

DB-AIRE

PRECISION ENVIRONMENTAL CONTROL UNIT

**DB-TEMP SYSTEMS
DB-AIRE SYSTEMS**



50/60 Hz



DB-AIRE

Precision Environmental Control Systems For Computer Rooms.

DB-AIRE SYSTEMS

State-of-the-art design with microprocessor based liquid crystal display panels, dual refrigeration circuits, tubular steel frames, large face area A-frame coils, the DB-Aire series offers a wide range of capacities and cooling mediums in compact, attractive, furniture grade cabinets. The units can be configured upflow or downflow.

The DBA (Air Cooled) system features efficiency in eight sizes. Available in 32-91 kW (9-26 tons) nominal capacities.

The DBW/ G (Water/ Glycol) system features units in eight sizes. Available in 32-91 kW (9-26 tons) nominal capacities.

The DBC (Chilled Water) system offers a large faced area coils in the industry's most compact cabinet available in 25-106 kW (7-30 tons) nominal capacities.

DB-TEMP SYSTEMS

The single refrigerant circuit DB-Temp has been designed to meet the demanding requirements of the most advanced computer room, yet is sized to provide complete economical protection for small applications.

Microprocessor based control with liquid crystal display monitoring plus a full complement of alarms are featured.

The small DB-Temp range is available in 7, 11, 14, 18 kW (2, 3, 4, and 5 ton) capacities, in air cooled, water/ glycol cooled, and chilled water models. Both upflow or downflow configurations are available.

The large DB-Temp range of 25, 32, 39, 46 kW (7, 9, 11, 13 ton) air cooled, water/glycol cooled precision environmental control systems is designed for data centers and telecommunications room applications. The units can be configured upflow or downflow.

This concept allows multiple units to be joined together or placed apart (any combination of capacities). Controls prevent conflicting operations.

GENERAL INFORMATION

DB-Aire units are precision environmental control systems that bring a new standard of flexibility and reliable performance to the computer room. Because room requirements differ, DB-Aire offers a wide range of sizes and styles.

DB-TEMP SYSTEMS

7, 11, 14 and 18 kW (2, 3, 4, and 5 ton) nominal capacities in air-cooled, water/glycol cooled, or chilled water models.

25, 32, 39 and 46 kW (7, 9, 11, and 13 ton) nominal capacities in air or water/glycol cooled models.

DB-Temp utilises a single compressor circuit.

DB-AIRE SYSTEMS

Dual compressor units in 32 through 91 kW (9 through 26 ton) nominal capacities available in air cooled or water/ glycol cooled models.

Chilled water models in 25 through 106 kW (7 through 30 ton) nominal capacities.

COMPUTER COMFORT

Computer rooms require air which is clean and properly distributed with precisely controlled temperatures and humidity. Building HVAC systems simply are not designed to meet these demands. But, DB-Aire units easily accomplish these goals with top-rated efficiency, 24 hours per day 7 days

a week! DB-Aire units have been designed to meet the demanding requirements of the most advanced computer room.

Although building HVAC systems cool your staff, they fall short of your computer's comfort need. And they are unable to provide the close humidity control required in a modern data processing centre.

DESIGN FEATURES

Each unit is a complete environmental control system, factory wired, tested, and specifically designed to provide temperature, humidity, and dust control for computer room or tele-communications installations.

A specially designed compact tubular steel frame allows for a minimum space requirement in your computer room for both upflow and downflow units while still providing excellent serviceability. All parts are easily accessible.

The DB-Processor, a microprocessor based control displays temperature and humidity on liquid crystal display (LCD). A comprehensive diagnostic routine is standard.

HIGH PERFORMANCE LOW COST

DB-Aire's high-tech, furniture look is clue to its high performance but belies its more than competitive price. Every DB-Aire unit comes with a commitment to excellence as standard equipment.

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DB-AIRE MONITORING/ CONTROL

The heart of the Environmental Control System is the microprocessor based DB-Alarm Processor. The liquid crystal display not only monitors your data center's temperature, humidity, airflow, and cleanliness, but also provides component run times, alarm history and an automatic self-test of the microprocessor on system start-up. Multiple messages will be displayed by automatically scrolling from each message to the next. All of these messages are spelled out in English language on the graphic liquid crystal display (LCD). The graphic LCD has graphic resolution 132 x 64 pixels, high density and backlit. Multiple alarms will be displayed sequentially in order of occurrence.

DB-AIRE STANDARD: PANEL MOUNTING LCD DISPLAY

The range of user interfaces has two further wall mounting versions with the same electrical features as the previous models. The LCD display with back-lit as standard.



- Power Supply: from the power board (Version 2020i) through the telephone cable (code S90CONN00*)
- Graphic Display: LCD graphic resolution 132 x 64 pixels
- Keypad: 15 buttons. Combination of silicon rubber and ABS.
- Indicator Leds: 15

OPERATION

Push button control switches allow unit on/off operation; menu selection for programming, operational information, diagnostics, and historical data. A password feature prevents unauthorized access; separate manual override switches are provided for fan motor, cool 1, cool 2, heat 1, and humidification operations. With manual override your DB-Aire unit will never be down as a result of a control problem - just activate the appropriate switch and you have ability to override controls. Another feature is that all menu programmed information for basic system operation and alarm parameters is stored in a non-volatile EEPROM. All historical information is protected by battery back-up.

PROGRAMMABLE FUNCTIONS/ MONITORING

The user friendly MENU SELECTION switch permits step-by-step programming and display of the following functions:

- Temperature Set Point 10 to 50°C (50°F-122°F)
- Temperature Sensitivity 0.5 to 2.7°C (1°F-5 °F)
- Humidity Set Point (40% - 70% RH)
- Humidity Sensitivity (1% - 10% RH)
- Temperature Alarm Points
- Humidity Alarm Points
- Unit Start Time Delay

Normal functions are monitored and displayed on the LCD and include, in addition to the above set points, the following:

- Current Temperature (deg C or deg F)
- Current Humidity (%RH)
- Cooling Stages 1, 2 as applicable
- Heating Stages 1, 2, 3
- Humidification
- Dehumidification
- Current percent of capacity and the average percent of capacity for the last hour of operation for compressors, humidification, dehumidification, reheat, and chilled water.

PROGRAMMING KEY

The programming keys for the DB-Aire series controllers provide easy software updates during both end-of production testing and maintenance procedures.



ALARMS

Alarm conditions are also monitored on the LCD and are enunciated by an audible alarm. The alarm silence button will quiet the audible alarm but the display will continue to indicate the alarm condition until the problem is corrected.

The following alarms are standard:

- Compressor High/Low Pressure
- High and Low Temperature
- High And Low Humidity
- No Airflow
- Filters Blocked
- Humidifier Failure
- Manual Override
- Power Failure Restart

DB-AIRE MONITORING/ CONTROL

- Compressor Short Cycle
- Temperature Sensor Error
- Humidity Sensor Error
- Local Alarm Customer Input Alarm (Programmable)
- Maintenance Due

The local alarm may be programmed to display any one of the following (optional sensors required): under the floor water detection, no water flow, smoke alarm, stand by pump on alarm etc. In addition, incomparable control settings will be identified on the LCD.

HISTORICAL DATA

In order to facilitate maintenance and service, component run times for fan motor, compressor operation reheat stages, humidification and dehumidification can be recalled and displayed on the LCD. The current temperature and humidity, with the minimum and maximum readings for the last 24 hours of operation, can be recalled and displayed. The last ten alarms and hours since occurrence can also be recalled and displayed. The historical data base is maintained by battery back-up should power fail.

DB-AIRE MEMORY BOX (Optional)

The high memory capacity (up to 4 Mbyte) and real time clock mean that the DB-Processor can act as a true black box recorder, saving all the alarm situations, the values of the sensors, and the status of the controlled devices. The black box data recorded can be transferred to the programming key or to a PC, including via modem.



DIAGNOSTICS

Automatic and manual diagnostic sequences simplify troubleshooting.

DB-AIRE PANEL MOUNTED TOUCH SCREEN GRAPHIC DISPLAY (Optional):

- Monochromatic (Blue/White) LCD graphic terminal with 320 x 240 pixels resolution and LED backlighting
- 256-color LCD graphic terminal with 320 x 240 pixels resolution CCFL backlighting

The terminal unit with back-lit graphic display for panel mounting is provided with a longer visual

display and more intense back lighting in order to allow applications in different areas. This terminal unit can be connected to the local network that allows the terminal to display (and log through the respective optional card) the information coming from the other DB-Aire Units of the network. The graphic terminal can also be programmed by means of the DB-Aire system in exactly the same way as with the control applications for the DB-Aire. The user who is already accustomed to the environment will meet no difficulty in customizing the application on such a device. The following possibilities are available to the user: configurability of the character fonts both with regard to the style and size. It is thus possible to represent every alphabet (Chinese, Arabic, etc)



- Creation of graphic objects, both static and in motion, for a more immediate display of the information (alarms, energized devices, etc)
- Display of the graph of the acquired data so as to obtain, for instance, the temperature plot in a selectable interval of time
- Opportunity to manage a serial printer so as to print, for instance, the detected alarms
- Adjustable brightness.

DB PROCESSOR COMMUNICATION INTERFACES (Optional)

Below are the available communication interface features of the DB-Alarm processor:

BMS interface

DB1 MODBUS RS485 Serial Card

Optional DB1 Modbus RS485 add-on card allows Vision 2020i

Controller to interface to Modbus Slave, RTU mode, RS485 network. The maximum baud rate is 19200 and it is set via software.



DB1 LONWORKS FTT10 Card

The optional Lonworks serial card allows Vision 2020i controller to interface to LonWorks® network FTT-10A 78 kbs (TP/FT-10).

The baud rate on the DB* must be set at 4800.



DB-AIRE MONITORING/ CONTROL



BACnet Gateway allows Vision 2020i controllers (maximum number: 8) to interface with BACnet.



This is a frequently used protocol and a property of many BMS manufacturers. This device makes automatically the translation of the Vision 2020i controller transmission protocol into the communication protocol BACnet.

The connections available on the Gateway are:

- serial 232 (protocol PTP) towards the BACnet;
- serial 422 or 485 towards Vision 2020i peripherals;
- serial 232 for the Gateway configuration.

WebGate

WebGate is an electronic device to interface all Vision 2020i controllers (maximum 16 units) on a RS485 network to any local 10 Mbps Ethernet network.



Contact the network administrator or other responsible person to arrange a network connection to the WebGate.

The following functions are therefore possible:

- access information (such as network variables and parameters) from each controller using a standard web browser, such as Internet Explorer™ (version 5 or higher) or NetScape Communicator™ (version 6 or higher) on any PC connected to the WebGate in a local network or WAN. For the better results use a browser supporting CSS style sheets.
- pass data to a supervising PC connected to the network using the SNMP standard protocol.

Standard Internetworking Protocols SNMP v1, HTTP, FTP Memory: 128KB RAM, 1MB Flash (400KB available for web pages and user data).

Interfaces: Serial RS485, Serial RS232 DTE interface and Ethernet interface RJ-45 connector.

DB-Web

The optional DB-Web board is used to interface all of the Vision 2020i series controllers to a 10 Mbps Ethernet network and consequently perform the following functions:

- access the information on the controller (network variables and parameters) using an Internet browser, such as Internet Explorer™ installed on a PC and connected to the DB-Web via TCP/IP.

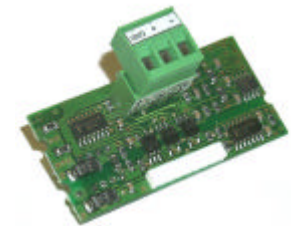
- connection to a supervisory network that uses one of the following standard protocols:
 - SNMP v1 & v2c;
 - BACnet Ethernet ISO8802-2/8802-3;
 - BACnet/IP
- DB-Web is supplied with the DHCP function already active. Therefore, in a network served by a DHCP server, DB-Web will automatically acquire the necessary parameters without requiring configuration, while, in the case of a network without DHCP, the parameters need to be configured manually.

Ethernet interface: RJ45 connector for Ethernet 10BaseT; use a class 5 shielded cable, max 100 meters. Protocols managed: HTTP, FTP, SNMP v1, v2c, DHCP, DNS, BACnet Ethernet ISO8802-2/8802-3, BACnet/IP.

There are two types of interfaces for DB-Web:

ETHERNET interface for:

- BACnet Ethernet
- BACnet over IP
- SNMP v1, v2.c, v3
- HTTP (web server)
- FTP, DHCP, DNS



EIA 485 interface for:

- BACnet MS/TP



Trend is a building Automation System very widespread in the Anglo-Saxon countries and in general in Europe.

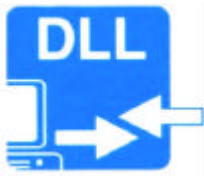
The DB-Aire controller is TREND compatible, through the proper serial card. TREND deals with the configuration and the supply of the interface card. Trend can be contacted directly on Tel. +44(0)1403211888.

SNMP

SNMP (Simple Network Management Protocol) is a protocol for the management of TCP/IP networks (the Internet protocol), established in 1988 based on the specifications of the IAB (Internet Administration Board), the body that supervises the internet protocol.

All DB controllers can be connected Web Gate or DB-Web to a 10 Mbps Ethernet™ network via gateway or DB-web, and communicate with systems that use the SNMP Protocol.

DB-AIRE MONITORING/ CONTROL

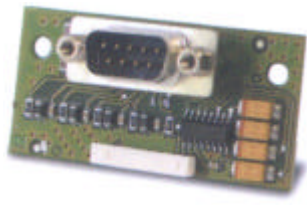


DB-Aire can provide developers and system integrators with DLLs (Dynamic link Libraries) for 16-and 32-bit Windows® applications.

Technically, a DLL is a compiled file that contains a series of functions for use by any other server process. In particular, the DB-Aire DLLs contain the software routines that allow the integration of communication with all DB-Aire instruments into the application, without needing to know the used protocol.

Direct modem

All the DB-Aire controllers can be connected directly to a traditional or GSM modem.



They can thus be controlled directly by remote stations, without requiring the use of a gateway or intermediate system.

SMS, short message service

Dunham-Bush has payed great attention to fitting the DB controllers with the ability to communicate important information directly by SMS message.

In fact, this is the best communication system for sending data wherever and promptly.

By simply connecting a GSM modem, the DB series controllers can not only send alarms and information, but also receive commands via SMS that service personnel can use to reset any alarm or perform the necessary operations, without having to travel to the installation.

NETWORK REMOTE MONITORING (OPTIONAL)

NETWATCH

For smaller systems with the same management and control requirements as larger installations, NetWatch offers the complete and integrated solution for all monitoring and remote management needs. NetWatch, a versatile data recorder for the controllers connected in a supervisory network, is also:



- an excellent monitoring system. In the event of alarms, it can send faxes, SMS messages, call a remote security center, etc.,

- an exceptional instrument for remote control.

Using a traditional or GSM modem, it can display all of the parameters in the system. Optional 110V or 230V 50/60Hz.

NetVisor

NetVisor is the DB web-server based monitoring and tele-maintenance system server that features flexibility of use and easy access to information and alarm management functions.

DB has responded to the requirements for local monitoring and remote management by supplying solutions at all levels: from controllers in the field to supervisory systems.

In this way, the user can be constantly kept up-to-date on the status of the installation. Tailor-made tele-maintenance solutions!

The solutions proposed by DB differ according to the type of installation:

- NetVisor Enhanced, PC-based solution, for installations with a maximum of 200 units with Vision 2020i controller;
- NetWatch, solution without requiring a PC for smaller installations, up to 32 units.
- NetVisor Enhanced Remote, program for the remote management of the NetVisor Enhanced and NetWatch systems.

1. NetVisor Enhanced Local can be accessed via modem using NetVisor Enhanced Remote and/or a PC with Microsoft® Internet Explorer. If NetVisor Enhanced Local is installed on a PC in a LAN network, the information from the installation can also be accessed by other PCs on the same network. NetVisor can also be published on the web if a permanent Internet connection is available.
2. NetVisor Enhanced Remote manages a modem for receiving and forwarding calls to all the local installations: in this way, the data, configurations and alarms are always synchronised between the installations and the Service Centre.
3. NetVisor can be connected remotely without requiring special software: all that is needed is a PC with a modem and Microsoft® Internet Explorer.
- 4-5. If NetVisor is published on the Internet, the site displaying the installation can be accessed from anywhere in the world simply using a PC or palmtop with Microsoft® Internet Explorer and an Internet connection

DB-TEMP DESIGN FEATURES

DB-TEMP MODELS

7-46 KW

2-13 TONS

AIR COOLED

WATER/GLYCOL COOLED

FRAME AND CABINET

The heliarc welded steel frame provides for maximum strength and ease of access. Side and front panels can be easily opened and removed with quarter-turn fasteners allowing full access to all unit components. All panels include 25mm (1 inch) thick, 1-1/2 lb density insulation for protection and sound attenuation. DB-Aire's unique frame design allows for your selection of either downflow or upflow air patterns in the same compact dimensions.

COIL SECTION

Designed for draw through application with large face areas for low velocity air to reduce turbulence and provide greater efficiency in the cooling and dehumidification process.

FAN SECTION

The centrifugal forward-curved, double-width, double-inlet blower configuration is engineered for quiet, reliable operation. The blowers are AMCA certified and factory certified dynamically balanced. The draw through design insures even air distribution across the coil, low internal cabinet pressure losses, and static sealing of the filter section. The fan motor is totally enclosed and is mounted on an adjustable slide base.

FILTERS

Computer room air cleanliness is enhanced by standard 50 mm (2 inch) deep pleated 30 percent efficient filters (based on ASHRAE 52-76) which can be easily changed by opening the front panel for the 2-5 tons models. The DB-Temp 7-13 tons models use standard 100 mm (4 inch) deep pleated 30 percent efficient filters (based on ASHRAE 52-76)

ELECTRICAL REHEAT

The three stage stainless steel finned tubular

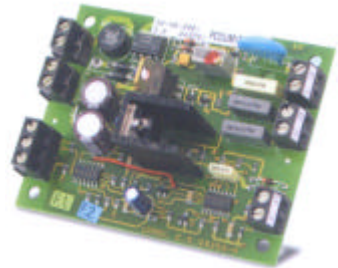
reheat coils provide ample capacity to maintain room dry bulb conditions during a system call for dehumidification. Three equal stages give a more accurate controlled response to the requirements of the computer room. The heating elements are protected by thermal safety switches. The three stages of reheat create a noticeable lowering of energy use.

HUMIDIFICATION (OPTIONAL)

The disposable cartridge electric steam generator humidifier provides humidification down stream of the cooling coil. The humidifier is designed to allow all units at any voltage to produce full rated steam output at an optimum low water level.

DB-AIRE UMID INTERFACE

The DB-Aire Umid interface allows the control of humidifiers directly from the DB-Aire microprocessor controller.



Steam Generator Humidifier



COMPRESSORIZED SYSTEM

The single stage refrigeration circuit includes a high efficiency and quiet scroll compressor. The scroll compressor has a high EER, low

DB-TEMP DESIGN FEATURES

sound power level and is highly reliable. The high efficiency is due to the controlled orbit with floating seals and advanced scroll geometry design. There is no contact of the mechanical parts in the scroll design which eliminates mechanical wear and tear. The motor is 100% cooled by suction gas. A check valve is located directly above the fixed scroll discharge port. This prevents the compressor from running backwards after the power has been switched off (i.e. no rattling and no shutdown noises). The motor is fitted with an internal thermal overload protection against maximum operating overload and loss of refrigerant charge. The refrigeration circuit includes filter drier, sight glass, adjustable expansion valve, low pressure override timer, manual reset high pressure control, short-cycle timer and rotalock service valves.

Air Cooled Systems- A wide range of sizes of remote mounted air-cooled condensers are available from DB-Aire in vertical discharge.

