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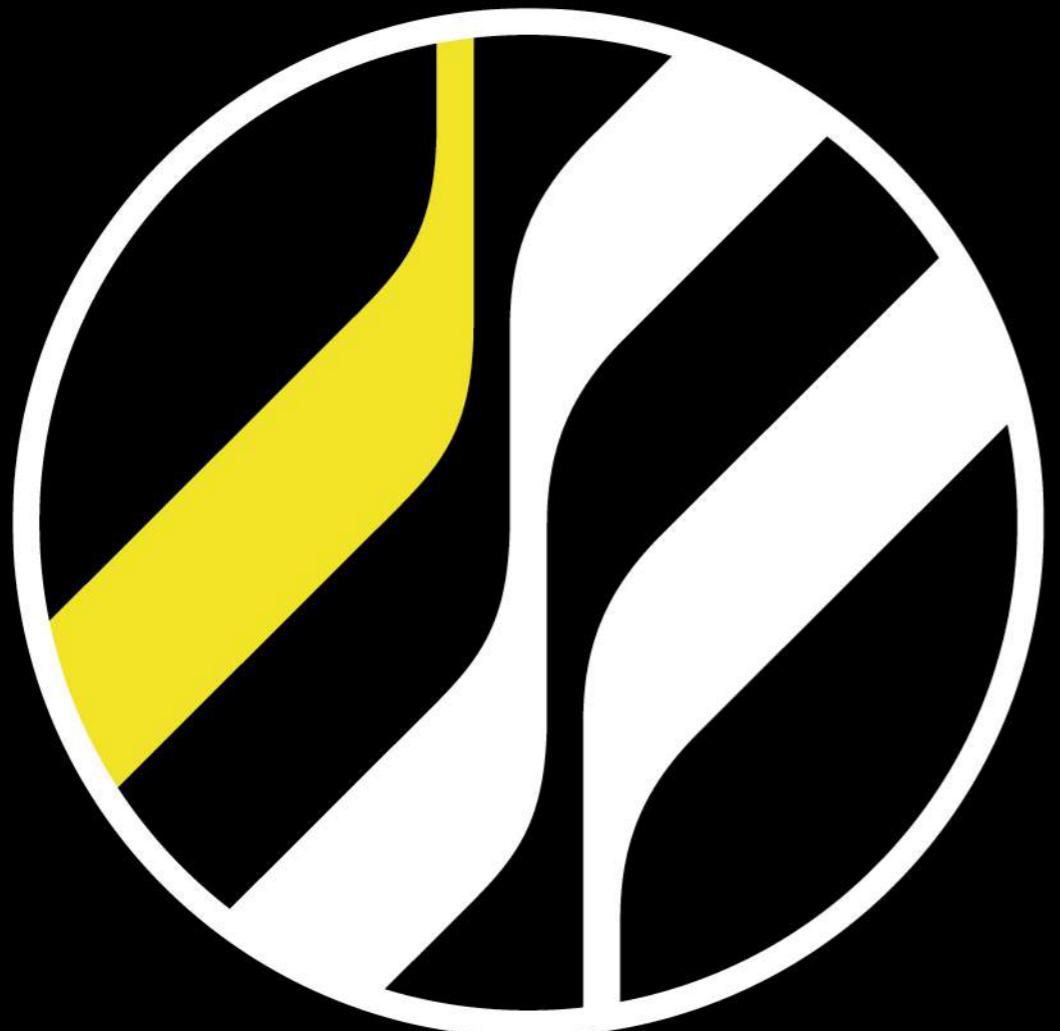
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Kelvion



Küba Green Line





WE ARE KELVION – THE NEW BRAND IN HEAT EXCHANGE

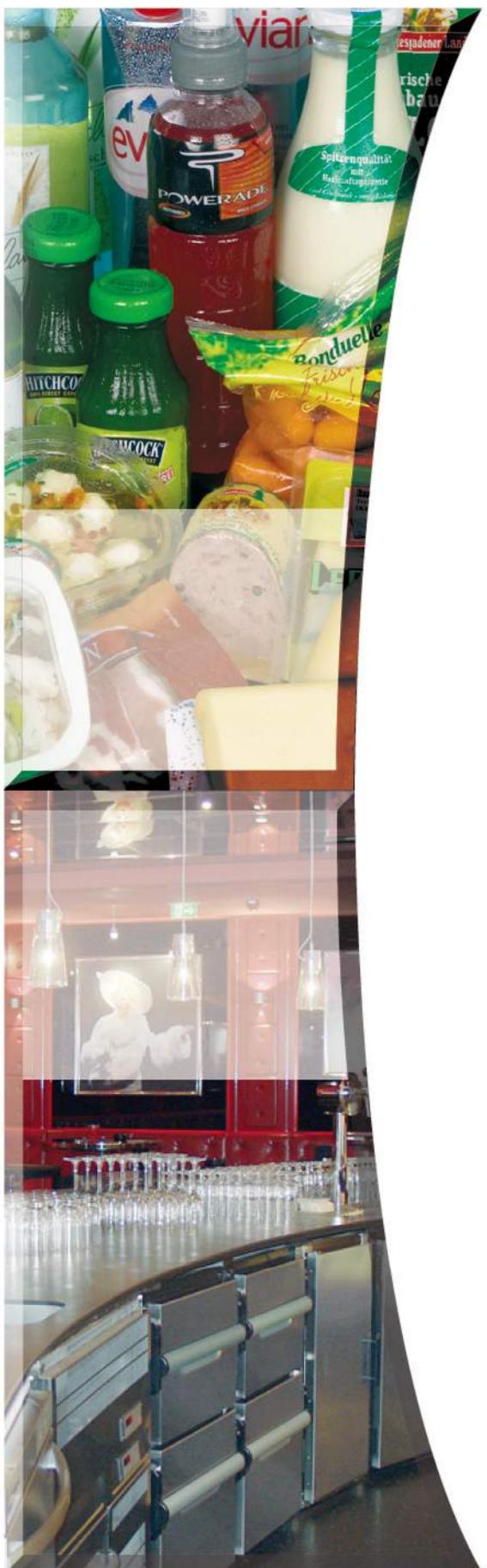
Kelvion Heat Exchangers has changed: another new standalone company has been created out of the former Heat Exchanger Division of the Kelvion Group AG. The name Kelvion is new, but we continue as global experts in heat exchange. As always, we remain committed to earning your trust.

