

VK™ Floor Console

Vertical Comfort & Precision Cooling A/C's & Heat Pumps

R407c & R410a



1 to 5 Tons

"Floor Console A/C's"



Features & Benefits

- 1 to 5 Ton Capacities
- *Comfort Applications*
 - General Office Spaces
 - Conference Rooms
 - Classrooms
- *Precision Applications*
 - Computer / Server Rooms
 - Telecom Rooms
 - Labs / Hospitals
- DX Air, Water & Glycol Cooled, Chilled Water & Heat Pump
- Total Temp & Humidity Control
 - Optional Steam Humidifier
 - Optional Heat/Reheat via Electric, Hot Gas, Hot Water, Steam or Heat Pump
- Microprocessor Controls & More!



MEA229-06-E Approved

AboveAir™ VK-Console™ floor mounted air conditioners are the reliable environmental control solution to your comfort and 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!

- ☑ R407c or Optional R410a Refrigerant
- ☑ 100% Front-Access cabinet design
(Saves Up To 18 Ft² of Valuable Floor Space)
- ☑ Total Temperature & Humidity Control
- ☑ Up-Flow & Down-Flow air patterns
- ☑ Variety of cooling methods
- ☑ Self-contained & split systems
- ☑ Flexible options and accessories
- ☑ Energy efficient operation

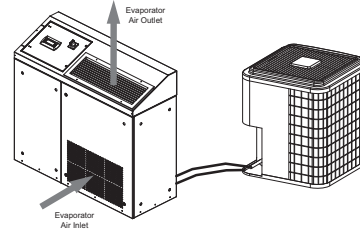
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DX - Air Cooled

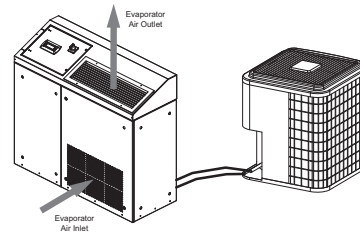
FCH & XPU(-)

DX - Air Cooled Split with Propeller Fan, Outdoor Remote Condensing Unit



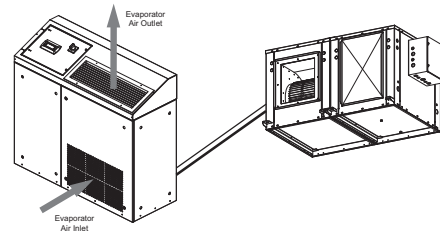
FCE & XP1(-)

DX - Air Cooled Split with Propeller Fan, Outdoor Remote Condenser



FCH/E & CCU/CCX & XCU/XCX (-)

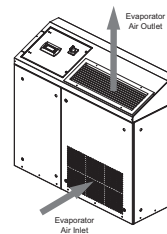
DX - Air Cooled Split with Centrifugal Blower, indoor Remote Condensing Unit & Condensers



DX - Water/Glycol Cooled

FCW & FCG(-)

DX - Water/Glycol Cooled Self-Contained



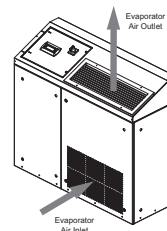
* Split Water/Glycol also Available!
(FCH & CWU/CGU)



Chilled Water Systems

FCC(-)

Chilled Water Air Handling Units



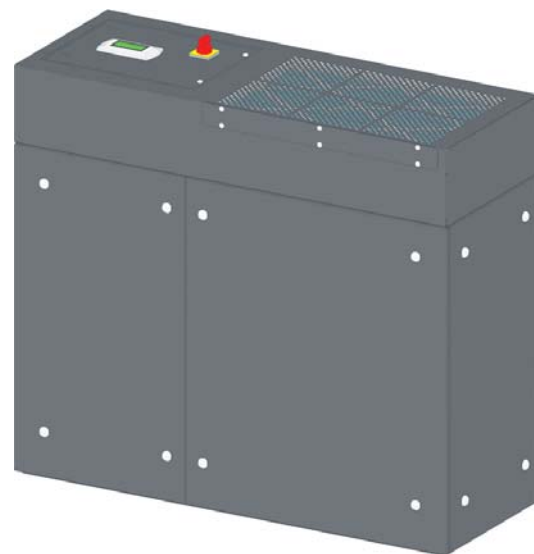
FEATURES & BENEFITS

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



Up-Flow Air Pattern

1 to 5 Tons
Single Circuit DX &
Chilled Water



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
- Low Sound Direct-Drive Centrifugal Blowers
- High Efficiency Air Filtration
- Low Ambient Head Pressure Control
- 2 & 3-way 150 psig or 350 psig Water/ Glycol Cooled Regulating Valves
- Hot Gas Bypass

Accessories:

- Condensate Pumps
- Main Power Electrical Disconnects
- Firestats
- Smoke Detectors
- Remote Water-Leak Detectors
- Compressor Sound Jackets
- Mounting Vibration Isolators
- Glycol Pump Packages & Drycoolers
- ... and more!



MEA229-06-E

Performance Data (VK-Console™) - DX 1 To 5 Tons

Nominal Size		1.0 Ton	1.5 Tons	2.0 Tons	3.0 Tons	4.0 Tons	5.0 Tons
AIR COOLED DX							
Air Cooled Model		FCE & FCH-012	FCE & FCH-018	FCE & FCH-024	FCE & FCH-036	FCE & FCH-048	FCE & FCH-060
80°F DB / 67°F WB, 50% RH							
Total	BTUH	13,900	20,000	27,800	40,700	53,700	67,700
Sensible	BTUH	10,200	16,200	20,400	30,100	40,000	50,200
75°F DB / 62.5°F WB, 50% RH							
Total	BTUH	13,100	18,300	25,500	37,400	49,400	62,300
Sensible	BTUH	10,600	15,900	20,000	29,600	39,300	49,300
72°F DB / 60°F WB, 50% RH							
Total	BTUH	12,500	17,400	24,400	35,800	47,100	59,600
Sensible	BTUH	10,400	15,600	19,900	29,000	38,900	48,300
Water Cooled Model		FCW-012	FCW-018	FCW-024	FCW-036	FCW-048	FCW-060
80°F DB / 67°F WB, 50% RH							
Total	BTUH	14,700	20,000	29,500	43,300	56,900	71,700
Sensible	BTUH	10,200	16,700	21,200	31,200	41,400	51,900
75°F DB / 62.5°F WB, 50% RH							
Total	BTUH	13,800	19,400	27,100	39,800	52,400	66,300
Sensible	BTUH	10,400	16,400	20,800	30,700	40,700	51,300
72°F DB / 60°F WB, 50% RH							
Total	BTUH	13,300	18,400	25,900	38,000	50,000	63,400
Sensible	BTUH	10,800	16,000	20,400	30,100	39,900	50,300
Glycol Cooled Model		FCG-012	FCG-018	FCG-024	FCG-036	FCG-048	FCG-060
80°F DB / 67°F WB, 50% RH							
Total	BTUH	13,600	19,000	27,200	39,800	52,600	66,200
Sensible	BTUH	10,400	15,800	20,100	29,700	39,500	49,500
75°F DB / 62.5°F WB, 50% RH							
Total	BTUH	12,500	17,400	24,900	36,600	48,200	60,800
Sensible	BTUH	10,400	15,500	19,800	29,100	38,900	48,600
72°F DB / 60°F WB, 50% RH							
Total	BTUH	11,900	16,600	23,900	34,800	46,200	57,800
Sensible	BTUH	10,100	15,200	19,700	28,600	38,600	47,700

