



Goedhart VCI

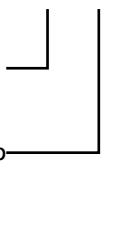
The extensive range Goedhart VCI single discharge ceiling mounted industrial air coolers are available with capacities between 3,4 and 149 kW. The Goedhart VCI air coolers are suitable for cooling and freezing applications and with a wide variety of accessories and options available. The coil block is standard build from aluminium end plates, copper tubes and aluminium fins. The fans are arranged for blow-through air configuration for the Goedhart VCI-B and draw-through for the Goedhart VCI-Z (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

VCI-B 63457

B=Blow through
Z=Draw through

Number of rows deep



Fin spacing



Fan diameter
in cm

Number of fans

Coil block

- Tube pitch : 50x50 mm straight
- Fin spacing : 4, 6, 7, 8 and 10 mm
- Material : 15mm o.d copper tube
- : aluminium HT-lamellen
- 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 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.
- Suitable for all known refrigerants and coolants, with the exception of NH₃.

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 projection 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.

Correction factors

Correction factors DT1 (=air-on)

The capacities are based on R-404A direct expansion, DT1 and a RH of 85 %. DT1 is the difference between air-on temperature and the evaporation temperature of the cooler. The evaporation temperature is the saturate temperature corresponding to the pressure at the suction outlet of the cooler.

The nominal capacities:

(SC1)	$t_o=0^\circ\text{C}$	and DT1=10K
(SC2)	$t_o=-8^\circ\text{C}$	and DT1 = 8K
(SC3)	$t_o=-25^\circ\text{C}$	and DT1=7K

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 nominal = factor x Q requested

Cooling

DT1	SC1-DT1 =10K-Air-on=10°C (0/+10)											
	Evaporation temperature (°C)											
K	+7	+6	+5	+4	+3	+2	+1	0	-1	-2		
6	1,87	1,87	1,87	1,88	1,88	1,89	1,89	1,89	1,89	1,90		
7	1,53	1,53	1,54	1,54	1,54	1,55	1,55	1,55	1,55	1,56		
8	1,28	1,28	1,28	1,29	1,29	1,30	1,30	1,30	1,30	1,31		
9	1,11	1,11	1,11	1,12	1,12	1,13	1,13	1,13	1,13	1,14		
10	0,98	0,98	0,98	0,99	0,99	0,99	1,00	1,00	1,00	1,01		
11	0,89	0,89	0,89	0,90	0,90	0,91	0,91	0,91	0,91	0,92		
12	0,78	0,79	0,79	0,79	0,80	0,80	0,80	0,80	0,80	0,81		

Cooling / Freezing

DT1	SC2-DT1 =8K-Air-on=0°C (-8/0)										
	Evaporation temperature (°C)										
K	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	
6	1,32	1,34	1,39	1,43	1,46	1,46	1,47	1,47	1,48	1,49	
7	1,05	1,08	1,12	1,15	1,18	1,19	1,19	1,20	1,20	1,21	
8	0,86	0,88	0,91	0,94	0,97	1,00	1,00	1,01	1,01	1,02	
9	0,76	0,76	0,78	0,80	0,82	0,86	0,86	0,87	0,87	0,88	
10	0,66	0,67	0,69	0,71	0,73	0,74	0,74	0,75	0,75	0,76	
11	0,58	0,59	0,59	0,60	0,62	0,64	0,64	0,65	0,66	0,67	
12	0,55	0,54	0,54	0,54	0,55	0,55	0,56	0,57	0,58	0,59	

Freezing

DT1	SC3-DT1 =7K-Air-on=-18°C (-25/-18)										
	Evaporation temperature (°C)										
K	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30	
6	1,20	1,20	1,21	1,21	1,22	1,22	1,23	1,23	1,24	1,24	
7	0,99	0,99	0,99	1,00	1,00	1,00	1,01	1,01	1,02	1,02	
8	0,83	0,84	0,84	0,84	0,85	0,85	0,85	0,85	0,86	0,86	
9	0,72	0,72	0,72	0,73	0,73	0,73	0,73	0,74	0,74	0,74	
10	0,63	0,63	0,63	0,64	0,64	0,64	0,64	0,65	0,65	0,65	
11	0,56	0,56	0,56	0,57	0,57	0,57	0,50	0,58	0,58	0,58	
12	0,50	0,51	0,51	0,51	0,51	0,51	0,52	0,52	0,52	0,52	