Condensers are manufactured by DB-Aire and include circuits sized to match the heat rejection of the corresponding compressor in the DB-

Temp. The industrial duty design includes galvanized corrosion resistant housings, high efficiency aluminium finned (optional copper fins available) copper tube coils; coated fan guard; energy efficient thermally protected motors integral factory wired and tested control panel.

Water/Glycol Cooled System - Includes unit mounted condensers for providing the required capacity for heat rejection with minimum water/glycol flow and low total pressure drop.

Dry-Air Cooler For Glycol Systems - A wide range of sizes of remote mounted dry-air coolers are available from DB-Aire in vertical discharge and direct drive. Dry-air coolers are manufactured by DB-Aire and are sized to match the heat rejection of the corresponding DB-Temp unit. The industrial duty design includes galvanised corrosion resistant housing, high efficiency aluminium finned (optional copper fins available) copper tube coils; coated fan guards; energy efficient, thermally protected motors and fan cycling controls with integral factory wired and tested control panel.

DB-TEMP SYSTEMS

AIR COOLED/ GLYCOL COOLED PERFORMANCE DATA

PERFORMANCE AT 35°C (95°F) AMBIENT WITH SPECIFIED CONDENSER/DRY-AIR COOLER
NET CAPACITY KW AT STANDARD AIRFLOW

MODEL	DBTAD/U-02 DBTGD/U-02		DBTAD/U-03 DBTGD/U-03		DBTAD/U-04 DBTGD/U-04		DBTAD/U-05 DBTGD/U-05		DBTAD/U-07 DBTGD/U-07		DBTAD/U-09 DBTGD/U-09		DBTAD/U-11 DBTGD/U-11		DBTAD/U-13 DBTGD/U-13	
	TOTAL	SENS.	TOTAL	SENS.	TOTAL	SENS.	TOTAL	SENS.	TOTAL	SENS.	TOTAL	SENS.	TOTAL	SENS.	TOTAL	SENS.
26.7DB/ 19.4WB 50% RH	10.3	8.0	12.8	10.2	14.9	13.1	18.5	16.7	26.1	22.3	38.8	32.8	43.3	39.0	50.4	45.4
24DB/ 17WB 50% RH	9.6	7.9	11.9	10.0	13.8	12.9	17.2	16.4	24.3	21.8	36.1	32.1	40.2	38.2	46.8	44.5
24DB/ 16WB 45% RH	9.4	8.4	11.6	10.7	13.6	13.6	16.7	16.7	23.8	23.4	35.3	34.4	39.4	39.4	45.9	45.9
22.2DB/ 15.5WB 50% RH	9.1	7.7	10.4	9.8	13.2	12.6	16.4	16.0	23.1	21.4	34.3	31.5	38.2	37.5	44.5	43.6
22.2DB/ 14.8WB 45% RH	8.7	8.2	10.8	10.5	12.6	12.6	15.7	15.7	22.1	22.1	32.9	32.9	36.7	36.7	42.7	42.7

NET CAPACITY MBH AT STANDARD AIRFLOW

80DB/ 67WB 50% RH	35.2	27.4	43.6	34.7	50.8	44.8	63.1	56.9	89.0	76.0	132.4	111.8	147.6	133.1	171.8	154.9
75DB/ 62.5WB 50% RH	32.7	26.8	40.5	34.1	47.2	43.9	58.7	55.8	82.8	74.5	123.1	109.6	137.3	130.4	159.7	151.8
75DB/ 61WB 45% RH	32.1	28.7	39.7	36.4	46.3	46.3	57.6	57.6	81.1	79.7	120.6	117.2	134.5	134.5	156.5	156.5
72DB/ 60WB 50% RH	31.1	26.3	35.5	33.4	44.9	43.0	55.8	54.7	78.7	73.0	117.0	107.4	130.4	127.8	151.8	148.7
72DB/ 58.6WB 45% RH	29.8	28.1	37.0	35.7	43.1	43.1	53.6	53.6	75.5	75.5	112.3	112.3	125.2	125.2	145.7	145.7

DB-TEMP SYSTEMS

WATER COOLED PERFORMANCE DATA

PERFORMANCE AT 29.4°C (85°F) ENTERING WATER TEMPERATURE
NET CAPACITY KW AT STANDARD AIRFLOW

MODEL		DBTWD/U-02		DBTWD/U-03		DBTWD/U-04		DBTWD/U-05		DBTWD/U-07		DBTWD/U-09		DBTWD/U-11		DTWD/U-13	
		TOTAL	SENS.	TOTAL	SENS.	TOTAL	SENS.	TOTAL	SENS.	TOTAL	SENS.	TOTAL	SENS.	TOTAL	SENS.	TOTAL	SENS.
26.7DB/ 19.4WB	50% RH	11.2	8.5	13.9	10.8	17.2	14.8	19.7	17.0	27.7	22.6	41.4	33.8	46.7	41.3	54.4	47.0
24DB/ 17WB	50% RH	10.5	8.3	12.9	10.6	16.0	14.5	18.3	16.6	25.8	22.2	38.5	33.1	43.5	40.4	50.6	46.0
24DB/ 16WB	45% RH	10.2	8.9	12.7	11.3	15.7	15.5	17.9	17.8	25.3	23.7	37.8	35.4	42.6	42.6	49.5	49.2
22.2DB/ 15.5WB	50% RH	9.9	8.2	12.3	10.4	15.1	14.2	17.4	16.3	24.5	21.7	36.6	32.4	41.3	39.6	48.0	45.1
22.2DB/ 14.8WB	45% RH	9.5	8.8	11.8	11.1	14.6	14.7	16.7	16.7	23.5	23.2	35.1	34.7	39.7	39.7	46.1	46.1

NET CAPACITY MBH AT STANDARD AIRFLOW

80DB/ 67WB	50% RH	38.3	29.1	47.4	36.9	58.6	50.6	67.1	57.9	94.6	77.2	141.3	115.3	159.5	140.8	185.5	160.2
75DB/ 62.5WB	50% RH	35.7	28.5	44.0	36.1	54.5	49.6	62.4	56.8	88.0	75.7	131.4	113.0	145.4	138.0	172.5	157.0
75DB/ 61WB	45% RH	34.9	30.5	43.2	38.6	53.4	53.0	61.1	60.8	86.2	81.0	128.8	120.9	145.4	145.4	169.0	168.0
72DB/ 60WB	50% RH	33.9	28.0	41.8	35.4	51.7	48.6	59.3	55.6	83.6	74.1	124.8	110.7	141.0	135.2	163.9	153.8
72DB/ 58.6WB	45% RH	32.5	29.9	40.2	37.9	49.7	49.7	56.9	56.9	80.2	79.3	119.8	118.5	135.3	135.3	157.3	157.3

AIR COOLED, WATER/ GLYCOL COOLED

PHYSICAL DATA

MODEL		DBT*D/U-02	DBT*D/U-03	DBT*D/U-04	DBT*D/U-05	DBT*D/U-07	DBT*D/U-09	DBT*D/U-11	DBT*D/U-13
LENGTH	MM	895	895	895	895	1727	1727	1727	1727
	INS	35.2	35.2	35.2	35.2	68	68	68	68
WIDTH	MM	867	867	867	867	902	902	902	902
	INS	34.2	34.2	34.2	34.2	35.5	35.5	35.5	35.5
HEIGHT	MM	1880	1880	1880	1880	1956	1956	1956	1956
	INS	74	74	74	74	77	77	77	77
WEIGHT	KG	280	290	310	320	530	540	560	580
	LB	616	638	682	704	1166	1188	1232	1276

ADD 457MM(18 INCH) TO HEIGHT OF UNITS FOR DISCHARGE PLENUM - UP FLOW UNITS ONLY.

BLOWER DATA

STANDARD AIR VOLUME	CMH	1700	2550	3400	4250	6796	8500	10200	11050
	CFM	1000	1500	2000	2500	4000	5000	6000	6500
STANDARD FAN MOTOR	KW	0.75	0.75	0.75	1.12	1.5	2.2	3.0	3.7
	HP	1	1	1	1.5	2	3	4	5
OPTIONAL AIR VOLUME	CMH	2550	3060	4250	4590	8500	10200	11050	N/A
	CFM	1500	1800	2500	2700	5000	6000	6500	N/A
OPTIONAL FAN MOTOR	KW	1.12	1.12	1.12	1.5	2.2	3.0	3.7	N/A
	HP	1.5	1.5	1.5	2	3	4	5	N/A
EXT. STATIC PRESSURE	MM W.G.	7.6	7.6	7.6	7.6	12.7	12.7	12.7	N/A
	INS W.G.	0.3	0.3	0.3	0.3	0.5	0.5	0.5	N/A
SIZE (QUANTITY)	MM	254 x 254 (1)	254 x 254 (1)	254 x 254 (1)	254 x 254 (1)	381 x 381 (1)	381 x 381 (1)	381 x 381 (1)	381 x 381 (1)
	INS	10 x 10 (1)	10 x 10 (1)	10 x 10 (1)	10 x 10 (1)	15 x 15 (1)	15 x 15 (1)	15 x 15 (1)	15 x 15 (1)

ADD 457MM (18 INCHES) TO HEIGHT OF UNITS FOR DISCHARGE PLENUM - UP FLOW UNITS ONLY

COMPRESSOR DATA

QUANTITY OF COMPRESSORS		1	1	1	1	1	1	1	1
REFRIGERANT		R 22	R 22	R 22	R 22	R 22	R 22	R 22	R 22
HORSEPOWER	50HZ	4.0	5.1	6.0	7.0	8.0	12.0	13.0	15.0
	60HZ	3.5	4.9	5.8	6.0	7.0	11.0	10.0	13.0

EVAPORATOR DATA @ STANDARD AIRFLOW

FACE AREA	M ²	0.28	0.28	0.49	0.49	1.13	1.13	1.13	1.13
	FT ²	3.0	3.0	5.2	5.2	12.2	12.2	12.2	12.2
ROWS OF COIL		4	4	4	4	2	3	4	4
FACE VELOCITY	M/S	1.66	2.49	1.93	2.42	1.66	2.09	2.50	2.71
	FPM	327	490	381	476	327	409	491	532

DB-TEMP SYSTEMS

REHEAT SECTION

MODEL	DBT*D/U-02	DBT*D/U-03	DBT*D/U-04	DBT*D/U-05	DBT*D/U-07	DBT*D/U-09	DBT*D/U-11	DBT*D/U-13
STANDARD ELECTRIC KW MBH	6.0 20.5	12.0 41.0	12.0 41.0	12.0 41.0	15.0 51.2	15.0 51.2	15.0 51.2	15.0 51.2

HUMIDIFIER SECTION (OPTIONAL)

STANDARD STEAM GENERATOR CAPACITY	KG/HR	4.6	4.6	4.6	4.6	4.6	4.6	4.6
	LB/HR	10	10	10	10	10	10	10
	KW	3.6	3.6	3.6	3.6	3.6	3.6	3.6

FILTERS STANDARD 50MM (2 INCH) THICK 30% ASHRAE STANDARD 52-76

610MM x 610MM (24 x 24) QTY	1	1	1	1	-	-	-	-

FILTERS STANDARD 100MM (4 INCH) THICK 30% ASHRAE STANDARD 52-76 (UPFLOW)

406MM x 635MM (16" x 25") QTY	-	-	-	-	-	3	3	3
508MM x 635MM (20" x 25") QTY	-	-	-	-	2	-	-	-

FILTERS STANDARD 100MM (4 INCH) THICK 30% ASHRAE STANDARD 52-76 (DOWNFLOW)

406MM x 635MM (16" x 25") QTY	-	-	-	-	4	4	4	4

CONNECTION SIZE

LIQUID LINE O.D COPPER (1/UNIT)	INS	1/2	1/2	1/2	1/2	1/2	5/8	5/8	5/8
HOT GAS LINE O.D COPPER (1/UNIT)	INS	1/2	1/2	1/2	1/2	3/4	7/8	7/8	7/8
CONDENSER WATER - IN OUT	INS	7/8	7/8	1 1/8	1 1/8	1 5/8	1 5/8	1 5/8	1 5/8
HUMIDIFIER SUPPLY	INS	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
CONDENSATE DRAIN	INS	7/8	7/8	7/8	7/8	7/8	7/8	7/8	7/8

NOTE : REFER TO OPERATION AND MAINTENANCE FOR RECOMMENDED PIPE SIZING BETWEEN INDOOR AND OUTDOOR UNIT.

AIR COOLED

AIR COOLED CONDENSERS STD SELECTIONS AT 35°C (95°F) AMBIENT, SEA LEVEL *

MODEL	DBTAD/U-02	DBTAD/U-03	DBTAD/U-04	DBTAD/U-05	DBTAD/U-07	DBTAD/U-09	DBTAD/U-11	DBTAD/U-13
MODEL NUMBER	DBRC-04	DBRC-04	DBRC-06	DBRC-06	DBRC-08	DBRC-10	DBRC-13	DBRC-17

*SEE 'REMOTE HEAT EXCHANGER' SECTION FOR MORE INFORMATION.

WATER COOLED

CONDENSER WATER REQUIREMENTS

MAXIMUM DESIGN WATER PRESSURE 1033 KPA

MODEL	DBTWD/U-02	DBTWD/U-03	DBTWD/U-04	DBTWD/U-05	DBTWD/U-07	DBTWD/U-09	DBTWD/U-11	DBTWD/U-13
29.4°C/85°F EWT LPS/PD IN KPA GPM/PD IN PSI	0.39/19.3 6.2/2.8	0.7/51.7 11.4/7.5	0.8/20.7 12.0/3.0	1.1/35.9 17.0/5.2	1.0/ 27.6 15.8/ 4.0	1.5/ 24.8 24.0/ 3.6	1.9/ 29.0 30.0/ 4.2	2.5/ 31.0 40.0/ 4.5
23.9°C/75°F EWT LPS/PD IN KPA GPM/PD IN PSI	0.3/11.0 4.0/1.6	0.4/19.3 6.2/2.8	0.5/13.8 8.3/2.0	0.7/17.9 10.4/2.6	0.7/ 20.7 11.1/ 3.0	1.1/ 17.9 17.3/ 2.6	1.4/ 20.7 22.0/ 3.0	2.0/ 21.4 31.3/ 3.1
18.3°C/65°F EWT LPS/PD IN KPA GPM/PD IN PSI	0.2/6.2 2.6/0.9	0.2/10.3 3.9/1.5	0.3/7.6 5.2/1.1	0.4/9.0 6.5/1.3	0.4/ 13.8 7.1/ 2.0	0.6/ 6.9 10.0/ 1.0	0.8/ 10.3 13.2/ 1.5	1.2/ 13.8 19.0/ 2.0

GLYCOL COOLED

DRY-AIR COOLER SELECTION AT 35°C (95°F) AMBIENT, SEA LEVEL

MODEL	DBTGD/U-02	DBTGD/U-03	DBTGD/U-04	DBTGD/U-05	DBTGD/U-07	DBTGD/U-09	DBTGD/U-11	DBTGD/U-13
GLYCOL LPS	0.4	0.7	0.7	0.9	1.3	1.7	1.9	2.2
FLOW RATE GPM	6.4	11.0	11.7	15.0	21.0	27.0	30.0	35.0
PRESSURE DROP KPA PSI	21.4 3.1	49.0 7.1	23.4 3.4	31.0 4.5	24.1 3.5	20.0 2.9	25.5 3.7	21.4 3.1
DRY-AIR COOLER	DBFC-05	DBFC-06	DBFC-09	DBFC-09	DBFC-11	DBFC-17	DBFC-21	DBFC-24

DB-TEMP SYSTEMS

AIR COOLED, WATER/ GLYCOL COOLED ELECTRICAL DATA

ELECTRICAL BASED ON STANDARD UNITS (WITH ELECTRIC REHEAT AND ELECTRIC HUMIDIFICATION)

MODEL		DBT*D/U-02	DBT*D/U-03	DBT*D/U-04	DBT*D/U-05	DBT*D/U-07	DBT*D/U-09	DBT*D/U-11	DBT*D/U-13
380/3/50	FLA	15.5	25.8	27.0	29.2	40.7	45.1	51.5	58.1
	MCA	19	32	33	36	50	55	63	71
	MFS	20.0	35.0	35.0	40.0	50.0	60.0	70.0	90.0
415/3/50	FLA	14.2	23.8	24.8	26.8	37.2	41.2	47.2	53.2
	MCA	17	29	31	33	46	50	57	65
	MFS	20.0	30.0	35.0	35.0	50.0	60.0	70.0	80.0
208/3/60	FLA	30.5	49.7	53.7	57.6	77.5	89.3	100.9	112.5
	MCA	37	61	66	71	95	109	123	137
	MFS	40.0	70.0	70.0	80.0	110.0	125.0	150.0	175.0
230/3/60	FLA	27.6	44.9	48.5	52.1	70.1	80.8	91.3	101.7
	MCA	34	55	60	64	86	99	111	124
	MFS	35.0	60.0	60.0	70.0	100.0	125.0	125.0	150.0
460/3/60	FLA	13.7	22.5	24.3	26.1	34.8	40.4	45.5	50.3
	MCA	17	28	30	32	43	50	55	61
	MFS	20.0	30.0	30.0	35.0	50.0	60.0	70.0	80.0

ELECTRICAL BASED ON ELECTRIC HUMIDIFICATION WITHOUT ELECTRIC REHEAT

380/3/50	FLA	11.9	13.1	14.3	16.5	23.4	27.8	34.2	40.9
	MCA	14	16	17	20	28	33	41	49
	MFS	17.5	20.0	20.0	25.0	40.0	45.0	60.0	70.0
415/3/50	FLA	10.9	12.1	13.1	15.1	21.4	25.3	31.3	37.3
	MCA	13	15	16	18	26	30	38	45
	MFS	15.0	17.5	20.0	20.0	35.0	45.0	50.0	60.0
208/3/60	FLA	23.8	26.4	30.3	34.3	45.8	57.7	69.3	80.9
	MCA	29	32	37	42	56	70	84	98
	MFS	35.0	40.0	50.0	50.0	80.0	100.0	125.0	150.0
230/3/60	FLA	21.5	23.8	27.4	31.0	41.4	52.1	62.6	73.1
	MCA	26	29	33	38	50.0	63.0	76.0	88.0
	MFS	30.0	35.0	45.0	50.0	70	90	110	125
460/3/60	FLA	10.7	11.9	13.7	15.5	20.5	26.1	31.1	36.0
	MCA	13	14	17	19	25	32	38	43
	MFS	15.0	17.5	20.0	25.0	35.0	45.0	50.0	60.0

ELECTRICAL BASED ON NO ELECTRIC REHEAT NO ELECTRIC HUMIDIFICATION

380/3/50	FLA	6.4	7.6	8.8	11.0	17.9	22.3	28.7	35.4
	MCA	8	9	11	13	21	27	34	42
	MFS	12.0	15.0	17.5	20.0	35.0	40.0	50.0	60.0
415/3/50	FLA	5.9	7.1	8.1	10.1	16.4	20.3	26.3	32.3
	MCA	7	8	10	12	20	24	31	38
	MFS	10.0	12.0	15.0	17.5	30.0	40.0	50.0	60.0
208/3/60	FLA	13.8	16.4	20.3	24.3	35.8	47.7	59.3	70.9
	MCA	16	20	25	29	43	57	71	85
	MFS	25.0	30.0	40.0	45.0	70.0	90.0	110.0	125.0
230/3/60	FLA	12.5	14.8	18.4	22.0	32.4	43.1	53.6	64.1
	MCA	15	18	22	26	39	52	64	77
	MFS	20.0	25.0	35.0	40.0	60.0	80.0	100.0	125.0
460/3/60	FLA	6.2	7.4	9.2	11.0	16.0	21.6	26.6	31.5
	MCA	7	9	11	13	19	26	32	38
	MFS	12.0	15.0	17.5	20.0	30.0	40.0	50.0	60.0

