

Climaveneta Technical Documentation
ERACS2-Q-G05_1062_3222_201812_EN

REGULATION (EU) N. 2016/2281 FOR COMFORT CHILLERS

Ecodesign requirements for cooling products

MULTIFUNCTION UNITS AIR SOURCE

ERACS2-Q-G05 1062 - 3222

Cooling Capacity Range 527 - 824 [kW] - (EN14511 VALUE)
Nominal Cooling Capacity at TdesignC Range 527 - 824 [kW]

EN



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1. REGULATION (EU) N. 2016/2281 FOR COMFORT CHILLERS

1.1 Scope of the document

This document is compliant with the Commission Regulation (EU) N. 2016/2281 regarding "REQUIREMENTS FOR PRODUCT INFORMATION" (Annex II, Point 5). In particular, it deals with comfort chillers and contains information required by Table 10 of the above-mentioned regulation, which is entitled "Information requirements for comfort chillers".

1.2 REGULATION (EU) N. 2016/2281 description

The COMMISSION REGULATION (EU) N. 2016/2281 of 30 November 2016, implementing Directive 2009/125/EC of the European Parliament and of the Council, establishes eco-design requirements for the placing on the market and/or putting into service of: air heating products with a rated heating capacity which does not exceed 1MW, cooling products and high temperature process chillers with a rated cooling capacity which do not exceed 2 MW, and all fan coil units. All these energy-related products are defined in Article 2 of the Regulation in question.

1.3 Description of the data declared by Mitsubishi Electric Hydronics & IT Cooling Systems

- Comfort chiller: a cooling product designed with the aim of attaining and maintaining the desired indoor temperature for the thermal comfort of human beings, whose evaporator extracts heat from a water-based cooling system designed to operate at leaving chilled water temperatures greater than or equal to +2°C.
- Rated cooling capacity (Prated,c): the cooling capacity of a comfort chiller when providing space cooling at standard rating conditions, expressed in kW.
- Low temperature application: application where the comfort chiller delivers its declared capacity for cooling at an indoor heat exchanger outlet temperature of 7°C.
- Medium temperature application: application where the comfort chiller delivers its declared capacity for cooling at an indoor heat exchanger outlet temperature of 18°C.
- Seasonal energy efficiency of the space cooling ($\eta_{s,c}$): ratio between the space cooling demand pertaining to the designated cooling season, and the annual energy consumption required to meet this demand, expressed in %.
- Seasonal Energy Efficiency Ratio (SEER): the overall energy efficiency ratio of the comfort chiller, representative for the cooling season, calculated as the reference annual cooling demand divided by the annual energy consumption for cooling.
- Degradation coefficient for chillers: measure of efficiency loss due to cycling of the chiller.
- Off mode: a condition in which the chiller is connected to the main power source and is not providing any function.
- Thermostat off-mode: condition corresponding to the hours with no cooling load and activated cooling function, whereby the cooling function is switched on but the chiller is not operational.
- Crankcase heater mode: condition in which a heating device is activated to avoid the refrigerant migrating to the compressor so as to limit the refrigerant concentration in oil when the compressor is started.
- Standby mode: condition where the chiller is connected to the mains power source and depends on energy input from the mains power source to work as intended. The unit provides only the following functions, which may persist for an indefinite time: reactivation function, or reactivation function and only an indication of enabled reactivation function, and/or information or status display.
- Capacity control: the ability of a chiller to change its cooling capacity by changing the volumetric flow rate of at least one of the fluids needed to operate the refrigeration cycle.
- Sound power level (LWA): the A-weighted sound power level, indoors and/or outdoors, expressed in dB.
- Global warming potential (GWP) of the refrigerant: the 100-year climatic warming potential of one kilogram of a greenhouse gas relative to one kilogram of dioxide (CO2).

