# WTG

## Water-water chiller

**Cooling capacity 246,6 ÷ 1959,4 kW**

- **Extended operating range**
- **Possibility of selecting between heat exchangers with 1 or 2 passes on water side**


## DESCRIPTION

Indoor unit producing chilled water equiped with magnetic levitation centrifugal compressors and shell & tube heat exchangers.
The base, the structure and the panels are made of galvanized steel treated with polyester paint RAL 9003.
The technological choices made always focus on maximum quality and efficiency, thereby achieving EER > 6 values (class A for Eurovent operating conditions).

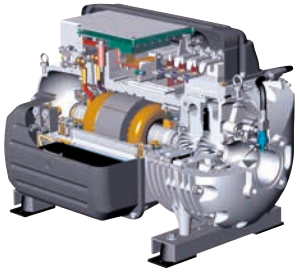
## EFFICIENCY

**A** High efficiency
**U** Very high efficiency
**Both units can be silenced.**

## FEATURES

### Two-stage, oil-free centrifugal compressor with latest-generation magnetic levitation

Oil-free operation without mechanical friction it is possible thanks to the use of magnetic levitation bearings that also ensure the total absence of vibration and low frequency noise.
The compressor is equipped with an inverter for continuous load modulation by varying rpm (from 30% to 100%).
**Built-in device to reduce starting current (only 6 Amps!)**



### Operating field

Water produced from 15 °C up to 50 °C on Condenser side and from 5 °C up to 25 °C on Evaporator side.

### Flooded Evaporator

**Evaporator**
— Low charge content
**Condenser**
— With refrigerant on shell side and water on pipe side

### Acoustic chiller enclosure (option)

in galvanised sheet metal of suitable thickness insulated on the inside with sound-proofing material.

## CONTROL

Microprocessor adjustment, with 7", touch screen keyboard, which allows to navigate intuitively among the various screens, allowing to modify the operating parameters and graphically view the progress of some variables in real time and the ad adjustment includes complete management of the alarms and their log.

## ACCESSORIES

**AER485P1:** RS-485 interface for supervising systems with MODBUS protocol. 1 accessory is provided for each unit control board.
**AERBAC-ONE:** Ethernet communication interface for Bacnet/IP and Modbus TCP/IP protocols, HTTPS protocol for web interface, encrypted communication protocols and access credential management in accordance with the latest standards. One accessory is provided for each unit control board.
**AERBACP:** Ethernet communication interface for Bacnet/IP and Modbus TCP/IP protocols. 1 accessory is provided for each unit control board.
**FL:** Flow switch.
**MULTICHILLER-EVO:** Control, switch-on and switch-off system of the single chillers where multiple units are installed in parallel (max. no. 9), always ensuring constant flow rate to the evaporators.
**AVX:** Spring anti-vibration supports.

## ACCESSORIES COMPATIBILITY

| Model | Ver | 1310 | 1490 | 2310 | 2490 | 3310 | 3400 | 3490 | 4400 | 4490 |
|---|---|---|---|---|---|---|---|---|---|---|
| AER485P1 | A,U | • | • | • | • | • | • | • | • | • |
| AERBAC-ONE | A,U | • | • | • | • | • | • | • | • | • |
| AERBACP | A,U | • | • | • | • | • | • | • | • | • |
| FL | A,U | • | • | • | • | • | • | • | • | • |
| MULTICHILLER-EVO | A,U | • | • | • | • | • | • | • | • | • |

*With the MULTICHILLER_EVO accessory, it is necessary to add AER485P1 for each connected unit.*

**Antivibration**

| Ver | 1310 | 1490 | 2310 | 2490 | 3310 | 3400 | 3490 | 4400 | 4490 |
|---|---|---|---|---|---|---|---|---|---|
| A, U | AVX. (1) | AVX. (1) | AVX. (1) | AVX. (1) | AVX. (1) | AVX. (1) | AVX. (1) | AVX. (1) | AVX. (1) |

(1) Contact us.

## CONFIGURATOR

| Field | | Description |
|---|---|---|
| **1,2,3** | | **WTG** |
| **4,5,6,7** | | **Size**<br>1310, 1490, 2310, 2490, 3310, 3400, 3490, 4400, 4490 |
| **8** | | **Version** |
| | A | High efficiency |
| | U | Very high efficiency |
| **9** | | **Exchanger** |
| | 1 | One pass on water side |
| | 2 | Two passes on water side |
| **10** | | **Set-up** |
| | L | Silenced |
| | ° | Standard |
| **11** | | **Power supply** |
| | ° | 400V ~ 3 50Hz with circuit breakers on compressors and auxiliary circuit |
| **12** | | **Refrigerant gas** |
| | ° | R1234ze |

## EXCHANGERS

Over-sized tube core exchangers ensure excellent performances at full and partial loads.

