Refrigerant / Coolant

- Can be used with all HFC refrigerants. Performance data can be found with Küba Select (Product Selection Software)
- For water / brine circulation choose your Air Cooler with Küba Select
- For CO_2 operation and for NH_3 applications immediate selection with Küba Select is possible – or ask our technical staff in sales

! The performance data in the Q_V Charts refer to the combination of materials: tubes, Cu / fins, Al.

Küba Blue Line Aircoolers

Fresh solutions.

Technical Data (R404A) SGA...C 4,5 mm

Nomenclature

Standard

SG	A	E	10	2	C

- Line designation
- Fin spacing: **A = 4,5 mm**, **B = 7 mm**, **L = 12 mm**
- Electrical defrosting: **E = with electrical defrosting**
- Installation size : **01-10**
- Number of fans: **1-3**
- Generation code

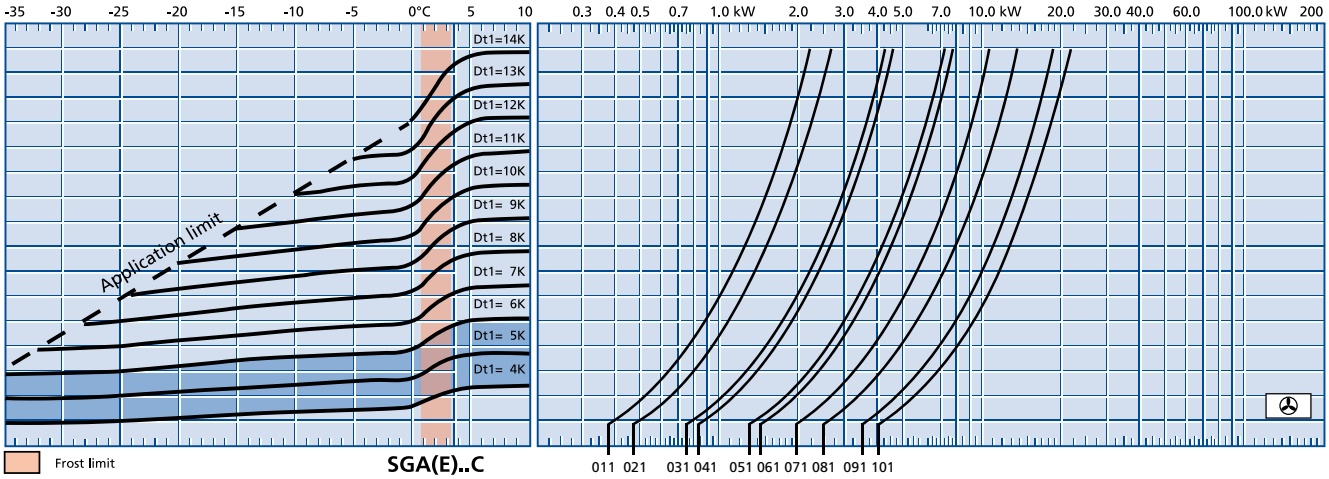
Model		Rating Q_0 at 50 Hz t_{L1} ±0 °C DT1 = 8K	Rating Q_0 at 50 Hz t_{L1} -18 °C DT1 = 7K	Surface	Air flow	Air throw	Tube volume	Connections Inlet	Connections Outlet	Connections Blade	Type of current	Fans (operating values at 50 Hz)		
		kW	kW	m²	m³/h	m	dm³	Ø mm	Ø mm	Ø mm		min⁻¹	W	A
SGA 011C	✇	1,00	0,79	7,3	620	7	1,3	10	15	250		1301	32	0,15
SGA 021C	✇	1,23	0,97	9,7	520	7	1,3	10	15	250		1301	32	0,15
SGA 031C	✇	1,98	1,57	12,5	1060	10	2,1	10	15	300		1295	86	0,38
SGA 041C	✇	2,19	1,73	16,6	970	10	2,8	10	15	300	230±10% V-1~ 50/60 Hz	1295	86	0,38
SGA 051C	✇	3,45	2,74	23,1	1620	13	3,8	10	22	400		1307	105	0,46
SGA 061C	✇	3,81	3,03	28,7	1600	13	4,8	10	22	400		1307	105	0,46
SGA 071C	✇	5,69	4,52	34,5	2610	19	5,7	10*	22	400		1362	205	0,90
SGA 081C	✇	6,73	5,34	51,5	2640	19	8,8	10*	28	400		1362	205	0,90
SGA 091C	✇	9,42	7,49	61,8	4010	23	10,6	10*	28	500	230/400 ±10%V-3~ 50/60 Hz	1417	360	0,86
SGA 101C	✇	10,80	8,57	82,3	4300	23	13,6	12*	35	500		1417	360	0,86
SGA 012C	✇✇	1,99	1,57	14,5	1240	11	2,3	10	15	250		1301	32	0,15
SGA 022C	✇✇	2,45	1,94	19,2	1040	11	3,1	10	18	250		1301	32	0,15
SGA 032C	✇✇	3,96	3,14	24,6	2120	14	3,9	10	18	300		1295	86	0,38
SGA 042C	✇✇	4,38	3,47	33,0	1940	14	5,3	10	22	300	230±10% V-1~ 50/60 Hz	1295	86	0,38
SGA 052C	✇✇	6,91	5,48	45,7	3240	18	7,6	10*	28	400		1307	105	0,46
SGA 062C	✇✇	7,62	6,05	57,1	3200	18	9,1	12*	28	400		1307	105	0,46
SGA 072C	✇✇	10,1	9,02	68,5	5220	26	10,8	12*	35	400		1362	205	0,90
SGA 082C	✇✇	12,5	10,68	103,0	5280	26	16,6	15*	35	400		1362	205	0,90
SGA 092C	✇✇	18,86	14,98	123,0	8020	33	19,8	15*	35	500	230/400 ±10%V-3~ 50/60 Hz	1417	360	0,86
SGA 102C	✇✇	21,60	17,16	164,0	8600	33	26,1	15*	42	500		1417	360	0,86
SGA 013C	✇✇✇	2,99	2,36	21,5	1860	13	3,4	10	15	250		1301	32	0,15
SGA 023C	✇✇✇	3,68	2,92	28,7	1560	13	4,5	10	22	250		1301	32	0,15
SGA 033C	✇✇✇	5,94	4,70	37,0	3180	17	5,8	10	28	300		1295	86	0,38
SGA 043C	✇✇✇	6,57	5,20	49,2	2910	17	8,1	10*	28	300	230±10% V-1~ 50/60 Hz	1295	86	0,38
SGA 053C	✇✇✇	10,35	8,21	68,3	4860	22	11,1	12*	35	400		1307	105	0,46
SGA 063C	✇✇✇	11,42	9,07	85,5	4800	22	13,1	12*	35	400		1307	105	0,46
SGA 073C	✇✇✇	15,2	12,1	103,0	7830	32	16,2	15*	35	400		1362	205	0,90
SGA 083C	✇✇✇	18,9	14,9	154,0	7920	32	24,6	22*	42	400		1362	205	0,90
SGA 093C	✇✇✇	28,29	22,47	184,0	12000	40	29,6	22*	54	500	230/400 ±10%V-3~ 50/60 Hz	1417	360	0,86
SGA 103C	✇✇✇	32,41	25,75	246,0	12900	40	38,5	22*	54	500		1417	360	0,86

