

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

PROCESS

CHILLERS

**i-FX-G05-Y**

**AIR COOLED CHILLERS  
WITH INVERTER  
SCREW COMPRESSORS,  
FROM 477 TO 1697 kW**



**r** **R513A**

**INVERTER** TOTAL  
TECHNOLOGY

# i-FX-G05-Y

## THE GREEN FULL INVERTER CHILLER DEVOTED TO SERVE YOUR INDUSTRIAL ACTIVITIES.



### Air cooled chiller with inverter screw compressors for outdoor installation from 477 to 1697 kW

i-FX-G05-Y has been accurately designed to make your process cooling activity highly efficient and reliable.

Brilliantly engineered to offer top-level efficiency at any load conditions, the air cooled chiller features innovative inverter technology compressors and new generation variable speed fans.

#### QUICK&EASY INSTALLATION AND MAINTENANCE



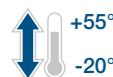
A vast array of already mounted options together with a smart unit design for quick and easy installation and maintenance operations.

#### HIGH DEGREE OF CONFIGURABILITY



Always the right solution for every project thanks to many specifically developed versions and a bespoke list of options (e.g. the integrated hydronic modules, several water flows controls).

#### EXTENDED OPERATING RANGE



Wide operating range, working with outdoor air temperatures from -20°C up to +55°C thanks to specifically developed options and smart control logics.

#### LEADING INVERTER TECHNOLOGY

The new i-FX-G05-Y showcases the latest variable speed technology applied on:

- ✓ dual screw compressors with integrated refrigerant cooled inverter motor and variable Vi technology
- ✓ high efficiency variable speed fans
- ✓ integrated variable speed hydronic modules (opt.)

#### COMPLETE RANGE OF CHILLERS

<b>K</b>	K efficiency	EER: 2,76	SEPR HT: 5,59 up to: 5,84
<b>K</b> +EC fans	K efficiency	EER: 2,79	SEPR HT: 5,72 up to: 6,02
<b>A</b>	High efficiency	EER: 3,03	SEPR HT: 5,86 up to: 6,10

EER conditions: evap. 12/7°C, air 35°C - SEPR HT according to the Regulation (EU) N.2281/2016

#### ACOUSTIC VERSIONS

<b>-</b>	<b>Standard</b>	Unit with standard compressor's enclosures.	<b>Baseline</b>
		Unit with noise reducer kit (Opt. 2315).	<b>-3 dB(A)</b>
<b>SL</b>	<b>Super low noise</b>	The highest level of noise reduction which cuts noise emissions down to -9dB(A), without compromising the unit's efficiency.	<b>-9 dB(A)</b>

#### HEAT RECOVERY CONFIGURATIONS

<b>-</b>	<b>Standard unit</b>	Unit for the production of chilled water.	<b>-</b>
<b>D</b>	<b>Partial heat recovery</b>	A desuperheater on the compressor discharge line recovers approximately 20% of the unit's capacity.  Suitable for DHW production or other secondary uses, such as the integration of an existing boiler.	<b>60°C</b>
<b>R</b>	<b>Total heat recovery</b>	A devoted refrigerant water heat exchanger recovers all the condensation heat.  Suitable for DHW production or air treatment in applications with AHU.	<b>up to 60°C</b>

# ALL-ROUND SUSTAINABILITY



## i-FX-G05-Y 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 i-FX-G05-Y, a complete chiller range with reduced environmental impact, optimized for R513A refrigerant.

Combining brilliant annual efficiency with the use of a low GWP refrigerant, i-FX-G05-Y 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.



### LOW GWP

-56% GWP vs R134a



### Non-flammable

Safety Class A1

## REFRIGERANT BENCHMARK

SCROLL			SCREW		
Refrigerant	GWP*	Flammability**	Refrigerant	GWP*	Flammability**
R410A	2088	NON flammable	R134a	1430	NON flammable
R32	675	MILDLY flammable	R513A	631	NON flammable
R454B	466	MILDLY flammable	R1234ze	7	MILDLY flammable
R452B	698	MILDLY flammable	R1234yf	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 i-FX-G05-Y, 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).

### PROFOUND EXPERTISE



With thousands of units installed worldwide since 2003, Climaveneta air-cooled screw chillers have evolved into the third generation: i-FX-G05-Y series. The highest manufacturing quality, proven reliability, and full configurability are the reasons behind the success of this range. Today i-FX-G05-Y combines extensive expertise with the latest technology to deliver you the best value.

### TOP-LEVEL PERFORMANCE



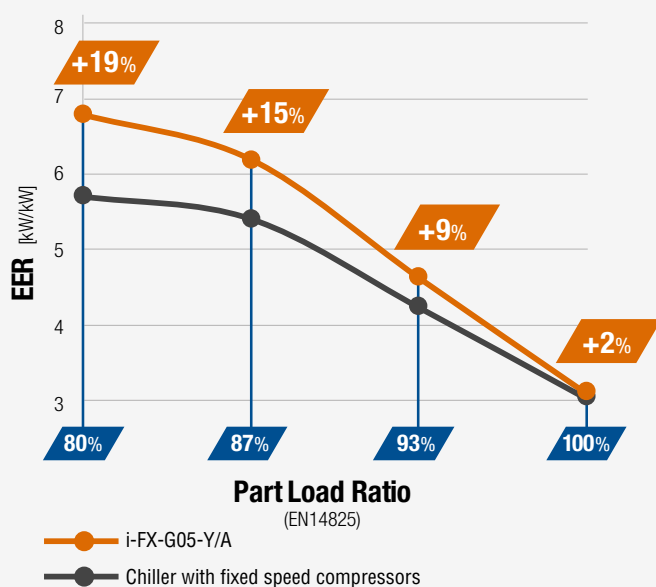
Fully customizable with a range of versions and accessories, i-FX-G05-Y allows custom-made application design for individual projects. Thanks to devoted technological solutions and accurate design, each i-FX-G05-Y configuration brings high full load performance and brilliant part load efficiency together, thus helping individuals and businesses reduce the energy consumption of their HVAC systems and cut their running costs.



# FULL INVERTER TECHNOLOGY



## HIGHER ENERGY EFFICIENCY



The increase in efficiency compared to high efficiency ErP 2018 compliant fixed speed units is expressed by drawing the EER trend to the conditions defined by the ErP directive 2009/125 /EC necessary for the calculation of SEPR HT seasonal parameters.

## ErP 2021 COMPLIANT



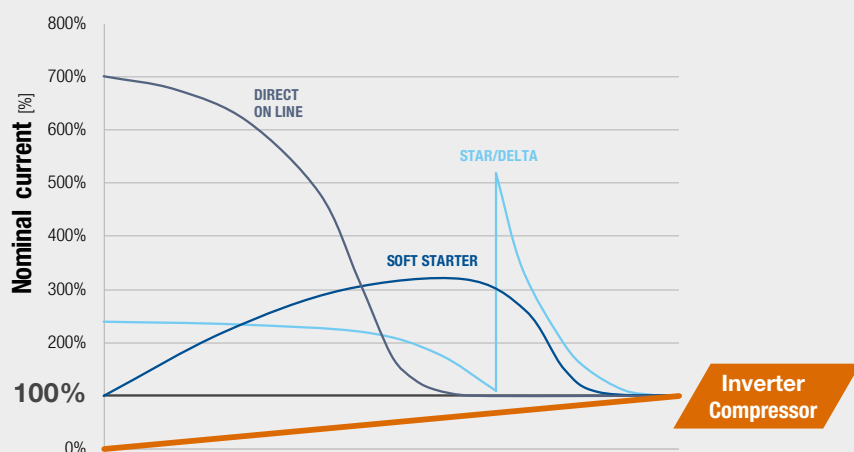
Industrial facilities are usually characterized by high loads all year round.

Even in high load profile applications, i-FX-G05-Y ensures significant efficiency improvement compared to traditional fixed speed compressor units.



## ABSENCE OF IN-RUSH CURRENTS

The inverter technology involves a start-up phase with very low in-rush current. The frequency converters chosen by Mitsubishi Electric are characterized by values of Displacement Power Factor of between 0,97 and 0,99.



## No electrical and mechanical stress

The unit never exceeds the nominal current, not even when starting up.

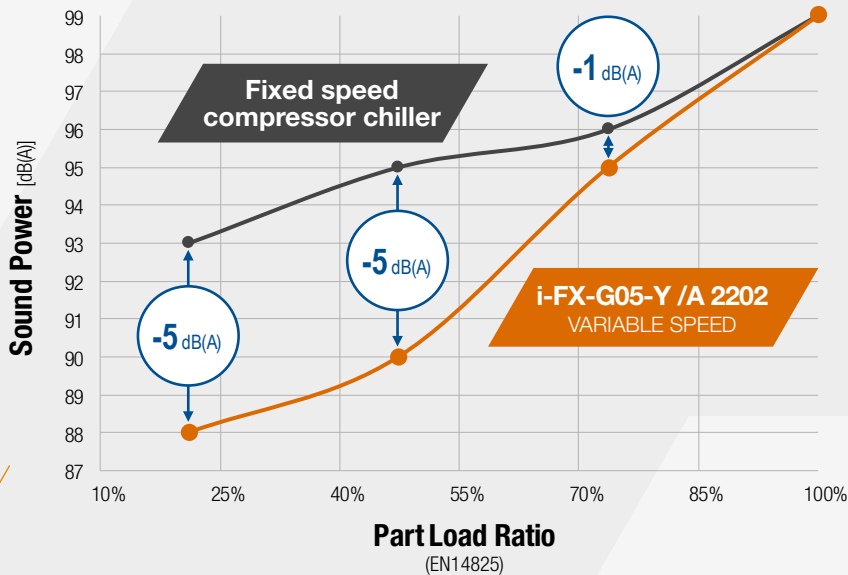
## No additional equipment needed

Such as star/delta commutators or soft starters in order to reduce the in-rush currents.

