CHANGING
GEA HEAT EXCHANGERS



Küba *market* SP

The new standard for basic refrigeration applications

Küba *market* SP

The new standard for basic refrigeration applications







Hinged, integrated fan system

Integrated electrical terminal box



Type designation code

1	2	3	4		5	6	7
SP	A	E	35	-	F	2	3

Refrigerant (Box 5)

F	HFC/CO_2	**G**	Glycol

1 Model range designation
2 Fin spacing
3 Electric defrost
4 Fan diameter
5 Refrigerant
6 Number of rows deep
7 Number of fans

Küba *market* SP



Küba HFE® fin-tube system

Capacity range (for SC2)

0.9 kW  46 kW

Temperature range (t_{L1})



-25°C 0°C +20°C

Number of fans



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Basic version 6

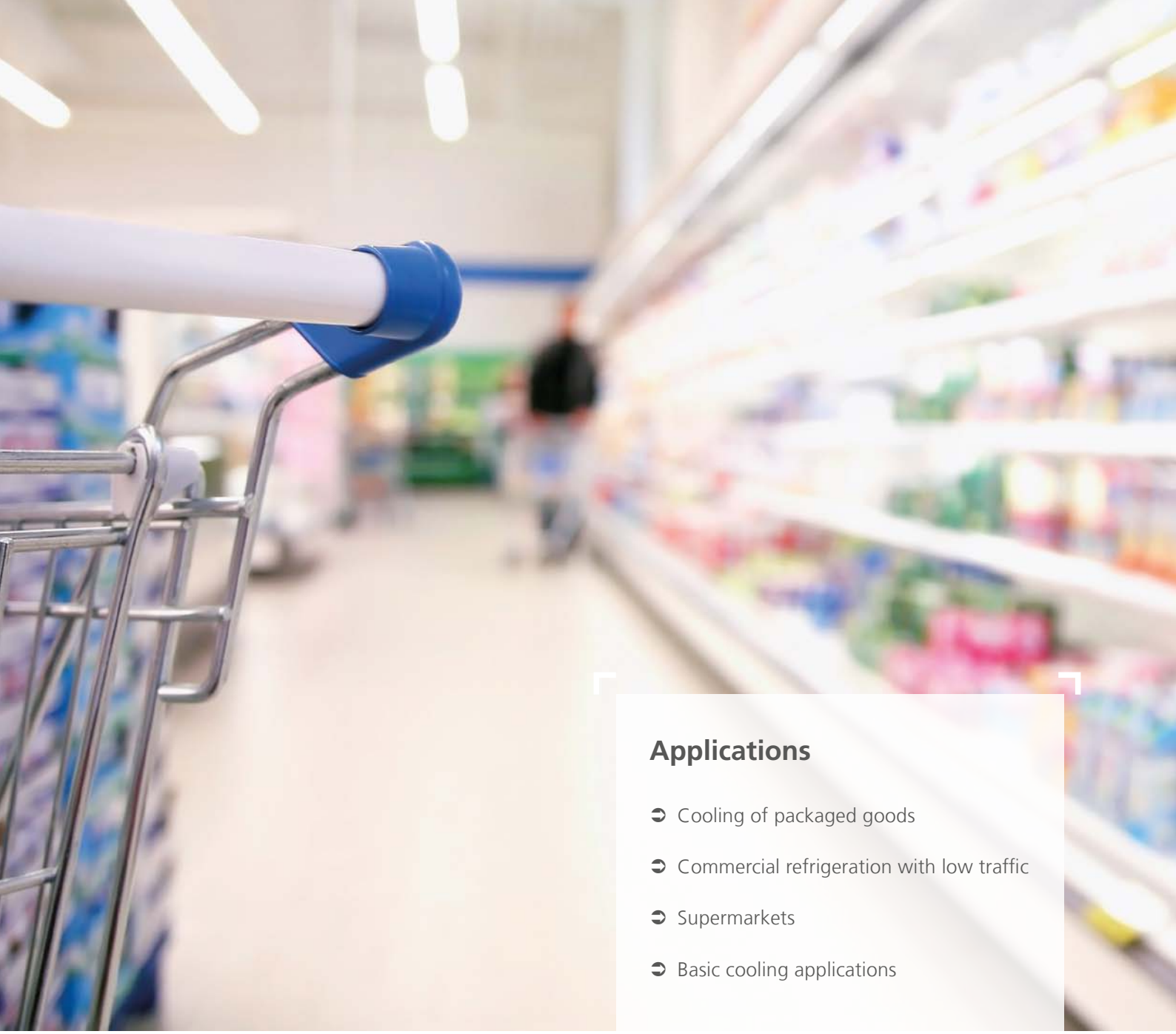
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Applications

- Cooling of packaged goods
- Commercial refrigeration with low traffic
- Supermarkets
- Basic cooling applications

Küba *market* SP

Application benefits for contractors and operators

The decisive factor in a refrigeration plant is the energy balance. We have radically redesigned the complete Küba *market* SP unit cooler by perfecting the interaction between individual components – which enables significant increase in energy efficiency.

Küba in this way sustainably counters constantly rising operating costs, while also consistently meeting increasingly stringent legislative requirements (e.g., ErP 2015).

The result: the best Küba *market* SP cooler ever.

Key features include:

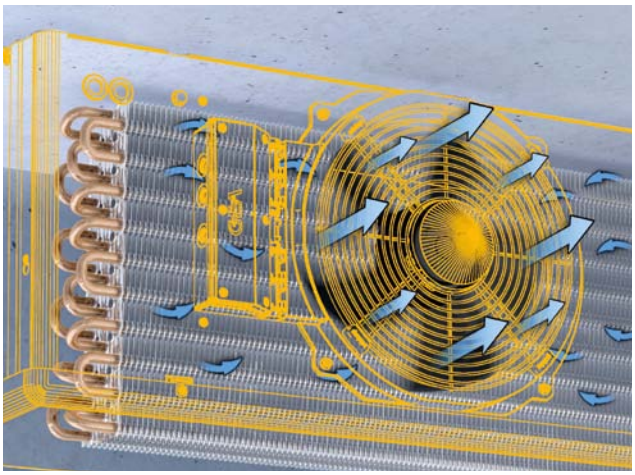
- Maximum energy efficiency due to low power consumption and great overall system efficiency.
- Performance-optimized heat exchanger, with the best fan system available today.
- Innovative hygienic design assures thorough cleaning of heat exchanger and fan.
- High-grade powder coating and use of composite-fiber materials, which minimizes corrosion.
- Excellent connection to the piping network as a result of the larger connection area in the side box.