GENERAL SHARED DATA

Electric Reheat / Heat - BTUH includes evaporator motor heat, (Optional)							
Capacity @ 208V	BTUH (KW)	16,040 (4.7)	16,040 (4.7)	16,610 (4.9)	17,185 (5.0)	33,220 (9.7)	33,220 (9.7)
Capacity @ 230V	BTUH (KW)	17,675 (5.2)	17,675 (5.2)	18,245 (5.3)	18,820 (5.5)	36,490 (10.7)	36,490 (10.7)
Capacity @ 460V	BTUH (KW)	16,960 (5.0)	16,960 (5.0)	17,535 (5.1)	18,105 (5.3)	35,065 (10.3)	35,065 (10.3)
Cap. @ 277/480V	BTUH (KW)	17,675 (5.2)	17,675 (5.2)	18,245 (5.3)	18,820 (5.5)	36,490 (10.7)	36,490 (10.7)
Hot Gas Reheat - (Optional)							
Capacity	BTUH	12,690	18,210	21,350	30,125	40,260	50,300
Steam Canister Humidifier - (Optional)							
Steam Canister	LBS/HR	5	5	5	5	10	10
Evaporator Blower / Motor - Direct Drive, DWDI Centrifugal							
Airflow Rate	CFM	500	750	900	1,200	1,600	2,000
E.S.P.	IN WG	0.3	0.3	0.3	0.3	0.3	0.3
Blower Motor	HP	1/4	1/4	1/2	3/4	1/2 (Qty. two)	1/2 (Qty. two)
Evaporator Coil - Aluminum Fin, Copper Tube							
Rows	NO	3	3	3	4	4	4
Face Area	FT ²	2.0	2.0	2.5	2.9	5.1	5.1
Filters - 30% Dust Spot Efficient							
Nominal Size	(NO) IN	(1) 16 x 25 x 2	(1) 16 x 25 x 2	(1) 16 x 25 x 2	(1) 16 x 25 x 2	(2) 16 x 20 x 2	(2) 16 x 20 x 2
Compressor - Heat Pump Duty Scroll							
Qty., Horespower	(NO) HP	(1) 1.25	(1) 1.5	(1) 2.0	(1) 3.0	(1) 4.0	(1) 5.0
Connection Sizes - (Note: Condensate Discharge Line Connection for Units w/ Condensate Pump Option)							
Condensate Line	OD IN	1/2	1/2	1/2	1/2	1/2	1/2
Humidifier Inlet	OD IN	1/4	1/4	1/4	1/4	1/4	1/4

Performance Data (VK-Console™) - DX 1 To 5 Tons

Heat Rejection Data

Nominal Size	1.0 Ton	1.5 Tons	2.0 Tons	3.0 Tons	4.0 Tons	5.0 Tons
Model Size	012	018	024	036	048	060

DX - AIR COOLED CONDENSER DATA

Indoor, Remote Centrifugal Blower Air Cooled Condenser & Condensing Unit Data - (CCU, CCX, XCU & XCX Models)							
Remote Condensing Unit Model		CCU-012	CCU-018	CCU-024	XCU-036	XCU-048	XCU-060
Remote Condenser Model		CCX-012	CCX-018	CCX-024	XCX-036	XCX-048	XCX-060
Airflow Rate	CFM	1,000	1,200	1,400	2,000	2,500	3,250
	IN ESP	0.3	0.3	0.3	0.75	0.75	0.75
Blower Motor	HP	1/2	1/2	3/4	3/4	1	1-1/2
Blower Diameter	IN	10 x 8	10 x 8	10 x 8	12 x 9	15 x 10	15 x 10
Blower Type		DD - Centrifugal	DD - Centrifugal	DD - Centrifugal	BD - Centrifugal	BD - Centrifugal	BD - Centrifugal
Coil Face Area	FT ²	2.0	2.0	2.5	4.1	6.5	6.5
Rows	NO	4	4	4	4	4	4
Outdoor, Remote Propeller Fan Air Cooled Condensing Units & Condensers - (XPU & XP1 models)							
Remote Condensing Unit Model		XPU-012	XPU-018	XPU-024	XPU-036	XPU-048	XPU-060
Remote Condenser Model		XP1-012	XP1-018	XP1-024	XP1-036	XP1-048	XP1-060
Airflow Rate	CFM	1,792	2,218	2,218	3,167	3,365	3,365
	IN ESP	Free Discharge	Free Discharge	Free Discharge	Free Discharge	Free Discharge	Free Discharge
Fan Motor	(NO) HP	(1) 1/12	(1) 1/10	(1) 1/10	(1) 1/5	(1) 1/4	(1) 1/4
Fan Type		DD - Propeller	DD - Propeller	DD - Propeller	DD - Propeller	DD - Propeller	DD - Propeller
Coil Face Area	FT ²	8.4	8.4	9.8	17.25	19.4	15.09
Rows	NO	1	1	1	1	1	2

**AIR
COOLED
DX**

DX - WATER COOLED CONDENSER DATA

Water Cooled Condenser Data - (FCW & CWU models)							
Model		FCW-012	FCW-018	FCW-024	FCW-036	FCW-048	FCW-060
Total Heat of Rej.	BTUH	21,575	24,270	32,315	47,410	71,100	88,150
Flow @ 85°F EWT	GPM	4.3	4.9	6.5	9.5	14.2	17.6
Water Press. Drop	FT WG	7.8	9.8	11.4	15.2	18.4	29.9
Condenser Type	TXT	Coaxial	Coaxial	Coaxial	Coaxial	Coaxial	Coaxial
Water Reg. Valve		2-Way, 150 psig - factory installed, (3-way & High Pressure Optional)					

**WATER
COOLED
DX**

DX - GLYCOL COOLED CONDENSER DATA

Glycol Cooled Condenser Data - Based on 40% Ethylene Glycol (FCG & CGU models)							
Model		FCG-012	FCG-018	FCG-024	FCG-036	FCG-048	FCG-060
Total Heat of Rej.	BTUH	21,345	24,885	31,430	46,425	69,310	85,470
Flow @ 110°F EGT	GPM	4.7	5.5	7.0	10.3	15.3	18.9
Glycol Press. Drop	FT WG	9.3	12.4	13.1	17.8	17.7	28.4
Condenser Type	TXT	Coaxial	Coaxial	Coaxial	Coaxial	Coaxial	Coaxial
Glycol Reg. Valve		2-Way, 150 psig - factory installed, (3-way & High Pressure Optional)					

**GLYCOL
COOLED
DX**

Connection Data

Nominal Size	1.0 Ton	1.5 Tons	2.0 Tons	3.0 Tons	4.0 Tons	5.0 Tons
Model Size	012	018	024	036	048	060

DX - AIR COOLED REFRIGERANT (R407C & R410a) CONNECTION DATA

DX Split Air Handling Units & Indoor, Centrifugal Blower Remote Air Cooled Condensing Units - (FCH, CCU & XCU models)							
Liquid Line	OD IN	(1) 3/8	(1) 3/8	(1) 3/8	(1) 3/8	(1) 3/8	(1) 3/8
Suction Line	OD IN	(1) 3/4	(1) 3/4	(1) 3/4	(1) 3/4	(1) 7/8	(1) 7/8
DX Split Evaporators & Indoor Remote Centrifugal Air Cooled Condensers - (FCE, CCX & XCX models)							
Liquid Line	OD IN	(1) 3/8	(1) 3/8	(1) 3/8	(1) 3/8	(1) 3/8	(1) 3/8
Hot Gas Line	OD IN	(1) 1/2	(1) 1/2	(1) 1/2	(1) 1/2	(1) 5/8	(1) 5/8
Outdoor, Propeller Fan Remote Air Cooled Condensers & Condensing Units - (XP1 w/ Liquid & Hot Gas Lines and XPU w/ Liquid & Suction Lines)							
Liquid Line	OD IN	(1) 3/8	(1) 3/8	(1) 3/8	(1) 3/8	(1) 3/8	(1) 3/8
Suction or Hot Gas Line	OD IN	(1) 3/4	(1) 3/4	(1) 3/4	(1) 7/8	(1) 7/8	(1) 7/8

**AIR
COOLED**

DX - WATER / GLYCOL COOLED CONDENSER CONNECTION DATA

Water Cooled Condenser Data - (FCW, CWU, FCG & CGU models)							
Water IN/OUT	OD IN	5/8	5/8	7/8	7/8	1-1/8	1-1/8

