

## MEGA-FIN™ AMBIENT AIR VAPORIZERS FOR CARBON DIOXIDE · PROPANE · LIQUEFIED GASES

Thermax MEGA-FIN™ Ambient Vaporizers have been designed especially for CARBON DIOXIDE, PROPANE and other high boiling point compressed liquefied gases. The units are fully tested by Thermax with a performance-rating guarantee. In addition to external surface enhancement, Thermax internal PRESS-TROL regulator automatically adjusts vaporizing pressure capacity. Traditional electrical vaporization can be both reduced or eliminated to reduce both costs and service problems.

**MEGA-FIN™ packs more surface area** into each foot of the new 16 fin extrusion and yet provides a generous gap for frost growth, allowing 1-5 days continuous operation between defrost in freezing climates.

These units require **NO EXTERNAL POWER** or other utilities.

*Set it and Forget it.*

### APPLICATIONS:

Since CARBON DIOXIDE is usually stored as a liquid at 250 to 300 PSIG with corresponding boiling range of between -30°F and 0°F, extracting the heat of vaporization from the ambient air requires that the ambient air be warmer than the CO<sub>2</sub>. The warmer the air, the higher the vaporizer performance ratings. The colder the air, the lower the performance. The annual air temperature chart (below) illustrates the annual performance variations. To select the performance factor, determine air design temperature and use performance table or performance factor (50°F air is used for a factor of one (1). For propane and other gas applications, see Rating Table 3.9R. For CO<sub>2</sub> pressure regulation to increase capacity at low air design temperatures, see datasheet 3.9A.

AIR TEMP.	PERF. FACTOR
80°F	1.6
70°F	1.4
60°F	1.25
50°F	1
40°F	.8
30°F	.6
20°F	.2
10°F	.1

CITY	MEAN AIR TEMP	MIN. AIR TEMP
Houston, TX	70°F	25°F
Jacksonville, FL	70°F	25°F
Ft. Worth, TX	65°F	15°F
Atlanta, GA	65°F	15°F
Raleigh, NC	60°F	10°F
Oklahoma City, OK	60°F	10°F
Kansas City, KS	55°F	0°F
Chicago, IL	50°F	-5°F
Pittsburgh, PA	50°F	-10°F
Green Bay, MI	45°F	-15°F
Duluth, MN	40°F	-25°F

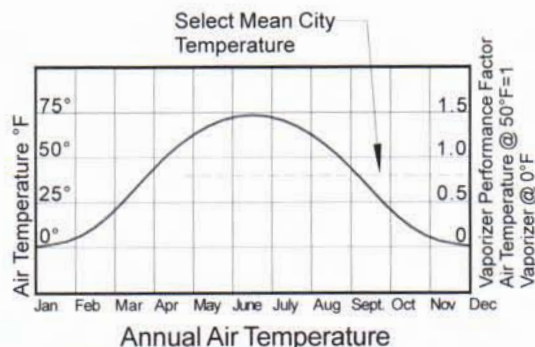
\*Contact Thermax for the annual air temperature for your city



MEGA-FIN AMBIENT AIR VAPORIZER MODEL MF1615-HF (785#/HR CO<sub>2</sub> SERVICE)

MODULE	Module 8-24 hour rating selected air temperatures			Standard Conn. (MNPT)	Dimensions	DRY WT. LBS.
	RATED CO <sub>2</sub> LB./HR. 8-24					
	75° F	50° F	25° F			
MF128A-HF	378	250	110	3/4	29 x 39 x 120	680
MF1610A-HF	588	392	168	3/4	39 x 39 x 144	1045
MF2010A-HF	733	490	210	1	40 x 49 x 144	1705
MF2412A-HF	1128	755	322	1	40 x 58 x 168	2045
MF3612A-HF	1680	1132	488	1 1/2	58 x 58 x 168	2915
MF4812A-HF	2268	1513	645	2	58 x 77 x 168	3870
MF6412A-HF	3025	2015	862	2	77 x 77 x 168	5115
MF6418A-HF	4538	3023	1295	2	77 x 77 x 246	5620
MF7218A-HF	5105	3400	1455	2	77 x 86 x 246	8515
MF7225A-HF	7000	4723	2025	2	77 x 86 x 330	11800

Other models available— contact Thermax, std. Pressure drops



**Thermax Inc.** 695 Dartmouth St., Dartmouth, MA 02748

508-999-1231 Telephone  
 508-999-1232 +Extension#  
 508-993-4036 Fax  
 Email: ds39@thermaxinc.com  
 Web: www.thermaxinc.com