FAN MOTOR FULL LOAD AMPS @ STANDARD AIR FLOW

380/3/50	1.8	1.8	1.8	2.8	3.7	5.1	6.7	8.4
415/3/50	1.7	1.7	1.7	2.6	3.4	4.6	6.2	7.7
208/3/60	3.5	3.5	3.5	5.0	6.5	9.0	11.8	14.0
230/3/60	3.2	3.2	3.2	4.5	5.9	8.1	10.7	12.7
460/3/60	1.6	1.6	1.6	2.2	3.0	4.1	5.4	6.4

COMPRESSOR NOMINAL RUNNING AMPS

380/3/50	4.6	5.8	7.0	8.2	14.2	17.2	22.0	27.0
415/3/50	4.2	5.4	6.4	7.5	13.0	15.7	20.1	24.6
208/3/60	10.3	12.8	16.8	19.4	29.3	38.7	47.4	56.8
230/3/60	9.3	11.6	15.2	17.5	26.5	35.0	42.9	51.4
460/3/60	4.6	5.8	7.6	8.8	13.0	17.5	21.2	25.1

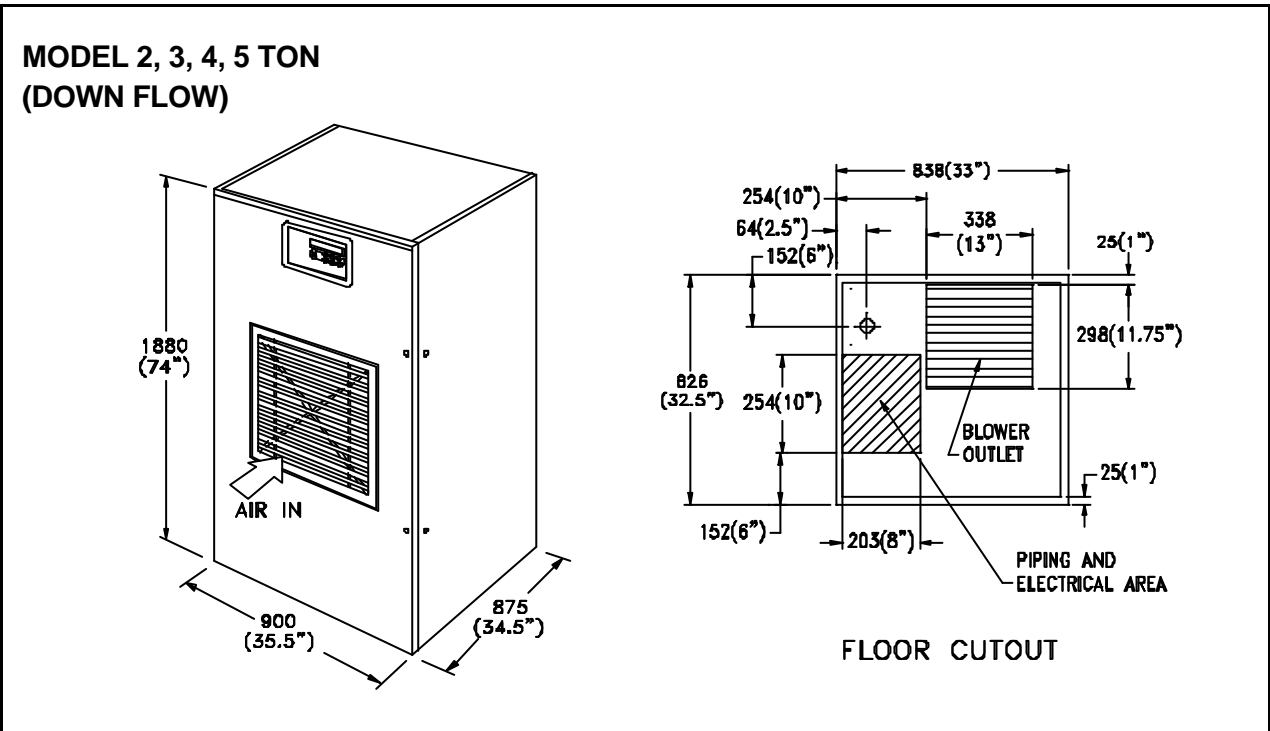
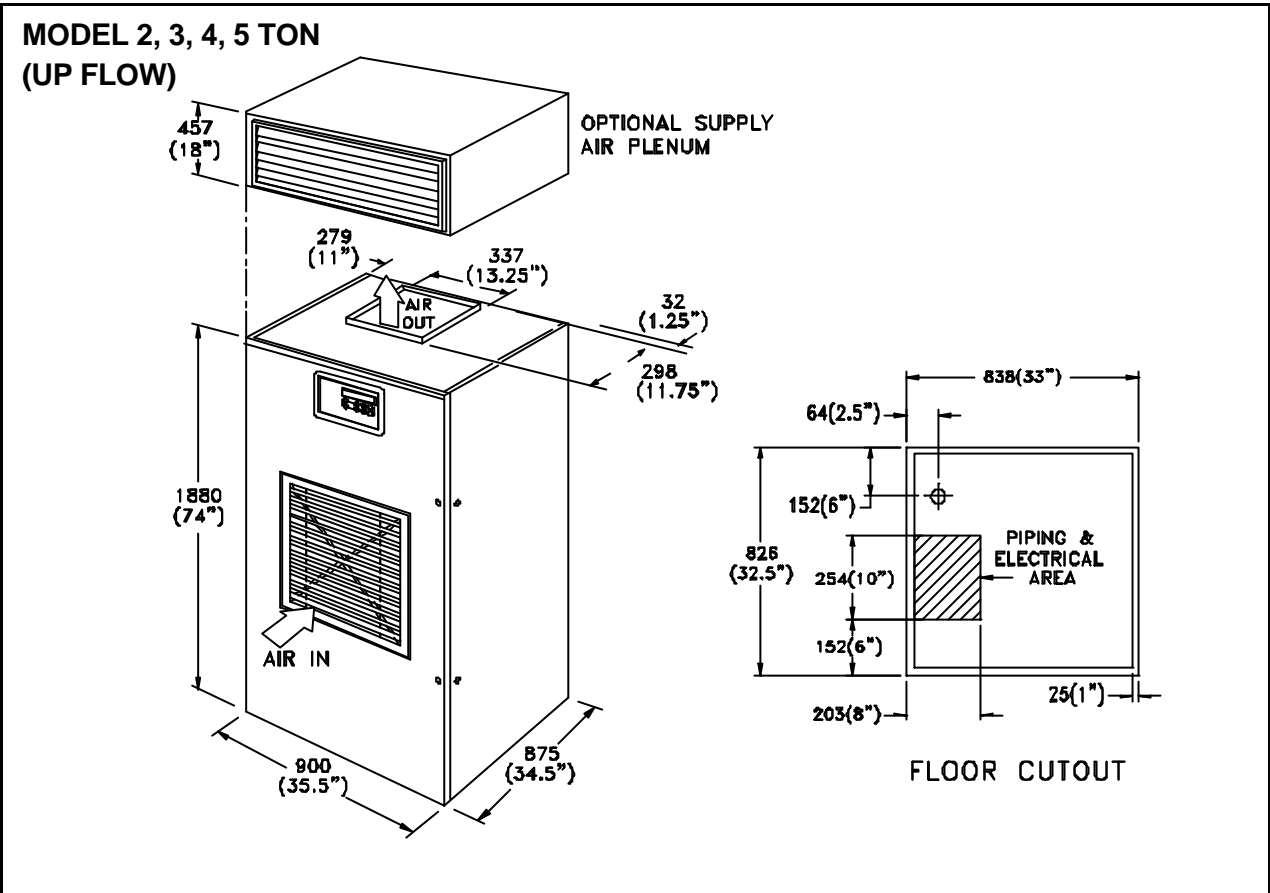
*A= AIR COOLED
FLA = FULL LOAD AMPACITY

W= WATER COOLED
MCA = MINIMUM CIRCUIT AMPACITY

G= GLYCOL COOLED
MFS = MAXIMUM FUSE SIZE

DB-TEMP SYSTEMS

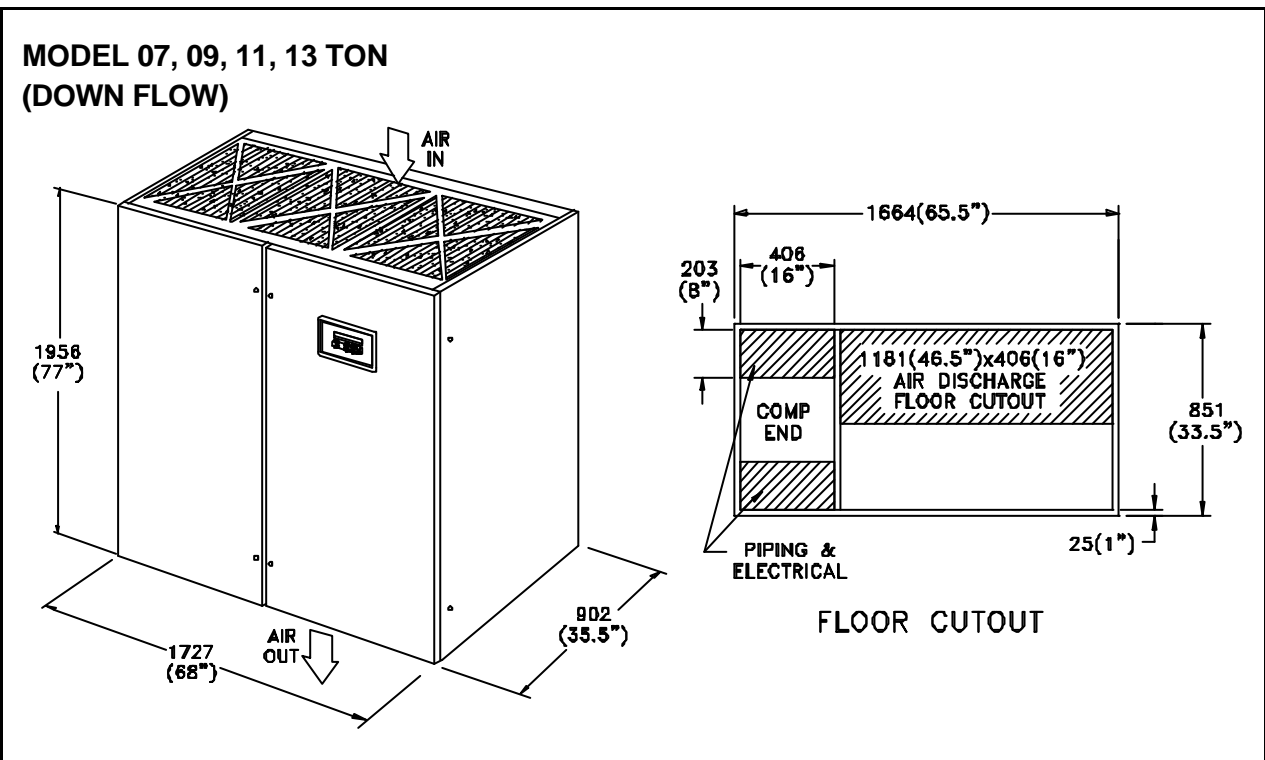
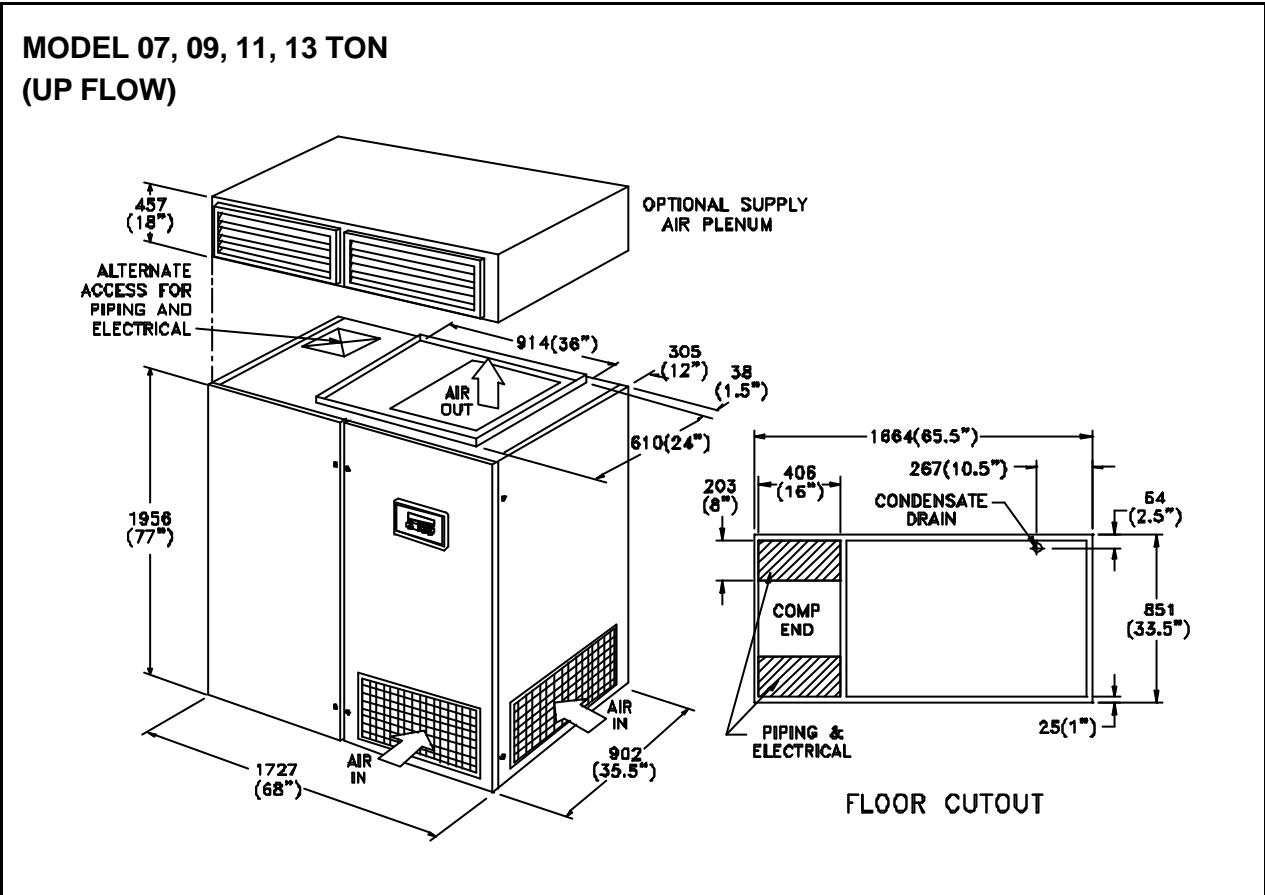
AIR COOLED, WATER/ GLYCOL COOLED/ CHILLED WATER DIMENSIONAL DATA



NOTES : 1.) MINIMUM SPACE REQUIRED IS 914MM (36") ON FRONT ,RIGHT AND LEFT SIDES FOR SERVICE ACCESS.
2.) ALL DIMENSIONS ARE IN MILLIMETER (INCHES).

DB-TEMP SYSTEMS

AIR COOLED, WATER/ GLYCOL COOLED DIMENSIONAL DATA



NOTES : 1.) MINIMUM SPACE REQUIRED IS 914MM (36") ON FRONT, RIGHT AND LEFT SIDES FOR SERVICE ACCESS.
2.) ALL DIMENSIONS ARE IN MILLIMETER (INCHES).

DB-AIRE DESIGN FEATURES

DB-AIRE MODELS

9 - 26 TONS

32 - 91 KW

AIR COOLED

WATER/GLYCOL COOLED

FRAME AND CABINET

The heliarc welded tubular steel frame provides for maximum strength and ease of access. Side and front panels can be easily opened and removed with quarter-turn fasteners allowing full access to all unit components. All panels include 25 mm (1 inch) thick 1-1/2lb density insulation for protection and sound attenuation. DB-Aire's unique frame design allows for your selection of either downflow or upflow air patterns in the same compact dimensions.

A-FRAME COIL

Computer selected coil design, using interwoven coil surface increases unit efficiency at low loads. Air is drawn through both circuits of the coil at low velocity providing effective surface exposure with minimum turbulence. This provides greater efficiency in the cooling and dehumidification process.

FAN SECTION

The 381 mm (15 inch) diameter, centrifugal, forward-curved, double-width, double-inlet blower configuration is engineered for quiet, reliable operation. The blowers are AMCA certified and factory certified dynamically balanced. The draw through design ensures even air distribution across the A-frame coil. The draw through design also ensures low internal cabinet pressure losses, and static sealing of the filter section. Fan motors are totally enclosed and mounted on an adjustable slide base.

FILTERS

Computer room air cleanliness is enhanced by standard 100 mm (4 inch) deep pleated 30 percent efficient filters (based on ASHRAE 52-76) which can be easily changed through either

side of the unit. Upflow units are changed from right hand side.

ELECTRICAL REHEAT

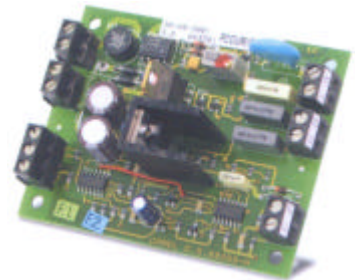
The three stage stainless steel finned tubular reheat coils provide ample capacity to maintain room dry bulb conditions during a system call for dehumidification. Three equal stages give a more accurate controlled response to the requirements of the computer room. The heating elements are protected by thermal safety switches. The three stages of reheat create a noticeable lowering of energy use.

HUMIDIFICATION (OPTIONAL)

The disposable cartridge electric steam generator humidifier provides humidification down stream of the cooling coil. The humidifier is designed to allow all units at any voltage to produce full rated steam output at an optimum low water level.

DB-AIRE UMID INTERFACE

The DB-Aire Umid interface allows the control of humidifiers directly from the DB-Aire microprocessor controller.



Steam Generator Humidifier



DB-AIRE DESIGN FEATURES

COMPRESSORIZED SYSTEMS

The refrigeration system uses two(2) highly efficient and quiet scroll compressors. The scroll compressor has a high EER, low sound power level and is highly reliable. The high efficiency is due to the controlled orbit with floating seals and advanced scroll geometry design. There is no contact of the mechanical parts in the scroll design which eliminates mechanical wear and tear. The motor is 100% cooled by suction gas. A check valve is located directly above the fixed scroll discharge port. This prevents the compressor from running backwards after the power has been switched off (i.e. no rattling and no shut-down noise). The motor is fitted with a thermostat which protects the compressor if a malfunction occurs. The refrigeration circuit includes built in compressor overload protection, filter drier, sight glass, adjustable expansion valve, low pressure override timer, manual reset high pressure control, short-cycle timer and rotalock service valves.

Air Cooled Systems - A wide range of sizes of remote mounted air cooled condensers are available from DB-Aire in vertical discharge.

Condensers are manufactured by DB-Aire and include circuits sized to match the heat rejection of the corresponding compressors. The industrial duty design includes galvanised corrosion resistant housings, high efficiency aluminium finned (optional copper fins available), copper tube coils; coated fan guards, energy efficient thermally protected motors; and integral factory wired and tested control panel.

Water/Glycol Cooled Systems - Include unit mounted condensers for providing the required capacity for heat rejection with minimum water/glycol flow and low total pressure drop.

Dry-Air Cooler For Glycol Systems - A wide range of sizes of remote mounted fluid coolers are available from DB-Aire in vertical discharge. Dry-air coolers are manufactured by DB-Aire and are sized to match the heat rejection of the corresponding unit. The industrial duty design includes galvanised corrosion resistant housings, high efficiency aluminium finned (optional copper fins available), copper tube coils; coated fan guards; energy efficient, thermally protected motors and fan cycling controls with integral factory wired and tested control panel.

