



## Goedhart VRB / VRZ

Industrial air coolers for cooling & freezing applications  
StSt/Al

$\text{NH}_3 - \text{CO}_2$



## Goedhart VRB/VRZ

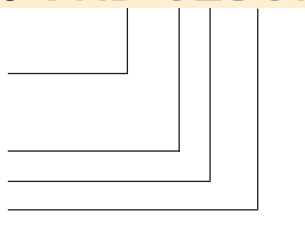
The range Goedhart VRB/VRZ single discharge ceiling mounted industrial air coolers consists of 902 types with capacities between 3,3 and 236,3 kW. The Goedhart VRB/VRZ air coolers are suitable for cooling and freezing applications and with a wide variety of accessories and options available. The coil 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 8 fans per cooler

### Type-description

## Goedhart VRB 62567

B=blow through  
Z=draw through

Number of rows deep  
Number of fans  
Fan diameter [cm]  
Fins spacing [mm]



### Coil block

- Tube pitch : 50x50 mm straight
- Fin spacings : 4, 6, 7, 8, 10 and 12 mm
- Material : 15 mm 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 NH<sub>3</sub>-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
- Defrost by hot gas spiral or electric defrost elements will be fixed to the bottom side of the coil.
- Stainless steel fasteners.

# General range features

## Capacity

The listed nominal cooling capacities are based on NH<sub>3</sub>, DT1, a RH of 85% and 4 pole 3 phase fans connected in D.

### 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.

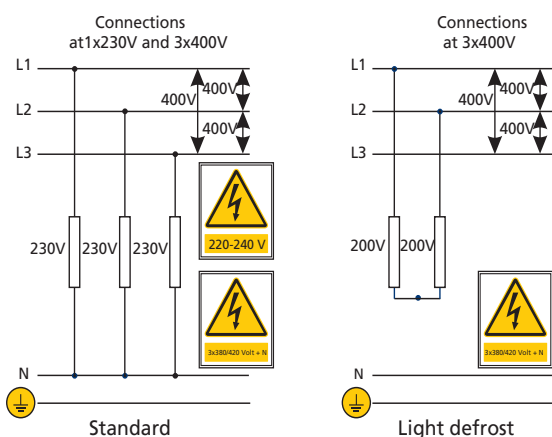
## Defrostsystem:

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.
- Hinged drip tray.
- 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 diffusor for a longer air throw
- Goedhart VRB supplied with air diffusor with air operated damper to increase defrost efficiency (airvolume reduced to approx. 90% and capacity reduced to approx. 95%)

The accessories are included in the price list.

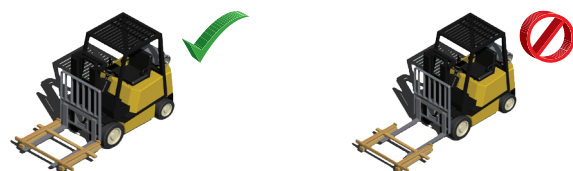
## Optional extras:

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, NH<sub>3</sub> 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

Because of the flexible construction of the Goedhart VRB/VRZ air cooler, in principle it is possible to deliver with different fans. GEA Goedhart selected a standard fan range of Ziehl Abegg (we reserve the right to alter the manufacturer) which fit perfectly on the Goedhart VRB/VRZ air coolers. The fans can be supplied in both blow-through and draw-through executions. Against an extra price and with extra delivery times stainless steel guards and EC-fans are available.

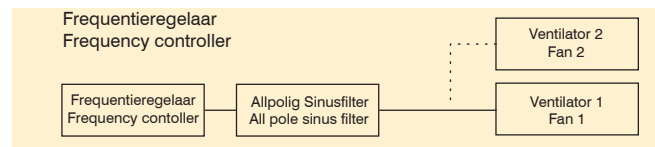
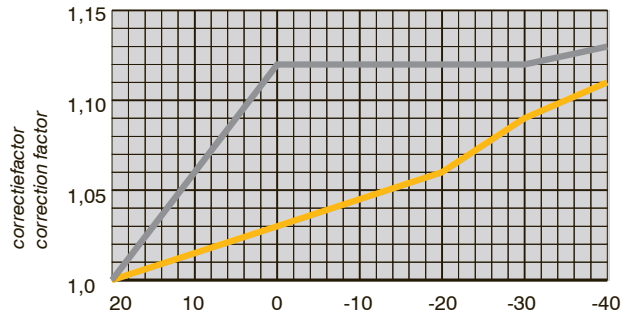
## Execution

The fans meet the ErP directive. The fans have very good aerodynamic features because of the special impeller geometry. This special impeller geometry gives the fan a low noise level and an high efficiency.

1x230V fans are suitable for a room temperature till -25°C. 3x400V fans are suitable for a room temperature till -40°C. When lower room temperatures are desired, special fans are need.

- Tension : 3x400V-50Hz-3 phase  
: 1x230V-50Hz-1 phase  
(60Hz execution on request)
- Protection class : IP44 / IP54
- Color : RAL9005 (black)
- Speed controlling : - 3 Phase motors are suitable for 2-speed regulation by  $\Delta$ -Y reconnection.  
- 3 Phase motors are suitable for frequency controller with all-pole sinus filter.  
- 1 Phase motors are suitable for phase control and transformer.