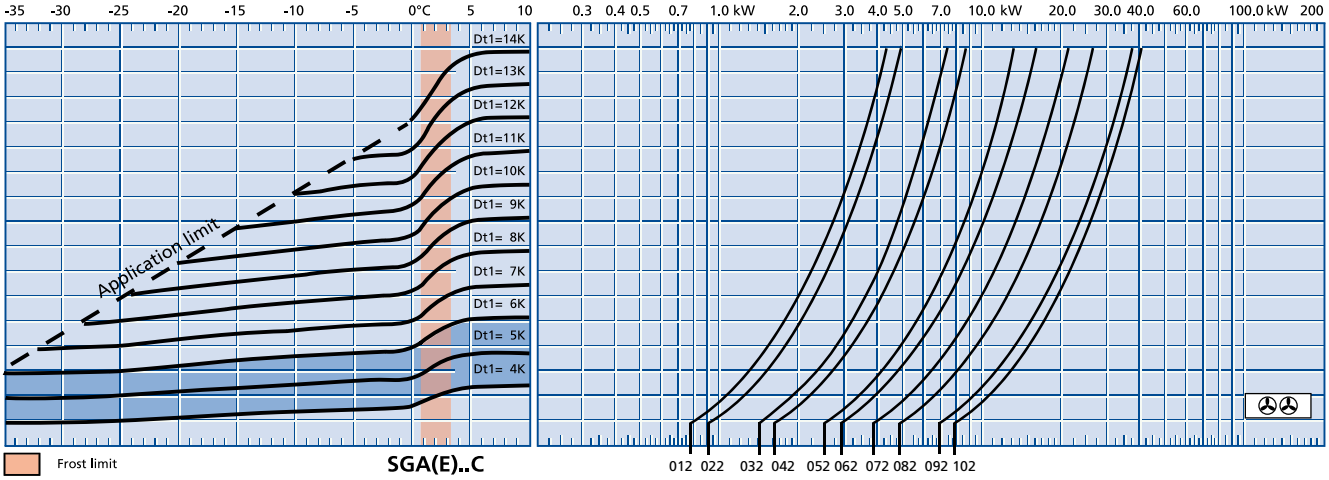
* Multiple injections with direct expansion using Küba CAL® distributors. The cooler rating at 60 Hz is 10% higher on average due to the higher speed and higher air flow.