**WATER /
GLYCOL
COOLED**

Performance Data (VK-Console™) - Chilled Water 1 To 5 Tons

CHILLED WATER SYSTEMS

Nominal Size		1.0 Ton	1.5 Tons	2.0 Tons	3.0 Tons	4.0 Tons	5.0 Tons
Chilled Water Unit Model		FCC-012	FCC-018	FCC-024	FCC-036	FCC-048	FCC-060
Cooling Capacity - 45°F Entering Chilled Water (0% Glycol)							
80°F DB / 67°F WB, 50% RH							
Total	BTUH	14,400	21,900	29,800	40,300	58,600	69,100
Sensible	BTUH	10,800	16,900	20,800	29,000	41,000	49,200
75°F DB / 62.5°F WB, 50% RH							
Total	BTUH	11,500	17,600	23,400	31,800	46,000	54,400
Sensible	BTUH	10,000	15,800	18,900	26,500	37,300	45,000
72°F DB / 60°F WB, 50% RH							
Total	BTUH	10,000	15,400	20,100	27,500	39,500	46,900
Sensible	BTUH	9,400	14,900	17,600	24,800	34,800	42,100
Chilled Water Coil / Valve - Aluminum Fin, Copper Tube							
Flow Rate / Coil PD	GPM/FT	3.0 / (0.5)	4.5 / (1.0)	6.0 / (3.4)	8.0 / (5.6)	12.0 / (3.4)	14.0 / (4.4)
Rows / Face Area	NO / FT²	4 / 2.0	4 / 2.0	4 / 2.8	4 / 2.8	4 / 5.1	4 / 5.1
Standard Valve	BTUH	2-Way, 150 psig - factory installed, (3-way & High Pressure Optional)					
Evaporator Blower / Motor - Direct Drive, DWDI Centrifugal							
Airflow Rate	CFM	500	750	900	1,200	1,600	2,000
E.S.P.	IN WG	0.3	0.3	0.3	0.3	0.3	0.3
Blower Motor	HP	1/4	1/4	1/2	3/4	1/2 (Qty. two)	1/2 (Qty. two)
Electric Reheat / Heat - BTUH includes evaporator motor heat, (Optional)							
Capacity @ 208V	BTUH (KW)	16,040 (4.7)	16,040 (4.7)	16,610 (4.9)	17,185 (5.0)	33,220 (9.7)	33,220 (9.7)
Capacity @ 230V	BTUH (KW)	17,675 (5.2)	17,675 (5.2)	18,245 (5.3)	18,820 (5.5)	36,490 (10.7)	36,490 (10.7)
Capacity @ 460V	BTUH (KW)	16,960 (5.0)	16,960 (5.0)	17,535 (5.1)	18,105 (5.3)	35,065 (10.3)	35,065 (10.3)
Cap. @ 277/480V	BTUH (KW)	17,675 (5.2)	17,675 (5.2)	18,245 (5.3)	18,820 (5.5)	36,490 (10.7)	36,490 (10.7)
Steam Canister Humidifier - (Optional)							
Steam Canister	LBS/HR	5	5	5	5	10	10
Filters - 30% Dust Spot Efficient							
Nominal Size	(NO) IN	(1) 16 x 25 x 2	(1) 16 x 25 x 2	(1) 16 x 25 x 2	(1) 16 x 25 x 2	(2) 16 x 20 x 2	(2) 16 x 20 x 2
Connection Sizes - (Note: Condensate Discharge Line Connection for Units w/ Condensate Pump Option)							
CW In/Out	OD IN	5/8	5/8	7/8	7/8	1-1/8	1-1/8
Condensate Line	OD IN	1/2	1/2	1/2	1/2	1/2	1/2
Humidifier Inlet	OD IN	1/4	1/4	1/4	1/4	1/4	1/4

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

MODEL	FCE, FCW & FCG-012				FCE, FCW & FCG-018				FCE, FCW & FCG-024			
Power Supply	208/1/60	277/1/60	208/3/60	460/3/60	208/1/60	277/1/60	208/3/60	460/3/60	208/1/60	277/1/60	208/3/60	460/3/60
Cooling Only (or Cooling with Hot Gas Reheat, Hot Water or Steam Reheat / Heat)												
FLA	11.2	9.1			11.8	9.7			16.8	14.1	12.3	6.9
MCA	13.5	10.9	----	----	14.2	11.6	----	----	20.0	16.8	14.4	8.2
MOP	20	15			20	15			30	25	20	15
with Electric Heat (No Electric Reheat or Humidifier)												
FLA	26.3	20.1			26.3	20.1			28.1	21.3	17.9	8.1
MCA	32.9	25.1	----	----	32.9	25.1	----	----	35.1	26.6	22.4	10.1
MOP	35	30			35	30			40	30	25	15
with Electric Reheat/Heat (No Humidifier)												
FLA	35.3	27.2			35.9	27.8			40.9	32.2	26.2	13.2
MCA	43.6	33.5	----	----	44.3	34.2	----	----	50.1	39.4	31.8	16.0
MOP	45	35			45	35			60	45	35	20
with Humidifier with or without Hot Gas Reheat, Hot Water/Steam Reheat/Heat(No Electric Reheat/Heat)												
FLA	19.4	15.3			20.0	15.9			25.0	20.3	20.5	10.6
MCA	21.7	17.1	----	----	22.4	17.8	----	----	28.2	23.0	22.6	11.9
MOP	30	20			30	25			40	30	30	15
with Electric Heat (No Electric Reheat) & Humidifier												
FLA	34.5	26.3			34.5	26.3			36.3	27.5	26.1	11.8
MCA	41.1	31.3	----	----	41.1	31.3	----	----	43.3	32.8	30.6	13.8
MOP	45	35			45	35			45	35	35	15
with Electric Reheat/Heat & Humidifier												
FLA	35.3	27.2			35.9	27.8			40.9	32.2	26.2	13.2
MCA	43.6	33.5	----	----	44.3	34.2	----	----	50.1	39.4	31.8	16.0
MOP	45	35			45	35			60	45	35	20

MODEL	FCE, FCW & FCG-036				FCE, FCW & FCG-048				FCE, FCW & FCG-060			
Power Supply	208/1/60	277/1/60	208/3/60	460/3/60	208/1/60	277/1/60	208/3/60	460/3/60	208/1/60	277/1/60	208/3/60	460/3/60
Cooling Only (or Cooling with Hot Gas Reheat, Hot Water or Steam Reheat / Heat)												
FLA	23.3	19.9	18.9	8.2			23.9	10.7			27.6	13.3
MCA	27.8	23.9	22.3	9.7	----	----	27.9	12.5	----	----	32.5	15.7
MOP	45	40	35	15			40	15			50	25
with Electric Heat (No Electric Reheat or Humidifier)												
FLA	29.5	22.0	19.3	8.5			23.9	10.7			27.6	13.3
MCA	36.9	27.5	24.1	10.6	----	----	27.9	12.5	----	----	32.5	15.7
MOP	45	40	35	15			40	15			50	25
with Electric Reheat/Heat (No Humidifier)												
FLA	47.4	38.0	32.8	14.5			37.8	17.0			41.5	19.6
MCA	57.9	46.5	39.7	17.6	----	----	45.3	20.3	----	----	49.9	23.6
MOP	60	50	45	20			50	25			60	30
with Humidifier with or without Hot Gas Reheat, Hot Water/Steam Reheat/Heat(No Electric Reheat/Heat)												
FLA	31.5	26.1	27.1	11.9			32.1	14.4			35.8	17.0
MCA	36.0	30.1	30.5	13.4	----	----	36.1	16.2	----	----	40.7	19.4
MOP	50	45	40	15			50	20			60	25
with Electric Heat (No Electric Reheat) & Humidifier												
FLA	37.7	28.2	27.5	12.2			32.1	14.4			35.8	17.0
MCA	45.1	33.7	32.3	14.3	----	----	36.1	16.2	----	----	40.7	19.4
MOP	50	45	40	15			50	20			60	25
with Electric Reheat/Heat & Humidifier												
FLA	47.4	38.0	32.8	14.5			37.8	17.0			41.5	19.6
MCA	57.9	46.5	39.7	17.6	----	----	45.3	20.3	----	----	49.9	23.6
MOP	60	50	45	20			50	25			60	30

Notes:

- 1) FLA = Full Load Amps; MCA = Min Circuit Amps; MOP = Max Overcurrent Protection (Max Fuse Size)
- 2) 277/1/60 systems may require field step-down transformer.
- 3) - - - - Consult local AboveAir Sales Representative for non-cataloged system power supply information.

