



MUA-DS-4
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MUA-DS-4

Packaged
Air Handling
Products

For Cooling, Ventilating and
Make-Up Air Applications





Features and Benefits

The Trane packaged air handling product line is suitable for cooling, ventilating and make-up air applications. Unit sizes range from 1,500 to 14,000 cfm (0.7-6.6 cu. m/s) with 1/2 to 15 hp motor capabilities.

Units are ETL and CSA certified to UL-1995 standard for heating, cooling and ventilating equipment. Units are available in one of eight standard arrangements. Air handling units are suitable for commercial, institutional and industrial applications where external system pressure losses are as high as three inches WC.

Arrangements are divided into two classifications — standard and high cfm blower types.

The standard blower unit consists of a blower cabinet that houses the dampers, filters and blower in one cabinet. An optional evaporative cooling unit with standard 8 or optional 12-inch media may also be included.

The high cfm blower unit uses a separate damper/filter cabinet with a V-bank filter arrangement and a blower cabinet. An optional coil cabinet is offered on units with a cfm range of up to 6,300. Both standard and high cfm blower arrangements may also include a downturn supply air plenum, outside air and/or return air, intake hood and a roof curb.

All units are completely packaged, rail mounted and wired to help assure a smooth installation and easy start-up.

Air control options offer a similar range of control features from manual dampers to modulating dampers that may include mixed air, dry bulb, pressure sensing, enthalpy control, DDC interface or ASHRAE Cycle control arrangements.

Features and Benefits

- ETL and CSA UL-1995 Certified.
- Cfm ranges from 1,500 to 14,000.
- Motor sizes up to 15 hp.
- ODP motors with high efficiency and totally enclosed options.
- Draw-thru cooling coil cabinet with stainless steel drain pan.
- Evaporative cooling with standard 8 or optional 12-inch media (203 or 305 mm).
- Insulated roof curb.
- Standard 18-gauge cabinets.
- Standard one-inch washable filters.
- Standard blower door safety interlock switch.
- Standard 24-volt circuit breaker.
- Standard printed circuit main connection board.
- Wiring harnesses with stamped wire numbers.
- Over 40 standard air control packages.

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Unit Configurations

Unit Type		Standard Features
Arrangement B — Air Handler with Standard Blower		<ul style="list-style-type: none"> — Electrical cabinet isolated from the airstream. — Blower door interlock switch with service override. — Insulated Fan Section — 1" Permanent Filters
Arrangement C — Air Handler with Standard Blower and Downflow Supply Plenum		<ul style="list-style-type: none"> — Same as Arrangement B with — Insulated Supply Plenum
Arrangement D — Air Handler with Standard Blower and Evaporative Cooler		<ul style="list-style-type: none"> — Same as Arrangement B with — Evaporative Cooler — Sealed pump motor with float valve — Heavy duty stainless steel water tank — High Efficiency 8 media — Self cleaning design
Arrangement E — Air Handler with Standard Blower, Evaporative Cooler and Downflow Supply Plenum		<ul style="list-style-type: none"> — Same as Arrangement D with — Insulated Supply Plenum
Arrangement G — Air Handler with High Cfm Blower		<ul style="list-style-type: none"> — Blower door interlock switch with service override — 1" Permanent Filters — Electrical cabinet isolated from the airstream — Quick opening access door — V bank filter and damper cabinet — Fully insulated filter/damper and blower cabinet
Arrangement J — Air Handler with High Cfm Blower and Downflow Supply Plenum		<ul style="list-style-type: none"> — Same as Arrangement G with — Insulated Supply Plenum
Arrangement K — Air Handler with High Cfm Blower and Coil Section		<ul style="list-style-type: none"> — Same as Arrangement G with — Coil Section — Mounting for 4-6 row coils — Stainless steel drain pan with 3/4" tapped outlets
Arrangement L — Air Handler with High Cfm Blower, Coil Section and Downflow Supply Plenum		<ul style="list-style-type: none"> — Same as Arrangement K with — Insulated Supply Plenum

Note: Motors/Air Inlet Configuration/Air Control and Damper Arrangement must be selected for each unit.

Legend is as follows:

B/F/D — Standard blower/Filter/Damper

SP — Supply Plenum

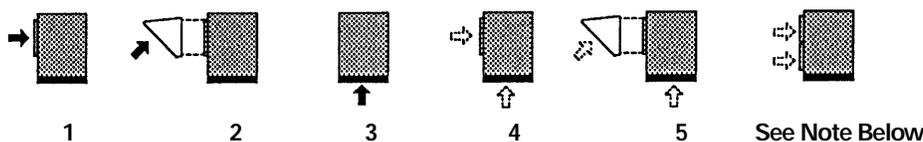
EV — Evaporative Cooler

F/D — Filter/Damper

B — High cfm Blower

CC — Coil Cabinet

Air Inlet Configuration (Digit 18 of the Model Number)



Note: Horizontal outside air over return air. Specify air inlet configuration 4 or 5 and then select miscellaneous option "D" for horizontal return.



Model Number Description

A H 0 A 20 0 A 0 DO 0 0 C F 1 0 5 H 0 P
 1 2 3 4 5,6 7 8 9 10,11 12 13 14 15 16 17 18 19 20 21

Digit 1,2 — Unit Type

AH = Air Handling Unit

Digit 3 — Furnace Type

0 = None

Digit 4 — Development Sequence

A = First Generation

Digit 5,6 — Unit Size

20 = 1500 - 8000 Cfm
 40 = 4000 - 14000 Cfm

Digit 7 — Venting Type

0 = None

Digit 8 — Main Power Supply

A = 115/60/1
 B = 208/60/1
 C = 230/60/1
 D = 208/60/3
 E = 230/60/3
 F = 460/60/3
 G = 575/60/3
 S = Special Main Power Supply

Digit 9 — Gas Control Option

0 = No gas control option

Digit 10, 11 — Design Sequence

DO = Design Sequence

Digit 12 — Fuel Type

0 = No selection

Digit 13 — Heat Exchanger Material

0 = No selection

Digit 14 — Air Handler Arrangements

B = Blower (Standard)
 C = Blower (Standard) Plenum
 D = Blower (Standard) Evaporative Cooler
 E = Blower (Standard) Evaporative Cooler/Plenum
 G = Blower (High CFM)
 J = Blower (High CFM)/Plenum
 K = Blower (High CFM)/Coil Cabinet
 L = Blower (High CFM)/Coil Cabinet/Plenum
 S = Special Air Handler Arrangement

Digit 15 — Motor Selection

A = 1/2 HP w/contactor
 B = 3/4 HP w/contactor
 C = 1 HP w/contactor
 D = 1 1/2 HP w/contactor
 E = 2 HP w/contactor
 F = 3 HP w/contactor
 G = 5 HP w/contactor
 H = 1/2 HP w/magnetic starter
 J = 3/4 HP w/magnetic starter
 K = 1 HP w/magnetic starter
 L = 1 1/2 HP w/magnetic starter
 N = 2 HP w/magnetic starter
 P = 3 HP w/magnetic starter
 Q = 5 HP w/magnetic starter
 R = 7 1/2 HP w/magnetic starter
 T = 10 HP w/magnetic starter
 U = 15 HP w/magnetic starter
 S = Special Motor

Digit 16 — Motor Speed and Starter

0 = No Selection
 1 = Single Speed ODP 1800 RPM
 2 = Single Speed TEFC 1800 RPM
 3 = Single Speed High Efficiency ODP 1800 RPM
 4 = Single Speed High Efficiency TEFC 1800 RPM
 5 = 2S1W ODP 1800/900 RPM
 6 = 2S2W ODP 1800/1200 RPM
 S = Special Motor Speed and Starter

Digit 17 — Coil Options

0 = No cooling coil selection
 A = DX coil, 4 Row, Single Circuit
 B = DX coil, 4 Row, Dual Circuit
 C = DX coil, 6 Row, Single Circuit
 D = DX coil, 6 Row, Dual Circuit
 E = Chilled Water Coil, 4 Row, Single Circuit
 G = Chilled Water Coil, 6 Row, Dual Circuit
 S = Special coil

Digit 18 — Air Inlet Configuration

1 = Outside Air (OA) Horizontal Inlet
 2 = Outside Air W/Air Hood, Horizontal Inlet
 3 = Bottom Return Air (RA)
 4 = Outside and Return Air (OA/RA)
 5 = Outside and Return Air W/Air Hood
 S = Special Air inlet configuration

Digit 19 — Air Control and Damper Arrangements

0 = No Selection
 A = Outside Air 2 pos. Motor/ SR
 B = Return Air 2 pos. Motor/ SR
 C = OA/RA 2 pos SR
 E = OA/RA Mod Mtr W/Mixed Air Control/Min Pot/SR
 H = OA/RA Mod Mtr W/Mixed Air Control/SR
 K = OA/RA Mod Mtr W/Min Pot/SR
 M = OA/RA Mod Mtr w/Dry Bulb/Mixed Air Control/Min Pot/SR
 N = OA/RA Mod Mtr w/Enthalpy Controlled Economizer/SR
 P = OA/RA Mod Mtr W/ Space Pressure Controller
 R = OA/RA Mod Mtr W/ S-350 P Proportional Mixed Air Control/SR
 U = OA/RA MTR. W/External 0-10VDC and 4-20 mA Analog Input/SR (External Input)
 W = ASHRAE Cycle I (OA/RA 2 pos. w/warm-up stat/SR
 X = ASHRAE Cycle II (OA/RA Mod W/Warm-up Stat/Mixed Air/min pot/SR
 Y = ASHRAE Cycle III (OA/RA Mod. W/Warm-up Stat/Mixed Air/SR
 Z = Manual Dampers
 S = Special air control and damper arrangement

Digit 20 — California Shipment

0 = Non-California Shipment
 1 = California Shipment

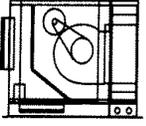
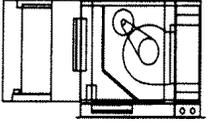
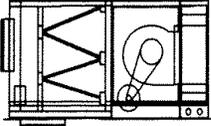
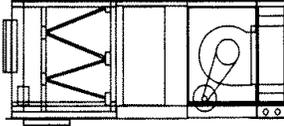
Digit 21 — Miscellaneous Options

B = 12" Evaporative Media (Celdek)
 C = Moisture Eliminators
 D = Horizontal Return
 E = Continuous Fan Relay
 F = Freezestat
 H = Return Air Firestat
 J = Supply Air Firestat
 K = Manual Blower Switch
 N = Double Wall Construction
 P = Low Leak Dampers
 Q = Clogged Filter Switch
 W = Interlock Relay — 24/115V Coil SPDT 10A
 X = Interlock Relay — 24/115/230V Coil DPDT 10A
 Z = 8" Evaporative Media (Glasdek)
 1 = 12" Evaporative Media (Glasdek)
 2 = Hinged Service Access Doors



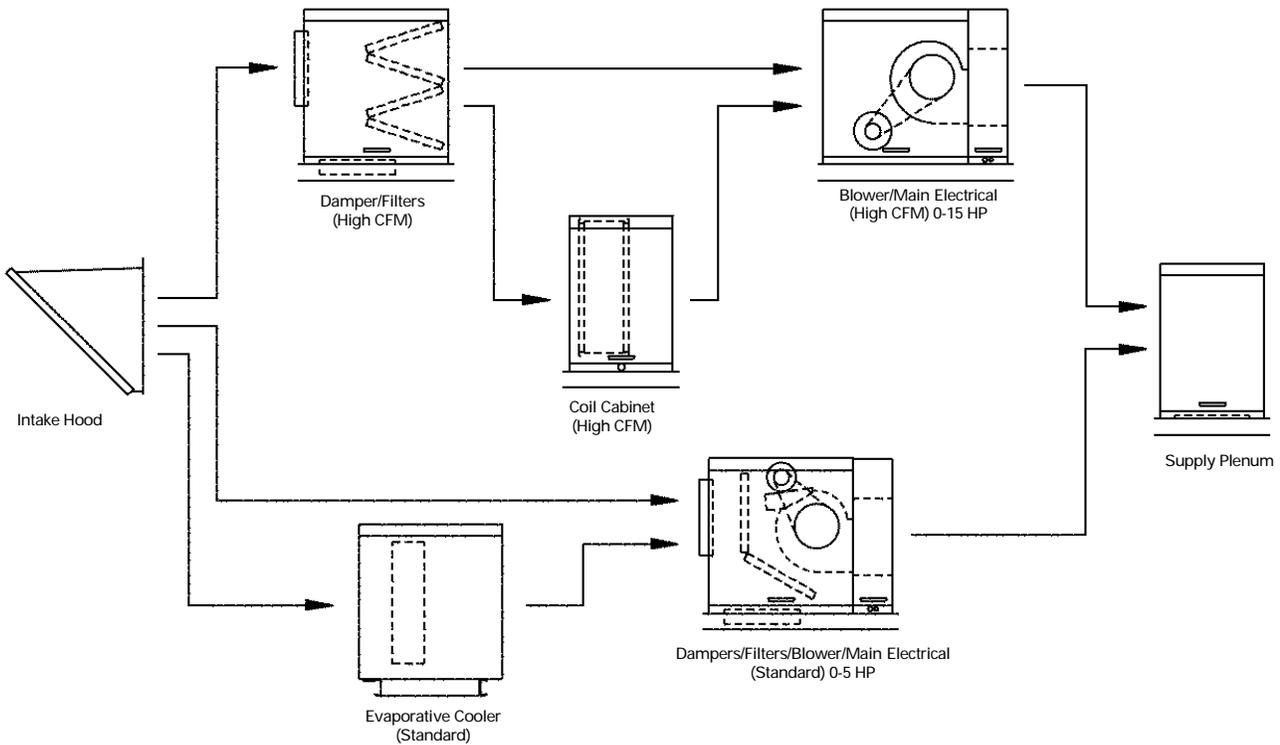
General Data

Packaged Air Handler Arrangement Reference

Standard Blower Arrangements B, C	Standard Blower W/EC-Mate Arrangements D, E	High CFM Blower Arrangements G, J	High CFM Blower W/Cooling Arrangements K, L
			
Capacity 20, 40 20 - 1,500-6,000 CFM, 1/2-5 HP 40 - 4,000-8,000 CFM, 1/2-5 HP ESP .1-3" in WC	Capacity 20, 40 20 - 1,500-6,000 CFM, 1/2-5 HP 40 - 4,000-8,000 CFM, 1/2-5 HP ESP .1-3" in WC	Capacity 20, 40 20 - 3,000-8,000 CFM, 3/4-10 HP 40 - 5,000-14,000 CFM, 3/4-15 HP ESP .1-3" in WC	Capacity 20, 40 20 - 3,000-4,300 CFM, 3/4-5 HP 40 - 5,000-6,300 CFM, 3/4-7 1/2 HP ESP .1-3" in WC

Filter Data

Arrangement	Unit Size	
	20	40
B-E	(4) 20 x 20	(6) 20 x 20
G-L	(8) 20 x 20	(12) 20 x 20





Performance Adjustment Factors

Table PAF-1 — Correction Factors for Altitude

	Altitude (Feet)												
	0'	500'	1000'	1500'	2000'	2500'	3000'	3500'	4000'	4500'	5000'	5500'	6000'
Temp.	Barometric Pressure (In. Hg)												
F	39.92	29.38	28.86	28.33	27.82	27.31	26.82	26.32	25.84	25.36	24.9	24.43	29.98
-40	0.79	0.81	0.82	0.84	0.85	0.87	0.88	0.90	0.92	0.93	0.95	0.97	0.99
0	0.87	0.88	0.90	0.92	0.93	0.95	0.97	0.99	1.00	1.02	1.04	1.06	1.08
40	0.94	0.96	0.98	1.00	1.01	1.03	1.05	1.07	1.09	1.11	1.13	1.16	1.18
70	1.00	1.02	1.04	1.06	1.08	1.10	1.12	1.14	1.16	1.18	1.20	1.22	1.25
80	1.02	1.04	1.06	1.08	1.10	1.12	1.14	1.16	1.18	1.20	1.22	1.25	1.27
100	1.06	1.08	1.10	1.12	1.14	1.16	1.18	1.20	1.22	1.25	1.27	1.29	1.32
120	1.90	1.11	1.13	1.16	1.18	1.20	1.22	1.24	1.27	1.29	1.31	1.34	1.37

1. Actual ESP = Duct ESP x Factor ÷ Accs. SP
2. Actual BHP = Cat. BHP ÷ Factor
3. Correct BTUH Input = Catalog BTUH Input ÷ Factor
4. Corrected BTUH Output = Corrected BTUH Input x Efficiency

Metric Conversion Table

Unless otherwise specified, the following conversions may be used for calculating SI unit measurements:

1 cubic foot = 0.028 m ³	1 inch water column = 0.029 kPa
1 foot = 0.305 m	1 gallon = 3.785 L
1 inch = 25.4 mm	1,000 Btu/Cu. Ft. = 37.5 MJ/m ³
1 psig = 6.894 kPa	1 liter/second = CFM x 0.472
1 pound = 0.453 kg	1 meter/second = FPM ÷ 196.8
1,000 Btu per hour = 0.293 kW	