2. CLIMAVENETA CONTENTS UNIT

2.1 Table index

MULTIFUNCTION UNITS AIR SOURCE

ERACS2-Q-G05 1062 - 3222

Cooling Capacity Range 527 - 824 [kW]

Nominal Cooling Capacity at TdesignC Range 527 - 824 [kW]

Units	Version	Size					Pag.
ERACS2-Q-G05	CA	2722	3222				5
ERACS2-Q-G05	LN-CA	2722	3222				7
ERACS2-Q-G05	SL-CA	2722	3222				9
ERACS2-Q-G05	XL-CA	2422	2622	2722	3222		11
ERACS2-Q-G05	XL-CA-E	2422	2622				15

ERACS2-Q-G05 /CA 2722			
Outdoor side heat exchanger of chiller	air or water/brine		Air
Indoor side heat exchanger chiller	water		Water
Type	compressor driven vapour compression or sorption process		Compressor driven vapour compression
Driver of compressor	electric motor or fuel driven, gaseous or liquid fuel, internal or external combustion engine		Electric motor
Rated cooling capacity	Prated,c	[kW]	699,7
Seasonal energy efficiency of the space cooling	$\eta_{s,c}$	[%]	162,0
Declared cooling capacity for part load at given outdoor temperatures Tj			
Declared cooling capacity at given outdoor temperatures Tj = 35°C	Pdc	[kW]	700
Declared cooling capacity at given outdoor temperatures Tj = 30°C	Pdc	[kW]	516
Declared cooling capacity at given outdoor temperatures Tj = 25°C	Pdc	[kW]	331
Declared cooling capacity at given outdoor temperatures Tj = 20°C	Pdc	[kW]	236
Degradation coefficient for chillers	Cdc		0,9
Declared energy efficiency ratio or gas utilisation efficiency/auxiliary energy factor for part load at given outdoor temperatures Tj			
Declared energy efficiency ratio at given outdoor temperatures Tj = 35°C	EERd	[%]	3,00
Declared energy efficiency ratio at given outdoor temperatures Tj = 30°C	EERd	[%]	3,87
Declared energy efficiency ratio at given outdoor temperatures Tj = 25°C	EERd	[%]	4,56
Declared energy efficiency ratio at given outdoor temperatures Tj = 20°C	EERd	[%]	5,15
Power consumption in modes other than "active mode"			
Off mode	POFF	[kW]	0,000
Thermostat-off mode	PTO	[kW]	0,536
Crankcase heater mode	PCK	[kW]	0,776
Standby mode	PSB	[kW]	0,776
Other items			
Capacity control	fixed/staged/variable		Variable
Sound power level, outdoor	LWA	[dB(A)]	101,0
GWP of the refrigerant		[Kg CO2eq]	631
For air-to-water comfort chillers: air flow rate, outdoor measured		[m³/h]	261071,98
For water/brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger		[m³/h]	-
Standard rating conditions used:	low temperature application/medium temperature application		Low temperature application

Contact details: Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A., via Caduti di Cefalonia 1 - 36061 Bassano del Grappa (VI) - Italy

ERACS2-Q-G05 /CA 3222			
Outdoor side heat exchanger of chiller	air or water/brine		Air
Indoor side heat exchanger chiller	water		Water
Type	compressor driven vapour compression or sorption process		Compressor driven vapour compression
Driver of compressor	electric motor or fuel driven, gaseous or liquid fuel, internal or external combustion engine		Electric motor
Rated cooling capacity	Prated,c	[kW]	823,6
Seasonal energy efficiency of the space cooling	$\eta_{s,c}$	[%]	161,0
Declared cooling capacity for part load at given outdoor temperatures Tj			
Declared cooling capacity at given outdoor temperatures Tj = 35°C	Pdc	[kW]	824
Declared cooling capacity at given outdoor temperatures Tj = 30°C	Pdc	[kW]	607
Declared cooling capacity at given outdoor temperatures Tj = 25°C	Pdc	[kW]	390
Declared cooling capacity at given outdoor temperatures Tj = 20°C	Pdc	[kW]	307
Degradation coefficient for chillers	Cdc		0,9
Declared energy efficiency ratio or gas utilisation efficiency/auxiliary energy factor for part load at given outdoor temperatures Tj			
Declared energy efficiency ratio at given outdoor temperatures Tj = 35°C	EERd	[%]	2,98
Declared energy efficiency ratio at given outdoor temperatures Tj = 30°C	EERd	[%]	3,74
Declared energy efficiency ratio at given outdoor temperatures Tj = 25°C	EERd	[%]	4,48
Declared energy efficiency ratio at given outdoor temperatures Tj = 20°C	EERd	[%]	5,24
Power consumption in modes other than "active mode"			
Off mode	POFF	[kW]	0,000
Thermostat-off mode	PTO	[kW]	0,585
Crankcase heater mode	PCK	[kW]	0,782
Standby mode	PSB	[kW]	0,782
Other items			
Capacity control	fixed/staged/variable		Variable
Sound power level, outdoor	LWA	[dB(A)]	102,0
GWP of the refrigerant		[Kg CO2eq]	631
For air-to-water comfort chillers: air flow rate, outdoor measured		[m³/h]	298368,00
For water/brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger		[m³/h]	-
Standard rating conditions used:	low temperature application/medium temperature application		Low temperature application

