

Unit Coolers

MUC-LUC



1 kW

13,7 kW



EUROVENT
CERTIFIED PERFORMANCE



CERTIFY ALL
DX AIR COOLERS

FRIGA-BOHN



www.friga-bohn.com

MUC-LUC

MUC-LUC cubic unit coolers are suitable for chilling or low temperature storage applications. 48 basic models with capacities ranging from 1 to 13,7 kW.

NOMENCLATURE

MUC 320 R

OPTIONAL
FEATURES

Model

See "OPTIONAL FEATURES"

DESCRIPTION

• APPROVAL

The MUC-LUC unit cooler line is EUROVENT approved. The ratings indicated are certified compliant to European standard EN328.

• CASING

Robust and attractive casing made of white enamelled steel, which enables easy cleaning of the unit.

• DRAIN PAN

Drain pan with rounded corners eliminating retention zones in which pathogenic germs may develop and guaranteeing total safety by the absence of sharp edges and corners.

• VENTILATION

MUC-LUC range is fitted with life lubricated, propeller motorfans, factory wired:

- Ø 300 mm: standard type, 230 V/1/ 50-60 Hz *, enclosed frame motor, class B, overload protector included.

Fan guards are in conformity with safety regulations, fitted with air stream straighteners thus ensuring a long air throw.

- Ø 400 and 450 mm: standard type, 230-400 V/3/ 50-60 Hz *, enclosed frame motor with drain holes, IP54, class F, including overload protector for field wiring.

Fans Ø 450 mm fitted with plastic guards, fans Ø 400 mm fitted with plastic coated steel wire guards. Guard design conform to safety regulations.

• ACCESSIBILITY

Side panels and drain pan easily removed, facilitating a full access to all unit components (coil, motorfans, defrost heaters, connections...).

• HIGH PERFORMANCE HEAT EXCHANGER

The highly efficient and compact MUC-LUC range finned coils are designed with corrugated surface aluminium fins (fin spacing 4.23 or 6.35 mm) and grooved internal structure copper tubes.

The refrigerant distributors are nozzle type (nozzle factory fitted).

• DEFROST

Tubular electric heaters are inserted in slots both on the front and rear coil faces. No lateral space is required for heater removing, except for MUC-R and MUC-L, equipped of kit E1K (see § OPTIONAL FEATURES). One of these heaters is located in the drain pan. Heaters are wired in our works, to a terminal block located in a sealed junction box.

- LUC 155 E, 210 E, 295 E and 150 C, 205 C models are factory coupled for 230 V/1 supply.

- LUC 350 E to 1030 E and 290 C to 1025 C models are factory coupled for 230-400 V/3 supply.

Defrost water is collected in the drain pan then drained through a large drain fitting (Ø 1" G).

* See "OPTIONAL FEATURES"

OPTIONAL FEATURES

- Defrost: **2TH** TH 5709L: defrost termination and fan delay thermostat with single-pole, reversing switch at +12 °C (±3 °C) and +2 °C (±3 °C).
THS 5708L: single-pole thermostat for overheating safety at +24 °C (±3°C).
Recommended with electric defrost.
HG1 Hot gas (LUC) (coil: hot gas, drain pan: electrical heaters).
- Kit : **E1K** Electrical defrost MUC-R and MUC-L: heaters located in sleeves (required lateral space for fitting).
- Motorfans: Special fans for 60 Hz application.
- Other options: Please consult us.