You'll still recognize us. We continue to develop our products, manufacture them with precision and distribute globally. We continue to offer one of the world's largest heat exchanger product portfolios: Plate heat exchangers, shell & tube heat exchangers, finned tube heat exchangers, modular cooling towers and refrigeration heat exchangers for a wide range of applications.

We operate in global markets for power generation, oil and gas, chemistry, marine applications, climate and environment, and food and beverages. From us, you can expect products with outstanding levels of efficiency, safety, and sustainability. More importantly, we care about your business, like close, trusted partners.

Customers rely on us to understand their needs, boost their performance, and deliver products that always get the job done. We compete for the toughest deals, in the harshest environments. But we're not too big to care. We're Kelvion – ready to take on the challenges of heat exchange. www.kelvion.com

Experts in Heat Exchange.



Welcome to the world of Kelvion Küba

The range of applications for our Green World line will carry the motto "Just cool." . When precision of temperature is important, the Küba Green Line is the right choice.

Yesterday, today and tomorrow we continue to set quality standards worldwide. The legendary "Küba evaporator 68" is the reference Air Cooler with which Air Cooler test rigs have been set up and calibrated since 1968. It provides the basis for the European norm EN 328 and the EUROVENT testing specifications, to which Küba engineers have made significant contributions.

For kelvion , quality means always providing the maximum benefit for our customers. We focus on the best technology for the application, not the technology itself. Continuously improving our products, internal processes, and production methods are at the heart of understanding who we are.

So that these benefits are also available to refrigeration system operators, we work closely with our partners in refrigeration wholesale and refrigeration system construction. In this way, that which belongs together can come together: Expertise in application, planning and system construction.

To provide orientation for our partners in their selection of the optimum Air Cooler, the product programme is presented by application. We offer you the right high performance Air Cooler for highly complex or very simple cooling tasks based on cooling technology for commercial or industrial use.

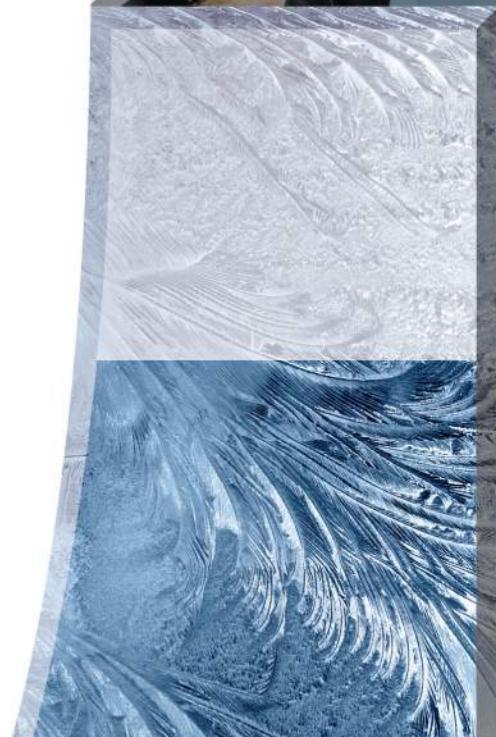
The Kü ba Green Line is the right product line for simple cooling applications. By clearly focusing on standardised refrigeration functions, the Kü ba Green Line combines low investment and operating costs with proven Küba quality.

The compact DF lives up to its name and is a power package in small spaces. In the service station, in catering and retail, it is the space-saving helper for packaged goods in temperature ranges both below and above zero.

Do you have a large refrigerated warehouse or a cooling hall? The market plus SP offers outstanding performance and precision for standard refrigeration and deep freezing.

Our comfort DP is the delicate touch in the Green World and makes conditions appreciably cool where people are working. Draft-free air circulation and extremely quiet operation make for a pleasant climate for people.

We would like to welcome you on an exciting journey through the "Green World" of kelvion Küba .



Küba Green Line
Air Coolers



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■ Reliability

Kelvion Küba stands for reliability:

Kelvion Küba represents tradition and progress and 8 decades of dedication to refrigeration technology. Since 1927, Kelvion Küba has developed and manufactured its products in Germany, setting worldwide technological standards with quality "Made in Germany".

Specialisation and continuous investment in research and development (R&D) and optimised production processes make this consistent top performance possible.

■ Quality

Kelvion Küba stands for quality:

Among Air Cooler manufacturers in Europe, Kelvion Küba has the largest R&D facility, which provides the driving force for technical advancement and innovation in both individual components as well as entire systems.

The acid test of the unrivalled functionality and quality of Kelvion Küba products, however, is their daily use in thousands of practical applications.

The result is maximum safety in terms of installation, use and maintenance as well as in the long-term value of the investment.

■ Optimum solutions

Kelvion Küba stands for optimum solutions:

A consistent focus on our customer's needs is the driving force for our innovative product solutions. The measuring stick is always achieving the maximum customer benefit, not reaching the ultimate pinnacle of technology.

