

engineering manual

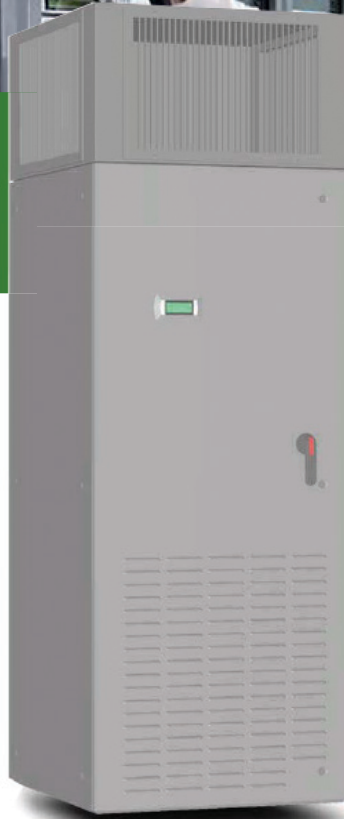
Environmental Control



Guardian I

Floor Mounted Precision A/C's 3-10 Tons

- 3 to 10 Tons Compact Single Circuit DX & Chilled Water
- Perfect for Computer Rooms, Telecom & Other Precision Environmentally Controlled Spaces
- 100% Front Access Available in Both Upflow & Downflow Air Pattern Configurations
- DX Air, Water & Glycol Cooled plus Chilled Water and Free-Cooling Economizer Systems



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Featuring
100%
Front Access



Advanced Microprocessor Controls: (Full BMS Communications via BacNet, ModBus ... !)



MicroSkil-200 Series
(Optional Display Shown)

Precision Environmental Control:

- Steam Humidifier (standard)
- Electric (Standard), Hot Water or Steam Reheat
- High Efficient Air Filtration



Reliability Built-In:

- Scroll Compressors
- Modular Motor Controllers with Circuit Breaker Protection

Head Pressure Control:

- Air Cooled - Choose from 0°F, -20°F and -30°F Low Ambient Options
- Water/Glycol Cooled - 2 and 3-way standard and high pressure regulating valve options



High Static Belt-Drive Blowers:

- Ducted Systems Available with Up to 2.0" E.S.P.



Capacity Modulation:

- Hot Gas Bypass

Select Accessories:

- Plenum Discharge Boxes
- Floor Stands
- ECX - Water/Glycol Economizers
- Condensate Pumps
- Non-Fused Disconnects
- Firestats
- Smoke Detectors
- Remote Water Detectors
- Glycol Drycoolers & Pump Packages
- and more ...!



DX Performance Data

Nominal Tons Model Size		3.0 Tons 036	5.0 Tons 060	8.0 Tons 096	10.0 Tons 120
DX - AIR COOLED @ 95°F Entering Condenser Air					
80°F DB, 50% RH					
Total / Sensible	KW (MBH)	12.6 / 11.3 (43.0 / 38.7)	20.3 / 17.3 (69.2 / 59.1)	30.7 / 25.9 (104.6 / 88.4)	39.4 / 30.3 (134.3 / 103.3)
75°F DB, 50% RH					
Total / Sensible	KW (MBH)	11.6 / 11.1 (39.6 / 38.0)	18.6 / 17.2 (63.5 / 58.6)	28.0 / 25.6 (95.7 / 87.2)	36.0 / 29.8 (122.9 / 101.6)
72°F DB, 50% RH					
Total / Sensible	KW (MBH)	11.1 / 10.8 (37.8 / 37.0)	17.8 / 16.8 (60.6 / 57.4)	26.7 / 25.0 (91.0 / 85.3)	34.6 / 29.6 (117.9 / 101.1)
DX - WATER COOLED @ 85°F Entering Condenser Water					
80°F DB, 50% RH					
Total / Sensible	KW (MBH)	13.5 / 11.5 (45.9 / 39.4)	21.7 / 17.8 (73.9 / 60.8)	32.9 / 26.8 (112.3 / 91.3)	41.8 / 31.3 (142.7 / 106.9)
75°F DB, 50% RH					
Total / Sensible	KW (MBH)	12.4 / 11.5 (42.3 / 39.2)	19.9 / 17.6 (67.9 / 60.2)	30.2 / 26.3 (103.0 / 89.7)	38.4 / 30.9 (131.0 / 105.4)
72°F DB, 50% RH					
Total / Sensible	KW (MBH)	11.8 / 11.3 (40.4 / 38.4)	19.0 / 17.3 (64.8 / 59.1)	28.8 / 25.7 (98.1 / 87.8)	36.6 / 30.3 (125.0 / 103.3)
DX - GLYCOL COOLED @ 110°F, 40% Entering Ethylene Glycol					
80°F DB, 50% RH					
Total / Sensible	KW (MBH)	12.0 / 11.1 (41.0 / 38.0)	19.3 / 17.0 (65.8 / 58.1)	29.3 / 25.4 (100.1 / 86.5)	37.5 / 29.6 (128.0 / 100.9)
75°F DB, 50% RH					
Total / Sensible	KW (MBH)	11.0 / 10.8 (37.7 / 37.0)	17.7 / 16.8 (60.3 / 57.4)	26.8 / 24.9 (91.4 / 85.1)	34.6 / 29.4 (118.0 / 100.4)
72°F DB, 50% RH					
Total / Sensible	KW (MBH)	10.6 / 10.3 (36.3 / 35.2)	16.8 / 16.4 (57.4 / 56.0)	25.5 / 24.4 (86.9 / 83.1)	32.9 / 28.8 (112.3 / 98.2)

COMMON FEATURES

Evaporator Airflow - Belt Drive Centrifugal					
Discharge	L/S (CFM)	849.4 (1,800)	1,321.3 (2,800)	2,076.4 (4,400)	2,265.1 (4,800)
E.S.P.	IN WG	0.5	0.5	0.5	0.5
Fan Motor	HP	3/4	1-1/2	3	3
Fan Dia (Qty.)	CM (IN)(NO)	30.5 X 22.9 (12 X 9)	30.5 X 22.9 (12 X 9)	30.5 X 30.5 (12 X 12)	30.5 X 30.5 (12 X 12)
Evaporator Coil - Aluminum Fin, Copper Tube					
Rows	NO	4	4	4	4
Face Area	M ² (FT ²)	0.6 (6.3)	0.6 (6.3)	0.9 (9.7)	0.9 (9.7)
Face Velocity	MPM (FPM)	87.8 (288)	136.6 (448)	125.6 (412)	150.9 (495)
Air Filtration - @ 30% Dust Spot					
Nominal Size	CM (NO) (IN)	63.5 x 73.7 x 10.2 (1) (25 x 29 x 4)	63.5 x 73.7 x 10.2 (1) (25 x 29 x 4)	94 x 83.8 x 10.2 (1) (37 x 33 x 4)	94 x 83.8 x 10.2 (1) (37 x 33 x 4)
Compressor - Heat Pump Duty Scroll					
Qty., HP	(NO) HP	(1) 3.5	(1) 5.0	(1) 8.0	(1) 10.0
Electric Reheat / Heat - includes evaporator motor heat					
Capacity	MBH	35.9	37.7	58.1	62.8
	KW	10.5	11.0	17.0	18.4
Stages	NO	1	1	2	2
Steam Canister Humidifier - adjustable output					
Steam Canister	LBS/HR	10	10	15	15
Connection Sizes					
Condensate Drain	OD CM (IN)	1.9 (3/4)	1.9 (3/4)	1.9 (3/4)	1.9 (3/4)
Humidifier Inlet	FLARE CM (IN)	0.6 (1/4)	0.6 (1/4)	0.6 (1/4)	0.6 (1/4)

DX Condenser Data

Nominal Tons Evap Model Size		3.0 036	5.0 060	8.0 096	10.0 120
DX - AIR COOLED CONDENSER DATA					
Outdoor, Remote Propeller Fan Condenser - (FAC models)					
95F Ambient Mode		FAC-005	FAC-008	FAC-012	FAC-015
Discharge	L/S (CFM)	1,746 (3,700)	3,704.4 (7,850)	3,303.3 (7,000)	7,408.8 (15,700)
	IN ESP	0.0	0.0	0.0	0.0
Fan Motor(NO)HP		(1) 1/2	(1) 1	(2) 1/2	(2) 1
Fan Type		Propeller	Propeller	Propeller	Propeller
Outdoor, Remote Air Cooled Condensing Unit - (FU models)					
Discharge	L/S (CFM)	1,368.5 (2,900)	1,415.7 (3,000)	2,925.8 (6,200)	3,539.3 (7,500)
	IN ESP	0.0	0.0	0.0	0.0
Fan Motor (NO) HP		(1) 1/6	(1) 1/6	1	1
Fan Type		Propeller	Propeller	Propeller	Propeller
DX - WATER COOLED CONDENSER DATA					
Water Cooled Condenser Data - (UW1 & DW1 models)					
Total Heat of Rej.	KW (MBH)	15.2 (52)	23.8 (81.1)	35.8 (122.3)	46.4 (158.4)
Flow @ 85F EWT	LPM (GPM)	39.4 (10.4)	61.3 (16.2)	92.4 (24.4)	120.0 (31.7)
Water Press. Drop	kPa (FTWG)	35.6 (11.9)	85.2 (28.5)	53.8 (18)	81.6 (27.3)
Water Reg. Valve		2-Way, 150 psig - factory installed			
DX - GLYCOL COOLED CONDENSER DATA					
Glycol Cooled Condenser Data - @ 40% Ethylene Glycol (UG1 & DG1 models)					
Total Heat of Rej.	KW (MBH)	14.7 (50.3)	23 (78.4)	34.4 (117.5)	45.5 (155.1)
Flow @ 110F EGT	LPM (GPM)	42.0 (11.1)	65.5 (17.3)	98.4 (26)	129.8 (34.3)
Glycol Press. Drop	kPa (FTWG)	38.3 (12.8)	91.5 (30.6)	59.2 (19.8)	91.8 (30.7)
Glycol Reg. Valve		2-Way, 150 psig - factory installed			

