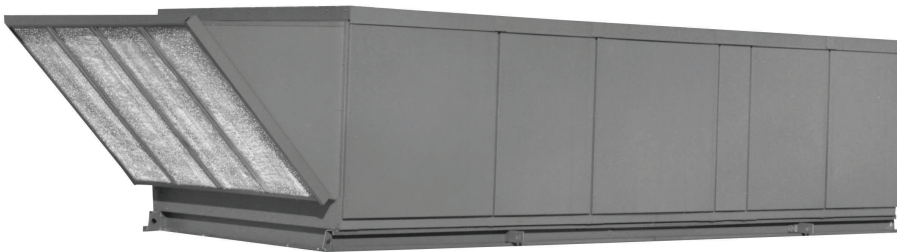




Product Catalog

# Outdoor Rooftop Gas Fired Duct Furnaces and Packaged Units

Packaged Systems for Heating, Cooling, Ventilating and Make-Up Air Applications





## Copyright

This document and the information in it are the property of Trane, and may not be used or reproduced in whole or in part without written permission. Trane reserves the right to revise this publication at any time, and to make changes to its content without obligation to notify any person of such revision or change.

## Trademarks

All trademarks referenced in this document are the trademarks of their respective owners.

## Revision History

- Model Number Description updated.
- Performance and Dimensional data tables updated.
- Thermostat TH8320R included.
- Running edits



# Table of Contents

Engineered Product Description .....	5
Features and Benefits .....	5
Engineered Products Model Number Description .....	7
Engineered Products Outdoor Duct Furnaces .....	9
Natural and Power Vent .....	9
Outdoor Duct Furnace Performance Data .....	11
Duct Furnace Performance.....	12
Dimensional Data .....	13
Packaged Rooftop Arrangements .....	15
Heating and Cooling Units .....	15
Packaged Rooftop Arrangement Reference .....	17
Quick Sizer Charts .....	19
Performance .....	21
Accessory Pressure Loss .....	26
Quick Sizer Charts .....	29
Performance .....	31
Dimensional Data – Unit Modules .....	41
Cooling Coil Options.....	54
Rooftop Arrangement: K, LCoil Options Model Digit 17.....	54
Rooftop Arrangements: K, LDX Cooling Coil Performance Data (Ref. R-410A) .....	55
Rooftop Arrangements: K, LChilled Water Cooling Coil Performance Data .....	59
Unit Options and Accessory Descriptions.....	62
Gas Type.....	62
Gas Control .....	62
Supply Voltage .....	64
Motor Type.....	65
Motor Size .....	65
Air Inlet Configuration.....	66
Air Control and Damper Arrangement .....	66
Accessories .....	67
Evaporative Cooling Module.....	76
Standard Features .....	77
Performance .....	77
Selection Method .....	78



## Table of Contents

---

Roof Curb Kits .....	81
<b>Standard Roof Curb Kits</b> .....	81
Uninsulated Roof Curb Kits .....	81
Vibration Isolation and Seismic Curbs .....	81
Adaptor Curbs .....	81
Dimensional Data .....	82
Rooftop Curb Specifications .....	86
Roof Curb Assembly .....	87
Engineered Products Specification Guide.....	88
Unit Selection Procedure .....	97
Cooling Coil Selection Procedure .....	99
Approximate Unit Net and Ship Weights .....	102
Cooling Coil Weight Adder .....	104
Double Wall Construction Adder .....	104
VFD Enclosure Shipping Weight Adder .....	104
Approximate Motor Shipping Weights.....	105
Approximate Roof Curb Kits Ship Weights.....	106
Motor Electrical Data .....	108



## Engineered Product Description

The Trane Engineered Products Rooftop is a packaged air, heating and cooling system, suitable for heating, cooling, ventilating and makeup air applications. Unit sizes range from 800 to 14,000 CFM (0.4-6.6 m<sup>3</sup>/s) with 1/2-15 HP. motors and 100,000 BTU/Hr to 1,200,000 BTU/Hr (29.3 to 351.4 kW) input. Duct furnaces are ETL certified for safety and performance with a range of 100,000 to 400,000 BTU/Hr (29.3 to 117.1 kW) input per duct furnace. Packaged units are also ETL certified for electrical safety in compliance with UL-1995 Standard for HVAC Equipment. Trane Rooftop Units may be ordered as individual Duct Furnaces only, Air Handler only, Air Handler with Cooling, or Packaged Heating and Cooling Systems.

The mechanical configuration is determined by customer selection and may consist of one of 17 standard arrangements (see "Rooftop Arrangements", model number digit 14). Rooftop Arrangements are divided into two classifications "Standard" and "High CFM" Blower types. The "Standard" Blower unit consist of a blower cabinet that houses dampers, filters and blower in one cabinet, an optional Evaporative cooling unit and up to 2 Duct Furnaces (800 MBH Max.) (234.3 kW Max.) may also be included. The "High CFM" blower unit utilizes a separate Damper/Filter cabinet with a "V" bank filter arrangement, a Blower cabinet and up to 3 Duct Furnaces (1200 MBH Max.) (351.4 kW Max.). An optional cooling coil cabinet is offered with up to 2 furnaces (800 MBH Max.). Both "Standard" and "High CFM" blower arrangements may also include a downturn Supply Air Plenum, Outside Air Intake Hood and a Roof Curb. All arrangements are rail mounted.

Furnace types are also divided into two classifications "Standard Temperature Rise" and "High Temperature Rise" with Natural and Power vented models and Left or Right Hand access (see "Unit Type", "Furnace Type" model number digits 2 and 3). Standard Temperature rise units have a lower pressure drop across the heat exchanger allowing higher air flow capacities and an 80% efficiency rating with  $\Delta T$  of 20-60°F (11 - 33°C). High Temperature Rise units are configured for higher temperature rise and have a higher pressure drop across the furnace section of the unit with  $\Delta T$  of 60-90°F (33 - 50°C). The High Temperature Rise type furnace is only available in a single furnace package and has an efficiency rating of 80%.

In addition to a versatile array of mechanical features, Trane Engineered Products Rooftop Units also offer a wide variety of factory installed control options. Control components are located in the main electrical cabinet. The main electrical cabinet is located out of the air stream as part of the blower transition, between the blower cabinet and the first furnace (or supply plenum if no furnace) for both Standard and High CFM units. The standard electrical control scheme consists of a solid state fan time delay, two pre-wired relay sockets for fan on and damper open functions mounted on the unit's main connection board, a solid state gas ignition system and room or duct thermostats. The units are also equipped with a blower door safety interlock, a 24 VAC circuit breaker, a high temperature limit switch in each furnace section and a reverse air flow switch located in the blower cabinet as standard equipment.

Gas control options range from single stage to six stages of fire, Electronic Modulation and DDC (Direct Digital Control) ready packages (see "Gas Control" model number digit 9). Air control options offer a similar range of control features from manual dampers to modulating motorized dampers that may include mixed air, dry bulb, pressure sensing, enthalpy control, DDC interface or ASHRAE Cycle control arrangements (see "Air Control" model number digit 19).

## Features and Benefits

- ETL Certified Duct Furnaces
- ETL UL-1995 Certified Packaged Units
- Heating Capacities from 100MBH - 1,200MBH (29.3 kW - 351.4 kW)
- Natural and Power Vented Furnaces
- 80% Efficient Furnace
- Standard Temperature Rise 20-60°F (11-33°C) per Furnace
- High Temperature Rise 60-90°F (33-50°C) single Furnace
- Vibration Isolation Roof Curbs
- Standard 1" Washable Filters.



## Engineered Product Description

---

- CFM Ranges from 800 - 14,000 CFM (0.4— 6.6 Cu. m/s)
- Motor Sizes up to 15 Horse Power (EPACT compliant)
- Standard ODP Motors; with Premium Efficiency and Totally Enclosed optional
- Standard Left Side Service Access, Right Optional
- Draw-thru Heating or Cooling Coil Cabinet with Stainless Steel Drip Pan
- Evaporative Cooling with standard 8" or optional 12" media (203 or 305mm)
- Standard Insulated Roof Curbs (Optional Uninsulated Roof Curbs Available)
- Seismic Rated Roof Curbs
- Adapter Roof Curbs
- Standard 18 ga. Cabinets, Painted Gray
- Standard Hinged Access Doors.
- Standard Printed Circuit Main Connection Board
- Standard Single Stage Combination Gas Valve
- Standard High Temperature Limit (Each Furnace)
- Standard 20 ga. Aluminized Steel Heat Exchanger (Stainless Steel Optional)
- Standard Blower Door Safety Interlock Switch
- Standard Reverse Air Flow Safety Switch
- Standard 24 Volt Circuit Breaker
- Wiring Harnesses with Stamped Wire Numbers
- Solid State Automatic Pilot Ignition Control
- Solid State Fan Time Delay
- Over 40 Standard Control Packages



# Engineered Products Model Number Description

<b>G</b>	<b>R</b>	<b>A</b>	<b>A</b>	<b>40</b>	<b>G</b>	<b>D</b>	<b>C</b>	<b>C</b>	<b>0</b>	<b>N</b>	<b>2</b>	<b>B</b>	<b>Q</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>A</b>	<b>0</b>	<b>+</b>
1	2	3	4	5,6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

## Digit 1 — Gas Heating Equipment

**G** — Gas

## Digit 2 — Unit Type

**F** — Rooftop Duct Furnace  
**R** — Rooftop Heating Unit  
**S** — Special Unit Type

## Digit 3 — Furnace Type

**A** — Standard Temp Rise (20-60 F) LH  
**B** — Standard Temp Rise (20-60 F) RH  
**C** — High Temp Rise (60-90 F) LH  
**D** — High Temp Rise (60-90 F) RH  
**S** — Special Furnace Type

**Note:** LH = Left Hand, RH = Right Hand

## Digit 4 — Development Sequence

**A** — First Generation

## Digit 5, 6 — Input Capacity

### Single Furnace

**10** — 100 MBh Input  
**15** — 150 MBh Input  
**20** — 200 MBh Input  
**25** — 250 MBh Input  
**30** — 300 MBh Input  
**35** — 350 MBh Input  
**40** — 400 MBh Input

### Double Furnace

**50** — 500 MBh Input  
**60** — 600 MBh Input  
**70** — 700 MBh Input  
**80** — 800 MBh Input

### Triple Furnace

**12** — 1200 MBh Input  
**SS** — Special Unit

## Digit 7 — Venting Type

**G** — Gravity Venting  
**P** — Power Venting  
**S** — Special Venting

## 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 (Intermittent Pilot Ignition)

**A** — Single-Stage  
**B** — Two-Stage  
**G** — Electronic Modulating With Room T-Stat  
**H** — Electronic Modulating With Duct T-Stat  
**J** — Electronic Modulating With Duct T-Stat and Override Room Thermostat  
**K** — Electronic Modulating W/External 4-20 mA Input (Furnace 1)  
**L** — Electronic Modulating W/External 4-20 mA Input (All furnaces)  
**M** — Electronic Modulating W/External 0-10 VDC Input (Furnace 1)  
**N** — Electronic Modulating W/External 0-10 VDC Input (All furnaces)  
**P** — Two-Stage Remote Temperature Control  
**R** — Three-Stage Remote Temperature Control  
**T** — Four-Stage Remote Temperature Control  
**U** — S-350 2 Stage Modular Electronic Control System  
**W** — S-350 3 Stage Modular Electronic Control System  
**X** — S-350 4 Stage Modular Electronic Control System  
**Y** — S-350 6 Stage Modular Electronic Control System  
**S** — Special Gas Control

## Digits 10,11 — Design Sequence

**F0** — Design Sequence

## Digit 12 — Fuel Type

**N** — Natural Gas  
**P** — LP (Propane) Gas  
**L** — Natural Gas with 100% Lockout  
**S** — Special Fuel Type

## Digit 13 — Heat Exchanger Material

**1** — Aluminized Steel  
**2** — #409 Stainless Steel (First Furnace Only)  
**3** — #409 Stainless Steel (All Furnace Sections)  
**4** — #321 Stainless Steel (First Furnace Only)  
**5** — #321 Stainless Steel (All Furnace Sections)  
**6** — #409 Stainless Steel Package (First Furnace Only)  
**7** — #409 Stainless Steel Package (All Furnace Sections)  
**8** — #321 Stainless Steel Package (First Furnace Only)  
**9** — #321 Stainless Steel Package (All Furnace Sections)  
**S** — Special Heat Exchanger Package

## Digit 14 — Rooftop Arrangements

**A** — Duct Furnace  
**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 Rooftop Arrangement

## Digit 15 — Rooftop Heating Unit Motor Selection

**0** — None (Rooftop duct furnace)  
**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  
**V** — 1 HP. w/VFD  
**W** — 1-1/2 HP. w/VFD



## Engineered Products Model Number Description

### Digit 15 — Rooftop Heating Unit Motor Selection (cont.)

- X — 2 HP. w/VFD
- Y — 3 HP. w/VFD
- Z — 5 HP. w/VFD
- 1 — 7-1/2 HP. VFD
- 2 — 10 HP. VFD
- 3 — 15 HP. VFD
- S — Special Motor

### Digit 16 — Motor Speed

- 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
- S — Special Motor Speed & 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

- 0 — None (Rooftop Duct Furnace)
- 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/Pressure Control (Space Pressure)

### Digit 19— Air Control and Damper Arrangements (cont.)

- Q — OA/RA Mod. Mtr. w/CO<sub>2</sub>Sensor
- R — OA/RA Mod. Mtr. w/S-350-P Proportional Mixed Air Control/SR
- U — OA/RA MTR. W/External 0-10 VDC 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

- A — Orifices For Elevation Above 2000 Feet (Specify Elevation)
- B — 12" Evaporative Media (Celdek)
- C — Moisture Eliminators
- D — Horizontal Return
- E — Air Flow Proving Switch
- F — Freezestat
- G — Fan Time Delay Control (Duct Furnace Only)
- H — Return Air Firestat
- J — Supply Air Firestat
- K — Manual Blower Switch
- L — 409 Stainless Steel Furnace Drip Pan
- M — Input De-Rate
- N — Double Wall Construction
- P — Low Leak Dampers
- Q — Clogged Filter Switch
- R — High/Low Gas Pressure Limit Switches
- T — Status Indicator Lights (Elec Cabinet)
- V — Manual Reset High Limit Switch
- W — 8" Evaporative Media (Glasdek)
- X — 12" Evaporative Media (Glasdek)
- Y — Ambient Lockout
- Z — Freezestat for Evap. Cooler
- 0 — No Filters Selected
- 1 — 1" Washable (Standard) Filters
- 2 — 2" Washable Filters
- 3 — 2" Throwaway Filters
- 4 — 1" Pleated Media Filters
- 5 — 2" Pleated Media Filters
- 6 — Service Convenience Package
- 7 — Through the Base Utilities

### Digit 22 — VFD Accessories

- 1 — Field Installed VFD
- 2 — Factory Installed VFD
- 3 — VFD Remote Keypad (Field Installed)
- 4 — CO<sub>2</sub> Sensor, 100% Outside Air
- 5 — CO<sub>2</sub> Sensor, Mixed Air
- 6 — Pressure Sensor
- 7 — 2-Speed VFD Relays
- 8 — 3-Speed VFD Relays
- 9 — VFD Enclosure





# Engineered Products Outdoor Duct Furnaces

## Natural and Power Vent

Trane Engineered Products Rooftop Duct Furnaces are ETL certified. Duct Furnaces are available as Natural or Power Vented Units. Sizes range from 100 MBH to 400 MBH (29.3 kW to 117.1 kW) per furnace with double and triple in series configurations available, for a capacity range of 100 MBH to 1,200 MBH (29.3 to 351.4 kW). All Trane Rooftop Duct Furnaces are designed with ease of service in mind and feature quick opening access side panels right or left side, slide-out burner drawer, terminal block connection, solid state automatic pilot ignition, combination gas valve and automatic reset safety limits. Duct furnaces may be ordered to operate with Natural or LP gas (Gas Type Model digit 12) and are standard for altitudes at 0 to 2,000 ft. (610m). Units are also available for higher elevations. Specify when ordering if unit is above 2,000 ft. (610m).

The Natural Vent units (Venting Type "G") utilize an innovative vent cap that vents products of combustion through the center flue and out the top of the vent cap. Fresh air for combustion is drawn through a protective grill at the base of the cap. This balance of combustion air and flue gas discharge ensure trouble free operation under all wind conditions. The vent cap is shipped separately for on-site installation and should not be altered in any way.

Power Vented units (Venting Type "P") eliminate the need for a vent cap, therefore lowering the overall height of the unit. A power ventor assembly, consisting of a 1/20 Hp. blower motor, is utilized to mechanically exhaust flue gases. The louvered intake and exhaust ports are built into a one piece access door.

Trane Engineered Products Rooftop Duct Furnaces are available in two types: Standard Temperature Rise type "A" and "B", and High Temperature Rise type "C" and "D" (Furnace Type Model digit 3). Standard Temperature rise units have a lower pressure drop across the heat exchanger, allowing higher air flow capacities and an 80% efficiency rating with  $\Delta T$  of 20-60°F (11-33°C) per furnace. Standard Temperature Rise type furnaces are available in single, double and triple series capacities (Capacity Model digits 5,6 "10-12"). High Temperature rise units are configured for higher temperature rise and have a higher pressure drop across the furnace section of the unit and an 80% efficiency rating with  $\Delta T$  of 60-90°F (33-50°C). The High Temperature Rise type furnace is only available in single furnace capacities (Capacity Model digits 5,6 "10-40"). The maximum discharge air temperature for all duct furnaces is 150°F (66°C).

All Trane Engineered Products Rooftop Duct Furnaces are constructed with aluminized steel heat exchangers, flue collectors and burners. Optional 409 or 321 stainless steel heat exchanger, 409 stainless steel burner, and 409 stainless steel flue collector are also available (Heat Exchanger Material Model Digit 13). An optional 409 or 321 Stainless Steel heat exchanger is recommended for the following applications:

- When the combined temperature of outside and return air is below 40°F (4.4°C).
- Whenever there is an evaporative cooler or cooling coil upstream of the furnace section(s).