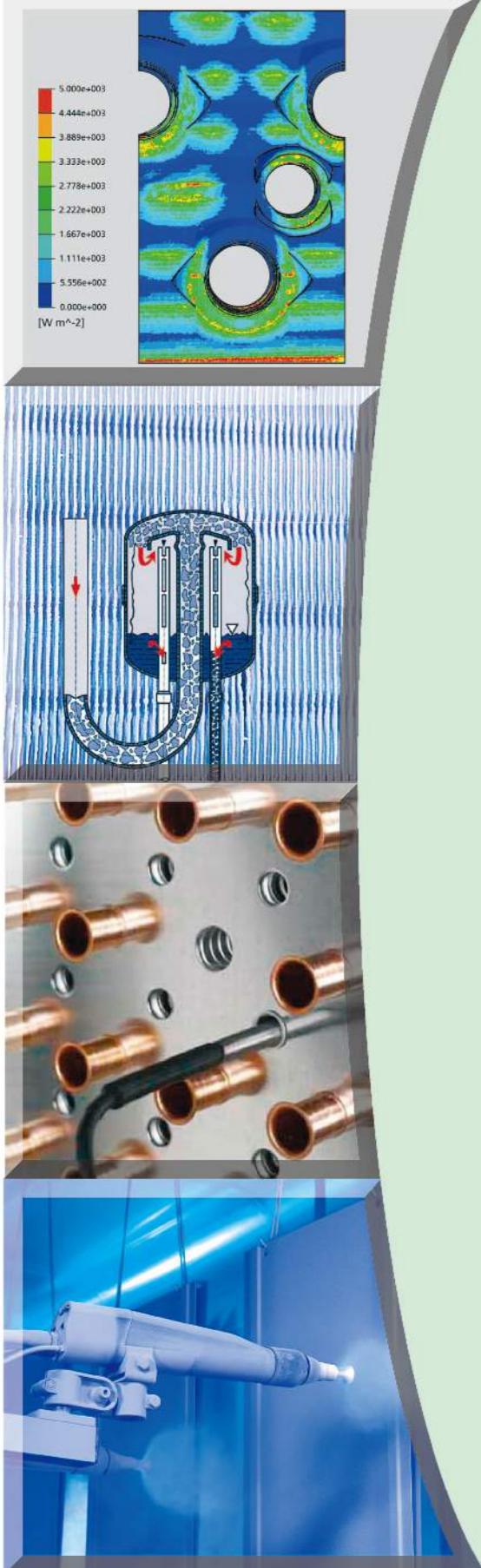
With the Küba Blue Line and the Küba Green Line, Kelvion Küba is the only manufacturer to offer two complete, comprehensive Air Cooler product lines.

■ Service and availability

Kelvion Küba stands for service and availability:

Of course, customer focus on Kelvion Küba also means offering extensive technical and sales-oriented service. Above all, this includes ease and accuracy in selecting products, accessories and spare parts.

An extensively stocked warehouse at the Baierbrunn site near Munich guarantees rapid availability (24 hour delivery) and provides additional reliability for operation, planning and scheduling.



The Kelvion Küba HFE[®]tube/fin system for maximum energy efficiency

Extensive, ground-breaking research and innovative testing methods have lead to the development of a tube/fin system that offers the optimum combination of maximum heat transfer with minimum loss of pressure.

- Optimised k-value allows for high refrigeration capacity
- Fan requires low energy input due to low air resistance
- Minimal frost build-up makes long operating periods possible
- The units are compact, with high capacity

The Küba CAL[®] distributor for superior refrigerant distribution

Kelvion Küba Air Coolers for direct expansion with multiple injection are equipped with the patented CAL[®] distributor.

- A consistent performer across the entire application spectrum, the CAL[®] distributor always works at the highest capacity
- Complete, consistent refrigerating capacity regardless of refrigerant and ambient temperature
- Maximum energy efficiency even in partial-load operation, thanks to even refrigerant distribution
- Universal flexibility from -55 °C to +40 °C

Exceptional defrosting for every application

According to the refrigeration plant concept, any of the established defrosting methods can be used. For brine and hot gas defrosting, the tube circuitry is adapted to fit the specific application. For electric defrosting, expanded heater tubes provide the best connection to the fin. In our defrosting processes there is:

- Energy transfer with almost no loss
- Shorter defrosting periods due to a lower final defrosting temperature in the heat exchanger
- Minimal vapour build-up because of the low surface temperature on the heater tube (< 95 °C)

Best material selection and processing

Kelvion Küba Air Coolers have lasting corrosion protection and are not overly sensitive to cleaning procedures, thanks to their scratch-resistant surface.

- We use the best materials and high-quality components for each application, because high quality products begin with the purchase of top quality materials.
- Perfect surface finish, with a food safe, non-polluting powder coating that is applied before assembly; corrosion protection even for inaccessible components

Highly cost-effective

Choosing Kelvion Küba Air Coolers is the right decision for ecologically and economically oriented investors.

- Because our components are fine-tuned to coordinate precisely with one another, Kelvion Küba Air Coolers are highly efficient. We take advantage of all energy saving potential for sustainable reductions in operating costs
- Selecting the best materials and high-quality processing are the basis for a long service life and provide the best protection for your investment

Maximum goods protection

All Kelvion Küba Air Coolers rely on Kelvion quality to offer the maximum goods protection for the respective refrigeration application.

- Absolute security in maintaining the temperature of the goods and the room
- Minimal dehumidification of sensitive cooled goods so that "Freshness lasts longer"
- Perfectly adjusted air distribution – from a powerful air flow to gentle cooling

Hygienic and operational safety

When you're dealing with food, hygiene is essential, as well as required according to the HACCP guidelines.

