



INTARCON

Glycol process chillers

"The most advanced solutions in refrigeration technology".



Natural refrigerant



Complies with
EN378 and F-Gas
Ruling



Integrated
hydraulic group



Compact chillers
for outdoor
installation



Inverter scroll or
semihermetic
compressors

Chillers for commercial and industrial refrigeration applications, which use a reduced load of R290 as a primary refrigerant, all contained in the chiller, and water, glycol or brine as a secondary refrigerant for the transport of cooling.



Benefits for the property owner



Natural, ecological and efficient refrigerant

R290 or propane is a natural, low cost, with a very low greenhouse effect, and with high energy efficiency. In their liquid state, the secondary refrigerants of glycol and brine are biodegradable and food grade.



Reliable cooling distribution, and free of gas leaks

The distribution of refrigeration is made by pumping glycol water or brine, at low pressure, through hydraulic pipes, with no risk of gas leaks, without risk of service interruption and with low maintenance cost.



Durable solution free of fluorinated refrigerants

Chiller plants with natural refrigerants are a safe bet in the long term, without future environmental restrictions, and free of taxes on refrigerants.



Energy efficiency with variable flow rate

Our unit incorporates INVERTER systems in the compressor and circulating pump, allowing for variable flow operation; modulated and adapted to the demand, with high energy savings.

Advantages for the installer



Compact chillers with a built-in hydraulic unit

Our R290 chillers have been optimized to occupy little floor space and facilitate their transport and installation. They incorporate a hydraulic group inside the same housing, with all the necessary elements for glycol pumping.



Operation with variable flow of glycol

The control system with variable liquid flow adapts the speed of the circulating pump to the refrigeration demand, and modulates the refrigeration capacity of the compressors according to the temperature and flow rate of the liquid, to ensure a constant outlet temperature.



Easy installation, with no need for a secondary circuit

Thanks to the progressive modulation of the cooling capacity of the system, it is not necessary to install a secondary circuit or buffer tanks, simplifying the hydraulic installation.



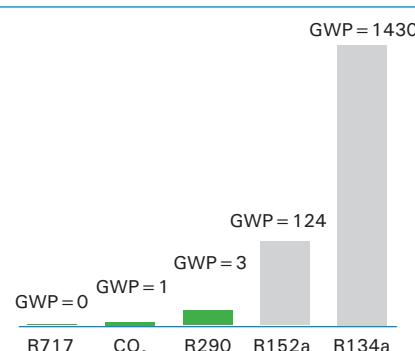
Reduced R290 refrigerant charge, with complete safety

Refrigeration circuits have been designed with a reduced refrigerant charge, without liquid containers, complying with safety regulations for installation outdoors or in a machine room.

R290 refrigerant

R290 or propane is a natural refrigerant with a very low greenhouse effect (GWP = 3) and widely available on the market. It is a pure substance, without refrigerant glide, and also has excellent thermodynamic performance, comparable only to ammonia (R717) or difluoroethane (R152a).

R290 has low toxicity but is a high flammable refrigerant (A3 class). The chillers comply with the safety requirements of the European standard EN-378: 2017, especially, regarding the refrigerant load limitations in outdoor installations, or in machine rooms.



Where to install a R290 process chiller

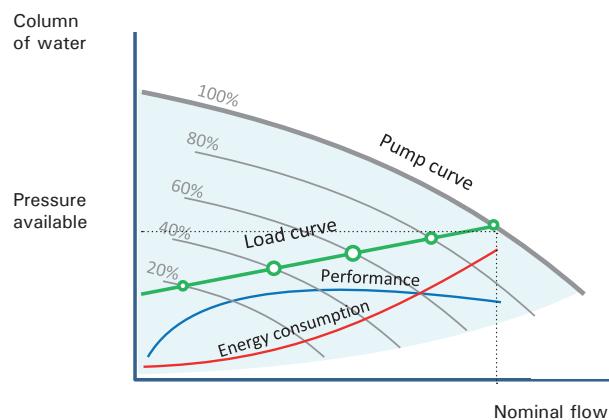
Application according to location category / location According to EN 378: 2017	Load limit per circuit	Unit
 <p>Commercial buildings. Cat. A / location 3, indirect system</p> <ul style="list-style-type: none"> • Households • Public conference buildings 	No more than 5 kg	 intarCUBE
 <p>Industrial buildings. Cat. C / location 3, indirect system.</p> <ul style="list-style-type: none"> • Restricted areas of supermarkets. • Areas with authorised access 	No restrictions	 intarWatt