## Engineered Products Outdoor Duct Furnaces

---

**Figure 1. Natural vent duct furnace**



**Figure 2. Power vent duct furnace**



# Outdoor Duct Furnace Performance Data

Venting Type G or P, Capacity 10–12, Furnace Type A,B / C,D, Rooftop Arrangement A

**Table 1. Outdoor duct furnace performance data**

Capacity [CA] Furnace Type [FT] (kW)	INPUT RATING BTU/Hr (kW)	OUTPUT RATING BTU/Hr	EFF. % MIN.	CFM (cu. m/s) MIN.	ΔT °F (°C) MAX.	Press. Drop In. of Water (kPa)	CFM (cu. m/s) MAX.	ΔT °F (°C) MIN.	Press. Drop In. of Water (kPa)	Nat. Gas Inlet in.	L.P. Gas Inlet in.
10 A/B	100,000 (29.3)	80,000 (23.4)	80	1,235 (0.583)	60 (33)	0.15 (0.04)	3,704 (1.748)	20 (11)	1.10 (0.27)	1/2	1/2
15 A/B	150,000 (43.9)	120,000 (35.1)	80	1,852 (0.874)	60 (33)	0.15 (0.04)	5,556 (2.622)	20 (11)	1.00 (0.25)	1/2	1/2
20 A/B	200,000 (58.6)	160,000 (46.9)	80	2,469 (1.165)	60 (33)	0.15 (0.04)	7,407 (3.496)	20 (11)	1.05 (0.26)	1/2	1/2
25 A/B	250,000 (73.2)	200,000 (58.6)	80	3,086 (1.457)	60 (33)	0.15 (0.04)	9,259 (4.370)	20 (11)	1.08 (0.27)	3/4	3/4
30 A/B	300,000 (87.8)	240,000 (70.3)	80	3,704 (1.748)	60 (33)	0.15 (0.04)	11,111 (5.244)	20 (11)	1.10 (0.27)	3/4	3/4
35 A/B	350,000 (102.5)	280,000 (82.0)	80	4,321 (2.040)	60 (33)	0.15 (0.04)	12,963 (6.119)	20 (11)	1.11 (0.28)	3/4	3/4
40 A/B	400,000 (117.1)	320,000 (93.7)	80	4,938 (2.331)	60 (33)	0.15 (0.04)	14,815 (6.993)	20 (11)	1.12 (0.28)	3/4	3/4
50 A/B	500,000 (146.4)	400,000 (117.1)	80	3,086 (1.457)	120 (67)	0.30 (0.07)	9,269 (4.375)	40 (22)	2.16 (0.54)	3/4	3/4
60 A/B	600,000 (175.7)	480,000 (140.6)	80	3,704 (1.748)	120 (67)	0.30 (0.07)	11,111 (5.244)	40 (22)	2.20 (0.55)	3/4	3/4
70 A/B	700,000 (205.0)	560,000 (164.0)	80	4,321 (2.040)	120 (67)	0.30 (0.07)	12,963 (6.119)	40 (22)	2.22 (0.55)	3/4	3/4
80 A/B	800,000 (234.3)	640,000 (187.4)	80	4,938 (2.331)	120 (67)	0.30 (0.07)	14,815 (6.993)	40 (22)	2.24 (0.56)	3/4	3/4
12 A/B	1,200,000 (351.4)	960,000 (281.1)	80	4,938 (2.331)	180 (100)	0.45 (0.11)	14,815 (6.993)	60 (33)	3.36 (0.84)	3/4	3/4
10 C/D	100,000 (29.3)	80,000 (23.4)	80	815 (0.384)	90 (50)	0.10 (0.02)	2,444 (1.153)	30 (17)	0.88 (0.22)	1/2	1/2
15 C/D	150,000 (43.9)	120,000 (35.1)	80	1,207 (0.570)	90 (50)	0.10 (0.02)	3,620 (1.708)	30 (17)	0.78 (0.19)	1/2	1/2
20 C/D	200,000 (58.6)	160,000 (46.9)	80	1,610 (0.760)	90 (50)	0.10 (0.02)	4,827 (2.278)	30 (17)	0.81 (0.20)	1/2	1/2
25 C/D	250,000 (73.2)	200,000 (58.6)	80	2,012 (0.950)	90 (50)	0.10 (0.02)	6,035 (2.848)	30 (17)	0.85 (0.21)	3/4	3/4
30 C/D*	300,000 (87.8)	240,000 (70.3)	80	2,414 (1.139)	90 (50)	0.10 (0.02)	7,242 (3.418)	30 (17)	0.86 (0.21)	3/4	3/4
35 C/D (G)	350,000 (102.5)	280,000 (82.0)	80	2,867 (1.353)	90 (50)	0.10 (0.02)	8,449 (3.987)	30 (17)	0.78 (0.19)	3/4	3/4
35 C/D (P)	325,000 (95.2)	260,000 (76.2)	80	2,663 (1.257)	90 (50)	0.10 (0.02)	7,988 (3.770)	30 (17)	0.78 (0.19)	3/4	3/4
40 C/D	400,000 (117.1)	320,000 (93.7)	80	3,277 (1.546)	90 (50)	0.10 (0.02)	9,831 (4.640)	30 (17)	0.88 (0.22)	3/4	3/4

**Notes:**

1. Ratings shown are for unit installations at elevations between 0 and 2000 ft. (610m).
2. \*Not available as Unit Type P.
3. For unit installations in U.S.A. above 2000 ft. (610m), the unit input must be derated by 4% for each 1000 ft. (305m) above sea level; refer to local codes, or in the absence of local codes, refer to the National Fuel Gas Code, ANSI Standard Z223.1-1996 (N.F.P. A. No. 54), or latest edition.
4. For installations in Canada, any references to deration at altitudes in excess of 2000 ft. (610m) are to be ignored. At altitudes of 2000 to 4500 ft. (610 to 1372m), the unit must be derated to 90% of the normal altitude rating, and be so marked in accordance with the ETL certification.

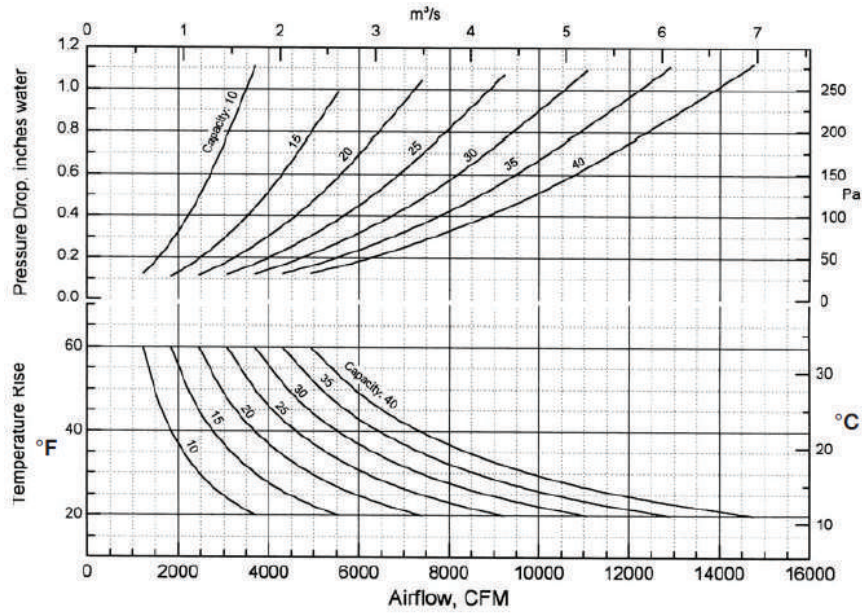


# Duct Furnace Performance

## Standard Temperature Rise

Furnace Type A,B, 20–60° F Temperature Rise

Figure 3. Standard temperature rise

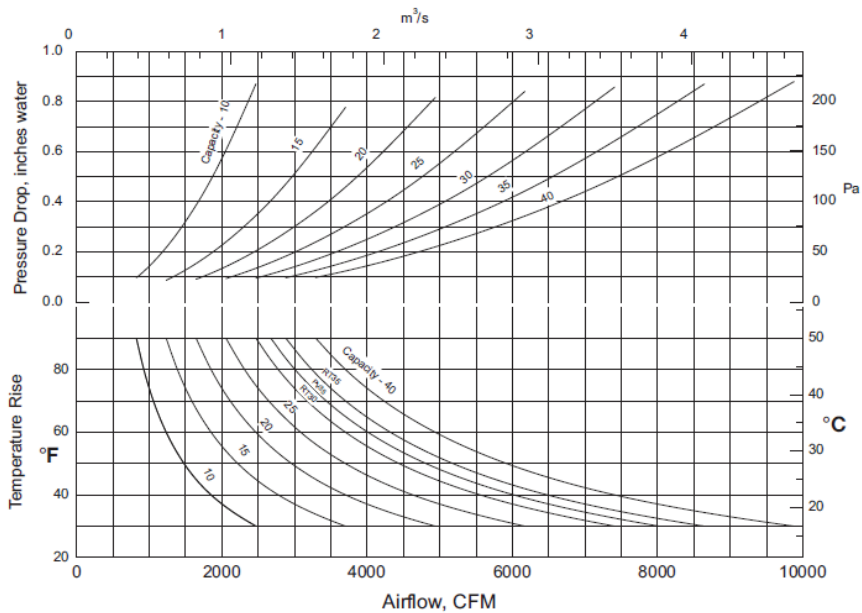


## High Temperature Rise

Furnace Type (C,D) 60–90° F Temperature Rise

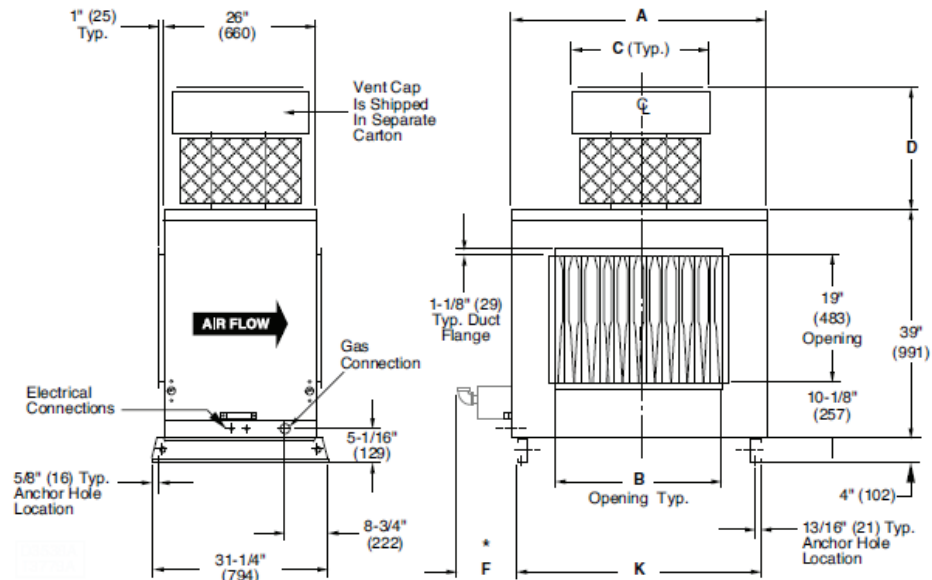
*Note: Furnace Type (C,D) Capacity 30 only available as Venting Type G).*

Figure 4. High temperature rise



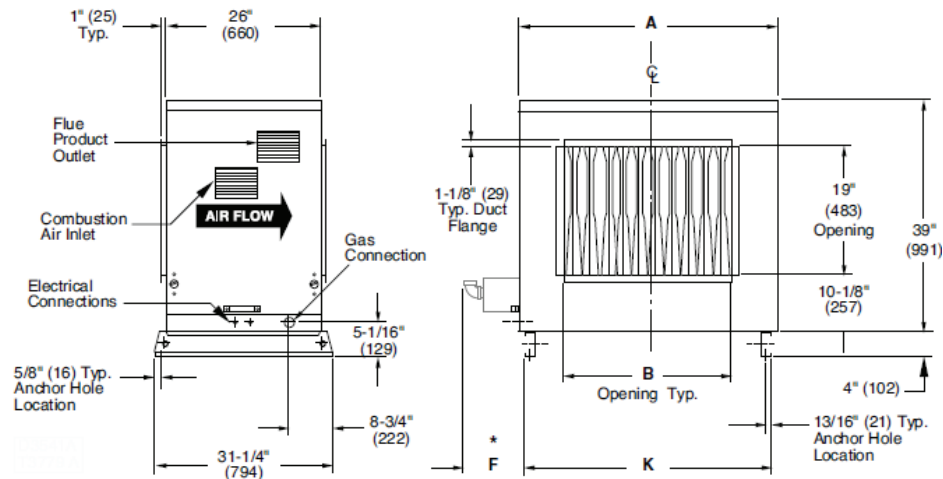
## Dimensional Data

**Figure 5. Rooftop arrangement "A" - capacities 10 - 40**  
Natural vent - 100/400 MBh unit sizes



*Note: See Table 2, p. 13 for tabulated dimensional data.*

**Figure 6. Rooftop arrangement "A" - capacities 10 - 40**  
Power vent - 100/400 MBh unit sizes



*Note: See Table 2, p. 13 for tabulated dimensional data.*

**Table 2. Dimensional data for rooftop duct furnaces, arrangement A**

Capacity (CA)	A	B	C	D USA	D CANADA	*F	K	GAS INLET	
								NAT	LP
10	32-7/8 (835)	15-9/16 (395)	12 (305)	11 (279)	20-11/16 (525)	19-3/8 (492)	30-3/16 (767)	1/2	1/2
15	32-7/8 (835)	18-5/16 (465)	21-1/2 (546)	16 (406)	25-3/16 (640)	23- 1/2 (597)	30-3/16 (767)	1/2	1/2
20	43-7/8 (1114)	23-13/16 (605)	23-1/2 (597)	16 (406)	25-3/16 (640)	26-1/4 (667)	41-3/16 (1046)	1/2	1/2



# Engineered Products Outdoor Duct Furnaces

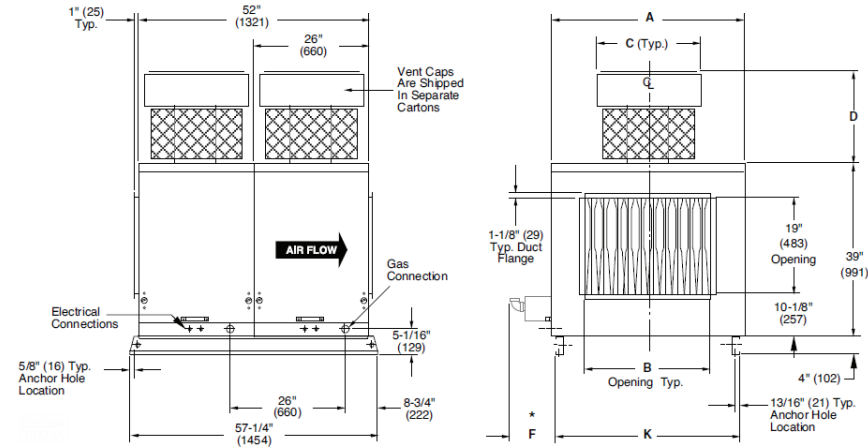
**Table 2. Dimensional data for rooftop duct furnaces, arrangement A (continued)**

Capacity (CA)	A	B	C	D USA	D CANADA	*F	K	GAS INLET	
								NAT	LP
25/50	43-7/8 (1114)	29-5/16 (745)	23-1/2 (597)	16 (406)	25-3/16 (640)	34-1/2 (876)	41-3/16 (1046)	3/4	3/4
30/60	54-7/8 (1394)	34-13/16 (884)	26 (660)	17-1/2 (445)	26-11/16 (678)	37-1/4 (946)	52-3/16 (1326)	3/4	3/4
35/70	54-7/8 (1394)	40-5/16 (1024)	26 (660)	17-1/2 (445)	26-11/16 (678)	45-1/2 (1156)	52-3/16 (1326)	3/4	3/4
40/80/12	60-3/8 (1534)	45-13/16 (1164)	26 (660)	17-1/2 (445)	26-11/16 (678)	51 (1295)	57-11/16 (1465)	3/4	3/4

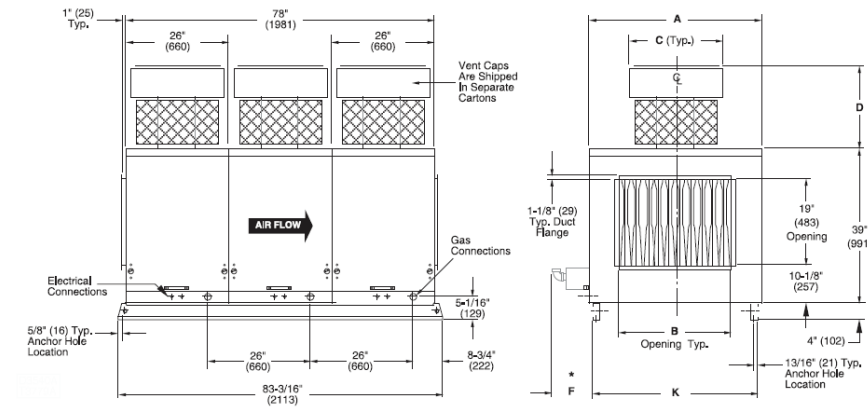
**Notes:**

- Dimensions are in inches. Dimensions in parenthesis are in millimeters.
- \* "F" Dimension is the recommended clearance to service the burner drawer(s).

**Figure 7. Rooftop arrangement "A" - capacities 50 - 80**



**Figure 8. Rooftop arrangement "A" - capacity 12**



**Note:** Arrangements shown above are for Natural Vent units. Contact Customer Service for Power Vent unit submittals.



# Packaged Rooftop Arrangements

## Heating and Cooling Units

Trane Packaged Rooftop Units are ETL certified to UL-1995 standard for heating, cooling and ventilating equipment. Units are available in one of 17 standard arrangements (Rooftop Arrangements, Model digit 14). Packaged heating and cooling units are suitable for commercial, institutional and industrial applications where external system pressure losses are as high as 2" W.C. (0.50 kPa).

Rooftop Arrangements are divided into two classifications "Standard" and "High-CFM" Blower types. The "Standard" blower units (Rooftop Arrangement "B-E") have a CFM range of 800-8,500 (0.4 - 4.0 m<sup>3</sup>/s). The Standard blower arrangement consists of a blower cabinet that houses dampers, filters and blower(s) in one cabinet; an optional Evaporative Cooling Unit with standard 8" or optional 12" (203 or 305 mm) media; and up to 2 Duct Furnaces (800 MBH Max.) (234.3 kW max) may also be included.

The "High-CFM" Blower Units (Rooftop Arrangement "G & J") have a range of 2,000 - 14,000 CFM (0.9 - 6.6 m<sup>3</sup>/s). These High-CFM Blower units utilize a separate Damper/ Filter cabinet with a "V" bank filter arrangement, a Blower Cabinet and up to 3 Duct Furnaces (1,200 MBH Max.) (351.4 kW).

Rooftop Arrangements "K & L" utilize the same cabinetry as Rooftop Arrangements "G & J" plus an additional Cooling Coil Cabinet capable of up to 20 tons and a CFM range of 960 - 6,300 (0.4 - 3.0 m<sup>3</sup>/s). These utilize up to 2 duct furnaces (800 MBH) (234.3 kW) max. This coil cabinet may also be suitable for field installations of heating coils.

Both "Standard" and "High-CFM" blower arrangements may also include a downturn Supply Air Plenum, Outside Air Intake Hood with standard Bird Screen or Optional Moisture Eliminators and a Roof Curb. All arrangements are rail mounted. We offer DX or Chilled Water type cooling coils.

For your safety and convenience, all Trane Packaged Heating and Cooling Units include the following: a 24 Volt control circuit; Solid State Fan Time Delay; 24 Volt in line Circuit Breaker; Blower Door Interlock Switch; a Reverse Air Flow Switch (Return Firestat); Pre-wired Fan On and Exhaust Fan Interlock Relay Sockets; and a Printed Circuit Main Connection Board with Terminal Block Wiring. All wiring is processed at our factory as harness assemblies, and each wire is permanently stamped with its wire number.

All cabinets are constructed of rugged 18 ga. material and painted Cloud Gray. The modular design of the cabinetry ensures reliability as well as serviceability with quick-release door latches, water-resistant sealed seams, insulated blower filter and plenum cabinets and down-rolled (hat type) rails mount tightly over the roof curb.