Contact details: Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A., via Caduti di Cefalonia 1 - 36061 Bassano del Grappa (VI) - Italy

ERACS2-Q-G05 /LN-CA 2722			
Outdoor side heat exchanger of chiller	air or water/brine		Air
Indoor side heat exchanger chiller	water		Water
Type	compressor driven vapour compression or sorption process		Compressor driven vapour compression
Driver of compressor	electric motor or fuel driven, gaseous or liquid fuel, internal or external combustion engine		Electric motor
Rated cooling capacity	Prated,c	[kW]	682,2
Seasonal energy efficiency of the space cooling	$\eta_{s,c}$	[%]	161,0
Declared cooling capacity for part load at given outdoor temperatures Tj			
Declared cooling capacity at given outdoor temperatures Tj = 35°C	Pdc	[kW]	682
Declared cooling capacity at given outdoor temperatures Tj = 30°C	Pdc	[kW]	503
Declared cooling capacity at given outdoor temperatures Tj = 25°C	Pdc	[kW]	323
Declared cooling capacity at given outdoor temperatures Tj = 20°C	Pdc	[kW]	233
Degradation coefficient for chillers	Cdc		0,9
Declared energy efficiency ratio or gas utilisation efficiency/auxiliary energy factor for part load at given outdoor temperatures Tj			
Declared energy efficiency ratio at given outdoor temperatures Tj = 35°C	EERd	[%]	2,89
Declared energy efficiency ratio at given outdoor temperatures Tj = 30°C	EERd	[%]	3,87
Declared energy efficiency ratio at given outdoor temperatures Tj = 25°C	EERd	[%]	4,53
Declared energy efficiency ratio at given outdoor temperatures Tj = 20°C	EERd	[%]	5,17
Power consumption in modes other than "active mode"			
Off mode	POFF	[kW]	0,000
Thermostat-off mode	PTO	[kW]	0,536
Crankcase heater mode	PCK	[kW]	1,004
Standby mode	PSB	[kW]	1,004
Other items			
Capacity control	fixed/staged/variable		Variable
Sound power level, outdoor	LWA	[dB(A)]	95,0
GWP of the refrigerant		[Kg CO2eq]	631
For air-to-water comfort chillers: air flow rate, outdoor measured		[m³/h]	197748,00
For water/brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger		[m³/h]	-
Standard rating conditions used:	low temperature application/medium temperature application		Low temperature application

Contact details: Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A., via Caduti di Cefalonia 1 - 36061 Bassano del Grappa (VI) - Italy

