



Roof Unit Cooler



Roof unit cooler indicated for limited spaces cold rooms, commercial refrigerators, refrigerated display cases, reach-in exhibitors and cellar air conditioning



309 to 3.791 Kcal/h
359 to 4.408 W

INTENSE

Roof Unit Cooler

Benefits

- Standard Electronic Fans
- Standardized Electrical assembly(NBR5410)
- Greater range of capacities
- 2 levels of protection against harsh environments
- Plug & Play concept: ease of installation and operation
- Longer fan motor life
- Higher thermal and energy efficiency
- Adaptable to all refrigerants
- Quick response electrical defrost system
- More compact: better use of space

Standard Version

- 3/8" copper tubes (external diameter)
- 5,5mm in between aluminum fins spacing
- 8" motor fan
- Flat plain aluminum cabinet
- Air defrost

Optionals

- Copper tubes and aluminum fins (Cu/Al) for CO2
- Aluminum fins and tubes (Al/Al) with circuits for R717 (NH3) or glycol solutions
- Copper tubes and aluminum fins (Cu/Al) with circuits for cold water and glycol solutions
- Cabinet in epoxy electrostatic white painting
- Anti-corrosion treatment for harsh environments
- Stainless steel cabinet
- Hot gas defrost
- Electric defrost

Applications

Ideal for cold rooms with limited spaces and low height, vertical displays with one or more glass doors, commercial chambers for food preservation, hospital chambers for blood banks and medicines

Capacities AC and electronic motor fans

Ft		Kcal/h								
		Evaporation Temperatures								
Model		-31°F -35°C	-22°F -30°C	-13°F -25°C	-4°F -20°C	5°F -15°C	14°F -10°C	23°F -5°C	32°F 0°C	41°F 5°C
0048	1	309	344	370	388	404	413	421	428	433
0093	2	598	667	717	752	782	800	816	828	838
0140	3	898	1001	1076	1127	1173	1200	1224	1267	1328
0186	4	1197	1334	1435	1503	1564	1600	1632	1690	1771
0233	5	1496	1668	1793	1879	1955	2000	2040	2112	2213
0279	6	1795	2001	2152	2255	2346	2400	2448	2535	2656
0326	7	2095	2335	2511	2631	2737	2800	2856	2957	3099
0372	8	2394	2668	2870	3007	3127	3200	3264	3380	3541

Ft		Watts								
		Evaporation Temperatures								
Model		-31°F -35°C	-22°F -30°C	-13°F -25°C	-4°F -20°C	5°F -15°C	14°F -10°C	23°F -5°C	32°F 0°C	41°F 5°C
0048	1	359	400	431	451	469	480	490	497	503
0093	2	696	776	834	874	909	930	949	963	975
0140	3	1044	1163	1251	1311	1364	1395	1423	1474	1544
0186	4	1392	1551	1668	1748	1818	1860	1898	1965	2059
0233	5	1740	1939	2085	2185	2273	2326	2372	2456	2574
0279	6	2088	2327	2502	2622	2727	2791	2847	2947	3088
0326	7	2436	2715	2920	3059	3182	3256	3321	3439	3603
0372	8	2784	3102	3337	3496	3637	3721	3796	3930	4118

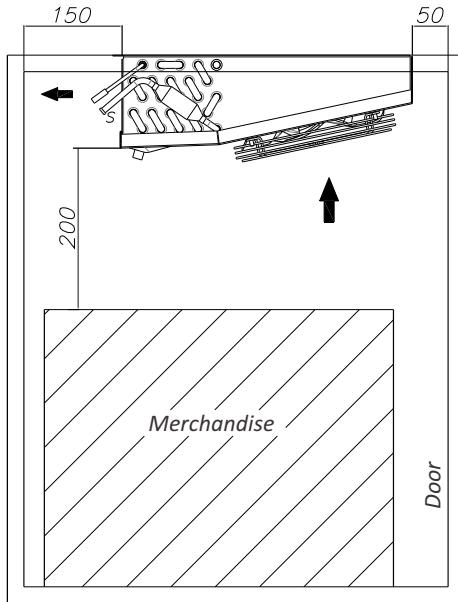
Capacities (DT=10,8°F / DT1=6°K)