DB-AIRE SYSTEMS

AIR COOLED/ GLYCOL COOLED PERFORMANCE DATA

PERFORMANCE AT 35°C (95°F) AMBIENT WITH SPECIFIED CONDENSER/ DRY-AIR COOLER
NET CAPACITY KW AT STANDARD AIRFLOW

MODEL	DBAD/U-09 DBGD/U-09		DBAD/U-11 DBGD/U-11		DBAD/U-13 DBGD/U-13		DBAD/U-14 DBGD/U-14		DBAD/U-16 DBGD/U-16		DBAD/U-19 DGAD/U-19		DBAD/U-22 DBGD/U-22		DBAD/U-26 DBGD/U-26	
	TOTAL	SENS.	TOTAL	SENS.	TOTAL	SENS.	TOTAL	SENS.	TOTAL	SENS.	TOTAL	SENS.	TOTAL	SENS.	TOTAL	SENS.
26.7DB/19.4WB 50% RH	36.6	32.3	45.5	38.8	51.6	45.1	57.9	51.1	67.9	58.7	77.5	66.2	88.1	76.1	102.5	88.5
24.0DB/17.0WB 50% RH	34.1	31.7	42.3	38.1	48.0	44.2	53.8	50.1	63.2	57.5	72.1	64.9	81.9	74.5	95.3	86.8
24.0DB/16.0WB 45% RH	33.4	33.4	41.4	40.7	47.1	47.3	52.8	52.8	61.9	61.5	70.7	69.4	80.3	79.8	93.4	92.8
22.2DB/15.5WB 50% RH	32.4	31.1	40.2	37.3	45.6	43.3	51.1	49.1	60.0	56.4	68.5	63.6	77.8	73.1	90.6	85.0
22.2DB/14.8WB 45% RH	31.1	31.1	38.6	38.6	43.8	43.8	49.1	49.1	57.6	57.6	65.7	65.7	74.7	74.7	86.9	86.9

NET CAPACITY MBH AT STANDARD AIRFLOW

80DB/67.0WB 50% RH	125.0	110.3	155.1	132.5	176.2	153.9	197.5	174.3	231.8	200.2	264.5	225.9	300.5	259.5	349.7	302.0
75DB/62.5WB 50%RH	116.2	108.1	144.3	129.9	163.9	150.8	183.7	170.8	215.6	196.2	246.0	221.4	279.5	254.3	325.2	296.0
75DB/61.0WB 45%RH	113.9	113.9	141.4	138.9	160.6	161.3	180.0	180.0	211.3	209.9	241.1	236.9	273.9	272.1	318.8	316.7
72DB/60.0WB 50%RH	110.4	106.0	137.1	127.3	155.7	147.8	174.5	167.4	204.8	192.3	233.7	217.0	265.5	249.3	309.0	290.1
72DB/58.6WB 45%RH	106.0	106.0	131.6	131.6	149.5	149.5	167.5	167.5	196.6	196.6	224.3	224.3	254.9	254.9	296.6	296.6

DB-AIRE SYSTEMS

WATER COOLED PERFORMANCE DATA

PERFORMANCE AT 29.4°C (85°F) ENTERING WATER TEMPERATURE
NET CAPACITY KW AT STANDARD AIRFLOW

MODEL		DBWD/U-09		DBWD/U-11		DBWD/U-13		DBWD/U-14		DBWD/U-16		DBWD/U-19		DBWD/U-22		DBWD/U-26	
		TOTAL	SENS.	TOTAL	SENS.	TOTAL	SENS.	TOTAL	SENS.	TOTAL	SENS.	TOTAL	SENS.	TOTAL	SENS.	TOTAL	SENS.
26.7DB/19.4WB	50% RH	38.6	33.0	48.0	41.0	54.4	46.0	61.0	52.1	71.4	59.6	82.0	67.7	92.6	77.4	107.7	90.0
24.0DB/17.0WB	50% RH	35.9	32.3	44.6	40.2	50.6	45.0	56.7	51.0	66.4	58.4	76.3	66.4	86.2	75.8	100.2	88.1
24.0DB/16.0WB	45% RH	35.2	34.6	43.8	43.0	49.6	48.2	55.6	54.6	65.1	62.5	74.8	71.0	84.4	81.1	98.2	94.3
22.2DB/15.5WB	50% RH	34.1	31.7	42.4	39.4	48.1	44.1	53.9	50.0	63.1	57.3	72.5	65.1	81.9	74.3	95.2	86.2
22.2DB/14.8WB	45% RH	32.7	30.7	40.7	38.2	46.2	42.8	51.7	48.5	60.6	55.6	69.6	63.1	78.6	72.1	91.4	83.8

NET CAPACITY MBH AT STANDARD AIRFLOW

80DB/67.0WB	50% RH	131.7	112.5	163.8	139.9	185.7	156.8	208.0	177.7	243.7	203.5	279.9	231.1	316.1	264.0	367.5	306.9
75DB/62.5WB	50%RH	122.5	110.2	152.3	137.1	172.7	153.7	193.5	174.1	226.6	199.4	260.3	226.5	294.0	258.7	341.7	300.7
75DB/61.0WB	45%RH	120.0	117.9	149.3	146.7	169.2	164.4	189.6	186.3	222.1	213.4	255.1	242.3	288.1	276.8	334.9	321.8
72DB/60.0WB	50%RH	116.3	108.0	144.7	134.4	164.0	150.6	183.8	170.6	215.3	195.4	247.3	222.0	279.3	253.5	324.7	294.7
72DB/58.6WB	45%RH	111.7	104.8	138.9	130.3	157.5	146.1	176.5	165.5	206.7	189.6	237.4	215.3	268.1	245.9	311.7	285.9

AIR COOLED, WATER/ GLYCOL COOLED

PHYSICAL DATA

MODEL		DB*D/U-09	DB*D/U-11	DB*D/U-13	DB*D/U-14	DB*D/U-16	DB*D/U-19	DB*D/U-22	DB*D/U-26	
LENGTH	MM	1727	1727	1727	2654	2654	2654	2654	2654	
	INS	68	68	68	104.5	104.5	104.5	104.5	104.5	
WIDTH	MM	902	902	902	902	902	902	902	902	
	INS	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	
HEIGHT	MM	1956	1956	1956	1956	1956	1956	1956	1956	
	INS	77	77	77	77	77	77	77	77	
WEIGHT	AIR COOLED	KG	545	630	630	845	895	950	1030	1100
		LB	1200	1381	1381	1859	1969	2090	2266	2420
	WATER COOLED	KG	565	655	655	900	960	1020	1060	1150
		LB	1243	1440	1440	1980	2112	2244	2332	2530
	GLYCOL COOLED	KG	565	655	655	900	960	1020	1060	1150
		LB	1243	1440	1440	1980	2112	2244	2332	2530

ADD 457MM(18 INCH) TO HEIGHT OF UNITS FOR DISCHARGE PLENUM - UP FLOW UNITS ONLY.

BLOWER DATA

STANDARD AIR VOLUME	CMH CFM	8500 5000	10200 6000	11000 6500	13600 8000	15300 9000	17000 10000	18700 11000	22100 13000
STANDARD FAN MOTOR	KW HP	2.2 3.0	3.0 4.0	3.7 5.0	3.0 4.0	3.7 5.0	4.1 5.5	5.6 7.5	7.5 10
OPTIONAL AIR VOLUME	CMH CFM	10200 6000	11000 6500	N/A N/A	15300 9000	17000 10000	20400 12000	22100 13000	N/A N/A
OPTIONAL FAN MOTOR	KW HP	3.0 4.0	3.7 5.0	N/A N/A	3.7 5.0	5.6 7.5	5.6 7.5	7.5 10.0	N/A N/A
EXT. STATIC PRESSURE	MM W.G. INS W.G.	12.7 0.5	12.7 0.5	12.7 0.5	12.7 0.5	12.7 0.5	12.7 0.5	12.7 0.5	12.7 0.5
SIZE (QUANTITY)	MM INS	381x381 (1) 15x15 (1)	381x381 (1) 15x15 (1)	381x381 (1) 15x15 (1)	381x381 (2) 15x15 (2)	381x381 (2) 15x15 (2)	381x381 (2) 15x15 (2)	381x381 (2) 15x15 (2)	381x381 (2) 15x15 (2)

COMPRESSOR DATA

QUANTITY OF COMPRESSORS		2	2	2	2	2	2	2	2
REFRIGERANT		R 22	R 22	R 22	R 22	R 22	R 22	R 22	R 22
HORSEPOWER EACH	50HZ 60HZ	5.5 5.0	7.0 5.5	8.0 7.0	9.0 8.0	10.0 9.0	12.0 10.0	13.0 12.0	15.0 13.0

EVAPORATOR DATA @ STANDARD AIRFLOW

FACE AREA	M ²	1.13	1.13	1.13	2.27	2.27	2.27	2.27	2.27
	FT ²	12.2	12.2	12.2	24.4	24.4	24.4	24.4	24.4
ROWS OF COIL		3	4	5	3	3	4	4	4
FACE VELOCITY	M/S	2.09	2.50	2.71	1.67	1.88	2.09	2.29	2.71
	FPM	409	491	532	327	368	409	450	532

DB-AIRE SYSTEMS

REHEAT SECTION

MODEL	DB*D/U-09	DB*D/U-11	DB*D/U-13	DB*D/U-14	DB*D/U-16	DB*D/U-19	DB*D/U-22	DB*D/U-26
STANDARD ELECTRIC KW	15.0	15.0	15.0	22.5	22.5	22.5	22.5	22.5
MBH	51.2	51.2	51.2	76.8	76.8	76.8	76.8	76.8

HUMIDIFIER SECTION (OPTIONAL)

STANDARD STEAM	KG/HR	4.6	4.6	4.6	13.6	13.6	13.6	13.6	13.6
GENERATOR	LB/HR	10.0	10.0	10.0	30.0	30.0	30.0	30.0	30.0
CAPACITY	KW	3.6	3.6	3.6	9.4	9.4	9.4	9.4	9.4

FILTERS STANDARD 100MM (4 INCH) THICK 30% ASHRAE STANDARD 52-76 (DOWNFLOW)

508MMx635MM (20"x 25")QTY	-	-	-	5	5	5	5	5
406MMx635MM (16"x 25")QTY	4	4	4	-	-	-	-	-

FILTERS STANDARD 100MM (4 INCH) THICK 30% ASHRAE STANDARD 52-76 (UPFLOW)

508MMx635MM (20"x 25")QTY	-	-	-	4	4	4	4	4
406MMx635MM (16"x 25")QTY	3	3	3	-	-	-	-	-

CONNECTION SIZE

LIQUID LINE O.D COPPER (2/UNIT)	INS	1/2	1/2	1/2	1/2	5/8	5/8	5/8	5/8
HOT GAS LINE O.D COPPER (2/UNIT)	INS	1/2	3/4	7/8	7/8	7/8	7/8	7/8	7/8
CONDENSER WATER - IN OUT	INS	1 5/8	1 5/8	1 5/8	1 5/8	2 1/8	2 1/8	2 1/8	2 1/8
HUMIDIFIER SUPPLY	INS	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
CONDENSATE DRAIN	INS	7/8	7/8	7/8	7/8	7/8	7/8	7/8	7/8

NOTE : REFER TO OPERATION AND MAINTENANCE FOR RECOMMENDED PIPE SIZING BETWEEN INDOOR AND OUTDOOR UNIT.

AIR COOLED

AIR COOLED CONDENSERS STD SELECTIONS AT 35°C(95°F) AMBIENT, SEA LEVEL*

MODEL	DBAD/U-09	DBAD/U-11	DBAD/U-13	DBAD/U-14	DBAD/U-16	DBAD/U-19	DBAD/U-22	DBAD/U-26
MODEL NUMBER	DBRC-10	DBRC-13	DBRC-17	DBRC-17	DBRC-20	DBRC-20	DBRC-26	DBRC-30

*SEE 'REMOTE HEAT EXCHANGER' SECTION FOR MORE INFORMATION.

WATER COOLED

CONDENSER WATER REQUIREMENTS

MAXIMUM DESIGN WATER PRESSURE 1033 KPA

MODEL	DBWD/U-09	DBWD/U-11	DBWD/U-13	DBWD/U-14	DBWD/U-16	DBWD/U-19	DBWD/U-22	DBWD/U-26	
29.4°C/85°F EWT	LPS/PD IN KPA GPM/PD IN PSI	1.7 / 34.5 26.2 / 5.0	2.5 / 41.4 40.0 / 6.0	2.7 / 48.3 42.0 / 7.0	2.7 / 48.3 42.0 / 7.0	2.7 / 48.3 43.0 / 7.0	3.2 / 48.3 50.7 / 7.0	3.3 / 48.3 52.5 / 7.0	4.0 / 72.4 62.6 / 10.5
23.9°C/75°F EWT	LPS/PD IN KPA GPM/PD IN PSI	1.2 / 27.6 18.6 / 4.0	1.7 / 27.6 27.3 / 4.0	1.9 / 31.0 29.7 / 4.5	1.9 / 31.0 29.7 / 4.5	1.9 / 31.0 30.7 / 4.5	2.2 / 31.0 35.5 / 4.5	2.3 / 31.0 37.1 / 4.5	2.9 / 48.3 46.4 / 7.0
18.3°C/65°F EWT	LPS/PD IN KPA GPM/PD IN PSI	0.8 / 24.1 11.9 / 3.5	1.1 / 24.1 17.0 / 3.5	1.2 / 27.6 19.0 / 4.0	1.2 / 27.6 19.0 / 4.0	1.3 / 27.6 20.0 / 4.0	1.5 / 27.6 23.0 / 4.0	1.5 / 27.6 23.8 / 4.0	1.9 / 41.4 29.7 / 6.0

GLYCOL COOLED

DRY-AIR COOLER SELECTION AT 35°C (95°F) AMBIENT, SEA LEVEL

MODEL	DBGD/U-09	DBGD/U-11	DBGD/U-13	DBGD/U-14	DBGD/U-16	DBGD/U-19	DBGD/U-22	DBGD/U-26	
MODEL NUMBER FLUID COOLER	DBFC-17	DBFC-21	DBFC-24	DBFC-28	DBFC-30	DBFC-37	DBFC-40	DBFC-24(2)	
GLYCOL FLOW RATE	LPS GPM	1.7 27	1.9 30	2.2 35	2.5 40	3.5 56	3.9 62	4.4 70	5.0 80
PRESSURE DROP	KPA PSI	20.0 2.9	25.5 3.7	21.4 3.1	18.6 2.8	24.5 3.5	26.2 3.8	20.7 3.0	21.4 3.1

DB-AIRE SYSTEMS

AIR COOLED, WATER/ GLYCOL COOLED ELECTRICAL DATA

ELECTRICAL BASED ON STANDARD UNITS (WITH ELECTRIC REHEAT AND ELECTRIC HUMIDIFICATION)

MODEL		DB*D/U-09	DB*D/U-11	DB*D/U-13	DB*D/U-14	DB*D/U-16	DB*D/U-19	DB*D/U-22	DB*D/U-26
380/3/50	FLA	44.3	53.7	59.6	72.8	78.9	77.3	90.1	103.8
	MCA	52	62	69	85	92	90	104	119
	MFS	60.0	70.0	70.0	90.0	100.0	90.0	110.0	125.0
415/3/50	FLA	40.5	49.1	54.5	66.5	72.2	70.7	82.5	95.0
	MCA	48	57	63	78	84	82	85	109
	MFS	50.0	60.0	70.0	80.0	90.0	90.0	100.0	125.0
208/3/60	FLA	89.3	106.3	114.3	143.1	153.4	158.0	177.9	205.1
	MCA	105	123	132	167	179	184	205	235
	MFS	110.0	125.0	150.0	175.0	200.0	200.0	225.0	250.0
230/3/60	FLA	80.8	96.1	103.4	129.4	138.7	142.9	160.9	185.5
	MCA	95	111	119	151	162	166	186	212
	MFS	100.0	125.0	125.0	175.0	175.0	175.0	200.0	250.0
460/3/60	FLA	40.5	47.1	51.2	63.3	68.7	70.1	80.0	91.6
	MCA	47	55	59	74	80	82	92	105
	MFS	50.0	60.0	60.0	80.0	90.0	90.0	100.0	110.0

ELECTRICAL BASED ON ELECTRIC HUMIDIFICATION WITHOUT ELECTRIC REHEAT

380/3/50	FLA	27.0	36.4	42.3	53.0	59.1	57.4	70.2	84.0
	MCA	30	41	47	61	67	65	79	94
	MFS	35.0	50.0	60.0	70.0	80.0	70.0	90.0	110.0
415/3/50	FLA	24.6	33.2	38.7	48.3	54.0	52.5	64.2	76.7
	MCA	28	37	43	55	61	60	72	86
	MFS	30.0	45.0	50.0	60.0	70.0	70.0	80.0	100.0
208/3/60	FLA	57.7	74.7	82.6	106.7	117.1	121.6	141.5	168.8
	MCA	65	84	92	122	133	138	160	190
	MFS	80.0	100.0	110.0	150.0	150.0	150.0	200.0	225.0
230/3/60	FLA	52.1	67.5	74.7	96.5	105.9	110.0	128.0	152.7
	MCA	59	76	84	110	120	125	145	171
	MFS	70.0	90.0	100.0	125.0	125.0	150.0	175.0	200.0
460/3/60	FLA	26.2	32.7	36.9	47.0	52.4	53.7	63.5	75.2
	MCA	30	37	41	54	60	61	72	84
	MFS	35.0	45.0	50.0	60.0	70.0	70.0	90.0	100.0

ELECTRICAL BASED ON NO ELECTRIC REHEAT NO ELECTRIC HUMIDIFICATION

380/3/50	FLA	21.5	30.9	36.8	38.7	44.8	43.1	55.9	69.7
	MCA	24	34	40	43	49	47	61	76
	MFS	30.0	45.0	50.0	50.0	60.0	60.0	80.0	100.0
415/3/50	FLA	19.6	28.2	33.7	35.2	40.9	39.4	51.1	63.6
	MCA	21	31	37	39	45	43	56	70
	MFS	25.0	40.0	50.0	50.0	60.0	50.0	70.0	90.0
208/3/60	FLA	47.7	64.7	72.6	80.6	91.0	95.5	115.4	142.8
	MCA	52	71	80	89	101	106	127	157
	MFS	70.0	90.0	100.0	110.0	125.0	125.0	175.0	200.0
230/3/60	FLA	43.1	58.5	65.7	72.9	82.3	86.4	104.4	129.1
	MCA	47	64	72	81	91	95	115	142
	MFS	60.0	80.0	90.0	110.0	125.0	125.0	150.0	175.0
460/3/60	FLA	21.7	28.2	32.4	35.2	40.6	41.9	51.7	63.4
	MCA	24	31	36	39	45	46	57	70
	MFS	30.0	40.0	45.0	50.0	60.0	60.0	70.0	90.0

FAN MOTOR FULL LOAD AMPS @ STANDARD AIR FLOW

380/3/50	5.1	6.7	8.4	6.7	8.4	8.7	11.9	15.7
415/3/50	4.6	6.2	7.7	6.2	7.7	8.0	10.9	14.4
208/3/60	9.0	11.8	14.0	11.8	14.0	15.3	20.6	29.1
230/3/60	8.1	10.7	12.7	10.7	12.7	13.8	18.6	26.3
460/3/60	4.1	5.4	6.4	5.4	6.4	6.9	9.3	13.2

COMPRESSOR FULL LOAD AMPS

380/3/50	8.2	12.1	14.2	16.0	18.2	17.2	22.0	27.0
415/3/50	7.5	11.0	13.0	14.5	16.6	15.7	20.1	24.6
208/3/60	19.4	26.4	29.3	34.4	38.4	40.1	47.4	56.8
230/3/60	17.5	23.9	26.5	31.1	34.8	36.3	42.9	51.4
460/3/60	8.8	11.4	13.0	14.9	17.1	17.5	21.2	25.1

