

TR-W-Z TR-W-G05-Z

**HIGH EFFICIENCY WATER
COOLED CHILLER, WITH
OIL-FREE CENTRIFUGAL
COMPRESSORS,
FROM 246 TO 4549 kW**

r
R513A



TR-W-Z

TR-W-G05-Z

**“LOGIC WILL GET YOU
FROM A TO B.
IMAGINATION WILL TAKE
YOU EVERYWHERE.”**

Albert Einstein

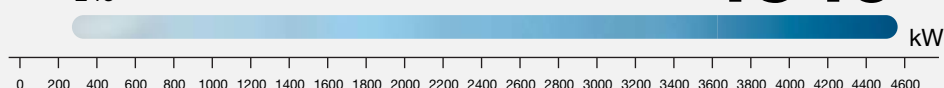
Internationally
renowned physicist
(1879-1955)



4549



246



High efficiency water cooled chiller with oil-free compressors and innovative layout

TR-W-Z is the high efficiency oil-free compressor chiller with extremely flexible design to allow the customer to choose from 63 possible configurations.

With a capacity range that spans from 246 to 4549 kW, the TR-W-Z range can be installed in both low or high condensing applications but also in critical buildings where sound level is key aspect. Thanks to the centrifugal compressor with minimized vibrations, TR-W-Z ensures very low sound emissions, while the possibility to choose the heat exchanger in a vertical or horizontal positioning is the ideal solution for narrow size spaces.

TR-W-Z is also available in the G05 series featuring the R513A refrigerant, as a low GWP alternative to the R134a refrigerant.

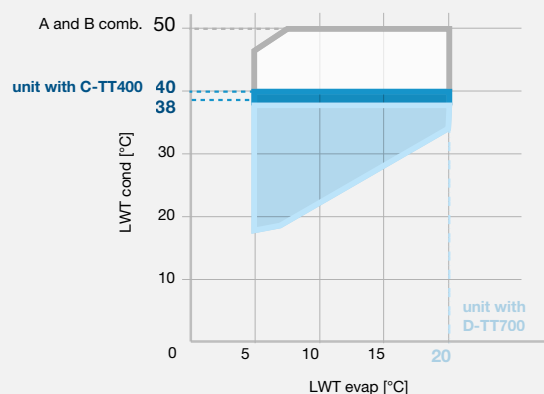
IT COOLING APPLICATIONS

- ✓ Data centers and server rooms
- ✓ Technological hubs
- ✓ Telecommunication installations
- ✓ Laboratories and technical rooms

DEDICATED OPERATING RANGE

TR-W-Z features several combinations of compressors to be installed both in applications working with a low condensing temperature (cooling towers, surface water) and in systems at the highest temperature involving the use of dry coolers.

Evaporator leaving water temperature up to 20°C makes the TR-W-Z the most suitable solution for the modern data centers with high temperatures.



ONLY IMAGINATION COULD LEAD TO THE IMPROVEMENT OF THE ALREADY BRILLIANT TECHNICAL FEATURES OF OIL-FREE CENTRIFUGAL CHILLERS AND CONCEIVE:

TR-W

THE SOLUTION BEYOND THE LIMITS OF TRADITIONAL DESIGN

Drawing on over 10 years of experience in units with oil-free centrifugal compressors, TR-W-Z overcomes the limits of traditional design and presents itself as the right solution for any project and application requirements.

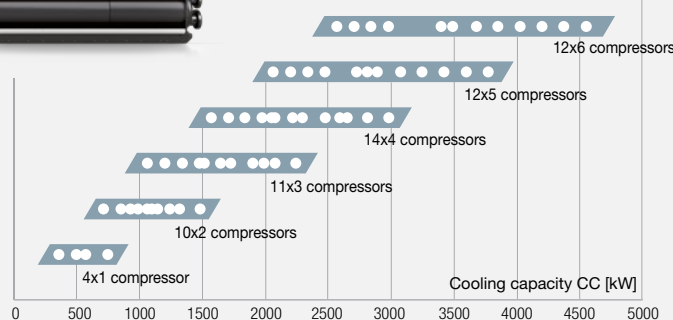
COUNTLESS DESIGN COMBINATIONS

to satisfy any specific project and application needs.

TR-W-Z is designed to host from 1 to 6 centrifugal oil-free compressors, also allowing the combination of different sizes. Each set of compressors matches one of the 6 new couples of heat exchangers (flooded evaporator and shell and tube condenser) created exclusively for TR-W-Z with the goal of reaching unequaled heat exchange performance. The result is a range of 63 possible combinations, able to meet any specific project and application needs.



63 SIZES



Data referred to the following working conditions: Evap. 12/7°C
Cond. 30/35°C (EN14511) - Max compr. Speed.

FLEXIBLE CONFIGURATION

Horizontal or diagonal layout of the exchangers.

With TR-W-Z you can choose between horizontal or diagonal layout of the heat exchangers, with dimensions that favor the overall compact size in height or in width.

The water connections of both heat exchangers can be deployed either on the right or left side, to fit the most diverse HVAC system requirements.



Heat exchangers with
horizontal alignment



Heat exchangers with
diagonal alignment

BRILLIANT FULL LOAD AND SEASONAL EFFICIENCIES

Unparalleled efficiency at both full and partial loads.

NEW G05 VERSION WITH R513A REFRIGERANT



Combining brilliant annual efficiency with the use of a low GWP refrigerant, the TR-W-Z range of oil-free compressor chillers is now available with the new G05 series. TR-W-G05-Z adopts the low GWP R513A refrigerant, which tackles both indirect (due to primary energy consumption) and direct global warming, thus resulting in the perfect choice for any forward-looking cooling system.

BESPOKE SELECTION SOFTWARE

ELCAWorld is the dedicated product software that ensures the selection of the most competitive product size, without sacrificing any demand in terms of efficiency or initial investment.

EER over 6,5*

SEPR HT over 11,95**

*Average values at 12/7°C, 35°C.

** Parameter calculated according to [REGULATION (EU) N. 2016/2281]

TECHNOLOGICAL CHOICES

Negligible inrush current, quiet operation, unrivalled efficiency and extreme flexibility come out from a definite choice: only cutting-edge technologies.

Gas detector device

TR-W-Z can be equipped with a gas detector to signal the presence of refrigerant in a closed environment. The detector has a double-threshold and can deactivate the compressors and disconnect the exchangers.



Innovative exchanger couples

The expertise makes the difference

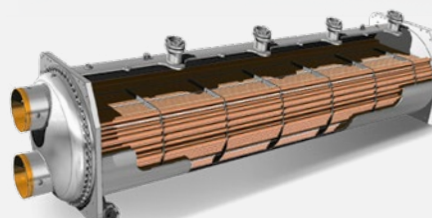
The excellent performance of oil-free centrifugal compressors are enhanced by matching them with 6 totally new heat exchanger couples (flooded evaporator and shell and tube condenser) designed to ensure the most minimal approach between the refrigerant phase changing and the water.

This provides an increased cooling capacity and the reduction of the compression work, with immediate benefits to overall efficiency.

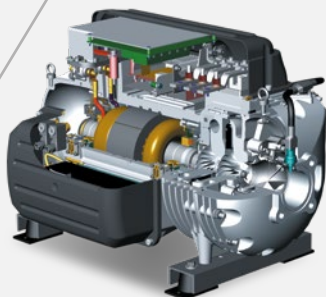
The flooded evaporator is designed to ensure a perfect and uniform evaporation of the refrigerant, without devoting any surface to the overheating (inside the shell, the boiling refrigerant finds a great amount of free room to eliminate even the minimum liquid entrainment). Generous size connections are selected, to minimize any penalization due to pressure drops.

The complete flooding of all the pipes is guaranteed, even during partialization, by the control algorithms on the expansion valve.

Even the condenser is designed for the minimum pressure drops, both in the water and refrigerant sides. The space is so well thought out that even inclined connections have been made to limit the length of the refrigerant discharge pipes.



Centrifugal oil-free compressor

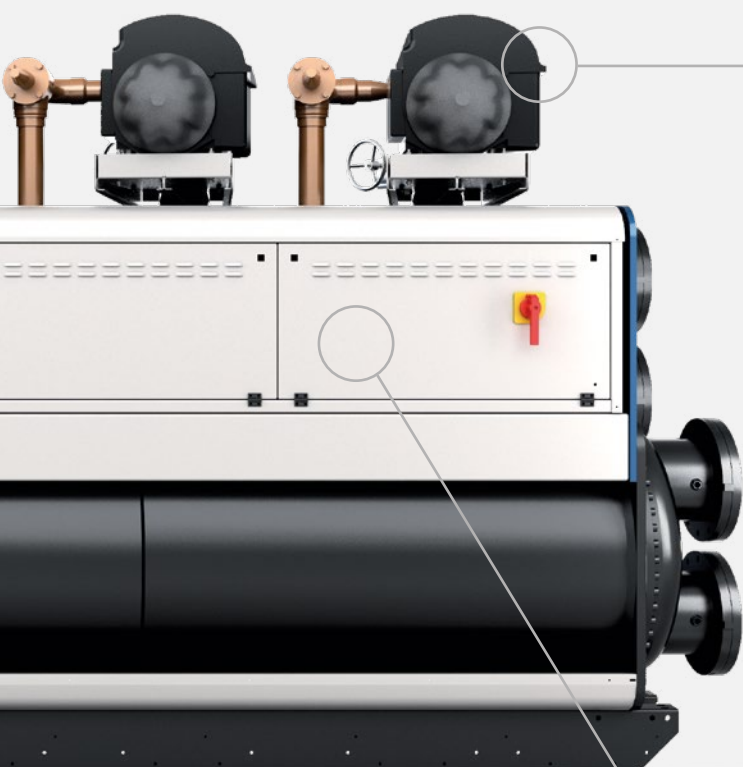


The expertise makes the difference

These top level technology compressors bring enormous benefits in terms of efficiency, adjustments, vibrations, and weight. Magnetic levitation eliminates the need for lubricant, its delicate management and its heat exchange loss.