Performance Data

Table PD-1 — Air Handling Performance Data — Arrangements B-E

		Total External Static Pressure (Inches of Water)																																	
		0.2		0.4		0.6		0.8		1		1.2		1.4		1.6		1.8		2		2.2		2.4		2.6		2.8		3					
Capacity	CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP				
	1,500	395	0.12	530	0.19	645	0.27	750	0.35	845	0.44	930	0.54	1010	0.65	1085	0.76																		
	2,000	435	0.22	550	0.3	655	0.4	750	0.49	835	0.59	915	0.7	995	0.81	1065	0.93	1135	1.06																
	3,000	555	0.61	630	0.71	710	0.83	790	0.96	865	1.09	935	1.23	1000	1.37	1065	1.51	1125	1.66	1180	1.81	1240	1.96	1295	2.12	1350	2.28	1405	2.45	1455	2.62				
20	4,000	700	1.33	750	1.47	805	1.61	865	1.75	930	1.9	990	2.07	1045	2.25	1105	2.43	1160	2.61	1210	2.8	1260	2.98	1310	3.17	1360	3.35	1405	3.54	1455	3.74				
	5,000	855	2.51	890	2.68	930	2.85	975	3.02	1020	3.19	1070	3.37	1120	3.55	1170	3.75	1220	3.96	1265	4.18	1310	4.4	1360	4.63	1400	4.86								
	5,500	935	3.3	965	3.49	1000	3.67	1040	3.86	1080	4.05	1120	4.24	1165	4.43	1210	4.63	1255	4.84																
	6,000	1015	4.25	1040	4.45	1075	4.65	1105	4.85																										
	4,000	450	0.46	565	0.64	670	0.82	760	1.01	845	1.22	930	1.43	1005	1.66	1075	1.9	1140	2.15	1205	2.42														
	5,000	510	0.79	605	0.99	700	1.21	785	1.44	860	1.67	935	1.91	1005	2.16	1070	2.42	1135	2.69	1200	2.97														
40	6,000	575	1.28	655	1.49	740	1.73	815	2.	885	2.28	955	2.56	1020	2.84	1085	3.12	1140	3.41	1200	3.71	1255	4.02	1315	4.34	1365	4.67	1420	5.						
	7,000	650	1.95	715	2.19	785	2.44	855	2.73	920	3.04	985	3.36	1045	3.68	1105	4.	1160	4.33	1215	4.66	1270	4.99												
	8,000	725	2.83	780	3.1	840	3.38	905	3.67	965	3.99	1025	4.34	1080	4.71																				

Note: Refer to Table for Accessory Pressure Losses (Rooftop Arrangement B-E)

Table PD-2 — Air Handling Accessory Pressure Loss Data — Arrangements B-E

		Pressure Loss (Inches of Water)											
		Rainhood With		Filters						Supply Air	Evaporative Media		Return or Outside Air
		Screen	Mstr. Elim.	Throwaway		Washable		Pleated		Plenum	8"	12"	Damper
Capacity	CFM			2"	1"	2"	1"	2"					
	1,600	.02	.02	.05	<.01	.01	.06	.03	.02	.02	.03	.03	.03
	1,800	.02	.03	.06	<.01	.01	.07	.04	.03	.03	.03	.03	.03
	2,000	.02	.03	.07	.01	.02	.08	.04	.03	.03	.03	.04	.04
20	2,200	.03	.04	.08	.01	.02	.09	.05	.04	.03	.05	.05	.05
	2,400	.03	.05	.09	.02	.02	.11	.06	.05	.04	.06	.05	.05
	2,500	.04	.05	.09	.02	.03	.12	.07	.05	.04	.07	.06	.06
	3,000	.05	.07	.12	.03	.04	.16	.09	.07	.06	.10	.08	.08
	4,000	.09	.13	.17	.05	.07	.26	.16	.13	.11	.17	.15	.15
	5,000	.15	.20		.07	.11	.38	.23	.21	.18	.27	.23	.23
	5,500	.18	.25		.09	.13	.44	.28	.25	.22	.32	.28	.28
	3,200	.03	.04	.07	.01	.02	.09	.05	.02	.04	.06	.04	.04
	3,600	.04	.05	.09	.02	.02	.11	.06	.03	.05	.07	.05	.05
	4,000	.04	.06	.10	.02	.03	.13	.07	.04	.06	.09	.07	.07
	4,400	.05	.07	.11	.03	.04	.15	.09	.05	.07	.11	.08	.08
40	4,800	.06	.09	.13	.03	.04	.18	.10	.05	.09	.13	.10	.10
	5,000	.07	.10	.13	.03	.05	.19	.11	.06	.09	.14	.10	.10
	6,000	.10	.14	.17	.05	.07	.26	.16	.08	.14	.20	.15	.15
	7,000	.13	.19		.07	.09	.33	.21	.11	.18	.27	.20	.20
	8,000	.17	.24		.09	.12	.42	.26	.15	.24	.36	.26	.26
	8,500	.20	.28		.10	.14			.17	.27	.41	.30	.30

Performance Data

Table PD-3 — Air Handling Performance Data — Arrangements G-J

		Total External Static Pressure (Inches of Water)																													
		0.2		0.4		0.6		0.8		1		1.2		1.4		1.6		1.8		2		2.2		2.4		2.6		2.8		3	
Capacity	CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
20	3,000	455	0.52	495	0.6	550	0.7	610	0.82	670	0.93	730	1.06	785	1.21	840	1.37	890	1.53	940	1.69	985	1.86	1030	2.02	1075	2.19				
	4,000	575	1.13	610	1.24	645	1.35	680	1.47	720	1.61	760	1.76	810	1.92	855	2.07	900	2.23	940	2.4	985	2.58	1025	2.78	1070	2.99	1110	3.2	1150	3.41
	5,000	695	2.11	730	2.27	760	2.41	790	2.55	815	2.68	840	2.83	870	2.99	905	3.17	940	3.36	975	3.56	1015	3.76	1050	3.95	1085	4.15	1120	4.35	1155	4.55
	6,000	820	3.54	850	3.75	880	3.94	905	4.12	930	4.28	950	4.44	975	4.6	995	4.77	1020	4.96	1045	5.15	1070	5.36	1100	5.59	1130	5.82	1160	6.06	1190	6.3
	7,000	945	5.51	975	5.78	1000	6.02	1025	6.24	1050	6.45	1070	6.64	1090	6.83	1105	7.02	1125	7.21	1145	7.4	1165	7.6	1185	7.81	1205	8.04	1225	8.28	1250	8.52
	7,500	1005	6.74	1035	7.03	1060	7.3	1085	7.54	1110	7.77	1130	7.99	1150	8.19	1165	8.4	1185	8.59	1200	8.8	1215	9	1235	9.21	1255	9.43	1270	9.66	1290	9.91
	8,000	1070	8.13	1095	8.45	1125	8.74	1145	9.01	1170	9.27	1190	9.5	1210	9.73	1225	9.95														
	40	5,000	405	0.67	465	0.84	540	1.03	610	1.25	675	1.5	740	1.77	800	2.04	855	2.31	905	2.59	955	2.88									
6,000		470	1.08	510	1.26	570	1.48	630	1.71	690	1.95	745	2.22	800	2.53	855	2.85	905	3.17	955	3.5										
8,000		595	2.4	630	2.62	665	2.84	700	3.1	745	3.39	790	3.71	835	4.02	880	4.33	925	4.66	965	5.01										
10,000		730	4.52	760	4.81	785	5.07	810	5.34	840	5.64	870	5.96	900	6.31	935	6.7	975	7.1	1010	7.49	1045	7.88	1085	8.27	1120	8.66	1155	9.07	1190	9.5
12,000		860	7.64	890	8.01	915	8.35	935	8.67	960	8.99	980	9.32	1000	9.66	1025	10.04	1050	10.44	1080	10.88	1110	11.33	1140	11.8	1170	12.28	1200	12.76	1230	13.23
14,000		995	11.97	1020	12.41	1045	12.83	1065	13.22	1085	13.6	1105	13.97	1120	14.34	1140	14.73														

Note: Refer to Table for Accessory Pressure Losses (Rooftop Arrangement G-L)

Table PD-4 — Air Handling Performance Data — Arrangements K-L

		Total External Static Pressure (Inches of Water)																													
		0.2		0.4		0.6		0.8		1		1.2		1.4		1.6		1.8		2		2.2		2.4		2.6		2.8		3	
Capacity	CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
20	3,000	455	0.52	495	0.6	550	0.7	610	0.82	670	0.93	730	1.06	785	1.21	840	1.37	890	1.53	940	1.69	985	1.86	1030	2.02	1075	2.19				
	4,000	575	1.13	610	1.24	645	1.35	680	1.47	720	1.61	760	1.76	810	1.92	855	2.07	900	2.23	940	2.4	985	2.58	1025	2.78	1070	2.99	1110	3.2	1150	3.41
40	5,000	405	0.67	465	0.84	540	1.03	610	1.25	675	1.5	740	1.77	800	2.04	855	2.31	905	2.59	955	2.88										
	6,000	470	1.08	510	1.26	570	1.48	630	1.71	690	1.95	745	2.22	800	2.53	855	2.85	905	3.17	955	3.5										

Note: Refer to Table for Accessory Pressure Losses (Rooftop Arrangement G-L) and Tables for Cooling Coil Data. (Rooftop Arrangement K-L) Do not exceed 6,300 Cfm for units with cooling coils.

Table PD-5 — Air Handling Accessory Pressure Loss Data — Arrangements G-L

		Pressure Loss (Inches of Water)										
		Rainhood With		Throwaway			Washable		Pleated		Supply Air Plenum	Return or Outside Air Damper
Capacity	CFM	Screen	Mstr. Elim.	2"	1"	Washable	2"	1"	2"	1"		
20	1,600	.02	.02	.03	<.01	<.01	.03	.01	.02	.01	.02	.03
	1,800	.02	.03	.03	<.01	<.01	.03	.02	.02	.01	.03	.03
	2,000	.02	.03	.04	<.01	<.01	.04	.02	.02	.01	.03	.04
	2,200	.03	.04	.04	<.01	<.01	.04	.02	.02	.01	.04	.05
	2,400	.03	.05	.05	<.01	<.01	.05	.03	.02	.01	.05	.05
	2,500	.04	.05	.05	<.01	<.01	.05	.03	.02	.01	.05	.06
	3,000	.05	.07	.06	.01	.02	.07	.04	.02	.01	.07	.08
	4,000	.09	.13	.09	.02	.03	.12	.07	.04	.01	.13	.15
	5,000	.15	.20	.12	.03	.04	.17	.10	.05	.01	.21	.23
	6,000	.21	.29	.16	.04	.06	.23	.14	.06	.01	.30	.33
40	6,500	.25	.34	.17	.05	.07	.16	.06	.01	.35	.39	
	7,000	.29	.40	.19	.06	.08	.26	.08	.01	.40	.45	
	7,400	.32	.45	.06	.09	.33	.20	.18	.01	.45	.50	
	3,300	.03	.04	.03	<.01	<.01	.03	.02	.01	.03	.05	
	3,500	.03	.05	.03	<.01	<.01	.03	.02	.01	.03	.05	
	4,000	.04	.06	.04	<.01	<.01	.04	.02	.01	.04	.07	
	4,500	.05	.08	.05	<.01	<.01	.05	.03	.01	.05	.08	
	5,000	.07	.10	.05	<.01	.01	.06	.03	.01	.06	.10	
	6,000	.10	.14	.07	.01	.02	.08	.04	.01	.08	.15	
	8,000	.17	.24	.10	.02	.03	.13	.07	.01	.15	.26	
10,000	.27	.38	.13	.03	.05	.19	.11	.01	.23	.41		
12,000	.39	.55	.17	.05	.07	.26	.16	.01	.34	.59		
14,000	.53	.75	.07	.07	.09	.33	.21	.01	.46	.80		

Note: Refer to Table for Cooling Coil and Table for Chilled Water Coil Pressure Losses. (Air Handler Arrangements K,L)

Performance Data

Table PD-6 — DX Cooling Coil Performance Data (Ref. R-22) — Rooftop Arrangements K, L

Capacity based on 95 F EDB, 74 F EWB, 45 F Sat. Suction, 100 F Liquid												
Number of Rows												
Unit Capacity	Air Flow (SCFM)	Face Velocity (FPM)	Fin Spacing (FPF)	4				6				
				Capacity (MBH)	L.A.T. (DB/WB)	A.P.D. In. W.C.	WT. (LBS)	Capacity (MBH)	L.A.T. (DB/WB)	A.P.D. In. W.C.	WT. (LBS)	
20	1600	217	*96	91.1	59 / 58	0.11	84				115	
			*120	99.5	56 / 56	0.12	89				122	
			144	106.4	54 / 54	0.13	95	120.8	51 / 51	0.20	130	
	2000	271	96	120	105.3	61 / 59	0.17	84	129.3	55 / 55	0.25	115
				120	117.2	58 / 57	0.18	89	138.7	53 / 53	0.27	122
				144	126.6	56 / 55	0.20	95	145.3	52 / 52	0.29	130
	3000	407	96	120	136.1	64 / 61	0.33	84	171.4	58 / 57	0.50	115
				120	154.4	61 / 59	0.36	89	186.6	56 / 56	0.54	122
				144	169.8	58 / 58	0.38	95	198.1	54 / 54	0.57	130
	4000	542	96	120	160.0	66 / 63	0.51	84	204.4	61 / 60	0.77	115
				120	184.1	63 / 61	0.55	89	224.8	58 / 58	0.82	122
				144	205.2	61 / 59	0.59	95	243.3	56 / 56	0.87	130
4400	596	96	120	168.6	67 / 64	0.58	84	215.7	62 / 60	0.87	115	
			120	194.5	64 / 62	0.63	89	238.1	59 / 59	0.94	122	
			144	217.7	61 / 60	0.67	95	261.2	57 / 57	1.00	130	
40	3300	304	96	173.1	61 / 59	0.21	115	207.5	56 / 55	0.31	158	
			120	191.6	58 / 57	0.22	122	224.7	54 / 54	0.33	170	
			144	205.9	56 / 56	0.24	130	237.6	52 / 52	0.36	182	
	4000	369	96	120	194.3	63 / 60	0.29	115	238.6	57 / 57	0.43	158
				120	216.5	60 / 58	0.31	122	260.6	55 / 55	0.46	170
				144	234.1	58 / 57	0.33	130	277.7	53 / 53	0.49	182
	5000	461	96	120	219.9	65 / 62	0.40	115	277.9	59 / 58	0.60	158
				120	246.8	62 / 60	0.43	122	306.9	56 / 56	0.65	170
				144	271.9	59 / 58	0.46	130	330.3	54 / 54	0.69	182
	6000	553	96	120	241.3	66 / 63	0.53	115	312.4	60 / 59	0.79	158
				120	273.5	63 / 61	0.56	122	348.2	58 / 57	0.85	170
				144	307.7	61 / 59	0.60	130	377.9	56 / 55	0.91	182
6300	581	96	120	247.1	67 / 63	0.56	115	321.9	61 / 60	0.84	158	
			120	281.7	64 / 62	0.60	122	359.7	58 / 57	0.91	170	
			144	317.7	61 / 60	0.64	130	391.3	56 / 56	0.97	182	

Conversions:

2119 SCFM = 1 m/s
 196.8 FPM = 1 m/s
 3.412 MBH = 1 kW
 (F-32) 5/9 = C
 1 In. W.C. = 248.8 Pa
 1 LB. = 0.453 kg

Notes:

- 1.) Data certified in accordance with ARI Standard 410.
- 2.) Capacity based on 95 F EDB, 74 F EWB, 45 F Sat. Suction, 100 F Liquid.
- 3.) Weight listed is the total weight of the dry coil.
- 4.) Coils denoted by an asterisk (*) require special pricing; consult product marketing for special coil requirements and pricing.

Performance Data

Table PD-7 — DX Cooling Coil Performance Data (Ref. R-22) — Rooftop Arrangements K, L

Capacity based on 80 F EDB, 67 F EWB, 45 F Sat. Suction, 100 F Liquid													
Number of Rows													
Unit Capacity	Air Flow (SCFM)	Face Velocity (FPM)	Fin Spacing (FPF)	4				6					
				Capacity (MBH)	L.A.T. (DB/WB)	A.P.D. In. W.C.	WT. (LBS)	Capacity (MBH)	L.A.T. (DB/WB)	A.P.D. In. W.C.	WT. (LBS)		
20	1600	217	*96				84					115	
			*120				89					122	
			*144				95			79.8	50 / 50	0.19	130
		2000	271	*96				84					115
				*120				89					122
				144	82.2	54 / 54	0.20	95	97.7	51 / 51	0.29	130	
	3000	407	96	88.2	59 / 58	0.33	84	112.0	56 / 55	0.50	115		
			120	97.7	58 / 57	0.36	89	123.1	54 / 54	0.53	122		
			144	107.5	56 / 56	0.38	95	131.8	53 / 53	0.57	130		
	4000	542	96	101.3	61 / 59	0.51	84	134.3	57 / 56	0.77	115		
			120	116.3	59 / 58	0.54	89	149.4	55 / 55	0.82	122		
			144	130.5	57 / 57	0.58	95	161.7	54 / 54	0.87	130		
	4400	596	96	105.6	62 / 60	0.58	84	142.1	58 / 57	0.87	115		
			120	123.1	60 / 58	0.62	89	158.7	56 / 55	0.94	122		
			144	138.6	58 / 57	0.66	95	172.3	55 / 54	1.00	130		
	40	3300	304	*96	113.2	57 / 56	0.21	115					158
				*120	126.2	55 / 55	0.22	122					170
				144	136.5	54 / 54	0.24	130	155.2	51 / 51	0.36	182	
4000			369	96	127.4	58 / 57	0.29	115	156.7	55 / 54	0.43	158	
				120	143.1	56 / 56	0.31	122	168.7	53 / 53	0.46	170	
				144	155.9	55 / 54	0.33	130	179.8	52 / 52	0.48	182	
5000		461	96	144.9	60 / 58	0.40	115	179.0	56 / 56	0.60	158		
			120	164.1	58 / 57	0.43	122	197.6	55 / 54	0.64	170		
			144	180.2	56 / 55	0.46	130	213.9	53 / 53	0.68	182		
6000		553	96	159.7	61 / 59	0.53	115	199.4	57 / 56	0.79	158		
			120	182.0	59 / 58	0.57	122	224.5	55 / 55	0.84	170		
			144	201.1	57 / 56	0.61	130	245.1	54 / 54	0.90	182		
6300		581	96	163.8	61 / 59	0.56	115	205.6	58 / 57	0.84	158		
			120	186.9	59 / 58	0.61	122	232.1	56 / 55	0.90	170		
			144	206.9	57 / 57	0.65	130	253.9	54 / 54	0.96	182		

Conversions:

2119 SCFM = 1 m/s
 196.8 FPM = 1 m/s
 3.412 MBH = 1 kW
 (F-32) 5/9 = C
 1 In. W.C. = 248.8 Pa
 1 LB. = 0.453 kg

Notes:

- 1.) Data certified in accordance with ARI Standard 410.
- 2.) Capacity based on 80 F EDB, 67 F EWB, 45 F Sat. Suction, 100 F Liquid.
- 3.) Weight listed is the total weight of the dry coil.
- 4.) Coils denoted by an asterisk (*) require special pricing; consult product marketing for special coil requirements and pricing.