*A = AIR COOLED
FLA = FULL LOAD AMPACITY

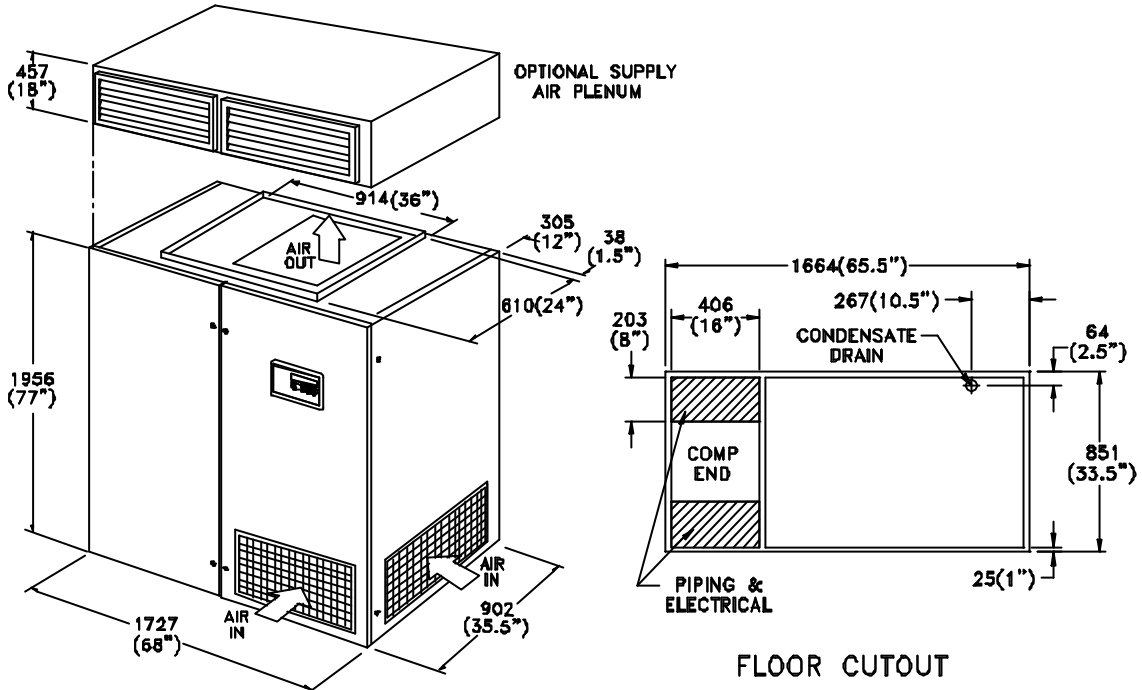
W = WATER COOLED
MCA = MINIMUM CIRCUIT AMPACITY

G = GLYCOL COOLED
MFS = MAXIMUM FUSE SIZE

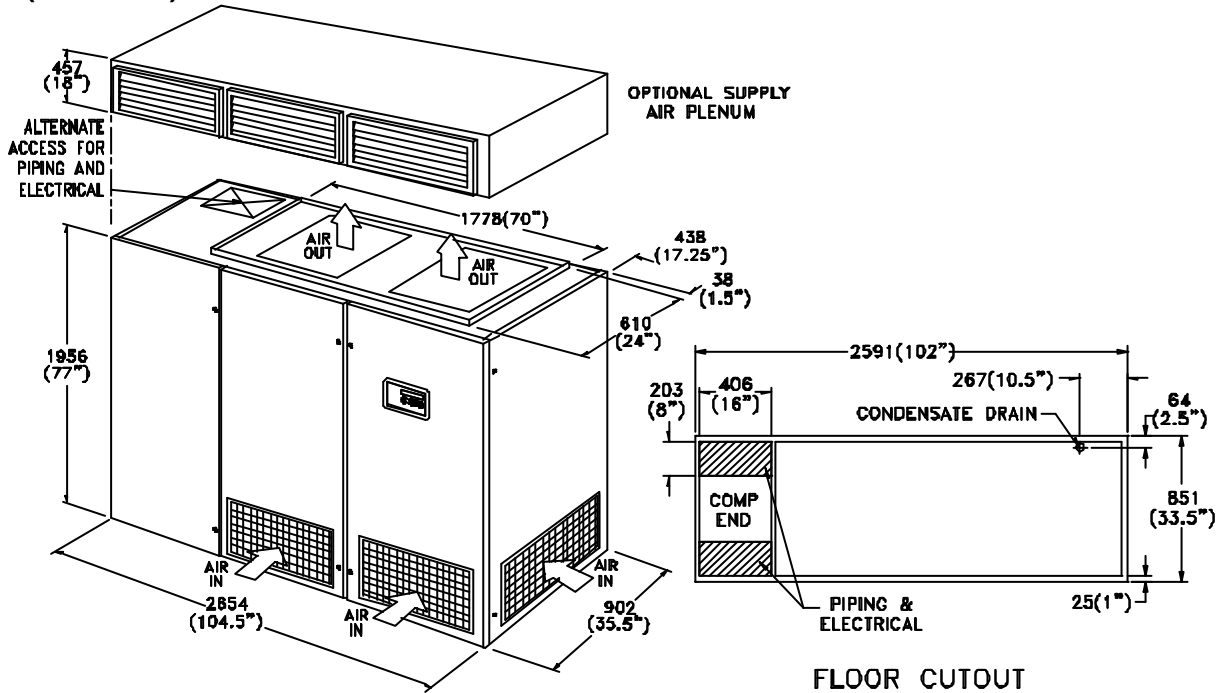
DB-AIRE SYSTEMS

AIR COOLED, WATER/ GLYCOL COOLED DIMENSIONAL DATA

MODEL 9, 11, 13 TON (UP FLOW)



MODEL 14, 16, 19, 22, 26 TON (UP FLOW)

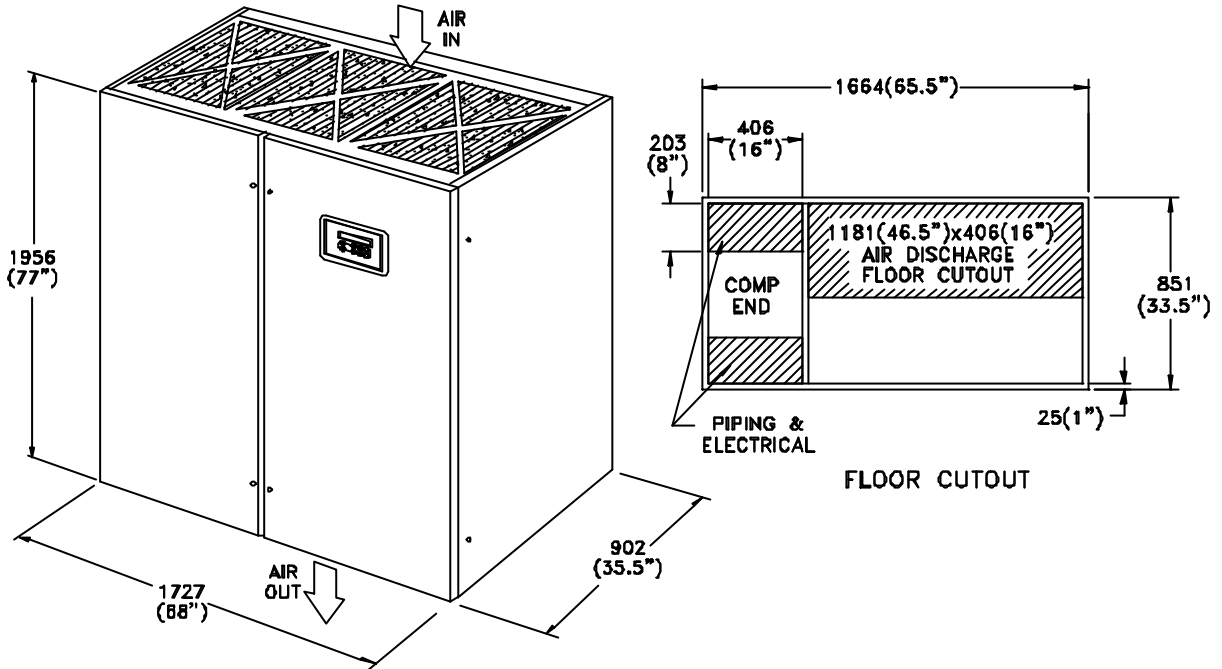


NOTES : 1.) MINIMUM SPACE REQUIRED IS 914MM (36") ON FRONT, RIGHT AND LEFT SIDES FOR SERVICE ACCESS.
2.) ALL DIMENSIONS ARE IN MILLIMETER (INCHES).

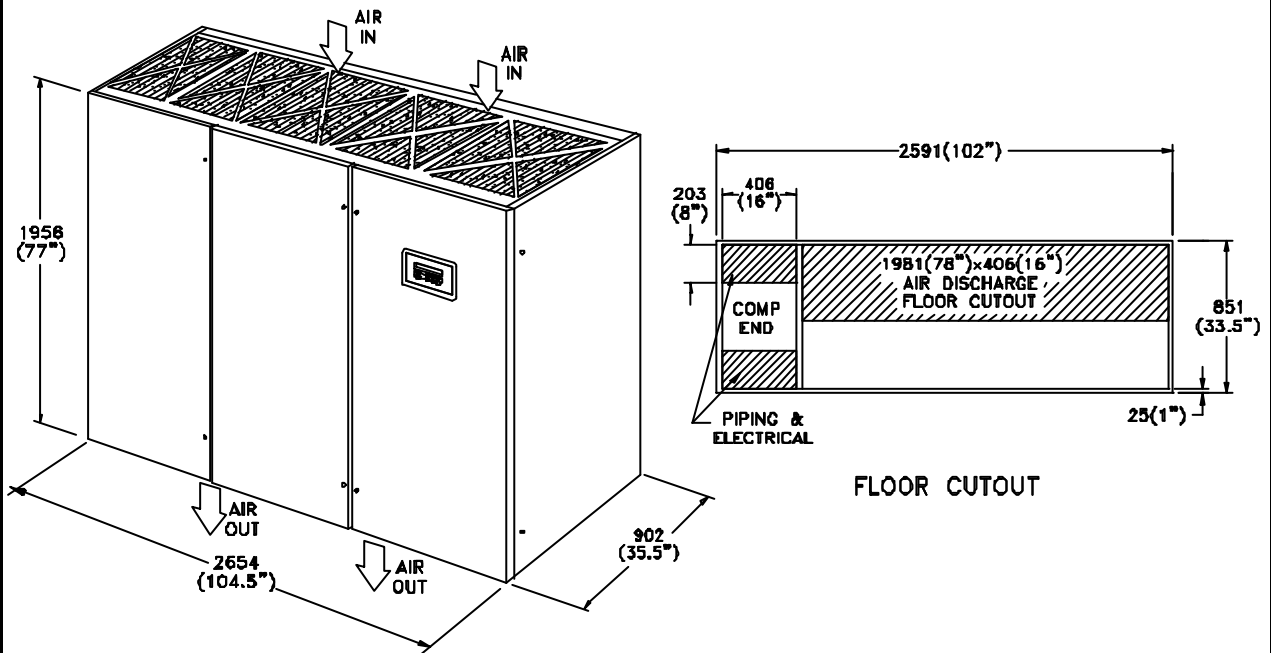
DB-AIRE SYSTEMS

AIR COOLED, WATER/ GLYCOL COOLED DIMENSIONAL DATA

**MODEL 9, 11, 13 TON
(DOWN FLOW)**



**MODEL 14, 16, 19, 22, 26 TON
(DOWN FLOW)**



NOTES : 1.) MINIMUM SPACE REQUIRED IS 914MM (36") ON FRONT, RIGHT AND LEFT SIDES FOR SERVICE ACCESS.
2.) ALL DIMENSIONS ARE IN MILLIMETER (INCHES).

CHILLED WATER DESIGN FEATURES

DB-TEMP MODELS DB-AIRE MODELS

FRAME AND CABINET

The heliarc welded structural steel frame provides for maximum strength and ease of access. Side and front panels can be easily opened and removed with quarter-turn fasteners allowing full access to all unit components. All panels include 25 mm (1 inch) thick 1 1/2 lb density insulation for protection and sound attenuation. DB-Aire's unique frame design allows for your selection of either downflow or upflow air patterns in the same compact dimensions.

COIL SECTION

The coil is designed for draw through application with large face areas for low velocity to reduce turbulence and provide greater efficiency in the cooling and dehumidification process. The chilled water flow is controlled by a three-way modulating mixing valve for accurate and economical temperature and dehumidification control.

FAN SECTION

The 380mm (15 inch) diameter, centrifugal forward-curved, double-width, double-inlet blower configuration is engineered for quiet, reliable operation. The blowers are AMCA certified and factory certified dynamically balanced. All DB-Aire models have a two belt drive system to assure reliability should one belt fail. The draw through design ensures even air distribution across the chilled water coil. It also ensures low internal cabinet pressure losses, and static sealing of the filter section. The fan motor is totally enclosed and is mounted on an adjustable slide base.

FILTERS

Computer room air cleanliness is enhanced by pleated 30 percent efficient filters (based on ASHRAE 52-76). Standard DB-Aire filters are 100mm (4 inch) deep, and may be changed through the side of the unit. DB Temp filters are

50mm (2 inch) deep and are changed by opening the front panel.

ELECTRICAL REHEAT

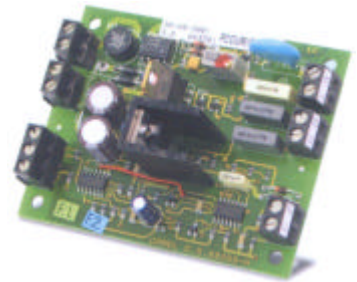
The three stage stainless steel finned tubular reheat coils provide ample capacity to maintain room dry bulb conditions during a system call for dehumidification. Three equal stages give a more accurate controlled response to the requirements of the computer room. The heating elements are protected by thermal safety switches. The three stages of reheat create a noticeable lowering of energy use.

HUMIDIFICATION (OPTIONAL)

The disposable cartridge electric steam generator humidifier provides humidification down stream of the cooling coil. The humidifier is designed to allow all units at any voltage to produce full rated steam output at an optimum low water level.

DB-AIRE UMID INTERFACE

The DB-Aire Umid interface allows the control of humidifiers directly from the DB-Aire microprocessor controller.



Steam Generator Humidifier



DB-TEMP CHILLED WATER SYSTEMS

CHILLED WATER PERFORMANCE DATA

PERFORMANCE WITH 7.2°C (45°F) CHILLED WATER AT SPECIFIED FLOW RATE

CAPACITY DATA (kW) AT 7.2 DEGREE CELSIUS CHILLED WATER

MODEL		DBTCD/U-02	DBTCD/U-03	DBTCD/U-04	DBTCD/U-05
26.7DB/19.4WB 50% RH	TOTAL	11.3	15.1	21.2	24.8
	SENSIBLE	7.9	11.0	15.3	18.3
	FLOW RATE L/SEC	0.5	0.6	0.9	1.1
	PRESSURE DROP KPA	20.7	33.8	15.2	20.0
23.9DB/16.9WB 50% RH	TOTAL	7.9	10.6	14.9	17.5
	SENSIBLE	6.8	9.5	13.1	15.8
	FLOW RATE L/SEC	0.3	0.5	0.6	0.8
	PRESSURE DROP KPA	11.0	18.6	8.3	11.0
23.9DB/16.1WB 45% RH	TOTAL	7.3	9.9	13.9	16.4
	SENSIBLE	7.1	9.9	13.7	16.4
	FLOW RATE L/SEC	0.3	0.4	0.6	0.7
	PRESSURE DROP KPA	9.7	16.5	6.9	9.7
22.2DB/15.6WB 50% RH	TOTAL	6.4	8.7	12.1	14.3
	SENSIBLE	6.2	8.7	12.0	14.3
	FLOW RATE L/SEC	0.3	0.4	0.5	0.6
	PRESSURE DROP KPA	8.3	13.1	5.5	7.6
22.2DB/14.8WB 45% RH	TOTAL	6.1	8.4	11.7	13.9
	SENSIBLE	6.1	8.4	11.7	13.9
	FLOW RATE L/SEC	0.3	0.4	0.5	0.6
	PRESSURE DROP KPA	7.6	12.4	5.5	6.9

NET CAPACITY MBH AT STANDARD AIRFLOW

80DB/67WB 50% RH	TOTAL	38.6	51.4	72.5	84.7
	SENSIBLE	27.1	37.6	52.1	62.4
	FLOW RATE GPM	7.7	10.3	14.5	17.0
	PRESSURE DROP PSI	3.0	4.9	2.2	2.9
75DB/62.5WB 50% RH	TOTAL	27.0	36.2	50.8	59.7
	SENSIBLE	23.2	32.4	44.7	53.8
	FLOW RATE GPM	5.4	7.3	10.2	11.9
	PRESSURE DROP PSI	1.6	2.7	1.2	1.6
75DB/61WB 45% RH	TOTAL	24.9	33.8	47.3	55.9
	SENSIBLE	24.2	33.8	46.9	55.9
	FLOW RATE GPM	5.0	6.8	9.5	11.2
	PRESSURE DROP PSI	1.4	2.4	1.0	1.4
72DB/60WB 50% RH	TOTAL	21.9	29.6	41.4	48.8
	SENSIBLE	21.0	29.6	40.8	48.8
	FLOW RATE GPM	4.4	5.9	8.3	9.8
	PRESSURE DROP PSI	1.2	1.9	0.8	1.1
72DB/58.6WB 45% RH	TOTAL	20.9	28.7	39.9	47.3
	SENSIBLE	20.9	28.7	39.9	47.3
	FLOW RATE GPM	4.2	5.7	8.0	9.5
	PRESSURE DROP PSI	1.1	1.8	0.8	1.0

DB-TEMP CHILLED WATER SYSTEMS

BLOWER DATA

MODEL		DBTCD/U-02	DBTCD/U-03	DBTCD/U-04	DBTCD/U-05
STANDARD AIR VOLUME	CMH CFM	1700 1000	2550 1500	3400 2000	4250 2500
STANDARD FAN MOTOR	KW HP	0.75 1.00	0.75 1.00	0.75 1.00	1.12 1.50
OPTIONAL AIR VOLUME	CMH CFM	2550 1500	3060 1800	4250 2500	4590 2700
OPTIONAL FAN MOTOR	KW HP	1.12 1.50	1.12 1.50	1.12 1.50	1.50 2.00
EXT. STATIC PRESSURE	MM W.G. ING W.G.	7.6 0.3	7.6 0.3	7.6 0.3	7.6 0.3
SIZE (QUANTITY)	MM INS	254 x 254 (1) 10 x 10 (1)	254 x 254 (1) 10 x 10 (1)	254 x 254 (1) 10 x 10 (1)	254 x 254 (1) 10 x 10 (1)

CHILLED WATER COIL DATA @ STANDARD AIRFLOW

FACE AREA	M ² FT ²	0.28 3	0.28 3	0.46 5	0.46 5
ROWS OF COIL		4	4	4	4
FACE VELOCITY	M/S FPM	1.69 333	2.54 500	2.03 400	2.54 500

REHEAT SECTION

STANDARD ELECTRIC	KW MBH	6.0 20.5	12.0 41.0	12.0 41.0	12.0 41.0
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HUMIDIFIER SECTION (OPTIONAL)

STANDARD STEAM	KG/HR	4.6	4.6	4.6	4.6
GENERATOR CAPACITY	LB/HR KW	10 3.6	10 3.6	10 3.6	10 3.6

FILTERS STANDARD 50 MM (2 INCH) THICK 30% ASHRAE STANDARD 52-76

610 x 610 (24 x 24)	1	1	1	1
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CONNECTION SIZES