The motors are standard executed with a thermo contact (TB) and must be connected to prevent motor damages. The maximum allowable working data in the table and on the name plate of the fans are to operate in an air temperature of 20 °C (air density of  $\rho = 1,2 \text{ kg/m}^3$ ). For air temperatures lower then +20 °C, 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	$\Delta$				Y				Wiring diagram blow-through/ draw-through
		Speed min <sup>-1</sup>	Input Watt	FLC A	Sound power indication each fan LwA (+/-2dB(A)) dB(A)	Speed min <sup>-1</sup>	Input Watt	FLC A	Sound power indication each fan LwA (+/-2dB(A)) dB(A)	
<b>4 pole (n=1500 min<sup>-1</sup> nom.)</b>										
FN040	3x400/690	1370	230	0.44	76	1110	170	0.27	70,5	108B/108A
FN045	3x400/690	1250	350	0.64	78	950	220	0.35	70	108B/108A
FN050	3x400/690	1330	830	1.45	81	940	550	0.97	75	108B/108A
FN056	3x400/690	1280	1050	2.20	85	920	580	1.10	76	108B/108A
FE063	3x400/690	1330	1450	2.60	89	1080	980	1.60	84	108B/108A
<b>6 pole (n=1000 min<sup>-1</sup> nom.)</b>										
FN045	3x400/690	860	170	0.39	67	640	100	0.19	61	108B/108A
FN050	3x400/690	870	290	0.74	72	590	150	0.36	64	108B/108A
FN056	3x400/690	870	340	0.70	73	630	210	0.38	65	108B/108A
FN063	3x400/690	900	630	1.25	74	720	440	0.73	69	108B/108A

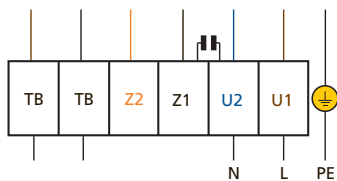
## Single phase - 50 Hz

Fan type	Speed min <sup>-1</sup>	Input Watt	FLC A	Sound power indication each fan LwA (+/-2dB(A)) dB(A)	Wiring diagram blow-through/ draw-through
<b>4 pole (n=1500 min<sup>-1</sup> nom.)</b>					
FN040	1350	240	1.10	76	104B/104A
FN045	1290	390	1.75	80	104B/104A
FN050	1230	750	3.35	81,5	104B/104A
<b>6 pole (n=1000 min<sup>-1</sup> nom.)</b>					
FN040	950	130	0.58	68	104B/104A
FN045	860	180	0.82	68,5	104B/104A
FN050	910	300	1.30	71,5	104B/104A

## Wiring diagram fans for blow-through air coolers

### Ziehl Abegg 1x230V-50Hz (104XB)

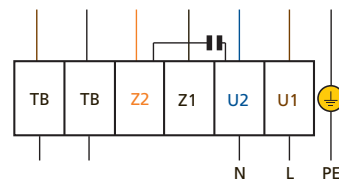
U1 = bruin  
 U2 = blauw  
 Z1 = zwart  
 Z2 = oranje  
 TB = wit



## Wiring diagram fans for draw-through air coolers

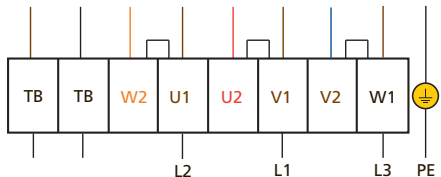
### Ziehl Abegg 1x230V-50Hz (104XA)

U1 = bruin  
 U2 = blauw  
 Z1 = zwart  
 Z2 = oranje  
 TB = wit



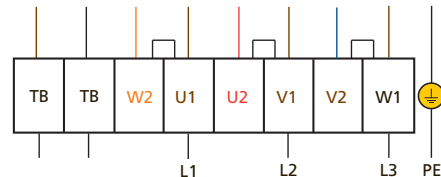
### Ziehl Abegg 3x400V (Δ)-50Hz (108XB)

U1 = bruin  
 V1 = blauw  
 W1 = zwart  
 U2 = rood  
 V2 = grijs  
 W2 = oranje  
 TB = wit



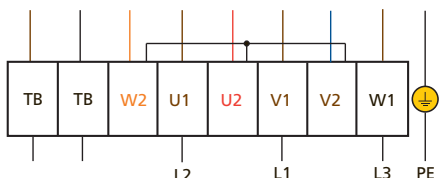
### Ziehl Abegg 3x400V (Δ)-50Hz (108XA)

U1 = bruin  
 V1 = blauw  
 W1 = zwart  
 U2 = rood  
 V2 = grijs  
 W2 = oranje  
 TB = wit



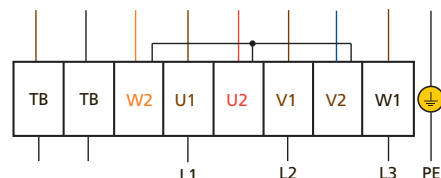
### Ziehl Abegg 3x400V (Y)-50Hz (108XB)

U1 = bruin  
 V1 = blauw  
 W1 = zwart  
 U2 = rood  
 V2 = grijs  
 W2 = oranje  
 TB = wit



### Ziehl Abegg 3x400V (Y)-50Hz (108XA)

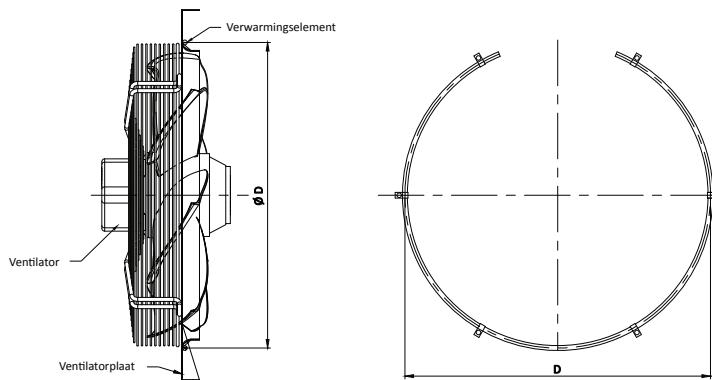
U1 = bruin  
 V1 = blauw  
 W1 = zwart  
 U2 = rood  
 V2 = grijs  
 W2 = oranje  
 TB = wit



## Fan heating

To prevent the freezing of the impeller of the fan during the defrost cyclus of the air cooler, a fan heater can be used.

