

Industrial air cooler VRB/VRZ

Cooling/Freezing

StSt/Al - NH₃

GEA Heat Exchangers



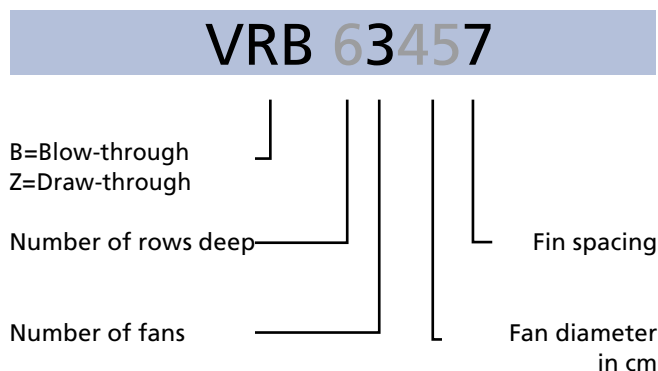
Goedhart



Goedhart VRB/VRZ

The range Goedhart VRB/VRZ single discharge ceiling mounted industrial air coolers consists of 510 types with capacities between 3,9 and 131,3 kW. The Goedhart VRB/VRZ air coolers are suitable for cooling and freezing applications and with a wide variety of accessories and options available. The coil block is standard build from aluminium end plates, stainless steel 304 tubes and aluminium fins. The fans are arranged for blow-through air configuration for the Goedhart VRB and draw-through for the Goedhart VRZ (please state which is required when ordering).. The modular design incorporates 5 different sizes of fan, with model options of up to 4 fans per cooler

Type-description



Coil block

- Tube pitch : 50x50 mm straight
- Fin spacings : 4, 7, 8, 10 and 12 mm
- Material : 15mm o.d stainless steel 304 tubes
- : aluminium HT-fins
- Optimized cooling circuits
- Standard refrigerant connections are positioned on the left hand side of the unit when looking with the direction of the airflow.
- A good thermal contact is achieved by hydraulic expansion of the tubes into the fin collars, that are also utilised as spacers to provide a constant distance between the fins.
- All coolers are pressure tested to 30 bar (lower by cooling mediums) and are supplied with a light over pressure charge of dry nitrogen.
- Standard the air coolers are suitable for NH₃-pumpcirculation (ratio 2/4).

Casing

- Construction for ceiling mounting
- The flush mounting protects against and prevents accumulation of dust and dirt.
- Casing material of galvanized sheet steel
- Finishing is standard white epoxy spray (RAL 9003)
- Bend/header protection by end covers, easy removed for maintenance
- Hinged drip tray.
- Defrost by hot gas spiral or electric defrost elements will be fixed to the bottom side of the coil.

General range features

Capacity

The listed nominal cooling capacities are based on NH₃, DT1 and DTM and a RH of 85%.

Influence of Coating on Capacity

The use of coated fins, or of a fully coated coil will result in a capacity decrease of approximately 3%

Capacity optimisation

Since Goedhart tries to limit stock products, we are capable of optimising the circuitry of our evaporators. In order to do this, the following information is needed :

- Design capacity
- Air volume
- Refrigerant
- Air on temperature
- Evaporating temperature
- Liquid temperature before expansion valve.

Sound data

The mean sound pressure (LpA @ 3m ± 2 dB (A)) each air cooler is a calculated indication value according to the EN13487 standard parallel pipe. Goedhart uses the fan manufacturer's sound power level (LwA) at the inlet side of the fan. Changes to or by the fan or the product, affect the sound, in these cases, consult the manufacturer for the new indication value. In critical sound requirements, we advise you to consult an expert.

Defrostsystem:

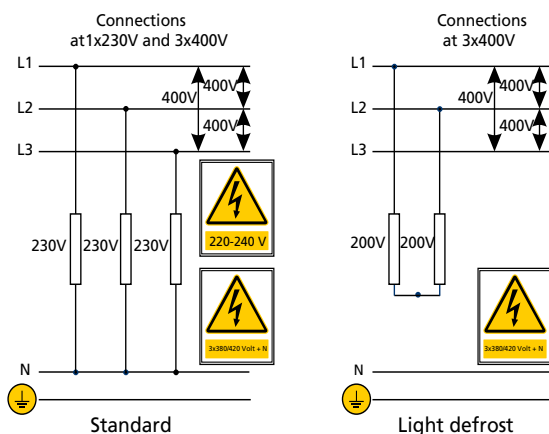
For room temperatures where ice build-up can be expected and where the coilblock can not be defrosted by the room air, electric or hotgas defrost is necessary.

With low temperatures we also advise fan periphery heating.

Electrical defrost:

The Goedhart VRB and VRZ can be provided with electric defrost. A distinction can be made here between heavy defrost loads for low temperatures and light defrost load for higher temperatures (room temperature approximately 0 °C).

The stainless steel heater elements are fitted in the coilblock in tubes, which forms a high conductive medium between the heaters and the fins. The driptray heaters are fitted to the underside of the aluminium inner tray with aluminium profiles. The heater elements which are rated for 220/240 V are connected for supply 380/415 V with neutral. The coilblock



elements are removable from the end opposite to the refrigerant connections, whilst the tray heater elements can be removed once the outer tray has been taken off.

Hotgas defrost:

The coilblock can be made suitable for hotgas. At an extra price the driptray can be provided with a hotgas/cooling medium spiral. The stainless steel tubes of the hotgas spiral are enclosed in special aluminium profiles that are rigidly secured to the underside of the aluminium inner tray, thus providing a good bond for maximum heat transfer. Just as with electric defrost a distinction is made with hotgas defrost between light defrost load (room temperature about 0°C) and heavy defrost load.

Accessories:

Standard accessories for the Goedhart VRB/VRZ air coolers are:

- Electric, hotgas and/or water defrost system.
- Fan periphery heating.
- Insulation within the driptray.
- Insulated hygienic polyester driptray.
- Goedhart VRZ supplied with bellmouth connection per fan for a longer air throw
- Goedhart VRB supplied with air diffuser for a longer air throw
- Goedhart VRB supplied with air diffuser with air operated damper to increase defrost efficiency (air volume reduced to approx. 90% and capacity reduced to approx. 95%)

The accessories are included in the price list.

Optional extras:

Various optional extras for the VRB/VRZ are available, price and delivery upon request:

- Insulation discs
- Feet for floor mounting
- Coating of the coilblock
- Fan hood
- 60 Hz motors
- EC-fans
- Single phase motors
- Over heat protection on the motors
- Glycol/water/etc. cooling mediums, NH₃ dx, R22 dx/pump-system.
- Stainless steel casing
- Coupling between hotgas spiral and coilblock
- Other fin spacings
- Stainless steel 316 tubes

Mounting and Maintenance

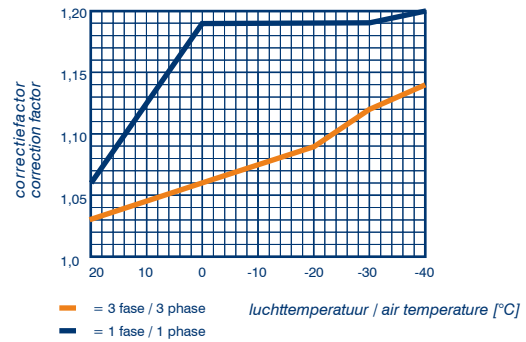
Goedhart VRB/VRZ is delivered on a wooden frame. When on the frame, Goedhart VRB/VRZ can be handled by forklift truck, which makes positioning and installation simple. Refer to our maintenance and installation manual..



Fans

The manufacturer of the fans is Süd Electric (we reserve the right to alter the manufacturer). The fans have glass fibre reinforced polypropylene impellers. The motors are available for 400V-50Hz-3 phase or 230V-50Hz-1 phase electrical supply. 2-Speed regulation can be achieved at 400/690V-50Hz-3 phase by using a D-Y reconnection (fig. 1). 3 Phase motors are suitable for a frequency controller (A sinus filter is needed, fig. 2). 1 Phase motors are suitable for phase control and transformer. The motors are standard executed with a thermo contact. The fans are suitable for operation in air temperature applications between -40 oC and +45 oC. When the air temperature is lower then -40 °C , special fans are needed. These speciale fans have a longer delivery time. The technical data in the table below are the same as on the motor name plates and is valid for an air temperature of +40 °C.

For air temperatures lower then +40 oC, the current amperage can be calculated by using the diagram multiplication factor, suitable thermal overloads can then be selected.



Three phase - 50 Hz

Fan type	Tension V	Δ				Y			Protection class*	Fan heating Watt (230V)
		Speed	Input	FLC	Sound power indication each fan LwA (+/-2dB(A))	Speed	Input	FLC		
		min ⁻¹	Watt	A	dB(A)	min ⁻¹	Watt	A		

4 pole motor (n=1500 rpm nom.)

400-32°	3x400/690	1350	250	0.60	74	1050	150	0.30	IP44	460
450-32°	3x400/690	1350	400	0.85	78	1050	300	0.50	IP44	580
500-40°	3x400/690	1380	880	1.90	85	1050	660	1.15	IP44	580
560-36°	3x400/690	1300	1250	2.30	85	1000	750	1.30	IP66	700
630-32°	3x400/690	1300	1250	2.30	86	1000	750	1.30	IP66	820
630-28°**	3x230/400				88	1400	1400	2.50	IP66	820

6 pole motor (n=1000 rpm nom.)

400-28°	3x400/690	900	105	0.33	63	750	65	0.13	IP44	460
450-32°	3x400/690	900	180	0.40	69	750	120	0.20	IP44	580
500-40°	3x400/690	900	500	1.00	81	760	350	0.65	IP44	580
560-32°	3x400/690	880	680	1.60	75	680	400	0.90	IP66	700
630-36°	3x400/690	880	680	1.60	80	680	400	0.90	IP66	820

Single phase - 50 Hz

Ventilator type	Speed	Input	FLC	Protection class*
	min ⁻¹	Watt	A	

4 pole motor (n=1500 rpm nom.)

400-32°	1350	450	1.95	IP44
450-32°	1350	450	1.95	IP44
500-40°	1330	700	3.40	IP44
560-36°	1350	920	4.00	IP66
630-32°	1350	1300	7.10	IP66

6 pole motor (n=1000 rpm nom.)

