

PURESTREAM

CFT CHILLERS

BY FRIULAIR



***Water Chiller for Comfort and Process Cooling
From 100 to 300 KW.
27 to 84 Tons.***

Meets CSA Standards

DESCRIPTION

The CFT range of PURESTREAM process chillers are suited for indoor and outdoor installations, and are intended for comfort and process cooling applications. The series consists of eight basic models ranging from 100 to 300 kW (27 to 84 Tons).

FRAME AND CABINET COVERING

All frame and cabinet cover material are made of powder coated galvanized steel making the CFT range of chillers suited for outdoor installation and for protection against harsh environments. The compressor cabinet is accessible on three sides to allow for easy access and maintenance. The hydraulic section is also easily accessible.

COMPRESSORS

The CFT chillers use scroll hermetic compressors. They are noted for reliability and efficiency through their widespread use in the air conditioning sector. The scroll compressor has the additional benefits of quiet operation, no vibration, and the ability to absorb liquid returns. The compressors are all equipped with crankcase heaters to allow oil warming during off cycle. Compressors are mounted on rubber anti vibration blocks to reduce noise vibration. They are also protected by an electronic device controlling phase sequences to avoid reverse rotation.

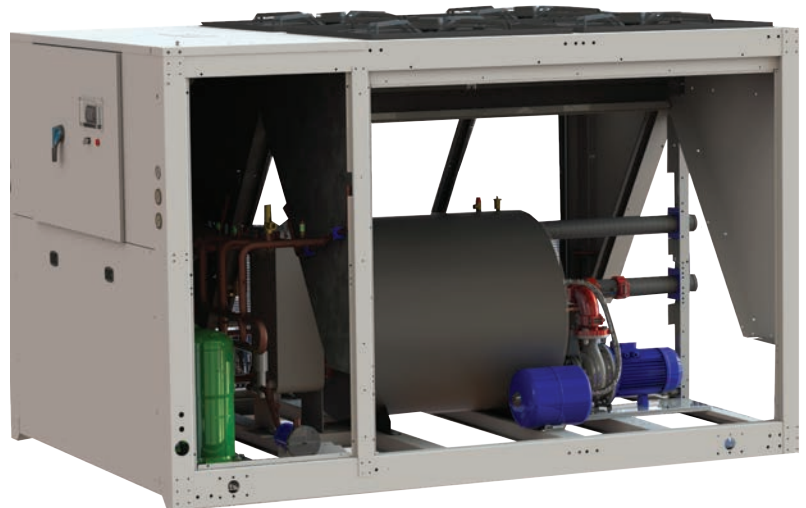
CONDENSERS

Micro-channel aluminum plate condensers: guarantee a greater exchange surface than the traditional copper tube condenser which also means the refrigerant charge can be minimised (from 30% to 35% less than a traditional condenser). The all-aluminum structure frees these condensers of any galvanic corrosion risks. They can be easily removed for service and cleaning. As an option the whole range of condensers is available in the ElectroFin E-coat treatment, that provides corrosion resistance and UV protection.

REFRIGERANT CIRCUIT

Made with quality materials by experienced personnel with strict brazing procedures. The circuit includes:

- Dehydrator filter
- Liquid solenoid valve
- Sight glass flow indicating presence of humidity
- Electronic expansion valve
- Manual reset high pressure switch and automatic reset low pressure switch
- High and low pressure gauges
- Control and maintenance pressure plugs



FANS

With 6 pole, axial motors and an external rotor, all fans have a protection grid, internal heat protection with automatic resetting. Low ambient option will use EC fans with electronic speed regulation (inverter). The exceptional efficiency and regularity of these fans, allow the chiller to work in a very wide field of temperatures and with reduced energy consumption. Furthermore this option makes it quieter when the outer temperature is low or when it operates with a reduced load. Rotation speed is regulated by the condensing pressure by means of a pressure transducer.

ELECTRONIC EXPANSION VALVE

CFT chillers are fitted with electronic expansion valves, that allows for optimal performance towards different working conditions and a safe control of the gas superheating which is important for compressor protection and for unit reliability.

HYDRAULIC SYSTEM

This water system is constructed according to customers requirements. All CFT chillers are supplied as standard with water strainer and with inlet/outlet galvanized steel pipes.

EVAPORATOR

The stainless steel brazed plate evaporator is compact in size and extremely efficient. A differential pressure switch protects the evaporator against no or low water flow and freezing up. The models CFT 230 to CFT 300, are designed with a double refrigerant circuit and single water circuit. This water configuration is very efficient with partial loads, compared to independent evaporator solutions.