Table PD-8 — Standard Conditions and Specifications — Refrigerant DX Coil

CONDITIONS	
Elevation	0 Ft.
Entering Air Temperature DB:	80 F 95 F
Entering Air Temperature WB:	67 F 74 F
Suction Temperature:	45 F 45 F
Liquid Temperature:	100 F 100 F
Fouling Factor:	0 HR x FT ² x F/BTU
SPECIFICATIONS	
Coil Type:	DE optional DH
Tube Size:	1/2" O.D. x 0.016" TWT Copper
Row Sizes:	4,6
Fin Type:	Delta-Flo
Fin Size:	0.0055" Aluminum
Fin Spacing:	Standard — 96, (120), 144 Fins/Ft. Optional — 72 thru 180 Fins/Ft.
Circuiting:	Standard — Single Optional — Dual: a) Intertwined b) Face-Split
Turbulators:	No
DIMENSIONAL DATA LISTING	
Unit Size	Finned Width Fixed Finned Length
20	30.00 34.00
40	30.00 50.00

Note:

1. Above specification is for standard coil with standard fin spacing.
Specify fin spacing and dual circuiting.
2. Special coils — contact Product Marketing.
3. Every order requires a coil selection.

Performance Data

Table PD-9 — Chilled Water Coil Performance Data — Rooftop Arrangements K, L

Capacity based on 95 F EDB, 74 F EWB, 45 EWT, 70 GPM											
Number of Rows											
Unit Capacity	Air Flow (SCFM)	Face Velocity (FPM)	Fin Spacing (FPF)	4				6			
				Capacity (MBH)	L.A.T. (DB/WB)	A.P.D. In. W.C.	WT. (LBS)	Capacity (MBH)	L.A.T. (DB/WB)	A.P.D. In. W.C.	WT. (LBS)
20	1800	254	96	109.8	58 / 56	0.12	84	131.2	52 / 52	0.18	115
			120	119.0	55 / 54	0.14	89	138.6	50 / 50	0.21	122
			144	126.3	53 / 53	0.16	95	143.9	49 / 49	0.24	130
	3000	424	96	148.1	63 / 60	0.27	84	185.5	57 / 56	0.40	115
			120	163.0	60 / 58	0.31	89	199.9	55 / 54	0.46	122
			144	174.9	58 / 57	0.35	95	210.8	53 / 53	0.52	130
	4300	607	96	175.1	67 / 63	0.47	84	226.1	61 / 59	0.70	115
			120	195.3	64 / 61	0.52	89	247.5	58 / 57	0.78	122
			144	210.8	62 / 60	0.60	95	263.2	56 / 56	0.90	130
40	2100	202	96	136.2	56 / 55	0.08	115	159.5	51 / 51	0.12	158
			120	146.9	54 / 53	0.09	122	167.5	49 / 49	0.14	170
			144	155.0	52 / 51	0.11	130	172.9	48 / 48	0.16	182
	3500	336	96	188.4	61 / 59	0.19	115	230.8	55 / 54	0.28	158
			120	205.7	58 / 57	0.22	122	246.5	53 / 53	0.33	170
			144	219.6	56 / 55	0.25	130	258.6	51 / 51	0.37	182
	4900	470	96	223.8	64 / 61	0.32	115	281.9	59 / 57	0.47	158
			120	247.4	62 / 60	0.36	122	305.8	56 / 56	0.54	170
			144	265.9	60 / 58	0.41	130	323.6	55 / 54	0.61	182
	6300	605	96	250.4	67 / 63	0.46	115	321.3	61 / 60	0.68	158
			120	278.8	64 / 62	0.51	122	351.4	59 / 58	0.77	170
			144	300.7	62 / 61	0.59	130	373.6	57 / 57	0.89	182

Conversions:

2119 SCFM = 1 m/s
 196.8 FPM = 1 m/s
 3.412 MBH = 1 kW
 (F-32) 5/9 = C
 1 In. W.C. = 248.8 Pa
 1 LB. = 0.453 kg

Notes:

- 1.) Data certified in accordance with ARI Standard 410.
- 2.) Capacity based on 95 F EDB, 74 F EWB, 45 F Sat. Suction, 100 F Liquid.
- 3.) Weight listed is the total weight of the dry coil.
- 4.) Contact product marketing for special coil requirements.

Table PD-10 — Chilled Water Coil Performance Data — Rooftop Arrangements K, L

Capacity based on 80 F EDB, 67 F EWB, 45 EWT, 70 GPM											
Number of Rows											
Unit Capacity	Air Flow (SCFM)	Face Velocity (FPM)	Fin Spacing (FPF)	4				6			
				Capacity (MBH)	L.A.T. (DB/WB)	A.P.D. In. W.C.	WT. (LBS)	Capacity (MBH)	L.A.T. (DB/WB)	A.P.D. In. W.C.	WT. (LBS)
20	1800	254	96	77.4	54 / 53	0.12	84	92.3	50 / 50	0.18	115
			120	83.9	52 / 52	0.14	89	97.5	49 / 49	0.21	122
			144	89.0	51 / 50	0.16	95	101.2	48 / 48	0.24	130
	3000	424	96	104.9	58 / 56	0.27	84	131.0	53 / 53	0.40	115
			120	115.5	56 / 55	0.31	89	141.2	52 / 51	0.47	122
			144	123.7	54 / 54	0.35	95	148.6	51 / 50	0.53	130
	4300	607	96	124.5	60 / 58	0.47	84	160.1	56 / 55	0.70	115
			120	138.4	58 / 57	0.53	89	174.9	54 / 54	0.79	122
			144	149.2	57 / 56	0.60	95	185.9	53 / 53	0.90	130
40	2100	202	96	95.9	53 / 52	0.08	115	112.1	49 / 49	0.12	158
			120	103.4	51 / 51	0.09	122	117.7	48 / 48	0.14	170
			144	109.0	50 / 49	0.11	130	121.5	47 / 47	0.16	182
	3500	336	96	133.3	56 / 55	0.19	115	162.9	52 / 52	0.28	158
			120	145.5	54 / 53	0.22	122	174.0	51 / 50	0.33	170
			144	155.2	53 / 52	0.25	130	182.2	49 / 49	0.37	182
	4900	470	96	158.9	59 / 57	0.32	115	199.6	55 / 54	0.47	158
			120	175.2	57 / 56	0.36	122	216.1	53 / 53	0.54	170
			144	188.1	55 / 55	0.41	130	228.4	52 / 52	0.61	182
	6300	605	96	177.7	61 / 58	0.47	115	227.4	56 / 55	0.69	158
			120	197.5	59 / 57	0.52	122	248.5	55 / 54	0.78	170
			144	212.8	57 / 56	0.59	130	263.9	54 / 53	0.89	182

Conversions:

2119 SCFM = 1 m/s
 196.8 FPM = 1 m/s
 3.412 MBH = 1 kW
 (F-32) 5/9 = C
 1 In. W.C. = 248.8 Pa
 1 LB. = 0.453 kg

Notes:

- 1.) Data certified in accordance with ARI Standard 410.
- 2.) Capacity based on 80 F EDB, 67 F EWB, 45 F Sat. Suction, 100 F Liquid.
- 3.) Weight listed is the total weight of the dry coil.
- 4.) Contact product marketing for special coil requirements.

Performance Data

Table PD-11 — Standard Conditions and Specifications — Chilled Water Coil

CONDITIONS		
Elevation	0 Ft.	
Entering Air Temperature DB:	80 F	95 F
Entering Air Temperature WB:	67 F	74 F
Entering Water Temperature:	45 F	45 F
Water Flow Rate:	70 GPM	70 GPM
Tube Velocity:	4 Ft./Sec.	
Fouling Factor:	0 HR x FT ² x F/BTU	
SPECIFICATIONS		
Coil Type:	W — Full Row Serpentine	
Tube Size:	5/8" O.D. x 0.024" TWT Copper	
Row Sizes:	4,6	
Fin Type:	Prima-Flo	
Fin Size:	0.0075" Aluminum	
Fin Spacing:	Standard — 96, (120), 144 Fins/Ft. Optional — 80 thru 168 Fins/Ft.	
Circuiting:	Single Circuit	
Drainable:	Yes	
Turbulators:	No	
DIMENSIONAL DATA LISTING		
Unit Size	Finned Width	Fixed Finned Length
20	30.00	34.00
40	30.00	50.00

Note:

- Above specification is for standard coil with standard fin spacing.
- Special coils — contact Product Marketing.
- Every order requires a coil selection.

Table PD-12 — Evaporative Cooling Performance Data and Pressure Drop — Rooftop Arrangements D,E

Unit Size	CFM		Efficiency Range		8" Saturation Efficiency Range		12" Saturation 8" or 12" Deep Media Face Area Size		Pressure Drop in. of Water		"A" Unit Width	(1) Shipping Wt.	(1) Operating Wt.
	Min.	Max.	Min.	Max.	Min.	Max.	Ft. ² (m ²)	In. (mm)	Min.	Max.	In. (mm)	lb. (kg)	lb. (kg)
	(cu. m/s)	(cu. m/s)							(KPa)	(KPa)			
20	1,600 (0.755)	5,500 (2.596)	77	88	88	92	9.38 (0.87)	31 x 43 9/16 (787) (1106)	0.03 (0.01)	0.20 (0.05)	43 3/4 (1111)	166 (75)	386 (175)
40	3,200 (1.510)	8,500 (4.012)	77	86	87	92	12.92 (1.20)	31 x 60 (787) (1524)	0.07 (0.02)	0.28 (0.07)	60 1/4 (1530)	206 (93)	509 (231)

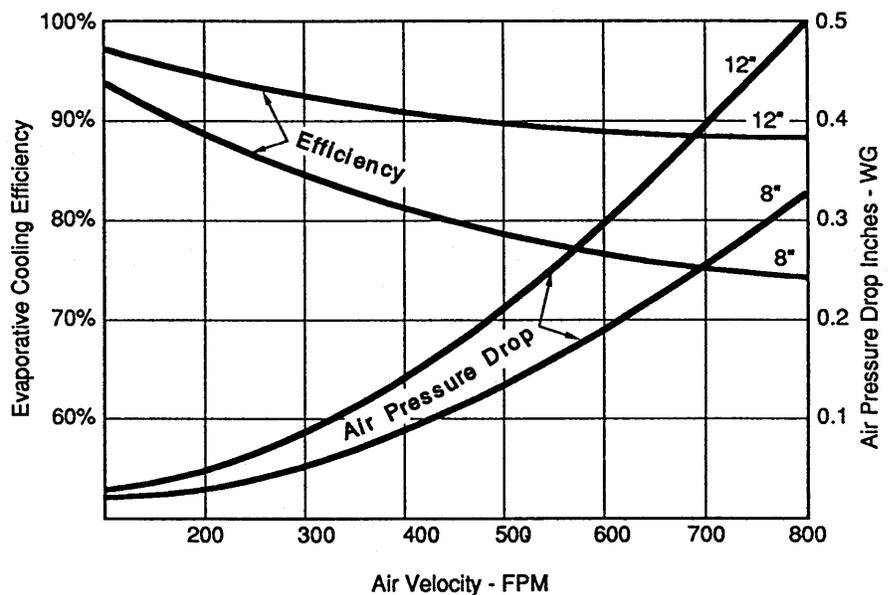
Note:

- These weights are for evaporative cooler only.

CELdek® Evaporative Media

The Trane Evaporative Cooler uses high efficiency CELdek® media. CELdek® is made from a special cellulose paper, impregnated with insoluble anti-rot salts and rigidifying saturants. The cross fluted design of the pads induces high-turbulent mixing of air and water for optimum heat and moisture transfer. The Trane evaporative coolers are standard with eight-inch deep media which produce high efficiency and high face velocities, along with a two-inch distribution pad to disperses the water evenly over the pads. We offer an optional 12-inch deep media (see chart at right for efficiencies).

Chart PD-1 — Evaporative Cooler Efficiency/A.P.D. Chart





Electrical Data

Air Handling Units Motor Electrical Data

Voltage	1/2 HP	3/4 HP	1 HP	1 1/2 HP	2 HP	3 HP	5 HP	7 1/2 HP	10 HP	15 HP
115/60/1 ODP	7.2	10.9	13.4	18.0	26.0	33.0	NA	NA	NA	NA
208/60/1 ODP	4.3	6.0	6.7	9.3	11.5	16.5	NA	NA	NA	NA
230/60/1 ODP	4.3	5.5	6.7	9.0	13.0	16.5	NA	NA	NA	NA
208/60/3 ODP	2.8	2.6	3.2	4.8	6.2	8.4	12.2	24.0	28.0	44.9
230/60/3 ODP	2.8	2.6	3.2	4.8	6.2	8.4	12.2	21.6	26.6	40.6
460/60/3 ODP	1.4	1.3	1.6	2.4	3.1	4.2	6.1	10.8	13.3	20.3
575/60/3 ODP	1.1	1.4	1.5	1.9	2.5	3.6	5.3	8.6	10.6	15.6
115/60/1 TE	9.0	11.4	13.6	17.6	24.6	34.0	NA	NA	NA	NA
208/60/1 TE	3.9	4.5	6.8	8.0	12.3	17.0	NA	NA	NA	NA
230/60/1 TE	4.5	5.7	6.8	8.8	12.3	17.0	NA	NA	NA	NA
208/60/3 TE	2.1	2.8	3.4	4.8	6.4	9.4	14.0	21.8	28.7	42.6
230/60/3 TE	2.2	2.8	3.6	4.9	6.4	9.2	13.0	20.4	26.4	28.4
460/60/3 TE	1.1	1.4	1.8	2.4	3.2	4.6	6.5	10.2	13.2	19.2
575/60/3 TE	0.9	1.3	1.7	1.9	2.6	3.6	5.1	7.6	9.6	14.4
115/60/1 HEODP	5.2	6.4	9.2	12.5	16.4	NA	NA	NA	NA	NA
208/60/1 HEODP	2.8	4.2	NA	NA	NA	NA	NA	NA	NA	NA
230/60/1 HEODP	2.6	5.2	4.6	6.3	8.2	NA	NA	NA	NA	NA
208/60/3 HEODP	1.8	2.5	3.6	5.0	6.7	9.2	14.7	22.1	29.0	40.0
230/60/3 HEODP	1.6	2.3	2.8	3.8	5.4	8.0	12.8	19.2	25.2	36.0
460/60/3 HEODP	0.8	1.2	1.4	1.9	2.7	4.0	6.4	9.6	25.2	18.0
575/60/3 HEODP	NA	NA	1.1	1.8	2.3	3.2	5.2	7.7	10.1	14.5
115/60/1 HETE	5.5	7.6	9.2	14.0	19.2	NA	NA	NA	NA	NA
208/60/1 HETE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
230/60/1 HETE	2.8	3.8	4.6	7.0	9.6	NA	NA	NA	NA	NA
208/60/3 HETE	NA	NA	3.2	4.6	6.2	8.8	14.7	21.4	29.0	41.2
230/60/3 HETE	4.6	6.3	3.0	4.2	5.8	8.0	12.0	18.8	25.2	37.0
460/60/3 HETE	2.3	3.2	1.5	2.1	2.9	4.0	6.0	9.4	12.6	18.5
575/60/3 HETE	NA	NA	1.1	1.8	2.4	3.2	4.8	7.5	10.2	14.9
208/60/3 2S1W	NA	NA	3.0/1.0	4.4/1.8	6.2/3.0	9.0/3.4	15.0/6.0	21.0/7.5	29.0/9.6	NA
230/60/3 2S1W	NA	NA	3.0/1.0	4.4/1.8	5.9/2.9	8.0/3.3	14.0/6.2	19.5/7.5	25.0/9.3	NA
460/60/3 2S1W	NA	NA	1.5/0.5	2.2/1.9	3.1/1.3	3.8/1.6	6.8/2.8	10.0/4.0	12.0/4.3	18.0/6.0
575/60/3 2S1W	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
115/60/1 2S2W	9.2/6.0	9.2/4.6	11.9/6.9	NA	NA	NA	NA	NA	NA	NA
208/60/1 2S2W	NA	5.0/2.5	6.3/3.0	NA	NA	NA	NA	NA	NA	NA
230/60/1 2S2W	4.6/3.0	4.6/2.3	6.0/3.6	NA	NA	NA	NA	NA	NA	NA
208/60/3 2S2W	2.4/1.6	3.0/1.9	3.4/2.0	5.0/2.6	6.5/3.5	9.3/4.9	NA	20.0/11.0	27.0/14.0	NA
230/60/3 2S2W	2.1/1.4	2.7/1.7	3.2/2.0	4.8/2.9	6.3/3.5	8.5/4.6	NA	19.0/10.0	25.0/12.5	NA
460/60/3 2S2W	1.1/0.7	1.3/0.9	1.5/1.0	2.3/1.3	3.0/1.7	4.6/2.7	NA	9.7/5.5	12.2/7.0	NA
575/60/3 2S2W	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

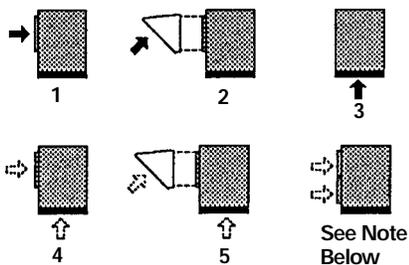
1. ODP = Open Drip Proof
2. TE = Totally enclosed
3. HEODP = High Efficiency Open Drip Proof
4. HETE = High Efficiency Totally Enclosed
5. 2S1W = Two Speed One Winding
6. 2S2W = Two Speed Two Winding
7. NA = Not Available

FLA based on NEC Ratings

Air Inlet Configuration

The air inlet configuration defines the entering air opening for the air handling units. This selection does not include dampers and must match the required opening for the air control and damper arrangement. A horizontal return air feature is offered on air inlet configurations 3 and 4.

Air Inlet Configuration



Note: Horizontal outside air over return air. Specify air inlet configuration 4 or 5 and then select miscellaneous option "D" for horizontal return.

Damper Options

Dampers shall be of the opposed blade type, constructed of galvanized steel with neoprene nylon bushings, blades to be mechanically interlocked.

Optional low leak outside air dampers shall be of the opposed blade type, construction of galvanized steel with neoprene nylon bushings and vinyl blade edge seals, blades to be mechanically interlocked.

