MC1™

MissionCritical

Vertical Floor Mounted A/C's (Single Circuit DX & CW)

Features & Benefits

- 12-35kW (3.5-10 Ton Capacities) (Modular to 70kW)
- *Precision Applications*
  - Computer Rooms
  - Telecom Rooms
  - Server Closets
- Compact Vertical Floor Mounted Upflow & Downflow Configurations
- DX Air, Water & Glycol Cooled, Chilled Water & Free-Cooling
- Total Temp & Humidity Control
  - Steam Humidifier
  - Reheat/Heat via Electric, Hot Gas, Hot Water or Steam
- Microprocessor Controls & More!

12 to 35kW (3.5-10 Tons)
(Modular to 70kW)
"Floor Mounted Precision A/C's"

AboveAir TECHNOLOGIES

AboveAir™ floor mounted precision air conditioners (MC1-L40.2)

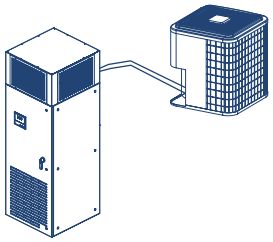
AboveAir™ MissionCritical™ vertical floor mounted precision air conditioners are the reliable environmental control solution to your precision cooling needs. Available in a wide variety of cooling methods and cabinet configurations including a full range of options, **AboveAir**™ Air Conditioners are a step above!

- ☑ 100% Front-Access cabinet design
- ☑ Total Temperature & Humidity Control
- ☑ Up-Flow & Down-Flow air patterns
- ☑ Variety of cooling methods
- ☑ Self-contained & split systems
- ☑ Flexible options and accessories
- ☑ R410a Refrigerant
- ☑ Energy efficient operation

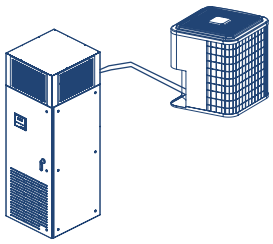
Contents

DX - Air Cooled

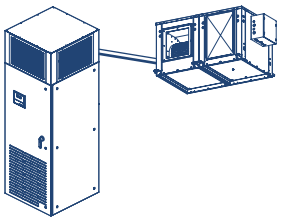
MCH & XPU-( )
DX - Air Cooled Split with Propeller Fan, Outdoor Remote Condensing Unit



MCE & XP1-( )
DX - Air Cooled Split with Propeller Fan, Outdoor Remote Condenser

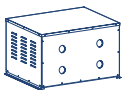


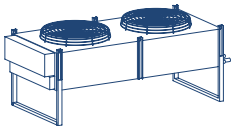
MCH/E & XCU/XCX -( )
DX - Air Cooled Split with Centrifugal Blower, indoor Remote Condensing Unit & Condensers



DX - Water/Glycol Cooled

MCW & MCG-( )
DX - Water/Glycol Cooled Self-Contained Plus Glycol Drycoolers & Pump Packages





FC_ & PA_ Models
Remote Indoor & Outdoor Glycol Drycoolers and Pump Packages

Chilled Water Systems

MCC-( )
Chilled Water Air Handling Units

AboveAir™ MissionCritical™ precision A/C's are designed to meet your unique application dependent requirements. Select from a wide range of options and configurations:

12-35kW (3.5-10T)

Single Circuit DX &
Chilled Water

Free-Cooling Econo & Dual-Cool!

Up-Flow Air Pattern

Down-Flow Air Pattern

Variety of Standard & Optional Features

Standard & Optional Features:

- MC-2000, Advanced Microprocessor Controls
- Electrode Steam Canister Humidifier
- Dehumidification Mode with Electric, Hot Gas, Hot Water or Steam Reheat
- Single Scroll Compressor (2-Speed & Digital Scrolls Optional Available!)
- EC Backward-Inclined Plug Fan
- High Efficiency Air Filtration
- Low Ambient Head Pressure Control
- 2 & 3-Way 450 psig Water / Glycol Cooled Head Pressure Control Regulating Valves
- Hot Gas Bypass
- Low Entering Condenser Water/Glycol Kit
- Top, Side or Bottom Piping Connections

Accessories:

- 2 or 3-Way Plenum Discharge Boxes
- Floor Stands & Turning Vanes
- Condensate Pumps - Factory Installed
- Main Power Electrical Disconnects
- Firestats
- Smoke Detectors
- Remote Water-Leak Detectors
- Compressor Sound Jackets
- Glycol Pump Packages & Drycoolers
- ... and more!

ETL LISTED
CONFORMS TO
UL STD 1995
3091370 CERTIFIED TO
CAN/CSA STD C22.2 No. 236

Model Nomenclature

Packaged Systems & Split Evaporators

MC	E	-	035	S	-	4	-	00	ER	H	-	EC	-	00	-	UF2	-	B1	-	S6
a	b	-	c	d	-	e	-	f	g	h	-	i	-	j	-	k	-	l	-	m

a: **MC** - *MissionCritical MC1 Vertical Floor A/C*

b:
- **C** - Chilled Water Air Handling Unit
- **E** - DX, Split Evaporator (Compressor with Evaporator)
- **G** - DX, Glycol Cooled - Packaged Self-Contained
- **H** - DX, Split Air Handling Unit
- **W** - DX, Water Cooled - Packaged Self-Contained

c: **012** = 12kW (3.5T); **014** = 14kW (4.0T); **018** = 18kW (5.0T); **021** = 21kW (6.0T); **029** = 29kW (8.0T); **035** = 35kW (10.0T)

d:
- **S** - Single Circuit DX System
- **X** - Chilled Water System

e:
- **1** - 208-230V / 1 Ph / 60 Hz
- **3** - 208-230V / 3 Ph / 60 Hz
- **4** - 460-480V / 3 Ph / 60 Hz
- **5** - 575V / 3 Ph / 60 Hz
- **7** - 277V / 1 Ph / 60 Hz
- **8** - 460-480V / 1 Ph / 60 Hz

f:
- **00** - No Hot Gas Reheat
- **HG** - Hot Gas Reheat (2-POS, On/Off)
- **MG** - Hot Gas Reheat (Modulating 0-10Vdc)
- **HR** - Hot Water Reheat/Heating Coil
- **SR** - Steam Reheat/Heating Coil

g:
- **00** - No Unit Mtd Electric Heat
- **EO** - Electric Heat Only, No Reheat
- **ER** - Electric Reheat/Heat

h:
- **0** - No Humidifier
- **H** - Electrode Canister Steam Humidifier

i:
- **EC** - EC = EC Plug Fan (Direct-Drive, Backward-Inclined Centrifugal Impeller, 0-10Vdc))

j:
- **00** - No Economizer
- **DC** - Dual-Cool / Alternate Water Source Coil
- **FE** - Water/Glycol Side Free-Cooling Economizer Coil

k:
- **DFB** - Down-Flow Evap Air Pattern w/ Free or Ducted Top Return & Bottom Discharge to Raised Floor
- **DFF** - Down-Flow Evap Air Pattern w/ Free or Ducted Top Return & Front Free-Discharge to Floor Level
- **UF0** - Up-Flow Evap Air Pattern w/ Front Free-Return & Top Ducted Discharge
- **UF1** - Up-Flow Evap Air Pattern w/ Front Free-Return & Top 1-Way Plenum Discharge Box
- **UF2** - Up-Flow Evap Air Pattern w/ Front Free-Return & Top 2-Way Plenum Discharge Box
- **UF3** - Up-Flow Evap Air Pattern w/ Front Free-Return & Top 3-Way Plenum Discharge Box
- **UFR** - Up-Flow Evap Air Pattern w/ Rear Ducted or Free-Return & Top Ducted Discharge

l:
- **B1** - MC1 Cabinet Size ... A1 = 12-18kW (3.5-5T); B1 = 21-35kW (6-10T); or C1 = 42-53kW (12-15T)

m:
- **00** - No Compressor (*Compressor located in remote condensing section)*
- **S1** - Fixed Speed Scroll Compressor w/ Hot Gas Bypass
- **S3** - 2-Speed Scroll Compressor Option
- **S6** - Modulating Digital Scroll Compressor Option
- **CX** - Chilled Water Valve - 2-Way, 300 psi (MOD, 0-10 VDC)
- **DX** - Chilled Water Valve - 3-Way, 300 psi (MOD, 0-10 VDC)
- **EX** - Chilled Water Valve by Others

Split, DX - Remote Condensers & Condensing Units

XP1	-	035	S	-	4	-	AA	-	VF	1	-	00	-	B
a	-	b	c	-	d	-	e	-	f	g	-	h	-	i

a:
- **XCU** - DX, Split Indoor Ceiling Mtd Remote Air Cooled Centrifugal Blower Condensing Unit (Compr w/ XCU Cond Unit)
- **XCX** - DX, Split Indoor Ceiling Mtd Remote Air Cooled Centrifugal Blower Condenser (Compr Located w/ MCE Evap)
- **XGU** - DX, Split Indoor Ceiling or Floor Mtd Remote Glycol Cooled Condensing Unit (Compr w/ XGU Cond Unit)
- **XWU** - DX, Split Indoor Ceiling or Floor Mtd Remote Water Cooled Condensing Unit (Compr w/ XWU Cond Unit)
- **XP1** - DX, Split Outdoor Mtd Remote Air Cooled Propeller Fan Condenser, SINGLE FAN (Compr Located w/ MCE Evap)
- **XP2** - DX, Split Outdoor Mtd Remote Air Cooled Propeller Fan Condenser, DUAL FAN (Compr Located w/ MCE Evap)
- **XPU** - DX, Split Outdoor Mtd Remote Air Cooled Propeller Fan Condensing Unit (Compr w/ XPU Cond Unit)

b: **012** = 12kW (3.5T); **014** = 14kW (4.0T); **018** = 18kW (5.0T); **021** = 21kW (6.0T); **029** = 29kW (8.0T); **035** = 35kW (10.0T)

c:
- **S** - Single Circuit DX System

d:
- **1** - 208-230V / 1 Ph / 60 Hz
- **3** - 208-230V / 3 Ph / 60 Hz
- **4** - 460-480V / 3 Ph / 60 Hz
- **5** - 575V / 3 Ph / 60 Hz
- **7** - 277V / 1 Ph / 60 Hz
- **8** - 460-480V / 1 Ph / 60 Hz

e:
- **00** - N/A
- **AA** - Axial Fan w/ Std Motor
- **AB** - DWDI FC BD Blower w/ ODP Motor
- **EA** - Axial Fan w/ ECM
- **EC** - EC DD Backward-Inclined Impeller

f:
- **00** - Not Applicable
- **LD** - Ducted, 90 Degree / Right-Angle, In-Front / Out Left-Side
- **MI** - Ducted, Mirror-Image Same-Face Condenser Air Pattern
- **RD** - Ducted, 90 Degree / Right-Angle, In-Rear / Out Right-Side
- **SF** - Ducted, Same Face Condenser Air Pattern
- **ST** - Ducted, Straight-Thru (ZST) Condenser Air Pattern
- **VF** - Free Airflow, Vertical Discharge Air Pattern

g:
- **0** - Not Applicable
- **1** - Slab or Wrap Around Type
- **_** - Cabinet Size ... HK-A, B, C or D & VK-A, B, C or D

h:
- **00** - No Compressor in this section (DX Condenser Model)
- **S1** - Fixed Spd Scroll Compressor w/ Hot Gas Bypass
- **S2** - Fixed Spd Scroll Compressor w/ Quench Hot Gas Bypass
- **S3** - 2-Spd Scroll Compressor Option
- **S6** - Modulating Digital Scroll Compressor Option

i:
- **0** - No Head Pressure Control
- **A** - Low Amb Fan Cycling Head Pressure Control
- **B** - Low Amb Variable Speed Fan Head Pressure Control
- **C** - Low Amb Flooded Head Pressure Control
- **D** - Water/Glycol Regulating Valve - 2-Way, 150 psig
- **E** - Water/Glycol Regulating Valve - 2-Way, 350 psig
- **F** - Water/Glycol Regulating Valve - 3-Way, 150 psig
- **G** - Water/Glycol Regulating Valve - 3-Way, 350 psig

General

Summary

These specifications describe the requirements for a vertical floor mounted packaged (or split) precision air conditioner. The system shall be designed to control space temperature and humidity.

The air conditioning manufacturer shall design and furnish all equipment in the quantities and configurations shown on the project plans and specifications.

The system shall be provided by AboveAir Technologies in Frederick, Maryland, USA. The system shall be listed by Intertek (ETL Semko), Inc. to conform with UL Std 1995 and be certified to CAN/CSA Std C22.2 No. 236 (Control No. 3091370). The system shall be NYC MEA229-06-E and Chicago Code Approved. The system model number shall be _____.

Design Requirements

The system shall be an AboveAir Technologies MissionCritical™ brand factory assembled and tested. The system shall be designed for indoor installation.

The system shall have a total cooling capacity of _____ BTU/H, and a sensible cooling capacity of _____ BTU/H, based on an entering air condition of _____ °F DB, and _____ °F WB, _____ % RH.

The evaporator section shall be designed for _____ Volt, _____ Phase, _____ Hertz main power supply. The remote condensing unit section (if applicable) shall be designed for _____ Volt, _____ Phase, _____ Hertz main power supply.

Submittals

Submittals shall be provided after manufacturer's receipt of a written purchase order and shall include: Detailed Performance and Electrical Data; Guide Specifications; and Dimensional Drawings.

Quality Assurance

The system shall be factory run tested prior to shipment. Testing shall include, but shall not be limited to: "HiPot" Test (2 times rated voltage plus 1000 volts, per UL 1995 testing requirements). The system shall be designed and manufactured according to world class quality standards.

Products

Standard Features

Cabinet

The cabinet chassis and access panels shall be powder-coat painted heavy gauge galvanneal steel for decor matching and corrosion resistance. Cabinet access panels shall rest in recessed pockets designed for minimum air leakage. The cabinet and access panels shall be lined with 2 lb/ft^2 high density sound and thermal insulation and sealed with self-extinguishing gasketing conforming to NFPA 90A and 90B.

Component Access

The unit shall be serviceable through front access panels with quick-release quarter-turn fasteners.

Electrical System

General:
The electrical system shall conform to National Electric Code (NEC) requirements according to UL 1995. The control circuit shall be a 24 VAC low voltage circuit.

The electrical system shall include, but not be limited to the following factory installed items: main power distribution block; grounding lug; 24 VAC control transformer; terminal connections; and motor controllers with start protection and circuit breakers for blower motors, compressors and each electric heater stage (if applicable).

Packaged Systems: (single point power) Self-Contained systems shall be designed for single point main power connection.

Split DX Systems: (separate power) Split systems shall require separate main power supplies to the evaporator and condensing unit sections. The evaporator and condensing unit sections shall be electrically interlocked by a field wired 24 volt control signal.

Overflow Safety Float Switch:
The system shall be provided with a factory installed float type condensate overflow safety switch. The circuit shall be designed to shut down all system water producing operations in the event of an overflow condition.

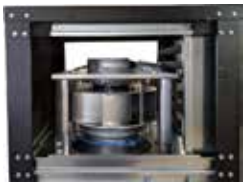
Main Power, Disconnect

(MC_ Evap Section)

The indoor evaporator section shall be provided with a factory installed main power non-fused disconnect. The disconnect shall be NEMA rated for indoor or outdoor installation as required.

Air Distribution

Evap Blower/Motor



The evaporator blower assembly shall be a backward-inclined direct-drive centrifugal impeller with variable speed EC (electronically commutated) motor. The blower shall be designed for ____ CFM @ ____ inches external static pressure (e.s.p.)

Variety of Air Patterns

Up-Flow (UF)

Down-Flow (DF)

Up-Flow Air Pattern:

UFFR: Front-Free Return

The system shall be configured for up-flow evaporator air pattern with front-free return and top discharge. *(Refer to Plenum Discharge Box Options.)*

UFRR: Rear-Ducted Return

The system shall be configured for up-flow evaporator air pattern with rear ducted return and top discharge.

Down-Flow Air Pattern:

DFB: Bottom Disch Into Raised Floor

The system shall be configured for down-flow evaporator air pattern with top free or ducted return and bottom discharge into raised floor. *(Refer to Floor Stand Options.)*

DFF: Front Discharge Floor Level

The system shall be configured for down-flow evaporator air pattern with top free or ducted return and front free discharge to floor level.

Air Filtration

The filter shall be a 4 inch thick pleated and Merv-_ efficiency rated (based on ASHRAE 52.2). The filter shall be serviceable through a side access panel without shutting down the system.

