



All-round
efficiency.



Unique design

From the ultra-efficient technology of Turbomiser comes **Circlemiser**, the new and most efficient series of air-cooled chillers available on the market.

The Circlemiser series is characterized by unbeatable performance, improving the already **high efficiency** of Turbomiser technology.

The technological innovation of Circlemiser lies in the design and development of special cylindrical condensers and the installation of cascade flooded evaporators.



Cylindrical condensers

The new Circlemiser series features microchannel condensers with a heat exchange surface increased by **45% compared to traditional condensers**, thanks to the special cylindrical configuration of the heat exchanger.

Geoclima's R&D Department designed this unique cylindrical layout, which allows for an increase of the heat exchanger's capacity while reducing both the condensing temperature and the approach temperature.

With the new Geoclima condenser and evaporator design, we have achieved performance improvements without altering the footprint of our air-cooled chiller range. Moreover, Circlemiser offers a **10% reduction in footprint compared to traditional air-cooled chillers**.



Cascade flooded evaporators

Circlemiser chillers are equipped with cascade flooded evaporators, which reduce the ΔT between the evaporation temperature and the fluid's outlet temperature.

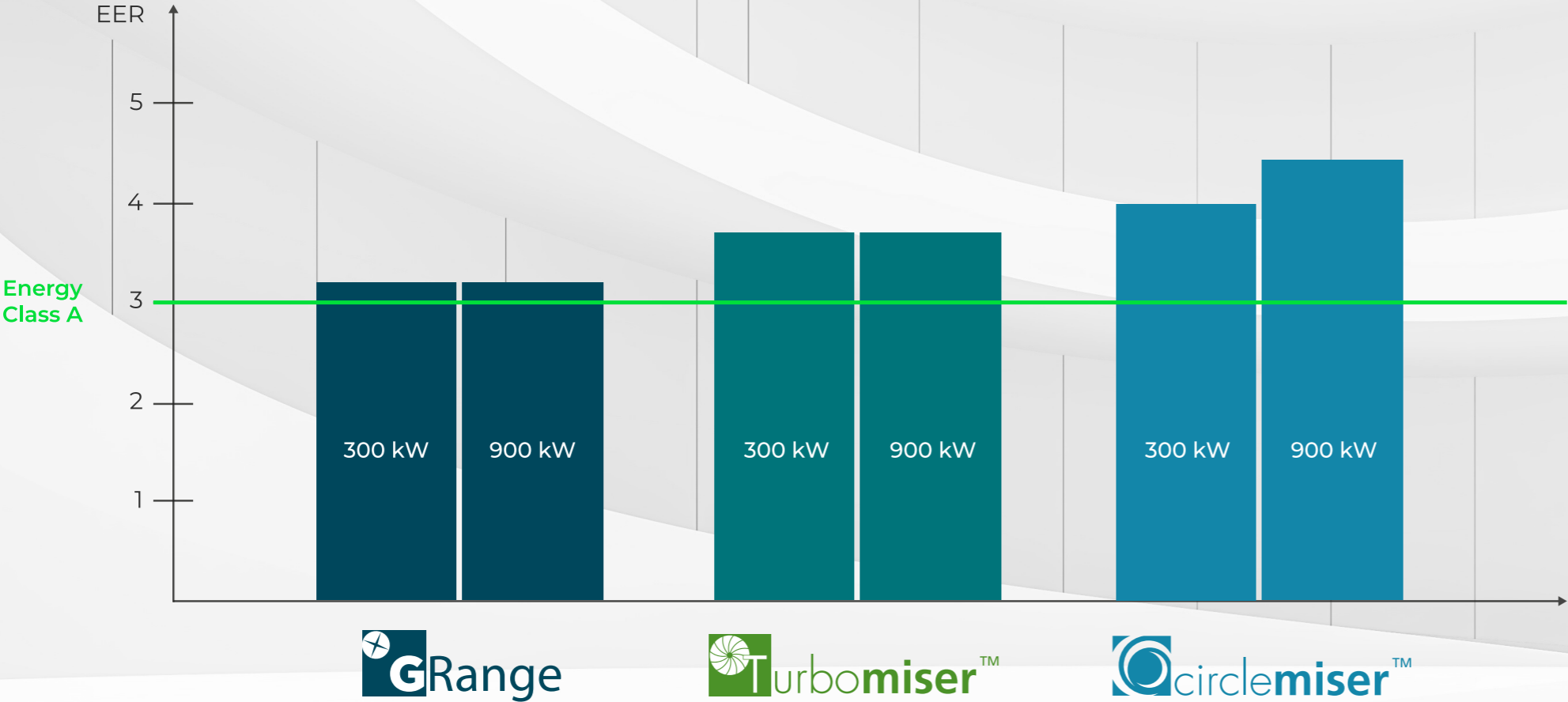
The cascade arrangement of the evaporators **increases the evaporation temperature while reducing energy consumption**. By using this type of evaporator, Geoclima has been able to further enhance efficiency across the Turbomiser air-cooled chiller range.