Outdoor, Pad Mtd - DX - Air Cooled, Remote Condensing Units & Condensers

XPU - Outdoor Propeller Fan
Air Cooled Remote Condensing Units

Power Supply	208/1/60	277/1/60	208/3/60	460/3/60
XPU-012				
FLA	9.5	7.1		
MCA	11.8	8.8	----	----
MOP	20	15		
XPU-018				
FLA	10.4	7.8		
MCA	17.6	13.2	----	----
MOP	30	20		
XPU-024				
FLA	13.6	10.2	9.1	5.2
MCA	16.8	12.6	11.2	6.3
MOP	25	20	20	15
XPU-036				
FLA	19.0	14.3	14.6	6.6
MCA	23.5	17.6	18.0	8.1
MOP	40	30	30	15
XPU-048				
FLA	21.3	16.0	15.1	7.1
MCA	26.2	19.7	18.4	8.6
MOP	40	35	30	15
XPU-060				
FLA	27.6	20.7	18.0	8.8
MCA	34.2	25.7	22.0	10.8
MOP	50	45	30	15

XP1 - Outdoor Propeller Fan
Air Cooled Remote Condensers

Power Supply	208/1/60	277/1/60	460/1/60
XP1-012			
FLA	0.5	0.4	0.6
MCA	0.6	0.5	0.8
MOP	15	15	15
XP1-018			
FLA	0.8	0.6	0.6
MCA	1.0	0.8	0.8
MOP	15	15	15
XP1-024			
FLA	0.8	0.6	0.7
MCA	1.0	0.8	0.9
MOP	15	15	15
XP1-036			
FLA	1.1	0.8	0.6
MCA	1.4	1.0	0.8
MOP	15	15	15
XP1-048			
FLA	2.0	1.5	1.0
MCA	2.5	1.9	1.3
MOP	15	15	15
XP1-060			
FLA	2.0	1.5	1.0
MCA	2.5	1.9	1.3
MOP	15	15	15

Indoor, Ceiling Mtd - DX - Air Cooled, Remote Condensing Units & Condensers

CCU - Indoor (Ceiling Mtd), Centrifugal Blower
Air Cooled Remote Condensing Units

Power Supply	208/1/60	277/1/60	208/3/60	460/3/60
CCU-012				
FLA	13.0	10.3		
MCA	15.3	12.1	----	----
MOP	20	15		
CCU-018				
FLA	13.6	10.9		
MCA	16.0	12.8	----	----
MOP	25	20		
CCU-024				
FLA	18.2	14.8	13.7	7.3
MCA	21.4	17.5	15.8	8.6
MOP	30	25	20	15
XCU-036				
FLA	24.6	21.0	17.3	7.9
MCA	29.1	25.0	20.7	9.4
MOP	45	40	30	15
XCU-048				
FLA			19.7	9.0
MCA	----	----	23.7	10.8
MOP			35	15
XCU-060				
FLA			25.2	12.5
MCA	----	----	30.1	14.9
MOP			45	20

CCX - Indoor (Ceiling Mtd), Centrifugal Blower
Air Cooled Remote Condensers

Power Supply	208/1/60	277/1/60	208/3/60	460/1/60	460/3/60
CCX-012					
FLA	4.0	3.2		1.8	
MCA	5.0	4.0	----	2.3	----
MOP	15	15		15	
CCX-018					
FLA	4.0	3.2		1.8	
MCA	5.0	4.0	----	2.3	----
MOP	15	15		15	
CCX-024					
FLA	5.4	3.9		2.2	
MCA	6.8	4.9	----	2.8	----
MOP	15	15		15	
XCX-036					
FLA	6.7	5.4	3.8		1.9
MCA	8.4	6.8	4.8	----	2.4
MOP	15	15	15		15
XCX-048					
FLA	6.7	5.4	3.8		1.9
MCA	8.4	6.8	4.8	----	2.4
MOP	15	15	15		15
XCX-060					
FLA	9.0	8.5	5.6		2.8
MCA	11.3	10.6	7.0	----	3.5
MOP	20	15	15		15

Indoor - DX - Water / Glycol Cooled, Remote Condensing Units

CWU & CGU - Indoor Ceiling or Floor Mounted
Water & Glycol Cooled Remote Condensing Units

Power Supply	208/1/60	277/1/60	208/3/60	460/3/60
CWU & CGU-012				
FLA	9.0	7.1		
MCA	11.3	8.9	----	----
MOP	20	15		
CWU & CGU-018				
FLA	9.6	7.7		
MCA	12.0	9.6	----	----
MOP	20	15		
CWU & CGU-024				
FLA	12.8	10.9	8.3	5.1
MCA	16.0	13.6	10.4	6.4
MOP	25	20	15	15

Power Supply	208/1/60	277/1/60	208/3/60	460/3/60
CWU & CGU-036				
FLA	17.9	16.0	13.5	6.0
MCA	22.4	20.0	16.9	7.5
MOP	40	35	30	15
CWU & CGU-048				
FLA	25.0		15.9	7.1
MCA	31.3	----	19.9	8.9
MOP	50		35	15
CWU & CGU-060				
FLA	31.1		19.6	9.7
MCA	38.9	----	24.5	12.1
MOP	70		40	20

DX Split and Chilled Water Air Handling Units

MODEL	FCH & FCC-012 & 018				FCH & FCC-024				FCH & FCC-036				FCH & FCC-048 & 060			
	208/1/60	277/1/60	208/3/60	460/3/60	208/1/60	277/1/60	208/3/60	460/3/60	208/1/60	277/1/60	208/3/60	460/3/60	208/1/60	277/1/60	208/3/60	460/3/60
Cooling Only (or Cooling with Hot Water or Steam Heat)																
FLA	2.2	2.0	2.2	1.1	4.0	3.2	4.0	1.8	5.4	3.9	5.4	2.2	8.0	6.4	8.0	3.6
MCA	2.8	2.5	2.8	1.4	5.0	4.0	5.0	2.3	6.8	4.9	6.8	2.8	10.0	8.0	10.0	4.5
MOP	15	15	15	15	15	15	15	15	12.2	8.8	12.2	5.0	15	15	15	15
with Electric Heat or Reheat/Heat (No Humidifier)																
FLA	26.3	20.1	16.1	7.4	28.1	21.3	17.9	8.1	29.5	22.0	19.3	8.5	56.2	42.6	35.8	16.2
MCA	32.9	25.1	20.1	9.2	35.1	26.6	22.4	10.1	36.9	27.5	24.1	10.6	70.2	53.2	44.8	20.2
MOP	35	30	25	15	40	30	25	15	36.2	26.9	26.1	11.2	80	60	45	25
with Humidifier with or without Hot Water/Steam Heat (No Electric Reheat/Heat)																
FLA	10.4	8.2	10.4	4.8	12.2	9.4	12.2	5.5	13.6	10.1	13.6	5.9	24.4	18.7	24.4	11.0
MCA	11.0	8.7	11.0	5.1	13.2	10.2	13.2	6.0	15.0	11.1	15.0	6.5	26.4	20.3	26.4	11.9
MOP	15	15	15	15	15	15	15	15	20.4	15.0	20.4	8.7	30	25	30	15
with Electric Heat or Reheat/Heat & Humidifier																
FLA	34.5	26.3	24.3	11.1	36.3	27.5	26.1	11.8	37.7	28.2	27.5	12.2	72.6	54.9	52.2	23.6
MCA	41.1	31.3	28.3	12.9	43.3	32.8	30.6	13.8	45.1	33.7	32.3	14.3	86.6	65.5	61.2	27.6
MOP	45	35	30	15	45	35	35	15	44.4	33.1	34.3	14.9	90	70	70	30

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.
- 3) ---- Consult local AboveAir Sales Representative for non-cataloged system power supply information.

1.0 General

☑ 1.1 Summary



These specifications describe the requirements for a vertical floor console mounted packaged (or split) 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 _____.

☑ 1.2 Design Requirements

The system shall be an AboveAir Technologies VK-FloorConsole™ 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.

☑ 1.3 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.

☑ 1.4 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.

