

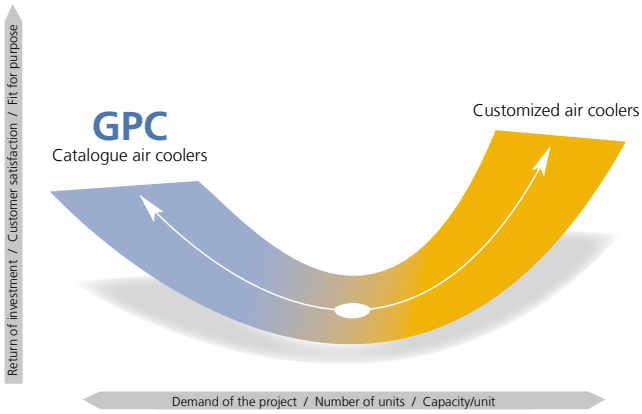
Goedhart DVS-i

Industrial air cooler for cooling and working rooms
Cu/Al - Inner grooved tubes

R404A



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 DVS-i air cooler selections are available in the Goedhart Product Catalogue or GPC.
On the tool section of **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!





Goedhart DVS-i

The Goedhart DVS range of dual discharge ceiling mounted air coolers consists of 240 types with capacities between 1,5 and 147,4 kW. The aircoolers are especially suitable for cooling and working room applications. The height of the aircooler is low, so the maximum space in the chill room can be utilised.
The fans are arranged for blow-through or draw-through air configuration (please state which is required when ordering).The modular design incorporates 5 different sizes of fan, with model options of up to 6 fans per cooler. The fans are mounted to the outside of the air cooler. The fans are as standard not wired on a junction box to the connection side. Wiring is available against an extra price.

Coil execution

- Tube pitch : 50x50 mm straight
- Fin spacings : 4, 7, 10 mm
- Material : 15 mm o.d. copper tubes - inner-grooved
  : aluminium HT-fins
- : aluminium end plates
- Goedhart DVS coil blocks have copper tubes mechanically expanded into fully collared aluminium fins, providing excellent thermal contact. All evaporator coils are pressure tested to 30 bars (lower by coolants) and supplied with a light overpressure charge.
- The coolers are suitable for the most commonly used refrigerants/coolants with the exception of NH3.

Casing

- Construction for ceiling mounting
- Casing material of galvanized sheet steel
- Finishing is standard white epoxy spray (RAL 9003)
- Bend/header protection by end covers, easy removed for maintenance
- 2 Hinged drip trays underneath each coil block.
- Defrost by hot gas spiral or electric defrost elements will be fixed to the bottom side of the coil.
- Stainless steel fasteners

Type description

Goedhart DVS-i 66457

- Inner grooved tubes
- Number of rows deep
- Number of fans
- Fan diameter [cm]
- Fin spacing [mm]

General Goedhart DVS-i features

Capacity

The nominal cooling capacities are based on R404A, DT1, RH of 85% and 4 pole 3 phase fans connected in Δ. Goedhart DVS air coolers can be selected with our GPC program, which can be downloaded from our website: www.goedhart.nl

Influence of coating on the 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.

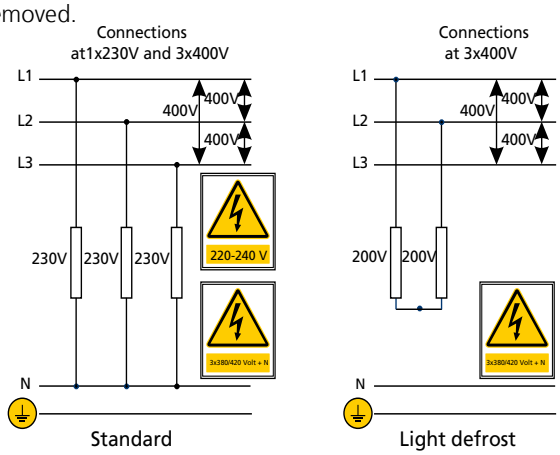
Sound data

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.

Defrost systems

For room temperatures where ice-build up can be expected and where the coil can not be defrosted by the room air, electric or hot gas defrost is necessary

Electrical defrost
On request Goedhart DVS can be provided with electrical defrost. The stainless steel heating elements are fitted in the coil block within aluminium tubes, which forms a highly conductive medium between the heaters and the fins. In the drip tray heater elements are fitted to the underside of the aluminium inner tray. The elements are rated for 220/240 V and are connected (IP55) for 380/415 V (with neutral) supply. The heater elements in the coil block are removable from the bend side, whilst the tray heater elements can be removed once the outer tray has been removed.



Hot gas defrost
The coil block is suited for hot gas defrost (hot gas supply through the suction header). The drip tray can be provided with a copper hot gas spiral. This is enclosed in aluminium profiles that are rigidly secured to the under side of the aluminium inner drip tray

Accessories:

Standard accessories for the Goedhart DVS aircoolers are:
-electric, hotgas defrost system.
-insulation in the space between the inner and outer drip tray.
-insulated hygienic polyester drip tray.
-insulated fanplate
-hinged fan plate
-single phase motors

The accessories are included in the price list.