Küba *market* SP

from the Küba Green Line production range

Maximum energy efficiency

- The Küba HFE® system combines the thermodynamic and fluid-dynamic interaction of the components with optimal fin structure and with newly developed heat-exchanger design. The result is stable control action, even with minimal temperature differences.
- The Küba defrost system guarantees quick and energy-efficient defrosting after long cooling cycles.
- The system of motors with fan blades and full bell mouth is optimized in aerodynamic design and are available with AC or EC technology.



Hygienic without a doubt

- The hinged fan system (not SP 23) makes thorough cleaning of the heat exchanger and the fan very easy.
- The casing has smooth, powder-coated surfaces that are easy to clean, food-safe, and environmentally friendly.
- The new fan system has a reliable splashguard feature that reliably protects it from liquid splashes from the outside. The new Küba *market* SP is manufactured to comply with the requirements of protection classes IP54 (EC motor) and IP44 (AC motor).



Simple installation

- The proven, rugged and sophisticated casing makes mounting of the cooler easy. The round corners and the smooth edges of the casing parts mean no danger of injury for installation and cleaning staff.
- The integrated terminal box for electrical wiring of the fans (not SP 23) is also an innovation. Standard spring-loaded terminals enable fast and sure connections.
- The connection area to the side is generous to enable simple maintenance.



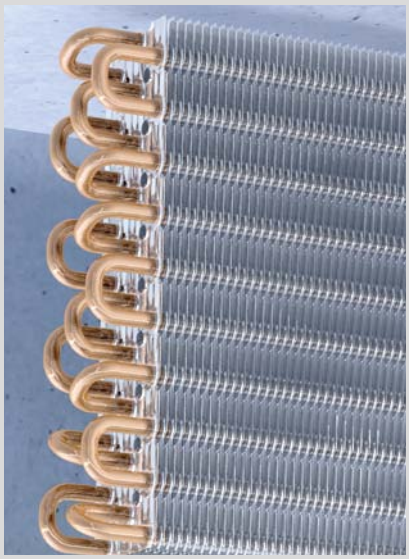
Küba *market* SP

Basic version



Casing

- Smooth aluminum and zinc coated steel
- High-grade powder coating RAL 9018 papyrus white
- Food-safe
- Easy to clean
- Best quality powder coated edges
- Prevention of ice formation in the wall ring gap
- Condensate drain grooves integrated in the wall ring: they provide effective drainage of the condensate from the fan plate, which is inclined at 3° to the drip tray



Heat exchanger for direct expansion

- Heat exchanger with staggered tube system consisting of special copper tubes, drawn oxygen-free and inner finned according to DIN EN 12735-1,2 and with 12 mm diameter and closed, pure-aluminum HFE fins.
- Fin spacing:
  A = 4 mm | B = 7 mm
- Fins flared to form-fit the core tube
- Highly effective heat transfer and compact design
- **Inlet connections:**
  With single injection:
  Copper pipe for brazed connections, tightly sealed
  SPA and SPB for multiple injection:
  Flow distributor, with brazed copper stub connection
- **Outlet connections:**
  Copper pipe for brazed connections, with Schrader valve UNF 7/16 inch



Electric defrost

- Heaters with CrNi steel sleeve
- Vapour-tight connections
- Mains voltage: 230 V-1/400V-3-Y
- Wired ready to connect in junction boxes
- Optimized tubular heater configurations ensure fast and even defrosting
- Fins flared to form-fit the core tube
- Aluminium heat pipes that ensure excellent heat transfer to the fins and thus effective defrosting cycles with optimized service life.



SP 23: Standard = ESM-Motor



SP 30, 35, 45: Standard = AC-Motor

Fan system

- Fan system with integrated terminal box and protection against liquid spray
- Permissible motor operating temperatures:
  -30 to +50°C (SP 23 [EC]),
  -40 to +40°C (SP 30, 35, 45 [AC])
- Built-in protector (AC) and connection box integrated in the hinge (not SP 23)
- Pre-wired to springloaded terminals
- Fan diameters available:
  230 / 300 / 350 / 450 mm
- 230 Volt, 50/60 Hz, 1 -phase as AC, (IP 44) or optionally as EC system (IP 54)
- Optional EC motor available with integrated motor management for monitoring of operational parameters to protect the fan unit: excess current, excess temperature, and undervoltage
- Hinged fan system (not SP 23)
- Controller:

Controller:	SP 23	SP 30,35,45
Phase control	☐	☑
Transformer	☐	☑
Delta/star	☐	☐
Frequency converter	☐	☑

Please observe the manufacturer's information!



Motor label data*

Type	Ø mm	50 Hz			60 Hz		
		rpm	W	A	rpm	W	A
SP 23 21-34	230	1,600	30	0.24	1,600	30	0.24
SP 23 21-34	230	1,000	14	0.11	1,000	14	0.11
SP 30 21-34	300	1,320	72	0.32	1,500	90	0.40
SP 35 21-45	350	1,400	180	0.81	1,600	250	1.10
SP 45 31-44	450	1,400	245	1.10	1,600	355	1.55
SP 45 51-74	450	1,390	510	2.75	1,600	710	3.11

Motor data per fan

*Data provided by the manufacturer

Küba *market* SP

Technical data – SPA(E)