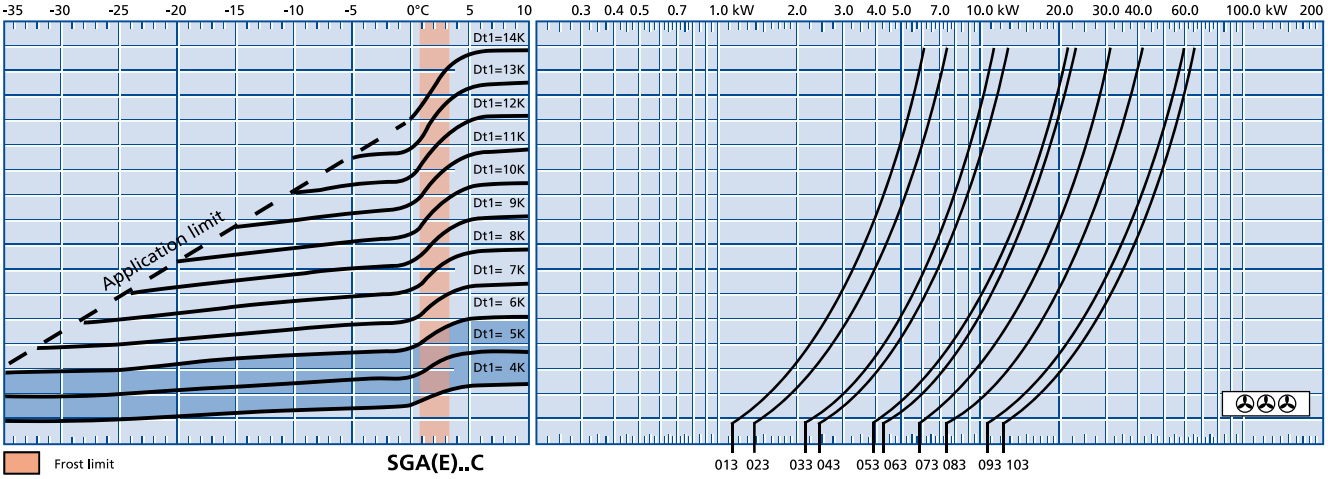
Q_V Chart (EN328, R404A) SGA...C 4,5 mm

t_{L1} [°C] Air inlet temperature

Q_0 [kW] Cooling capacity





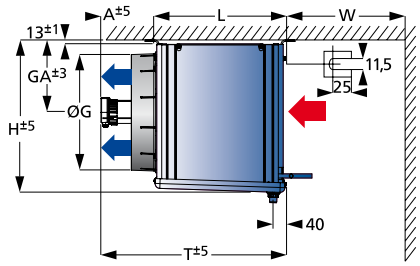


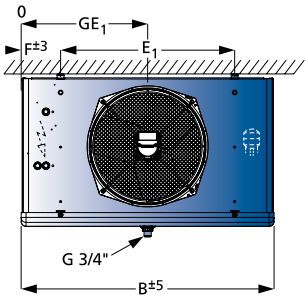
$\mathbf{Q_0}$ = Cooling capacity
$\mathbf{t_{L1}}$ = Air inlet temperature
$\mathbf{t_0}$ **[°C]** = Evaporating temperature (coil outlet)
DT1 [K] = Temperature difference = $t_{L1} - t_0$ (°C)

