENTRIFUGAL WH 1.50

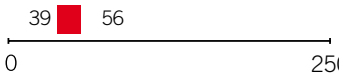
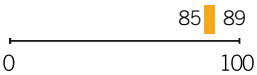
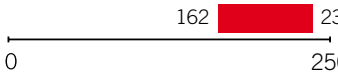
Technical data



WH 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				
WH 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				
WH 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				
WH 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 WH 1.50

Performances

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

CENTRIFUGAL WH 1.50

Table of codes

W	W	**EXCHANGER TYPE** Round shape 12 mm diam. copper tube
H	H	**DESIGN** H-FLOW
RD	RD	**FAN TYPE / PERFORMANCE / CONFIGURATION** Radial / Delta
	RY	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
.		
6	4..6	**COIL ROWS** 4 / 6
/		
2	2..14	**NO. OF CIRCUITS** 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 11 / 12 / 13 / 14

Multiple choice One only choice

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