Type	Rating Q_0 at 50 Hz. DT1. R404A		Cooling surface	Air flow	Air throw ***	Tube volume	Connections		Sound	Fans (Operational values at 50 Hz)				
	SC1	SC2					Inlet	Outlet	L_{WA}	Blade	Current	Per Fan		
	kW	kW	m^2	m^3/h	m	dm^3	Ø mm	Ø mm	db(A)	Ø mm	230 ± 10% V-1 50 Hz	rpm	W	A
SPA 23-F21	1.9	1.3	4.7	900	7	0.8	10 x1.0*	12 x1.0	67	230	230 V -1	1,580	30	0.25
SPA 23-F31	2.4	1.6	6.9	870	6	1.3	10 x1.0*	12 x1.0	67	230	230 V -1	1,580	30	0.25
SPA 30-F21	3.1	2.1	7.8	1,540	10	1.3	10 x1.0*	12 x1.0	65	300	230 V -1	1,360	65	0.30
SPA 30-F31	3.9	2.6	11.5	1,410	10	2.2	10 x1.0*	18 x1.0	65	300	230 V -1	1,360	65	0.30
SPA 35-F21	5.2	3.5	11.0	2,860	18	2.1	12 x1.0**	18 x1.0	72	350	230 V -1	1,430	145	0.68
SPA 35-F31	6.5	4.3	16.3	2,630	17	3.0	12 x1.0**	22 x1.0	72	350	230 V -1	1,430	145	0.68
SPA 35-F41	7.4	5.0	21.6	2,460	16	4.1	12 x1.0**	22 x1.0	72	350	230 V -1	1,430	145	0.68
SPA 45-F31	11.4	7.6	28.0	4,650	24	5.2	15 x1.0**	28 x1.5	81	450	230 V -1	1,360	270	1.20
SPA 45-F41	12.9	8.7	37.0	4,420	23	6.8	15 x1.0**	28 x1.5	81	450	230 V -1	1,360	270	1.20
SPA 45-F51	15.6	10.5	46.1	4,900	27	8.3	15 x1.0**	28 x1.5	81	450	230 V -1	1,400	490	2.71
SPA 45-F71	16.7	11.3	64.2	4,370	24	11.7	15 x1.0**	35 x1.5	81	450	230 V -1	1,400	490	2.71
SPA 23-F32	4.7	3.1	14.0	1,740	12	2.5	10 x1.0*	18 x1.0	70	230	230 V -1	1,580	30	0.25
SPA 30-F22	6.3	4.2	15.5	3,080	16	2.7	12 x1.0**	22 x1.0	68	300	230 V -1	1,360	65	0.30
SPA 30-F32	7.8	5.2	22.9	2,820	15	4.1	12 x1.0**	22 x1.0	68	300	230 V -1	1,360	65	0.30
SPA 35-F22	10.5	7.0	22.1	5,720	24	3.9	15 x1.0**	22 x1.0	75	350	230 V -1	1,430	145	0.68
SPA 35-F32	13.2	8.9	32.6	5,260	22	5.9	15 x1.0**	28 x1.5	75	350	230 V -1	1,430	145	0.68
SPA 35-F42	14.9	10.0	43.2	4,920	21	7.8	15 x1.0**	28 x1.5	75	350	230 V -1	1,430	145	0.68
SPA 45-F32	22.8	15.3	55.9	9,300	30	9.9	15 x1.0**	35 x1.5	84	450	230 V -1	1,360	270	1.20
SPA 45-F42	25.9	17.4	74.0	8,840	29	13.3	15 x1.0**	35 x1.5	84	450	230 V -1	1,360	270	1.20
SPA 45-F52	30.6	20.6	92.1	9,800	32	16.1	15 x1.0**	35 x1.5	84	450	230 V -1	1,400	490	2.71
SPA 45-F72	33.4	22.7	128.3	8,740	30	22.5	22 x1.0**	42 x1.5	84	450	230 V -1	1,400	490	2.71
SPA 23-F33	7.2	4.8	21.0	2,610	15	3.7	12 x1.0**	22 x1.0	72	230	230 V -1	1,580	30	0.25
SPA 30-F23	9.6	6.4	23.3	4,620	19	4.1	15 x1.0**	22 x1.0	70	300	230 V -1	1,360	65	0.30
SPA 30-F33	11.7	7.9	34.4	4,230	19	6.0	15 x1.0**	28 x1.5	70	300	230 V -1	1,360	65	0.30
SPA 35-F23	15.3	10.2	33.1	8,580	27	5.9	15 x1.0**	28 x1.5	77	350	230 V -1	1,430	145	0.68
SPA 35-F33	19.4	13.0	48.9	7,890	26	8.6	15 x1.0**	35 x1.5	77	350	230 V -1	1,430	145	0.68
SPA 35-F43	22.2	14.9	64.8	7,380	25	11.3	15 x1.0**	35 x1.5	77	350	230 V -1	1,430	145	0.68
SPA 45-F33	34.3	22.9	83.9	13,950	33	14.7	22 x1.0**	42 x1.5	86	450	230 V -1	1,360	270	1.20
SPA 45-F43	39.5	26.6	111.0	13,260	32	19.9	22 x1.0**	42 x1.5	86	450	230 V -1	1,360	270	1.20
SPA 45-F53	47.6	32.1	138.2	14,700	36	23.9	22 x1.0**	42 x1.5	86	450	230 V -1	1,400	490	2.71
SPA 45-F73	48.8	33.0	192.5	13,110	33	33.2	22 x1.0**	42 x1.5	86	450	230 V -1	1,400	490	2.71
SPA 23-F34	9.4	6.3	28.0	3,480	18	4.9	15 x1.0**	22 x1.0	73	230	230 V -1	1,580	30	0.25
SPA 30-F24	12.7	8.5	31.0	6,160	22	5.4	15 x1.0**	28 x1.5	71	300	230 V -1	1,360	65	0.30
SPA 30-F34	15.4	10.3	45.8	5,640	21	8.0	15 x1.0**	28 x1.5	71	300	230 V -1	1,360	65	0.30
SPA 35-F24	20.6	13.7	44.1	11,440	30	7.6	15 x1.0**	35 x1.5	78	350	230 V -1	1,430	145	0.68
SPA 35-F34	26.1	17.5	65.2	10,520	28	11.4	15 x1.0**	35 x1.5	78	350	230 V -1	1,430	145	0.68
SPA 35-F44	29.8	20.0	86.4	9,840	27	15.0	22 x1.0**	35 x1.5	78	350	230 V -1	1,430	145	0.68
SPA 45-F34	44.8	30.0	111.9	18,600	36	19.9	22 x1.0**	42 x1.5	87	450	230 V -1	1,360	270	1.20
SPA 45-F44	51.9	34.9	148.0	17,680	35	26.0	28 x1.5**	42 x1.5	87	450	230 V -1	1,360	270	1.20
SPA 45-F54	62.5	42.1	184.2	19,600	38	32.0	28 x1.5**	54 x2.0	87	450	230 V -1	1,400	490	2.71
SPA 45-F74	66.9	45.6	256.6	17,480	36	44.3	28 x1.5**	54 x2.0	87	450	230 V -1	1,400	490	2.71
SPA 35-F45	36.8	24.7	107.9	12,300	29	18.6	22 x1.0**	42 x1.5	79	350	230 V -1	1,430	145	0.68

Standard condition	t_{L1}	t_0	DT1
NB1/SC1	+10	0	10
NB2/SC2	0	-8	8

* Single injection
** Multiple injection
*** Throw limit at 0.5 m/s

Operating values are the values of the built-in motor at +20 °C, with an unobstructed air flow and a dry surface

EC = EC-Motor (ESM) as Standard

Subject to modification.

