

i-CHILLER PROCESS

**COMPLETE TEMPERATURE CONTROL SOLUTIONS
FOR PROCESS & INDUSTRIAL APPLICATIONS**



**PLANET-FRIENDLY PROCESS COOLING RANGE
FULLY PACKAGED AIR-COOLED CHILLERS
WITH LOWEST AVAILABLE ODP/GWP**

7kW to 254kW



THE MARKET LEADING i-CHILLER

THE SUSTAINABLE COOLING SOLUTION FOR INDUSTRY AND OUR PLANET



i-Chiller Process-e air-cooled process chillers are designed specifically for use in the most demanding industrial applications.

- i-Chiller Process-e is the result of our commitment towards sustainability, combining the reliability and durability of our process chillers with the application of eco-friendly refrigerants R513A and R454B.
- i-Chiller Process-e has a fully packaged configuration and features an internal storage tank and pump as standard, offering a plug & play solution with worldwide acclaim.
- i-Chiller Process-e offers an extensive range of options,

coupled with wide operating limits, allowing the model to perfectly fit a variety of process cooling applications.

- i-Chiller Process-e widens the ordinary chiller limits to match the requirements of multiple applications. The limits can be further extended with the optional EC fans.
- i-Chiller Process-e offers certified efficiency which exceeds the latest Ecodesign standard for process cooling applications.
- i-Chiller Process-e is designed to work whatever the conditions. The standard safety equipment includes a phase monitor, pressure switches, antifreeze sensors, level sensors, crankcase heaters and an internal hydraulic bypass circuit.

SUITABLE FOR INDUSTRIES SUCH AS:

FOOD & BEVERAGE | PLASTICS | CHEMICAL & PHARMAECEUTICAL | METAL WORKS



FEATURES

- Fully packaged (everything in one box)
- Over 30 years proven reliability
- More than 100,000 projects completed

HIGH EFFICIENCY AXIAL FANS

Options:

- EC brushless fans on models iC303A-iC7100G
- Continuous electronic regulation of the air flow
- Very low ambient temperature operation (-20°C)
- High efficiency

ELECTRICAL PANEL

- IP54 electrical cabinet (IP44 on mod. iC220A)
- Parametric microprocessor IC208CX, models iC538G-iC7100G with semi-graphic LCD display
- Automatic thermal-magnetic cut-outs on main loads
- Phase monitor

CONDENSING COIL

Copper tubes and corrugated aluminium fins with removable metal filters (models iC303A- iC7100G) and protection grid (model iC220A).

EVAPORATOR-IN-TANK

High-efficiency finned coil evaporator with copper tubes and aluminum fins, installed inside the water storage tank

CENTRIFUGAL PUMP

Options:

- P3 Pump for open circuits (3 bar)
- P5 Pump (5 bar)
- Parallel P3+P3 or P5+P5 pumps (models IC201e-IC1002e)