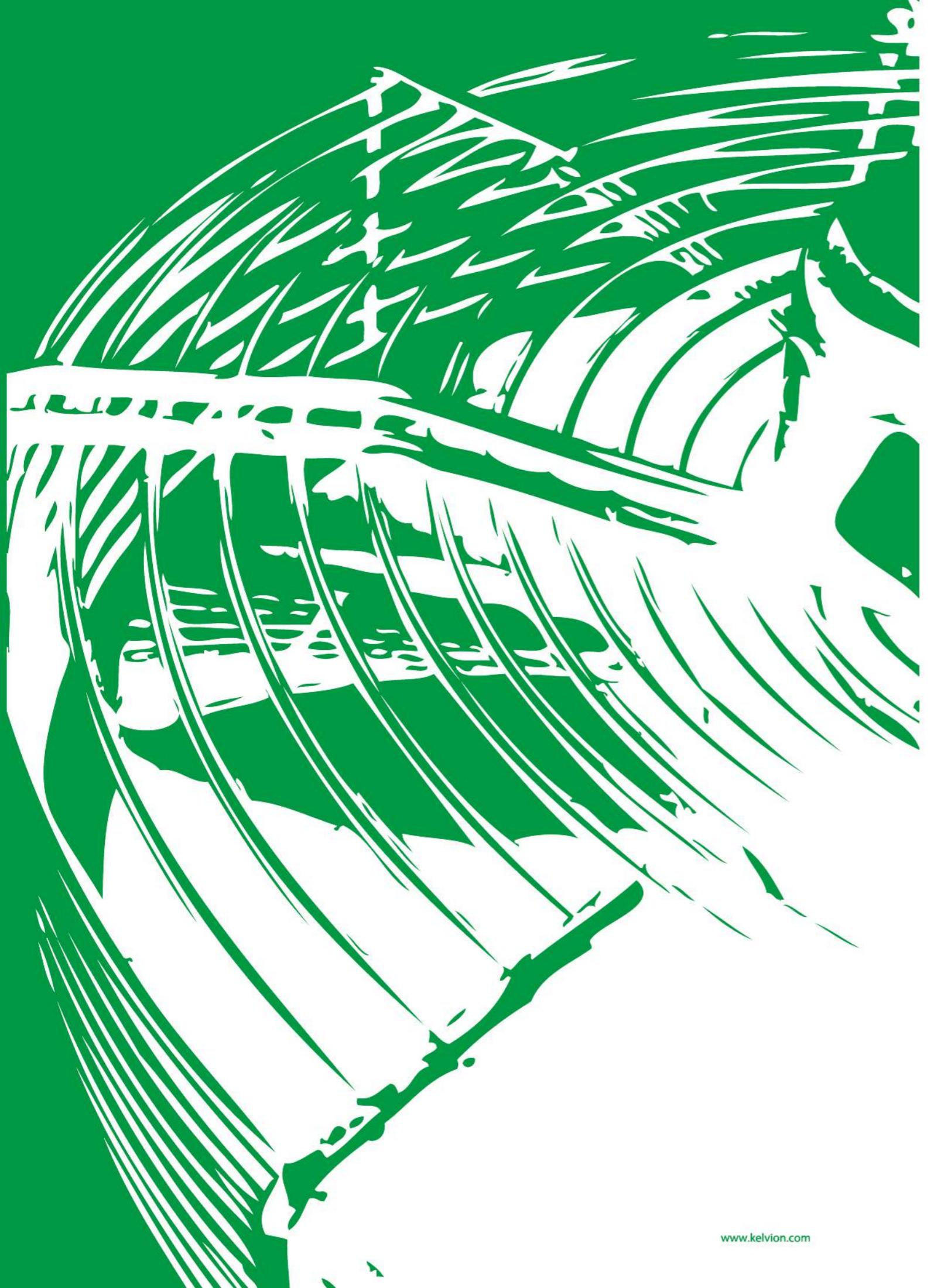
- Our material selection and surface finishes (i.e. our powder coating) meet the requirements of food and consumer product legislation
- It's simple to clean Kelvion Küba products. Hinge-down drip trays are standard; hinged fans are available upon request
- Long-lasting corrosion protection facilitates hygiene in the cold storage room

Optimum installation and maintenance

The design of Kelvion Küba Air Coolers places great emphasis on quick and easy assembly and maintenance.

- All significant component groups are easily accessible
- Injuries are prevented by our powder coating as well as our smooth edge design
- The smaller Air Coolers can be installed right out of the package by just one technician





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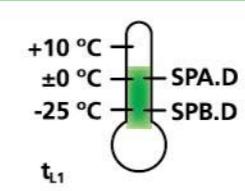
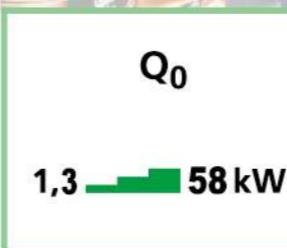
Küba Green Line



