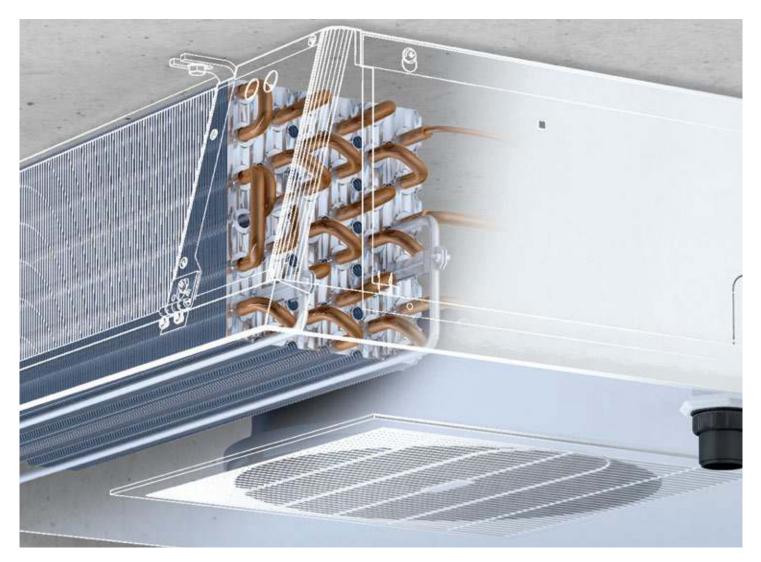
Küba Green Line Aircoolers



Küba comfort DP

DRAUGHT-FREE VENTILATION AND QUIET OPERATION



Kelvion

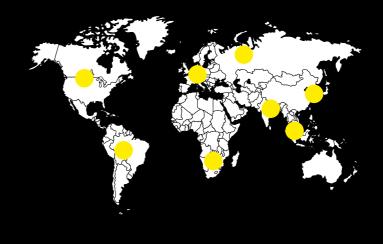


KELVION - A TRIBUTE TO LORD KELVIN (1824 - 1907)



Lord Kelvin formulated the laws of thermodynamics and absolute units of temperature are stated in kelvin, in his honor.

67 BRANCHES AND SALES PARTNERS WORLDWIDE



EXPERTS IN HEAT EXCHANGE – SINCE 1920

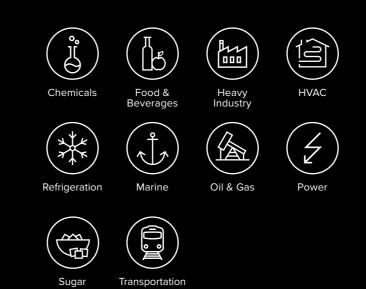
Welcome to Kelvion! Where Heat Exchange is our Business. We are one of the leading global manufacturers of heat exchangers and have been providing solutions for almost every industrial application imaginable since the 1920s, specializing in customized solutions suitable for extreme environmental conditions - as of 2015 under the name of Kelvion.

With one of the most extensive selections of heat exchangers in the world, we are a well-known partner in many industries, including transportation, energy, oil and gas, the heavy industry, chemical and marine as well as sugar, food and beverage and the HVAC and refrigeration technology sector. Our products include Compact Fin Heat Exchangers, Plate Heat Exchangers, Single Tube Heat Exchangers, Transformer Cooling Systems, Cooling Towers and Shell & Tube Heat Exchangers. Our many years of experience and in-depth expertise have made us specialists in this field. Our heat exchangers are designed specifically to meet the needs of the respective machine or equipment system, ensuring outstanding energy efficiency and reliability in any market segment. This gives our customers a cutting-edge over their competitors while also reducing operating costs over the long term.

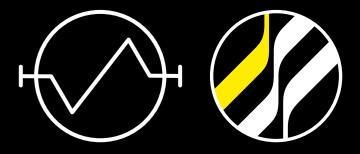
As your heat exchange partner, we understand that outstanding and reliable after-sales services are critical for you, our customer, and we work alongside with you in close partnership supporting you throughout the full life cycle of your plant and equipment to ensure lasting business success.

Kelvion – Experts in Heat Exchange.

