



ABOUT THE i-CHILLER RANGE

The fully packaged, EcoDesign compliant, air-cooled i-Chiller range is designed specifically for reliable and efficient process cooling.

The unique evaporator is immersed within a generously sized storage tank. This design ensures safe and reliable operation even during large fluctuations in cooling demand – something often encountered within various industrial applications. Each unit comes with a 3-bar pump as standard with the option to customise with a 5-bar pump – allowing for demanding industrial applications.

The i-Chiller ranges from 7.2 to 210kW and provides process fluid at temperatures from -10°C to 30°C. All come with a comprehensive 3-year parts warranty as standard with an option to extend to 5 years. Ts & Cs apply.

i-Chiller units are held in-stock for fast delivery and can be customised quickly with various options and modifications to meet your unique requirements – saving you valuable budget and time.

ENERGY & PROCESS EFFICIENCY:

- High efficiency finned coil in-tank evaporator with copper tubes & aluminium fins allowing for variable flow rates
- Hydraulic circuit includes integral 3-bar pump, drain valve, overflow & water pressure gauge and process connections
- Scroll compressor(s) operating with R410a refrigerant
- Copper tube / aluminium fin condenser coils combined with axial condenser fans

RELIABILITY:

- Internal water bypass to protect pump against dead heading
- Phase monitor to protect the unit against phase loss & reversal
- Galvanised, epoxy coated carbon steel structure
- Electrical panel protection rating: IP44

EASE OF OPERATION & MAINTENANCE:

- High & low refrigerant pressure gauges & switches
- Easy to use and externally visible advanced electronic controller
- Digital input for remote on/off control
- Volt-free contacts for remote general alarm signal
- Mains isolator
- Manual filling kit comprising atmospheric (open) expansion tank



These models are compliant with ErP efficiency requirements for both medium temperature & high temperature process chillers.

● = Standard / ○ = Optional

	iC770	iC780
Atmospheric fill & vent tank	●	●
Remote on/off	●	●
Volt free alarm contact	●	●
Water pressure gauge	●	●
Low pressure safety switch	●	●
High pressure safety switch	●	●
Antifreeze protection	●	●
Outlet temperature indication	●	●
Condensing pressure fan switch	●	●
Tank level sensor	●	●
Alarm history	●	●
Automatic compressor rotation	●	●
High pressure transducers	●	●
High condensing pressure compressor unloading function	●	●
Low ambient to -20°C	○	○
High efficiency brushless axial fans	○	○
P5 High pressure pump	○	○
Run / standby pumps	○	○
Phase cut fan speed controller	○	○
Anti-Floodback	○	○
Water filter	○	○
Manual bypass	○	○
Pressure relief bypass	○	○
Compressor soft start	○	○
Electronic expansion valve	○	○
Condensers coil coating	○	○
Pre Heat inline heater	○	○
Trace heating for frost protection	○	○
Loose kits		
Manual bypass kit	○	○
Pressure relief bypass kit	○	○
Pressurisation kit	○	○
Advanced remote control kit	○	○
RS485 Modbus trend kit	○	○
Gateway Modbus trend kit	○	○
xWEB Supervisor kit	○	○
xWEB Supervisor kit with GPRS	○	○
Remote X	○	○
Master/Slave modularity kit	○	○
Glycol filling kit	○	○