Piping Connection Location

☐ Top Piping Connections
☐ Lower-Side Piping Connections
☐ Bottom Piping Connections

Direct Expansion Systems

DX - Evaporator Coil

The DX evaporator coil shall be constructed of copper tubes and aluminum fins. The system shall be designed for a draw-through air pattern for maximum heat transfer. Coil end-plates shall be hot dipped galvanized. The evaporator coil shall be mounted in an insulated stainless steel condensate drain pan.

Scroll Compressors

Each compressor shall be the high efficiency, low sound Scroll type mounted on vibration isolators and located in a separate compartment out of the evaporator air stream to facilitate servicing while equipment is operating. Each compressor shall be complete with reversible positive oil pump, charging and service ports, internal spring isolation, and discharge gas vibration eliminator.

*(**Note:** 2-Speed & Modulating Digital Scroll Compressors are optionally available!)*

DX - Refrigeration Circuit

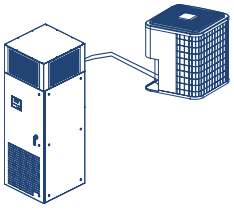
Each refrigeration circuit shall be pre-piped with type “L” refrigerant copper tubing. The refrigeration system shall include but not be limited to: expansion valve with external equalizer and rapid bleed-through capacity. Features shall include filter dryer, sight glass, pressure fittings and high pressure/low pressure safety cutouts.

Cooling Configurations

DX - Air Cooled Systems

DX - Air Cooled Split

(Split Evap & Outdoor Remote Condenser) *MCE-( ) & XP1-( )*

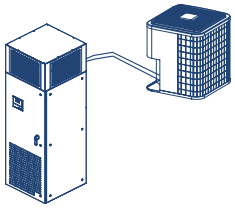


The system shall be a split configuration with compact indoor vertical floor mounted dx evaporator precision air conditioner with outdoor dx air cooled propeller fan remote condenser. The compressor shall be located in the indoor evaporator section. The condenser shall be sized for full heat of rejection at 95°F ambient and be capable of operation to ___ °F low ambient air temperature.

The system shall be refrigerant charged and run tested at the factory prior to shipment. The evaporator and condenser sections shall ship separately with a dry-nitrogen charge ready for field refrigerant charging.

DX - Air Cooled Split

(Air Handling & Outdoor Remote Condensing Units) *MCH-( ) & XPU-( )*

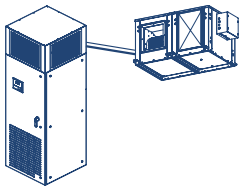


The system shall be a split configuration with compact indoor vertical floor mounted precision dx air handling unit with outdoor dx air cooled propeller fan remote condensing unit. The compressor shall be located in the condensing unit. The condensing unit shall be sized for full heat of rejection at 95°F ambient and be capable of operation to ___ °F low ambient air temperature.

The system shall be refrigerant charged and run tested at the factory prior to shipment. The evaporator and condensing unit sections shall ship separately with a dry-nitrogen charge ready for field refrigerant charging.

DX - Air Cooled Split (Air Handler & Indoor Remote Condensing Unit)

MCH-( ) & XCU-( )



The system shall be a split configuration with compact indoor vertical floor mounted precision dx air handling unit with indoor dx - air cooled centrifugal blower remote condensing unit. The compressor shall be located in the condensing unit. The condensing unit shall be sized for full heat of rejection at 95°F ambient and be capable of operation to ___ °F low ambient air temperature.

The system shall factory tested prior to shipment. The air handling and condensing unit sections shall ship separately from the factory with a dry-nitrogen holding charge for field sweat (copper) connection and refrigerant charging.

DX - Water Cooled
(Self-Contained Systems) *MCW-( )*

The system shall be a self-contained, compact indoor vertical floor mounted dx water cooled precision air conditioner. The system shall include a water cooled tube-in-tube coaxial condenser and factory installed head pressure controlling 2-way water regulating valve rated for 450 psi w.w.p. The water cooled condenser shall be designed to provide the total required system heat of rejection at 85°F entering water temperature and 95°F leaving water temperature. Source water shall be provided by a remote water source *(by others)*.

The system shall require only single point main power supply and ship from the factory with a full operating refrigerant charge.

*(**Note:** 3-Way valves are optionally available)*

DX - Glycol Cooled
(Self-Contained Systems) *MCG-( )*

The system shall be a self-contained, compact indoor vertical floor mounted dx glycol cooled precision air conditioner. The system shall include a glycol cooled tube-in-tube coaxial condenser and factory installed head pressure controlling 2-way glycol regulating valve rated for 450 psi w.w.p. The condenser shall be designed to provide the total required system heat of rejection at 110°F entering glycol temperature and 120°F leaving glycol temperature based on 40% ethylene glycol solution. Source glycol shall be provided by a remote glycol drycooler source *(see AboveAir Technologies' FluidCool™ drycoolers)*.

The system shall require only single point main power supply and shall ship from the factory with a full operating refrigerant charge.

*(**Note:** 3-Way valves are optionally available)*

Glycol Pump Packages & Drycoolers
FC_-( ) / PA_-( )

Glycol condenser source shall be provided by a FluidCool™ brand remote air cooled glycol drycooler and Pump-All™ brand pump package.

The glycol drycooler shall be the outdoor mounted propeller fan type complete with factory installed aquastat fan cycling controls, motor starters with overload protection and non-fused disconnect switch.

The glycol pump package shall be a (single or dual) pump package designed for outdoor installation complete with individual pump motor starters. Dual glycol pump packages shall be provided with manual lead-lag switch and field installed flow switch for automatic switchover to backup pump upon loss of flow.

An expansion tank and air purge fitting valve shall be factory provided for field installation.

The drycooler shall provide _____ BTUH total heat rejection at a flow rate of _____ GPM with ____ °F EGT and ____ °F LGT at ____ °F ambient air temperature. Each pump shall be ____ Hp and shall be sized to provide ____ GPM @ ____ Ft. w.g. total system head. The glycol solution shall be ___ % (*ethylene* or *propylene*) by volume.

The drycooler and pump package shall be designed for _____ Volt, _____ Phase, _____ Hertz main power supply.

*(**Note:** See AboveAir Technologies' FluidCool™ indoor & outdoor glycol drycooler and PumpAll™ glycol pump packages engineering manuals for more information.)*

Chilled Water Systems
MCC-( )

The system shall be a compact indoor vertical floor mounted chilled water precision air conditioner.

The chilled water cooling coil shall be constructed of copper tubes and aluminum fins. Coil end-plates shall be hot dipped galvanized. The cooling coil shall be mounted in an insulated stainless steel condensate drain pan.

Chilled water flow shall be controlled by a factory installed 2-Way Modulating (0-10Vdc) control valve rated for a maximum 580 psig w.w.p.

Options

DX Air Cooled Condenser - Low Ambient Control

0°F Ambient - Fan Cycling
(XP1 & XPU Models)

Fan cycling controls shall be factory installed to the direct drive condenser fan to allow for low ambient operation to 0°F.

-20°F Ambient - Variable Spd Fan
(XCX, XCU, XP1 & XPU Models)

Variable fan speed head pressure controls (*JCI P266 or Modulating EC*) shall be factory installed to allow for low ambient operation to -20°F. Compressor cold start time delay relay and crankcase heater shall be factory installed with the -20°F low ambient control feature.

-30°F Flooded Condenser
(All Condenser/ing Models)

A flooded condenser system shall be provided to allow for low ambient condenser operation to -30°F. The flooded system shall include a factory installed liquid refrigerant receiver and modulating head pressure control valve. Compressor cold start time delay relay and crankcase heater shall be factory installed with the -30°F low ambient control feature.

DX - Water / Glycol Cooled Head Pressure Control

DX - Water/Glycol Reg. Valves
(Factory Installed!)

- **2-Way, 450 psig Reg. Valve**
- **3-Way, 450 psig Reg. Valve**

System head pressure shall be controlled by a factory provided __-Way electronic modulating (0-10Vdc) water / glycol regulating valve rated for ___ psig w.w.p.

Chilled Water Control Valves

Chilled Water Control Valves

- **2-Way, 580 psig (0-10Vdc, NC)**
- **3-Way, 580 psig (0-10Vdc, NC)**

A __-way chilled water system control valve shall be factory installed within the air conditioning unit. The valve shall provide precison space cooling and/or dehumidification control. The valve shall be the 24 VAC, __-Way, Modulating (0-10Vdc), normally closed type.

Hot Gas Bypass Systems

Hot Gas Bypass To Evap Inlet

Each refrigerant circuit shall be provided with a factory installed hot gas (discharge) bypass valve. The hot gas bypass valve shall be designed to supply hot gas to evaporator inlet as required to provide coil freeze-protection and capacity modulation under low load conditions

Hot Gas Bypass To Suction Line with Quench Valve

(XPU & CCU Remote Condensing Units 3rd Line Not Required!)

Each refrigerant circuit of the Split DX system shall be provided with a factory installed hot gas bypass system to include: hot gas (discharge) bypass; desuperheating quench; and hot gas & quench solenoid valves. The hot gas bypass system shall be designed to supply hot gas and liquid refrigerant to the suction line as required to provide coil freeze-protection and capacity modulation under low load conditions. All hot gas bypass components shall be factory installed and shall not require additional field refrigerant lines on split DX systems.

Suction-Line Accumulator

Each refrigerant circuit shall be provided with a factory installed Suction-Line Accumulator to prevent liquid slugging of the compressor and excessive refrigerant dilution of the compressor oil during low load conditions. The accumulator shall return refrigerant and oil to the compressor at a sufficient rate to maintain both system operating efficiency and proper oil level. The accumulators shall be wrapped with 1/2" closed-cell neoprene insulation to prevent sweating.

CONTROL OPTIONS

MC-2000™, Advanced Temp/Humid Microprocessor Controller w/ Alarms & BMS Connection

The system shall be provided with a MC-2000™ advanced microprocessor based temperature and humidity controller with alarms.

Select Features/Benefits:

- 4x20 Character Liquid Crystal Alpha-numerical Display
- User Configurable
- Run-Time Hours
- Current Unit Mode Status
- Alarm Status
- Digital & Analog Inputs / Outputs
- Temperature Anticipation
- Remote Stop / Start Contact
- Summary Alarm Contact
- Automatic or Manual (selectable) Restart After Power Loss
- Sequential Load After Restart
- Recovery Delay
- Compressor Short Cycle Timers
- Cold Start Time Delay
- Security Password Access
- Self-Diagnostics
- Service Mode

Unit Status Display

The control system shall display current unit functions and room status (if applicable):

- Current Dry Bulb Temp Set Point
- Current Relative Humidity Set Point
- System ON/OFF
- Cooling
- Heating
- Humidifying
- Dehumidifying
- Reheating
- Actual Room DB Temperature
- Actual Room Relative Humidity

Alarm Conditions:

Alarm conditions activate an audible and visual indicator plus close a summary alarm dry contact connection. The control system shall alert to the following alarm conditions (if applicable):

- High Temperature
- Low Temperature
- High Humidity
- Low Humidity
- Sensor Failure
- Summary Failure
- Loss of Air Flow
- High Head Press
- Smoke Detection
- Firestat
- Leak Detection
- Sensor Failure
- Loss of Power
- Dirty Filter

Digital & Analog Control Inputs / Outputs:

The control system shall be capable of both digital (ON/OFF) and analog (proportional integral, PI) input and output control.

Select MC-2000 Options:

☐ Multi-Unit N+1 Sequencing

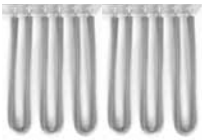
☐ BMS Communications Interface:

- ☐ BACnet over MS/TP (RS485 Serial)
- ☐ BACnet Over IP (Ethernet / EIA485)
- ☐ ModBus RS485 Serial Connection

Heat / Reheat Options

HEAT OPTIONS

Electric Reheat/Heat



An electric heating system shall be factory installed to provide:

- ☐ Electric Heat Only during heat mode
- ☐ Electric Reheat to offset sensible cooling during the dehumidification mode and to provide heating during heat mode.

Heater elements shall be the low-watt density finned-tubular type. The heater shall be complete with individual heater stage starter/contactor and overheat safeties. Systems incorporating factory installed electric heaters shall require only single point power to the main unit power distribution. The electric heat shall have a capacity of _____

BTU/H and a KW rating of ___ KW, controlled in ___ stages.

☐ **SCR Fired Heat/Reheat**
(0-100% Modulating 0-10Vdc)

The electric heat/reheat shall be controlled through a "zero firing" silicon control rectifier (SCR) with an extruded aluminum heat sink and solid state logic system to provide close dry bulb temperature control of the leaving conditioned air temperature. The electric heat shall have a capacity of _____ BTUH and a KW rating of ___ KW.

Hot Gas Reheat


The system shall be provided with a hot gas reheat coil with 3-way heat reclaim control valve. The hot gas reheat coil shall provide free-energy space neutral leaving air temperature by offsetting the sensible cooling during dx dehumidification operation.

*(**Note:** When compressor is located in the remote condensing unit, the maximum allowable refrigerant run for systems with Hot Gas Rheat is 40 linear feet, including both horizontal and vertical refrigerant line components.)*

Hot Water or Steam Heat Coil

A Hot Water (or Steam) Heating system shall be factory provided. The hot water (or steam) heating system shall be complete a factory installed aluminum fin, copper tube hot water coil and field installed 2-way motorized hot water (or steam rated) control valve. Hot water (or steam) shall be provided by a remote source at the specified flow rate, temperature and pressure. Piping specialties shall be field provided by others. The heating system shall have a rated capacity of _____ BTUH @ _____ GPM, _____°F EWT (or @ ____ psig saturated steam.)

Humidification Options

Steam Humidification

An electrode steam canister type humidification system shall be factory installed within the air conditioning system. The humidifier shall be complete with disposable canister, steam distributor, fill and drain valve, air gap, automatic flush cycle, manual humidity output adjustment and field installed remote wall mounted humidistat. The humidifier shall have a maximum output capacity of _____ lbs/hr.

Accessories

Plenum Discharge Box
(UF - Up-Flow Units)

A 3-Way (or 2-Way, or 1-Way) plenum discharge box shall be provided for field installation to the top of the up-flow unit. The plenum box shall be insulated and powder-coat painted to match the color of the unit. The plenum box supply grilles shall be the double deflection type with vertical blades in the front, horizontal blades in the back; both individually adjustable and on 2/3" spacing; aluminum roll-formed blade with semi-airfoil design; pressure fit nylon pivot pins (rattle free & non-loosening) and an aluminum extruded frame with mechanically locked corners.

Floor Stand

A ____ inch nominal high (__ in to __ in adj. range) floor stand shall be factory provided for field installation. The floor stand shall have adjustable legs with vibration isolation.

Turning Vanes

Turning vanes shall be factory provided with the floor stand to direct the discharge air either to the front or rear of the unit.

Condensate Pump
(Factory Installed - UpFlow)

A condensate pump shall be factory provided and installed within the indoor evaporator section *(Up-Flow & Down-Flow Air Pattern Configurations)*. The condensate pump shall be provided with dual internal float switches: one for pump operation initiation and the other for pump reservoir overflow safety.

Main Power, Non-Fused Disconnect
(Remote Condenser/ing Section)

The remote condensing unit (or condenser) shall be factory provided with a main power non-fused disconnect for field installation. The disconnect shall be NEMA rated for indoor or outdoor installation as required.

Remote Water-Leak Detector

A remote water-leak detector shall be factory provided for field installation. The remote water-leak detector shall be wired to shut down all A/C unit water producing functions upon sensing a water leak.

*(**Note:** Cable Type Remote Water Detectors are also optionally available.)*

Flow Switch - Condenser Water

A factory installed flow switch shall shut-down / lockout compressor operation prior to a high refrigerant pressure switch alarm upon sensing a loss or low dx condenser water/glycol flow. The flow switch alarm shall be indicated both via MC-2000 microprocessor display and auxilary dry-contact terminal connection.

Low Entering Condenser Water / Glycol Kit to 45°F EWT/EGT

A low enter condenser water/glycol kit shall be provided with liquid refrigerant receiver, compressor crankcase heater, insulated wrapped condenser and unit internal condenser water/glycol piping. The Low EWT/EGT kit shall allow for continued winter A/C operation when condenser source water/glycol drops below 65°F (down to 45°F).

Smoke Detector
(Factory Installed)

A Smoke Detector shall be factory installed in the return air stream of the unit and wired to the A/C unit electrical control panel. The Smoke Detector shall shut-down all A/C system operations upon activation.

Firestat
(Factory Installed)

A Firestat shall be factory installed in the return air stream of the unit and wired to the A/C unit electrical control panel. The Firestat shall shut-down all A/C system operations upon sensing a high return air temperature condition.