400-28°	900	250	1.10	IP44
450-32°	900	250	1.10	IP44
500-40°	900	400	1.75	IP44
560-32°	870	700	3.40	IP66
630-36°	870	700	3.40	IP66

*= IP44 motors also available in IP66 execution (extra price)

**= Only freezing conditions

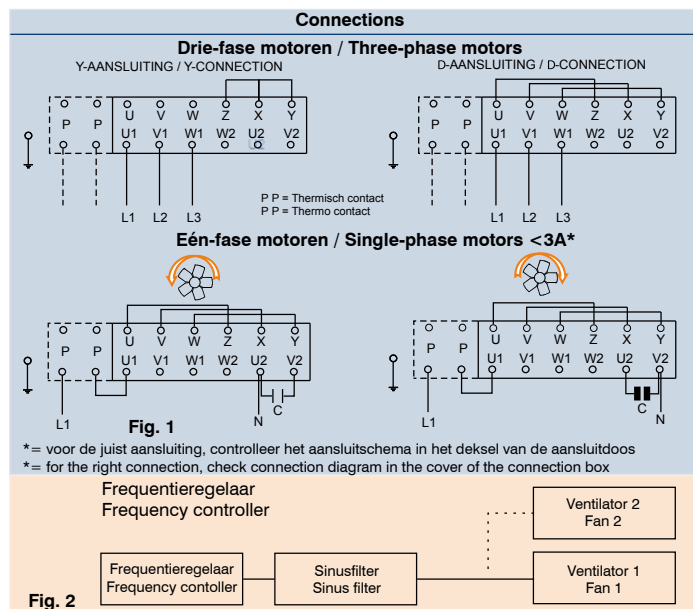


Fig. 2

Correction factors

Capacities at DTM:

The capacities are based on NH₃ pump system and the difference between the mean air temperature and the evaporation temperature (DTM). The evaporation temperature is the saturated temperature corresponding to the pressure at the suction outlet of the cooler. The nominal capacities are based on evaporation temperatures of -5 °C and -25°C, a DTM of 7 K and light frosting. Capacities for other mediums and systems are available upon request.

Correction factors for various mean air temperatures and evaporation temperatures (DTM) are as indicated in the tables below.

The requested capacity must be multiplied by a correction factor from one of these tables.

$$Q_{\text{nominal}} = \text{factor} \times Q_{\text{requested}}$$

Capacities at DT1:

Hereby the capacities are based on NH₃ pump system and DT1. DT1 is the difference between air-on temperature and the evaporation temperature of the cooler. The evaporation temperature is the saturated temperature corresponding to the pressure at the suction outlet of the cooler. The nominal capacities are based on evaporation temperatures of -8°C and DT1=8K and -25°C and DT1=7K and light frosting.

Capacities for other mediums and systems are available upon request.


Correction factors for various air-on temperatures and temperature differences (DT1) are as indicated in the table below. The requested capacity must be multiplied by a correction factor from the table, so that a cooler with the resulting nominal capacity can be chosen from the selection tables.


$$Q_{\text{nominal}} = \text{factor} \times Q_{\text{requested}}$$

NH₃ light frost = 0.2 mm RV = 85%

DTM	Evaporation temperature (°C)														
	K	0	-2,5	-5	-7,5	-10	-12,5	-15	-20	-22,5	-25	-27,5	-30	-32,5	-35
5	1.44	1.49	1.54	1.59	1.62	1.65	1.69	1.51	1.52	1.54	1.56	1.58	1.60	1.61	
6	1.14	1.18	1.23	1.26	1.29	1.31	1.32	1.18	1.20	1.22	1.23	1.25	1.26	1.28	
7	0.93	0.97	1.00	1.03	1.05	1.07	1.09	0.97	0.99	1.00	1.01	1.03	1.04	1.05	
8	0.79	0.82	0.85	0.87	0.88	0.90	0.92	0.82	0.83	0.85	0.86	0.87	0.88	0.89	
9	0.68	0.71	0.73	0.75	0.76	0.77	0.79	0.71	0.72	0.73	0.74	0.75	0.76	0.77	
10	0.61	0.61	0.64	0.65	0.67	0.68	0.69	0.62	0.63	0.64	0.65	0.66	0.66	0.67	
11	0.53	0.55	0.57	0.58	0.59	0.60	0.61	0.55	0.56	0.57	0.58	0.58	0.59	0.60	
12	0.47	0.49	0.51	0.52	0.53	0.54	0.55	0.50	0.50	0.51	0.52	0.52	0.53	0.54	

DT1	Evaporation temperature (°C)														
	K	0	-2,5	-5	-7,5	-10	-12,5	-15	-20	-22,5	-25	-27,5	-30	-32,5	-35
5	1.63	1.69	1.75	1.80	1.85	1.90	1.95	1.48	1.51	1.54	1.57	1.60	1.63	1.65	
6	1.29	1.34	1.39	1.43	1.47	1.50	1.54	1.17	1.20	1.22	1.24	1.26	1.29	1.31	
7	1.06	1.11	1.14	1.17	1.21	1.24	1.26	0.97	0.99	1.00	1.02	1.04	1.06	1.07	
8	0.90	0.94	0.97	1.00	1.02	1.04	1.06	0.82	0.83	0.85	0.86	0.88	0.89	0.91	
9	0.78	0.80	0.84	0.86	0.88	0.90	0.92	0.70	0.72	0.73	0.75	0.76	0.77	0.78	
10	0.68	0.70	0.74	0.76	0.78	0.79	0.80	0.62	0.63	0.64	0.65	0.66	0.67	0.69	
11	0.61	0.63	0.66	0.68	0.69	0.70	0.71	0.55	0.56	0.57	0.58	0.59	0.60	0.60	
12	0.54	0.56	0.59	0.60	0.62	0.63	0.64	0.49	0.50	0.51	0.52	0.53	0.54	0.53	

 = calculated without frost layer

 = calculated without frost layer

NH₃ normal frost = 0.5 mm RV= 85%

DTM	Evaporation temperature (°C)														
	K	0	-2,5	-5	-7,5	-10	-12,5	-15	-20	-22,5	-25	-27,5	-30	-32,5	-35
5		1.67	1.72	1.77	1.80	1.83	1.86	1.65	1.67	1.69	1.71	1.74	1.76	1.77	
6		1.32	1.37	1.39	1.42	1.45	1.48	1.31	1.32	1.34	1.36	1.38	1.39	1.41	
7		1.10	1.13	1.16	1.17	1.19	1.21	1.08	1.09	1.11	1.12	1.13	1.15	1.16	
8		0.92	0.95	0.97	0.98	1.00	1.02	0.91	0.92	0.94	0.95	0.96	0.97	0.98	
9			0.82	0.83	0.85	0.87	0.88	0.79	0.80	0.81	0.82	0.83	0.84	0.85	
10			0.72	0.74	0.75	0.76	0.77	0.69	0.70	0.71	0.72	0.73	0.74	0.74	
11			0.64	0.65	0.66	0.67	0.69	0.62	0.63	0.63	0.64	0.65	0.66	0.66	
12			0.57	0.58	0.60	0.61	0.62	0.55	0.56	0.57	0.58	0.58	0.59	0.59	

DT1	Evaporation temperature (°C)														
	K	0	-2,5	-5	-7,5	-10	-12,5	-15	-20	-22,5	-25	-27,5	-30	-32,5	-35
5		1.86	1.92	1.98	2.03	2.08	2.13	1.68	1.71	1.73	1.74	1.76	1.79	1.80	
6		1.48	1.52	1.57	1.61	1.65	1.68	1.33	1.34	1.35	1.37	1.38	1.39	1.40	
7		1.22	1.26	1.29	1.33	1.36	1.39	1.08	1.09	1.10	1.11	1.12	1.13	1.14	
8		1.04	1.07	1.09	1.12	1.14	1.16	0.91	0.92	0.93	0.95	0.96	0.97	0.98	
9			0.92	0.95	0.97	0.99	1.00	0.79	0.80	0.81	0.81	0.82	0.83	0.84	
10			0.81	0.83	0.85	0.86	0.88	0.69	0.70	0.71	0.71	0.72	0.74	0.74	
11			0.72	0.74	0.76	0.77	0.78	0.61	0.62	0.63	0.64	0.64	0.65	0.66	
12			0.65	0.67	0.68	0.69	0.70	0.55	0.56	0.57	0.58	0.59	0.60	0.61	

Attention!

Moisture carry over from the coil block:

When you select VRB with a Ø500 mm fan in an application with a high relative humidity and/or defrost with room air, Goedhart advises the use of a fan with a low pitch angle or the draw-through execution VRZ. Thus, you will avoid the risk of moisture carry over from the coil block. The fan with a low pitch angle give a reducing of the capacity of approx. 5% and a reduction of the air volume of approx. 10%.

ATTENTION !!!

When making your selection, pay attention to the ratio between the airvolume and capacity. A low volume to capacity ratio results in a wide temperature drop across the coil which cause to dry out (especially on coils with a high number of rows deep).