Fan diameter	Diameter element	Power (230V)
mm	D in mm	kW
400	435	0,50
450	485	0,63
500	535	0,63
560	595	0,76
630	665	0,89



# Correction factors

## Capacities at DT1:

Hereby the capacities are based on NH<sub>3</sub> 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.

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

### NH<sub>3</sub> light frost = 0.2 mm RH = 85%

DT1 K	Evaporation temperature (°C)													
	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

  = gerekend zonder berijping

### NH<sub>3</sub> normal frost = 0.5 mm RH= 85%

DT1 K	Evaporation temperature (°C)													
	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!




### ATTENTION !!!

When making your selection, pay attention to the ratio between the air volume 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).

### 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%.

# Goedhart VRB/VRZ 10mm

	Type VRB VRZ	3x400V-50H-4polig (1500 min <sup>-1</sup> nom.)				Air volume	LpA @ 3 m (+/- 2 dB(A))*	Surface	Internal volume	Weight	Dimensions								Connections							
		NH3		m <sup>3</sup> /h	dB(A)						m <sup>2</sup>	dm <sup>3</sup>	kg	L	B	H	C	E1	E2	E3	D1	D2	Refrigerant			
		kW	kW																				I In	K Out	Hot gas	Air throw**
	6.1.40.10	6,2	4,4	3455	54,3	24	8	84	1156	740	620	600	756		578		21,3	21,3	22	20						
	8.1.40.10	7,3	5,1	3346	54,3	32	11	98	1156	840	620	700	756		578		21,3	21,3	22	20						
	1.1.40.10	8,2	5,8	3239	54,3	40	14	111	1156	940	620	800	756		578		21,3	21,3	22	20						
	6.1.45.10	9,1	6,5	5255	56,2	33	11	101	1256	710	720	600	856		628		21,3	21,3	22	22,5						
	8.1.45.10	10,8	7,8	5066	56,2	44	15	117	1256	810	720	700	856		628		21,3	26,7	22	22,5						
	1.1.45.10	12,0	8,5	4886	56,2	55	19	133	1256	910	720	800	856		628		21,3	26,7	22	22,5						
	6.1.50.10	12,2	8,8	7378	59,1	41	14	129	1456	830	720	700	1056		728		21,3	26,7	22	25						
	8.1.50.10	14,6	10,5	7162	59,1	55	19	149	1456	930	720	800	1056		728		21,3	26,7	22	25						
	1.1.50.10	16,4	11,8	6959	59,1	69	23	168	1456	1030	720	900	1056		728		21,3	33,7	22	25						
	6.1.56.10	17,5	12,7	10410	62,8	60	20	171	1556	930	920	800	1156		778		21,3	33,7	22	27,5						
	8.1.56.10	21,0	15,1	10158	62,8	81	27	197	1556	1030	920	900	1156		778		21,3	33,7	22	27,5						
	1.1.56.10	23,5	17,0	9926	62,8	101	34	223	1556	1130	920	1000	1156		778		21,3	33,7	22	27,5						
	6.1.63.10	22,1	16,1	12814	66,6	82	27	221	1656	945	1120	800	1256		828		21,3	33,7	22	27,5						
8.1.63.10	26,6	19,3	12609	66,6	110	36	254	1656	1045	1120	900	1256		828		21,3	33,7	22	27,5							
1.1.63.10	30,3	21,4	12404	66,6	137	45	287	1656	1145	1120	1000	1256		828		21,3	42,2	22	27,5							
	6.2.40.10	12,3	8,9	6903	57,0	48	16	134	1856	740	620	600	1456		928		21,3	26,7	22	20						
	8.2.40.10	14,6	10,2	6684	57,0	64	21	156	1856	840	620	700	1456		928		21,3	26,7	22	20						
	1.2.40.10	16,3	11,6	6468	57,0	80	27	177	1856	940	620	800	1456		928		21,3	26,7	22	20						
	6.2.45.10	18,1	13,1	10503	58,9	66	22	163	2056	710	720	600	1656		1028		21,3	33,7	22	22,5						
	8.2.45.10	21,2	15,5	10121	58,9	88	29	190	2056	810	720	700	1656		1028		21,3	33,7	22	22,5						
	1.2.45.10	23,7	17,2	9758	58,9	110	36	219	2056	910	720	800	1656		1028		21,3	33,7	22	22,5						
	6.2.50.10	24,4	17,7	14751	61,7	82	27	217	2456	830	720	700	2056		1228		21,3	33,7	22	25						
	8.2.50.10	29,2	21,0	14314	61,7	110	36	251	2456	930	720	800	2056		1228		21,3	42,2	22	25						
	1.2.50.10	32,6	23,6	13907	61,7	137	45	284	2456	1030	720	900	2056		1228		21,3	42,2	22	25						
	6.2.56.10	34,9	25,3	20813	65,4	121	40	289	2656	930	920	800	2256		1328		21,3	42,2	22	27,5						
	8.2.56.10	41,9	30,2	20304	65,4	161	53	336	2656	1030	920	900	2256		1328		21,3	42,2	22	27,5						
	1.2.56.10	46,9	34,0	19842	65,4	201	66	382	2656	1130	920	1000	2256		1328		26,7	42,2	22	27,5						
	6.2.63.10	44,2	32,3	25621	69,2	164	54	382	2856	945	1120	800	2456		1428		26,7	42,2	22	27,5						
8.2.63.10	53,2	38,6	25210	69,2	219	72	442	2856	1045	1120	900	2456		1428		26,7	42,2	33,7	27,5							
1.2.63.10	60,5	42,8	24798	69,2	274	90	502	2856	1145	1120	1000	2456		1428		26,7	48,3	33,7	27,5							
	6.3.45.10	27,1	19,4	15751	60,4	99	33	228	2856	710	720	600	2456		1428		21,3	33,7	22	22,5						
	8.3.45.10	32,2	23,2	15176	60,4	132	44	268	2856	810	720	700	2456		1428		21,3	42,2	22	22,5						
	1.3.45.10	35,6	25,8	14632	60,4	164	54	307	2856	910	720	800	2456		1428		21,3	42,2	22	22,5						
	6.3.50.10	36,5	26,5	22121	63,1	123	41	307	3456	830	720	700	2028	2028	864	1728	21,3	42,2	22	25						
	8.3.50.10	43,3	31,6	21465	63,1	164	54	357	3456	930	720	800	2028	2028	864	1728	26,7	42,2	22	25						
	1.3.50.10	48,9	35,5	20854	63,1	206	68	405	3456	1030	720	900	2028	2028	864	1728	26,7	42,2	33,7	25						
	6.3.56.10	52,2	37,6	31214	66,8	181	60	408	3756	930	920	800	1128	2228	939	1878	26,7	42,2	22	27,5						
	8.3.56.10	62,6	43,8	30451	66,8	241	79	475	3756	1030	920	900	1128	2228	939	1878	26,7	48,3	33,7	27,5						
	1.3.56.10	70,8	50,7	29756	66,8	301	99	542	3756	1130	920	1000	1128	2228	939	1878	26,7	48,3	33,7	27,5						
	6.3.63.10	66,6	48,4	38430	70,6	247	81	554	4056	945	1120	800	1228	2428	1014	2028	26,7	48,3	33,7	27,5						
	8.3.63.10	80,2	57,9	37810	70,6	329	108	631	4056	1045	1120	900	1228	2428	1014	2028	33,7	60,3	33,7	27,5						
	1.3.63.10	90,7	65,2	37192	70,6	411	135	716	4056	1145	1120	1000	1228	2428	1014	2028	33,7	60,3	33,7	27,5						

