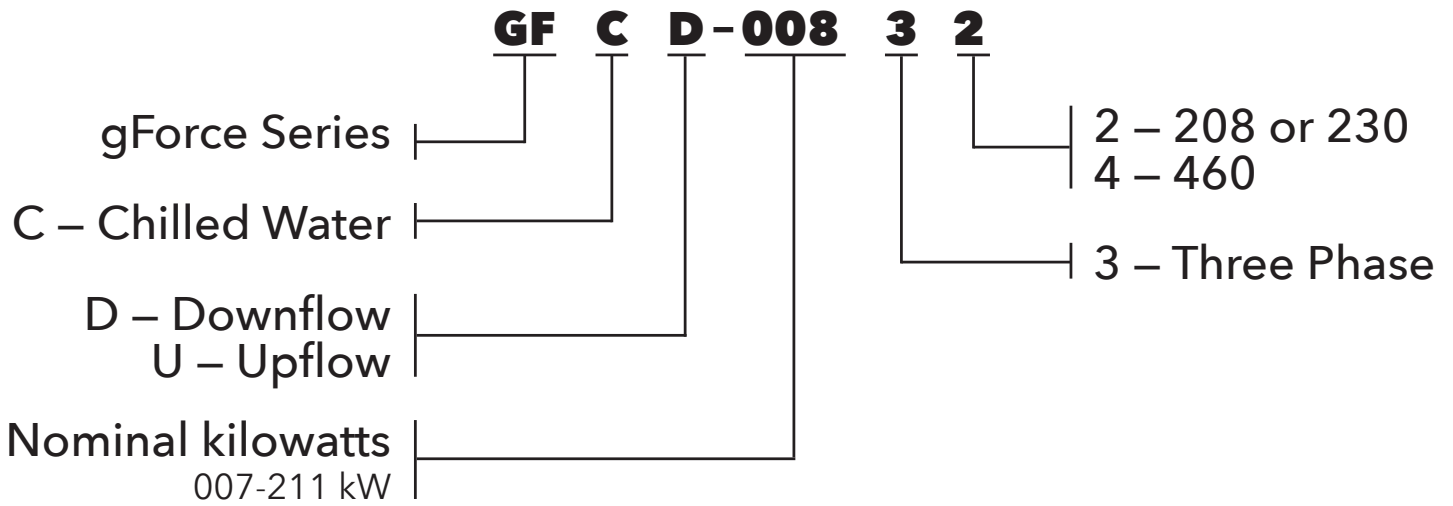


# gForce Chilled Water

7 to 211 kW



# Model Number Identification

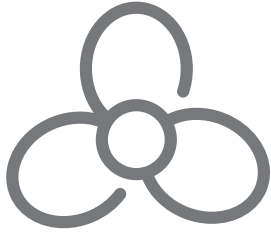




Building on more than 50 years of experience, Data Aire produces innovative solutions to meet the developing demands of critical spaces. We are a solutions-driven organization with a passion for finding creative answers by working with our customers through a consultative process.

Known for products that are designed utilizing high levels of technology, Data Aire engineers are experienced visionaries who adapt processes and design proprietary unit enhancements which reflect the constant needs of today's mission critical spaces.

Data Aire combines extensive expertise in control logic with world-class manufacturing capability recognized by key international quality certifications. For those seeking reliable, scalable, customized technology, we provide the solutions of choice. Our precision air control equipment and intelligent energy management technology serve customers in diverse applications worldwide.



## MISSION CRITICAL COOLING

gForce by Data Aire are efficient and economical while complying with strict environmental requirements. Incorporating backward curved plenum fans with electronically commutated (EC) motors, these units supply radially dispersed cooling air at lower speeds allowing for more uniform static pressure across the room. These fans provide more net cooling from the computer room air conditioning (CRAC) system. DC motors are more energy efficient, providing an on-going savings year after year. Each unit is factory run tested and put through a vigorous quality control procedure.