Characteristics

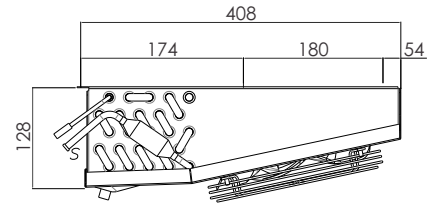
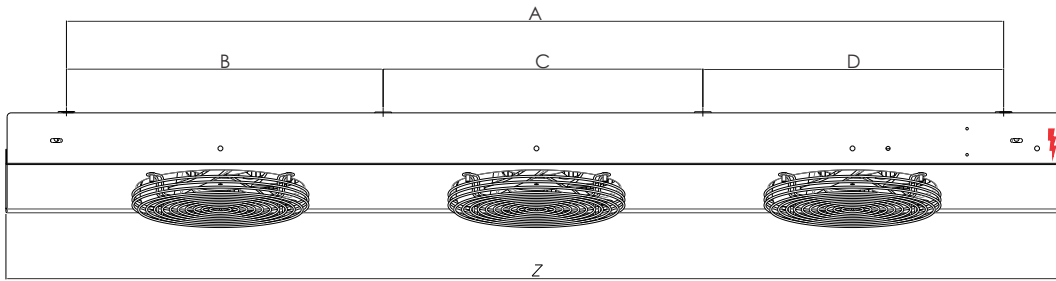
Ft		S	R	V	C	N	Motor fans Ø 210 mm				Electric Resistances		
		m ²	m ² /m ²	dm ³	Refr. Kg	dB (A) (1m)	m ³ / h	W	1~ 110V A	1~ 220V A	W	1~ 110V A	1~ 220V A
0048	1	2,03	5,7	0,85	0,26	50	360	42	0,26	0,4	500	4,5	2,3
0093	2	3,25	7,6	1,03	0,31	53	560	84	0,52	0,8	1000	9,1	4,5
0140	3	4,88	7,6	1,48	0,44	55	840	126	0,78	1,2	1500	13,6	6,8
0186	4	6,50	7,6	1,94	0,58	56	1120	168	1,04	1,6	2000	18,2	9,1
0233	5	8,13	7,6	2,40	0,72	57	1400	210	1,30	2,0	2500	22,7	11,4
0279	6	9,75	7,6	2,85	0,86	60	1680	252	1,56	2,4	3000	27,3	13,6
0326	7	11,38	7,6	3,30	0,99	61	1960	294	1,82	2,8	3500	31,8	15,9
0372	8	13,00	7,6	3,76	1,13	62	2240	336	2,08	3,2	4000	36,4	18,2

Subtitles
 S= Total heat exchange surface area R= Secondary heat exchange surface ratio/ primary heat exchange surface V = Internal volume C = approximate charge of refrigerant N = Noise level obtained in open field conditions at a distance of 1 meter (The actual noise level depends on factors such as: chamber construction, type of load and number of devices installed). m³/h = Air flow measured the density of 1.2 M³/Kg d = unbalanced consumption.
 Air range by 4m with final speed of 0,25m/s. The final speed of 0,25m/s is obtained in open field conditions. The air range can't be considered an absolutely value due to many factors that influence this distance.
 We recommend the use of this model for cold rooms with ceiling height up to 3 meters.