Pay attention to the relation capacity / air volume !!

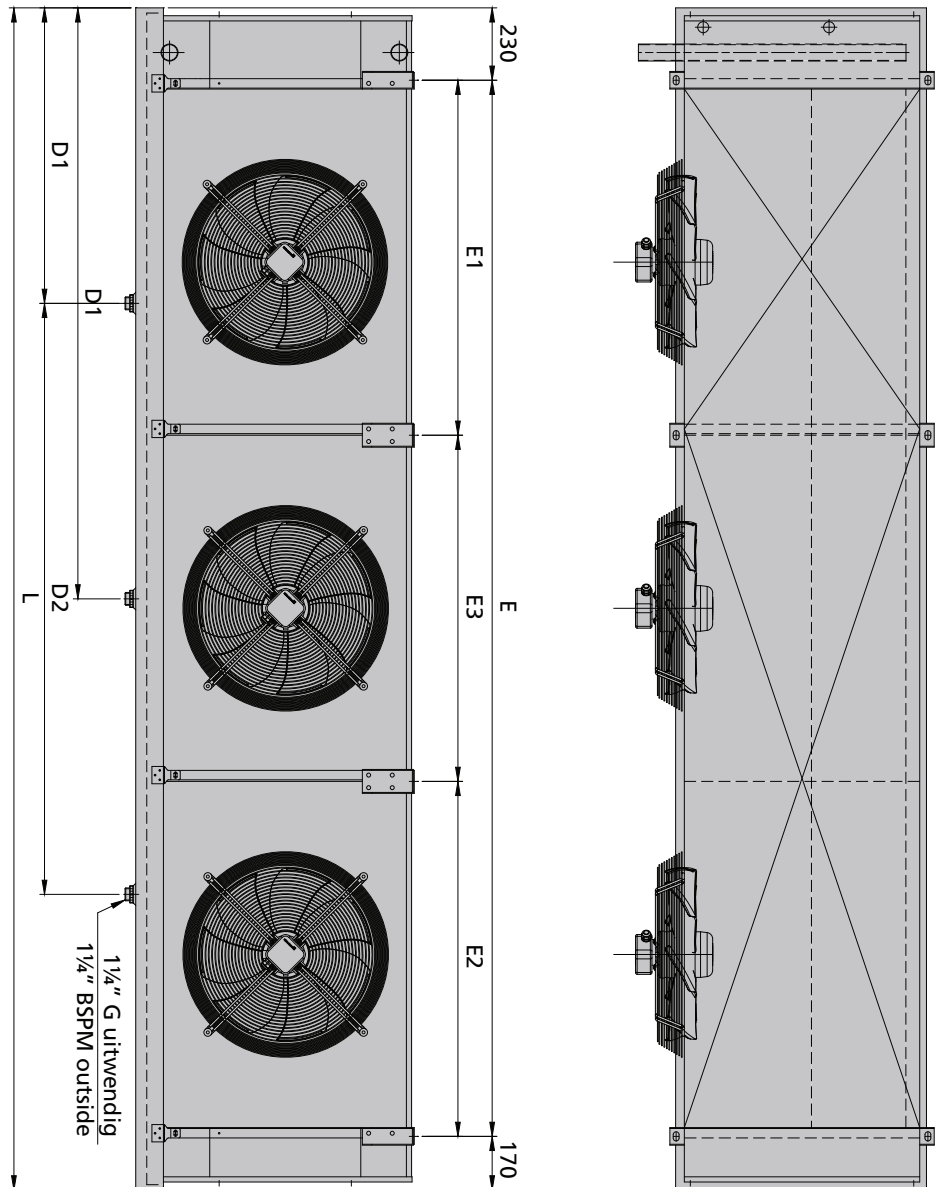
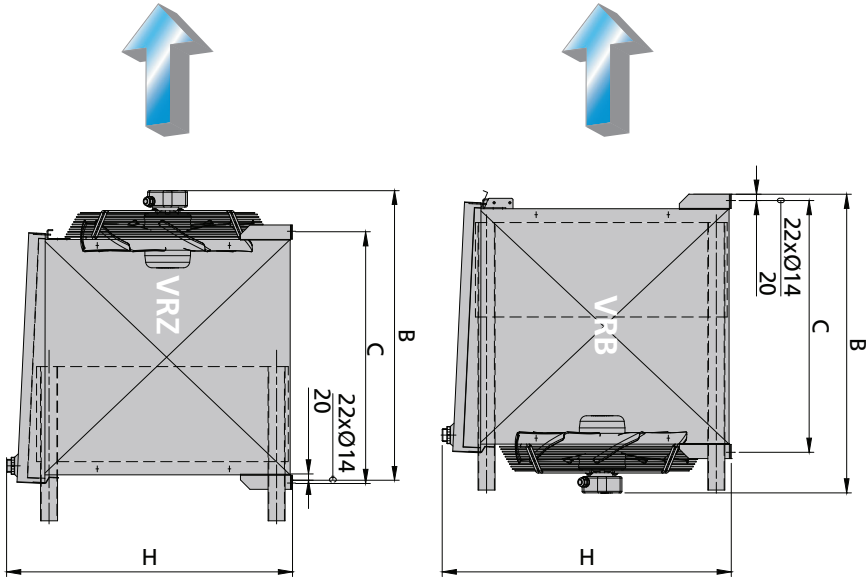
\* = Sound pressure indication (LpA) at 3 m distance each air cooler (+/- 2 dB(A)), free field conditions, according EN13487