VRB/VRZ 4mm Technical data

Type VRB VRZ	3x400V-50H-4pole (1500 min ⁻¹ nom.)						Surface	Internal volume	Weight	Dimensions							Connections					
	NH3				Air volume m ³ /h	LpA @ 3 m (+/- 2 dB(A))				L	B	H	D	E1	E2	E3	Refrigerant			Waterdefrost		
	Cooling		Freezing														In	Uit	Hot gas	Drain	In	Drain
	DTM = 7K air mean = +2°C	DT1 = 8K (SC2) air on = 0°C	DTM = 7K air mean = -18°C	DT1 = 7K (SC3) air on = -18°C																		
3.1.40.4	8,9	6,8			3230	52	28	4	65	1156	650	610	450	756			21,3	21,3	22	1¼	1¼	2
4.1.40.4	11,3	7,9			3079	52	38	6	74	1156	700	610	500	756			21,3	21,3	22	1¼	1¼	2
5.1.40.4	13,1	8,5			2942	52	47	7	82	1156	750	610	550	756			21,3	21,3	22	1¼	1¼	2
3.1.45.4	12,6	9,9			4881	56	39	6	79	1256	690	710	450	856			21,3	21,3	22	1¼	1¼	2
4.1.45.4	16,1	11,5			4652	56	52	8	90	1256	740	710	500	856			21,3	26,7	22	1¼	1¼	2
5.1.45.4	18,9	12,5			4448	56	65	10	101	1256	790	710	550	856			21,3	26,7	22	1¼	1¼	2
3.1.50.4	16,6	13,3			6958	63	48	7	99	1456	770	710	550	1056			21,3	26,7	22	1¼	1¼	2
4.1.50.4	21,2	15,5			6648	63	65	10	112	1456	820	710	600	1056			21,3	26,7	22	1¼	1¼	2
5.1.50.4	25,2	17,1			6371	63	81	12	127	1456	870	710	650	1056			21,3	26,7	22	1¼	1¼	2
3.1.56.4	24,2	19,4			10063	63	71	10	136	1556	910	910	650	1156			21,3	33,7	22	1¼	1¼	2
4.1.56.4	30,9	22,6			9704	63	95	14	155	1556	960	910	700	1156			21,3	33,7	22	1¼	1¼	2
5.1.56.4	37,0	25,1			9375	63	119	17	175	1556	1010	910	750	1156			21,3	33,7	22	1¼	1¼	2
3.1.63.4	31,6	25,1			12597	63	97	14	171	1656	910	1110	650	1256			21,3	33,7	22	1¼	1¼	2
4.1.63.4	41,0	29,5			12209	63	129	18	196	1656	960	1110	700	1256			21,3	33,7	22	1¼	1¼	2
5.1.63.4	48,7	32,1			11842	63	162	23	221	1656	1010	1110	750	1256			21,3	42,2	22	1¼	1¼	2
3.2.40.4	17,8	13,7			6453	55	56	8	105	1856	650	610	450	1456			21,3	26,7	22	1¼	1¼	2
4.2.40.4	22,5	15,7			6149	55	75	11	121	1856	700	610	500	1456			21,3	26,7	22	1¼	1¼	2
5.2.40.4	26,3	17,0			5875	55	94	14	137	1856	750	610	550	1456			21,3	26,7	22	1¼	1¼	2
3.2.45.4	25,2	19,7			9753	59	77	11	129	2056	690	710	450	1656			21,3	33,7	22	1¼	1¼	2
4.2.45.4	32,1	22,9			9291	59	103	15	149	2056	740	710	500	1656			21,3	33,7	22	1¼	1¼	2
5.2.45.4	37,7	24,5			8882	59	129	18	170	2056	790	710	550	1656			21,3	33,7	22	1¼	1¼	2
3.2.50.4	32,8	26,6			13905	66	97	14	166	2456	770	710	550	2056			21,3	33,7	22	1¼	1¼	2
4.2.50.4	42,3	31,0			13283	66	129	18	191	2456	820	710	600	2056			21,3	42,2	22	1¼	1¼	2
5.2.50.4	50,2	33,7			12728	66	162	23	216	2456	870	710	650	2056			21,3	42,2	22	1¼	1¼	2
3.2.56.4	48,2	38,8			20115	66	142	20	231	2656	910	910	650	2256			21,3	42,2	22	1¼	1¼	2
4.2.56.4	61,7	45,2			19392	66	190	27	268	2656	960	910	700	2256			26,7	42,2	34	1¼	1¼	2
5.2.56.4	73,8	50,1			18734	66	237	33	302	2656	1010	910	750	2256			26,7	42,2	34	1¼	1¼	3
3.2.63.4	63,8	50,3			25181	66	194	27	294	2856	910	1110	650	2456			26,7	42,2	34	1¼	1¼	3
4.2.63.4	81,8	58,9			24402	66	259	36	341	2856	960	1110	700	2456			26,7	48,3	34	1¼	1¼	3
5.2.63.4	97,2	64,9			23667	66	324	45	386	2856	1010	1110	750	2456			26,7	48,3	34	1¼	1¼	3
3.3.45.4	36,9	29,6			14623	61	116	17	180	2856	690	710	450	2456			21,3	33,7	22	1¼	1¼	2x2
4.3.45.4	48,0	34,3			13929	61	155	22	211	2856	740	710	500	2456			21,3	42,2	22	1¼	1¼	2x2
5.3.45.4	56,6	36,8			13317	61	194	27	240	2856	790	710	550	2456			21,3	42,2	22	1¼	1¼	2x2
3.3.50.4	49,6	39,9			20852	67	145	21	235	3456	770	710	550	3056	1028	2028	21,3	42,2	22	2x1¼	2x1¼	2x2
4.3.50.4	63,4	46,4			19918	67	194	27	270	3456	820	710	600	3056	1028	2028	26,7	42,2	34	2x1¼	2x1¼	2x2
5.3.50.4	75,2	51,1			19085	67	242	34	306	3456	870	710	650	3056	1028	2028	26,7	42,2	34	2x1¼	2x1¼	2x2
3.3.56.4	71,4	58,2			30165	67	213	30	326	3806	910	910	650	3356	2228	1128	26,7	42,2	34	2x1¼	2x1¼	2x2
4.3.56.4	92,8	67,9			29081	67	284	40	379	3806	960	910	700	3356	2228	1128	26,7	48,3	34	2x1¼	2x1¼	2x2
5.3.56.4	110,5	75,1			28093	67	356	50	430	3806	1010	910	750	3356	2228	1128	33,7	60,3	34	2x1¼	2x1¼	2x2
3.3.63.4	95,7	75,4			37766	67	291	41	427	4106	910	1110	650	3656	2428	1228	33,7	60,3	34	2x1¼	2x1¼	2x2
4.3.63.4	122,4	88,3			36595	67	388	54	498	4106	960	1110	700	3656	2428	1228	33,7	60,3	42	2x1¼	2x1¼	2x2
5.3.63.4	145,4	97,3			35492	67	485	68	563	4106	1010	1110	750	3656	2428	1228	33,7	60,3	42	2x1¼	2x1¼	2x2
3.4.50.4	66,1	53,2			27799	68	194	27	302	4506	770	710	550	4056	2028	2028	26,7	42,2	34	2x1¼	2x1¼	2x3
4.4.50.4	84,5	61,9			26553	68	258	36	349	4506	820	710	600	4056	2028	2028	26,7	48,3	34	2x1¼	2x1¼	2x3
5.4.50.4	100,3	68,1			25441	68	323	45	397	4506	870	710	650	4056	2028	2028	26,7	48,3	34	2x1¼	2x1¼	2x3
3.4.56.4	96,4	77,5			40216	68	284	40	429	4906	910	910	650	4456	2228	2228	33,7	60,3	34	2x1¼	2x1¼	2x3
4.4.56.4	123,4	90,3			38770	68	379	53	500	4906	960	910	700	4456	2228	2228	33,7	60,3	42	2x1¼	2x1¼	2x3
5.4.56.4	147,1	99,9			37451	68	474	66	567	4906	1010	910	750	4456	2228	2228	33,7	60,3	42	2x1¼	2x1¼	2x3
3.4.63.4	126,2	100,4			50350	68	388	54	551	5306	910	1110	650	4856	2428	2428	33,7	60,3	42	2x1¼	2x1¼	2x3
4.4.63.4	163,2	117,5			48790	68	517	72	643	5306	960	1110	700	4856	2428	2428	33,7	60,3	42	2x1¼	2x1¼	2x3
5.4.63.4	193,9	129,4			47315	68	647	90	729	5306	1010	1110	750	4856	2428	2428	42,2	60,3	48	2x1¼	2x1¼	2x3

Pay attention to the relation capacity / air volume !!

* = Sound pressure indication (LpA) at 3 m distance each air cooler (+/- 2 dB(A)) , free field conditions, according EN13487