Soft start, integrated in the compressors, lowers the inrush current to only 2 Amps, making the selection of power line systems more favourable.

Thorough knowledge is necessary to harness such a concentration of technology and here is where the RC brand really makes the difference thanks to its 10-year experience in magnetic levitation compressor units and thousands of projects all over the world.

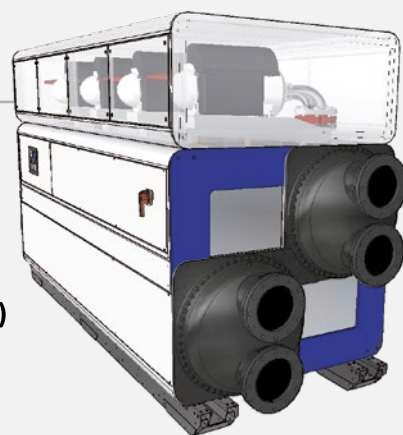


Acoustic enclosure

The already minimal noise emissions of TR-W-Z units can be further reduced by choosing the option "acoustic enclosure", available in two variants:

 **Standard -14 dB(A)**

 **Integral -18 dB(A)**



THDi and Power Factor



The careful design of electrical and electronic components and the use of specific solutions, such as compressor line reactors (std) and power factor correction capacitors (opt), reduce the THDi (Total Harmonic Distortion of current) and increase the unit's Power Factor. To fit even the most demanding requirements, modular active harmonic filters can be added to cut the THDi down to values below 5%.

Fast restart

In some applications it is crucial to ensure the rapid restoration of cooling capacity after an interruption in power supply (black -out). The fast restart option provides a restart of the compressors within 26" seconds after power is restored and the rapid re-entry into full operation (e.g.: unit mod. 2D00 comes back to provide 1300 kW in just 6 minutes after voltage dip).



Immediate cooling start-up

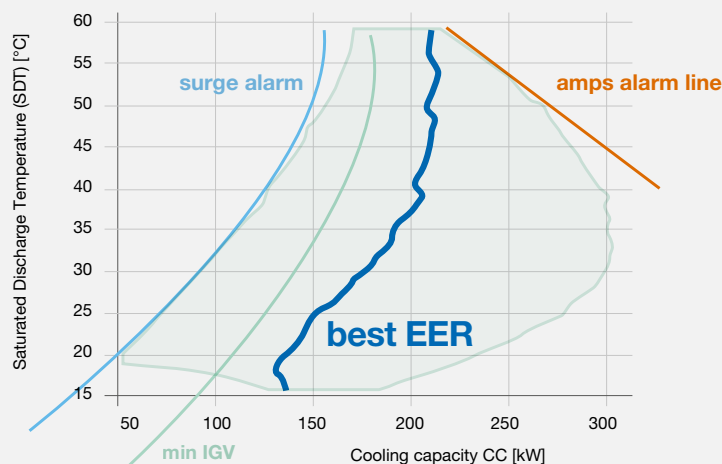
Accelerated cooling ramp-up
1300 kW are delivered
within 6' after a voltage dip.

CX4

The evolution in the world of controls

TR-W-Z can count on the brand-new CX4 Control logic with exclusive software optimally designed to master the magnetic levitation technology.

ALWAYS THE HIGHEST EFFICIENCY

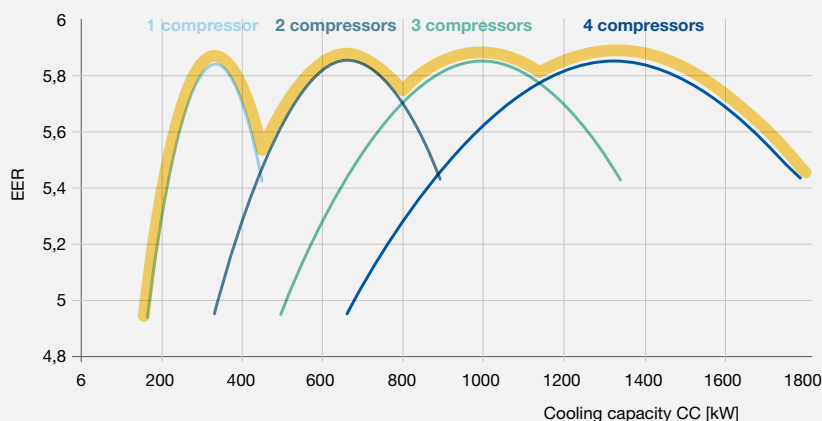


The brand-new logic, created for CX4, optimally manages the correct compression ratio, the rotation speed, the position of IGV (Inlet Guide Vane) and the opening of the by-pass valve.

All this to ensure that the compressors are always - during start-up, in operation, in response to the thermoregulator and during shutdown - in a full safety work area (away from the limits of the "surge" and "amps").

CX4 constantly monitors the compressor: the cooling capacity required by the thermoregulator is achieved by making the compressor work only in the envelope's area with the highest efficiency (curve "best EER").

In units with multiple compressors, CX4 employs the exclusive 'jumping staging' logic, enabling, during partialization, only the most efficient combination of compressors.



Always the best efficiency (best EER)

KIPLink The keyboard in your pocket

KIPLink allows direct access to the CX4 controller: even possible without traditional interface, thanks to the wi-fi technology, the unit can be operated directly from any mobile device (tablet, smartphone, PC) that displays the same touch interface screens.



CUSTOMIZED TOUCH SCREEN INTERFACE (option)

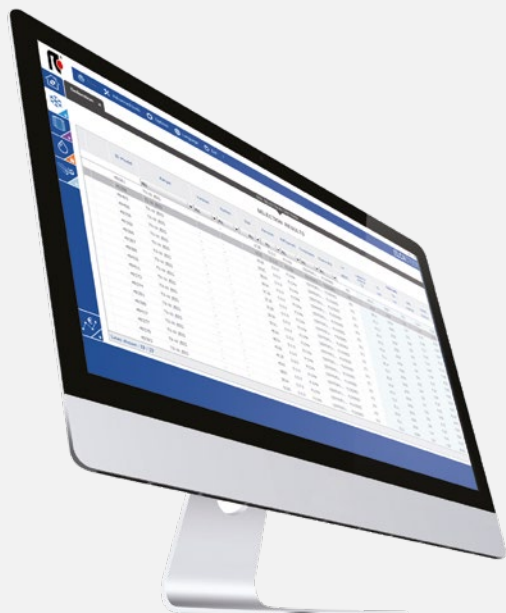
As an option the W3000 control is available with the touch screen version:

- interactive displays whose graphics have been designed exclusively for the TR-W-Z unit.
- large color 13" touch screen home page that shows the immediate labor status of the units and of its main operating parameters dedicated tooltip for describing the unit functions.



ELCAWORLD

Your targeted product selection



Each project is different: some require top efficiency at full load while others the best initial investment, or an unrivaled seasonal performance.

TR-W-Z is designed to cater to any requirements: among the countless combinations it is always possible to find the most competitive product, without sacrificing any demands.

Thanks to the exclusive ELCA WORLD software, TR-W-Z can be selected according to the specific customer requirements.

Whatever the cooling capacity requested, the software proposes several design alternatives:

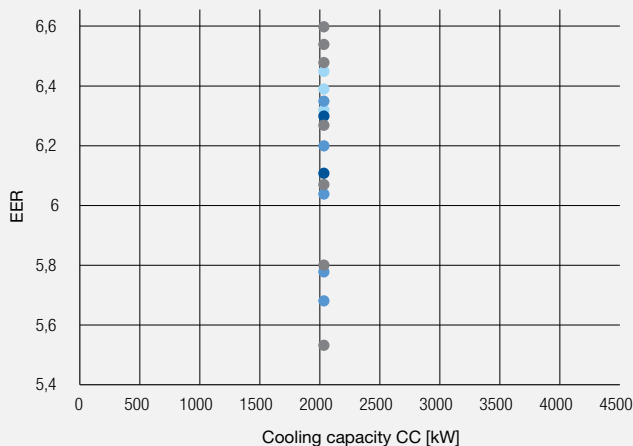
- ✓ **with a different number and type of compressor** (i.e.: units with different initial investment value, different dimensions and different noise levels)
- ✓ **with different capacities** (from 100% meant as the maximum speed of the compressors down to 70%)

- ✓ **with full load efficiency EER values greater than 6,6***
- ✓ **with seasonal efficiency ESEER values greater than 10,2 *** (IPLV up to 11,2)

* gross values, @ 12/7 and 30/35°C

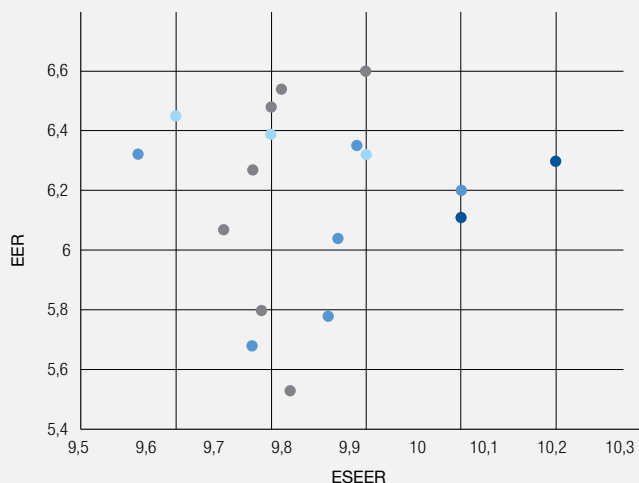
CHOOSE YOUR SOLUTION ACCORDING TO THE COOLING CAPACITY NEEDED

For the same CC, a wide range of choices:
3-4-5-6 compressor units with
EER from 5,53 up to 6,60



CHOOSE YOUR SOLUTION ACCORDING TO THE EFFICIENCY REQUIREMENTS OF YOUR PLANT

The 3-4-5-6 compressor units with the same CC,
features full load EER between 5,51 and 6,52,
and seasonal efficiencies
ESEER from 9,76 up to 10,20



TR-W-G05-Z

High efficiency water cooled chiller with R513A refrigerant



Fully committed to supporting the creation of a greener tomorrow, Mitsubishi Electric Hydronics & IT Cooling Systems designed TR-W-G05-Z, a complete large capacity chiller range with reduced environmental impact, optimized for R513A refrigerant.