## IMPROVED PERFORMANCE AND REDUCED MAINTENANCE

Backward curved fans discharge air radially, allowing for uniform static pressure across the raised floor. Traditional forward curved fans prohibit optimal airflow through the raised floor close to the CRAC. One of the key features of backward curved fans, commonly referred to as plug fans, is that the motor and fan are integrated into a single unit, and includes a separate speed controller. This eliminates the need for monthly maintenance, belt replacement and all belt dust.



## IMPROVED AIRFLOW DESIGN

The increased capacity of the gForce internal cabinet allows for less restrictive airflow. When additional options are added to smaller cabinets, the static pressure within the unit increases, making airflow more difficult. The advanced design of the bigger interior and the product's quality construction ensures the highest level of efficiency in a precision air system.



## DATA AIRE DELIVERS

Standard lead time for a standard unit is 30 days from date of order. With an optional premium "quick ship" units can be expedited to ship in as little as one week. All units are built to your specific order and specification. Not only does Data Aire deliver standard products in short lead times, our consultative process helps you meet your specific requirements.

## DESIGN

gForce CW units feature a specially designed compact tubular steel frame which allows for minimum space requirement of air conditioning equipment in the controlled area. Although compact, all parts are easily accessible providing excellent serviceability. The heart of the system is the Data Alarm Processor (dap4), a microprocessor based controller. The dap4 not only controls and monitors temperature, humidity, airflow, and cleanliness, it provides component runtimes, alarm history, and automatic self-test.

## FRAME AND CABINET

The heliarc welded tubular steel frame provides for maximum strength and ease of access. Side and front doors can be easily opened and removed with quarter-turn fasteners allowing full access to all unit components. All doors include one inch thick, 1-1/2 pound density insulation for thermal performance, protection, and sound attenuation.

## COIL SECTION

Designed for draw-through application, the computer-selected, rifle-tubing dual circuited A-frame coil has an interwoven surface that increases unit efficiency at low load conditions. Air is drawn through both circuits of the coil at low velocity providing effective surface exposure with minimum turbulence. The coil sits in a stainless steel drain pan.

## FAN SECTION

Backward curved plenum fans with electronically commutated motors are used to provide the most efficient fan/motor combination available in the market today. Electronically commutated motors are DC motors connected to standard AC power. DC motors are more efficient than AC motors and can be programmed to run at various speeds. With the fan blades directly connected to the motor, there is no need for periodic maintenance. In the unlikely event of a fan failure, replacement is simple; remove four bolts, disconnect the power and remove the fan. Reverse the process for installation of a new fan.

## ELECTRIC REHEAT

Low-watt density finned tubular sheathed elements provide ample capacity to maintain room dry bulb conditions during a call for dehumidification. Three stages of reheat are standard.

## HUMIDIFICATION

gForce CW includes an electric steam generator humidifier with "quick change" disposable cylinders and an auto-flush cycle. The steam generator humidifier, with its patented control system, optimizes cylinder life and energy efficiency by concentrating incoming water to a predetermined conductivity much higher than that of any entering water. The control system continuously monitors the conductivity in the cylinder through its electronics, which allows water to be flushed as often as is necessary to maintain the capacity at this design conductivity. The high design conductivity results in a minimum flushing of heated water, which saves energy. The humidifier is designed to allow all units at any voltage to produce full rated steam output capacity at an optimum low water level based on this design conductivity.

## FILTER SECTION

Units are provided with 4 inch deep, MERV-8 pleated filters. The filter section is accessible from the top, front, or side on downflow units, and the front and right hand side on upflow units.

# System Control

## SMART SYSTEM CONTROLS FOR MISSION CRITICAL ENVIRONMENTS

Incorporating advances based on years of control-logic experience, Data Aire system control products offer maximum operational flexibility and growth potential. From a versatile microprocessor controller or a dependable relay autochangeover unit, to accessories that help prevent hot spots in rack installations and compensate for short-term power outages, Data Aire technology keeps you in command.

