



Küba DE *professional*



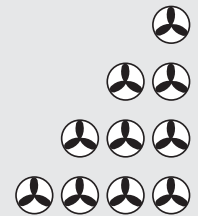
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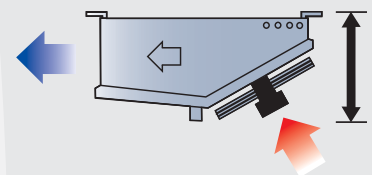
Küba DE *professional*: Specific advantages

High performance ceiling-type unit cooler that covers a large scope for commercial applications.

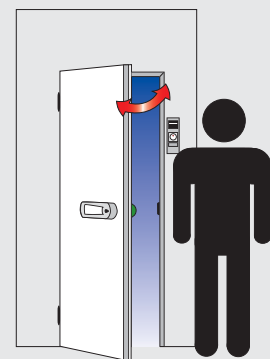
Q_0 1,5 ——— 9,4 kW



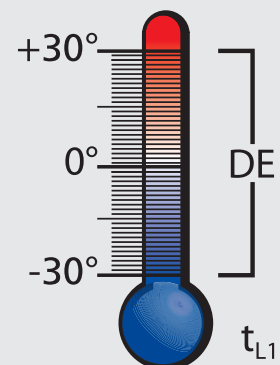
Compact unit ceiling-type cooler for complex refrigeration tasks in small and low spaces.



The Küba DE *professional* can cope with difficult environmental conditions, e.g. doors that are frequently opened, open sales areas, low noise requirements.



All temperature ranges can be maintained at the highest level of precision.





Construction



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1. Casing

- Al-Stucco, top panel: galvanised steel
- High-grade powder coating, papyrus white RAL 9018
 - Food quality
 - Easy to clean
 - Optimum corrosion protection
- Drip tray and side panels removable
- Low construction height
- Quick and easy assembly
- Stainless steel mounting material and brackets
- Plastic drain

2. Heat exchanger

- Fin spacing
 - DEA.D: 4,5mm
 - DEB.D: 7mm
- Tube arrangement aligned, spacing 50 x 50 mm
- HFE® tube / fin system
- Tubing: Cu-special
- Fins: Al
- End plates: Al
- Küba-CAL® refrigerant distributor for multiple injection

3. Fans

- Fans individually connected to internal junction box
- Ø300mm
- In accordance with VDE specifications with built-in protector
- Application range: -30°C bis +50°C
- 230±10% V-1~

- 50 / 60 Hz
- Protection class IP44 in accordance with EN 60529
- Insulation class B in accordance with EN 60034
- Operating data can be found with Küba Select or in the technical data
- Optional Controller:
 - Phase control
 - Transformer
 - Delta / star
 - Frequency converter

 Please observe the manufacturer's information

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

50 Hz			60 Hz		
min ⁻¹	W	A	min ⁻¹	W	A
1400	65	0,30	1500	90	0,40

4. Electric defrost

- 230 ±10% V-1~ oder 400 ±10% V-3~ -Y
- Heaters with CrNi tube sleeves
- Vapour-tight connections
- Connector cable 1.5 mm² x 1000 mm
- Designed to defrost the heat exchanger quickly and evenly
- To prevent steam build-up and to accomplish heat exchange with almost no loss, the heaters are mounted in special expanded tube sleeves
- Wired ready for connection to the connection box in accordance with VDE specifications



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 CO₂ operation and for NH₃ 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
Freshness that lasts longer



Technical data (R404A)