Combining brilliant annual efficiency with the use of a low GWP refrigerant, TR-W-G05-Z tackles both the indirect (due to primary energy consumption) and the direct global warming, thus resulting in the perfect choice for any new, forward-looking cooling system.



LOW GWP

-56% GWP vs R134a



Non-flammable

Safety Class A1

REFRIGERANT BENCHMARK

SCROLL		
Refrigerant	GWP*	Flammability**
R410A	2088	NON flammable
R32	675	MILDLY flammable
R454B	466	MILDLY flammable
R452B	698	MILDLY flammable

SCREW		
Refrigerant	GWP*	Flammability**
R134a	1430	NON flammable
R513A	631	NON flammable
R1234ze	7	MILDLY flammable
R1234yf	4	MILDLY flammable

New regulations like the EU F-gas and the Kigali Amendment to the Montreal Protocol, are driving the industry towards new eco-friendly refrigerants, with reduced greenhouse effect.

Unfortunately, the majority of low GWP refrigerants raises another critical issue: flammability.

The new refrigerant R513A, chosen for TR-W-G05-Z, is a brilliant exception: it offers a -56% GWP reduction compared to R134a's while ensuring complete non-toxicity and non-flammability (Class A1 of ASHRAE 34, ISO 817).

*IPCC AR4

**ASHRAE 34 - ISO 817



TR-W-G05-Z			1A00	1B00	1B1A	1B2A	1B3A	1C00	1C1A	1C1B	1C3B
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	243,6-353,0	343,6-490,9	582,5-844,2	820,6-1189	1083-1547	396,2-565,9	642,4-917,7	735,4-1051	1425-2036
EER	(1)	kW/kW	6.150	6.290	6.230	6.040	6.200	6.390	6.290	6.290	6.320
ESEER (up to)	(1)	kW/kW									
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	243,7	364,4	581,9	818,9	1143	458,9	642,5	737,1	1708
EER	(1)(2)	kW/kW	5.970	6.050	6.060	5.910	5.970	6.080	6.110	6.120	5.910
Cooling energy class		A	A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		11,62	11,56	11,64	11,41	11,57	11,49	11,75	11,58	10,96
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	372,5	513,6	887,4	1259	1626	606,9	978,5	1116	2146
Total power input	(5)	kW	66,87	84,78	152,6	226,5	282,3	97,28	163,6	182,1	345,8
EER	(5)	kW/kW	5.568	6.057	5.815	5.558	5.760	6.237	5.981	6.129	6.206
23°C/15°C											
Cooling capacity	(6)	kW	383,1	517,4	904,2	1303	1656	651,0	1034	1168	2200
Total power input	(6)	kW	58,82	70,54	130,5	199,6	242,6	88,94	147,0	159,6	292,3
EER	(6)	kW/kW	6.515	7.339	6.929	6.528	6.826	7.323	7.034	7.318	7.527
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	11,68	17,46	27,89	39,23	54,81	21,99	30,79	35,32	81,94
Pressure drop	(1)(2)	kPa	18,8	21,8	25,7	21,1	34,3	24,1	25,7	25,7	52,2
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	13,55	20,22	32,29	45,60	63,56	25,44	35,61	40,85	95,03
Pressure drop	(1)(2)	kPa	17,5	20,5	20,7	19,4	26,2	23,5	20,4	20,1	33,9
REFRIGERANT CIRCUIT											
Compressors nr.		N°	1	1	2	3	4	1	2	2	4
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	215	220	390	495	747	262	436	416	1078
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	75	76	76	78	78	77	77	77	79
Sound power level in cooling	(8)(9)	dB(A)	93	94	95	97	98	95	96	96	99
SIZE AND WEIGHT											
A	(10)	mm	2910	2910	3050	3710	4690	2910	3050	3050	4720
B	(10)	mm	1000	1000	1620	1710	1890	1000	1620	1620	1890
H	(10)	mm	1950	1950	2190	2260	2400	1950	2190	2190	2400
Operating weight	(10)	kg	2690	2800	5200	7590	9320	2880	5280	5410	11010

TR-W-G05-Z			1D00	1D1A	1D1B	1D1C	1D2C	1D3C	1D4C	1D5C	2A00
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	587,8-734,7	736,8-1084	833,4-1226	1043-1303	1241-1880	1964-2455	2441-3051	2918-3648	495,9-708,5
EER	(1)	kW/kW	6.130	6.100	6.210	6.250	6.300	6.300	6.420	6.480	6.120
ESEER (up to)	(1)	kW/kW									
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	658,5	748,2	857,2	1067	1271	2143	2637	3128	522,3
EER	(1)(2)	kW/kW	5.890	5.910	6.020	5.990	6.100	5.940	6.040	6.120	5.900
Cooling energy class		A	A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		11,55	11,60	11,58	11,51	11,88	-	-	-	11,55
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	782,1	1154	1299	1393	2004	2619	3243	3868	748,1
Total power input	(5)	kW	117,3	183,7	202,2	216,2	313,2	411,1	499,5	590,2	134,1
EER	(5)	kW/kW	6.668	6.282	6.424	6.443	6.398	6.371	6.492	6.554	5.579
23°C/15°C											
Cooling capacity	(6)	kW	792,9	1178	1319	1451	2093	2750	3386	4021	770,8
Total power input	(6)	kW	98,56	157,0	169,3	189,5	274,9	364,0	437,5	512,8	118,3
EER	(6)	kW/kW	8.042	7.503	7.791	7.657	7.614	7.555	7.739	7.841	6.516
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	31,59	35,86	41,09	51,19	60,91	102,9	126,6	150,1	25,03
Pressure drop	(1)(2)	kPa	38,8	28,8	30,6	40,8	30,3	60,3	68,6	61,4	24,0
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	36,64	41,65	47,60	59,28	70,44	119,1	146,3	173,2	29,07
Pressure drop	(1)(2)	kPa	38,3	23,6	24,4	32,3	25,1	38,6	44,4	50,5	24,6
REFRIGERANT CIRCUIT											
Compressors nr.		N°	1	2	2	2	3	4	5	6	2
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	253	422	400	450	814	1017	1319	1696	273
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	78	78	78	78	79	79	79	80	76
Sound power level in cooling	(8)(9)	dB(A)	96	97	97	97	99	99	100	101	95
SIZE AND WEIGHT											
A	(10)	mm	2910	3050	3050	3050	4690	4720	5700	6610	2910
B	(10)	mm	1000	1620	1620	1620	1660	1890	2350	2400	1560
H	(10)	mm	1950	2190	2190	2190	2260	2400	2400	2450	2190
Operating weight	(10)	kg	2950	5350	5340	5420	8810	11410	15330	20580	4070

Notes:

- 1 Plant (side) cooling exchanger water (in/out) 12°C/7°C;
Source (side) heat exchanger water (in/out) 30°C/35°C.
- 2 Values in compliance with EN14511
- 3 Seasonal energy efficiency ratio
- 4 Seasonal energy efficiency of high temperature process cooling
[REGULATION (EU) N. 2016/2281]
- 5 User side heat exchanger water temperature (in/out) 16°C/10°C;
source side heat exchanger water temperature (in/out) 30°C/35°C.
- 6 User side heat exchanger water temperature (in/out) 23°C/15°C;

source side heat exchanger water temperature (in/out) 30°C/35°C.

- 7 Average sound pressure level at 1m distance, unit in a free field on a reflective surface;
non-binding value calculated from the sound power level.
- 8 Sound power on the basis of measurements made in compliance with ISO 9614.
- 9 Sound power level in cooling, indoors.
- 10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain R513A [GWP₁₀₀ 631] fluorinated greenhouse gases.