Rekenvoorbeeld

Lamelaafstand	:	6 mm	-	DT1 = +3- (+10) = 7K
Gevraagde capaciteit	:	30 kW	-	Correctiefactor = 1,54
Luchttintrede temperatuur	:	+10 oC	-	Vermenigvuldig gevraagde capaciteit met correctie factor.
Verdampingstemperatuur	:	+3 oC		
Euroventconditie	:	SC1		30 kW x 1,54 = 46,2 kW
Koudemiddel	:	R-404A	-	Selecteer luchtkoeler uit tabel (SC1 type VCI-B 44566=46,5 kW)

Attention!

Moisture carry over from the coil block:

When you select VCI-B 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 VCI-Z. 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%.

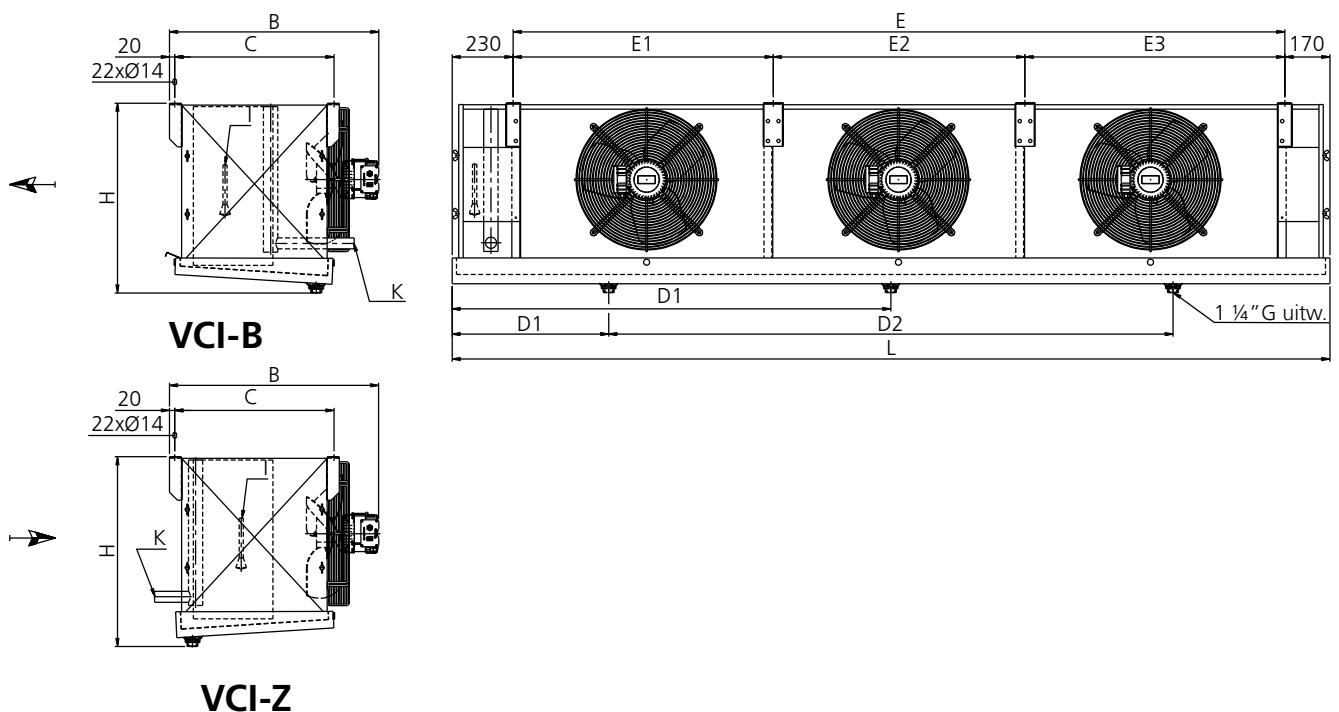
Air throw** (only draw-through execution)