YOUR MARKETS ARE OUR MARKETS



OUR LOGO - INSPIRED FROM THE SCHEMATIC FOR HEAT EXCHANGER



5,000 EMPLOYEES WORLDWIDE

KELVION HAS A LONG <mark>HISTORY</mark>

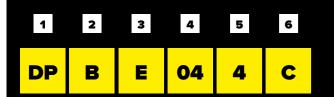


Küba comfort DP

DRAUGHT-FREE VENTILATION AND EXTREMELY QUIET OPERATION



Type Designation Code



- 1 Model range designation
- 2 Fin spacing
- 3 Electric defrost
- 4 Size

- 5 Number of fans
- 6 Generation Code



Küba comfort DP

APPLICATION **BENEFITS FOR** CONTRACTORS AND OPERATO

Cold Rooms

Application examples

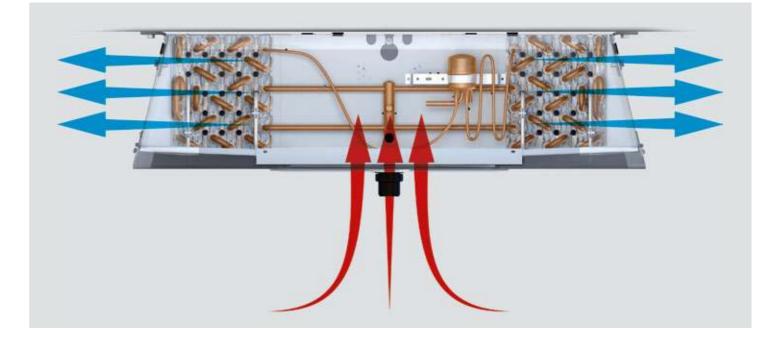
- ► Laboratories
- ► Food Preparation areas

COOLING WHERE PEOPLE ARE WORKING

Our Küba comfort DP is the gentle one in the Küba Green Line, cooling where people are working.

Low-velocity bladed fans bring draught-free cold air to the working zone. The Küba comfort DP creates best conditions for processing goods. Drain trays can be swung down to give access to the bottom for cleaning or maintenance.

- ► Air baffles ensure low air speeds (up to 0.8 m/s) in the cold room, guiding the air across the ceiling and far into the room.
- ▶ Both 50 Hz and 60 Hz bladed fans can be fitted with a choice of high or low speed (normal speed "N", silent speed "L").
- ► Extremely silent operation "S", with accessories (capacitor or speed switch).
- ▶ Saves space: Low profile of only 303 mm.



DRAUGHT-FREE AIR MOVEMENT AND SILENT OPERATION

The technical cooling demands and spatial conditions are only one aspect. Safety and health are top priority as soon as people need to work in cold rooms. For staff to perform their workwithout adverse effects their wellbeing must be assured.

Reduced noise and comfortable air movement are significant contributing factors to a pleasant indoor climate. The demands made on equipment to ensure a constant temperature in rooms where sensitive goods such as cut flowers are exhibited for sale and where people also need to work are, of course, correspondingly high.

Draught-free air movement and silent operation create a pleasant indoor climate for the people and excellent conditions for the processing and short-time storage of sensitive products.

The air in the room is drawn in by the fans and exhausted via the heat exchangers on both sides. The integrated air baffle of the Küba comfort DP guides the air towards the ceiling where the Coanda effect carries it far into the room.

The Küba comfort DP in this way creates optimal air flow at very low air velocity.

Power ratings range from 2.2 kW to 28 kW. Low frame height saves space and allows its use even in rooms with low ceilings. In addition, the drip tray hinges down to facilitate comfortable cleaning.