CHILLED WATER	INS(OD)	1 1/8	1 1/8	1 1/8	1 1/8
HUMIDIFIER	INS	1/4	1/4	1/4	1/4
CONDENSATE DRAIN	INS(OD)	7/8	7/8	7/8	7/8

U – UPFLOW

D - DOWN FLOW

DB-TEMP CHILLED WATER SYSTEMS

CHILLED WATER ELECTRICAL DATA

ELECTRICAL BASED ON STANDARD UNITS (WITH ELECTRIC REHEAT AND ELECTRIC HUMIDIFIER)

MODEL		DBTCD/U-02	DBTCD/U-03	DBTCD/U-04	DBTCD/U-05
380/3/50	FLA	10.9	20.0	20.0	21.0
	MCA	13	25	25	26
	MFS	15.0	25.0	25.0	30.0
415/3/50	FLA	10.0	18.4	18.4	19.3
	MCA	12	23	23	23
	MFS	12.0	25.0	25.0	25.0
208/3/60	FLA	20.2	36.8	36.8	38.3
	MCA	24	45	45	47
	MFS	25.0	45.0	45.0	50.0
230/3/60	FLA	18.3	33.3	33.3	34.6
	MCA	22	41	41	42
	MFS	25.0	45.0	45.0	45.0
460/3/60	FLA	9.1	16.7	16.7	17.3
	MCA	11	20	20	21
	MFS	12.0	20.0	20.0	25.0

ELECTRICAL BASED ON ELECTRIC HUMIDIFICATION WITHOUT ELECTRIC REHEAT

380/3/50	FLA	7.3	7.3	7.3	8.3
	MCA	9	9	9	10
	MFS	10.0	10.0	10.0	10.0
415/3/50	FLA	6.7	6.7	6.7	7.6
	MCA	8	8	8	9
	MFS	10.0	10.0	10.0	10.0
208/3/60	FLA	13.5	13.5	13.5	15.0
	MCA	16	16	16	17
	MFS	17.5	17.5	17.5	17.5
230/3/60	FLA	12.2	12.2	12.2	13.5
	MCA	14	14	14	16
	MFS	15.0	15.0	15.0	17.5
460/3/60	FLA	6.1	6.1	6.1	6.7
	MCA	7	7	7	8
	MFS	10.0	10.0	10.0	10.0

ELECTRICAL BASED ON NO ELECTRIC REHEAT NO ELECTRIC HUMIDIFICATION

380/3/50	FLA	1.8	1.8	1.8	2.8
	MCA	2	2	2	4
	MFS	6.0	6.0	6.0	10.0
415/3/50	FLA	1.7	1.7	1.7	2.6
	MCA	2	2	2	3
	MFS	6.0	6.0	6.0	10.0
208/3/60	FLA	3.5	3.5	3.5	5.0
	MCA	4	4	4	6
	MFS	12.0	12.0	12.0	15.0
230/3/60	FLA	3.2	3.2	3.2	4.5
	MCA	4	4	4	6
	MFS	10.0	10.0	10.0	15.0
460/3/60	FLA	1.6	1.6	1.6	1.6
	MCA	2	2	2	3
	MFS	6.0	6.0	6.0	10.0

*A-AIR COOLED W-WATER COOLED G-GLYCOL COOLED
 FLA = FULL LOAD AMPACITY MCA = MINIMUM CIRCUIT AMPACITY MFS = MAXIMUM FUSE SIZE

DB-AIRE CHILLED WATER SYSTEMS

CHILLED WATER PERFORMANCE DATA

PERFORMANCE WITH 7.2°C(45°F) CHILLED WATER AT SPECIFIED FLOW RATE
NET CAPACITY KW AT STANDARD AIRFLOW

MODEL		DBCD/U-07	DBCD/U-09	DBCD/U-11	DBCD/U-13	DBCD/U-15	DBCD/U-18	DBCD/U-22	DBCD/U-26	DBCD-30
26.7DB/19.4WB 50% RH	TOTAL	39.8	56.3	66.7	74.9	88.3	112.5	138.0	153.6	183.9
	SENSIBLE	32.2	42.5	47.6	51.5	64.9	78.7	94.0	105.9	124.3
	FLOW RATE L/SEC	1.7	2.4	2.9	3.2	3.8	4.9	6.0	6.6	7.9
	PRESSURE DROP KPA	14.5	22.8	31.7	40.7	47.6	80.7	129.0	35.9	53.1
23.9DB/16.9WB 50% RH	TOTAL	28.2	39.7	46.9	52.9	62.0	79.4	98.0	108.5	130.4
	SENSIBLE	28.2	36.9	40.8	43.9	55.9	67.4	80.1	90.3	105.5
	FLOW RATE L/SEC	1.2	1.7	2.0	2.3	2.7	3.4	4.2	4.7	5.6
	PRESSURE DROP KPA	11.0	15.9	20.0	24.8	29.0	46.9	73.8	22.8	31.7
23.9DB/16.1WB 45% RH	TOTAL	27.2	37.5	43.6	48.6	57.9	73.0	89.4	99.7	119.0
	SENSIBLE	27.2	37.5	42.8	45.5	57.9	70.0	82.7	93.9	108.9
	FLOW RATE L/SEC	1.2	1.6	1.9	2.1	2.5	3.1	3.9	4.3	5.1
	PRESSURE DROP KPA	11.0	14.5	18.6	22.8	26.2	41.4	64.2	20.7	28.3
22.2DB/15.6WB 50% RH	TOTAL	23.3	32.6	38.2	42.9	50.7	64.5	79.5	88.1	105.8
	SENSIBLE	23.3	32.6	37.2	39.7	50.7	61.2	72.5	81.9	95.4
	FLOW RATE L/SEC	1.0	1.4	1.6	1.8	2.2	2.8	3.4	3.8	4.6
	PRESSURE DROP KPA	9.7	13.1	15.9	20.0	22.1	34.5	53.8	17.9	24.1
22.2DB/14.8WB 45% RH	TOTAL	23.3	31.9	36.8	40.7	48.9	61.2	74.6	83.5	99.0
	SENSIBLE	23.3	31.9	36.8	40.7	48.9	61.2	74.6	83.5	99.0
	FLOW RATE L/SEC	1.0	1.4	1.6	1.8	2.1	2.6	3.2	3.6	4.3
	PRESSURE DROP KPA	9.7	13.1	15.9	18.6	21.4	32.4	20.6	16.6	22.8

NET CAPACITY MBH AT STANDARD AIRFLOW

80DB/67WB 50% RH	TOTAL	135.8	192.1	227.4	255.5	301.3	383.9	471.1	523.9	627.7
	SENSIBLE	109.8	145.0	162.5	175.8	221.4	268.5	320.7	361.4	424.0
	FLOW RATE GPM	27.2	38.5	45.5	51.2	60.3	76.9	94.3	104.9	125.7
	PRESSURE DROP PSI	2.1	3.3	4.6	5.9	6.9	11.7	18.7	5.2	7.7
75DB/62.5WB 50% RH	TOTAL	96.2	135.3	160.1	180.6	211.5	270.8	334.2	370.2	445.0
	SENSIBLE	96.2	125.8	139.3	149.9	190.7	230.0	273.2	308.1	360.1
	FLOW RATE GPM	19.3	27.1	32.0	36.1	42.3	54.2	66.9	74.1	89.1
	PRESSURE DROP PSI	1.6	2.3	2.9	3.6	4.2	6.8	10.7	3.3	4.6
75DB/61WB 45% RH	TOTAL	92.8	127.9	148.8	165.7	197.5	248.9	305.0	340.1	406.0
	SENSIBLE	92.8	127.9	145.9	155.4	197.5	238.8	282.1	320.2	371.7
	FLOW RATE GPM	18.6	25.6	29.8	33.2	39.5	49.8	61.1	68.1	81.3
	PRESSURE DROP PSI	1.6	2.1	2.7	3.3	3.8	6.0	9.3	3.0	4.1
72DB/60WB 50% RH	TOTAL	79.6	111.1	130.5	146.5	173.0	220.1	271.3	300.6	360.8
	SENSIBLE	79.6	111.1	127.0	135.6	173.0	208.9	247.4	279.4	325.6
	FLOW RATE GPM	15.9	22.2	26.1	29.3	34.6	44.1	54.3	60.2	72.2
	PRESSURE DROP PSI	1.4	1.9	2.3	2.9	3.2	5.0	7.8	2.6	3.5
72DB/58.6WB 45% RH	TOTAL	79.4	108.9	125.4	138.7	167.0	208.9	254.4	284.8	337.9
	SENSIBLE	79.4	108.9	125.4	138.7	167.0	208.9	254.4	284.8	337.9
	FLOW RATE GPM	15.9	21.8	25.1	27.8	33.4	41.8	50.9	57.0	67.7
	PRESSURE DROP PSI	1.4	1.9	2.3	2.7	3.1	4.7	7.1	2.4	3.3

DB-AIRE CHILLED WATER SYSTEMS

BLOWER DATA

MODEL		DBCD/U-07	DBCD/U-09	DBCD/U-11	DBCD/U-13	DBCD/U-15	DBCD/U-18	DBCD/U-22	DBCD/U-26	DBCD-30
STANDARD AIR VOLUME	CMH	8925	10200	10200	10200	16150	17000	18700	21080	23800
	CFM	5250	6000	6000	6000	9500	10000	11000	12400	14000
STANDARD FAN MOTOR	KW	2.2	3.0	3.0	3.7	3.7	5.6	5.6	7.5	7.5
	HP	3.0	4.0	4.0	5.0	5.0	7.5	7.5	10.0	10.0
OPTIONAL AIR VOLUME	CMH	10200	11900	11900	11560	18360	19210	20400	23120	N/A
	CFM	6000	7000	7000	6800	10800	11300	12000	13600	N/A
OPTIONAL FAN MOTOR	KW	3.0	3.7	3.7	5.6	5.6	7.5	7.5	7.5	N/A
	HP	4.0	5.0	5.0	7.5	7.5	10.0	10.0	10.0	N/A
EXT. STATIC PRESSURE	MM WG	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7
	INS WG	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
SIZE (QUANTITY)	MM	381x381(1)	381x381(1)	381x381(1)	381x381(1)	381x381(2)	381x381(2)	381x381(2)	381x381(2)	457x457(2)
	INS	15x15(1)	15x15(1)	15x15(1)	15x15(1)	15x15(2)	15x15(2)	15x15(2)	15x15(2)	18x18(2)

CHILLED WATER COIL DATA @ STANDARD AIRFLOW

FACE AREA	M ²	1.16	1.16	1.16	1.16	2.32	2.32	2.32	2.32	2.88
	FT ²	12.50	12.50	12.50	12.50	25.00	25.00	25.00	25.00	31.00
ROWS OF COIL		3	4	5	6	3	4	5	6	6
FACE VELOCITY	M/S	2.14	2.44	2.44	2.44	1.93	2.03	2.24	2.52	2.30
	FPM	420	480	480	480	380	400	440	496	452

CHILLED WATER CONTROLS (DESIGN PRESSURE 1722 KPA (HIGH PRESSURE OPTIONAL))

CONTROL METHOD	MODULATE									
VALVE BODY	3-WAY									
VALVE CV	10	10	16	25	25	40	40	40	40	40
VALVE SIZE	MM(IN)	25.4(1)	25.4(1)	32.1(1¼)	38.0(1½)	38.0(1½)	51.0(2)	51.0(2)	51.0(2)	51.0(2)

REHEAT SECTION

STANDARD ELECTRIC	KW	15.0	15.0	15.0	15.0	22.5	22.5	22.5	22.5	22.5
	MBH	51.2	51.2	51.2	51.2	76.8	76.8	76.8	76.8	76.8

HUMIDIFIER SECTION (OPTIONAL)

STANDARD STEAM GENERATOR CAPACITY	KG/HR	4.5	4.5	4.5	4.5	13.6	13.6	13.6	13.6	13.6
	LB/HR	10	10	10	10	30	30	30	30	30
	KW	3.6	3.6	3.6	3.6	9.4	9.4	9.4	9.4	9.4

FILTERS STANDARD 100 MM (4INCH) THICK 30% ASHRAE STANDARD 52-75

508x635 (20x25)	-	-	-	-	1	1	1	1	5
406x635 (16x25)	3	3	3	3	4	4	4	4	-

CONNECTION SIZES

CHILLED WATER	INS(OD)	1 1/8	1 1/8	1 3/8	1 5/8	1 5/8	2 1/8	2 1/8	2 1/8	2 1/8
HUMIDIFIER	INS(OD)	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
CONDENSATE DRAIN	INS(OD)	7/8	7/8	7/8	7/8	7/8	7/8	7/8	7/8	7/8

DB-AIRE CHILLED WATER SYSTEMS

CHILLED WATER ELECTRICAL DATA

ELECTRICAL BASED ON STANDARD UNITS (WITH ELECTRIC REHEAT AND ELECTRIC HUMIDIFIER)

MODEL		DBCD/U-07	DBCD/U-09	DBCD/U-11	DBCD/U-13	DBCD/U-15	DBCD/U-18	DBCD/U-22	DBCD/U-26	DBCD 30
380/3/50	FLA	27.9	29.5	29.5	31.2	42.6	46.1	46.1	49.9	49.9
	MCA	34	35	35	37	51	55	55	58	58
	MFS	35.0	35.0	35.0	40.0	60.0	60.0	60.0	60.0	60.0
415/3/50	FLA	25.5	27.1	27.1	28.6	39.0	42.2	42.2	45.7	45.7
	MCA	31	32	32	34	47	50	50	54	54
	MFS	35.0	35.0	35.0	35.0	50.0	50.0	50.0	60.0	60.0
208/3/60	FLA	50.6	53.5	53.5	55.7	76.5	83.0	83.0	91.5	91.5
	MCA	61	64	64	66	92	99	99	107	107
	MFS	70.0	70.0	70.0	70.0	100.0	100.0	100.0	110.0	110.0
230/3/60	FLA	45.8	48.4	48.4	50.4	69.2	75.1	75.1	82.8	82.8
	MCA	55	58	58	60	83	89	89	97	97
	MFS	60.0	60.0	60.0	60.0	90.0	90.0	90.0	100.0	100.0
460/3/60	FLA	22.9	24.2	24.2	25.2	34.6	37.5	37.5	41.4	41.4
	MCA	28	29	29	30	42	45	45	48	48
	MFS	30.0	30.0	30.0	30.0	45.0	45.0	45.0	50.0	50.0

ELECTRICAL BASED ON ELECTRIC HUMIDIFICATION WITHOUT ELECTRIC REHEAT

380/3/50	FLA	10.6	12.2	12.2	13.9	22.7	26.2	26.2	30.0	30.0
	MCA	12	14	14	15	26	30	30	34	34
	MFS	12.0	15.0	15.0	15.0	30.0	30.0	30.0	35.0	35.0
415/3/50	FLA	9.6	11.2	11.2	12.7	20.8	24.0	24.0	27.5	27.5
	MCA	11	12	12	14	24	27	27	31	31
	MFS	12.0	12.0	12.0	15.0	25.0	30.0	30.0	35.0	35.0
208/3/60	FLA	18.9	21.8	21.8	24.0	40.1	46.7	46.7	55.2	55.2
	MCA	21	24	24	27	47	53	53	62	62
	MFS	25.0	25.0	25.0	30.0	50.0	60.0	60.0	70.0	70.0
230/3/60	FLA	17.1	19.7	19.7	21.7	36.3	42.2	42.2	49.9	49.9
	MCA	19	22	22	24	42	48	48	56	56
	MFS	20.0	25.0	25.0	25.0	45.0	50.0	50.0	60.0	60.0
460/3/60	FLA	8.6	9.9	9.9	10.9	18.2	21.1	21.1	25.0	25.0
	MCA	10	11	11	12	21	24	24	28	28
	MFS	10.0	12.0	12.0	12.0	25.0	25.0	25.0	30.0	30.0

ELECTRICAL BASED ON NO ELECTRIC REHEAT NO ELECTRIC HUMIDIFICATION

380/3/50	FLA	5.1	6.7	6.7	8.4	8.4	11.9	11.9	15.7	15.7
	MCA	6	8	8	11	11	15	15	20	20
	MFS	15.0	20.0	20.0	25.0	25.0	40.0	40.0	50.0	50.0
415/3/50	FLA	4.6	6.2	6.2	7.7	7.7	10.9	10.9	14.4	14.4
	MCA	6	8	8	10	10	14	14	18	18
	MFS	15.0	20.0	20.0	25.0	25.0	35.0	35.0	45.0	45.0
208/3/60	FLA	9.0	11.8	11.8	14.0	14.0	20.6	20.6	29.1	29.1
	MCA	11	15	15	18	18	26	26	36	36
	MFS	30.0	35.0	35.0	45.0	45.0	70.0	70.0	90.0	90.0
230/3/60	FLA	8.1	10.7	10.7	12.7	12.7	18.6	18.6	26.3	26.3
	MCA	10	13	13	16	16	23	23	33	33
	MFS	25.0	35.0	35.0	40.0	40.0	60.0	60.0	80.0	80.0
460/3/60	FLA	4.1	5.4	5.4	6.4	6.4	9.3	9.3	13.2	13.2
	MCA	5	7	7	8	8	12	12	17	17
	MFS	12.0	17.5	17.5	20.0	20.0	30.0	30.0	40.0	40.0

*A-AIR COOLED
FLA = FULL LOAD AMPACITY

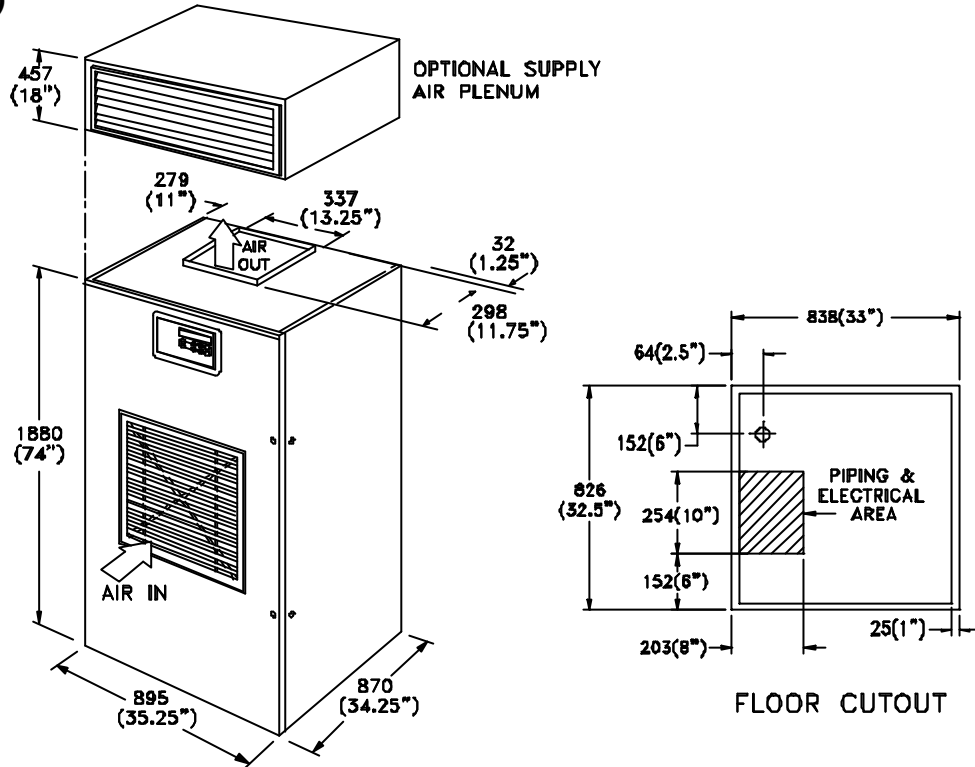
W-WATER COOLED
MCA = MINIMUM CIRCUIT AMPACITY