market plus SP



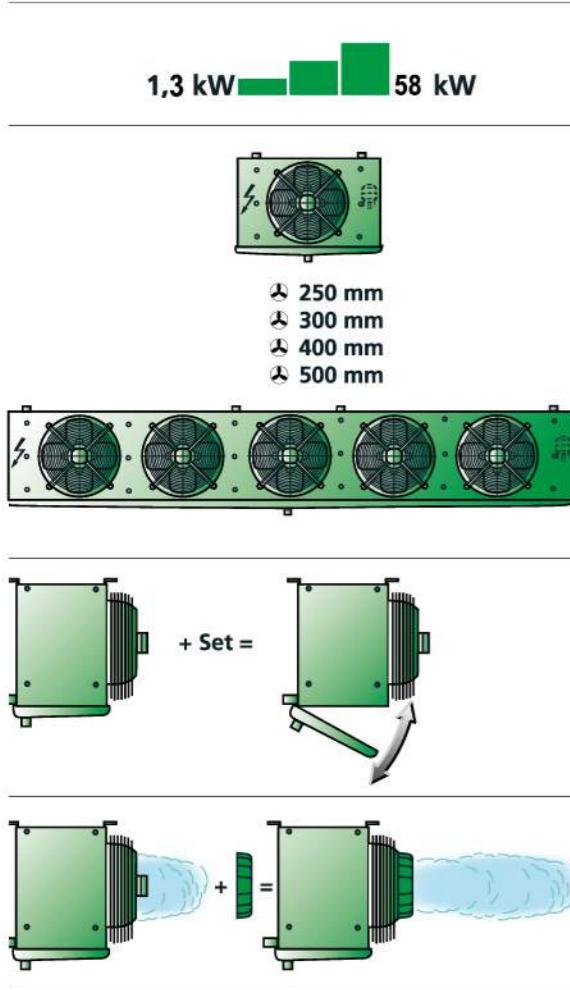
High Performance Unit Cooler



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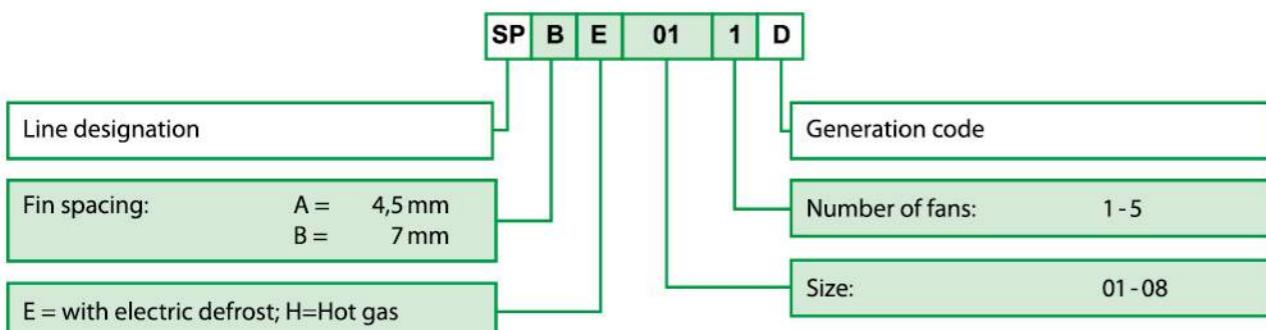


Application Benefits for Contractors and Operators



Nomenclature

Standard



Construction

**1. Casing**

- Aluminium, smooth
- High-quality powder coating, papyrus white RAL 9018
- Food-safe
- Easy to clean
- Best corrosion protection
- Removable side pieces

2. Heat exchanger

- Internal cleanliness acc. to DIN 8964
- Fin spacing: SPA.D: 4,5 mm, SPB.D: 7,0 mm
- Refrigerant distributor:
 - SPA.D: Flow distributor/SPB.D: Küba-CAL*
 - Tubing Cu-Special, Fins Al, End plates Al

3. Fans CE

- Fans are wired to an internal terminal box:
Ø 250 mm/Ø 300 mm/Ø 400 mm
- With built-in protector according to VDE provisions
(Ø 500 mm: Led-out protector)
- Application range: RT: -30 °C to +50 °C
- Voltage:
 - SP. 011 - 065D = 230 V ±10 %, V-1 50/60 Hz:
Ø250 mm, non-adjustable; Ø300 mm, adjustable;
Ø400 mm, adjustable
 - SP. 071 - 084D = 400 V ±10 %, V-3 50/60 Hz:
Ø500 mm, adjustable

• Index of protection

- SP. 011 - 024D = IP42
- SP. 031 - 065D = IP44
- SP. 071 - 084D = IP54

• Insulation class

- SP. 011 - 065D = Insulation class B
- SP. 071 - 084D = Insulation class F

• Operating values are the values of the built-in motor at +20 °C, with an unobstructed air flow and a dry surface, as required for the refrigeration load calculation

Motor label data(max. allowable value +40°C)

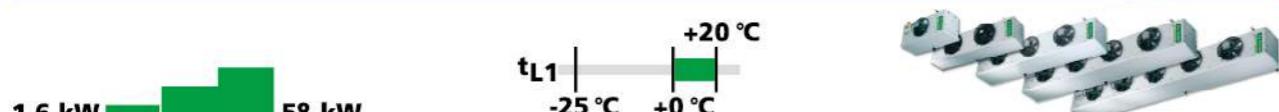
	Ø mm	50 Hz			60 Hz		
		min ⁻¹	W	A	min ⁻¹	W	A
SP.01.-02.D	250	1300	90	0,62	1550	80	0,55
SP.03.-04.D	300	1380	62	0,28	1500	90	0,40
SP.05.-06.D	400	1380	195	0,88	1560	285	1,25
SP.07.-08.D	500	1325	820	1,59	1570	1220	1,86

4. Electric defroster

- Wired-up, ready to connect in terminal box
- To prevent steam build-up and to accomplish heat exchange with almost no loss, the heaters are located in special expanded tube sleeves
- 230 V-1 / 400 V-3-Y
- With splash pan