Operation with variable flow

The glycol variable flow control adapts the speed of the circulating pump to a preconfigured load curve with a linear relationship between the flow rate and the water column pressure at the outlet of the chiller, to maintain a constant differential pressure in the services.

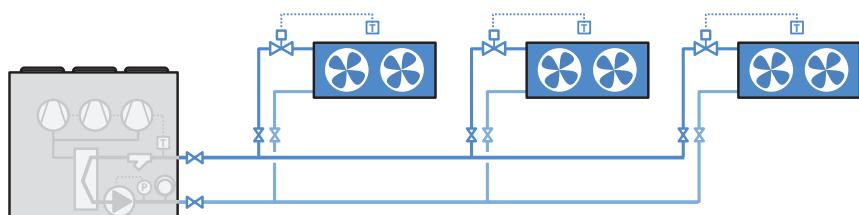
The chiller plant in turn adjusts the cooling capacity supplied in function to the temperature and the glycol flow rate, in order to ensure a constant outlet temperature.

Contrary to the traditional systems with fixed flow rates, variable flow allows for significant reduction in the energy consumption of the pump group at partial load. Pumps have also been dimensioned for optimum energy efficiency at half load.

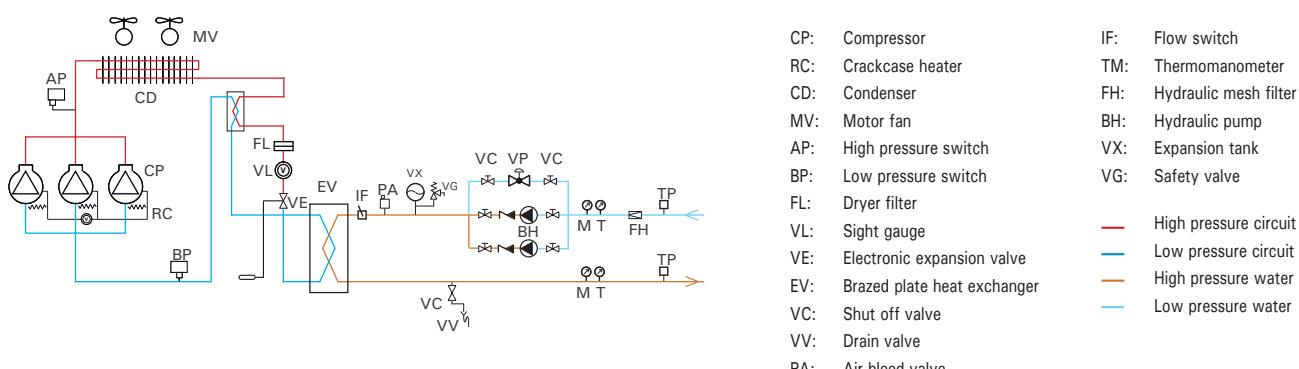


Installation scheme

Chillers are designed to work directly with a circuit of multiple refrigeration services equipped with two-way control valves (on / off or modulating).



Cooling and hydraulic scheme



intarCUBE chiller

Description

This unit is based on a compact construction, with a small footprint, air condensation and an integrated hydraulic unit. The refrigerant circuit is in an insulated compartment with leak detection and emergency ventilation.