For moisture carry over see remark pag 5

VRB/VRZ 7mm Technical data

Type VRB VRZ	3x400V-50H-4pole (1500 min ⁻¹ nom.)						Surface	Internal volume	Weight	Dimensions							Connections					
	NH3				Air volume	LpA @ 3 m (+/- 2 dB(A))				L	B	H	D	E1	E2	E3	Refrigerant			Waterdefrost		
	Cooling		Freezing														In	Uit	Hot gas	Drain	In	Drain
	DTM = 7K air mean = +2°C	DT1 = 8K (SC2) air on = 0°C	DTM = 7K air mean = -18°C	DT1 = 7K (SC3) air on = -18°C																		
4.1.40.7	6,9	5,8	5,6	4,2	3430	52	22	6	68	1156	700	610	500	756			21,3	21,3	22	1¼	1¼	2
6.1.40.7	9,9	7,5	7,7	5,2	3285	52	33	8	82	1156	800	610	600	756			21,3	26,7	22	1¼	1¼	2
8.1.40.7	12,4	8,5	9,7	6,0	3147	52	44	11	97	1156	900	610	700	756			21,3	26,7	22	1¼	1¼	2
4.1.45.7	9,9	8,5	7,8	6,0	5206	56	30	8	81	1256	740	710	500	856			21,3	26,7	22	1¼	1¼	2
6.1.45.7	14,2	10,9	11,3	7,8	4968	56	45	11	99	1256	840	710	600	856			21,3	26,7	22	1¼	1¼	2
8.1.45.7	17,9	12,4	14,1	8,9	4754	56	61	15	117	1256	940	710	700	856			21,3	33,7	22	1¼	1¼	2
4.1.50.7	13,0	11,4	10,7	8,2	7387	63	38	10	101	1456	820	710	600	1056			21,3	26,7	22	1¼	1¼	2
6.1.50.7	18,8	14,7	15,2	10,5	7073	63	57	14	123	1456	920	710	700	1056			21,3	33,7	22	1¼	1¼	2
8.1.50.7	23,9	17,0	18,9	12,3	6786	63	76	19	145	1456	1020	710	800	1056			21,3	33,7	22	1¼	1¼	2
4.1.56.7	18,9	16,5	14,5	11,8	10553	63	56	14	137	1556	960	910	700	1156			21,3	33,7	22	1¼	1¼	2
6.1.56.7	27,0	21,3	22,1	15,4	10195	63	84	20	167	1556	1060	910	800	1156			21,3	33,7	22	1¼	1¼	2
8.1.56.7	34,9	24,8	26,1	17,8	9864	63	112	27	196	1556	1160	910	900	1156			21,3	42,2	22	1¼	1¼	2
4.1.63.7	24,7	21,2	20,2	15,2	13095	63	76	18	172	1656	960	1110	700	1256			21,3	33,7	22	1¼	1¼	2
6.1.63.7	35,4	27,4	28,8	19,9	12734	63	114	27	210	1656	1060	1110	800	1256			21,3	42,2	22	1¼	1¼	2
8.1.63.7	45,6	32,0	35,9	22,8	12384	63	152	36	247	1656	1160	1110	900	1256			21,3	42,2	22	1¼	1¼	2
4.2.40.7	13,7	11,6	11,2	8,5	6853	55	44	11	108	1856	700	610	500	1456			21,3	26,7	22	1¼	1¼	2
6.2.40.7	19,8	14,9	15,8	10,7	6563	55	66	16	132	1856	800	610	600	1456			21,3	33,7	22	1¼	1¼	2
8.2.40.7	24,7	16,9	19,4	12,0	6285	55	89	21	157	1856	900	610	700	1456			21,3	33,7	22	1¼	1¼	2
4.2.45.7	19,7	16,9	16,1	12,3	10405	59	61	15	130	2056	740	710	500	1656			21,3	33,7	22	1¼	1¼	2
6.2.45.7	27,8	21,6	22,6	15,7	9926	59	91	22	162	2056	840	710	600	1656			21,3	42,2	22	1¼	1¼	2
8.2.45.7	35,7	24,8	28,2	17,7	9495	59	122	29	193	2056	940	710	700	1656			21,3	42,2	22	1¼	1¼	2
4.2.50.7	25,9	22,8	21,4	16,5	14765	66	76	18	169	2456	820	710	600	2056			21,3	42,2	22	1¼	1¼	2
6.2.50.7	37,6	29,3	30,3	21,0	14135	66	114	27	206	2456	920	710	700	2056			21,3	42,2	22	1¼	1¼	3
8.2.50.7	47,8	34,0	37,7	24,5	13560	66	152	36	244	2456	1020	710	800	2056			21,3	42,2	22	1¼	1¼	3
4.2.56.7	37,7	32,9	29,0	23,5	21096	66	111	27	232	2656	960	910	700	2256			21,3	42,2	22	1¼	1¼	2
6.2.56.7	54,0	42,5	44,0	30,7	20378	66	167	40	285	2656	1060	910	800	2256			21,3	48,3	34	1¼	1¼	3
8.2.56.7	69,6	49,6	52,2	35,6	19714	66	223	53	337	2656	1160	910	900	2256			21,3	48,3	34	1¼	1¼	3
4.2.63.7	49,4	42,4	40,4	30,4	26184	66	152	36	293	2856	960	1110	700	2456			21,3	48,3	22	1¼	1¼	3
6.2.63.7	70,6	54,8	57,5	39,8	25457	66	228	54	361	2856	1060	1110	800	2456			21,3	60,3	34	1¼	1¼	3
8.2.63.7	91,0	63,9	71,8	45,5	24754	66	304	72	430	2856	1160	1110	900	2456			26,7	60,3	34	1¼	1¼	3
4.3.45.7	29,2	25,4	24,0	18,5	15604	61	91	22	183	2856	740	710	500	2456			21,3	42,2	22	1¼	1¼	2x2
6.3.45.7	42,5	32,5	33,9	23,5	14883	61	137	33	228	2856	840	710	600	2456			21,3	42,2	22	1¼	1¼	2x2
8.3.45.7	53,5	37,2	42,0	26,6	14236	61	182	44	273	2856	940	710	700	2456			21,3	42,2	34	1¼	1¼	2x2
4.3.50.7	38,7	34,1	32,1	24,6	22144	67	114	27	235	3456	820	710	600	3056	1028	2028	21,3	42,2	22	2x1¼	2x1¼	2x2
6.3.50.7	55,5	43,9	45,4	31,8	21197	67	171	41	291	3456	920	710	700	3056	1028	2028	21,3	48,3	34	2x1¼	2x1¼	2x2
8.3.50.7	71,5	51,0	56,6	36,5	20333	67	228	54	346	3456	1020	710	800	3056	1028	2028	21,3	48,3	34	2x1¼	2x1¼	2x2
4.3.56.7	56,5	49,1	46,3	35,9	31642	67	167	40	326	3806	960	910	700	3356	2228	1128	21,3	48,3	34	2x1¼	2x1¼	2x2
6.3.56.7	82,0	63,5	66,0	46,0	30562	67	251	60	402	3806	1060	910	800	3356	2228	1128	26,7	60,3	34	2x1¼	2x1¼	2x2
8.3.56.7	104,4	74,2	82,6	52,8	29566	67	335	79	478	3806	1160	910	900	3356	2228	1128	26,7	60,3	34	2x1¼	2x1¼	2x3
4.3.63.7	73,6	63,8	60,0	46,4	39271	67	228	54	425	4106	960	1110	700	3656	2428	1228	26,7	60,3	34	2x1¼	2x1¼	2x2
6.3.63.7	105,9	82,2	85,6	59,7	38181	67	342	81	524	4106	1060	1110	800	3656	2428	1228	26,7	60,3	42	2x1¼	2x1¼	2x3
8.3.63.7	133,8	95,8	107,2	68,7	37124	67	456	108	624	4106	1160	1110	900	3656	2428	1228	26,7	76,1	42	2x1¼	2x1¼	2x3
4.4.50.7	51,7	45,5	42,7	33,0	29523	68	152	36	303	4506	820	710	600	4056	2028	2028	21,3	48,3	22	2x1¼	2x1¼	2x3
6.4.50.7	75,2	58,6	60,6	42,5	28259	68	228	54	374	4506	920	710	700	4056	2028	2028	21,3	60,3	34	2x1¼	2x1¼	2x3
8.4.50.7	95,5	67,9	75,4	49,0	27107	68	304	72	445	4506	1020	710	800	4056	2028	2028	26,7	60,3	34	2x1¼	2x1¼	2x3
4.4.56.7	75,4	65,8	57,9	47,0	42185	68	223	53	429	4906	960	910	700	4456	2228	2228	26,7	60,3	34	2x1¼	2x1¼	2x3
6.4.56.7	107,9	84,9	88,0	61,3	40744	68	334	79	527	4906	1060	910	800	4456	2228	2228	26,7	60,3	42	2x1¼	2x1¼	2x3
8.4.56.7	139,2	99,1	104,3	71,1	39415	68	446	106	627	4906	1160	910	900	4456	2228	2228	26,7	76,1	42	2x1¼	2x1¼	2x3
4.4.63.7	98,7	84,8	80,6	60,8	52359	68	304	72	546	5306	960	1110	700	4856	2428	2428	26,7	60,3	34	2x1¼	2x1¼	2x3
6.4.63.7	140,4	109,6	114,9	79,5	50904	68	456	108	677	5306	1060	1110	800	4856	2428	2428	33,7	76,1	42	2x1¼	2x1¼	2x3
8.4.63.7	181,9	127,7	143,5	91,0	49495	68	608	144	807	5306	1160	1110	900	4856	2428	2428	33,7	76,1	48	2x1¼	2x1¼	2x3

Pay attention to the relation capacity / air volume !!

* = Sound pressure indication (LpA) at 3 m distance each air cooler (+/- 2 dB(A)) , free field conditions, according EN13487