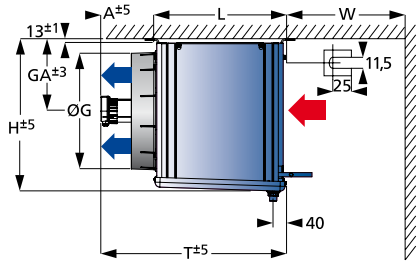
DT1 = 4 K bis 6 K
with electronic expansion valve

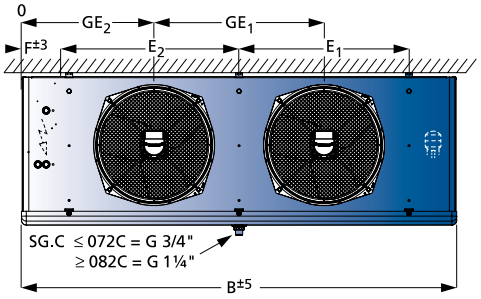
Example selection:
For examples and explanations, please see the information section on pg. 136.

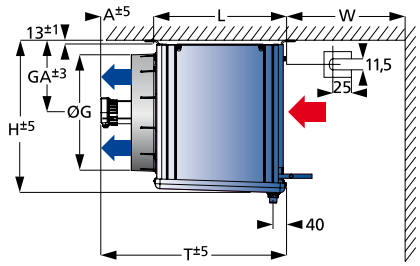
Dimensional Drawings

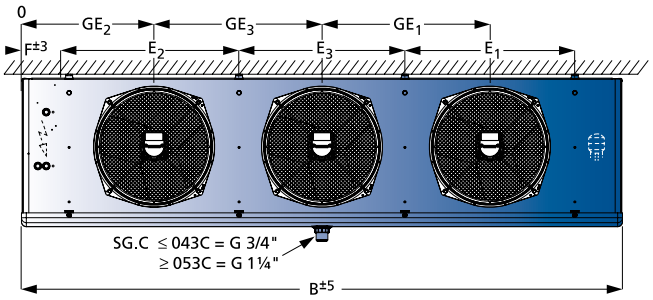












With double, insulated drip trays the following dimensions are changed:
Width B: +60 mm
Height H: +30 mm
Depth T: +30 mm

Sound power level L_{WA} [dB(A)]

	SGA/SGB/SGL		
Größe	✇	✇ ✇	✇ ✇ ✇
01	59	62	64
02	59	62	64
03	66	69	71
04	66	69	71
05	70	73	75
06	70	73	75
07	75	78	80
08	75	78	80
09	78	81	83
10	78	81	83