Küba *market* SP

Technical data – SPB (E)

7 mm

Type	Rating Q_0 at 50 Hz. DT1. R404A		Cooling surface	Air flow	Air throw ***	Tube volume	Connections		Sound	Fans (Operational values at 50 Hz)				
	SC2	SC3					Inlet	Outlet	L_{WA}	Blade	Current	Per Fan		
	kW	kW	m^2	m^3/h	m	dm^3	Ø mm	Ø mm	db (A)	Ø mm	230 ± 10% V-1 50 Hz	rpm	W	A
EC SPB 23-F21	0.9	0.6	2.8	980	7	0.8	10 x1.0*	12 x1.0	67	230	230 V -1	1,580	30	0.25
EC SPB 23-F31	1.2	0.8	4.2	890	7	1.3	10 x1.0*	12 x1.0	67	230	230 V -1	1,580	30	0.25
SPB 30-F21	1.5	1.1	4.3	1,660	11	1.3	10 x1.0*	12 x1.0	65	300	230 V -1	1,360	65	0.30
SPB 30-F31	2.0	1.4	6.4	1,590	11	2.2	10 x1.0*	18 x1.0	65	300	230 V -1	1,360	65	0.30
SPB 35-F21	2.4	1.6	6.6	3,040	19	2.1	12 x1.0**	18 x1.0	72	350	230 V -1	1,430	145	0.68
SPB 35-F31	3.3	2.4	9.8	2,940	19	3.0	12 x1.0**	22 x1.0	72	350	230 V -1	1,430	145	0.68
SPB 35-F41	4.0	2.9	12.9	2,820	18	4.1	12 x1.0**	22 x1.0	72	350	230 V -1	1,430	145	0.68
SPB 45-F31	5.6	4.0	16.7	5,010	26	5.2	15 x1.0**	28 x1.5	81	450	230 V -1	1,360	270	1.20
SPB 45-F41	6.8	5.1	22.1	4,870	25	6.8	15 x1.0**	28 x1.5	81	450	230 V -1	1,360	270	1.20
SPB 45-F51	8.7	6.5	27.6	5,650	31	8.3	15 x1.0**	28 x1.5	81	450	230 V -1	1,400	490	2.71
SPB 45-F71	10.3	7.9	38.4	5,270	29	11.7	15 x1.0**	35 x1.5	81	450	230 V -1	1,400	490	2.71
EC SPB 23-F32	2.3	1.7	8.4	1,780	12	2.5	10 x1.0*	18 x1.0	70	230	230 V -1	1,580	30	0.25
SPB 30-F22	3.0	2.1	8.6	3,320	17	2.7	12 x1.0**	22 x1.0	68	300	230 V -1	1,360	65	0.30
SPB 30-F32	4.0	2.9	12.8	3,180	16	4.1	12 x1.0**	22 x1.0	68	300	230 V -1	1,360	65	0.30
SPB 35-F22	4.9	3.3	13.2	6,080	25	3.9	15 x1.0**	22 x1.0	75	350	230 V -1	1,430	145	0.68
SPB 35-F32	6.6	4.5	19.5	5,880	24	5.9	15 x1.0**	28 x1.5	75	350	230 V -1	1,430	145	0.68
SPB 35-F42	8.0	5.8	25.8	5,640	24	7.8	15 x1.0**	28 x1.5	75	350	230 V -1	1,430	145	0.68
SPB 45-F32	11.3	8.0	33.4	10,020	32	9.9	15 x1.0**	35 x1.5	84	450	230 V -1	1,360	270	1.20
SPB 45-F42	13.6	10.3	44.3	9,740	31	13.3	15 x1.0**	35 x1.5	84	450	230 V -1	1,360	270	1.20
SPB 45-F52	17.2	13.3	55.1	11,300	37	16.1	15 x1.0**	35 x1.5	84	450	230 V -1	1,400	490	2.71
SPB 45-F72	20.7	15.9	76.8	10,540	34	22.5	22 x1.0**	42 x1.5	84	450	230 V -1	1,400	490	2.71
EC SPB 23-F33	3.5	2.5	12.5	2,670	16	3.7	12 x1.0**	22 x1.0	72	230	230 V -1	1,580	30	0.25
SPB 30-F23	4.5	3.0	13.0	4,980	20	4.1	15 x1.0**	22 x1.0	70	300	230 V -1	1,360	65	0.30
SPB 30-F33	6.0	4.3	19.2	4,770	20	6.0	15 x1.0**	28 x1.5	70	300	230 V -1	1,360	65	0.30
SPB 35-F23	7.2	5.3	19.8	9,120	28	5.9	15 x1.0**	28 x1.5	77	350	230 V -1	1,430	145	0.68
SPB 35-F33	9.8	7.2	29.3	8,820	28	8.6	15 x1.0**	35 x1.5	77	350	230 V -1	1,430	145	0.68
SPB 35-F43	11.9	8.8	38.7	8,460	27	11.3	15 x1.0**	35 x1.5	77	350	230 V -1	1,430	145	0.68
SPB 45-F33	16.9	12.1	50.2	15,030	35	14.7	22 x1.0**	42 x1.5	86	450	230 V -1	1,360	270	1.20
SPB 45-F43	20.6	14.9	66.4	14,610	34	19.9	22 x1.0**	42 x1.5	86	450	230 V -1	1,360	270	1.20
SPB 45-F53	26.4	19.1	82.7	16,950	40	23.9	22 x1.0**	42 x1.5	86	450	230 V -1	1,400	490	2.71
SPB 45-F73	30.4	24.2	115.2	15,810	38	33.2	22 x1.0**	42 x1.5	86	450	230 V -1	1,400	490	2.71
EC SPB 23-F34	4.6	3.5	16.7	3,560	18	4.9	15 x1.0**	22 x1.0	73	230	230 V -1	1,580	30	0.25
SPB 30-F24	6.0	4.2	17.3	6,640	23	5.4	15 x1.0**	28 x1.5	71	300	230 V -1	1,360	65	0.30
SPB 30-F34	7.9	6.0	25.5	6,360	22	8.0	15 x1.0**	28 x1.5	71	300	230 V -1	1,360	65	0.30
SPB 35-F24	9.7	6.9	26.4	12,160	31	7.6	15 x1.0**	35 x1.5	78	350	230 V -1	1,430	145	0.68
SPB 35-F34	13.2	9.5	39.0	11,760	30	11.4	15 x1.0**	35 x1.5	78	350	230 V -1	1,430	145	0.68
SPB 35-F44	16.0	11.6	51.7	11,280	30	15.0	22 x1.0**	35 x1.5	78	350	230 V -1	1,430	145	0.68
SPB 45-F34	22.3	16.7	66.9	20,040	38	19.9	22 x1.0**	42 x1.5	87	450	230 V -1	1,360	270	1.20
SPB 45-F44	27.2	20.6	88.6	19,480	37	26.0	28 x1.5**	42 x1.5	87	450	230 V -1	1,360	270	1.20
SPB 45-F54	34.9	26.4	110.2	22,600	43	32.0	28 x1.5**	54 x2.0	87	450	230 V -1	1,400	490	2.71
SPB 45-F74	41.5	31.9	153.6	21,080	40	44.3	28 x1.5**	54 x2.0	87	450	230 V -1	1,400	490	2.71
SPB 35-F45	19.8	14.9	64.6	14,100	31	18.6	22 x1.0**	42 x1.5	79	350	230 V -1	1,430	145	0.68

Subject to modification.