**Flooded evaporator:** with level adjustment through an electronic valve controlled by a level sensor.

**Backflow condenser:** with refrigerant on shell side and water on tube side.

*From size 1310 to 2490, heat exchangers have 2 passes on the water side*

**Starting from size WTG 3310, heat exchangers are available as versions with one or two passes on the water side,** to meet any plant installation requirement. **The dimensions of the two configurations ensure similar performances** (same approach to heat exchangers). **The difference is that the version with two passes on the water side due offers the convenience of water connections all on the same side**, against a generally higher but nonetheless limited drop in pressure compared to the version with one pass on the water side.

## PERFORMANCE SPECIFICATIONS

### WTG - A

| Size | | | 1310 | 1490 | 2310 | 2490 | 3310 | 3400 | 3490 | 4400 | 4490 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Exchanger: 1** | | | | | | | | | | | |
| **Cooling performance 12 °C / 7 °C (1)** | | | | | | | | | | | |
| Cooling capacity | | kW | - | - | - | - | 1049,5 | 1199,4 | 1409,4 | 1679,3 (2) | 1955,0 (2) |
| Input power | | kW | - | - | - | - | 194,3 | 202,4 | 245,0 | 286,4 | 334,3 |
| Cooling total input current | | A | - | - | - | - | 310,00 | 324,00 | 389,00 | 457,00 | 532,00 |
| EER | | W/W | - | - | - | - | 5,40 | 5,93 | 5,75 | 5,86 | 5,85 |
| Water flow rate system side | | l/h | - | - | - | - | 180.402 | 206.174 | 242.254 | 288.643 | 336.022 |
| Pressure drop system side | | kPa | - | - | - | - | 24 | 32 | 27 | 29 | 28 |
| Water flow rate source side | | l/h | - | - | - | - | 213.103 | 240.238 | 283.553 | 336.857 | 392.518 |
| Pressure drop source side | | kPa | - | - | - | - | 23 | 23 | 24 | 27 | 19 |

(1) Date 14511:2022; Water user side 12 °C / 7 °C; Water source side 30 °C / 35 °C
(2) Sizes 4400 and 4490 not included in the EUROVENT certification programme because Cooling capacity > 1500 kW

| Size | | | 1310 | 1490 | 2310 | 2490 | 3310 | 3400 | 3490 | 4400 | 4490 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Exchanger: 2** | | | | | | | | | | | |
| **Cooling performance 12 °C / 7 °C (1)** | | | | | | | | | | | |
| Cooling capacity | | kW | 349,7 | 469,7 | 699,6 | 899,3 | 1049,3 | 1199,2 | 1409,2 | 1679,2 (2) | 1958,5 (2) |
| Input power | | kW | 66,4 | 81,4 | 132,2 | 158,8 | 196,5 | 204,4 | 248,0 | 290,2 | 339,1 |
| Cooling total input current | | A | 106,00 | 130,00 | 211,00 | 250,00 | 310,00 | 324,00 | 389,00 | 457,00 | 532,00 |
| EER | | W/W | 5,27 | 5,77 | 5,29 | 5,66 | 5,34 | 5,87 | 5,68 | 5,79 | 5,78 |
| Water flow rate system side | | l/h | 60.134 | 80.751 | 120.268 | 154.630 | 180.402 | 206.174 | 242.254 | 288.643 | 336.647 |
| Pressure drop system side | | kPa | 24 | 14 | 22 | 50 | 45 | 49 | 40 | 44 | 46 |
| Water flow rate source side | | l/h | 71.250 | 94.518 | 142.500 | 181.033 | 213.103 | 240.238 | 283.553 | 336.857 | 393.148 |
| Pressure drop source side | | kPa | 23 | 18 | 23 | 32 | 33 | 32 | 42 | 47 | 39 |

(1) Date 14511:2022; Water user side 12 °C / 7 °C; Water source side 30 °C / 35 °C
(2) Sizes 4400 and 4490 not included in the EUROVENT certification programme because Cooling capacity > 1500 kW