The new i-FX-G05-Y chillers apply variable speed technology in all of its main components, achieving top-level performances in any load condition.



## REDUCED SOUND POWER LEVELS



## LOWER SPEED, LOWER NOISE

The unit working in partial loads is far more silent than a fixed speed compressor unit.

In applications with units working at part load for most of the year, i-FX-G05-Y ensures extremely low noise operations down to -5dB(A).

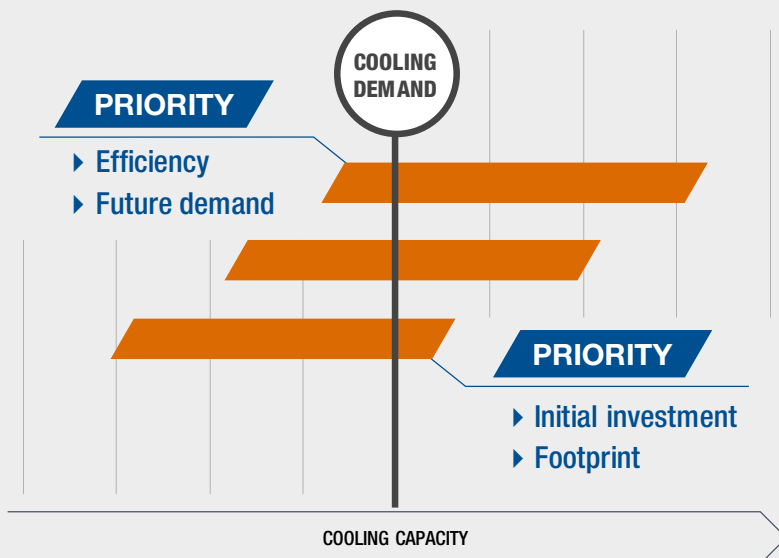
## Ideal for sound sensitive environments located nearby

- ✓ Offices
- ✓ Meeting Rooms



## FLEXIBLE SELECTION

The smart design of the units combined with the ELCAWorld selection software allows you to always choose the right unit for every project, prioritizing efficiency, additional future plant demands or reducing the initial investment and the footprint.



## Choose YOUR target



**EFFICIENCY**



**INITIAL INVESTMENT**



**FOOTPRINT**



**FUTURE PLANT DEMANDS**



# TECHNOLOGICAL CHOICES

## W3000TE CONTROL

Fully in-house developed management software.

- ▶ Efficient and reliable operation in all conditions
- ▶ Connectivity with the most commonly used BMS protocols (Opt.)

## KIPLink USER INTERFACE

Innovative Wi-Fi interface for an easy and enhanced unit management.



## Built-in pump group (Opt.)

Factory-mounted pumps and pre-plumbed hydraulic components, for minimum on-site installation time, work, and cost.

- ▶ Fix speed and variable speed pumps available, with low or high head
- ▶ Electronic primary flow controls for constant pressure or constant temperature

## Casing

Base and frame made of hot-galvanized steel, all parts polyester-painted.

- ▶ Easy access to all inner components
- ▶ Simple transport, lifting, and handling
- ▶ Total weather resistance

## Refrigerant circuits

One independent refrigerant circuit per compressor, to grant reliability and easy maintenance. Compressor enclosures are supplied as standard in all versions.

## Variable speed fans

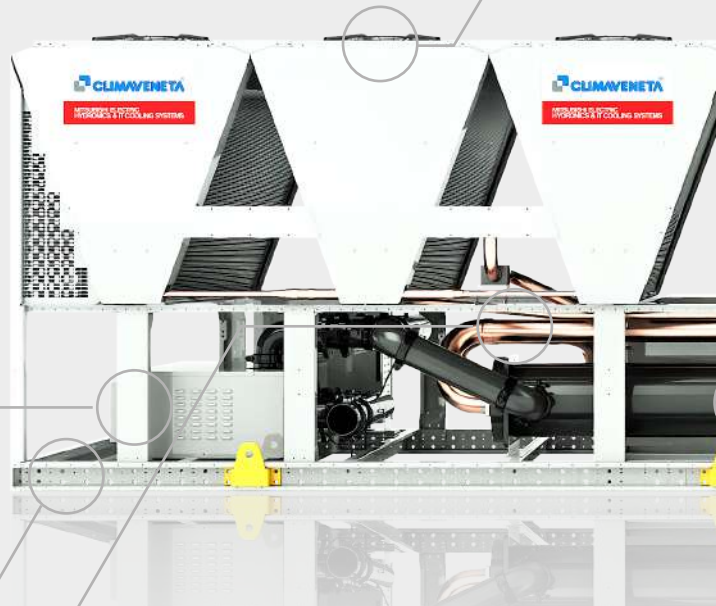
New generation AC and EC fans for precise airflow management and reduced power consumption.

### i-FX-G05-Y / K versions

High performing axial fans equipped with autotransformer for speed adjustment

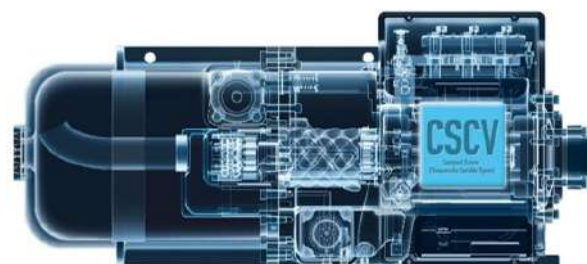
### i-FX-G05-Y / A versions

High performing EC fans, for higher efficiency and continuous speed modulation



## CSCV Compressors

Inverter, Variable Vi dual rotor screw compressors, designed according to Mitsubishi Electric Hydraulics & IT Cooling Systems specifications and for its' exclusive use.



**Trusted reliability, simplified installation, maximized performance: i-FX-G05-Y improves the already high performance of the fixed speed chiller range adding new exceptional features.**



## Micro-channel coils

New generation full aluminum micro-channel coils, ideally positioned on a "V" block structure to optimize airflow and heat transfer.

- ▶ Up to 30% of refrigerant charge reduction vs. traditional tube and fin coils.
- ▶ Long Life Alloy (LLA) for higher corrosion resistance and longer life cycle
- ▶ Protective coating available for harsh industrial and marine environments (Opt.)



## Low GWP refrigerant

New generation refrigerant with reduced greenhouse effect. Non-flammable.

R513A GWP<sub>100 year</sub> = 572  
(R134a GWP<sub>100 year</sub> = 1300)  
GWP values according to IPCC AR5

### Non-toxic, non-flammable

ASHRAE 34, ISO 817: A1 class

### Favorable physical properties

Same cooling capacity delivered as R134a  
Same operating pressures as R134a

### In line with standard building codes

No special equipment  
No need for flammable risk assesment  
No extra costs

### Compliant with eco regulation objectives

No future retrofit required  
Reduced price volatility

## Shell and tube evaporator

Dry expansion, single pass shell and tube evaporator, fully developed by Mitsubishi Electric Hydronics & IT Cooling Systems.

- ▶ Internally grooved copper tubes for enhanced heat exchange
- ▶ Low pressure drops
- ▶ Fully protected against ice formation

## Electrical panel

Large electrical panel with power circuit components and control main board.

- ▶ Forced-air cooling system

## Variable Speed Drive

Integrated and compact frequency converter, refrigerant cooled, for outstanding seasonal efficiency and wide capacity regulation.

## Automatic internal volume ratio adaption

Obtained thanks to an integrated Vi slider which adapts the internal geometry to the current operating condition, thus ensuring the best efficiency.

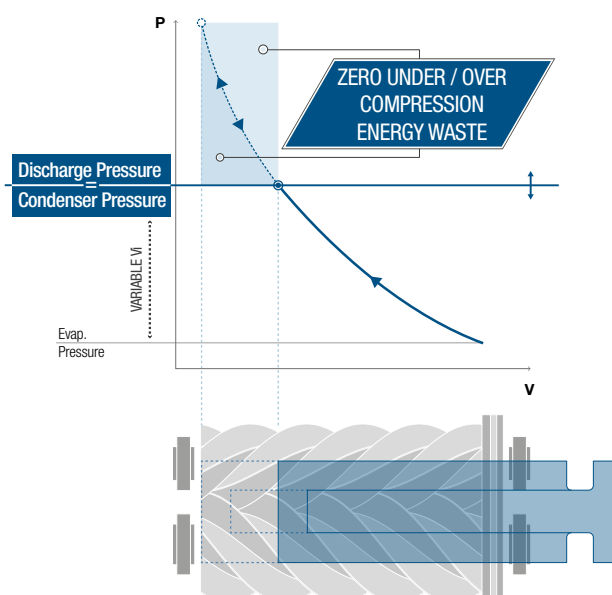
## Extra durability achieved thanks to dedicated components:

- Envelope control function, 3-stage warning and alarm system, safe-torque-off function.
- Carbon steel bearings granted for a lifetime of over 150.000 hours.

