MITSUBISHI ELECTRIC
HYDRONICS & IT COOLING SYSTEMS S.p.A.

IT COOLING

CHILLERS

TRCS2-G05-Z

AIR COOLED CHILLERS WITH OIL-FREE COMPRESSORS FROM 218 TO 1313 kW

R513A

rcitcooling.com

TRCS2-G05-Z

THE GREEN CHILLER OPERATING AT PEAK EFFICIENCY

Air cooled chiller with oil-free compressors. From 218 to 1313 kW

Resulting from the recognised prestige of RC brand products utilising magnetic levitation technology, TRCS2-G05-Z air cooled chillers match together the advantages of the oil-free technology with the 513A innovative green refrigerant.

Brilliantly engineered to achieve premium levels of efficiency and reliability, TRCS2-G05-Z also feature a very compact layout and silent operation that make this unit the ideal solution for any IT cooling application.

IT COOLING APPLICATIONS

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

LOW OPERATING COSTS

In application working for more than 8000 hours/year, even a small increase in the product efficiency can lead to a significant saving on the overall energy bill. Each component must be accurately selected in order to achieve premium efficiency levels in all operating loads.
The combination of the oil-free compressors, the in-house designed evaporator and the high efficiency EC fans, make together TRCS2-G05-Z the solution that always harness the highest cooling efficiency, in every load condition.

24/7 RELIABILITY

The uninterrupted operations of data centers, telecommunications infrastructures and manufacturing machineries depend on a steady and precise cooling load coverage.

RC's approach to cooling dependability goes beyond the unit's accurate and sturdy design. It also involves several devices and functions that maximise unit's uptime in case of emergency circumstances such as power supply outage.

ACOUSTIC VERSIONS

SL-CA	**Super Low noise version**, Class A of efficiency
XL-CA	**Extra Low noise version**, Class A of efficiency
SL-CA-E	**Super Low noise version**, Premium efficiency, Class A enhanced

HEAT RECOVERY CONFIGURATIONS

-	Basic function
D	Partial condensing heat recovery function

ALL-ROUND SUSTAINABILITY

R513A

TRCS2-G05-Z is the result of Mitsubishi Electric Hydronics & IT Cooling Systems' extensive approach to sustainability.

Increasing concerns about the global warming impact of chillers and heat pumps is driving new regulatory policies to push towards even more efficient units with the lowest carbon footprint.

Today, an all-round approach is the only way to effectively reduce the Total Equivalent Warming Impact (TEWI).

Fully committed to support the creation of a greener tomorrow, Mitsubishi Electric Hydronics & IT Cooling Systems designed TRCS2-G05-Z, a complete chiller range with reduced environmental impact, optimized for R513A refrigerant.

Combining brilliant annual efficiency with the use of a low GWP refrigerant, TRCS2-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.

R513A

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
1234ze	7	MILDLY flammable
1234yf	4	MILDLY flammable

*IPCC AR4 **ASHRAE 34 - ISO 817

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 TRCS2-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).

SIMPLIFIED LOGISTICS

PLUG & PLAY

Oil-free compressors feature an extremely advantageous capacity / weight ratio.
The considerable weight reduction allows simplified on-site operations and a more compact layout compared to traditional screw compressor chillers.

LOW IN RUSH CURRENT

SoftSTART

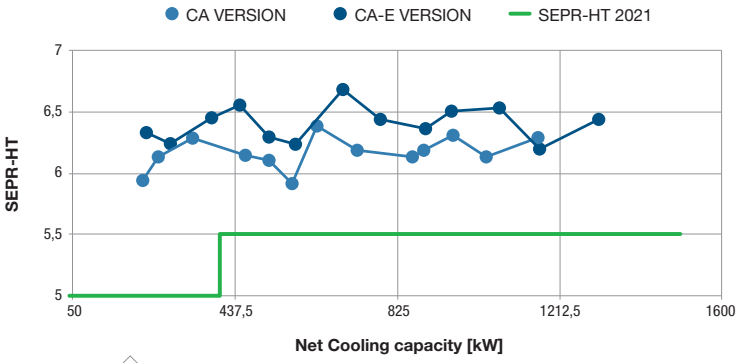
A further benefit is the very low inrush current, obtained thanks to the characteristics of the compressor and to the "inverter" starting. This is a crucial factor, as it allows a more favourable selection of the protection devices to be placed on the power supply between transformer and unit.