Outside Air or Return Air/Two- Position Motor/Spring Return

Units with outside air or return air only shall be provided with damper, two-position spring return damper motor and controls. The motor shall power the damper full open when the unit is on and full closed when the unit is off.

Outside Air/Return Air Two-Position Spring Return

Two-position spring return motor with interlocked outside and return air dampers shall be provided. The motor shall power either the outside air damper full open and the return air damper full closed or the outside air damper full closed and the return air damper full open in response to an outside air temperature sensor. (Includes an outside air thermostat that makes on a rise in temperature and drives the damper open.) When the unit is off, the motor will drive the outside air damper full closed and the return air damper full open.

Outside Air/Return Air Modulating Motor with Mixed Air Control/ Minimum Position Potentiometer/ Spring Return

Modulating motor with interlocked outside and return air dampers shall be provided. The motor shall modulate the position of the outside and return air dampers in response to a thermostatic controller located in the mixed air stream. Units shall also be provided with a minimum position potentiometer for minimum outside air damper position.

The spring return feature drives the outside air damper full closed and the return air damper full open when the unit is off.

Outside Air/Return Air Modulating Motor with Mixed Air Temperature Control/Spring Return

Modulating motor with interlocked outside and return air dampers shall be provided. The motor shall modulate the position of the outside and return air dampers in response to a thermostatic controller located in the mixed air stream.

The spring return feature drives the outside air damper full closed and the return air damper full open when the unit is off.

Outside Air/Return Air Modulating Motor with Minimum Position Potentiometer/Spring Return

Modulating motor with interlocked outside and return air dampers shall be provided. The motor shall position the outside and return air dampers in response to a manually set potentiometer.

The spring return feature drives the outside air damper full closed and the return air damper full open when the unit is off.

Outside Air/Return Air Modulating Motor with Dry Bulb/Mixed Air Temperature Control and Minimum Position Potentiometer/Spring Return

Modulating motor with interlocked outside and return air dampers shall be provided. The motor shall modulate the position of the outside and return air dampers in response to a thermostatic controller and dry bulb thermostat located in the mixed air stream. Units shall also be provided with a minimum position potentiometer for minimum outside air damper position.

The spring return feature drives the outside air damper full open and the return air damper full closed when the unit is off.

Outside Air/Return Air Modulating Motor with Enthalpy Controlled Economizer/Spring Return

Modulating motor with spring return and interlocked outside and return air dampers shall be provided. The motor shall modulate the position of the outside and return air dampers in response to an enthalpy controlled economizer. When the unit is off the motor will drive the outside air damper full closed and the return air damper full open.

Outside Air/Return Air Modulating Motor with Space Pressure Controller

Modulating motor with spring return and interlocked outside and return air dampers shall be provided. The motor shall modulate the position of the outside and return air dampers in response to a pressure sensor located in the building.

Controls

Outside Air/Return Air Modulating Motor with S-350P Proportional Mixed Air Control/Spring Return

Modulating motor with spring return and interlocked outside and return air dampers shall be provided. The motor shall modulate the position of the outside and return air dampers in response to a solid-state mixed air sensor and S-350 proportional controller. When the unit is off the motor will drive the outside air damper full closed and the return air damper full open.

Outside Air/Return Air Modulating Motor with External 4-20 mA or 0-10 VDC Analog Input/Spring Return

Modulating motor interlocked with outside and return air dampers shall be provided. The motor shall modulate the position of the outside and return air dampers in response to a 4-20 mA or 0-10 VDC signal supplied by an external DDC controller.

The spring return feature drives the outside air damper full closed and the return air damper full open when the unit is shut down.

ASHRAE Cycle I (Outside/Return Air Two-Position with Warm-Up Stat/Spring Return)

Two-position spring return motor with interlocked outside and return air dampers shall be provided. The motor shall power the outside air damper full open after a warm-up period determined by a minimum supply air temperature sensor when the unit is on, and full closed when the unit is off.

ASHRAE Cycle II (Outside Air/Return Air Modulating Motor with Warm-Up Stat/Mixed Air Temperature Controller/Minimum Position Potentiometer/Spring Return)

Modulating motor with interlocked outside and return air dampers shall be provided. The motor shall modulate the position of the outside and return air dampers in response to a thermostatic controller located in the mixed air stream after a warm-up period determined by a minimum supply air temperature sensor. Units shall also be provided with a minimum position potentiometer for minimum outside air damper position.

When the unit is off, the motor will drive the outside air damper full closed and the return air damper full open.

ASHRAE Cycle III (Outside Air/Return Air Modulating Motor with Warm-Up Thermostat/Mixed Air Temperature Controller/Spring Return)

Modulating motor with spring return and interlocked outside and return air dampers shall be provided. The motor shall modulate the position of the outside and return air dampers in response to a thermostatic controller located in the mixed airstream after a warm-up period determined by a minimum supply air temperature sensor. Units shall also be provided with a minimum position potentiometer for minimum outside air damper position. When the unit is off, the motor will drive the outside air damper full closed and the return air damper full open.

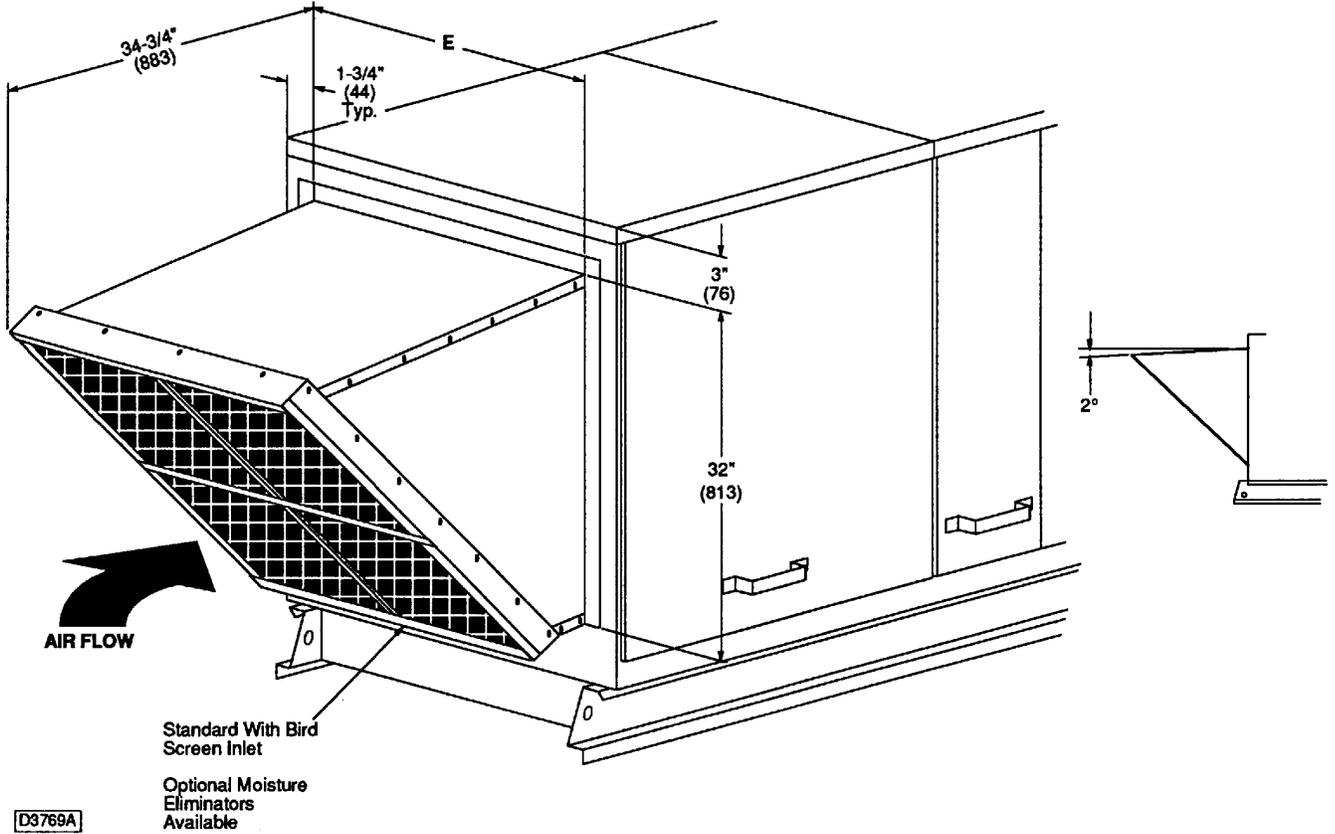
Manual Dampers

Units with outside air and return air shall be provided with manually set outside and return air dampers.



Dimensional Data

Air Intake Hood
 Arrangements B, C, D, E, G, J, K, L
 Unit Sizes 20, 40

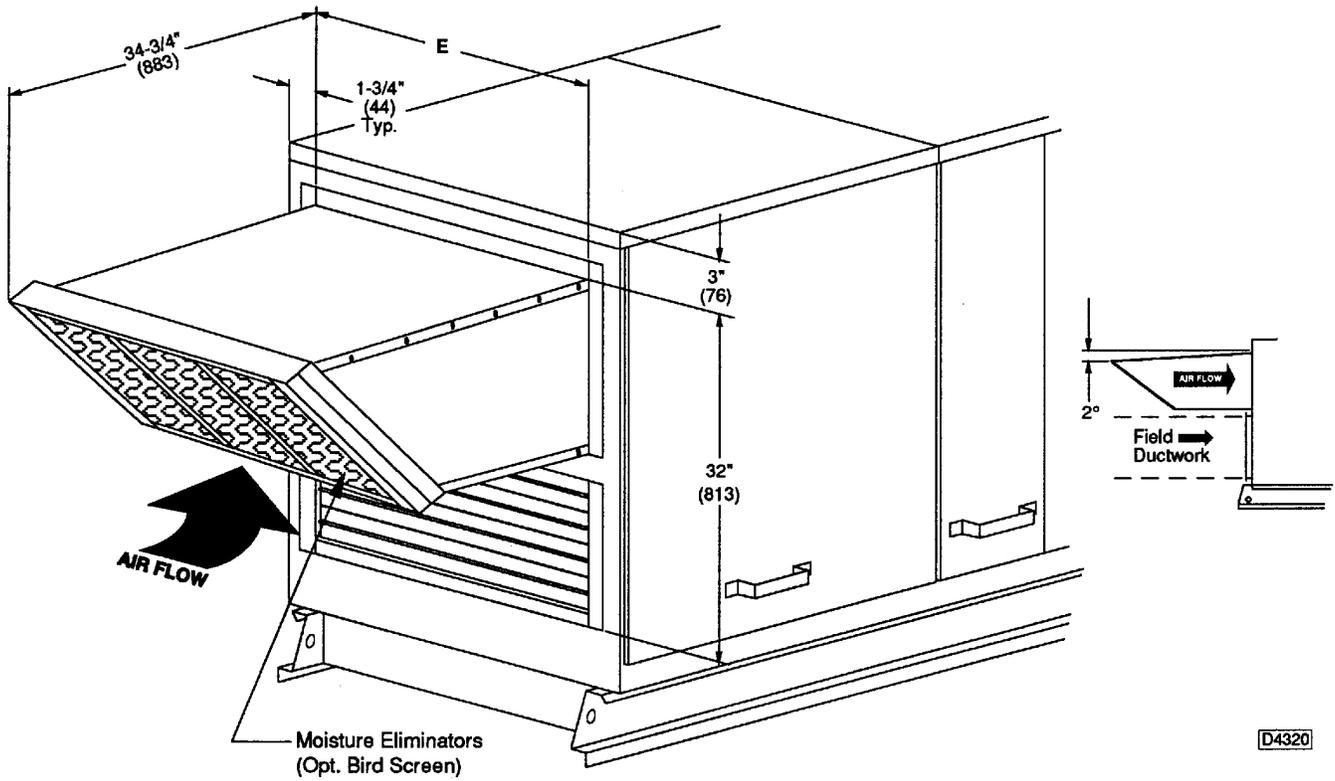


Model	E Dimension
20	40 ³ / ₈ " (1025)
40	56 ⁷ / ₈ " (1445)

DIMENSIONS ARE IN INCHES, DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS.

Dimensional Data

Over/Under Air Intake with Hood
 Arrangements B, C, D, E, G J, K, L
 Unit Sizes 20, 40

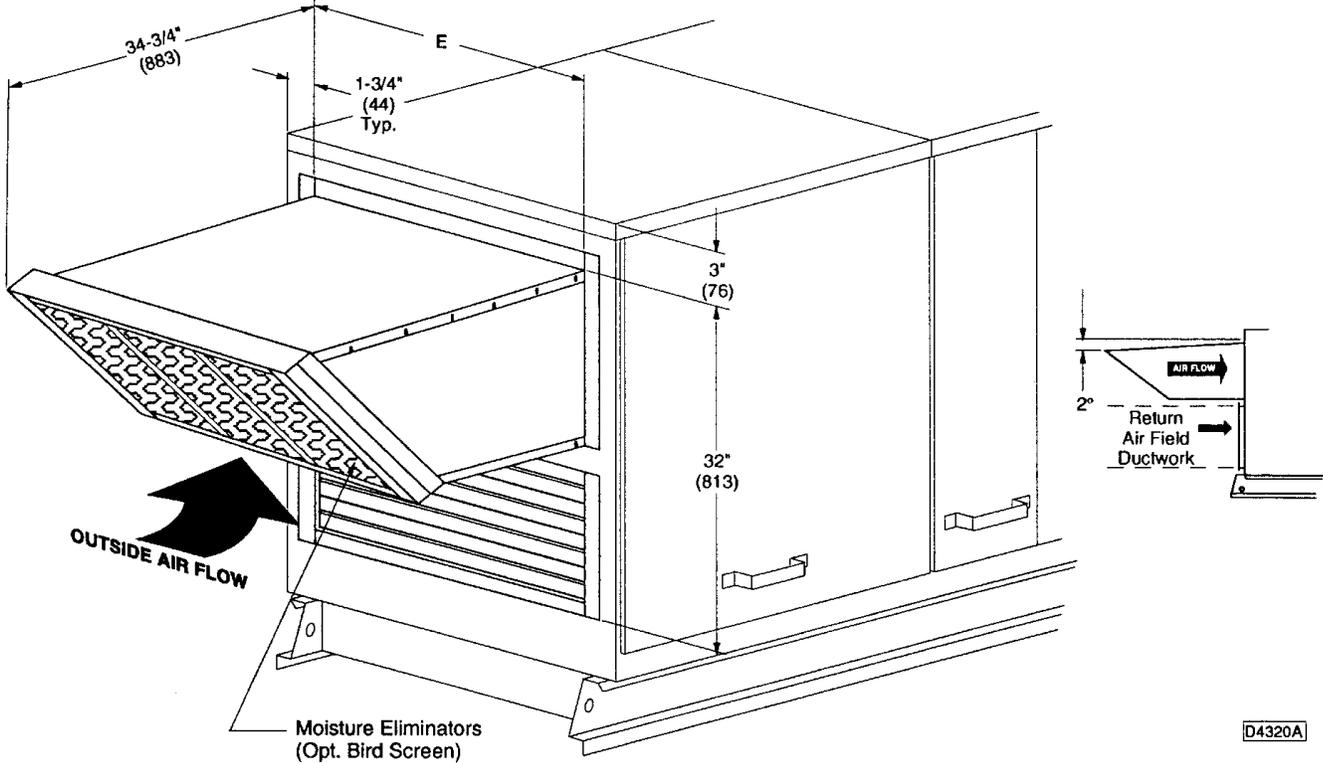


Model	E Dimension
20	40 ³ / ₈ " (1025)
40	56 ⁷ / ₈ " (1445)

DIMENSIONS ARE IN INCHES, DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS.

Dimensional Data

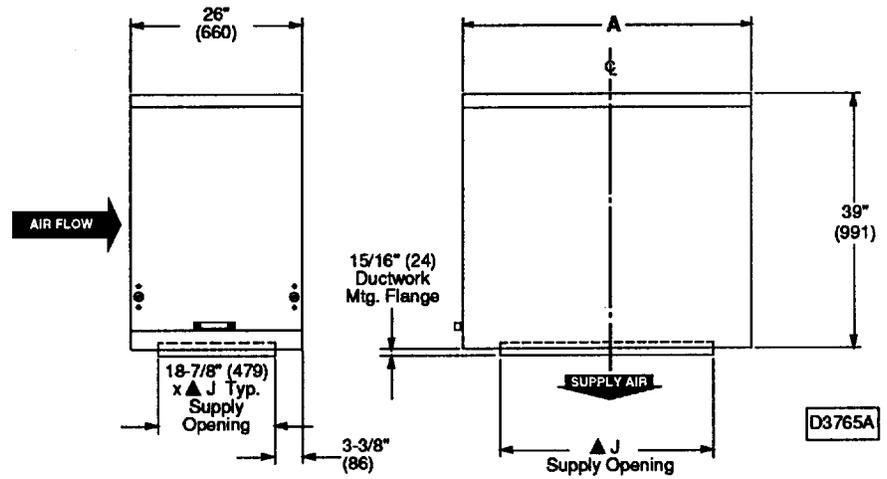
Over/Under Air Intake without Hood
Arrangements B, C, D, E, G J, K, L
Unit Sizes 20, 40



DIMENSIONS ARE IN INCHES, DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS.

Dimensional Data

Supply Plenum Module
Arrangement C, E, J, L
Unit Sizes 20, 40



Note: The dimensions shown do not include base skid rail.