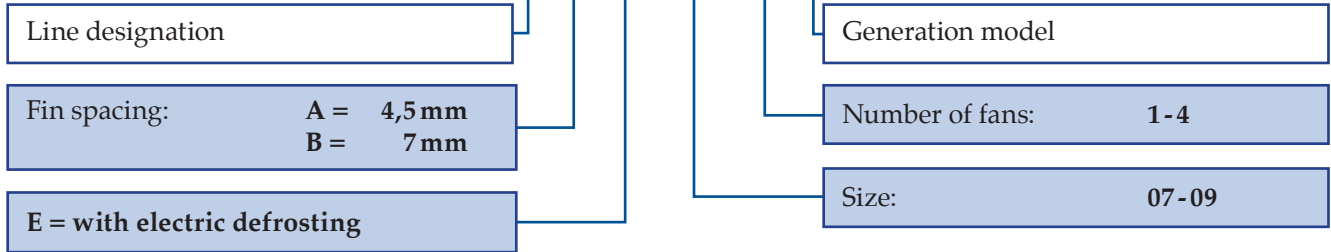
DE...D



Nomenclature

Standard

DE A E 07 1 D



DEA (E) ...D



Model	Rating Q _o at 50 Hz		Surface	Airflow	Air throw	Tube volume	Connections			Sound output	Fans (operating values at 50 Hz)***			Electric Defrosting	
	t ₁ ±0°C DT1=8K	t ₁ -18°C DT1=7K					Inlet	Outlet	Blade		min ⁻¹	W	A		kW
	kW	kW	m ²	m ³ /h	m	dm ³	Ø mm	Ø mm	Ø mm	L _{W(A)} **					
DEA 071D	⊕	1,90	1,51	12,9	1100	9	2,8	12	15	300	68	1357	84	0,35	1,46
DEA 081D	⊕	2,10	1,67	16,1	1070	9	3,5	12	15	300	68	1357	84	0,35	2,15
DEA 091D	⊕	2,35	1,87	19,3	1035	9	4,2	12	15	300	68	1357	84	0,35	2,15
DEA 072D	⊕⊕	3,80	3,02	25,8	2200	11	5,6	12	15	300	71	1357	84	0,35	2,51
DEA 082D	⊕⊕	4,20	3,34	32,2	2140	11	7,0	12	22	300	71	1357	84	0,35	3,72
DEA 092D	⊕⊕	4,70	3,74	38,6	2070	11	8,4	12	22	300	71	1357	84	0,35	3,72
DEA 083D	⊕⊕⊕	6,30	5,01	48,3	3210	12	10,5	10*	22	300	73	1357	84	0,35	5,24
DEA 093D	⊕⊕⊕	7,05	5,60	57,9	3105	12	12,6	10*	22	300	73	1357	84	0,35	5,24
DEA 084D	⊕⊕⊕⊕	8,40	6,68	64,4	4280	16	14,0	10*	22	300	74	1357	84	0,35	5,15
DEA 094D	⊕⊕⊕⊕	9,40	7,47	77,2	4140	16	16,8	10*	28	300	74	1357	84	0,35	5,15

DEB (E) ...D



Model	Rating Q _o at 50 Hz		Surface	Airflow	Air throw	Tube volume	Connections			Sound output	Fans (operating values at 50 Hz)***			Electric Defrosting	
	t ₁ ±0°C DT1=8K	t ₁ -18°C DT1=7K					Inlet	Outlet	Blade		min ⁻¹	W	A		kW
	kW	kW	m ²	m ³ /h	m	dm ³	Ø mm	Ø mm	Ø mm	L _{W(A)} **					
DEB 071D	⊕	1,53	1,22	5,4	1280	10	2,8	12	15	300	68	1357	84	0,35	1,46
DEB 081D	⊕	1,80	1,43	10,6	1220	10	3,5	12	15	300	68	1357	84	0,35	2,15
DEB 091D	⊕	2,00	1,59	12,7	1120	10	4,2	12	15	300	68	1357	84	0,35	2,15
DEB 072D	⊕⊕	3,06	2,43	16,8	2560	12	5,6	12	15	300	71	1357	84	0,35	2,51
DEB 082D	⊕⊕	3,60	2,86	21,2	2440	12	7,0	12	22	300	71	1357	84	0,35	3,72
DEB 092D	⊕⊕	4,00	3,18	25,4	2240	14	8,4	10*	22	300	71	1357	84	0,35	3,72
DEB 083D	⊕⊕⊕	5,40	4,29	31,8	3660	14	10,5	10*	22	300	73	1357	84	0,35	5,24
DEB 093D	⊕⊕⊕	6,00	4,77	38,1	3360	14	12,6	10*	22	300	73	1357	84	0,35	5,24
DEB 084D	⊕⊕⊕⊕	7,20	5,72	42,4	4880	17	14,0	10*	22	300	74	1357	84	0,35	5,15
DEB 094D	⊕⊕⊕⊕	8,00	6,36	50,8	4480	17	16,8	10*	28	300	74	1357	84	0,35	5,15

* Multiple injection with Küba CAL®

** Changes in sound power level, see page 131

*** Values free discharge, dry fin surfaces, RT 20°C



Q_v chart (EN 328, R404A)