TECHNOLOGICAL CHOICES

CENTRIFUGAL COMPRESSOR WITH MAGNETIC LEVITATION

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 heat exchange penalisation. Partial load efficiency, which is crucial to reduce energy consumption during all-year-round operation, is therefore strongly increased

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

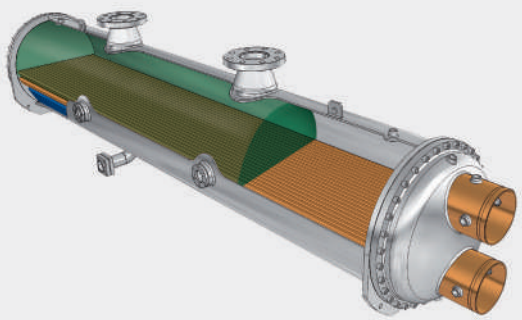


Every version of TECS2-G05, is erp 2021 compliant for High temperature Process application, and is at the maximum level of efficiency at both partial and full load

Flooded evaporator

Designed and built internally, the geometry of the flooded evaporator grants optimum temperature distribution along the shell, hence highly efficient heat exchange and low refrigerant pressure drops.

Allowing the over-heating surface to be eliminated, the flooded evaporation delivers unbeatable heat exchange efficiency, but it also requires maximum care in keeping the exact liquid refrigerant level.



W3000TE CONTROL AND USER-FRIENDLY INTERFACE

The logic behind TRCS2-G05-Z is the W3000TE control software.

Characterized by advanced functions and algorithms, **W3000TE features proprietary settings** that ensure faster adaptive responses to different dynamics, in all operating conditions:

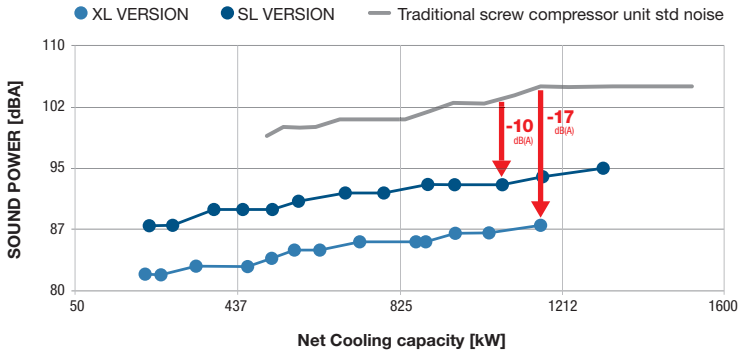
Efficiency, silent operation and reliability. But also compact dimensions and reduced weight. These are the main features that make TRCS2-G05-Z the most reliable solution for IT Cooling applications.

EC FANS FOR A SUPER SILENT OPERATION

On TRCS2-G05-Z units, the technology of EC electronic switching fans is introduced, as standard on SL-CA-E versions and optional on the other models.

The superior energy efficiency of the DC brushless motor further improves the chiller's performance, that reaches the highest efficiencies at full and partial load level in the market.

More advantages are low inrush current and the ability to continuously modulate the rotational speed with an immediate gain in both silence and energy consumption.

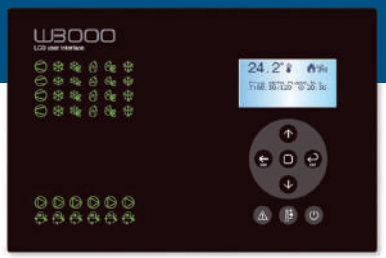


TRCS2-G05-Z shows as the EC fans on the XL and SL versions ensure very low noise levels compared to traditional screw compressor units. These unbeatable sound power levels make this unit the perfect solution for noise critical applications.