ERACS2-Q-G05 /LN-CA 3222			
Outdoor side heat exchanger of chiller	air or water/brine		Air
Indoor side heat exchanger chiller	water		Water
Type	compressor driven vapour compression or sorption process		Compressor driven vapour compression
Driver of compressor	electric motor or fuel driven, gaseous or liquid fuel, internal or external combustion engine		Electric motor
Rated cooling capacity	Prated,c	[kW]	797,7
Seasonal energy efficiency of the space cooling	$\eta_{s,c}$	[%]	161,0
Declared cooling capacity for part load at given outdoor temperatures Tj			
Declared cooling capacity at given outdoor temperatures Tj = 35°C	Pdc	[kW]	798
Declared cooling capacity at given outdoor temperatures Tj = 30°C	Pdc	[kW]	588
Declared cooling capacity at given outdoor temperatures Tj = 25°C	Pdc	[kW]	378
Declared cooling capacity at given outdoor temperatures Tj = 20°C	Pdc	[kW]	303
Degradation coefficient for chillers	Cdc		0,9
Declared energy efficiency ratio or gas utilisation efficiency/auxiliary energy factor for part load at given outdoor temperatures Tj			
Declared energy efficiency ratio at given outdoor temperatures Tj = 35°C	EERd	[%]	2,77
Declared energy efficiency ratio at given outdoor temperatures Tj = 30°C	EERd	[%]	3,74
Declared energy efficiency ratio at given outdoor temperatures Tj = 25°C	EERd	[%]	4,47
Declared energy efficiency ratio at given outdoor temperatures Tj = 20°C	EERd	[%]	5,28
Power consumption in modes other than "active mode"			
Off mode	POFF	[kW]	0,000
Thermostat-off mode	PTO	[kW]	0,585
Crankcase heater mode	PCK	[kW]	1,004
Standby mode	PSB	[kW]	1,004
Other items			
Capacity control	fixed/staged/variable		Variable
Sound power level, outdoor	LWA	[dB(A)]	96,0
GWP of the refrigerant		[Kg CO2eq]	631
For air-to-water comfort chillers: air flow rate, outdoor measured		[m³/h]	226008,00
For water/brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger		[m³/h]	-
Standard rating conditions used:	low temperature application/medium temperature application		Low temperature application

Contact details: Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A., via Caduti di Cefalonia 1 - 36061 Bassano del Grappa (VI) - Italy

ERACS2-Q-G05 /SL-CA 2722			
Outdoor side heat exchanger of chiller	air or water/brine		Air
Indoor side heat exchanger chiller	water		Water
Type	compressor driven vapour compression or sorption process		Compressor driven vapour compression
Driver of compressor	electric motor or fuel driven, gaseous or liquid fuel, internal or external combustion engine		Electric motor
Rated cooling capacity	Prated,c	[kW]	676,1
Seasonal energy efficiency of the space cooling	$\eta_{s,c}$	[%]	161,0
Declared cooling capacity for part load at given outdoor temperatures Tj			
Declared cooling capacity at given outdoor temperatures Tj = 35°C	Pdc	[kW]	676
Declared cooling capacity at given outdoor temperatures Tj = 30°C	Pdc	[kW]	498
Declared cooling capacity at given outdoor temperatures Tj = 25°C	Pdc	[kW]	320
Declared cooling capacity at given outdoor temperatures Tj = 20°C	Pdc	[kW]	233
Degradation coefficient for chillers	Cdc		0,9
Declared energy efficiency ratio or gas utilisation efficiency/auxiliary energy factor for part load at given outdoor temperatures Tj			
Declared energy efficiency ratio at given outdoor temperatures Tj = 35°C	EERd	[%]	2,82
Declared energy efficiency ratio at given outdoor temperatures Tj = 30°C	EERd	[%]	3,86
Declared energy efficiency ratio at given outdoor temperatures Tj = 25°C	EERd	[%]	4,55
Declared energy efficiency ratio at given outdoor temperatures Tj = 20°C	EERd	[%]	5,19
Power consumption in modes other than "active mode"			
Off mode	POFF	[kW]	0,000
Thermostat-off mode	PTO	[kW]	0,536
Crankcase heater mode	PCK	[kW]	1,004
Standby mode	PSB	[kW]	1,004
Other items			
Capacity control	fixed/staged/variable		Variable
Sound power level, outdoor	LWA	[dB(A)]	91,0
GWP of the refrigerant		[Kg CO2eq]	631
For air-to-water comfort chillers: air flow rate, outdoor measured		[m³/h]	182628,00
For water/brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger		[m³/h]	-
Standard rating conditions used:	low temperature application/medium temperature application		Low temperature application