\*\* = Air throw see remark page 5

For moisture carry over see remark pag 5




Capacities and air volumes with 60 Hz fans on request or in our GPC selection program available.

# Goedhart VRB/VRZ Drawing





# Goedhart VRB/VRZ Electrical defrost

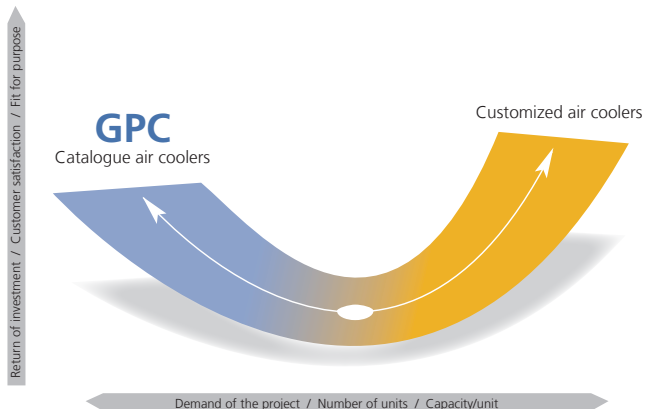
Type VC	Light defrost								Heavy defrost*										
	Coil block			Drip tray					Total each air cooler	Coil block			Drip tray				Total each air cooler		
	Number	Type of heating element	Total	Number	Type of heating element	Tension	Total	Number		Type of heating element	Total	Number	Type of heating element	Tension	Total				
																n		mm	kW
 1x	3.1.40.f	2	1900	1,52	1	2800	230	1,16	2,68	3	1900	2,28	2	2500	200	1,56	3,84		
	4.1.40.f	2	1900	1,52	1	2800	230	1,16	2,68	3	1900	2,28	2	2500	200	1,56	3,84		
	6.1.40.f	2	1900	1,52	1	2800	230	1,16	2,68	4	1900	3,04	2	2500	200	1,56	4,6		
	8.1.40.f	3	1900	2,28	1	2800	230	1,16	3,44	6	1900	4,56	2	2500	200	1,56	6,12		
	1.1.40.f	3	1900	2,28	1	3100	230	1,29	3,57	6	1900	4,56	2	2500	200	1,56	6,12		
	3.1.45.f	2	2200	1,78	1	3100	230	1,29	3,07	3	2200	2,67	2	2800	200	1,76	4,43		
	4.1.45.f	2	2200	1,78	1	3100	230	1,29	3,07	3	2200	2,67	2	2800	200	1,76	4,43		
	6.1.45.f	3	2200	2,67	1	3100	230	1,29	3,96	4	2200	3,56	2	2800	200	1,76	5,32		
	8.1.45.f	4	2200	3,56	1	3100	230	1,29	4,85	6	2200	5,34	2	2800	200	1,76	7,1		
	1.1.45.f	4	2200	3,56	1	3400	230	1,42	4,98	6	2200	5,34	2	2800	200	1,76	7,1		
	3.1.50.f	2	2500	2,04	1	3400	230	1,42	3,46	3	2500	3,06	2	3100	200	1,96	5,02		
	4.1.50.f	2	2500	2,04	1	3400	230	1,42	3,46	3	2500	3,06	2	3100	200	1,96	5,02		
	6.1.50.f	3	2500	3,06	1	3400	230	1,42	4,48	4	2500	4,08	2	3100	200	1,96	6,04		
	8.1.50.f	4	2500	4,08	1	3700	230	1,55	5,63	6	2500	6,12	2	3100	200	1,96	8,08		
	1.1.50.f	4	2500	4,08	2	3100	200	1,96	6,04	6	2500	6,12	2	3100	200	1,96	8,08		
	3.1.56.f	3	2800	3,48	1	3700	230	1,55	5,03	4	2800	4,64	2	3400	200	2,14	6,78		
	4.1.56.f	3	2800	3,48	1	3700	230	1,55	5,03	4	2800	4,64	2	3400	200	2,14	6,78		
	6.1.56.f	4	2800	4,64	1	3700	230	1,55	6,19	6	2800	6,96	2	3400	200	2,14	9,1		
	8.1.56.f	6	2800	6,96	2	3400	200	2,14	9,1	8	2800	9,28	2	3400	200	2,14	11,42		
	1.1.56.f	6	2800	6,96	2	3400	200	2,14	9,1	8	2800	9,28	2	3400	200	2,14	11,42		
	3.1.63.f	5	3100	6,45	1	4000	230	1,68	8,13	6	3100	7,74	2	3700	200	2,34	10,08		
4.1.63.f	5	3100	6,45	1	4000	230	1,68	8,13	6	3100	7,74	2	3700	200	2,34	10,08			
6.1.63.f	5	3100	6,45	1	4000	230	1,68	8,13	6	3100	7,74	2	3700	200	2,34	10,08			
8.1.63.f	7	3100	9,03	2	3700	200	2,34	11,37	9	3100	11,61	2	3700	200	2,34	13,95			
1.1.63.f	7	3100	9,03	2	3700	200	2,34	11,37	9	3100	11,61	2	3700	200	2,34	13,95			
 2x	3.2.40.f	2	3400	2,84	1	4300	230	1,81	4,65	3	3400	4,26	2	4000	200	2,54	6,8		
	4.2.40.f	2	3400	2,84	1	4300	230	1,81	4,65	3	3400	4,26	2	4000	200	2,54	6,8		
	6.2.40.f	2	3400	2,84	1	4300	230	1,81	4,65	4	3400	5,68	2	4000	200	2,54	8,22		
	8.2.40.f	3	3400	4,26	1	4300	230	1,81	6,07	6	3400	8,52	2	4000	200	2,54	11,06		
	1.2.40.f	3	3400	4,26	1	4600	230	1,94	6,2	6	3400	8,52	2	4000	200	2,54	11,06		
	3.2.45.f	2	3700	3,1	1	4600	230	1,94	5,04	3	3700	4,65	2	4300	200	2,74	7,39		