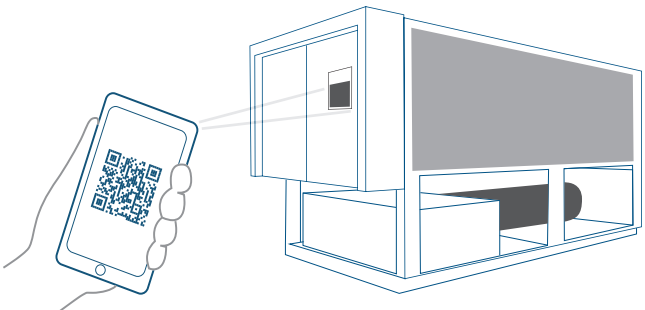
Electronic Expansion Valve

The electronic valve is adopted to grant the ideal operation of the evaporator in all conditions.
In the air cooled unit the control is made with a precise measurement of the subcooling in the condenser coil.

The fast processing of the acquired data allow a quick, fluctuation-free regulation, and therefore a highly accurate adjustment to the swings of load and ambient conditions.



- ✔ Efficient and reliable operation in all conditions
- ✔ Connectivity with the most commonly used BMS protocols (Opt.)
- ✔ Demand limit option (available for double circuit units).



Easier on-site operation

Real-time graphs and trends

Data logger function

As an option, the direct control over the unit comes through the innovative **KIPlink interface**. Based on Wi-Fi technology, KIPlink gets rid of the standard keyboard and **allows one to operate on the unit directly from a mobile device** (smartphone, tablet, notebook).

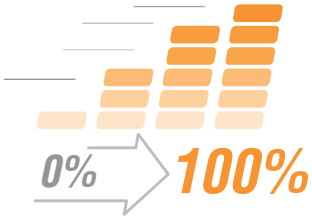
EQUIPMENT FOR MISSION CRITICAL APPLICATIONS

Committed to ensure the highest standards of reliability, TRCS2-G05-Z includes a full range of devices and functions that maximize unit's uptime in case of emergency circumstances.

FAST RESTART

Ensures a **faster return to the necessary cooling** levels in the shortest time possible, while maintaining the **reliability** of the chiller.

Ensure immediate cooling start-up within 25”



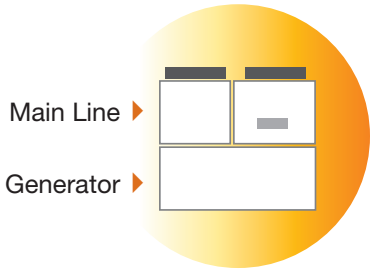
Have the unit running at full load in a shorter time

A 2-cpr unit in standard working conditions delivers 100% of cooling capacity within 180” after power is restored.

Fast restart - UPS excluded (Opt.4501)
This option requires an external 230V AC UPS, not supplied with the unit, to keep the on-board controller functional and ensure fast restart after a power outage.

Fast restart - UPS included (Opt. 4502)
This option includes an electric device capable of keeping the controller power supply uninterrupted during a power failure. The capacity of this device is selected on the basis of the needs of a specific project.

DOUBLE POWER SUPPLY



Redundancy increases uptime. TRCS2-G05-Z extends this concept also to the electrical supply: the unit, equipped with an ATS*, can be connected to two separate power lines to enhance the system's dependability.

In case of a main line power outage, the ATS* automatically switches over to the backup line, granting uninterrupted power supply to the unit.
The double power supply makes TRCS2-G05-Z suitable for Uptime Institute's TIER III and TIER IV** design topologies, the highest standards of reliability.

* ATS: Automatic Transfer Switch
** The Tier Classification System provides the data center industry with a consistent method to compare typically unique facilities based on expected site infrastructure performance, or uptime.

Double power supply (ATS) (Opt. 1561)
The ATS, installed within the electrical board, automatically senses if one of the sources has lost or gained power. The switching is completely automatic (line priority and frequency of checking are selectable).

Double power supply (Motorized changeover) (Opt. 1562)
The motorized changeover, installed within the electrical board, is with remote control (i.e. signal of generator start-up).

ENERGY METER

You can't manage what you don't measure.

PUE (Power usage effectiveness) is the ratio that determines how energy efficient data centers are comparing the power currently used for the IT equipment with the power used by the infrastructure which keeps that IT equipment working, including the cooling system.
Energy meter option allows to acquire the electrical data and the power absorbed by the unit and send them to the supervisor for energy metering.

TRCS2-G05-Z 0211 - 1154

Chiller, air source for outdoor installation, from 218 to 1313 kW.

