

# i-FX-Q2-G05 /XL-CA /0802

Software version: ELCA World 1.4.2.0  
 Database version: 1.5.2.0  
 User: Daniel hunt  
 Print data: 16/06/2020 14:43  
 Calculation type: EN 14511 - EN 14825



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Code	i-FX-Q2-G05 /XL-CA /0802	
Version	XL-CA	
Size	0802	
UNIT DESCRIPTION	INTEGRA unit for 4-pipe systems, air source, VSD screw compressors and EC fans, for outdoor installation	
Power supply	V/ph/Hz	400/3/50

## PERFORMANCE AT DESIGNED CONDITIONS

### RUNNING CONDITIONS

#### CHILLED WATER HEAT EX. USER SIDE

Fluid inlet temperature (cooling mode)	°C	12.00
Fluid outlet temperature (cooling mode)	°C	7.00
Fluid type		WATER
Glycol	%	0
Fouling factor	m²K/kW	0.000

#### WARM WATER HEAT EX. USER SIDE

Fluid inlet temperature (heating mode)	°C	40.00
Fluid outlet temperature (heating mode)	°C	45.00
Fluid		WATER
Glycol	%	0
Fouling factor	m²K/kW	0.000

#### OUTDOOR CONDITION

Air temperature (cooling mode)	°C	35.0
Air temperature (heating mode)	°C	-4.0

#### COOLING (EN 14511)

Cooling capacity	kW	740.7
Compressors power input	kW	239.9
Fans power input (cooling mode)	kW	9.60
Total power input	kW	253.7
EER	kW/kW	2.920
ESEER EN 14511 (referiment)	kW/kW	4.700

#### COOLING WITH HEAT RECOVERY (EN 14511 VALUE)

Cooling capacity	kW	758.5
Recovery heat exchanger capacity	kW	951.2
Total power input	kW	230.3
TER	kW/kW	7.423

#### HEATING (EN14511)

Total heating capacity	kW	491.9
Compressors power input (heating mode)	kW	186
Fan power input (heating mode)	kW	11.20
Total power input	kW	196.8
COP	kW/kW	2.500

#### SEER

#### SEER Official (Reg. EU 2016/2281)

#### Fan coil (12/7)

Type climate		Average
Temp. Plant side		Fan coil (12/7)
Type flow		Fixed
Type Temperature		Variable
Prated,c	kW	741
T Design		35.00
Qce		93940.02
SEER		4.73
Performance ηs	%	186

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## SEER Editable (EN 14825)

### Fan coil (12/7)

		Average
Type climate		Fan coil (12/7)
Temp. Plant side		Fixed
Type flow		Variable
Type Temperature		740.70
Prated,c	kW	35.00
T Design		93940.02
Qce		4.73
SEER		186
Performance ηs	%	

## PART LOAD DATA

### COOLING PARTIAL LOADS

Load	%	100.0	90.0	80.0	70.0	60.0	50.0	40.0	30.0	20.0	10.0
Outdoor air temperature	°C	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0
Cooling load	kWh	741	667	593	519	444	370	296	222	148	74
Fans power input (cooling mode)	kW	9.60	9.60	9.60	9.03	8.00	8.00	8.00	4.00	4.00	2.27
Total power input	kW	253.6	218.4	183.3	155.3	133.7	108.0	85.90	69.50	44.10	24.00
Temp. evaporator inlet	°C	12.00	11.49	10.99	10.48	9.97	9.47	8.96	8.46	7.95	7.92
Temp. evaporator outlet	°C	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
Evaporator water flow	l/s	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
EER	kW/kW	2.920	3.050	3.230	3.340	3.320	3.430	3.450	3.200	3.360	3.090

### HEATING PART LOAD

Load	%	100.0	90.0	80.0	70.0	60.0	50.0	40.0	30.0	20.0	10.0
Outdoor air temp.	°C	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0
Heating load	kWh	492	443	394	344	295	246	197	148	98	49
Total power input	kW	196.5	178.1	159.7	141.3	122.8	104.3	85.70	67.00	48.40	29.70
Condenser input temperature	°C	40.00	40.49	40.98	41.47	41.97	42.30	42.30	42.30	42.30	42.30
Condenser output temperature	°C	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
Condenser fluid flow	l/s	27.02	27.02	27.02	27.02	27.02	27.02	27.02	27.02	27.02	27.02
COP	kW/kW	2.500	2.490	2.460	2.440	2.400	2.360	2.300	2.200	2.030	1.660