### Rooftop Arrangements Digit 14

(B-L assumes furnace section(s))

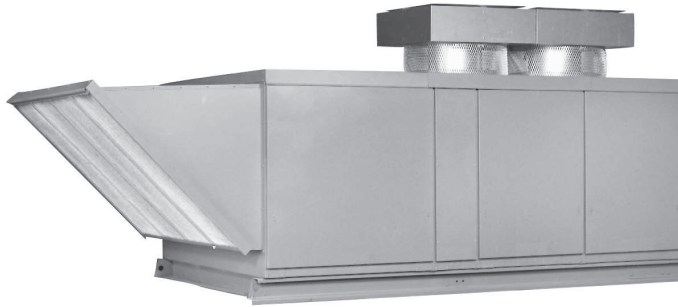
- A - Duct Furnace
- B - Blower (STANDARD)
- C - Blower (STANDARD) / Plenum
- D - Blower (STANDARD) / Evap. Cooling
- E - Blower (STANDARD) / Evap. Cooling / Plenum
- G - Blower (HIGH-CFM)
- J - Blower (HIGH-CFM) / Plenum
- K - Blower (HIGH-CFM) / Coil Cabinet
- L - Blower (HIGH-CFM) / Coil Cabinet / Plenum



## Packaged Rooftop Arrangements

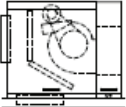

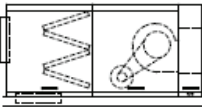
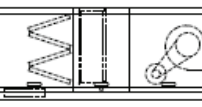
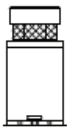

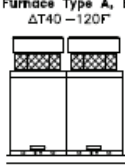
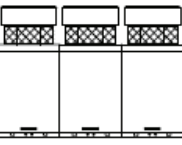
---

Figure 9. Standard blower unit





# Packaged Rooftop Arrangement Reference

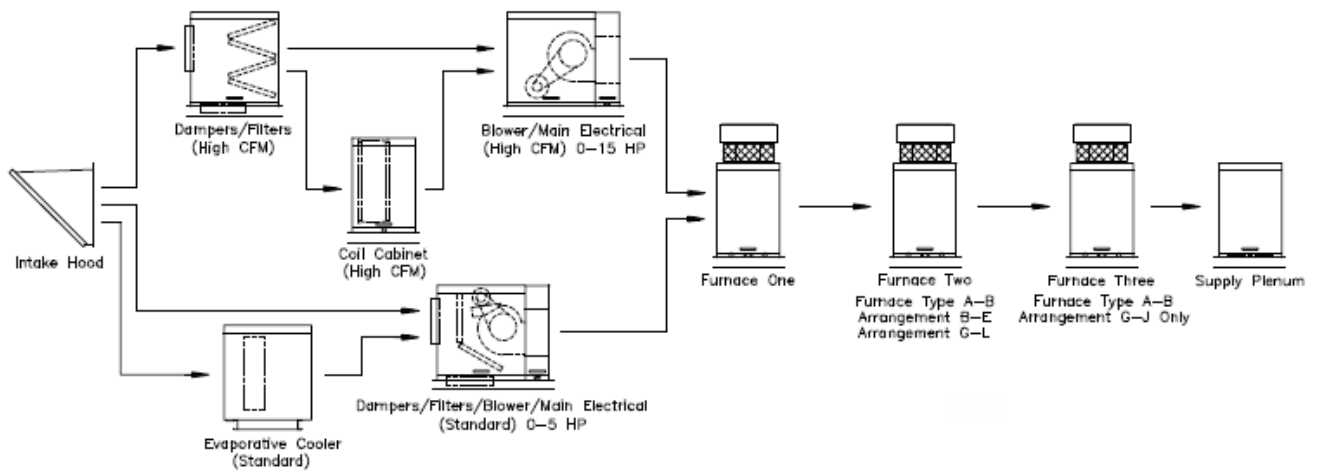
<p>*The maximum CFM for Rooftop Arrangements K and L is 6,300 (3.0 m<sup>3</sup>/s). A variable frequency drive may be utilized for non-cooling air flow up to 14,000 CFM (6.6 m<sup>3</sup>/2).</p>	<p>Standard Blower Rooftop Arrangements B, C</p> 	<p>Standard Blower w/Evap. Rooftop Arrangements D, E</p> 	<p>High CFM Blower Rooftop Arrangements G, J</p> 	<p>High CFM Blower w/Cooling Rooftop Arrangements K, L *†</p> 
<p>Furnace Type A, B ΔT20 - 60F</p>  <p>[0v]RT/PV-100/400H</p>	<p>Capacity 10 - 40</p> <p>10 - 1,200-3,500 CFM, 1/2 - 5 HP. 15 - 2,000-4,500 CFM, 1/2 - 5 HP. 20 - 2,500-5,500 CFM, 1/2 - 5 HP. 25 - 3,000-5,500 CFM, 3/4 - 5 HP. 30 - 3,700-7,000 CFM, 3/4 - 5 HP. 35 - 4,500-8,500 CFM, 3/4 - 5 HP. 40 - 5,000-8,500 CFM, 1 - 5 HP.</p> <p>ESP 0.1 - 2.0 in. WC</p>	<p>Capacity 10 - 40</p> <p>10 - 1,200-3,500 CFM, 1/2 - 5 HP. 15 - 2,000-4,500 CFM, 1/2 - 5 HP. 20 - 2,500-5,500 CFM, 1/2 - 5 HP. 25 - 3,000-5,500 CFM, 3/4 - 5 HP. 30 - 3,700-7,000 CFM, 3/4 - 5 HP. 35 - 4,500-8,500 CFM, 3/4 - 5 HP. 40 - 5,000-8,500 CFM, 1 - 5 HP.</p> <p>ESP 0.1 - 2.0 in. WC</p>	<p>Capacity 20 - 40</p> <p>20 - 2,500-7,400 CFM, 3/4 - 10 HP. 25 - 3,100-7,500 CFM, 3/4 - 10 HP. 30 - 3,700-11,000 CFM, 1/2 - 15 HP. 35 - 4,500-13,000 CFM, 3/4 - 15 HP. 40 - 5,000-14,000 CFM, 1 - 15 HP.</p> <p>ESP 0.1 - 2.0 in. WC</p>	<p>Capacity 10 - 40</p> <p>10 - 960-3,000 CFM, 1/2 - 5 HP. 15 - 960-3,000 CFM, 1/2 - 5 HP. 20 - 1,600-4,400 CFM, 3/4 - 10 HP. 25 - 1,600-4,400 CFM, 3/4 - 10 HP. 30 - 1,900-5,700 CFM, 1/2 - 15 HP. 35 - 1,900-5,700 CFM, 3/4 - 15 HP. 40 - 2,100-6,300 CFM, 1 - 15 HP.</p> <p>ESP 0.1 - 2.0 in. WC</p>
<p>Furnace Type C, D ΔT60 - 90F</p>  <p>[0v]RT/PV-100/400</p>	<p>Capacity 10-40</p> <p>10 - 800-1,200 CFM, 1/2 - 1-1/2HP. 15 - 1,200-1,800 CFM, 1/2 - 2 HP. 20 - 1,600-2,400 CFM, 1/2 - 2 HP. 25 - 2,000-3,000 CFM, 1/2 - 3 HP. 30 - 2,400-3,600 CFM, 1/2 - 5 HP. 35 - 2,600-4,200 CFM, 1/2 - 5 HP. 40 - 3,200-4,800 CFM, 1/2 - 5 HP.</p> <p>ESP 0.1 - 2.0 in. WC</p>	<p>Capacity 10-40</p> <p>10 - 800-1,200 CFM, 1/2 - 1-1/2HP. 15 - 1,200-1,800 CFM, 1/2 - 2 HP. 20 - 1,600-2,400 CFM, 1/2 - 2 HP. 25 - 2,000-3,000 CFM, 1/2 - 3 HP. 30 - 2,400-3,600 CFM, 1/2 - 5 HP. 35 - 2,600-4,200 CFM, 1/2 - 5 HP. 40 - 3,200-4,800 CFM, 1/2 - 5 HP.</p> <p>ESP 0.1 - 2.0 in. WC</p>	<p>NA</p>	<p>Capacity 20 - 40</p> <p>20 - 1,600-2,400 CFM, 1/2 - 2 HP. 25 - 1,600-3,000 CFM, 1/2 - 2 HP. 30 - 1,900-3,600 CFM, 1/2 - 5 HP. 35 - 1,900-4,200 CFM, 1/2 - 5 HP. 40 - 2,100-5,000 CFM, 1/2 - 5 HP.</p> <p>ESP 0.1 - 2.0 in. WC</p>
<p>Furnace Type A, B ΔT40 - 120F</p> 	<p>Capacity 50 - 80</p> <p>50 - 3,000-5,500 CFM, 1 - 5 HP. 60 - 3,700-6,500 CFM, 1 - 5 HP. 70 - 4,500-8,000 CFM, 1 - 5 HP. 80 - 5,000-8,000 CFM, 1 - 5 HP.</p> <p>ESP 0.1 - 2.0 in. WC</p>	<p>Capacity 50 - 80</p> <p>50 - 3,000-5,500 CFM, 1 - 5 HP. 60 - 3,700-6,500 CFM, 1 - 5 HP. 70 - 4,500-8,000 CFM, 1 - 5 HP. 80 - 5,000-8,000 CFM, 1 - 5 HP.</p> <p>ESP 0.1 - 2.0 in. WC</p>	<p>Capacity 50 - 80</p> <p>50 - 3,100-7,500 CFM, 1 - 10 HP. 60 - 3,700-11,000 CFM, 3/4 - 15 HP. 70 - 4,500-13,000 CFM, 1 - 15 HP. 80 - 5,000-13,500 CFM, 1 - 15 HP.</p> <p>ESP 0.1 - 2.0 in. WC</p>	<p>Capacity 50 - 80</p> <p>50 - 1,600-4,400 CFM, 1 - 10 HP. 60 - 1,900-5,700 CFM, 3/4 - 15 HP. 70 - 1,900-5,700 CFM, 1 - 15 HP. 80 - 2,100-6,300 CFM, 1 - 15 HP.</p> <p>ESP 0.1 - 2.0 in. WC</p>
<p>Furnace Type A, B ΔT60 - 180F</p> 	<p>NA</p>	<p>NA</p>	<p>Capacity 12</p> <p>12 - 5,500-13,000 CFM, 1-1/2 - 15 HP.</p> <p>ESP 0.1 - 2.0 in. WC</p>	<p>NA</p>

**Notes:**

- These minimum and maximum CFMs shown are for Arrangements K & L in the cooling mode. See Performance Data in Tables 8, 9, and 10 for heating mode specifications.
- Capacity 30 Power Vented units are not available in Furnace Type C & D (high temperature rise).

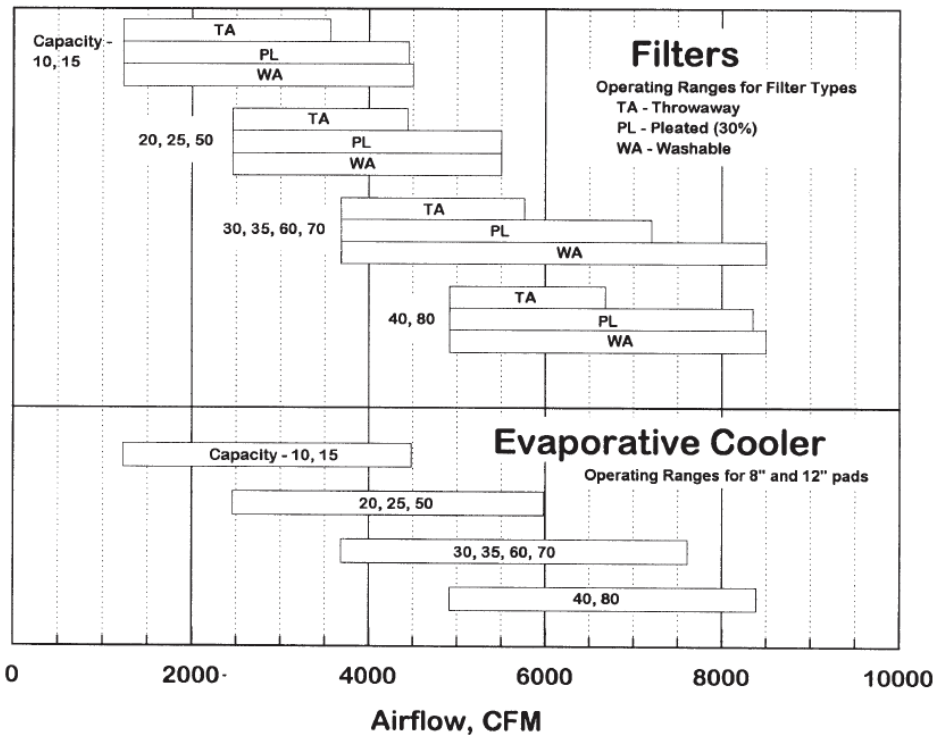
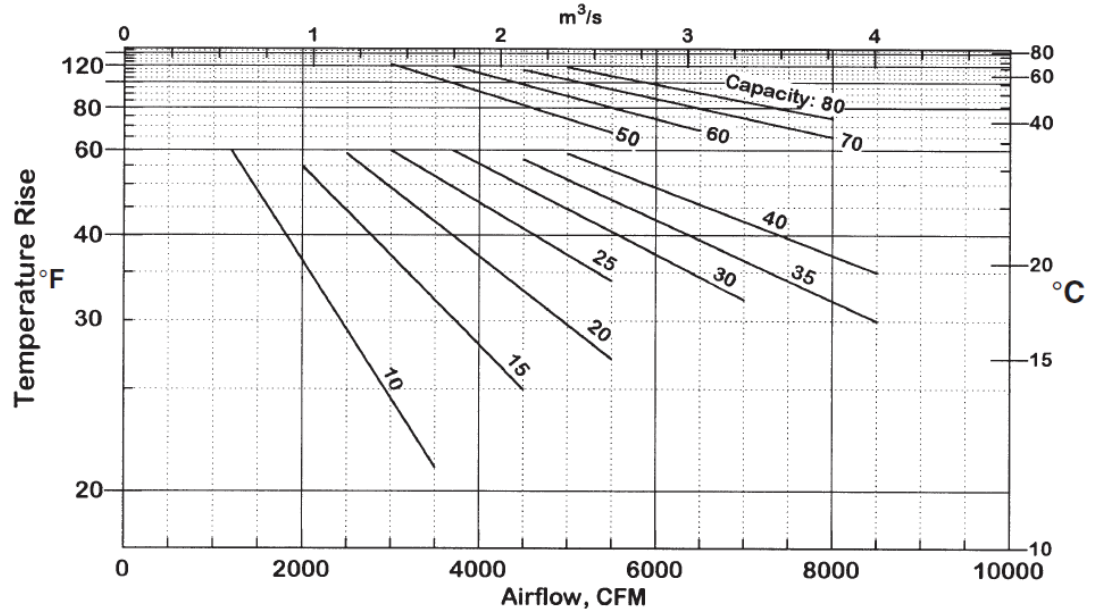


## Packaged Rooftop Arrangements



## Quick Sizer Charts

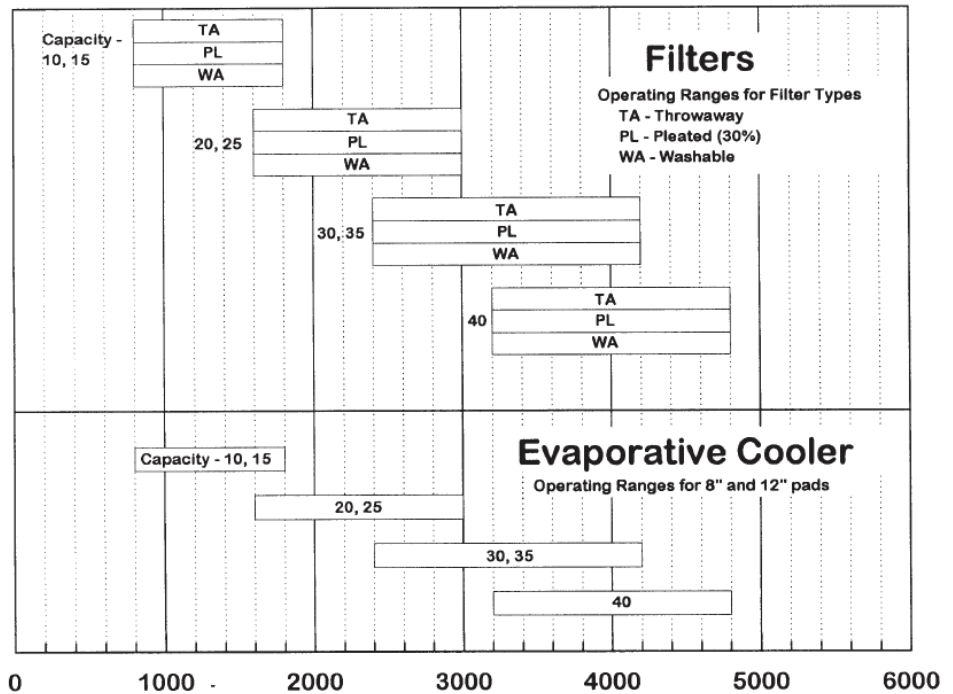
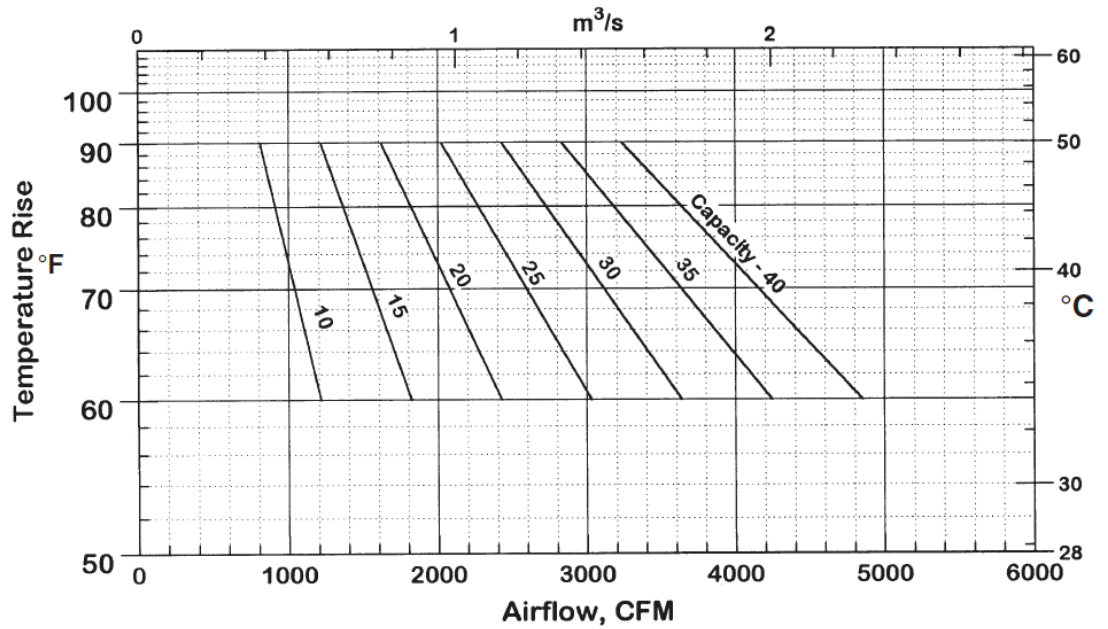
Figure 10. Furnacetype: A, B, standard temperature rise  
Rooftop arrangements: B, C, D, E





## Packaged Rooftop Arrangements

Figure 11. Furnace type: C,D, high temperature rise  
Rooftop arrangements: B, C, D, E



## Performance

Table 3. Furnace type: A,B high temperature rise, rooftop arrangements: B, C, D, E