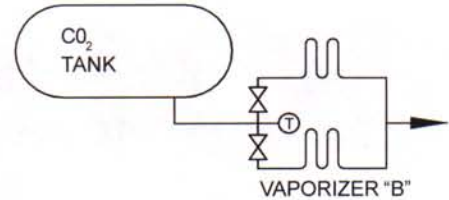
VAPORIZERS HEAT EXCHANGERS THERMAL SYSTEMS CRYOGENIC EQUIPMENT

## APPLICATION #1- Continuous service

For applications where annual climatic temperature variations are favorable for MEGA-FIN™ CO<sub>2</sub> air vaporizers and when gas is in use continuous 24 hours/day, 7 days per week, a Thermax switching air vaporizer system is employed. The switching system allows one unit to defrost while the other unit is vaporizing on line. Site freeze period is determined to establish proper performance factor. Call Thermax for freeze period assistance.

### EXAMPLE:

Miami FL 75°F mean temperature, design minimum: 50°F.  
Install 2 MF4812AHF and 2 valve/Timer S430, Installed cost \$32,000  
Power saved 50 kW @ 8½ cents/kW-hr: \$37,230  
Payback: 10 months



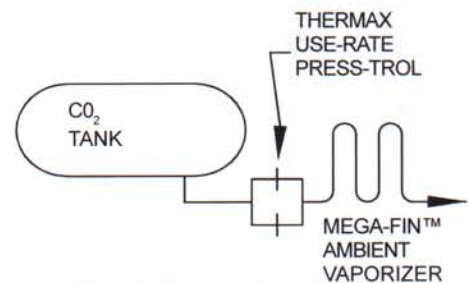
# 1 Switching Mega-Fin™ ambient vaporizers for continuous service

## APPLICATION #2- Intermittent operation

Stand alone ambient vaporization intermittent operation. Moderate climate or indoors. Where ambient air temperatures remain high enough throughout the year, (above +15°F) MEGA-FIN™ units can fully replace the existing electric vaporizers.

### EXAMPLE:

Performance Factor 40% for 25°F air  
Vaporizer cost (500 lb./HR) installed MF3612AHF \$11,000  
Power saved 16 hr/7 day week \$9,900 (@ 8½ cents kW-hr on 20 kW-hr elec. unit)  
Payback: 13.5 months



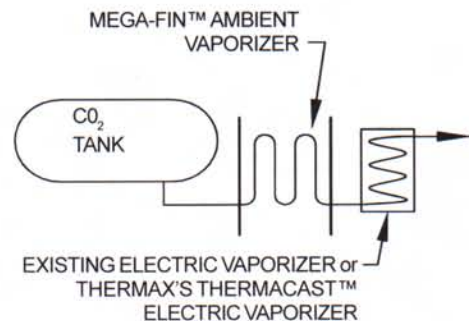
# 2 Stand alone Mega-Fin™ ambient vaporizers for intermittent service

## APPLICATION #3- Money saver

If the site has a temperature profile with a winter performance factor approaching zero, use a Thermax MEGA-FIN™ vaporizer, in conjunction with a traditional vaporizer such as Thermax WATT-BLOCK™ or Thermax THERMACAST™ electric vaporizers. The MEGA-FIN™ delivers CO<sub>2</sub> vaporization via the ambient air in warmer weather and partially at other times. The reduced power consumption provides a very attractive return on investment while still providing 100% electric vaporization backup and reducing service calls most of the year.

### EXAMPLE:

Chicago; 40°F mean temperature. 16 hour daily operation - 5 day week. Present electric vaporizer - 50 kW on 1250 lb./hr. (2,600,000 lb/year). Present power cost 8½ cents/kW-hr \$17,708. Install MEGA-FIN™ rated at 1,250 lb/hr @ 40°F to save about 6 months /50 kW power savings of \$8,855. MF4812AHF estimated installed cost \$15,000, Payback: 20 months.



# 3 Switching Mega-Fin™ ambient vaporizers for continuous service

Our 25 years of experience rating systems for the cryogenic user enables us to select the proper arrangement.

We also offer THERMACAST™ and new WATTBLOCK™ Electric Vaporizers/Trim Heaters for CO<sub>2</sub>, Propane and related liquid Gases.

All the tables shown here are intended as guides reflecting our experience on these models. Actual performance may vary. This product and/or data was designed and/or developed by Thermax Inc. and shall not be used in any way injurious to the interests of Thermax Inc.

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# THERMAX INC.

695 Dartmouth St., Dartmouth, MA 02748

VAPORIZERS, HEAT EXCHANGERS,  
THERMAL SYSTEMS, CRYOGENIC EQUIPMENT

508-999-1231 Telephone  
508-999-1232 +Extension#  
508-993-4036 Fax  
Email: ds39@thermaxinc.com  
Web: www.thermaxinc.com