	400 V-III-50 Hz		Integrated hydraulic group
	Scroll or semihermetic compressor		Outdoor installation
	EC axial fans		High temperature 20 - 100 kW

According to
EN 378 y F-Gas

Positive temperature
12 - 60 kW



Features

- Weatherproof casing with separated compressor compartment, made in self-supporting galvanised steel sheet casing and polyester paint.
- Reduced load of R290 refrigerant.
- Dual or triple R290 scroll compressors with noise-insulation jackets; or R290 semihermetic compressor with capacity control and soft starting, ATEX grade crankcase heaters.
- Oil separator and oil equalisation line between 2 compressors (Dual); individual electronic oil injection for 3 and 4 compressors.
- Variable speed drive on one compressor.
- Micro-tube condensing coil with aluminium fins and 7 mm copper tubes.
- Variable speed EC fans.
- Plate heat exchanger with electronic expansion valve.
- Internal plate heat exchanger for liquid subcooling and suction superheating.
- Cooling circuit made of copper tube with soldered connections, dehydrating filter, ATEX pressure switches, ATEX pressure transducers and temperature probes.
- IP55 separated electrical board with ventilation fan. Individual Siemens protection devices for each compressor and fan.
- Dixell iPro controller, with variable cooling capacity control (only with inverter compressor) and condensing pressure control with floating setpoint.
- R290 leak detector, alarm light and buzzer, and emergency ventilation of compressor compartment with ATEX extraction fan.
- Inbuilt hydraulic circuit made of copper tube and threaded connections, with a fixed speed pump for glycol water with 15 mH₂O available pressure, expansion vessel, relief valve, filter, thermometers, manometers, air vent, purge and service valves.

Unit components



Glycol process chillers - R290

AWV / MWV series

400 V-III-50 Hz | R290 | Scroll compressor or semihermetic compressor

Series / Model	Compressor		Cooling capacity (kW)		Input power (kW)	Condenser		Water flow (m³/h)	Hydraulic connection	Weight (kg)	S.P.L. dB(A) ⁽³⁾	
	HP	Model	Evap. temp. I/O water -2/-8 °C ⁽¹⁾	Evap. temp. I/O water 12/7 °C ⁽²⁾		I Max. (A)	Fan Ø mm					
High temperature	AWV-SD-60502	8	2x ZB25KCU	20,7	5,8	14,4	2x Ø 450	9 000	3,5	1 ½"	392	43
	AWV-SD-60742	12	2x ZB37KCU	28,6	8,4	19,7	2x Ø 450	9 000	4,9	2"	410	43
	AWV-SD-60982	16	2x ZB49KCU	34,4	11,0	22,9	2x Ø 450	9 000	5,9	2"	414	43
	AWV-SD-70753	12	3x ZB25KCU	31,2	8,7	20,6	3x Ø 450	14 400	5,4	2"	552	44
	AWV-SD-71113	18	3x ZB37KCU	42,6	12,8	28,5	3x Ø 450	14 400	7,2	2"	571	44
	AWV-SD-71473	24	3x ZB49KCU	50,7	16,7	33,2	3x Ø 450	14 400	8,7	2 ½"	586	45
	AWV-SD-81484	24	4x ZB37KCU	58,0	17,0	38,2	2x Ø 630	21 000	10,0	2 ½"	689	46
	AWV-SD-81964	32	4x ZB49KCU	70,2	21,9	44,5	2x Ø 630	21 000	12,0	2 ½"	696	46
	AWV-KD-80401	40	1x Z40-126	88,2	30,3	60,4	2x Ø 630	21 000	15,1	DN80	835	51
Positive temperature	AWV-KD-80501	50	1x Z50-154	100,6	37,1	75,8	2x Ø 630	21 000	17,4	DN80	840	51
	MWV-SD-60502	8	2x ZB25KCU	12,1	5,3	14,4	2x Ø 450	9 000	1,9	1 ½"	392	43
	MWV-SD-60742	12	2x ZB37KCU	17,2	7,4	19,7	2x Ø 450	9 000	2,7	1 ½"	410	43
	MWV-SD-60982	16	2x ZB49KCU	21,0	9,5	22,9	2x Ø 450	9 000	3,3	1 ½"	414	43
	MWV-SD-70753	12	3x ZB25KCU	18,1	7,9	20,6	3x Ø 450	14 400	2,8	1 ½"	552	44
	MWV-SD-71113	18	3x ZB37KCU	25,7	11,2	28,5	3x Ø 450	14 400	4,0	1 ½"	571	44
	MWV-SD-71473	24	3x ZB49KCU	31,4	14,3	33,2	3x Ø 450	14 400	4,9	2"	586	45
	MWV-SD-81484	24	4x ZB37KCU	34,7	15,9	38,2	2x Ø 630	21 000	5,4	2"	689	46
	MWV-SD-81964	32	4x ZB49KCU	42,6	19,0	44,5	2x Ø 630	21 000	6,6	2"	696	46
	MWV-KD-80401	40	1x Z40-126	53,2	23,5	60,4	2x Ø 630	21 000	8,3	2 ½"	835	51
	MWV-KD-80501	50	1x Z50-154	60,6	28,7	75,8	2x Ø 630	21 000	9,4	2 ½"	840	51