Standard condition	t_{c1}	t_0	DT1
NB2/SC2	0	-8	8
NB3/SC3	-18	-25	7

* Single injection
** Multiple injection
*** Throw limit at 0.5 m/s

Operating values are the values of the built-in motor at +20 °C, with an unobstructed air flow and a dry surface

EC = EC-Motor (ESM) as Standard

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Dimensions, weights, electric defrost, drain

Type	Dimensions										Electrical defrost 230 V-1 / 400 V-3-Y			Weights (net)		Weights (gross)		Drain
	H	B	T	L	E_1	E_2	E_3	F	A	W	Coil	Tray	Total	SP A/B	SP A/B E	SP A/B	SP A/B E	D
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kW	kW	kW	kg	kg	kg	kg	inch
SP 23-21	351	760	400	335	480	-	-	140	79	200	0.5	0.4	0.9	11	12	15	16	G ¾
SP 23-31	351	760	400	335	480	-	-	140	79	200	0.5	0.4	0.9	12	13	16	17	G ¾
SP 30-21	427	960	425	360	620	-	-	170	78	200	0.6	0.6	1.2	18	19	23	24	G ¾
SP 30-31	427	960	425	360	620	-	-	170	78	200	0.6	0.6	1.2	20	21	25	26	G ¾
SP 35-21	505	1,130	607	515	730	-	-	200	105	300	0.7	0.8	1.5	28	29	35	36	G ¾
SP 35-31	505	1,130	607	515	730	-	-	200	105	300	1.4	0.8	2.2	31	32	38	39	G ¾
SP 35-41	505	1,130	607	515	730	-	-	200	105	300	1.4	0.8	2.2	34	35	41	42	G ¾
SP 45-31	657	1,330	613	510	930	-	-	200	120	400	1.7	0.9	2.6	45	47	79	81	G ¾
SP 45-41	657	1,330	613	510	930	-	-	200	120	400	2.6	0.9	3.5	50	52	83	86	G ¾
SP 45-51	662	1,330	573	470	930	-	-	200	120	400	3.5	0.9	4.4	57	62	90	95	G ¾
SP 45-71	662	1,330	573	470	930	-	-	200	120	400	4.4	0.9	5.3	66	68	100	101	G ¾
SP 23-32	351	1,210	400	335	930	-	-	140	79	200	0.9	0.8	1.7	20	21	25	26	G ¾
SP 30-22	427	1,550	425	360	1,210	-	-	170	78	200	1.0	1.0	2.0	30	32	57	58	G ¾
SP 30-32	427	1,550	425	360	1,210	-	-	170	78	200	1.0	1.0	2.0	33	35	60	61	G ¾
SP 35-22	505	1,830	607	515	1,430	-	-	200	105	300	1.3	1.3	2.6	48	50	85	87	G 1¼
SP 35-32	505	1,830	607	515	1,430	-	-	200	105	300	2.6	1.3	3.9	53	56	90	92	G 1¼
SP 35-42	505	1,830	607	515	1,430	-	-	200	105	300	2.4	1.3	3.7	58	61	95	97	G 1¼
SP 45-32	657	2,230	613	510	1,830	-	-	200	120	400	3.2	1.6	4.8	82	86	165	169	G 1¼
SP 45-42	657	2,230	613	510	1,830	-	-	200	120	400	4.5	1.6	6.1	88	93	171	175	G 1¼
SP 45-52	662	2,230	573	470	1,830	-	-	200	120	400	6.0	1.6	7.6	100	109	182	191	G 1¼
SP 45-72	662	2,230	573	470	1,830	-	-	200	120	400	7.9	1.6	9.5	119	121	201	204	G 1¼
SP 23-33	351	1,660	400	335	1,380	450	-	140	79	200	1.2	1.1	2.3	28	29	60	62	G ¾
SP 30-23	427	2,140	425	360	1,800	590	-	170	78	200	1.5	1.5	3.0	43	45	81	83	G ¾
SP 30-33	427	2,140	425	360	1,800	590	-	170	78	200	1.5	1.5	3.0	47	49	84	86	G ¾
SP 35-23	505	2,530	607	515	2,130	700	-	200	105	300	1.8	1.8	3.6	68	70	150	153	G 1¼
SP 35-33	505	2,530	607	515	2,130	700	-	200	105	300	3.6	1.8	5.4	74	78	157	161	G 1¼
SP 35-43	505	2,530	607	515	2,130	700	-	200	105	300	3.4	1.8	5.2	82	86	165	168	G 1¼
SP 45-33	657	3,130	613	510	2,730	900	-	200	120	400	4.4	2.2	6.6	123	128	258	263	G 1¼
SP 45-43	657	3,130	613	510	2,730	900	-	200	120	400	6.5	2.2	8.7	132	138	267	273	G 1¼
SP 45-53	662	3,130	573	470	2,730	900	-	200	120	400	8.0	2.2	10.2	150	163	285	298	G 1¼
SP 45-73	662	3,130	573	470	2,730	900	-	200	120	400	10.9	2.2	13.1	175	179	310	313	G 1¼
SP 23-34	351	2,110	400	335	1,830	900	-	140	79	200	1.5	1.5	3.0	35	38	103	105	G ¾
SP 30-24	427	2,730	425	360	2,390	1,180	-	170	78	200	2.0	2.0	4.0	57	59	147	150	G 1¼
SP 30-34	427	2,730	425	360	2,390	1,180	-	170	78	200	2.0	2.0	4.0	60	63	151	153	G 1¼
SP 35-24	505	3,230	607	515	2,830	1,400	-	200	105	300	2.3	2.3	4.6	90	93	217	220	G 1¼
SP 35-34	505	3,230	607	515	2,830	1,400	-	200	105	300	4.5	2.3	6.8	98	103	226	231	G 1¼
SP 35-44	505	3,230	607	515	2,830	1,400	-	200	105	300	4.4	2.2	6.6	109	114	237	241	G 1¼
SP 45-34	657	4,030	613	510	3,630	1,800	-	200	120	400	7.2	0.7	7.9	158	166	323	331	G 1¼
SP 45-44	657	4,030	613	510	3,630	1,800	-	200	120	400	8.6	0.7	9.3	171	179	336	345	G 1¼
SP 45-54	662	4,030	573	470	3,630	1,800	-	200	120	400	10.1	0.7	10.8	195	213	360	378	G 1¼
SP 45-74	662	4,030	573	470	3,630	1,800	-	200	120	400	14.4	0.7	15.1	231	235	396	400	G 1¼
SP 35-45	505	3,930	607	515	3,530	1,400	2,100	200	105	300	5.8	0.7	6.5	137	143	294	301	G 1¼

Subject to modification.