DX Connection Sizes

Nominal Tons Model Size		3.0 036	5.0 060	8.0 096	10.0 120
DX - AIR COOLED REFRIGERANT (R410A) CONNECTION DATA					
DX Split Air Cooled Evaporator - (UA1 & DA1 models, with compressor in evap)					
Liquid Line Inlet	OD CM (IN)	(1) 1.3 (1/2)	(1) 1.3 (1/2)	(1) 2.2 (7/8)	(1) 2.2 (7/8)
Hot Gas Line Outlet	OD CM (IN)	(1) 2.2 (7/8)	(1) 2.2 (7/8)	(1) 2.2 (7/8)	(1) 2.9 (1 1/8)
Outdoor, Remote Propeller Fan Air Cooled Condensers - (FAC models)					
Hot Gas Line Inlet	OD CM (IN)	(1) 1.6 (5/8)	(1) 2.2 (7/8)	(1) 2.9 (1 1/8)	(1) 2.9 (1 1/8)
Liquid Line Outlet	OD CM (IN)	(1) 2.2 (7/8)	(1) 2.9 (1 1/8)	(1) 3.5 (1 3/8)	(1) 3.5 (1 3/8)
DX Split Air Handling Units - (UB1 & DB1 models, with compressor in cond. unit)					
Liquid Line Inlet	OD CM (IN)	(1) 1 (3/8)	(1) 1.3 (1/2)	(1) 2.2 (7/8)	(1) 2.2 (7/8)
Suction Line Outlet	OD CM (IN)	91) 2.2 (7/8)	(1) 2.2 (7/8)	(1) 2.2 (7/8)	(1) 2.9 (1 1/8)
Outdoor, Remote Propeller Fan Air Cooled Condensing Units - (FU models)					
Suction Line Inlet	OD CM (IN)	(1) 1.9 (3/4)	(1) 2.2 (7/8)	(1) 2.9 (1 1/8)	(1) 2.9 (1 1/8)
Liquid Line Outlet	OD CM (IN)	(1) 1 (3/8)	(1) 1 (3/8)	(1) 1.6 (5/8)	(1) 1.6 (5/8)
DX - WATER COOLED CONDENSER CONNECTION DATA					
Water Cooled Condenser Data - (UW1 & DW1 models)					
Water IN/OUT	OD CM (IN)	2.2 (7/8)	2.9 (1 1/8)	3.5 (1 3/8)	3.5 (1 3/8)
DX - GLYCOL COOLED CONDENSER CONNECTION DATA					
Glycol Cooled Condenser Data - @ 40% Ethylene Glycol (UG1 & DG1 models)					
Glycol IN/OUT	OD CM (IN)	2.2 (7/8)	2.9 (1 1/8)	3.5 (1 3/8)	3.5 (1 3/8)

APPROXIMATE SHIP Weights kg. (lbs.)

MODEL	APPROX. WT.
UA1 & DA1 - 036	260.8 (575)
UA1 & DA1 - 060	272.2 (600)
UA1 & DA1 - 096	362.9 (800)
UA1 & DA1 - 120	367.4 (810)
FAC - 005	
FAC - 005	93 (205)
FAC - 008	138.3 (305)
FAC - 010	149.7 (330)
FAC - 012	161 (355)
FAC - 015	290.3 (640)
FAC - 016	294.8 (650)
FAC - 020	315.3 (695)
FAC - 025	313 (690)
FAC - 031	344.7 (760)
FAC - 036	381 (840)
UB1 & DB1 - 036	
UB1 & DB1 - 036	204.1 (450)
UB1 & DB1 - 060	204.1 (450)
UB1 & DB1 - 096	272.2 (600)
UB1 & DB1 - 120	272.2 (600)
FU - 048	
FU - 048	89.8 (198)
FU - 060	109.8 (242)
FU - 096	142.9 (315)
FU - 120	151.5 (334)
UW1 & DW1 - 036	
UW1 & DW1 - 036	272.2 (600)
UW1 & DW1 - 060	283.5 (625)
UW1 & DW1 - 096	385.6 (850)
UW1 & DW1 - 120	390.1 (860)
UG1 & DG1 - 036	
UG1 & DG1 - 036	272.2 (600)
UG1 & DG1 - 060	283.5 (625)
UG1 & DG1 - 096	385.6 (850)
UG1 & DG1 - 120	390.1 (860)
UC1 & DC1 - 036	
UC1 & DC1 - 036	204.1 (450)
UC1 & DC1 - 060	204.1 (450)
UC1 & DC1 - 096	272.2 (600)
UC1 & DC1 - 120	272.2 (600)

ECX Coil Performance Data

Nominal Tons Model Size		3.0 Tons 036	5.0 Tons 060	8.0 Tons 096	10.0 Tons 120
ECX COOLING CAPACITY: (UA1 & DA1-)_ECX DX Air Cooled w/ ECX 45°F EWT, 0% Glycol)					
80°F DB, 50% RH					
Total / Sensible	KW (MBH)	18.4 / 13.2 (62.7 / 45.0)	26.6 / 19.4 (90.7 / 66.3)	33.4 / 24.9 (114.1 / 85.1)	37.7 / 28.7 (128.7 / 97.8)
Flow Rate / PD	LPM (GPM) / kPa (FT WG)	47.7 (12.6) / 5.1 (1.7)	71.9 (19.0) / 10.5 (3.5)	87.1 (23.0) / 13.2 (4.4)	98.4 (26.0) / 16.4 (5.5)
75°F DB, 50% RH					
Total / Sensible	KW (MBH)	12.1 / 11.1 (41.4 / 37.9)	19.3 / 17.1 (65.9 / 58.5)	23.1 / 21.7 (78.9 / 73.9)	26.2 / 25.0 (89.5 / 85.4)
Flow Rate / PD	LPM (GPM) / kPa (FT WG)	31.4 (8.3) / 2.4 (0.8)	56.8 (15.0) / 6.9 (2.3)	60.6 (16.0) / 6.9 (2.3)	68.1 (18.0) / 8.7 (2.9)
72°F DB, 50% RH					
Total / Sensible	KW (MBH)	9.8 / 9.8 (33.5 / 33.5)	15.5 / 15.5 (53.0 / 53.0)	18.8 / 18.8 (64.0 / 64.0)	21.7 / 21.7 (73.9 / 73.9)
Flow Rate / PD	LPM (GPM) / kPa (FT WG)	26.5 (7.0) / 1.8 (0.6)	45.4 (12.0) / 4.5 (1.5)	49.2 (13.0) / 4.8 (1.6)	56.8 (15.0) / 6.3 (2.1)
ECX COOLING CAPACITY: (UW1 & DW1-)_ECX DX Water Cooled w/ ECX 45°F EWT, 0% Glycol)					
80°F DB, 50% RH					
Total / Sensible	KW (MBH)	17.0 / 12.7 (58.0 / 43.2)	24.8 / 18.7 (84.7 / 63.9)	34.1 / 25.2 (116.5 / 86.1)	40.4 / 29.7 (137.9 / 101.4)
75°F DB, 50% RH					
Total / Sensible	KW (MBH)	13.6 / 11.7 (46.3 / 40.0)	19.8 / 17.3 (67.7 / 59.2)	27.0 / 23.2 (92.2 / 79.3)	31.9 / 27.3 (108.8 / 93.2)
72°F DB, 50% RH					
Total / Sensible	KW (MBH)	11.8 / 11.0 (40.2 / 37.5)	17.3 / 16.4 (59.0 / 55.8)	23.4 / 21.8 (79.8 / 74.5)	27.6 / 25.6 (94.1 / 87.5)
Flow Rate	LPM (GPM)	39.4 (10.4)	61.3 (16.2)	92.4 (24.4)	120.0 (31.7)
Press Drop, ECX Coil	kPa (FT WG)	3.6 (1.2)	7.8 (2.6)	14.6 (4.9)	23.0 (7.7)
ECX COOLING CAPACITY: (UG1 & DG1-)_ECX DX Glycol Cooled w/ ECX 45°F EGT, 40% EG)					
80°F DB, 50% RH					
Total / Sensible	KW (MBH)	12.4 / 10.9 (42.2 / 37.2)	16.4 / 15.6 (56.0 / 53.2)	24.6 / 21.6 (83.9 / 73.7)	31.2 / 26.2 (106.4 / 89.4)
75°F DB, 50% RH					
Total / Sensible	KW (MBH)	10.3 / 10.3 (35.0 / 35.0)	13.8 / 13.8 (47.2 / 47.2)	20.3 / 20.3 (69.2 / 69.2)	25.5 / 24.7 (86.9 / 84.4)
72°F DB, 50% RH					
Total / Sensible	KW (MBH)	9.2 / 9.2 (31.3 / 31.3)	12.5 / 12.5 (42.5 / 42.5)	18.1 / 18.1 (61.8 / 61.8)	22.6 / 22.6 (77.2 / 77.2)
Flow Rate	LPM (GPM)	42.0 (11.1)	65.5 (17.3)	98.4 (26)	129.8 (34.3)
Press Drop, ECX Coil	kPa (FT WG)	5.1 (1.7)	12.0 (4)	22.4 (7.5)	37.4 (12.5)