CASING

- ► Aluminum, Sendzimir zinc-plated steel
- ▶ Best quality powder coated edges thanks to high-grade powder coating, RAL 9010 pure white
- ► Food-safe
- Smooth surfaces: Easy to clean
- ► Hinged drip tray on both sides, removable
- Removable side panels
- Drip tray: additional integrated splash pan

ELECTRIC DEFROST

- ► Tubular heater: Stainless steel
- ► Connections: steam-proof
- ▶ Mains voltage: 1/N/PE 230V 50/60Hz
- Readily wired for connection box
- Optimized tubular heater configurations ensure fast and even defrosting
- ► Aluminum tube sleeves: Ensure excellent heat transfer to the fins and thus effective defrosting cycles with optimized service life

HEAT EXCHANGER

- ▶ Tube: Copper, inner finned, Ø 12 mm
- ► Fins: Aluminum HFE[®] fins
- End plates: Aluminum
- Staggered tube system
- Fin spacing:
 - A = 4,5 mm
 - B = 7 mm
- ► Fins flared to form-fit the core tube
- ▶ Internal cleanliness according to DIN 14276
- Connection Inlet:
- Küba-CAL® refrigerant distributor with multiple injection, sealed Connection Outlet:
- Copper pipe for solder connection with schrader valve UNF 7/16", sealed

FAN UNIT

- AC technology
- Blow-through axial fan
- ▶ Fan diameter: 350 mm
- ▶ Permissible motor ambient temperatures: -30° C bis +60° C
- Supply voltage: 1/N/PE 230V 50/60Hz
- ► Motor protection: Built-in thermal contact (inaccessible)
- Protection class: IP44
- Insulation class: F
- Fans are wired to 1 internal distribution box
- Plug connection on motor
- Minimum Voltage = 100 V
- Motor Control:
 - Phase control ☑ (50Hz only) Transformer Delta/Star Frequency converter □

Please observe the manufacturer's information!

MOTOR LABEL DATA

Туре			50 Hz			60 Hz	
	Ømm	rpm	w	Α	rpm	w	Α
DP 031-044 C	350	1,390	140	0.62	1,550	195	0.86

Motor data per fan

Data provided by the manufacture

TECHNICAL DATA DPB (E)

[SPEED N NORMAL]

Küba comfort DP | Fin spacing 4,5 mm

TECHNICAL DATA DPA (E)

Туре	Rating 50 Hz, D1	g Q _o at [1, R404A	Cooling surface	Air flow	Air throw	Tube volume	Conne	ctions	Sound	Fa	ans (Operati	onal valu	es at 50 Hz	z)
	SC1	SC2			***		Inlet	Outlet	L _{wa}	Blade	Current		Per fan	
	kW	kW	m²	m³/h	m	dm³	Ømm	Ømm	dB(A)	Ømm	230±10% V-1 50Hz	rpm	w	А
DPA 031 C	5.4	3.8	16.3	1,720	2 x 11	3.4	10 x 1.0**	22 x 1.0	74	350	230 V-1	1,335	158	0.7
DPA 041 C	6.3	4.4	24.3	1,620	2 x 9	5.1	10 x 1.0**	22 x 1.0	74	350	230 V-1	1,335	158	0.7
DPA 032 C	10.8	7.6	32.6	3,440	2 x 12	6.8	10 x 1.0**	28 x 1.5	77	350	230 V-1	1,335	158	0.7
DPA 042 C	12.5	8.6	48.6	3,240	2 x 10	10.2	10 x 1.0**	28 x 1.5	77	350	230 V-1	1,335	158	0.7
DPA 033 C	16.3	11.0	48.9	5,160	2 x 13	10.2	10 x 1.0**	28 x 1.5	79	350	230 V-1	1,335	158	0.7
DPA 043 C	18.8	12.9	72.9	4,860	2 x 11	15.3	15 x 1.0**	35 x 1.5	79	350	230 V-1	1,335	158	0.7
DPA 034 C	21.7	14.9	65.2	6,880	2 x 14	13.6	15 x 1.0**	35 x 1.5	80	350	230 V-1	1,335	158	0.7
DPA 044 C	25.0	17.2	97.2	6,480	2 x 12	20.4	22 x 1.0**	35 x 1.5	80	350	230 V-1	1,335	158	0.7

[SPEED L QUIET]