### WTG - U

| Size | | | 1310 | 1490 | 2310 | 2490 | 3310 | 3400 | 3490 | 4400 | 4490 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Exchanger: 1** | | | | | | | | | | | |
| **Cooling performance 12 °C / 7 °C (1)** | | | | | | | | | | | |
| Cooling capacity | | kW | - | - | - | - | 736,7 | 869,6 | 999,1 | 1159,6 | 1336,9 |
| Input power | | kW | - | - | - | - | 120,2 | 140,2 | 153,5 | 186,2 | 211,9 |
| Cooling total input current | | A | - | - | - | - | 205,00 | 233,00 | 254,00 | 311,00 | 349,00 |
| EER | | W/W | - | - | - | - | 6,13 | 6,20 | 6,51 | 6,23 | 6,31 |
| Water flow rate system side | | l/h | - | - | - | - | 126.626 | 149.476 | 171.729 | 199.301 | 229.777 |
| Pressure drop system side | | kPa | - | - | - | - | 12 | 17 | 14 | 14 | 13 |
| Water flow rate source side | | l/h | - | - | - | - | 147.066 | 173.222 | 197.868 | 230.962 | 265.867 |
| Pressure drop source side | | kPa | - | - | - | - | 16 | 22 | 18 | 19 | 18 |

(1) Date 14511:2022; Water user side 12 °C / 7 °C; Water source side 30 °C / 35 °C

| Size | | | 1310 | 1490 | 2310 | 2490 | 3310 | 3400 | 3490 | 4400 | 4490 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Exchanger: 2** | | | | | | | | | | | |
| **Cooling performance 12 °C / 7 °C (1)** | | | | | | | | | | | |
| Cooling capacity | | kW | 246,4 | 334,3 | 492,9 | 669,8 | 736,6 | 869,5 | 999,1 | 1159,5 | 1342,8 |
| Input power | | kW | 40,1 | 50,9 | 80,1 | 105,5 | 120,7 | 140,3 | 154,1 | 187,0 | 212,7 |
| Cooling total input current | | A | 69,00 | 85,00 | 137,00 | 173,00 | 205,00 | 233,00 | 254,00 | 311,00 | 349,00 |
| EER | | W/W | 6,15 | 6,57 | 6,16 | 6,35 | 6,10 | 6,20 | 6,48 | 6,20 | 6,31 |
| Water flow rate system side | | l/h | 42.371 | 57.462 | 84.741 | 115.160 | 126.626 | 149.476 | 171.729 | 199.301 | 230.804 |
| Pressure drop system side | | kPa | 12 | 7 | 11 | 28 | 22 | 26 | 20 | 21 | 22 |
| Water flow rate source side | | l/h | 49.186 | 66.178 | 98.371 | 132.989 | 147.066 | 173.222 | 197.868 | 230.962 | 266.902 |
| Pressure drop source side | | kPa | 11 | 9 | 11 | 17 | 16 | 16 | 20 | 22 | 18 |

(1) Date 14511:2022; Water user side 12 °C / 7 °C; Water source side 30 °C / 35 °C

## ENERGY INDICES (REG. 2016/2281 EU)

| Size | | | | 1310 | 1490 | 2310 | 2490 | 3310 | 3400 | 3490 | 4400 | 4490 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Exchanger: 1** | | | | | | | | | | | | |
| **SEER - 12/7 (EN14825: 2018)** | | | | | | | | | | | | |
| SEER | A | W/W | | - | - | - | - | 9,44 | 9,80 | 9,92 | 9,74 | 9,94 |
| | U | W/W | | - | - | - | - | 9,82 | 10,35 | 11,12 | 10,46 | 10,95 |
| Seasonal efficiency | A | % | | - | - | - | - | 374,50 | 388,80 | 393,60 | 386,40 | 394,40 |
| | U | % | | - | - | - | - | 389,60 | 410,90 | 441,90 | 415,20 | 435,10 |
| Water Regulation (1) | A,U | type | | - | - | - | - | FW/VO-FW | FW/VO-FW | FW/VO-FW | FW/VO-FW | FW/VO-FW |
| **SEPR - (EN 14825: 2018)** | | | | | | | | | | | | |
| SEPR | A | W/W | | - | - | - | - | 10,15 | 11,89 | 11,60 | 11,62 | 11,51 |
| | U | W/W | | - | - | - | - | 11,21 | 12,56 | 13,33 | 12,62 | 13,02 |
| Water Regulation (1) | A,U | type | | - | - | - | - | FW/FO-FW | FW/FO-FW | FW/FO-FW | FW/FO-FW | FW/FO-FW |

(1) VW/VO - variable water flow rate/variable outlet temperature; FW/VO - fixed water flow rate/variable outlet temperature; VW/FO - variable water flow rate/fixed outlet temperature; FW/FO - fixed water flow rate/fixed outlet temperature.