Dimensional Drawings, Electric Defrosting, Weights

	Dimensions [mm]																Electrical Defrosting			Net weight		
Size	H	B	T	L	E_1	E_2	E_3	F	A	W	W Hood	ØG	GA	GE_1	GE_2	GE_3	Coil	Tray	Total	SGA	SGB	SGL
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kW	kW	kW	kg	kg	kg
011C	360	565	420	345	380	-	-	93	80	200	290	265	160	283	-	-	0,77	0,35	1,16	12	11	-
021C	360	565	420	345	380	-	-	93	80	200	290	265	160	283	-	-	0,77	0,35	1,16	13	12	-
031C	460	665	440	345	480	-	-	93	100	200	340	321	210	333	-	-	0,96	0,42	1,38	18	17	-
041C	460	665	440	345	480	-	-	93	100	200	340	321	210	333	-	-	0,96	0,42	1,38	20	19	-
051C	560	815	570	415	530	-	-	143	160	300	430	419	260	408	-	-	1,44	0,24	1,68	30	29	28
061C	560	815	570	415	530	-	-	143	160	300	430	419	260	408	-	-	1,61	0,24	1,85	33	32	30
071C	560	915	640	495	630	-	-	143	150	300	430	419	260	458	-	-	1,73	0,29	2,02	41	39	37
081C	560	1065	640	495	780	-	-	143	150	300	430	419	260	533	-	-	2,18	0,35	2,53	53	51	49
091C	660	1065	650	495	780	-	-	143	160	400	500	525	320	533	-	-	2,90	0,35	3,25	62	59	56
101C	660	1315	650	495	1030	-	-	143	160	400	500	525	320	658	-	-	3,68	0,44	4,12	71	68	65
012C	360	1015	420	345	730	365	-	143	80	200	290	265	160	690	325	-	1,38	0,69	2,07	23	21	19
022C	360	1015	420	345	730	365	-	143	80	200	290	265	160	690	325	-	1,38	0,69	2,07	24	22	20
032C	460	1215	440	345	930	465	-	143	100	200	340	321	210	840	375	-	1,72	0,77	2,49	35	33	31
042C	460	1215	440	345	930	465	-	143	100	200	340	321	210	840	375	-	1,72	0,77	2,49	39	37	35
052C	560	1375	570	415	1030	515	-	173	160	300	430	419	260	945	430	-	2,64	0,44	3,08	58	55	53
062C	560	1375	570	415	1030	515	-	173	160	300	430	419	260	945	430	-	2,64	0,44	3,08	64	61	58
072C	560	1575	640	495	1230	615	-	173	150	300	430	419	260	1095	480	-	3,11	0,52	3,63	80	76	72
082C	560	1875	640	495	1530	765	-	173	150	300	430	419	260	1320	555	-	3,90	0,65	4,55	104	100	96
092C	660	1875	650	495	1530	765	-	173	160	400	500	525	320	1320	555	-	6,50	0,65	7,15	120	114	108
102C	660	2375	650	495	2030	1015	-	173	160	400	500	525	320	1695	680	-	8,42	0,84	9,27	137	130	123
013C	360	1365	420	345	1080	365	715	143	80	200	290	265	160	1040	325	683	1,84	0,92	2,76	34	31	28
023C	360	1365	420	345	1080	365	715	143	80	200	290	265	160	1040	325	683	1,84	0,92	2,76	37	34	31
033C	460	1665	440	345	1380	465	915	143	100	200	340	321	210	1290	375	833	2,42	1,21	3,63	51	48	45
043C	460	1665	440	345	1380	465	915	143	100	200	340	321	210	1290	375	833	2,42	1,21	3,63	57	54	51
053C	560	1875	570	415	1530	515	1015	173	160	300	430	419	260	1445	430	938	3,90	0,65	4,55	86	81	76
063C	560	1875	570	415	1530	515	1015	173	160	300	430	419	260	1445	430	938	3,90	0,65	4,55	95	90	85
073C	560	2175	640	495	1830	615	1215	173	150	300	430	419	260	1695	480	1088	4,47	0,75	5,22	118	111	104
083C	560	2625	640	495	2280	765	1515	173	150	300	430	419	260	2070	555	1313	5,63	0,94	6,57	154	147	140
093C	660	2625	650	495	2280	765	1515	173	160	400	500	525	320	2070	555	1313	9,37	0,94	10,32	180	170	160
103C	660	3375	650	495	3030	1015	2015	173	160	400	500	525	320	2695	680	1688	12,09	1,82	13,92	240	228	216

The dimensions are only valid for the standard model design!
Note the differences in dimension among versions and accessories.

Models

- **Version V6.02**

Heat exchanger:
Tubing: Stainless steel
Fins: „goldlack“ coating
End plates: Stainless steel

Casing: Al-stucco., protective coating on both sides
Refrigerant distributor: Standard Venturi
Stainless steel CAL® distributor upon request

- **Version V6.03**

Heat exchanger:
Tubing: Stainless steel
Fins: Al
End plates: Al

Casing: Al-Stucco., protective coating on one side
Refrigerant distributor: Standard Venturi
Stainless steel CAL® distributor upon request

- **Version V6.04**

Heat exchanger:
Tubing: Cu
Fins: Al „goldlack“ coating
End plates: Al

Casing: Al-Stucco., protective coating on one side

Further information regarding corrosion protection can be found on pages 132 to 135

Accessories

Adapter for textile hose connection and Shut-Up®

With the Küba Shut-Up® and fitting adapter, (aluminium, powder-coated RAL 9018) mounting a PVC or textile hose is quick and easy.