+15% of cooling efficiency

Comparing the Circlemiser with traditional air-cooled Turbomiser chillers under the same AHR/ EUROVENT conditions and size (with the same number and model of compressors, and the same capacity), Circlemiser records an increase in EER of up to 9.5% for single-compressor units and up to 15% for multi-compressor units, with the **highest achievable EER value of 4.35 kW/kW (14.85 Btu/Wh).**

*EER in accordance with ANSI/AHRI STANDARD 551/591 (SI) and ANSI/AHRI STANDARD 550/590 (I-P).

When comparing Circlemiser to Turbomiser with Evaporative System at a relative humidity of 50%, **the efficiency ensured by Circlemiser is equivalent to the efficiency achievable with the Evaporative System**, without the additional costs, installation conditions and maintenance requirements associated with water use in the Evaporative System. Therefore, Circlemiser represents a viable alternative to adiabatic units when an adiabatic configuration is not applicable.



The new Circlemiser series is available with **R515B, R513A, R134a**, and **HFO-R1234ze** refrigerants.

HFO

1234ze

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ODP

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GWP

		TMA 1J400A EC-ZE CM	TMA 3Z900B EC-ZE CM
PERFORMANCE			
Total cooling capacity	kW (RT)	422 (120)	879 (250)
E.E.R	W/W (Btu/Wh)	4.09 (13.96)	4.09 (13.96)
Total power input	kW	103.6	215.1
WORKING CONDITIONS			
Inlet water temperature	°C	12	12
Outlet water temperature	°C	7	7
Water flow rate	m³/h	72.52	151.0
Water pressure drop	kPa	45.2	58.2
Ambient temperature (DBT)	°C	35	35
Refrigerant	Type	HFO-R1234ze	HFO-R1234ze
Refrigerant circuits	n°	1	3
Refrigerant charge	kg	135	368
Nominal unit voltage	Ph/V/Hz	3/400/50	3/400/50
MAIN COMPONENTS			
Compressor	Type	Oil-free magnetic bearing	Oil-free magnetic bearing
Number of compressors	n°	1	3
Fan	Type	EC	EC
Fans diameter	mm	800	910
Number of fans	n°	8	18
Evaporator	Type	Flooded shell and tube	Flooded shell and tube
Number of evaporators	n°	1	3
DIMENSIONS			
Length	mm	4510	9750
Width	mm	2100	2100
Height	mm	2500	2500
Shipping/operating weight	kg	4200/4310	10075/10447

All units are equipped with the Web Monitoring System for remote control of parameters and remote troubleshooting.

HFO

1234ze

0

ODP

0

GWP

		TMA 3J1100B EC-ZE CM	TMA 4J1400B EC-ZE CM
PERFORMANCE			
Total cooling capacity	kW (RT)	1055 (300)	1406 (400)
Cooling efficiency	W/W (Btu/Wh)	4.19 (14.30)	4.00 (13.65)
Total power input	kW	252.6	353.6
WORKING CONDITIONS			
Inlet water temperature	°C	12	12
Outlet water temperature	°C	7	7
Water flow rate	m³/h	181.2	241.8
Water pressure drop	kPa	27.4	37.3
Ambient temperature (DBT)	°C	35	35
Refrigerant	Type	HFO-R1234ze	HFO-R1234ze
Refrigerant circuits	n°	3	2
Refrigerant charge	kg	405	640
Nominal unit voltage	Ph/V/Hz	3/400/50	3/400/50
MAIN COMPONENTS			
Compressor	Type	Oil-free magnetic bearing	Oil-free magnetic bearing
Number of compressors	n°	3	4
Fan	Type	EC	EC
Fans diameter	mm	910	910
Number of fans	n°	20	22
Evaporator	Type	Flooded shell and tube	Flooded shell and tube
Number of evaporators	n°	3	2
DIMENSIONS			
Length	mm	10950	12000
Width	mm	2100	2100
Height	mm	2500	2500
Shipping/operating weight	kg	11155/11540	13085/13540

All units are equipped with the Web Monitoring System for remote control of parameters and remote troubleshooting.

