



Forced Convection Unit Coolers

Capacity : 1.7 - 61 kw

MODEL KEYWORD

ACMT 3 50 A 4.6 R E

Production series:
ACMT : 10 > Tr > -10 °C
ACLT : -10 > Tr > -20 °C
(Tr= Room temperature)

Number pf fans

Diameter of fans(cm)

Serial size
(A,B,C)

Fin spacing(mm)

Refrigerant connections side
R:Right
L:Left

Defrost system
A:Air
E:Electric H:Hot gas W:Hot Water C: Circulation

ACMT Series:

For medium room temperature (-10) - 10 °C
Fin spacing : 4.6 mm
Tube diameter: 5/8" With staggered geometry.

ACLT Series:

For low room temperature (-20) - (-10) °C
Fin spacing : 7 mm
Tube diameter: 5/8" With inline 1/2" staggered geometry.

Industrial unit coolers are suitable for all application such as dairy products fruits, meat , fish and frozen products and etc.They are also using HFC and HCFC refrigerants with nominal capacity from change

CASING:

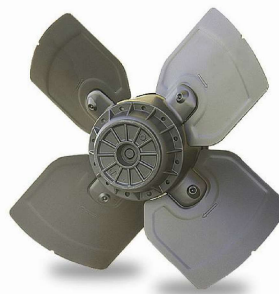
Made of galvanized steel with electrostatic paint coating which allows for easy cleaning.

FANS:

The unit cooler fans are *single and three phase* with internal thermal protection. The electric motors are classified in IP54.

COIL:

In addition, there are four models, 350,400,450,500, 630 mm ,impeller diameters.The coils are tested at 30 bar and all the unit coolers are recharged with nitrogen gas to ensure



UNIT COOLER SELECTION

The nominal capacities Qn related to standard condition SC2 in accordance with ENV328'

$$DT1 = \text{room temperature} - \text{evaporating temperature} = 8 \text{ k}$$

Tr=0 °C with relative humidity 85% and evaporating temperature Te= -8 °C with R22 refrigerant.

Table1- ENV 328 STANDARD CONDITIONS:

Standard condition	Room temperature	Evaporating temperature	RH %	QN/QST
SC1	10	0	85	1.35
SC2	0	-8	85	1.15
SC3	-18	-25	95	1.05
SC4	-25	-31	95	1.00

For selecting suitable unit coolers there are two methods. One using the TABLE 2(H,M,L,G,Q) and the other using chart.

Table2- CORRECTION FACTOR TABLES (FC)

$$DT1 = \text{Room temp.} - \text{Evaporator temp.}$$

MODEL	DT1 [k]	Tr [°C] (Room Temperature)									
		-35	-30	-25	-20	-15	-10	-5	0	5	10
ACMT	5	0.52	0.53	0.54	0.56	0.58	0.59	0.65	0.69	0.73	0.75
	6	-	0.66	0.67	0.68	0.69	0.71	0.72	0.75	0.84	0.88
	7	-	-	0.80	0.81	0.82	0.84	0.86	0.90	1.01	1.03
	8	-	-	0.92	0.93	0.94	0.95	0.97	1.00	1.16	1.20
	9	-	-	1.03	1.04	1.05	1.07	1.10	1.15	1.28	1.34
	10	-	-	1.15	1.16	1.17	1.19	1.22	1.27	1.42	1.47
	11	-	-	-	1.31	1.32	1.33	1.35	1.41	1.57	1.66
	12	-	-	-	1.41	1.42	1.43	1.45	1.54	1.73	1.80
ACLT	5	0.69	0.70	0.71	0.72	0.73	0.74	0.75	-	-	-
	6	0.83	0.84	0.85	0.86	0.87	0.88	0.90	-	-	-
	7	0.96	0.97	0.98	0.99	1.02	1.03	1.05	-	-	-
	8	1.11	1.12	1.13	1.14	1.16	1.18	1.20	-	-	-
	9	1.24	1.25	1.26	1.27	1.29	1.31	1.34	-	-	-
	10	1.39	1.40	1.41	1.42	1.43	1.45	1.48	-	-	-
	11	1.53	1.54	1.56	1.57	1.58	1.60	1.63	-	-	-
	12	1.66	1.67	1.68	1.69	1.71	1.73	1.77	-	-	-

A unit cooler with defrost is necessary if the room temperature is lower than shown in (Table 3) for each function of DT1.

Table 3

Tr [°C]	1.5	2.0	2.5	3.0	3.5	4.0
DT1 [K]	1.5	2.0	2.5	3.0	3.5	4.0

Temperature and working DT1 define the room relative humidity conditions.