Model	A	J
20	43 7/8" (1114)	35" (889)
40	60 3/8" (1534)	51" (1295)

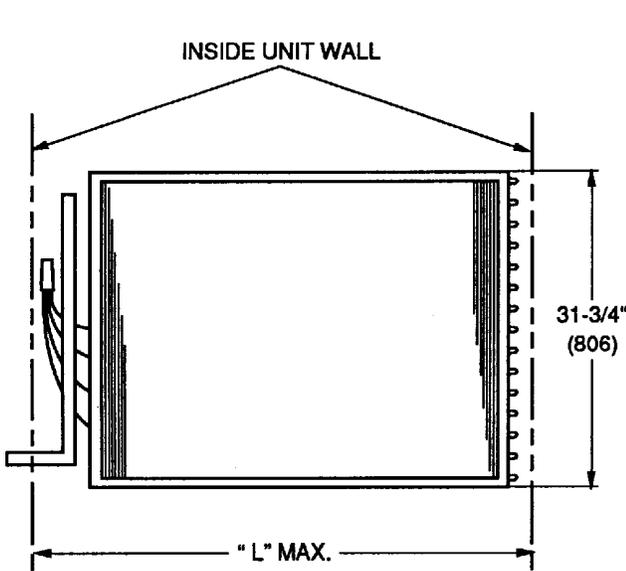
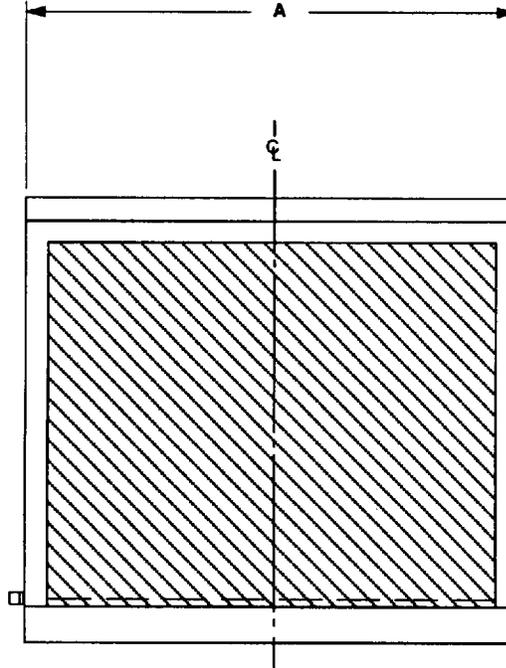
DIMENSIONS ARE IN INCHES, DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS.

Dimensional Data

Cooling Coil Module Arrangements K, L
Unit Sizes 20, 40

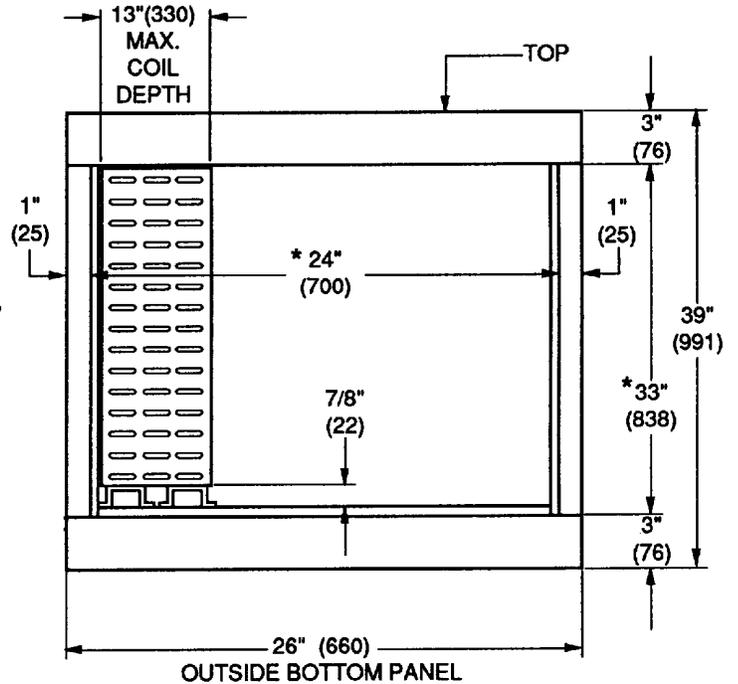
Model	A
20	43 7/8" (1114)
40	60 3/8" (1534)

DIMENSIONS ARE IN INCHES, DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS.



Maximum Coil Dimensions

Unit Size	"L" Inside Max. Cabinet Opening
20	42 1/4" (1073)
40	58 3/4" (1492)

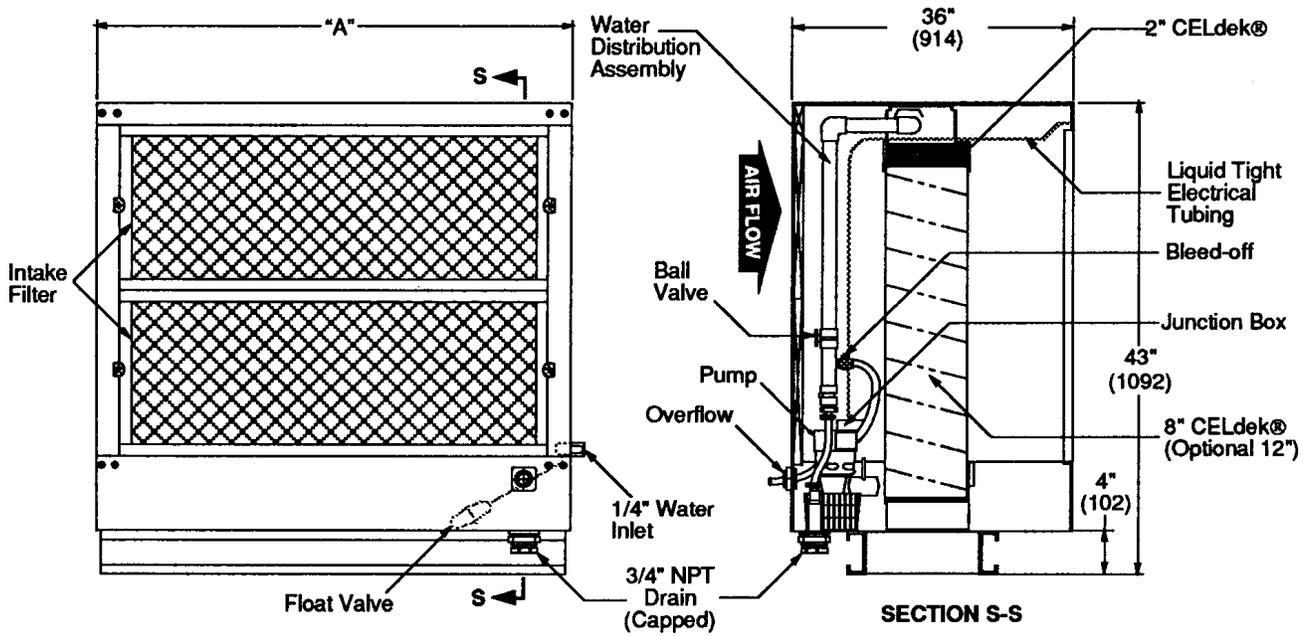


Side Opening of Cooling Module

- The coil section drain pan connection is 3/4 inch NPT pipe thread. It is a female fitting that just protrudes outside of the unit base rail. It is located on the service side of the unit.
- The drain pan is constructed of stainless steel, including the fitting. It is sloped towards the center of the pan and level across the width of the unit.
- P-trap required external to the unit provided by others.

Dimensional Data

Evaporative Cooler Module
Arrangements D, E
Unit Sizes 20, 40

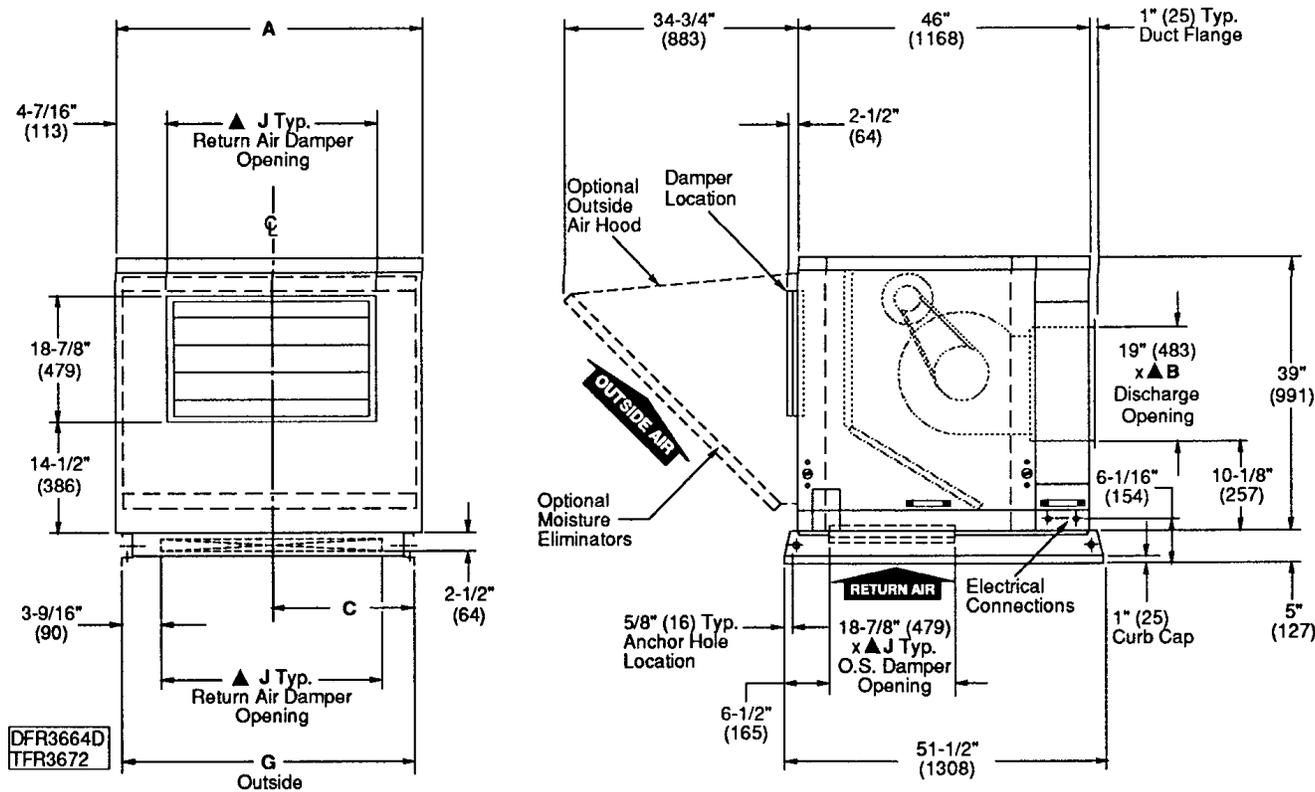


Model	A
20	43 7/8" (1114)
40	60 3/8" (1534)

DIMENSIONS ARE IN INCHES, DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS.

Dimensional Data

Air Handler with Standard Blower Arrangement B AH0A 20, 40



(Left Hand Service Access Shown)

Unit Dimensional Data

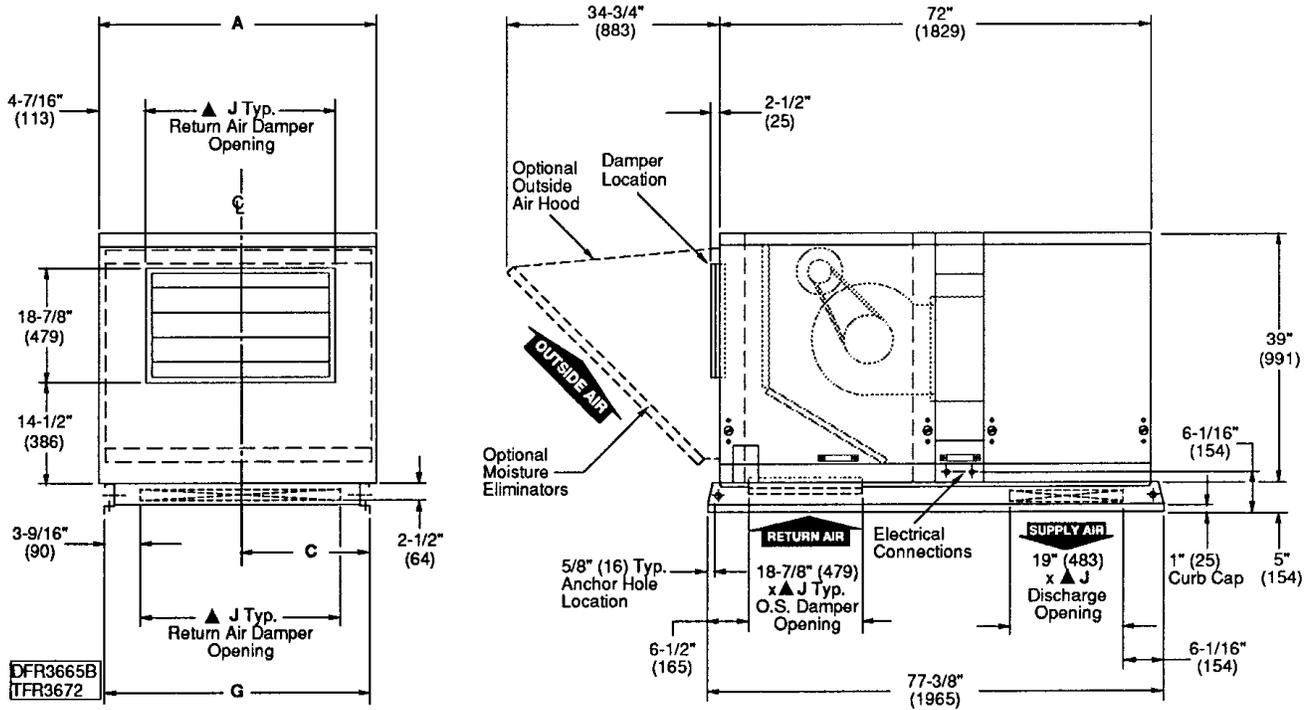
Capacity	A	B	C	G	J
20	43-7/8 (1114)	23-13/16 (605)	21-15/16 (557)	42-1/16 (1068)	35 (889)
40	60-3/8 (1534)	45-13/16 (1164)	30-3/16 (767)	58-7/16 (1487)	51-1/2 (1308)



DIMENSIONS ARE IN INCHES, DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS.

Dimensional Data

Air Handler with Standard Blower and Downflow Supply Plenum Arrangement C AH0A 20, 40



(Left Hand Service Access Shown)

Unit Dimensional Data

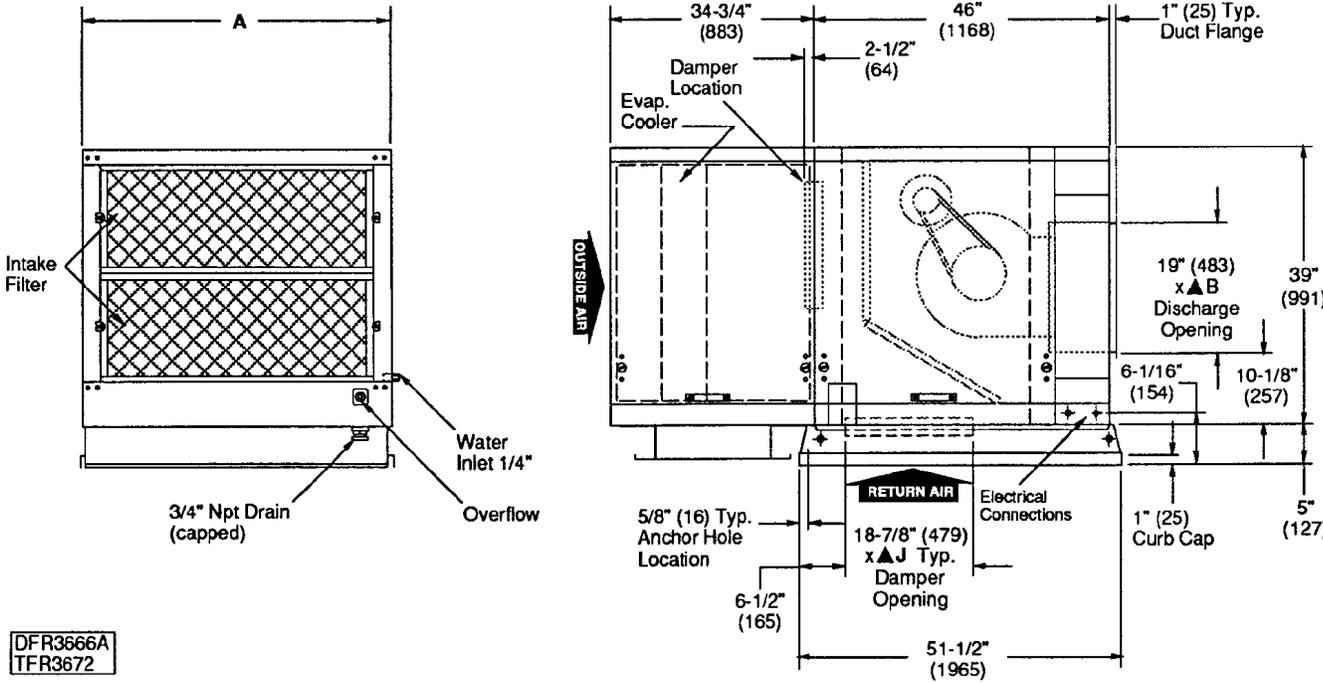
Capacity	A	B	C	G	J
20	43-7/8 (1114)	23-13/16 (605)	21-15/16 (557)	42-1/16 (1068)	35 (889)
40	60-3/8 (1534)	45-13/16 (1164)	30-3/16 (767)	58-9/16 (1487)	51-1/2 (1308)



DIMENSIONS ARE IN INCHES, DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS.