Capacity Furnace Type	TR (°F)	CFM	Input BTU/H	Output BTU/H	TOTAL STATIC PRESSURE (INCHES OF WATER)									
					0.2		0.4		0.6		0.8		1	
					RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
10-A,B	49	1500	100,000	80,000	655	0.26	765	0.35	870	0.44	965	0.54	1060	0.64
	37	2000			795	0.55	890	0.65	975	0.77	1055	0.88	1130	1.00
	29	2500			950	1.01	1030	1.12	1105	1.25	1175	1.39	1240	1.54
	25	3000			1110	1.68	1175	1.82	1240	1.95	1305	2.10	1365	2.27
	21	3500			1270	2.59	1330	2.77	1385	2.93	1440	3.08	1495	3.25
15-A,B	55	2000	150,000	120,000	685	0.44	785	0.54	880	0.63	965	0.75	1045	0.87
	44	2500			805	0.78	890	0.91	970	1.04	1045	1.15	1120	1.28
	37	3000			935	1.28	1005	1.44	1075	1.60	1140	1.75	1205	1.88
	32	3500			1065	1.97	1130	2.15	1190	2.33	1250	2.52	1305	2.70
	28	4000			1200	2.88	1255	3.08	1310	3.28	1365	3.49	1415	3.70
	25	4500			1340	4.04	1390	4.26	1435	4.49	1485	4.72	1530	4.95
20-A,B	59	2500	200,000	160,000	555	0.44	650	0.55	740	0.66	820	0.78	895	0.89
	49	3000			630	0.71	710	0.83	790	0.96	865	1.10	935	1.23
	37	4000			790	1.58	855	1.72	915	1.86	975	2.03	1035	2.21
	29	5000			965	2.98	1010	3.15	1060	3.32	1110	3.50	1160	3.70
	27	7400			1050	3.92	1095	4.11	1135	4.30	1180	4.49	1225	4.70
25-A,B	60	3100	250,000	200,000	615	0.69	695	0.80	775	0.93	850	1.07	920	1.21
	53	4000			690	1.05	760	1.17	830	1.31	900	1.46	965	1.62
	46	5000			770	1.53	830	1.66	895	1.81	955	1.97	1015	2.14
	41	6000			855	2.13	905	2.29	960	2.44	1015	2.61	1070	2.79
	37	7000			940	2.88	985	3.05	1030	3.23	1080	3.40	1130	3.59
	34	7500			1025	3.80	1065	3.98	1110	4.17	1150	4.36	1195	4.56
30-A,B	60	3700	300,000	240,000	655	0.73	760	0.91	860	1.11	945	1.32	1030	1.54
	55	4000			690	0.89	790	1.09	885	1.28	970	1.51	1050	1.74
	44	6000			815	1.59	895	1.85	975	2.10	1055	2.32	1125	2.58
	37	8000			945	2.60	1015	2.91	1080	3.23	1150	3.53	1215	3.79
	34	10,000			1010	3.25	1075	3.58	1140	3.92	1200	4.26	1260	4.58
	32	11,000			1075	4.00	1140	4.35	1200	4.71	-	-	-	-
35-A,B	57	4500	350,000	280,000	535	0.70	640	0.90	730	1.11	815	1.32	890	1.55
	52	6000			575	0.91	670	1.13	755	1.36	835	1.59	910	1.83
	43	8000			650	1.48	735	1.72	810	1.99	880	2.26	950	2.54
	37	10,000			735	2.25	805	2.51	875	2.81	940	3.12	1000	3.44
	32	12,000			820	3.27	880	3.56	940	3.87	1000	4.21	1060	4.57
	30	13,000			860	3.88	920	4.18	980	4.51	1035	4.86	-	-
40-A,B	59	5000	400,000	320,000	560	0.89	655	1.10	745	1.33	825	1.56	900	1.80
	45	6000			675	1.78	750	2.03	825	2.30	895	2.60	960	2.90
	42	8000			715	2.19	785	2.44	855	2.73	920	3.04	985	3.36
	37	12,000			800	3.18	860	3.46	920	3.76	980	4.09	1040	4.45
	35	14,000			840	3.77	895	4.07	955	4.38	1015	4.72	-	-



## Packaged Rooftop Arrangements

**Table 3. Furnace type: A,B high temperature rise, rooftop arrangements: B, C, D, E (continued)**

Capacity Furnace Type	TR (°F)	CFM	Input BTU/H	Output BTU/H	TOTAL STATIC PRESSURE (INCHES OF WATER)									
					0.2		0.4		0.6		0.8		1	
					RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
50-A,B	120	3100	500,000	400,000	645	0.73	730	0.85	805	0.99	880	1.12	950	1.26
	105	4000			730	1.12	800	1.25	870	1.39	935	1.55	1000	1.71
	92	5000			815	1.63	875	1.77	940	1.92	1000	2.09	1055	2.27
	82	6000			900	2.27	955	2.43	1010	2.59	1065	2.77	1120	2.97
	74	7000			990	3.07	1040	3.25	1085	3.42	1135	3.61	1185	3.81
	67	7500			1080	4.05	1120	4.23	1165	4.43	1210	4.63	1255	4.84
60-A,B	120	3700	600,000	480,000	700	0.82	805	0.99	900	1.20	985	1.42	1065	1.64
	111	4000			740	1.00	840	1.18	930	1.40	1010	1.63	1090	1.86
	88	6000			880	1.79	960	2.05	1035	2.27	1110	2.53	1180	2.82
	74	10,000			1025	2.95	1090	3.27	1155	3.57	1220	3.83	1285	4.11
	68	11,000			1095	3.69	1160	4.03	1220	4.37	1280	4.67	1340	4.95
70-A,B	115	4500	700,000	560,000	590	0.80	685	1.01	770	1.22	855	1.43	930	1.66
	103	6000			630	1.04	720	1.27	805	1.50	880	1.74	950	1.98
	86	8000			720	1.68	800	1.95	870	2.22	940	2.50	1005	2.78
	74	12,000			815	2.55	885	2.85	950	3.17	1010	3.49	1070	3.81
	65	13,000			910	3.70	970	4.03	1030	4.38	1085	4.75	-	-
80-A,B	118	5000	800,000	640,000	605	0.98	695	1.21	780	1.44	860	1.67	935	1.91
	98	8000			690	1.59	770	1.84	845	2.12	915	2.39	980	2.67
	84	10,000			780	2.41	850	2.70	915	3.01	980	3.33	1040	3.65
	74	13,500			870	3.51	930	3.81	990	4.15	1050	4.51	1105	4.87
Capacity Furnace Type	TR (°F)	CFM	Input BTU/H	Output BTU/H	TOTAL STATIC PRESSURE (INCHES OF WATER)									
					1.2		1.4		1.6		1.8		2	
					RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
10-A,B	49	1500	100,000	80,000	1150	0.75	1235	0.87	1315	0.99	1390	1.12	1460	1.24
	37	2000			1205	1.12	1280	1.25	1355	1.39	1425	1.54	1490	1.68
	29	2500			1305	1.68	1365	1.83	1425	1.98	1485	2.13	1545	2.29
	25	3000			1420	2.44	1475	2.62	1530	2.79	1580	2.97	1635	3.14
	21	3500			1550	3.43	1600	3.63	1650	3.83	1695	4.04	1745	4.25
15-A,B	55	2000	150,000	120,000	1120	0.98	1195	1.11	1270	1.24	1345	1.37	1415	1.52
	44	2500			1190	1.43	1255	1.57	1320	1.72	1380	1.86	1440	2.01
	37	3000			1270	2.02	1335	2.18	1390	2.35	1450	2.53	1500	2.70
	32	3500			1360	2.87	1420	3.02	1475	3.17	1525	3.35	1580	3.55
	28	4000			1465	3.91	1515	4.12	1565	4.30	1615	4.48	1660	4.65
	25	4500			-	-	-	-	-	-	-	-	-	-
20-A,B	59	2500	200,000	160,000	965	1.02	1035	1.14	1105	1.28	1170	1.41	1230	1.56
	49	3000			1000	1.37	1065	1.52	1125	1.66	1180	1.81	1240	1.96
	37	4000			1090	2.39	1145	2.57	1200	2.76	1250	2.94	1300	3.13
	29	5000			1205	3.90	1255	4.12	1300	4.35	1345	4.57	1390	4.80
	27	7400			1270	4.91	-	-	-	-	-	-	-	-

Table 3. Furnace type: A,B high temperature rise, rooftop arrangements: B, C, D, E (continued)

Capacity Furnace Type	TR (°F)	CFM	Input BTU/H	Output BTU/H	TOTAL STATIC PRESSURE (INCHES OF WATER)									
					1.2		1.4		1.6		1.8		2	
					RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
25-A,B	60	3100	250,000	200,000	985	1.34	1050	1.49	1110	1.63	1170	1.78	1225	1.93
	53	4000			1025	1.78	1085	1.94	1140	2.11	1195	2.27	1250	2.44
	46	5000			1070	2.32	1125	2.51	1180	2.69	1235	2.87	1285	3.06
	41	6000			1125	2.98	1175	3.19	1225	3.39	1275	3.60	1320	3.80
	37	7000			1180	3.79	1230	4.00	1275	4.22	1320	4.45	1365	4.68
	34	7500			1240	4.77	1285	4.98	-	-	-	-	-	-
30-A,B	60	3700	300,000	240,000	1110	1.76	1190	2.01	1270	2.26	1345	2.53	1415	2.81
	55	4000			1125	1.98	1200	2.22	1275	2.48	1345	2.76	1415	3.05
	44	6000			1195	2.88	1260	3.17	1325	3.46	1385	3.75	1445	4.05
	37	8000			1280	4.07	1340	4.39	1400	4.74	-	-	-	-
	34	10,000			1320	4.86	-	-	-	-	-	-	-	-
	32	11,000			-	-	-	-	-	-	-	-	-	-
35-A,B	57	4500	350,000	280,000	970	1.78	1040	2.02	1110	2.28	1175	2.55	1235	2.82
	52	6000			980	2.08	1050	2.33	1115	2.60	1180	2.88	1240	3.16
	43	8000			1015	2.82	1080	3.10	1140	3.39	1195	3.69	1255	4.00
	37	10,000			1060	3.76	1120	4.09	1175	4.41	1230	4.74	-	-
	32	12,000			1115	4.94	-	-	-	-	-	-	-	-
	30	13,000			-	-	-	-	-	-	-	-	-	-
40-A,B	59	5000	400,000	320,000	970	2.04	1040	2.30	1105	2.56	1170	2.84	1230	3.12
	45	6000			1025	3.20	1085	3.50	1145	3.80	1200	4.12	1255	4.44
	42	8000			1045	3.68	1105	4.00	1160	4.33	1215	4.66	1270	4.99
	37	12,000			1095	4.81	-	-	-	-	-	-	-	-
	35	14,000			-	-	-	-	-	-	-	-	-	-
50-A,B	120	3100	500,000	400,000	1015	1.40	1075	1.55	1135	1.69	1195	1.84	1250	1.99
	105	4000			1060	1.87	1115	2.03	1175	2.20	1225	2.36	1280	2.53
	92	5000			1110	2.46	1165	2.64	1220	2.82	1270	3.01	1320	3.19
	82	6000			1170	3.17	1220	3.37	1270	3.58	1320	3.78	1365	3.99
	74	7000			1235	4.03	1280	4.25	1325	4.47	1370	4.70	1415	4.93
	67	7500			-	-	-	-	-	-	-	-	-	-
60-A,B	120	3700	600,000	480,000	1145	1.87	1225	2.12	1305	2.38	1375	2.65	1450	2.94
	111	4000			1165	2.10	1240	2.36	1310	2.63	1385	2.91	1455	3.20
	88	6000			1250	3.11	1310	3.40	1370	3.69	1430	3.99	1490	4.29
	74	10,000			1345	4.43	1405	4.78	-	-	-	-	-	-
	68	11,000			-	-	-	-	-	-	-	-	-	-
70-A,B	115	4500	700,000	560,000	1005	1.90	1075	2.15	1140	2.41	1205	2.68	1265	2.96
	103	6000			1020	2.23	1090	2.49	1155	2.76	1215	3.05	1275	3.34
	86	8000			1070	3.06	1130	3.35	1190	3.65	1245	3.96	1300	4.27
	74	12,000			1130	4.13	1185	4.46	1240	4.79	-	-	-	-
	65	13,000			-	-	-	-	-	-	-	-	-	-



## Packaged Rooftop Arrangements

**Table 3. Furnace type: A,B high temperature rise, rooftop arrangements: B, C, D, E (continued)**

Capacity Furnace Type	TR (°F)	CFM	Input BTU/H	Output BTU/H	TOTAL STATIC PRESSURE (INCHES OF WATER)									
					1.2		1.4		1.6		1.8		2	
					RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
80-A,B	118	5000	800,000	640,000	1005	2.16	1070	2.42	1135	2.69	1200	2.97	1260	3.26
	98	8000			1045	2.95	1105	3.24	1165	3.53	1225	3.84	1280	4.15
	84	10,000			1100	3.97	1155	4.29	1210	4.62	1265	4.96	-	-
	74	13,500			-	-	-	-	-	-	-	-	-	-

**Notes:**

- See Table 5 for Accessory Pressure Losses.
- Values in this table are based on "Basic Packaged Unit" which includes pressure drop of the Duct Furnace and "System Effect" of the blower module.
- Unit leaving air temperature is limited to 150 °F (66 °C), and is equal to: [Entering Air Temperature + Duct Furnace(s) Temperature Rise]
- Brake Horsepower (BHP) includes drive losses.
- "Total Static Pressure" is the sum of the units' "Internal" accessory pressure loss(es) from Table 5, plus the external static pressure.
- Ratings shown are for elevations between 0 and 2000 ft. (610 m). For unit installations in the U.S.A. above 2000 ft. (610 m), the unit input must be derated 4% for each 1000 ft. (305 m) above sea level; refer to local codes, or in the absence of local codes, refer to the National Fuel Gas Code, ANSI Standard Z223.1-1992 (N.F.P.A. No. 54), or latest edition. For installations in Canada, any references to deration at altitudes in excess of 2000 ft. (610m) are to be ignored. At altitudes of 2000 to 4500 ft. (610 to 1372m), the unit must be derated to 90% of the normal rating, and be so marked in accordance with the ETL certification.

**Table 4. Furnace type: C,D high temperature rise, rooftop arrangements: B, C, D, E**

Capacity Furnce Type	TR (°F)	CFM	Input BTU/H	Output BTU/H	TOTAL STATIC PRESSURE (INCHES OF WATER)									
					0.2		0.4		0.6		0.8		1	
					RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
10-C,D	81	900	100,000	80,000	575	0.11	730	0.18	855	0.25	965	0.33	1065	0.41
	73	1000			605	0.14	745	0.21	870	0.29	980	0.37	1080	0.46
	66	1100			635	0.17	770	0.25	890	0.33	995	0.42	1095	0.51
	60	1200			670	0.21	795	0.29	910	0.38	1015	0.47	1110	0.57
15-C,D	78	1400	150,000	120,000	630	0.23	745	0.31	855	0.39	960	0.49	1055	0.59
	68	6600			685	0.31	795	0.40	890	0.50	985	0.60	1075	0.70
	60	1800			740	0.42	845	0.52	935	0.62	1020	0.73	1100	0.84
20-C,D	81	1800	200,000	160,000	530	0.24	640	0.33	735	0.42	830	0.51	915	0.62
	73	2000			560	0.31	665	0.41	755	0.50	845	0.60	925	0.71
	66	2200			595	0.40	695	0.50	780	0.60	860	0.71	940	0.82
	60	2400			635	0.49	725	0.60	805	0.71	885	0.83	955	0.95
25-C,D	81	2250	250,000	200,000	580	0.39	680	0.50	765	0.60	850	0.71	925	0.82
	73	2500			625	0.51	715	0.63	795	0.74	875	0.86	945	0.98
	66	2750			665	0.66	750	0.78	830	0.90	905	1.03	970	1.16
	60	3000			710	0.83	790	0.96	865	1.10	935	1.23	1000	1.37
30-A,B G only	81	2700	300,000	240,000	625	0.43	740	0.58	850	0.75	960	0.94	1055	1.14
	73	3000			665	0.54	775	0.72	875	0.90	975	1.09	1070	1.30
	60	3600			750	0.86	850	1.05	940	1.26	1025	1.47	1110	1.70
35-C,D G	75	3400	350,000	280,000	535	0.46	645	0.62	745	0.79	840	0.98	920	1.19
	69	3700			560	0.56	665	0.73	760	0.91	850	1.11	935	1.32
	60	4200			605	0.76	705	0.95	790	1.15	875	1.36	950	1.59



Table 4. Furnace type: C,D high temperature rise, rooftop arrangements: B, C, D, E (continued)

Capacity Furnace Type	TR (°F)	CFM	Input BTU/H	Output BTU/H	TOTAL STATIC PRESSURE (INCHES OF WATER)									
					0.2		0.4		0.6		0.8		1	
					RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
35-C,D P	90	2700	325,000	260,000	490	0.29	610	0.39	720	0.56	817	0.73	903	0.92
	80	3000			504	0.35	632	0.49	731	0.66	826	0.84	912	1.03
	67	3600			557	0.53	663	0.69	759	0.88	850	1.07	933	1.28
	60	4000			591	0.67	691	0.86	781	1.05	866	1.26	947	1.48
40-C,D	81	3600	400,000	320,000	535	0.50	645	0.66	740	0.84	830	1.04	915	1.24
	73	4000			570	0.64	670	0.82	760	1.01	845	1.22	930	1.43
	66	4400			605	0.80	700	1.01	785	1.21	865	1.43	945	1.66
	60	4800			640	1.00	730	1.22	815	1.44	890	1.67	960	1.91
Capacity Furnace Type	TR (°F)	CFM	Input BTU/H	Output BTU/H	TOTAL STATIC PRESSURE (INCHES OF WATER)									
					1.2		1.4		1.6		1.8		2	
					RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
10-C,D	81	900	100,000	80,000	1150	0.50	1230	0.58	1305	0.67	1375	0.76	1440	0.86
	73	1000			1165	0.55	1245	0.64	1320	0.74	1390	0.83	1455	0.93
	66	1100			1180	0.61	1260	0.71	1335	0.81	1410	0.91	1475	1.01
	60	1200			1195	0.67	1280	0.77	1355	0.88	1425	0.99	1490	1.10
15-C,D	78	1400	150,000	120,000	1150	0.70	1235	0.81	1315	0.93	1385	1.05	1460	1.17
	68	6600			1160	0.82	1245	0.94	1325	1.07	1400	1.19	1470	1.33
	60	1800			1180	0.96	1260	1.09	1340	1.22	1410	1.36	1480	1.50
20-C,D	81	1800	200,000	160,000	990	0.73	1060	0.84	1130	0.96	1200	1.09	1265	1.23
	73	2000			1000	0.83	1075	0.95	1140	1.07	1205	1.20	1265	1.34
	66	2200			1015	0.94	1085	1.07	1150	1.19	1215	1.33	1270	1.47
	60	2400			1030	1.07	1095	1.20	1160	1.34	1225	1.48	1285	1.62
25-C,D	81	2250	250,000	200,000	1000	0.94	1070	1.07	1140	1.20	1200	1.33	1260	1.47
	73	2500			1015	1.10	1085	1.23	1150	1.37	1210	1.51	1270	1.66
	66	2750			1035	1.29	1100	1.43	1160	1.57	1225	1.72	1280	1.87
	60	3000			1065	1.51	1125	1.66	1180	1.81	1240	1.96	1295	2.12
30-A,B G only	81	2700	300,000	240,000	1150	1.36	1235	1.58	1315	1.80	1390	2.04	1460	2.27
	73	3000			1160	1.53	1245	1.76	1325	2.00	1395	2.25	1470	2.50
	60	3600			1190	1.94	1270	2.20	1345	2.46	1415	2.74	1485	3.02
35-C,D G	75	3400	350,000	280,000	1000	1.40	1070	1.63	1140	1.88	1210	2.14	1275	2.41
	69	3700			1010	1.55	1080	1.78	1145	2.03	1210	2.29	1275	2.57
	60	4200			1025	1.82	1095	2.07	1160	2.33	1225	2.60	1285	2.88
35-C,D P	90	2700	325,000	260,000	990	1.14	1069	1.36	1145	1.59	1215	1.82	1282	2.08
	80	3000			992	1.24	1071	1.47	1145	1.71	1215	1.96	1282	2.22
	67	3600			1009	1.50	1080	1.74	1148	1.98	1215	2.24	1280	2.52
	60	4000			1023	1.71	1092	1.95	1158	2.21	1221	2.47	1282	2.75



## Packaged Rooftop Arrangements

**Table 4. Furnace type: C,D high temperature rise, rooftop arrangements: B, C, D, E (continued)**

Capacity Furnace Type	TR (°F)	CFM	Input BTU/H	Output BTU/H	TOTAL STATIC PRESSURE (INCHES OF WATER)									
					1.2		1.4		1.6		1.8		2	
					RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
40-C,D	81	3600	400,000	320,000	995	1.46	1065	1.69	1135	1.94	1200	2.20	1265	2.47
	73	4000			1005	1.66	1075	1.90	1145	2.15	1205	2.42	1265	2.69
	66	4400			1020	1.90	1090	2.15	1155	2.41	1215	2.68	1275	2.96
	60	4800			1035	2.16	1100	2.42	1165	2.69	1230	2.97	1285	3.26

**Notes:**

1. Refer to Table 5 for Accessory Pressure Losses.
2. Values in this table are based on the "Basic Packaged Unit" which includes pressure drop of the Duct Furnace(s) and "system effect" of the Blower Module.
3. Brake Horsepower (BHP) includes drive losses.
4. Unit leaving air temperature is limited to 150°F (66°C) and is equal to: Entering Air Temperature + Duct Furnace(s) Temperature Rise.
5. "Total Static Pressure" is the sum of the unit's "Internal" accessory pressure loss(es) from Table 5, plus the external static pressure.
6. Ratings shown are for elevations between 0 and 2000 ft. (610 m). For unit installations in the U.S.A. above 2000 ft. (610 m), the unit input must be derated 4% for each 1000 ft. (305 m) above sea level; refer to local codes, or in the absence of local codes, refer to the National Fuel Gas Code, ANSI Standard Z223.1-1992 (N.F.P.A. No. 54), or latest edition. For installations in Canada, any references to deration at altitudes in excess of 2000 ft. (610m) are to be ignored. At altitudes of 2000 to 4500 ft. (610 to 1372m), the unit must be derated to 90% of the normal rating, and be so marked in accordance with the ETL certification.