## High efficiency high speed motor

For unprecedented full and part load efficiencies and extremely wide and accurate capacity regulation.

## SMART VARIABLE Vi LOGIC



# CORE FEATURES FOR ALL YOUR EQUIPMENT NEEDS

## W3000TE control and KIPLink innovative interface

The logic behind i-FX-G05-Y 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 modes. 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).



### Easier on-site operation

Monitor each component while moving around the unit for maintenance operations. View and change all parameters with easy-to-understand screenshots and dedicated tooltips.

Get devoted "help" messages for alarm reset and trouble shooting.



### Real-time graphs and trends

Monitor the immediate labor status of the compressors, heat exchangers, cooling circuits, and pumps.

View the real-time graphs of the key operating variable trends.



### Data logger function

View history of events and use the filter for a simple search.

Enhance diagnostics with data and graphs of 10 minutes before and after each alarm.

Download all the data for detailed analysis.

## How to access the unit with KIPLink



Direct access to the W3000TE control is achieved by scanning the QR-code positioned on the front side of the i-FX-G05-Y unit.



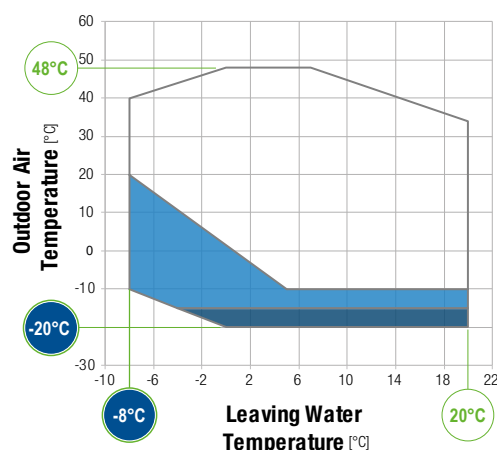
## LED switch

The three-colour LED button positioned on the electrical board allows the user to switch the unit on/off and visualize the general status of the equipment without using any mobile device.

In addition (Opt. 1442, 1444) or in substitution (Opt. 6194, 6195) to the KIPLink, i-FX-G05-Y can be provided with: a 7" color touch screen interface or with a keyboard with large display and LED icons.

In these cases, the LED switch is not provided. Remote keyboard is possible (Opt. C9261063, C9261064, C926108911, C926108913).

## EXTENSIVE OPERATING LIMITS



## K VERSION (Standard)

### FULL LOAD OPERATION

- Standard unit
- Required: EC fans (Opt. 808)
- Required: EC fans (Opt. 808)
- Low temp. device DBA (Opt. 813)

Air temp. < -10°C  
Double insulation on heat exchangers (Opt. 2631)

LWT < 0°C  
Compressor liquid injection (Opt. 871)

EC fans (Opt. 808)  
Maximum outside air temperature: 46°C

### PARTIAL LOAD OPERATION

In case of higher outdoor air temperature, i-FX-G05-Y automatically partializes its resources to ensure uninterrupted operation (HPTC function).

Operating limits when working partialized (water +7°C):  
**up to 53°C**



Climaveneta brand products have always been synonymous for best in class performance and high versatility. This is particularly true for i-FX-G05-Y, the innovative chiller where all the features have been designed for complete customer peace of mind.

## Hydronic modules and flow controls

i-FX-G05-Y units come equipped as standard with terminal and modulating signal (0-10V) to control the activation and speed of one external variable speed pump, and with a parameter set constant water flow control to set the pump speed. This latest arrangement is particularly useful during the installation and commissioning to adjust water flow and the pressure head according to the current plant characteristics.

## Factory-mounted pump group

2 pumps (duty/standby) provide low or high head  
(available head approx. 100 or 200 kPa)

### Fixed speed pumps

2 pump, 2-pole motor: Opt. 4711 (LH) / 4712 (HH)

2 pump, 4-pole motor: Opt. 4708 (LH) / 4709 (HH)

### Variable speed pumps

2 pump, 2-pole motor: Opt. 4722 (LH) / 4723 (HH)

2 pump, 4-pole motor: Opt. 4719 (LH) / 4721 (HH)



Close-coupled pumps by Grundfos

## Terminals for external pump control

The unit controls the activation or the activation and speed of 1 or 2 external pumps.

### Terminals + Modulating signal

1 pump: Standard

2 pumps: Opt. 4714

These arrangements allow to control the activation / deactivation of fixed speed pumps too!

## Other possible variable primary flow control logics:



### VPF control logic

The VPF control series (Variable Primary Flow) doesn't only **adjust the pump speed on the basis of the plant's thermal load**, but also **dynamically optimizes the unit's thermoregulation** for variable flow operation, thus ensuring both the highest pump energy savings and chiller stable operation.

### VPF: constant $\Delta P$ on the plant side

For systems with only the primary circuit.

Opt. 4864 or 4865 for single unit system, Opt. 4866 for multi-unit system

### VPF.D: constant $\Delta T$ on the plant side

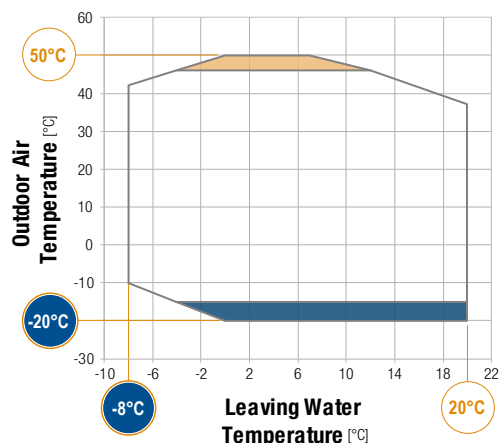
For systems with primary and secondary circuits separated by a hydraulic decoupler.

Opt. 4867 for single unit system, Opt. 4868 for multi-unit system

### VPF.E: constant $\Delta T$

For systems with only the primary circuit and terminals with bypass.  
Opt. 4869

## EXTENSIVE OPERATING LIMITS



## A VERSION (High Efficiency)

### FULL LOAD OPERATION

- Standard unit
- Required: HT kit (Opt. 1955)
- Required: Low temp. device DBA (Opt. 813)

Air temp. < -10°C

Double insulation on heat exchangers (Opt. 2631)

LWT < 0°C

Compressor liquid injection (Opt. 871)

### PARTIAL LOAD OPERATION

In case of higher outdoor air temperature, i-FX-G05-Y automatically partializes its resources to ensure uninterrupted operation (HPTC function).

Operating limits when working partialized (water \*7°C):  
**up to 55°C**

# i-FX-G05-Y Energy Analysis

Rome, Industrial facility

## PROCESS COOLING

### Project

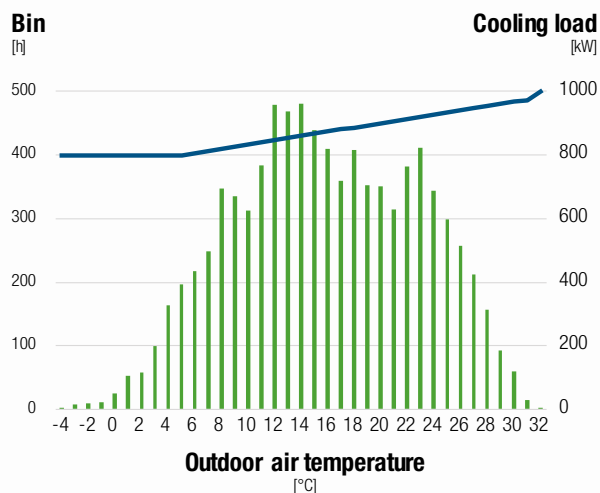
A typical manufacturing site located Rome has been considered for this energy analysis.

This project has provided data that shows a significant increase in seasonal efficiency of the new i-FX-G05-Y inverter screw chillers compared to an already excellent high efficiency fixed speed chiller.

This process application emphasizes the benefits of the inverter technology, ensuring exceptional results.



### Temperature profile



For the process cooling of the industry activities, it has been considered a plant requiring a continuous cooling load 7 days a week, from 6 am to 10 pm.

As visible from the graph, for most of the time the unit is working at high loads.

### Energy analysis parameters:

**Total of 3 units:** 2 operating + 1 redundant  
**Operating schedule:** 7 days/week, continuous operation  
**Cold water set point:** 7°C **Electric energy cost:** 0,13 €/kWh  
**Interest rate:** 6% **Inflation rate:** 3%

## i-FX-G05-Y/A vs High efficiency chiller with fixed speed compr.

This analysis compares the performance values of three full inverter air cooled chillers i-FX-G05-Y with the efficiency of three high efficiency chillers featuring fixed speed compressors.