### PART LOAD DATA INTEGRA

	%	0.0	10.0	20.0	30.0	40.0	50.0	60.0	70.0	80.0	90.0	100.0
Refrigeration load	%	0.0	10.0	20.0	30.0	40.0	50.0	60.0	70.0	80.0	90.0	100.0
Heating load	%	100.0	90.0	80.0	70.0	60.0	50.0	40.0	30.0	20.0	10.0	0.0
Air temp.	°C	-4.0	-0.1	3.8	7.7	11.6	15.5	19.4	23.3	27.2	31.1	35.0
Cooling capacity	kW	0.000	74.10	148.1	222.2	296.3	370.4	444.4	518.5	592.6	666.6	740.7
Heating capacity	kW	491.9	442.7	393.5	344.4	295.2	246.0	196.8	147.6	98.40	49.20	0.000
Total power input	kW	196.5	155.9	119.2	94.60	86.90	94.90	97.90	113.2	142.6	193.1	253.6
TER	kW/kW	2.500	3.310	4.540	5.990	6.810	6.500	6.550	5.880	4.850	3.710	2.920

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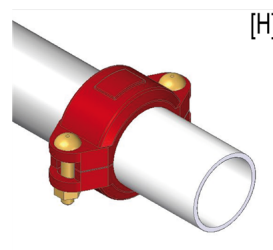


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## EXCHANGERS

### CHILLED WATER HEAT EX. USER SIDE

Typology		SHELL&TUBE
Quantity	N°	1
Fluid type		WATER
Glycol	%	0
Fouling factor	m²K/kW	0.000
Type of connections		[H] - Grooved coupling with weld end counter-pipe user side
Diameter of connections		8"
Min flow	l/s	25.00
Max flow	l/s	68.89
K pressure drop		1.58
Water content	l	261



### COOLING

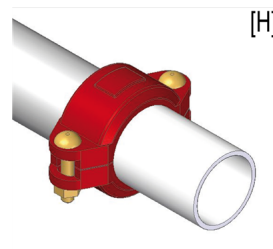
Fluid inlet temperature (cooling mode)	°C	12.00
Fluid outlet temperature (cooling mode)	°C	7.00
Water flow	l/s	35.00
Pressure drop at the heat exchanger	kPa	25.1
Available unit's head	kPa	259

### COOLING + HEAT RECOVERY

Water flow	l/s	35.94
Pressure drop at the heat exchanger	kPa	26.4

### WARM WATER HEAT EX. USER SIDE

Typology		SHELL&TUBE
Quantity	N°	1
Fluid		WATER
Glycol	%	0
Fouling factor	m²K/kW	0.000
Type of connections		[H] - Grooved coupling with weld end counter-pipe user side
Diameter of connections		8"
Min flow	l/s	17.67
Max flow	l/s	70.64
K pressure drop		1.86
Water content	l	472



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## HEATING

Fluid inlet temperature (heating mode)	°C	40.00
Fluid outlet temperature (heating mode)	°C	45.00
Water flow	l/s	27.02
Pressure drop at the heat exchanger	kPa	17.6
Available unit's head	kPa	292

## FANS

Fans type		EC FAN
Fans number	N°	16
Fans power input	kW	0.60
F.L.I.	kW	1.780
F.L.A.	A	3

## COOLING

Fans number	N°	16
Fans power input	kW	0.60
Air flow	m³/s	58.25
Fan available static pressure	Pa	0

## HEATING

Quantity	N°	16
Fans power input	kW	0.70
Air flow	m³/s	62.17
Fan available static pressure	Pa	0

## COMPRESSORS

Compressor type		SCREW
Compressors nr.	N°	2
No. Circuits	N°	2
Refrigerant		R513A
Number of capacity steps	N°	0
Min. capacity step	%	
Regulation		STEPLESS
Oil charge	kg	36.0
Refrigerant charge	kg	425
F.L.I. - Max absorbed power	kW	2x147
F.L.A. - Max absorbed current	A	2x235
L.R.A. - Locked rotor amperes for single compressor	A	1x20+1x20