MUC ... R 4,23 mm

Models	MUC ... R	145	200	285	320	420	520	620	640	660	670	780	960		
R404A DT1 = 8 K SC2 (1)	Nominal capacity Q_{0m} kW	1,85	2,31	3,48	3,83	4,94	5,89	7,17	8,23	9,56	10,89	12,01	13,67		
Surface	m ²	5,5	8,7	10	13,4	18,2	21,4	25,8	40,2	48,7	48,7	32,3	38,6		
Circuit vol.	dm ³	1,1	1,8	1,9	2,6	3,5	4,0	4,8	6,9	8,3	8,3	6,0	7,2		
Fan 1500 r.p.m.	Air flow	m ³ /h	1246	1239	2336	2076	2562	3252	3696	3264	3486	4168	7895		
	Air throw	m	12	12	12	12	12	12	12	12	12	28	45		
	No x Ø mm		1 x 300	1 x 300	2 x 300	2 x 300	2 x 300	3 x 300	3 x 300	3 x 300	3 x 300	4 x 300	2 x 400	2 x 450	
	230V/1/50Hz	Total	W A	145 0,65	145 0,65	290 1,30	290 1,30	290 1,30	435 1,95	435 1,95	435 1,95	435 1,95	580 2,60		
400V/3/50Hz		W max A max (2)										2 x 360 2 x 1,0	2 x 360 2 x 1,0		
	No		3	3	3	3	3	3	3	3	3	3	3/6		
Electric defrost E1K (3)		Total	W	420	630	780	960	1320	1560	1860	2550	3150	3150	2340	1740/3480
	230V/1/50Hz	Total	A	1,8	2,8	3,4	4,2	5,8	6,8	8,1					
	400V/3/50Hz	Total	A								3,7	4,6	4,6	3,4	2,5/5,0
Net weight	kg	17	19	23	28	33	44	45	58	70	72	65	75		

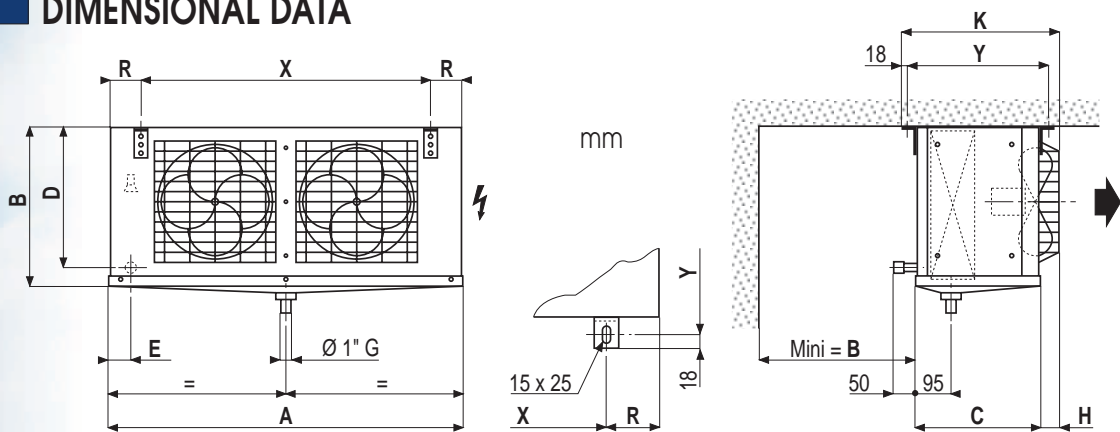
(1) See pages "APPENDICES".

(2) Setting of overload protections.

For room temperatures 't_i' other than +20 °C, multiply the given amperage by the ratio 293/(273 + 't_i') so as to obtain the approximate amperage after the room pull down.

(3) Electric defrost option.

DIMENSIONAL DATA



Models	MUC ... R	145	200	285	320	420	520	620	640	660	670	780	960
A		560	560	966	966	1220	1347	1650	1990	2340	2340	1650	1650
B		400	464	400	400	400	464	400	400	400	400	495	590
C		365	365	365	365	365	365	365	365	365	365	482	482
D		355	419	355	355	355	419	352	350	350	350	447	543
E	mm	42	39	89	89	89	89	110	110	110	110	110	110
H		53	53	53	53	53	53	53	53	53	53	68	78
K		456	456	456	456	456	456	456	456	456	456	596	606
R		72	72	122	122	122	122	147	147	147	147	147	147
X		416	416	722	722	976	976	1356	1686	2036	2036	1356	1356
Y		412	412	412	412	412	412	412	412	412	412	536	536
Inlet	Ø (1)	D 1/2"	D 1/2"	D 1/2"	D 1/2"	D 1/2"	D 1/2"	D 1/2"	D 1/2"	D 7/8"	D 7/8"	D 7/8"	D 1 1/8"
Outlet	Ø ODF (2)	1/2"	1/2"	5/8"	5/8"	3/4"	3/4"	7/8"	7/8"	7/8"	7/8"	1 1/8"	1 3/8"

