



## Goedhart BC50

Blast freezer  
Cu/Al

R404A - CO<sub>2</sub>



# Goedhart BC50

## Goedhart BC50 blastfreezers

The Goedhart BC50 blast freezers are a range of floor mounted aircoolers specially designed for quick freezing of food products. The Goedhart BC50 is a high-quality Goedhart aircooler with a lot of possible optional extras.

The Goedhart BC50 air coolers are very suitable for the use in 'large scale kitchens' (ready-to-serve meals). Besides this it can be used for quick freezing of bakery products, meat, fish, poultry, milk products and the production of ice cream. The working temperature is usually between -10°C and -30°C. The aircooler design is optimized for the use in confined spaces.

The process of quick freezing is very important to minimize the weight loss and conserving the qualities of the food product. The nutritional value is maintained, as well as the original taste. The fans on our Goedhart BC50 air coolers have standard 100 Pascal external pressure available to enable the quick freezing process.

The Goedhart BC50 range is designed based on the most common used execution. Goedhart has a lot more possibilities to provide the optimum solution for its customers. Please have a look at the available non-standard executions or contact the sales department for more information.

### Type description

**BC50 66657**

Number of rows deep  
(6,7,8)

Number of fans  
(2,4,6)

Fin spacing  
(7,10,12 mm)

Fan diameter in cm

# General range features

## Execution

Tube Pitch	: 50x50 mm square	
Fin Spacing	: 7, 10 and 12 mm	
Material	: Tubes : Copper 15 mm o d	
	: Fins : Goedhart Aluminum HT-Fins	

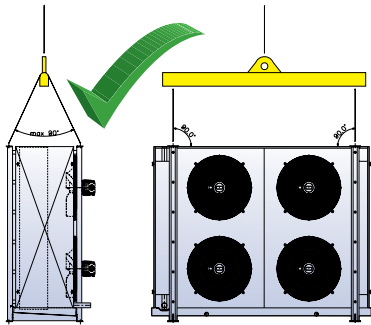
Standard refrigerant connections are positioned on the left hand side of the unit when looking with the direction of the airflow. Goedhart BC50 coil blocks have copper tubes mechanically expanded into fully collared aluminium fins, providing excellent thermal contact. All evaporator coils are pressure tested to 30 bars and supplied with a light overpressure charge.

## Casing

Material	: galvanized sheet steel to form a robust construction.
Finishing	: natural
Fixings	: Stainless steel to prevent corrosion.
Bends/header protection	: by end covers, easy removed for maintenance.
Defrost	: hot gas spiral or electric defrost elements will be fixed to the bottom side of the coil.

## Mounting

Goedhart BC50 must be handled with a crane. If only forklift truck is available, Goedhart must be informed when ordering the aircooler.



## Maintenance

Refer to our maintenance and installation manual.

## Capacities

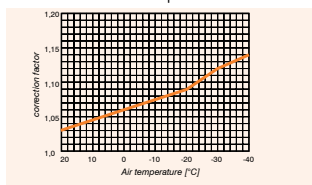
The capacities are based on R-404A direct expansion, DT1 (SC3, SC4) and a RH of 85% (frost layer 0 mm). See for more information page 5. Goedhart optimise the coil circuitry to suit the design condition. This provides the best performance for a given cooler in combination with application, refrigerant and capacity.

## Fans

Manufacturer	: Süd Electric
Diameter	: 650 mm
Electrical supply	: 400V-50Hz-3 phase electrical supply.
Connection	: Δ (Δ / Y only on request)
Protection class	: IP66
Frequency regulation	: only in combination with sinus filter
Temperature	: between -40 °C and +45 °C
Thermo contact	: PTO
Sound power level (LwA)	: 91 dB(A) each fan (+/- 2 dB(A))

When the air temperature is lower than -40 °C, special fans are needed. These special fans have a longer delivery time. The technical data in the selection table are the same as on the motor name plates and is valid for an air temperature of +40 °C.