2.0 Products

☑ 2.1 Standard Features / All Systems

☑ 2.1.1 Cabinet

The cabinet chassis and access panels shall be powder-coat painted heavy gauge galvanized 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/ft² high density sound and thermal insulation and sealed with self-extinguishing gasketing conforming to NFPA 90A and 90B.

☑ 2.1.2 Component Access

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

☑ 2.1.3 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 Switches:

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

☑ 2.1.4 Evap Blower/Motor

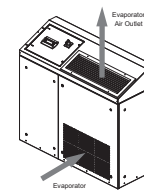


The evaporator blower assembly shall be designed for _____ CFM @ _____ inches external static pressure (e.s.p.)

The blower shall be the direct-driven centrifugal type, double width double inlet (DWDI), and statically and dynamically balanced to a minimum vibration level.

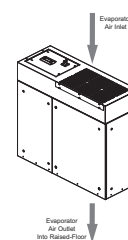
☑ 2.1.5 Air Patterns

☐ 2.1.5.1 Up-Flow Air Pattern



The evaporator shall be designed for free front-unit return air inlet and free-top air discharge thru adjustable grille. Air inlet and outlet connections shall include factory provided turned-out duct flanges for each of field duct connection.

☐ 2.1.5.2 Down-Flow Air Pattern



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.)

☑ 2.1.6 Air Filtration

The filter(s) shall be _____ inch thick pleated and rated for 30% dust spot

Guide Specifications - VK Floor Console Vertical A/C's (1-5 Tons)

efficiency (based on ASHRAE 52.1). The filter(s) shall be serviceable through front of the system.

□ 2.2 Direct Expansion Systems

□ 2.2.1 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.

□ 2.2.2 Scroll Compressor



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.

□ 2.2.3 DX - Refrigeration Circuit

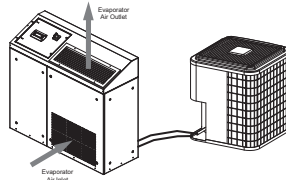


Each refrigeration circuit shall be pre-piped with type "L" refrigerant copper tubing. The refrigeration system shall include but not be limited to: expansion valve with external equalizer and rapid bleed-through capacity. Features shall include filter dryer, sight glass, pressure fittings and high pressure/low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

2.3 Standard Features / Individual Systems

□ 2.3.1 DX - Air Cooled Systems

□ 2.3.1.1 DX - Air Cooled Split (Air Handling & Outdoor Remote Condensing Units) FCH(-) & XPU(-)

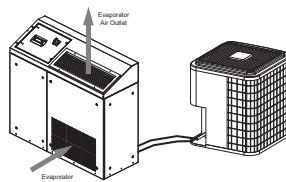


The system shall be a split configuration with indoor floor console mounted dx air handling unit and outdoor dx air cooled propeller fan remote condensing unit. The compressor shall be located in the condensing unit. The condensing unit shall be sized for full heat of rejection at 95°F ambient and be 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.

(Note-1: See 2.4.1 pg 12 Low Amb. Options.)

□ 2.3.1.2 DX - Air Cooled Split (Split Evap & Outdoor Remote Condenser) FCE(-) & XP1(-)

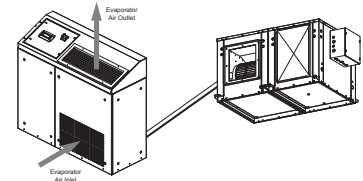


The system shall be a split configuration with indoor floor console mounted precision dx evaporator and outdoor dx air cooled propeller fan remote condenser. The compressor shall be located in the indoor evaporator section. The condenser shall be sized for full heat of rejection at 95°F ambient and be 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.

(Note-1: See 2.4.1 pg 12 Low Amb. Options.)

□ 2.3.1.3 DX - Air Cooled Split (Air Handler & Indoor Remote Condensing Unit) FCH(-) & CCU or XCU(-)

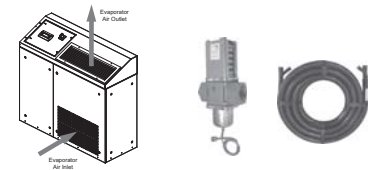


The system shall be a split configuration with indoor floor console dx air handling unit and indoor dx - air cooled centrifugal blower remote condensing unit. The compressor shall be located in the condensing unit. The condensing unit shall be sized for full heat of rejection at 95°F ambient and be capable 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.

(Note-1: See 2.4.1 pg 12 Low Amb. Options.)

□ 2.3.2 DX - Water Cooled (Self-Contained Systems) Models: FCW(-)



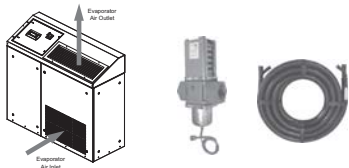
The system shall be a self-contained, floor console mounted air conditioner with integral dx water cooled condensing unit. The system shall include a water cooled tube-in-tube coaxial condenser and factory installed head pressure controlling 2-way water regulating valve rated for 150 psi w.w.p. The water 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: Higher pressure and 3-way valves are optionally available, see option 2.4.2.)

□ 2.3.3 DX - Glycol Cooled Systems

□ 2.3.3.1 DX - Glycol Cooled (Self-Contained Systems) FCG-(-)



The system shall be a self-contained, floor console mounted air conditioner with integral dx glycol cooled condensing unit. 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 150 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: Higher pressure and 3-way valves are optionally available, see option 2.4.2.)

□ 2.3.3.2 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.

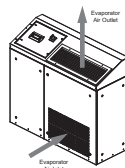
An expansion tank and air purge fitting valve shall be factory provided for field installation.

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' Fluid-Cool™ indoor & outdoor glycol drycooler and PumpAll™ glycol pump packages engineering manuals for more information.)

□ 2.3.4 Chilled Water Systems FCC-(-)



The system shall be a floor console mounted chilled water air handling unit with chilled water cooling coil and chilled water control valve.

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 slowly opening and closing 2-way motorized valve rated for a maximum 300 psig w.w.p.

(Note: 3-way and higher pressure valves are optionally available.)

2.4 Options

□ 2.4.1 Air Cooled Condenser - Low Ambient Control

□ 2.4.1.1 0°F Ambient - Fan Cycling (CCX, 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.

□ 2.4.1.2 -20°F Ambient - Variable Speed Fan (XCU, XP1 & XPU Models)

Variable fan speed head pressure controls (JCI P266 or VFD66) 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.

□ 2.4.1.3 -30°F Flooded Condenser (All Condensing/er 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.

□ 2.4.2 DX - Water/Glycol Cooled Reg. Valves



□ 2.4.2.1 2-Way, 150 psig Reg. Valve

□ 2.4.2.2 3-Way, 150 psig Reg. Valve

□ 2.4.2.3 2-Way, 350 psig Reg. Valve

□ 2.4.2.4 3-Way, 350 psig Reg. Valve

System head pressure shall be controlled by a factory provided 2-way water / glycol regulating valve rated for 350 psig w.w.p.

2.4.3 CONTROL OPTIONS

□ 2.4.3.1 DT-201™ - Digital H/C Thermostat (7-day programmable)



A remote wall or unit mounted deluxe 7-day programmable heat pump ready thermostat with digital display shall be factory provided for field installation. The thermostat shall include FAN AUTO-ON, AUTO-

COOL-OFF-HEAT-EM (emergency heat), SET and PROG/MAN selector switches.

□ 2.4.3.2 MC-2000™, Advanced Microprocessor T/H Controller w/ Alarms



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 | • High Head Press |
| • Low Temperature | • Smoke Detection |
| • High Humidity | • Firestat |
| • Low Humidity | • Leak Detection |
| • Sensor Failure | • Sensor Failure |
| • Summary Failure | • Loss of Power |

- Loss of Air Flow
- 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:
 - ModBus RS485 Serial Connection
 - BACnet over MS/TP (RS485 Serial)
 - BACnet Over IP (Ethernet / EIA485)
 - LonWorks FTT10 (RS485 Serial)

2.4.4 HEAT OPTIONS

□ 2.4.4.1 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/contacter 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.

□ 2.4.4.1.1 SCR Fired Heat/Reheat (Requires MC-2000™)

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.