Air Guiding Grid design: plastic (not suitable for fan collar heaters)

Selection table

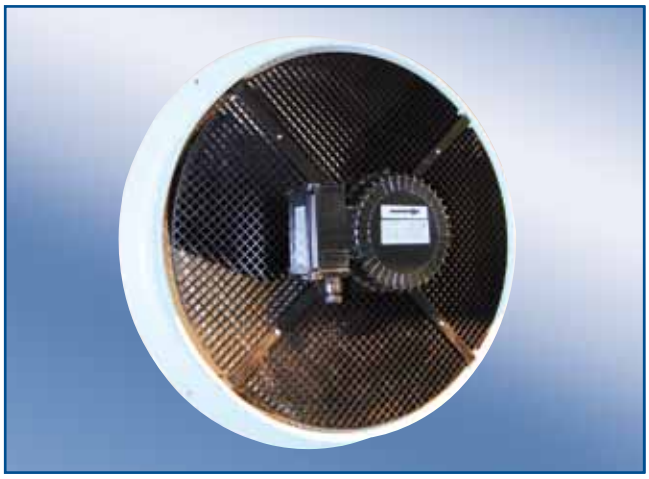
For Air Coolers	Adapter		Note
	Quantity	ØG mm	
SG 011-021C	1	270	
SG 031-041C	1	325	
SG 051-061C	1	425	
SG 071-081C	1	425	
SG 091-101C	1	525	
SG 012-022C	2	270	
SG 032-042C	2	325	Not assembled upon delivery (cannot be used with electric defrosting SGHR)
SG 052-062C	2	425	
SG 072-082C	2	425	
SG 092-102C	2	525	
SG 013-023C	3	270	
SG 033-043C	3	325	
SG 053-063C	3	425	
SG 073-083C	3	425	
SG 093-103C	3	525	

For greater pressure drops we recommend using more powerful fans. When using textile or PVC hoses, take the Ø G (mm) in the selection table into consideration. For more information, contact our sales engineers, Tel.: ++49 (0)89 / 74473-0. For more detailed information, please see the information provided by the textile or PVC hose manufacturer.

Fan unit for assembling fan collar heaters

This fan unit (collar made of aluminium, powder-coated RAL 9018) is used to assemble a fan collar heater.

Fan unit design: suitable for use with fan collar heaters



Applications

- Assembling fan collar heaters for deep-freezing starting at -18 °C

If fan collar heaters are used for a deep-freeze application, a fan with an aluminium collar must be used instead of the standard fan unit. Please note this in planning.

Scope of delivery

Complete fan unit consisting of:

Collar:	Al Stucco, white powder-coated RAL 9018 Food safe High protection against corrosion
Air Guiding Grid:	Plastic
Motor and blade:	Standard

Accessories

Recommended for frozen storage

- Shut-Up®
- Defrost hood
- Fan collar heaters
- Double insulated drip tray
- Insulate the top panel on site

Shut-Up®

In conjunction with the accessories mentioned above, the Küba Shut-Up® optimises the defrost process, especially in deep-freeze applications.

Applications

- Frozen storage starting at -18 °C
- Alternating defrosting of the Air Coolers in one room

Advantages (in connection with the defrosting hood)

With Shut-Up® and the defrost hood, a positive accumulation of heat occurs in the Air Cooler during the defrost process. The heat remains in the cooler, which means:

- Defrost times are reduced by more than 50 %
- Significant amounts of energy are saved
- No frost build-up on the ceiling of the storage room or on the goods due to minimal vapour build-up
- Defrost temperature in the cooler is ≦5 °C

Calculation hint

Due to the additional external pressure, the air quantity and Air Cooler capacity change:

Model	Change in air quantity	Change in rating
SG *commercial*	-10%	-5%

Selection table

for model		Shut-Up®
SG...	✇	1 piece
SG...	✇ ✇	2 pieces
SG...	✇ ✇ ✇	3 pieces

Please plan to use an adapter.
Shut-Up® is not assembled upon delivery.

Cooling phase, fans switched on: Shut-Up® is inflated

Defrosting, fans switched off: Shut-Up® closes the Air Cooler

Accessories

Defrost hood

The defrosting hood optimises the defrost process, especially for deep-freeze applications.