### 3x chiller with fixed speed compressors

Cooling capacity: 550 kW (12/7°C, 35°C)  
EER: 3,00 (12/7°C, 35°C)  
SEPR HT: 5,22 Length: 5250 mm



### 3x i-FX-G05-Y/A

Cooling capacity: 550 kW (12/7°C, 35°C)  
EER: 3,07 (12/7°C, 35°C)  
SEPR HT: 5,89 Length: 5400 mm

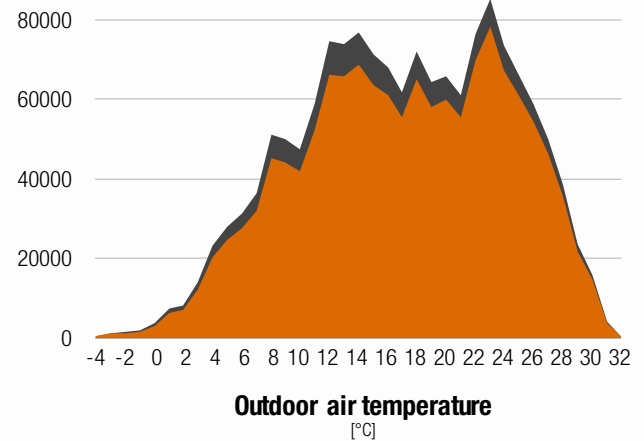
### Electrical energy

[kWh/year]

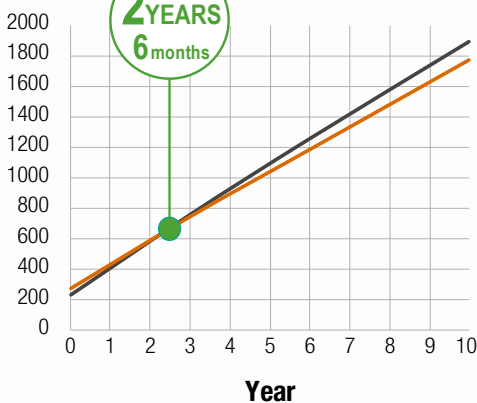
Fixed speed unit: 100%

i-FX-G05-Y/A 4822: 90%

**-10%** Energy Consumption



€  
Thousands



### Payback Time

### Results

The results obtained comparing a top-level fixed speed screw compressor chiller to the new i-FX-G05-Y are astounding:

Even if the two units have similar footprint, the new unit achieves **12% higher annual energy efficiency** than the latest generation fixed speed unit, resulting in an annual energy consumption reduced by 10%.

This leads to a payback time of only **2 year and 6 months**.

## AT A GLANCE



### Power input saving

149.646 kWh per year

### CO<sub>2</sub> saved per year

67.161 kg, equivalent to CO<sub>2</sub> emissions produced by a petrol car driving 395.036 km

### Payback period

**2 year and 6 months**

### Annual energy efficiency

**+12 %**

# ACCESSORIES AND SERVICES

## MICROCHANNEL COILS

Al - Regular (std)

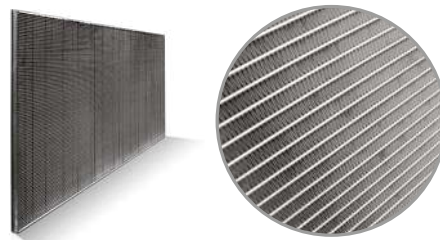
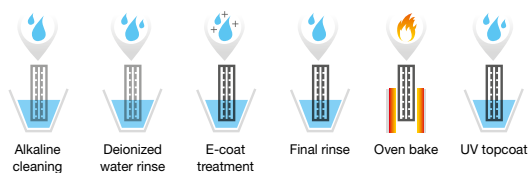
Al - E-coating (Opt. 876)



**3120 h**  
SWAAT test  
(ASTM G85-02 A3)

✓ UV rays  
excellent

### E-coating process



## TUBE & FIN COILS

Cu/Al - Regular (Opt. 879)

Cu/Al - Pre-painted fins (Opt. 894)

Cu/Al - High pressure spray coating (Opt. 895 / RFQ)

**Fin Guard Silver SB \***  
Opt. 895

Polyurethane resin with  
aluminum fillers

✓ **3000 h** ASTM B117

✓ **UV** rays - excellent

\* Thermoguard

**PoluAl XT \***  
RFQ

Polyurethane resin with  
aluminum fillers

✓ **4000 h** ASTM B117

✓ **UV** rays - excellent

\* Blygold

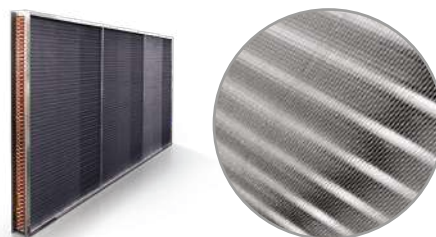
**Heresite P-413C \***  
RFQ

Phenolic resin

✓ **6000 h** ASTM B117

✓ **UV** rays - good

\* Heresite Protective Coating, LLC



Cu/Cu - Tube & fin coil (Opt. 881)

## WITNESS TESTING

Test your chiller before installation and make sure its' performance is totally reliable.

### Performance WITNESS TEST

Performance Witness testing is available as additional service in order to allow the final user to see the unit being tested under specific conditions. Carried out within modern and sophisticated facilities, this service gives the customer the possibility to choose among different witness test options in order to:

- ▶ Verify unit operation under severe conditions
- ▶ Detect sound emissions
- ▶ Check performance, both at full and partial loads
- ▶ Test the unit with low outdoor air temperature operation
- ▶ Time the fast restart





# EQUIPMENT FOR MISSION CRITICAL APPLICATIONS

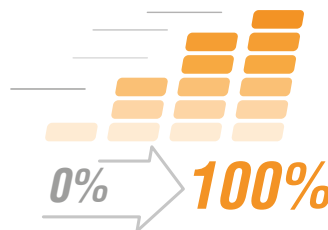
Committed to ensure the highest standards of reliability, i-FX-G05-Y includes a full range of devices and functions that maximize unit's uptime in case of emergency circumstances.

## FAST RESTART

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



Ensure fast cooling start-up



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.

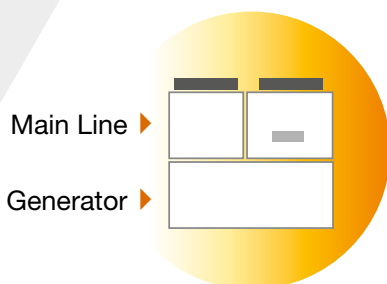
### Fast restart - UPS excluded (Opt.4501)

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. i-FX-G05-Y also 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.

\* ATS: Automatic Transfer Switch

### 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.**

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.



# i-FX-G05-Y 2202 - 7223

Air cooled chillers with inverter screw compressors (from 477 to 1697 kW)



## i-FX-G05-Y/K

Model		2202	2602	2652	2702	2722	3152	3602
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
<b>PERFORMANCE</b>								
<b>COOLING ONLY (GROSS VALUE)</b>								
Cooling capacity	kW	478,6	531,1	561,2	598,1	656,7	720,7	801,4
Total power input	kW	172,0	189,2	198,6	209,1	237,2	263,0	290,3
EER	kW/kW	2,783	2,807	2,826	2,860	2,769	2,740	2,761
<b>COOLING ONLY (EN14511 VALUE)</b>								
Cooling capacity	(1)(2) kW	477,3	529,4	559,6	596,2	654,7	718,2	798,9
EER	(1)(2) kW/kW	2,750	2,770	2,800	2,830	2,740	2,710	2,730
Cooling energy class		C	C	C	C	C	C	C
<b>ENERGY EFFICIENCY</b>								
<b>SEASONAL EFFICIENCY IN COOLING (REG. EU 2016/2281)</b>								
<b>PROCESS REFRIGERATION AT HIGH TEMPERATURE</b>								
Prated,c	(7) kW	477,3	529,4	559,6	596,2	654,7	718,2	798,9
SEPR	(7)(9)	5,56	5,51	5,51	5,51	5,50	5,51	5,54
<b>EXCHANGERS</b>								
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>								
Water flow	l/s	22,89	25,40	26,84	28,60	31,40	34,47	38,33
Pressure drop	kPa	32,0	39,5	35,2	40,0	38,3	46,2	40,7
<b>REFRIGERANT CIRCUIT</b>								
Compressors nr.	N°	2	2	2	2	2	2	2
No. Circuits	N°	2	2	2	2	2	2	2
Refrigerant charge	kg	79,0	87,0	92,0	101	108	120	135
<b>NOISE LEVEL</b>								
Sound Pressure	(3) dB(A)	67	68	68	68	69	68	68
Sound power level in cooling	(4)(5) dB(A)	99	100	100	100	101	101	101
<b>SIZE AND WEIGHT</b>								
A	(6) mm	4150	5400	5400	5400	5400	6650	6650
B	(6) mm	2260	2260	2260	2260	2260	2260	2260
H	(6) mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(6) kg	4790	5270	5280	5330	5720	6210	6270