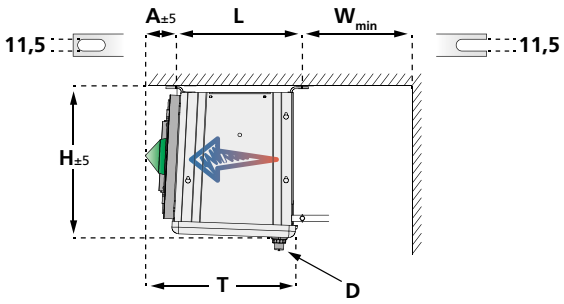
The dimensions are only valid for the standard model design!
Note the differences in dimension among versions and accessories.

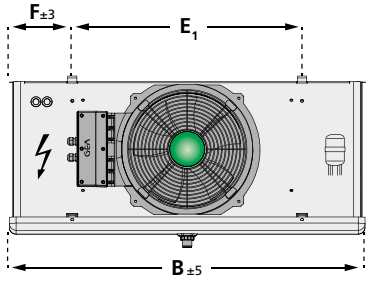
Küba *market* SP

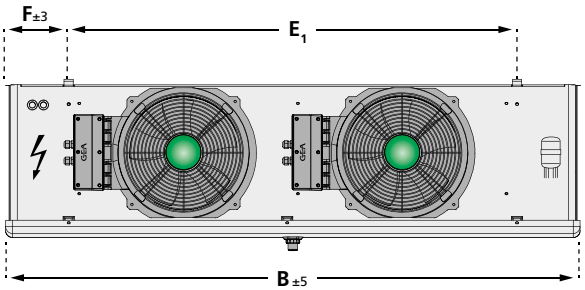
Dimensional drawings

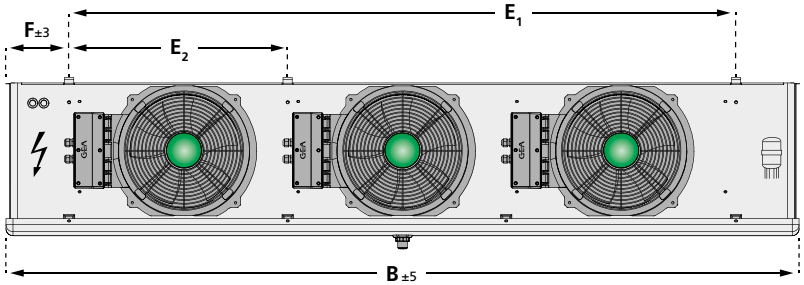
Dimensional drawings for Küba *market* SP (1-5 motors)

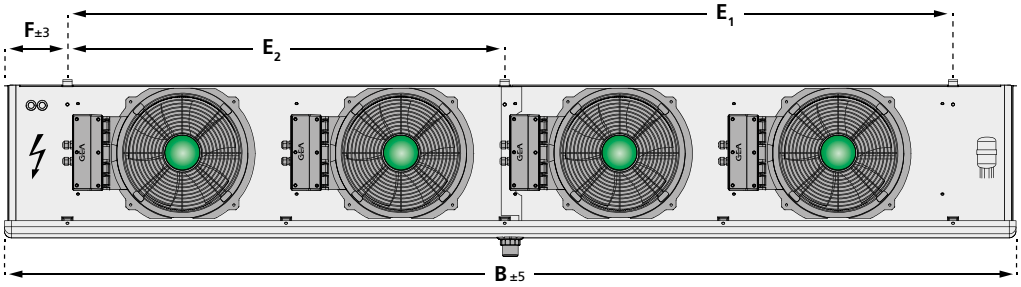
Example showing Küba *market* SP with 300 mm blade diameter

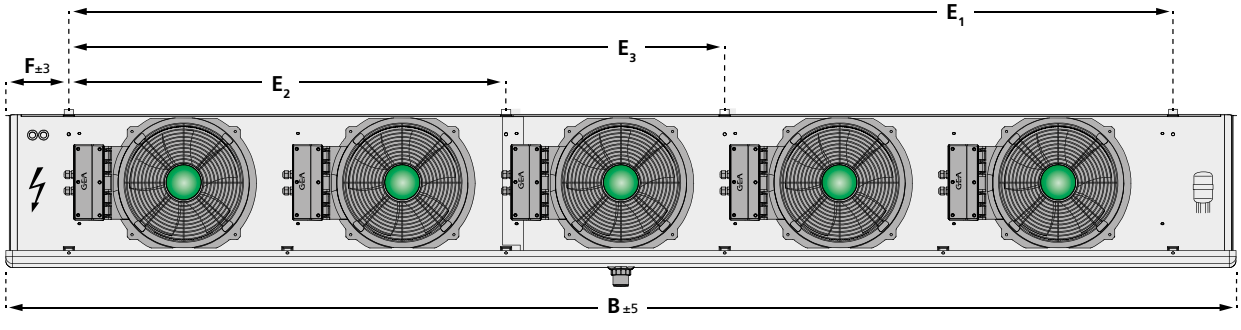












Küba *market* SP

Variants

Motor-Variants

V 1.50 EC fans with fixed speeds

SP 23: ESM motor with 2 speeds (standard)
from SP 30: EC motor with fixed speed

V 1.52 EC fan with controllable speed

Controllable fan, 0 ... 10 V, for Ø 300, 350, and 450

Protection against corrosion

V 6.01 Corrosion protection 1

Tubing: Copper
Fins: Aluminum, epoxy-resin-coated
End plates: Aluminum protective coating
Casing: Aluminum/zinc coated steel, protective coating on both sides

V 6.04 Corrosion protection 4

Tubing: Copper
Fins: Aluminum, epoxy-resin-coated
End plates: Aluminum
Casing: Aluminum/zinc coated steel, protective coating on on one side

Construction-Variants

V 3.09 Double-walled, insulated drip tray

Prevents condensed water from forming on the bottom side of the pan, and it reduces the transfer of defrost heat into the cold rooms.

V 3.11 Hinge-down drip tray

To make the devices easy to clean, the drip tray can be hinged (mounting set).

