

# Low Profile Frozen



# Forced air evaporator



1.030 a 12.043 Kcal/h 1.198 a 14.003 W

january - 2023



1.030 a 12.043 Kcal/h 1.198 a 14.003 W

# Forced air evaporator low profile -

# Frozen products



# For cameras up to 4m in height

# Standard Version

- Copper tubes with a ½" outer diameter
- 8mm aluminum fin spacing
- Smooth, flat aluminum tray
- Smooth, flat aluminum cabinet
- Electric defrost
- Electronic motor fan, 254mm x 135W
- Pre-installed drain heater

**Applications** 



# **Benefits**

- Higher thermal and energy efficiency
- Longer lifespan of the motor-fan assembly
- Compatible with all refrigerants
- Greater capacity range
- Two options for electronic motors: fixed or adjustable speed
- Tilting tray
- Removal of heating elements from the back of the equipment
- Standardized electrical assemblies (NBR5410)
- Fast-response electric defrost system
- Air rectifier grille (Patent Pending)
- Built-in protection thermostat
- Plug & Play concept: Easy installation and operation
- Two levels of protection against harsh environments

# Optional

Copper tubes and aluminum fins (Cu/Al) for CO2

Aluminum tubes and fins (Al/Al) with circuits for R717 (NH3) or glycol solutions

Copper tubes and aluminum fins (Cu/Al) with circuits for chilled water and glycol solutions

Cabinet and tray with epoxy electrostatic paint in white color

Electric defrost

Hot gas in the evaporator and resistance in the tray

Stainless steel cabinet

Double tray with intermediate insulation

Exclusive protection against aggressive environments









# Dimensional





Ma	dal	R			Dime	ensional	(mm)		Weight (Kg)	
Model		<u> </u>	А	В	С	D	Z	ØS	Net	
00	14	1	388	-	-	-	673	1/2"	8	
00	33	2	751	-	-		1036	5/8"	17,7	
00	52	3	1114		-	-	1399	7/8"	25,4	
00	68	4	1477	726		751	1762	1 1/8"	33,7	
00	84	5	1840	726	363	751	2125	1 1/8"	40	
010	04	6	2203	1089	-	1114	2488	1 1/8"	47,6	
012	22	7	2566	726	1089	751	2851	1 1/4"	45	
014	40	8	2929	1089	726	1114	3214	1 1/4"	47,2	



Packaging



Madal		(mm)	Weight (Kg)		
MODEI		L	Gross		
0014	1	704	9,2		
0033	2	1067	19,1		
0052	3	1430	27,2		
0068	4	1793	35,4		
0084	5	2156	42		
0104	6	2519	39,2		
0122	7	2882	47		
0140	8	3245	50		

# **Capabilities • AC Motor Fans**

	ł.		Kc	al/h			Watts						
					Evap	temperatures							
Model	-31 ºF	-22 ºF	-13 ºF	-4 ºF	5 ºF	14 ºF	-31 ºF	-22 ºF	-13 ºF	-4 ºF	5 ºF	14 ºF	
Model	-35 ºF	-30 ºC	-25 ºC	-20 ºC	-15 ºC	-10 ºC	-35 ºF	-30 ºC	-25 ºC	-20 ºC	-15 ºC	-10 ºC	
0014	1030	1039	1050	1067	1094	1194	1198	1208	1221	1241	1272	1388	
0033	1999	2154	2285	2375	2570	2864	2324	2505	2657	2762	2988	3330	
0052	3415	3561	3685	3796	4030	4456	3971	4141	4285	4414	4686	5181	
0068	4155	4449	4695	4858	5265	5860	4831	5173	5459	5649	6122	6814	
0084	5526	5794	6004	6158	6473	7198	6426	6737	6981	7160	7527	8370	
0104	6934	7215	7447	7653	8124	8982	8063	8390	8659	8899	9447	10444	
0122	7836	8278	8598	8857	9463	10515	9112	9626	9998	10299	11003	12227	
0140	9225	9644	9971	10211	10844	12043	10727	11214	11594	11873	12609	14003	

#### Capabilities (DT=10,8°F / DT1=6°K)

(\*) Same capacities for 50Hz and 60Hz. R-22 capacity. Dt1: Difference between the air inlet temperature at the evaporator and the refrigerant evaporation temperature.

°K=Kelvin degrees °F=Fahrenheit degrees The air inlet temperature at the evaporator is considered the chamber temperature approximately.

 Refrigerant gas correction factor

 R22
 R134A
 R404A
 R407C
 R410A

 1
 1,01
 0,983
 0,98
 0,95

## **Expansion valves**

Model		Modelo da Válvula	Orifício		
0014	1	Tx2	2		
0033	2	Tx2	2		
0052	3	TEX2	3		
0068	4	TEX2	3		
0084	5	TEX2	5		
0104	6	TEX2	5		
0122	7	TEX2	6		
0140	8	TEX2	6		

