



with RainCycle™

Keep your data center cool with free cooling.

CO₂ Computer Room Air Conditioner

Inspired by the natural cycle of water, our patented Rain Cycle economizer cycle uses the thermosiphon principle to recirculate CO₂ refrigerant in free cooling mode.



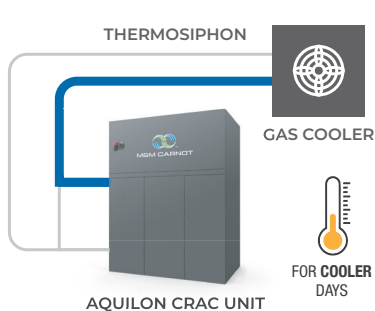
Design Features:

- Patented rain cycle economizer mode using thermosiphon standard on all units
- Less piping required compared to synthetic refrigerants
- Adiabatic condenser option available when required
- Available in up-flow, down-flow, and other configurations
- Readily available standard components

Benefits:

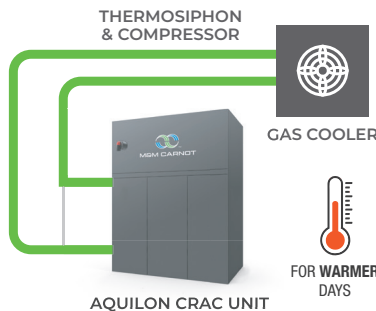
- Free cooling with CO₂ thermosiphon, removes need for recirculation pump
- Significant reduction in footprint than synthetic systems
- Less energy consumption during compression mode with CO₂
- Utilizes Future proof natural refrigerant against regulations with GWP-1
- CO₂ is Non-toxic & Non-flammable refrigerant
- Higher heat capacity compared to synthetics, requiring smaller components and providing higher efficiency
- Condenser height is not limited with CO₂, unlike synthetic solutions available when required

RainCycle™ Cooling Modes



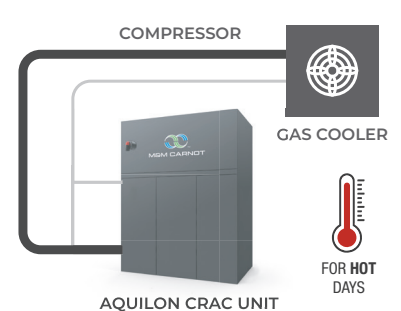
Mode A: RainCycle™ with Free-Cooling

- Ambient Temp of 53.6°F (12°C)
- Capacity of 70%
- Both circuits in thermosiphon free-cooling mode (No Compression)
- Total Energy Consumption 6.1kw



Mode B: Partial Compressor with Free-Cooling

- Ambient Temp of 64.4°F (18°C)
- Capacity of 70%
- One circuit in compressor in subcritical compression mode and one in thermosiphon free cooling mode
- Total Energy Consumption 15kw



Mode C: Full Compressor Transcritical

- Ambient Temp of 95°F (35°C)
- Capacity of 70%
- Full compression mode for warmer ambient temperatures
- Total Energy Consumption 30.3kw

Performance Per AQ30.

The natural solution.

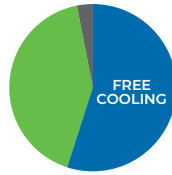


Regional Efficiency Examples:



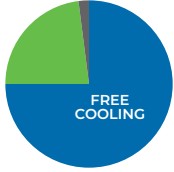
NEW YORK

60% FREE COOLING MODE
33% PARTIAL COMPRESSOR MODE
7% FULL COMPRESSOR MODE



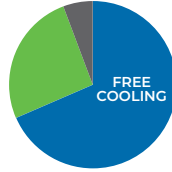
SAN FRANCISCO

55% FREE COOLING MODE
43% PARTIAL COMPRESSOR MODE
2% FULL COMPRESSOR MODE



MONTREAL

75% FREE COOLING MODE
23% PARTIAL COMPRESSOR MODE
2% FULL COMPRESSOR MODE



SEATTLE

69% FREE COOLING MODE
25% PARTIAL COMPRESSOR MODE
6% FULL COMPRESSOR MODE



TORONTO

74% FREE COOLING MODE
23% PARTIAL COMPRESSOR MODE
3% FULL COMPRESSOR MODE

Estimated hours based on historical temperature data.

Models:

	Model AQ15				Model AQ24			
	Weight Lbs.	Length (in)	Width (in)	Height (in)	Weight Lbs.	Length (in)	Width (in)	Height (in)
Aquilon CRAC	2500 (1135 kg)	71" (1794 mm)	39" (991 mm)	81" (2058 mm)	3500 (1590 kg)	97" (2454 mm)	39" (991 mm)	81" (2058 mm)
Gas Cooler	975 (445 kg)	95" (2391 mm)	52" (1321 mm)	75" (1888 mm)	2175 (990 kg)	157" (3970 mm)	53" (1342 mm)	74.5" (1893mm)

	Model AQ30				Model AQ48			
	Weight Lbs.	Length (in)	Width (in)	Height (in)	Weight Lbs.	Length (in)	Width (in)	Height (in)
Aquilon CRAC	4250 (1930 kg)	123" (3112 mm)	48" (1212 mm)	100" (2540 mm)	5500 (2500 kg)	144" (3658 mm)	48" (1207 mm)	100" (2540 mm)
Gas Cooler	1950 (890 kg)	95" (2391 mm)	104" (2642 mm)	75" (1888 mm)	4350 (1980 kg)	157" (3970 mm)	106" (2683 mm)	75" (1893mm)

* Model AQ78 now available! Contact below for specifications.



Associated Standards for CO₂ Refrigeration Systems:

- Construction per ASME B31.5 "Refrigeration Piping and Heat Transfer Components"
- Stainless Steel Tubing per ASTM A249 TP304
- Nitrogen Pressure Test per ASME B31.5 Edition 2019 Article 53.8
- Ability to meet Title 24 Requirements
- UL/CSA Approved

Contact us to learn how you can increase operational efficiency.

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