Contact details: Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A., via Caduti di Cefalonia 1 - 36061 Bassano del Grappa (VI) - Italy

ERACS2-Q-G05 /SL-CA 3222			
Outdoor side heat exchanger of chiller	air or water/brine		Air
Indoor side heat exchanger chiller	water		Water
Type	compressor driven vapour compression or sorption process		Compressor driven vapour compression
Driver of compressor	electric motor or fuel driven, gaseous or liquid fuel, internal or external combustion engine		Electric motor
Rated cooling capacity	Prated,c	[kW]	788,6
Seasonal energy efficiency of the space cooling	$\eta_{s,c}$	[%]	161,0
Declared cooling capacity for part load at given outdoor temperatures Tj			
Declared cooling capacity at given outdoor temperatures Tj = 35°C	Pdc	[kW]	789
Declared cooling capacity at given outdoor temperatures Tj = 30°C	Pdc	[kW]	581
Declared cooling capacity at given outdoor temperatures Tj = 25°C	Pdc	[kW]	374
Declared cooling capacity at given outdoor temperatures Tj = 20°C	Pdc	[kW]	303
Degradation coefficient for chillers	Cdc		0,9
Declared energy efficiency ratio or gas utilisation efficiency/auxiliary energy factor for part load at given outdoor temperatures Tj			
Declared energy efficiency ratio at given outdoor temperatures Tj = 35°C	EERd	[%]	2,68
Declared energy efficiency ratio at given outdoor temperatures Tj = 30°C	EERd	[%]	3,71
Declared energy efficiency ratio at given outdoor temperatures Tj = 25°C	EERd	[%]	4,47
Declared energy efficiency ratio at given outdoor temperatures Tj = 20°C	EERd	[%]	5,28
Power consumption in modes other than "active mode"			
Off mode	POFF	[kW]	0,000
Thermostat-off mode	PTO	[kW]	0,585
Crankcase heater mode	PCK	[kW]	1,004
Standby mode	PSB	[kW]	1,004
Other items			
Capacity control	fixed/staged/variable		Variable
Sound power level, outdoor	LWA	[dB(A)]	92,0
GWP of the refrigerant		[Kg CO2eq]	631
For air-to-water comfort chillers: air flow rate, outdoor measured		[m³/h]	208728,00
For water/brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger		[m³/h]	-
Standard rating conditions used:	low temperature application/medium temperature application		Low temperature application

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ERACS2-Q-G05 /XL-CA 2422			
Outdoor side heat exchanger of chiller	air or water/brine		Air
Indoor side heat exchanger chiller	water		Water
Type	compressor driven vapour compression or sorption process		Compressor driven vapour compression
Driver of compressor	electric motor or fuel driven, gaseous or liquid fuel, internal or external combustion engine		Electric motor
Rated cooling capacity	Prated,c	[kW]	527,1
Seasonal energy efficiency of the space cooling	$\eta_{s,c}$	[%]	168,0
Declared cooling capacity for part load at given outdoor temperatures Tj			
Declared cooling capacity at given outdoor temperatures Tj = 35°C	Pdc	[kW]	527
Declared cooling capacity at given outdoor temperatures Tj = 30°C	Pdc	[kW]	388
Declared cooling capacity at given outdoor temperatures Tj = 25°C	Pdc	[kW]	250
Declared cooling capacity at given outdoor temperatures Tj = 20°C	Pdc	[kW]	179
Degradation coefficient for chillers	Cdc		0,9
Declared energy efficiency ratio or gas utilisation efficiency/auxiliary energy factor for part load at given outdoor temperatures Tj			
Declared energy efficiency ratio at given outdoor temperatures Tj = 35°C	EERd	[%]	2,79
Declared energy efficiency ratio at given outdoor temperatures Tj = 30°C	EERd	[%]	3,98
Declared energy efficiency ratio at given outdoor temperatures Tj = 25°C	EERd	[%]	4,82
Declared energy efficiency ratio at given outdoor temperatures Tj = 20°C	EERd	[%]	5,60
Power consumption in modes other than "active mode"			
Off mode	POFF	[kW]	0,000
Thermostat-off mode	PTO	[kW]	0,478
Crankcase heater mode	PCK	[kW]	0,762
Standby mode	PSB	[kW]	0,762
Other items			
Capacity control	fixed/staged/variable		Variable
Sound power level, outdoor	LWA	[dB(A)]	87,0
GWP of the refrigerant		[Kg CO2eq]	631
For air-to-water comfort chillers: air flow rate, outdoor measured		[m³/h]	132876,00
For water/brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger		[m³/h]	-
Standard rating conditions used:	low temperature application/medium temperature application		Low temperature application

