

## PRODUCT SHEET

# Geoclima

## Mag-Bearing ACC

Circlemiser air cooled chiller 1200–2500 kW

Data center cooling systems

With extended water side operating envelope, magnetic bearing compressor technology, extended surface area condensers and unique cascade flooded evaporator, Munters Geoclima TMA chillers offer best-in-class power and size options that are purpose designed for data center cooling.



### Standard features

- Turbocor magnetic bearing centrifugal oil free compressor with integrated variable speed drive
- Circular condenser design (more condenser surface area and more compact product footprint)
- Cascade flooded evaporator provides maximum energy efficiency
- Economizer brazed plate heat exchanger(s) for added efficiency optimization
- Refrigerant pump for low lift operation
- 65 kA SCCR electrical rating
- Controls power UPS with fast start
- BACnet IP/MSTP & Modbus



### Geoclima exclusive cylindrical condenser

- Heat exchange surface increased by 45% compared to v-bank condensers
- Allows for more compact chiller design (maximized kW heat rejection per square ft)
- Up to 15% improved kW/ton compared to traditional V-Bank mag-bearing chillers
- Up to 20% increased capacity compared to traditional V-Bank mag-bearing chillers of the same footprint
- Micro-channel condenser coils with epoxy coating standard

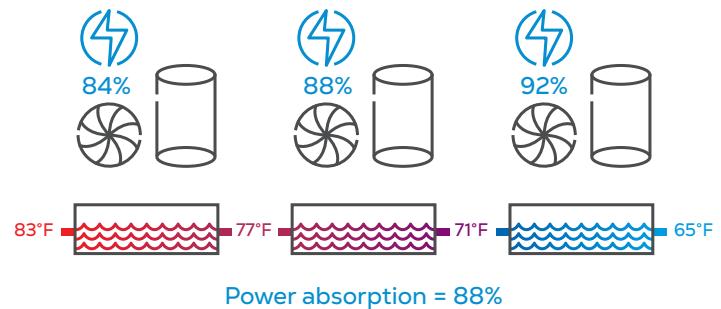




### Cascade flooded evaporator

- Multiple evaporator circuits enable compressors to operate at individual optimal evaporator temperatures
- Multiple circuits optimizes resilience
- Multiple evaporator configurations specifically designed for low, medium and higher water side delta T, up to 30°F without sacrificing flow turn down capability

Note: Not all evaporator configurations include the cascade benefit



Note: Power percentage relative to Geoclima V-Bank Turbocor chiller design without cascade evaporator

### Available options

- Various insulated acoustic compressor enclosure options
- Cold weather package including heated compressor enclosures, insulated and heat traced refrigerant suction lines and evaporator(s), and refrigerant migration isolation valve(s)
- Active or passive harmonic filter
- Integrated pump package w/VFD
- Electrofin coating (E-coat) on condenser coils for seacoast and other areas with corrosive ambient air potential
- Separate electrical feeds for controls, optional circulating pump, convenience outlet, heat trace, etc.
- Extreme high ambient package
- Supply to return bypass circulation pump with immersion heater and controls to ensure water internal to chiller remains above freezing when main circulation pump is off
- Dynamic noise suppression controls – schedule quieter operation as required



Insulated acoustic compressor enclosure example

# Geoclima TMA Circlemiser air cooled chiller 1200 – 2500 kW

## TMA Circlemiser chiller refrigerant options

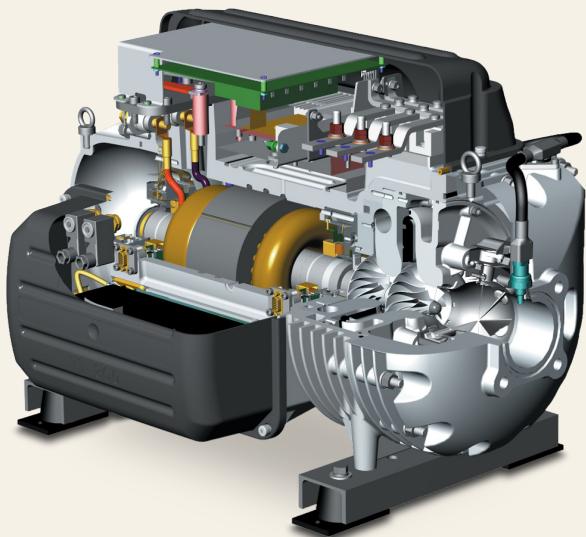
Refrigerant		GWP	Class	Compressor
R513A	Standard refrigerant offering best efficiency and size up to 125°F ambient rating	631	A1	
R515B	Refrigerant option for extreme ambient temperature	293	A1	
R1234ze	Special option	6	A2L	