Hose Kits - Automatic

Condenser water/glycol hose kits shall be factory provided. Each kit shall include the piping specialties necessary to ensure a proper installation: a Hays 2500 Series Mesurflo Automatic Flow Control Valve, two 36" flexible hoses, ball valves on the return and supply sides with P/T Ports, high flow "Y-ball" strainers for sizes 1/2"-2" and a manual air vent on the return. Hose materials shall be the reinforced and bonded EPDM rubber type with a temperature rating of 32°F to 225°F and a working pressure of 400 psig. Minimum burst pressure shall be four (4) times the working pressure at maximum rated temperature. The hoses shall have stainless steel braid over an EPDM liner. The "Y-Ball" strainters shall have a stainless steel 20 mesh screen that is easily accessible for cleaning without disconnecting the hoses.

Mounting Vibration Isolators

Rubber/Cork Anti-Vibration Pads:

Each indoor vertical floor mounted section shall be provided with a set of quantity four (4"x4"x7/8") Rubber/Cork Anti-Vibration Pad vibration mounting isolators.

Spring Mounting Isolators:

Each indoor vertical floor mounted section shall be provided with a set of quantity four adjustable spring vibration mounting isolators with non-skid neoprene acoustical isolation pads. Isolators shall be sized for the total distributive weight of the unit with a 1" deflection.

Compressor Sound Jacket

Each compressor shall be provided with a factory installed compressor sound jacket with a snap closure system for ease of removal and reinstallation. Sound jackets shall have a noise reduction coefficient (NRC) of 0.85 per ASTM (C423) and a sound transmission class/loss (STC) of 11 per ASTM E-90.

Free-Cooling w/ DX Water/Glycol Cooled - MCW & MCG-( )-FE

The system shall include a factory installed water/glycol free cooling cycle complete with economizer cooling coil, 2 or 3-way modulating (0-10Vdc) control valve, aquastat sensor and automatic control logic. The FE coil shall be capable of providing rated sensible capacity without compressor operation when entering water/glycol fluid temperatures are 45°F or below (adjustable).

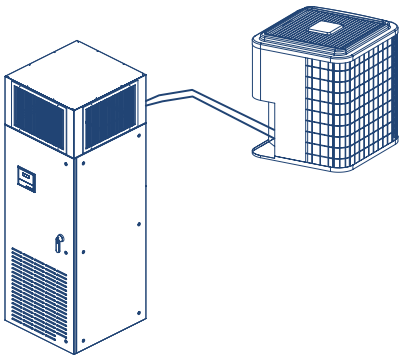
*(**Note:** Free-Cool valve must match condenser water/glycol regulating valve 2 or 3-way!)*

Dual-Cool, Chilled Water Coil & DX Cooling Cycle - MC_-( )-DC

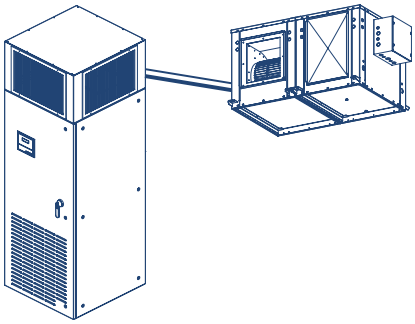
The system shall be a Dual-Cool configuration with primary chilled water coil cooling cycle and back-up DX cooling cycle *(DX Air, Water or Glycol Cooled as specified)*. Based on the available chilled water flow rate and temperature (45°F or below typical, adjustable), the unit's control system shall automatically select either chilled water or DX cooling modes. The system shall be provided with a factory installed 2 or 3-Way Modulating (0-10Vdc) chilled water control valve and field installed aquastat and flow switch.

DX - Air Cooled

MCE/H & XP1/2-( )
DX - Air Cooled Split with Propeller Fan,
Outdoor Remote Condenser or Condensing Unit

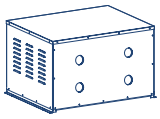


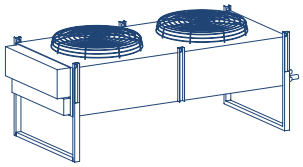
MCE/H with XCX or XCU -( )
DX - Air Cooled Split with Centrifugal Blower,
Indoor Remote Condenser or Condensing Unit



DX - Water / Glycol Cooled

MCW & MCG-( )
DX - Water/Glycol Cooled Self-Contained Plus Glycol Drycoolers &
Pump Packages





FCP & PA_ Models
Remote Indoor & Outdoor
Glycol Drycoolers and
Pump Packages

Chilled Water Sytems

MCC-( )
Chilled Water Air Handling Units

Performance Data (*MC1*™) - DX Air Cooled (12-35kW, 3.5-10 Tons)

	Nominal Size		12kW (3.5T)	18kW (5.0T)	21kW (6.0T)	29kW (8.0T)	35kW (10.0T)
	Air Cooled Model		**MCE & MCH-012**	**MCE & MCH-018**	**MCE & MCH-021**	**MCE & MCH-029**	**MCE & MCH-035**
AIR COOLED DX STD CFM	**80°F DB / 67°F WB, 50% RH**						
	Total	BTUH	43,000	69,200	82,700	107,400	132,500
	Sensible	BTUH	38,700	59,200	67,400	81,300	98,700
	75°F DB / 62.5°F WB, 50% RH						
	Total	BTUH	39,600	63,500	75,900	98,700	121,300
	Sensible	BTUH	38,000	58,600	66,700	81,500	97,100
	75°F DB / 61°F WB, 45% RH						
	Total	BTUH	39,200	62,000	73,700	95,800	118,400
	Sensible	BTUH	38,600	62,000	71,700	87,100	104,200
	72°F DB / 60°F WB, 50% RH						
	Total	BTUH	37,800	60,600	72,300	94,100	115,500
	Sensible	BTUH	37,000	57,400	65,400	79,800	95,100
	72°F DB / 58.5°F WB, 45% RH						
	Total	BTUH	37,600	59,800	70,300	91,200	112,800
	Sensible	BTUH	37,300	59,300	69,900	85,500	102,200
AIR COOLED DX OPT CFM	**75°F DB / 62.5°F WB, 50% RH**						
	Total	BTUH	41,100	63,000	75,000	100,400	122,900
	Sensible	BTUH	40,900	60,000	69,700	86,500	101,700
	75°F DB / 61°F WB, 45% RH						
	Total	BTUH	41,100	62,300	73,600	97,500	120,100
	Sensible	BTUH	41,100	61,800	73,000	92,700	109,400
	72°F DB / 60°F WB, 50% RH						
	Total	BTUH	39,400	60,000	71,400	95,700	118,000
	Sensible	BTUH	39,100	58,600	68,100	84,800	101,100
	72°F DB / 58.5°F WB, 45% RH						
	Total	BTUH	39,300	59,700	70,600	92,900	114,500
	Sensible	BTUH	39,300	59,400	70,100	90,800	107,300

COMPONENT DATA

AIR COOLED DX	**Electric Reheat / Heat** - BTUH includes evaporator motor heat, **(Optional)**						
	Capacity	MBH	36.0	37.6	38.4	40.2	42.7
		KW	10.6	11.0	11.3	11.8	12.5
	Stages	NO	1	1	1	1	1
	Steam Canister Humidifier - **(Optional)**						
	Steam Canister	LBS/HR	10	10	15	15	15
	Evaporator Fan / Motor - Direct-Drive, Backward-Inclined EC Plug Fan Impeller (Variable Speed Adjustable for Balancing)						
	Std Airflow Rate	CFM	1,800	2,800	3,200	3,800	4,400
	Opt Airflow Rate	*CFM*	*2,300*	*3,000*	*3,600*	*4,200*	*4,800*
	Blower Motor	kW	0.53	1.00	1.23	1.76	2.48
	E.S.P.	IN WG	0.5	0.5	0.5	0.5	0.5
	Evaporator Coil - Aluminum Fin, Copper Tube						
	Rows	NO	4	4	4	4	4
	Face Area	FT^2	6.3	6.3	9.7	9.7	9.7
	Face Velocity	FPM	288	448	330	391	453
	Filters - 4", 30% Dust Spot Efficient						
	Nominal Size	(NO) IN	(1) 25 x 29 x 4	(1) 25 x 29 x 4	(1) 37 x 33 x 4	(1) 37 x 33 x 4	(1) 37 x 33 x 4
	Compressor - Heat Pump Duty, SCROLL						
	Qty., Horsepower	(NO) HP	(1) 3.0	(1) 5.0	(1) 6.0	(1) 8.0	(1) 10.0
	Connection Sizes						
	Cond Drain w/ Pump	OD IN	1/2	1/2	1/2	1/2	1/2
	Humidifier Inlet	FLARE IN	1/4	1/4	1/4	1/4	1/4

Heat Rejection Data - DX Air Cooled

Nominal Size / Model Size		12kW (3.5T) 012	18kW (5.0T) 018	21kW (6.0T) 021	29kW (8.0T) 029	35kW (10.0T) 035
DX - AIR COOLED CONDENSER DATA						
AIR COOLED DX						
Outdoor, Remote Propeller Fan Air Cooled Condensing Units & Condensers - (XPU & XP1 models)						
Remote Condensing Unit Model		**XPU-012**	**XPU-018**	**XPU-021**	**XPU-029**	**XPU-035**
Remote Condenser Model		**XP1-012**	**XP1-018**	**XP1-021**	**XP1-029**	**XP1-035**
Airflow Rate	CFM	3,365	3,365	6,000	6,000	6,000
	IN ESP	Free Discharge	Free Discharge	Free Discharge	Free Discharge	Free Discharge
Blower Motor	HP	(1) 1/4	(1) 1/4	(2) 1/3	(2) 1/3	(2) 1/3
Fan Type		DD - Propeller	DD - Propeller	DD - Propeller	DD - Propeller	DD - Propeller
Coil Face Area	FT^2	19.4	15.09	21.7	24.0	24.0
Rows	NO	1	2	3	3	3
Indoor, Remote Centrifugal Blower Air Cooled Condenser & Condensing Unit Data - (XCU & XCX Models)						
Remote Condensing Unit Model		**XCU-012**	**XCU-018**	**XCU-021**	**XCU-029**	**XCU-035**
Remote Condenser Model		**XCX-012**	**XCX-018**	**XCX-021**	**XCX-029**	**XCX-035**
Airflow Rate	CFM	2,500	3,250	3,800	4,500	6,500
	IN ESP	1.0	1.0	1.0	1.0	1.0
Blower Motor	HP	1	1-1/2	2	3	5
Blower Diameter	IN	15 x 10	15 x 10	15 x 15	15 x 15	15 x 15
Blower Type		BD - Centrifugal	BD - Centrifugal	BD - Centrifugal	BD - Centrifugal	BD - Centrifugal
Coil Face Area	FT^2	6.5	6.5	9.7	9.7	9.7
Rows	NO	4	4	6	6	6

Connection Data - DX Air Cooled

Nominal Size		12kW (3.5T)	18kW (5.0T)	21kW (6.0T)	29kW (8.0T)	35kW (10.0T)
DX - AIR COOLED REFRIGERANT CONNECTION DATA						
DX Air Cooled						
DX Split, Indoor Evaporators - (MCE models)						
Model		**MCE-012**	**MCE-018**	**MCE-021**	**MCE-029**	**MCE-035**
Liquid Line, (Qty.)	OD IN (NO)	3/8, (1)	1/2, (1)	1/2, (1)	1/2, (1)	5/8, (1)
Hot Gas Line, (Qty.)	OD IN (NO)	1/2, (1)	3/4, (1)	7/8, (1)	7/8, (1)	1-1/8, (1)
Outdoor, Propeller Fan Remote Air Cooled Condenser - (XP1 models)						
Model - 95°F Amb Condenser		**XP1-012**	**XP1-018**	**XP1-021**	**XP1-029**	**XP1-035**
Liquid Line, (Qty.)	OD IN (NO)	3/8, (1)	3/8, (1)	1/2, (1)	1/2, (1)	5/8, (1)
Hot Gas Line, (Qty.)	OD IN (NO)	7/8, (1)	7/8 (1)	7/8, (1)	7/8, (1)	1-1/8, (1)
DX Split, Indoor Air Handling Units - (MCH models)						
Model		**MCH-012**	**MCH-018**	**MCH-021**	**MCH-029**	**MCH-035**
Liquid Line, (Qty.)	OD IN (NO)	3/8, (1)	1/2, (1)	1/2, (1)	1/2, (1)	5/8, (1)
Suction Line, (Qty.)	OD IN (NO)	7/8, (1)	7/8, (1)	7/8, (1)	1-1/8, (1)	1-3/8, (1)
Outdoor, Propeller Fan Remote Air Cooled Condensing Units - (XPU models)						
Model - 95°F Amb Cond Unit		**XPU-012**	**XPU-018**	**XPU-021**	**XPU-029**	**XPU-035**
Liquid Line, (Qty.)	ID IN (NO)	3/8, (1)	3/8, (1)	1/2, (1)	1/2, (1)	5/8, (1)
Suction Line, (Qty.)	ID IN (NO)	7/8, (1)	7/8, (1)	7/8, (1)	1-1/8, (1)	1-3/8, (1)

Performance Data (*MC1*™) - DX Water Cooled (12-35kW, 3.5-10 Tons)

	Nominal Size		12kW (3.5T)	18kW (5.0T)	21kW (6.0T)	29kW (8.0T)	35kW (10.0T)
	Water Cooled Model		**MCW-012**	**MCW-018**	**MCW-021**	**MCW-029**	**MCW-035**
WATER COOLED DX STD CFM	**80°F DB / 67°F WB, 50% RH**						
	Total	BTUH	45,800	74,000	87,900	114,300	141,100
	Sensible	BTUH	39,400	60,800	69,300	84,500	102,400
	75°F DB / 62.5°F WB, 50% RH						
	Total	BTUH	42,200	67,900	80,700	104,700	129,700
	Sensible	BTUH	39,200	60,200	68,500	83,300	100,700
	75°F DB / 61°F WB, 45% RH						
	Total	BTUH	41,600	66,100	78,400	102,300	126,200
	Sensible	BTUH	40,600	64,600	73,600	89,800	108,200
	72°F DB / 60°F WB, 50% RH						
	Total	BTUH	40,300	64,800	77,000	99,900	123,700
	Sensible	BTUH	38,400	59,100	67,300	81,700	98,700
	72°F DB / 58.5°F WB, 45% RH						
	Total	BTUH	39,900	63,100	74,700	97,600	120,600
	Sensible	BTUH	39,300	63,000	72,300	88,300	106,000
WATER COOLED DX OPT CFM	**75°F DB / 62.5°F WB, 50% RH**						
	Total	BTUH	43,800	67,500	80,000	107,300	131,200
	Sensible	BTUH	42,900	61,700	71,600	89,700	105,500
	75°F DB / 61°F WB, 45% RH						
	Total	BTUH	43,600	65,700	77,800	104,200	128,300
	Sensible	BTUH	43,500	65,700	76,800	95,500	113,200
	72°F DB / 60°F WB, 50% RH						
	Total	BTUH	42,000	64,300	76,200	102,400	125,300
	Sensible	BTUH	41,400	60,500	70,100	87,800	103,400
	72°F DB / 58.5°F WB, 45% RH						
	Total	BTUH	41,800	63,400	74,200	99,500	122,500
	Sensible	BTUH	41,800	62,900	74,200	93,800	111,000

COMPONENT DATA

WATER COOLED DX	**Electric Reheat / Heat** - BTUH includes evaporator motor heat, **(Optional)**						
	Capacity	MBH	36.0	37.6	38.4	40.2	42.7
		KW	10.6	11.0	11.3	11.8	12.5
	Stages	NO	1	1	1	1	1
	Steam Canister Humidifier - (Optional)						
	Steam Canister	LBS/HR	10	10	15	15	15
	Evaporator Fan / Motor - Direct-Drive, Backward-Inclined EC Plug Fan Impeller (Variable Speed Adjustable for Balancing)						
	Std Airflow Rate	CFM	1,800	2,800	3,200	3,800	4,400
	Opt Airflow Rate	*CFM*	*2,300*	*3,000*	*3,600*	*4,200*	*4,800*
	Blower Motor	kW	0.53	1.00	1.23	1.76	2.48
	E.S.P.	IN WG	0.5	0.5	0.5	0.5	0.5
	Evaporator Coil - Aluminum Fin, Copper Tube						
	Rows	NO	4	4	4	4	4
	Face Area	FT^2	6.3	6.3	9.7	9.7	9.7
	Face Velocity	FPM	288	448	330	391	453
	Filters - 4", 30% Dust Spot Efficient						
	Nominal Size	(NO) IN	(1) 25 x 29 x 4	(1) 25 x 29 x 4	(1) 37 x 33 x 4	(1) 37 x 33 x 4	(1) 37 x 33 x 4
	Compressor - Heat Pump Duty, SCROLL						
	Qty., Horsepower	(NO) HP	(1) 3.0	(1) 5.0	(1) 6.0	(1) 8.0	(1) 10.0
	Connection Sizes						
	Condenser Water In/Out	OD IN	7/8	1-1/8	1-3/8	1-3/8	1-3/8
	Cond Drain w/ Pump	OD IN	1/2	1/2	1/2	1/2	1/2
	Humidifier Inlet	FLARE IN	1/4	1/4	1/4	1/4	1/4