Custom solutions

Geoclima is able to provide extremely tailored solutions, based on specific needs and requirements. Circlemiser units can be personalized with additional features, including:



LOW NOISE LEVELS



ALTERNATIVE SUPPLY **VOLTAGES AND FREQUENCIES**



SPECIAL COLOURS AND TREATMENTS FOR PANELS AND FRAME



SPECIAL **WINTER** OPERATION FOR COLD CLIMATES



SPECIAL **SUMMER** OPERATION FOR HOT CLIMATES



INTEGRATED HYDRAULIC SECTION, INCLUDING PUMP PRESSURIZATION UNITS AND EXPANSION VESSELS



STAND-BY COMPRESSOR



INTEGRATED **GLYCOL-FREE** MODULE



SPECIAL DESIGN FOR INDUSTRIAL AND PROCESS APPLICATIONS

Unison Laboratories

THE 1ST AIR-COOLED CHILLER IN THAILAND

Unison Laboratories Co., Ltd. has been one of Thailand's leading pharmaceutical manufacturers for more than 60 years. Geoclima was tasked with designing a smart HVAC solution that would guarantee high efficiency and performance at a competitive price. For this project, Geoclima developed two Circlemiser chillers with R134a refrigerant and oil-free centrifugal compressors for a total cooling capacity of 844 kW (240 RT), achieving an E.E.R. of 3.6 W/W (12.28 Btu/Wh).

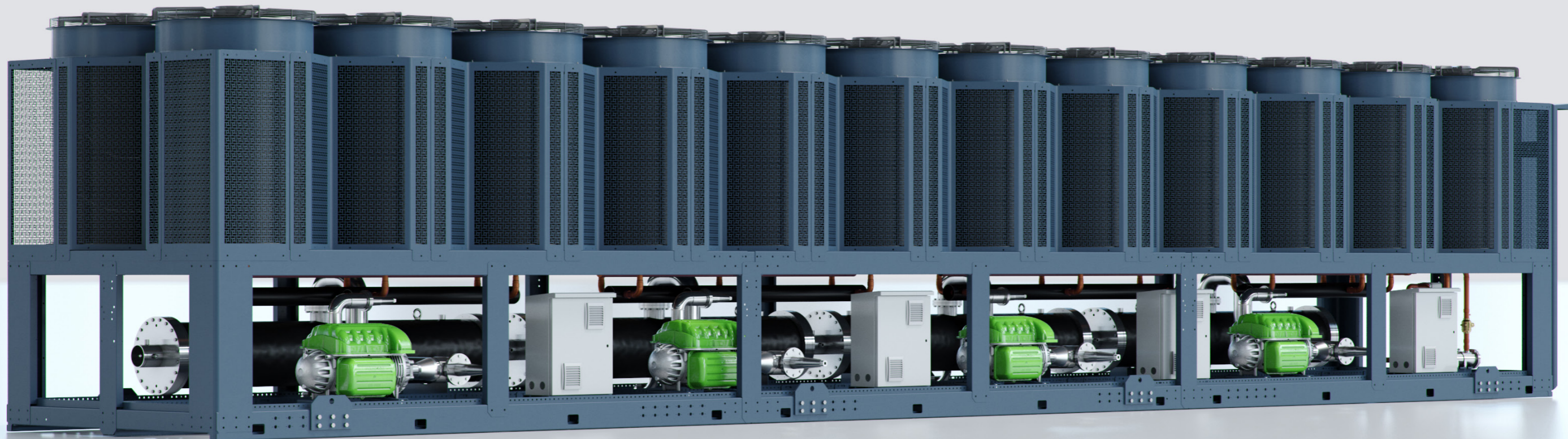


Vi.V.O. Cantine

HIGH EFFICIENCY AND LOW ENVIRONMENTAL IMPACT IN ITALY

Vi.V.O. Cantine is one of the biggest wine-making companies in Veneto, Italy. Geoclima was commissioned to design two high-efficiency cooling plants, with low environmental impact and remote assistance. Geoclima provided 4 Circlemiser chillers with HFO-R1234ze refrigerant and oil-free centrifugal compressors, reaching a total cooling capacity of 4000 kW (1137 RT) and an E.E.R. of 4.17 W/W (14.23 Btu/Wh). The units are constantly monitored remotely thanks to Geoclima web-based platform that allows real-time control and direct intervention on the unit parameters.







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