	4.2.45.f	2	3700	3,1	1	4600	230	1,94	5,04	3	3700	4,65	2	4300	200	2,74	7,39		
	6.2.45.f	3	3700	4,65	1	4600	230	1,94	6,59	4	3700	6,2	2	4300	200	2,74	8,94		
	8.2.45.f	4	3700	6,2	1	4600	230	1,94	8,14	6	3700	9,3	2	4300	200	2,74	12,04		
	1.2.45.f	4	3700	6,2	1	4900	230	2,07	8,27	6	3700	9,3	2	4300	200	2,74	12,04		
	3.2.50.f	2	4600	3,88	1	5500	230	2,13	6,01	3	4600	5,82	2	5200	200	3,34	9,16		
	4.2.50.f	2	4600	3,88	1	5500	230	2,13	6,01	3	4600	5,82	2	5200	200	3,34	9,16		
	6.2.50.f	3	4600	5,82	1	5500	230	2,13	7,95	4	4600	7,76	2	5200	200	3,34	11,1		
	8.2.50.f	4	4600	7,76	1	5500	230	2,13	9,89	6	4600	11,64	2	5200	200	3,34	14,98		
	1.2.50.f	4	4600	7,76	2	5200	200	3,34	11,1	6	4600	11,64	2	5200	200	3,34	14,98		
	3.2.56.f	3	4900	6,21	1	6100	230	2,6	8,81	4	4900	8,28	2	5500	200	3,52	11,8		
	4.2.56.f	3	4900	6,21	1	6100	230	2,6	8,81	4	4900	8,28	2	5500	200	3,52	11,8		
	6.2.56.f	4	4900	8,28	1	6100	230	2,6	10,88	6	4900	12,42	2	5500	200	3,52	15,94		
	8.2.56.f	6	4900	12,42	2	5500	200	3,52	15,94	8	4900	16,56	2	5500	200	3,52	20,08		
	1.2.56.f	6	4900	12,42	2	5500	200	3,52	15,94	8	4900	16,56	2	5500	200	3,52	20,08		
	3.2.63.f	5	5500	11,65	1	6400	230	2,76	14,41	6	5500	13,98	2	6100	200	3,92	17,9		
	4.2.63.f	5	5500	11,65	1	6400	230	2,76	14,41	6	5500	13,98	2	6100	200	3,92	17,9		
	6.2.63.f	5	5500	11,65	1	6400	230	2,76	14,41	6	5500	13,98	2	6100	200	3,92	17,9		
	8.2.63.f	7	5500	16,31	2	6100	200	3,92	20,23	9	5500	20,97	2	6100	200	3,92	24,89		
	1.2.63.f	7	5500	16,31	2	6100	200	3,92	20,23	9	5500	20,97	2	6100	200	3,92	24,89		
	 3x	3.3.45.f	2	5500	4,66	1	6400	230	2,76	7,42	3	5500	6,99	2	6100	200	3,92	10,91	
		4.3.45.f	2	5500	4,66	1	6400	230	2,76	7,42	3	5500	6,99	2	6100	200	3,92	10,91	
		6.3.45.f	3	5500	6,99	1	6400	230	2,76	9,75	4	5500	9,32	2	6100	200	3,92	13,24	
		8.3.45.f	4	5500	9,32	1	6400	230	2,76	12,08	6	5500	13,98	2	6100	200	3,92	17,9	
		1.3.45.f	4	5500	9,32	1	6400	230	2,76	12,08	6	5500	13,98	2	6100	200	3,92	17,9	
		3.3.50.f	4	3400	5,68	2	3700	200	2,34	8,02	6	3400	8,52	4	3700	200	4,68	13,2	
		4.3.50.f	4	3400	5,68	2	3700	200	2,34	8,02	6	3400	8,52	4	3700	200	4,68	13,2	
		6.3.50.f	6	3400	8,52	2	3700	200	2,34	10,86	8	3400	11,36	4	3700	200	4,68	16,04	
		8.3.50.f	8	3400	11,36	2	3700	200	2,34	13,7	12	3400	17,04	4	3700	200	4,68	21,72	
1.3.50.f		8	3400	11,36	4	3700	200	4,68	16,04	12	3400	17,04	4	3700	200	4,68	21,72		
3.3.56.f		6	3700	9,3	2	4000	200	2,54	11,84	8	3700	12,4	4	4000	200	5,08	17,48		
4.3.56.f		6	3700	9,3	2	4000	200	2,54	11,84	8	3700	12,4	4	4000	200	5,08	17,48		
6.3.56.f		8	3700	12,4	2	4000	200	2,54	14,94	12	3700	18,6	4	4000	200	5,08	23,68		
8.3.56.f		12	3700	18,6	4	4000	200	5,08	23,68	16	3700	24,8	4	4000	200	5,08	29,88		
1.3.56.f		12	3700	18,6	4	4000	200	5,08	23,68	16	3700	24,8	4	4000	200	5,08	29,88		
3.3.63.f		10	4000	16,8	2	4300	200	2,74	19,54	12	4000	20,16	4	4300	200	5,48	25,64		
4.3.63.f		10	4000	16,8	2	4300	200	2,74	19,54	12	4000	20,16	4	4300	200	5,48	25,64		
6.3.63.f		10	4000	16,8	2	4300	200	2,74	19,54	12	4000	20,16	4	4300	200	5,48	25,64		
8.3.63.f		14	4000	23,52	4	4300	200	5,48	29	18	4000	30,24	4	4300	200	5,48	35,72		
1.3.63.f		14	4000	23,52	4	4300	200	5,48	29	18	4000	30,24	4	4300	200	5,48	35,72		