Heat Rejection Data - DX Water Cooled

	Nominal Size		12kW (3.5T)	18kW (5.0T)	21kW (6.0T)	29kW (8.0T)	35kW (10.0T)
DX Water Cooled	**Water Cooled Model**		**MCW-012**	**MCW-018**	**MCW-021**	**MCW-029**	**MCW-035**
	Water Cooled Condenser Data - 85°F EWT / 95°F LWT, 0% Glycol Solution *(rated at 75°F DB/62.5°F WB EAT, Optional Evap CFM)*						
	Total Heat of Reject.	BTUH	53,960	84,640	103,700	136,050	165,470
	Flow @ 85°F EWT	GPM	10.8	16.9	20.7	27.2	33.1
	Pressure Drop	FT WG	12.5	29.0	16.0	22.0	29.0
	Condenser Type		Coaxial	Coaxial	Brazed-Plate	Brazed-Plate	Brazed-Plate

Optional Free-Cooling Economizer Data DX Water Cooled

	Nominal Unit Size		12kW (3.5T)	18kW (5.0T)	21kW (6.0T)	29kW (8.0T)	35kW (10.0T)
	FE Free-Cool (0% Glycol) Model:		**MCW-012-FE**	**MCW-018-FE**	**MCW-021-FE**	**MCW-029-FE**	**MCW-035-FE**
Free-Cool (45°F EWT) 0% Glycol Std CFM	**80°F DB / 67°F WB, 50% RH**						
	Total / Sensible	MBH	56.3 / 42.4	84.7 / 63.8	114.5 / 80.9	137.1 / 95.9	156.9 / 109.7
	75°F DB / 62.5°F WB, 50% RH						
	Total / Sensible	MBH	45.1 / 39.3	67.7 / 59.1	90.2 / 73.8	107.6 / 87.3	123.0 / 99.7
	72°F DB / 60°F WB, 50% RH						
	Total / Sensible	MBH	39.3 / 37.1	58.9 / 55.7	77.7 / 68.9	92.4 / 81.4	105.5 / 93.0
	Flow Rate, (PD)	GPM / FT WG	10.3 / 1.1	16.8 / 2.7	20.4 / 4.8	26.7 / 7.7	32.8 / 11.1
Free-Cool (45°F EWT) 0% Glycol OPT CFM	**75°F DB / 62.5°F WB, 50% RH**						
	Total / Sensible	MBH	51.6 / 47.4	70.0 / 62.0	96.4 / 80.5	114.1 / 94.0	128.9 / 106.2
	72°F DB / 60°F WB, 50% RH						
	Total / Sensible	MBH	45.4 / 44.9	61.2 / 58.6	83.4 / 75.5	98.3 / 87.9	111.0 / 99.3
	Flow Rate, (PD)	GPM / FT WG	10.8 / 1.2	16.9 / 2.7	20.7 / 4.9	27.2 / 8.0	33.1 / 11.3

COMPONENT DATA: FREE-COOLING ECONOMIZER SYSTEMS

"FE" Free-Cool Econo Systems	**Evaporator Airflow Rates** - Direct-Drive, Backward-Inclined EC Plug Fan Impeller (Variable Speed Adjustable for Balancing)						
	Std Airflow / E.S.P.	CFM / IN WG	1,800 @ 0.5	2,800 @ 0.5	3,200 @ 0.5	3,800 @ 0.5	4,400 @ 0.5
	Opt Airflow / E.S.P.	*CFM / IN WG*	*2,300* @ 0.5	*3,000* @ 0.5	*3,600* @ 0.5	*4,200* @ 0.5	*4,800* @ 0.5
	FE Free-Cooling Economizer Coil - Aluminum Fin, Copper Tube						
	Rows	NO	3	3	3	3	3
	Face Area / Velocity	FT^2 / FPM	6.1 / 297	6.1 / 461	9.7 / 330	9.7 / 390	9.7 / 453
	Control Valve						
	Valve Options		2 or 3-Way	2 or 3-Way	2 or 3-Way	2 or 3-Way	2 or 3-Way
	Valve Size, (Cv)	IN	3/4, (11.7)	1, (18.7)	1-1/4, (29.2)	1-1/4, (29.2)	1-1/4, (29.2)
	Max Opr Press	PSIG	580	580	580	580	580
	Connection Sizes						
	Glycol In/Out	OD IN	7/8	1-1/8	1-3/8	1-3/8	1-3/8

Performance Data (*MC1*™) - DX Glycol Cooled (12-35kW, 3.5-10 Tons)

	Nominal Size		12kW (3.5T)	18kW (5.0T)	21kW (6.0T)	29kW (8.0T)	35kW (10.0T)
	Glycol Cooled Model		**MCG-012**	**MCG-018**	**MCG-021**	**MCG-029**	**MCG-035**
GLYCOL COOLED DX STD CFM	**80°F DB / 67°F WB, 50% RH**						
	Total	BTUH	41,000	65,800	79,000	102,100	126,500
	Sensible	BTUH	38,000	58,100	66,100	79,600	96,000
	75°F DB / 62.5°F WB, 50% RH						
	Total	BTUH	37,700	60,300	72,400	94,000	115,500
	Sensible	BTUH	37,000	57,400	65,400	79,400	94,500
	75°F DB / 61°F WB, 45% RH						
	Total	BTUH	37,500	59,600	70,500	91,100	112,700
	Sensible	BTUH	37,200	59,000	70,000	85,200	101,700
	72°F DB / 60°F WB, 50% RH						
	Total	BTUH	36,200	57,400	68,900	89,500	110,600
	Sensible	BTUH	35,200	56,000	64,100	77,800	93,800
	72°F DB / 58.5°F WB, 45% RH						
	Total	BTUH	36,000	57,100	67,800	86,700	107,200
	Sensible	BTUH	35,800	56,800	66,900	83,500	99,700
GLYCOL COOLED DX OPT CFM	**75°F DB / 62.5°F WB, 50% RH**						
	Total	BTUH	39,400	59,800	71,400	95,600	117,900
	Sensible	BTUH	39,100	58,500	68,300	84,600	100,400
	75°F DB / 61°F WB, 45% RH						
	Total	BTUH	39,300	59,400	70,700	92,800	114,300
	Sensible	BTUH	39,300	59,200	70,100	90,600	106,900
	72°F DB / 60°F WB, 50% RH						
	Total	BTUH	37,700	56,900	68,000	91,000	112,300
	Sensible	BTUH	37,500	56,800	66,700	82,800	98,200
	72°F DB / 58.5°F WB, 45% RH						
	Total	BTUH	37,700	56,900	67,600	88,400	108,800
	Sensible	BTUH	37,700	56,800	67,400	88,400	104,700

COMPONENT DATA

GLYCOL COOLED DX	**Electric Reheat / Heat** - BTUH includes evaporator motor heat, **(Optional)**						
	Capacity	MBH	36.0	37.6	38.4	40.2	42.7
		KW	10.6	11.0	11.3	11.8	12.5
	Stages	NO	1	1	1	1	1
	Steam Canister Humidifier - (Optional)						
	Steam Canister	LBS/HR	10	10	15	15	15
	Evaporator Fan / Motor - Direct-Drive, Backward-Inclined EC Plug Fan Impeller (Variable Speed Adjustable for Balancing)						
	Std Airflow Rate	CFM	1,800	2,800	3,200	3,800	4,400
	Opt Airflow Rate	*CFM*	*2,300*	*3,000*	*3,600*	*4,200*	*4,800*
	Blower Motor	kW	0.53	1.00	1.23	1.76	2.48
	E.S.P.	IN WG	0.5	0.5	0.5	0.5	0.5
	Evaporator Coil - Aluminum Fin, Copper Tube						
	Rows	NO	4	4	4	4	4
	Face Area	FT^2	6.3	6.3	9.7	9.7	9.7
	Face Velocity	FPM	288	448	330	391	453
	Filters - 4", 30% Dust Spot Efficient						
	Nominal Size	(NO) IN	(1) 25 x 29 x 4	(1) 25 x 29 x 4	(1) 37 x 33 x 4	(1) 37 x 33 x 4	(1) 37 x 33 x 4
	Compressor - Heat Pump Duty, SCROLL						
	Qty., Horsepower	(NO) HP	(1) 3.0	(1) 5.0	(1) 6.0	(1) 8.0	(1) 10.0
	Connection Sizes						
	Condenser Glycol In/Out	OD IN	7/8	1-1/8	1-3/8	1-3/8	1-3/8
	Cond Drain w/ Pump	OD IN	1/2	1/2	1/2	1/2	1/2
	Humidifier Inlet	FLARE IN	1/4	1/4	1/4	1/4	1/4

Heat Rejection Data - DX Glycol Cooled

DX Glycol Cooled

Nominal Size		12kW (3.5T)	18kW (5.0T)	21kW (6.0T)	29kW (8.0T)	35kW (10.0T)
Glycol Cooled Model		**MCG-012**	**MCG-018**	**MCG-021**	**MCG-029**	**MCG-035**
Glycol Cooled Condenser Data - 110°F EGT / 120°F LGT, 40% Ethylene Glycol Solution, *75°F DB/62.5°F WB EAT, Opt. Evap CFM*						
Total Heat of Reject.	BTUH	52,490	82,360	100,860	132,195	161,900
Flow @ 110°F EGT	GPM	11.6	18.2	22.3	29.2	35.8
Unit Pressure Drop	FT WG	13.0	31.0	18.0	24.0	32.0
Condenser Type		Coaxial	Coaxial	Brazed-Plate	Brazed-Plate	Brazed-Plate
Standard (Optional) Valve		*2-Way, 150 PSIG Standard (High Pressure and 3-Way Valves are Optionally Available)*				
Remote Outdoor Propeller Fan Glycol Drycooler Data - 110°F EGT / 120°F LGT, 40% Ethylene Glycol Solution						
Drycooler Model - 95°F Amb		**FCP-052-1S**	**FCP-080-2S**	**FCP-100-2S**	**FCP-131-2S**	**FCP-186-2S**
Flow @ 110°F EGT	GPM	11.6	18.2	22.3	29.2	35.8
Unit Pressure Drop	FT WG	7.0	7.8	6.2	6.5	9.5
Air Flow Rate	CFM	3,850	8,550	7,700	15,400	15,000
Fan Hp, (Qty)	HP, (NO)	1/2, (one)	1/2, (two)	1/2, (two)	1, (two)	1, (two)
Glycol Pump Package Data - 40% Ethylene Glycol Solution						
Single Pump Model		**PA1-007**	**PA1-007**	**PA1-010**	**PA1-015**	**PA1-015**
Motor Horsepower	HP	3/4	3/4	1	1-1/2	1-1/2
Total Available HD	FT WG	55	55	60	70	70
Optional Drycoolers & Pumps		*See AboveAir™ FluidCool / PumpAll™ Engineering Manual for Full Drycooler/Pump Offering*				

Optional Free-Cooling Economizer Data

Nominal Unit Size		12kW (3.5T)	18kW (5.0T)	21kW (6.0T)	29kW (8.0T)	35kW (10.0T)
FE Free-Cool (40% Glycol) Model:		**MCG-012-FE**	**MCG-018-FE**	**MCG-021-FE**	**MCG-029-FE**	**MCG-035-FE**
Free-Cool (45°F EGT) 40% Glycol Std CFM						
75°F DB / 62.5°F WB, 50% RH						
Total / Sensible	MBH	34.8 / 34.8	48.1 / 48.1	68.1 / 64.8	85.9 / 78.4	101.0 / 90.7
72°F DB / 60°F WB, 50% RH						
Total / Sensible	MBH	31.2 / 31.2	43.3 / 43.3	60.1 / 60.1	75.3 / 74.2	88.4 / 85.4
Flow Rate, (PD)	GPM / FT WG	11.1 / 1.8	18.1 / 4.3	22.0 / 7.6	28.9 / 12.3	35.3 / 17.5
Free-Cool (45°F EGT) 40% Glycol OPT CFM						
75°F DB / 62.5°F WB, 50% RH						
Total / Sensible	MBH	39.1 / 39.1	49.8 / 49.8	72.4 / 70.9	90.4 / 84.4	105.7 / 96.7
72°F DB / 60°F WB, 50% RH						
Total / Sensible	MBH	35.2 / 35.2	44.9 / 44.9	64.3 / 64.3	79.6 / 79.6	92.9 / 91.7
Flow Rate, (PD)	GPM / FT WG	11.6 / 2.0	18.2 / 4.3	22.3 / 7.8	29.2 / 12.5	35.8 / 17.9

COMPONENT DATA: FREE-COOLING ECONOMIZER SYSTEMS

"FE" Free-Cool Econo Systems

Evaporator Airflow Rates - Direct-Drive, Backward-Inclined EC Plug Fan Impeller (Variable Speed Adjustable for Balancing)						
Std Airflow / E.S.P.	CFM / IN WG	1,800 @ 0.5	2,800 @ 0.5	3,200 @ 0.5	3,800 @ 0.5	4,400 @ 0.5
Opt Airflow / E.S.P.	*CFM / IN WG*	*2,300* @ 0.5	*3,000* @ 0.5	*3,600* @ 0.5	*4,200* @ 0.5	*4,800* @ 0.5
FE Free-Cooling Economizer Coil - Aluminum Fin, Copper Tube						
Rows	NO	3	3	3	3	3
Face Area / Velocity	FT^2 / FPM	6.1 / 297	6.1 / 461	9.7 / 330	9.7 / 390	9.7 / 453
Control Valve						
Valve Options		2 or 3-Way	2 or 3-Way	2 or 3-Way	2 or 3-Way	2 or 3-Way
Valve Size, (Cv)	IN	3/4, (11.7)	1, (18.7)	1-1/4, (29.2)	1-1/4, (29.2)	1-1/4, (29.2)
Max Opr Press	PSIG	580	580	580	580	580
Connection Sizes						
Glycol In/Out	OD IN	7/8	1-1/8	1-3/8	1-3/8	1-3/8

Performance Data (*MC1*™) - Chilled Water Systems (12-35kW, 3.5-10T)