The gForce systems come equipped with dap4 touch for the dap4 control panel. dap4 supports the following network protocols for integration with a Building Management System (BMS) for Computer Room Air Conditioning (CRAC) system monitoring and control: Modbus RTU, TCP/IP, SNMP V1 or V2, BACnet IP or MS/TP and LonTalk SNVT. Building Management System Interface: Unit(s) shall be furnished with an optional interface card to communicate directly with the Building Automation System (BAS) through a RS-485, Ethernet or LonTalk port. All alarms, set points, and operating parameters that are accessible from the unit mounted control panel shall also be made available through the BAS.

## CONTROLS

### AUTOMATIC CONTROL FUNCTIONS

- Humidity Anticipation
- Auxiliary Chilled Water Operation\*
- Sequential Load Activation
- Start Time Delay
- Automatic Reheat Element Rotation
- Temperature Anticipation
- Energy Saver (Glycol Operation)\*
- Hot Water Coil Flush Cycle\*
- Dehumidification Lockout
- Chilled Water Coil Flush Cycle\*
- Energy Saver Coil Flush Cycle\*
- Selectable Water Under Floor Alarm Action
- Compressor Short Cycle

### CONDITION AND DATA ROUTINELY DISPLAYED

- Current Date and Time
- Unit Status
- Temperature Setpoint
- Humidity Setpoint
- Current Temperature
- Cooling 1, 2, 3, 4\*
- Current Humidity
- Dehumidification
- Humidification
- Current Fan Speed\*
- Reheat 1, 2, 3Current
- Discharge Temperature\*
- Current Chilled Water Valve Position
- Current Percent of Capacity Utilized

### SWITCHING AND CONTROL FUNCTIONS

- System On/Off/Esc Button
- Menu Selection Buttons
- Menu Exit Button
- Select Buttons
- Alarm Silence Button
- Program Set Button
- Manual Override for:
  - Cool 1, Cool 2, Heat 1,
  - Humidification, CW Valve
  - and Fan Speed

## ALARMS

- High Temperature Warning
- Low Temperature Warning
- Low Pressure Compressor 1
- High Pressure Compressor 1
- Dirty Filter
- Firestat Tripped
- Temperature Sensor Error
- No Water Flow\*
- Fan Motor Overload\*

- High Humidity Warning
- Low Humidity Warning
- Low Pressure Compressor 2
- High Pressure Compressor 2
- Under Floor Water Detection
- Compressor Short Cycle
- Humidity Sensor Error
- Smoke Detector\*
- Standby Pump On\*

- Local Alarm
- Manual Override
- Humidifier Problem
- Custom Message\*
- Power Failure Restart
- Maintenance Required
- Discharge Sensor Error\*
- High Condensate Water Level\*
- Person to Contact on Alarm\*

## HISTORICAL DATA

High Temperature Last 24 Hours  
High Humidity Last 24 Hours  
Alarm History (Last 100 Alarms)  
Equipment Runtimes for:  
Blower, Compressor 1, Compressor 2, Reheat 1, 2, 3, Dehumidification,  
Energy Saver\*, Humidifier, Condenser and Chilled Water

Low Temperature Last 24 Hours  
Low Humidity Last 24 Hours  
Hourly Average of Duty

## PROGRAMMABLE FUNCTIONS

Temperature Setpoint	Temperature Deadband	Fan Control Mode
System Start Delay	Low Temperature Alarm Limit	Humidity Deadband
Humidity Setpoint	High Humidity Alarm Limit	Low Humidity Alarm Limit
Define Password	Reset Equipment Runtimes	Audio Alarm Mode
Reverse Acting Water Valve	Compressor Short Cycle Alarm	Humidity Anticipation
Compressors(s)	Analog Module Sensor Setup*	Calibrate Temperature Sensor
Temperature Scale	High Temperature Alarm Limit	Fan Speed Settings
Water Valve Voltage Range	Delay for Optional Alarm 1, 2, 3, 4	Firestat Temperature Alarm Limit
Manual Diagnosis	Remote Alarm 1, 2, 3, 4 Selection	Calibrate Discharge Air Sensor*
Person to contact on Alarm	Compressor Lead/Lag Sequence	Dehumidification Mode
Humidifier Autoflush Timer*	Power Problem or Restart Mode	Scheduled Normal Maintenance
Reheat Stages	Water Valve Mode	Calibrate Humidity
Humidifier	Network Protocol	
Compressor Supplements to Energy Saver*		
Low Discharge Temperature Alarm Limit*		
Calibrate Chilled Water Temperature Sensor*		