Küba Green Line

Technical data SPA(E)...D



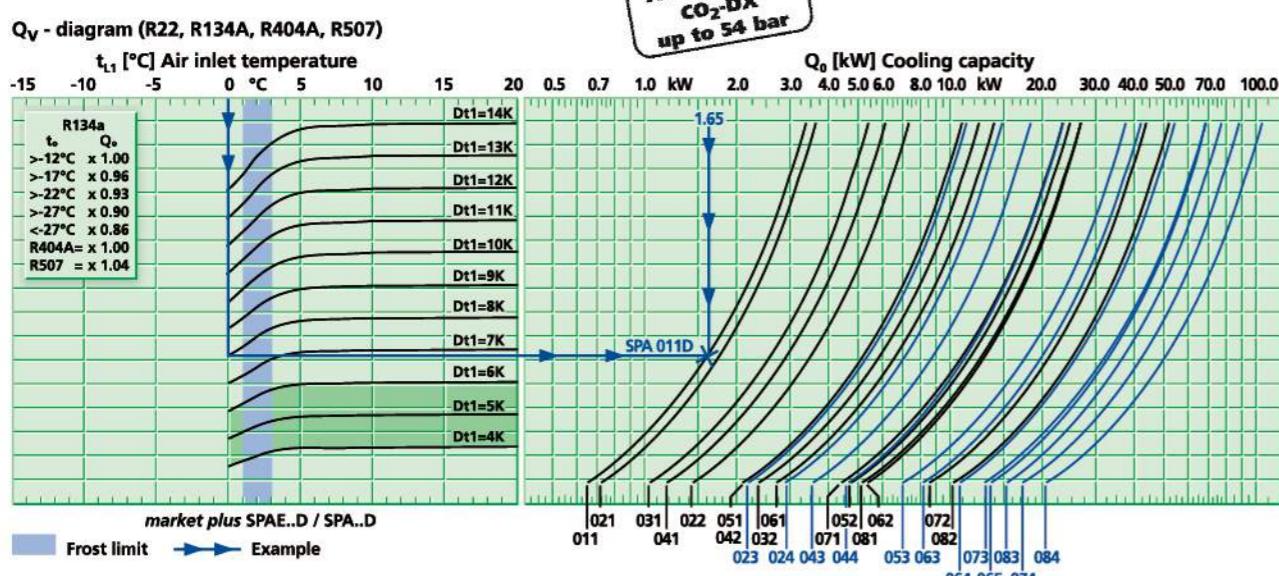
Model	Rating Q_0 at 50 Hz DTI, R404A		Surface	Air flow	Air throw	Tube volume	Connections	Sound L_{WA}	Fans ΔP (Operating values at 50 Hz)					
	$t_{L1} \pm 0^\circ C$ DTI = 8 K	$t_{L1} +10^\circ C$ DTI = 10 K							(Operating values at 50 Hz)					
	Inlet	Outlet							L_{WA}	Blade	Type of current			
	kW	kW	m²	m³/h	m	dm³	Ø mm	dB (A)	St. x Ø mm	min⁻¹	W	A		
SPA 011D	1,65	2,44	6,9	820	4	1,4	10	12	63	1 x 250	230V-1	1347	85	0,59
SPA 021D	1,80	2,65	9,1	760	4	1,9	10	12	63	1 x 250	230V-1	1347	85	0,59
SPA 031D	2,65	3,93	10,3	1380	6	2,1	10	18	70	1 x 300	230V-1	1340	80	0,36
SPA 041D	3,00	4,44	13,6	1300	5	2,8	12*	22	70	1 x 300	230V-1	1340	80	0,36
SPA 051D	6,05	8,98	20,5	3020	8	4,2	12*	28	77	1 x 400	230V-1	1365	188	0,83
SPA 061D	6,83	10,1	30,6	2720	7	6,3	12*	28	77	1 x 400	230V-1	1365	188	0,83
SPA 071D	10,97	15,02	36,3	7270	23	7,6	15*	35	83	1 x 500	400V-3	1346	752	1,4
SPA 081D	13,35	19,54	54,2	6350	20	11,1	15*	35	83	1 x 500	400V-3	1346	752	1,4
SPA 022D	3,62	5,34	18,2	1520	6	3,6	12*	22	66	2 x 250	230V-1	1347	85	0,59
SPA 032D	5,33	7,90	20,6	2760	8	4,1	12*	28	73	2 x 300	230V-1	1340	80	0,36
SPA 042D	6,02	8,92	27,3	2600	7	5,5	12*	28	73	2 x 300	230V-1	1340	80	0,36
SPA 052D	11,9	17,7	40,9	6040	12	8,2	15*	35	80	2 x 400	230V-1	1365	188	0,83
SPA 062D	13,4	19,7	60,9	5440	11	12,1	15*	35	80	2 x 400	230V-1	1365	188	0,83
SPA 072D	23,58	31,59	72,7	14540	28	14,3	15*	35	86	2 x 500	400V-3	1346	752	1,4
SPA 082D	28,8	38,21	108,3	12700	25	21,5	22*	42	86	2 x 500	400V-3	1346	752	1,4
SPA 023D	5,51	8,16	27,3	2280	8	5,3	12*	28	68	3 x 250	230V-1	1347	85	0,59
SPA 043D	8,96	13,3	40,9	3900	10	8,0	15*	35	75	3 x 300	230V-1	1340	80	0,36
SPA 053D	18,2	27,0	61,4	9060	15	12,0	22*	42	82	3 x 400	230V-1	1365	188	0,83
SPA 063D	20,6	30,4	91,5	8160	13	18,0	22*	42	82	3 x 400	230V-1	1365	188	0,83
SPA 073D	38,28	50,93	109,2	21810	32	21,3	22*	54	88	3 x 500	400V-3	1346	752	1,4
SPA 083D	41,92	55,87	162,7	19050	29	32,2	22*	54	88	3 x 500	400V-3	1346	752	1,4
SPA 024D	7,26	10,7	36,3	3040	9	7,1	12*	28	69	4 x 250	230V-1	1347	85	0,59
SPA 044D	11,7	17,2	54,5	5200	12	10,6	15*	35	76	4 x 300	230V-1	1340	80	0,36
SPA 064D	26,9	39,6	122,0	10880	16	23,7	22*	42	83	4 x 400	230V-1	1365	188	0,83
SPA 074D	47,62	63,63	145,5	29080	34	28,6	22*	54	89	4 x 500	400V-3	1346	752	1,4
SPA 084D	58,05	76,85	216,9	25400	31	41,0	28**	54	89	4 x 500	400V-3	1346	752	1,4
SPA 065D	34,1	50,4	152,4	13600	18	28,9	22*	54	84	5 x 400	230V-1	1420	188	0,83

Multiple injections via * a flow distributor, ** Küba-CAL's distributor

*** For modifications of sound power levels, see page 59

The technical data is also given in the product selection software.