f = Fin spacing

\* = Always heavy electric defrost when using cooling mediums..



## Best of both worlds



One question which always is in the mind of an industrial refrigeration engineer is the following:  
Do I ask for standard or shall I go for tailor made?

There are good reasons for both choices. In some cases, the solution needed is beyond the boundaries of the standard program. In other occasions, tailor made can even offer a more economical solution. In again other situations standard would be the logical choice to go for.

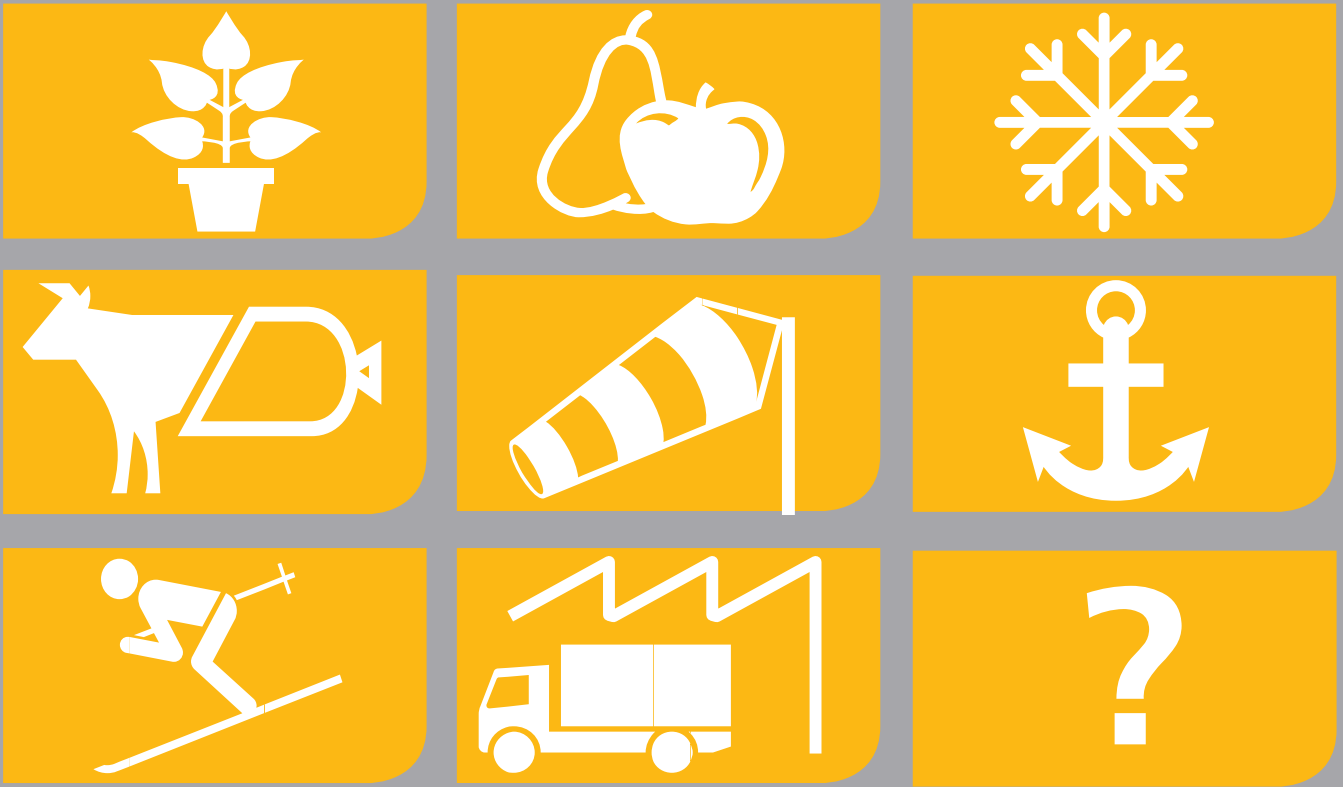
In any of the cases GEA Goedhart can offer you the right solution. With the standard selection software GPC finding the right heat exchanger is just a few mouse clicks away. On other cases the GEA Goedhart engineers are happy to help you out!