The air throw mentioned in the selection table indicated with ** is based on an air temperature of 20°C, blowing under a flat ceiling without any obstruction. The height and air circulation fold of the room can influence the air throw. The air speed at the end of the throw-length is 0,25 m/sec

VCI 7mm Technical data

Type VCI	3x400V-50H-4pole (1500 min ⁻¹ nom.)						Surface	Internal volume	Weight	Dimensions								Connections			Air throw**				
	R404A			Air volume	LpA@ 3 m (+/- 2 dB(A))*	mm				mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm				
	DT1 = 10K (SC1) lucht on = 0°C (0/+10)	DT1 = 8K (SC2) lucht on = 0°C (-8/+0)	DT1 = 7K (SC3) lucht on = -18°C (-25/+18)																						
	kW	kW	kW	m ³ /h	dB(A)	m ²	dm ³	kg	mm	L	B	H	D	E1	E2	E3	D1	D2	In	Uit	Hot gas	mm	m		
4.1.40.7		4,0	2,8	3430	52	22	6	76	1156	670	620	500		756		578			15	15	19	20			
6.1.40.7		5,1	3,8	3285	52	33	9	80	1156	770	620	600		756		578			12	15	19	20			
8.1.40.7		6,3	4,5	3147	52	44	11	96	1156	870	620	700		756		578			12	22	19	20			
4.1.45.7		5,5	4,1	5206	56	30	8	93	1256	670	720	500		856		628			12	22	19	22,5			
6.1.45.7		7,7	5,4	4968	56	45	12	97	1256	770	720	600		856		628			12	22	19	22,5			
8.1.45.7		9,2	6,6	4754	56	61	16	116	1256	870	720	700		856		628			12	22	19	22,5			
4.1.50.7		7,8	5,5	7387	63	38	10	115	1456	790	720	600		1056		728			12	22	19	25			
6.1.50.7		10,4	7,5	7073	63	57	15	122	1456	890	720	700		1056		728			12	22	19	25			
8.1.50.7		12,4	8,9	6786	63	76	19	143	1456	990	720	800		1056		728			12	28	19	25			
4.1.56.7		10,1	7,6	10553	63	56	14	160	1556	910	920	700		1156		778			12	22	19	27,5			
6.1.56.7		15,1	10,6	10195	63	84	21	166	1556	1010	920	800		1156		778			12	28	19	27,5			
8.1.56.7		16,7	11,5	9864	63	112	28	193	1556	1110	920	900		1156		778			16	28	19	27,5			
4.1.63.7		14,7	10,5	13095	63	76	19	203	1656	910	1120	700		1256		828			12	28	19	27,5			
6.1.63.7		19,6	14,1	12734	63	114	29	206	1656	1010	1120	800		1256		828			16	35	19	27,5			
8.1.63.7		23,3	16,9	12384	63	152	38	243	1656	1110	1120	900		1256		828			16	35	19	27,5			
4.2.40.7		8,0	5,6	6853	55	44	11	123	1856	670	620	500		1456		928			12	22	19	20			
6.2.40.7		10,7	7,6	6563	55	66	17	130	1856	770	620	600		1456		928			12	22	19	20			
8.2.40.7		12,7	9,0	6285	55	89	22	156	1856	870	620	700		1456		928			12	28	19	20			
4.2.45.7		11,7	8,2	10405	59	60	15	151	2056	670	720	500		1656		1028			12	28	19	22,5			
6.2.45.7		15,3	10,7	9926	59	91	23	160	2056	770	720	600		1656		1028			12	28	19	22,5			
8.2.45.7		18,3	13,2	9495	59	121	30	192	2056	870	720	700		1656		1028			16	28	19	22,5			
4.2.50.7		15,6	11,0	14765	66	76	19	191	2456	790	720	600		2056		1228			16	28	19	25			
6.2.50.7		20,8	14,9	14135	66	114	29	205	2456	890	720	700		2056		1228			16	35	35	25			
8.2.50.7		24,7	17,8	13560	66	152	38	242	2456	990	720	800		2056		1228			16	35	35	25			
4.2.56.7		20,4	15,2	21096	66	111	28	267	2656	910	920	700		2256		1328			16	35	35	27,5			