Available for
CO₂-DX
up to 54 bar



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market plus SP



Technical data SPB(E)...D

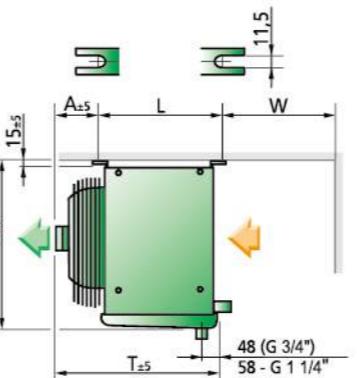


Model	Rating Q_0 at 50 Hz DTI, R404A		Surface	Air flow	Air throw	Tube volume	Connections	Sound L_{WA}	Fans ΔP (Operating values at 50 Hz)					
	$t_{L1} \pm 0^\circ C$ DTI = 8 K	$t_{L1} +10^\circ C$ DTI = 7 K							(Operating values at 50 Hz)					
	Inlet	Outlet							L_{WA}	Blade	Type of current			
	kW	kW	m²	m³/h	m	dm³	Ø mm	dB (A)	St. x Ø mm	min⁻¹	W	A		
SPB 011D	1,28	1,01	4,6	880	4	1,4	10	12	63	1 x 250	230V-1	1347	85	0,59
SPB 021D	1,51	1,20	6,0	850	4	1,9	10	12	63	1 x 250	230V-1	1347	85	0,59
SPB 031D	2,03	1,61	6,9	1450	7	2,1	10	18	70	1 x 300	230V-1	1340	80	0,36
SPB 041D	2,45	1,94	9,1	1420	6	2,8	12*	22	70	1 x 300	230V-1	1340	80	0,36
SPB 051D	4,78	3,78	13,7	3320	9	4,2	12*	28	77	1 x 400	230V-1	1365	188	0,83
SPB 061D	5,93	4,70	20,4	3080	8	6,3	12*	28	77	1 x 400	230V-1	1365	188	0,83
SPB 071D	9,22	6,96	24,3	8150	25	7,6	15*	35	83	1 x 500	400V-3	1346	752	1,4
SPB 081D	12	9,05	36,3</td											

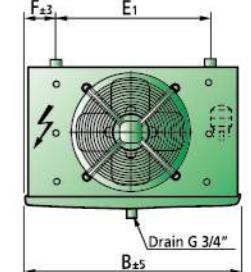
Dimensions, electric defrost, weights

Model	Dimensions [mm]								Electric defrost 230 V-1 / 400 V-3-Y				Weight (net)		Weight (gross)		
	H mm	B mm	T mm	L mm	E ₁ mm	E ₂ mm	E ₃ mm	F mm	A mm	W mm	Coil kW	Tray kW	Total kW	SPA kg	SPB kg	SPA kg	SPB kg
SP.011D	354	810	424	350	530	-	-	140	92	200	1,07	0,58	1,65	14	13,5	17	16,5
SP.021D	354	810	424	350	530	-	-	140	92	200	1,07	0,58	1,65	15	14,5	18	17,5
SP.031D	430	970	421	350	630	-	-	170	90	200	1,23	0,69	1,92	18,5	18	22,5	22
SP.041D	430	970	421	350	630	-	-	170	90	200	1,23	0,69	1,92	21	20,5	25	24,5
SP.051D	509	1180	501	420	780	-	-	200	100	300	2,07	0,88	2,95	31,5	30,5	37	36
SP.061D	509	1180	501	420	780	-	-	200	100	300	2,90	0,88	3,78	36,5	35,5	42	41
SP.071D	661	1430	592	500	1030	-	-	200	110	400	3,52	0,50	4,02	55	53	75	73
SP.081D	661	1430	592	500	1030	-	-	200	110	400	5,52	0,50	6,02	65	63	85	83
SP.022D	354	1310	424	350	1030	-	-	140	92	200	1,84	0,96	2,80	26,5	25,5	30,5	29,5
SP.032D	430	1570	421	350	1230	-	-	170	90	200	2,14	1,15	3,29	33,5	32,5	51	50
SP.042D	430	1570	421	350	1230	-	-	170	90	200	2,14	1,15	3,29	36,5	35,5	54	53
SP.052D	509	1930	501	420	1530	-	-	200	100	300	3,90	1,44	5,34	56	54	76	74
SP.062D	509	1930	501	420	1530	-	-	200	100	300	5,20	1,44	6,64	65	63	85	83
SP.072D	661	2430	592	500	2030	-	-	200	110	400	6,74	0,86	7,60	96,5	93,5	180,5	177,5
SP.082D	661	2430	592	500	2030	-	-	200	110	400	10,11	0,86	10,97	117	114	201	198
SP.023D	354	1810	424	350	1530	-	-	140	92	200	2,60	1,30	3,90	37,5	36	56,5	55
SP.043D	430	2170	421	350	1830	-	-	170	90	200	3,18	1,59	4,77	51,5	50	72	70,5
SP.053D	509	2680	501	420	2280	750	-	200	100	300	5,63	1,95	7,58	78,5	77	137,5	136
SP.063D	509	2680	501	420	2280	750	-	200	100	300	7,50	1,95	9,45	96	93	155	152
SP.073D	661	3430	592	500	3030	1000	-	200	110	400	9,20	1,82	11,02	139,5	135,5	244,5	240,5
SP.083D	661	3430	592	500	3030	1000	-	200	110	400	13,80	1,82	15,62	168,5	164,5	273,5	269,5
SP.024D	354	2310	424	350	2030	1000	-	140	92	200	3,37	1,72	5,09	48,5	46,5	73	71
SP.044D	430	2770	421	350	2430	1200	-	170	90	200	4,00	2,00	6,00	67	65	127	125
SP.064D	509	3430	501	420	3030	1500	-	200	100	300	9,20	1,82	11,02	125	121	229	225
SP.074D	661	4430	592	500	4030	2000	-	200	110	400	12,72	2,39	15,11	183	178	293	288
SP.084D	661	4430	592	500	4030	2000	-	200	110	400	19,08	2,39	21,47	221	216	331	326
SP.065D	509	4180	501	420	3780	1500	2250	200	100	300	11,92	2,24	14,16	156,5	150,5	252,5	246,5