Defrost-Variants

V 4.01 Hot-gas coil in the drip tray (Cu)

Hot-gas connection on both sides; copper

V 6.05 Hot gas in heat exchanger

Hot gas circuit for coil, without non-return valve

CO_2-Variants

V 7.45 CO_2-Direct expansion

up to 45 bar operating pressure

V 7.60 CO_2-Direct expansion

up to 60 bar operating pressure



Designs with water/brine flow are identified by unit type codes (F / G): see page 2.

Küba *market* SP

Accessories

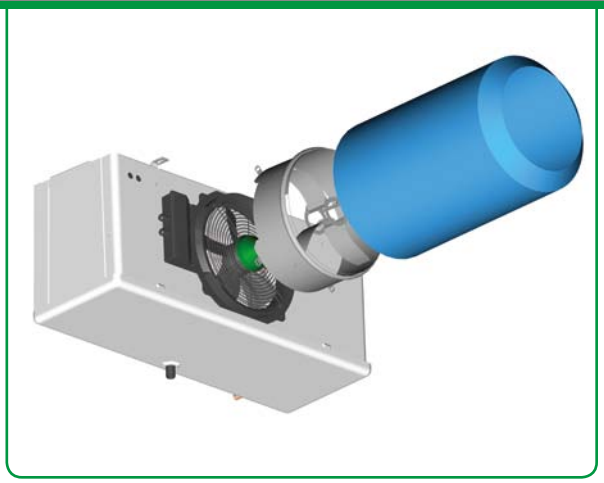


Recommended for frozen storage:

- Shut-Up®
- Defrost hood
- Wall ring heating
- Double insulated drip tray
- Insulate the top panel on site

Küba Shut-Up® (+ Adapter)

The Shut-Up® optimises the defrosting procedure, especially in deep-freeze applications. Shut-Up® is suspended over the fan unit, closing the Air Cooler. Hot air cannot escape.

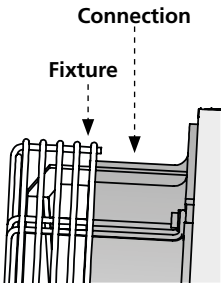


Features and material:

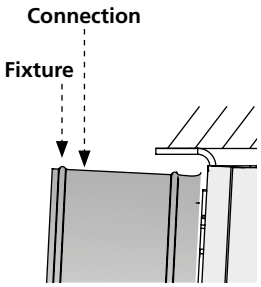
High-tech microfiber, damp-resistant, vapour resistant, tearproof, ultraflexible, UV-resistant, form- and temperature resistant, double stitched, rot-proof, food-safe, polyester/polyamide, washable at 30°C, chemical purification P

Selection table & Dimensions:

	Küba *market* SP			Shut-Up®	
Type	Fan blade	Connections	Fixture	Air outlet	Length
	Ø	Ø	Ø	Ø	
	mm	mm	mm	mm	mm
SP 23	230	253	258	149	390
SP 30	300	360	369	254	490
SP 35	350	427	436	344	610
SP 45	450	558	567	430	684



SP 23



SP 30,35,45 mit Adapter

NOTE:

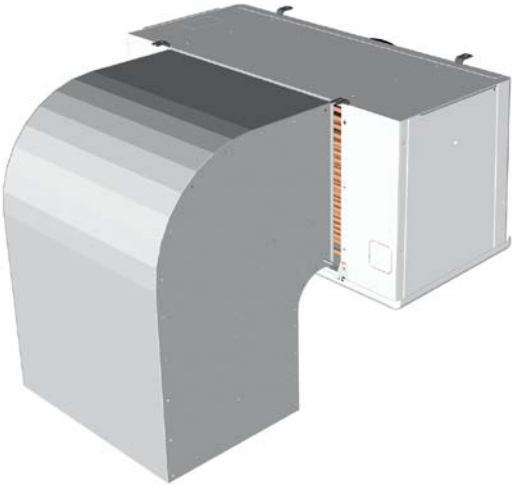
For SP 23, you do not need an additional adapter to install a Shut-Up®.

Due to the additional external pressure, the air quantity and Air Cooler capacity change:
When using Shut-Up®: Air volume is reduced by 10% ≙ -5% cooling capacity
When using von Shut-Up® & Defrost hood: Air volume is reduced by 20% ≙ -10% cooling capacity
1 Shut-Up® per fan unit required. Delivery not mounted.

Küba Defrost hood

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

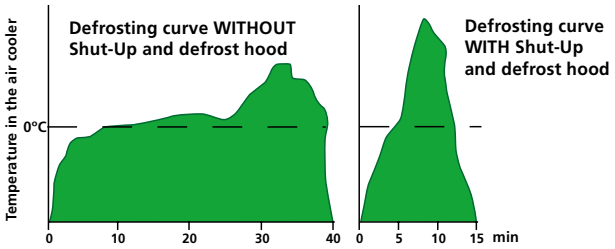
- The casing is made of aluminum, coated (RAL 9018)
- The double wall drip tray has 16 mm of insulation
- The construction is modular, i.e. 1 module per fan
- Delivery not mounted



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:

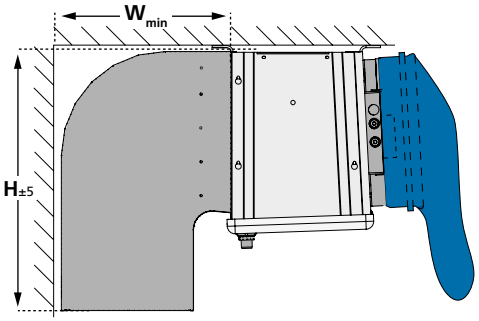
- Defrost times are reduced by more than 50%
- Significant amounts of energy are saved
- No frost build up on the ceiling of the storage room or on the goods due to minimal vapour build-up



Selection table & Dimensions:

Type	Dimensions			Weight
	H	B	W_{Haube}	
	mm	mm	mm	kg
SP 23	665	450	460	9
SP 30	815	590	560	13
SP 35	915	700	660	17
SP 45	1,010	900	810	24

Dimensions per module (1 module per fan)



NOTE:

Due to the additional external pressure, the air quantity and Air Cooler capacity change:
When using Shut-Up®: Air volume is reduced by 10% ≙ -5% cooling capacity
When using von Shut-Up® & Defrost hood: Air volume is reduced by 20% ≙ -10% cooling capacity
1 Shut-Up® per fan unit required. Delivery not mounted.

Küba wall ring heating WH®

WH® Küba wall ring heating prevents formation of ice between fan blade and the wall ring.

Advantages:

- Maximum energy efficiency, optimal control behavior, and reduced power consumption (up to 87 % less).
- Heat retention in the wall ring, no vapor formation, no overheating.
- Protection from human contact by complete integration of the heating element.