Air Range



Dimensional



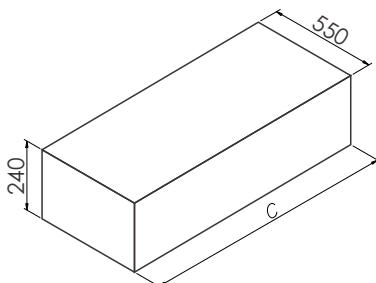
	Icon	mm					Ø	
		A	B	C	D	Z	E	S
0048	1	385	-	-	-	543	3/16"	5/16"
0093	2	785	-	-	-	943	3/8"	3/8"
0140	3	1185	-	-	-	1343	3/8"	3/8"
0186	4	1585	800	-	785	1743	1/2"	1/2"
0233	5	1985	800	400	785	2143	1/2"	1/2"
0279	6	2385	1200	-	1185	2543	1/2"	1/2"
0326	7	2785	800	1200	785	2943	5/8"	5/8"
0372	8	3185	1200	800	1185	3343	5/8"	5/8"

Connector resistant to temperature variations, vibration and shock. Spring-loaded technology reduces the time for electrical installations without the need for special tools.

Packing

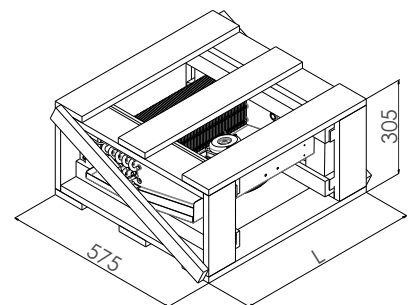
Cardboard box

Ft	Icon	Quota	Gross Weight
		C	
		mm	Kg
0048	1	580	6,4
0093	2	980	12,9

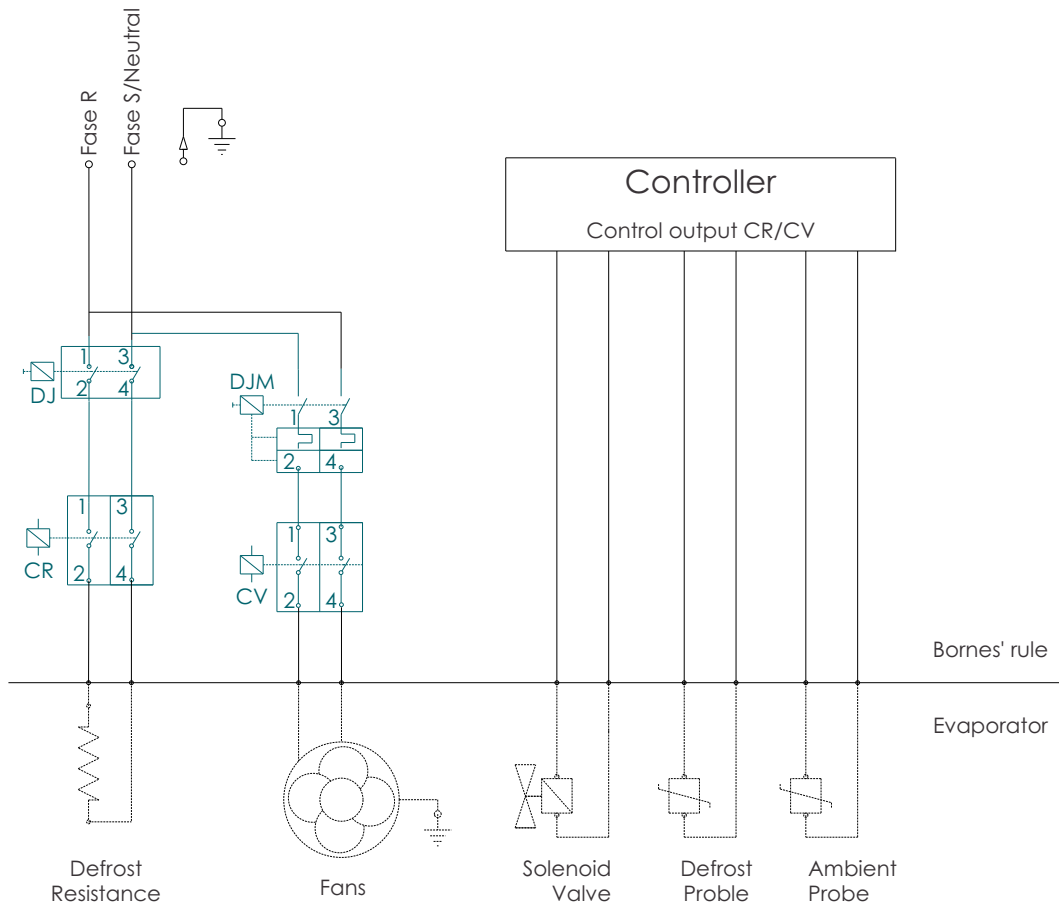


Wooden Crate

Ft	Icon	Quota	Gross Weight
		L	
		mm	Kg
0140	3	1430	19,3
0186	4	1830	26,5
0233	5	2230	33,6
0279	6	2630	39,3
0326	7	3030	46,5
0372	8	3430	52,9



Model	Description	Available Options
FTA	Ceiling Air Forced Evaporator	FTA • Model Ft
Z	Spacing between fins	Z • 5,5 / 11mm
E	Defrost	A • By Air E • Electric on core and tray
0048	Model	FTA • 0048 to 0372
C	Tubes	B • Copper for Co2 C • Copper
A	Conexões e bandeja	A • Direct Expansion B • 2 Collectors C • 2 Collectors with Flanges D • 2 Collectors with Nipples
0	Accessories	00 • Without accessories 10 • 1 + 2 + 3 01 • Expansion valve 11 • 1 + 2 02 • Solenoid valve 12 • 2 + 3 03 • Drain Resistance 13 • 1 + 3
A	Finishing	A • Aluminum Cabinet B • Aluminum cabinet and fins N1 protection C • Aluminum cabinet and fins N2 protection D • Aluminium cabinet protected E • Al. cabinet protected and fins N1 protection F • Al. cabinet protected and fins N2 protection M • Stainless steel cabinet N • Stainless steel cabinet and fins N1 protection O • Stainless steel cabinet and fins N2 protection
MEC	Motor	MAC • Motor fan AC MEC • Motor fan EC
G	Voltage and Frequency	B • Motor = 127V/1F/50Hz A • Motor = 127V/1F/60Hz N • Motor = 230V/1F/50Hz G • Motor = 230V/1F/60Hz
1	Packing	1 • Crate 2 • Boc 4 • Cardboard



Subtitles

Subtitles:

- CR = Resistances Contactor
- CV = Fans Contactor