## Goedhart GPC Program, your selection software for air coolers and air cooled condensers!

Goedhart VRB/VRZ air cooler selections are available in the Goedhart Product Catalogue or GPC.  
On the tool section of [www.goedhart.nl](http://www.goedhart.nl) you will find the download button for the latest version of the GPC.

The GPC program is an easy to use tool for contractors, consultants and every other thinkable user and gives you access to many advantages such as:

- Multilingual
- The whole range of GEA Goedhart standard air coolers and air cooled condensers
- Pre-select buttons to application
- Selections including drawings and an extensive list of accessories
- Spare parts
- Accurate capacities: Under the GPC shell hides a sophisticated capacity calculation program which optimizes circuits to the design conditions as you work!



For Contractors and Original Equipment Manufacturers (OEM) related to the industrial refrigeration industry, GEA 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	Fin material
Copper (Cu)	Aluminium (Al)
Stainless steel (Stst)	Aluminium (Al)
Stainless steel (Stst)	Stainless steel (Stst)
Aluminium (Al)	Aluminium (Al)
Hot dipped galvanized steel (FeZn)	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.)**

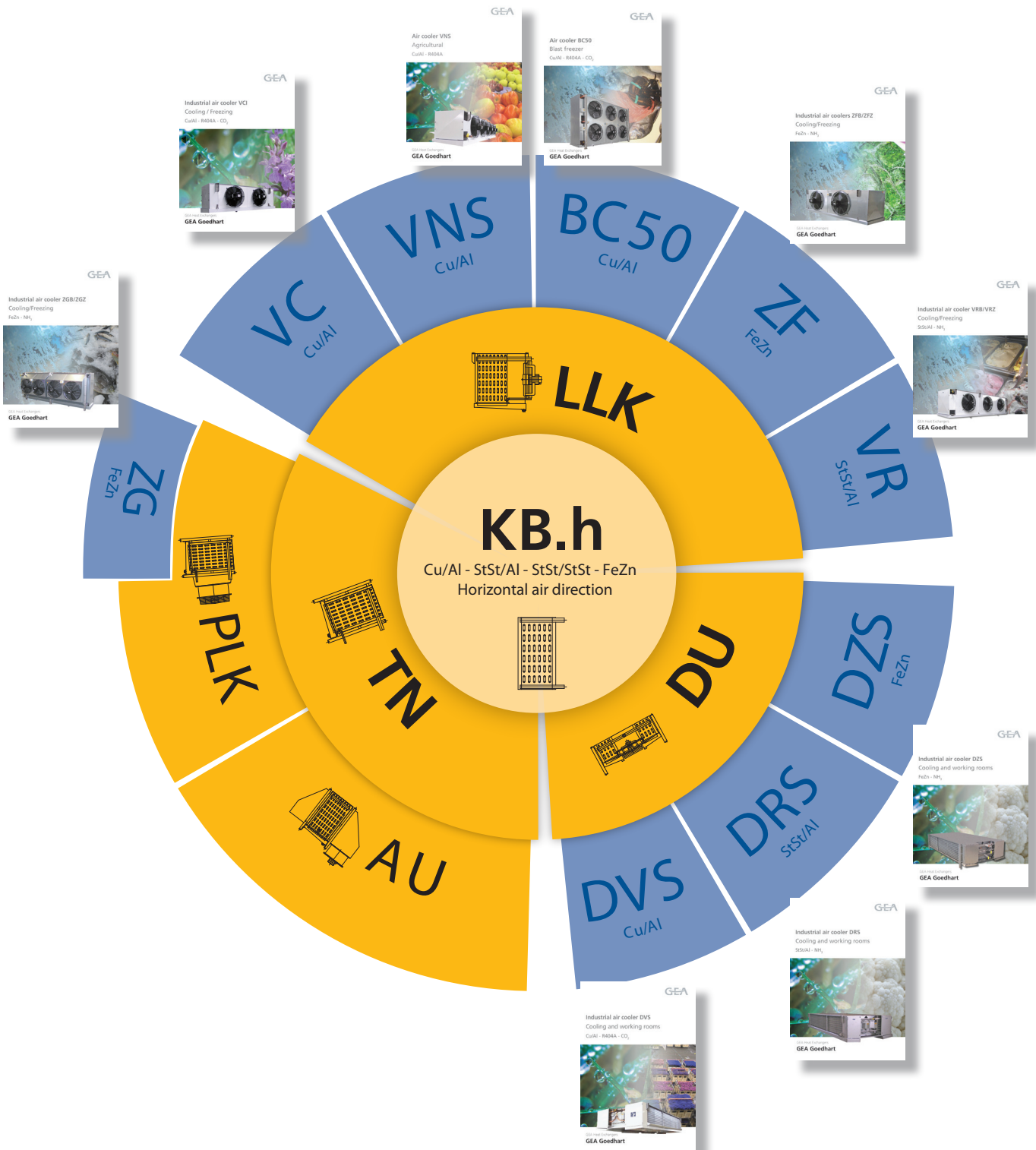
All aircoolers produced by Goedhart comply with the Pressure Equipment Directive 97/23/EC. PED certificates can be downloaded from [www.goedhart.nl](http://www.goedhart.nl).

**GEA Goedhart**  
air coolers  
for every application



# Goedhart industrial air coolers

## Catalogue ranges







Excellence

Passion

Integrity

Responsibility

GEA-versity

GEA Group is a global mechanical engineering company with multi-billion euro sales and operations in more than 50 countries. Founded in 1881 the company is one of the largest providers of innovative equipment and process technology. GEA Group is listed in the STOXX Europe 600 Index.



## GEA Heat Exchangers

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## GEA Heat Exchangers

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