Optional extras:

Various optional extras for the Goedhart DVS are available, price and delivery upon request:

-insulation discs
-60 Hz motors
-EC-fans
-water defrost system
-glycol/water/etc. cooling mediums
-stainless steel casing
-other fin spacings
-other fans (when external pressure is requested)

Mounting and Maintenance

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





Because of the flexible construction of the Goedhart DVS-i 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 DVS-i air coolers. The fans can be supplied in both blow-through and draw-through executions. The fans are mounted to the outside of the air cooler. The fans are as standard not wired (wiring is optional) on a junction box to the connection side. Against an extra price and with extra delivery times stainless steel guards and EC-fans are available.

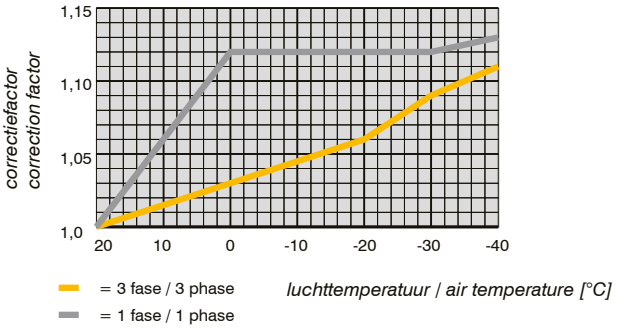
Execution

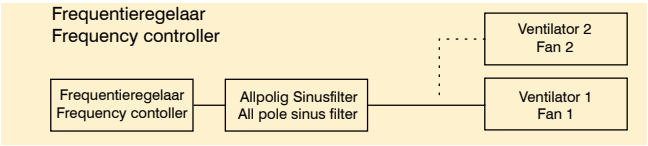
The fans meet the ErP directive. The fans have very good aerodynamic features because of the special impeller geometry. This special impeller geometry gives the fan a low noise level and an high efficiency.

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 : IP54
Color : RAL9005 (black)
Speed controlling : - 3 Phase motors are suitable for 2-speed regulation by Δ-Y reconnection.
- 3 Phase motors are suitable for frequency controller with all-pole sinus filter.
- 1 Phase motors are suitable for phase control and transformator.

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 ρ = 1,2 kg/m³). 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.





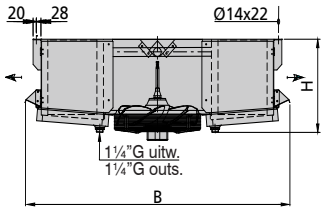
Three phase - 50 Hz

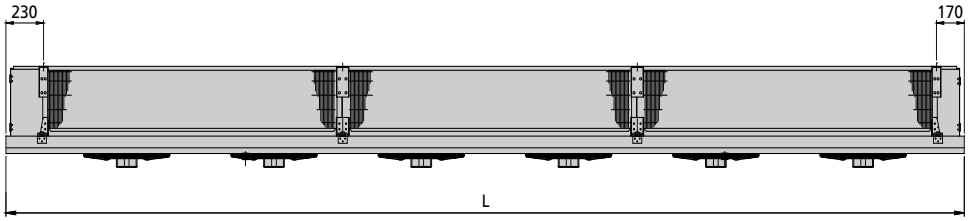
Fan type	Tension	Δ				Y				
		Speed	Input	FLC	Sound power indication each fan LwA (+/-2dB(A))	Seed	Input	FLC	Sound power indication each fan LwA (+/-2dB(A))	Wiring diagram blow-through/ draw-trhough
	V	min⁻¹	Watt	A	dB(A)	min⁻¹	Watt	A	dB(A)	
4 pole (n=1500 min⁻¹ nom.)										
FN040	3x400/690	1370	230	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
6 pole (n=1000 min⁻¹ nom.)										
FN045	3x400/690	860	180	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	Input	FLC	Sound power indication each fan LwA (+/-2dB(A))	Wiring diagram blow-through/ draw-trhough
	min⁻¹	Watt	A	dB(A)	
4 pole (n=1500 min⁻¹ nom.)					
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
6 pole (n=1000 min⁻¹ nom.)					
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