	Nominal Size		12kW (3.5T)	18kW (5.0T)	21kW (6.0T)	29kW (8.0T)	35kW (10.0T)
	Chilled Water System Model		**MCC-012**	**MCC-018**	**MCC-021**	**MCC-029**	**MCC-035**
CHILLED WATER SYSTEMS (45°F EWT) STD CFM	**80°F DB / 67°F WB, 50% RH**						
	Total / Sensible	MBH	60.9 / 44.3	85.6 / 64.1	122.1 / 84.0	139.3 / 96.8	154.4 / 108.7
	Flow Rate, (PD)	GPM / FT WG	12.2 / 1.5	17.2 / 2.8	24.5 / 6.6	28.0 / 8.4	31.0 / 10.0
	75°F DB / 62.5°F WB, 50% RH						
	Total / Sensible	MBH	40.0 / 37.3	58.4 / 55.3	84.7 / 71.5	97.0 / 82.9	108.4 / 93.7
	Flow Rate, (PD)	GPM / FT WG	8.0 / 0.7	11.7 / 1.4	17.0 / 3.5	19.5 / 4.4	21.8 / 5.4
	75°F DB / 61°F WB, 45% RH						
	Total / Sensible	MBH	38.0 / 38.0	56.2 / 56.2	77.9 / 74.5	89.7 / 86.6	100.7 / 98.3
	Flow Rate, (PD)	GPM / FT WG	7.6 / 0.7	11.3 / 1.3	15.6 / 3.0	18.0 / 3.9	20.2 / 4.7
	72°F DB / 60°F WB, 50% RH						
	Total / Sensible	MBH	31.0 / 31.0	47.3 / 47.3	67.8 / 64.8	78.2 / 75.4	87.8 / 85.6
	Flow Rate, (PD)	GPM / FT WG	6.2 / 0.5	9.5 / 1.0	13.6 / 2.4	15.7 / 3.0	17.6 / 3.7
	72°F DB / 58.5°F WB, 45% RH						
	Total / Sensible	MBH	30.9 / 30.9	47.2 / 47.2	64.9 / 64.9	75.3 / 75.3	85.1 / 85.1
	Flow Rate, (PD)	GPM / FT WG	6.2 / 0.5	9.5 / 1.0	13.0 / 2.2	15.1 / 2.8	17.1 / 3.5
CHILLED WATER SYSTEMS (45°F EWT) OPT CFM	**75°F DB / 62.5°F WB, 50% RH**						
	Total / Sensible	MBH	49.9 / 46.6	61.8 / 58.7	93.0 / 79.1	104.6 / 90.1	115.5 / 100.7
	Flow Rate, (PD)	GPM / FT WG	10.0 / 1.1	12.4 / 1.6	18.7 / 4.1	21.0 / 5.1	23.2 / 6.0
	75°F DB / 61°F WB, 45% RH						
	Total / Sensible	MBH	47.4 / 47.4	59.4 / 59.4	85.8 / 82.6	97.2 / 94.5	107.8 / 105.9
	Flow Rate, (PD)	GPM / FT WG	9.5 / 1.0	11.9 / 1.5	17.2 / 3.6	19.5 / 4.4	21.6 / 5.3
	72°F DB / 60°F WB, 50% RH						
	Total / Sensible	MBH	39.5 / 39.5	50.3 / 50.3	74.8 / 71.9	84.7 / 82.2	94.0 / 92.2
	Flow Rate, (PD)	GPM / FT WG	7.9 / 0.7	10.1 / 1.1	15.0 / 2.8	17.0 / 3.5	18.9 / 4.2
	72°F DB / 58.5°F WB, 45% RH						
	Total / Sensible	MBH	39.4 / 39.4	50.0 / 50.0	71.9 / 71.9	81.8 / 81.8	91.1 / 91.1
	Flow Rate, (PD)	GPM / FT WG	7.9 / 0.7	10.0 / 1.1	14.4 / 2.6	16.4 / 3.3	18.3 / 4.0

COMPONENT DATA - CHILLED WATER SYSTEMS

CHILLED WATER SYSTEMS	**Electric Reheat / Heat** - BTUH includes evaporator motor heat, **(Optional)**						
	Capacity	MBH (kW)	36.0 (10.6)	37.6 (11.0)	38.4 (11.3)	40.2 (11.8)	42.7 (12.5)
	Stages	NO	1	1	1	1	1
	Steam Canister Humidifier - **(Optional)**						
	Steam Canister	LBS/HR	10	10	15	15	15
	Evaporator Fan / Motor - Direct-Drive, Backward-Inclined EC Plug Fan Impeller (Variable Speed Adjustable for Balancing)						
	Std Airflow Rate	CFM	1,800	2,800	3,200	3,800	4,400
	Opt Airflow Rate	*CFM*	*2,300*	*3,000*	*3,600*	*4,200*	*4,800*
	Blower Motor	kW	0.53	1.00	1.23	1.76	2.48
	E.S.P.	IN WG	0.5	0.5	0.5	0.5	0.5
	Chilled Water Coil - Aluminum Fin, Copper Tube						
	Rows	NO	4	4	4	4	4
	Face Area / Velocity	FT^2 / FPM	6.1 / 297	6.1 / 461	9.7 / 330	9.7 / 390	9.7 / 453
	Control Valve						
	Standard Valve		2-Way	2-Way	2-Way	2-Way	2-Way
	Valve Size, (Cv)	IN	3/4, (11.7)	1, (18.7)	1-1/4, (29.2)	1-1/4, (29.2)	1-1/4, (29.2)
	Max Opr Press	PSIG	580	580	580	580	580
	Optional Valve		*3-Way*	*3-Way*	*3-Way*	*3-Way*	*3-Way*
	Filters - 4", 30% Dust Spot Efficient						
	Nominal Size	(NO) IN	(1) 25 x 29 x 4	(1) 25 x 29 x 4	(1) 37 x 33 x 4	(1) 37 x 33 x 4	(1) 37 x 33 x 4
	Connection Sizes						
	Chilled Water In/Out	OD IN	7/8	1-1/8	1-3/8	1-3/8	1-3/8
	Cond Drain w/ Pump	OD IN	1/2	1/2	1/2	1/2	1/2
	Humidifier Inlet	OD IN	1/4	1/4	1/4	1/4	1/4

Performance Data (*MC1*™) - Dual-Cool Systems (12-35kW, 3.5-10T)

	Nominal Size		12kW (3.5T)	18kW (5.0T)	21kW (6.0T)	29kW (8.0T)	35kW (10.0T)
	Dual-Cool Chilled Water Model		**MC_-012-DC**	**MC_-018-DC**	**MC_-021-DC**	**MC_-029-DC**	**MC_-035-DC**
DUAL COOL (45°F EWT) STD CFM	**80°F DB / 67°F WB, 50% RH**						
	Total / Sensible	MBH	60.9 / 44.3	85.6 / 64.1	122.1 / 84.0	139.3 / 96.8	154.4 / 108.7
	Flow Rate, (PD)	GPM / FT WG	12.2 / 1.5	17.2 / 2.8	24.5 / 6.6	28.0 / 8.4	31.0 / 10.0
	75°F DB / 62.5°F WB, 50% RH						
	Total / Sensible	MBH	40.0 / 37.3	58.4 / 55.3	84.7 / 71.5	97.0 / 82.9	108.4 / 93.7
	Flow Rate, (PD)	GPM / FT WG	8.0 / 0.7	11.7 / 1.4	17.0 / 3.5	19.5 / 4.4	21.8 / 5.4
	75°F DB / 61°F WB, 45% RH						
	Total / Sensible	MBH	38.0 / 38.0	56.2 / 56.2	77.9 / 74.5	89.7 / 86.6	100.7 / 98.3
	Flow Rate, (PD)	GPM / FT WG	7.6 / 0.7	11.3 / 1.3	15.6 / 3.0	18.0 / 3.9	20.2 / 4.7
	72°F DB / 60°F WB, 50% RH						
	Total / Sensible	MBH	31.0 / 31.0	47.3 / 47.3	67.8 / 64.8	78.2 / 75.4	87.8 / 85.6
	Flow Rate, (PD)	GPM / FT WG	6.2 / 0.5	9.5 / 1.0	13.6 / 2.4	15.7 / 3.0	17.6 / 3.7
	72°F DB / 58.5°F WB, 45% RH						
	Total / Sensible	MBH	30.9 / 30.9	47.2 / 47.2	64.9 / 64.9	75.3 / 75.3	85.1 / 85.1
	Flow Rate, (PD)	GPM / FT WG	6.2 / 0.5	9.5 / 1.0	13.0 / 2.2	15.1 / 2.8	17.1 / 3.5
DUAL COOL (45°F EWT) OPT CFM	**75°F DB / 62.5°F WB, 50% RH**						
	Total / Sensible	MBH	49.9 / 46.6	61.8 / 58.7	93.0 / 79.1	104.6 / 90.1	115.5 / 100.7
	Flow Rate, (PD)	GPM / FT WG	10.0 / 1.1	12.4 / 1.6	18.7 / 4.1	21.0 / 5.1	23.2 / 6.0
	75°F DB / 61°F WB, 45% RH						
	Total / Sensible	MBH	47.4 / 47.4	59.4 / 59.4	85.8 / 82.6	97.2 / 94.5	107.8 / 105.9
	Flow Rate, (PD)	GPM / FT WG	9.5 / 1.0	11.9 / 1.5	17.2 / 3.6	19.5 / 4.4	21.6 / 5.3
	72°F DB / 60°F WB, 50% RH						
	Total / Sensible	MBH	39.5 / 39.5	50.3 / 50.3	74.8 / 71.9	84.7 / 82.2	94.0 / 92.2
	Flow Rate, (PD)	GPM / FT WG	7.9 / 0.7	10.1 / 1.1	15.0 / 2.8	17.0 / 3.5	18.9 / 4.2
	72°F DB / 58.5°F WB, 45% RH						
	Total / Sensible	MBH	39.4 / 39.4	50.0 / 50.0	71.9 / 71.9	81.8 / 81.8	91.1 / 91.1
	Flow Rate, (PD)	GPM / FT WG	7.9 / 0.7	10.0 / 1.1	14.4 / 2.6	16.4 / 3.3	18.3 / 4.0

COMPONENT DATA - DUAL COOL SYSTEMS

DUAL COOL SYSTEMS	**Evaporator Fan / Motor -** Direct-Drive, Backward-Inclined EC Plug Fan Impeller (Variable Speed Adjustable for Balancing)						
	Std Airflow Rate	CFM	1,800	2,800	3,200	3,800	4,400
	Opt Airflow Rate	*CFM*	*2,300*	*3,000*	*3,600*	*4,200*	*4,800*
	Blower Motor	kW	0.53	1.00	1.23	1.76	2.48
	E.S.P.	IN WG	0.5	0.5	0.5	0.5	0.5
	Dual-Cool Chilled Water Coil - Aluminum Fin, Copper Tube						
	Rows	NO	4	4	4	4	4
	Face Area / Velocity	FT^2 / FPM	6.1 / 297	6.1 / 461	9.7 / 330	9.7 / 390	9.7 / 453
	Control Valve						
	Valve Options		2 or 3-Way	2 or 3-Way	2 or 3-Way	2 or 3-Way	2 or 3-Way
	Valve Size, (Cv)	IN	3/4, (11.7)	1, (18.7)	1-1/4, (29.2)	1-1/4, (29.2)	1-1/4, (29.2)
	Max Opr Press	PSIG	580	580	580	580	580
	Connection Sizes						
	Chilled Water In/Out	OD IN	7/8	1-1/8	1-3/8	1-3/8	1-3/8

ELECTRICAL COMPONENT DATA - MC1

Unit Size (Nom. Tons)	MC1 Model	Main Power Supply	Compressor (Fixed Speed)				Evap Fan Motor				Electric Reheat/Heat (Optional)		Steam Humidifier (Optional)		
			Qty.	RLA	LRA	Type	Qty.	FLA	HP (kW)	Type	KW	FLA	LB/HR (kg/hr)	FLA	KW
12kW (3.5 Tons)	MC_-012S-3-*	208/3/60	1	13.7	83.1	Scroll	1	9.5	0.71 (0.53)	EC	10.02	27.8	10 (4.5)	16.4	3.4
	MC_-012S-3-*	460/3/60	1	6.2	41.0	Scroll	1	4.6	0.71 (0.53)	EC	10.02	12.6	10 (4.5)	7.4	3.4
18kW (5.0 Tons)	MC_-018S-3-*	208/3/60	1	15.6	110.0	Scroll	1	9.5	1.34 (1.0)	EC	10.02	27.8	10 (4.5)	16.4	3.4
	MC_-018S-4-*	460/3/60	1	7.8	52.0	Scroll	1	4.6	1.34 (1.0)	EC	10.02	12.6	10 (4.5)	7.4	3.4
21kW (6.0 Tons)	MC_-021S-3-*	208/3/60	1	23.2	164.0	Scroll	1	9.3	1.65 (1.23)	EC	10.02	27.8	15 (6.8)	14.2	5.1
	MC_-021S-4-*	460/3/60	1	11.2	75.0	Scroll	1	4.5	1.65 (1.23)	EC	10.02	12.6	15 (6.8)	6.4	5.1
29kW (8.0 Tons)	MC_-029S-3-*	208/3/60	1	25.0	164.0	Scroll	1	9.3	2.36 (1.76)	EC	10.02	27.8	15 (6.8)	14.2	5.1
	MC_-029S-4-*	460/3/60	1	12.2	100.0	Scroll	1	4.5	2.36 (1.76)	EC	10.02	12.6	15 (6.8)	6.4	5.1
35kW (10.0 Tons)	MC_-035S-3-*	208/3/60	1	28.2	240.0	Scroll	1	9.3	3.33 (2.48)	EC	10.02	27.8	15 (6.8)	14.2	5.1
	MC_-035S-4-*	460/3/60	1	14.7	130.0	Scroll	1	4.5	3.33 (2.48)	EC	10.02	12.6	15 (6.8)	6.4	5.1

DX - Split Evap & Water/Glycol Cooled Self-Contained

MODEL	MCE, MCW & MCG-012S		MCE, MCW & MCG-018S		MCE, MCW & MCG-021S		MCE, MCW & MCG-029S		MCE, MCW & MCG-035S	
Power Supply	208/3/60	460/3/60	208/3/60	460/3/60	208/3/60	460/3/60	208/3/60	460/3/60	208/3/60	460/3/60
Cooling Only *(or Cooling with Hot Gas Reheat, Hot Water or Steam Reheat/Heat)*										
FLA	23.2	10.8	25.2	12.4	32.5	15.7	34.3	16.7	37.5	19.3
MCA	26.7	12.4	29.1	14.3	38.3	18.5	40.5	19.7	44.5	23.0
MOP	40	15	40	20	60	25	60	30	70	35
with Electric Heat *(No Electric Reheat or Humidifier)*										
FLA	37.3	17.2	37.3	17.2	37.1	17.1	37.1	17.1	37.5	19.3
MCA	46.7	21.5	46.7	21.5	46.4	21.4	46.4	21.4	46.4	23.0
MOP	50	25	50	25	60	25	60	30	70	35
with Electric Reheat/Heat *(No Humidifier)*										
FLA	51.0	23.4	53.0	24.9	60.3	28.3	62.1	29.3	65.3	31.8
MCA	61.4	28.1	63.8	30.0	73.1	34.3	75.3	35.5	79.3	38.7
MOP	70	30	70	35	80	40	90	40	100	50
with Humidifier with or without Hot Gas Reheat, Hot Water/Steam Reheat/Heat *(No Electric Reheat/Heat)*										
FLA	39.6	18.2	41.6	19.8	46.7	22.1	48.5	23.1	51.7	25.7
MCA	43.1	19.8	45.5	21.7	52.5	24.9	54.7	26.1	58.7	29.4
MOP	50	25	60	25	70	35	70	35	80	40
with Electric Heat *(No Electric Reheat)* **& Humidifier**										
FLA	53.7	24.6	53.7	24.6	51.3	23.5	51.3	23.5	51.7	25.7
MCA	63.1	28.9	63.1	28.9	60.6	27.8	60.6	27.8	60.6	29.4
MOP	70	30	70	30	70	35	70	35	80	40
with Electric Reheat/Heat & Humidifier										
FLA	53.7	24.6	53.7	24.9	60.3	28.3	62.1	29.3	65.3	31.8
MCA	63.1	28.9	63.8	30.0	73.1	34.3	75.3	35.5	79.3	38.7
MOP	70	30	70	35	80	40	90	40	100	50

Notes:
1) FLA = Full Load Amps; MCA = Min Circuit Amps; MOP = Max Overcurrent Protection (Max Fuse Size)
2) - - - - Consult local AboveAir Sales Representative for non-cataloged system

DX - Split and Chilled Water Air Handling Units

MODEL	MCH & MCC-012		MCH & MCC-018		MCH & MCC-021		MCH & MCC-029		MCH & MCC-035	
Power Supply	**208/3/60**	**460/3/60**	**208/3/60**	**460/3/60**	**208/3/60**	**460/3/60**	**208/3/60**	**460/3/60**	**208/3/60**	**460/3/60**
Cooling Only *(or Cooling with Hot Gas Reheat, Hot Water or Steam Reheat/Heat)*										
FLA	9.5	4.6	9.5	4.6	9.3	4.5	9.3	4.5	9.3	4.5
MCA	11.9	5.8	11.9	5.8	11.6	5.7	11.6	5.7	11.6	5.7
MOP	20	15	20	15	20	15	20	15	20	15
with Electric Heat *(No Electric Reheat or Humidifier)*										
FLA	37.3	17.2	37.3	17.2	37.1	17.1	37.1	17.1	37.1	17.1
MCA	46.7	21.5	46.7	21.5	46.4	21.4	46.4	21.4	46.4	21.4
MOP	50	25	50	25	50	25	50	25	50	25
with Electric Reheat/Heat *(No Humidifier)*										
FLA	37.3	17.2	37.3	17.2	37.1	17.1	37.1	17.1	37.1	17.1
MCA	46.7	21.5	46.7	21.5	46.4	21.4	46.4	21.4	46.4	21.4
MOP	50	25	50	25	50	25	50	25	50	25
with Humidifier with or without Hot Gas Reheat, Hot Water/Steam Reheat/Heat *(No Electric Reheat/Heat)*										
FLA	25.9	12.0	25.9	12.0	23.5	10.9	23.5	10.9	23.5	10.9
MCA	28.3	13.2	28.3	13.2	25.8	12.1	25.8	12.1	25.8	12.1
MOP	35	15	35	15	35	15	35	15	35	15
with Electric Heat *(No Electric Reheat)* **& Humidifier**										
FLA	53.7	24.6	53.7	24.6	51.3	23.5	51.3	23.5	51.3	23.5
MCA	63.1	28.9	63.1	28.9	60.6	27.8	60.6	27.8	60.6	27.8
MOP	70	30	70	30	70	30	70	30	70	30
with Electric Reheat/Heat & Humidifier										
FLA	53.7	24.6	53.7	24.6	51.3	23.5	51.3	23.5	51.3	23.5
MCA	63.1	28.9	63.1	28.9	60.6	27.8	60.6	27.8	60.6	27.8
MOP	70	30	70	30	70	30	70	30	70	30

Approximate Unit Ship Weights (lbs.)