COMMON FEATURES

Evaporator Airflow - Belt Drive Centrifugal					
Discharge	L/S CFM	849.4 (1,800)	1,321.3 (2,800)	2,076.4 (4,400)	2,265.1 (4,800)
E.S.P.	IN WG	0.5	0.5	0.5	0.5
Fan Motor	HP	1	2	3	5
Fan Dia (Qty.)	IN (NO)	30.5 X 22.9 (12 X 9)	30.5 X 22.9 (12 X 9)	30.5 X 30.5 (12 X 12)	30.5 X 30.5 (12 X 12)
ECX Coil - Aluminum Fin, Copper Tube					
Rows	NO	4	4	3	3
Face Area	M ² (FT ²)	0.6 (6.3)	0.6 (6.3)	0.9 (9.7)	0.9 (9.7)
Face Velocity	FPM	87.2 (286)	135.3 (444)	125.6 (412)	150.9 (495)
Connection Sizes					
Water/Glycol IN/OUT	IN OD	1 1/8	1 1/8	1 3/8	1 3/8
Approximate Unit Weights					
U/DA1(-)-ECX	KG (LBS)	306.2 (675)	317.5 (700)	408.2 (900)	412.8 (910)
U/DW1(-)-ECX	KG (LBS)	317.5 (700)	328.9 (725)	430.9 (950)	435.5 (960)
U/DG1(-)-ECX	KG (LBS)	317.5 (700)	328.9 (725)	430.9 (950)	435.5 (960)

Chilled Water System Performance Data

Nominal Tons Model Size		3.0 Tons 036	5.0 Tons 060	8.0 Tons 096	10.0 Tons 120
Chilled Water Systems @ 45°F Entering Water					
80°F DB, 50% RH					
Total/Sensible	KW (MBH)	18.4 / 13.2 (62.7 / 45.0)	26.6 / 19.4 (90.7 / 66.3)	33.4 / 24.9 (114.1 / 85.1)	37.7 / 28.7 (128.7 / 97.8)
Flow Rate/PD	LPM (GPM) / kPa (FTWG)	47.7 (12.6) / 5.1 (1.7)	71.9 (19.0) / 10.5 (3.5)	87.1 (23.0) / 13.2 (4.4)	98.4 (26.0) / 16.4 (5.5)
75°F DB, 50% RH					
Total/Sensible	KW (MBH)	12.1 / 11.1 (41.4 / 37.9)	19.3 / 17.1 (65.9 / 58.5)	23.1 / 21.7 (78.9 / 73.9)	26.2 / 25.0 (89.5 / 85.4)
Flow Rate/PD	LPM (GPM) / kPa (FTWG)	31.4 (8.3) / 2.4 (0.8)	56.8 (15.0) / 6.9 (2.3)	60.6 (16.0) / 6.9 (2.3)	68.1 (18.0) / 8.7 (2.9)
72°F DB, 50% RH					
Total/Sensible	KW (MBH)	9.8 / 9.8 (33.5 / 33.5)	15.5 / 15.5 (53.0 / 53.0)	18.8 / 18.8 (64.0 / 64.0)	21.7 / 21.7 (73.9 / 73.9)
Flow Rate/PD	LPM (GPM) / kPa (FTWG)	26.5 (7.0) / 1.8 (0.6)	45.4 (12.0) / 4.5 (1.5)	49.2 (13.0) / 4.8 (1.6)	56.8 (15.0) / 6.3 (2.1)

COMMON FEATURES

Evaporator Airflow - Belt Drive Centrifugal					
Discharge	L/S (CFM)	849.4 (1,800)	1,321.3 (2,800)	2,076.4 (4,400)	2,265.1 (4,800)
E.S.P.	IN WG	0.5	0.5	0.5	0.5
Fan Motor	HP	3/4	1-1/2	3	3
Fan Dia (Qty.)	CM (IN) (NO)	30.5 X 22.9 (12 X 9)	30.5 X 22.9 (12 X 9)	30.5 X 30.5 (12 X 12)	30.5 X 30.5 (12 X 12)
Evaporator Coil / Valve - Aluminum Fin, Copper Tube					
Rows	NO	4	4	3	3
Face Area	M ² (FT ²)	0.6 (6.3)	0.6 (6.3)	0.9 (9.7)	0.9 (9.7)
Face Velocity	MPM (FPM)	87.2 (286)	135.3 (444)	125.6 (412)	150.9 (495)
Standard Valve		2-Way, 300 psig rate (3-Way Optional)			
Air Filtration - @ 30% Dust Spot					
Nominal Size	CM (NO) IN	63.5 x 73.7 x 10.2 (1) 25 x 29 x 4	63.5 x 73.7 x 10.2 (1) 25 x 29 x 4	94.0 x 83.8 x 10.2 (1) 37 x 33 x 4	94.0 x 83.8 x 10.2 (1) 37 x 33 x 4
Electric Reheat / Heat - includes evaporator motor heat					
Capacity	MBH	35.9	37.7	58.2	62.8
	KW	10.5	11.0	17.0	18.4
Stages	NO	1	1	2	2
Steam Canister Humidifier					
Steam Canister	LBS/HR	10	10	15	15
Connection Sizes					
Chilled Water In/Out	MPT CM (IN)	2.9 (1-1/8)	2.9 (1-1/8)	4.1 (1-5/8)	4.1 (1-5/8)
Condensate Drain	OD CM (IN)	1.9 (3/4)	1.9 (3/4)	1.9 (3/4)	1.9 (3/4)
Humidifier Inlet	FLARE CM (IN)	0.6 (1/4)	0.6 (1/4)	0.6 (1/4)	0.6 (1/4)
Approximate Unit Weights					
U/DC1-()	KG (LBS)	204.1 (450)	204.1 (450)	272.2 (600)	272.2 (600)

Split Air Cooled Evaporator & Water/Glycol Self-Contained

(FLA = Full Load Amps / MCA = Min Circuit Amps / MFS = Min Fuse Size) * see notes 1-2 below

REHEAT	None, Hot Water or Steam Reheat (No Electric Reheat)		None, Hot Water or Steam Reheat (No Electric Reheat)		Electric Reheat		Electric Reheat	
HUMIDIFICATION	None		Steam Canister Humidifier		None		Steam Canister Humidifier	
DX - AIR COOLED SPLIT EVAPORATOR & WATER / GLYCOL SELF-CONTAINED								
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
U/DA1, W1 & G1-036								
FLA	14.9	7.7	31.3	15.1	42.7	20.3	47.7	22.0
MCA	17.8	9.1	34.2	16.5	52.5	24.8	59.6	27.5
MFS	25	15	45	20	60	25	60	30
U/DA1, W1 & G1-060								
FLA	25.4	12.6	41.8	20.0	53.2	25.2	53.2	25.2
MCA	30.6	15.1	47.0	22.5	65.3	30.8	65.3	30.8
MFS	50	25	60	30	70	35	70	35
U/DA1, W1 & G1-096								
FLA	35.9	17.2	50.1	23.6	77.6	36.1	77.6	36.1
MCA	42.8	20.4	57.0	26.8	94.9	44.0	94.9	44.0
MFS	70	30	80	35	100	50	100	50
U/DA1, W1 & G1-120								
FLA	40.2	19.4	54.4	25.8	81.9	38.3	81.9	38.3
MCA	48.1	23.1	62.3	29.5	100.3	46.7	100.3	46.7
MFS	70	35	90	40	125	50	125	50

ECX - Water/Glycol-Side Economizer Cooling Systems

(FLA = Full Load Amps / MCA = Min Circuit Amps / MFS = Min Fuse Size) * see notes 1-2 below

REHEAT	None, Hot Water or Steam Reheat (No Electric Reheat)		None, Hot Water or Steam Reheat (No Electric Reheat)		Electric Reheat		Electric Reheat	
HUMIDIFICATION	None		Steam Canister Humidifier		None		Steam Canister Humidifier	
DX - AIR COOLED SPLIT EVAPORATOR & WATER / GLYCOL SELF-CONTAINED with ECX Economizer Cooling Option								
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
U/DA1, W1 & G1-036-ECX								
FLA	15.3	7.9	31.7	15.3	43.1	20.5	48.1	22.2
MCA	18.2	9.3	34.6	16.7	52.9	25.0	60.1	27.7
MFS	25	15	45	20	60	30	70	30
U/DA1, W1 & G1-060-ECX								
FLA	26.8	13.3	43.2	20.7	54.6	25.9	54.6	25.9
MCA	32.0	15.8	48.4	23.2	66.7	31.5	66.7	31.5
MFS	50	25	60	30	80	35	80	35
U/DA1, W1 & G1-096-ECX								
FLA	35.9	17.2	50.1	23.6	77.6	36.1	77.6	36.1
MCA	42.8	20.4	57.0	26.8	94.9	44.0	94.9	44.0
MFS	70	30	80	35	100	50	100	50
U/DA1, W1 & G1-120-ECX								
FLA	45.4	22.0	59.6	28.4	87.1	40.9	87.1	40.9
MCA	53.3	25.7	67.5	32.1	105.5	49.3	105.5	49.3
MFS	80	40	90	45	125	50	125	50

Notes

- 1) The above unit electrical data is reflective of the standard performance data and standard options as shown on pages 4 thru 7.
- 2) Due to a policy of continuous improvement, Skil-aire reserves the right to change specifications without notice. Always consult equipment name plate for exact electrical requirements.