Dimensions





	Type DVS	Dimensions L mm	B mm	H mm
1x	3.1.40.*	1056	1220	420
	4.1.40.*	1056	1320	420
	6.1.40.*	1056	1520	420
	8.1.40.*	1056	1720	420
	1.1.40.*	1056	1920	420
	3.1.45.*	1056	1270	545
	4.1.45.*	1056	1370	545
	6.1.45.*	1056	1570	545
	8.1.45.*	1056	1770	545
	1.1.45.*	1056	1970	545
	3.1.50.*	1356	1320	545
	4.1.50.*	1356	1420	545
	6.1.50.*	1356	1620	545
	8.1.50.*	1356	1820	545
	1.1.50.*	1356	2020	545
	3.1.56.*	1456	1380	660
	4.1.56.*	1456	1480	660
	6.1.56.*	1456	1680	660
	8.1.56.*	1456	1880	660
	1.1.56.*	1456	2080	660
	3.1.63.*	1456	1450	750
	4.1.63.*	1456	1550	750
	6.1.63.*	1456	1750	750
	8.1.63.*	1456	1950	750
	1.1.63.*	1456	2150	750
2x	3.2.40.*	1656	1220	420
	4.2.40.*	1656	1320	420
	6.2.40.*	1656	1520	420
	8.2.40.*	1656	1720	420
	1.2.40.*	1656	1920	420
	3.2.45.*	1656	1270	545
	4.2.45.*	1656	1370	545
	6.2.45.4	1656	1570	545
	8.2.45.*	1656	1770	545
	1.2.45.*	1656	1970	545
	3.2.50.*	2256	1320	545
	4.2.50.*	2256	1420	545
	6.2.50.*	2256	1620	545
	8.2.50.*	2256	1820	545
	1.2.50*	2256	2020	545
	3.2.56.*	2456	1380	660
	4.2.56.*	2456	1480	660
	6.2.56.*	2456	1680	660
	8.2.56.*	2456	1880	660
	1.2.56.*	2456	2080	660
	3.2.63.*	2456	1450	750
	4.2.63.*	2456	1550	750
	6.2.63.*	2456	1750	750
	8.2.63.*	2456	1950	750
	1.2.63.*	2456	2150	750

	Type DVS	Dimensions L mm	B mm	H mm
3x	3.3.45.*	2256	1270	545
	4.3.45.*	2256	1370	545
	6.3.45.*	2256	1570	545
	8.3.45.*	2256	1770	545
	1.3.45.*	2256	1970	545
	3.3.50.*	3156	1320	545
	4.3.50.*	3156	1420	545
	6.3.50.*	3156	1620	545
	8.3.50.*	3156	1820	545
	1.3.50.*	3156	2020	545
	3.3.56.*	3456	1380	660
	4.3.56.*	3456	1480	660
	6.3.56.*	3456	1680	660
	8.3.56.*	3456	1880	660
	1.3.56.*	3456	2080	660
	3.3.63.*	3456	1450	750
	4.3.63.*	3456	1550	750
	6.3.63.*	3456	1750	750
	8.3.63.*	3456	1950	750
	1.3.63.*	3456	2150	750
4x	3.4.45.*	2856	1270	545
	4.4.45.*	2856	1370	545
	6.4.45.*	2856	1570	545
	8.4.45.*	2856	1770	545
	1.4.45.*	2856	1970	545
	3.4.50.*	4056	1320	545
	4.4.50.*	4056	1420	545
	6.4.50.*	4056	1620	545
	8.4.50.*	4056	1820	545
	1.4.50.*	4056	2020	545
	3.4.56.*	4456	1380	660
	4.4.56.*	4456	1480	660
	6.4.56.*	4456	1680	660
	8.4.56.*	4456	1880	660
	1.4.56.*	4456	2080	660
	3.4.63.*	4456	1450	750
	4.4.63.*	4456	1550	750
	6.4.63.*	4456	1750	750
	8.4.63.*	4456	1950	750
	1.4.63.*	4456	2150	750

	Type DVS	Dimensions L mm	B mm	H mm
5x	3.5.50.*	4956	1320	545
	4.5.50.*	4956	1420	545
	6.5.50.*	4956	1620	545
	8.5.50.*	4956	1820	545
	1.5.50.*	4956	2020	545
	3.5.56.*	5456	1380	660
	4.5.56.*	5456	1480	660
	6.5.56.*	5456	1680	660
	8.5.56.*	5456	1880	660
	1.5.56.*	5456	2080	660
	3.5.63.*	5456	1450	750
	4.5.63.*	5456	1550	750
	6.5.63.*	5456	1750	750
	8.5.63.*	5456	1950	750
	1.5.63.*	5456	2150	750
6x	3.6.50.*	5856	1320	545
	4.6.50.*	5856	1420	545
	6.6.50.*	5856	1620	545
	8.6.50.*	5856	1820	545
	1.6.50.*	5856	2020	545
	3.6.56.*	6456	1380	660
	4.6.56.*	6456	1480	660
	6.6.56.*	6456	1680	660
	8.6.56.*	6456	1880	660
	1.6.56.*	6456	2080	660
	3.6.63.*	6456	1450	750
	4.6.63.*	6456	1550	750
	6.6.63.*	6456	1750	750
	8.6.63.*	6456	1950	750
	1.6.63.*	6456	2150	750

Attention!



The fans are mounted to the outside of the air cooler. The fans are as standard not wired on a junction box to the connection side. Wiring is available against an extra price.



GEA Goedhart air coolers for every application

For Contractors and Original Equipment Manufacturers (OEM) related to the industrial refrigeration industry, GEA Goedhart 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 GEA Goedhart comply with the Pressure Equipment Directive 97/23/EC. PED certificates can be downloaded from www.goedhart.nl.

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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