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

R R513A | COOLING | VPF | CENTRIF. | ENERG.CL. | VSPEED | AXIAL | FL FLOODED

TRCS2-G05-Z/SL-CA			0211	0251	0351	0452	0512	0552	0652
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
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	230,4	255,9	343,3	437,9	502,5	567,3	643,1
Total power input	(1)	kW	70,85	80,82	110,0	137,7	160,7	173,5	207,2
EER	(1)	kW/kW	3,254	3,167	3,121	3,180	3,127	3,270	3,104
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	229,6	255,2	342,4	436,9	501,3	565,7	641,9
EER	(1)(2)	kW/kW	3,210	3,130	3,090	3,150	3,100	3,230	3,080
Cooling energy class			A	A	A	A	A	A	A
SEPR	(3)(4)		5,80	5,87	6,04	5,92	6,00	5,68	6,15
COOLING ONLY (GROSS VALUE) 16°C/10°C									
Cooling capacity	(5)	kW	254,9	282,6	376,8	483,5	554,5	649,1	739,0
Total power input	(5)	kW	71,05	81,17	113,4	138,1	161,4	186,9	212,8
EER	(5)	kW/kW	3,590	3,480	3,323	3,501	3,436	3,473	3,473
23°C/15°C									
Cooling capacity	(6)	kW	296,3	330,2	453,0	565,0	649,7	710,8	849,7
Total power input	(6)	kW	70,49	81,28	116,2	137,7	162,0	193,5	217,5
EER	(6)	kW/kW	4,203	4,062	3,898	4,103	4,010	3,673	3,907
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	11,02	12,24	16,42	20,94	24,03	27,13	30,76
Pressure drop	(1)(2)	kPa	35,7	27,0	28,1	27,0	27,0	34,4	20,7
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	100	100	120	210	180	210	240
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	56	56	58	58	58	59	59
Sound power level in cooling	(8)(9)	dB(A)	88	88	90	90	90	91	92
SIZE AND WEIGHT									
A	(10)	mm	3100	3100	4000	4900	4900	5800	7000
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2430	2430	2430	2430	2430	2430	2430
Operating weight	(10)	kg	2320	2370	3050	4000	4240	4530	5800

TRCS2-G05-Z/XL-CA			0712	0853	0913	1013	1054	1154
Power supply		V/ph/Hz	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	733,3	840,5	891,7	964,6	1056	1173
Total power input	(1)	kW	225,0	269,6	287,3	309,1	335,2	373,3
EER	(1)	kW/kW	3,259	3,118	3,104	3,121	3,150	3,142
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	731,7	838,5	889,3	962,5	1053	1170
EER	(1)(2)	kW/kW	3,230	3,090	3,070	3,090	3,120	3,110
Cooling energy class			A	A	A	A	A	A
SEPR	(3)(4)		6,06	5,98	5,98	6,09	5,89	6,09
COOLING ONLY (GROSS VALUE) 16°C/10°C								
Cooling capacity	(5)	kW	822,3	922,7	978,7	1060	1167	1286
Total power input	(5)	kW	232,8	273,3	292,9	317,5	336,7	379,7
EER	(5)	kW/kW	3,532	3,376	3,341	3,339	3,466	3,387
23°C/15°C								
Cooling capacity	(6)	kW	928,7	1124	1181	1272	1364	1560
Total power input	(6)	kW	241,8	278,7	299,0	324,3	337,4	386,9
EER	(6)	kW/kW	3,841	4,033	3,950	3,922	4,043	4,032
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	35,07	40,19	42,64	46,13	50,52	56,08
Pressure drop	(1)(2)	kPa	26,9	31,2	35,1	29,0	34,7	36,7
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	3	3	3	4	4
No. Circuits		N°	1	2	2	2	2	2
Refrigerant charge		kg	280	340	430	490	480	520
NOISE LEVEL								
Sound Pressure	(7)	dB(A)	59	60	60	60	61	61
Sound power level in cooling	(8)(9)	dB(A)	92	93	93	93	94	94
SIZE AND WEIGHT								
A	(10)	mm	7000	8500	9700	10600	11200	11500
B	(10)	mm	2260	2260	2260	2260	2260	2260
H	(10)	mm	2430	2430	2430	2430	2430	2430
Operating weight	(10)	kg	6150	6940	7370	8150	8700	9020

TRCS2-G05-Z 0211 - 1154

Chiller, air source for outdoor installation,
from 218 to 1313 kW.