Applications
- Frozen storage starting at -18 °C
- Alternating defrosting of the Air Coolers in one room

Advantages (in connection with Shut-Up®)
With the defrost hood and Shut-Up®, a positive accumulation of heat occurs in the Air Cooler during the defrost process. The heat remains in the cooler, which means:
- Defrost times are reduced by more than 50%
- Significant amounts of energy are saved
- No frost build-up on the ceiling of the storage room or on the goods due to minimal vapour build-up
- Defrost temperature in cooler is ≦5°C

Construction
- The defrosting hood consists of 6 mm of thick expanded polycarbonate
- To a large extent, the insulated plastic prevents temperatures from falling below the dew point and the related formation of ice.
- The material is temperature resistant from -100 °C to +140 °C
- Results of endurance tests with regard to contact with foodstuffs are available.
- The defrosting hoods are delivered as a kit for every fan module and can be assembled on site according to the enclosed assembly instructions
- Please note the minimum wall clearance „W_{min}“

Module dimensions and weight:

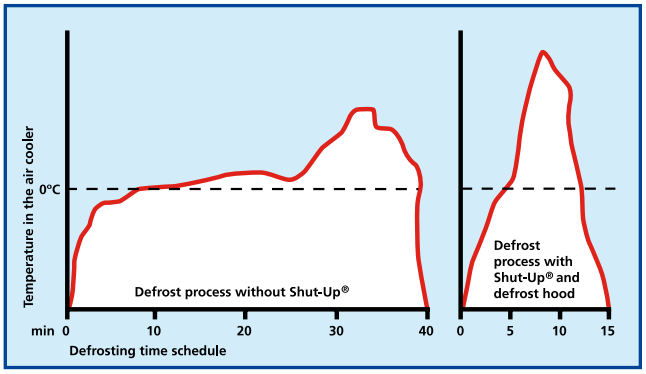
Model	H mm	B mm	$W_{min.}$ mm	Weight kg
SG 11-23	600	352	290	1,8
SG 31-14	700	452	360	2,5
SG 51-63	800	502	430	3,0
SG 71-73	800	602	430	3,4
SG 81-83	800	752	430	4,1
SG 91-93	900	752	500	4,5
SG 101-103	900	1002	500	5,6

Calculation hint
Due to the additional external pressure, the air quantity and Air Cooler capacity change:

Model	Change in air quantity	Change in rating
SG *commercial*	-10%	-5%

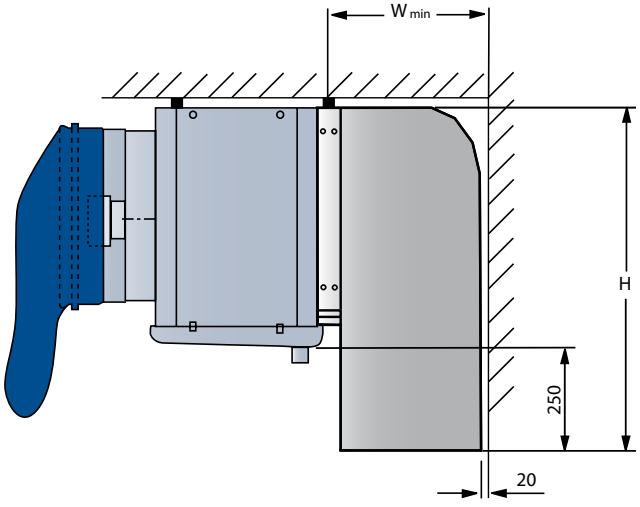
For deep-freeze applications, GEA Küba engineers recommend an insulated drip tray.

Defrosting process with Shut-Up® and defrost hood



Defrost time reduced by more than half

Defrost hood at air inlet



Accessories

Fan collar heater VRB

Benefits:
Prevents the fan blade at the collar from freezing up (in cases of extreme humidity in the freezer and frozen storage area)

Included in delivery:
Electric tubular heater with stainless steel sleeve Ø 8,5 mm
Connection ends: 1,5 x 2000 mm
Tension spring: stainless steel

Technical Data

Model	for blade	Nominal rating at 230 V	Ø mm	Weight
	mm	kW	D_i	kg
VRB 25	250	0,31	270	0,35
VRB 30	300	0,39	325	0,40
VRB 40	400	0,48	425	0,50
VRB 50	500	0,27	525	0,55

Selection table

For Air Coolers	VRB	Model	Connection power / cooler
	Quantity	Designation	kW
SG 011, 021C	1	VRB 25	0,31
SG 031, 041C	1	VRB 30	0,39
SG 051, 061C	1	VRB 40	0,48
SG 071, 081C	1	VRB 40	0,48
SG 091, 101C	1	VRB 50	0,27
SG 012, 022C	2	VRB 25	0,62
SG 032, 042C	2	VRB 30	0,78
SG 052, 062C	2	VRB 40	0,96
SG 072, 082C	2	VRB 40	0,96
SG 092, 102C	2	VRB 50	0,54
SG 013, 023C	3	VRB 25	0,93
SG 033, 043C	3	VRB 30	1,17
SG 053, 063C	3	VRB 40	1,44
SG 073, 083C	3	VRB 40	1,44
SG 093, 103C	3	VRB 50	0,81