## ACCESSORIES

RackSense 32  
dap4 Smart Power Capacitor  
dap4 Power Meter

\* Some of the programmable selections, displays or alarms may require additional components or sensors

## REMOTE TEMPERATURE AND HUMIDITY SENSORS

Temperature and humidity sensors may be ordered for remote wall mounting in lieu of the standard return air sensors. Sensors are provided in a wall mounted plastic case for remote sensing of temperature and humidity. 35 feet of shielded cable is provided for field wiring. Other lengths available as well.

## SMOKE DETECTOR

A unit mounted smoke detector will shut down the unit if smoke is sensed. The microprocessor will sound an alarm and display a "SMOKE DETECTED" message. The smoke detector is mounted in the return air stream and is provided with auxiliary contacts.

## UNIT MOUNTED DISCONNECT

A unit mounted nonautomatic disconnect switch is installed in the high voltage electrical section. The operating mechanism allows access to the high voltage electrical components when switched to the "OFF" position. The operating mechanism (handle) protrudes through the decorative door.

## CONDENSATE PUMP

Condensate pumps may be ordered as factory installed or for field installation. Condensate pumps are complete with sump, motor, and automatic control. The pumps are rated for 145 GPH at 40 feet (460v) or 168 GPM at 40 feet (230v) maximum. Pumps shipped loose are available in 115, 230, or 460 volt.

## FLOORSTAND

Floorstands are adjustable -1/+3 inches and are available with seismic construction.

## HIGH EFFICIENCY FILTERS

Standard filters are rated at MERV 8 based on ASHRAE 52.2. Higher efficiency filters are available (consult factory regarding efficiency and unit static pressure).

## STEAM GENERATOR HUMIDIFIER WITH MODULATING CONTROL

Modulating control may be added to the steam generator humidifier. Modulating control will allow the humidifier to automatically adjust steam output to match changing room conditions. Self-regulating auto flush is included.



## HOT WATER REHEAT

Where hot water is available, a unit installed reheat coil can use hot water reheat. The system is designed for 150 psi maximum water pressure and includes a 2-way valve (a 3-way valve is optional). Units with the hot water reheat do not include electric reheat. Supplemental reheat may be ordered.

## 2-WAY CHILLED WATER VALVE

A 2-way chilled water valve is available to replace the standard 3-way valve where required.

## UPFLOW PLENUM

Upflow plenums are fully insulated and have front discharge air grilles. Side grilles for both or one side are available. Plenums are available in various heights and are painted to match the unit color.



# Models & Capacities

GFCX-007XX thru GFCX-014XX						
	GFCX-007XX @ 800 CFM, 6 GPM		GFCX-011XX @ 1,200 CFM, 8 GPM		GFCX-014XX @ 1,600 CFM, 11 GPM	
EAT °F (DB/WB)	Net Total kW (BTU/hr)	Net Sensible kW (BTU/hr)	Net Total kW (BTU/hr)	"Net Sensible kW (BTU/hr)"	Net Total kW (BTU/hr)	Net Sensible kW (BTU/hr)
72/58.6	4.7 (16,100)	4.5 (15,400)	7.0 (23,900)	6.8 (23,300)	10.5 (35,800)	10.0 (34,000)
75/61	5.6 (19,000)	5.0 (17,000)	8.1 (27,700)	7.5 (25,600)	12.3 (41,900)	10.9 (37,200)
72/60	5.0 (17,200)	4.3 (14,700)	7.3 (25,000)	6.6 (22,400)	11.2 (38,200)	9.6 (32,800)
75/62.5	6.0 (20,600)	4.7 (16,200)	8.7 (29,600)	7.1 (24,400)	13.2 (45,200)	10.5 (35,800)
80/67	7.9 (27,100)	5.4 (18,400)	11.3 (38,400)	8.1 (27,500)	17.2 (58,700)	11.8 (40,400)

