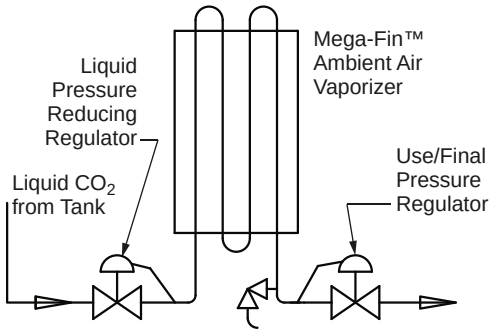
MEGA-FIN™

CO_2 AMBIENT AIR VAPORIZERS

Thermax
A Chart Industries Company

Product Datasheet **3.9A**



Suggested Configuration

Chart 1		
Customer Line Pressure	Vaporizer Pressure	Vaporizer Temperature
80 PSIG	90 PSIG	-50°F
100 PSIG	110 PSIG	-45°F
120 PSIG	130 PSIG	-40°F
140 PSIG	150 PSIG	-35°F
160 PSIG	170 PSIG	-25°F
200 PSIG	210 PSIG	-15°F
240 PSIG	250 PSIG	-10°F

Chart 2	
Performance Factor vs. Temperature. Air-Temperature Vaporizer	
Temp Differential ΔT°F	Performance Factor
90°	1.8
80°	1.6
70°	1.4
60°	1.25
50°	1
40°	0.8
30°	0.6
20°	0.2
10°	0.1

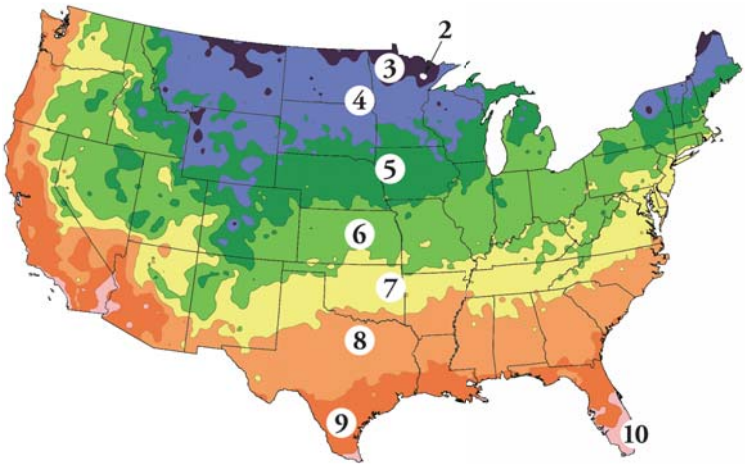
	Zone	Average Annual Low
	2	-50°F to -40°F
	3	-40°F to -30°F
	4	-30°F to -20°F
	5	-20°F to -10°F
	6	-10°F to 0°F
	7	0°F to 10°F
	8	10°F to 20°F
	9	20°F to 30°F
	10	30°F to 40°F

Thermax Mega-fin™ Ambient Air Vaporizers can now be used for Carbon Dioxide service at ambient air temperatures down to -35°F, now covering ALL the annual temperate zones of the USA and Europe.

Free heat from the air can cut vaporizer power costs to zero and provide paybacks from 6 months to one year, depending on location and use rate.

Making the Mega-fin™ selection is easy:

1. Determine the lowest customer use/line pressure and select vaporization temperature from Chart 1 (We have added 10 PSI to allow for system pressure drop.)
2. Select annual minimum temperature zone for vaporizer location from USA temperature zone map.
3. Determine air to vaporizer temperature difference by subtracting minimum air temperature from Step 2 from vaporization temperature from Step 1.
4. Select module-rating factor from Chart 2.
5. Divide customer peak demand/vaporizer capacity required by factor rating.
6. Select vaporizer module required (rating from table is precalculated with ΔT 50 at rating factor = 1).
7. For pressure regulator selection assistence contact Thermax, Inc.