MICRO PROCESSOR CONTROLLER

The electronic control micro-processor controls and optimizes all CFT chiller components and functions.



CONTROL PANEL

The control panel complies with the Canadian electrical code and includes door lock disconnect which prevents access to the control panel when it is powered. The watertight door provides easy access to the electronic controller as well as the numbered panel wires provide easy trouble shooting and maintenance. Each control panel includes: thermo-magnetic motor protectors for the compressors and pump, contactors, autotransformers, compressor rotation direction control devices, ON/OFF switch on the panel door. The control panel also includes an active ventilation system to prevent over heating when the unit is in operation.



Technical Data

Capacity (460 Volt)		CFT100	CFT115	CFT130	CFT160	CFT180	CFT200	CFT230	CFT260	CFT280	CFT300
glycol percentage	---	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Cooling capacity	[Tons]	27.55	32.58	37.65	43.55	50.91	57.81	65.18	71.66	78.63	84.04
Compressors power input	[kW]	28.44	39.30	52.46	60.63	60.39	79.03	69.02	95.03	106.53	117.67
Total power input	[kW]	38.06	48.92	62.08	74.37	74.13	92.77	87.47	113.48	124.98	136.12
Total absorbed current	[A]	55.18	69.44	86.71	106.83	104.50	133.88	125.02	159.49	174.45	188.35
Energy efficiency (pump excluded)	COP[Btu/Btu]	2.90	2.59	2.30	2.25	2.64	2.35	2.90	2.40	2.37	2.31
Water flow	[gal/min]	66.03	78.10	90.26	104.39	122.03	138.57	156.25	171.79	188.47	201.44
Evaporator pressure drop	[psig]	---	---	---	---	---	---	---	---	---	---
Available pressure	[psig]	47.0	43.8	45.7	51.9	51.0	47.1	47.6	45.9	46.2	44.8

Electrical Data

Maximum power input (total)	[kW]	49.73	62.05	75.60	93.88	93.92	112.17	110.99	142.14	150.41	158.67
Maximum absorbed current (total)	[A]	70.35	86.72	106.41	134.78	131.38	160.28	155.86	204.35	211.63	218.91
Starting current	[A]	222.52	261.71	272.56	357.99	366.29	370.74	334.95	373.31	377.77	383.23
Fan power	[kW]	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
Fan current	[A]	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20
Number of fans	[#]	2	2	2	3	3	3	4	4	4	4
Pump power input	[kW]	4.62	4.62	4.62	6.24	6.24	6.24	8.45	8.45	8.45	8.45
Pump absorbed current	[A]	6.30	6.30	6.30	8.60	8.60	8.60	11.40	11.40	11.40	11.40
Power supply	[V/Ph/Hz]	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60
IP protection degree	---	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54

Technical Data

Refrigerant	---	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Compressor type	---	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Evaporator type	---	Brazed plates	Brazed plates	Brazed plates	Brazed plates	Brazed plates	Brazed plates	Brazed plates	Brazed plates	Brazed plates	Brazed plates
Condenser type	---	Microchannel	Microchannel	Microchannel	Microchannel	Microchannel	Microchannel	Microchannel	Microchannel	Microchannel	Microchannel
N° of compressors	[#]	2	2	2	2	2	2	4	4	4	4
N° of refrigerant circuits	[#]	1	1	1	1	1	1	2	2	2	2
Air flow	[cfm]	25,897	25,897	25,897	38,846	38,846	38,846	51,795	51,795	51,795	51,795
Sound pressure level at 10 m in free field	[dba]	58	56.5	58	58.5	57.5	59	61	59.5	60.5	61
Water connections size	[inch]	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	3"	3"	3"	3"
Tank capacity	[gal]	124	124	124	124	159	159	159	159	159	159
Expansion vessel capacity	[gal]	5	5	5	5	5	5	5	5	5	5
Width	[inch]	43	43	43	43	43	43	87	87	87	87
Depth	[inch]	118	118	118	158	158	158	118	118	118	118
Height	[inch]	78	78	78	78	78	78	78	78	78	78
Weight - standard version	[lb]	2,579	2,601	2,844	2,866	3,990	4,034	4,079	4,960	4,960	4,960