## Accessory Pressure Loss

**Table 5. Rooftop arrangements (B, C, D, E)**

Capacity	CFM	PRESSURE LOSS (INCHES OF WATER)										
		Airhood With		Filters					Supply Air Plenum	Evaporative media		Return or Outside Air Damper
				Throwaway	Washable		Pleated			8"	12"	
Screen	Mstr. Elim.	2"	1"	2"	1"	2"	8"	12"				
10	800	<0.01	0.01	0.03	<0.01	<0.01	0.03	0.01	0.02	0.01	0.02	0.01
	900	0.01	0.01	0.03	<0.01	<0.01	0.03	0.02	0.02	0.02	0.02	0.02
	1100	0.02	0.02	0.04	<0.01	<0.01	0.04	0.02	0.03	0.02	0.04	0.03
	1200	0.02	0.02	0.05	<0.01	<0.01	0.05	0.03	0.04	0.03	0.04	0.03
	1500	0.03	0.04	0.06	0.01	0.02	0.07	0.04	0.06	0.04	0.07	0.05
	2000	0.05	0.07	0.09	0.02	0.03	0.12	0.07	0.10	0.08	0.12	0.09
	2500	0.08	0.11	0.12	0.03	0.04	0.17	0.10	0.15	0.12	0.18	0.13
	3000	0.11	0.15	0.16	0.04	0.06	0.23	0.14	0.22	0.17	0.26	0.19
	3500	0.16	0.21	0.19	0.06	0.08	0.30	0.18	0.29	0.24	0.35	0.25
15	1200	0.02	0.02	0.05	<0.01	<0.01	0.05	0.03	0.03	0.03	0.04	0.03
	1400	0.03	0.03	0.06	<0.01	0.01	0.06	0.03	0.03	0.04	0.06	0.04
	1600	0.03	0.04	0.07	0.01	0.02	0.08	0.04	0.04	0.05	0.07	0.06
	1800	0.04	0.05	0.08	0.02	0.02	0.10	0.05	0.06	0.06	0.09	0.07
	2000	0.05	0.07	0.09	0.02	0.03	0.12	0.07	0.07	0.08	0.12	0.09
	2500	0.08	0.11	0.12	0.03	0.04	0.17	0.10	0.11	0.12	0.18	0.13
	3000	0.11	0.15	0.16	0.04	0.06	0.23	0.14	0.15	0.17	0.26	0.19
	3500	0.16	0.21	0.19	0.06	0.08	0.30	0.18	0.21	0.24	0.35	0.25
	4000	0.20	0.27	-	0.07	0.11	0.38	0.23	0.27	N/A	N/A	0.33
	4500	0.26	0.34	-	0.09	0.14	-	-	0.34	N/A	N/A	0.42

Table 5. Rooftop arrangements (B, C, D, E) (continued)

Capacity	CFM	PRESSURE LOSS (INCHES OF WATER)										
		Airhood With		Filters					Supply Air Plenum	Evaporative media		Return or Outside Air Damper
		Screen	Mstr. Elim.	Throwaway	Washable		Pleated			8"	12"	
		2"	1"	2"	1"	2"						
20	1600	0.02	0.02	0.05	<0.01	0.01	0.06	0.03	0.02	0.02	0.03	0.03
	1800	0.02	0.03	0.06	<0.01	0.01	0.07	0.04	0.03	0.02	0.03	0.03
	2000	0.02	0.03	0.07	0.01	0.02	0.08	0.04	0.03	0.03	0.04	0.04
	2200	0.03	0.04	0.08	0.01	0.02	0.09	0.05	0.04	0.03	0.05	0.05
	2400	0.03	0.05	0.09	0.02	0.02	0.11	0.06	0.05	0.04	0.06	0.05
	2500	0.04	0.05	0.09	0.02	0.03	0.12	0.07	0.05	0.04	0.07	0.06
	3000	0.05	0.07	0.12	0.03	0.04	0.16	0.09	0.07	0.06	0.10	0.08
	4000	0.09	0.13	0.17	0.05	0.07	0.26	0.16	0.13	0.11	0.17	0.15
	5000	0.15	0.20	-	0.07	0.11	0.38	0.23	0.21	0.18	0.27	0.23
	5500	0.18	0.25	-	0.09	0.13	0.44	0.28	0.25	0.22	0.32	0.28
25	2000	0.02	0.03	0.07	0.01	0.02	0.08	0.04	0.02	0.03	0.04	0.04
	2250	0.03	0.04	0.08	0.02	0.02	0.10	0.05	0.03	0.04	0.05	0.05
	2500	0.04	0.05	0.09	0.02	0.03	0.12	0.07	0.04	0.04	0.07	0.06
	2750	0.04	0.06	0.10	0.02	0.03	0.14	0.08	0.04	0.05	0.08	0.07
	3000	0.05	0.07	0.12	0.03	0.04	0.16	0.09	0.05	0.06	0.10	0.08
	4000	0.09	0.13	0.17	0.05	0.07	0.26	0.16	0.09	0.11	0.17	0.15
	4500	0.12	0.16	-	0.06	0.09	0.31	0.19	0.12	0.15	0.22	0.19
	5000	0.15	0.20	-	0.07	0.11	0.38	0.23	0.14	0.18	0.27	0.23
	5500	0.18	0.25	-	0.09	0.13	0.44	0.28	0.17	0.22	0.32	0.28
30	2400	0.02	0.03	0.06	0.01	0.01	0.07	0.04	0.02	0.03	0.04	0.03
	2700	0.02	0.03	0.07	0.01	0.02	0.09	0.05	0.03	0.03	0.05	0.04
	3000	0.03	0.04	0.08	0.02	0.02	0.10	0.06	0.03	0.04	0.06	0.05
	3300	0.04	0.05	0.09	0.02	0.03	0.12	0.07	0.04	0.05	0.07	0.06
	3600	0.04	0.06	0.10	0.02	0.03	0.14	0.08	0.05	0.06	0.09	0.07
	4000	0.05	0.08	0.12	0.03	0.04	0.17	0.10	0.06	0.07	0.11	0.08
	5000	0.09	0.12	0.16	0.04	0.06	0.24	0.14	0.09	0.11	0.17	0.13
	6000	0.12	0.17	-	0.06	0.09	0.33	0.20	0.13	0.16	0.24	0.19
	6500	0.14	0.20	-	0.07	0.11	0.38	0.23	0.16	0.19	0.29	0.22
7000	0.17	0.23	-	0.09	0.13	0.43	0.27	0.18	0.22	0.33	0.25	
35	2800	0.03	0.04	0.07	0.01	0.02	0.09	0.05	0.02	0.04	0.05	0.04
	3100	0.03	0.05	0.08	0.02	0.02	0.11	0.06	0.03	0.04	0.07	0.05
	3400	0.04	0.06	0.10	0.02	0.03	0.13	0.07	0.04	0.05	0.08	0.06
	3700	0.05	0.07	0.11	0.02	0.03	0.15	0.08	0.04	0.06	0.09	0.07
	4000	0.05	0.08	0.12	0.03	0.04	0.17	0.10	0.05	0.07	0.11	0.08
	5000	0.09	0.12	0.16	0.04	0.06	0.24	0.14	0.08	0.11	0.17	0.13
	6000	0.12	0.17	-	0.06	0.09	0.33	0.20	0.11	0.16	0.24	0.19
	7000	0.17	0.23	-	0.09	0.13	0.43	0.27	0.15	0.22	0.33	0.25
	8000	0.22	0.31	-	0.11	0.16	-	-	0.19	0.29	0.44	0.33
9000	0.28	0.39	-	-	-	-	-	0.24	N/A	N/A	0.42	



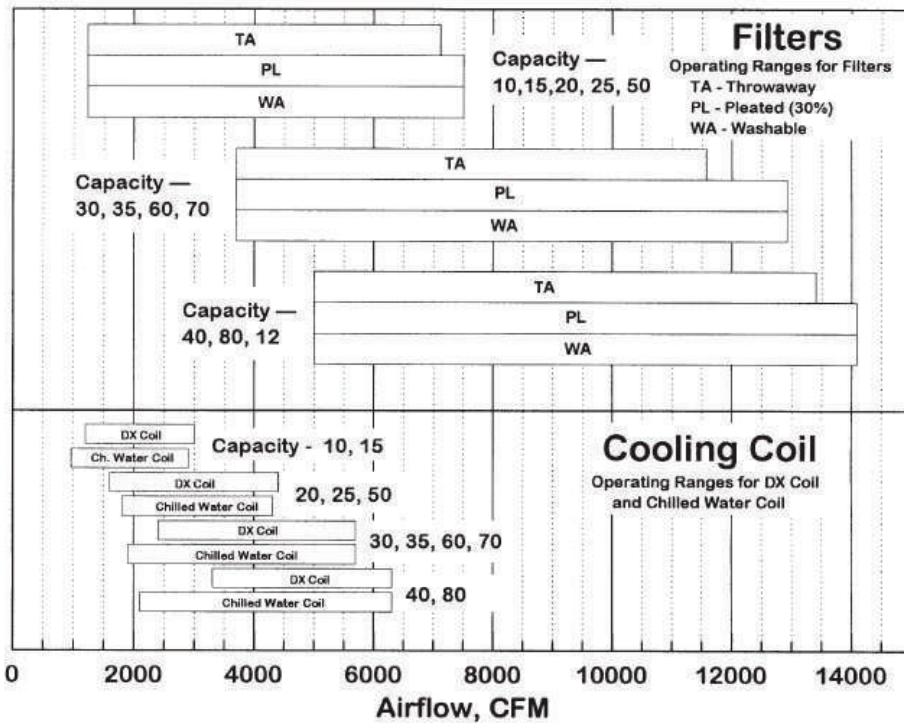
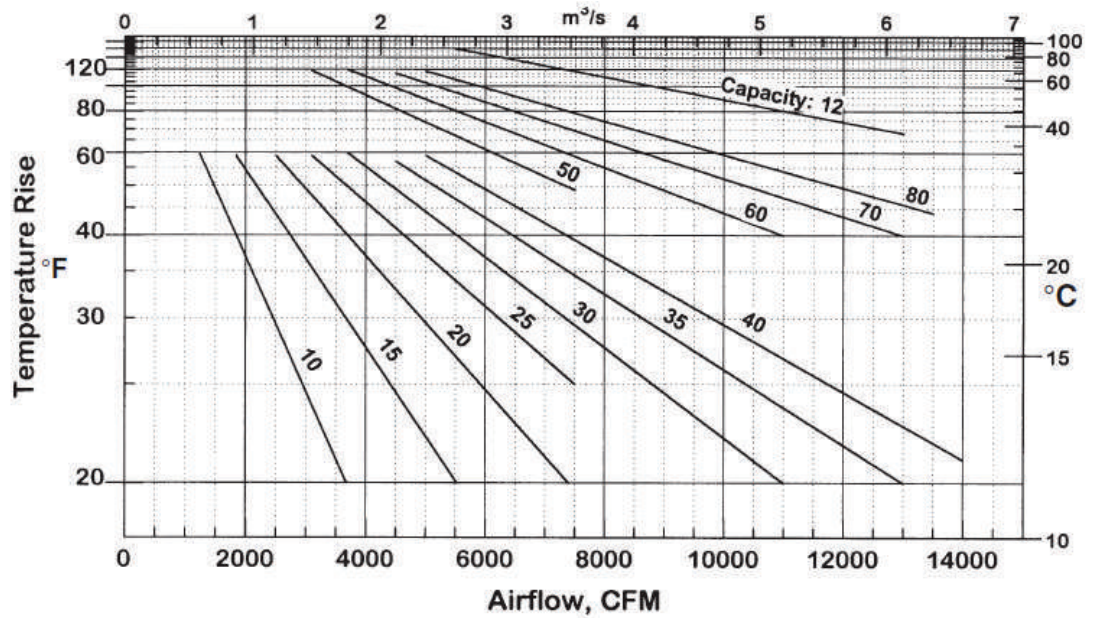
## Packaged Rooftop Arrangements

Table 5. Rooftop arrangements (B, C, D, E) (continued)

Capacity	CFM	PRESSURE LOSS (INCHES OF WATER)											
		Airhood With		Filters						Supply Air Plenum	Evaporative media		Return or Outside Air Damper
				Throwaway	Washable		Pleated		8"		12"		
		Screen	Mstr. Elim.		2"	1"	2"	1"		2"			
40	3200	0.03	0.04	0.07	0.01	0.02	0.09	0.05	0.02	0.04	0.06	0.04	
	3600	0.04	0.05	0.09	0.02	0.02	0.11	0.06	0.03	0.05	0.07	0.05	
	4000	0.04	0.06	0.10	0.02	0.03	0.13	0.07	0.04	0.06	0.09	0.07	
	4400	0.05	0.07	0.11	0.03	0.04	0.15	0.09	0.05	0.07	0.11	0.08	
	4800	0.06	0.09	0.13	0.03	0.04	0.18	0.10	0.05	0.09	0.13	0.10	
	5000	0.07	0.10	0.13	0.03	0.05	0.19	0.11	0.06	0.09	0.14	0.10	
	6000	0.10	0.14	0.17	0.05	0.07	0.26	0.16	0.08	0.14	0.20	0.15	
	7000	0.13	0.19	-	0.07	0.09	0.33	0.21	0.11	0.18	0.27	0.20	
	8000	0.17	0.24	-	0.09	0.12	0.42	0.26	0.15	0.24	0.36	0.26	
8500	0.20	0.28	-	0.10	0.14	-	-	0.17	0.27	0.41	0.30		
50	3000	0.05	0.07	0.12	0.03	0.04	0.16	0.09	0.05	0.06	0.10	0.08	
	3500	0.07	0.10	0.14	0.04	0.05	0.21	0.12	0.07	0.09	0.13	0.11	
	4000	0.09	0.13	0.17	0.05	0.07	0.26	0.16	0.09	0.11	0.17	0.15	
	4500	0.12	0.16	-	0.06	0.09	0.31	0.19	0.12	0.15	0.22	0.19	
	5000	0.15	0.20	-	0.07	0.11	0.38	0.23	0.14	0.18	0.27	0.23	
	5500	0.18	0.25	-	0.09	0.13	0.44	0.28	0.17	0.22	0.32	0.28	
60	3700	0.05	0.07	0.11	0.02	0.03	0.15	0.08	0.05	0.06	0.09	0.07	
	4000	0.05	0.08	0.12	0.03	0.04	0.17	0.10	0.06	0.07	0.11	0.08	
	5000	0.09	0.12	0.16	0.04	0.06	0.24	0.14	0.09	0.11	0.17	0.13	
	6000	0.12	0.17	-	0.06	0.09	0.33	0.20	0.13	0.16	0.24	0.19	
	6500	0.14	0.20	-	0.07	0.11	0.38	0.23	0.16	0.19	0.29	0.22	
70	4500	0.07	0.10	0.14	0.04	0.05	0.20	0.12	0.06	0.09	0.14	0.11	
	5000	0.09	0.12	0.16	0.04	0.06	0.24	0.14	0.08	0.11	0.17	0.13	
	6000	0.12	0.17	-	0.06	0.09	0.33	0.20	0.11	0.16	0.24	0.19	
	7000	0.17	0.23	-	0.09	0.13	0.43	0.27	0.15	0.22	0.33	0.25	
	8000	0.22	0.31	-	0.11	0.16	-	-	0.19	0.29	0.44	0.33	
80	5000	0.07	0.10	0.13	0.03	0.05	0.19	0.11	0.06	0.09	0.14	0.10	
	6000	0.10	0.14	0.17	0.05	0.07	0.26	0.16	0.08	0.14	0.20	0.15	
	7000	0.13	0.19	-	0.07	0.09	0.33	0.21	0.11	0.18	0.27	0.20	
	8000	0.17	0.24	-	0.09	0.12	0.42	0.26	0.15	0.24	0.36	0.26	

## Quick Sizer Charts

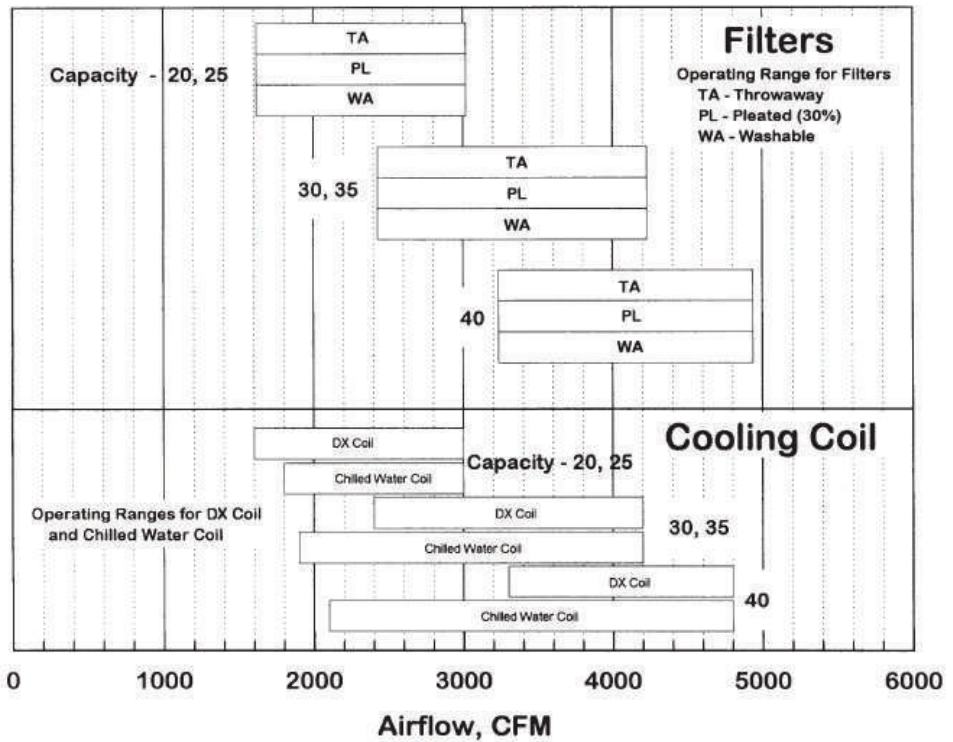
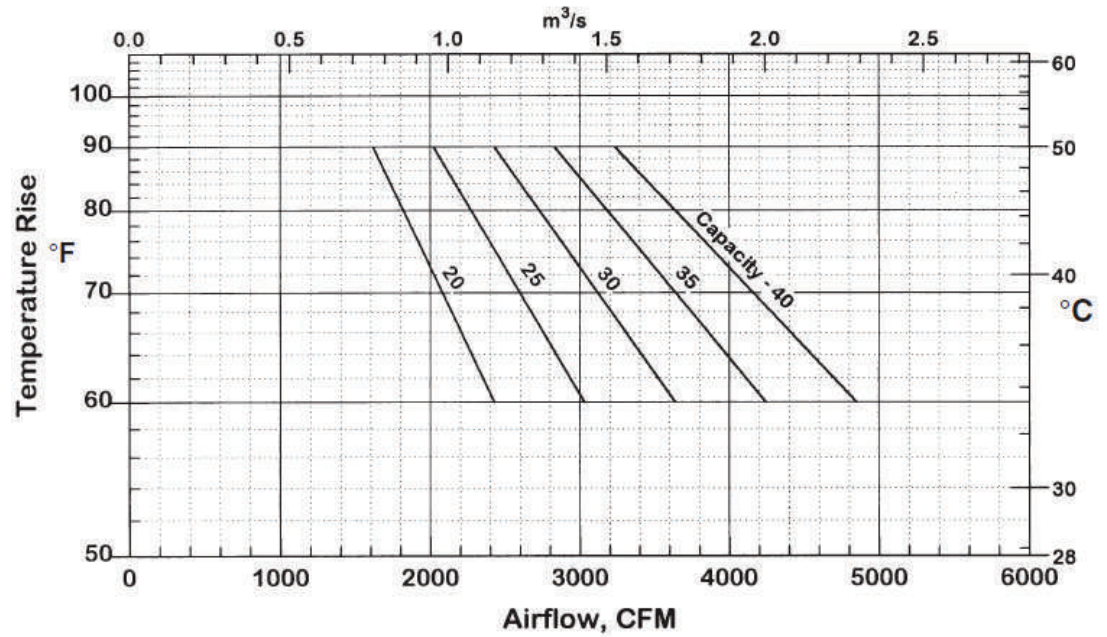
Figure 12. Furnace type: A,B, standard temperature rise  
Rooftop Arrangements: G, J, K, L





# Packaged Rooftop Arrangements

Figure 13. Furnace type: C,D, high temperature rise  
Rooftop arrangements: K, L



## Performance

The maximum CFM for Rooftop Arrangement K and L with cooling coil is 6,500 (3.1 m<sup>3</sup>/s). A variable frequency drive may be utilized for noncooling air flow up to 14,000 CFM (6.6 m<sup>3</sup>/s).