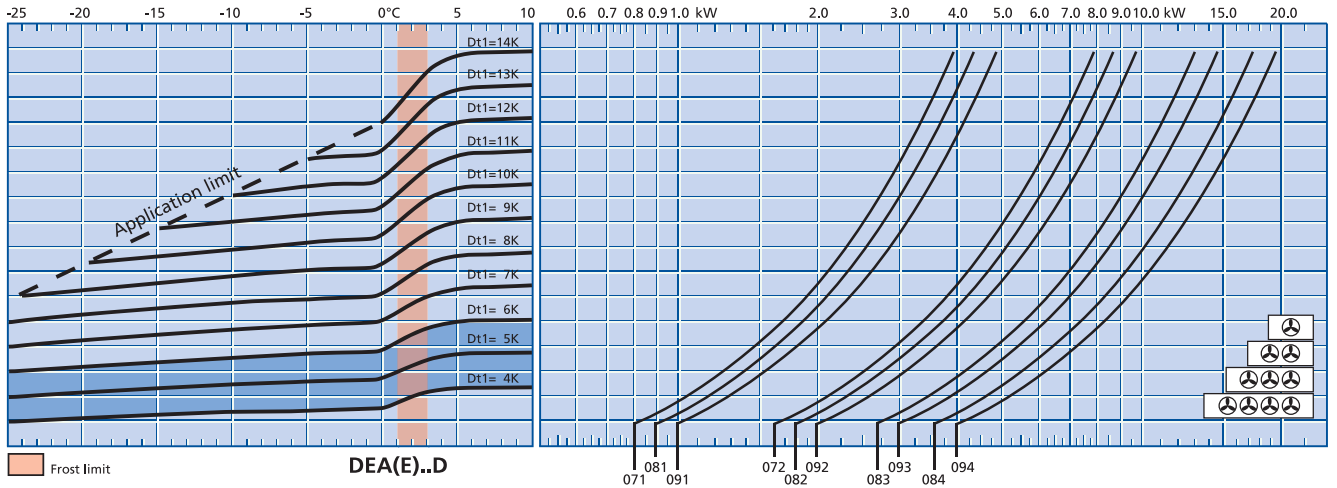
DE...D

4,5/7 mm

DEA(E) ...D

t_{L1} [°C] Air inlet temperature

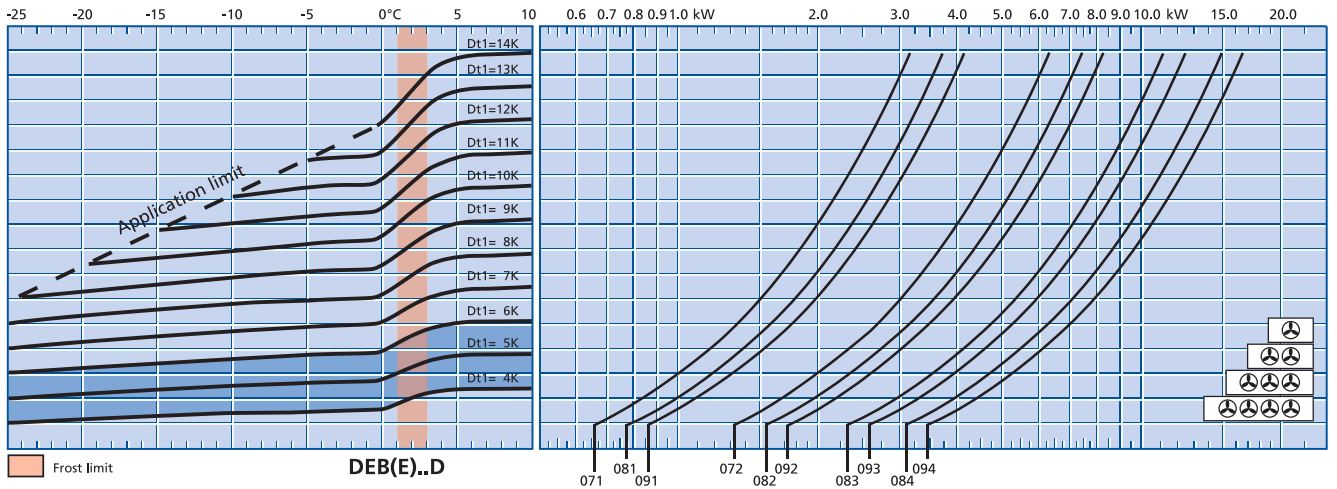
Q₀ [kW] Cooling capacity



DEB(E) ...D

t_{L1} [°C] Air inlet temperature

Q₀ [kW] Cooling capacity



- Q₀ = Cooling capacity
- t_{L1} = Air inlet temperature
- t₀ [°C] = Evaporating temperature (coil outlet)
- DT1 [K] = Temperature difference = t_{L1} - t₀ (°C)