GFCX-018XX thru GFCX-032XX						
	GFCX-018XX @ 2,000 CFM, 13 GPM		GFCX-025XX @ 3,250 CFM, 18 GPM		GFCX-032XX @ 3,500 CFM, 22 GPM	
EAT °F (DB/WB)	Net Total kW (BTU/hr)	Net Sensible kW (BTU/hr)	Net Total kW (BTU/hr)	Net Sensible kW (BTU/hr)	Net Total kW (BTU/hr)	Net Sensible kW (BTU/hr)
72/58.6	12.8 (43,600)	12.3 (42,000)	15.6 (53,400)	15.6 (53,400)	20.4 (69,700)	20.1 (68,500)
75/61	14.9 (50,700)	13.4 (45,800)	17.8 (60,800)	17.5 (59,600)	23.7 (80,900)	22.0 (75,000)
72/60	13.5 (46,200)	11.8 (40,400)	15.9 (54,400)	15.2 (52,000)	21.4 (73,000)	19.3 (65,700)
75/62.5	15.9 (54,300)	12.9 (44,000)	18.6 (63,400)	16.7 (56,900)	25.2 (85,900)	21.0 (71,600)
80/67	20.5 (70,100)	14.5 (49,400)	23.9 (81,400)	18.6 (63,500)	32.5 (111,000)	23.5 (80,100)

GFCX-039XX thru GFCX-053XX						
	GFCX-039XX @ 3,750 CFM, 27 GPM		GFCX-046XX @ 4,000 CFM, 32 GPM		GFCX-053XX @ 7,000 CFM, 42 GPM	
EAT °F (DB/WB)	Net Total kW (BTU/hr)	Net Sensible kW (BTU/hr)	Net Total kW (BTU/hr)	Net Sensible kW (BTU/hr)	Net Total kW (BTU/hr)	Net Sensible kW (BTU/hr)
72/58.6	25.1 (85,500)	23.8 (81,100)	29.2 (99,600)	26.9 (91,800)	39.1 (133,600)	38.2 (130,300)
75/61	29.4 (100,300)	26.0 (88,600)	34.5 (117,900)	29.4 (100,500)	45.7 (156,000)	41.9 (143,100)
72/60	26.8 (91,300)	22.8 (77,900)	31.6 (107,800)	26.0 (88,700)	41.4 (141,200)	36.8 (125,500)
75/62.5	31.7 (108,100)	24.9 (85,100)	37.5 (128,100)	28.5 (97,200)	48.9 (166,900)	40.3 (137,400)
80/67	41.2 (140,500)	28.1 (95,900)	49.0 (167,300)	32.4 (110,500)	63.6 (217,100)	45.3 (154,600)

GFCX-063XX thru GFCX-091XX						
	"GFCX-063XX" @ 8,000 CFM, 46 GPM"		"GFCX-077XX" @ 9,000 CFM, 55 GPM"		"GFCX-091XX" @ 9,500 CFM, 73 GPM"	
EAT °F (DB/WB)	Net Total kW (BTU/hr)	Net Sensible kW (BTU/hr)	Net Total kW (BTU/hr)	Net Sensible kW (BTU/hr)	Net Total kW (BTU/hr)	Net Sensible kW (BTU/hr)
72/58.6	50.2 (171,200)	48.1 (164,300)	61.9 (211,200)	58.2 (198,700)	67.4 (230,000)	62.8 (214,300)
75/61	58.6 (200,000)	52.6 (179,600)	72.6 (247,700)	63.5 (216,800)	79.5 (271,300)	68.6 (234,200)
72/60	53.3 (181,800)	46.3 (158,000)	66.2 (226,000)	56.1 (191,300)	72.6 (247,800)	60.5 (206,500)
75/62.5	62.8 (214,300)	48.8 (166,500)	78.2 (266,800)	61.1 (208,700)	86.1 (294,000)	66.2 (226,100)
80/67	81.1 (276,900)	56.7 (193,600)	101.1 (345,200)	68.9 (235,100)	112.2 (383,100)	75.0 (256,000)

1. Performance data is based on ACFM and tested in compliance with ASHRAE Standard 127-2007 Standard Rating Conditions.
2. Net capacity data includes fan motor heat.