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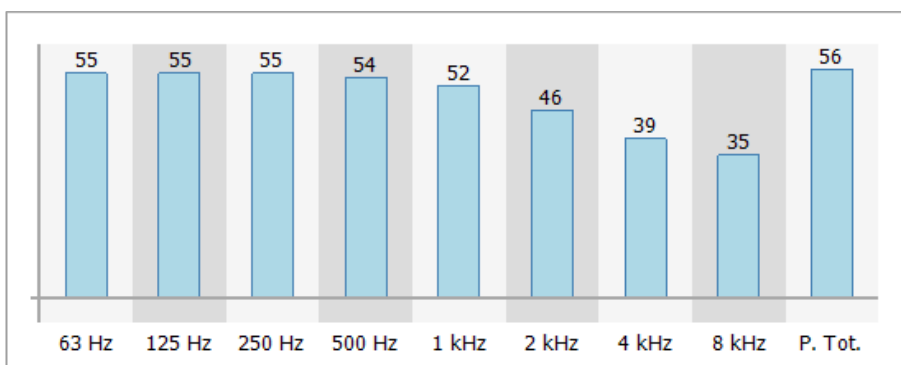
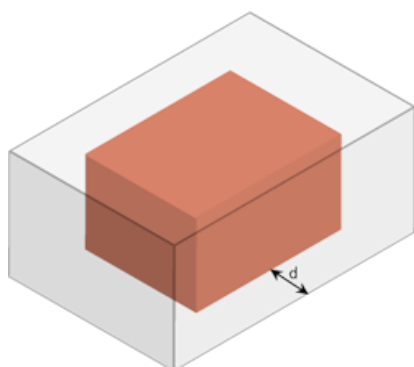


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## NOISE DATA

### SOUND DATA COLD

Frequencies	Hz	63	125	250	500	1000	2000	4000	8000
Sound power (spectrum)	dB	88	88	88	87	85	79	72	68
Sound power level in cooling	dB(A)	89							
Sound pressure level (spectrum)	dB	55	55	55	54	52	46	39	35
Sound Pressure	dB(A)	56							



### SOUND DATA OUTDOOR HOT

Sound power level in heating	dB(A)	90
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### Note

Distance	m	10
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Average sound pressure level at 10 m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level. Sound power on the basis of measurements made in compliance with ISO 9614.

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## OPERATING LIMITS



## ELECTRICAL DATA

Power supply	V/ph/Hz	400/3/50
F.L.I. - Max absorbed power	kW	359.0
F.L.A. - Max absorbed current	A	589
S.A. - Inrush current	A	-

## ACCESSORIES

### HYDRONIC GROUPS

#### CHILLED WATER HEAT EX. USER SIDE

Accessory code	4709
Accessory description	EV - 2 PUMPS 4P HH (FIX SPEED)
Min flow	l/s 25.00
Max flow	l/s 68.89

#### COOLING

Water flow	l/s 35.00
Available unit's head	kPa 259

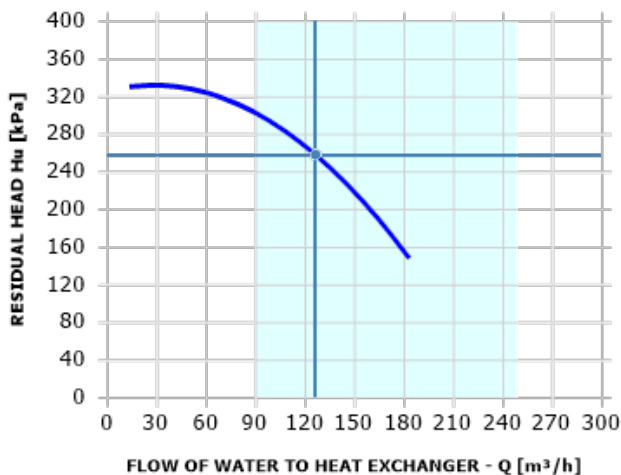
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## GRAPHIC RESIDUAL PRESSURE HEAD