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



## Sound data

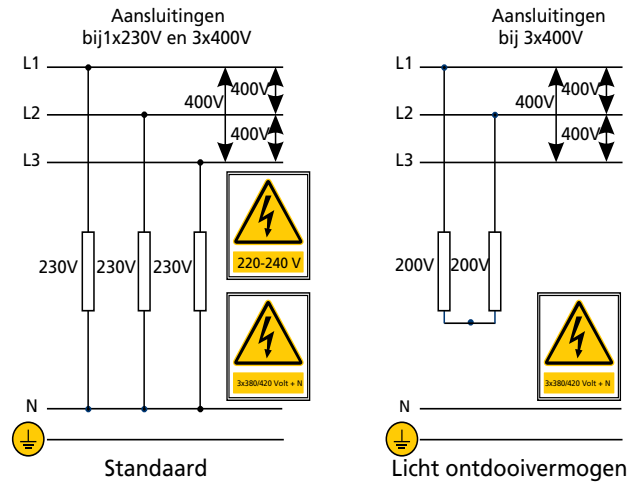
The mean sound pressure (LpA @ 3m ± 2 dB (A)) each air cooler is a calculated indication value according to the EN13487 standard parallel pipe. Goedhart uses the fan manufacturer's sound power level (LwA) at the inlet side of the fan. Changes to or by the fan or the product, affect the sound, in these 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 BC50 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.

## Optional extras

### Pump system / cooling mediums

On demand the BC50 aircoolers can be designed for applications with pump systems or secondary refrigerants (glycol, water, etc.). Please contact Goedhart sales department for a quotation.

### Non-standard executions

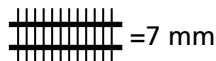
Goedhart is able to offer a lot of non-standard solutions. We can offer blastfreezers with higher available external pressure using axial fans. Also different lengths, heights and widths are possible.

- Tubes Stainless Steel (BR50)
- Execution ceiling mounted without legs
- Fins pre-coated with Goldlack
- Fins of Seawater resistant Aluminium (AlMg)
- Coating of the coilblock (tubes and fins)
- Various casing materials
- Various end plates materials
- Other fin spacings
- Staggered fin spacings
- Coupling between hotgas spiral and suctionheader
- Insulation discs
- Single phase fan motors
- 60 Hz fan motors
- Axial fans
- Adjustable feet
- Insulated driptray
- Fanheating
- Hinged fanplates
- Inspection doors / windows
- Water defrost

### In general:

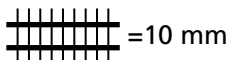
**Do not hesitate to contact Goedhart for non-standard solutions!**

# Goedhart BC50 Technical data



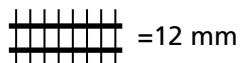
Type	DT1 (R404A)			Surface	Fans(Nominal values at 50Hz - 3x400V - T=40°C)					Electrical defrost Heavy			Sound pressure indication (LpA) at 3 m (+/- 2 dB(A)) *
	Capacity SC3 T in=-18°C DT1=7K -25/-18	Capacity SC4 T in=-25°C DT1=6K -31/-25	Airvolume 100 Pa external pressure		Number	Diameter	Speed	Absorbed Power	Absorbed FLC	Coilblock	Drip tray	Total	
BC50	kW	kW	m³/h	m²		mm	min <sup>-1</sup>	Watt	A	kW	kW	kW	dB(A)
6.2.65.7	22,9	18,3	22332	172	2	650	1350	1500	2,80	12,30	2,16	14,46	71
8.2.65.7	27,4	22,0	21201	229	2	650	1350	1500	2,80	15,37	2,16	17,53	71
6.4.65.7	45,8	36,6	44622	343	4	650	1350	1500	2,80	23,26	3,34	26,60	74
7.4.65.7	50,6	40,6	43440	400	4	650	1350	1500	2,80	27,13	3,34	30,47	74
6.6.65.7	68,6	54,9	66912	514	6	650	1350	1500	2,80	35,60	4,80	40,40	76
8.6.65.7	82,0	66,0	63503	685	6	650	1350	1500	2,80	46,99	4,80	51,79	76