G-GLYCOL COOLED
MFS = MAXIMUM FUSE SIZE

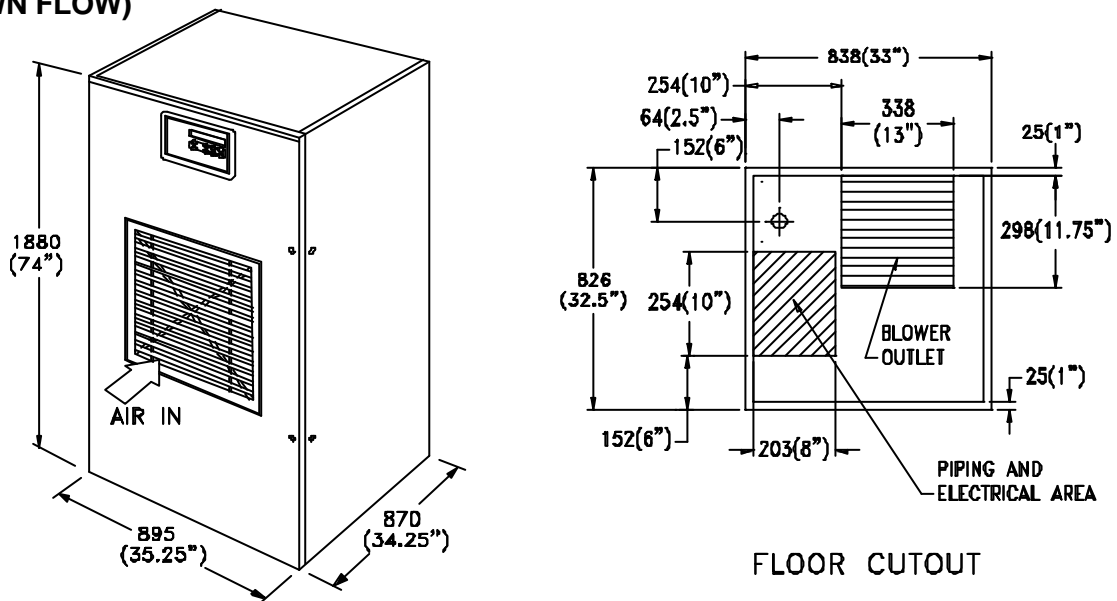
DB-TEMP/ DB-AIRE CHILLED WATER SYSTEMS

AIR COOLED, WATER/ GLYCOL COOLED/ CHILLED WATER DIMENSIONAL DATA

MODEL 2, 3, 4, 5 TON
(UP FLOW)



MODEL 2, 3, 4, 5 TON
(DOWN FLOW)

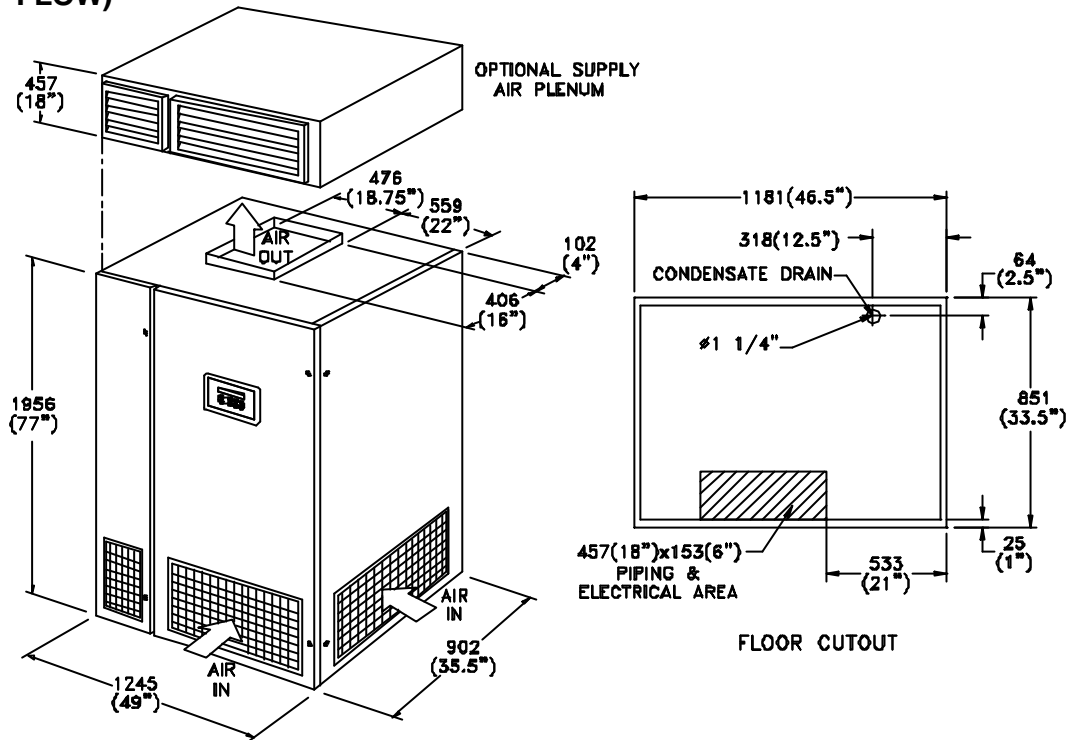


NOTES : 1.) MINIMUM SPACE REQUIRED IS 914MM (36") ON FRONT ,RIGHT AND LEFT SIDES FOR SERVICE ACCESS.
2.) ALL DIMENSIONS ARE IN MILLIMETER (INCHES).

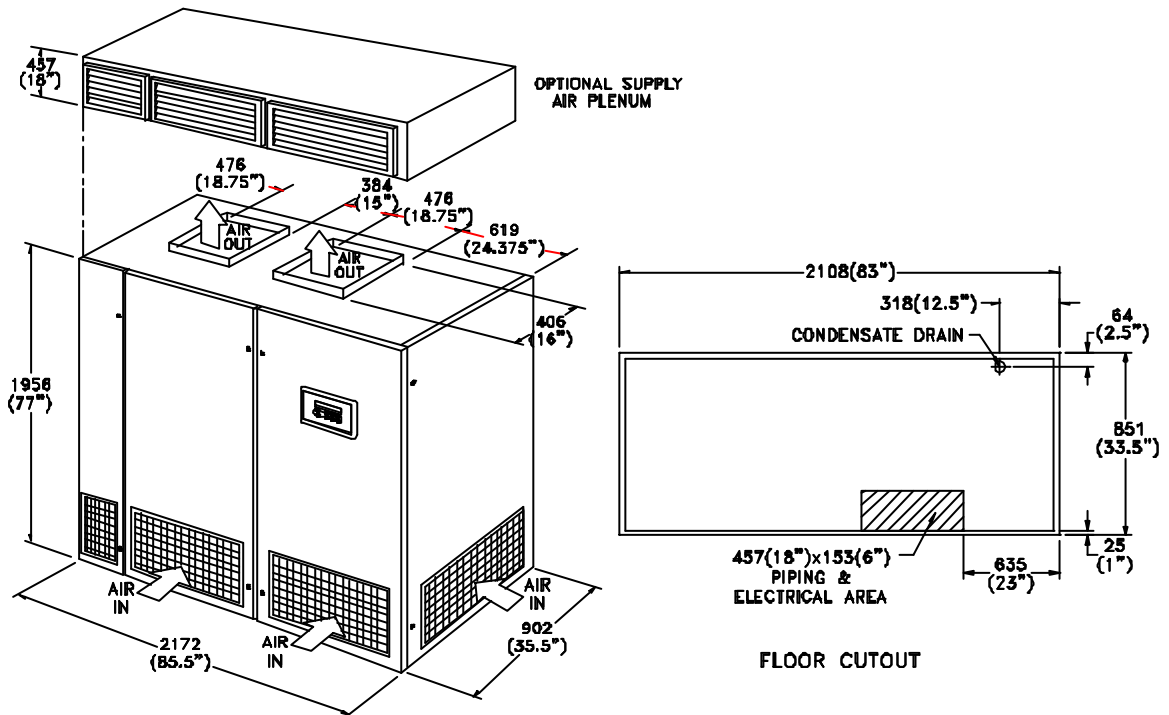
DB-TEMP/ DB-AIRE CHILLED WATER SYSTEMS

DIMENSIONAL DATA

MODEL 7, 9, 11, 13 TON (UP FLOW)



MODEL 15, 18, 22, 26 TON (UP FLOW)

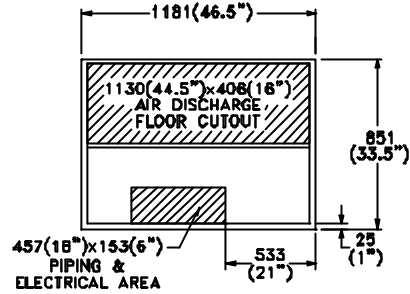
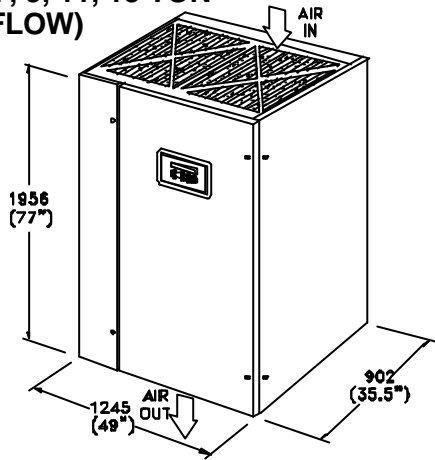


- NOTES : 1.) MINIMUM SPACE REQUIRED IS 914MM (36") ON FRONT, RIGHT AND LEFT SIDES FOR SERVICE ACCESS.
 2.) ALL DIMENSIONS ARE IN MILLIMETER (INCHES).
 3.) DEPTH IS 40" FOR 5-ROW AND 6-ROW COIL.

DB-TEMP/DB-AIRE CHILLED WATER SYSTEMS

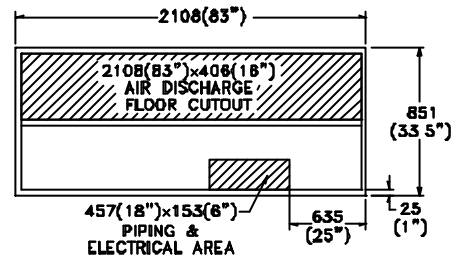
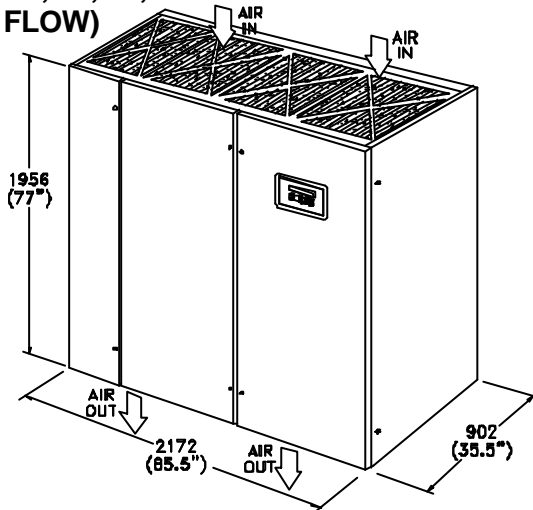
DIMENSIONAL DATA

**MODEL 7, 9, 11, 13 TON
(DOWN FLOW)**



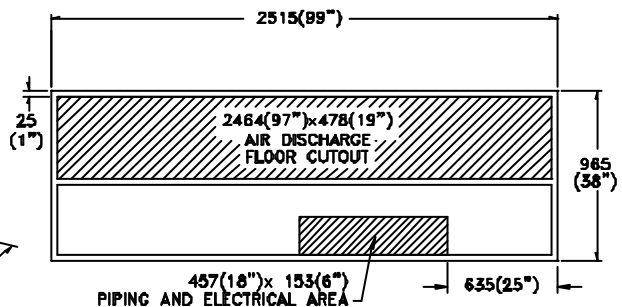
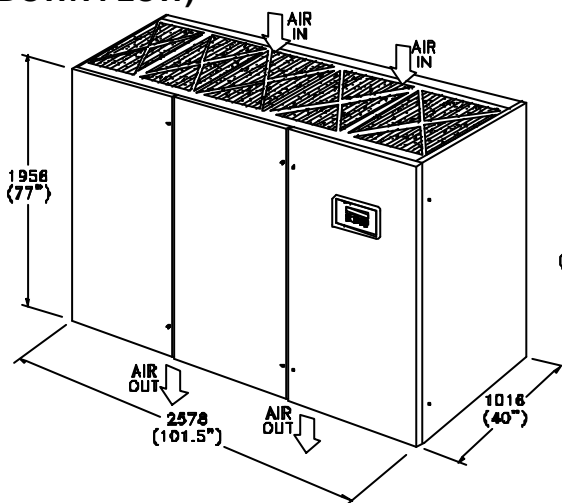
FLOOR CUTOUT

**MODEL 15, 18, 22, 26 TON
(DOWN FLOW)**



FLOOR CUTOUT

**MODEL 30 TON
(DOWN FLOW)**

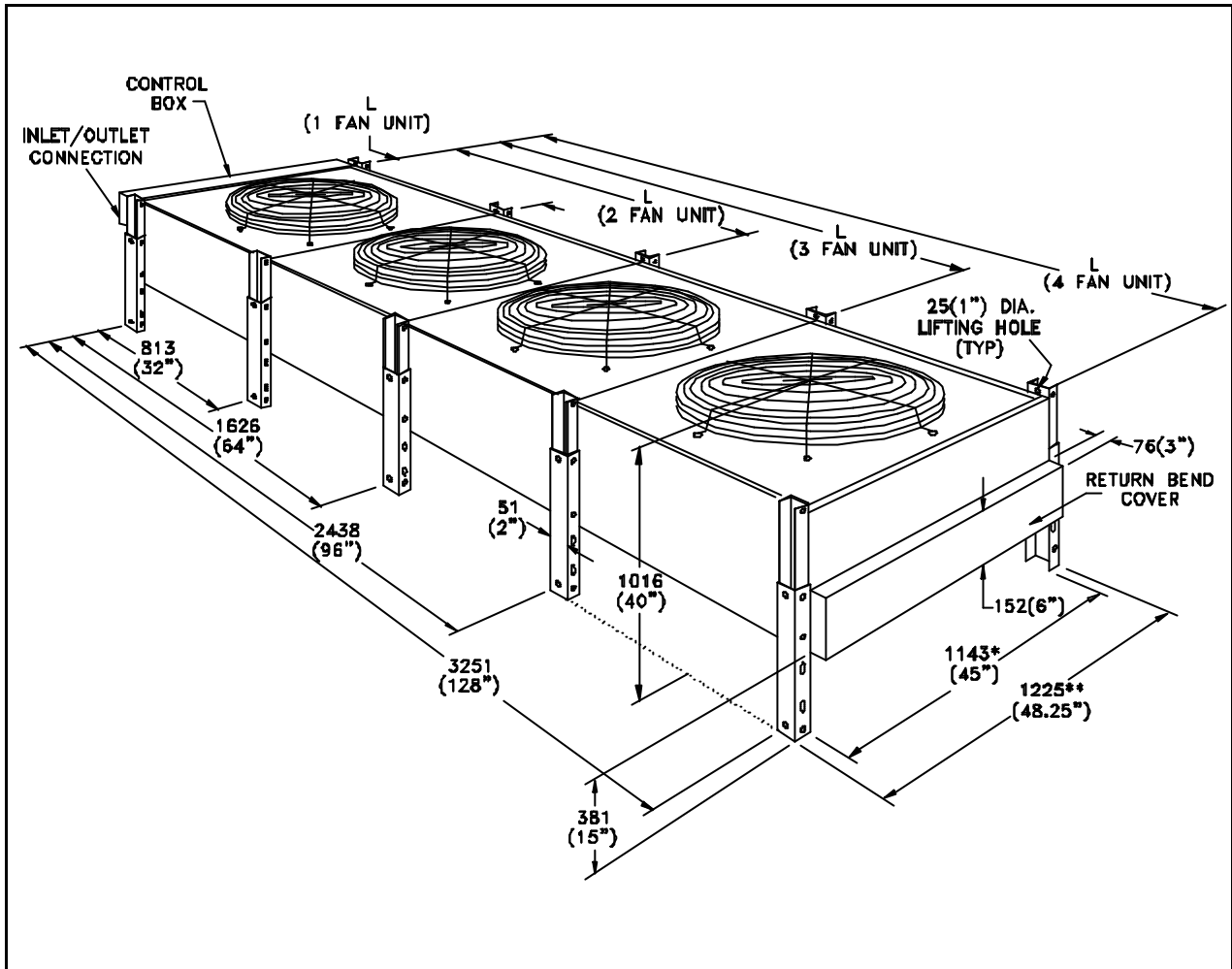


FLOOR CUTOUT

- NOTES : 1.) MINIMUM SPACE REQUIRED IS 914MM (36") ON FRONT, RIGHT AND LEFT SIDES FOR SERVICE ACCESS.
 2.) ALL DIMENSIONS ARE IN MILLIMETER (INCHES).
 3.) DEPTH IS 40" FOR 5-ROW AND 6-ROW COIL.