For moisture carry over see remark pag 5

VRB/VRZ 8mm Technical data

Type VRB VRZ	3x400V-50H-4pole (1500 min ⁻¹ nom.)						Surface	Internal volume	Weight	Dimensions							Connections					
	NH3				Air volume m ³ /h	LpA @ 3 m (+/- 2 dB(A))				L	B	H	D	E1	E2	E3	Refrigerant			Waterdefrost		
	Cooling		Freezing														In	Uit	Hot gas	Drain	In	Drain
	DTM = 7K air mean = +2°C	DT1 = 8K (SC2) air on = 0°C	DTM = 7K air mean = -18°C	DT1 = 7K (SC3) air on = -18°C																		
4.1.40.8	6,1	5,4	5,0	3,9	3480	52	19	6	67	1156	700	610	500	756			21,3	21,3	22	1¼	1¼	2
6.1.40.8	8,9	7,0	6,8	4,9	3361	52	29	8	81	1156	800	610	600	756			21,3	21,3	22	1¼	1¼	2
8.1.40.8	11,3	8,1	8,9	5,7	3244	52	39	11	96	1156	900	610	700	756			21,3	26,7	22	1¼	1¼	2
4.1.45.8	8,8	7,8	6,8	5,6	5296	56	27	8	79	1256	740	710	500	856			21,3	26,7	22	1¼	1¼	2
6.1.45.8	12,8	10,2	10,3	7,3	5090	56	40	11	97	1256	840	710	600	856			21,3	26,7	22	1¼	1¼	2
8.1.45.8	16,3	11,9	12,9	8,5	4902	56	54	15	114	1256	940	710	700	856			21,3	26,7	22	1¼	1¼	2
4.1.50.8	11,6	10,4	9,5	7,5	7504	63	33	10	99	1456	820	710	600	1056			21,3	26,7	22	1¼	1¼	2
6.1.50.8	17,0	13,8	13,7	9,9	7236	63	50	14	120	1456	920	710	700	1056			21,3	33,7	22	1¼	1¼	2
8.1.50.8	21,8	16,2	17,3	11,7	6986	63	67	19	141	1456	1020	710	800	1056			21,3	33,7	22	1¼	1¼	2
4.1.56.8	16,8	15,1	13,3	10,9	10685	63	49	14	135	1556	960	910	700	1156			21,3	33,7	22	1¼	1¼	2
6.1.56.8	24,6	19,8	19,9	14,4	10380	63	74	20	164	1556	1060	910	800	1156			21,3	33,7	22	1¼	1¼	2
8.1.56.8	31,7	23,5	24,3	16,9	10096	63	98	27	191	1556	1160	910	900	1156			21,3	42,2	22	1¼	1¼	2
4.1.63.8	22,0	19,4	17,9	13,8	13224	63	67	18	169	1656	960	1110	700	1256			21,3	33,7	22	1¼	1¼	2
6.1.63.8	31,8	25,5	25,9	18,5	12925	63	101	27	204	1656	1060	1110	800	1256			21,3	42,2	22	1¼	1¼	2
8.1.63.8	41,3	30,2	32,5	21,7	12630	63	134	36	239	1656	1160	1110	900	1256			21,3	42,2	22	1¼	1¼	2
4.2.40.8	12,2	10,7	10,0	7,7	6957	55	39	11	105	1856	700	610	500	1456			21,3	26,7	22	1¼	1¼	2
6.2.40.8	17,7	13,8	14,2	9,9	6716	55	58	16	128	1856	800	610	600	1456			21,3	33,7	22	1¼	1¼	2
8.2.40.8	22,5	16,1	17,8	11,4	6479	55	78	21	152	1856	900	610	700	1456			21,3	33,7	22	1¼	1¼	2
4.2.45.8	17,5	15,6	14,4	11,2	10585	59	53	15	127	2056	740	710	500	1656			21,3	33,7	22	1¼	1¼	2
6.2.45.8	25,2	20,2	20,5	14,6	10173	59	80	22	158	2056	840	710	600	1656			21,3	33,7	22	1¼	1¼	2
8.2.45.8	32,5	23,7	25,7	17,0	9794	59	107	29	188	2056	940	710	700	1656			21,3	42,2	22	1¼	1¼	2
4.2.50.8	23,2	20,9	19,1	15,2	15000	66	67	18	165	2456	820	710	600	2056			21,3	33,7	22	1¼	1¼	2
6.2.50.8	33,9	27,5	27,3	19,8	14463	66	100	27	200	2456	920	710	700	2056			21,3	42,2	22	1¼	1¼	3
8.2.50.8	43,4	32,3	34,4	23,3	13960	66	134	36	237	2456	1020	710	800	2056			21,3	42,2	22	1¼	1¼	3
4.2.56.8	33,6	30,2	26,5	21,8	21363	66	98	27	227	2656	960	910	700	2256			21,3	42,2	22	1¼	1¼	2
6.2.56.8	49,2	39,6	39,7	28,7	20752	66	148	40	276	2656	1060	910	800	2256			21,3	42,2	22	1¼	1¼	3
8.2.56.8	63,2	47,0	48,5	33,9	20178	66	197	53	326	2656	1160	910	900	2256			21,3	48,3	34	1¼	1¼	3
4.2.63.8	43,7	39,0	35,7	27,8	26442	66	134	36	286	2856	960	1110	700	2456			21,3	42,2	22	1¼	1¼	3
6.2.63.8	63,4	51,0	51,7	37,0	25840	66	201	54	350	2856	1060	1110	800	2456			21,3	48,3	34	1¼	1¼	3
8.2.63.8	82,5	60,4	64,9	43,3	25249	66	269	72	415	2856	1160	1110	900	2456			21,3	60,3	34	1¼	1¼	3
4.3.45.8	26,2	23,4	21,5	17,0	15875	61	80	22	178	2856	740	710	500	2456			21,3	42,2	22	1¼	1¼	2x2
6.3.45.8	38,2	30,3	30,8	21,9	15256	61	121	33	222	2856	840	710	600	2456			21,3	42,2	22	1¼	1¼	2x2
8.3.45.8	48,7	35,5	38,6	25,5	14685	61	161	44	264	2856	940	710	700	2456			21,3	42,2	22	1¼	1¼	2x2
4.3.50.8	34,7	31,4	28,6	22,6	22497	67	100	27	230	3456	820	710	600	3056	1028	2028	21,3	42,2	22	1¼	2x1¼	2x2
6.3.50.8	50,2	41,1	41,1	29,7	21690	67	151	41	283	3456	920	710	700	3056	1028	2028	21,3	42,2	22	1¼	2x1¼	2x2
8.3.50.8	65,1	48,5	51,6	34,9	20936	67	201	54	335	3456	1020	710	800	3056	1028	2028	21,3	48,3	34	1¼	2x1¼	2x2
4.3.56.8	50,4	45,1	41,5	32,8	32041	67	147	40	318	3806	960	910	700	3356	2228	1128	21,3	48,3	22	2x1¼	2x1¼	2x2
6.3.56.8	73,6	59,5	59,6	42,7	31123	67	221	60	390	3806	1060	910	800	3356	2228	1128	21,3	60,3	34	2x1¼	2x1¼	2x2
8.3.56.8	94,4	70,3	75,5	49,8	30261	67	295	79	462	3806	1160	910	900	3356	2228	1128	26,7	60,3	34	2x1¼	2x1¼	2x3
4.3.63.8	65,5	58,5	53,8	42,5	39661	67	201	54	414	4106	960	1110	700	3656	2428	1228	21,3	60,3	34	2x1¼	2x1¼	2x2
6.3.63.8	95,1	76,4	77,5	55,5	38756	67	302	81	508	4106	1060	1110	800	3656	2428	1228	26,7	60,3	34	2x1¼	2x1¼	2x3
8.3.63.8	123,7	90,6	98,0	65,3	37867	67	403	108	603	4106	1160	1110	900	3656	2428	1228	26,7	60,3	42	2x1¼	2x1¼	2x3
4.4.50.8	46,4	41,7	38,1	30,5	29994	68	134	36	296	4506	820	710	600	4056	2028	2028	21,3	48,3	22	2x1¼	2x1¼	2x3
6.4.50.8	67,0	54,8	54,5	39,9	28916	68	201	54	363	4506	920	710	700	4056	2028	2028	21,3	60,3	34	2x1¼	2x1¼	2x3
8.4.50.8	86,8	64,6	68,8	46,6	27911	68	268	72	430	4506	1020	710	800	4056	2028	2028	26,7	60,3	34	2x1¼	2x1¼	2x3
4.4.56.8	67,2	60,4	53,1	43,6	42721	68	197	53	418	4906	960	910	700	4456	2228	2228	21,3	60,3	34	2x1¼	2x1¼	2x3
6.4.56.8	98,3	79,2	79,4	57,5	41494	68	295	79	511	4906	1060	910	800	4456	2228	2228	26,7	60,3	34	2x1¼	2x1¼	2x3
8.4.56.8	126,3	93,9	97,0	67,7	40345	68	394	106	606	4906	1160	910	900	4456	2228	2228	26,7	60,3	42	2x1¼	2x1¼	2x3
4.4.63.8	87,3	77,9	71,3	55,6	52878	68	268	72	531	5306	960	1110	700	4856	2428	2428	26,7	60,3	34	2x1¼	2x1¼	2x3
6.4.63.8	126,6	102,2	103,3	73,9	51671	68	403	108	655	5306	1060	1110	800	4856	2428	2428	26,7	76,1	42	2x1¼	2x1¼	2x3
8.4.63.8	164,9	120,8	129,7	86,7	50486	68	537	144	778	5306	1160	1110	900	4856	2428	2428	33,7	76,1	48	2x1¼	2x1¼	2x3

Pay attention to the relation capacity / air volume !!

* = Sound pressure indication (LpA) at 3 m distance each air cooler (+/- 2 dB(A)) , free field conditions, according EN13487