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



Type	DT1 (R404A)			Surface	Fans(Nominal values at 50Hz - 3x400V - T=40°C)					Electrical defrost Heavy			Sound pressure indication (LpA) at 3 m (+/- 2 dB(A)) *
	Capacity SC3 T in=-18°C DT1=7K -25/-18	Capacity SC4 T in=-25°C DT1=6K -31/-25	Airvolume 100 Pa external pressure		Number	Diameter	Speed	Absorbed Power	Absorbed FLC	Coilblock	Drip tray	Total	
BC50	kW	kW	m³/h	m²		mm	min <sup>-1</sup>	Watt	A	kW	kW	kW	dB(A)
6.2.65.10	19,5	15,7	24007	124	2	650	1350	1500	2,80	12,30	2,16	14,46	71
6.4.65.10	38,9	31,3	47981	247	4	650	1350	1500	2,80	23,26	3,34	26,60	74
6.6.65.10	58,3	46,9	71954	370	6	650	1350	1500	2,80	35,60	4,80	40,40	76

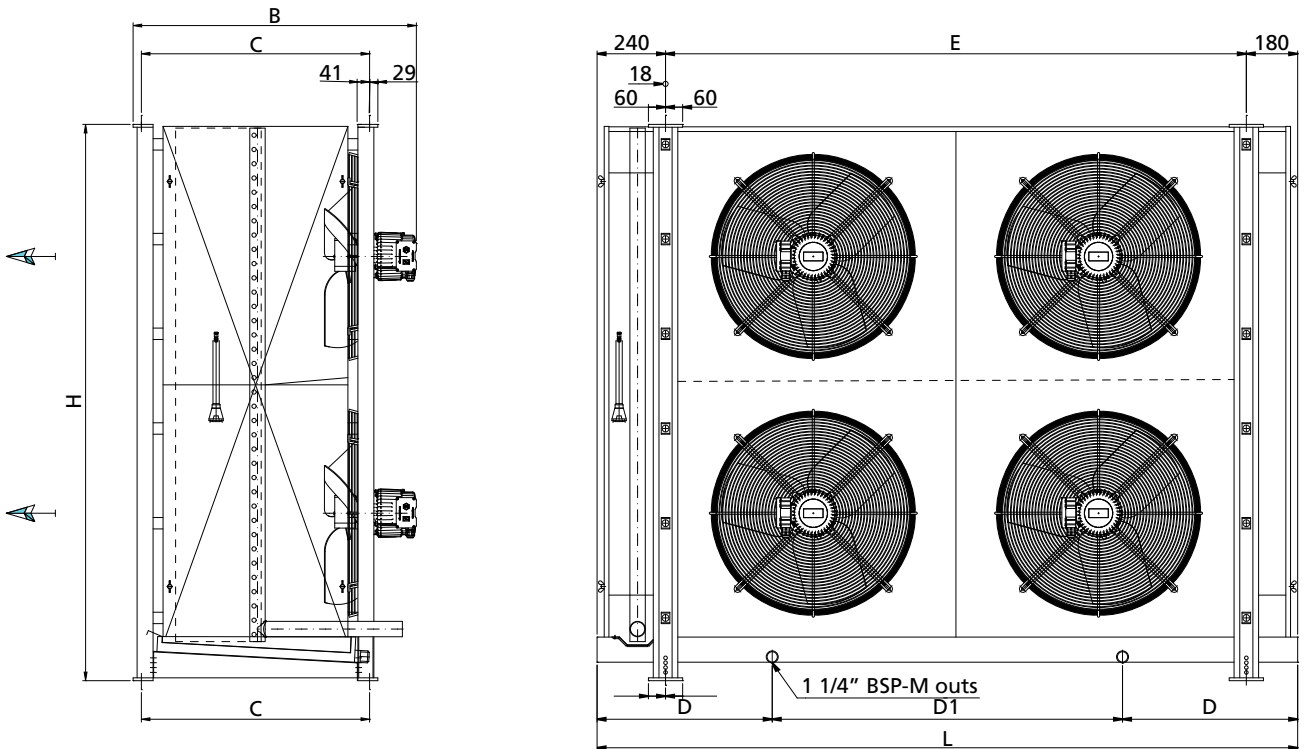
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	Capacity SC3 T in=-18°C DT1=7K -25/-18	Capacity SC4 T in=-25°C DT1=6K -31/-25	Airvolume 100 Pa external pressure		Number	Diameter	Speed	Absorbed Power	Absorbed FLC	Coilblock	Drip tray	Total	
BC50	kW	kW	m³/h	m²		mm	min <sup>-1</sup>	Watt	A	kW	kW	kW	dB(A)
6.2.65.12	18,4	14,8	24677	105	2	650	1350	1500	2,80	12,30	2,16	14,46	71
6.4.65.12	36,6	29,5	49327	209	4	650	1350	1500	2,80	23,26	3,34	26,60	74
6.6.65.12	55,0	44,2	73976	314	6	650	1350	1500	2,80	35,60	4,80	40,40	76