Split DX & Chilled Water Air Handling Units

(FLA = Full Load Amps / MCA = Min Circuit Amps / MFS = Min Fuse Size) * see notes 1-2 below

REHEAT	None, Hot Water or Steam Reheat (No Electric Reheat)		None, Hot Water or Steam Reheat (No Electric Reheat)		Electric Reheat		Electric Reheat	
HUMIDIFICATION	None		Steam Canister Humidifier		None		Steam Canister Humidifier	
SPLIT DX & CHILLED WATER AIR HANDLING UNITS								
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
U/DB & C1-036								
FLA	3.5	2.0	19.9	9.4	31.3	14.6	47.7	22.0
MCA	4.4	2.5	24.9	11.8	39.1	18.2	59.6	27.5
MFS	15	15	25	15	40	20	60	30
U/DB & C1-060								
FLA	4.7	2.6	21.1	10.0	32.5	15.2	48.9	22.6
MCA	5.9	3.3	26.4	12.5	40.6	19.0	61.1	28.2
MFS	15	15	30	15	45	20	70	30
U/DB & C1-096								
FLA	8.5	4.5	22.7	10.9	50.2	23.4	64.4	29.8
MCA	10.6	5.6	28.4	13.6	62.8	29.2	80.5	37.2
MFS	15	15	35	15	70	30	90	40
U/DB & C1-120								
FLA	8.5	4.5	22.7	10.9	50.2	23.4	64.4	29.8
MCA	10.6	5.6	28.4	13.6	62.8	29.2	80.5	37.2
MFS	15	15	35	15	70	30	90	40

Remote Air Cooled Condensers & Condensing Units

(FLA = Full Load Amps / MCA = Min Circuit Amps / MFS = Min Fuse Size) * see notes 1-3 below

FAC - Outdoor Propeller Fan Air Cooled Remote Condensers									
Power Supply	208/1/60	277/1/60	208/3/60	460/3/60	Power Supply	208/1/60	277/1/60	208/3/60	460/3/60
FAC - 005					FAC - 016				
FLA	2.5	1.9	2.0	1.0	FLA	9.8	7.4	8.0	4.0
MCA	3.1	2.3	2.5	1.3	MCA	12.3	9.2	10.0	5.0
MFS	15	15	15	15	MFS	20	15	15	15
FAC - 008					FAC - 020				
FLA	4.9	3.7	4.0	2.0	FLA	9.8	7.4	8.0	4.0
MCA	6.1	4.6	5.0	2.5	MCA	12.3	9.2	10.0	5.0
MFS	15	15	15	15	MFS	20	15	15	15
FAC - 010					FAC - 025				
FLA	5.0	3.8	4.0	2.0	FLA			13.0	6.6
MCA	6.3	4.7	5.0	2.5	MCA	N/A	N/A	16.3	8.3
MFS	15	15	15	15	MFS			25	15
FAC - 012					FAC - 031				
FLA	5.0	3.8	4.0	2.0	FLA			13.0	6.6
MCA	6.3	4.7	5.0	2.5	MCA	N/A	N/A	16.3	8.3
MFS	15	15	15	15	MFS			25	15
FAC - 015					FAC - 036				
FLA	9.8	7.4	8.0	4.0	FLA			13.0	6.6
MCA	12.3	9.2	10.0	5.0	MCA	N/A	N/A	16.3	8.3
MFS	20	15	15	15	MCA			25	15

FU - Outdoor Propeller Fan Air Cooled Remote Condensing Units		
Power Supply	230/3/60	460/3/60
036 / FU		
FLA	10.5	Consult Factory
MCA	12.7	Consult Factory
MFS	20	Consult Factory
060 / FU		
FLA	18.4	7.3
MCA	22.7	9.0
MFS	40	15
090 / FU		
FLA	31.2	15.5
MCA	37.6	18.7
MFS	60	30
120 / FU		
FLA	35.7	18.2
MCA	43.2	22.1
MFS	70	30

*Notes

- 1) The above unit electrical data is reflective of the standard performance data and standard options as shown on pages 4 thru 7.
- 2) Due to a policy of continuous improvement, Skil-aire reserves the right to change specifications without notice. Always consult equipment name plate for exact electrical requirements.
- 3) 277V available via field installed step-down transformer.

1.0 GENERAL

1.1 SUMMARY

These specifications describe requirements for an air conditioning system. The system shall be designed to maintain precision temperature and humidity conditions within the specified room. The manufacturer shall design and furnish all equipment to be fully compatible with the heat dissipation requirements of the site.

The system shall be manufactured by Skil-aire in Baltimore, Maryland U.S.A. The system shall be approved and labeled by Underwriters Laboratories, Inc. (UL). The system shall be New York City MEA and Chicago Code Approved.

1.2 DESIGN REQUIREMENTS

The precision environmental control system shall be a Skil-aire factory assembled Guardian-I™ model vertical floor mounted system. The system shall be specifically designed for indoor installation, unless specified otherwise.

The system shall have a total cooling capacity of _____ BTUH and a sensible cooling capacity of _____ BTUH based on an entering air temperature of _____ °F DB and _____ °F WB. The unit shall be supplied with _____ volt, _____ phase, _____ Hz electrical service. The system model number shall be _____.

2.0 PRODUCTS

2.1 STANDARD FEATURES / ALL SYSTEMS

2.1.1 CABINET

The cabinet and access panels shall be fabricated from sturdy heavy gauge galvanized steel. The cabinet and panels shall be painted for corrosion protection and decor matching. The panels shall be lined with 2 lb. density thermal/acoustical insulation for whisper quiet operation. The system shall be designed for front only access with hinged and removable front access door. Removable side panels with quarter-turn fasteners shall be provided for additional ease of installation, service and maintenance on the system.

2.1.2 BLOWER ASSEMBLIES

Blowers shall be belt driven double-inlet, dynamically balanced with multiple forward curved blades mounted on a solid steel keyed shaft. A heavy-duty V-belt fan drive (sized for 200% of motor nameplate horsepower) with adjustable cast iron pulleys keyed and secured to the blower shaft shall be provided for adjusting fan speed to system requirements.

2.1.3 MOTORASSEMBLIES

All fan motors shall be permanently mounted, 1750 or

3450 RPM, with overload protection. Motors shall have permanently lubricated ball bearings and be resiliently mounted to an adjustable motor frame. Motor pulleys shall be cast iron, keyed, with variable pitch design to allow for field adjustment of specific airflow and static requirements.

2.1.4 EVAPORATOR AIR PATTERNS

Up-Flow: (Front Free Return)

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

Note Upflow Systems are available with Top Evaporator Air Discharge Connections or Plenum Discharge Boxes (2 or 3-way).

Up-Flow: (Ducted Rear Return)

The system shall be configured for up-flow air pattern with ducted rear evaporator return air connections and top evaporator air discharge. Ducted rear return systems require left or right side filter service access.

Note Upflow Systems are available with Top Evaporator Air Discharge Connections or Plenum Discharge Boxes (2 or 3-way).

Down-Flow:

The system shall be configured for down-flow air pattern with top free (or ducted) evaporator return air and bottom evaporator air discharge through the raised floor. (Note: Down flow systems require the Adjustable Floor Stand Option.)

2.1.5 FILTERS

The system shall be provided with 4" extended surface pleated disposable type filters rated for 30% average dust-spot efficiency.

2.1.6 ELECTRICAL CIRCUITS

The system shall be provided with a factory installed main electrical enclosure per NEC code requirements. A low voltage transformer with integral protection shall be provided to supply 24 VAC to the control circuit. The fan motor(s), compressor and electric heater (if applicable) shall each have their own contactor. A float switch shall be provided in the evaporator section to sense a clogged condensate drain and shall shut the unit down to prevent water damage.

2.1.7 MAIN POWER NON-FUSED DISCONNECT

The indoor evaporator section shall be provided with a factory installed thru-the-door non-locking main power non-fused disconnect sized for options installed.

2.1.8 MicroSkil-200™ Advanced Microprocessor

The system shall be provided with a MicroSkil-200™ 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
- High Head Press
- Loss of Air Flow
- Loss of Power
- Dirty Filter
- Smoke Detection
- Firestat
- Leak Detection
- Sensor Failure
- Summary Failure
- Glycol Pump Failure

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 Options:

- Multi-Unit Sequencing(Optional)
- BMS Communications(Optional)

RS 485 Serial Connection: (Optional)

An RS 485 Serial Port Connection shall be provided for remote communications to BSM and/or Modem.

2.2 DIRECT EXPANSION SYSTEM COMPONENTS

2.2.1 EVAPORATOR COIL

The evaporator coil shall be quality construction of seam- less drawn rifled copper tube, mechanically bonded to tempered aluminum fins with galvanized coil end plates. The coil shall have ____ sq. ft. face area, ____ rows deep. The coil shall be factory pressure tested and the refrigeration system sealed prior to shipment. A stainless steel drain pan shall be provided to cover the entire coil area.