Contact details: Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A., via Caduti di Cefalonia 1 - 36061 Bassano del Grappa (VI) - Italy

ERACS2-Q-G05 /XL-CA 2622			
Outdoor side heat exchanger of chiller	air or water/brine		Air
Indoor side heat exchanger chiller	water		Water
Type	compressor driven vapour compression or sorption process		Compressor driven vapour compression
Driver of compressor	electric motor or fuel driven, gaseous or liquid fuel, internal or external combustion engine		Electric motor
Rated cooling capacity	Prated,c	[kW]	582,9
Seasonal energy efficiency of the space cooling	$\eta_{s,c}$	[%]	161,0
Declared cooling capacity for part load at given outdoor temperatures Tj			
Declared cooling capacity at given outdoor temperatures Tj = 35°C	Pdc	[kW]	583
Declared cooling capacity at given outdoor temperatures Tj = 30°C	Pdc	[kW]	430
Declared cooling capacity at given outdoor temperatures Tj = 25°C	Pdc	[kW]	276
Declared cooling capacity at given outdoor temperatures Tj = 20°C	Pdc	[kW]	229
Degradation coefficient for chillers	Cdc		0,9
Declared energy efficiency ratio or gas utilisation efficiency/auxiliary energy factor for part load at given outdoor temperatures Tj			
Declared energy efficiency ratio at given outdoor temperatures Tj = 35°C	EERd	[%]	2,62
Declared energy efficiency ratio at given outdoor temperatures Tj = 30°C	EERd	[%]	3,73
Declared energy efficiency ratio at given outdoor temperatures Tj = 25°C	EERd	[%]	4,52
Declared energy efficiency ratio at given outdoor temperatures Tj = 20°C	EERd	[%]	5,27
Power consumption in modes other than "active mode"			
Off mode	POFF	[kW]	0,000
Thermostat-off mode	PTO	[kW]	0,397
Crankcase heater mode	PCK	[kW]	0,770
Standby mode	PSB	[kW]	0,770
Other items			
Capacity control	fixed/staged/variable		Variable
Sound power level, outdoor	LWA	[dB(A)]	87,0
GWP of the refrigerant		[Kg CO2eq]	631
For air-to-water comfort chillers: air flow rate, outdoor measured		[m³/h]	132876,00
For water/brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger		[m³/h]	-
Standard rating conditions used:	low temperature application/medium temperature application		Low temperature application

Contact details: Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A., via Caduti di Cefalonia 1 - 36061 Bassano del Grappa (VI) - Italy