UNIT SIZE	MODEL TYPE								
	MCH	**MCE**	**XCU**	**XCX**	**XPU**	**XP1**	**MCW & MCG**	**M_-FE/DC**	**MCC**
012	450	575	475	340	185	130	600	700	450
018	450	600	585	350	195	140	625	725	450
021	600	790	875	700	315	200	820	920	600
029	600	800	885	715	325	200	850	950	600
035	600	810	895	725	350	215	860	960	600

Notes:
1) FLA = Full Load Amps; MCA = Min Circuit Amps; MOP = Max Overcurrent Protection (Max Fuse Size)
2) - - - - Consult local AboveAir Sales Representative for non-cataloged system

DX - AIR COOLED, REMOTE CONDENSERS & CONDENSING UNITS

Unit Size (Tons)	Condenser / Cond Unit Model	Main Power Supply	Type	Compressor (Fixed Speed)				Cond Fan Motor				Unit Nameplate Data		
				Qty.	RLA	LRA	Type	Qty.	HP (kW)	FLA	Type	FLA	MCA	MOP
12kW (3.5 Tons)	**XP1-012S-1***	208/1/60	Outdoor Pad/Roof Mtd	- - -	- - -	- - -	- - -	1	1/4 (0.19)	2.0	AC	**2.0**	**2.5**	**15**
	XP1-012S-7*	277/1/60	Outdoor Pad/Roof Mtd	- - -	- - -	- - -	- - -	1	1/4 (0.19)	1.5	AC	**1.5**	**1.9**	**15**
	XP1-012S-3*	208/3/60	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
	XP1-012S-8*	460/1/60	Outdoor Pad/Roof Mtd	- - -	- - -	- - -	- - -	1	1/4 (0.19)	1.0	AC	**1.0**	**1.3**	**15**
	XPU-012S-1*	208/1/60	Outdoor Pad/Roof Mtd	1	17.9	112.0	Scroll	1	1/4 (0.19)	2.0	AC	**19.9**	**24.4**	**40**
	XPU-012S-7*	277/1/60	Outdoor Pad/Roof Mtd	1	13.4	84.1	Scroll	1	1/4 (0.19)	1.5	AC	**14.9**	**18.3**	**30**
	XPU-012S-3*	208/3/60	Outdoor Pad/Roof Mtd	1	13.5	88.0	Scroll	1	1/4 (0.19)	2.0	AC	**15.5**	**18.9**	**30**
	XPU-012S-4*	460/3/60	Outdoor Pad/Roof Mtd	1	6.0	44.0	Scroll	1	1/4 (0.19)	1.0	AC	**7.0**	**8.5**	**15**
	XCX-012S-1*	208/1/60	Indoor Ceiling Mtd	- - -	- - -	- - -	- - -	1	1-1/2 (1.12)	7.5	AC	**7.5**	**9.4**	**15**
	XCX-012S-7*	277/1/60	Indoor Ceiling Mtd	- - -	- - -	- - -	- - -	1	1-1/2 (1.12)	5.6	AC	**5.6**	**7.0**	**15**
	XCX-012S-3*	208/3/60	Indoor Ceiling Mtd	- - -	- - -	- - -	- - -	1	1-1/2 (1.12)	5.4	AC	**5.4**	**6.8**	**15**
	XCX-012S-4*	460/3/60	Indoor Ceiling Mtd	- - -	- - -	- - -	- - -	1	1-1/2 (1.12)	2.8	AC	**2.8**	**3.5**	**15**
	XCU-012S-1*	208/1/60	Indoor Ceiling Mtd	1	17.9	112.0	Scroll	1	1-1/2 (1.12)	7.5	AC	**25.4**	**29.9**	**45**
	XCU-012S-7*	277/1/60	Indoor Ceiling Mtd	1	16.0	87.0	Scroll	1	1-1/2 (1.12)	5.6	AC	**21.6**	**25.6**	**40**
	XCU-012S-3*	208/3/60	Indoor Ceiling Mtd	1	13.5	88.0	Scroll	1	1-1/2 (1.12)	5.4	AC	**18.9**	**22.3**	**35**
	XCU-012S-4*	460/3/60	Indoor Ceiling Mtd	1	6.0	44.0	Scroll	1	1-1/2 (1.12)	2.8	AC	**8.8**	**10.3**	**15**
14kW (4.0 Tons)	**XP1-014S-1***	208/1/60	Outdoor Pad/Roof Mtd	- - -	- - -	- - -	- - -	1	1/4 (0.19)	2.0	AC	**2.0**	**2.5**	**15**
	XP1-014S-7*	277/1/60	Outdoor Pad/Roof Mtd	- - -	- - -	- - -	- - -	1	1/4 (0.19)	1.5	AC	**1.5**	**1.9**	**15**
	XP1-014S-3*	208/3/60	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
	XP1-014S-8*	460/1/60	Outdoor Pad/Roof Mtd	- - -	- - -	- - -	- - -	1	1/4 (0.19)	1.0	AC	**1.0**	**1.3**	**15**
	XPU-014S-1*	208/1/60	Outdoor Pad/Roof Mtd	1	19.9	109.0	Scroll	1	1/4 (0.19)	2.0	AC	**21.9**	**26.8**	**45**
	XPU-014S-7*	277/1/60	Outdoor Pad/Roof Mtd	1	14.9	81.8	Scroll	1	1/4 (0.19)	1.5	AC	**16.4**	**20.2**	**35**
	XPU-014S-3*	208/3/60	Outdoor Pad/Roof Mtd	1	13.1	83.1	Scroll	1	1/4 (0.19)	2.0	AC	**15.1**	**18.4**	**30**
	XPU-014S-4*	460/3/60	Outdoor Pad/Roof Mtd	1	6.1	41.0	Scroll	1	1/4 (0.19)	1.0	AC	**7.1**	**8.6**	**15**
	XCX-014S-1*	208/1/60	Indoor Ceiling Mtd	- - -	- - -	- - -	- - -	1	1-1/2 (1.12)	7.5	AC	**7.5**	**9.4**	**15**
	XCX-014S-7*	277/1/60	Indoor Ceiling Mtd	- - -	- - -	- - -	- - -	1	1-1/2 (1.12)	5.6	AC	**5.6**	**7.0**	**15**
	XCX-014S-3*	208/3/60	Indoor Ceiling Mtd	- - -	- - -	- - -	- - -	1	1-1/2 (1.12)	5.4	AC	**5.4**	**6.8**	**15**
	XCX-014S-4*	460/3/60	Indoor Ceiling Mtd	- - -	- - -	- - -	- - -	1	1-1/2 (1.12)	2.8	AC	**2.8**	**3.5**	**15**
	XCU-014S-1*	208/1/60	Indoor Ceiling Mtd	1	26.4	134.0	Scroll	1	1-1/2 (1.12)	7.5	AC	**33.9**	**40.5**	**60**
	XCU-014S-7*	277/1/60	Indoor Ceiling Mtd	1	19.9	130.0	Scroll	1	1-1/2 (1.12)	5.6	AC	**25.5**	**30.5**	**50**
	XCU-014S-3*	208/3/60	Indoor Ceiling Mtd	1	16.0	110.0	Scroll	1	1-1/2 (1.12)	5.4	AC	**21.4**	**25.4**	**40**
	XCU-014S-4*	460/3/60	Indoor Ceiling Mtd	1	7.8	52.0	Scroll	1	1-1/2 (1.12)	2.8	AC	**10.6**	**12.5**	**20**
18kW (5.0 Tons)	**XP1-018S-1***	208/1/60	Outdoor Pad/Roof Mtd	- - -	- - -	- - -	- - -	1	1/4 (0.19)	2.0	AC	**2.0**	**2.5**	**15**
	XP1-018S-7*	277/1/60	Outdoor Pad/Roof Mtd	- - -	- - -	- - -	- - -	1	1/4 (0.19)	1.5	AC	**1.5**	**1.9**	**15**
	XP1-018S-3*	208/3/60	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
	XP1-018S-8*	460/1/60	Outdoor Pad/Roof Mtd	- - -	- - -	- - -	- - -	1	1/4 (0.19)	1.0	AC	**1.0**	**1.3**	**15**
	XPU-018S-1*	208/1/60	Outdoor Pad/Roof Mtd	1	26.4	134.0	Scroll	1	1/4 (0.19)	2.0	AC	**28.4**	**35.0**	**60**
	XPU-018S-7*	277/1/60	Outdoor Pad/Roof Mtd	1	19.8	100.6	Scroll	1	1/4 (0.19)	1.5	AC	**21.3**	**26.3**	**45**
	XPU-018S-3*	208/3/60	Outdoor Pad/Roof Mtd	1	16.0	110.0	Scroll	1	1/4 (0.19)	2.0	AC	**18.0**	**22.0**	**35**
	XPU-018S-4*	460/3/60	Outdoor Pad/Roof Mtd	1	7.8	52.0	Scroll	1	1/4 (0.19)	1.0	AC	**8.8**	**10.7**	**15**
	XCX-018S-1*	208/1/60	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
	XCX-018S-7*	277/1/60	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
	XCX-018S-3*	208/3/60	Indoor Ceiling Mtd	- - -	- - -	- - -	- - -	1	2 (1.49)	6.9	AC	**6.9**	**8.6**	**15**
	XCX-018S-4*	460/3/60	Indoor Ceiling Mtd	- - -	- - -	- - -	- - -	1	2 (1.49)	3.5	AC	**3.5**	**4.4**	**15**
	XCU-018S-1*	208/1/60	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
	XCU-018S-7*	277/1/60	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
	XCU-018S-3*	208/3/60	Indoor Ceiling Mtd	1	15.6	110.0	Scroll	1	2 (1.49)	6.9	AC	**22.5**	**26.5**	**40**
	XCU-018S-4*	460/3/60	Indoor Ceiling Mtd	1	7.8	52.0	Scroll	1	2 (1.49)	3.5	AC	**11.3**	**13.2**	**20**

Notes:

1) Notes:

1) FLA = Full Load Amps; MCA = Min Circuit Amps; MOP = Max Overcurrent Protection (Max Fuse Size)

2) 277/1/60 systems may require factory provided field installed step-down transformer.

DX - AIR COOLED, REMOTE CONDENSERS & CONDENSING UNITS

Unit Size (Tons)	Condenser / Cond Unit Model	Main Power Supply	Type	Compressor (Fixed Speed)				Cond Fan Motor				Unit Nameplate Data		
				Qty.	RLA	LRA	Type	Qty.	HP (kW)	FLA	Type	FLA	MCA	MOP
21kW (6.0 Tons)	**XP1-021S-1***	208/1/60	Outdoor Pad/Roof Mtd	---	---	---	---	2	1/3 (0.25)	2.5	AC	**5.0**	**6.3**	**15**
	XP1-021S-7*	277/1/60	Outdoor Pad/Roof Mtd	---	---	---	---	2	1/3 (0.25)	1.9	AC	**3.8**	**72.5**	**15**
	XP1-021S-3*	208/3/60	---	---	---	---	---	---	---	---	---	---	---	---
	XP1-021S-8*	460/1/60	Outdoor Pad/Roof Mtd	---	---	---	---	2	1/3 (0.25)	1.3	AC	**2.6**	**72.5**	**15**
	XPU-021S-1*	208/1/60	---	---	---	---	---	---	---	---	---	---	---	---
	XPU-021S-7*	277/1/60	---	---	---	---	---	---	---	---	---	---	---	---
	XPU-021S-3*	208/3/60	Outdoor Pad/Roof Mtd	1	23.2	164.0	Scroll	2	1/3 (0.25)	2.5	AC	**28.2**	**34.0**	**50**
	XPU-021S-4*	460/3/60	Outdoor Pad/Roof Mtd	1	11.2	75.0	Scroll	2	1/3 (0.25)	1.3	AC	**13.8**	**16.6**	**25**
	XCX-021S-1*	208/1/60	---	---	---	---	---	---	---	---	---	---	---	---
	XCX-021S-7*	277/1/60	---	---	---	---	---	---	---	---	---	---	---	---
	XCX-021S-3*	208/3/60	Indoor Ceiling Mtd	---	---	---	---	1	2 (1.49)	6.9	AC	**6.9**	**8.6**	**15**
	XCX-021S-4*	460/3/60	Indoor Ceiling Mtd	---	---	---	---	1	2 (1.49)	3.5	AC	**3.5**	**4.4**	**15**
	XCU-021S-1*	208/1/60	---	---	---	---	---	---	---	---	---	---	---	---
	XCU-021S-7*	277/1/60	---	---	---	---	---	---	---	---	---	---	---	---
	XCU-021S-3*	208/3/60	Indoor Ceiling Mtd	1	23.2	164.0	Scroll	1	2 (1.49)	6.9	AC	**30.1**	**35.9**	**50**
	XCU-021S-4*	460/3/60	Indoor Ceiling Mtd	1	11.2	75.0	Scroll	1	2 (1.49)	3.5	AC	**14.7**	**17.5**	**25**
29kW (8.0 Tons)	**XP1-029S-1***	208/1/60	Outdoor Pad/Roof Mtd	---	---	---	---	1	1/3 (0.25)	2.5	AC	**2.5**	**3.1**	**15**
	XP1-029S-7*	277/1/60	Outdoor Pad/Roof Mtd	---	---	---	---	1	1/3 (0.25)	1.9	AC	**1.9**	**72.5**	**15**
	XP1-029S-3*	208/3/60	---	---	---	---	---	---	---	---	---	---	---	---
	XP1-029S-8*	460/1/60	Outdoor Pad/Roof Mtd	---	---	---	---	1	1/3 (0.25)	1.3	AC	**1.3**	**72.5**	**15**
	XPU-029S-1*	208/1/60	---	---	---	---	---	---	---	---	---	---	---	---
	XPU-029S-7*	277/1/60	---	---	---	---	---	---	---	---	---	---	---	---
	XPU-029S-3*	208/3/60	Outdoor Pad/Roof Mtd	1	25.0	164.0	Scroll	1	1/3 (0.25)	2.5	AC	**27.5**	**33.8**	**50**
	XPU-029S-4*	460/3/60	Outdoor Pad/Roof Mtd	1	12.2	100.0	Scroll	1	1/3 (0.25)	1.3	AC	**13.5**	**16.5**	**25**
	XCX-029S-1*	208/1/60	---	---	---	---	---	---	---	---	---	---	---	---
	XCX-029S-7*	277/1/60	---	---	---	---	---	---	---	---	---	---	---	---
	XCX-029S-3*	208/3/60	Indoor Ceiling Mtd	---	---	---	---	1	3 (2.24)	9.3	AC	**9.3**	**11.6**	**20**
	XCX-029S-4*	460/3/60	Indoor Ceiling Mtd	---	---	---	---	1	3 (2.24)	4.5	AC	**4.5**	**5.6**	**15**
	XCU-029S-1*	208/1/60	---	---	---	---	---	---	---	---	---	---	---	---
	XCU-029S-7*	277/1/60	---	---	---	---	---	---	---	---	---	---	---	---
	XCU-029S-3*	208/3/60	Indoor Ceiling Mtd	1	25.0	164.0	Scroll	1	3 (2.24)	9.3	AC	**34.3**	**40.6**	**60**
	XCU-029S-4*	460/3/60	Indoor Ceiling Mtd	1	12.2	100.0	Scroll	1	3 (2.24)	4.5	AC	**16.7**	**19.7**	**30**
35kW (10.0 Tons)	**XP1-035S-1***	208/1/60	Outdoor Pad/Roof Mtd	---	---	---	---	1	1/3 (0.25)	2.5	AC	**2.5**	**3.1**	**15**
	XP1-035S-7*	277/1/60	Outdoor Pad/Roof Mtd	---	---	---	---	1	1/3 (0.25)	1.9	AC	**1.9**	**72.5**	**15**
	XP1-035S-3*	208/3/60	---	---	---	---	---	---	---	---	---	---	---	---
	XP1-035S-8*	460/1/60	Outdoor Pad/Roof Mtd	---	---	---	---	1	1/3 (0.25)	1.3	AC	**1.3**	**72.5**	**15**
	XPU-035S-1*	208/1/60	---	---	---	---	---	---	---	---	---	---	---	---
	XPU-035S-7*	277/1/60	---	---	---	---	---	---	---	---	---	---	---	---
	XPU-035S-3*	208/3/60	Outdoor Pad/Roof Mtd	1	16.7	114.0	Scroll	1	1/3 (0.25)	2.5	AC	**19.2**	**23.3**	**35**
	XPU-035S-4*	460/3/60	Outdoor Pad/Roof Mtd	1	12.2	80.0	Scroll	1	1/3 (0.25)	1.3	AC	**13.5**	**16.5**	**25**
	XCX-035S-1*	208/1/60	---	---	---	---	---	---	---	---	---	---	---	---
	XCX-035S-7*	277/1/60	---	---	---	---	---	---	---	---	---	---	---	---
	XCX-035S-3*	208/3/60	Indoor Ceiling Mtd	---	---	---	---	1	5 (3.73)	12.6	AC	**12.6**	**15.8**	**25**
	XCX-035S-4*	460/3/60	Indoor Ceiling Mtd	---	---	---	---	1	5 (3.73)	6.3	AC	**6.3**	**7.9**	**15**
	XCU-035S-1*	208/1/60	---	---	---	---	---	---	---	---	---	---	---	---
	XCU-035S-7*	277/1/60	---	---	---	---	---	---	---	---	---	---	---	---
	XCU-035S-3*	208/3/60	Indoor Ceiling Mtd	1	28.2	240.0	Scroll	1	5 (3.73)	12.6	AC	**40.8**	**47.9**	**70**
	XCU-035S-4*	460/3/60	Indoor Ceiling Mtd	1	14.7	130.0	Scroll	1	5 (3.73)	6.3	AC	**21.0**	**24.7**	**35**

Notes:

1) Notes:

1) FLA = Full Load Amps; MCA = Min Circuit Amps; MOP = Max Overcurrent Protection (Max Fuse Size)

2) 277/1/60 systems may require factory provided field installed step-down transformer.