2.2.2 SCROLL COMPRESSOR

The compressor shall be the heat pump duty scroll. The compressor shall be mounted on vibration isolators. 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 REFRIGERATION CIRCUIT

Each refrigeration circuit shall be pre-piped with type “L” refrigerant copper tubing. Each refrigeration circuit 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 CHILLED WATER SYSTEMS

2.3.1 CHILLED WATER AIR HANDLERS (Models U/DC1-V)

The system shall be a chilled water air handling unit. The chilled water coil shall be of quality construction of seam- less drawn rifled copper tube, mechanically bonded to tempered aluminum fins with galvanized coil end plates. The coil shall be factory pressure tested. The coil shall have ____ sq. ft. face area, ____ rows deep. A stainless steel drain pan shall be provided to cover the entire coil area. The coil shall be controlled by a factory installed 2-way chilled water control valve. The coil shall be designed to distribute water into the entire coil face area. The coil shall be supplied with ____ °F entering water temperature with a ____ °F temperature rise. The coil shall require ____ GPM of chilled water and the pressure drop shall not exceed ____ Ft. w.g.

2.4 STANDARD FEATURES - INDIVIDUAL SYSTEMS

2.4.1 AIR COOLED SYSTEMS

2.4.1.1 DX - SPLIT EVAPORATOR WITH REMOTE OUTDOOR PROPELLER FAN AIR COOLED CONDENSER (Models U/DA1 / FAC)

The system shall be a split system with indoor vertical floor mounted evaporator unit and remote outdoor propeller fan condenser. The indoor evaporator section shall include, but not be limited to: evaporator coil, stainless steel condensate drain pan, adjustable belt-driven blower, blower motor, thermal expansion valve with external equalizer, heat pump duty compressors, refrigerant service valves, refrigerant sight glass / moisture indicator, filter drier, 24 volt terminal connection and 4" filters. The remote propeller fan condenser shall include, but not be limited to: condenser coil rated for 95°F ambient, low rpm direct driven propeller fans and low ambient controls. The evaporator and condenser sections shall ship with a dry-nitrogen holding charge ready for field refrigerant (R-407C or R-410A) charging.

2.4.1.2 DX - AIR HANDLING UNIT ONLY (Models U/DB1-V)

The system shall be a vertical floor mounted split DX - Air Handling Unit designed for field connection to the specified remote condensing unit. The air handling unit shall include, but not be limited to: evaporator coil, stainless steel condensate drain pan, adjustable belt-driven blower, blower motor, thermal expansion valve with external equalizer, refrigerant service valves, refrigerant sight glass / moisture indicator, filter drier, 24 volt terminal connection and 2" filters.

2.4.1.3 OUTDOOR, REMOTE PROPELLER FAN, AIR COOLED CONDENSING UNIT (FU models)

The remote air cooled condensing unit shall be an outdoor mounted direct drive, propeller fan type arranged for vertical air discharge. The condensing unit shall be sized for full heat of rejection at 95°F ambient and be capable of operation to ____ °F. The condenser coil shall be constructed of copper tube and aluminum fins. The coil shall be factory tested, and refrigeration system sealed prior to shipment. The condenser fan motor shall have permanently lubricated bearings and inherent internal overload protection.

2.4.2 WATER COOLED SYSTEMS

2.4.2.1 WATER COOLED, SELF-CONTAINED (U/DW1-V models)

The system shall be self-contained vertical floor mounted air conditioner with integral factory installed water cooled condensing unit. Water cooled systems shall have coaxial, counter flow liquid condensers with adjustable 2-way water regulating valves per circuit to maintain head pressure with condenser water flow. The unit shall require ____ GPM of ____ °F water and have a maximum pressure drop of ____ Ft. w.g.

2.4.3 GLYCOL COOLED SYSTEMS

2.4.3.1 GLYCOL COOLED, SELF-CONTAINED (U/DG1-V models)

The system shall be self-contained vertical floor mounted air conditioner with integral factory installed glycol cooled condensing unit. Glycol cooled systems shall have coaxial, counter flow liquid condensers with adjustable 2-way glycol regulating valves to maintain head pressure with condenser glycol flow. The unit shall require ____ GPM of ____ °F glycol and have a maximum pressure drop of ____ Ft.w.g.

2.4.3.2 DRY COOLER & SIMPLEX PUMP PACKAGE (FCPP models)

The drycooler shall be complete with field mounted expansion tank and aquastat to control fan motor operation. The coil shall have seamless copper tubes bonded to aluminum fins for high transfer efficiency. The motor(s) shall have permanently lubricated bearings with inherent overload protection on 1 Phase motors and three coil overloads on 3 Phase motors.

The pump package shall include controls to operate the drycooler and the pump. The pump package shall be enclosed in a weatherproof housing. The pump shall be rated for ____ GPM at ____ Ft. of head, and operate on ____ volt, ____ PH, 60 Hz.

2.5 OPTIONS

2.5.1 AIR COOLED CONDENSER - LOW AMBIENT CONTROL

2.5.1.1 0°F AMBIENT - FAN CYCLING

Condenser fan cycling controls shall be factory installed to allow for low ambient condenser operation to 0°F minimum air temperature.

2.5.1.2 -20°F VARIABLE SPEED FAN

Variable speed head pressure controls shall be factory installed to allow for low ambient condenser operation to a -20°F minimum air temperature. Compressor crankcase heater and cold start time delay relay shall also be factory installed with -20°F low ambient control option.

2.5.1.3 -30°F FLOODED CONDENSER

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 head pressure control valve. Compressor crankcase heater and cold start time delay relay shall also be factory installed with -30°F low ambient control option.

2.5.2 WATER / GLYCOL COOLED - HEAD PRESSURE CONTROL VALVES

2.5.2.1 3-WAY WATER / GLYCOL HEAD PRESSURE CONTROL VALVE

Each refrigerant circuit's head pressure shall be controlled by a factory provided 3-way water/glycol regulating valve rated for 150 psig w.w.p.

trolled by a factory provided 3-way water/glycol regulating valve rated for 150 psig w.w.p.

2.5.2.2 350 PSI HIGH PRESSURE - WATER/GLYCOL HEAD PRESSURE CONTROL VALVES

Each refrigerant circuit's head pressure shall be controlled by a factory provided high pressure rated _____ (2 or 3) -way water/glycol regulating valve rated for 350 psig w.w.p.

2.5.3 STEAM GENERATING HUMIDIFIER (Standard)

The humidification system shall be an electrode canister type, complete with fill valve, drain valve, adjustable humidity output, and automatic flush cycle. Humidification shall be in the coil bypass to provide maximum humidification efficiency. The humidifier shall be producing _____ lbs/hr.

2.5.4 REHEAT OPTIONS

2.5.4.1 ELECTRIC REHEAT (Standard)

The electric reheat shall be a factory installed low watt density finned-tubular nickel plated element heater with overheat safety controls. The electric reheat shall have a capacity of _____ BTUH and a KW rating of _____ KW

2.5.4.2 STEAM REHEAT

The steam reheat coil shall have copper tubes and aluminum fins with capacity of _____ BTUH with _____ Ft. w.g. steam. The system shall be factory pre-piped with a 2-way steam control valve.

2.5.4.3 HOT WATER REHEAT

The hot water reheat coil shall have copper tubes and aluminum fins with a capacity of _____ BTUH when supplied with _____ °F entering water temperature, _____ GPM at _____ Ft. w.g. The system shall be factory pre-piped with a 2-way hot water control valve.

2.5.5 PLENUM DISCHARGE BOX - UPFLOW UNITS

A (2-way, 3-way or ducted) plenum discharge box shall be provided for field installation to the top of the upflow unit. The plenum box shall be 18.5 inches high, insulated and painted to match the color of the unit.

2.5.6 FLOOR STAND

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

2.5.6.1 Turning Vanes - DOWNFLOW UNITS

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

2.5.7 CONDENSATE PUMP

A condensate pump shall be factory installed. The condensate pump shall have the capacity of _____ GPH at _____ Ft. of head. The condensate pump shall be complete with integral float switch, pump and motor assembly, check valve and reservoir.

2.5.8 HOT GAS BYPASS

(DX Systems)

The refrigerant circuit shall be provided with a hot gas bypass system for evaporator freeze-protection and capacity modulation during low load conditions.

2.5.9 VARIABLE AIR VOLUME (VAV) OPTION KIT

The system shall be designed for evaporator supply air control for application with a variable air volume (VAV) system. The shall incorporate Skil-aire's VAV Option Kit which shall include, but not be limited to:

- Variable Frequency Drive-factory installed
- Static Pressure Sensor/Transducer - field installed
- MicroSkil-200, Advanced Microprocessor Controller w/ Supply Air Control Algorithm
- Circuit 1: Modulating (0-10 Vdc) Hot Gas Bypass
- Circuit 2: Standard Hot Gas Bypass

2.5.10 FIRESTAT

A firestat shall be factory installed within the evaporator return air stream to immediately shut down the environmental control system when activated.

2.5.11 SMOKE DETECTOR

A smoke detector shall be factory installed within the evaporator return air stream to immediately shut down the environmental control system when activated.

2.5.12 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.

2.5.13 ECX - ECONOMIZER / FREE-COOLING CYCLE

(Models U/DA1, W1 & G1-V_-ECX)

The system shall be provided with an auxiliary Skil-aire™ ECX economizer cooling coil with a factory mounted 3-way control valve. The ECX coil shall be capable of providing rated sensible capacity without compressor operation when entering water/glycol fluid temperatures are 45°F or below.