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

# Goedhart BC50 Technical data



Type	Dimensions							Internal volume	Weight (empty)		
	L	B	H	C	E	D	D1		7 mm	10 mm	12 mm
BC50	mm	mm	mm	mm	mm	mm	mm	dm <sup>3</sup>	kg	kg	kg
6.2.65.	1456	993	1950	800	1036	728		43	310	290	290
8.2.65.	1456	1093	1950	900	1036	728		57	360		
6.4.65.	2456	993	1950	800	2036	614	1228	85	515	475	470
7.4.65.	2456	1093	1950	850	2036	614	1228	99	560		
6.6.65.	3456	993	1950	800	3036	576	2x1152	127	710	655	650
8.6.65.	3456	1093	1950	900	3036	576	2x1152	169	840		

## Correction factors DT1 (= air-on temperature)

Capacities: are based on R-404A direct expansion and DT1.

DT1: 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: (SC3)  $t_o = -25^\circ\text{C}$  and  $\text{DT1} = 7\text{K}$

(SC4)  $t_o = -31^\circ\text{C}$  and  $\text{DT1} = 6\text{K}$

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.

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

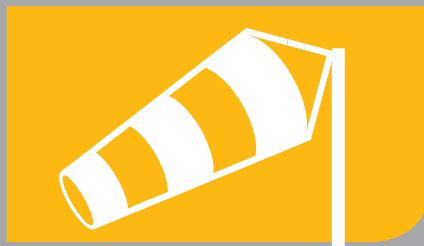
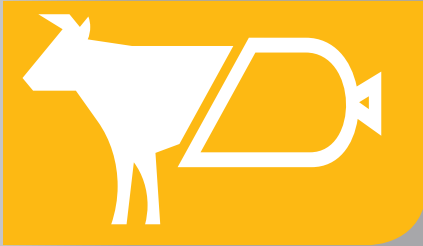
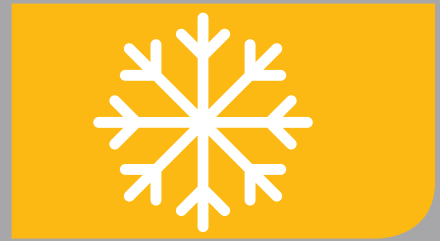
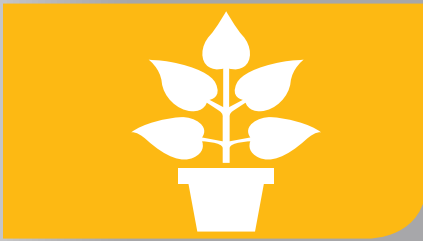
DT1	Evaporation temperature ( $^\circ\text{C}$ )									
	SC3 ( $T_o = -25^\circ\text{C}$ DT1=7K)									
K	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30
6	1.20	1.20	1.21	1.21	1.22	1.22	1.23	1.23	1.24	1.24
7	0.99	0.99	0.99	1.00	1.00	1.00	1.01	1.01	1.02	1.02
8	0.83	0.84	0.84	0.84	0.85	0.85	0.85	0.85	0.86	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	0.58	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

DT1	Evaporation temperature ( $^\circ\text{C}$ )				
	SC4 ( $T_o = -31^\circ\text{C}$ DT1=6K)				
K	-31	-32	-33	-34	-35
6	1.00	1.01	1.01	1.02	1.03
7	0.82	0.83	0.84	0.84	0.84
8	0.70	0.69	0.69	0.69	0.69
9	0.58	0.59	0.59	0.59	0.60
10	0.51	0.51	0.51	0.51	0.52
11	0.45	0.45	0.46	0.46	0.46
12	0.41	0.41	0.41	0.41	0.41

# Goedhart product information

## Goedhart Blast freezer overview





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





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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