Model		3902	4202	4502	4802	4812	4822	5412
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
<b>PERFORMANCE</b>								
<b>COOLING ONLY (GROSS VALUE)</b>								
Cooling capacity	kW	874,1	932,0	990,3	1029	1054	1128	1169
Total power input	kW	312,1	331,0	358,1	383,8	366,8	405,3	430,5
EER	kW/kW	2,801	2,816	2,765	2,681	2,874	2,783	2,715
<b>COOLING ONLY (EN14511 VALUE)</b>								
Cooling capacity	(1)(2) kW	871,3	928,7	987,3	1026	1050	1124	1166
EER	(1)(2) kW/kW	2,770	2,780	2,730	2,650	2,840	2,750	2,690
Cooling energy class		C	C	C	D	C	C	D
<b>ENERGY EFFICIENCY</b>								
<b>SEASONAL EFFICIENCY IN COOLING (REG. EU 2016/2281)</b>								
<b>PROCESS REFRIGERATION AT HIGH TEMPERATURE</b>								
Prated,c	(7) kW	871,3	928,7	987,3	1026	1050	1124	1166
SEPR	(7)(9)	5,50	5,50	5,61	5,60	5,50	5,50	5,67
<b>EXCHANGERS</b>								
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>								
Water flow	l/s	41,80	44,57	47,36	49,20	50,41	53,94	55,90
Pressure drop	kPa	42,8	48,7	42,4	45,8	48,1	51,7	41,7
<b>REFRIGERANT CIRCUIT</b>								
Compressors nr.	N°	2	2	2	2	2	2	2
No. Circuits	N°	2	2	2	2	2	2	2
Refrigerant charge	kg	146	155	161	168	174	189	193
<b>NOISE LEVEL</b>								
Sound Pressure	(3) dB(A)	69	70	70	71	71	72	72
Sound power level in cooling	(4)(5) dB(A)	102	103	103	104	104	105	105
<b>SIZE AND WEIGHT</b>								
A	(6) mm	7900	7900	7900	7900	9150	9150	9150
B	(6) mm	2260	2260	2260	2260	2260	2260	2260
H	(6) mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(6) kg	6700	6740	7350	7750	8220	8340	8500

### 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 ▶ 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.
- 4 ▶ Sound power on the basis of measurements made in compliance with ISO 9614.
- 5 ▶ Sound power level in cooling, outdoors.
- 6 ▶ Unit in standard configuration/execution, without optional accessories.

- 7 ▶ Parameter calculated according to [REGULATION (EU) N. 2016/2281]

- 8 ▶ Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]

- 9 ▶ Seasonal energy efficiency ratio

The units highlighted in this publication contain R513A [GWP<sub>100</sub> 631] fluorinated greenhouse gases.

Certified data in EUROVENT



Model		6002	6022	6303	6903	7203	7213	7223
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
<b>PERFORMANCE</b>								
<b>COOLING ONLY (GROSS VALUE)</b>								
Cooling capacity	kW	1242	1302	1409	1493	1559	1649	1697
Total power input	kW	438,8	477,1	498,8	544,8	578,9	596,2	618,5
EER	kW/kW	2,830	2,729	2,825	2,740	2,693	2,766	2,744
<b>COOLING ONLY (EN14511 VALUE)</b>								
Cooling capacity	(1)(2) kW	1238	1297	1405	1488	1555	1644	1691
EER	(1)(2) kW/kW	2,800	2,690	2,790	2,710	2,670	2,740	2,710
Cooling energy class		C	D	C	C	D	C	C
<b>ENERGY EFFICIENCY</b>								
<b>SEASONAL EFFICIENCY IN COOLING (REG. EU 2016/2281)</b>								
<b>PROCESS REFRIGERATION AT HIGH TEMPERATURE</b>								
Prated,c	(7) kW	1238	1297	1405	1488	1555	1644	1691
SEPR	(7)(9)	5,70	5,56	5,51	5,51	5,51	5,50	5,50
<b>EXCHANGERS</b>								
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>								
Water flow	l/s	59,42	62,28	67,38	71,40	74,58	78,86	81,17
Pressure drop	kPa	47,1	51,8	45,9	51,5	39,6	44,3	50,4
<b>REFRIGERANT CIRCUIT</b>								
Compressors nr.	N°	2	2	3	2	3	3	3
No. Circuits	N°	2	2	3	3	3	3	3
Refrigerant charge	kg	208	214	236	244	254	273	288
<b>NOISE LEVEL</b>								
Sound Pressure	(3) dB(A)	72	72	72	72	72	73	73
Sound power level in cooling	(4)(5) dB(A)	105	105	105	105	105	106	106
<b>SIZE AND WEIGHT</b>								
A	(6) mm	10400	10400	11650	11650	11650	12900	12900
B	(6) mm	2260	2260	2260	2260	2260	2260	2260
H	(6) mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(6) kg	8890	9000	10650	11460	11840	12350	12430

**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 ▶ 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.
- 4 ▶ Sound power on the basis of measurements made in compliance with ISO 9614.
- 5 ▶ Sound power level in cooling, outdoors.
- 6 ▶ Unit in standard configuration/execution, without optional accessories.

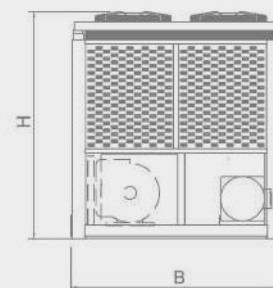
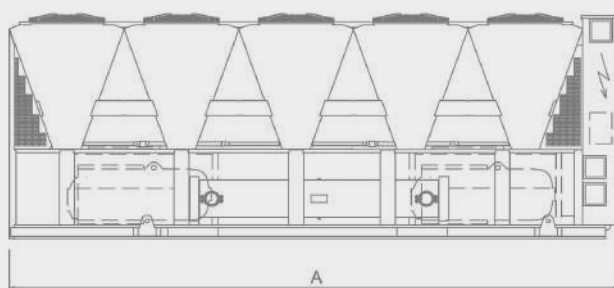
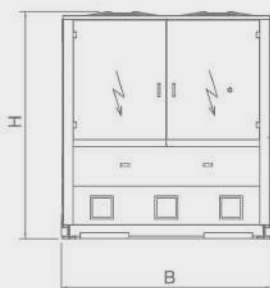
- 7 ▶ Parameter calculated according to [REGULATION (EU) N. 2016/2281]

- 8 ▶ Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]

- 9 ▶ Seasonal energy efficiency ratio

The units highlighted in this publication contain R513A [GWP<sub>100</sub> 631] fluorinated greenhouse gases.

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# i-FX-G05-Y 2202 - 7223

Air cooled chillers with inverter screw compressors (from 477 to 1697 kW)



## i-FX-G05-Y/SL-K

Model		2202	2602	2652	2702	2722	3152	3602
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
<b>PERFORMANCE</b>								
<b>COOLING ONLY (GROSS VALUE)</b>								
Cooling capacity	kW	477,0	516,7	554,6	578,0	662,9	711,3	774,2
Total power input	kW	168,1	177,0	195,5	212,2	228,3	260,2	295,6
EER	kW/kW	2,838	2,919	2,837	2,724	2,904	2,734	2,619
<b>COOLING ONLY (EN14511 VALUE)</b>								
Cooling capacity	(1)(2) kW	475,7	515,1	553,0	576,3	660,9	708,9	772,0
EER	(1)(2) kW/kW	2,810	2,880	2,810	2,690	2,870	2,700	2,590
Cooling energy class		C	C	C	D	C	C	D
<b>ENERGY EFFICIENCY</b>								
<b>SEASONAL EFFICIENCY IN COOLING (REG. EU 2016/2281)</b>								
<b>PROCESS REFRIGERATION AT HIGH TEMPERATURE</b>								
Prated,c	(7) kW	475,7	515,1	553,0	576,3	660,9	708,9	772,0
SEPR	(7)(9)	5,73	5,68	5,68	5,50	5,52	5,60	5,63
<b>EXCHANGERS</b>								
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>								
Water flow	l/s	22,81	24,71	26,52	27,64	31,70	34,02	37,02
Pressure drop	kPa	31,8	37,4	34,4	37,3	39,1	45,0	38,0
<b>REFRIGERANT CIRCUIT</b>								
Compressors nr.	N°	2	2	2	2	2	2	2
No. Circuits	N°	2	2	2	2	2	2	2
Refrigerant charge	kg	83,0	91,0	97,0	101	116	125	135
<b>NOISE LEVEL</b>								
Sound Pressure	(3) dB(A)	60	61	61	61	61	61	61
Sound power level in cooling	(4)(5) dB(A)	92	93	93	93	94	94	94
<b>SIZE AND WEIGHT</b>								
A	(6) mm	5400	5400	5400	5400	6650	6650	6650
B	(6) mm	2260	2260	2260	2260	2260	2260	2260
H	(6) mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(6) kg	5450	5600	5620	5650	6560	6580	6590