(1) Liquid distributor: male to be brazed

(2) ODF: female sweat type connection



MUC ... L 6,35 mm

Models	MUC ... L	140	195	280	315	415	515	615	635	655	665	775	955	
R404A DT1 = 8 K SC2 (1)	Nominal capacity Q_{0m} kW	1,70	2,07	3,17	3,46	4,52	5,49	6,42	6,89	7,41	9,00	10,61	12,20	
	Surface m^2	5,17	7,54	9,33	11,66	15,98	18,64	22,43	27,80	33,70	33,70	28,04	33,65	
Circuit vol.	dm^3	1,5	2,3	2,5	3,3	4,4	5,0	6,0	6,9	8,4	8,4	7,5	9,0	
	Air flow m^3/h	1217	1239	2267	2075	2561	3250	3694	3435	3624	4436	7093	7893	
Fan	Air throw m	12	12	12	12	12	12	12	12	12	12	28	45	
	No x \varnothing mm	1 x 300	1 x 300	2 x 300	2 x 300	2 x 300	3 x 300	3 x 300	3 x 300	3 x 300	4 x 300	2 x 400	2 x 450	
1500 r.p.m.	230V/1/50Hz	Total	W	145	145	290	290	290	435	435	435	435	580	
			A	0,65	0,65	1,30	1,30	1,30	1,95	1,95	1,95	1,95	2,60	
	400V/3/50Hz	W max A max (2)										2 x 360	2 x 360	
													2 x 1,0	2 x 1,0
	No		3	3	3	3	3	3	3	3	3	3	3/6	
		Electric defrost	Total	W	420	630	780	960	1320	1560	1860	2550	3150	3150
E1K (3)	230V/1/50Hz	Total	A	1,8	2,8	3,4	4,2	5,8	6,8	8,1				
	400V/3/50Hz	Total	A								3,7	4,6	4,6	3,4
Net weight	kg	17	19	23	28	33	44	45	58	70	72	65	75	

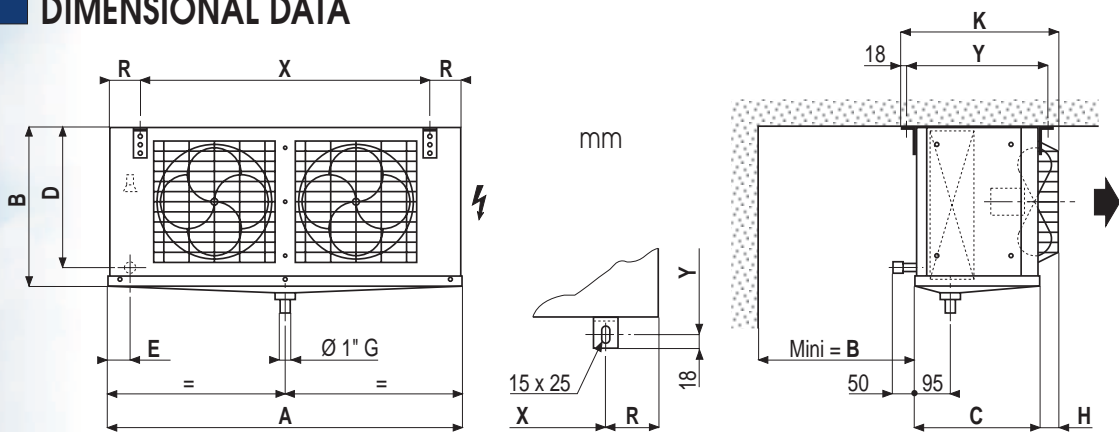
(1) See pages "APPENDICES".