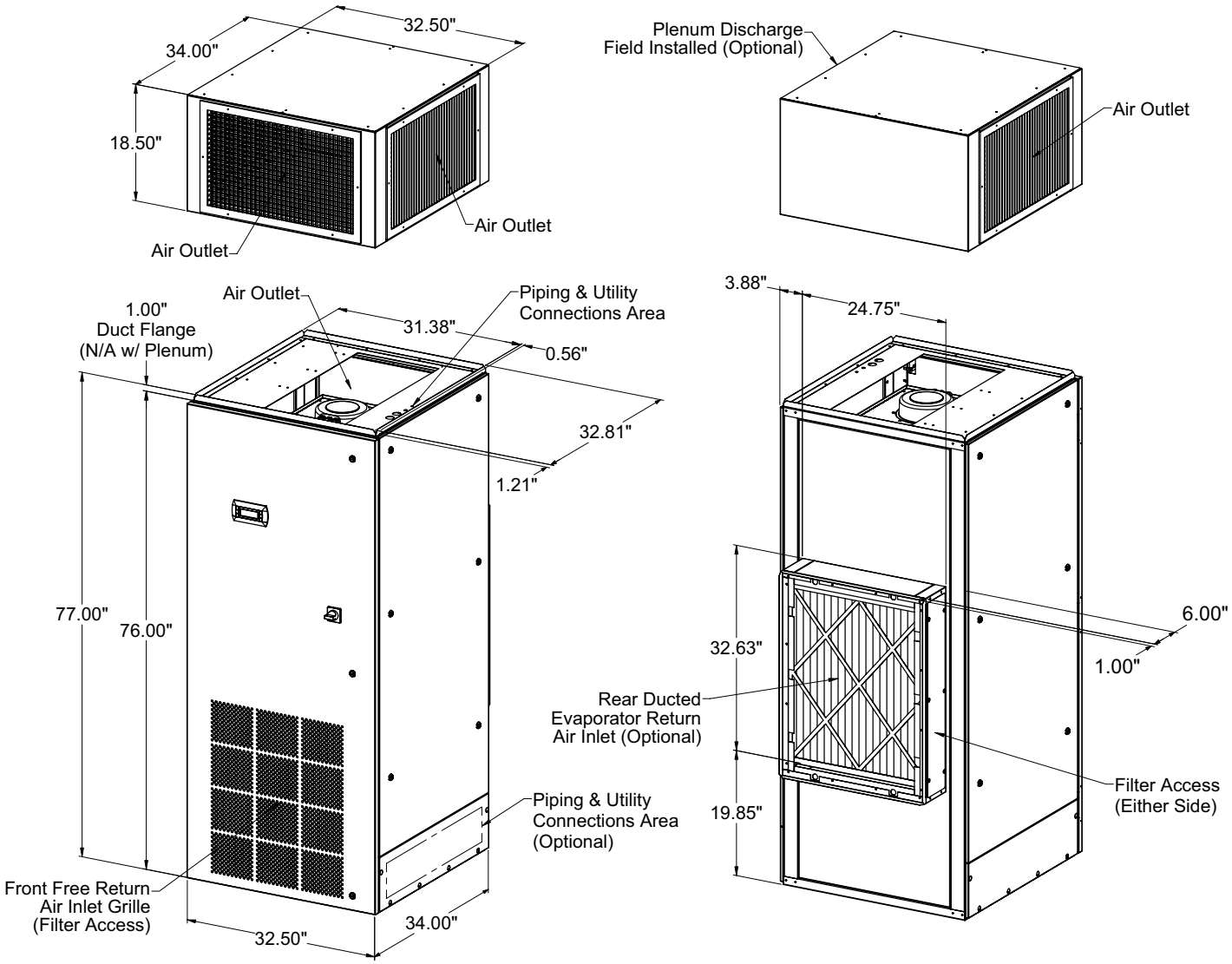
UP-FLOW: 12 to 18kW (3.5-5 Tons)

(MCE, MCH, MCW, MCG & MCC-012, 014 & 018-_-___-UF_

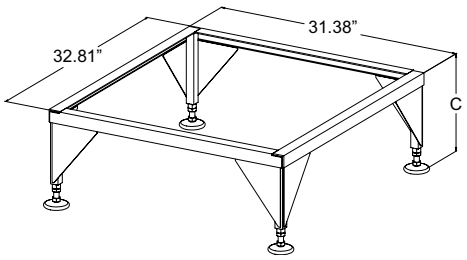
(FE Free-Cooling & DC Dual-Cool Coil as well!)

100% Front Access Only

(side panels also removable)



Front / Right / Top **Rear / Left / Bottom**



Floor Stand Model	Nominal Height "C"
FS1A-04	**4.0"** (3.75"-4.75" Adj.)
FS1A-05	**5.0"** (4.25"-5.38" Adj.)
FS1A-06	**6.0"** (5.25"-8.25" Adj.)
FS1A-09	**9.0"** (8.25"-11.25" Adj.)
FS1A-12	**12.0"** (11.25"-14.25" Adj.)
FS1A-15	**15.0"** (14.25"-17.25" Adj.)
FS1A-18	**18.0"** (17.25"-20.25" Adj.)
FS1A-24	**24.0"** (23.25"-26.25" Adj.)

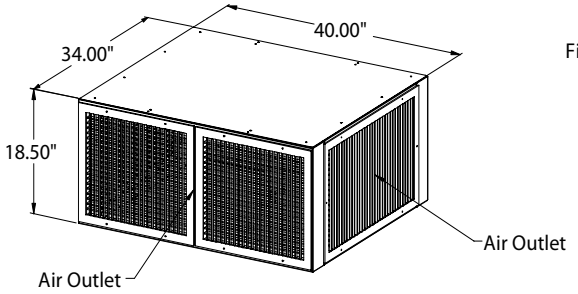
UP-FLOW: 21 to 35kW (6-10 Tons)

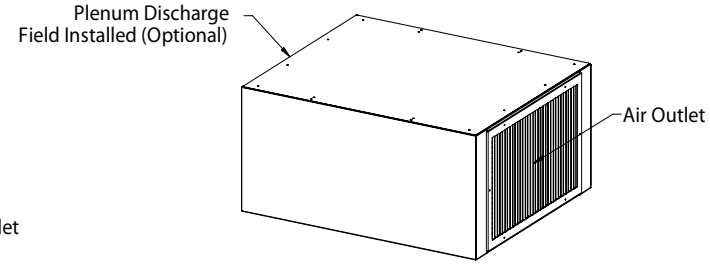
(MCE, MCH, MCW, MCG & MCC-021, 029 & 035-_-___-UF_

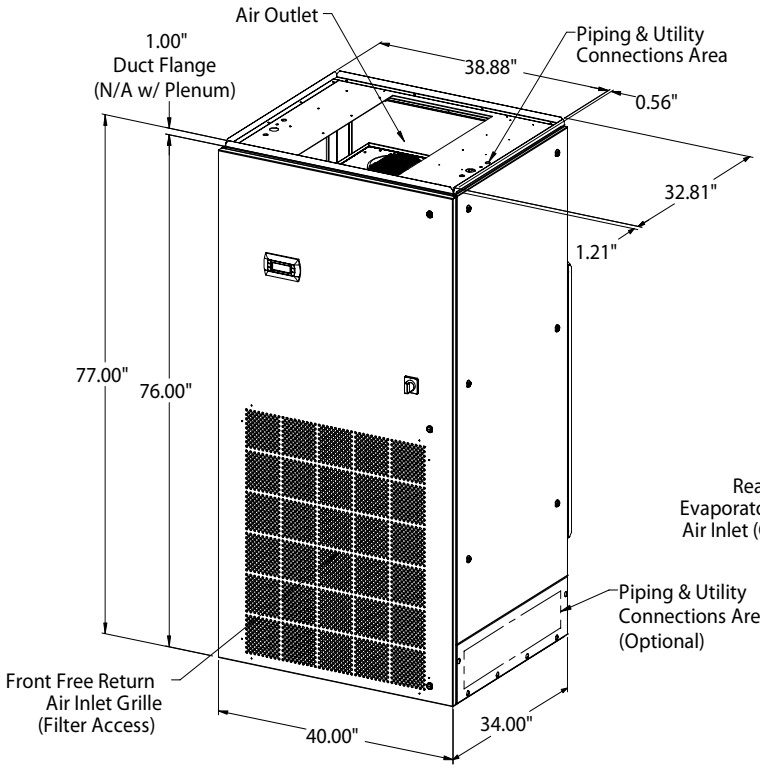
(FE Free-Cooling & DC Dual-Cool Coil as well!)

100% Front Access Only

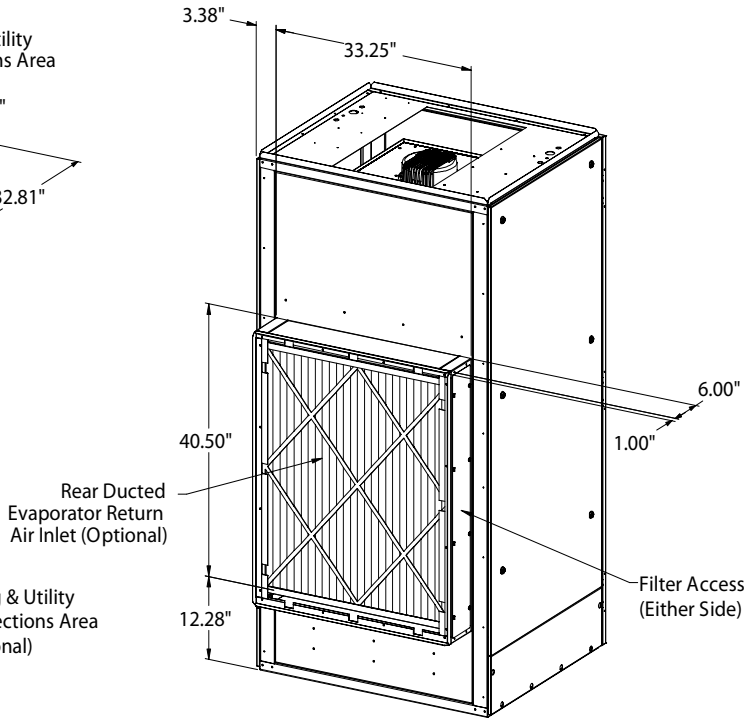
(side panels also removable)



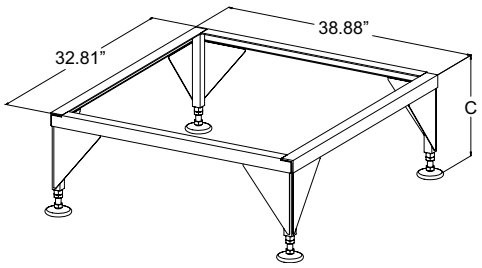




Front / Right / Top



Rear / Left / Top



Floor Stand Model	Nominal Height "C"
FS1B-04	**4.0"** (3.75"-4.75" Adj.)
FS1B-05	**5.0"** (4.25"-5.38" Adj.)
FS1B-06	**6.0"** (5.25"-8.25" Adj.)
FS1B-09	**9.0"** (8.25"-11.25" Adj.)
FS1B-12	**12.0"** (11.25"-14.25" Adj.)
FS1B-15	**15.0"** (14.25"-17.25" Adj.)
FS1B-18	**18.0"** (17.25"-20.25" Adj.)
FS1B-24	**24.0"** (23.25"-26.25" Adj.)

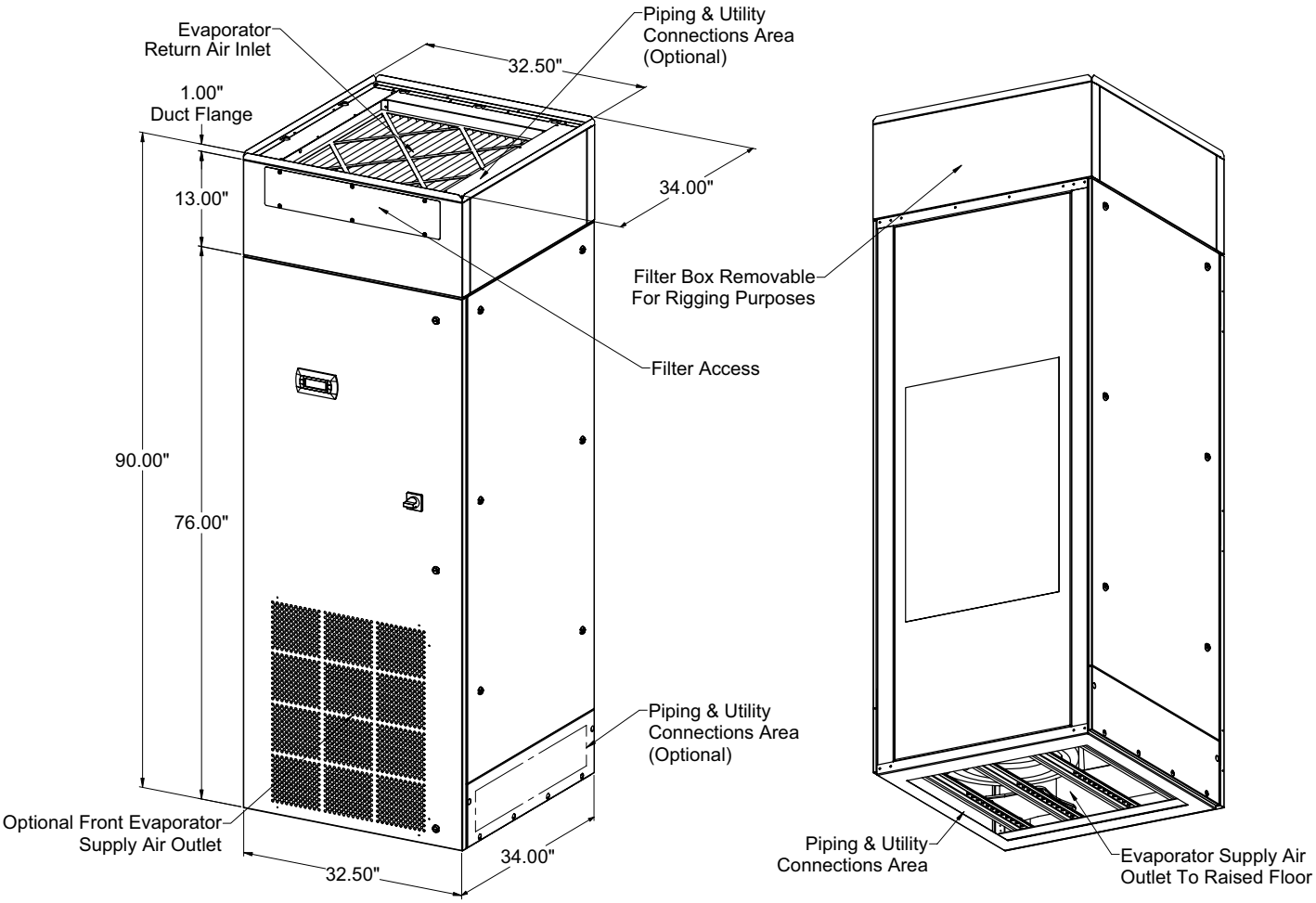
DOWN-FLOW: 12 to 18kW (3.5-5 Tons)

(MCE, MCH, MCW, MCG & MCC-012, 014 & 018-_-___-UF_

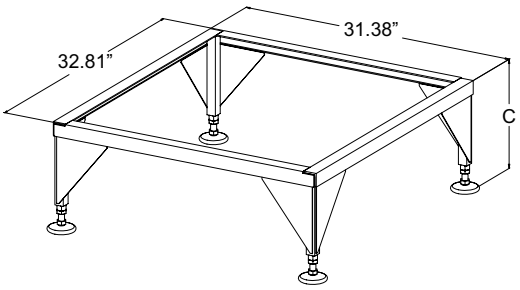
(FE Free-Cooling & DC Dual-Cool Coil as well!)