Model		3902	4202	4502	4802	4812	4822	5412
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
<b>PERFORMANCE</b>								
<b>COOLING ONLY (GROSS VALUE)</b>								
Cooling capacity	kW	845,6	903,1	972,7	1028	1046	1120	1162
Total power input	kW	317,7	336,9	356,8	373,5	359,4	397,2	422,1
EER	kW/kW	2,662	2,681	2,726	2,752	2,910	2,820	2,753
<b>COOLING ONLY (EN14511 VALUE)</b>								
Cooling capacity	(1)(2) kW	843,1	900,1	969,8	1025	1042	1116	1159
EER	(1)(2) kW/kW	2,630	2,650	2,700	2,720	2,870	2,780	2,720
Cooling energy class		D	D	C	C	C	C	C
<b>ENERGY EFFICIENCY</b>								
<b>SEASONAL EFFICIENCY IN COOLING (REG. EU 2016/2281)</b>								
<b>PROCESS REFRIGERATION AT HIGH TEMPERATURE</b>								
Prated,c	(7) kW	843,1	900,1	969,8	1025	1042	1116	1159
SEPR	(7)(9)	5,50	5,50	5,66	5,64	5,63	5,55	5,67
<b>EXCHANGERS</b>								
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>								
Water flow	l/s	40,44	43,19	46,52	49,15	50,01	53,58	55,57
Pressure drop	kPa	40,1	45,7	40,9	45,7	47,3	51,0	41,2
<b>REFRIGERANT CIRCUIT</b>								
Compressors nr.	N°	2	2	2	2	2	2	2
No. Circuits	N°	2	2	2	2	2	2	2
Refrigerant charge	kg	146	155	168	178	183	198	204
<b>NOISE LEVEL</b>								
Sound Pressure	(3) dB(A)	62	63	63	63	63	63	63
Sound power level in cooling	(4)(5) dB(A)	95	96	96	96	96	96	96
<b>SIZE AND WEIGHT</b>								
A	(6) mm	7900	7900	9150	9150	10400	10400	10400
B	(6) mm	2260	2260	2260	2260	2260	2260	2260
H	(6) mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(6) kg	7050	7100	8110	8550	9010	9130	9310

### 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 ▶ 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.
- 4 ▶ Sound power on the basis of measurements made in compliance with ISO 9614.
- 5 ▶ Sound power level in cooling, outdoors.
- 6 ▶ Unit in standard configuration/execution, without optional accessories.

- 7 ▶ Parameter calculated according to [REGULATION (EU) N. 2016/2281]

- 8 ▶ Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]

- 9 ▶ Seasonal energy efficiency ratio

The units highlighted in this publication contain R513A [GWP<sub>100</sub> 631] fluorinated greenhouse gases.

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Model		6002	6022	6303	6903	7203	7213	7223
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
<b>PERFORMANCE</b>								
<b>COOLING ONLY (GROSS VALUE)</b>								
Cooling capacity	kW	1199	1290	1365	1474	1541	1590	1635
Total power input	kW	446,5	470,5	507,7	541,1	572,2	610,0	633,6
EER	kW/kW	2,685	2,742	2,689	2,724	2,693	2,607	2,580
<b>COOLING ONLY (EN14511 VALUE)</b>								
Cooling capacity	(1)(2) kW	1195	1286	1361	1469	1537	1586	1630
EER	(1)(2) kW/kW	2,660	2,710	2,660	2,690	2,670	2,580	2,550
Cooling energy class		D	C	D	D	D	D	D
<b>ENERGY EFFICIENCY</b>								
<b>SEASONAL EFFICIENCY IN COOLING (REG. EU 2016/2281)</b>								
<b>PROCESS REFRIGERATION AT HIGH TEMPERATURE</b>								
Prated,c	(7) kW	1195	1286	1361	1469	1537	1586	1630
SEPR	(7)(9)	5,76	5,65	5,70	5,84	5,76	5,66	5,61
<b>EXCHANGERS</b>								
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>								
Water flow	l/s	57,32	61,67	65,28	70,50	73,70	76,02	78,18
Pressure drop	kPa	43,9	50,8	43,1	50,2	38,7	41,2	46,7
<b>REFRIGERANT CIRCUIT</b>								
Compressors nr.	N°	2	2	3	2	3	2	3
No. Circuits	N°	2	2	3	3	3	3	3
Refrigerant charge	kg	208	224	236	255	267	278	288
<b>NOISE LEVEL</b>								
Sound Pressure	(3) dB(A)	63	63	63	63	63	64	64
Sound power level in cooling	(4)(5) dB(A)	96	96	96	96	96	97	97
<b>SIZE AND WEIGHT</b>								
A	(6) mm	10400	11650	11650	12900	12900	12900	12900
B	(6) mm	2260	2260	2260	2260	2260	2260	2260
H	(6) mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(6) kg	9270	9790	11140	12390	12770	12850	12930

**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 ▶ 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.
- 4 ▶ Sound power on the basis of measurements made in compliance with ISO 9614.
- 5 ▶ Sound power level in cooling, outdoors.
- 6 ▶ Unit in standard configuration/execution, without optional accessories.

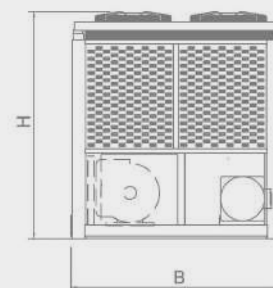
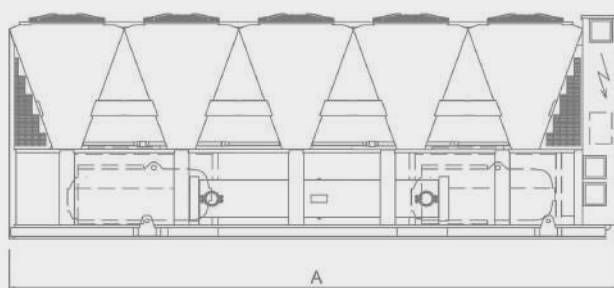
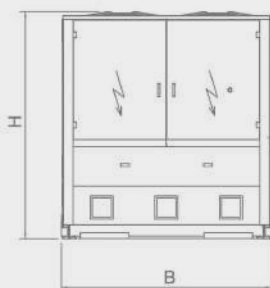
- 7 ▶ Parameter calculated according to [REGULATION (EU) N. 2016/2281]

- 8 ▶ Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]

- 9 ▶ Seasonal energy efficiency ratio

The units highlighted in this publication contain R513A [GWP<sub>100</sub> 631] fluorinated greenhouse gases.

Certified data in EUROVENT



## i-FX-G05-Y

**2202 - 7223**Air cooled chillers with  
inverter screw compressors  
(from 477 to 1697 kW)

## i-FX-G05-Y/A

Model		2202	2602	2652	2702	2722	3152	3602	3902
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	400/3/50
<b>PERFORMANCE</b>									
<b>COOLING ONLY (GROSS VALUE)</b>									
Cooling capacity	kW	510,2	551,9	590,0	626,9	684,3	767,2	839,9	899,4
Total power input	kW	163,5	177,8	189,4	203,0	222,2	257,2	286,0	303,4
EER	kW/kW	3,120	3,104	3,115	3,088	3,080	2,983	2,937	2,964
<b>COOLING ONLY (EN14511 VALUE)</b>									
Cooling capacity	(1)(2) kW	508,7	550,4	588,2	624,8	682,1	765,0	837,1	896,4
EER	(1)(2) kW/kW	3,080	3,070	3,080	3,050	3,040	2,950	2,900	2,930
Cooling energy class		B	B	B	B	B	B	B	B
<b>ENERGY EFFICIENCY</b>									
<b>SEASONAL EFFICIENCY IN COOLING (REG. EU 2016/2281)</b>									
<b>PROCESS REFRIGERATION AT HIGH TEMPERATURE</b>									
Prated,c	(7) kW	508,7	550,4	588,2	624,8	682,1	765,0	837,1	896,4
SEPR	(7)(9)	5,98	5,89	5,87	5,92	5,77	5,87	5,88	5,67
<b>SEASONAL EFFICIENCY IN COOLING (REG. EU 2015/1095)</b>									
<b>PROCESS REFRIGERATION AT MEDIUM TEMPERATURE</b>									
Prated,c	(8) kW	267,0	287,9	307,9	327,5	359,0	401,8	441,8	472,9
SEPR	(8)(9)	3,79	3,67	3,67	3,71	3,71	3,67	3,62	3,55
<b>EXCHANGERS</b>									
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>									
Water flow	l/s	24,40	26,39	28,22	29,98	32,73	36,69	40,16	43,01
Pressure drop	kPa	36,4	34,0	38,9	43,9	41,6	37,3	44,7	45,3
<b>REFRIGERANT CIRCUIT</b>									
Compressors nr.	N°	2	2	2	2	2	2	2	2
No. Circuits	N°	2	2	2	2	2	2	2	2
Refrigerant charge	kg	91,0	93,0	100	106	115	130	141	153
<b>NOISE LEVEL</b>									
Sound Pressure	(3) dB(A)	67	68	67	67	68	68	68	69
Sound power level in cooling	(4)(5) dB(A)	99	100	100	100	101	101	101	102
<b>SIZE AND WEIGHT</b>									
A	(6) mm	5400	5400	6650	6650	6650	7900	7900	9150
B	(6) mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(6) mm	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(6) kg	5180	5240	5720	5800	6210	6620	6670	7080