- CJ = Circuit Breaker
- DJM = Motor Circuit Breaker

Attention

- When dimensioning installation components, refer to the catalog data table
- In case of change factory power, contact Mipal engineering
- The safety thermostat must be connected in series with the contactor coil and the controller heating
- Always use the ground wire

Mipal Indústria de Evaporadores Ltda., (Mipal), warrants its product for workmanship and material for a period of three years from time of purchase, for the first buyer (user). In no circumstances that period will be longer than forty two months from manufacture time, there included the legal period, taken that the product has not been misused, abused, correctly installed and that its operational condition fits Mipal's technical recommendations.

This guaranty prevails if the equipment is to be operated in full conformity with Mipal's installation and/or maintenance instructions. Warranty rules out equipment repair or installation by others or outside Mipal's premises (except for jobs executed by Mipal itself) or inappropriately operated or subjected to misuse, negligence, imprudence or lack of expertise.

Mipal, at its exclusive judgment, will repair or otherwise replace at no charge to the original buyer a product or any product component which was or has been impaired due to faulty manufacture, project or inadequate choice of material, except those due to regular operation. And this will prevail if none of the below described actions may have been discarded:

- Product application according to original prescriptions;
- Every installation instruction and product prescribed operative condition has been abided to;
- Installation components and piping system kept in pace with the latest state of the art as to HVAC concepts;
- Every brazed junction has been carried out along with nitrogen or inert gas flow inside the pipework or product mounting.

In every case modern industrial installation, maintenance and operation practices shall have been effectively employed by certified technicians, engineers, designers and every personnel involved in the job.