100% Front Access Only

(side panels also removable)



Front / Right / Top **Rear / Left / Bottom**



Floor Stand Model	Nominal Height "C"
FS1A-06	**6.0"** (5.25"-8.25" Adj.)
FS1A-09	**9.0"** (8.25"-11.25" Adj.)
FS1A-12	**12.0"** (11.25"-14.25" Adj.)
FS1A-15	**15.0"** (14.25"-17.25" Adj.)
FS1A-18	**18.0"** (17.25"-20.25" Adj.)
FS1A-24	**24.0"** (23.25"-26.25" Adj.)

Note: *Turning Vanes, Seismic Rated and Custom Height Floor Stands are optionally available.*

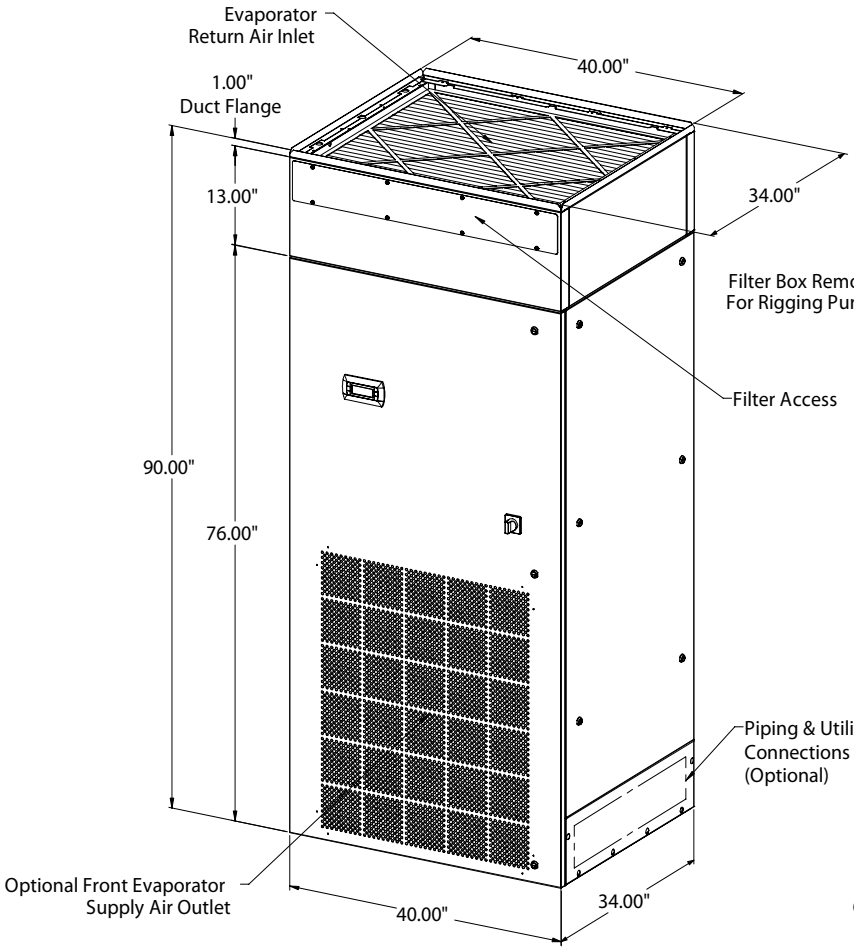
DOWN-FLOW: 21 to 35kW (6-10 Tons)

(MCE, MCH, MCW, MCG & MCC-021, 029 & 035-_-___-DF_

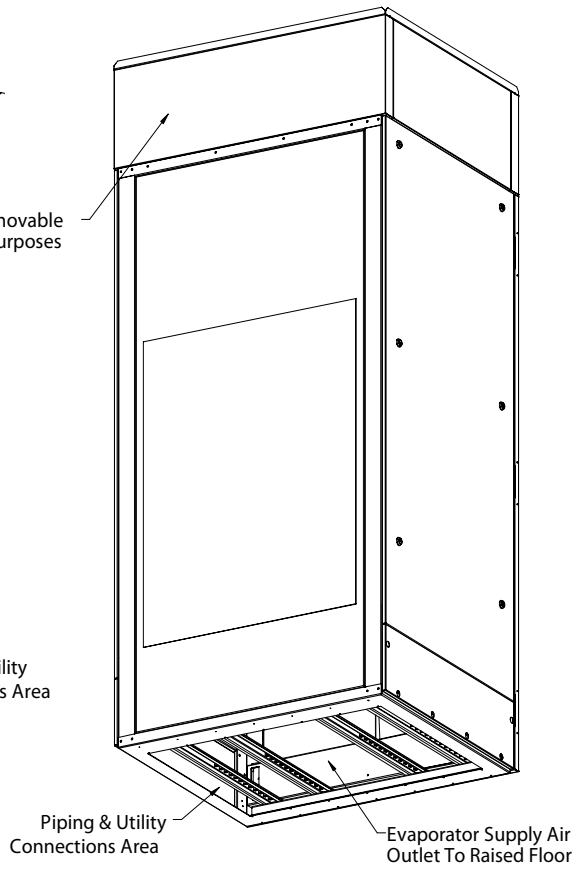
(FE Free-Cooling & DC Dual-Cool Coil as well!)

100% Front Access Only

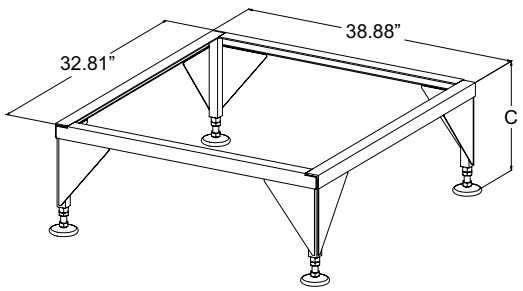
(side panels also removable)



Front / Right / Top



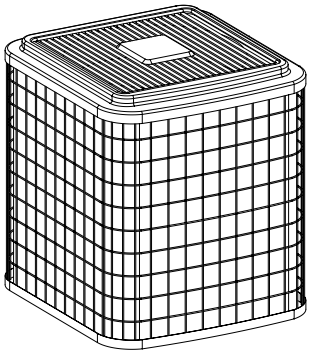
Rear / Left / Bottom



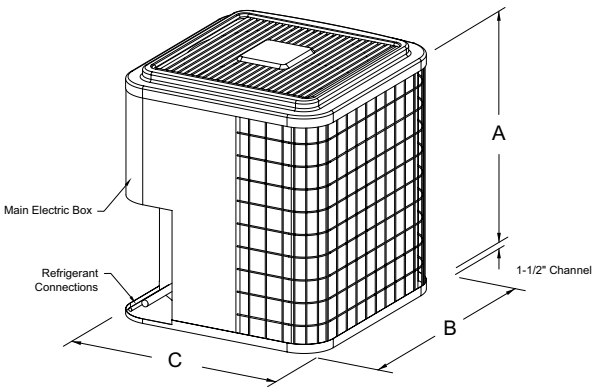
Floor Stand Model	Nominal Height "C"
FS1B-06	**6.0"** (5.25"-8.25" Adj.)
FS1B-09	**9.0"** (8.25"-11.25" Adj.)
FS1B-12	**12.0"** (11.25"-14.25" Adj.)
FS1B-15	**15.0"** (14.25"-17.25" Adj.)
FS1B-18	**18.0"** (17.25"-20.25" Adj.)
FS1B-24	**24.0"** (23.25"-26.25" Adj.)

Note: *Turning Vanes, Seismic Rated and Custom Height Floor Stands are optionally available.*

12-18 kW (3.5-5T), Outdoor, DX - Air Cooled
Propeller Fan, Remote Condensing Units & Condensers
Models: XPU & XP1-012 thru 018



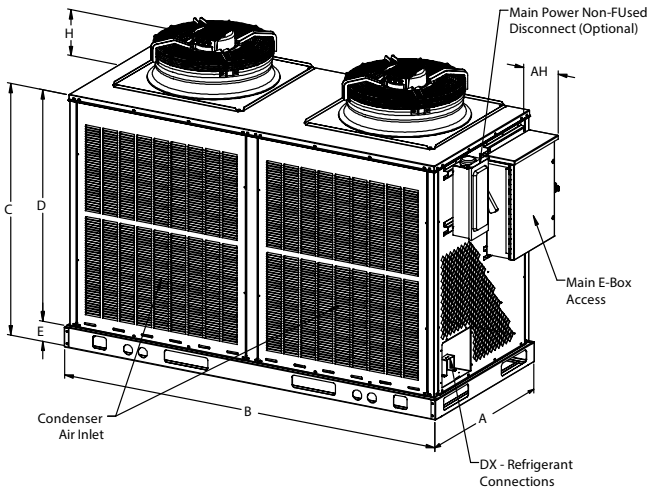
FRONT / LEFT / TOP



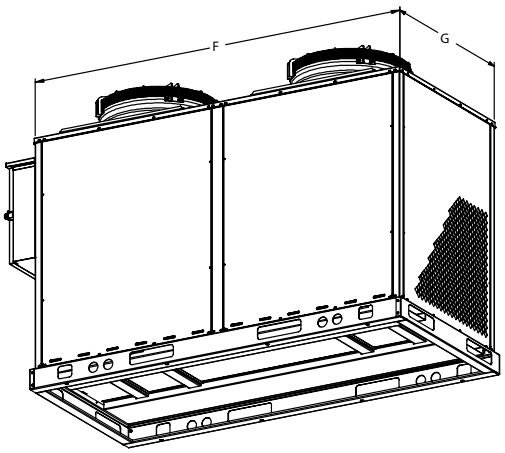
REAR / LEFT / TOP

XP1 & XPU-( ) Model No.	Unit Size (Nominal)	DIMENSIONS (inches)		
		A	B	C
XP1/XPU-012	12kW (3.5T)	35.75	31.19	31.19
XP1/XPU-014	14kW (4T)	35.75	31.19	31.19
XP1/XPU-018	18kW (5T)	28.94	31.19	31.19

21-35 kW (6-10T), Outdoor, DX - Air Cooled
Propeller Fan, Remote Condensing Units & Condensers
Models: XPU & XP2-021 thru 035



Front / Right / Top

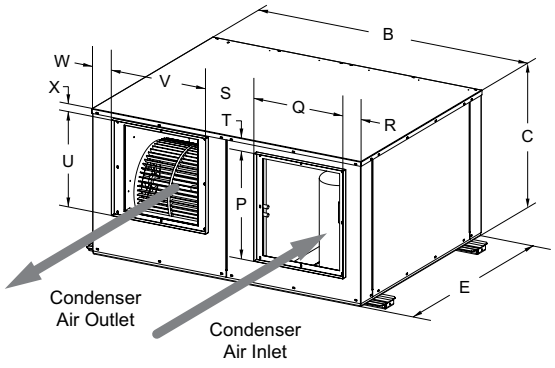


Rear / Left / Bottom

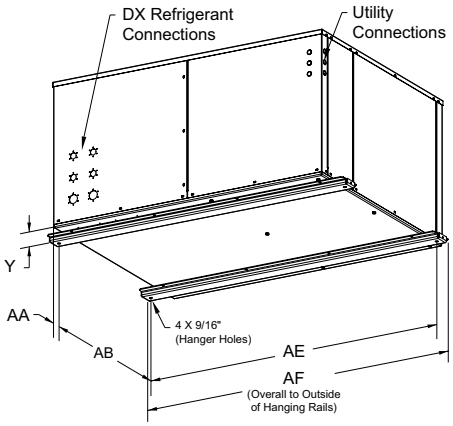
XP2 & XPU-( ) Model No.	Unit Size (Nominal)	DIMENSIONS (inches)									
		A	B	C	D	E	F	G	H		AH
									AC FAN	EC FAN	
XP2/XPU-021	21kW (6.0T)	33.63	72.73	51.00	46.88	4.13	71.25	32.00	0.25	9.27	8.03
XP2/XPU-029	29kW (8.0T)	37.63	81.48	51.00	46.88	4.13	80.00	36.00	0.25	9.27	8.03
XP2/XPU-035	35kW (10.0T)	37.63	81.48	51.00	46.88	4.13	80.00	36.00	0.25	9.27	8.03

12-35kW (3.5-10T), Indoor Ceiling Mtd, Centrifugal Blower
DX Air Cooled, Remote Condensing Units
"Same-Face (standard) or Optional Straight-Thru & "90° L" Air Patterns"

2-Side Access:
18"-24" on Left & Right Sides!



FRONT / RIGHT / TOP



REAR / LEFT / BOTTOM

DIMENSIONS (inches)																	
XCX & XCU-( ) Model No.	B	C	E	P	Q	R	S	T	U	V	W	X	Y	AA	AB	AE	AF
012, 014 & 018	54.00	27.00	42.00	20.00	18.00	3.00	9.63	2.00	17.38	19.00	4.38	1.25	1.00	5.00	32.00	57.50	60.00
021, 029 & 035	74.00	29.00	58.00	24.00	30.00	2.75	14.13	2.00	18.25	23.00	4.25	3.00	1.00	5.00	48.00	77.50	80.00

Notes:

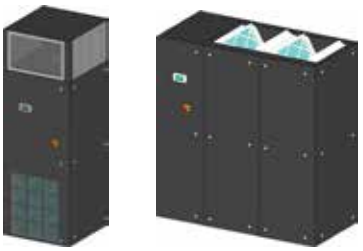
Notes:

Innovative HVAC Solutions

MissionCritical Units - Precision A/C's

SC-2x4 SpotCool Ceiling Mounted A/C's
(4-11kW, 1-3 Tons)

HK Horizontal Ducted Ceiling Mounted A/C's
(4-70kW, 1-20 Tons)



MC Vertical Floor Mtd A/C's Up-Flow & Down-Flow
(4-1080kW, 1-307 Tons)

WC Wall-Cassette and FC Floor-Console Mtd A/C's
(4-18kW, 1-5 Tons)

Outdoor-Air Units - IAQ High Percent (20%-100% OA)

HK-OA Horizontal Ceiling Mtd
(1-30 Tons)

VK-OA Vertical Floor Mtd
(1-50 Tons)

Specialty Units - A/C's & Water Source Heat Pumps

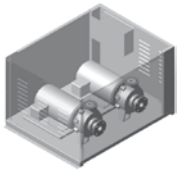
SC-2x4 SpotCool Ceiling Mtd A/C's
(4-11kW, 1-3 Tons)

HK Horizontal Packaged & Split Ceiling Mtd A/C's
(4-70kW, 1-20 Tons)

VK Vertical Packaged & Split Floor Mtd A/C's
(4-105kW, 1-30 Tons)

Remote Heat Rejection Units

Remote Air Cooled Condensers, Condensing Units & Glycol Drycoolers



Single, Dual & Triplex Glycol Pump Packages
(1/2 to 50 HP, VFD Optional)

AboveAir TECHNOLOGIES

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Email: sales@aboveair.com