At positive room temperature, DT1 has an influence on the relative humidity (R.H) according to the following (Table 4)

Table 4

DT1 [K]	5	6	7	8	9	10	11
DT1 [K]	93	89	85	82	79	76	73

$$DT1 = \text{Room temp.} - \text{Evaporator temp.}$$

Table 5 - REFRIGERANT CORRECTION FACTOR

ENV328	Refrigerant			
	EUROVENT	R22	R134a	R404A
SC1	1.00	1.00	1.12	
SC2	1.00	0.94	1.09	
SC3	1.00	0.82	1.03	

Example:

- Required capacity $Q_r = 21 \text{ kw}$
- Room temperature $T_r = -5 \text{ °C}$
- Difference temperature $DT1 = 7 \text{ k}$
- Refrigerant: R22
- Relative humidity $R.H=85\%$

If in TABLE 2(M) & TABLE 5 the correction factors are $F_c = 0.86$ & $F_r = 1.00$, the nominal capacity will be $21 / (0.86 \times 1.00) = 24.4 \text{ kw}$

The corresponding model is **ACMT345A4.6**

MEDIUM Temperature Unit Coolers

Fin spacing 4.6 mm - Tube 5/8"

Model	Capacity [kw]		Coil		Air circulation				Dimensions						Connections		Defrost Heaters kw		
	Nominal DTI=6K DTI=10K	sc3 DTI=7K	Surface m ²	Internal Volume dm ³	Air Flow m ³ /h	Air Throw m	Fans		Length mm	Width mm	High mm	D			Inlet In (Ø)	Outlet In (Ø)		Weight kg	
							n°	Ø(mm)				Motors Kw(230v)	D1 mm	D2 mm					ØD In
ACMT135A4.6	4.1	5.0	18.5	6.4	2300	16	1*350	0.2	800	255	610	580	-	1	1/2	7/8	36	2.7	
ACMT140A4.6	5.3	6.4	21.8	7.5	3150	20	1*400	0.32	900	270	610	680	-	1	1/2	7/8	41	3.6	
ACMT145A4.6	7.0	9.0	33.6	11.4	4000	26	1*450	0.57	1000	335	610	780	-	1	1/2	7/8	60	4.8	
ACMT145B4.6	8.6	10.5	41.5	14.5	4500	26	1*450	0.57	1050	335	710	830	-	1	1/2	7/8	69	5.4	
ACMT150A4.6	10.0	12.3	45.7	15.4	5400	28	1*500	0.64	1100	350	710	880	-	1	1/2	1 1/8	73	6.0	
ACMT245A4.6	16.5	20.0	75.2	24.5	8600	26	2*450	1.14	1650	335	710	1430	700	730	1	1/2	1 1/8	118	9.0
ACMT250A4.6	19.8	24.0	91.0	29.4	10800	28	2*500	1.28	1950	350	710	1830	900	930	1	5/8	1 3/8	136	10.8
ACMT250B4.6	24.2	29.3	118.2	33.3	10000	28	2*500	1.28	2450	400	710	2230	1100	1130	1 1/4	7/8	1 3/8	150	10.8
ACMT345A4.6	27.6	34.5	147.8	47.1	12300	28	3*450	1.71	2450	385	710	2230	733	764	1 1/4	7/8	1 5/8	201	12.0
ACMT350A4.6	33.4	41.4	168.6	52.4	14400	28	3*500	1.92	2700	400	710	2480	817	846	1 1/4	1 1/8	1 5/8	220	13.2
ACMT450A4.6	43.5	54.2	201.5	64.1	21000	28	4*500	2.56	2650	400	860	2430	600	630	1 1/4	1 1/8	2 1/8	267	13.2
ACMT450B4.6	50.3	61.5	230.9	73.3	20000	28	4*500	2.56	3000	400	860	2780	687	719	1 1/4	1 1/8	2 1/8	294	15.0

MEDIUM Temperature Unit Coolers

Fin spacing 4.6 mm - Tube 1/2"

Model	Capacity [kw]		Coil		Air circulation				Dimensions						Connections		Defrost Heaters kw		
	Nominal DTI=6K DTI=10K	sc3 DTI=7K	Surface m ²	Internal Volume dm ³	Air Flow m ³ /h	Air Throw m	Fans		Length mm	Width mm	High mm	D			Inlet In (Ø)	Outlet In (Ø)		Weight kg	
							n°	Ø(mm)				Motors Kw(230v)	D1 mm	D2 mm					ØD In
ACMT135A5	4.0	5.0	20.4	4.1	2100	16	1*350	0.2	800	321	526	580	-	1	1/2	7/8	38	2.7	
ACMT140A5	5.2	6.3	24.1	4.8	2500	20	1*400	0.32	900	336	526	680	-	1	1/2	7/8	44	3.6	
ACMT145A5	6.7	8.2	33.3	6.5	4300	26	1*450	0.57	1000	351	609	780	-	1	1/2	7/8	57	4.8	
ACMT145B5	9.0	11.0	43.0	8.0	4800	26	1*450	0.57	1050	351	692	830	-	1	1/2	7/8	68	5.4	
ACMT150A5	9.6	12.0	44.1	8.5	5700	28	1*500	0.64	1100	366	692	880	-	1	1/2	1 1/8	72	6.0	
ACMT245A5	15.4	19.0	72.6	13.3	9000	26	2*450	1.14	1650	351	692	1430	700	730	1	1/2	1 1/8	115	9.0