| Size | | | 1310 | 1490 | 2310 | 2490 | 3310 | 3400 | 3490 | 4400 | 4490 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Exchanger: 2** | | | | | | | | | | | |
| **SEER - 12/7 (EN14825: 2018)** | | | | | | | | | | | |
| SEER | A | W/W | 8,53 | 9,30 | 9,37 | 9,06 | 8,77 | 9,22 | 9,20 | 8,99 | 9,15 |
| | U | W/W | 9,35 | 10,29 | 9,66 | 10,12 | 9,59 | 9,96 | 10,61 | 9,96 | 10,39 |
| Seasonal efficiency | A | % | 338,10 | 369,10 | 371,90 | 359,20 | 347,90 | 365,90 | 364,90 | 356,70 | 362,90 |
| | U | % | 371,10 | 408,40 | 383,20 | 401,70 | 380,60 | 395,50 | 421,20 | 395,50 | 412,50 |
| Water Regulation (1) | A,U | type | | | | | FW/VO-FW | | | | |
| **SEPR - (EN 14825: 2018)** | | | | | | | | | | | |
| SEPR | A | W/W | 9,99 | 11,89 | 9,96 | 11,14 | 9,87 | 11,54 | 11,20 | 11,19 | 11,07 |
| | U | W/W | 11,39 | 13,47 | 11,34 | 12,59 | 11,03 | 12,33 | 13,03 | 12,33 | 12,69 |
| Water Regulation (1) | A,U | type | | | | | FW/FO-FW | | | | |

(1) VW/VO - variable water flow rate/variable outlet temperature; FW/VO - fixed water flow rate/variable outlet temperature; VW/FO - variable water flow rate/fixed outlet temperature; FW/FO - fixed water flow rate/fixed outlet temperature.

## ELECTRIC DATA

| Size | | | 1310 | 1490 | 2310 | 2490 | 3310 | 3400 | 3490 | 4400 | 4490 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Electric data** | | | | | | | | | | | |
| Maximum current (FLA) | A,U | A | 150,0 | 217,0 | 300,0 | 434,0 | 450,0 | 651,0 | 651,0 | 868,0 | 868,0 |
| Peak current (LRA) | A,U | A | 6,0 | 6,0 | 156,0 | 223,0 | 306,0 | 440,0 | 440,0 | 657,0 | 657,0 |

## GENERAL TECHNICAL DATA

| Size | | | 1310 | 1490 | 2310 | 2490 | 3310 | 3400 | 3490 | 4400 | 4490 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Exchanger: 1** | | | | | | | | | | | |
| **Compressor** | | | | | | | | | | | |
| Type | A,U | type | - | - | - | - | Centrifugal | Centrifugal | Centrifugal | Centrifugal | Centrifugal |
| Number | A,U | no. | - | - | - | - | 3 | 3 | 3 | 4 | 4 |
| Circuits | A,U | no. | - | - | - | - | 1 | 1 | 1 | 1 | 1 |
| Refrigerant | A,U | type | - | - | - | - | R1234ze(E) | R1234ze(E) | R1234ze(E) | R1234ze(E) | R1234ze(E) |
| Potential global heating (GWP) | A,U | | - | - | - | - | 1,37 | 1,37 | 1,37 | 1,37 | 1,37 |

| Size | | | 1310 | 1490 | 2310 | 2490 | 3310 | 3400 | 3490 | 4400 | 4490 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Exchanger: 2** | | | | | | | | | | | |
| **Compressor** | | | | | | | | | | | |
| Type | A,U | type | | | | | Centrifugal | | | | |
| Number | A,U | no. | 1 | 1 | 2 | 2 | 3 | 3 | 3 | 4 | 4 |
| Circuits | A,U | no. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Refrigerant | A,U | type | | | | | R1234ze(E) | | | | |
| Potential global heating (GWP) | A,U | | | | | | 1,37 | | | | |

| Size | | | 1310 | 1490 | 2310 | 2490 | 3310 | 3400 | 3490 | 4400 | 4490 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Exchanger: 1** | | | | | | | | | | | |
| **System side heat exchanger** | | | | | | | | | | | |
| Type | A,U | type | - | - | - | - | Shell and tube | Shell and tube | Shell and tube | Shell and tube | Shell and tube |
| Number | A,U | no. | - | - | - | - | 1 | 1 | 1 | 1 | 1 |
| **Source side heat exchanger** | | | | | | | | | | | |
| Type | A,U | type | - | - | - | - | Shell and tube | Shell and tube | Shell and tube | Shell and tube | Shell and tube |
| Number | A,U | no. | - | - | - | - | 1 | 1 | 1 | 1 | 1 |

| Size | | | 1310 | 1490 | 2310 | 2490 | 3310 | 3400 | 3490 | 4400 | 4490 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Exchanger: 2** | | | | | | | | | | | |
| **System side heat exchanger** | | | | | | | | | | | |
| Type | A,U | type | | | | | Shell and tube | | | | |
| Number | A,U | no. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **Source side heat exchanger** | | | | | | | | | | | |
| Type | A,U | type | | | | | Shell and tube | | | | |
| Number | A,U | no. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