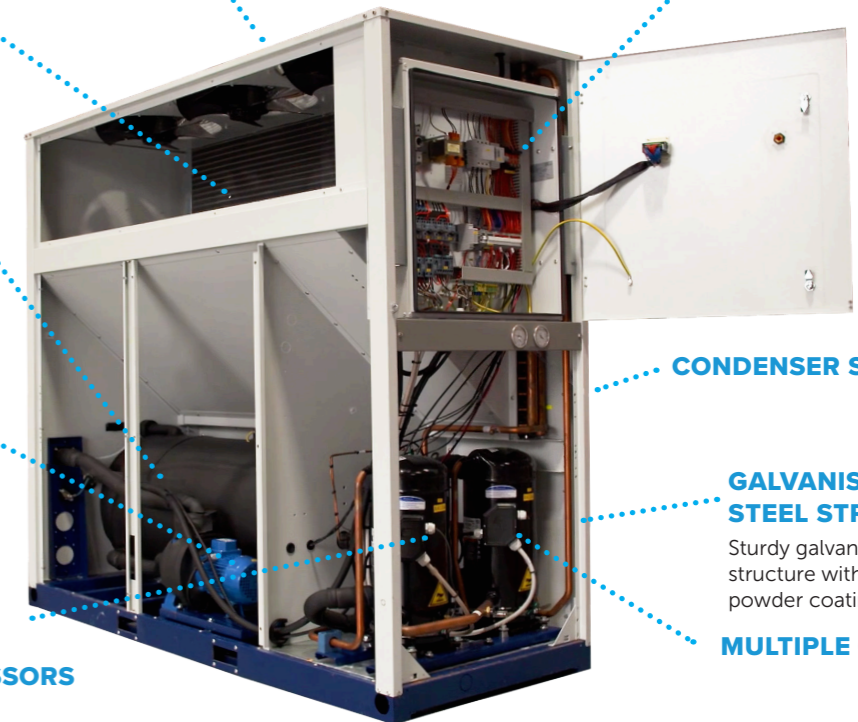
SCROLL COMPRESSORS

CONDENSER SECTION

GALVANISED CARBON STEEL STRUCTURE

Sturdy galvanised carbon steel structure with epoxy polyester powder coating.

MULTIPLE CIRCUITS



- Refrigerant fluid R513A (GWP=573) on models iC220A to iC407A
- Refrigerant fluid R454B (GWP=466) on models iC408G to iC7100G
- Internal hydraulic bypass
- High pressure switch (models iC303A - iC7100G), high pressure transducer, low pressure switch
- Electronic level sensor with water conductivity function
- Refrigerant pressure gauges (models iC303A -iC7100G).

* The 5 year warranty covers both parts and labour and applies to all new i-Chiller Process and Compact models commissioned by ICS Cool Energy and purchased with a PPM plan, effective from 1st June 2022.

R513A MODELS iC220A - iC407A

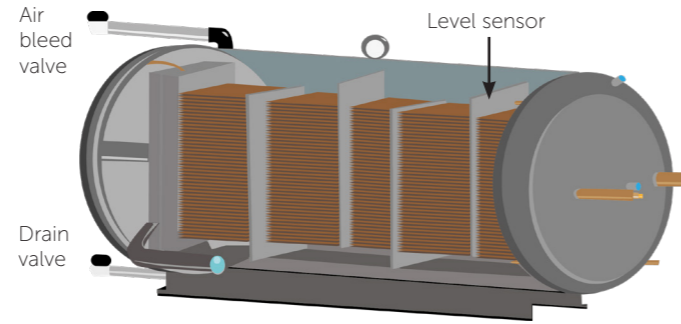
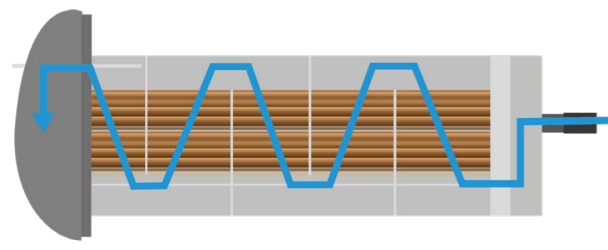
- Composition 44% R134A + 56% R1234yf;
- Low GWP 573 (IPCC);
- A1 low-toxicity, non-flammable (ISO 817)
- Non-Ozone depleting

**-72%
GWP vs
R410A**

R454B MODELS iC408G - iC7100G

- Composition 69% R32 + 31% R1234yf;
- Low GWP 466 (IPCC);
- A2L low-toxicity, mildly flammable (ISO 817);
- Non-Ozone depleting.

**-77%
GWP vs
R410A**



UNIQUE FINNED COIL IN TANK EVAPORATOR

- Highly versatile coil in tank evaporator
- Finned coil type evaporator with copper tubes and aluminium fins
- Refrigerant flows through tubes
- The water flows through the baffles in contact with the finned surface

Advantages:

- Low pressure drop
- Large operating envelop for flow, allows for both low and high Delta T
- Less chance of blocking due to poor water quality when compared to plate heat exchanger

INTEGRATED BUFFER TANK

- Built-in carbon steel cold storage buffer tank ranging in size from 25 to 500 litres

Advantages:

- Improves temperature stability of the chilled water to process
- Helps reduce overall plant footprint
- Reduces compressor starts