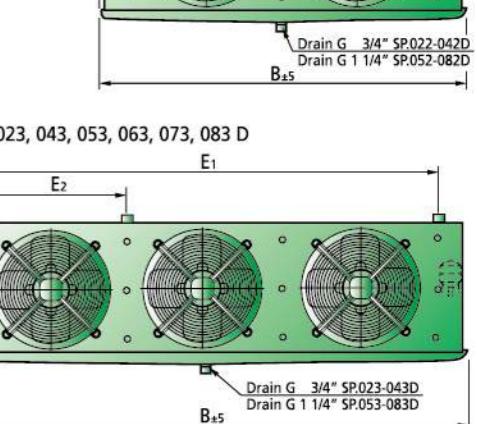
Dimensional drawings



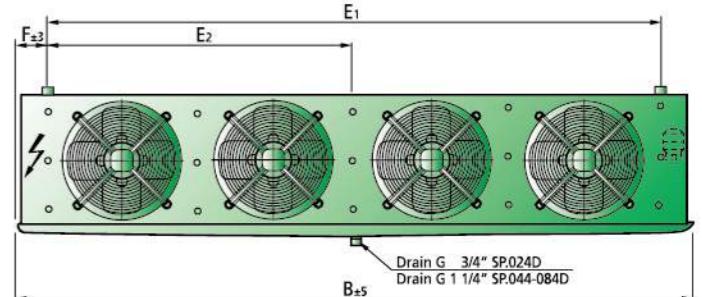
SP.(E) 011, 021, 031, 041, 051, 061, 071, 081 D



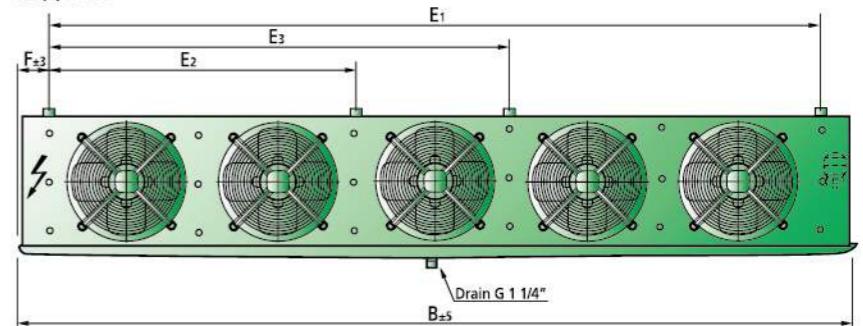
SP.(E) 022, 032, 042, 052, 062, 072, 082 D



SP.(E) 023, 043, 053, 063, 073, 083 D



SP.(E) 065 D





Constructions, Variants and Accessories

Water/brine operation

Please use our selection software for configuring the brine Air Coolers. Do not hesitate to contact us if you have any further questions.

Configuration

- Soldered connections
- Ventilation and drainage

Küba Air Jet

Advantages

- Longer air throw
- Even temperature distribution in the cold room



Loose as accessory



After assembly

Information:
Unassembled upon delivery
(Cannot be used in conjunction with electrical radiator SPHR)

For Model	Air Jet
	Ø mm
SP. 031D-044D	300
SP. 051D-065D	400
SP. 071D-084D	500

Corrosion protection

• Version .V6.01

Cooler:

Tubing: Cu
Fins: Al "goldlack" coating
End plates: Al, anti-corrosion paint coating on both sides

Casing:

Top Panel: Al or Sendzimir zinc-plated steel, anti-corrosion paint coating on both sides

• Version .V6.04

Cooler:

Tubing: Cu
Fins: Al "goldlack" coating
End plates: Al

Casing:

Top Panel: Al, anti-corrosion paint coating

Accessories

Adapter for textile hose connection

Advantages of the textile hose operation

- Even cooling without draughts
- Even temperature distribution
- Best possible comfort in workrooms of all kinds

Information:
Unassembled upon delivery
(Cannot be used in conjunction with electrical radiator SPHR)

For Model	Adapter
	Ø mm
SP. 031D-044D	320
SP. 051D-065D	420
SP. 071D-084D	520

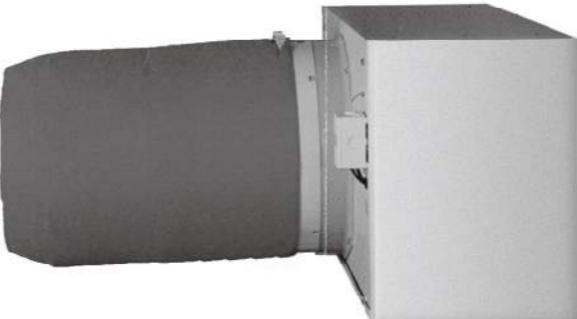


Important note:
Using a textile hose reduces the air volume and performance.

Shut-Up® with Air Jet

Advantages

- Reduces defrosting time by more than 40%
- With Shut-Up®, the defrosting heat is kept where it should be – in the Air Cooler
- For electrical defrosting and hot gas defrosting



During the cooling phase, fans are switched on:
Shut-Up® is inflated

Für Model	Shut-Up*
	Ø mm
SP. 031D-044D	320
SP. 051D-065D	420
SP. 071D-084D	520

Information:
Unassembled upon delivery
(Cannot be used in conjunction with electrical radiator SPHR)



During the defrosting, fans are switched off:
Shut-Up® locks the Air Cooler

Important note:

1. Using a textile hose as well as a Shup-Up® reduces the air volume and performance.
2. Using a textile hose as well as a Shup-Up® requires the use of the AIR JET and an adapter (see above).