Certified data in EUROVENT





TR-W-G05-Z

High efficiency water cooled chiller with R513A refrigerant

TR-W-G05-Z			2B00	2B1A	2B2A	2B3A	2C00	2C1A	2C1B	2D00	2D1B
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	676,3-980,2	930,1-1329	1176-1680	1434-2049	791,5-1131	1042-1489	1135-1621	971,1-1471	1416-1966
EER	(1)	kW/kW	6.210	6.050	6.210	6.320	6.400	6.360	6.360	6.040	6.240
ESEER (up to)	(1)	kW/kW									
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	680,3	978,2	1240	1674	916,7	1123	1221	984,1	1448
EER	(1)(2)	kW/kW	6.040	5.850	5.960	5.890	6.060	6.100	6.110	5.850	6.010
Cooling energy class		A	A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		11,48	11,26	11,45	11,50	11,37	11,56	11,55	11,63	11,54
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	1027	1401	1761	2142	1213	1588	1724	1570	2079
Total power input	(5)	kW	172,4	247,7	300,2	357,6	194,8	259,5	276,7	235,4	316,1
EER	(5)	kW/kW	5.957	5.656	5.866	5.990	6.227	6.119	6.231	6.669	6.577
23°C/15°C											
Cooling capacity	(6)	kW	1038	1440	1783	2157	1304	1681	1812	1598	2095
Total power input	(6)	kW	144,2	214,1	254,0	299,9	178,7	233,0	244,2	199,2	262,1
EER	(6)	kW/kW	7.198	6.726	7.020	7.192	7.297	7.215	7.420	8.022	7.993
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	32,60	46,87	59,51	80,37	43,95	53,83	58,54	47,17	69,44
Pressure drop	(1)(2)	kPa	26,0	23,1	40,4	61,1	33,8	35,3	34,6	30,0	41,2
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	37,77	54,55	68,99	93,18	50,86	62,22	67,66	54,87	80,40
Pressure drop	(1)(2)	kPa	20,5	21,6	26,5	38,3	26,5	27,6	26,7	25,0	32,7
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	3	4	5	2	3	3	2	3
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	433	640	1015	1303	411	751	795	429	814
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	77	78	78	78	78	78	78	79	79
Sound power level in cooling	(8)(9)	dB(A)	96	97	98	99	97	98	98	98	99
SIZE AND WEIGHT											
A	(10)	mm	3050	3710	4720	5700	3050	4690	4690	3050	4690
B	(10)	mm	1620	1710	1890	2350	1620	1660	1660	1620	1660
H	(10)	mm	2190	2260	2400	2400	2190	2260	2260	2190	2260
Operating weight	(10)	kg	5340	7750	10610	13850	5330	8470	8700	5310	8810

TR-W-G05-Z			2D1C	2D2B	2D2C	2D3C	2D4C	3A00	3B00	3B1A	3B2A
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	1636-2045	1968-2460	2092-2614	2568-3210	3054-3817	724,3-1050	1009-1462	1273-1819	1522-2174
EER	(1)	kW/kW	6.300	6.270	6.320	6.400	6.510	5.970	6.070	6.220	6.250
ESEER (up to)	(1)	kW/kW									
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	1848	2185	2332	2823	3320	723,3	1078	1344	1790
EER	(1)(2)	kW/kW	5.920	5.890	5.950	6.010	6.130	5.830	5.850	5.970	5.830
Cooling energy class		A	A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		11,25	-	-	-	-	11,33	11,24	11,42	11,42
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	2175	2596	2782	3403	4032	1115	1538	1904	2268
Total power input	(5)	kW	329,6	399,2	426,4	517,4	603,6	207,7	267,6	320,8	378,4
EER	(5)	kW/kW	6.599	6.503	6.524	6.577	6.680	5.368	5.747	5.935	5.994
23°C/15°C											
Cooling capacity	(6)	kW	2229	2616	2878	3505	4140	1164	1572	1921	2274
Total power input	(6)	kW	281,8	330,5	369,4	444,9	515,6	187,0	227,9	268,5	313,8
EER	(6)	kW/kW	7.910	7.915	7.791	7.878	8.029	6.225	6.898	7.155	7.247
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	88,69	104,9	112,0	135,6	159,4	34,65	51,64	64,46	85,92
Pressure drop	(1)(2)	kPa	61,2	65,6	65,0	73,8	65,9	21,0	23,2	39,8	60,3
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	102,7	121,6	129,6	156,7	183,7	40,35	60,10	74,72	99,77
Pressure drop	(1)(2)	kPa	47,9	44,1	41,4	47,7	52,5	19,2	22,0	26,1	38,7
REFRIGERANT CIRCUIT											
Compressors nr.		N°	3	4	4	5	6	3	3	4	5
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	812	1013	1094	1299	1667	501	598	985	1269
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	79	79	80	79	80	77	78	78	78
Sound power level in cooling	(8)(9)	dB(A)	99	99	100	100	101	96	97	98	99
SIZE AND WEIGHT											
A	(10)	mm	4690	4720	4720	5700	6610	3710	3710	4720	5700
B	(10)	mm	1660	1890	1890	2350	2400	1710	1710	1890	2350
H	(10)	mm	2260	2400	2400	2400	2450	2260	2260	2400	2400
Operating weight	(10)	kg	8880	11250	11450	15420	20750	7440	7370	10740	14050

Notes:

- 1 Plant (side) cooling exchanger water (in/out) 12°C/7°C;
Source (side) heat exchanger water (in/out) 30°C/35°C.
- 2 Values in compliance with EN14511
- 3 Seasonal energy efficiency ratio
- 4 Seasonal energy efficiency of high temperature process cooling
[REGULATION (EU) N. 2016/2281]
- 5 User side heat exchanger water temperature (in/out) 16°C/10°C;
source side heat exchanger water temperature (in/out) 30°C/35°C.
- 6 User side heat exchanger water temperature (in/out) 23°C/15°C;

source side heat exchanger water temperature (in/out) 30°C/35°C.

- 7 Average sound pressure level at 1m distance, unit in a free field on a reflective surface;
non-binding value calculated from the sound power level.
- 8 Sound power on the basis of measurements made in compliance with ISO 9614.
- 9 Sound power level in cooling, indoors.
- 10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT



TR-W-G05-Z			3B3A	3C00	3C1A	3C1B	3C2B	3D00	3D1A	3D1C	3D2C
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	1636-2045	1968-2460	2092-2614	2568-3210	3054-3817	724,3-1050	1009-1462	1273-1819	1522-2174
EER	(1)	kW/kW	6.320	6.430	6.360	6.390	6.470	6.240	6.220	6.350	6.440
ESEER (up to)	(1)	kW/kW									
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	2070	1301	1738	1854	2277	2043	2326	2536	3027
EER	(1)(2)	kW/kW	5.920	6.170	5.940	5.970	6.030	5.870	5.840	5.960	6.010
Cooling energy class		A	A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		-	11,71	11,02	11,11	-	-	-	-	-
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	2634	1831	2199	2331	2865	2349	2719	2965	3584
Total power input	(5)	kW	433,8	291,8	357,8	372,9	450,7	349,4	415,5	442,8	533,4
EER	(5)	kW/kW	6.072	6.275	6.146	6.251	6.357	6.723	6.544	6.696	6.719
23°C/15°C											
Cooling capacity	(6)	kW	2628	1961	2336	2462	2979	2369	2749	3025	3646
Total power input	(6)	kW	357,3	265,9	322,7	331,9	390,6	291,2	348,6	375,9	450,6
EER	(6)	kW/kW	7.355	7.375	7.239	7.418	7.627	8.135	7.886	8.047	8.091
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	99,31	62,37	83,42	88,96	109,3	98,15	111,8	121,8	145,4
Pressure drop	(1)(2)	kPa	55,0	35,3	51,4	51,3	58,8	67,4	74,5	71,1	79,5
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	115,1	71,99	96,69	103,0	126,3	113,7	129,6	140,9	167,9
Pressure drop	(1)(2)	kPa	42,9	28,2	33,9	33,0	41,4	55,3	47,9	46,3	54,8
REFRIGERANT CIRCUIT											
Compressors nr.		N°	6	3	4	4	5	3	4	4	5
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	1677	795	1078	1013	1252	850	1059	1072	1400
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	79	78	79	79	79	79	80	80	80
Sound power level in cooling	(8)(9)	dB(A)	100	98	99	99	100	99	100	100	101
SIZE AND WEIGHT											
A	(10)	mm	6610	4690	4720	4720	5700	4690	4720	4720	5700
B	(10)	mm	2400	1660	1890	1890	2350	1660	1890	1890	2350
H	(10)	mm	2450	2260	2400	2400	2400	2260	2400	2400	2400
Operating weight	(10)	kg	18670	8700	11010	11210	14910	9010	11250	11580	15500

TR-W-G05-Z			3D3C	4B00	4B1A	4B2A	4C00	4C1B	4D00	4D1C	4D2C
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	3192-3990	1366-1952	1620-2314	1875-2679	1344-2277	1947-2781	2369-2961	2857-3571	3337-4171
EER	(1)	kW/kW	6.570	6.260	6.310	6.410	6.400	6.530	6.280	6.450	6.550
ESEER (up to)	(1)	kW/kW									
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	3518	1443	1918	2200	1488	2349	2733	3233	3724
EER	(1)(2)	kW/kW	6.170	6.020	5.880	6.000	6.190	6.080	5.890	6.020	6.130
Cooling energy class		A	A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		-	11,47	11,53	-	11,95	-	-	-	-
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	4200	2039	2409	2783	2439	2959	3143	3767	4376
Total power input	(5)	kW	615,1	337,3	394,5	446,9	388,2	462,3	464,8	549,7	633,6
EER	(5)	kW/kW	6.828	6.045	6.106	6.227	6.283	6.401	6.762	6.853	6.907
23°C/15°C											
Cooling capacity	(6)	kW	4261	2047	2406	2767	2610	3113	3172	3787	4392
Total power input	(6)	kW	516,6	278,7	323,7	365,6	353,5	408,7	388,0	456,2	523,6
EER	(6)	kW/kW	8.248	7.345	7.433	7.568	7.383	7.617	8.175	8.301	8.388
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	168,9	69,20	92,05	105,6	71,29	112,7	131,3	155,4	178,9
Pressure drop	(1)(2)	kPa	70,2	39,1	59,3	56,3	30,3	60,9	80,4	87,6	74,6
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	194,5	80,15	106,8	122,1	82,33	130,2	152,0	179,3	206,0
Pressure drop	(1)(2)	kPa	53,9	25,8	38,4	44,5	20,2	41,7	53,9	54,2	60,5
REFRIGERANT CIRCUIT											
Compressors nr.		N°	6	4	5	6	4	5	4	5	6
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	1626	1078	1233	1638	1050	1239	1072	1380	1767
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	80	78	78	79	79	79	80	80	80
Sound power level in cooling	(8)(9)	dB(A)	101	98	99	100	99	100	100	101	101
SIZE AND WEIGHT											
A	(10)	mm	6610	4720	5700	6610	4720	5700	4720	5700	6610
B	(10)	mm	2400	1890	2350	2400	1890	2350	1890	2350	2400
H	(10)	mm	2450	2400	2400	2450	2400	2400	2400	2400	2450
Operating weight	(10)	kg	21010	10920	14300	18880	11250	15000	11580	15730	21180