ERACS2-Q-G05 /XL-CA 2722			
Outdoor side heat exchanger of chiller	air or water/brine		Air
Indoor side heat exchanger chiller	water		Water
Type	compressor driven vapour compression or sorption process		Compressor driven vapour compression
Driver of compressor	electric motor or fuel driven, gaseous or liquid fuel, internal or external combustion engine		Electric motor
Rated cooling capacity	Prated,c	[kW]	663,9
Seasonal energy efficiency of the space cooling	$\eta_{s,c}$	[%]	167,0
Declared cooling capacity for part load at given outdoor temperatures Tj			
Declared cooling capacity at given outdoor temperatures Tj = 35°C	Pdc	[kW]	664
Declared cooling capacity at given outdoor temperatures Tj = 30°C	Pdc	[kW]	489
Declared cooling capacity at given outdoor temperatures Tj = 25°C	Pdc	[kW]	314
Declared cooling capacity at given outdoor temperatures Tj = 20°C	Pdc	[kW]	233
Degradation coefficient for chillers	Cdc		0,9
Declared energy efficiency ratio or gas utilisation efficiency/auxiliary energy factor for part load at given outdoor temperatures Tj			
Declared energy efficiency ratio at given outdoor temperatures Tj = 35°C	EERd	[%]	2,75
Declared energy efficiency ratio at given outdoor temperatures Tj = 30°C	EERd	[%]	3,91
Declared energy efficiency ratio at given outdoor temperatures Tj = 25°C	EERd	[%]	4,78
Declared energy efficiency ratio at given outdoor temperatures Tj = 20°C	EERd	[%]	5,49
Power consumption in modes other than "active mode"			
Off mode	POFF	[kW]	0,000
Thermostat-off mode	PTO	[kW]	0,536
Crankcase heater mode	PCK	[kW]	0,776
Standby mode	PSB	[kW]	0,776
Other items			
Capacity control	fixed/staged/variable		Variable
Sound power level, outdoor	LWA	[dB(A)]	87,0
GWP of the refrigerant		[Kg CO2eq]	631
For air-to-water comfort chillers: air flow rate, outdoor measured		[m³/h]	159048,00
For water/brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger		[m³/h]	-
Standard rating conditions used:	low temperature application/medium temperature application		Low temperature application

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ERACS2-Q-G05 /XL-CA 3222			
Outdoor side heat exchanger of chiller	air or water/brine		Air
Indoor side heat exchanger chiller	water		Water
Type	compressor driven vapour compression or sorption process		Compressor driven vapour compression
Driver of compressor	electric motor or fuel driven, gaseous or liquid fuel, internal or external combustion engine		Electric motor
Rated cooling capacity	Prated,c	[kW]	770,7
Seasonal energy efficiency of the space cooling	$\eta_{s,c}$	[%]	161,0
Declared cooling capacity for part load at given outdoor temperatures Tj			
Declared cooling capacity at given outdoor temperatures Tj = 35°C	Pdc	[kW]	771
Declared cooling capacity at given outdoor temperatures Tj = 30°C	Pdc	[kW]	568
Declared cooling capacity at given outdoor temperatures Tj = 25°C	Pdc	[kW]	365
Declared cooling capacity at given outdoor temperatures Tj = 20°C	Pdc	[kW]	295
Degradation coefficient for chillers	Cdc		0,9
Declared energy efficiency ratio or gas utilisation efficiency/auxiliary energy factor for part load at given outdoor temperatures Tj			
Declared energy efficiency ratio at given outdoor temperatures Tj = 35°C	EERd	[%]	2,56
Declared energy efficiency ratio at given outdoor temperatures Tj = 30°C	EERd	[%]	3,84
Declared energy efficiency ratio at given outdoor temperatures Tj = 25°C	EERd	[%]	4,54
Declared energy efficiency ratio at given outdoor temperatures Tj = 20°C	EERd	[%]	5,22
Power consumption in modes other than "active mode"			
Off mode	POFF	[kW]	0,000
Thermostat-off mode	PTO	[kW]	0,585
Crankcase heater mode	PCK	[kW]	0,782
Standby mode	PSB	[kW]	0,782
Other items			
Capacity control	fixed/staged/variable		Variable
Sound power level, outdoor	LWA	[dB(A)]	88,0
GWP of the refrigerant		[Kg CO2eq]	631
For air-to-water comfort chillers: air flow rate, outdoor measured		[m³/h]	181764,00
For water/brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger		[m³/h]	-
Standard rating conditions used:	low temperature application/medium temperature application		Low temperature application