**Table 6. Furnace type: A, B, standard temperature rise  
Rooftop arrangements: G, J, K, L**

Capacity Furnace Type	TR (°F)	CFM	Input BTU/H	Output BTU/H	TOTAL STATIC PRESSURE (INCHES OF WATER)									
					0.2		0.4		0.6		0.8		1	
					RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
10-A,B <sup>(a)</sup>	60	1200	100,000	80,000	575	0.16	705	0.23	825	0.31	940	0.40	1040	0.50
	49	1500			655	0.26	765	0.35	870	0.44	965	0.54	1060	0.64
	37	2000			795	0.55	890	0.65	975	0.77	1055	0.88	1130	1.00
	29	2500			950	1.01	1030	1.12	1105	1.25	1175	1.39	1240	1.54
	25	3000			1110	1.68	1175	1.82	1240	1.95	1305	2.10	1365	2.27
	21	3500			1270	2.59	1330	2.77	1385	2.93	1440	3.08	1495	3.25
15-A,B <sup>(a)</sup>	55	2000	150,000	120,000	685	0.44	785	0.54	880	0.63	965	0.75	1045	0.871
	44	2500			805	0.78	890	0.91	970	1.04	1045	1.15	1120	1.28
	37	3000			935	1.28	1005	1.44	1075	1.60	1140	1.75	1205	1.88
	32	3500			1065	1.97	1130	2.15	1190	2.33	1250	2.52	1305	2.70
	28	4000			1200	2.88	1255	3.08	1310	3.28	1365	3.49	1415	3.70
	25	4500			1340	4.04	1390	4.26	1435	4.49	1485	4.72	1530	4.95
20-A,B	59	2500	200,000	160,000	425	0.36	495	0.46	565	0.55	635	0.67	700	0.80
	49	3000			490	0.59	540	0.68	600	0.80	660	0.92	720	1.05
	37	4000			630	1.30	660	1.41	700	1.54	740	1.68	785	1.84
	29	5000			770	2.46	795	2.59	825	2.73	850	2.88	880	3.05
	25	6000			915	4.18	940	4.34	960	4.50	980	4.66	1000	4.84
	23	6500			990	5.27	1010	5.45	1030	5.62	1050	5.80	1070	5.98
	21	7000			1060	6.55	1080	6.74	1100	6.93	1115	7.12	1135	7.31
	20	7400			1120	7.71	1140	7.92	1155	8.12	1175	8.31	1190	8.51
25-A,B	59	3100	250,000	200,000	495	0.62	540	0.72	595	0.83	655	0.95	715	1.08
	46	4000			620	1.26	650	1.37	685	1.49	725	1.63	770	1.79
	37	5000			755	2.39	785	2.52	810	2.66	835	2.80	865	2.96
	31	6000			895	4.05	920	4.21	945	4.37	965	4.53	985	4.70
	26	7000			1040	6.35	1060	6.55	1080	6.74	1100	6.92	1115	7.11
	25	7500			1110	7.77	1130	7.99	1150	8.19	1165	8.39	1185	8.59
	30-A,B	60			3700	300,000	240,000	415	0.47	505	0.65	590	0.86	665
55		4000	430	0.56	520			0.76	600	0.97	675	1.20	745	1.45
37		6000	560	1.51	630			1.79	690	2.08	750	2.38	805	2.69
28		8000	710	3.29	760			3.64	810	4.01	860	4.40	905	4.79
22		10,000	860	6.18	900			6.59	945	7.03	985	7.48	1025	7.95
20		11,000	940	8.12	975			8.57	1015	9.04	1050	9.52	1085	10.03



## Packaged Rooftop Arrangements

**Table 6. Furnace type: A, B, standard temperature rise Rooftop arrangements: G, J, K, L (continued)**

Capacity Furnace Type	TR (°F)	CFM	Input BTU/H	Output BTU/H	TOTAL STATIC PRESSURE (INCHES OF WATER)									
					0.2		0.4		0.6		0.8		1	
					RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
35-A,B	57	4500	350,000	280,000	405	0.58	490	0.76	565	0.96	640	1.19	705	1.43
	43	6000			500	1.22	555	1.43	615	1.66	675	1.90	735	2.16
	32	8000			645	2.70	675	2.93	715	3.20	760	3.51	805	3.83
	26	10,000			790	5.10	815	5.37	840	5.67	870	5.99	905	6.35
	22	12,000			935	8.66	960	8.98	980	9.31	1000	9.66	1025	10.04
	20	13,000			1010	10.95	1030	11.29	1050	11.64	1070	12.01	1090	12.39
40-A,B	59	5000	400,000	320,000	430	0.73	500	0.92	570	1.12	640	1.35	705	1.61
	49	6000			495	1.18	545	1.38	605	1.62	665	1.85	725	2.11
	37	8000			630	2.62	665	2.85	700	3.10	745	3.40	790	3.72
	29	10,000			775	4.96	800	5.23	825	5.51	855	5.82	885	6.16
	25	12,000			920	8.42	945	8.74	965	9.07	985	9.40	1010	9.75
	21	14,000			1065	13.22	1085	13.60	1105	13.97	1120	14.35	1140	14.73
50-A,B	119	3100	500,000	400,000	515	0.66	565	0.76	625	0.89	680	1.01	740	1.14
	92	4000			640	1.34	675	1.45	715	1.59	755	1.74	805	1.90
	74	5000			785	2.54	810	2.67	840	2.82	870	2.98	900	3.16
	61	6000			935	4.30	955	4.46	975	4.63	1000	4.80	1020	4.98
	53	7000			1080	6.76	1100	6.94	1120	7.13	1135	7.32	1155	7.52
	49	7500			1155	8.28	1175	8.48	1190	8.68	1205	8.88	1225	9.08
60-A,B	120	3700	600,000	480,000	455	0.55	545	0.74	625	0.95	700	1.19	775	1.45
	111	4000			480	0.66	560	0.86	640	1.09	710	1.33	780	1.59
	74	6000			640	1.83	700	2.12	755	2.42	810	2.73	865	3.05
	55	8000			810	4.00	855	4.38	905	4.78	950	5.17	990	5.57
	44	10,000			985	7.49	1025	7.96	1065	8.45	1100	8.94	1140	9.43
	40	11,000			1075	9.83	1110	10.35	1145	10.87	1180	11.41	1215	11.95
70-A,B	115	4500	700,000	560,000	445	0.67	525	0.85	600	1.07	670	1.31	735	1.55
	86	6000			545	1.39	610	1.63	670	1.86	725	2.12	780	2.42
	65	8000			695	3.06	735	3.35	785	3.66	830	3.98	875	4.29
	52	10,000			850	5.75	880	6.09	915	6.46	950	6.85	990	7.25
	43	12,000			1005	9.74	1030	10.13	1060	10.54	1085	10.97	1115	11.43
	40	13,000			1085	12.30	1110	12.71	1130	13.14	1155	13.59	1185	14.08
80-A,B	118	5000	800,000	640,000	460	0.82	535	1.01	605	1.22	670	1.47	735	1.74
	98	6000			525	1.31	585	1.54	645	1.77	705	2.02	760	2.30
	74	8000			670	2.88	710	3.15	750	3.45	800	3.77	845	4.08
	59	10,000			820	5.45	850	5.75	880	6.08	915	6.45	950	6.84
	49	12,000			975	9.24	995	9.58	1020	9.95	1045	10.35	1075	10.77
	44	13,500			1090	13.03	1110	13.41	1130	13.8	1150	14.23	1175	14.68



## Packaged Rooftop Arrangements

**Table 6. Furnace type: A, B, standard temperature rise Rooftop arrangements: G, J, K, L (continued)**

Capacity Furnace Type	TR (°F)	CFM	Input BTU/H	Output BTU/H	TOTAL STATIC PRESSURE (INCHES OF WATER)									
					0.2		0.4		0.6		0.8		1	
					RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
12-A,B	161	5500	1,200,000	960,000	530	1.16	595	1.38	660	1.61	720	1.87	780	2.17
	147	6000			565	1.46	625	1.70	685	1.93	740	2.20	800	2.50
	126	7000			640	2.21	690	2.49	745	2.76	795	3.03	845	3.34
	111	8000			715	3.20	760	3.50	805	3.82	850	4.13	895	4.45
	88	10,000			875	6.01	905	6.37	940	6.75	980	7.15	1015	7.55
	74	12,000			1035	10.16	1060	10.57	1090	11.01	1120	11.47	1150	11.94
	68	13,000			1115	12.81	1140	13.25	1165	13.72	1190	14.20	1220	14.71
Capacity Furnace Type	TR (°F)	CFM	Input BTU/H	Output BTU/H	TOTAL STATIC PRESSURE (INCHES OF WATER)									
					1.2		1.4		1.6		1.8		2	
					RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
10-A,B <sup>(b)</sup>	60	1200	100,000	80,000	1135	0.60	1220	0.70	1300	0.80	1375	0.91	1440	1.02
	49	1500			1150	0.75	1235	0.87	1315	0.99	1390	1.12	1460	1.24
	37	2000			1205	1.12	1280	1.25	1355	1.39	1425	1.54	1490	1.68
	29	2500			1305	1.68	1365	1.83	1425	1.98	1485	2.13	1545	2.29
	25	3000			1420	2.44	1475	2.62	1530	2.79	1580	2.97	1635	3.14
	21	3500			1550	3.43	1600	3.63	1650	3.83	1695	4.04	1745	4.25
15-A,B <sup>(a)</sup>	55	2000	150,000	120,000	120	0.98	1195	1.11	1270	1.24	1345	1.37	1415	1.52
	44	2500			1190	1.43	1255	1.57	1320	1.72	1380	1.86	1440	2.01
	37	3000			1270	2.02	1335	2.18	1390	2.35	1450	2.53	1500	2.70
	32	3500			1360	2.87	1420	3.02	1475	3.17	1525	3.35	1580	3.55
	28	4000			1465	3.91	1515	4.12	1565	4.30	1615	4.48	1660	4.65
	25	4500			-	-	-	-	-	-	-	-	-	-
20-A,B	59	2500	200,000	160,000	760	0.93	820	1.07	875	1.21	925	1.35	975	1.50
	49	3000			775	1.19	830	1.35	885	1.51	930	1.67	980	1.84
	37	4000			830	2.00	875	2.16	920	2.32	965	2.49	1005	2.68
	29	5000			915	3.24	950	3.43	990	3.63	1025	3.83	1065	4.02
	25	6000			1025	5.02	1050	5.23	1080	5.44	1110	5.67	1140	5.90
	23	6500			1090	6.171	110	6.37	1135	6.59	1160	6.82	1185	7.06
	21	7000			1155	7.50	1175	7.71	1195	7.93	1215	8.16	1240	8.41
	20	7400			1205	8.71	1225	8.92	1245	9.15	1265	9.38	1285	9.62
25-A,B	59	3100	250,000	200,000	770	1.22	820	1.37	875	1.54	925	1.71	970	1.87
	46	4000			815	1.95	860	2.10	905	2.26	950	2.43	990	2.61
	37	5000			895	3.13	930	3.32	970	3.52	1005	3.72	1045	3.92
	31	6000			1010	4.88	1030	5.07	1060	5.27	1085	5.49	1115	5.72
	26	7000			1135	7.30	1155	7.50	1170	7.70	1195	7.92	1215	8.15
	25	7500			1200	8.79	1215	9.00	1235	9.21	1250	9.43	1270	9.66



## Packaged Rooftop Arrangements

**Table 6. Furnace type: A, B, standard temperature rise Rooftop arrangements: G, J, K, L (continued)**

Capacity Furnace Type	TR (°F)	CFM	Input BTU/H	Output BTU/H	TOTAL STATIC PRESSURE (INCHES OF WATER)									
					1.2		1.4		1.6		1.8		2	
					RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
30-A,B	60	3700	300,000	240,000	815	1.60	885	1.89	950	2.19	1010	2.51	1065	2.82
	55	4000			815	1.72	880	2.02	945	2.33	1005	2.65	1065	2.99
	37	6000			860	3.01	910	3.34	960	3.68	1010	4.03	1055	4.40
	28	8000			950	5.19	995	6	1035	5.99	1075	6.41	1115	6.83
	22	10,000			1065	8.44	1100	8.93	1140	9.42	1175	9.92	1210	10.42
	20	11,000			1125	10.55	1160	11.08	1195	11.61	1230	12.16	1260	12.70
35-A,B	57	4500	350,000	280,000	765	1.68	825	1.93	880	2.19	930	2.46	975	2.74
	43	6000			790	2.46	845	2.78	895	3.10	945	3.43	990	3.75
	32	8000			850	4.14	895	4.45	940	4.79	985	5.15	1025	5.55
	26	10,000			940	6.74	980	7.14	1015	7.53	1050	7.92	1085	8.31
	22	12,000			1050	10.44	1080	10.87	1110	11.32	1140	11.79	1170	12.27
	20	13,000			1115	12.80	1140	13.24	1165	13.71	1190	14.19	1215	14.69
40-A,B	59	5000	400,000	320,000	765	1.88	820	2.15	875	2.43	925	2.71	975	3.00
	49	6000			780	2.40	835	2.72	885	3.04	935	3.36	985	3.69
	37	8000			835	4.03	880	4.34	925	4.67	970	5.02	1010	5.41
	29	10,000			920	6.54	960	6.93	995	7.33	1030	7.72	1070	8.11
	25	12,000			1030	10.14	1060	10.55	1085	10.98	1115	11.44	1145	11.92
	21	14,000			-	-	-	-	-	-	-	-	-	-
50-A,B	119	3100	500,000	400,000	790	1.29	845	1.45	895	1.61	945	1.78	990	1.95
	92	4000			850	2.06	895	2.21	935	2.38	980	2.56	1020	2.76
	74	5000			935	3.35	975	3.55	1010	3.74	1045	3.94	1085	4.13
	61	6000			1045	5.18	1075	5.4	1105	5.62	1135	5.86	1165	6.10
	53	7000			1175	7.73	1195	7.95	1215	8.18	1240	8.42	1265	8.68
	49	7500			1240	9.30	1260	9.52	1280	9.76	-	-	-	-
60-A,B	120	3700	600,000	480,000	845	1.73	915	2.02	975	2.33	1035	2.65	1090	2.97
	111	4000			850	1.87	915	2.18	975	2.50	1035	2.83	1090	3.16
	74	6000			915	3.38	965	3.72	1015	4.08	1065	4.45	1110	4.83
	55	8000			1035	5.98	1075	6.39	1115	6.81	1155	7.24	1195	7.68
	44	10,000			1175	9.92	1210	10.42	1245	10.93	1280	11.43	1310	11.95
	40	11,000			1250	12.49	1280	13.04	1315	13.58	1345	14.14	1375	14.69
70-A,B	115	4500	700,000	560,000	795	1.80	850	2.06	905	2.32	955	2.60	1000	2.88
	86	6000			835	2.73	890	3.05	940	3.38	985	3.71	1030	4.04
	65	8000			920	4.61	960	4.96	1005	5.34	1045	5.74	1085	6.16
	52	10,000			1025	7.64	1060	8.03	1095	8.42	1130	8.82	1165	9.23
	43	12,000			1145	11.90	1175	12.38	1210	12.86	1240	13.33	1270	13.79
	40	13,000			1210	14.57	-	-	-	-	-	-	-	-

## Packaged Rooftop Arrangements

**Table 6. Furnace type: A, B, standard temperature rise Rooftop arrangements: G, J, K, L (continued)**

Capacity Furnace Type	TR (°F)	CFM	Input BTU/H	Output BTU/H	TOTAL STATIC PRESSURE (INCHES OF WATER)									
					1.2		1.4		1.6		1.8		2	
					RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
80-A,B	118	5000	800,000	640,000	790	2.01	850	2.28	900	2.56	950	2.85	995	3.14
	98	6000			815	2.61	870	2.93	920	3.25	965	3.58	1015	3.91
	74	8000			890	4.39	935	4.72	975	5.08	1020	5.47	1060	5.88
	59	10,000			985	7.24	1025	7.63	1060	8.02	1095	8.41	1130	8.81
	49	12,000			1100	11.22	1130	11.69	1165	12.17	1195	12.65	1225	13.12
	44	13,500			-	-	-	-	-	-	-	-	-	-
12-A,B	161	5500	1,200,000	960,000	835	2.46	885	2.76	935	3.06	985	3.37	1030	3.68
	147	6000			850	2.82	905	3.15	950	3.47	1000	3.80	1045	4.13
	126	7000			890	3.68	940	4.04	985	4.41	1030	4.79	1070	5.16
	111	8000			940	4.78	980	5.14	1025	5.54	1065	5.95	1105	6.37
	88	10,000			1050	7.94	1090	8.32	1125	8.72	1160	9.13	1195	9.57
	74	12,000			1180	12.42	1210	12.90	1240	13.36	1270	13.83	1300	14.29
	68	13,000			-	-	-	-	-	-	-	-	-	-

**Notes:**

1. See Table 5 Accessory Pressure Losses for Rooftop Arrangements B, C, D, and E. See Table 8 Accessory Pressure Losses for Rooftop Arrangements G, J, K, and L.
  2. Values in this table are based on "Basic Packaged Unit" which includes pressure drop of the Duct Furnace and "System Effect" of the blower module.
  3. Unit leaving air temperature is limited to 150 °F (66 °C), and is equal to: [Entering Air Temperature + Duct Furnace(s) Temperature Rise]
  4. Brake Horsepower (BHP) includes drive losses.
  5. "Total Static Pressure" is the sum of the units' "Internal" accessory pressure loss(es) from the Accessory Pressure Loss table, plus the external static pressure.
  6. Ratings shown are for elevations between 0 and 2000 ft. (610 m). For unit installations in the U.S.A. above 2000 ft. (610 m), the unit input must be derated 4% for each 1000 ft. (305 m) above sea level; refer to local codes, or in the absence of local codes, refer to the National Fuel Gas Code, ANSI Standard Z223.1-1992 (N.F.P.A. No. 54), or latest edition. For installations in Canada, any references to deration at altitudes in excess of 2000 ft. (610m) are to be ignored. At altitudes of 2000 to 4500 ft. (610 to 1372m), the unit must be derated to 90% of the normal rating, and be so marked in accordance with the ETL certification.
- (a) Capacity - 10, 15 units when equipped with Cooling Only, (Rooftop Arrangements K,L). Refer to Table 1, and Rooftop Arrangements B ,C for Capacity - 10, 15 units Without Cooling.
- (b) Capacity - 10, 15 units when equipped with Cooling Only, (Rooftop Arrangements K,L). Refer to Table 1, and Rooftop Arrangements B ,C for Capacity - 10, 15 units Without Cooling.