Туре		y Q _o at [1, R404A	Cooling surface	Air flow	Air throw	Tube volume	Conne	ctions	Sound	Fa	ans (Operati	onal valu	es at 50 H	z)
	SC1	SC2			***		Inlet	Outlet	L _{WA}	Blade	Current		Per fan	
	kW	kW	m²	m³/h	m	dm³	Ømm	Ømm	dB(A)	Ømm	230±10% V-1 50Hz	rpm	w	А
DPA 031 C	3.7	2.7	16.3	1,064	2 x 8	3.4	10 x 1.0**	22 x 1.0	64	350	230 V-1	935	112	0.8
DPA 041 C	4.0	2.9	24.3	950	2 x 5	5.1	10 x 1.0**	22 x 1.0	64	350	230 V-1	935	112	0.8
DPA 032 C	7.4	5.5	32.6	2,128	2 x 9	6.8	10 x 1.0**	28 x 1.5	67	350	230 V-1	935	112	0.8
DPA 042 C	7.9	5.7	48.6	1,900	2 x 6	10.2	10 x 1.0**	28 x 1.5	67	350	230 V-1	935	112	0.8
DPA 033 C	11.1	8.1	48.9	3,192	2 x 10	10.2	10 x 1.0**	28 x 1.5	69	350	230 V-1	935	112	0.8
DPA 043 C	11.9	8.6	72.9	2,850	2 x 7	15.3	15 x 1.0**	35 x 1.5	69	350	230 V-1	935	112	0.8
DPA 034 C	14.9	10.9	65.2	4,256	2 x 11	13.6	15 x 1.0**	35 x 1.5	70	350	230 V-1	935	112	0.8
DPA 044 C	15.9	11.4	97.2	3,800	2 x 8	20.4	22 x 1.0**	35 x 1.5	70	350	230 V-1	935	112	0.8

[SPEED S VERY QUIET]

Туре	Rating 50 Hz, D1	y Q _o at [1, R404A	Cooling surface	Air flow	Air throw	Tube volume	Conne	ctions	Sound	Fa	ans (Operati	onal valu	es at 50 Hz	:)
	SC1	SC2			***		Inlet	Outlet	L _{WA}	Blade	Current		Per fan	
	kW	kW	m²	m³/h	m	dm³	Ømm	Ømm	dB(A)	Ømm	230±10% V-1 50Hz	rpm	w	Α
DPA 031 C	3.0	2.1	16.3	760	2 x 5	3.4	10 x 1.0**	22 x 1.0	56	350	230 V-1	715	85	0.7
DPA 041 C	3.1	2.2	24.3	670	2 x 4	5.1	10 x 1.0**	22 x 1.0	56	350	230 V-1	715	85	0.7
DPA 032 C	6.1	4.3	32.6	1,520	2 x 6	6.8	10 x 1.0**	28 x 1.5	59	350	230 V-1	715	85	0.7
DPA 042 C	6.3	4.1	48.6	1,340	2 x 5	10.2	10 x 1.0**	28 x 1.5	59	350	230 V-1	715	85	0.7
DPA 033 C	9.1	6.3	48.9	2,280	2 x7	10.2	10 x 1.0**	28 x 1.5	61	350	230 V-1	715	85	0.7
DPA 043 C	9.4	6.4	72.9	2,010	2 x 6	15.3	15 x 1.0**	35 x 1.5	61	350	230 V-1	715	85	0.7
DPA 034 C	12.2	8.5	65.2	3,040	2 x 8	13.6	15 x 1.0**	35 x 1.5	62	350	230 V-1	715	85	0.7
DPA 044 C	12.5	8.4	97.2	2,680	2 x 7	20.4	22 x 1.0**	35 x 1.5	62	350	230 V-1	715	85	0.7