## Turbocor key benefits

- No oil or associated management and concerns
- Unmatched energy efficiency
- Minimal maintenance
- No performance degradation
- Full digital control
- Compact design
- Very low starting current (5 amps)
- Ultra quiet (67 dB at 16 feet)

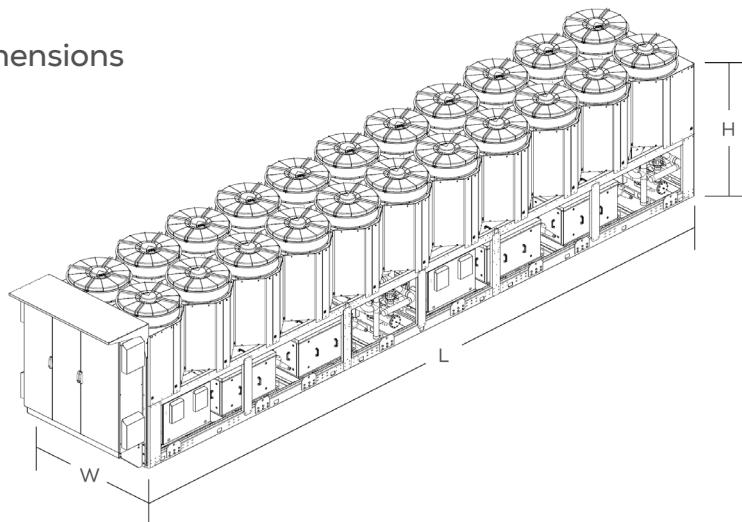
## 20+ years experience with Turbocor compressor technology for air cooled chillers

- First to market with R1234ze low GWP refrigerant in 2011
- Over 5,000 Turbocor compressors installed since 2003



# Geoclima TMA Circlemiser air cooled chiller 1200 - 2500 kW

## TMA CM chiller data superior power and dimensions



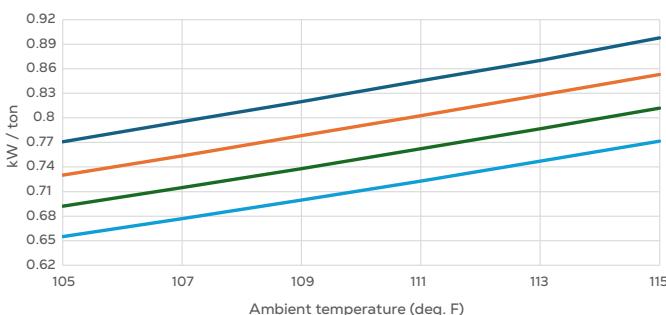
## Geoclima US chiller models

Geoclima model	500 Ton "Small"	500 Ton "Large"	600 Ton "Small"	600 Ton "Large"	600 Ton "High Ambient"
Geoclima model	TMA 3D1500B C18 13 1W	TMA 3D1800B C22 13 1W	TMA 4D2100B C22 13 1W	TMA 4D2100BC28 13 1W	TMA 4V1800B C28 15 1W
Refrigerant type	513A	513A	513A	513A	515B
Max ambient (°F)	125	125	125	125	135
Evaporator configurations	1 or 2 Pass	1 or 2 Pass	1 or 2 Pass (Note 2)	1 or 2 Pass (Note 2)	1 or 2 Pass (Note 2)
Turbocor compressor model / qty	TT450 / 3	TT450 / 3	TT450 / 4	TT450 / 4	TGS380 / 4
Number of fans	18	22	22	28	28
*Max capacity 105°F ambient (tons)	492	568	657	700	625
*Max capacity 122°F ambient (tons)	359	438	497	574	560
Dimension L (base frame; in.)	372	455	455	581	581
W (in.)	83	83	83	83	83
H (in.)	102	102	102	112	112
Weight (lbs.)	19,800	27,520	23,520	30,050	30,400

### Notes:

1. \* 500' elevation and 82-68°F water conditions (no glycol)
2. Models with even number of compressors available with unique evaporator configuration for 25-30°F delta T water conditions
3. Weight shown does not include all available features (integrated pump, compressor enclosures, etc.)

## kW / ton (Chiller providing 490 ton capacity at sea level)



### Facility water design envelope

- 83 - 65°F (490 tons is maximum chiller capacity at 115°F for this condition)
- 86 - 68°F
- 89 - 71°F
- 92 - 74°F

### Notes:

1. Data based on TMA 3D1800B C22 13 1W (22 Fan 1800 kW chiller)
2. Power for optional hydronic circulation pumps not included

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