⁽¹⁾ Nominal cooling capacity at 35 °C ambient temperature with inlet/outlet glycol temperature of -2/-8 °C, with propylene glycol concentration of 35 %

⁽²⁾ Nominal cooling capacity at 35 °C ambient temperature with inlet/outlet water temperature of 12/7 °C.

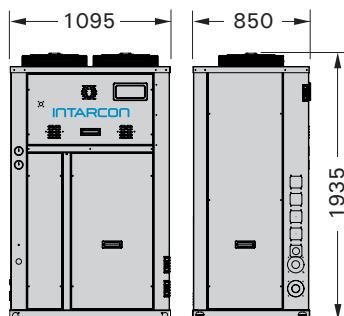
⁽³⁾ Sound Pressure Level in open field at 10 m distance.

Options

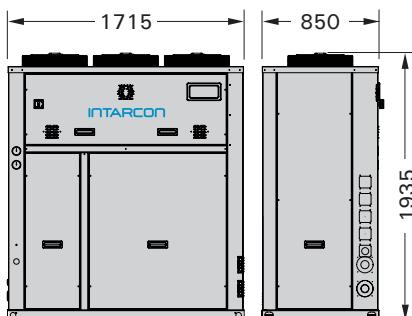
- Indoor version with EC plug fans for ducted air outlet, and ATEX grade centrifugal fan for emergency ventilation.
- Variable speed pump for variable glycol flow control.
- Emergency backup control with pressure switches.
- Anti-corrosion polyurethane coating on the condenser coil.
- Remote touchscreen control pad.
- Power-supply monitor.
- Silent-blocks for the installation of the chiller.
- Heat recovery heat exchanger (20 % or 80 % of condenser heat) for generation of hot water.

Dimensions

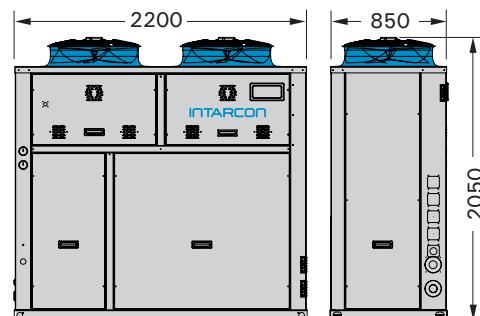
series 6



series 7



series 8



intarWatt chiller

Description

The MWW range has four modular sizes, formed by one or two semihermetic compressor per module, axial condenser with V coils and plate heat exchanger.

- | | |
|---|---|
|  400 V-III-50 Hz |  Integrated hydraulic group |
|  Semihermetic compressor |  Outdoor installation |
|  EC axial fans |  According to EN 378 y F-Gas |
| |  High temperature
110 - 810 kW |
| |  Positive temperature
65 - 475 kW |