Selection table & Technical data:

For type	Description	Current	Capacity
		A	W
SP 23	not available		
SP 30	WH 30	0.5	118
SP 35	WH 35	0.9	209
SP 45	WH 45	1.2	266

Delivery:

- Mounted and wired to terminal box
- or unassembled

NOTE:

Küba wall ring heating WH® is only available for SP 30, SP 35, SP 45
1 wall ring heating WH® per fan unit required.

Finned-tube heaters SPHR / SPHRZ

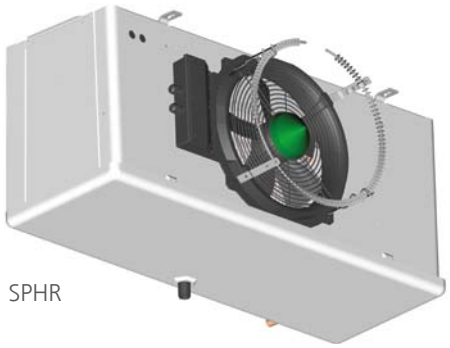
For air coolers with draw-through fans.
For conditioning of room air.

SPHR = Standard design
SPHRZ = Additional heater
SPHR + SPHRZ = Greater heating capacity

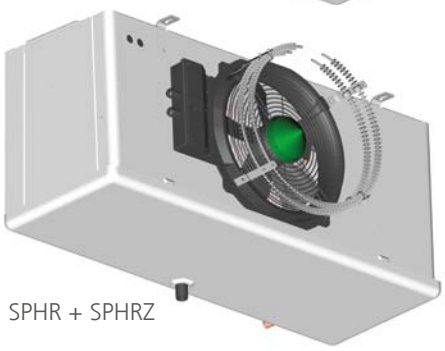
Selection table, Technical data & Dimensions:

For type	Description	Current [A]				Capacity [kW]			
		L1	L2	L3	Tot.	L1	L2	L3	Tot.
SP 23	SPHR 23	4.3	-	-	**4.3**	1.0	-	-	**1.0**
SP 30	SPHR 30	5.9	-	-	**5.9**	1.3	-	-	**1.3**
SP 35	SPHR 35	7.6	-	-	**7.6**	1.7	-	-	**1.7**
SP 45	SPHR 45	10.7	-	-	**10.7**	2.5	-	-	**2.5**
SP 23	SPHR + SPHR 23 Z	4.3	4.3	-	**8.6**	1.0	1.0	-	**2.0**
SP 30	SPHR + SPHR 30 Z	5.9	5.9	-	**11.8**	1.3	1.3	-	**2.6**
SP 35	SPHR + SPHR 35 Z	7.6	7.6	-	**15.2**	1.7	1.7	-	**3.4**
SP 45	SPHR + SPHR 45 Z	10.7	10.7	-	**21.4**	2.5	2.5	-	**5.0**

Example assembly

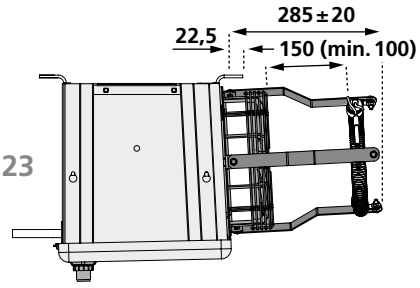


SPHR

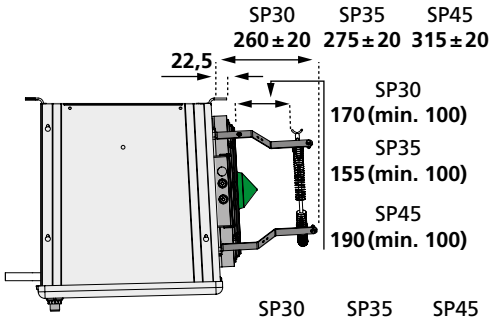


SPHR + SPHRZ

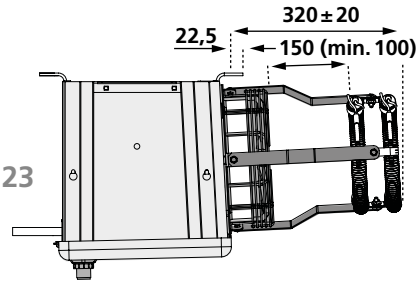
SPHR for SP 23



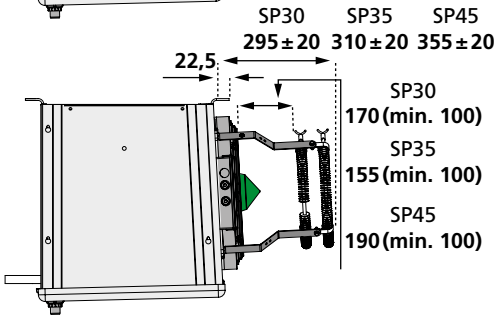
SPHR for SP 30, 35, 45



SPHRZ for SP 23



SPHRZ for SP 30, 35, 45



NOTE:

This unit is operated only when the air-cooler fans are in use, to prevent overheating of the ceiling of the cold room. Be sure to observe the relevant safety instructions. 1 SPHR/Z per fan unit required.

Air Hoses (on site procurement, not available from Küba)

Ventilation can be optimised with textile / PVC air hoses.

- Applications in work rooms and production areas
- Cooled goods that are sensitive to draft (i.e. flowers, ripening cheeses)



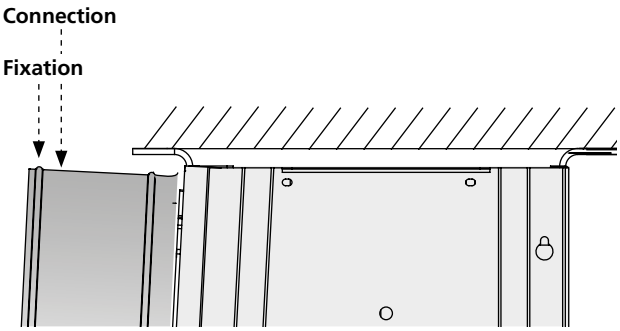
Advantages:

The air hoses make uniform air distribution possible at very low air speeds.

- Working in a draft-free environment yields low illnes rates
- Maximum protection for sensitive cooled goods
- No condensation water: temperatures do not fall below the dew point because air can penetrate the woven material

Dimensions (Connection):

	Küba market SP with Adapter		
Type	Fan blade	Connection	Fixation
	Ø	Ø	Ø
	mm	mm	mm
SP 30	300	360	369
SP 35	350	427	436
SP 45	450	558	567



NOTE:

Please take the respective pressure drop for the cooler design into consideration.

Küba *market* SP

Notes

www.brand-change.com

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