Notes:

- 1 Plant (side) cooling exchanger water (in/out) 12°C/7°C;
Source (side) heat exchanger water (in/out) 30°C/35°C.
- 2 Values in compliance with EN14511
- 3 Seasonal energy efficiency ratio
- 4 Seasonal energy efficiency of high temperature process cooling
[REGULATION (EU) N. 2016/2281]
- 5 User side heat exchanger water temperature (in/out) 16°C/10°C;
source side heat exchanger water temperature (in/out) 30°C/35°C.
- 6 User side heat exchanger water temperature (in/out) 23°C/15°C;

source side heat exchanger water temperature (in/out) 30°C/35°C.

- 7 Average sound pressure level at 1m distance, unit in a free field on a reflective surface;
non-binding value calculated from the sound power level.
- 8 Sound power on the basis of measurements made in compliance with ISO 9614.

9 Sound power level in cooling, indoors.

10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain R513A [GWP₁₀₀ 631] fluorinated greenhouse gases.

Certified data in EUROVENT



TR-W-G05-Z

High efficiency water cooled chiller with R513A refrigerant

TR-W-G05-Z			5B00	5B1A	5C00	5C1B	5D00	5D1C	6B00	6C00	6D00
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	1718-2454	1966-2809	1999-2856	2357-3367	2991-3739	3458-4322	2055-2935	2420-3458	3592-4490
EER	(1)	kW/kW	6.340	6.430	6.540	6.580	6.450	6.540	6.430	6.580	6.520
ESEER (up to)	(1)	kW/kW									
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	2046	2319	2421	2835	3426	3901	2434	2919	4092
EER	(1)(2)	kW/kW	5.900	6.020	6.080	6.150	6.020	6.130	6.020	6.150	6.110
Cooling energy class		A	A	A	A	A	A	A	A	A	A
SEPR	(3)(4)	-	-	-	-	-	-	-	-	-	-
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	2551	2914	3051	3575	3937	4522	3041	3685	4684
Total power input	(5)	kW	412,2	462,2	477,3	550,8	564,4	646,5	478,5	569,0	661,7
EER	(5)	kW/kW	6.189	6.305	6.392	6.491	6.976	6.995	6.355	6.476	7.079
23°C/15°C											
Cooling capacity	(6)	kW	2539	2888	3244	3742	3915	4491	3007	3892	4607
Total power input	(6)	kW	334,9	374,9	429,4	482,5	460,7	526,0	385,2	505,8	530,2
EER	(6)	kW/kW	7.581	7.703	7.555	7.755	8.498	8.538	7.806	7.695	8.689
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	98,21	111,3	116,2	136,0	164,7	187,4	116,8	140,1	196,6
Pressure drop	(1)(2)	kPa	60,0	56,2	61,2	57,6	91,4	77,4	56,6	58,5	80,2
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	113,9	128,7	134,2	156,9	190,0	215,8	135,1	161,5	226,4
Pressure drop	(1)(2)	kPa	38,6	45,1	39,7	44,7	60,8	60,4	44,9	43,9	66,5
REFRIGERANT CIRCUIT											
Compressors nr.		N°	5	6	5	6	5	6	6	6	6
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	1317	1594	1343	1583	1355	1739	1722	1555	1699
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	78	79	79	80	80	81	79	80	81
Sound power level in cooling	(8)(9)	dB(A)	99	100	100	101	101	102	100	101	102
SIZE AND WEIGHT											
A	(10)	mm	5700	6610	5700	6610	5700	6610	6610	6610	6610
B	(10)	mm	2350	2400	2350	2400	2350	2400	2400	2400	2400
H	(10)	mm	2400	2450	2400	2450	2400	2450	2450	2450	2450
Operating weight	(10)	kg	14550	19150	15180	20240	15890	21350	19400	20410	21560

Notes:

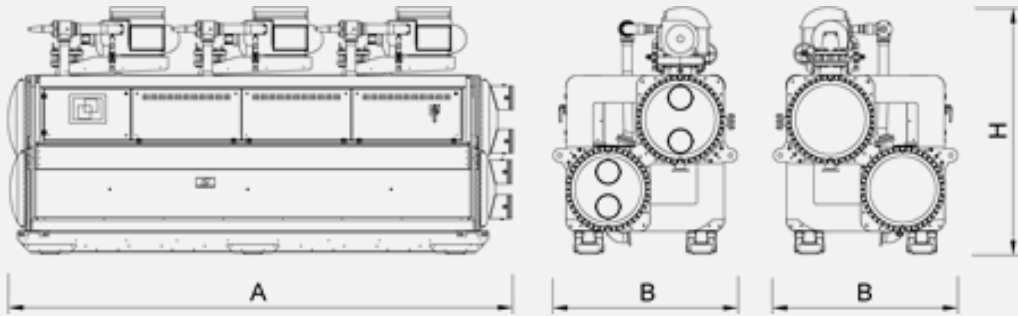
- 1 Plant (side) cooling exchanger water (in/out) 12°C/7°C;
Source (side) heat exchanger water (in/out) 30°C/35°C.
- 2 Values in compliance with EN14511
- 3 Seasonal energy efficiency ratio
- 4 Seasonal energy efficiency of high temperature process cooling
[REGULATION (EU) N. 2016/2281]
- 5 User side heat exchanger water temperature (in/out) 16°C/10°C;
source side heat exchanger water temperature (in/out) 30°C/35°C.
- 6 User side heat exchanger water temperature (in/out) 23°C/15°C;

source side heat exchanger water temperature (in/out) 30°C/35°C.

- 7 Average sound pressure level at 1m distance, unit in a free field on a reflective surface;
non-binding value calculated from the sound power level.
- 8 Sound power on the basis of measurements made in compliance with ISO 9614.
- 9 Sound power level in cooling, indoors.
- 10 Unit in standard configuration/execution, without optional accessories.

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R513A [GWP₁₀₀ 631] fluorinated greenhouse gases.**

Certified data in EUROVENT





TR-W-Z

High efficiency water cooled chiller with R134a refrigerant

TR-W-Z			1A00	1B00	1B1A	1B2A	1B3A	1C00	1C1A	1C1B	1C3B
Power supply	V/ph/Hz		400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	246,1-356,6	346,0-494,3	586,6-850,1	828,9-1201	1096-1566	400,6-572,2	648,9-927,0	744,4-1063	1438-2054
EER	(1)	kW/kW	6.250	6.310	6.250	6.080	6.260	6.460	6.340	6.360	6.380
ESEER (up to)	(1)	kW/kW									
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	246,1	366,9	586,0	827,1	1157	464,0	649,0	746,0	1723
EER	(1)(2)	kW/kW	6.060	6.060	6.070	5.940	6.020	6.140	6.160	6.180	5.970
Cooling energy class		A	A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		11,77	11,60	11,67	11,45	11,66	11,59	11,81	11,68	11,05
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	376,3	517,3	893,7	1271	1646	613,7	988,4	1130	2165
Total power input	(5)	kW	66,54	85,12	153,2	227,6	282,9	97,38	163,9	182,3	345,4
EER	(5)	kW/kW	5.659	6.079	5.834	5.584	5.818	6.301	6.031	6.199	6.268
23°C/15°C											
Cooling capacity	(6)	kW	387,0	521,1	910,6	1316	1676	658,2	1045	1182	2220
Total power input	(6)	kW	58,52	70,83	131,1	200,6	243,1	89,03	147,3	159,7	292,0
EER	(6)	kW/kW	6.615	7.360	6.946	6.560	6.894	7.396	7.094	7.401	7.603
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	11,80	17,59	28,09	39,62	55,47	22,24	31,10	35,75	82,69
Pressure drop	(1)(2)	kPa	19,2	22,1	26,1	21,6	35,1	24,6	26,2	26,3	53,2
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	13,66	20,35	32,51	46,03	64,24	25,69	35,93	41,29	95,77
Pressure drop	(1)(2)	kPa	17,7	20,8	21,0	19,8	26,7	24,0	20,8	20,5	34,5
REFRIGERANT CIRCUIT											
Compressors nr.		N°	1	1	2	3	4	1	2	2	4
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	215	220	390	495	747	262	436	416	1078
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	75	76	76	78	78	77	77	77	79
Sound power level in cooling	(8)(9)	dB(A)	93	94	95	97	98	95	96	96	99
SIZE AND WEIGHT											
A	(10)	mm	2910	2910	3050	3710	4690	2910	3050	3050	4720
B	(10)	mm	1000	1000	1620	1710	1890	1000	1620	1620	1890
H	(10)	mm	1950	1950	2190	2260	2400	1950	2190	2190	2400
Operating weight	(10)	kg	2690	2800	5200	7590	9320	2880	5280	5410	11010