REMOTE AIR-COOLED CONDENSERS

TECHNICAL DATA

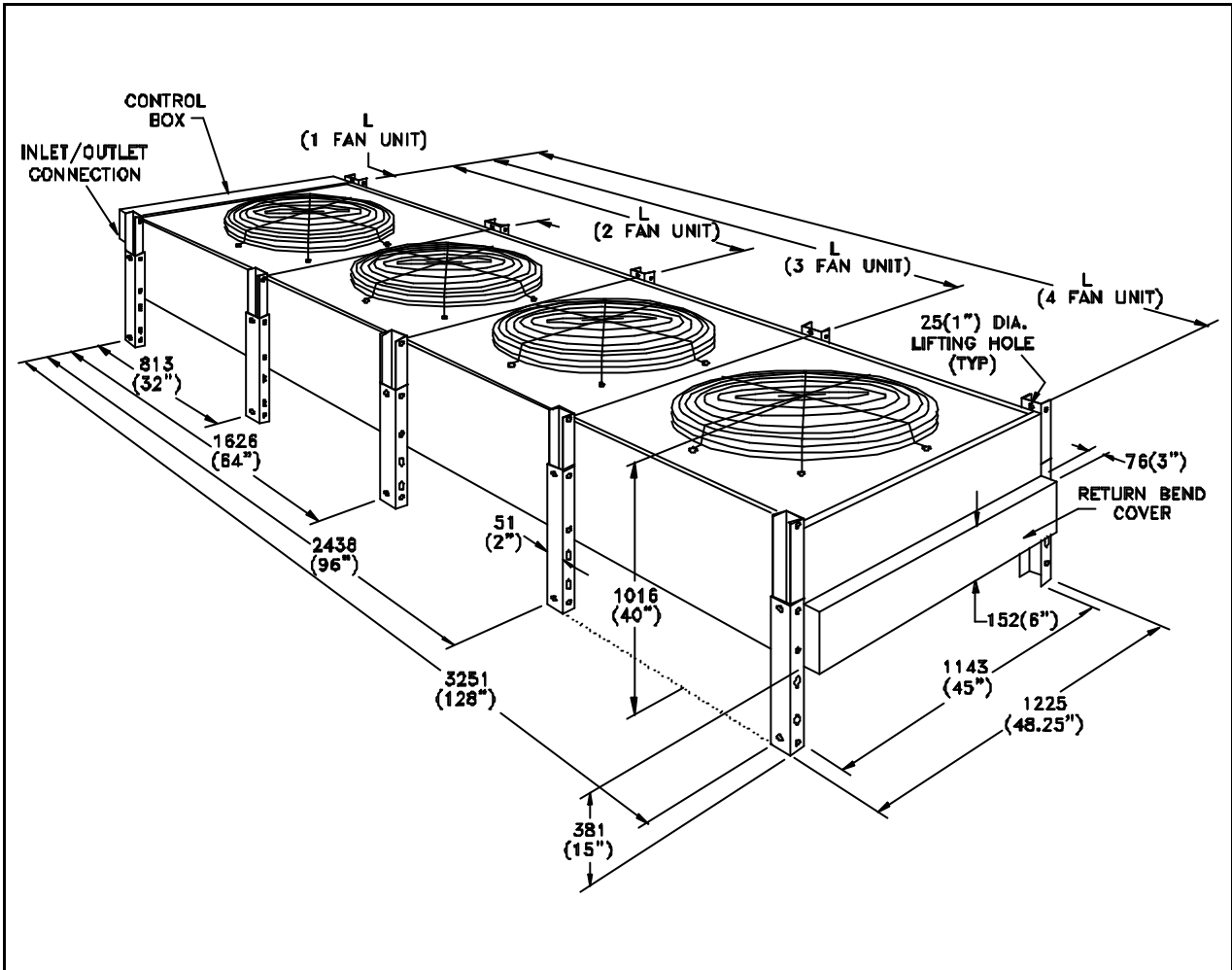


MODEL	PHYSICAL DATA				ELECTRICAL DATA							
	LENGTH 'L'	FANS		APPROX. WEIGHT KG(LBS)	MTR QTY	RPM		MTR FLA (3-PHASE)				
		MM (INS)	QTY			TOTAL L/S (CFM)	50Hz	60Hz	380V (50Hz)	415V (50Hz)	208V (60Hz)	230V (60Hz)
DBRC 04	870 (34¼)	1	2030 (4300)	100 (220)	1	900	1080	-	-	-	-	
DBRC 06	870 (34¼)	1	3210 (6800)	111 (244)	1	950	1075	2.0	1.8	3.6	3.3	
DBRC 08	870 (34¼)	1	3210 (6800)	122 (268)	1	950	1075	2.0	1.8	3.6	3.3	
DBRC 10	870 (34¼)	1	3210 (6800)	134 (295)	1	950	1075	2.0	1.8	3.6	3.3	
DBRC 11	870 (34¼)	1	3210 (6800)	180 (400)	1	950	1075	2.0	1.8	3.6	3.3	
DBRC 13	1683 (66¼)	2	6420 (13600)	190 (420)	2	950	1075	4.0	3.7	7.3	6.6	
DBRC 17	1683 (66¼)	2	6420 (13600)	204 (450)	2	950	1075	4.0	3.7	7.3	6.6	
DBRC 20	1683 (66¼)	2	6420 (13600)	265 (583)	2	950	1075	4.0	3.7	7.3	6.6	
DBRC 26	2500 (98¼)	3	9630 (20400)	288 (634)	3	950	1075	6.0	5.5	10.9	9.9	
DBRC 30	2500 (98¼)	3	9630 (20400)	320 (700)	3	950	1075	6.0	5.5	10.9	9.9	
DBRC 34	2500 (98¼)	3	9630 (20400)	355 (780)	3	950	1075	6.0	5.5	10.9	9.9	
DBRC 40	3308 (130¼)	4	12838 (27200)	380 (835)	4	950	1075	8.0	7.3	14.6	13.2	
DBRC 44	3308 (130¼)	4	12838 (27200)	410 (900)	4	950	1075	8.0	7.3	14.6	13.2	

NOTE: 1.) ALL DIMENSIONS ARE IN MM (INCHES).
 2.) * = 889(35"), ** = 972(38.25") FOR DBRC-04
 3.) MOTOR FLA FOR DBRC04 IS 1 PHASE 1.3A (220V) / 1.2A (240V) / 1.4A (208V) / 1.2A (230V).

DRY-AIR COOLERS

TECHNICAL DATA



MODEL	PHYSICAL DATA				ELECTRICAL DATA							
	LENGTH 'L'	FANS		APPROX. WEIGHT KG(LBS)	MTR QTY	RPM		MTR FLA (3-PHASE)				
		MM (INS)	QTY			TOTAL L/S (CFM)	50Hz	60Hz	380V (50Hz)	415V (50Hz)	208V (60Hz)	230V (60Hz)
DBFC 05	870 (34¼)	1	3210 (6800)	100 (220)	1	950	1075	2.0	1.8	3.6	3.3	
DBFC 06	870 (34¼)	1	3210 (6800)	111 (244)	1	950	1075	2.0	1.8	3.6	3.3	
DBFC 09	870 (34¼)	1	3210 (6800)	122 (268)	1	950	1075	2.0	1.8	3.6	3.3	
DBFC 11	1683 (66¼)	2	6420 (13600)	180 (400)	2	950	1075	4.0	3.7	7.3	6.6	
DBFC 15	1683 (66¼)	2	6420 (13600)	190 (420)	2	950	1075	4.0	3.7	7.3	6.6	
DBFC 17	1683 (66¼)	2	6420 (13600)	204 (450)	2	950	1075	4.0	3.7	7.3	6.6	
DBFC 21	2500 (98¼)	3	9630 (20400)	265 (583)	3	950	1075	6.0	5.5	10.9	9.9	
DBFC 24	2500 (98¼)	3	9630 (20400)	288 (634)	3	950	1075	6.0	5.5	10.9	9.9	
DBFC 28	2500 (98¼)	3	9630 (20400)	320 (700)	3	950	1075	6.0	5.5	10.9	9.9	
DBFC 30	3308 (130¼)	4	12838 (27200)	355 (780)	4	950	1075	8.0	7.3	14.6	13.2	
DBFC 37	3308 (130¼)	4	12838 (27200)	380 (835)	4	950	1075	8.0	7.3	14.6	13.2	
DBFC 40	3308 (130¼)	4	12838 (27200)	410 (900)	4	950	1075	8.0	7.3	14.6	13.2	

NOTE: ALL DIMENSIONS ARE IN MM (INCHES).

REMOTE HEAT EXCHANGERS

CONDENSER/DRY-AIR COOLER DATA

CONDENSERS

MODEL	HEAT REJECTION		THR @ 35°C(95°F) AMB 52°C(125°F) COND		CONNECTION SIZE (INCH)	
	KW/°C	MBH/°F	KW	MBH	HOT GAS	LIQUID
DBRC 04	1.12	2.2	19.1	65.2	1 1/8	7/8
DBRC 06	1.62	3.1	27.5	93.9	1 1/8	7/8
DBRC 08	1.76	3.4	29.9	101.9	1 1/8	7/8
DBRC 10	2.51	4.9	42.7	145.8	1 1/8	7/8
DBRC 11	2.80	5.4	47.5	162.1	1 1/8	7/8
DBRC 13	3.16	6.1	53.8	183.4	1 1/8	7/8
DBRC 17	4.25	8.2	72.3	246.7	1 1/8	7/8
DBRC 20	5.06	9.8	86.0	293.5	1 1/8	7/8
DBRC 26	6.44	12.4	109.4	373.3	1 1/8	7/8
DBRC 30	7.51	14.5	127.7	435.6	1 3/8	7/8
DBRC 34	8.44	16.3	143.4	489.4	1 3/8	7/8
DBRC 40	10.07	19.5	171.2	584.1	1 5/8	1 1/8
DBRC 44	11.18	21.6	190.1	648.7	1 5/8	1 1/8

DRY-AIR COOLER (BASED ON 40% GLYCOL-SEE TABLE 1 FOR CORRECTION FACTORS)

MODEL	NOMINAL		PRESSURE DROP		THR @ 35°C (95°F) AMB 52°C (125°F) COND		NO. OF CIRCUIT	CONN. SIZE (INCH)	INTERNAL VOLUME	
	L/S	GPM	KPa	PSI	KW	MBH		(1 EA PER UNIT) INLET/OUTLET	LT	GAL
DBFC 05	0.38	6	18.6	2.7	11.9	40.6	4	1 3/8	8.3	2.2
DBFC 06	0.57	9	8.3	1.2	16.0	54.5	8	1 5/8	12.2	3.2
DBFC 09	0.95	15	19.3	2.8	24.9	84.9	10	1 5/8	18.4	4.8
DBFC 11	1.3	21	24.1	3.5	30.9	105.6	10	2 1/8	16.8	4.4
DBFC 15	1.6	25	29.0	4.2	40.7	139	12	2 1/8	22.5	5.9
DBFC 17	1.7	27	20.0	2.9	45.0	153.7	16	2 1/8	28.3	7.5
DBFC 21	1.9	30	25.5	3.7	55.8	190.6	16	2 1/8	30.6	8.1
DBFC 24	2.2	35	21.4	3.1	64.5	220.2	21	2 1/8	39.1	10.3
DBFC 28	2.5	40	18.6	2.8	71.7	244.8	26	2 1/8	47.6	12.6
DBFC 30	3.5	56	34.5	5.0	85.2	290.8	24	2 1/8	38.7	10.2
DBFC 37	3.9	62	26.2	3.8	95.3	325.3	32	2 1/8	50.0	13.2
DBFC 40	4.4	70	20.7	3.0	103.4	353.0	40	2 5/8	63.8	16.9

GLYCOL CORRECTION FACTORS

PERCENT GLYCOL	CAPACITY	PRESSURE DROP	FREEZE POINT	
0	1.07	0.88	0°C	32°F
10	1.05	0.91	-3.8	25
20	1.04	0.94	-9.4	15
30	1.02	0.97	-32.2	4
40	1.00	1.00	-23.3	-10
50	0.98	1.03	-35.6	-32

CONDENSER SELECTIONS

MODEL	THR		35°C(95°F)	37.8°C(100°F)	40.5°C(105°F)
	KW	MBH	CONDENSER	CONDENSER	CONDENSER
DBTA 02	11.7	40	DBRC 04	DBRC 04	DBRC 04
DBTA 03	14.7	50	DBRC 04	DBRC 04	DBRC 06
DBTA 04	17.6	60	DBRC 04	DBRC 06	DBRC 06
DBTA 05	21.4	73	DBRC 06	DBRC 06	DBRC 08
DBTA 07	29.3	100	DBRC 08	DBRC 10	DBRC 11
DBTA 09	43.7	149	DBRC 10	DBRC 13	DBRC 17
DBTA 11	50.7	173	DBRC 13	DBRC 17	DBRC 20
DBTA 13	57.2	202	DBRC 17	DBRC 17	DBRC 26
DBA 09	42.8	146	DBRC 10	DBRC 13	DBRC 17
DBA 11	53.1	181	DBRC 13	DBRC 17	DBRC 20
DBA 13	60.4	206	DBRC 17	DBRC 17	DBRC 26
DBA 14	67.4	230	DBRC 17	DBRC 20	DBRC 26
DBA 16	78.3	267	DBRC 20	DBRC 26	DBRC 26
DBA 19	87.1	297	DBRC 20	DBRC 26	DBRC 34
DBA 22	101.4	346	DBRC 26	DBRC 30	DBRC 34
DBA 26	118.1	403	DBRC 30	DBRC 34	DBRC 44

NOTE : SELECTIONS ARE BASED ON STANDARD AIR FLOWS, 125 DEGREE CONDENSING TEMPERATURE, RETURN AIR TEMPERATURE 75/62.5 OR LESS.

REMOTE HEAT EXCHANGERS

DRY-AIR COOLER SELECTIONS

MODEL	THR		FLOW RATE		35°C(95°F)			37.8°(100°F)		
	KW	MBH	L/S	GPM	COOLER	PD,KPa	PD, PSI	COOLER	PD,KPa	PD, PSI
DBTG 02	11.7	40	0.38	6	DBFC 5	18.6	2.7	DBFC 9	3.4	0.5
DBTG 03	14.7	50	0.57	9	DBFC 6	8.3	1.2	DBFC 9	7.6	1.1
DBTG 04	17.6	60	0.76	12	DBFC 9	13.1	1.9	*DBFC 9	19.3	2.8
DBTG 05	21.4	73	0.95	15	DBFC 9	19.3	2.8	DBFC 15	11.0	1.6
DBTG 07	29.3	100	1.30	21	DBFC 11	24.1	3.5	DBFC 17	20.0	2.9
DBTG 09	43.7	149	1.70	27	DBFC 17	20.0	2.9	DBFC 24	21.4	3.1
DBTG 11	50.7	173	1.90	30	DBFC 21	25.5	3.7	DBFC 28	18.6	2.8
DBTG 13	59.2	202	2.20	35	DBFC 24	21.4	3.1	DBFC 30	34.5	5.0
DBG 09	42.8	146	1.70	27	DBFC 17	20.0	2.9	DBFC 21	20.7	3.0
DBG 11	53.1	181	1.90	30	DBFC 21	25.5	3.7	DBFC 28	11.0	1.6
DBG 13	60.4	206	2.20	35	DBFC 24	21.4	3.1	DBFC 30	34.5	5.0
DBG 14	67.4	230	2.50	40	DBFC 28	18.6	2.8	DBFC 37	26.2	3.8
DBG 16	78.3	267	3.50	56	DBFC 30	24.5	3.5	(2) DBFC 21	22.1	3.2
DBG 19	87.1	297	3.90	62	DBFC 37	26.2	3.8	(2) DBFC 24	21.4	3.1
DBG 22	101.4	346	4.40	70	DBFC 40	20.7	3.0	(2) DBFC 28	22.8	3.3
DBG 26	118.1	403	5.00	80	(2)DBFC 24	21.4	3.1	(2)DAFC 30	22.8	3.3

ALL SELECTIONS ARE BASED ON THE FOLLOWING CONDITIONS :

RETURN AIR TEMPERATURE 75/62.5 OR LESS, STANDARD WATER FLOWS, STANDARD AIR FLOWS, 40 PERCENT GLYCOL, 125 DEGREE CONDENSING TEMPERATURE, 115 DEGREE AVERAGE FLUID TEMPERATURE. EXAMPLE :

SELECT DRY-AIR COOLER FOR DBGD 11 AT 95 DEGREE AMBIENT FROM CHART, USE DBFC 21

DBGD 11 (THR) TOTAL HEAT REJECTION IS = 173 MBH

DBFC 21 (CAP) CAPACITY IS = 191 MBH

DBFC 21 (PD) PRESSURE DROP IS = 3.7 PSI AT 30 (GPM) GALLONS PER MIN.

OPTIONS AND ACCESSORIES

Hermetic Compressors

Includes: Crankcase heaters, suction accumulators.

Hot Gas Bypass

Prevents compressor short-cycling in low room load application.

Hot Water Or Steam Reheat

These economical reheats are controlled by two way valve. Completely piped, wired and tested, at the factory.

Smoke Detector

For systems shut down when smoke is detected with manual reset.

Upflow Plenum

Complete with attractive grilles for room discharge of conditioned air.

Adjustable Leveling Jackstands

Allows raising or lowering of units with fully adjustable rods. Locknuts assures rigidity.

Copper Fin Coils

For use in high humidity corrosive

atmospheres.

High Filter Efficiency Filters

65% (based on ASHRAE 52-76) efficiency. 25mm (2 inch) pre-filters available to reduce main filter changes.

Condensate Pump

Complete with pump motor, pump, check valve and automatic control. Available units mounted and wired or externally mounted and powered by either 220V/50Hz or 208-230V/60Hz.

Remote Panel Mount

Remote mount of DB Processor available with 3.0m or 15.0m cable.

Under Floor Water Detection

Give an alarm signal when it detects water under floor.

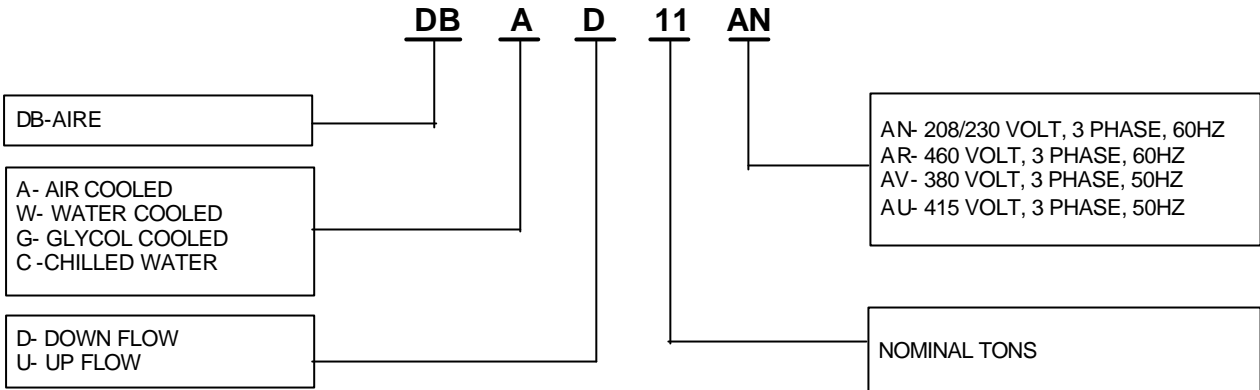
Variable Pitch Palley

Provides adjustable airflow capacity to match load requirements.

SAMPLE NOMENCLATURE

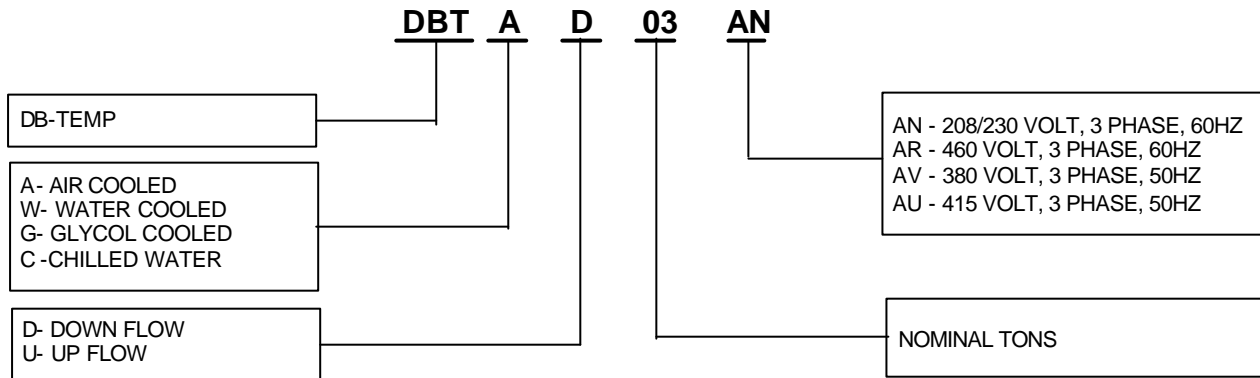
DB-AIRE SERIES

UP AND DOWN FLOW UNITS

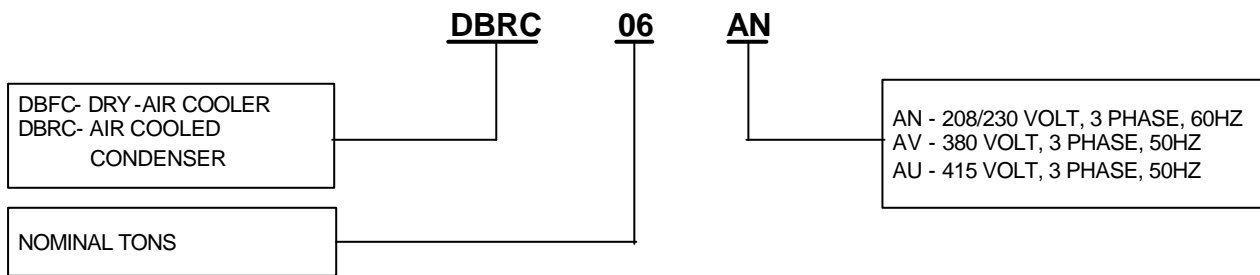


DB-TEMP SERIES

UP AND DOWN FLOW UNITS



AIR COOLED CONDENSER AND DRY FLUID COOLER



MANUFACTURER RESERVES THE RIGHT TO CHANGE SPECIFICATION OR DESIGN AT ANY TIME WITHOUT PRIOR NOTICE.

DB-AIRE