			iC770	iC780
	Cooling Capacity (1)	kW	184	213
	Total absorbed power (1)	kW	45.4	51.5
	EER (1)	-	4.05	4.14
	Cooling Capacity (2)	kW	139	160
	Total absorbed power (2)	kW	51.5	56.6
	EER (2)	-	2.70	2.83
	Min / max ambient temps. (3)	°C	-5/+44	
	Min / max fluid supply temps. (4)	°C	-10/+30	
Compressors				
	Cooling circuits	No.	2	
	Compressors per circuit	No.	2	
	Capacity control	%	0-25-50-75-100	
	SEPR HT	-	5.07	5.31
	SEPR MT	-	3.38	3.42
Electrical power supply (4)				
	Power	V/Ph/Hz	400/3-PE/50	
	Auxiliary	V/Ph/Hz	24-230/1/50	
	Maximum absorbed power	kW	70.48	79.48
	Maximum absorbed current	A	119.28	142.2
	Starting current	A	235.01	286.2
Fan				
	Fans number	No.	3	
	Total airflow	m ³ /h	63,900	62,100
	Nominal power (per fan)	kW	1.9	
Hydraulic group				
P3	Water flow rate (5)	m ³ /h	13.0/56.0	
	Available pump head pressure (6)	barg	3.4/2.5	
	Nominal absorbed power	kW	5.5	
P5	Water flow rate (5)	m ³ /h	30.0/72.0	
	Available pump head pressure (6)	barg	4.9/3.5	
	Nominal absorbed power	kW	9.2	
	Tank volume	l	678	
	Max working pressure	barg	6	
	Water connections	BSP	3"	
Sound levels (7)				
	Sound power	dB(A)	90.2	90.7
	Sound pressure	dB(A)	62.2	62.7
Dimensions & installed weight				
	Length	mm	3,535	
	Width	mm	1,250	
	Height	mm	2,151	
	Weight	kg	2,290	2,310

(1) Evaporator outlet / inlet temperatures +15°C/+20°C, external ambient temperature +25°C, total absorbed power includes compressors & fans

(2) Evaporator outlet / inlet temperatures +7°C/+12°C, external ambient temperature +35°C, total absorbed power includes compressors & fans

(3) Standard unit configuration operating with evaporator outlet / inlet temperatures +15/+20°C

(4) Protection class IP54

(5) Minimum / maximum water flow rates achievable by pump

(6) Available head pressure at outlet of unit at the minimum / maximum water flow rates

(7) Sound power determined on basis of measurements taken in accordance with ISO 3744. Sound pressure at 10m average value obtained in free field on a reflective surface at 10m distance from the side of the condenser coils & at a height of 1.6m from the unit support base. Values with tolerance ± 2dB. The sound levels refer to unit operation under full load in nominal conditions.

Unless otherwise specified, the above data refers to unit configuration with standard axial fans & fitted with standard P3 pump.

Data declared according to UNI EN 14511-2013.

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

SEPR MT: Data declared in compliance with the European Regulation (EU) 2015/1095 with regard to ecodesign requirements for medium temperature & low temperature process chillers.

Information requirements for high temperature process chillers - SEPR HT

Model:	iC770		
Type of condensing:	Air-cooled		
Refrigerant fluid:	Water		
Item	Symbol	Value	Unit
Operating temperature	t	7,00	°C
Seasonal energy performance ratio	SEPR HT	5,07	[-]
Annual electricity consumption	Q	198470,47	kWh/a
Parameters at full load and reference ambient temperature at rating point A			
Rated refrigeration capacity	P_A	137,2	kW
Rated power input	D_A	49,28	kW
Rated energy efficiency ratio	$EER_{DC,A}$	2,78	[-]
Parameters at rating point B			
Declared refrigeration capacity	P_B	154,0	kW
Declared power input	D_B	40,75	kW
Declared energy efficiency ratio	$EER_{DC,B}$	3,78	[-]
Parameters at rating point C			
Declared refrigeration capacity	P_C	130,3	kW
Declared power input	D_C	26,86	kW
Declared energy efficiency ratio	$EER_{DC,C}$	4,85	[-]
Parameters at rating point D			
Declared refrigeration capacity	P_D	139,4	kW
Declared power input	D_D	23,03	kW
Declared energy efficiency ratio	$EER_{DC,D}$	6,05	[-]
Other items			
Capacity control	Variable		
Degradation co-efficient chillers	C_{dc}	0,90	[-]
Type and GWP of the refrigerant	R410A	2088,00	kg CO2 eq (100 years)
Contact details	ICS Cool Energy B.V. - Rotschotseweg 4, 5271 WX Sint - Michielsgestel		