<b>GFCX-106XX thru GFCX-158XX</b>						
	<b>GFCX-106XX @ 11,700 CFM, 83 GPM</b>		<b>GFCX-141XX @ 16,000 CFM, 95 GPM</b>		<b>GFCX-158XX @ 17,500 CFM, 105 GPM</b>	
EAT °F (DB/WB)	"Net Total kW (BTU/hr)"	Net Sensible kW (BTU/hr)	Net Total kW (BTU/hr)	Net Sensible kW (BTU/hr)	Net Total kW (BTU/hr)	Net Sensible kW (BTU/hr)
72/58.6	83.7 (285,700)	77.6 (264,700)	97.6 (333,000)	94.7 (323,200)	113.3 (386,600)	107.2 (365,700)
75/61	98.9 (337,400)	84.8 (289,400)	113.4 (387,000)	103.5 (353,300)	133.3 (454,900)	117.3 (400,300)
72/60	90.3 (308,200)	74.8 (255,300)	103.0 (351,600)	91.1 (311,000)	121.1 (413,300)	102.9 (351,300)
75/62.5	107.1 (365,600)	81.9 (279,600)	121.1 (413,300)	99.3 (338,800)	143.5 (489,900)	112.6 (384,400)
80/67	139.5 (476,100)	92.8 (316,600)	156.1 (532,800)	111.2 (379,600)	186.6 (637,000)	127.1 (433,900)

<b>GFCX-0176XX thru GFCX-211XX</b>						
	<b>GFCX-176XX @ 19,000 CFM, 110 GPM</b>		<b>GFCX-211XX @ 20,000 CFM, 144 GPM</b>		-	
EAT °F (DB/WB)	Net Total kW (BTU/hr)	Net Sensible kW (BTU/hr)	Net Total kW (BTU/hr)	Net Sensible kW (BTU/hr)	Net Total kW (BTU/hr)	Net Sensible kW (BTU/hr)
72/58.6	128.4 (438,100)	120.7 (412,000)	154.1 (526,000)	138.6 (473,100)	-	-
75/61	150.8 (514,600)	131.8 (449,900)	184.3 (629,100)	152.5 (520,500)	-	-
72/60	137.1 (467,900)	115.8 (395,300)	169.1 (577,100)	134.9 (460,400)	-	-
75/62.5	162.1 (553,400)	126.5 (431,700)	202.1 (689,700)	148.6 (507,300)	-	-
80/67	209.8 (716,200)	142.4 (486,100)	265.1 (904,900)	170.1 (580,400)	-	-

<b>GFCX-XXXXX @ STANDARD AIRFLOW</b>						
	<b>Standard EC Plug Fans</b>			<b>Standard Cabinet Dimensions</b>		
Capacity, kW	Number of Fans	Fan Size, mm	Fan Motor, kW	Depth, in.	Length, in.	Height, in.
7	1	450mm	1.0	40.5	36.0	78.0
11	1	450mm	1.0	40.5	36.0	78.0
14	1	450mm	1.0	40.5	36.0	78.0
18	1	450mm	1.0	40.5	36.0	78.0
25	1	500mm	2.7	40.5	49.5	78.0
32	1	500mm	2.7	40.5	49.5	78.0
39	1	500mm	2.7	40.5	49.5	78.0
46	1	500mm	2.7	40.5	49.5	78.0
53	2	500mm	2.7	40.5	83.0	78.0
63	2	500mm	2.7	40.5	83.0	78.0
77	2	500mm	2.7	40.5	83.0	78.0
91	2	560mm	3.0	40.5	83.0	78.0
106	3	500mm	2.7	40.5	106.0	78.0
141	3	560mm	3.0	40.5	120.0	84.0
158	3	560mm	5.0	40.5	120.0	84.0
176	3	560mm	5.0	40.5	120.0	84.0
211	3	560mm	5.0	46.0	120.0	99.0

- Performance data based on an entering temperature of 45° F.
- Consult factory for alternate operating conditions or options as these may impact unit performance.

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