TR-W-Z			1D00	1D1A	1D1B	1D1C	1D2C	1D3C	1D4C	1D5C	2A00
Power supply	V/ph/Hz		400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	595,5-744,4	757,5-1098	852,5-1235	1052-1315	1274-1901	1980-2475	2461-3076	2942-3677	499,4-713,5
EER	(1)	kW/kW	6.220	6.160	6.240	6.300	6.390	6.370	6.480	6.560	6.160
ESEER (up to)	(1)	kW/kW									
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	667,1	758,0	864,0	1077	1285	2160	2659	3153	526,0
EER	(1)(2)	kW/kW	5.970	5.970	6.040	6.040	6.200	6.010	6.090	6.190	5.940
Cooling energy class		A	A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		11,70	11,68	11,61	11,59	12,04	-	-	-	11,62
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	792,4	1169	1309	1405	2027	2640	3269	3899	753,4
Total power input	(5)	kW	117,0	184,2	202,8	216,4	311,6	409,5	499,0	587,3	134,1
EER	(5)	kW/kW	6.773	6.346	6.455	6.493	6.505	6.447	6.551	6.639	5.618
23°C/15°C											
Cooling capacity	(6)	kW	803,4	1194	1330	1464	2116	2772	3413	4054	776,3
Total power input	(6)	kW	98,27	157,5	169,8	189,7	273,6	362,5	437,0	510,3	118,3
EER	(6)	kW/kW	8.173	7.581	7.833	7.717	7.734	7.647	7.810	7.944	6.562
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	32,00	36,34	41,42	51,66	61,59	103,7	127,7	151,4	25,21
Pressure drop	(1)(2)	kPa	39,8	29,6	31,1	41,5	31,0	61,3	69,7	62,3	24,3
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	37,05	42,14	47,96	59,75	71,08	119,9	147,3	174,3	29,25
Pressure drop	(1)(2)	kPa	39,1	24,2	24,7	32,9	25,5	39,1	45,0	51,2	24,9
REFRIGERANT CIRCUIT											
Compressors nr.		N°	1	2	2	2	3	4	5	6	2
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	253	422	400	450	814	1017	1319	1696	273
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	78	78	78	78	79	79	79	80	76
Sound power level in cooling	(8)(9)	dB(A)	96	97	97	97	99	99	100	101	95
SIZE AND WEIGHT											
A	(10)	mm	2910	3050	3050	3050	4690	4720	5700	6610	2910
B	(10)	mm	1000	1620	1620	1620	1660	1890	2350	2400	1560
H	(10)	mm	1950	2190	2190	2190	2260	2400	2400	2450	2190
Operating weight	(10)	kg	2950	5350	5340	5420	8810	11410	15330	20580	4070

Notes:

- Plant (side) cooling exchanger water (in/out) 12°C/7°C;
Source (side) heat exchanger water (in/out) 30°C/35°C.
- Values in compliance with EN14511
- Seasonal energy efficiency ratio
- Seasonal energy efficiency of high temperature process cooling
[REGULATION (EU) N. 2016/2281]
- User side heat exchanger water temperature (in/out) 16°C/10°C;
source side heat exchanger water temperature (in/out) 30°C/35°C.
- User side heat exchanger water temperature (in/out) 23°C/15°C;

source side heat exchanger water temperature (in/out) 30°C/35°C.

- Average sound pressure level at 1m distance, unit in a free field on a reflective surface;
non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, indoors.
- Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain
HFC R134a [GWP₁₀₀ 1430] fluorinated greenhouse gases.

Certified data in EUROVENT



TR-W-Z			2B00	2B1A	2B2A	2B3A	2C00	2C1A	2C1B	2D00	2D1B
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	681,1-987,1	938,5-1341	1191-1702	1444-2063	798,7-1141	1054-1506	1150-1642	994,7-1485	1451-1988
EER	(1)	kW/kW	6.290	6.100	6.300	6.330	6.430	6.440	6.460	6.060	6.330
ESEER (up to)	(1)	kW/kW									
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	685,1	987,1	1257	1685	925,1	1135	1237	993,1	1464
EER	(1)(2)	kW/kW	6.100	5.900	6.030	5.900	6.090	6.180	6.200	5.890	6.090
Cooling energy class		A	A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		11,60	11,34	11,56	11,51	11,42	11,68	11,69	11,69	11,67
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	1034	1414	1784	2157	1224	1606	1747	1584	2102
Total power input	(5)	kW	171,5	247,5	300,2	359,4	195,6	259,0	276,1	235,9	314,9
EER	(5)	kW/kW	6.029	5.713	5.943	6.002	6.258	6.201	6.327	6.715	6.675
23°C/15°C											
Cooling capacity	(6)	kW	1045	1453	1806	2172	1315	1700	1836	1613	2118
Total power input	(6)	kW	143,4	213,9	254,0	301,4	179,4	232,5	243,7	199,6	261,1
EER	(6)	kW/kW	7.287	6.793	7.110	7.206	7.330	7.312	7.534	8.081	8.112
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	32,83	47,29	60,29	80,94	44,35	54,42	59,31	47,60	70,22
Pressure drop	(1)(2)	kPa	26,4	23,5	41,5	62,0	34,4	36,1	35,6	30,5	42,2
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	37,98	54,97	69,78	93,81	51,28	62,81	68,41	55,31	81,14
Pressure drop	(1)(2)	kPa	20,8	21,9	27,1	38,8	26,9	28,1	27,3	25,4	33,3
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	3	4	5	2	3	3	2	3
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	433	640	1015	1303	411	751	795	429	814
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	77	78	78	78	78	78	78	79	79
Sound power level in cooling	(8)(9)	dB(A)	96	97	98	99	97	98	98	98	99
SIZE AND WEIGHT											
A	(10)	mm	3050	3710	4720	5700	3050	4690	4690	3050	4690
B	(10)	mm	1620	1710	1890	2350	1620	1660	1660	1620	1660
H	(10)	mm	2190	2260	2400	2400	2190	2260	2260	2190	2260
Operating weight	(10)	kg	5340	7750	10610	13850	5330	8470	8700	5310	8810

TR-W-Z			2D1C	2D2B	2D2C	2D3C	2D4C	3A00	3B00	3B1A	3B2A
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	1656-2070	1984-2479	2117-2646	2599-3249	3081-3852	733,1-1062	1036-1480	1288-1839	1540-2200
EER	(1)	kW/kW	6.370	6.330	6.390	6.490	6.580	6.060	6.130	6.320	6.360
ESEER (up to)	(1)	kW/kW									
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	1870	2203	2360	2856	3350	732,1	1091	1359	1812
EER	(1)(2)	kW/kW	5.990	5.950	6.000	6.080	6.190	5.910	5.920	6.060	5.930
Cooling energy class		A	A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		11,34	-	-	-	-	11,48	11,35	11,57	11,56
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	2201	2617	2816	3444	4068	1129	1557	1925	2295
Total power input	(5)	kW	329,6	398,4	427,2	516,4	603,0	207,1	267,6	319,2	376,5
EER	(5)	kW/kW	6.678	6.569	6.592	6.669	6.746	5.451	5.818	6.031	6.096
23°C/15°C											
Cooling capacity	(6)	kW	2256	2638	2913	3548	4178	1178	1591	1942	2302
Total power input	(6)	kW	281,8	329,8	370,2	444,0	515,0	186,4	227,9	267,2	312,3
EER	(6)	kW/kW	8.006	7.999	7.869	7.991	8.113	6.320	6.981	7.268	7.371
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	89,77	105,8	113,3	137,2	160,8	35,07	52,27	65,17	86,97
Pressure drop	(1)(2)	kPa	62,7	66,7	66,6	75,6	67,1	21,5	23,7	40,7	61,8
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	103,8	122,4	131,0	158,3	185,2	40,76	60,73	75,40	100,7
Pressure drop	(1)(2)	kPa	48,9	44,7	42,3	48,7	53,3	19,6	22,5	26,5	39,5
REFRIGERANT CIRCUIT											
Compressors nr.		N°	3	4	4	5	6	3	3	4	5
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	812	1013	1094	1299	1667	501	598	985	1269
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	79	79	80	79	80	77	78	78	78
Sound power level in cooling	(8)(9)	dB(A)	99	99	100	100	101	96	97	98	99
SIZE AND WEIGHT											
A	(10)	mm	4690	4720	4720	5700	6610	3710	3710	4720	5700
B	(10)	mm	1660	1890	1890	2350	2400	1710	1710	1890	2350
H	(10)	mm	2260	2400	2400	2400	2450	2260	2260	2400	2400
Operating weight	(10)	kg	8880	11250	11450	15420	20750	7440	7370	10740	14050

Notes:

- Plant (side) cooling exchanger water (in/out) 12°C/7°C;
Source (side) heat exchanger water (in/out) 30°C/35°C.
- Values in compliance with EN14511
- Seasonal energy efficiency ratio
- Seasonal energy efficiency of high temperature process cooling
[REGULATION (EU) N. 2016/2281]
- User side heat exchanger water temperature (in/out) 16°C/10°C;
source side heat exchanger water temperature (in/out) 30°C/35°C.
- User side heat exchanger water temperature (in/out) 23°C/15°C;

source side heat exchanger water temperature (in/out) 30°C/35°C.