## SOUND DATA

| Size | | | 1310 | 1490 | 2310 | 2490 | 3310 | 3400 | 3490 | 4400 | 4490 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Set-up: L** | | | | | | | | | | | |
| **Sound data calculated in cooling mode (1)** | | | | | | | | | | | |
| Sound power level | A | dB(A) | - | - | - | 87,0 | - | - | - | 90,0 | - |
| | U | dB(A) | - | - | - | - | - | - | - | - | - |

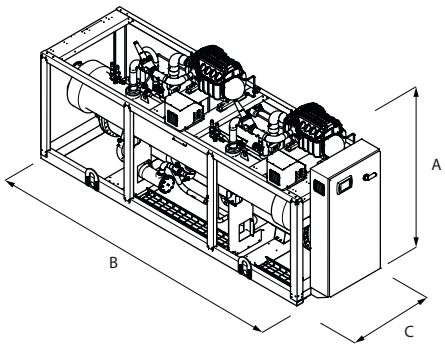
(1) Sound power calculated on the basis of measurements made in accordance with UNI EN ISO 9614-2, as required for Eurovent certification. Sound pressure (cold functioning) measured in free field, 10m away from the unit external surface (in compliance with UNI EN ISO 3744).

| Size | | | 1310 | 1490 | 2310 | 2490 | 3310 | 3400 | 3490 | 4400 | 4490 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Set-up: °** | | | | | | | | | | | |
| **Sound data calculated in cooling mode (1)** | | | | | | | | | | | |
| Sound power level | A | dB(A) | 89,0 | 91,0 | 92,0 | 94,0 | 94,0 | 93,0 | 96,0 | 94,0 | 97,0 |
| | U | dB(A) | 86,0 | 88,0 | 89,0 | 91,0 | 91,0 | 93,0 | 93,0 | 94,0 | 94,0 |

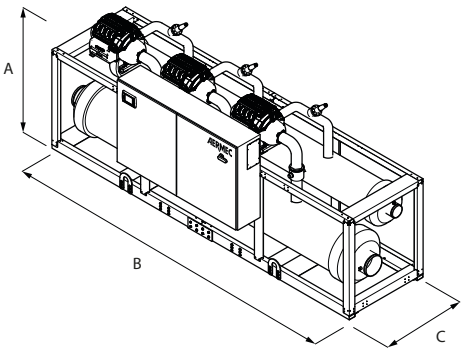
(1) Sound power calculated on the basis of measurements made in accordance with UNI EN ISO 9614-2, as required for Eurovent certification. Sound pressure (cold functioning) measured in free field, 10m away from the unit external surface (in compliance with UNI EN ISO 3744).

## DIMENSIONS

**WTG 1310 - 2490**




**WTG 3310 - 4490**




| Size | | | 1310 | 1490 | 2310 | 2490 | 3310 | 3400 | 3490 | 4400 | 4490 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Exchanger: 1** | | | | | | | | | | | |
| **Dimensions and weights** | | | | | | | | | | | |
| A | A,U | mm | - | - | - | - | 2010 | 2010 | 2010 | 2280 | 2280 |
| B | A,U | mm | - | - | - | - | 4966 | 4966 | 4966 | 4966 | 4966 |
| C | A,U | mm | - | - | - | - | 1640 | 1640 | 1640 | 1732 | 1732 |
| **Size** | | | **1310** | **1490** | **2310** | **2490** | **3310** | **3400** | **3490** | **4400** | **4490** |
| **Exchanger: 2** | | | | | | | | | | | |
| **Dimensions and weights** | | | | | | | | | | | |
| A | A,U | mm | 1850 | 1970 | 2010 | 2280 | 2280 | 2280 | 2280 | 2280 | 2280 |
| B | A,U | mm | 3040 | 3040 | 3340 | 4390 | 3990 | 3990 | 4966 | 4966 | 4966 |
| C | A,U | mm | 1000 | 1240 | 1240 | 1332 | 1732 | 1836 | 1836 | 1836 | 1836 |



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