6.2.56.7		30,3	21,2	20378	66	167	42	282	2656	1010	920	800		2256		1328			16	42	35	27,5			
8.2.56.7		34,2	22,9	19714	66	223	55	333	2656	1110	920	900		2256		1328			16	42	35	27,5			
4.2.63.7		29,5	20,9	26184	66	152	38	342	2856	910	1120	700		2456		1428			16	42	35	27,5			
6.2.63.7		39,3	28,2	25457	66	228	57	357	2856	1010	1120	800		2456		1428			22	42	35	27,5			
8.2.63.7		46,5	33,8	24754	66	304	75	424	2856	1110	1120	900		2456		1428			22	42	35	27,5			
4.3.45.7		17,4	12,3	15604	61	91	23	210	2856	670	720	500		2456		1428			16	28	35	22,5			
6.3.45.7		23,3	16,6	14883	61	137	34	225	2856	770	720	600		2456		1428			16	35	35	22,5			
8.3.45.7		27,5	19,4	14236	61	182	45	270	2856	870	720	700		2456		1428			16	35	35	22,5			
4.3.50.7		23,7	16,5	22144	67	114	29	268	3456	790	720	600	1028		2028	864	1728	16	35	35	25				
6.3.50.7		31,5	22,3	21197	67	171	43	288	3456	890	720	700	1028		2028	864	1728	16	42	35	25				
8.3.50.7		37,0	26,7	20333	67	228	57	342	3456	990	720	800	1028		2028	864	1728	16	42	35	25				
4.3.56.7		34,3	23,2	31642	67	167	42	384	3756	910	920	700	1128		2228	939	1878	16	42	35	27,5				
6.3.56.7		45,9	31,8	30562	67	251	62	398	3756	1010	920	800	1128		2228	939	1878	16	42	35	27,5				
8.3.56.7		54,7	38,6	29566	67	334	83	473	3756	1110	920	900	1128		2228	939	1878	22	54	35	27,5				
4.3.63.7		44,2	29,8	39271	67	228	57	483	4056	910	1120	700	1228		2428	1014	2028	22	42	35	27,5				
6.3.63.7		59,5	42,0	38181	67	342	85	507	4056	1010	1120	800	1228		2428	1014	2028	22	54	35	27,5				
8.3.63.7		71,1	49,5	37124	67	456	113	604	4056	1110	1120	900	1228		2428	1014	2028	22	54	35	27,5				
4.4.45.7		23,7	16,4	20802	62	121	30	274	3656	670	720	500	1628		1628	914	1828	16	35	35	22,5				
6.4.45.7		31,3	22,1	19840	62	182	45	287	3656	770	720	600	1628		1628	914	1828	16	42	35	22,5				
8.4.45.7		36,6	26,4	18978	61	243	60	346	3656	870	720	700	1628		1628	914	1828	16	42	35	22,5				
4.4.50.7		31,7	22,0	29523	68	152	38	351	4456	790	720	600	2028		2028	1114	2228	16	42	35	25				
6.4.50.7		42,0	29,7	28259	68	228	57	373	4456	890	720	700	2028		2028	1114	2228	16	42	35	25				
8.4.50.7		49,4	35,6	27107	68	304	75	441	4456	990	720	800	2028		2028	1114	2228	22	42	35	25				
4.4.56.7		41,8	30,5	42182	68	223	55	491	4856	910	920	700	2228		2228	1214	2428	16	42	35	27,5				
6.4.56.7		61,5	42,4	40744	68	334	83	513	4856	1010	920	800	2228		2228	1214	2428	22	54	42	27,5				
8.4.56.7		69,8	45,8	39415	68	446	110	610	4856	1110	920	900	2228		2228	1214	2428	22	54	42	27,5				
4.4.63.7		59,7	41,8	52359	68	304	75	623	5256	910	1120	700	2428		2428	1314	2628	22	54	42	27,5				
6.4.63.7		79,7	56,4	50904	68	456	113	659	5256																

VCI Drawing





Goedhart air cooler for every application

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	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

- Goldblack 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.



PRESSURE
EQUIPMENT