## Packaged Rooftop Arrangements

**Table 7. Furnace type: C, D, high temperature rise  
Rooftop arrangements: K, L**

Capacity Furnace Type	TR (°F)	CFM	Input BTU/H	Output BTU/H	TOTAL STATIC PRESSURE (INCHES OF WATER)									
					0.2		0.4		0.6		0.8		1	
					RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
20-C,D	91	1600	200,000	160,000	380	0.16	480	0.24	565	0.33	645	0.42	710	0.52
	81	1800			400	0.20	495	0.29	580	0.39	650	0.49	720	0.59
	73	2000			425	0.26	510	0.35	590	0.45	665	0.56	730	0.67
	66	2200			450	0.33	530	0.42	605	0.53	675	0.64	740	0.76
	61	2400			475	0.40	550	0.50	620	0.61	690	0.74	750	0.87
25-C,D	91	2000	250,000	200,000	405	0.24	495	0.33	575	0.43	650	0.54	715	0.65
	81	2250			435	0.32	515	0.41	590	0.52	660	0.64	725	0.76
	73	2500			465	0.42	540	0.52	610	0.62	675	0.75	740	0.88
	66	2750			500	0.53	565	0.64	630	0.75	695	0.87	755	1.02
	61	3000			535	0.67	595	0.79	655	0.90	710	1.03	770	1.17
30-C,D G only	91	2400	300,000	240,000	390	0.25	510	0.40	615	0.60	700	0.80	775	1.01
	78	2800			420	0.33	520	0.50	620	0.70	710	0.92	785	1.16
	68	3200			450	0.44	540	0.62	630	0.83	715	1.06	790	1.32
	61	3600			480	0.58	565	0.77	645	0.99	725	1.23	800	1.49
35-C,D G	85	3000	350,000	280,000	385	0.29	485	0.46	575	0.62	650	0.81	715	1.00
	75	3400			410	0.38	505	0.56	585	0.74	660	0.94	725	1.14
	64	4000			445	0.55	530	0.74	610	0.96	680	1.17	745	1.40
	61	4200			460	0.62	540	0.81	615	1.04	685	1.26	750	1.50
35-C,D P	90	2700	325,000	260,000	371	0.22	478	0.39	567	0.52	643	0.70	710	0.90
	80	3000			387	0.29	489	0.46	576	0.62	651	0.81	718	1.00
	67	3600			421	0.43	513	0.61	595	0.81	668	1.01	733	1.22
	60	4000			448	0.55	534	0.74	612	0.96	682	1.17	746	1.40
40-C,D	88	3300	400,000	320,000	390	0.34	485	0.51	575	0.69	650	0.88	715	1.08
	83	3500			400	0.38	495	0.56	580	0.75	655	0.94	720	1.15
	73	4000			430	0.52	515	0.70	595	0.92	665	1.13	730	1.36
	65	4500			460	0.70	540	0.88	615	1.11	680	1.35	745	1.60
	58	5000			495	0.91	565	1.11	635	1.34	700	1.60	760	1.87
Capacity Furnace Type	TR (°F)	CFM	Input BTU/H	Output BTU/H	TOTAL STATIC PRESSURE (INCHES OF WATER)									
					1.2		1.4		1.6		1.8		2	
					RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
20-C,D	91	1600	200,000	160,000	770	0.63	830	0.74	880	0.86	930	0.98	980	1.10
	81	1800			780	0.70	835	0.82	890	0.94	940	1.07	985	1.20
	73	2000			790	0.79	845	0.91	900	1.04	950	1.17	995	1.31
	66	2200			800	0.89	855	1.02	905	1.15	955	1.28	1000	1.43
	61	2400			810	1.00	865	1.13	915	1.27	965	1.41	1010	1.56
25-C,D	91	2000	250,000	200,000	780	0.76	835	0.89	890	1.01	940	1.14	985	1.28
	81	2250			785	0.88	845	1.01	895	1.14	945	1.28	995	1.42
	73	2500			795	1.02	855	1.15	905	1.29	955	1.44	1000	1.58
	66	2750			810	1.16	865	1.31	915	1.46	965	1.62	1010	1.77
	61	3000			825	1.33	875	1.49	925	1.65	975	1.81	1020	1.98

**Table 7. Furnace type: C, D, high temperature rise Rooftop arrangements: K, L (continued)**

Capacity Furnace Type	TR (°F)	CFM	Input BTU/H	Output BTU/H	TOTAL STATIC PRESSURE (INCHES OF WATER)									
					1.2		1.4		1.6		1.8		2	
					RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
30-C,D G only	91	2400	300,000	240,000	845	1.23	905	1.45	960	1.68	1010	1.92	1055	2.16
	78	2800			855	1.40	920	1.65	975	1.91	1025	2.16	1075	2.43
	68	3200			865	1.59	930	1.86	985	2.14	1040	2.42	1090	2.71
	61	3600			870	1.78	935	2.08	995	2.38	1050	2.69	1105	3.00
35-C,D G	85	3000	350,000	280,000	775	1.21	835	1.44	885	1.67	935	1.90	980	2.15
	75	3400			785	1.36	840	1.60	895	1.84	945	2.09	990	2.35
	64	4000			805	1.63	860	1.88	910	2.14	960	2.41	1005	2.6
	61	4200			810	1.74	865	1.99	915	2.25	965	2.52	1010	2.8
35-C,D P	90	2700	325,000	260,000	771	1.11	825	1.40	881	1.55	931	1.76	977	2.00
	80	3000			779	1.21	835	1.44	888	1.67	937	1.90	984	2.15
	67	3600			793	1.44	849	1.68	902	1.93	951	2.19	998	2.45
	60	4000			806	1.63	861	1.88	913	2.14	962	2.41	1008	2.69
40-C,D	88	3300	400,000	320,000	775	1.30	835	1.52	885	1.76	935	2.01	985	2.27
	83	3500			780	1.37	835	1.60	890	1.85	940	2.10	985	2.37
	73	4000			790	1.59	850	1.83	900	2.09	950	2.35	995	2.63
	65	4500			805	1.85	860	2.10	910	2.37	960	2.65	1005	2.93
	58	5000			820	2.14	875	2.41	925	2.70	975	2.99	1020	3.29

**Notes:**

1. Refer to Table 5 Accessory Pressure Losses for Rooftop Arrangements B, C, D, E. Refer to Table 8 Accessory Pressure Losses for Rooftop Arrangements G, J, K, L.
2. Values in this table are based on the "Basic Packaged Unit" which includes pressure drop of the Duct Furnace(s) and "system effect" of the Blower Module.
3. Brake Horsepower (BHP) includes drive losses.
4. Unit leaving air temperature is limited to 150°F (66°C) and is equal to: Entering Air Temperature + Duct Furnace(s) Temperature Rise.
5. "Total Static Pressure" is the sum of the unit's "Internal" accessory pressure loss(es) from Table 4, plus the external static pressure.
6. Ratings shown are for elevations between 0 and 2000 ft. (610 m). For unit installations in the U.S.A. above 2000 ft. (610 m), the unit input must be derated 4% for each 1000 ft. (305 m) above sea level; refer to local codes, or in the absence of local codes, refer to the National Fuel Gas Code, ANSI Standard Z223.1-1992 (N.F.P.A. No. 54), or latest edition. For installations in Canada, any references to deration at altitudes in excess of 2000 ft. (610m) are to be ignored. At altitudes of 2000 to 4500 ft. (610 to 1372m), the unit must be derated to 90% of the normal rating, and be so marked in accordance with the ETL certification.



## Packaged Rooftop Arrangements

### Accessory Pressure Loss

Table 8. Rooftop arrangements (G,J,K,L)

Capacity	CFM	PRESSURE LOSS (INCHES OF WATER)								
		AIRHOOD With		FILTERS					Supply Air Plenum	Return or Outside Air Damper
		Screen	Mstr.Elim.	Throwaway	Washable		Pleated			
				2"	1"	2"	1"	2"		
10	800	<.01	0.01	0.01	<.01	<.01	<.01	<.01	0.02	0.01
	900	0.01	0.02	0.01	<.01	<.01	<.01	<.01	0.02	0.02
	1100	0.02	0.02	0.02	<.01	<.01	0.01	<.01	0.03	0.03
	1200	0.02	0.03	0.02	<.01	<.01	0.02	<.01	0.04	0.03
	1500	0.03	0.04	0.02	<.01	<.01	0.02	0.01	0.06	0.05
	2000	0.06	0.07	0.04	<.01	<.01	0.04	0.02	0.10	0.09
	2500	0.09	0.12	0.05	<.01	0.01	0.05	0.03	0.15	0.13
	3000	0.13	0.17	0.06	0.01	0.02	0.07	0.04	0.22	0.19
	3500	0.18	0.23	0.08	0.01	0.02	0.09	0.05	0.29	0.25
15	1200	0.02	0.03	0.02	<.01	<.01	0.02	<.01	0.03	0.03
	1400	0.03	0.04	0.02	<.01	<.01	0.02	<.01	0.03	0.04
	1600	0.04	0.05	0.03	<.01	<.01	0.03	0.01	0.04	0.06
	1800	0.05	0.06	0.03	<.01	<.01	0.03	0.02	0.06	0.07
	2000	0.06	0.07	0.04	<.01	<.01	0.04	0.02	0.07	0.09
	2500	0.09	0.12	0.05	<.01	0.01	0.05	0.03	0.11	0.13
	3000	0.13	0.17	0.06	0.01	0.02	0.07	0.04	0.15	0.19
	3500	0.18	0.23	0.08	0.01	0.02	0.09	0.05	0.21	0.25
	4000	0.23	0.30	0.09	0.02	0.03	0.12	0.07	0.27	0.33
	4500	0.29	0.38	0.11	0.02	0.03	0.14	0.08	0.34	0.42
20	1600	0.02	0.02	0.03	<.01	<.01	0.03	0.01	0.02	0.03
	1800	0.02	0.03	0.03	<.01	<.01	0.03	0.02	0.03	0.03
	2000	0.02	0.03	0.04	<.01	<.01	0.04	0.02	0.03	0.04
	2200	0.03	0.04	0.04	<.01	<.01	0.04	0.02	0.04	0.05
	2400	0.03	0.05	0.05	<.01	<.01	0.05	0.03	0.05	0.05
	2500	0.04	0.05	0.05	<.01	0.01	0.05	0.03	0.05	0.06
	3000	0.05	0.07	0.06	0.01	0.02	0.07	0.04	0.07	0.08
	4000	0.09	0.13	0.09	0.02	0.03	0.12	0.07	0.13	0.15
	5000	0.15	0.20	0.12	0.03	0.04	0.17	0.10	0.21	0.23
	6000	0.21	0.29	0.16	0.04	0.06	0.23	0.14	0.30	0.33
	6500	0.25	0.34	0.17	0.05	0.07	0.26	0.16	0.35	0.39
	7000	0.29	0.40	0.19	0.06	0.08	0.30	0.18	0.40	0.45
7400	0.32	0.45	-	0.06	0.09	0.33	0.20	0.45	0.50	

Table 8. Rooftop arrangements (G,J,K,L) (continued)

Capacity	CFM	PRESSURE LOSS (INCHES OF WATER)								
		AIRHOOD With		FILTERS					Supply Air Plenum	Return or Outside Air Damper
		Screen	Mstr.Elim.	Throwaway	Washable		Pleated			
		2"	1"	2"	1"	2"				
25	2000	0.02	0.03	0.04	<.01	<.01	0.04	0.02	0.02	0.04
	2250	0.03	0.04	0.04	<.01	<.01	0.04	0.02	0.03	0.05
	2500	0.04	0.05	0.05	<.01	0.01	0.05	0.03	0.04	0.06
	2750	0.04	0.06	0.05	<.01	0.01	0.06	0.03	0.04	0.07
	3000	0.05	0.07	0.06	0.01	0.02	0.07	0.04	0.05	0.08
	4000	0.09	0.13	0.09	0.02	0.03	0.12	0.07	0.09	0.15
	5000	0.15	0.20	0.12	0.03	0.04	0.17	0.10	0.14	0.23
	6000	0.21	0.29	0.16	0.04	0.06	0.23	0.14	0.21	0.33
	7000	0.29	0.40	0.19	0.06	0.08	0.30	0.18	0.28	0.45
	7500	0.33	0.46	-	0.07	0.09	0.34	0.21	0.32	0.52
30	2400	0.02	0.03	0.02	<.01	<.01	0.02	0.01	0.02	0.03
	2600	0.02	0.03	0.03	<.01	<.01	0.03	0.01	0.03	0.04
	2800	0.03	0.04	0.03	<.01	<.01	0.03	0.01	0.03	0.04
	3000	0.03	0.04	0.03	<.01	<.01	0.03	0.02	0.03	0.05
	3200	0.03	0.05	0.03	<.01	<.01	0.04	0.02	0.04	0.05
	3400	0.04	0.06	0.04	<.01	<.01	0.04	0.02	0.04	0.06
	3600	0.04	0.06	0.04	<.01	<.01	0.04	0.02	0.05	0.07
	4000	0.05	0.08	0.05	<.01	0.01	0.05	0.03	0.06	0.08
	6000	0.12	0.17	0.08	0.02	0.02	0.10	0.06	0.13	0.19
	8000	0.22	0.31	0.12	0.03	0.04	0.17	0.10	0.24	0.33
	10,000	0.34	0.48	0.16	0.04	0.06	0.24	0.14	0.37	0.52
	11,000	0.41	0.58	0.18	0.05	0.08	0.28	0.17	0.45	0.63
35	3000	0.03	0.04	0.03	<.01	<.01	0.03	0.02	0.03	0.05
	3200	0.03	0.05	0.03	<.01	<.01	0.04	0.02	0.03	0.05
	3400	0.04	0.06	0.04	<.01	<.01	0.04	0.02	0.04	0.06
	3600	0.04	0.06	0.04	<.01	<.01	0.04	0.02	0.04	0.07
	3800	0.05	0.07	0.04	<.01	<.01	0.05	0.03	0.04	0.08
	4000	0.05	0.08	0.05	<.01	0.01	0.05	0.03	0.05	0.08
	4500	0.07	0.10	0.05	<.01	0.01	0.06	0.03	0.06	0.11
	6000	0.12	0.17	0.08	0.02	0.02	0.10	0.06	0.11	0.19
	8000	0.22	0.31	0.12	0.03	0.04	0.17	0.10	0.19	0.33
	10,000	0.34	0.48	0.16	0.04	0.06	0.24	0.14	0.30	0.52
		12,000	0.49	0.69	-	0.06	0.09	0.33	0.20	0.43
	13,000	0.58	0.81	-	0.07	0.11	0.38	0.23	0.51	0.88



## Packaged Rooftop Arrangements

**Table 8. Rooftop arrangements (G,J,K,L) (continued)**

Capacity	CFM	PRESSURE LOSS (INCHES OF WATER)								
		AIRHOOD With		FILTERS					Supply Air Plenum	Return or Outside Air Damper
		Screen	Mstr.Elim.	Throwaway	Washable		Pleated			
		2"	1"	2"	1"	2"				
40	3300	0.03	0.04	0.03	<.01	<.01	0.03	0.02	0.03	0.05
	3500	0.03	0.05	0.03	<.01	<.01	0.03	0.02	0.03	0.05
	4000	0.04	0.06	0.04	<.01	<.01	0.04	0.02	0.04	0.07
	4500	0.05	0.08	0.05	<.01	<.01	0.05	0.03	0.05	0.08
	5000	0.07	0.10	0.05	<.01	0.01	0.06	0.03	0.06	0.10
	6000	0.10	0.14	0.07	0.01	0.02	0.08	0.04	0.08	0.15
	8000	0.17	0.24	0.10	0.02	0.03	0.13	0.07	0.15	0.26
	10,000	0.27	0.38	0.13	0.03	0.05	0.19	0.11	0.23	0.41
	12,000	0.39	0.55	0.17	0.05	0.07	0.26	0.16	0.34	0.59
	14,000	0.53	0.75	-	0.07	0.09	0.33	0.21	0.46	0.80
50	3100	0.06	0.08	0.06	0.01	0.02	0.08	0.04	0.06	0.09
	4000	0.09	0.13	0.09	0.02	0.03	0.12	0.07	0.09	0.15
	5000	0.15	0.20	0.12	0.03	0.04	0.17	0.10	0.14	0.23
	6000	0.21	0.29	0.16	0.04	0.06	0.23	0.14	0.21	0.33
	7000	0.29	0.40	0.19	0.06	0.08	0.30	0.18	0.28	0.45
	7500	0.33	0.46	-	0.07	0.09	0.34	0.21	0.32	0.52
60	3700	0.05	0.07	0.04	<.01	<.01	0.05	0.02	0.05	0.07
	4000	0.05	0.08	0.05	<.01	0.01	0.05	0.03	0.06	0.08
	6000	0.12	0.17	0.08	0.02	0.02	0.10	0.06	0.13	0.19
	8000	0.22	0.31	0.12	0.03	0.04	0.17	0.10	0.24	0.33
	10,000	0.34	0.48	0.16	0.04	0.06	0.24	0.14	0.37	0.52
	11,000	0.41	0.58	0.18	0.05	0.08	0.28	0.17	0.45	0.63
70	4500	0.07	0.10	0.05	<.01	0.01	0.06	0.03	0.06	0.11
	6000	0.12	0.17	0.08	0.02	0.02	0.10	0.06	0.11	0.19
	8000	0.22	0.31	0.12	0.03	0.04	0.17	0.10	0.19	0.33
	10,000	0.34	0.48	0.16	0.04	0.06	0.24	0.14	0.30	0.52
	12,000	0.49	0.69	-	0.06	0.09	0.33	0.20	0.43	0.75
	13,000	0.58	0.81	-	0.07	0.11	0.38	0.23	0.51	0.88
80	5000	0.07	0.10	0.05	<.01	0.01	0.06	0.03	0.06	0.10
	6000	0.10	0.14	0.07	0.01	0.02	0.08	0.04	0.08	0.15
	8000	0.17	0.24	0.10	0.02	0.03	0.13	0.07	0.15	0.26
	10,000	0.27	0.38	0.13	0.03	0.05	0.19	0.11	0.23	0.41
	12,000	0.39	0.55	0.17	0.05	0.07	0.26	0.16	0.34	0.59
	13,500	0.49	0.70	-	0.06	0.09	0.31	0.19	0.43	0.75
12	7400	0.15	0.21	0.09	0.02	0.03	0.11	0.06	0.13	0.22
	8000	0.17	0.24	0.10	0.02	0.03	0.13	0.07	0.15	0.26
	10,000	0.27	0.38	0.13	0.03	0.05	0.19	0.11	0.23	0.41
	12,000	0.39	0.55	0.17	0.05	0.07	0.26	0.16	0.34	0.59
	13,000	0.46	0.65	0.19	0.06	0.08	0.30	0.18	0.40	0.69

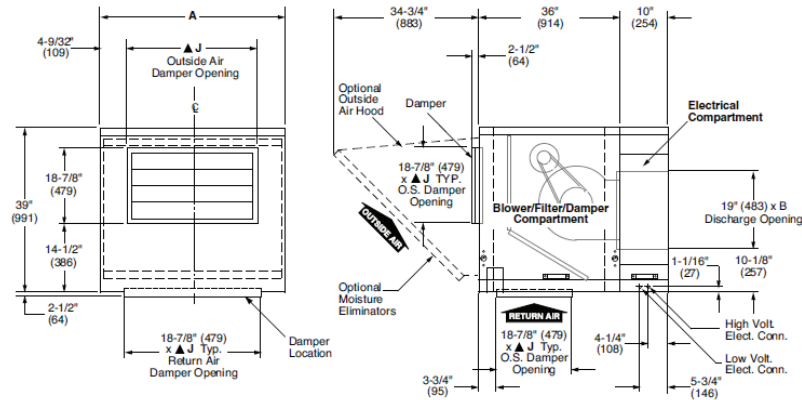
**Note:** Refer to Tables 15 and 16 for DX Cooling Coil and Tables 17 and 18 for Chilled Water Coil Pressure Losses (Rooftop Arrangements K,L).