□ 2.4.4.2 Hot Gas Reheat

The system shall be provided with a hot gas reheat coil with 3-way heat reclaim control valve and liquid refrigerant storage receiver. The hot gas reheat coil shall be

sized to provide free-energy space neutral leaving air temperature by offsetting the sensible cooling during dx compressor operation.

(Note: Hot Gas Reheat is not available on systems with compressor located in remote condensing unit section.)

□ 2.4.4.3 Hot Water Heat

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

□ 2.4.4.4 Steam Heat

A Steam Heating system shall be factory provided. The steam heating system shall be complete a factory installed aluminum fin, copper tube steam coil and field installed 2-way motorized steam rated control valve. Steam piping specialties shall be field provided. Steam shall be provided by a remote source at the specified temperature and pressure. The steam heating system shall have a rated capacity of _____ BTUH @ _____ psig saturated steam.

□ 2.4.4.5 Heat Pump Option

The system shall include a factory installed heat pump heating cycle including reversing valve, automatic defrost cycle (if applicable) and remote wall mounted temperature controller with auxiliary heating control capability. The heat pump mode heating capacity shall be _____ BTUH.

□ 2.4.5 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.

(Note: Remote wall mounted humidistat is not required with MC-2000™ combination temp & humid control option.)

2.5 Accessories

□ 2.5.1 Condensate Pump (Factory Installed)



A condensate pump shall be factory provided and installed within the indoor evaporator section. The condensate pump shall be provided with dual internal float switches: one for pump operation initiation and the other for pump reservoir overflow safety.

□ 2.5.2 Hot Gas Bypass Systems

□ 2.5.2.1 Hot Gas Bypass To Evaporator 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.

□ 2.5.2.2 Hot Gas Bypass To Suction Line with Quench Valve (FCH/XPU-CCU /CWU-CGU 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 and desuperheating quench. 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.

□ 2.5.3 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 a 1/2" closed-cell neoprene insulation to prevent sweating.

□ 2.5.4 Main Power, Non-Fused Disconnects

□ 2.5.4.1 Main Power, Non-Fused Disconnect (FC_ 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.

□ 2.5.4.2 Main Power, Non-Fused Disconnect (Remote Condenser 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.

□ 2.5.5 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.

□ 2.5.6 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.

□ 2.5.7 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.

□ 2.5.8 Floor Stand



A _____ inch high floor stand shall be factory provided for field installation. The floor stand shall have adjustable legs with vibration isolation.

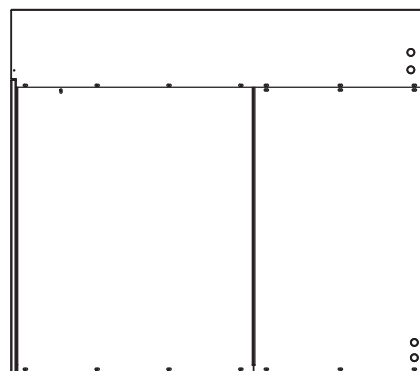
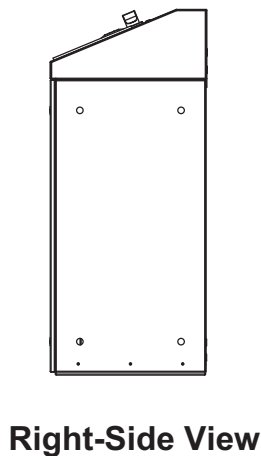
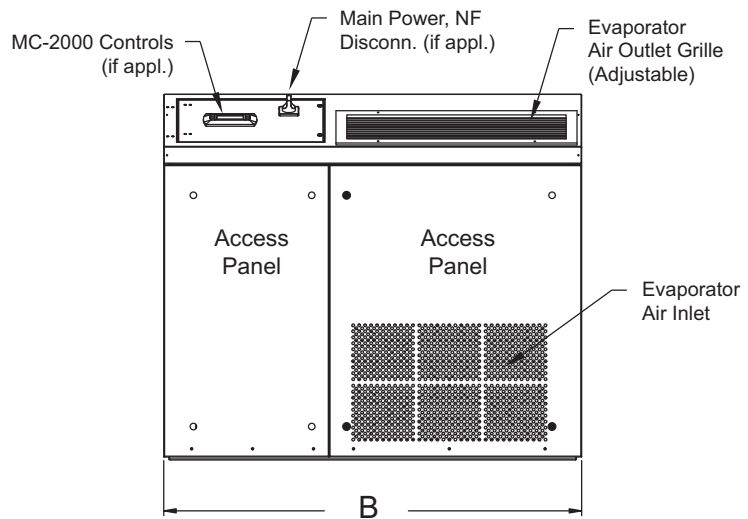
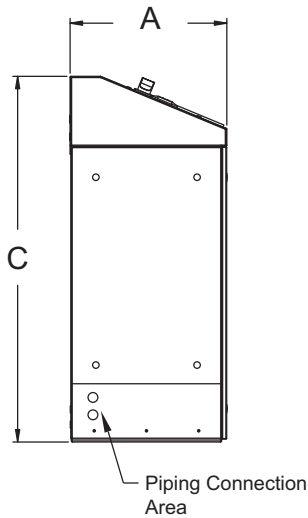
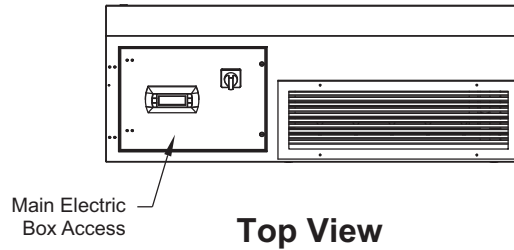
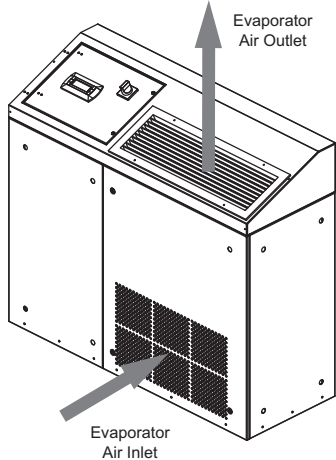
□ 2.5.9 Compressor Acoustic / Sound Jacket

Each compressor shall be provided with a factory installed compressor sound jacket with snap closure system for ease of removal and reinstallation. Sound jackets shall have a noise reduction coefficient (NRC) of 85 per ASTM and C-423 and a sound transmission lost (STC) of 11 per ASTM E-90.

Floor Console: 1 thru 5-Tons, Up-Flow

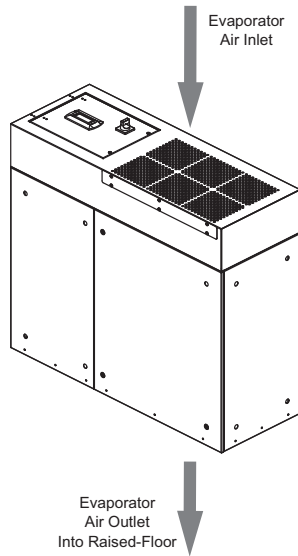
(FCE, FCH, FCW, FCG & FCC-012 thru 060-_-UF)

FC_(-) Model Size	Dimensions		
	A	B	C
012, 018, 024 & 036	18"	48"	42"
048 & 060	18"	62"	48"

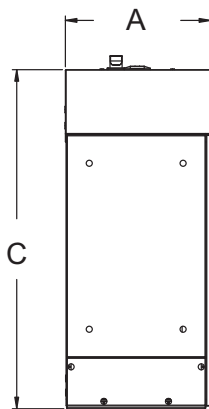
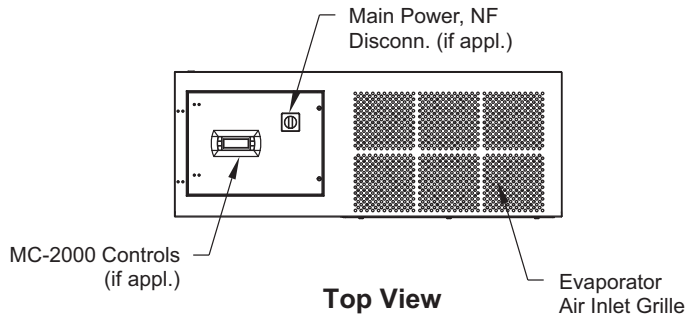