Fan collar heater cover

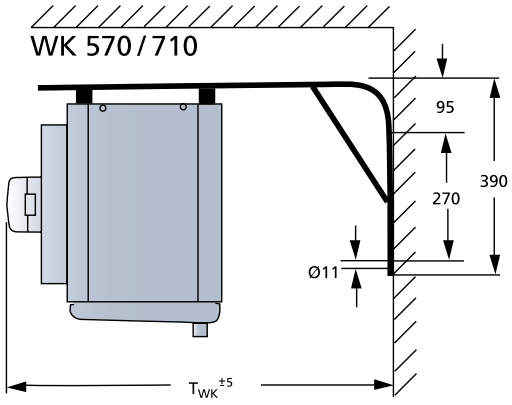
Benefits:
- Contact protection
- Reduces heat radiation from the fan collar heaters into the Cold Room
- Improves heat conductivity at the collar
- Increases the efficiency of the fan collar heaters
- Protects against slipping

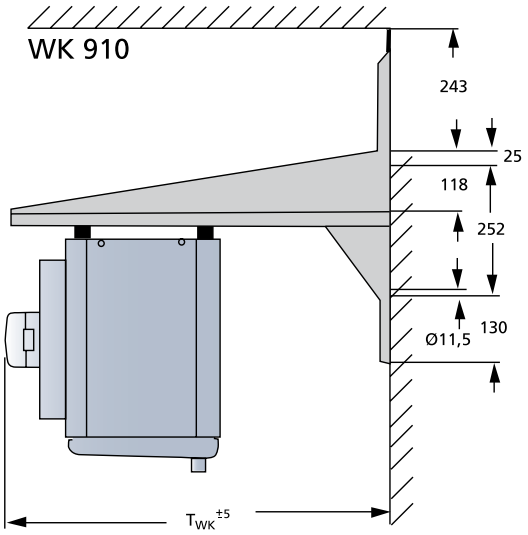
Only available for usage with a metal air duct;
fan unit for assembling a fan collar heater VRB, see page 58!

Accessories

Mounting material, wall bracket / floor bracket

Wall bracket (WK)

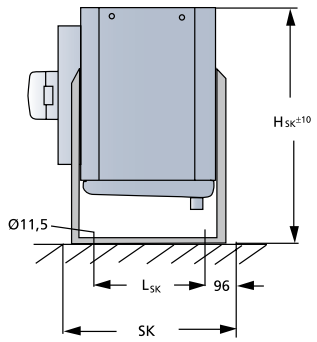


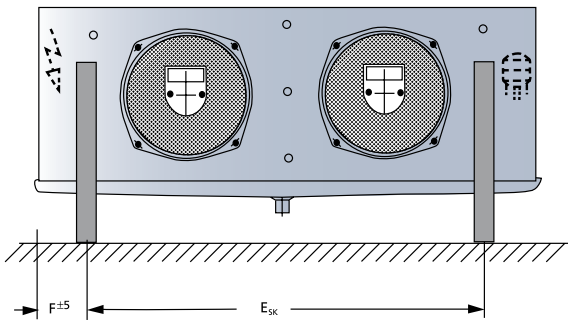


Design: Galvanised steel

SG.	011-013C	021-023C	031-033C	041-043C	051-053C	061-063C	071-073C	081-083C	091-093C	101-103C
WK	570	570	570	570	710	710	910	910	910	910
T_{WK} [mm]	615	615	635	635	835	835	1000	1000	1010	1010

Floor brackets (SK)





Design: SK 460, 510 = Al

SG.		051-053C	061-063C	071-073C	081-083C	091-093C	101-103C
SK		460	460	460	460	510	510
Dimensions [mm]	SK	460	460	460	460	510	510
	H_{SK}	685	685	785	785	785	785
	L_{SK}	478	478	558	558	558	558
	E_{SK} }	≙ E1 und F					
	F }	≙ According to dimension table p. 55					

No floor mounting brackets are available for SG. 011 - 043C.