# Electrical characteristics • AC fan motor

			M	lotor AC		Elec	tronic - 1:	speed	E	lectronic	- 2 spee	ds	Ele	ctric Resis	tors
Model	<b>8</b>	Flow Rate	Noise	1~2	220V	Ruído	1~	220V	V1	V2	1~	220V	147	1~ 220V	3~ 220V
Model		m³/h	dBA	W	A	dBA	W	А	dBA	dBA	W	A	vv	A	A
0014	1	1 x 1000	44,3	120	1,6	44,3	24	0,2	44,3	50,3	32	0,24	2 x 600	5,5	5,5d
0033	2	2 x 1000	47,5	240	3,2	47,3	48	0,4	47,3	53,3	64	0,48	2 x 1200	10,9	10,9d
0052	3	3 x 1000	49,5	360	4,8	49,3	72	0,6	49,3	55,3	96	0,72	3 x 1200	16,4	9,5
0068	4	4 x 1000	50,5	480	6,4	50,3	96	0,8	50,3	56,3	128	0,96	3 x 1600	21,8	12,6
0084	5	5 x 1000	51,5	600	8	51,5	120	1	51,5	57,5	160	1,20	3 x 2000	27,3	15,8
0104	6	6 x 1000	52,5	720	9,6	52,5	144	1,2	52,5	58,5	192	1,20	3 x 2400	32,7	18,9
0122	7	7 x 1000	53,5	840	11,2	53,5	168	1,4	53,5	59,5	224	1,44	3 x 2800	38,2	22,1
0140	8	8 x 1000	54,5	960	12,8	54,5	192	1,6	54,5	60,5	256	1,44	3 x 3200	43,6	25,2

Connectors resistant to temperature variations, vibration, and shock. Spring connection technology reduces electrical installation time without the need for special tools. Standardized electrical components

#### Subtitles

V = Internal volume C = Approximate refrigerant charge m<sup>3</sup>/h = Airflow measured at a density of 1.2 m<sup>3</sup>/kg d = Unbalanced consumption. Noise level obtained under 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 installed devices.) Air range of 12m with a final velocity of 0.25 m/s. The final velocity of 0.25 m/s is achieved under open field conditions. The air range cannot be considered as an absolute value due to many factors that influence this distance. We recommend the use of this model for cold storage chambers with a ceiling height of up to 4 meters.

Arrow of Air



## 12 meters

Rectifier grid of air flow (Patented) Range of Air with a final velocity of 0.25 m/s. The final velocity is achieved under open field conditions. The air range cannot be considered as an absolute value, due to many factors that influence this distance

How to Buy =

Model	Description	Available Options						
MIP		Low Profile Forced Air Evaporator						
Н	Spacing between fins	H•8mm						
E	Defrosting	<ul> <li>A • The air</li> <li>E • Electric in the core and tray</li> <li>F • Air in the core and electric on the tray</li> <li>G • Gas in the core and tray</li> <li>H • Gas in the core and electric on the tray</li> </ul>						
0015	Model	0014 a 0140						
С	Tube	A • Aluminum B • Copper for CO2 C • Copper						
A	Connections and tray	<ul> <li>A • Direct Expansion</li> <li>B • 2 Collectors</li> <li>C • 2 Collectors with Flanges</li> <li>D • 2 Collectors with Nipples</li> <li>E • 2 Threaded Collectors (Aluminum)</li> <li>F • Direct Expansion and Double Insulated Tray</li> <li>G • 2 Collectors and Double Insulated Tray</li> <li>H • 2 Collectors with Flanges and Double Insulated Tray</li> <li>I • 2 Collectors with Nipples and Double Insulated Tray</li> <li>J • 2 Threaded Collectors and Double Insulated Tray</li> </ul>						
00	Accessories	00 • Without accessories       10 • 1 + 2 + 3         01 • Expansion Valve       11 • 1 + 2         02 • Solenoid Valve       12 • 2 + 3         03 • Drain Heater       13 • 1 + 3						
A	Finishing	<ul> <li>A • Aluminum cabinet</li> <li>B • Aluminum cabinet with N1 protection on fins</li> <li>C • Aluminum cabinet with N2 protection on fins</li> <li>D • Protected aluminum cabinet</li> <li>E • Protected aluminum cabinet with N1 protection on fins</li> <li>F • Protected aluminum cabinet with N2 protection on fins</li> <li>M • Stainless steel cabinet</li> <li>N • Stainless steel cabinet with N1 protection on fins</li> <li>O • Stainless steel cabinet with N2 protection on fins</li> </ul>						
MIQ	Motor	MAC • AC 70/16W Motor Fan. MIQ • IQ Electronic Single-speed Motor Fan. ESM • ESM Electronic Two-speed Motor Fan. ECM • ECM Electronic Single-speed Motor Fan. ECQ • ECQ Electronic Three-speed Motor Fan.						
G	Voltage and Frequency	G • 230V/1F/50Hz N • 230V/1F/60Hz						
3	Packaging	3 • EPS + PVC Film 4 • Cardboard Box (Export						

## Electrical Schematics

# Defrost 1F 220V 50/60Hz • Fan 1F 220V 50/60Hz (1 and 2 motor fans)



# Defrost 3F 220V 50/60Hz • Fan 1F 220V 50/60Hz (3 to 8 motor fans)



- CR Resistance Contactor
- CV Fan Contactor
- CJ Circuit Breaker
- DJM Motor Circuit Breaker

#### Attention

- When sizing installation components, consult the catalog data table
- To change factory power supply, please contact Mipal engineering.
- The safety thermostat must be connected in series with the contactor coil.
- Always use the ground wire.



















- www mipal.com.br
- O mipal\_evaporadores
- **f** mipaloficial
- 🕞 mipal



- **\$** +55 11 4409-0515
- 11 97617-5467

Av. Engenheiro Afonso Botti, 240 Pinhal • Cabreúva • 13315-000



**Technology and Trust** 

A Mipal reserva-se o direito de alterar os dados apresentados neste catálogo sem prévio aviso. As fotos apresentadas neste catálogo são meramente ilustrativas