(2) Setting of overload protections.

For room temperatures 't_i' other than +20 °C, multiply the given amperage by the ratio 293/(273 + 't_i') so as to obtain the approximate amperage after the room pull down.

(3) Electric defrost option.

DIMENSIONAL DATA



Models	MUC ... L	140	195	280	315	415	515	615	635	655	665	775	955
A		560	560	966	966	1220	1347	1650	1990	2340	2340	1650	1650
B		400	464	400	400	400	464	400	400	400	400	495	590
C		365	365	365	365	365	365	365	365	365	365	482	482
D		355	419	355	355	355	419	352	350	350	350	447	543
E	mm	42	39	89	89	89	89	110	110	110	110	110	110
H		53	53	53	53	53	53	53	53	53	53	68	78
K		456	456	456	456	456	456	456	456	456	456	596	606
R		72	72	122	122	122	122	147	147	147	147	147	147
X		416	416	722	722	976	976	1356	1686	2036	2036	1356	1356
Y		412	412	412	412	412	412	412	412	412	412	536	536
Inlet	\varnothing (1)	D 1/2"	D 1/2"	D 1/2"	D 1/2"	D 1/2"	D 1/2"	D 1/2"	D 1/2"	D 1/2"	D 7/8"	D 7/8"	D 1 1/8"
Outlet	\varnothing ODF (2)	1/2"	1/2"	5/8"	5/8"	3/4"	3/4"	7/8"	7/8"	7/8"	7/8"	1 1/8"	1 3/8"

(1) Liquid distributor: male to be brazed

(2) ODF: female sweat type connection



LUC ... E 4,23 mm

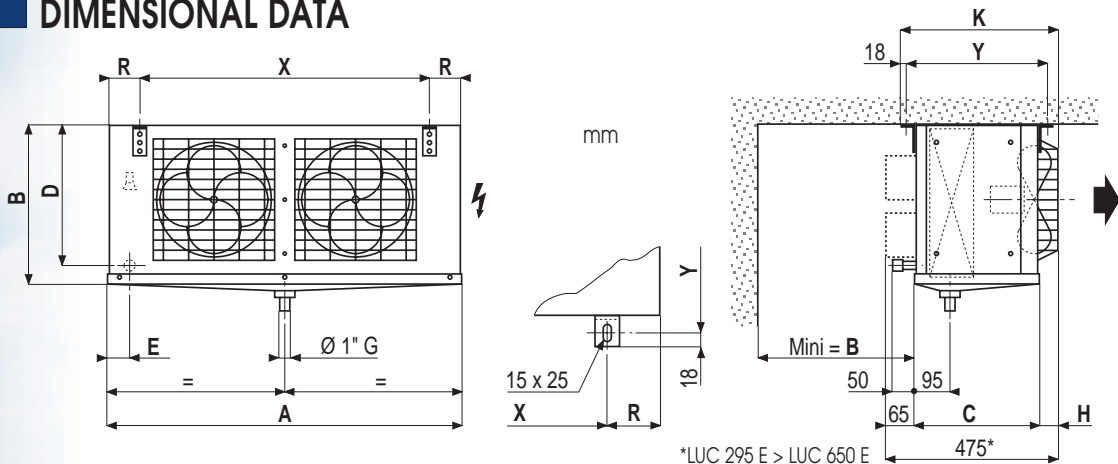
Models	LUC ... E	155	210	295	350	440	550	650	700	710	720	840	1030	
R404A DT1 = 7 K SC3 (1)	Nominal capacity Q_{0m} kW	1,42	1,84	2,69	3,03	3,96	4,86	5,68	6,92	7,51	8,47	9,24	10,60	
	Nominal capacity Q_{0m} kW	1,10	1,44	2,04	2,37	3,12	3,82	4,48	5,73	6,22	6,94	7,26	8,35	
Surface	m ²	5,5	8,7	10	13,4	18,2	21,4	25,8	40,2	48,7	48,7	32,3	38,6	
Circuit vol.	dm ³	1,1	1,8	1,9	2,6	3,5	4,0	4,8	6,9	8,4	8,4	6,0	7,2	
Air flow	m ³ /h	1246	1239	2336	2076	2562	3252	3696	3264	3486	4168	7095	7895	
	m	12	12	12	12	12	12	12	12	12	12	28	45	
Fan	No x Ø mm	1 x 300	1 x 300	2 x 300	2 x 300	2 x 300	3 x 300	3 x 300	3 x 300	3 x 300	4 x 300	2 x 400	2 x 450	
	230V/1/50Hz	Total	W A	145 0,65	145 0,65	290 1,30	290 1,30	290 1,30	435 1,95	435 1,95	435 1,95	435 1,95	580 2,60	
1500 r.p.m.	400V/3/50Hz	W max A max (2)										2 x 360 2 x 1,0	2 x 360 2 x 1,0	
	No Coil Drain pan		1	2	3	5	5	5	5	5	5	5	8	
Electric defrost	Total	W	1300	2150	2000	3000	3600	3600	5640	6900	8400	8400	5640	8460
	230V/1/50Hz	Total	A	5,7	9,4	8,7								
	400V/3/50Hz	Total	A				4,4	5,2	5,2	8,2	9,9	12,1	12,1	8,2
Net weight	kg	17	19	23	28	33	44	45	59	71	73	65	75	