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	400/3/50
<b>PERFORMANCE</b>									
<b>COOLING ONLY (GROSS VALUE)</b>									
Cooling capacity	kW	959,4	1028	1099	1162	1230	1334	1467	1520
Total power input	kW	320,6	340,0	358,2	388,6	401,1	452,6	493,4	518,9
EER	kW/kW	2,993	3,024	3,068	2,990	3,067	2,947	2,973	2,929
<b>COOLING ONLY (EN14511 VALUE)</b>									
Cooling capacity	(1)(2) kW	955,9	1025	1095	1159	1226	1330	1463	1516
EER	(1)(2) kW/kW	2,950	2,980	3,020	2,960	3,030	2,910	2,940	2,900
Cooling energy class		B	B	B	B	B	B	B	B
<b>ENERGY EFFICIENCY</b>									
<b>SEASONAL EFFICIENCY IN COOLING (REG. EU 2016/2281)</b>									
<b>PROCESS REFRIGERATION AT HIGH TEMPERATURE</b>									
Prated,c	(7) kW	955,9	1025	1095	1159	1226	1330	1463	1516
SEPR	(7)(9)	5,60	5,73	5,80	5,75	5,71	5,71	5,64	5,61
<b>SEASONAL EFFICIENCY IN COOLING (REG. EU 2015/1095)</b>									
<b>PROCESS REFRIGERATION AT MEDIUM TEMPERATURE</b>									
Prated,c	(8) kW	507,7	540,5	575,9	609,6	644,8	696,8	770,8	795,9
SEPR	(8)(9)	3,61	3,66	3,72	3,69	3,58	3,51	3,60	3,56
<b>EXCHANGERS</b>									
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>									
Water flow	l/s	45,88	49,16	52,54	55,59	58,81	63,78	70,16	72,70
Pressure drop	kPa	51,6	45,7	50,1	41,2	46,2	41,1	35,1	37,7
<b>REFRIGERANT CIRCUIT</b>									
Compressors nr.	N°	2	2	2	2	2	4	3	4
No. Circuits	N°	2	2	2	2	2	3	3	3
Refrigerant charge	kg	162	174	185	199	209	227	260	258
<b>NOISE LEVEL</b>									
Sound Pressure	(3) dB(A)	70	70	71	72	72	72	72	72
Sound power level in cooling	(4)(5) dB(A)	103	103	104	105	105	105	105	105
<b>SIZE AND WEIGHT</b>									
A	(6) mm	9150	10400	10400	10400	11650	12900	12900	12900
B	(6) mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(6) mm	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(6) kg	7120	8110	8550	8810	9280	10880	10920	11610

**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 ▶ 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.
- 4 ▶ Sound power on the basis of measurements made in compliance with ISO 9614.
- 5 ▶ Sound power level in cooling, outdoors.
- 6 ▶ Unit in standard configuration/execution, without optional accessories.

- 7 ▶ Parameter calculated according to [REGULATION (EU) N. 2016/2281]

- 8 ▶ Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]

- 9 ▶ Seasonal energy efficiency ratio

The units highlighted in this publication contain R513A [GWP<sub>100</sub> 631] fluorinated greenhouse gases.

Certified data in EUROVENT



## i-FX-G05-Y/SL-A

Model		2202	2602	2652	2702	2722	3152	3602	3902
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	400/3/50
<b>PERFORMANCE</b>									
<b>COOLING ONLY (GROSS VALUE)</b>									
Cooling capacity	kW	498,8	559,5	581,8	615,1	682,8	751,6	811,9	891,5
Total power input	kW	162,3	182,7	185,5	202,2	216,8	251,1	275,3	295,2
EER	kW/kW	3,073	3,062	3,136	3,042	3,149	2,993	2,949	3,020
<b>COOLING ONLY (EN14511 VALUE)</b>									
Cooling capacity	(1)(2) kW	497,4	557,9	580,0	613,4	680,6	749,5	809,4	888,6
EER	(1)(2) kW/kW	3,040	3,030	3,100	3,010	3,110	2,960	2,910	2,980
Cooling energy class		B	B	A	B	A	B	B	B
<b>ENERGY EFFICIENCY</b>									
<b>SEASONAL EFFICIENCY IN COOLING (REG. EU 2016/2281)</b>									
<b>PROCESS REFRIGERATION AT HIGH TEMPERATURE</b>									
Prated,c	(7) kW	497,4	557,9	580,0	613,4	680,6	749,5	809,4	888,6
SEPR	(7)(9)	6,10	5,98	5,93	5,94	5,80	5,92	5,98	5,90
<b>SEASONAL EFFICIENCY IN COOLING (REG. EU 2015/1095)</b>									
<b>PROCESS REFRIGERATION AT MEDIUM TEMPERATURE</b>									
Prated,c	(8) kW	261,7	291,6	303,3	320,5	356,9	393,5	425,9	467,6
SEPR	(8)(9)	3,90	3,78	3,70	3,73	3,71	3,69	3,64	3,67
<b>EXCHANGERS</b>									
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>									
Water flow	l/s	23,85	26,76	27,82	29,42	32,65	35,94	38,83	42,63
Pressure drop	kPa	34,8	35,0	37,8	33,6	41,5	35,8	41,8	44,5
<b>REFRIGERANT CIRCUIT</b>									
Compressors nr.	N°	2	2	2	2	2	2	2	2
No. Circuits	N°	2	2	2	2	2	2	2	2
Refrigerant charge	kg	91,0	101	106	112	123	136	148	162
<b>NOISE LEVEL</b>									
Sound Pressure	(3) dB(A)	60	60	60	60	61	61	61	62
Sound power level in cooling	(4)(5) dB(A)	92	93	93	93	94	94	94	95
<b>SIZE AND WEIGHT</b>									
A	(6) mm	5400	6650	6650	6650	7900	7900	9150	10400
B	(6) mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(6) mm	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(6) kg	5490	6030	6080	6400	6990	6990	7460	7860

Model		4202	4502	4802	4822	5412	5703	6303
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
<b>PERFORMANCE</b>								
<b>COOLING ONLY (GROSS VALUE)</b>								
Cooling capacity	kW	942,8	1016	1086	1149	1213	1332	1462
Total power input	kW	312,4	331,8	350,0	380,1	393,2	456,9	493,5
EER	kW/kW	3,018	3,062	3,103	3,023	3,085	2,915	2,963
<b>COOLING ONLY (EN14511 VALUE)</b>								
Cooling capacity	(1)(2) kW	939,4	1013	1082	1146	1209	1328	1458
EER	(1)(2) kW/kW	2,980	3,020	3,060	2,990	3,050	2,880	2,930
Cooling energy class		B	B	B	B	B	C	B
<b>ENERGY EFFICIENCY</b>								
<b>SEASONAL EFFICIENCY IN COOLING (REG. EU 2016/2281)</b>								
<b>PROCESS REFRIGERATION AT HIGH TEMPERATURE</b>								
Prated,c	(7) kW	939,4	1013	1082	1146	1209	1328	1458
SEPR	(7)(9)	5,85	5,96	5,90	5,83	5,89	5,98	5,93
<b>SEASONAL EFFICIENCY IN COOLING (REG. EU 2015/1095)</b>								
<b>PROCESS REFRIGERATION AT MEDIUM TEMPERATURE</b>								
Prated,c	(8) kW	497,8	533,3	568,2	601,6	635,1	697,6	770,5
SEPR	(8)(9)	3,74	3,80	3,77	3,74	3,68	3,72	3,80
<b>EXCHANGERS</b>								
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>								
Water flow	l/s	45,09	48,60	51,92	54,96	58,00	63,72	69,92
Pressure drop	kPa	49,8	44,7	48,9	40,3	44,9	41,0	34,8
<b>REFRIGERANT CIRCUIT</b>								
Compressors nr.	N°	2	2	2	2	2	4	3
No. Circuits	N°	2	2	2	2	2	3	3
Refrigerant charge	kg	171	184	197	210	220	237	260
<b>NOISE LEVEL</b>								
Sound Pressure	(3) dB(A)	63	63	63	63	63	63	63
Sound power level in cooling	(4)(5) dB(A)	96	96	96	96	96	96	96
<b>SIZE AND WEIGHT</b>								
A	(6) mm	10400	11650	11650	11650	12900	12900	12900
B	(6) mm	2260	2260	2260	2260	2260	2260	2260
H	(6) mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(6) kg	8080	8860	9310	9640	10080	11410	11420

### 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 ▶ 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.
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# FURTHER OPTIONS

## Auxiliary input

**4-20 mA (Opt. 6161):** Enables remote set-point adjustments (analog input).

**Double set-point (Opt. 6162):** Enables the remote switch between 2 set-points (digital input).

**Demand limit (Opt. 6171):** Limits the unit's power absorption for safety reasons or in temporary situations (digital input).

## Electrical

**Automatic circuit breakers for all major electrical loads (compressors excluded) (Opt. 3414):**

Protect all the major electrical loads (compressors excluded) from possible current peaks, over-current switches are provided in place of the standard fuses. The compressors are already protected by extra-fast sectionable fuses.

## Connectivity

Serial card interface module to allow integration with BMS protocols:

**Modbus (Opt. 4181) / LonWorks (Opt. 4182) / BACnet MS/TP (Opt. 4184) / BACnet over IP (Opt. 4185)**

**M-Net interface kit (Opt. 4187):** Interface module to allow the integration of the unit with Mitsubishi Electric proprietary communication protocol M-Net.