Küba comfort DP | Fin spacing 7 mm

Туре		g Q _o at [1, R404A	Cooling surface	Air flow	Air throw	Tube volume	Conne	ections	Sound	F	ans (Operati	onal valu	es at 50 Hz	:)
	SC1	SC2			***		Inlet	Outlet	L _{WA}	Blade	Current		Per fan	
	kW	kW	m²	m³/h	m	dm³	Ømm	Ømm	dB(A)	Ømm	230±10% V-1 50Hz	rpm	w	Α
DPB 031 C	4.4	3.1	11.0	1,850	2 x 11	3.4	10 x 1.0**	22 x 1.0	74	350	230 V-1	1,335	158	0.7
DPB 041 C	5.5	3.8	16.4	1,770	2 x 9	5.1	10 x 1.0**	22 x 1.0	74	350	230 V-1	1,335	158	0.7
DPB 032 C	8.8	6.2	22.0	3,700	2 x 12	6.8	10 x 1.0**	28 x 1.5	77	350	230 V-1	1,335	158	0.7
DPB 042 C	10.9	7.5	32.8	3,540	2 x 10	10.2	10 x 1.0**	28 x 1.5	77	350	230 V-1	1,335	158	0.7
DPB 033 C	13.1	9.0	33.0	5,550	2 x 13	10.2	10 x 1.0**	28 x 1.5	79	350	230 V-1	1,335	158	0.7
DPB 043 C	16.4	11.3	49.2	5,310	2 x 11	15.3	15 x 1.0**	35 x 1.5	79	350	230 V-1	1,335	158	0.7
DPB 034 C	17.5	12.2	44.0	7,400	2 x 14	13.6	15 x 1.0**	35 x 1.5	80	350	230 V-1	1,335	158	0.7
DPB 044 C	21.8	15.1	65.6	7,080	2 x 12	20.4	22 x 1.0**	35 x 1.5	80	350	230 V-1	1,335	158	0.7

Туре		g Q _o at T1, R404A	Cooling surface	Air flow	Air throw	Tube volume	Conne	ections	Sound	Fa	ans (Operati	onal valu	es at 50 Hz	:)
	SC1	SC2			***		Inlet	Outlet	L _{wa}	Blade	Current		Per fan	
	kW	kW	m²	m³/h	m	dm³	Ømm	Ømm	dB(A)	Ømm	230±10% V-1 50Hz	rpm	w	Α
DPB 031 C	3.5	2.5	11.0	1,300	2 x 8	3.4	10 x 1.0**	22 x 1.0	64	350	230 V-1	935	112	0.8
DPB 041 C	4.0	2.8	16.4	1,140	2 x 5	5.1	10 x 1.0**	22 x 1.0	64	350	230 V-1	935	112	0.8
DPB 032 C	7.0	5.0	22.0	2,600	2 x 9	6.8	10 x 1.0**	28 x 1.5	67	350	230 V-1	935	112	0.8
DPB 042 C	8.0	5.6	32.8	2,280	2 x 6	10.2	10 x 1.0**	28 x 1.5	67	350	230 V-1	935	112	0.8
DPB 033 C	10.6	7.3	33.0	3,900	2 x 10	10.2	10 x 1.0**	28 x 1.5	69	350	230 V-1	935	112	0.8
DPB 043 C	12.1	8.4	49.2	3,420	2 x 7	15.3	15 x 1.0**	35 x 1.5	69	350	230 V-1	935	112	0.8
DPB 034 C	14.1	9.8	44.0	5,200	2 x 11	13.6	15 x 1.0**	35 x 1.5	70	350	230 V-1	935	112	0.8
DPB 044 C	16.1	11.2	65.6	4,560	2 x 8	20.4	22 x 1.0**	35 x 1.5	70	350	230 V-1	935	112	0.8

Туре		g Q _o at 11, R404A	Cooling surface	Air flow	Air throw	Tube volume	Conne	ctions	Sound	Fa	ans (Operati	onal valu	es at 50 Hz	£)
	SC1	SC2			***		Inlet	Outlet	L _{WA}	Blade	Current		Per fan	
	kW	kW	m²	m³/h	m	dm³	Ømm	Ømm	dB(A)	Ømm	230±10% V-1 50Hz	rpm	w	Α
DPB 031 C	2.6	1.8	11.0	810	2 x 5	3.4	10 x 1.0**	22 x 1.0	56	350	230 V-1	715	85	0.7
DPB 041 C	3.1	2.2	16.4	800	2 x 4	5.1	10 x 1.0**	22 x 1.0	56	350	230 V-1	715	85	0.7
DPB 032 C	5.1	3.6	22.0	1,620	2 x 6	6.8	10 x 1.0**	28 x 1.5	59	350	230 V-1	715	85	0.7
DPB 042 C	6.3	4.4	32.8	1,600	2 x 5	10.2	10 x 1.0**	28 x 1.5	59	350	230 V-1	715	85	0.7
DPB 033 C	7.7	5.4	33.0	2,430	2 x7	10.2	10 x 1.0**	28 x 1.5	61	350	230 V-1	715	85	0.7
DPB 043 C	9.4	6.5	49.2	2,400	2 x 6	15.3	15 x 1.0**	35 x 1.5	61	350	230 V-1	715	85	0.7
DPB 034 C	10.3	7.2	44.0	3,240	2 x 8	13.6	15 x 1.0**	35 x 1.5	62	350	230 V-1	715	85	0.7
DPB 044 C	12.5	8.7	65.6	3,200	2 x 7	20.4	22 x 1.0**	35 x 1.5	62	350	230 V-1	715	85	0.7