For moisture carry over see remark pag 5

VRB/VRZ 10mm Technical data

Type VRB VRZ	3x400V-50H-4pole (1500 min ⁻¹ nom.)						Surface	Internal volume	Weight	Dimensions							Connections					
	NH3				Air volume	LpA @ 3 m (+/- 2 dB(A))				L	B	H	D	E1	E2	E3	Refrigerant			Waterdefrost		
	Cooling		Freezing														In	Uit	Hot gas	Drain	In	Drain
	DTM = 7K air mean= +2°C	DT1 = 8K (SC2) air on= 0°C	DTM = 7K air mean= -18°C	DT1 = 7K (SC3) air on= -18°C																		
6.1.40.10	7,4	6,2	5,7	4,4	3460	52	24	8	78	1156	800	610	600	756			21,3	21,3	22	1¼	1¼	2
8.1.40.10	9,6	7,4	7,6	5,1	3374	52	32	11	92	1156	900	610	700	756			21,3	21,3	22	1¼	1¼	2
1.1.40.10	11,5	8,3	9,0	5,9	3289	52	40	14	105	1156	1000	610	800	756			21,3	26,7	22	1¼	1¼	2
6.1.45.10	10,8	9,1	8,7	6,5	5260	56	33	11	94	1256	840	710	600	856			21,3	26,7	22	1¼	1¼	2
8.1.45.10	13,9	10,8	10,9	7,8	5112	56	44	15	110	1256	940	710	700	856			21,3	26,7	22	1¼	1¼	2
1.1.45.10	16,7	12,1	13,2	8,6	4973	56	55	19	126	1256	1040	710	800	856			21,3	26,7	22	1¼	1¼	2
6.1.50.10	14,3	12,3	11,4	8,9	7457	63	41	14	116	1456	920	710	700	1056			21,3	26,7	22	1¼	1¼	2
8.1.50.10	18,6	14,7	14,9	10,6	7264	63	55	19	135	1456	1020	710	800	1056			21,3	33,7	22	1¼	1¼	2
1.1.50.10	22,5	16,7	17,8	12,0	7081	63	68	23	154	1456	1120	710	900	1056			21,3	33,7	22	1¼	1¼	2
6.1.56.10	20,7	17,7	16,7	12,8	10632	63	60	20	158	1556	1060	910	800	1156			21,3	33,7	22	1¼	1¼	2
8.1.56.10	26,9	21,3	21,3	15,4	10413	63	80	27	183	1556	1160	910	900	1156			21,3	33,7	22	1¼	1¼	2
1.1.56.10	32,0	23,9	25,6	17,4	10203	63	100	34	210	1556	1260	910	1000	1156			21,3	42,2	22	1¼	1¼	2
6.1.63.10	26,9	22,5	21,7	16,4	13173	63	82	27	197	1656	1060	1110	800	1256			21,3	42,2	22	1¼	1¼	2
8.1.63.10	34,9	27,1	27,2	19,7	12957	63	109	36	229	1656	1160	1110	900	1256			21,3	42,2	22	1¼	1¼	2
1.1.63.10	42,3	30,9	33,5	21,8	12743	63	137	45	262	1656	1260	1110	1000	1256			21,3	42,2	22	1¼	1¼	2
6.2.40.10	14,8	12,4	11,9	8,9	6918	55	48	16	125	1856	800	610	600	1456			21,3	26,7	22	1¼	1¼	2
8.2.40.10	19,1	14,7	15,1	10,3	6742	55	64	21	147	1856	900	610	700	1456			21,3	33,7	22	1¼	1¼	2
1.2.40.10	22,9	16,5	18,1	11,8	6570	55	80	27	168	1856	1000	610	800	1456			21,3	33,7	22	1¼	1¼	2
6.2.45.10	21,5	18,1	17,3	13,1	10514	59	65	22	152	2056	840	710	600	1656			21,3	33,7	22	1¼	1¼	2
8.2.45.10	27,7	21,6	21,8	15,6	10217	59	87	29	179	2056	940	710	700	1656			21,3	42,2	22	1¼	1¼	2
1.2.45.10	33,4	24,1	26,4	17,5	9937	59	109	36	207	2056	1040	710	800	1656			21,3	42,2	22	1¼	1¼	3
6.2.50.10	28,6	24,5	22,8	17,8	14907	66	82	27	193	2456	920	710	700	2056			21,3	42,2	22	1¼	1¼	3
8.2.50.10	37,1	29,5	29,7	21,2	14520	66	109	36	226	2456	1020	710	800	2056			21,3	42,2	22	1¼	1¼	3
1.2.50.10	45,0	33,0	35,6	23,9	14151	66	137	45	260	2456	1120	710	900	2056			21,3	42,2	22	1¼	1¼	3
6.2.56.10	41,4	35,3	33,3	25,6	21258	66	120	40	265	2656	1060	910	800	2256			21,3	42,2	22	1¼	1¼	3
8.2.56.10	53,7	42,6	42,6	30,8	20817	66	160	53	311	2656	1160	910	900	2256			21,3	48,3	34	1¼	1¼	3
1.2.56.10	63,9	47,8	51,1	34,7	20395	66	201	66	357	2656	1260	910	1000	2256			21,3	48,3	34	1¼	1¼	3
6.2.63.10	53,7	45,0	43,3	32,8	26340	66	164	54	335	2856	1060	1110	800	2456			21,3	48,3	34	1¼	1¼	3
8.2.63.10	69,7	54,1	54,4	39,4	25907	66	219	72	395	2856	1160	1110	900	2456			21,3	60,3	34	1¼	1¼	3
1.2.63.10	84,6	61,7	65,2	43,6	25475	66	274	90	455	2856	1260	1110	1000	2456			21,3	60,3	34	1¼	1¼	3
6.3.45.10	32,2	27,1	26,0	19,4	15769	61	98	33	213	2856	840	710	600	2456			21,3	42,2	22	1¼	1¼	3
8.3.45.10	41,5	32,4	33,2	23,4	15321	61	131	44	252	2856	940	710	700	2456			21,3	42,2	22	1¼	1¼	3
1.3.45.10	50,0	36,1	39,4	26,1	14901	60	164	54	292	2856	1040	710	800	2456			21,3	42,2	34	1¼	1¼	3
6.3.50.10	42,9	36,8	34,7	26,7	22358	67	123	41	272	3456	920	710	700	3056	1028	2028	21,3	42,2	22	2x1¼	2x1¼	3
8.3.50.10	55,6	43,7	43,9	31,9	21776	67	164	54	320	3456	1020	710	800	3056	1028	2028	21,3	48,3	34	2x1¼	2x1¼	2x3
1.3.50.10	65,9	49,5	53,4	35,9	21221	67	205	68	367	3456	1120	710	900	3056	1028	2028	21,3	48,3	34	2x1¼	2x1¼	2x3
6.3.56.10	62,1	52,9	50,0	38,1	31883	67	180	60	373	3806	1060	910	800	3356	2228	1128	21,3	60,3	34	2x1¼	2x1¼	2x3
8.3.56.10	80,4	63,7	64,2	44,6	31221	67	241	79	439	3806	1160	910	900	3356	2228	1128	21,3	60,3	34	2x1¼	2x1¼	2x3
1.3.56.10	97,7	72,2	77,1	51,8	30589	67	301	99	506	3806	1260	910	1000	3356	2228	1128	26,7	60,3	42	2x1¼	2x1¼	2x3
6.3.63.10	79,6	67,8	65,0	49,3	39509	67	246	81	476	4106	1060	1110	800	3656	2428	1228	26,7	60,3	34	2x1¼	2x1¼	2x3
8.3.63.10	104,5	81,8	83,6	59,0	38854	67	328	108	561	4106	1160	1110	900	3656	2428	1228	26,7	60,3	42	2x1¼	2x1¼	2x3
1.3.63.10	126,8	92,5	100,1	66,5	38208	67	410	135	647	4106	1260	1110	1000	3656	2428	1228	26,7	60,3	42	2x1¼	2x1¼	2x3
6.4.50.10	56,5	48,7	46,2	35,6	29808	68	164	54	348	4506	920	710	700	4056	2028	2028	21,3	48,3	34	2x1¼	2x1¼	2x3
8.4.50.10	74,1	58,9	59,4	42,4	29031	68	219	72	411	4506	1020	710	800	4056	2028	2028	21,3	60,3	34	2x1¼	2x1¼	2x3
1.4.50.10	89,8	65,9	71,0	47,8	28291	68	273	90	473	4506	1120	710	900	4056	2028	2028	26,7	60,3	34	2x1¼	2x1¼	2x3
6.4.56.10	82,7	70,6	66,6	51,2	42510	68	240	79	480	4906	1060	910	800	4456	2228	2228	26,7	60,3	34	2x1¼	2x1¼	2x3
8.4.56.10	107,4	85,1	85,1	61,5	41626	68	321	106	566	4906	1160	910	900	4456	2228	2228	26,7	60,3	42	2x1¼	2x1¼	2x3
1.4.56.10	127,8	95,6	102,1	69,3	40780	68	401	132	652	4906	1260	910	1000	4456	2228	2228	26,7	60,3	42	2x1¼	2x1¼	2x3
6.4.63.10	107,3	90,6	86,6	65,5	52676	68	328	108	625	5306	1060	1110	800	4856	2428	2428	26,7	60,3	42	2x1¼	2x1¼	2x3
8.4.63.10	139,4	108,2	108,7	78,7	51803	68	438	144	738	5306	1160	1110	900	4856	2428	2428	33,7	76,1	42	2x1¼	2x1¼	2x3
1.4.63.10	169,0	122,4	130,7	88,8	50941	68	547	180	850	5306	1260	1110	1000	4856	2428	2428	33,7	76,1	48	2x1¼	2x1¼	2x3

Pay attention to the relation capacity / air volume !!

* = Sound pressure indication (LpA) at 3 m distance each air cooler (+/- 2 dB(A)) , free field conditions, according EN13487