TRCS2-G05-Z/SL-CA-E			0211	0251	0351	0452	0512	0552	0652
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
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	217,9	252,4	338,6	431,0	519,2	573,0	634,0
Total power input	(1)	kW	68,84	79,54	109,0	135,9	165,3	171,1	205,8
EER	(1)	kW/kW	3,167	3,175	3,106	3,171	3,141	3,349	3,081
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	217,2	251,7	337,7	430,0	517,9	571,4	632,9
EER	(1)(2)	kW/kW	3,120	3,140	3,070	3,140	3,110	3,310	3,060
Cooling energy class			A	A	B	A	A	A	B
SEPR	(3)(4)		5,93	6,13	6,28	6,14	6,10	5,92	6,38
COOLING ONLY (GROSS VALUE) 16°C/10°C									
Cooling capacity	(5)	kW	240,7	278,6	387,1	475,4	573,1	647,9	726,1
Total power input	(5)	kW	69,03	79,90	110,0	136,3	166,1	179,5	206,5
EER	(5)	kW/kW	3,488	3,487	3,519	3,488	3,450	3,609	3,516
23°C/15°C									
Cooling capacity	(6)	kW	281,3	326,3	445,4	557,1	671,5	740,2	836,0
Total power input	(6)	kW	68,83	80,21	113,6	136,2	166,9	187,6	212,9
EER	(6)	kW/kW	4,089	4,069	3,921	4,090	4,023	3,946	3,927
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	10,42	12,07	16,19	20,61	24,83	27,40	30,32
Pressure drop	(1)(2)	kPa	32,0	26,3	27,3	26,2	28,8	35,1	20,1
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	100	100	130	220	220	240	270
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	50	50	51	51	52	52	52
Sound power level in cooling	(8)(9)	dB(A)	82	82	83	83	84	85	85
SIZE AND WEIGHT									
A	(10)	mm	3100	3100	4000	4900	5800	7000	7000
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2430	2430	2430	2430	2430	2430	2430
Operating weight	(10)	kg	2370	2420	3200	4240	4690	5350	6150

TRCS2-G05-Z/SL-CA-E			0712	0853	0913	1013	1054	1154
Power supply	V/ph/Hz		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	730,0	865,8	888,0	959,1	1040	1163
Total power input	(1)	kW	226,0	279,0	290,4	311,0	330,3	376,9
EER	(1)	kW/kW	3,230	3,103	3,058	3,084	3,149	3,086
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	728,4	863,6	885,7	957,0	1037	1160
EER	(1)(2)	kW/kW	3,200	3,070	3,030	3,060	3,120	3,050
Cooling energy class			A	A	B	B	A	B
SEPR	(3)(4)		6,18	6,13	6,18	6,30	6,13	6,28
COOLING ONLY (GROSS VALUE) 16°C/10°C								
Cooling capacity	(5)	kW	817,5	950,3	1020	1097	1149	1338
Total power input	(5)	kW	228,8	282,7	291,5	312,6	331,8	377,4
EER	(5)	kW/kW	3,573	3,362	3,499	3,509	3,463	3,545
23°C/15°C								
Cooling capacity	(6)	kW	941,8	1152	1175	1263	1346	1543
Total power input	(6)	kW	236,1	283,2	297,9	322,3	333,4	382,8
EER	(6)	kW/kW	3,989	4,068	3,944	3,919	4,037	4,031
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	34,91	41,40	42,47	45,87	49,75	55,63
Pressure drop	(1)(2)	kPa	26,7	33,1	34,8	28,6	33,7	36,1
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	3	3	3	4	4
No. Circuits		N°	1	2	2	2	2	2
Refrigerant charge		kg	310	410	450	520	500	580
NOISE LEVEL								
Sound Pressure	(7)	dB(A)	53	53	53	54	54	55
Sound power level in cooling	(8)(9)	dB(A)	86	86	86	87	87	88
SIZE AND WEIGHT								
A	(10)	mm	7900	9400	9700	10600	11200	12400
B	(10)	mm	2260	2260	2260	2260	2260	2260
H	(10)	mm	2430	2430	2430	2430	2430	2430
Operating weight	(10)	kg	6650	7520	7770	8650	9150	9960

Notes:
1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 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 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m 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, outdoors.
10 Unit in standard configuration/execution, without optional accessories.
The units highlighted in this publication contain R513A [GWP_{100} 631] fluorinated greenhouse gases.