[SPEED L QUIET]

[SPEED S VERY QUIET]

DIMENSIONS, WEIGHTS, ELECTRIC DEFROST

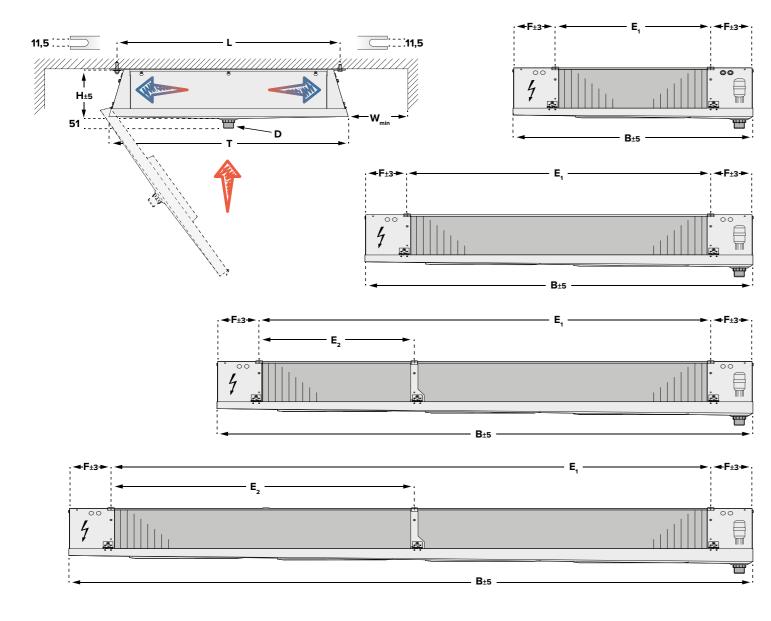
Küba comfort DP

Туре				Dime	nsions					ctrical defi V-1 / 400 \			nt (net) acked	-	(gross) ked	Drain
	н	В	т	L	E,	E ₂	F	W _{min}	Coil	Tray	Total	DPA/B	DPA/B E	DPA/B	DPA/B E	D
	mm	mm	mm	mm	mm	mm	mm	mm	kW	kW	kW	kg	kg	kg	kg	inch
DP 031 C	281	972	1,010	930	630	-	171	1,200	2.3	-	2.3	44	47	74	78	G 11⁄4
DP 041 C	281	972	1,010	930	630	-	171	1,200	2.3	-	2.3	46	49	76	80	G 11⁄4
DP 032 C	288	1,572	1,010	930	1,230	-	171	1,200	4.1	-	4.1	68	72	105	109	G 11⁄4
DP 042 C	288	1,572	1,010	930	1,230	-	171	1,200	4.1	-	4.1	72	76	109	113	G 11⁄4
DP 033 C	296	2,172	1,010	930	1,830	629	171	1,200	6.0	-	6.0	96	101	150	155	G 11⁄4
DP 043 C	296	2,172	1,010	930	1,830	629	171	1,200	6.0	-	6.0	102	107	156	161	G 11⁄4
DP 034 C	303	2,772	1,010	930	2,430	1,229	171	1,200	7.8	-	7.8	120	126	182	188	G 11⁄4
DP 044 C	303	2,772	1,010	930	2,430	1,229	171	1,200	7.8	-	7.8	128	134	188	194	G 11⁄4

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

DIMENSIONAL DRAWINGS

Küba comfort DP





MOTOR - VARIANTS

V 1.52 EC FAN WITH CONTROLLABLE SPEED

CASING - 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. The following dimensions are changed: Width B: +60 mm Height H: +30 mm Depth T: +30 mm