2.5.14 COMPRESSOR SOUND JACKETS

(Not Available with Crankcase Heater)

An acoustical compressor sound jacket shall be factory installed. The sound jacket shall be designed for ease of compressor maintenance via a snap closure system.

2.5.15 4 YEAR EXTENDED (5 YR TOTAL) COMPRESSOR WARRANTY (PART ONLY)

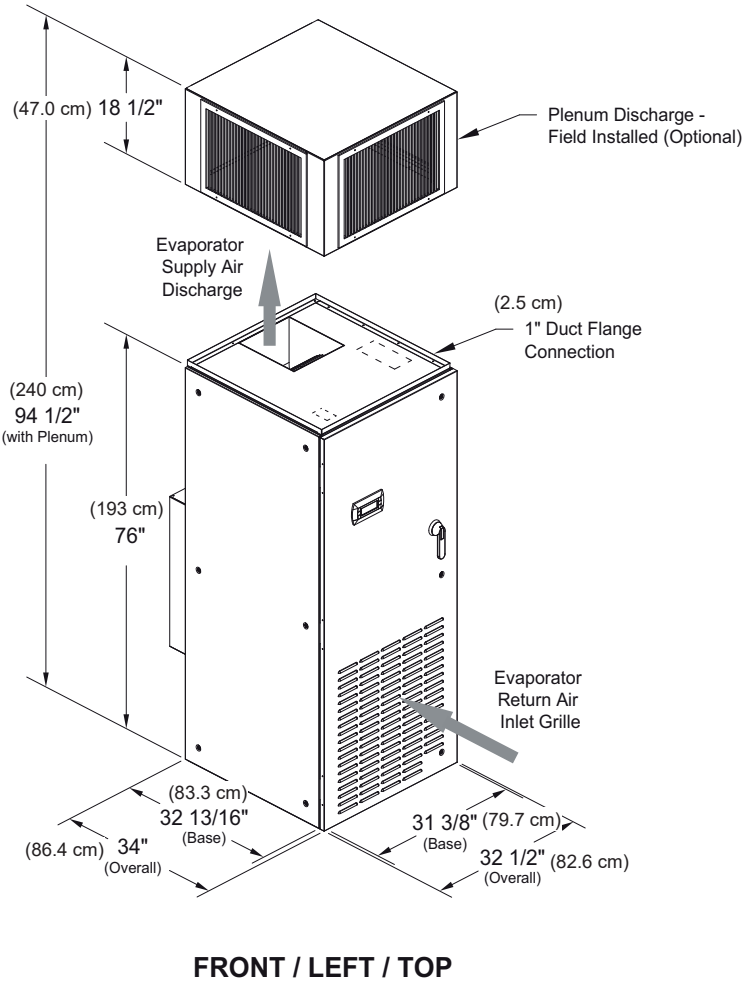
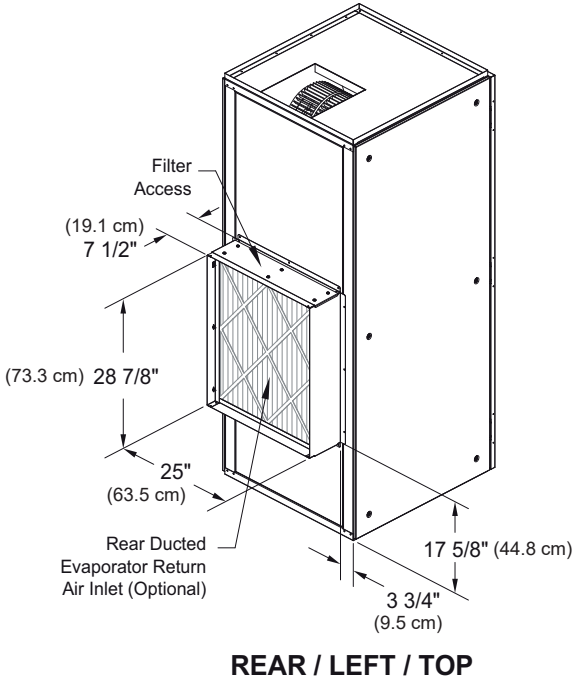
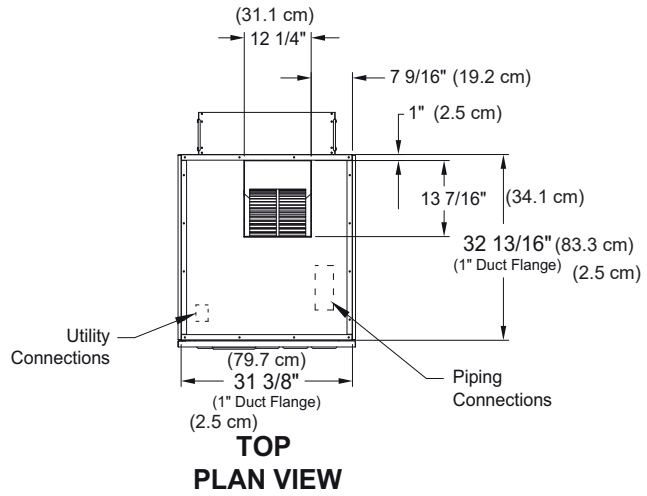
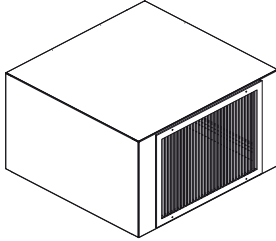
The A/C unit shall be provided with a 4 year extended (5 year total) A/C unit manufacturer's limited compressor warranty. The warranty shall be for compressor part only and shall not include labor, transportation or parts other than the compressor.

UPFLOW - 3 & 5 Ton

(UA1, UB1, UW1, UG1 & UC1-036 & 060-V_)

Front only service Access:

Guardian-I systems require only front access for all routinely maintained components through the hinged (removable) front access door. Side panels are also removable as a standard if additional access is desired.

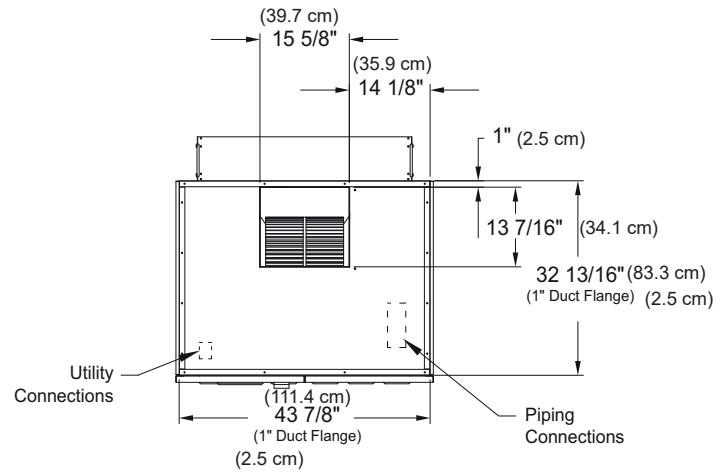
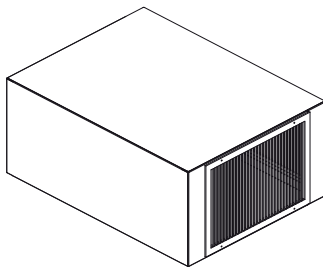


UPFLOW - 8 & 10 Ton

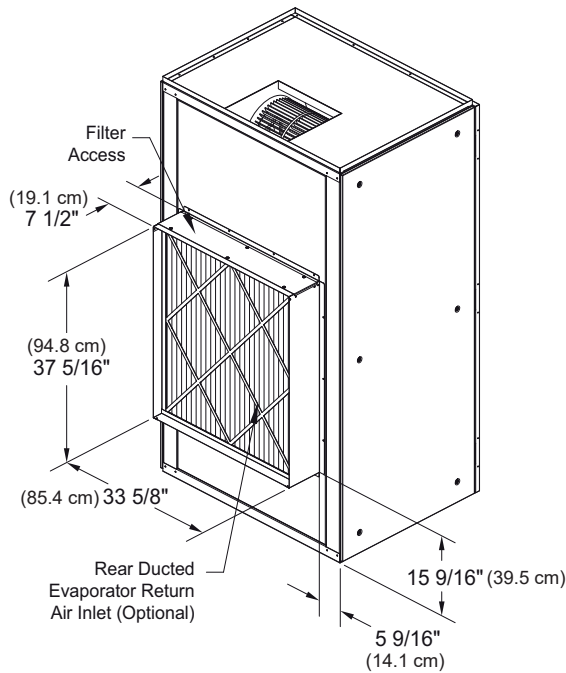
(UA1, UB1, UW1, UG1 & UC1-096 & 120-V_)

Front only service Access:

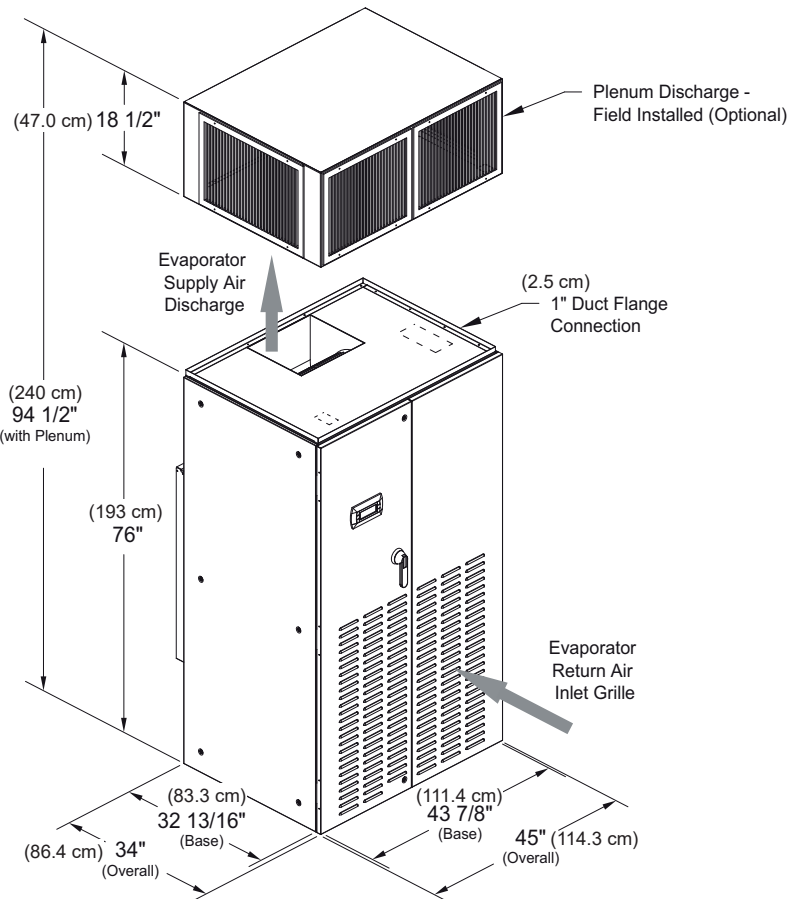
Guardian-I systems require only front access for all routinely maintained components through the hinged (removable) front access door. Side panels are also removable as a standard if additional access is desired.



**TOP
PLAN VIEW**



REAR / LEFT / TOP



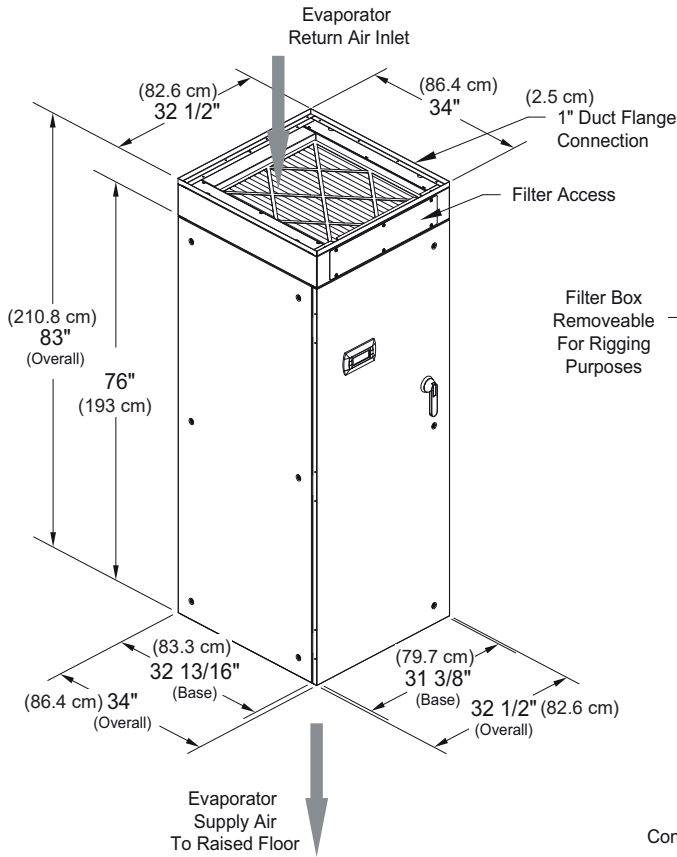
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DOWNFLOW - 3 & 5 Ton

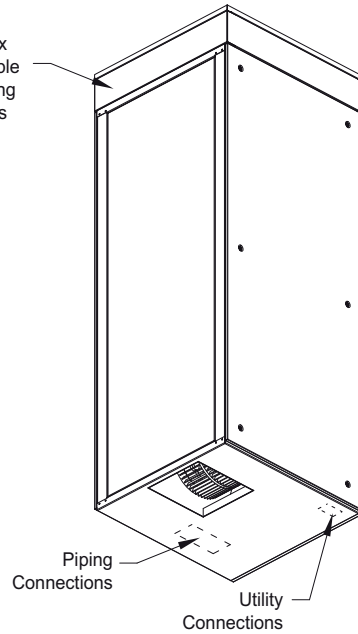
(UA1, UB1, UW1, UG1 & UC1-036 & 060-V_)

Front only service Access:

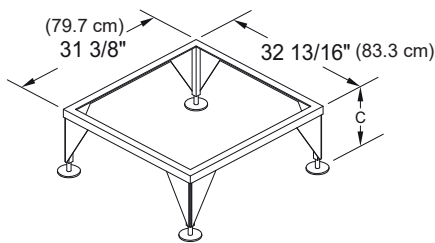
Guardian-I systems require only front access for all routinely maintained components through the hinged (removable) front access door. Side panels are also removable as a standard if additional access is desired.



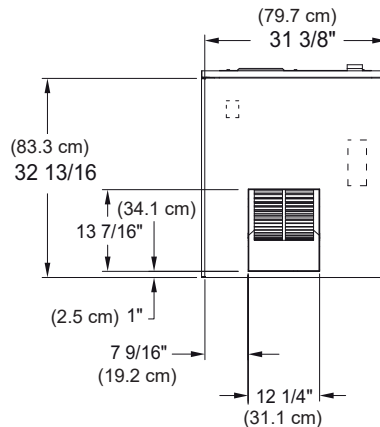
FRONT / LEFT / TOP



REAR / LEFT / BOTTOM



FLOOR STAND (OPTIONAL)



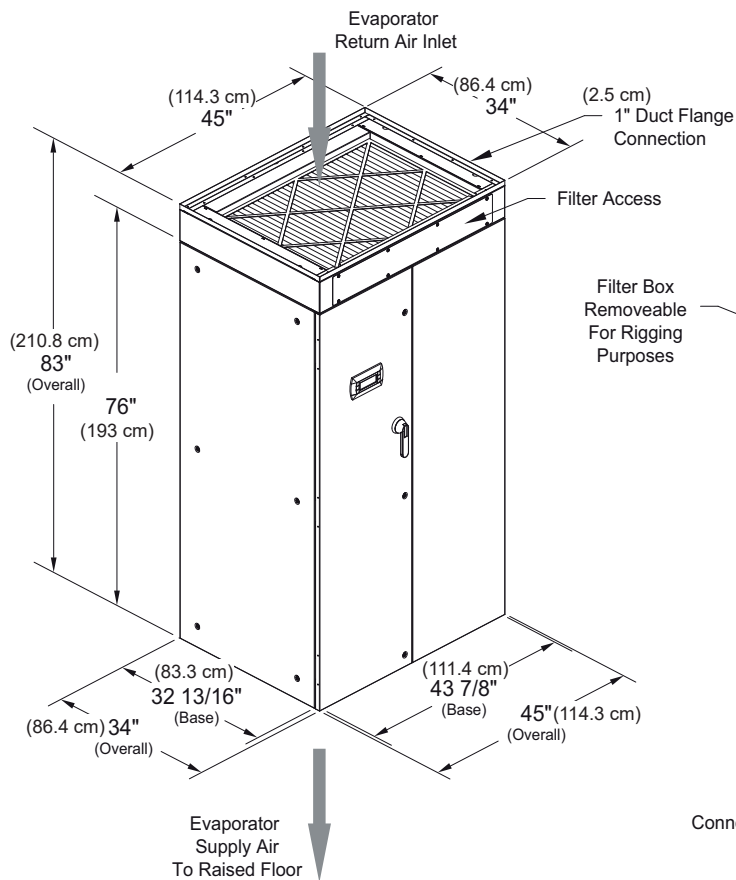
BOTTOM PLAN VIEW

Floor Stand Model	Nominal Height "C"
FSA1-12	30.5 cm (22.9-35.6 cm) (12.0" (9"-14" Adj.))
FSA1-18	45.7 cm (38.1-50.8 cm) (18.0" (15"-20" Adj.))
FSA1-24	61.0 cm (53.3-66.0 cm) (24.0" (21"-26" Adj.))