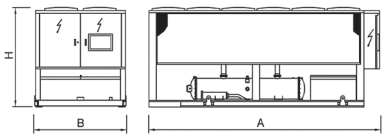
Certified data in EUROVENT

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

VPF | R513A | COOLING | ENERGY CLASS
VSPEED | CENTRIFUGAL | AXIAL | FLOODED

TRCS2-G05-Z/SL-CA-E			0211	0251	0351	0452	0512	0552	0652
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
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	226,4	282,8	381,9	450,5	520,5	583,5	695,8
Total power input	(1)	kW	67,41	81,04	112,7	133,0	154,1	168,3	203,5
EER	(1)	kW/kW	3,359	3,491	3,389	3,387	3,378	3,467	3,419
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	225,6	281,9	380,8	449,4	519,2	581,8	694,4
EER	(1)(2)	kW/kW	3,310	3,440	3,340	3,350	3,340	3,420	3,390
Cooling energy class			A	A	A	A	A	A	A
SEPR	(3)(4)		6,32	6,24	6,45	6,56	6,29	6,23	6,68
COOLING ONLY (GROSS VALUE) 16°C/10°C									
Cooling capacity	(5)	kW	250,5	308,4	414,8	498,1	594,6	636,1	756,7
Total power input	(5)	kW	67,53	85,47	117,1	133,3	167,2	177,7	209,9
EER	(5)	kW/kW	3,711	3,607	3,542	3,737	3,556	3,580	3,605
23°C/15°C									
Cooling capacity	(6)	kW	290,7	354,6	481,2	579,1	651,1	728,9	877,2
Total power input	(6)	kW	66,82	91,17	123,0	132,1	172,5	189,8	219,0
EER	(6)	kW/kW	4,352	3,888	3,912	4,384	3,774	3,840	4,005
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	10,83	13,52	18,26	21,55	24,89	27,90	33,27
Pressure drop	(1)(2)	kPa	34,5	33,0	34,7	28,6	29,0	36,4	24,2
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	100	100	130	220	220	240	270
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	56	56	58	58	58	59	59
Sound power level in cooling	(8)(9)	dB(A)	88	88	90	90	90	91	92
SIZE AND WEIGHT									
A	(10)	mm	3100	3100	4000	4900	4900	5800	7000
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2430	2430	2430	2430	2430	2430	2430
Operating weight	(10)	kg	2270	2350	3130	4070	4230	4570	6040

TRCS2-G05-Z/SL-CA-E			0712	0853	0913	1013	1054	1154
Power supply	V/ph/Hz		400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
REFRIGERAZIONE (GROSS VALUE)								
Cooling capacity	(1)	kW	786,2	894,0	956,7	1071	1168	1313
Total power input	(1)	kW	233,3	263,0	279,5	316,2	335,5	382,5
EER	(1)	kW/kW	3,370	3,399	3,423	3,387	3,481	3,433
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	784,3	891,6	953,9	1068	1164	1309
EER	(1)(2)	kW/kW	3,330	3,360	3,380	3,350	3,430	3,380
Cooling energy class			A	A	A	A	A	A
SEPR	(3)(4)		6,44	6,36	6,51	6,53	6,20	6,43
COOLING ONLY (GROSS VALUE) 16°C/10°C								
Cooling capacity	(5)	kW	854,3	1012	1043	1165	1274	1428
Total power input	(5)	kW	243,0	282,4	289,9	327,2	354,3	400,1
EER	(5)	kW/kW	3,516	3,584	3,598	3,561	3,596	3,569
23°C/15°C								
Cooling capacity	(6)	kW	987,0	1128	1206	1352	1460	1651
Total power input	(6)	kW	255,5	291,6	304,6	342,8	378,8	422,8
EER	(6)	kW/kW	3,863	3,868	3,959	3,944	3,854	3,905
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	37,60	42,75	45,75	51,24	55,85	62,77
Pressure drop	(1)(2)	kPa	31,0	35,3	40,4	35,7	42,4	46,0
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	3	3	3	4	4
No. Circuits		N°	1	2	2	2	2	2
Refrigerant charge		kg	310	410	450	520	500	580
NOISE LEVEL								
Sound Pressure	(7)	dB(A)	59	60	60	60	61	62
Sound power level in cooling	(8)(9)	dB(A)	92	93	93	93	94	95
SIZE AND WEIGHT								
A	(10)	mm	7900	8500	9700	10600	11200	12400
B	(10)	mm	2260	2260	2260	2260	2260	2260
H	(10)	mm	2430	2430	2430	2430	2430	2430
Operating weight	(10)	kg	6450	7020	7610	8510	8660	9720