Capacity (575 Volt)		CFT100	CFT115	CFT130	CFT160	CFT180	CFT200	CFT230	CFT260	CFT280	CFT300
glycol percentage	---	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Cooling capacity/Heating capacity	[Tons]	27.51	32.58	37.65	43.54	50.91	57.81	65.09	71.64	78.61	84.04
Compressors power input	[kW]	28.43	39.30	52.46	60.63	60.39	79.03	69.00	95.01	106.52	117.67
Total power input	[kW]	38.45	49.32	62.48	74.67	74.43	93.07	87.58	113.59	125.10	136.25
Total absorbed current	[A]	44.75	56.16	69.98	86.30	84.44	107.94	100.93	128.49	140.48	151.62
Energy efficiency (pump excluded)	COP[Btu/Btu]	2.89	2.59	2.30	2.25	2.64	2.35	2.90	2.40	2.37	2.31
Water flow	[gal/min]	65.93	78.10	90.25	104.38	122.03	138.57	156.03	171.73	188.44	201.44
Evaporator pressure drop	[psig]	---	---	---	---	---	---	---	---	---	---
Available pressure	[psig]	52.8	49.3	50.7	52.3	51.8	47.9	53.5	51.7	51.8	50.2

Electrical Data

Maximum power input (total)	[kW]	50.13	62.45	76.00	94.18	94.22	112.47	111.12	142.27	150.54	158.80
Maximum absorbed current (total)	[A]	56.89	69.99	85.69	108.61	105.94	129.07	125.63	164.19	170.13	176.07
Starting current	[A]	166.63	205.18	217.03	321.20	316.87	331.43	264.10	291.02	301.47	305.92
Fan power	[kW]	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
Fan current	[A]	3.40	3.40	3.40	3.40	3.40	3.40	3.40	3.40	3.40	3.40
Number of fans	[#]	2	2	2	3	3	3	4	4	4	4
Pump power input	[kW]	5.02	5.02	5.02	6.54	6.54	6.54	8.58	8.58	8.58	8.58
Pump absorbed current	[A]	5.57	5.57	5.57	7.60	7.60	7.60	9.90	9.90	9.90	9.90
Power supply	[V/Ph/Hz]	575/3/60	575/3/60	575/3/60	575/3/60	575/3/60	575/3/60	575/3/60	575/3/60	575/3/60	575/3/60
IP protection degree	---	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54

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Evaporator type	---	Brazed plates	Brazed plates	Brazed plates	Brazed plates	Brazed plates	Brazed plates	Brazed plates	Brazed plates	Brazed plates	Brazed plates
Condenser type	---	Microchannel	Microchannel	Microchannel	Microchannel	Microchannel	Microchannel	Microchannel	Microchannel	Microchannel	Microchannel
N° of compressors	[#]	2	2	2	2	2	2	4	4	4	4
N° of refrigerant circuits	[#]	1	1	1	1	1	1	2	2	2	2
Air flow	[cfm]	25,897	25,897	25,897	38,846	38,846	38,846	51,795	51,795	51,795	51,795
Sound pressure level at 10 m in free field	[dba]	58	56.5	58	58.5	57.5	59	61	59.5	60.5	61
Water connections size	[inch]	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	3"	3"	3"	3"
Tank capacity	[gal]	124	124	124	124	159	159	159	159	159	159
Expansion vessel capacity	[gal]	5	5	5	5	5	5	5	5	5	5
Width	[inch]	43	43	43	43	43	43	87	87	87	87
Depth	[inch]	118	118	118	158	158	158	118	118	118	118
Height	[inch]	78	78	78	78	78	78	78	78	78	78
Weight - standard version	[lb]	2,579	2,601	2,844	2,866	3,990	4,034	4,079	4,960	4,960	4,960

Water temp. In/Out 54/44F, ambient air temp. 95F

OPTIONS

Single P2 Pump	P2
Single P3 Pump	P3
Double P2 Pump	D2
Double P3 Pump	D3
Pressurized Water Tank	TP [1]
Condenser with e-coating protection	OEC
Shut-off compressor valve	VSC
Evaporator anti freeze heater	RA1
Evaporator and pump anti freeze heater	RA2
Evaporator, pump and tank anti freeze heater	RA3
Electrical Switchboard anti-condensation Resistor	RS
Water double set point (from MODBUS and/or keyboard)	WE
Condensing Control: Continuous Speed (Phase cut)	CA
Electric board: 230V electric plug on	EBS
Compressors soft starter	SFS
Condenser air filters	FP
Flanged Water Connections (EN1092-1)	WC1
Threaded Water Connections (GAS)	WC2
Control panel roof	FPR
Feet	FF
Rubber anti-vibration mountings for no tank units	FA1
Rubber anti-vibration mountings for units with tank	FA2
Automatic Water Filling Kit	WF
Net biter	ENB
Packing with barrier bag	PBB
Wooden Crate	PWC



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