(1) See pages "APPENDICES".

(2) Setting of overload protections.

For room temperatures 't_i' other than +20 °C, multiply the given amperage by the ratio 293/(273 + 't_i') so as to obtain the approximate amperage after the room pull down.

DIMENSIONAL DATA



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A		560	560	966	966	1220	1347	1650	1990	2340	2340	1650	1650
B		400	464	400	400	400	464	400	400	400	400	495	590
C		365	365	365	365	365	365	365	365	365	365	482	482
D		355	419	355	355	355	419	352	350	350	350	447	543
E	mm	42	39	89	89	89	89	110	110	110	110	110	110
H		53	53	53	53	53	53	53	53	53	53	68	78
K		456	456	456	456	456	456	456	456	456	456	596	606
R		72	72	122	122	122	122	147	147	147	147	147	147
X		416	416	722	722	976	976	1356	1686	2036	2036	1356	1356
Y		412	412	412	412	412	412	412	412	412	412	536	536
Inlet	Ø (1)	D 1/2"	D 1/2"	D 1/2"	D 1/2"	D 1/2"	D 1/2"	D 1/2"	D 7/8"	D 7/8"	D 7/8"	D 7/8"	D 1 1/8"
Outlet	Ø ODF (2)	1/2"	1/2"	5/8"	5/8"	3/4"	3/4"	7/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 3/8"