For moisture carry over see remark pag 5

VRB/VRZ 12mm Technical data

Type VRB VRZ	3x400V-50H-4pole (1500 min ⁻¹ nom.)						Surface	Internal volume	Weight	Dimensions								Connections					
	NHS				Air volume	LpA @ 3 m (+/- 2 dB(A))				L	B	H	D	E1	E2	E3	Refrigerant			Drain	Waterdefrost		
	Cooling		Freezing														In	Uit	Hot gas		In	Drain	
	DTM = 7K air mean = +2°C	DT1 = 8K (SC2) air on = 0°C	DTM = 7K air mean = -18°C	DT1 = 7K (SC3) air on = -18°C													mm	mm	mm		mm	mm	mm
kW	kW	kW	kW	m ³ /h	dB(A)	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		
6.1.40.12	6,9	5,9	5,4	4,2	3520	52	20	8	78	1156	800	610	600	756			21,3	21,3	22	1¼	1¼	2	
8.1.40.12	8,9	7,1	7,0	4,9	3455	52	27	11	92	1156	900	610	700	756			21,3	21,3	22	1¼	1¼	2	
1.1.40.12	10,8	8,0	8,5	5,7	3388	52	34	14	105	1156	1000	610	800	756			21,3	26,7	22	1¼	1¼	2	
6.1.45.12	9,9	8,6	8,0	6,1	5369	56	28	11	94	1256	840	710	600	856			21,3	26,7	22	1¼	1¼	2	
8.1.45.12	12,9	10,4	10,2	7,5	5250	56	37	15	110	1256	940	710	700	856			21,3	26,7	22	1¼	1¼	2	
1.1.45.12	15,7	11,8	12,4	8,4	5136	56	46	19	127	1256	1040	710	800	856			21,3	26,7	22	1¼	1¼	2	
6.1.50.12	13,2	11,6	10,6	8,4	7597	63	35	14	116	1456	920	710	700	1056			21,3	26,7	22	1¼	1¼	2	
8.1.50.12	17,2	14,0	13,8	10,1	7444	63	46	19	136	1456	1020	710	800	1056			21,3	33,7	22	1¼	1¼	2	
1.1.50.12	21,0	16,1	16,7	11,6	7296	63	58	23	154	1456	1120	710	900	1056			21,3	33,7	22	1¼	1¼	2	
6.1.56.12	19,0	16,6	15,3	12,1	10792	63	51	20	158	1556	1060	910	800	1156			21,3	33,7	22	1¼	1¼	2	
8.1.56.12	24,9	20,3	19,8	14,6	10618	63	68	27	183	1556	1160	910	900	1156			21,3	33,7	22	1¼	1¼	2	
1.1.56.12	29,9	23,0	24,0	16,7	10449	63	85	34	209	1556	1260	910	1000	1156			21,3	42,2	22	1¼	1¼	2	
6.1.63.12	24,4	21,3	19,9	15,5	13326	63	69	27	197	1656	1060	1110	800	1256			21,3	33,7	22	1¼	1¼	2	
8.1.63.12	31,8	25,8	25,5	18,7	13158	63	93	36	229	1656	1160	1110	900	1256			21,3	42,2	22	1¼	1¼	2	
1.1.63.12	39,4	29,7	31,2	21,1	12993	63	116	45	262	1656	1260	1110	1000	1256			21,3	42,2	22	1¼	1¼	2	
6.2.40.12	13,7	11,7	10,9	8,4	7036	55	40	16	124	1856	800	610	600	1456			21,3	26,7	22	1¼	1¼	2	
8.2.40.12	17,8	14,1	14,0	9,9	6905	55	54	21	147	1856	900	610	700	1456			21,3	33,7	22	1¼	1¼	2	
1.2.40.12	21,6	16,0	17,1	11,4	6772	55	67	27	168	1856	1000	610	800	1456			21,3	33,7	22	1¼	1¼	2	
6.2.45.12	19,8	17,1	15,9	12,4	10732	59	55	22	151	2056	840	710	600	1656			21,3	33,7	22	1¼	1¼	2	
8.2.45.12	25,8	20,5	20,3	15,0	10493	59	74	29	180	2056	940	710	700	1656			21,3	33,7	22	1¼	1¼	2	
1.2.45.12	30,7	23,4	24,8	16,9	10265	59	93	36	207	2056	1040	710	800	1656			21,3	42,2	22	1¼	1¼	3	
6.2.50.12	25,9	22,9	21,1	16,8	15189	66	69	27	193	2456	920	710	700	2056			21,3	42,2	22	1¼	1¼	3	
8.2.50.12	34,3	27,9	27,6	20,2	14881	66	93	36	226	2456	1020	710	800	2056			21,3	42,2	22	1¼	1¼	3	
1.2.50.12	41,9	31,9	33,2	23,1	14584	66	116	45	260	2456	1120	710	900	2056			21,3	42,2	22	1¼	1¼	3	
6.2.56.12	38,0	33,2	30,6	24,1	21579	66	102	40	266	2656	1060	910	800	2256			21,3	42,2	22	1¼	1¼	3	
8.2.56.12	49,7	40,5	39,6	29,2	21228	66	136	53	311	2656	1160	910	900	2256			21,3	42,2	22	1¼	1¼	3	
1.2.56.12	59,8	46,0	47,9	33,3	20889	66	170	66	357	2656	1260	910	1000	2256			21,3	48,3	34	1¼	1¼	3	
6.2.63.12	48,7	42,5	39,7	30,9	26647	66	139	54	335	2856	1060	1110	800	2456			21,3	48,3	34	1¼	1¼	3	
8.2.63.12	63,5	51,6	50,9	37,4	26312	66	186	72	394	2856	1160	1110	900	2456			21,3	48,3	34	1¼	1¼	3	
1.2.63.12	78,7	59,3	60,3	42,1	25978	66	232	90	453	2856	1260	1110	1000	2456			21,3	60,3	34	1¼	1¼	3	
6.3.45.12	29,7	25,7	23,9	18,4	16096	61	83	33	212	2856	840	710	600	2456			21,3	42,2	22	1¼	1¼	3	
8.3.45.12	38,6	31,1	30,8	22,4	15737	61	111	44	252	2856	940	710	700	2456			21,3	42,2	22	1¼	1¼	3	
1.3.45.12	46,1	35,0	37,0	25,3	15393	60	139	54	291	2856	1040	710	800	2456			21,3	42,2	34	1¼	1¼	3	
6.3.50.12	39,5	34,6	31,7	25,1	22779	67	104	41	272	3456	920	710	700	3056	1028	2028	21,3	42,2	34	1¼	2x1¼	3	
8.3.50.12	50,6	41,9	41,0	30,4	22318	67	139	54	320	3456	1020	710	800	3056	1028	2028	21,3	48,3	34	1¼	2x1¼	2x3	
1.3.50.12	61,8	47,8	49,8	34,6	21871	67	174	68	367	3456	1120	710	900	3056	1028	2028	21,3	48,3	34	1¼	2x1¼	2x3	
6.3.56.12	57,0	49,8	45,6	36,0	32364	67	153	60	373	3806	1060	910	800	3356	2228	1128	21,3	48,3	34	2x1¼	2x1¼	2x3	
8.3.56.12	74,2	60,6	59,1	42,1	31839	67	204	79	439	3806	1160	910	900	3356	2228	1128	21,3	60,3	34	2x1¼	2x1¼	2x3	
1.3.56.12	90,8	69,3	72,1	49,7	31329	67	255	99	505	3806	1260	910	1000	3356	2228	1128	26,7	60,3	42	2x1¼	2x1¼	2x3	
6.3.63.12	73,3	63,8	59,5	46,3	39967	67	209	81	475	4106	1060	1110	800	3656	2428	1228	21,3	60,3	34	2x1¼	2x1¼	2x3	
8.3.63.12	96,7	77,8	77,1	56,1	39465	67	278	108	561	4106	1160	1110	900	3656	2428	1228	26,7	60,3	42	2x1¼	2x1¼	2x3	
1.3.63.12	118,0	88,8	93,0	63,8	38962	67	348	135	646	4106	1260	1110	1000	3656	2428	1228	26,7	60,3	42	2x1¼	2x1¼	2x3	
6.4.50.12	51,8	45,9	42,6	33,5	30370	68	139	54	348	4506	920	710	700	4056	2028	2028	21,3	48,3	34	2x1¼	2x1¼	2x3	
8.4.50.12	68,6	55,8	55,1	40,3	29755	68	185	72	410	4506	1020	710	800	4056	2028	2028	21,3	60,3	34	2x1¼	2x1¼	2x3	
1.4.50.12	83,7	63,7	66,5	46,2	29157	68	232	90	472	4506	1120	710	900	4056	2028	2028	26,7	60,3	34	2x1¼	2x1¼	2x3	
6.4.56.12	75,9	66,4	61,1	48,2	43152	68	204	79	479	4906	1060	910	800	4456	2228	2228	26,7	60,3	34	2x1¼	2x1¼	2x3	
8.4.56.12	99,2	80,9	79,2	58,4	42448	68	272	106	566	4906	1160	910	900	4456	2228	2228	26,7	60,3	42	2x1¼	2x1¼	2x3	
1.4.56.12	119,4	91,9	95,7	66,5	41770	68	340	132	651	4906	1260	910	1000	4456	2228	2228	26,7	60,3	42	2x1¼	2x1¼	2x3	
6.4.63.12	97,3	84,9	79,3	61,7	53287	68	278	108	624	5306	1060	1110	800	4856	2428	2428	26,7	60,3	42	2x1¼	2x1¼	2x3	
8.4.63.12	127,0	103,2	101,8	74,8	52617	68	371	144	736	5306	1160	1110	900	4856	2428	2428	26,7	76,1	42	2x1¼	2x1¼	2x3	
1.4.63.12	154,4	117,8	123,0	85,3	51947	68	464	180	849	5306	1260	1110	1000	4856	2428	2428	33,7	76,1	48	2x1¼	2x1¼	2x3	

Pay attention to the relation capacity / air volume !!

* = Sound pressure indication (LpA) at 3 m distance each air cooler (+/- 2 dB(A)) , free field conditions, according EN13487

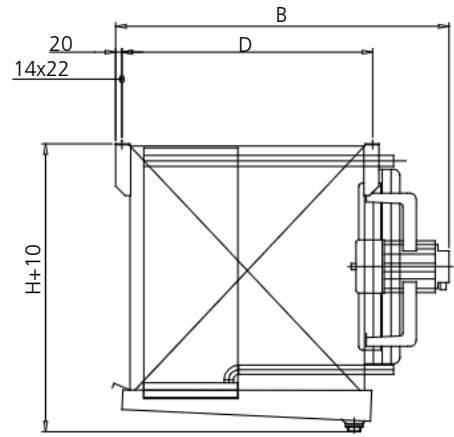
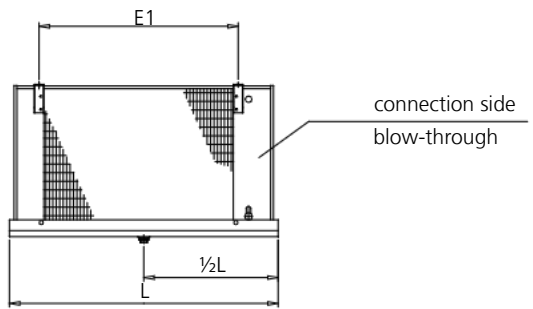
For moisture carry over see remark pag 5