annex to manual

Information requirements for high temperature process chillers - SEPR HT

Model:	iC780		
Type of condensing:	Air-cooled		
Refrigerant fluid:	Water		
Item	Symbol	Value	Unit
Operating temperature	t	7,00	°C
Seasonal energy performance ratio	SEPR HT	5,31	[-]
Annual electricity consumption	Q	220895,00	kWh/a
Parameters at full load and reference ambient temperature at rating point A			
Rated refrigeration capacity	P_A	159,9	kW
Rated power input	D_A	56,58	kW
Rated energy efficiency ratio	$EER_{DC,A}$	2,83	[-]
Parameters at rating point B			
Declared refrigeration capacity	P_B	178,7	kW
Declared power input	D_B	46,81	kW
Declared energy efficiency ratio	$EER_{DC,B}$	3,82	[-]
Parameters at rating point C			
Declared refrigeration capacity	P_C	151,7	kW
Declared power input	D_C	30,34	kW
Declared energy efficiency ratio	$EER_{DC,C}$	5,00	[-]
Parameters at rating point D			
Declared refrigeration capacity	P_D	163,2	kW
Declared power input	D_D	24,88	kW
Declared energy efficiency ratio	$EER_{DC,D}$	6,56	[-]
Other items			
Capacity control	Variable		
Degradation co-efficient chillers	C_{dc}	0,90	[-]
Type and GWP of the refrigerant	R410A	2088,00	kg CO2 eq (100 years)
Contact details	ICS Cool Energy B.V. - Rotschotseweg 4, 5271 WX Sint - Michielsgestel		

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Information requirements for medium temperature process chillers - SEPR MT

Model:	iC770		
Type of condensing:	Air-cooled		
Refrigerant fluid:	Brine		
Item	Symbol	Value	Unit
Operating temperature	t	-8	°C
Seasonal energy performance ratio	SEPR MT	3.38	[-]
Annual electricity consumption	Q	178364	kWh/a
Parameters at full load and reference ambient temperature at rating point A			
Rated refrigeration capacity	P _A	82.06	kW
Rated power input	D _A	44.18	kW
Rated energy efficiency ratio	EER _A	1.86	[-]
Parameters at rating point B			
Declared refrigeration capacity	P _B	76.31	kW
Declared power input	D _B	30.20	kW
Declared energy efficiency ratio	EER _B	2.53	[-]
Parameters at rating point C			
Declared refrigeration capacity	P _C	71.39	kW
Declared power input	D _C	21.64	kW
Declared energy efficiency ratio	EER _C	3.30	[-]
Parameters at rating point D			
Declared refrigeration capacity	P _D	65.65	kW
Declared power input	D _D	16.67	kW
Declared energy efficiency ratio	EER _D	3.94	[-]
Other items			
Capacity control	Variable		
Degradation co-efficient chillers	C _c	0.90	[-]
Type and GWP of the refrigerant	R410A	2088,00	kg CO2 eq (100 years)
Contact details	ICS Cool Energy B.V. - Rotschotseweg 4, 5271 WX Sint - Michielsgestel		

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Information requirements for medium temperature process chillers - SEPR MT

Model:	iC780		
Type of condensing:	Air-cooled		
Refrigerant fluid:	Brine		
Item	Symbol	Value	Unit
Operating temperature	t	-8	°C
Seasonal energy performance ratio	SEPR MT	3.42	[-]
Annual electricity consumption	Q	205436	kWh/a
Parameters at full load and reference ambient temperature at rating point A			
Rated refrigeration capacity	P_A	95.81	kW
Rated power input	D_A	50.76	kW
Rated energy efficiency ratio	EER_A	1.89	[-]
Parameters at rating point B			
Declared refrigeration capacity	P_B	89.10	kW
Declared power input	D_B	34.92	kW
Declared energy efficiency ratio	EER_B	2.55	[-]
Parameters at rating point C			
Declared refrigeration capacity	P_C	83.36	kW
Declared power input	D_C	25.01	kW
Declared energy efficiency ratio	EER_C	3.33	[-]
Parameters at rating point D			
Declared refrigeration capacity	P_D	76.65	kW
Declared power input	D_D	19.11	kW
Declared energy efficiency ratio	EER_D	4.01	[-]
Other items			
Capacity control	Variable		
Degradation co-efficient chillers	C_c	0.90	[-]
Type and GWP of the refrigerant	R410A	2088,00	kg CO2 eq (100 years)
Contact details	ICS Cool Energy B.V. - Rotschotseweg 4, 5271 WX Sint - Michielsgestel		

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