HIGH POWER PUMP

- Overcomes larger process pressure drops
- Typical system process pressure drop: **2-3 bar**
- HVAC Chiller System: **1-1.5 bar**

- ✓ **ECODESIGN COMPLIANT**
- ✓ **STOCK AVAILABLE IMMEDIATELY**
- ✓ **FAST CUSTOMISATION OF STANDARD MODELS**
- ✓ **INDIVIDUALLY FACTORY TESTED**
- ✓ **5-YEAR WARRANTY***
- ✓ **3-BAR PUMP AS STANDARD**

WATER OUTLET TEMPERATURE:
-10/+30°C

AMBIENT TEMPERATURE UP TO:
-20/+46°C

SPECIFICATION

i-chiller process-e		iC220A	iC303A	iC305A	iC407A	iC408G	iC410G	iC412G	iC416G	iC520G	iC525G	iC530G
Nominal cooling capacity (1)	kW	4,96	7,17	10,36	16,60	21,85	25,98	33,05	35,95	43,37	47,66	57,03
Total absorbed power (1)	kW	1,81	2,47	3,64	5,49	8,37	9,56	12,39	14,11	16,93	19,55	21,52
EER (1)		2,75	2,90	2,85	3,02	2,61	2,72	2,67	2,55	2,56	2,44	2,65
Max external air temperature	°C	46	46	46	46	46	46	46	46	46	46	46
SEPR HT (2)		5,11	5,20	5,10	5,20	5,09	5,15	5,01	5,05	5,64	5,60	5,28
SEPR MT (3)		2,85	2,95	2,92	3,17	3,27	3,11	3,29	3,39	3,31	3,36	3,27
Nominal cooling capacity (4)	kW	7,22	10,42	14,89	23,43	30,11	35,43	45,36	48,91	59,69	65,33	78,25
Total absorbed power (4)	kW	1,59	2,22	3,29	4,97	7,28	8,26	11,06	12,47	14,79	17,39	19,00
EER (4)		4,54	4,70	4,53	4,71	4,14	4,29	4,10	3,92	4,04	3,76	4,12
Max external air temperature	°C	46	46	46	46	46	46	43	45	45	45	45
Power supply	V/Ph/Hz	400 ± 10% / 3-PE / 50										
Circuits / Compressors	N°	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/2	1/2	1/2
Sound power (5)	db(A)	80,4	81,1	81,1	81,6	81,6	82,1	82,1	83	84,3	84,3	86
Sound pressure (6)	db(A)	52,4	53,1	53,1	53,6	53,6	54,1	54,1	55,0	56,3	56,3	58,0
Refrigerant		R513A	R513A	R513A	R513A	R454B	R454B	R454B	R454B	R454B	R454B	R454B
Width	mm	560	660	660	761	761	761	761	761	866	866	866
Depth	mm	1284	1315	1315	1862	1862	1862	1862	1862	2250	2250	2250
Height	mm	904	1420	1420	1556	1556	1556	1556	1556	2172	2172	2172
Working weight (7)	Kg	199	314	324	462	462	624	635	649	924	966	1018
Tank volume	l	60	115	115	140	140	255	255	255	350	350	350
Evaporator water connections	Rp-DN	3/4"	1"	1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	2"	2"	2"