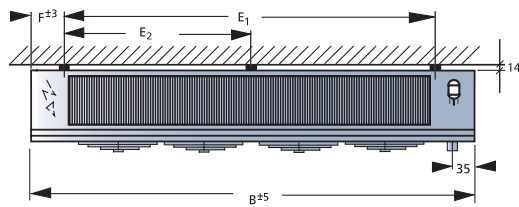
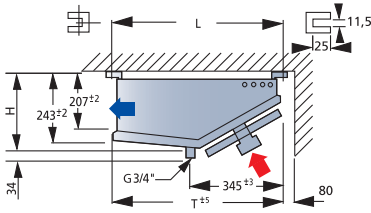
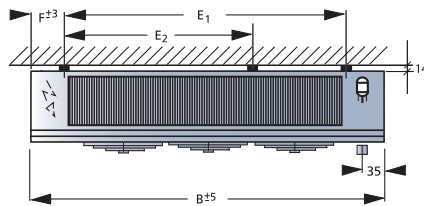
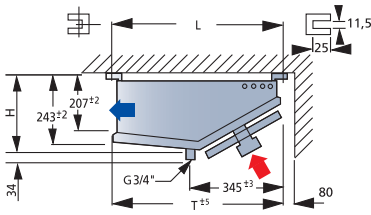
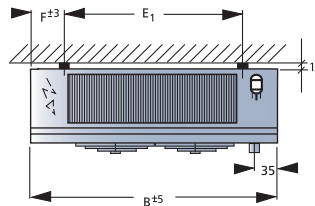
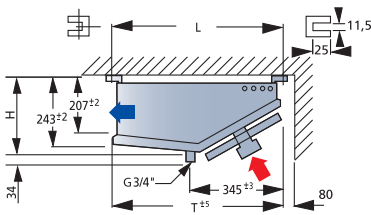
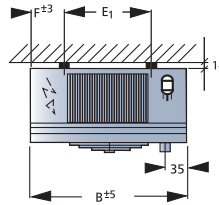
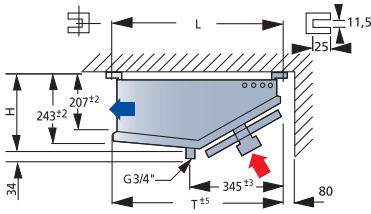
DT1 = 4 K bis 6 K
with electronic expansion valve

Example selection:

For example and explanation, see the information section on p. 136.



Dimensional drawings, dimensions, electric defrosting, weights



Model	Dimensions							Electric Defrost 230 V-1~/400 V3-3-Y~			Net weight	
	H	B	T	L	E ₁	E ₂	F	Coil	Tray	Total	DEA.D	DEB.D
	mm	mm	mm	mm	mm	mm	mm	kW	kW	kW	kg	kg
DE. 071D	260	1080	660	672	730	-	175	0,69	0,77	1,46	25,8	24,0
DE. 081D	260	1080	660	672	730	-	175	1,38	0,77	2,15	26,7	28,0
DE. 091D	260	1080	660	672	730	-	175	1,38	0,77	2,15	31,0	26,4
DE. 072D	260	1780	660	672	1430	-	175	1,21	1,30	2,51	44,8	41,1
DE. 082D	260	1780	660	672	1430	-	175	2,42	1,30	3,72	46,9	42,2
DE. 092D	260	1780	660	672	1430	-	175	2,42	1,30	3,72	54,2	53,6
DE. 083D	260	2480	660	672	2130	1400	175	3,44	1,80	5,24	67,0	61,8
DE. 093D	260	2480	660	672	2130	1400	175	3,44	1,80	5,24	73,4	70,2
DE. 084D	260	3180	660	672	2830	1400	175	4,58	0,57	5,15	79,4	72,2
DE. 094D	260	3180	660	672	2830	1400	175	4,58	0,57	5,15	86,6	76,5



Alternative versions / accessories

Motor versions

•Version V1.33 – quiet design



- Particularly suited for sales areas, etc.
- Reduced air volume flow, VL
 - Lower sound power level, Lw (A)
 - Fans 230 ± 10% V-1~

For other alternative motor versions, see Küba Select or version overview, p. 126

Water / brine circulation

•Version V2.05

Large number of circuits (small pressure drop)

•Version V2.06

Small number of circuits (large pressure drop)

Casing versions

Double insulated Drip Tray

• V3.09



The double insulated drip tray has 6 mm of insulation.