Dimensional Data

Air Handler with Standard Blower and Evaporative Cooler Arrangement D AH0A 20, 40



DFR3666A
TFR3672

(Left Hand Service Access Shown)

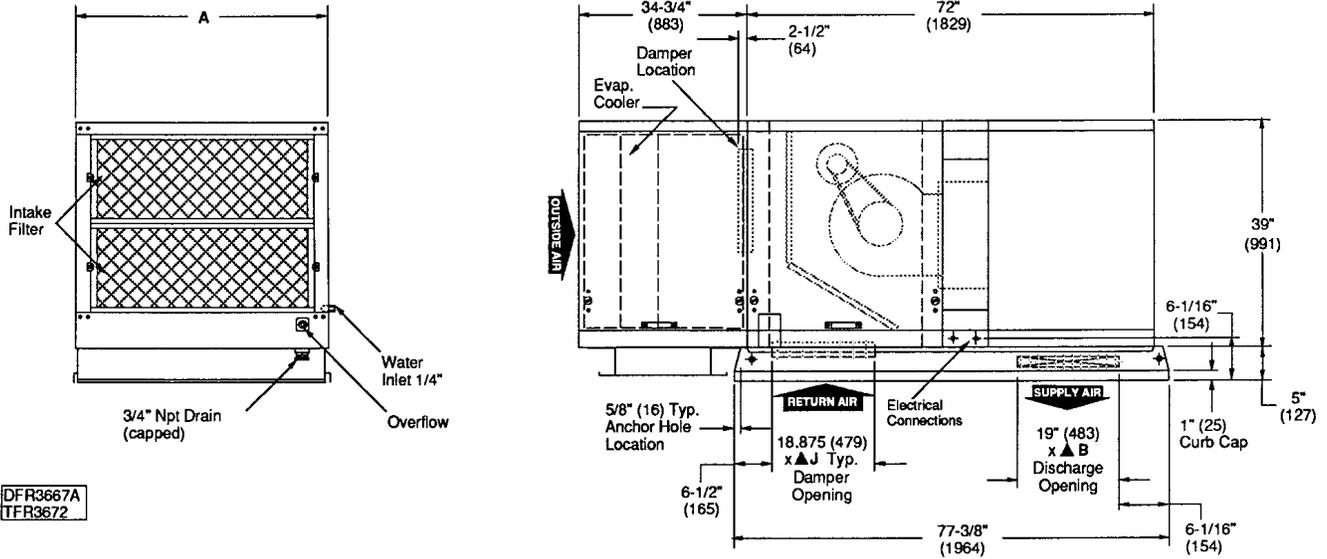
Unit Dimensional Data

Capacity	A	B	C	J
20	43-7/8 (1114)	23-13/16 (605)	21-15/16 (557)	35 (889)
40	60-3/8 (1534)	45-13/16 (1164)	30-3/16 (767)	51-1/2 (1308)

DIMENSIONS ARE IN INCHES, DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS.

Dimensional Data

Air Handler with Standard Blower, Evaporative Cooler and Downflow Supply Plenum Arrangement E AHOA 20, 40



(Left Hand Service Access Shown)

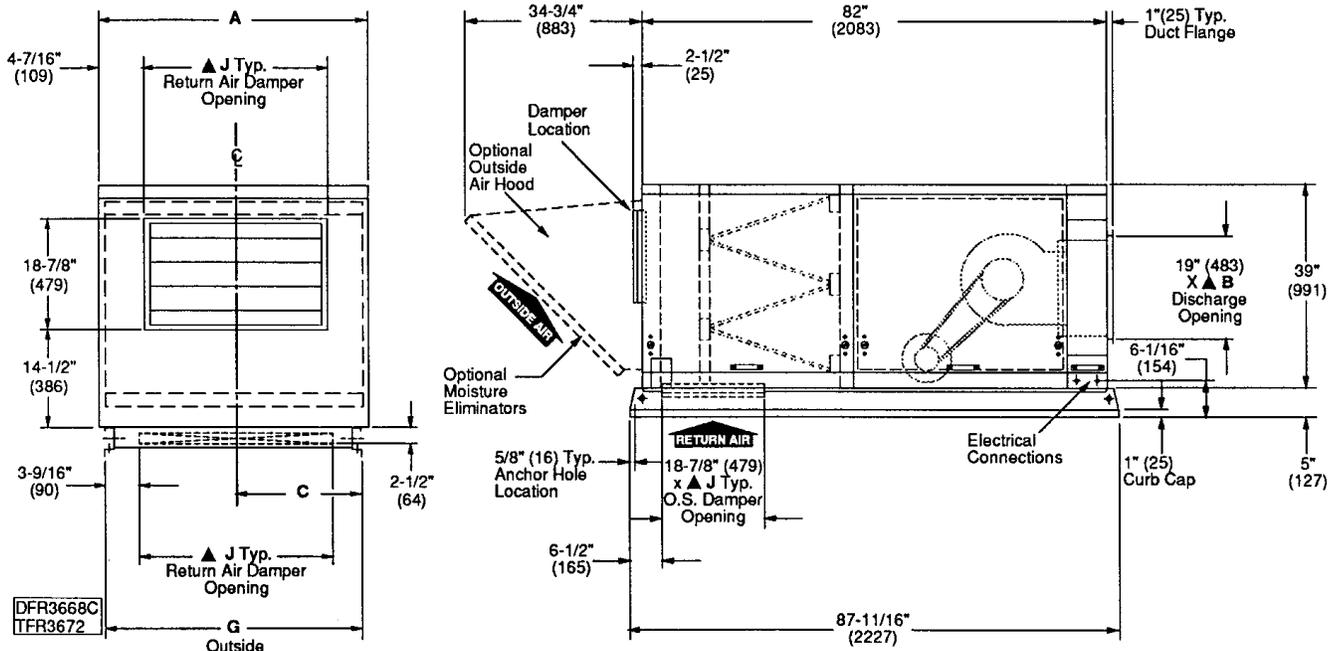
Unit Dimensional Data

Capacity	A	B	C	J
20	43-7/8 (1114)	23-13/16 (605)	21-15/16 (557)	35 (889)
40	60-3/8 (1534)	45-13/16 (1164)	30-3/16 (767)	51-1/2 (1308)

DIMENSIONS ARE IN INCHES, DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS.

Dimensional Data

Air Handler with High Cfm Blower Arrangement G AH0A 20, 40



(Left Hand Service Access Shown)

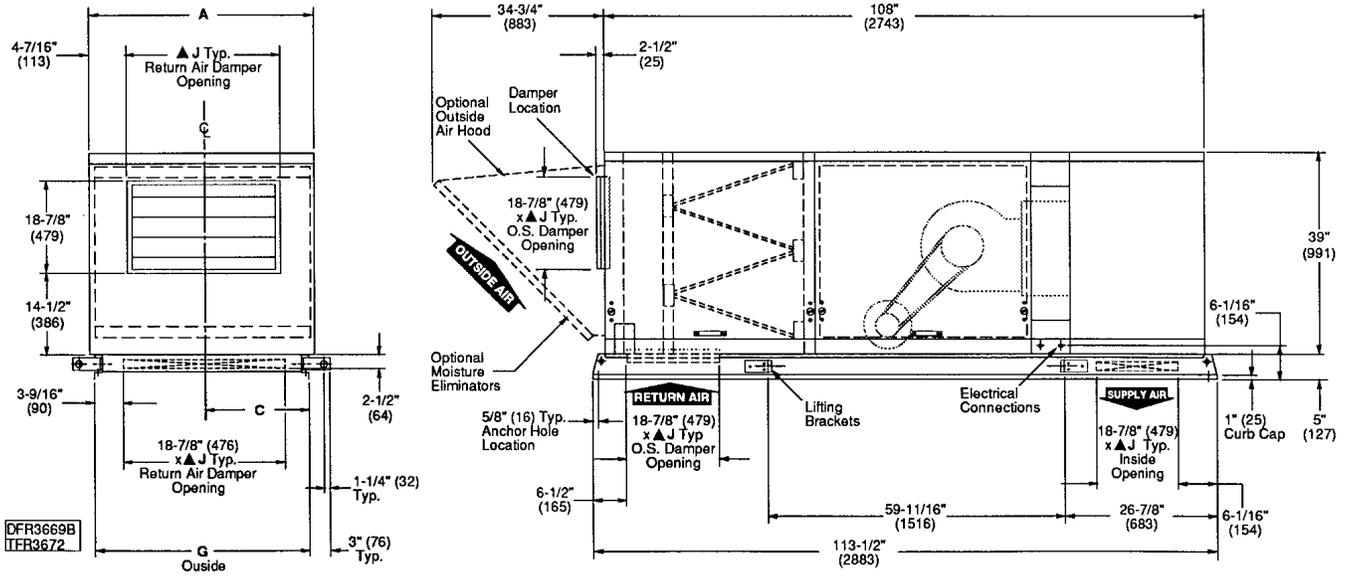
Unit Dimensional Data

Capacity	A	B	C	G	J
20	43-7/8 (1114)	23-13/16 (605)	21-15/16 (557)	42-1/16 (1068)	35 (889)
40	60-3/8 (1534)	45-13/16 (1164)	30-3/16 (767)	58-9/16 (1487)	51-1/2 (1308)

DIMENSIONS ARE IN INCHES, DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS.

Dimensional Data

Air Handler with High Cfm Blower and Downflow Supply Plenum Arrangement J AH0A 20, 40



(Left Hand Service Access Shown)

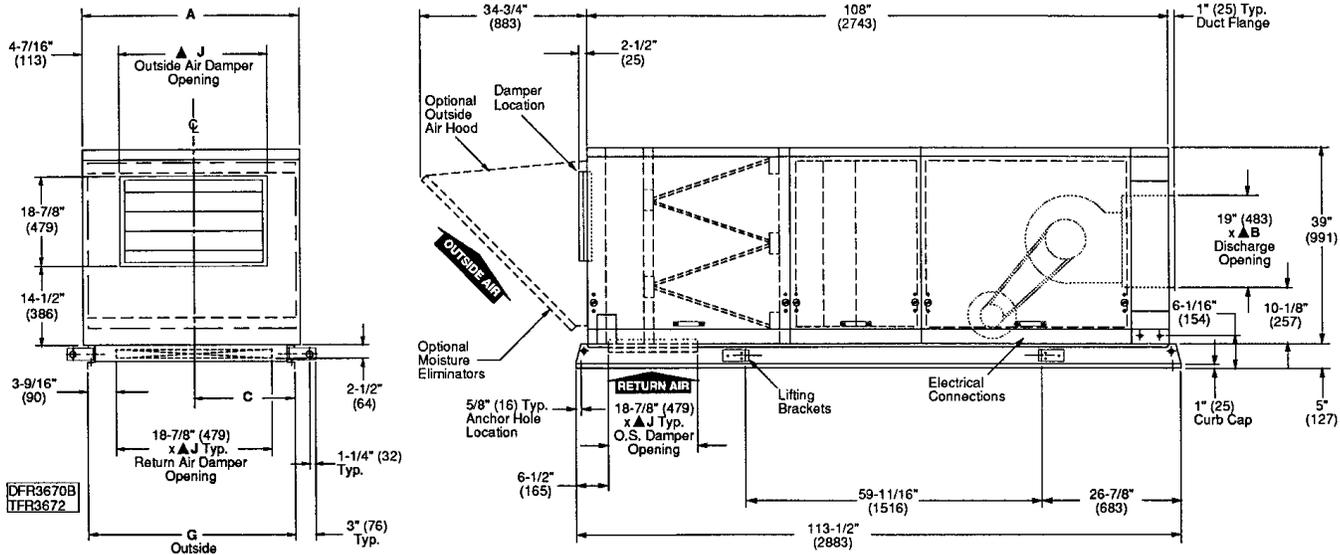
Unit Dimensional Data

Capacity	A	B	C	G	J
20	43-7/8 (1114)	23-13/16 (605)	21-15/16 (557)	42-1/16 (1068)	35 (889)
40	60-3/8 (1534)	45-13/16 (1164)	30-3/16 (767)	58-9/16 (1487)	51-1/2 (1308)

DIMENSIONS ARE IN INCHES, DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS.

Dimensional Data

Air Handler with High Cfm Blower and Cooling Coil Section Arrangement K AH0A 20, 40



(Left Hand Service Access Shown)

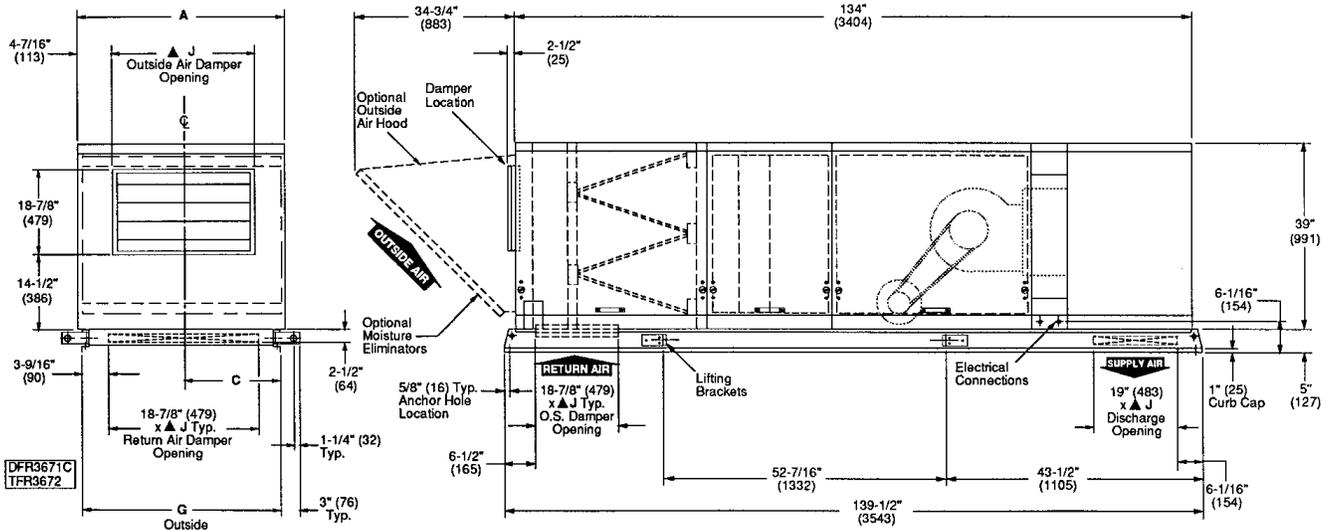
Unit Dimensional Data

Capacity	A	B	C	G	J
20	43-7/8 (1114)	23-13/16 (605)	21-15/16 (557)	42-1/16 (1068)	35 (889)
40	60-3/8 (1534)	45-13/16 (1164)	30-3/16 (767)	58-7/16 (1487)	51-1/2 (1308)

DIMENSIONS ARE IN INCHES, DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS.

Dimensional Data

Air Handler with High Cfm Blower, Cooling Coil Section and Downflow Supply Plenum Arrangement L AH0A 20, 40



(Left Hand Service Access Shown)

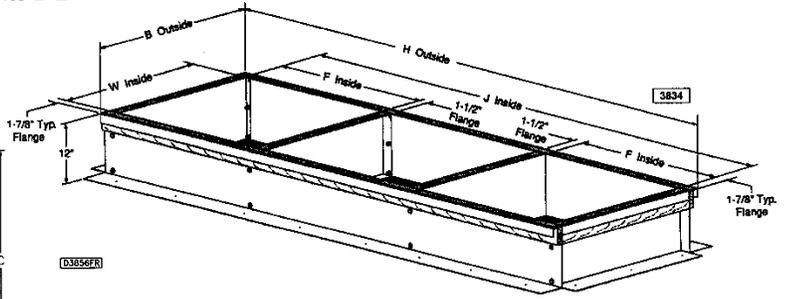
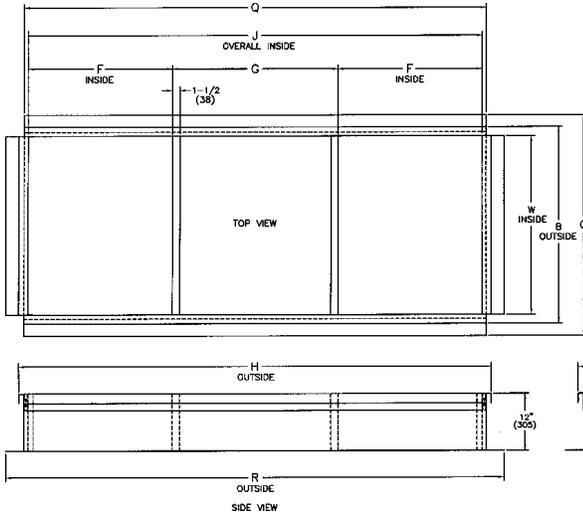
Unit Dimensional Data

Capacity	A	B	C	G	J
20	43-7/8 (1114)	23-13/16 (605)	21-15/16 (557)	42-1/16 (1068)	35 (889)
40	60-3/8 (1534)	45-13/16 (1164)	30-3/16 (767)	58-9/16 (1487)	51-1/2 (1308)

DIMENSIONS ARE IN INCHES, DIMENSIONS
IN PARENTHESES ARE IN MILLIMETERS.

Dimensional Data

Roof Curb— Air Handler Arrangements B-L 20, 40



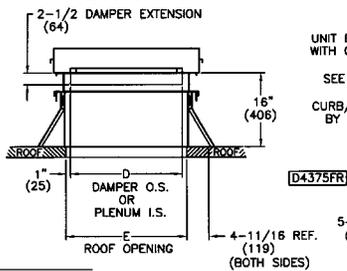
DIMENSIONS ARE IN INCHES, DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS.

Capacity (CA)	Rooftop Arr. (RA)	Capacity (CA)					
		F	G	H	J	Q	R
20 or 40	B,D	N/A	N/A	45 ^{-1/4} (1,149)	41 ^{-1/2} (1,054)	43 ^{-3/8} (1,095)	50 ^{-1/2} (1,283)
	C,E	29 ^{-3/8} (752)	8 ^{-1/8} (206)	71 ^{-1/8} (1,806)	67 ^{-3/8} (1,711)	69 (1,753)	76 ^{-3/8} (1,940)
	G	38 ^{-1/8} (968)	N/A	81 ^{-7/16} (2,069)	77 ^{-11/16} (1,973)	79 ^{-3/16} (2,015)	86 ^{-11/16} (2,202)
	J,K	37 ^{-3/16} (944)	29 ^{-3/16} (741)	107 ^{-3/16} (2,726)	103 ^{-3/16} (2,630)	105 ^{-3/16} (2,672)	112 ^{-3/16} (2,859)
	L	37 ^{-1/8} (943)	55 ^{-1/4} (1,403)	133 ^{-1/4} (3,385)	129 ^{-1/2} (3,289)	131 ^{-1/8} (3,331)	138 ^{-1/2} (3,518)

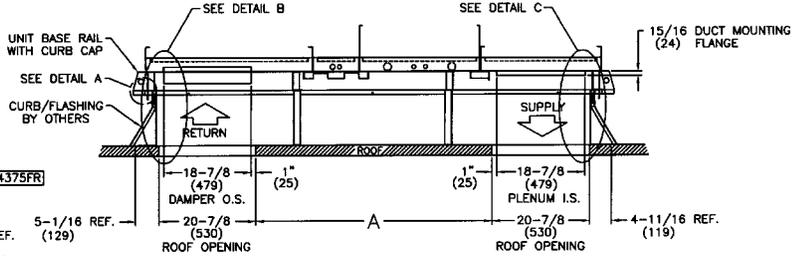
Capacity (CA)	W	B	C
20	37 ^{-7/16} (951)	41 ^{-3/16} (1,046)	46 ^{-7/16} (1,179)
40	53 ^{-15/16} (1,370)	57 ^{-11/16} (1,465)	62 ^{-15/16} (1,599)

1. Roof curbs ship knocked down for full assembly.
2. Arrangement D and E require a separate platform for the evaporative cooler. See separate drawing for dimensional information on the platform.