- Average sound pressure level at 1m distance, unit in a free field on a reflective surface;
non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, indoors.
- Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain
HFC R134a [GWP₁₀₀ 1430] fluorinated greenhouse gases.

Certified data in EUROVENT



TR-W-Z

High efficiency water cooled chiller with R134a refrigerant

TR-W-Z			3B3A	3C00	3C1A	3C1B	3C2B	3D00	3D1A	3D1C	3D2C
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	1793-2562	1205-1721	1453-2076	1550-2214	1907-2724	1792-2240	2076-2594	2254-2817	738-3423
EER	(1)	kW/kW	6.420	6.490	6.450	6.470	6.540	6.340	6.330	6.370	6.490
ESEER (up to)	(1)	kW/kW									
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	2095	1310	1753	1877	2292	2068	2354	2559	3057
EER	(1)(2)	kW/kW	6.010	6.230	6.010	6.040	6.080	5.960	5.930	5.980	6.060
Cooling energy class		A	A	A	A	A	A	A	A	A	A
SEPR	(3)(4)	-	-	11,81	11,13	11,21	-	-	-	-	-
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	2666	1844	2217	2359	2885	2377	2752	2992	3620
Total power input	(5)	kW	432,0	290,9	356,0	372,9	449,4	347,7	413,4	445,0	533,9
EER	(5)	kW/kW	6.171	6.339	6.228	6.326	6.420	6.836	6.657	6.724	6.780
23°C/15°C											
Cooling capacity	(6)	kW	2660	1974	2355	2492	3000	2398	2782	3053	3683
Total power input	(6)	kW	355,9	265,1	321,1	331,9	389,4	289,8	346,9	377,8	451,1
EER	(6)	kW/kW	7.474	7.446	7.334	7.508	7.704	8.275	8.020	8.081	8.164
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	100,5	62,81	84,10	90,04	110,1	99,34	113,1	122,9	146,9
Pressure drop	(1)(2)	kPa	56,3	35,8	52,2	52,5	59,6	69,1	76,3	72,4	81,1
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	116,2	72,40	97,31	104,1	127,1	114,9	130,9	142,1	169,4
Pressure drop	(1)(2)	kPa	43,8	28,5	34,4	33,7	41,8	56,4	48,8	47,1	55,8
REFRIGERANT CIRCUIT											
Compressors nr.		N°	6	3	4	4	5	3	4	4	5
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	1677	795	1078	1013	1252	850	1059	1072	1400
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	79	78	79	79	79	79	80	80	80
Sound power level in cooling	(8)(9)	dB(A)	100	98	99	99	100	99	100	100	101
SIZE AND WEIGHT											
A	(10)	mm	6610	4690	4720	4720	5700	4690	4720	4720	5700
B	(10)	mm	2400	1660	1890	1890	2350	1660	1890	1890	2350
H	(10)	mm	2450	2260	2400	2400	2400	2260	2400	2400	2400
Operating weight	(10)	kg	18670	8700	11010	11210	14910	9010	11250	11580	15500

TR-W-Z			3D3C	4B00	4B1A	4B2A	4C00	4C1B	4D00	4D1C	4D2C
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	3221-4026	1384-1978	1636-2337	1890-2700	1376-2294	1964-2806	2388-2985	2877-3596	3360-4200
EER	(1)	kW/kW	6.590	6.350	6.390	6.450	6.440	6.560	6.330	6.480	6.600
ESEER (up to)	(1)	kW/kW									
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	3549	1462	1937	2218	1498	2370	2755	3255	3750
EER	(1)(2)	kW/kW	6.190	6.090	5.950	6.030	6.240	6.100	5.940	6.050	6.170
Cooling energy class		A	A	A	A	A	A	A	A	A	A
SEPR	(3)(4)	-	-	11,59	11,64	-	12,05	-	-	-	-
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	4238	2066	2433	2806	2456	2985	3169	3793	4407
Total power input	(5)	kW	618,2	337,3	393,4	447,8	387,5	464,1	464,3	550,3	633,6
EER	(5)	kW/kW	6.855	6.125	6.185	6.266	6.338	6.432	6.825	6.893	6.955
23°C/15°C											
Cooling capacity	(6)	kW	4300	2074	2431	2790	2628	3141	3198	3813	4423
Total power input	(6)	kW	519,2	278,7	322,7	366,3	352,8	410,3	387,6	456,6	523,6
EER	(6)	kW/kW	8.282	7.442	7.533	7.617	7.449	7.655	8.251	8.351	8.447
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	170,4	70,11	92,98	106,4	71,80	113,8	132,4	156,5	180,1
Pressure drop	(1)(2)	kPa	71,5	40,1	60,5	57,3	30,7	62,1	81,7	88,9	75,7
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	196,1	81,06	107,7	123,0	82,82	131,3	153,1	180,4	207,3
Pressure drop	(1)(2)	kPa	54,8	26,4	39,1	45,1	20,4	42,4	54,7	54,9	61,2
REFRIGERANT CIRCUIT											
Compressors nr.		N°	6	4	5	6	4	5	4	5	6
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	1626	1078	1233	1638	1050	1239	1072	1380	1767
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	80	78	78	79	79	79	80	80	80
Sound power level in cooling	(8)(9)	dB(A)	101	98	99	100	99	100	100	101	101
SIZE AND WEIGHT											
A	(10)	mm	6610	4720	5700	6610	4720	5700	4720	5700	6610
B	(10)	mm	2400	1890	2350	2400	1890	2350	1890	2350	2400
H	(10)	mm	2450	2400	2400	2450	2400	2400	2400	2400	2450
Operating weight	(10)	kg	21010	10920	14300	18880	11250	15000	11580	15730	21180

Notes:

- Plant (side) cooling exchanger water (in/out) 12°C/7°C;
Source (side) heat exchanger water (in/out) 30°C/35°C.
- Values in compliance with EN14511
- Seasonal energy efficiency ratio
- Seasonal energy efficiency of high temperature process cooling
[REGULATION (EU) N. 2016/2281]
- User side heat exchanger water temperature (in/out) 16°C/10°C;
source side heat exchanger water temperature (in/out) 30°C/35°C.
- User side heat exchanger water temperature (in/out) 23°C/15°C;

source side heat exchanger water temperature (in/out) 30°C/35°C.

- Average sound pressure level at 1m distance, unit in a free field on a reflective surface;
non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, indoors.
- Unit in standard configuration/execution, without optional accessories.

**The units highlighted in this publication contain
HFC R134a [GWP₁₀₀ 1430] fluorinated greenhouse gases.**

Certified data in EUROVENT



TR-W-Z			5B00	5B1A	5C00	5C1B	5D00	5D1C	6B00	6C00	6D00
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	1732-2474	1986-2837	2021-2888	2381-3401	3016-3770	3500-4374	2082-2974	2440-3486	3639-4549
EER	(1)	kW/kW	6.420	6.470	6.600	6.640	6.470	6.590	6.490	6.660	6.580
ESEER (up to)	(1)	kW/kW									
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	2062	2342	2448	2864	3453	3948	2466	2942	4147
EER	(1)(2)	kW/kW	5.970	6.050	6.130	6.200	6.040	6.170	6.070	6.220	6.160
Cooling energy class			A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		-	-	-	-	-	-	-	-	-
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	2571	2943	3085	3611	3968	4577	3081	3715	4746
Total power input	(5)	kW	410,2	464,0	478,3	551,4	567,3	649,1	480,4	566,7	664,4
EER	(5)	kW/kW	6.268	6.343	6.450	6.549	6.995	7.051	6.413	6.555	7.143
23°C/15°C											
Cooling capacity	(6)	kW	2560	2918	3280	3780	3947	4546	3046	3923	4668
Total power input	(6)	kW	333,2	376,4	430,3	483,0	463,1	528,1	386,8	503,8	532,4
EER	(6)	kW/kW	7.683	7.752	7.623	7.826	8.523	8.608	7.875	7.787	8.768
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	99,01	112,4	117,5	137,4	166,0	189,7	118,4	141,2	199,2
Pressure drop	(1)(2)	kPa	61,0	57,3	62,6	58,7	92,9	79,2	58,1	59,4	82,3
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	114,6	129,9	135,5	158,3	191,4	218,2	136,7	162,6	229,2
Pressure drop	(1)(2)	kPa	39,1	45,9	40,4	45,5	61,7	61,7	46,0	44,5	68,1
REFRIGERANT CIRCUIT											
Compressors nr.		N°	5	6	5	6	5	6	6	6	6
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	1317	1594	1343	1583	1355	1739	1722	1555	1699
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	78	79	79	80	80	81	79	80	81
Sound power level in cooling	(8)(9)	dB(A)	99	100	100	101	101	102	100	101	102
SIZE AND WEIGHT											
A	(10)	mm	5700	6610	5700	6610	5700	6610	6610	6610	6610
B	(10)	mm	2350	2400	2350	2400	2350	2400	2400	2400	2400
H	(10)	mm	2400	2450	2400	2450	2400	2450	2450	2450	2450
Operating weight	(10)	kg	14550	19150	15180	20240	15890	21350	19400	20410	21560

Notes:

- 1 Plant (side) cooling exchanger water (in/out) 12°C/7°C;
Source (side) heat exchanger water (in/out) 30°C/35°C.
- 2 Values in compliance with EN14511
- 3 Seasonal energy efficiency ratio
- 4 Seasonal energy efficiency of high temperature process cooling
[REGULATION (EU) N. 2016/2281]
- 5 User side heat exchanger water temperature (in/out) 16°C/10°C;
source side heat exchanger water temperature (in/out) 30°C/35°C.
- 6 User side heat exchanger water temperature (in/out) 23°C/15°C;

source side heat exchanger water temperature (in/out) 30°C/35°C.