Regular product, or its moving parts, repair, maintenance and installation correction will not be covered by this guaranty, and neither will it cover damages incurred during transport or movement of the product once out of Mipal's hands.

Third party components and parts such as: valves, motors, resistors and electrical accessories that integrate Mipal's products will be generally warranted by their respective suppliers or manufacturers usually for a year period in the case of mechanical parts or a semester for electrical, if that be the case.

Products guaranties will be suspended should there be any misuse or maltreat, electrical voltage fluctuation, aggressive environment, pressure in excess, accidental crash, mechanical damages (internal or external) due to irregular operation or installation or other inadequacies or even if simply operated out of Mipal's recommendations. Mipal will also waive guaranty in the case of defaced or removed product or part serial number.

And again, Mipal will not be deemed responsible for caused damages due to an unauthorized third party job our unauthorized job serviced on its products or even if not genuine parts have been mounted in the product.

If a product is to be sent for re-servicing, a document called: "call back authorization" must be issued by Mipal prior to its dispatch. Transport should be CIF Mipal, back and forth, totally on Client's expenses. Mipal will analyze the damage, or Client's complaint, and in the case that the fault stems from manufacture causes, the product will be repaired, or replaced, free from charge to the first buyer, except for transportation charges as stated above.

The problem report, must be sent by mail, phone or fax, sent to Mipal, not later than two days after the event has taken place and time must be granted to Mipal so that its support team may properly define the procedure that best sorts out the matter.

As pointed out above there must be a "call back authorization" document accompanying the cargo so that things will be readily attended by the factory.

Every cost involved in the repair or replacement of the product, such as freight, customs, exchange, will be at customer's expense.

Mipal will also not be held responsible for any cost incurred to remove, reinstall or whatever to have the product brought to any point which is made necessary.

After product reception and inspection, Mipal will at its discretion decide which steps to take in order to solve the situation, be it replacement or repair. At the time the product is ready for dispatch Mipal will advise the customer who from then on will provide for the return of the product to its premises at its own cost. This encompasses Mipal's warranty fulfillment.

In case of no inherent fault due to factory or any other cause described in the conditions of purchase, Mipal may send quotation for its repair or else ask the sender to retrieve the product at its expenses.

Mipal will not accept any responsibility regarding resultant consequences due to alteration on or repair of its product either by the purchaser or a third party, without previous Mipal's acknowledgement.

Mipal reserves its right to inspect the product during the guarantee period in case there have been hints of equipment irregular operation or installation not in accordance with the state of the art. Also in the case of alleged faulty operation or misunderstanding over the correct expectation over the equipment result, Mipal will intercede over the matter.

Disclaimer

Every Mipal's intervention on a purchaser's complaint of any equipment or part supplied will encompass exclusively either replacement or repair of the supplied item, FOB Cabreúva, SP, Brazil, at its own convenience. In no circumstance will Mipal be liable to any further claim on losses which may be deemed to have arisen from causes linked with its products or parts. These losses may be taken as, but not limited to, because unpredictable by Mipal: refrigerant, stored goods, sales, unfulfilled orders, profits, incomes, and all items that represent marginal financial losses, each or all of them might be conceived as stemming directly, or indirectly, from the fault occurred in Mipal's product or part thereof, or even from its alleged inefficacy.

Since 1956 Mipal are writing the history of refrigeration. With a complete line of condensers, evaporators and fins for the most varied commercial and industrial applications, stands out in the market by the high quality and efficiency in our products.

That's why it's growing in large scale it's presence in other countries.

This is the result of dedication for innovation and attention to our customers. That's why the Mipal brand it's too strong, becoming a synonym of technology and reliability.

INTENSE

Mipal developed the Intense system with electronic motor fans and the concept of intense thermal exchange, improving the efficiency in finned equipments. This represents one more innovation from Mipal, aligned with world trends for maximum performance and low energy consumption.



Warranty Term



Intense Line