Floor Console: 1 thru 5-Tons, Down-Flow

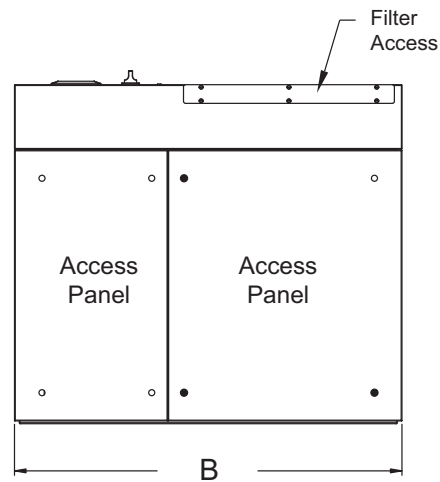
(FCE, FCH, FCW, FCG & FCC-012 thru 060-_-DF)



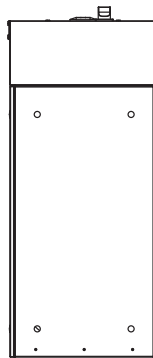
FC_(-) Model Size	Dimensions		
	A	B	C
012, 018, 024 & 036	18"	48"	42"
048 & 060	18"	62"	48"



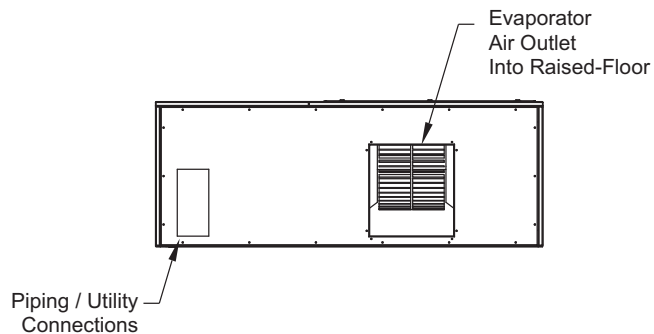
Left-Side View



Front View

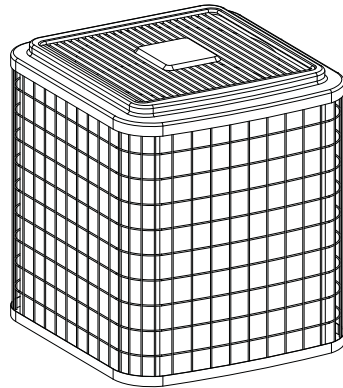


Right-Side View

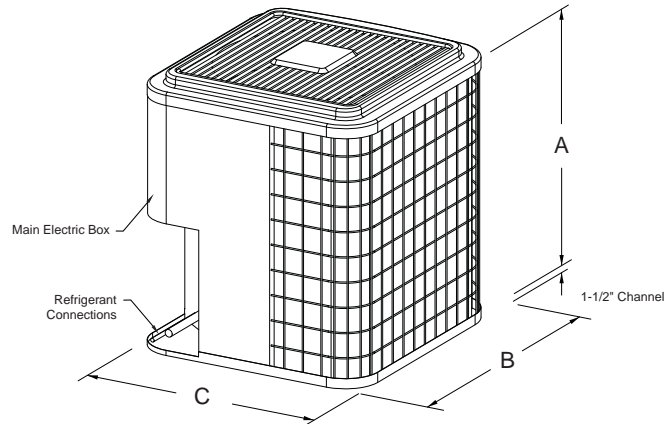


Bottom View

1-5 Tons, Outdoor, DX - Air Cooled Propeller Fan, Remote Condensing Units & Condensers Models: XPU & XP1-012 thru 060



FRONT / LEFT / TOP

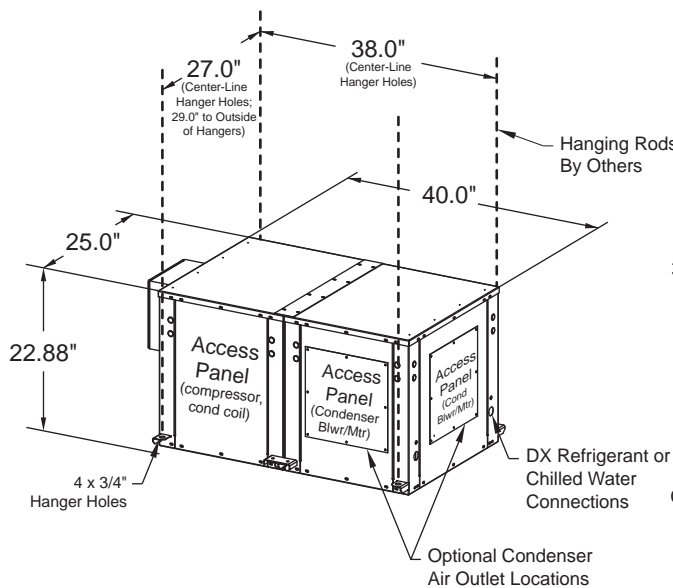


REAR / LEFT / TOP

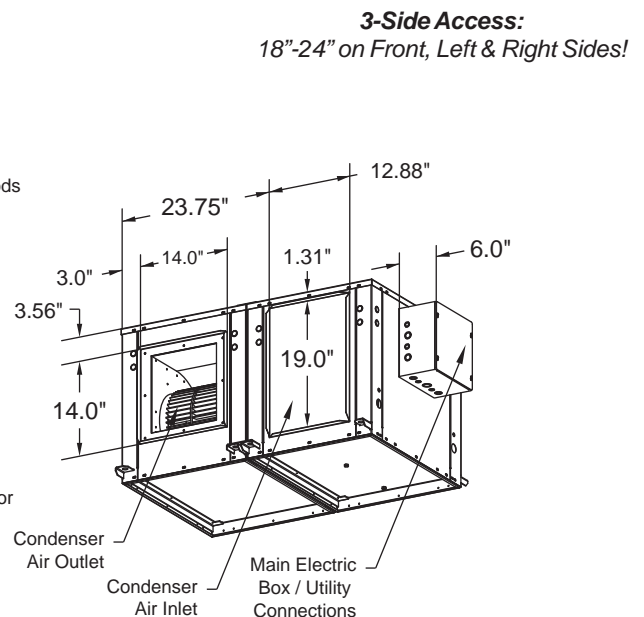
XPU & XP1-() Model Size	Dimensions		
	A	B	C
XPU & XP1-012 & 018	25-5/16"	23-1/8"	23-1/8"
XPU & XP1-024	28-11/16"	23-1/8"	23-1/8"
XPU & XP1-030	31-3/16"	25-3/4"	25-3/4"

XPU & XP1-() Model Size	Dimensions		
	A	B	C
XPU & XP1-036	32-5/16"	31-3/16"	31-3/16"
XPU & XP1-048	35-3/4"	31-3/16"	31-3/16"
XPU & XP1-060	28-15/16"	31-3/16"	31-3/16"

Direct-Drive: 1-2 Tons, Indoor Ceiling Mtd, Centrifugal Blower DX Air Cooled, Remote Condensing Units & Condensers "Same-Face (standard) or Optional Straight-Thru & "90° L" Air Patterns" Models: CCU & CCX-012 thru 024



Front / Right / Top



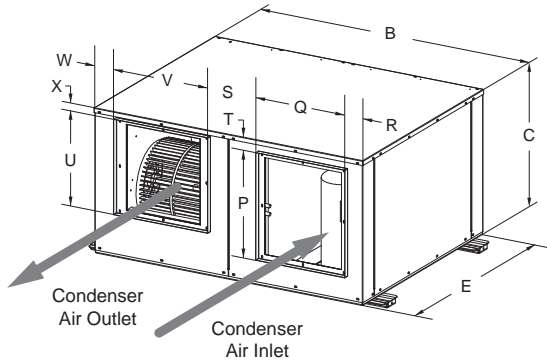
Rear / Left / Bottom

3-Side Access:

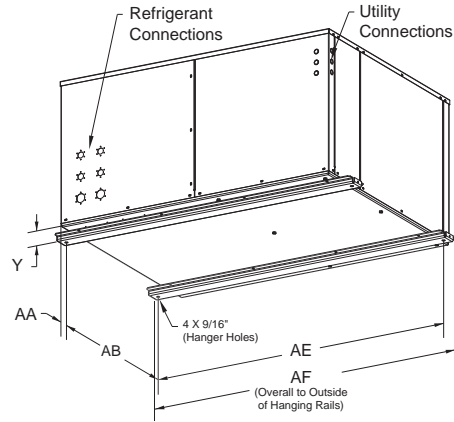
18"-24" on Front, Left & Right Sides!