CONSTRUCTION - VARIANTS

V 2.05 WATER / BRINE CIRCULATION With a large number of distributors (small pressure drop)

V 2.06 WATER / BRINE CIRCULATION With a small number of distributors

(large pressure drop)

PROTECTION AGAINST CORROSION

V 6.01 CORROSION PROTECTION 1

Tubing:CopperFins:Aluminum, epoxy-resin-coatedEnd plates:Aluminum protective coatingCasing: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

CO₂ - **VARIANTS**

V 7.45 CO₂- DIRECT EXPANSION up to 45 bar operating pressure

V 7.60 CO₂- DIRECT EXPANSION up to 60 bar operating pressure

ACCESSORIES

ELECTRIC HEATER DPHR

For air coolers with forced-draft fans, for assembly on site. Suitable for air conditioning, or heating, in the winter. For optimal heat transfer, the heater rods are fitted in Cu tube sleeves.

Construction:

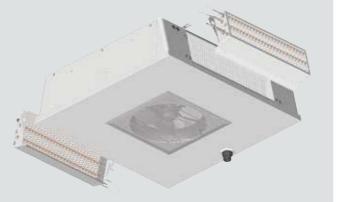
- ► Fully powder-coated (RAL 9010)
- ▶ 230 ± 10% V-1~ or 400 ± 10% V-3~ -Y
- ► Heater rods with CrNi steel sleeve
- ► Vapour-tight connections
- ► Connecting cable 1.0 mm² x 1000 mm
- ► Casing: steel, continuous hot-dip zinc coated
- ► Fins: Aluminum
- ► Tube sleeves: Copper

Selection table & Technical data:

						Connected val	ue per register	Connected value	ue per aircooler
For type	Description	Pieces	Dime	nsions	Weight	Current	Capacity	Current	Capacity
			н	L	kg	А	kW	А	kW
DP 031 C	DPHR 600	2	210	600	1.7	4.2	1.0	8.4	1.92
DP 041 C	DPHR 600	2	210	600	1.7	4.2	1.0	8.4	1.92
DP 032 C	DPHR 1200	2	210	1,200	2.9	8.3	1.9	16.6	3.82
DP 042 C	DPHR 1200	2	210	1,200	2.9	8.3	1.9	16.6	3.82
DP 033 C	DPHR 1800	2	210	1,800	4.2	12.5	2.9	25.0	5.74
DP 043 C	DPHR 1800	2	210	1,800	4.2	12.5	2.9	25.0	5.74
DP 034 C	DPHR 2400	2	210	2,400	5.6	16.3	3.8	32.6	7.5
DP 044 C	DPHR 2400	2	210	2,400	5.6	16.3	3.8	32.6	7.5

NOTE:

Operate only when the air cooler fans are running, to prevent the cold storage ceiling from overheating. Please observe the corresponding safety guidelines.



SPEED SWITCH OPERATION N, L, S

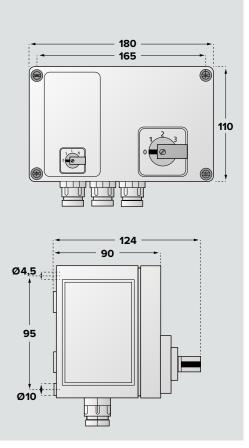
Construction:

- ▶ With floating change-over at fan ON/OFF,
- contact open in switch position 0 ► Floating drag switch contacts on terminals 11/12
- ► Capacitor (C) for level S included

Selection table & Dimensions:

For Type	Description	Description	Protection class
	Speed switch	Capacitor (S)	
DP 031 C	SC - 10	C - 10	IP 54
DP 041 C	SC - 10	C - 10	IP 54
DP 032 C	SC - 20	C - 20	IP 54
DP 042 C	SC - 20	C - 20	IP 54
DP 033 C	SC - 30	C - 30	IP 54
DP 043 C	SC - 30	C - 30	IP 54
DP 034 C	SC - 40	C - 40	IP 54
DP 044 C	SC - 40	C - 40	IP 54

μF	
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30	
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40	
40	



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