VRB/VRZ Electrical defrost

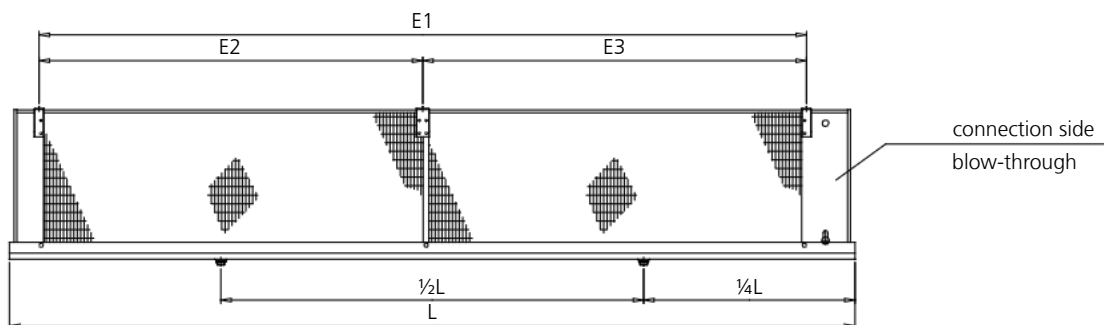
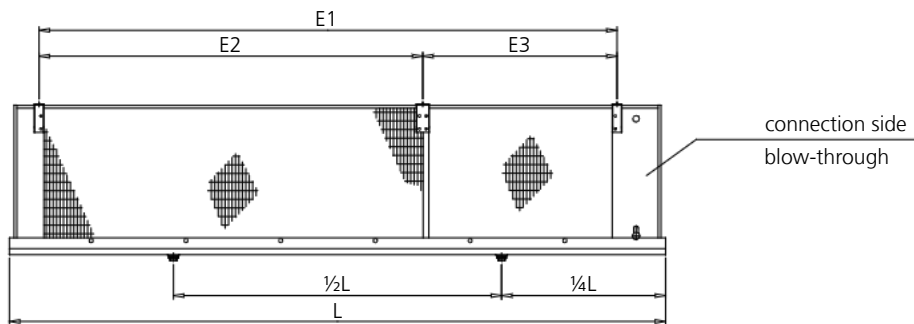
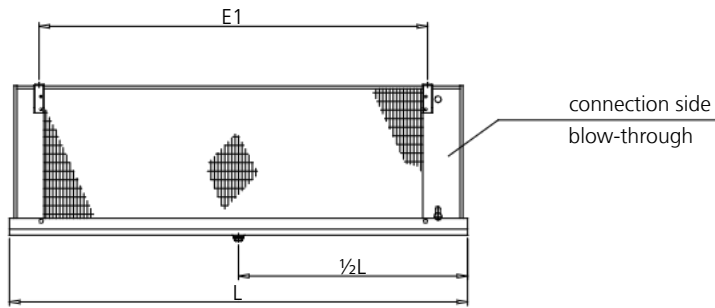
Type	Light defrost			Heavy defrost		
	Coil	Drip tray	Total	Coil	Drip tray	Total
	kW	kW	kW	kW	kW	kW
3/4.1.40.f	1.64	1.06	2.70	2.46	1.40	3.86
3/4.1.45.f	1.64	1.18	2.82	2.46	1.58	4.04
3/4.1.50.f	2.12	1.30	3.42	3.18	1.76	4.94
3/4.1.56.f	3.18	1.42	4.60	4.24	1.94	6.18
3/4.1.63.f	5.90	1.54	7.44	7.08	2.12	9.20
3/4.2.40.f	2.60	1.66	4.26	3.90	2.30	6.20
3/4.2.45.f	3.08	1.77	4.85	4.62	2.48	7.10
3/4.2.50.f	3.54	2.13	5.67	5.31	3.02	8.33
3/4.2.56.f	6.06	2.37	8.43	8.08	3.18	11.26
3/4.2.63.f	10.65	2.53	13.18	12.78	3.54	16.32
3/4.3.45.f	4.26	2.53	6.79	6.39	3.54	9.93
3/4.3.50.f	5.20	2.12	7.32	7.80	4.24	12.04
3/4.3.56.f	8.52	2.30	10.82	11.36	4.60	15.96
3/4.3.63.f	15.40	2.48	16.64	18.48	4.96	23.44
3/4.4.50.f	6.64	2.64	9.28	9.96	5.28	15.24
3/4.4.56.f	10.62	3.02	13.64	14.16	6.04	20.20
3/4.4.63.f	20.20	3.18	21.79	24.24	6.36	30.60
5/6.1.40.f	1.64	1.06	2.70	3.28	1.40	4.68
5/6.1.45.f	2.46	1.18	3.64	3.28	1.58	4.86
5/6.1.50.f	3.18	1.30	4.48	4.24	1.76	6.00
5/6.1.56.f	4.24	1.42	5.66	6.36	1.94	8.30
5/6.1.63.f	5.90	1.54	7.44	7.08	2.12	9.20
5/6.2.40.f	2.60	1.66	4.26	5.20	2.30	7.50
5/6.2.45.f	4.62	1.77	6.39	6.16	2.48	8.64
5/6.2.50.f	5.31	2.13	7.44	7.08	3.02	10.10
5/6.2.56.f	8.08	2.37	10.45	12.12	3.18	15.30
5/6.2.63.f	10.65	2.53	13.18	12.78	3.54	16.32
5/6.3.45.f	6.39	2.53	8.92	8.52	3.54	12.06
5/6.3.50.f	7.80	2.12	9.92	10.40	4.24	14.64
5/6.3.56.f	11.36	2.30	13.66	17.04	4.60	21.64
5/6.3.63.f	15.40	2.48	16.64	18.48	4.96	23.44
5/6.4.50.f	9.96	2.64	12.60	13.28	5.28	18.56
5/6.4.56.f	14.16	3.02	17.18	21.24	6.04	27.28
5/6.4.63.f	20.20	3.18	21.79	24.24	6.36	30.60
8.1.40.f	2.46	1.06	3.52	4.92	1.40	6.32
8.1.45.f	3.28	1.18	4.46	4.92	1.58	6.50
8.1.50.f	4.24	1.42	5.66	6.36	1.76	8.12
8.1.56.f	6.36	1.94	8.30	8.48	1.94	10.42
8.1.63.f	8.26	2.12	10.38	10.62	2.12	12.74
8.2.40.f	3.90	1.66	5.56	7.80	2.30	10.10
8.2.45.f	6.16	1.77	7.93	9.24	2.48	11.72
8.2.50.f	7.08	2.13	9.21	10.62	3.02	13.64
8.2.56.f	12.12	3.36	15.48	16.16	3.18	19.34
8.2.63.f	14.91	3.54	18.45	19.17	3.54	22.71
8.3.45.f	8.52	2.53	11.05	12.78	3.54	16.32
8.3.50.f	10.40	2.12	12.52	15.60	4.24	19.84
8.3.56.f	17.04	4.60	21.64	22.72	4.60	27.32
8.3.63.f	21.56	4.96	26.52	27.72	4.96	32.68
8.4.50.f	13.28	2.64	15.92	19.92	5.28	25.20
8.4.56.f	21.24	6.04	27.28	28.32	6.04	34.36
8.4.63.f	28.28	6.36	34.64	36.36	6.36	42.72
1.1.40.f	2.46	1.18	3.64	4.92	1.40	6.32
1.1.45.f	3.28	1.30	4.58	4.92	1.58	6.50
1.1.50.f	4.24	1.76	6.00	6.36	1.76	8.12
1.1.56.f	6.36	1.94	8.30	8.48	1.94	10.42
1.1.63.f	8.26	2.12	10.38	10.62	2.12	12.74
1.2.40.f	3.90	1.77	5.67	7.80	2.30	10.10
1.2.45.f	6.16	1.89	8.05	9.24	2.48	11.72
1.2.50.f	7.08	3.02	10.1	10.62	3.02	13.64
1.2.56.f	12.12	3.36	15.48	16.16	3.18	19.34
1.2.63.f	14.91	3.54	18.45	19.17	3.54	22.71
1.3.45.f	8.52	2.53	11.05	12.78	3.54	16.32
1.3.50.f	10.40	4.24	14.64	15.60	4.24	19.84
1.3.56.f	17.04	4.60	21.64	22.72	4.60	27.32
1.3.63.f	21.56	4.96	26.52	27.72	4.96	32.68
1.4.50.f	13.28	5.28	18.56	19.92	5.28	25.20
1.4.56.f	21.24	6.04	27.28	28.32	6.04	34.36
1.4.63.f	28.28	6.36	34.64	36.36	6.36	42.72

f = fin spacing

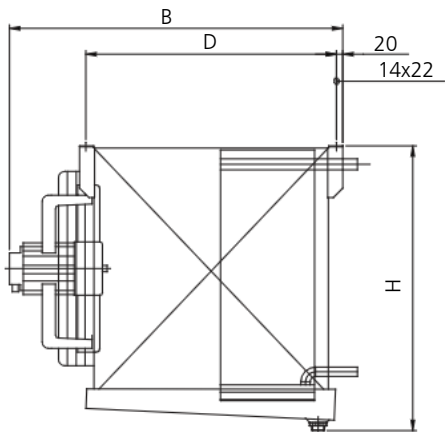
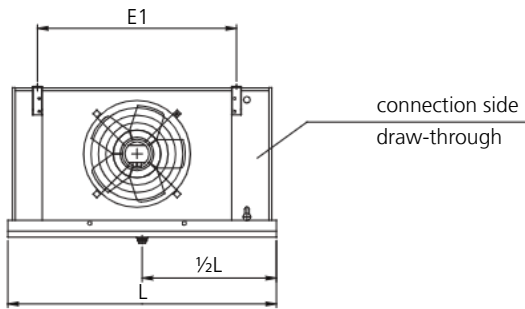
VRB Drawing



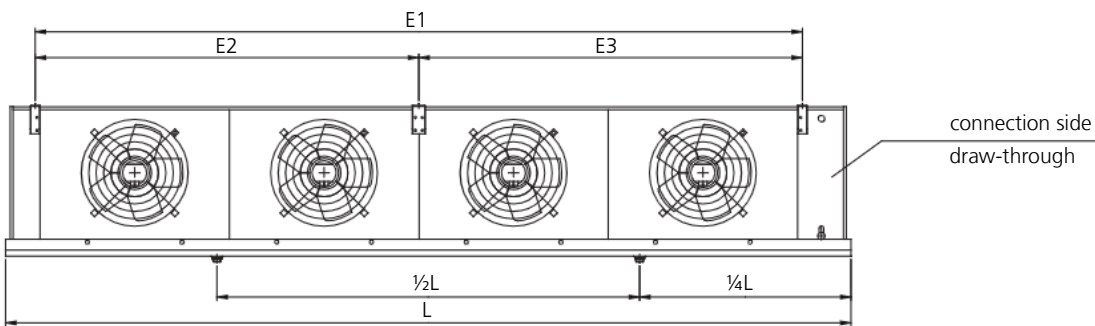
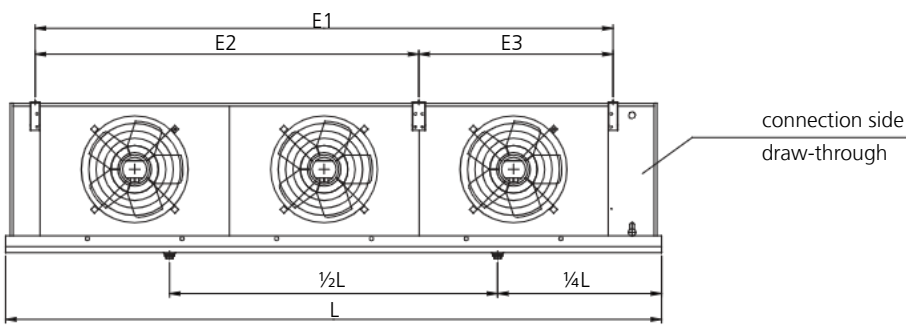
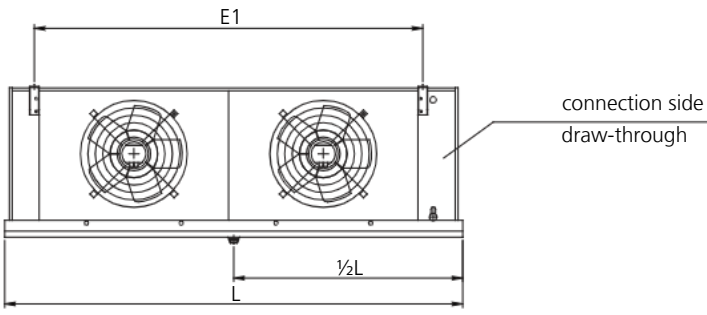
Air configuration : Blow through



VRZ Drawing



Air configuration : Draw through



Goedhart standard product information

Goedhart standard aircooler overview



VCI



DVS/DRS/DZS



ZGB/ZGZ



PAC



FC38



ZFB/ZFZ



Goedhart air cooler for every application

For Contractors and Original Equipment Manufacturers (OEM) related to the industrial refrigeration industry, GE A Goedhart B.V. offers an unlimited range of air coolers and air cooled condensers in several configurations.

Depending on the application, the optimum configuration will be selected in close cooperation with our customers.

Configurations

The following material combinations are available in various tube pitches and various fin spacing:

Tube material	Tube configuration	Fin material
Copper (Cu)	38x33, 50x50, 60x60	Aluminium (Al)
Stainless steel (Stst)	38x33, 50x50, 60x60	Aluminium (Al)
Stainless steel (Stst)	50x50	Stainless steel (Stst)
Aluminium (Al)	60x60	Aluminium (Al)
Hot dipped galvanized steel (FeZn)	60x60, 75x75	Hot dipped galvanized steel (FeZn)

Options on aluminium fins

- Goldlack coated fins
- Seawater resistant aluminium fins (AlMg)

Applications

Cooling	Freezing
Cold stores / Distribution centres	Cold stores / Distribution centres
Food processing rooms	Tunnel / spiral freezers
Fruit storage	Slaughter houses
Banana ripening storage	Automotive testing rooms
Greenhouse conditioning	Ski domes

Pressure Equipment Directive (P.E.D.)

All aircoolers produced by Goedhart comply with the Pressure Equipment Directive 97/23/EC. PED certificates can be downloaded from www.goedhart.nl.





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