(1) Liquid distributor: male to be brazed

(2) ODF: female sweat type connection





LUC ... C 6,35 mm

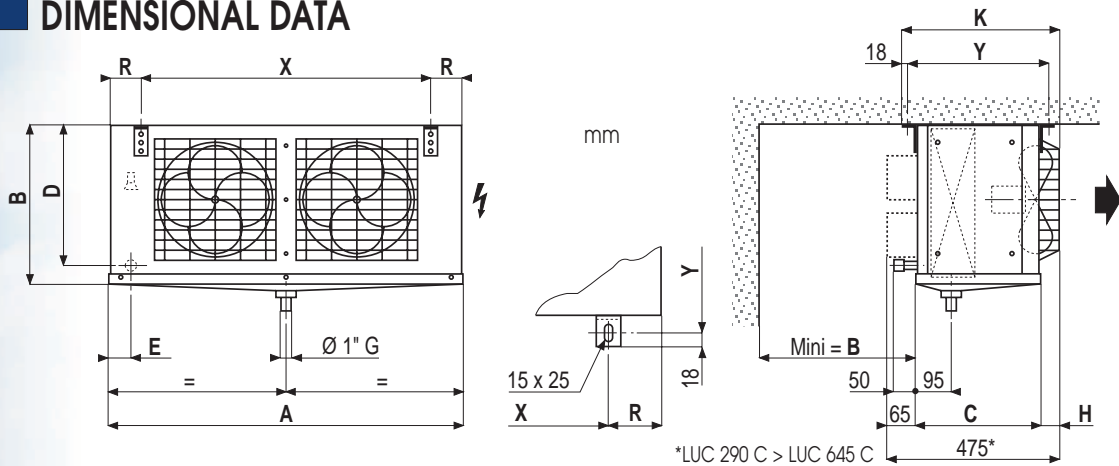
Models	LUC ... C	150	205	290	345	435	545	645	695	705	715	835	1025	
R404A DT1 = 7 K SC3 (1)	Nominal capacity Q_{0m} kW	1,30	1,67	2,48	2,78	3,58	4,39	5,17	5,68	6,21	7,08	8,38	9,64	
	Nominal capacity Q_{0m} kW	1,03	1,31	1,96	2,20	2,83	3,48	4,11	4,76	5,18	5,89	6,61	7,62	
Surface	m ²	5,17	7,54	9,33	11,66	15,98	18,64	22,43	27,80	33,70	33,70	28,04	33,65	
Circuit vol.	dm ³	1,5	2,3	2,5	3,3	4,4	5,0	6,0	6,9	8,4	8,4	7,5	9,0	
Fan	Air flow	m ³ /h	1217	1239	2267	2075	2561	3250	3694	3435	3624	4436	7093	
	Air throw	m	12	12	12	12	12	12	12	12	12	28	45	
1500 r.p.m.	No x Ø mm	1 x 300	1 x 300	2 x 300	2 x 300	2 x 300	3 x 300	3 x 300	3 x 300	3 x 300	4 x 300	2 x 400	2 x 450	
	230V/1/50Hz	Total W A	145 0,65	145 0,65	290 1,30	290 1,30	290 1,30	435 1,95	435 1,95	435 1,95	435 1,95	580 2,60		
400V/3/50Hz	W max A max (2)											2 x 360 2 x 1,0	2 x 360 2 x 1,0	
No	Coil	1	1	2	2	5	5	5	5	5	5	5	8	
	Drain pan													
Electric defrost	Total W A	2150 5,7	2150 9,4	3000	3000	3600	3600	5640	6900	8400	8400	5640	8460	
	230V/1/50Hz	Total W A			4,4	4,4	5,2	5,2	8,2	9,9	12,1	12,1	8,2	12,2
	400V/3/50Hz	Total W A												
Net weight	kg	17	19	23	28	33	44	45	59	71	73	65	75	

(1) See pages "APPENDICES".

(2) Setting of overload protections.

For room temperatures 't_i' other than +20 °C, multiply the given amperage by the ratio 293/(273 + 't_i') so as to obtain the approximate amperage after the room pull down.

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B		400	464	400	400	400	464	400	400	400	400	495	590
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E	mm	42	39	89	89	89	89	110	110	110	110	110	110
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X		416	416	722	722	976	976	1356	1686	2036	2036	1356	1356
Y		412	412	412	412	412	412	412	412	412	412	536	536
Inlet	Ø (1)	D 1/2"	D 1/2"	D 1/2"	D 1/2"	D 1/2"	D 1/2"	D 1/2"	D 7/8"	D 7/8"	D 7/8"	D 7/8"	D 1 1/8"
Outlet	Ø ODF (2)	1/2"	1/2"	5/8"	5/8"	3/4"	3/4"	7/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 3/8"

(1) Liquid distributor: male to be brazed

(2) ODF: female sweat type connection