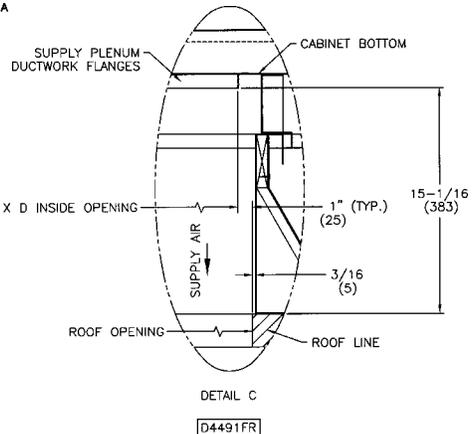
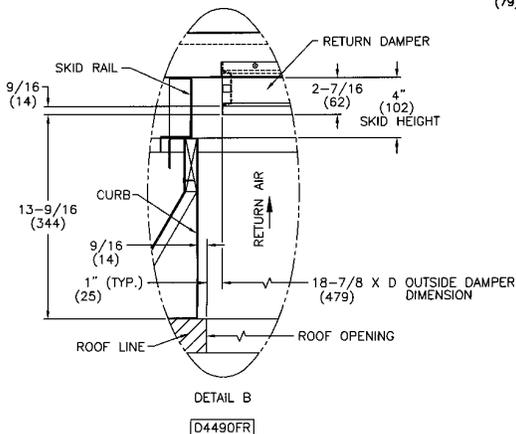
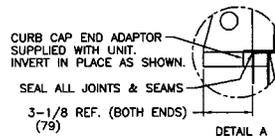
SECTION Y-Y



SECTION X-X

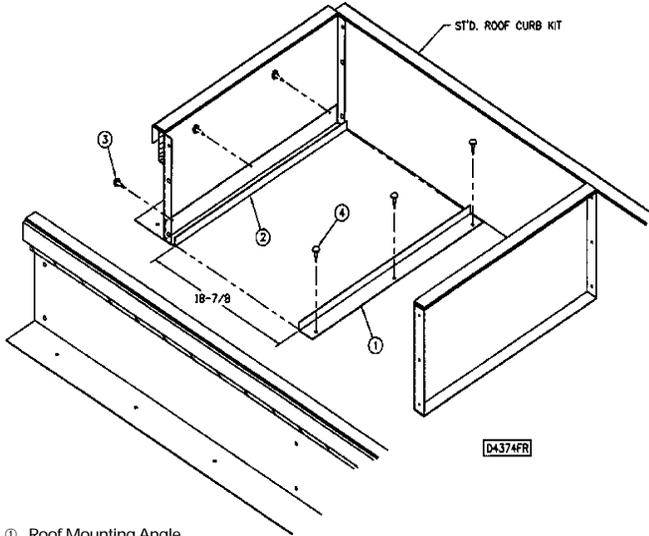


Model	D	E
20	35 (889)	37 (940)
40	51 ^{-1/2} (1,308)	53 ^{-1/2} (1,359)



Dimensional Data

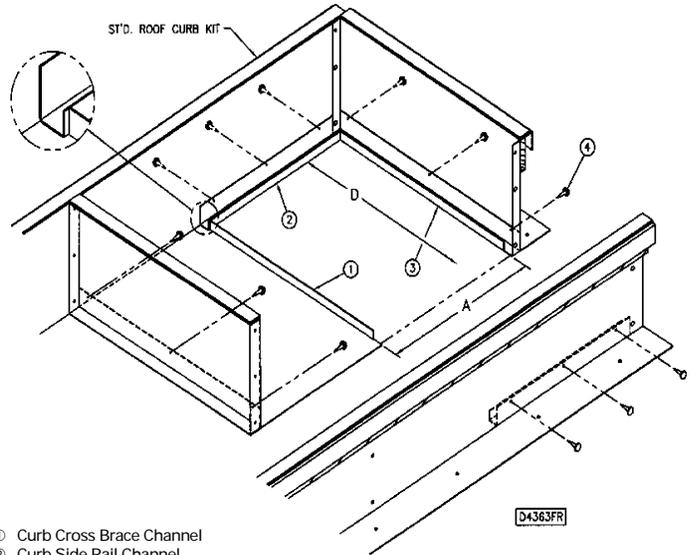
Roof Openings — Air Handler Arrangements B-L 20,40



- ① Roof Mounting Angle
- ② Curb End Rail Channel
- ③ Screw - #10 x 5/8 Lg. Pan Hd. Type "AB" 8 Req'd.
- ④ Fasteners by Others

Blower/Filter/Damper or Filter/Damper Area

Capacity (CA)	B
20	4
40	5

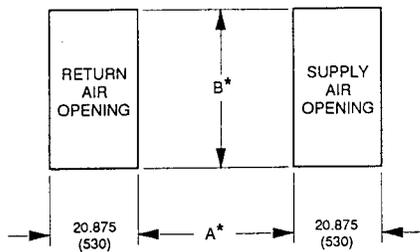


- ① Curb Cross Brace Channel
- ② Curb Side Rail Channel
- ③ Curb End Rail Channel
- ④ Screw - #10 x 5/8 Lg. Pan Hd. Type "AB" 8 Req'd.

Supply Plenum Area

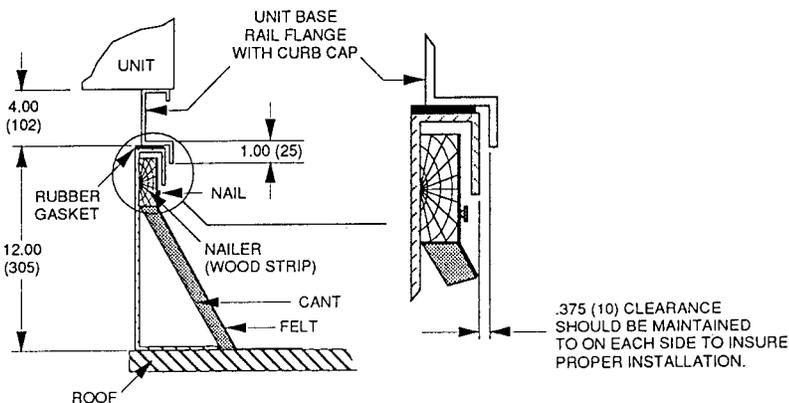
Arrg.	Cap.	A	Capacity (CA)	D	B
C,E	20,40	18-7/8	20	35	14
J	20,40	19-1/8	40	51-1/2	16
L	20,40	19-1/8			

Curb Specifications *Roof Openings



Unit Type AH	
Capacity	Dimension "B"
20	37.00 (940)
40	53.50 (1,359)

*All dimensions shown have been calculated to include a one (1) inch clearance around return and supply ducts.

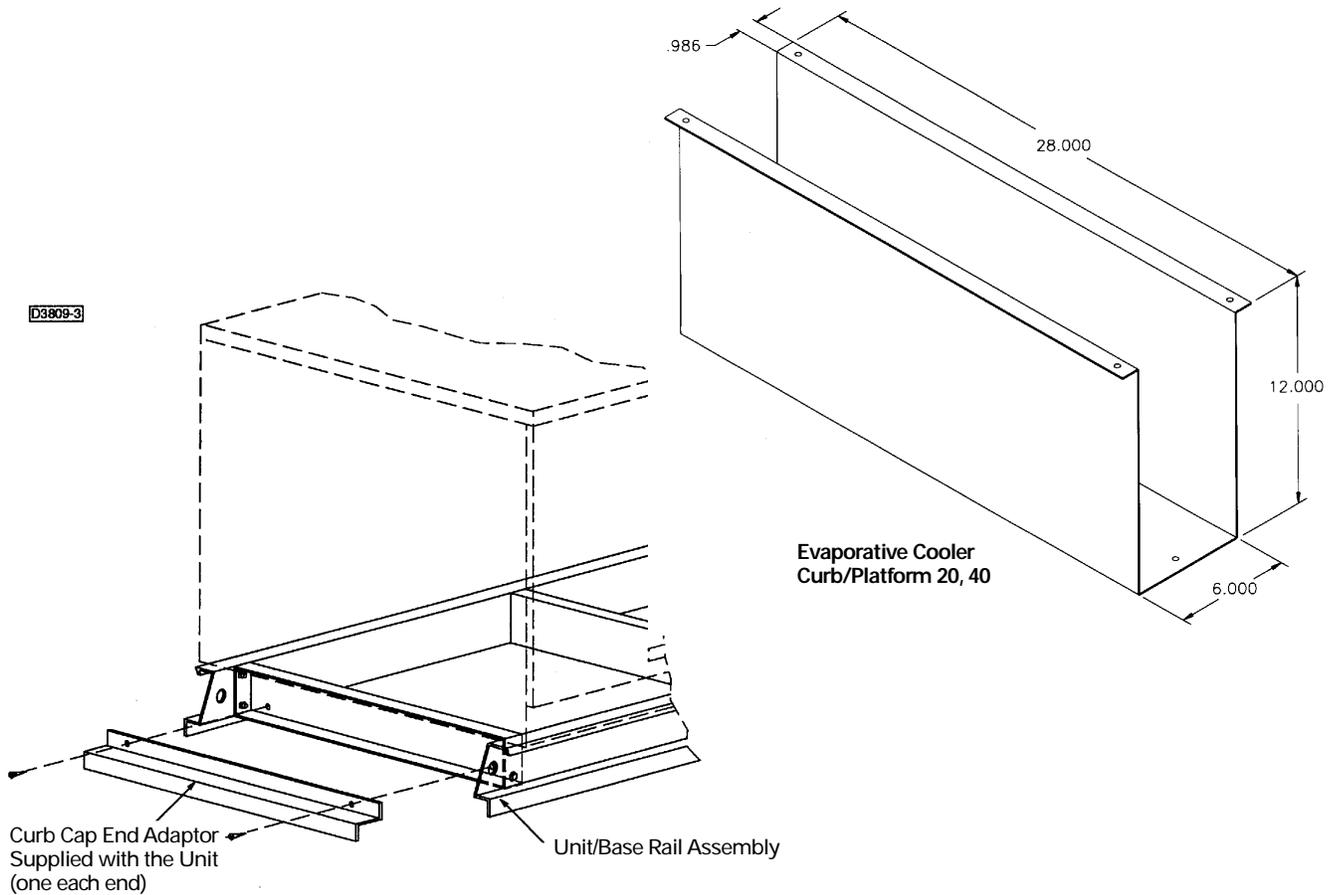


Arrg.	CA	Blower			A
		Std	HI	Coil	
C,E	20 or 40	✓		✓	24.859 (631)
J	20 or 40		✓	✓	61.047 (1551)
L	20 or 40	✓	✓	✓	87.035 (2211)

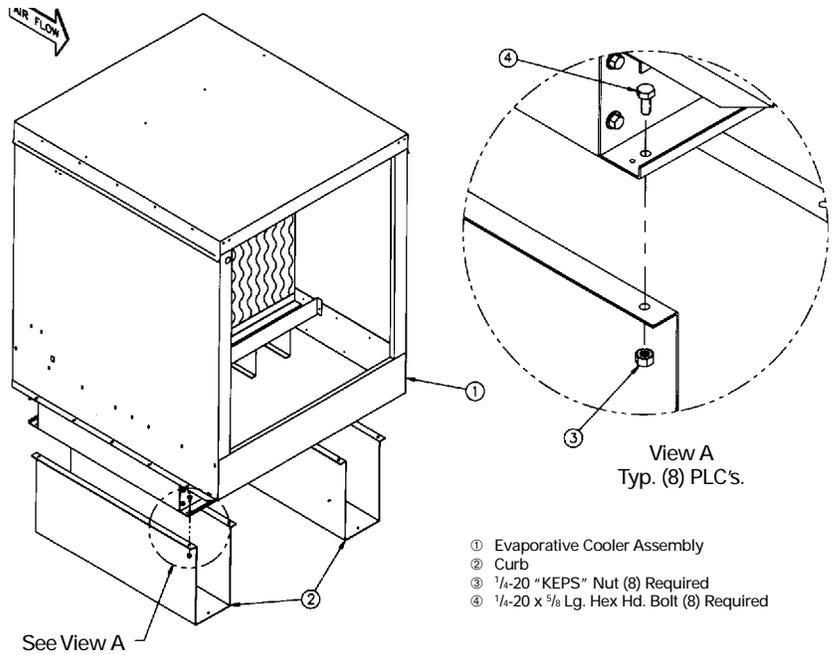
**Arrangements B, D, G, K, are without a supply plenum; use the same return air dimensions for these unit rooftop openings. Refer to unit submittals for more detail.
RA - Rooftop arrangement.

DIMENSIONS ARE IN INCHES, DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS.

Dimensional Data



Unit/Curb End Rail Assembly



Evaporative Cooler Curb/Platform Mounting Assembly



Weights

Table W-1 — Shipping Weights

Arrangement	Unit Size			
	20		40	
	Net	Ship	Net	Ship
B	406	408	529	621
C	509	616	649	767
D	612	725	785	909
E	715	852	905	920
G	567	680	764	888
J	649	786	913	928
K	652	789	865	880
L	734	896	1014	1191

Metric Conversion — 1 lb = 0.453 kg.

Table W-2 — Roof Curb Weights

Arrangement	Unit Size	
	20	40
B	85	112
C	133	161
D	85	112
E	133	161
G	140	168
J	179	207
K	177	204
L	210	238
Outside Air Hood	51	63

Metric Conversion — 1 lb = 0.453 kg.

Table W-3 — Evaporative Cooler Weights

Unit Size	Shipping Wt.	Operating Wt.
	lb. (Kg)	lb. (Kg)
20	166	386
40	206	509

Metric Conversion — 1 lb = 0.453 kg.

Table W-4 — Motor Weights

Voltage	1/2 HP	3/4 HP	1 HP	1 1/2 HP	2 HP	3 HP	5 HP	7 1/2 HP	10 HP	15 HP
115/60/1 ODP	20	25	25	40	42	80	NA	NA	NA	NA
208/60/1 ODP	21	27	25	40	66	80	NA	NA	NA	NA
230/60/1 ODP	21	25	25	40	42	80	NA	NA	NA	NA
208/60/3 ODP	20	24	31	29	35	47	49	99	118	152
230/60/3 ODP	20	24	31	29	35	47	49	99	118	150
460/60/3 ODP	20	24	31	29	35	47	49	99	118	150
575/60/3 ODP	20	20	27	31	37	56	73	105	116	150
115/60/1 TE	26	30	34	41	65	74	NA	NA	NA	NA
208/60/1 TE	27	36	39	48	65	74	NA	NA	NA	NA
230/60/1 TE	26	30	34	41	65	74	NA	NA	NA	NA
208/60/3 TE	18	23	28	32	36	55	65	90	123	295
230/60/3 TE	18	23	28	32	36	55	65	90	123	295
460/60/3 TE	18	23	28	32	36	55	65	90	123	295
575/60/3 TE	21	21	26	36	40	90	92	161	199	284
115/60/1 HEODP	32	33	38	58	72	NA	NA	NA	NA	NA
208/60/1 HEODP	32	30	NA	NA	NA	NA	NA	NA	NA	NA
230/60/1 HEODP	32	33	38	58	72	NA	NA	NA	NA	NA
208/60/3 HEODP	22	25	40	44	44	83	89	139	141	213
230/60/3 HEODP	24	26	40	43	44	80	91	137	138	238
460/60/3 HEODP	24	26	40	43	44	80	91	137	138	238
575/60/3 HEODP	NA	NA	41	44	45	90	100	170	141	215
115/60/1 HETE	28	37	38	41	53	NA	NA	NA	NA	NA
208/60/1 HETE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
230/60/1 HETE	28	37	38	41	53	NA	NA	NA	NA	NA
208/60/3 HETE	NA	NA	39	34	48	71	78	107	124	225
230/60/3 HETE	32	52	39	34	48	94	110	158	166	294
460/60/3 HETE	32	52	39	34	48	94	110	158	166	294
575/60/3 HETE	NA	NA	44	69	88	76	80	132	140	260
208/60/3 2S1W	NA	NA	34	38	48	66	81	125	143	NA
230/60/3 2S1W	NA	NA	34	38	48	66	81	125	143	NA
460/60/3 2S1W	NA	NA	34	38	41	58	94	125	136	218
575/60/3 2S1W	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
115/60/1 2S2W	23	30	37	NA	NA	NA	NA	NA	NA	NA
208/60/1 2S2W	NA	29	36	NA	NA	NA	NA	NA	NA	NA
230/60/1 2S2W	23	29	36	NA	NA	NA	NA	NA	NA	NA
208/60/3 2S2W	27	32	44	47	67	84	NA	221	192	NA
230/60/3 2S2W	26	32	44	47	67	84	NA	221	192	NA
460/60/3 2S2W	26	33	40	44	55	67	NA	214	230	NA
575/60/3 2S2W	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

1. ODP = Open Drip Proof
2. TE = Totally enclosed
3. HEODP = High Efficiency Open Drip Proof
4. HETE = High Efficiency Totally Enclosed
5. 2S1W = Two Speed One Winding
6. 2S2W = Two Speed Two Winding
7. NA = Not Available
8. Metric Conversion — 1 lb = 0.453 kg.