Possible design codes, available upon request.

CHART
Innovation. Experience. Performance.

MEGA-FIN™

CO_2 AMBIENT AIR VAPORIZERS

Carbon Dioxide 1-2 Day Rating-Lb/Hr*												
	Vaporizer ΔT=Air Temperature (Chart2) Minus Vaporizing Temperature (Chart1)											
MODULE	ΔT°F	90	80	70	60	50	40	30	20	10	Std. Conn. NPT	Length x Width x Height
	Rating Factor	1.8	1.6	1.4	1.25	1	0.8	0.6	0.2	0.1		
MF128A-HF		450	400	350	312	250	200	150	50	25	3/4"	29x39x120
MF1610A-HF		727	628	550	490	393	315	235	78	40	3/4"	39x39x144
MF2010A-HF		883	785	685	613	490	393	295	100	50	1"	40x49x144
MF2415A-HF		1,360	1,205	1,056	945	755	605	453	150	75	1"	40x58x168
MF3612A-HF		2,035	1,813	1,585	1,415	1,133	905	680	225	113	1-1/2"	58x58x168
MF4812A-HF		2,723	2,420	2,118	1,890	1,513	1.210	906	303	150	2"	58x77x168
MF6412A-HF		3,628	3,225	2,820	2,520	2,015	1,610	1,210	403	203	2"	77x77x168
MF6420A-HF		5,440	4,835	4,233	3,778	3,023	2,418	1,813	605	303	2"	77x77x246
MF7220A-HF		6,120	5,440	4,763	4,250	3,400	2,720	2,040	680	343	2"	77x86x246
MF7225A-HF		8,500	7,555	6,110	5,903	4,723	3,783	2,833	945	473	2"	77x86x330

***For 2-5 day rating (50-150 hr. between defrost) use 2/3 rating shown. Note: SCFH X 0.115 = lb/hr**

Mega-Fin™
Ambient Air Vaporizer

We also offer Thermacast™ and side arm Electric Vaporizers/Trim heaters for CO_2, Propane and related liquid gases.

Note: MF-HF Units are all aluminum welded construction, manufactured to ASME-B31-B. Advise for 304 Stainless Steel Lined, Thermax MF-SS Modules units reduces ratings.

Application: Customer location: Kansas City, MO
Flow rate: 1,200 lbs/hr for 8 hr/day, 40 hr/week
Line pressure: 140 PSIG to process

Step 1: From Chart 1 at 140 PSIG the liquid regulator setting gives a vaporizer temperature of -35°F
Step 2: From temperature map, Kansas City, MO is in zone 6 and has the average annual low temperature of -5°F
Step 3: Subtract -35 from -5°F for a ΔT of 30°F
Step 4: From Chart 2, the module-rating factor is 0.6
Step 5: Divide use rate 1,200 lbs/hr by 0.6 for module rating of 2,000 at 1 factor for; ΔT 50 base rating, or omit this step and go directly to precalculated ΔT 30 column in table for 1,200 lbs/hr = MF6412A-HF at 1,210 lbs/hr
Step 6: Using base ΔT 50 column locate module base minimum 2,000, which is module MF6420AHF with a base of 2,015 lbs/hr
Step 7: Use liquid downstream press regulator to provide 150 PSIG in vaporizer
Step 8: Check local codes, install liquid breakthrough sensor/shut-off control to avoid over draw
Note: This selection covers operation up to 150 hours between defrost. For longer-term operation, call Thermax for assistance and/or 2-module auto switching kits.

Ask for Product Datasheet 3.9 for Thermax vaporizers capable of continuous operating cycles beyond 50-200 hours and for freeze zone switching systems. For Side-Arm vapor return to tank/ pressure build models see product datasheets 2.2 and 2.4.

Thermax
A Chart Industries Company
540 Hawthorn St. • Dartmouth, MA 02747 USA
+1 508 999 1231
w@thermaxinc.com
www.thermaxinc.com

P/N 21288409