**Belt-Driven: 1-5 Tons, Indoor Ceiling Mtd, Centrifugal Blower
DX Air Cooled, Remote Condensing Units & Condensers
Models: XCU & XCX-012 thru 060**

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



FRONT / RIGHT / TOP

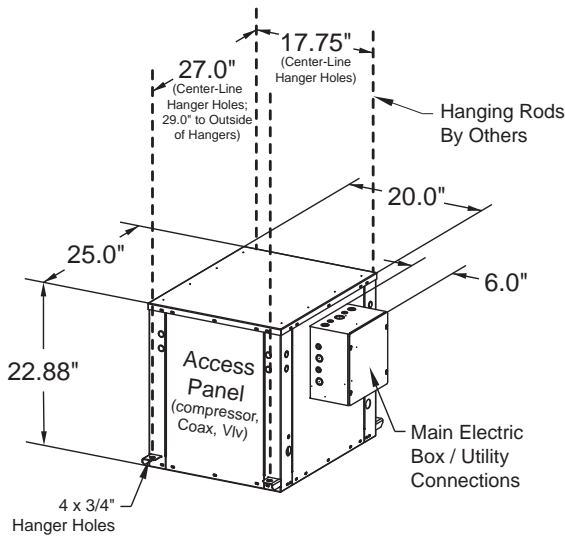


REAR / LEFT / BOTTOM

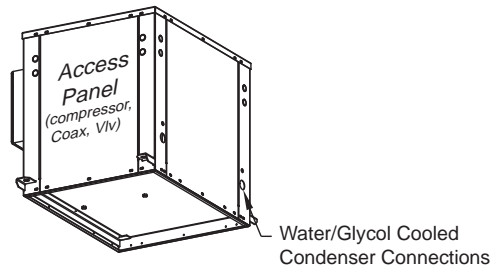
DIMENSIONS(inches)																	
XCU & XCX(-) Model No.	B	C	E	P	Q	R	S	T	U	V	W	X	Y	AA	AB	AE	AF
012, 018, 024 & 036	44	22	34	16	16	2-3/4	6-7/8	2	16	16	2-3/8	1-5/16	1	5	24	47-1/2	50
048 & 060	54	27	42	20	18	3	9-5/8	2	17-3/8	19	4-3/8	1	1	5	32	57-1/2	60

**1-5 Tons, Indoor, DX Water/Glycol Cooled, Remote Condensing Units
Models: CWU & CGU-012 thru 060**

3-Side Access:
18"-24" on Front, Left & Right Sides!



Front / Right / Top



Rear / Left / Bottom

Model Nomenclature

Packaged Systems & Split Evaporators

FC	H	-	036	-	3	-	E1	H	-	UF
a	b	-	c	-	d	-	e	f	-	g

Heat Rejection Systems

C	C	U	-	036	-	3	-	00
a	b	c	-	d	-	e	-	f

- a:** **FC** - VK Floor Console Series
- b:** **C** - Chilled Water, Air Handling Unit
E - Split, DX - Evaporator
G - Packaged, DX - Glycol Cooled
H - Split, DX - Air Handling Unit
W - Packaged, DX - Water Cooled
- c:** **Nom. Cooling Capacity:** **012** = 1.0 Tons; **018** = 1.5 Tons;
024 = 2.0 Tons; **030** = 2.5 Tons; **036** = 3.0 Tons; **048** = 4.0 Tons &
060 = 5.0 Tons
- 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
- e:** **00** - No Heat
E1 - Electric Heat 1-Stage
E2 - Electric Heat 2-Stages
ES - SCR Fired Electric Heat
HE - Heat Pump with Auxiliary Electric Heat
HG - Hot Gas Reheat
HP - Heat Pump w/o Auxiliary Electric Heat
HW - Hot Water Heat
ES - SCR Fired Electric Heat
ST - Steam Heat
- f:** **0** - No Humidifier
H - Electrode Canister Humidifier
- g:** **UF** - Up-Flow Air Pattern
DF - Down-Flow Air Pattern

- a:** **C** - SC™ Series Remote Heat Exchanger
X - HK™ Series Remote Heat Exchanger
- b:** **C** - DX, Air Cooled, Indoor Centrifugal Blower Type
G - DX, Glycol Cooled
P - DX, Air Cooled, Outdoor Propeller Fan Type
W - DX, Water Cooled
- c:** **1** - DX, Single Circuit Remote Outdoor Condenser
U - DX, Remote Condensing Unit
X - DX, Remote Condenser
- d:** **Nom. Heat Rej. Capacity:** **012** = 1.0 Tons; **018** = 1.5 Tons;
024 = 2.0 Tons; **036** = 3.0 Tons; **042** = 3.5 Tons & **060** = 5 Tons
- 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
- f:** **00** - None
HP - Heat Pump

Approximate Unit Ship Weights (lbs.)

UNIT SIZE	MODEL TYPE										
	FCH	FCE	CCU	CCX	XCU	XCX	XPU	XP1	FCW & FCG	CWU & CGU	FCC
012	345	345	195	160	325	235	110	65	445	125	345
018	345	345	215	160	345	235	115	70	445	145	345
024	355	355	215	160	355	250	120	75	455	145	355
036	355	360	230	N/A	360	340	180	120	460	150	355
048	460	470	N/A	N/A	475	340	185	130	570	185	460
060	460	470	N/A	N/A	485	350	195	140	570	190	460



Ceiling Air Conditioners

SpotCool™ - 2x4 T-Bar "Spot-Cool & Ducted" Comfort & Precision Ceiling Mounted A/C's

HK™ Horizontal - Hi-Static Ducted Comfort & Precision Ceiling Mounted A/C's

HK-OA™ - Horizontal Up to 100% DOAS High-Percentage Outside Air Ceiling Mounted A/C's

Floor Air Conditioners

MissionCritical™ - Precision Vertical Floor Mounted Computer Room A/C's

VK™ Vertical - SCAV, Vertical Floor Mounted Self-Contained & Split Comfort Constant Air Volume and Variable Air Volume (VAV) A/C's & Heat Pumps

VK-OA™ - Vertical Up to 100% DOAS High-Percentage Outside Air Vertical Floor Mounted A/C's

VK™ Console - Vertical Floor Console Mounted Self-Contained & Split A/C's & Heat Pumps

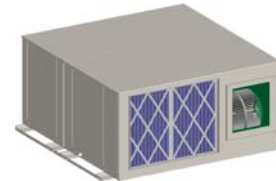
Remote Heat Rejection

FluidCool™ - Indoor & Outdoor Remote Glycol Drycoolers

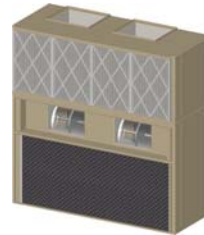
PumpAll™ - Single, Dual & Triplex Standard & Variable (VFD) Speed Glycol Pump Packages



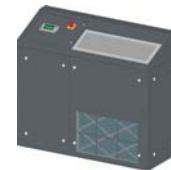
2x4 "Spot-Cool & Ducted" Ceiling Mounted A/C's
(1 to 3 Tons)



High-Static BD "Ducted" Ceiling Mounted A/C's
(1 to 30 Tons)



Comfort - Packaged & Split Vertical Floor Mounted Air Conditioners
(1 to 45 Tons)



Precision - Vertical Floor Console Mounted Air Conditioners
(1 to 30 Tons)



VK-MissionCritical™ - Up-Flow & Down-Flow Vertical Floor Mounted Computer Room Air Conditioners
(1 to 30 Tons)



Remote Air Cooled Condensers, Condensing Units & Glycol Drycoolers
(1 to 180 Tons of THR)

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



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