FLA based on NEC Ratings



Options

Remote Control Station (Order No. 134-0201-01)

- Wall mounted
- Six LED status lamps
- System on/off, fan auto/on, heat auto/off, cool auto/off, auxiliary on/off switching and modulating damper potentiometer mounting.
- Plug-in terminal block wiring and wall mounting bracket.
- 6 1/4" W x 3 3/4" H x 1 1/2" D



Seven-Day Timeclock (Order No. 134-0201-02)

- Single pole double throw (SPDT) relay output at setpoint time
- Maximum of six setpoints per day
- 7 3/4" H x 5" W x 3 7/16" D

24-Hour Timeclock (Order No. 134-0201-03)

- Single pole double throw (SPDT) relay output at setpoint time.
- Maximum 12 setpoints per day.
- 7 3/4" H x 5" W x 3 7/16" D



Roof Curbs

Roof curbs are available for all Trane packaged air handlers offered in this catalog. All curbs are shipped knocked down for field assembly. Curbs are normally available on a short lead time basis so that they may be on the jobsite well in advance of the units. Curbs are 12 inches high, factoring in the four-inch unit base rail, overall height to the bottom of the rooftop unit is actually 16 inches. Roof curbs can be supplied with one-inch fiberglass insulation.

Features Summary

Trane rooftop packaged air handlers have the following design features:

- ETL and CSA UL-1995 certified.
- Units are completely wired, tested and rail-mounted with blower drives preset.
- Draw-thru cooling coil cabinet arrangements with stainless steel drain pan.
- Evaporative cooling arrangement with standard 8 or optional 12-inch media (203 or 305 mm).



Mechanical Specifications

Arrangements B-L

General

Units shall be completely factory assembled, wired and test fired. Units shall be mounted on metal rails with lifting and anchor holes and shall be suitable for slab or curb mounting. All units shall be ETL or UL certified for electrical safety in compliance with UL 1995 safety standard for heating, ventilating and cooling equipment.

Electrical

Standard control relays shall be socket mounted with terminal block connections. All control wiring shall terminate at terminal strips (single point connection) and include an identifying marker corresponding to the wiring diagram. Motor and control wiring shall be harnessed with terminal block connections.

Casing

Casings shall be die-formed, 18-gauge galvanized steel and finished in air-dry enamel. Service and access panels shall be provided through easily removable side access panels with captive fasteners. Fan sections and supply plenums (when provided) shall be insulated with fire resistant, odorless, matte-faced one-inch glass fiber material. Outside air hoods, when provided, ship with a wire mesh inlet screen.

Evaporative Cooler (Standard on Arrangement D and E only)

An evaporative cooler with 8-inch media shall be provided. The evaporative cooler shall be of a self-cleaning design with a stainless steel water tank, regulated water flow and overflow protection. The cooler shall have a cabinet assembly of heavy-gauge aluminized steel with weatherproof finish, a UL recognized thermally protected sealed recirculating pump motor, two-inch distribution pad, and corrosion resistant PVC water distribution tubes.

Cooling Coil Section (Standard on Arrangement K and L only)

A cooling coil section, constructed of galvanized steel, shall be provided with the unit. This section shall be insulated with fire resistant, odorless, matte-faced one-inch glass fiber material.

Fans

Centrifugal fan shall be belt-driven, forward curved with double inlet, statically and dynamically balanced. The blower wheel shall be fixed on a keyed shaft, supported with rubber grommet on bearing only and ball bearing secured. 7 1/2 through 15 hp motors are equipped with a pillow block bearing assembly on the drive side. An access interlock switch shall be installed in the blower compartment and will disengage the blower upon removing the service panel. An override shall be incorporated into the interlock switch for serviceability.

Filters

Filter rack shall be constructed of galvanized steel with access through the side service panel. Standard filters are one-inch permanent washable type (Arrangement B-E).

OR

Filter rack shall be of v-bank design for minimal pressure drop and be constructed of galvanized steel with access through the side service panel. Standard filters are one-inch permanent washable type (Arrangement G-L).

Electrical Cabinet

Electrical cabinet shall be isolated from the airstream with a non-removable access panel interior to the outer service panel. There is provision in this cabinet for component mounting, wire routing and high voltage isolation. Motor and control wiring shall be harnessed with terminal block connections.

Controls

All rooftop units shall be provided with a low voltage circuit breaker rated for 150 percent of the units normal 24-volt operating load.

Factory Installed Options

Motors — General

All motors shall be ball bearing type with resilient base mount and NEMA frame sizes from 48 to 256T. Windings are Class "B", 1800 rpm with service factors of 1/2 - 3/4 hp = 1.25 and 1 - 15 hp = 1.15.

Single-Speed Open Drip-proof
60 HZ/1800 RPM

Single-Phase (with contactor) —
Optional 115V, 208V and 230V motors available in 1/2 - 2 hp models.

Three-Phase (with contactor) —
Optional 208V, 230V and 460V motors available in 1/2 - 5 hp models.

Single-Phase (with magnetic starter) —
Optional 115V, 208V and 230V motors available in 1/2 - 3 hp models.

Three-Phase (with magnetic starter) —
Optional 208V, 230V, 460V and 575V motors available in 1/2 - 15 hp models.

Single-Speed TEFC
60 HZ/1800 RPM

Single-Phase (with contactor) —
Optional 115V, 208V and 230V motors available in 1/2 - 1 1/2 hp models.

Single-Phase (with magnetic starter) —
Optional 115V, 208V and 230V motors available in 1/2 - 3 hp models.

Three-Phase (with magnetic starter) —
Optional 208V, 230V, 460V and 575V motors available in 1/2 - 15 hp models.

Single-Speed High Efficiency ODP
60 HZ/1800 RPM

Single-Phase (with contactor) —
Optional 115V and 230V motors available in 1/2 - 1 hp models. Optional 208V motors available in 1/2 - 3/4 hp models.

Single-Phase (with magnetic starter) —
Optional 115V and 230V motors available in 1/2 - 2 hp models. Optional 208V motors available in 1/2 - 3/4 hp models.

Three-Phase (with magnetic starter) —
Optional 208V, 230V and 460V motors available in 1/2 - 15 hp models. Optional 575V motors available in 1 - 15 hp models.

Mechanical Specifications

Single-Speed High Efficiency TEFC
60 HZ/1800RPM

Single-Phase (with contactor) —
Optional 115V and 230V motors
available in 1/2 - 1 1/2 hp models.

Single-Phase (with magnetic starter) —
Optional 115V and 230V motors
available in 1/2 - 2 hp models.

Three-Phase (with magnetic starter) —
Optional 230V and 460V motors
available in 1/2 - 15 hp models. Optional
208V and 575V available in 1 - 15 hp
models.

Two-Speed/One Winding Motors
(Three-Phase Only)
60 HZ/1800/900 RPM

Three-Phase (with magnetic starter) —
Optional 208V, 230V and 460V motors
available in 1 - 15 hp models.

Two-Speed/Two Winding Motors
60 HZ/1800/1200 RPM

Single-Phase (with magnetic starter) —
Optional 115V and 230V motors
available in 1/2 - 1 hp models. Optional
208V motors available in 3/4 - 1 hp
models.

Three-Phase (with magnetic starter) —
Optional 208V and 230V motors
available in 1/2 - 15 hp models. Optional
460V motors available in 1/2 - 3 hp and
7 1/2 - 10 hp models. Optional 575V
motors available in 7 1/2 - 10 hp models.

Manual Blower Switch

Manual blower switch shall be factory
installed in the electrical cabinet.

DX or Chilled Water Cooling Coils
Available on arrangement K and L only.
A direct expansion (DX) or chilled
water coil certified by ARI shall be
provided with the unit.

Damper Options

Dampers shall be of the opposed blade
type, constructed of galvanized steel
with neoprene nylon bushings, blades
to be mechanically interlocked.

Optional low leak outside air dampers
shall be of the opposed blade type,
construction of galvanized steel with
neoprene nylon bushings and vinyl
blade edge seals, blades to be
mechanically interlocked.

Outside Air or Return Air/Two- Position
Motor/ Spring Return

Units with outside air or return air only
shall be provided with damper, two-
position spring return damper motor
and controls. The motor shall power the
damper full open when the unit is on
and full closed when the unit is off.

OA/RA Two-Position Spring Return
Two-position spring return motor with
interlocked outside and return air
dampers shall be provided. The motor
shall power either the outside air
damper full open and the return air
damper full closed or the outside air
damper full closed and the return air
damper full open in response to an
outside air temperature sensor.
(Includes an outside air thermostat that
makes on a rise in temperature and
drives the damper open.) When the
unit is off, the motor will drive the
outside air damper full closed and the
return air damper full open.

OA/RA Mod Motor with Mixed Air
Control/Min. Pot/Spring Return
Modulating motor with interlocked
outside and return air dampers shall be
provided. The motor shall modulate the
position of the outside and return air
dampers in response to a thermostatic
controller located in the mixed air
stream. Units shall also be provided
with a minimum position
potentiometer for minimum outside air
damper position.

The spring return feature drives the
outside air damper full closed and the
return air damper full open when the
unit is off.

OA/RA Mod Motor with Mixed Air
Control/Spring Return
Modulating motor with interlocked
outside and return air dampers shall be
provided. The motor shall modulate the
position of the outside and return air
dampers in response to a thermostatic
controller located in the mixed air
stream.

The spring return feature drives the
outside air damper full closed and the
return air damper full open when the
unit is off.

OA/RA Mod Motor with Min Pot/
Spring Return

Modulating motor with interlocked
outside and return air dampers shall be
provided. The motor shall position the
outside and return air dampers in
response to a manually set
potentiometer.

The spring return feature drives the
outside air damper full closed and the
return air damper full open when the
unit is off.

OA/RA Mod Motor with Dry Bulb/
Mixed Air Control/Min Pot/
Spring Return

Modulating motor with interlocked
outside and return air dampers shall be
provided. The motor shall modulate the
position of the outside and return air
dampers in response to a thermostatic
controller and dry bulb thermostat
located in the mixed airstream. Units
shall also be provided with a minimum
position potentiometer for minimum
outside air damper position.

The spring return feature drives the
outside air damper full open and the
return air damper full closed when the
unit is off.

OA/RA Mod Motor with Enthalpy
Controlled Economizer/Spring Return
Modulating motor with spring return
and interlocked outside and return air
dampers shall be provided. The motor
shall modulate the position of the
outside and return air dampers in
response to an enthalpy controlled
economizer. When the unit is off, the
motor will drive the outside air damper
full closed and the return air damper
full open.

OA/RA Mod Motor with Space
Pressure Controller

Modulating motor with spring return
and interlocked outside and return air
dampers shall be provided. The motor
shall modulate the position of the
outside and return air dampers in
response to a pressure sensor located
in the building.

Mechanical Specifications

OA/RA Mod Mtr with S-350P Proportional Mixed Air Control/ Spring Return

Modulating motor with spring return and interlocked outside and return air dampers shall be provided. The motor shall modulate the position of the outside and return air dampers in response to a solid-state mixed air sensor and S-350 Proportional controller. When the unit is off, the motor will drive the outside air damper full closed and the return air damper full open.

OA/RA Mtr. with External 4-20 mA or 0-10VDC Analog Input/Spring Return Modulating motor interlocked with outside and return air dampers shall be provided. The motor shall modulate the position of the outside and return air dampers in response to a 4-10 mA or 0-10VDC signal supplied by an external DDC controller.

The spring return feature drives the outside air damper full closed and the return air damper full open when the unit is shut down.

ASHRAE Cycle I (OA/RA Two- Position with Warm-up Stat/SR)

Two-position spring return motor with interlocked outside and return air dampers shall be provided. The motor shall power the outside air damper full open after a warm-up period determined by a minimum supply air temperature sensor when the unit is on, and full closed when the unit is off.

ASHRAE Cycle II OA/RA Mod with Warm-up Stat/Mixed Air/Min Pot/ Spring Return

Modulating motor with interlocked outside and return air dampers shall be provided. The motor shall modulate the position of the outside and return air dampers in response to a thermostatic controller located in the mixed air stream after a warm-up period determined by a minimum supply air temperature sensor. Units shall also be provided with a minimum position potentiometer for minimum outside air damper position. When the unit is off, the motor will drive the outside air damper full closed and the return air damper full open.

ASHRAE Cycle III OA/RA Mod. with Warm-up Stat/Mixed Air/SR Modulating motor with spring return and interlocked outside and return air dampers shall be provided. The motor shall modulate the position of the outside and return air dampers in response to a thermostatic controller located in the mixed airstream after a warm-up period determined by a minimum supply air temperature sensor. When the unit is off, the motor will drive the outside air damper full closed and the return air damper full open.

Manual Dampers

Units with outside air and return air shall be provided with manually set outside and return air dampers.

Additional Factory Installed Options Firestat

If temperature reaches the setpoint, the dampers will return to their normal position and shut down the blower. Manual reset.

Return Air Mounted (setpoint typically 130 F)

Supply Air Mounted (setpoint typically 150 F)

Freezestat

Unit shall be provided with a freezestat (0-100 F) with the sensing bulb located in the discharge airstream. Wired as an interlock to prevent cold air discharge.

12-inch Evaporative Media

12-inch media shall be provided for the evaporative cooler.

Double Wall Construction

The construction will consist of a 24-gauge inner liner wall with 1-inch 1½ lb. density insulation. Access doors on the specified side will be hinged and of the same double wall design. Double wall is not available on the applicable evaporative cooler and furnace sections. Double wall construction will be provided by the manufacturer on applicable filter/damper, blower, coil and plenum cabinets.

Clogged Filter Switch

A clogged filter pressure switch with adjustable operating range and normally open switch shall be installed to sense increased suction pressure by the blower due to filter obstruction. Provision for remote indication shall be provided by terminal block connection points. Includes a status lamp mounted in the electrical cabinet.

Moisture Eliminators

Provided in place of an inlet screen on the outside air hood. Includes a pressure switch.

Horizontal Return

Unit shall be supplied with the return air opening at or under the outside air opening location depending on the air inlet configuration.

Continuous Fan Relay — 24V Coil DPDT 10A

Relay provided with 24-volt coil and double pole double-throw 10-amp contacts. Plugs into the main connection PC board in the electrical cabinet. Included as standard on Arrangement D and E. May also be utilized as an exhaust fan interlock.

Interlock Relay — 24/115V Coil SPDT 10A

Relay has a selectable coil voltage of 24 or 115 volts and single-pole double throw 10-amp contacts with LED on indicator lamp. Relay is utilized as an auxiliary relay.

Interlock Relay — 24/115-230V Coil DPDT 10A

Relay has a selectable coil voltage of 24, 115 or 230-volts and double pole double throw 10-amp contacts. Utilized as an auxiliary relay for general purpose duty.

Ambient Lockout

Airflow proving switch

Hinged Service Access Doors

Optional hinged doors are mounted to the access side of the standard blower/filter/damper cabinet and high CFM filter/damper and blower cabinets in lieu of the standard removable access doors. The hinged doors include dual quick opening tool-less latches and full perimeter gasketing to assure a water tight seal and door stops to guard against closure while open. The remaining Duct Furnace(s), supply plenum cabinets (if applicable) are supplied with a standard removable door. The coil cabinet door utilizes a special removable vertical split door allowing for coil access and unit penetration for coil connections.

Mechanical Specifications

Field Installed Accessories

Remote Control Station

Wall mounted. Provides six LED status lamps with System On/Off, Fan Auto/On, Heat Auto/Off, CoolAuto/Off, Auxiliary On/Off switching and modulating damper potentiometer mounting. Designed for easy installation with plug-in terminal block wiring and wall mounting bracket. (Auxiliary On/Off may be used with the evaporative cooler fill and drain kit)

Seven-Day Timeclock

Provides single-pole double-throw (SPDT) relay output at setpoint time with maximum six setpoints per day.

24-Hour Timeclock

Provides single-pole double-throw (SPDT) relay output at setting time with maximum 12 setpoints per day.

Disconnect Switch

115V Convenience Outlet

GFI (Ground Fault Convenience Outlet) is manual reset with weatherproof enclosure. (Requires separate 115V power supplied.)

Roof Mounting Curb

Insulated roof curb shall be shipped unassembled with hardware package and gasket attached. Curb and rail shall total 16 inches high and supplied with a cross-member which allows the isolation of the return and supply air streams (when supplied).

Evaporative Cooler Platform

Provides mounting support for evaporative cooler only.

Fill and Drain Kit

Includes three-way valve and relay for automatic fill and drain for the evaporative coolers. Optional freezestat provides automatic shutoff and drain upon meeting outside air setpoint.

Optional Filters (One-inch permanent standard)

Two-inch Permanent

Two-inch Throwaway

One-inch 30 percent Pleated Media

Two-inch 30 percent Pleated Media

Thermostats

Low voltage room thermostat, single-stage with fan auto-on-switch and system heat-off cool switch

Low voltage room thermostat, single-stage with fan auto-on switch

Low voltage room thermostat, two-stage with fan auto-on switch and system off-heat-auto-cool switch

Low voltage programmable room thermostat, two-stage with LCD display, fan auto-switch an system off-heat-auto-cool switch

Universal tamperproof guard for all room thermostats

Low voltage duct thermostat, single-stage

Low voltage duct thermostat, two-stage

Room thermostat, electronic modulating control

Duct thermostat, electronic modulating control

Duct thermostat, electronic modulating control with override room thermostat

Evaporative Cooler

General

An evaporative cooler with eight-inch media shall be provided. The evaporative cooler shall be of a self-cleaning design with a stainless steel water tank, regulated water flow and overflow protection. The cooler shall have a cabinet assembly of heavy-gauge aluminized steel with weatherproof finish, a UL recognized, thermally protected sealed recirculating pump motor, two-inch distribution pad, and corrosion resistant PVC water distribution tubes.

Factory Installed Options

12-Inch Evaporative Media

12-inch media shall be provided for the evaporative cooler.

Field Installed Accessories

Evaporative Cooler Platform

Provides mounting support for evaporative cooler only

Fill and Drain Kit

Includes three-way valve and relay and automatic fill and drain for the evaporative cooler.

Freezestat

Freezestat provides automatic shutoff and drain upon meeting outside air setpoint.

The Trane Company
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Clarksville, TN 37040
www.trane.com

An American Standard Company

The Trane Company has a policy of continuous product and product data improvement, it reserves the right to change product design and specifications without notice.

Library	Product Literature
Product Section	Air Handling
Product	Make-Up Air
Model	000
Literature Type	Data Sales Catalog
Sequence	4
Date	February 1998
File No.	PL-AH-MUA-000-DS-4-298
Supersedes	MUA-DS-4 695
Ordering No.	MUA-DS-4