LOW Temperature Unit Coolers

Fin spacing 7 mm - Tube 5/8"

Model	Capacity [kw]		Coil		Air circulation			Dimensions					Connections		Defrost Heaters kw				
	Nominal	sc3 DTI=10K	Surface m ²	Internal Volume dm ³	Air Throw m	Fans		Length mm	Width mm	High mm	D mm	D1 mm	D2 mm	ØD In		Inlet In (Ø)	Outlet In (Ø)	Weight kg	
						n°x(mm)	Motors Kw(230V)												
ACLT135A7	2.0	2.5	1.7	15.0	3.8	16	1*350	0.2	800	305	560	580	-	1	1/2	7/8	35	2.7	
ACLT140A7	2.1	2.7	1.8	15.0	3.8	20	1*400	0.32	800	320	560	580	-	1	1/2	7/8	38	2.7	
ACLT145A7	2.7	3.5	2.3	19.0	4.7	26	1*450	0.57	900	335	610	680	-	1	1/2	7/8	48	3.0	
ACLT148B7	3.3	4.4	2.9	23.0	5.4	26	1*450	0.57	1000	335	610	780	-	1	1/2	7/8	51	3.6	
ACLT235A7	3.8	5.0	3.3	29.0	7.4	16	2*350	0.4	1250	305	610	1030	500	530	1	1/2	1 1/8	54	5.4
ACLT240A7	5.8	7.5	5.0	40.0	9.2	20	2*400	0.64	1650	320	610	1530	750	780	1	1/2	1 1/8	76	6.3
ACLT250A7	7.6	9.9	6.6	50.0	11.0	28	2*500	1.62	1650	350	710	1530	750	780	1 1/4	1/2	1 3/8	102	7.2
ACLT250B7	9.6	12.5	8.3	74.2	16.5	28	2*500	1.62	1650	450	710	1530	750	780	1 1/4	5/8	1 3/8	122	10.8
ACLT250C7	11.7	15.3	10.2	90.5	19.6	28	2*500	1.62	1950	450	710	1730	850	880	1 1/4	7/8	1 5/8	136	14.4
ACLT350A7	15.5	20.3	13.5	116.5	25.2	28	3*500	2.46	2450	450	710	2230	1100	1130	1 1/4	7/8	2 1/8	179	18.0
ACLT350B7	18.8	24.5	16.2	136.0	29.6	28	3*500	2.46	2800	450	710	2580	1275	1305	1 1/4	7/8	2 1/8	184	19.8
ACLT450A7	22.0	28.7	19.1	167.0	34.6	28	4*500	3.28	2950	450	710	2730	900	930	1 1/4	7/8	2 1/8	187	22.5

LOW Temperature Unit Coolers

Fin spacing 7 mm - Tube 1/2"

Model	Capacity [kw]		Coil		Air circulation			Dimensions					Connections		Defrost Heaters kw				
	Nominal	sc3 DTI=10K	Surface m ²	Internal Volume dm ³	Air Throw m	Fans		Length mm	Width mm	High mm	D mm	D1 mm	D2 mm	ØD In		Inlet In (Ø)	Outlet In (Ø)	Weight kg	
						n°x(mm)	Motors Kw(230V)												
ACLT135A7.5	2.0	2.5	1.7	12.0	3.3	16	1*350	0.2	800	249	610	580	-	1	1/2	7/8	34	2.7	
ACLT140A7.5	2.1	2.7	1.8	12.0	3.3	20	1*400	0.32	800	264	610	580	-	1	1/2	7/8	36	2.7	
ACLT145A7.5	2.7	3.4	2.3	18.0	5.0	26	1*450	0.57	800	351	610	580	-	1	1/2	7/8	50	3.0	
ACLT135B7.5	3.3	4.4	2.9	21.0	5.7	26	1*450	0.57	850	351	610	680	-	1	1/2	7/8	56	3.6	
ACLT235A7.5	3.9	5.0	3.3	26.0	7.6	16	2*350	0.4	1150	321	610	930	450	480	1	1/2	1 1/8	59	5.4
ACLT240A7.5	5.8	7.5	5.0	38.0	10.0	20	2*400	0.64	1450	336	610	1230	600	630	1	1/2	1 1/8	78	6.3

DIMENSIONS :

MODEL	Pmin (mm)
ACLT	600
ACMT	650
ACHT	650
ACGT	600
ACQT	600