i-chiller process-e		iC535G	iC538G	iC540G	iC640G	iC650G	iC660G	iC770G	iC780G	iC790G	iC7100G	
Nominal cooling capacity (1)	kW	64,19	75,09	85,08	87,13	99,26	112,32	130,58	148,27	171,91	190,26	
Total absorbed power (1)	kW	26,28	26,39	31,74	34,50	37,94	43,10	50,10	53,43	63,42	74,92	
EER (1)		2,44	2,85	2,68	2,53	2,62	2,61	2,61	2,77	2,71	2,54	
Max external air temperature	°C	46	46	46	46	46	46	46	46	46	46	
SEPR HT (2)		5,36	5,46	5,56	5,49	5,69	5,61	5,61	5,86	5,63	5,36	
SEPR MT (3)		3,38	3,36	3,34	3,42	3,55	3,58	3,64	3,80	3,67	3,61	
Nominal cooling capacity (4)	kW	87,10	103,91	117,70	121,13	137,80	155,57	175,93	197,96	229,66	254,22	
Total absorbed power (4)	kW	23,71	23,29	28,60	30,33	33,56	38,61	44,70	47,29	56,40	67,55	
EER (4)		3,67	4,46	4,11	3,99	4,11	4,03	3,94	4,19	4,07	3,76	
Max external air temperature	°C	44	44	43	44	44	43	43	44	46	45	
Power supply	V/Ph/Hz	400 ± 10% / 3-PE / 50										
Circuits / Compressors	N°	1/2	1/2	1/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	
Sound power (5)	db(A)	86	88,3	89,7	89,5	89,5	89,5	90,2	90,6	91,7	92,8	
Sound pressure (6)	db(A)	58,0	60,3	61,7	61,5	61,5	61,5	62,2	62,6	78,7	79,8	
Refrigerant		R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	
Width	mm	866	1150	1150	1255	1255	1255	1250	1250	1250	1250	
Depth	mm	2250	2790	2790	3298	3298	3298	3535	3535	4655	4655	
Height	mm	2172	2260	2260	2299	2299	2299	2152	2152	2152	2152	
Working weight (7)	Kg	1028	1366	1419	1666	1682	1726	2077	2114	2839	2936	
Tank volume	l	350	410	410	500	500	500	678	678	950	950	
Evaporator water connections	Rp-DN	2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	3"	3"	100	100	

Data declared according to UNI EN 14511:2018. All data refers to standard units without accessories/options which require an electrical feeding source and in nominal working conditions.

(1) Evaporator water inlet/outlet temperature 12/7 °C, external air temperature 35 °C;

(2) Data declared in compliance with the European Regulation (EU) 2016/2281 with regard to ecodesign requirements for cooling products and high temperature process chillers;

(3) Data declared in compliance with the European Regulation (EU) 2015/1095 with regard to ecodesign requirements for cooling products and medium temperature process chillers;

(4) Evaporator water inlet/outlet temperature 20/15 °C, external air temperature 25 °C;

(5) Sound power: determined on the basis of measurements taken in accordance with the standard ISO 3744.

(6) Sound pressure: average value obtained in free field on a reflective surface at a distance of 10 m from the condensate side of the machine and at a height of 1.6 m from the unit support base. Values with tolerance ± 2 dB. The sound levels refer to operation of the unit under full load in nominal conditions;

(7) The weight refers to the version without accessories/options.

OPTIONS

- Anti-freeze heaters (on tank and pumps)
- EC brushless fans, which give a continuous electronic regulation of the air flow and very low ambient temperature operation (-20°C) and high efficiency at partial loads
- Pump options:
 - P3 Pump for open circuits (3 bar)
 - P5 Pump (5 bar)
 - Parallel P3+P3

KITS

- Flow rate regulation kit
- Manual filling tank kit: suitable for hydraulic circuits at atmospheric pressure
- Automatic filling kit: suitable for pressurised hydraulic circuits (up to 6 bar)
- Remote ON/OFF kit and remote control kit (max 150 m)
- Remote control kit VICX620 (LED display) & VGI890 (LCD display) (max 150 m)
- Adapter kit for VICX620 and VGI890 remote control (necessary for models iC538G - iC7100G)
- Supervisor kits: RS485 ModBus, xWEB300D PRO, xVISION
- Automatic external hydraulic bypass kit (models iC220A - iC660G and iC790G -iC7100G)
- Modularity kit: up to 5 units in MASTER/SLAVE



ics cool energy

**PROCESS TEMPERATURE CONTROL SPECIALISTS
SALES. HIRE. SERVICE.**

Date: 06/23

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ICS Cool Energy are specialists in critical and process temperature control solutions to keep industry running. Since 1989, ICS Cool Energy have been providing technical solutions helping businesses meet compliance requirements, reduce their energy consumption, maintenance, and operative costs. ICS Cool Energy offer long term and temporary cooling and heating rental, along with equipment and systems purchase, maintenance and emergency breakdown support. ICS Cool Energy are a part of Trane Technologies, a global climate innovator. For more information, visit www.icscoolenergy.com or www.tranetechnologies.com.



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