## Energy Meter

**Energy meter for BMS (Opt. 5924):** Acquires electrical data and the power absorbed by the unit and send them the BMS for energy metering (Modbus RS485).

## Refrigerant circuit

**Dual pressure relief valves with switch (Opt. 1961):** One valve is isolated from the refrigerant circuit while the other is in service. The user can work on the isolated valve for periodic maintenance or replacement, without removing the refrigerant from the circuit.

**Compressor suction valve (Opt. 1901):** Installed on each compressor suction line, it simplifies maintenance activity (discharge valves are present as per standard).

## Refrigerant leak detector

**Leak detector (Opt. 3431):** Factory installed device. In case of a gas leak detection it raises an alarm.

**Leak detector + compressor off (Opt. 3433):** Factory installed device. In case of a gas leak detection it raises an alarm and stops the units.

## Hydraulic

**Water flow switch (Opt. 1801):** Designed to protect the unit where the water flow across the evaporator is not sufficient and falls outside of the operating parameters.

**Delta T > 8°C (Opt. 2881):** Evaporator designed to operate with low primary circuit water flow.

**Flanged hydraulic connections (Opt. 2911):** Grooved coupling with flanged counter-pipe.

## Structure

**Anti-intrusion grilles (Opt. 2021):** Perimeter metal grilles to protect against the intrusion of solid bodies into the unit structure.

**Rubber type (Opt. 2101) or spring type (Opt. 2102) anti-vibration mountings:** Reduce vibrations, keeping noise transmission to a minimum.

## Packing

**Reinforcing bars (Opt. 1971):** Steel brackets used to strengthen the unit structure. Suggested in case of long truck transport.

**Nylon packing (Opt. 9966):** i-FX-G05-Y is covered with a protective nylon layer and provided with the lifting eye-plates, to load the unit into a truck.

**Container packing (Opt. 9979):** i-FX-G05-Y is covered with a protective nylon layer, provided with structural reinforcing bars and equipped with both lifting eye-plates and handling devices to load it on a container (metal slides, front handling bar).



# A SELECTION OF CLIMAVENETA INSTALLATIONS

## TASSAL SALMON

2015 TASMANIA (AUSTRALIA)

Application:  
Food & Drink

Plant type:  
Hydronic System

Cooling capacity: 4316 kW

Installed machines: 2x FOCS-W water cooled chillers with screw compressors, 2x i-FX(1+i)/CA high efficiency chillers with fixed speed and variable speed compressors



### PROJECT

Tassal is an Australian leader in producing Tasmanian Atlantic Salmon. Founded in 1986, today the company employs 800 people and produces 10 million smolt a year. Since 2012, WWF-Australia and Tassal have been working together in a partnership for responsible aquaculture; in 2014 Tassal became the first producer of farmed salmon globally to achieve full Aquaculture Stewardship Council certification (the highest standard for responsibly farmed seafood) across all sites.

### CHALLENGE

The company highlights its commitment to environment reporting every year its sustainable practices within company and marine farmings.

To satisfy its cooling requirements, fundamental to ensure high quality of fishes and respect hygienic requirements during processing time, the company needed an efficient HVAC system.

### SOLUTION

For the production of the chilled water required by its processes, Tassal installed a process cooling system based on 2 FOCS-W units exploiting sea water as a source and 2 i-FX (1+i) air cooled chillers. These units make Tassal's cooling system reliable, flexible and very efficient also at partial loads, thanks to the precise thermoregulation.

# MORE THAN 1000 PROJECTS ALL OVER THE WORLD

2017 Imola (Bologna) - Italy

## CEFLA HQ

**Application:** Industrial Process - Offices

**Plant type:** Hydronic System

**Cooling Capacity:** 858 kW

**Air flow:** 11055 m<sup>3</sup>/h

**Installed machines:**

1x i-FX 1+i CA high efficiency air cooled chillers with fixed speed and variable speed compressors, 3x HRD2 hydronic terminals



2017 Imola (Bologna) - Italy

## Esselunga Bakery

**Application:** Food & Drink - Offices

**Plant type:** Hydronic System

**Cooling Capacity:** 1408 kW

**Heating Capacity:** 1175 kW

**Installed machines:**

1x i-FX(1+i)/SL super low noise chiller with fixed speed and variable speed compressors, 2x ERACS2-WQ water source 4-pipe heat pumps, ClimaPRO HVAC optimisation system, 1x i-FX-Q2/SL-CA high efficiency 4-pipe heat pump with full inverter technology





Climaveneta's chiller units, with their unbeatable advantages in terms of efficiency, quality, and precision are already the preferred choice of the major brands in the most prestigious projects all over the world.

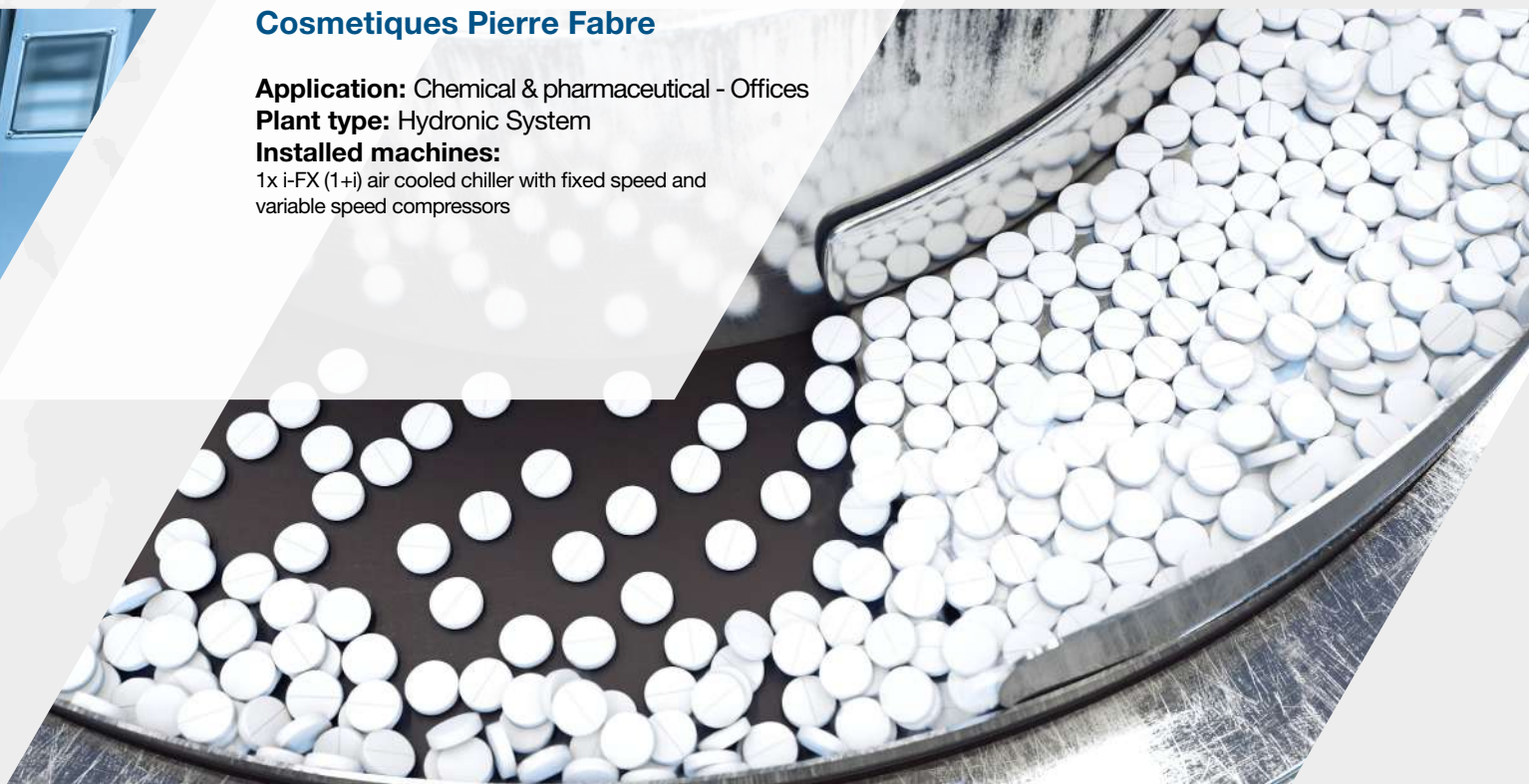
**2015 Avene - France**  
**Cosmetiques Pierre Fabre**

**Application:** Chemical & pharmaceutical - Offices

**Plant type:** Hydronic System

**Installed machines:**

1x i-FX (1+i) air cooled chiller with fixed speed and variable speed compressors



**2017 Honefoss - Norway**  
**Vardar Fjernvarme AS**

**Application:** Industrial Process - Energy

**Plant type:** Hydronic System

**Cooling Capacity:** 606 kW

**Installed machines:**

1x i-FX HFO/CA high efficiency screw compressor chiller with HFO refrigerant





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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