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ERACS2-Q-G05 /XL-CA-E 2422			
Outdoor side heat exchanger of chiller	air or water/brine		Air
Indoor side heat exchanger chiller	water		Water
Type	compressor driven vapour compression or sorption process		Compressor driven vapour compression
Driver of compressor	electric motor or fuel driven, gaseous or liquid fuel, internal or external combustion engine		Electric motor
Rated cooling capacity	Prated,c	[kW]	539,9
Seasonal energy efficiency of the space cooling	$\eta_{s,c}$	[%]	172,0
Declared cooling capacity for part load at given outdoor temperatures Tj			
Declared cooling capacity at given outdoor temperatures Tj = 35°C	Pdc	[kW]	540
Declared cooling capacity at given outdoor temperatures Tj = 30°C	Pdc	[kW]	398
Declared cooling capacity at given outdoor temperatures Tj = 25°C	Pdc	[kW]	256
Declared cooling capacity at given outdoor temperatures Tj = 20°C	Pdc	[kW]	180
Degradation coefficient for chillers	Cdc		0,9
Declared energy efficiency ratio or gas utilisation efficiency/auxiliary energy factor for part load at given outdoor temperatures Tj			
Declared energy efficiency ratio at given outdoor temperatures Tj = 35°C	EERd	[%]	3,04
Declared energy efficiency ratio at given outdoor temperatures Tj = 30°C	EERd	[%]	4,16
Declared energy efficiency ratio at given outdoor temperatures Tj = 25°C	EERd	[%]	4,89
Declared energy efficiency ratio at given outdoor temperatures Tj = 20°C	EERd	[%]	5,57
Power consumption in modes other than "active mode"			
Off mode	POFF	[kW]	0,000
Thermostat-off mode	PTO	[kW]	1,390
Crankcase heater mode	PCK	[kW]	0,768
Standby mode	PSB	[kW]	0,768
Other items			
Capacity control	fixed/staged/variable		Variable
Sound power level, outdoor	LWA	[dB(A)]	88,0
GWP of the refrigerant		[Kg CO2eq]	631
For air-to-water comfort chillers: air flow rate, outdoor measured		[m³/h]	175032,00
For water/brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger		[m³/h]	-
Standard rating conditions used:	low temperature application/medium temperature application		Low temperature application

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ERACS2-Q-G05 /XL-CA-E 2622			
Outdoor side heat exchanger of chiller	air or water/brine		Air
Indoor side heat exchanger chiller	water		Water
Type	compressor driven vapour compression or sorption process		Compressor driven vapour compression
Driver of compressor	electric motor or fuel driven, gaseous or liquid fuel, internal or external combustion engine		Electric motor
Rated cooling capacity	Prated,c	[kW]	610,1
Seasonal energy efficiency of the space cooling	$\eta_{s,c}$	[%]	165,0
Declared cooling capacity for part load at given outdoor temperatures Tj			
Declared cooling capacity at given outdoor temperatures Tj = 35°C	Pdc	[kW]	610
Declared cooling capacity at given outdoor temperatures Tj = 30°C	Pdc	[kW]	450
Declared cooling capacity at given outdoor temperatures Tj = 25°C	Pdc	[kW]	289
Declared cooling capacity at given outdoor temperatures Tj = 20°C	Pdc	[kW]	233
Degradation coefficient for chillers	Cdc		0,9
Declared energy efficiency ratio or gas utilisation efficiency/auxiliary energy factor for part load at given outdoor temperatures Tj			
Declared energy efficiency ratio at given outdoor temperatures Tj = 35°C	EERd	[%]	3,01
Declared energy efficiency ratio at given outdoor temperatures Tj = 30°C	EERd	[%]	3,96
Declared energy efficiency ratio at given outdoor temperatures Tj = 25°C	EERd	[%]	4,68
Declared energy efficiency ratio at given outdoor temperatures Tj = 20°C	EERd	[%]	5,35
Power consumption in modes other than "active mode"			
Off mode	POFF	[kW]	0,000
Thermostat-off mode	PTO	[kW]	1,166
Crankcase heater mode	PCK	[kW]	0,782
Standby mode	PSB	[kW]	0,782
Other items			
Capacity control	fixed/staged/variable		Variable
Sound power level, outdoor	LWA	[dB(A)]	88,0
GWP of the refrigerant		[Kg CO2eq]	631
For air-to-water comfort chillers: air flow rate, outdoor measured		[m³/h]	190908,00
For water/brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger		[m³/h]	-
Standard rating conditions used:	low temperature application/medium temperature application		Low temperature application

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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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