“ EXPERIENCE IS BY FAR THE BEST PROOF”

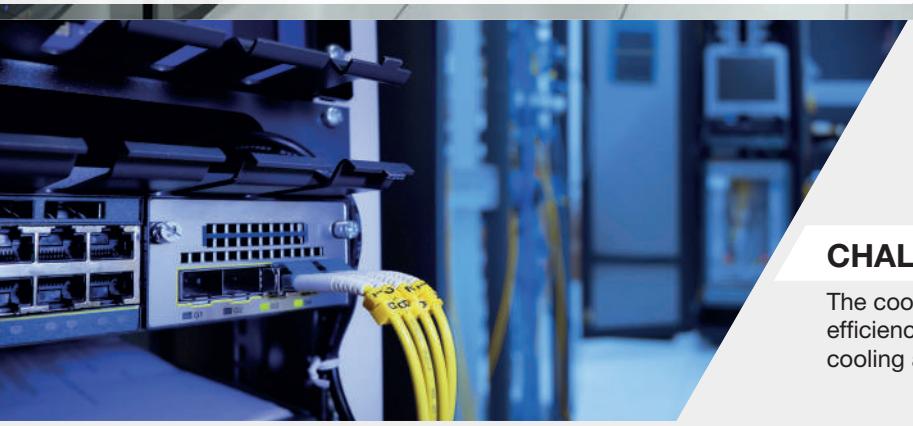
Sir Francis Bacon
British philosopher (1561-1626)

Telecom Data Center Tier IV

2016 Rome - Italy

Investor:
Telecom
Application:
Data Center
Plant type:
Hydronic System

Cooling capacity:
7804 kW
Installed machines:
3x TECS2/SL-CA-S high efficiency chillers with oil-free compressors,
5x high efficiency chillers with fixed speed and variable speed compressors.



CHALLENGE

The cooling system is based on high efficiency RC units, linked to centralized free cooling and geo cooling systems.

PROJECT

The structure has just been certified as TIER IV by Uptime Institute. That is to say, that these facilities have multiple, independent, and physically isolated systems that provide redundant capacity components and multiple, independent, diverse, and active distribution paths, which simultaneously serve the critical environment, achieving a fully Fault Tolerant infrastructure.

SOLUTION

Specifically, the M&E designers have selected 3 chillers with oil-free compressors and 5 chillers with fixed speed and variable speed screw compressors, getting a total cooling capacity of 7,800 kW. The large experience in air conditioning and the reliability of its solutions make Mitsubishi Electric Hydronics and IT Cooling System the ideal partner for cooling TIER IV data centers, like the newly certified Telecom IT structure in Acilia.

Fastweb Datacenter, Tier IV

2014 Milan - Italy

Data Center

Plant type: Hydronic System
Cooling capacity: 2800 kW
Installed machines:
4x oil-free compressor chillers,
2x Optimization and control systems for the HVAC plant

Nos Data Centre

2018 Carnaxide - Portugal

Data Center

Plant type: Hydronic System
Cooling capacity: 510 kW
Installed machines:
1x high efficiency chiller with oil-free compressor

Wuxi National Super Computing Data Center

2016 Jiangsu Province - China

Data Center

Plant type: Hydronic System
Installed machines:
18x water cooled chillers with oil-free compressors

ECMWF - European Centre for Medium-Range Weather Forecasts

2013 Reading - Great Britain

Data Center - Office building

Plant type: Hydronic System
Cooling capacity: 4596 kW
Installed machines:
6x chillers with oil-free compressors,
2x high efficiency extra low noise chillers with oil-free compressors

TRCS2-G05-Z_ENG_02-2019

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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