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

DOWNFLOW - 8 & 10 Ton

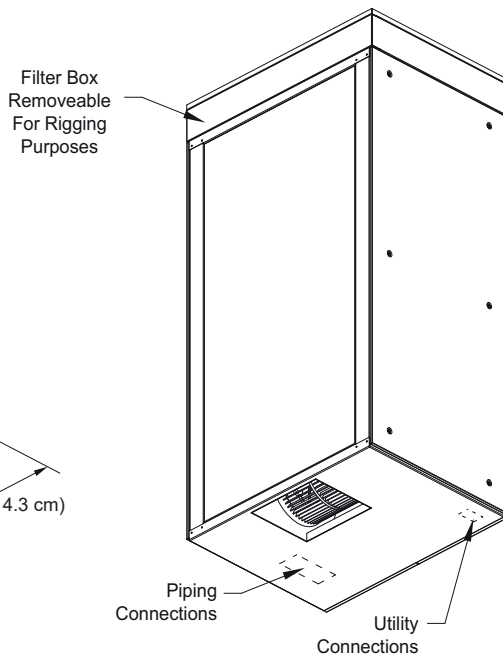
(UA1, UB1, UW1, UG1 & UC1-096 & 120-V_)



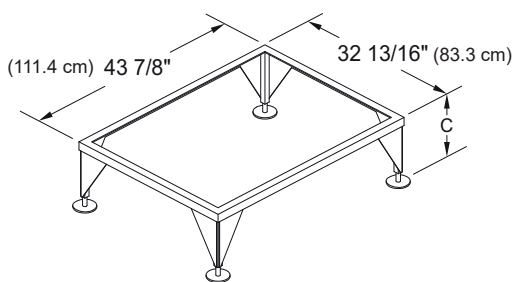
FRONT / LEFT / TOP

Front only service Access:

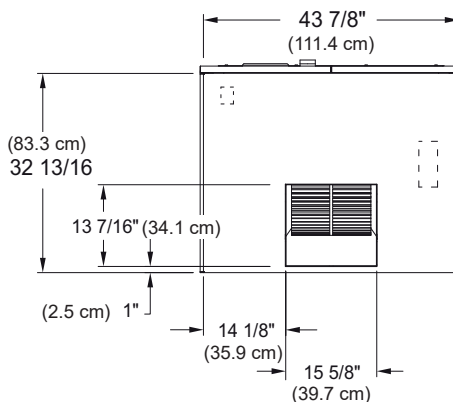
Guardian-I systems require only front access for all routinely maintained components through the hinged (removable) front access door. Side panels are also removable as a standard if additional access is desired.



REAR / LEFT / BOTTOM



FLOOR STAND (OPTIONAL)



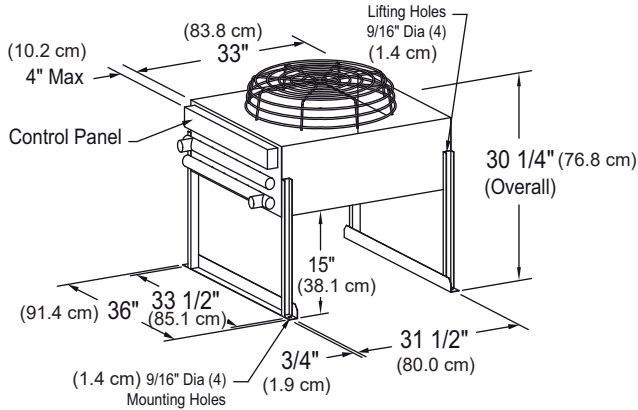
BOTTOM PLAN VIEW

Floor Stand Model	Nominal Height "C"
FSA1-12	30.5 cm (22.9-35.6 cm) (12.0" (9"-14" Adj.))
FSA1-18	45.7 cm (38.1-50.8 cm) (18.0" (15"-20" Adj.))
FSA1-24	61.0 cm (53.3-66.0 cm) (24.0" (21"-26" Adj.))

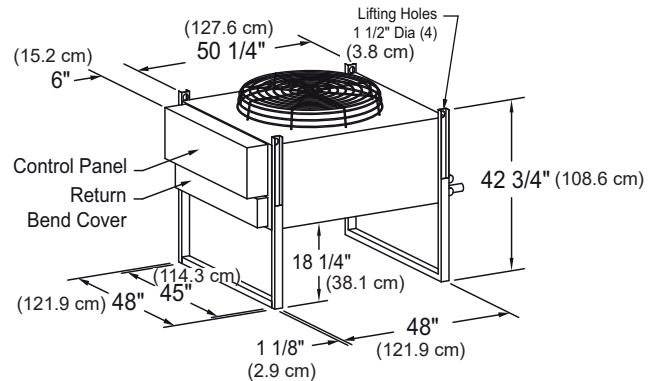
Note Turning Vanes, Seismic Rated and Custom Height Floor Stands are optionally available.

Remote Outdoor Propeller Fan Air Cooled Condensers

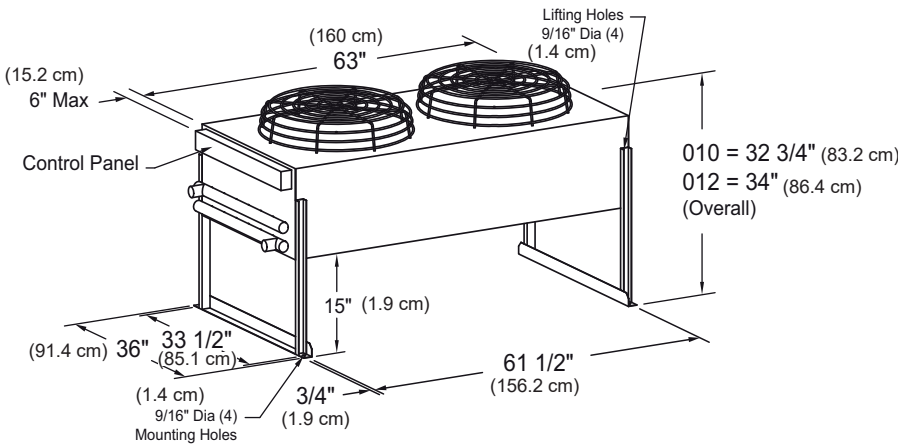
FAC-005



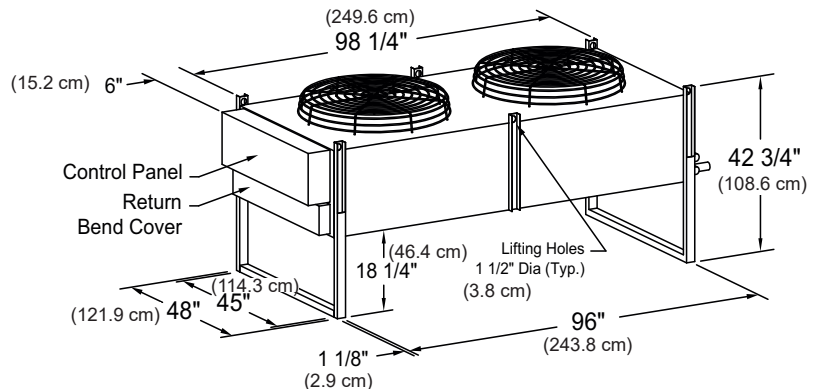
FAC-008



FAC-010 & 012

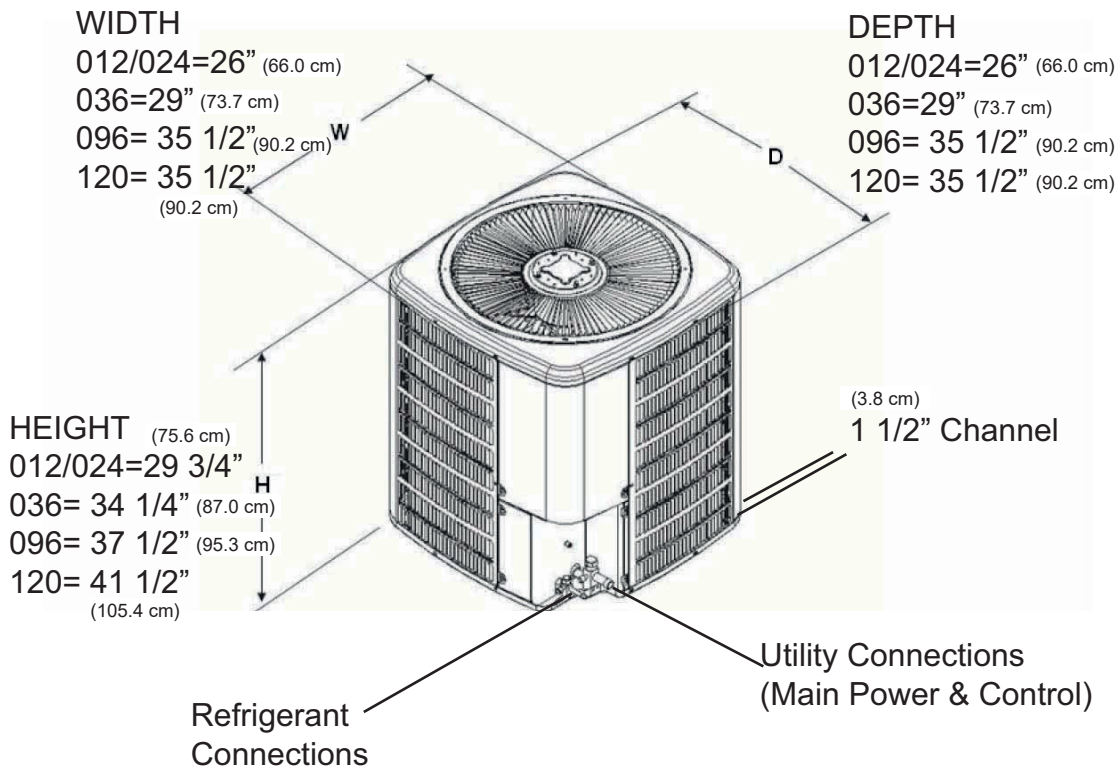


FAC-015, 016, 20, 25, 31 & 036



036/120-FU

(Remote Propeller Fan,
Outdoor Air Cooled Condensing Units)



Glycol Drycoolers & Pump Packages

(For U/DG1-036/120 Glycol Cooled Systems)

Refer to Skil-aire Glycol Pump Package & Drycooler Engineering Manual for Detailed Technical Information.