Features

- Weatherproof construction made with self-supporting galvanised steel sheet case and polyurethane coating.
- Reduced load of R290 refrigerant.
- Tandem or single R290 semihermetic compressors with capacity control and unloaded starting. Crankcase heaters with ATEX grade.
- Oil separator and oil equalisation line between compressors.
- V-shape micro-tube condensing coil with aluminium fins and 7 mm copper tubes.
- Two variable speed EC fans per V module.
- Plate heat exchanger with electronic expansion valve per module.
- Internal plate heat exchanger for liquid subcooling and suction superheating.
- Cooling circuit made in copper tube with soldered connections, dryer filter, ATEX pressure switches, ATEX pressure transducers and temperature probes.
- IP55 separated electrical board with ventilation fan. Individual Siemens protection devices for each compressors and fan.
- Dixell iPro controller, with variable cooling capacity control (only with digital compressor), condensing pressure control with floating setpoint.
- R290 leak detector, alarm light and buzzer, and emergency ventilation of compressor compartment with ATEX extraction fan.

Options

- Indoor version with EC plug fans for ducted air outlet, and ATEX grade centrifugal fan for emergency ventilation.
- Variable speed pump for variable glycol flow control.
- Very-low ambient temperature version down to -20 °C, with electrical board heater and condensing pressure control valves.
- Emergency backup control with pressure switches.
- Anti-corrosion polyurethane coating on the condenser coil.
- Remote touchscreen control pad.
- Power-supply monitor.
- Silent-blocks for the installation of the chiller.
- Heat recovery heat exchanger (20 % or 80 % of condenser heat) for generation of hot water.