The insulation prevents condensation water from building up on the bottom side of the tray and reduces the transfer of Defrost Heat into the Cold Room.

This changes the following dimensions:

- Width B:** +10mm
- Height H:** +10mm
- Depth T:** +10mm

Defrost Versions

All Küba Air Coolers are available with electric defrosting. See nomenclature, p. 36

Protection against corrosion

Stainless steel casing

• V3.12



For protection in aggressive cold storage air, e.g. in smokehouses and curing areas, all casing components are stainless steel. Industrial quality.

•Version V6.01



Heat exchanger:

- Tubing: Cu
- Fins: Al „goldlack“ coating
- End plates: Al, protective coating on both sides

Casing: Al-Stucco.

Top Panel: Sendzimir galvanised steel, protective coating on both sides

•Version V6.02



Heat exchanger:

- Tubing: Stainless steel
- Fins: Al „goldlack“ coating
- End plates: Stainless steel

Casing: Al-Stucco.

Top Panel: Sendzimir galvanised steel, protective coating on both sides

•Version V6.03



Heat exchanger:

- Tubing: Stainless steel
- Fins: Al
- End plates: Al

Casing: Al-Stucco.

Top Panel: Sendzimir galvanised steel, protective coating on one side

•Version V6.04



Heat exchanger:

- Tubing: Cu
- Fins: Al „goldlack“ coating
- End plates: Al

Casing: Al-Stucco.

Top Panel: Sendzimir galvanised steel, protective coating on one side



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



Note: Details regarding the versions pictured here can be found in the product selection software Küba Select




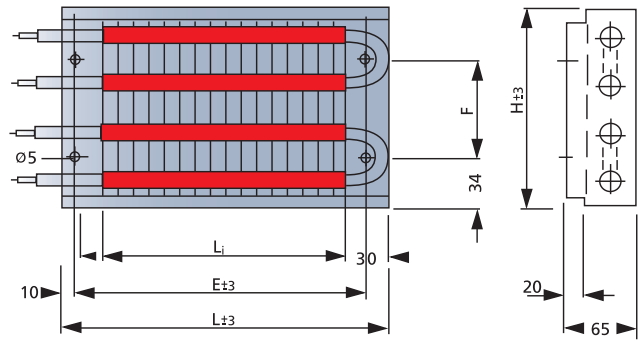
Accessories

Electric radiator HR

For Air Coolers with blow through fans, for on site assembly.

Suitable for air conditioning or heating in winter. For optimum heat transfer, the heaters are mounted in Cu tube sleeves.

 Only for use with running air cooler fans so that the ceiling of the cold storage areas does not overheat.



Design:

- 230 ± 10% V-1~ oder 400 ± 10% V-3~ -Y
- Heaters with CrNi steel sleeve
- Vapour-tight connections
- Connector cable 1.5 mm² x 1000 mm
- Casing: Al
- Fins: Al
- Tube sleeves: Cu

Electric radiator

Model	Nominal capacity at 230V		Dimensions				Weight
	kW	H	L	L _i	E	F	kg
HR4-70	1,07	145	755	700	733	76	1,69
HR4-140	2,14	145	1433	1400	1433	76	3,00
HR4-210	3,37	145	2133	2100	2133	76	4,34
HR4-280	4,33	145	2855	2800	2833	76	5,76

Selection table

For Air Coolers Electric radiator 230±10%V-1~

	Quantity	Model	Connection value per air cooler
		HR	kW
071D	1	4-70	1,07
081D	1	4-70	1,07
091D	1	4-70	1,07
072D	1	4-140	2,14
082D	1	4-140	2,14
092D	1	4-140	2,14
083D	1	4-210	3,37
093D	1	4-210	3,37
084D	1	4-280	4,33
094D	1	4-280	4,33