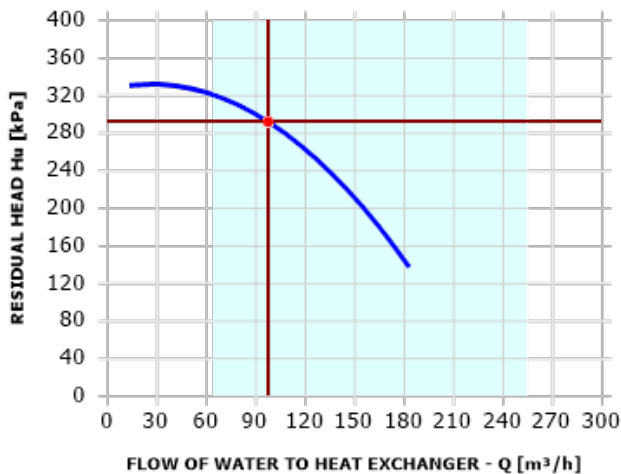
## WARM WATER HEAT EX. USER SIDE

Accessory code		4769
Accessory description		CD - 2 PUMPS 4P HH (FIX SPEED)
Min flow	l/s	17.67
Max flow	l/s	70.64

## HEATING

Water flow	l/s	27.02
Available unit's head	kPa	292

## GRAPHIC RESIDUAL PRESSURE HEAD



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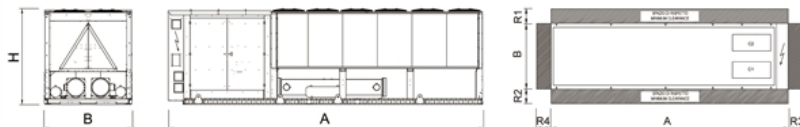
## DIMENSION AND ELECTRIC DATA VARIATION

Extra tot. FLA	A	74
Extra tot. FLI	kW	37.00
Extra tot. weight	kg	0
Extra length size	mm	0.00
Extra width size	mm	0
Extra height size	mm	0
Extra Sound pwr.	dB(A)	0.0
Total water tank	l	0.00

Note Select same HYDRONIC MODULE for evaporator and condenser, different configurations require feasibility analysis.  
 Dimensions and weights of the unit with accessory HYDRONIC MODULE: refer to the data book.

## WEIGHT & DIMENSIONS

A	mm	10400
B	mm	2260
H	mm	2530
Operating weight	kg	11450
R1	mm	2000
R2	mm	2000
R3	mm	1500
R4	mm	1500



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## TECHNICAL DOCUMENTATION - REGULATION (EU) N. 2016/2281 - Chillers for space cooling

i-FX-Q2-G05 /XL-CA /0802			
Outdoor side heat exchanger of chiller	air or water/brine		Air
Indoor side heat exchanger chiller	water		Water
Type	compressor driven vapour compression or sorption process		Compressor driven vapour compression
Driver of compressor	electric motor or fuel driven, gaseous or liquid fuel, internal or external combustion engine		Electric motor
Rated cooling capacity	Prated,c	[kW]	740.7
Seasonal energy efficiency of the space cooling	$\eta_{s,c}$	[%]	186.0
Declared cooling capacity for part load at given outdoor temperatures Tj			
Declared cooling capacity at given outdoor temperatures Tj = 35°C	Pdc	[kW]	741
Declared cooling capacity at given outdoor temperatures Tj = 30°C	Pdc	[kW]	546
Declared cooling capacity at given outdoor temperatures Tj = 25°C	Pdc	[kW]	351
Declared cooling capacity at given outdoor temperatures Tj = 20°C	Pdc	[kW]	180
Degradation coefficient for chillers	Cdc		0.9
Declared energy efficiency ratio or gas utilisation efficiency/auxiliary energy factor for part load at given outdoor temperatures Tj			
Declared energy efficiency ratio at given outdoor temperatures Tj = 35°C	EERd	[%]	2.92
Declared energy efficiency ratio at given outdoor temperatures Tj = 30°C	EERd	[%]	4.09
Declared energy efficiency ratio at given outdoor temperatures Tj = 25°C	EERd	[%]	5.15
Declared energy efficiency ratio at given outdoor temperatures Tj = 20°C	EERd	[%]	6.88
Power consumption in modes other than "active mode"			
Off mode	POFF	[kW]	0.000
Thermostat-off mode	PTO	[kW]	4.106
Crankcase heater mode	PCK	[kW]	0.200
Standby mode	PSB	[kW]	0.234
Other items			
Capacity control	fixed/staged/variable		Variable
Sound power level, outdoor	LWA	[dB(A)]	89.0
GWP of the refrigerant		[Kg CO2eq]	631
For air-to-water comfort chillers: air flow rate, outdoor measured		[m³/h]	209700.00
For water/brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger		[m³/h]	-
Standard rating conditions used:	low temperature application/medium temperature application		Low temperature application

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