- 7 Average sound pressure level at 1m distance, unit in a free field on a reflective surface;
non-binding value calculated from the sound power level.
- 8 Sound power on the basis of measurements made in compliance with ISO 9614.
- 9 Sound power level in cooling, indoors.
- 10 Unit in standard configuration/execution, without optional accessories.

**The units highlighted in this publication contain
HFC R134a [GWP₁₀₀ 1430] fluorinated greenhouse gases.**

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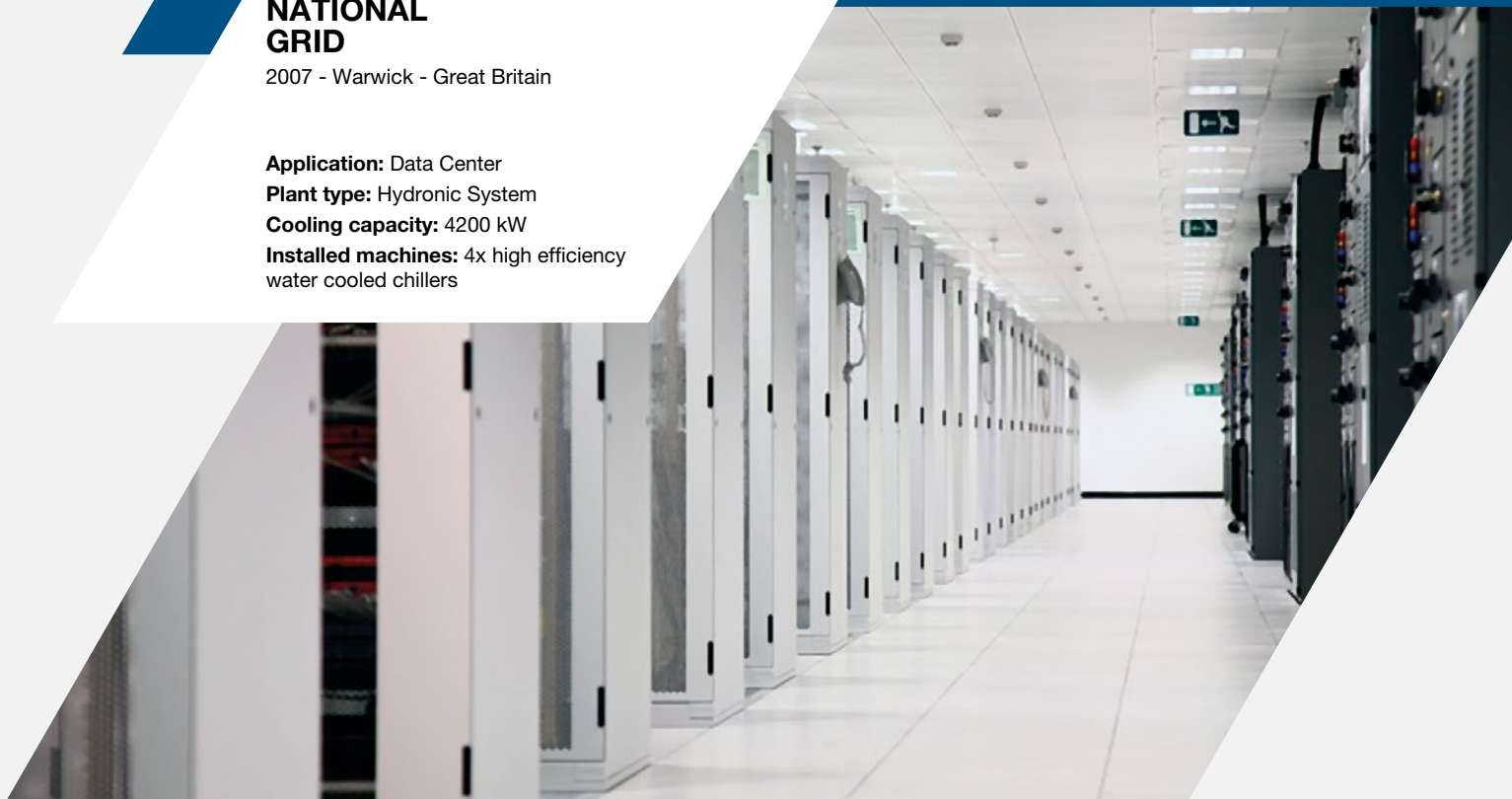
2007 - Warwick - Great Britain

Application: Data Center

Plant type: Hydronic System

Cooling capacity: 4200 kW

Installed machines: 4x high efficiency
water cooled chillers



VODAFONE MSC MILANO 3

2015-2016 - Milan - Italy

Application: Data Center

Plant type: Hydronic System

Cooling capacity: 1700 kW

Installed machines: 2x high efficiency
water cooled chillers



Every project is characterised by different conditions and system specifications for many different climates. All of them share high energy efficiency, reduced noise emissions, and the reliability standards of the RC brand.

ASTRO HOUSE DATA CENTER

2012- Fareham - Great Britain

Application: Data Center

Plant type: Hydronic System

Cooling capacity: 1650 kW

Installed machines: 3x high efficiency low
condensing water cooled chillers



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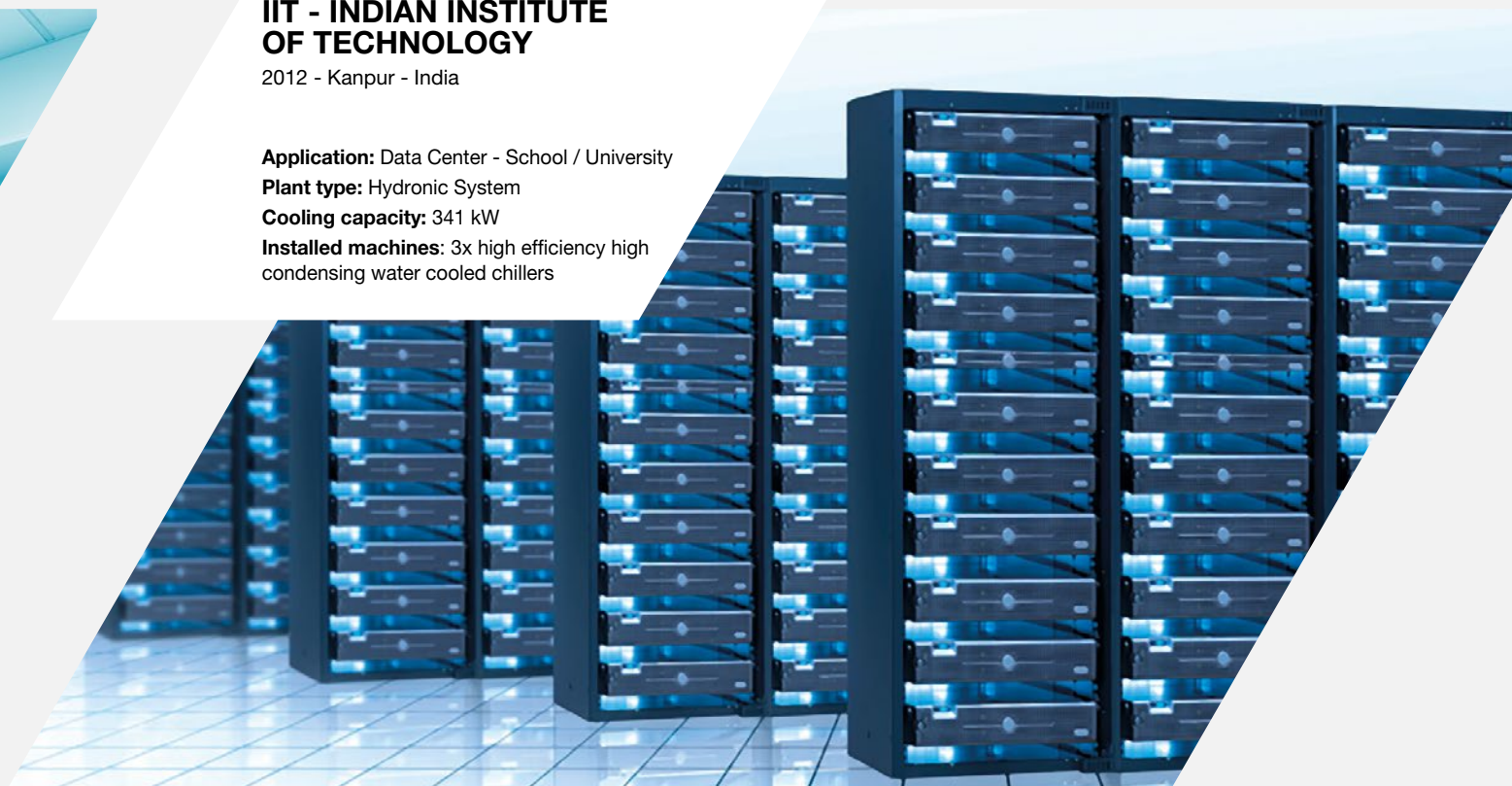
2012 - Kanpur - India

Application: Data Center - School / University

Plant type: Hydronic System

Cooling capacity: 341 kW

Installed machines: 3x high efficiency high
condensing water cooled chillers





for a greener tomorrow

Eco Changes is the Mitsubishi Electric Group's environmental statement, and expresses the Group's stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.



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