Unit components



Process glycol chillers - R290

AWW / MWW series

400 V-III-50 Hz | R290 | Frascold compressor

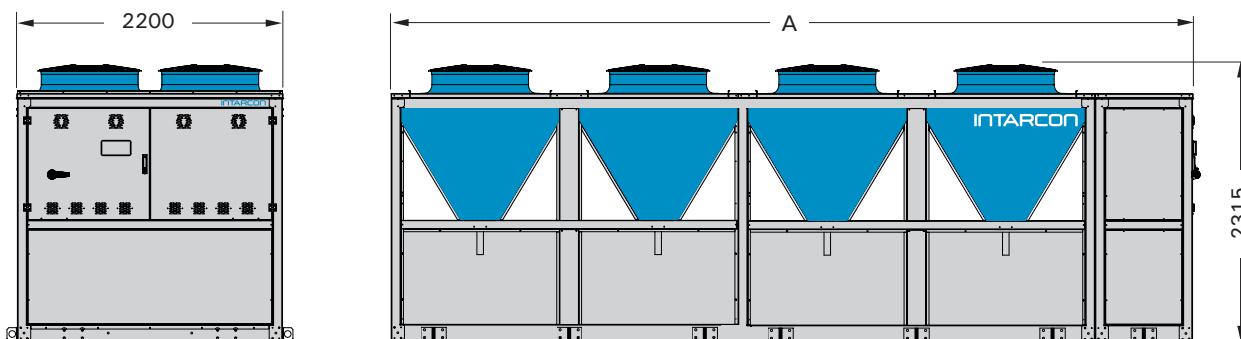
Series / Model	Compressor		Cooling capacity (kW)		Input power (kW)	I Max. (A)	Condenser		Water flow (m³/h)	Hydraulic connection	Weight (kg)	S.P.L. dBA (3)
	HP	Model	Evap. temp. I/O water -2/-8 °C (1)	Evap. temp. I/O water 12/7 °C (2)			Fan Ø mm	Air flow (m³/h)				
High temperature	AWW-KD-10502	50	2x V25-71	111,5	34,3	79,1	2x Ø 800	46 000	19,2	DN80	1 128	60
	AWW-KD-10602	60	2x V30-84	126,9	39,9	90,9	2x Ø 800	46 000	21,8	DN80	1 137	61
	AWW-KD-10702	70	2x V35-103	145,8	48,0	95,8	2x Ø 800	46 000	25,0	DN80	1 267	60
	AWW-KD-10802	80	2x Z40-126	117,3	59,6	122,3	2x Ø 800	44 000	30,5	DN80	1 358	61
	AWW-KD-11002	100	2x Z50-154	202,8	72,6	153,0	2x Ø 800	44 000	35,0	DN100	1 375	61
	AWW-KD-21204	120	2x2x V30-84	253,8	79,8	181,8	4x Ø 800	92 000	43,6	DN100	2 274	64
	AWW-KD-21404	140	2x2x V35-103	291,5	96,0	191,5	4x Ø 800	88 000	50,1	DN100	2 534	63
	AWW-KD-21604	160	2x2x Z40-126	354,5	119,2	244,6	4x Ø 800	88 000	60,9	DN125	2 716	64
	AWW-KD-22004	200	2x2x Z50-154	405,7	145,1	305,9	4x Ø 800	88 000	69,9	DN125	2 750	64
	AWW-KD-32106	210	3x2x V35-103	437,3	144,0	287,3	6x Ø 800	132 000	75,1	DN125	3 801	65
	AWW-KD-32406	240	3x2x Z40-126	531,8	178,8	366,8	6x Ø 800	132 000	91,4	DN125	4 074	66
	AWW-KD-33006	300	3x2x Z50-154	608,5	217,7	459,0	6x Ø 800	132 000	104,9	DN150	4 125	65
	AWW-KD-43208	320	4x2x Z40-126	709,0	238,4	489,1	8x Ø 800	176 000	121,8	DN150	5 432	67
	AWW-KD-44008	400	4x2x Z50-154	811,3	290,3	611,9	8x Ø 800	176 000	139,8	DN150	5 500	66
Positive temperature	MWW-KD-10502	50	2x V25-71	68,1	28,1	79,1	2x Ø 800	46 000	10,6	2 ½"	1 128	60
	MWW-KD-10602	60	2x V30-84	77,7	32,0	90,9	2x Ø 800	46 000	12,1	2 ½"	1 137	61
	MWW-KD-10702	70	2x V35-103	85,2	38,5	95,8	2x Ø 800	46 000	13,2	DN80	1 267	60
	MWW-KD-10802	80	2x Z40-126	108,1	46,7	122,3	2x Ø 800	44 000	16,8	DN80	1 358	61
	MWW-KD-11002	100	2x Z50-154	118,4	58,9	153,0	2x Ø 800	44 000	18,4	DN80	1 375	61
	MWW-KD-21204	120	2x2x V30-84	155,4	63,9	181,8	4x Ø 800	92 000	24,1	DN100	2 274	64
	MWW-KD-21404	140	2x2x V35-103	170,3	77,0	191,5	4x Ø 800	88 000	26,4	DN100	2 534	63
	MWW-KD-21604	160	2x2x Z40-126	216,1	93,4	244,6	4x Ø 800	88 000	33,5	DN100	2 716	64
	MWW-KD-22004	200	2x2x Z50-154	236,7	117,9	305,9	4x Ø 800	88 000	36,8	DN100	2 750	64
	MWW-KD-32106	210	3x2x V35-103	255,5	115,5	287,3	6x Ø 800	132 000	39,6	DN100	3 801	65
	MWW-KD-32406	240	3x2x Z40-126	324,2	140,1	366,8	6x Ø 800	132 000	50,4	DN125	4 074	66
	MWW-KD-33006	300	3x2x Z50-154	355,1	176,8	459,0	6x Ø 800	132 000	55,1	DN125	4 125	65
	MWW-KD-43208	320	4x2x Z40-126	432,2	186,8	489,1	8x Ø 800	176 000	67,1	DN125	5 432	67
	MWW-KD-44008	400	4x2x Z50-154	473,5	235,7	611,9	8x Ø 800	176 000	73,5	DN125	5 500	66

(1) Nominal cooling capacity at 35 °C ambient temperature with inlet/outlet glycol temperature of -2/-8 °C, with propylene glycol concentration of 35 %

(2) Nominal cooling capacity at 35 °C ambient temperature with inlet/outlet water temperature of 12/7 °C.

(3) Sound Pressure Level in open field at 10 m distance.

WW dimensions



Dimensions (mm)	A
WW-1	1 982
WW-2	3 459
WW-3	4 936
WW-4	6 413


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