## Dimensional Data – Unit Modules

### Standard Blower Module

**Figure 14. Rooftop arrangements: B, C, D, E**  
Capacities 10–80 unit sizes (left-hand service access shown)

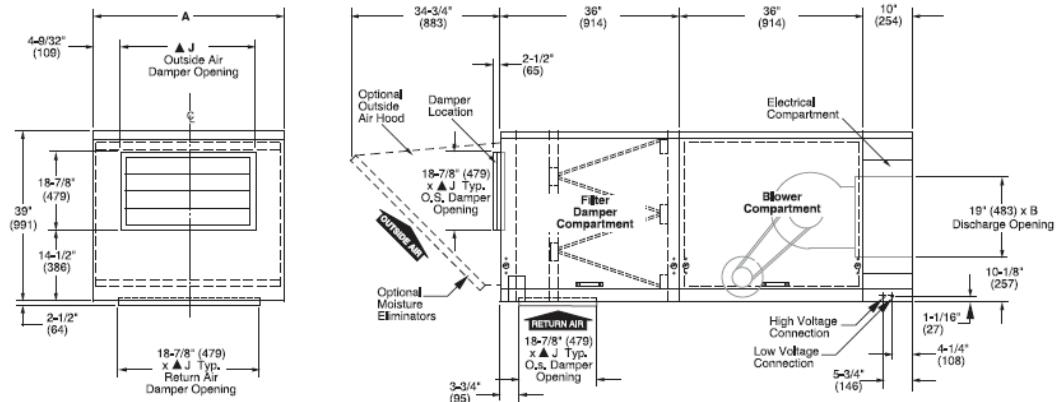


**Notes:**

- Dimensions shown do not include the base/skid rail.
- See table below for tabulated dimensions.

### High CFM Blower Module

**Figure 15. Rooftop arrangements: G, J**  
Capacities 10–12



**Notes:**

- Dimensions shown do not include the base/skid rail.
- Capacities 10 and 15 apply to cooling arrangements K and L only. Arrangements K and L are similar with the exception that the cooling coil module is located between the filter and blower compartments (see Coil Cabinet Module and Arrangements K and L dimensional data).
- See table below for tabulated dimensions.



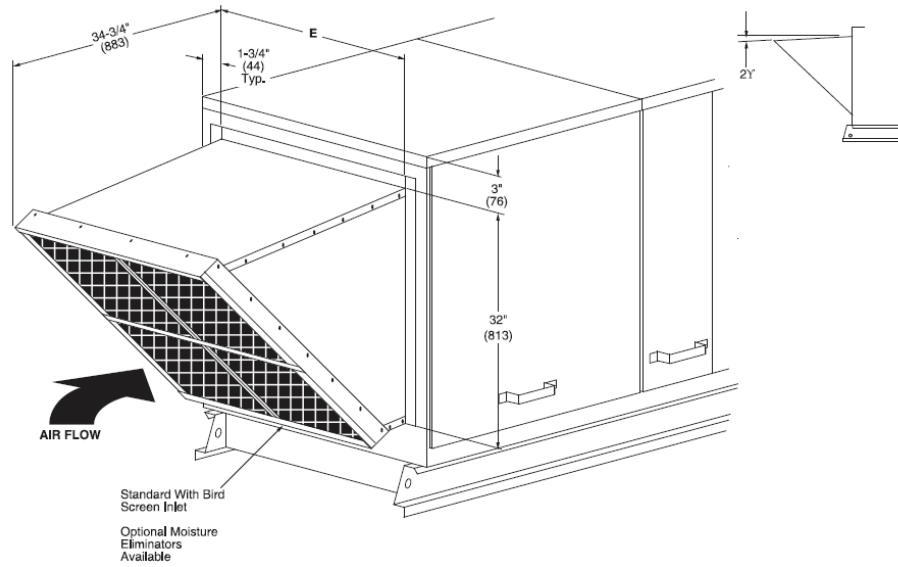
## Packaged Rooftop Arrangements

---

Capacity	A	B	ΔJ
10/15	32- 7/8 (835)	15- 9/16 (395)	24 (610)
20/25/50	43- 7/8 (1114)	23- 13/16 (605)	35 (889)
30/35 60/70	54- 7/8 (1394)	34-13/16 (884)	46 (1168)
40/80	60- 3/4 (1534)	45-13/16 (1164)	51-1/2 (1308)

**Note:** Dimensions are in inches. Dimensions in parenthesis are in millimeters.

### Air Intake Hood



Capacity	E
10/15	20- 3/8 (746)
20/25/50	40- 3/8 (1025)
30/35 60/70	51- 3/8 (1305)
40/80/12	56- 7/8 (1445)

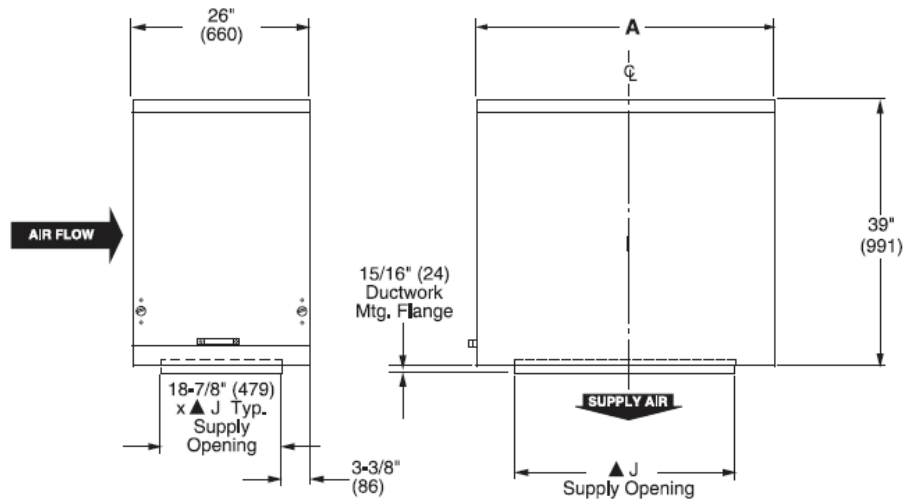
**Note:** Dimensions are in inches.  
Dimensions in parenthesis are  
in millimeters.



## Packaged Rooftop Arrangements

### Supply Plenum Module

Capacities 10–12 unit sizes (left-hand service access shown)



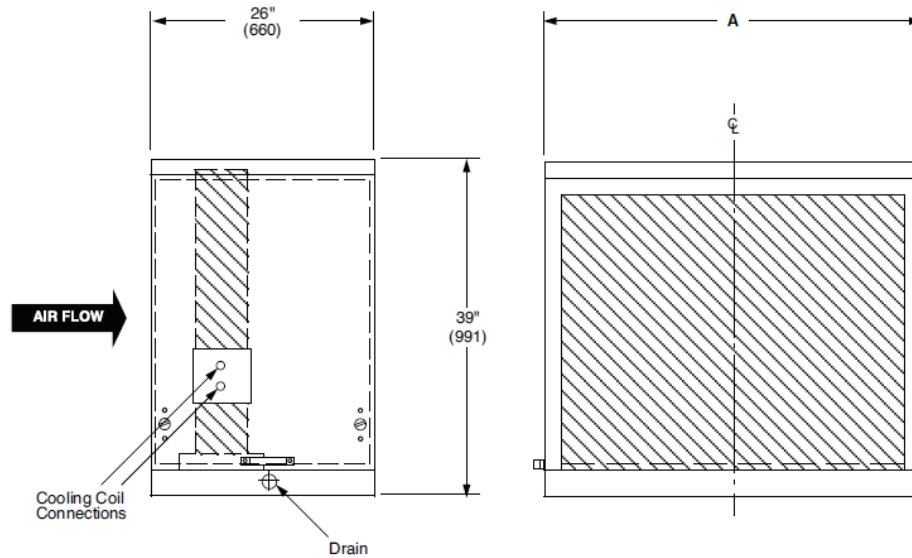
**Note:** Dimensions shown do not include the base/skid rail.

Capacity (CA)	E	$\Delta$ J
10/15	32- 7/8 (835)	24 (610)
20/25/50	43- 7/8 (1114)	35 (889)
30/35 60/70	54- 7/8 (1394)	46 (1168)
40/80/12	60- 3/8 (1534)	51 (1308)

**Note:** Dimensions are in inches. Dimensions in parenthesis are in millimeters.

### Coil Cabinet Module

Capacities 10–80 unit sizes (left-hand service access shown)



**Note:** Dimensions shown do not include the base/skid rail.

Capacity	A
10/15	32- 7/8 (835)
20/25/50	43- 7/8 (1114)
30/35 60/70	54- 7/8 (1394)
40/80/12	60- 3/8 (1534)

**Notes:**

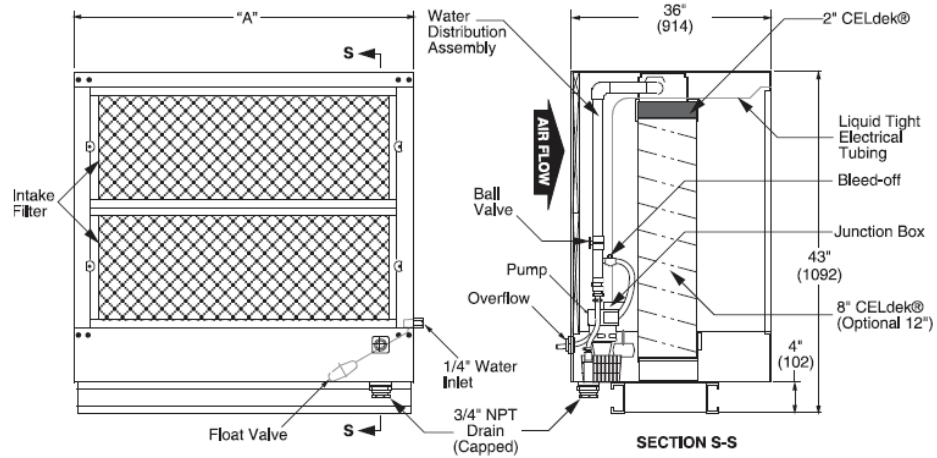
- Dimensions are in inches.
- Dimensions in parenthesis are in millimeters.



## Packaged Rooftop Arrangements

### Evaporative Cooler Module

Capacities 10–80 unit sizes



Capacity	A
10/15	32- 7/8 (835)
20/25/50	43- 7/8 (1114)
30/35 60/70	54- 7/8 (1394)
40/80/12	60- 3/8 (1534)

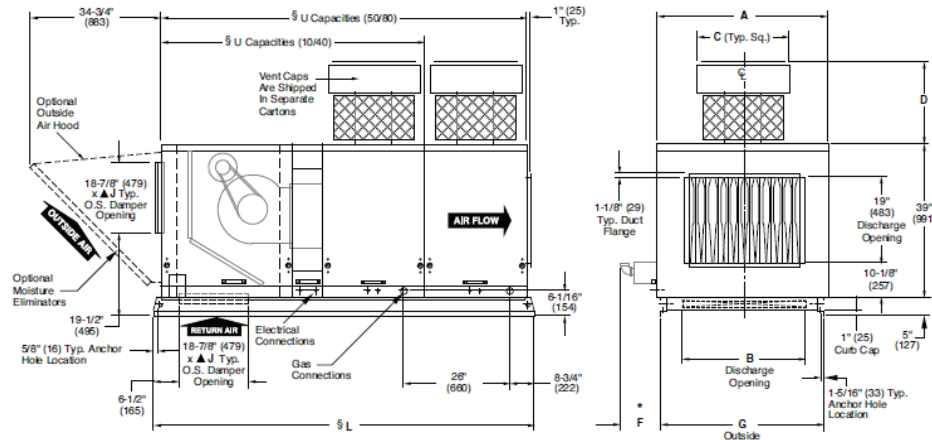
**Note:** Dimensions are in inches.  
Dimensions in parenthesis are in millimeters.

### Dimensional Data – Arrangements

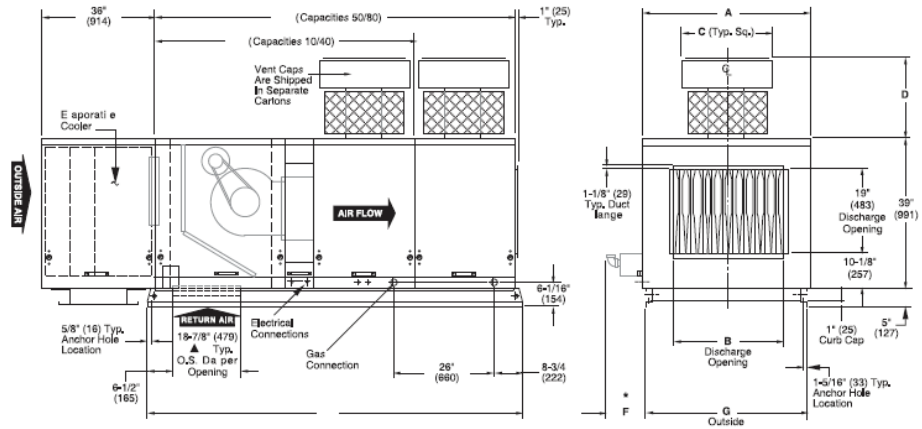
All arrangements shown are Natural Vent.

*Note: See table below for tabulated dimensions.*

**Figure 16. Rooftop arrangement: B**  
Capacities 10–80 unit sizes (capacity 50–80 shown)



**Figure 17. Rooftop arrangement: D**  
Capacities 10–80 unit sizes (capacity 50–80 shown)



# Packaged Rooftop Arrangements

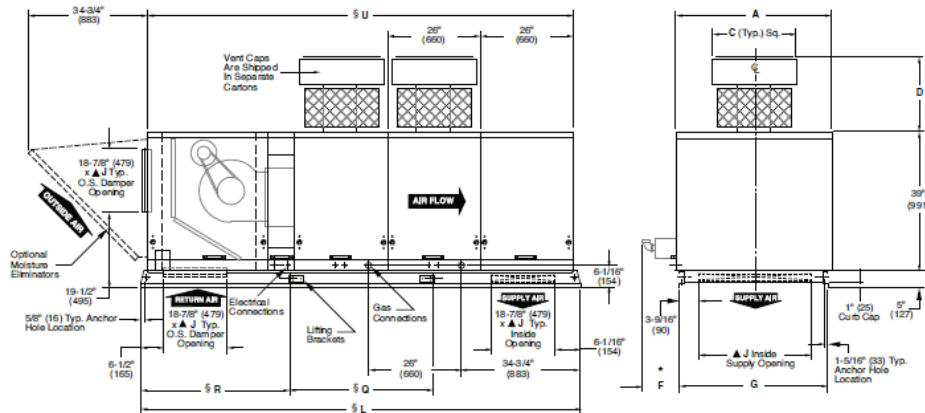
**Table 9. Dimensional data, rooftop arrangements B and D**

Capacity (CA)	A	B	C	D USA	D CANADA	F(a)	G	J(b)	L	U (c)	Gas Inlet	
											NAT	LP
10	32-7/8 (835)	15-9/16 (395)	12 (305)	11 (279)	20-11/16 (525)	19-3/8 (492)	31-1/16 (789)	24 (610)	77-3/8 (1965)	72-1/4 (1835)	1/2	1/2
15	32-7/8 (835)	18-5/16 (465)	21-1/2 (546)	16 (406)	25-3/16 (640)	23-1/2 (597)	31-1/16 (789)	24 (610)	77-3/8 (1965)	72-1/4 (1835)	1/2	1/2
20	43-7/8 (1114)	23-13/16 (605)	23- 1/2 (597)	16 (406)	25-3/16 (640)	26-1/4 (667)	42-1/16 (1068)	35 (889)	77-3/8 (1965)	72-1/4 (1835)	1/2	1/2
25	43-7/8 (1114)	29-5/16 (745)	23-1/2 (597)	16 (406)	25-3/16 (640)	34-1/2 (876)	42-1/16 (1068)	35 (889)	77-3/8 (1965)	72-1/4 (1835)	3/4	3/4
30	54-7/8 (1394)	34-13/16 (884)	26 (660)	17-1/2 (445)	26-11/16 (678)	37-1/4 (946)	53-1/16 (1348)	46 (1168)	77-3/8 (1965)	72-1/4 (1835)	3/4	3/4
35	54-7/8 (1394)	40-5/16 (1024)	26 (660)	17-1/2 (445)	26-11/16 (678)	45-1/2 (1156)	53-1/16 (1348)	46 (1168)	77-3/8 (1965)	72-1/4 (1835)	3/4	3/4
40	60-3/8 (1534)	45-13/16 (1164)	26 (660)	17-1/2 (445)	26-11/16 (678)	51 (1295)	58-9/16 (1487)	51-1/2 (1308)	77-3/8 (1965)	72-1/4 (1835)	3/4	3/4
50	43-7/8 (1114)	29-5/16 (745)	23-1/2 (597)	16 (406)	25-3/16 (640)	34-1/2 (876)	42-1/16 (1068)	35 (889)	103-3/8 (2626)	98-1/4 (2496)	3/4	3/4
60	54-7/8 (1394)	34-13/16 (884)	26 (660)	17-1/2 (445)	26-11/16 (678)	37-1/4 (946)	53-1/16 (1348)	46 (1168)	103-3/8 (2626)	98-1/4 (2496)	3/4	3/4
70	54-7/8 (1394)	40-5/16 (1024)	26 (660)	17-1/2 (445)	26-11/16 (678)	45-1/2 (1156)	53-1/16 (1348)	46 (1168)	103-3/8 (2626)	98-1/4 (2496)	3/4	3/4
80	60-3/8 (1534)	45-13/16 (1164)	26 (660)	17-1/2 (445)	26-11/16 (678)	51 (1295)	58-9/16 (1487)	51-1/2 (1308)	103-3/8 (2626)	98-1/4 (2496)	3/4	3/4

**Note:** Dimensions are in inches. Dimensions in parenthesis are in millimeters.

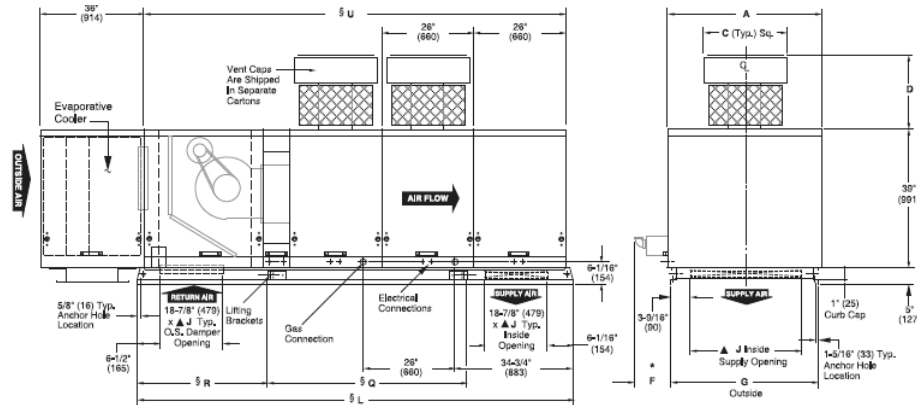
- (a) "F" Dimension is the recommended clearance to service the burner drawer.
- (b) "J" Dimension is an outside dimension for the return air damper(s).
- (c) All dimensions are tabulated for Rooftop Arrangements B & D per capacities 10 through 80 accordingly (Capacities 50/80 are shown pictorially).

**Figure 18. Rooftop arrangement: C**  
Capacities 10–80 unit sizes (capacity 50–80 shown)





**Figure 19. Rooftop arrangement: E**  
**Capacities 10–80 unit sizes (capacity 50–80 shown)**



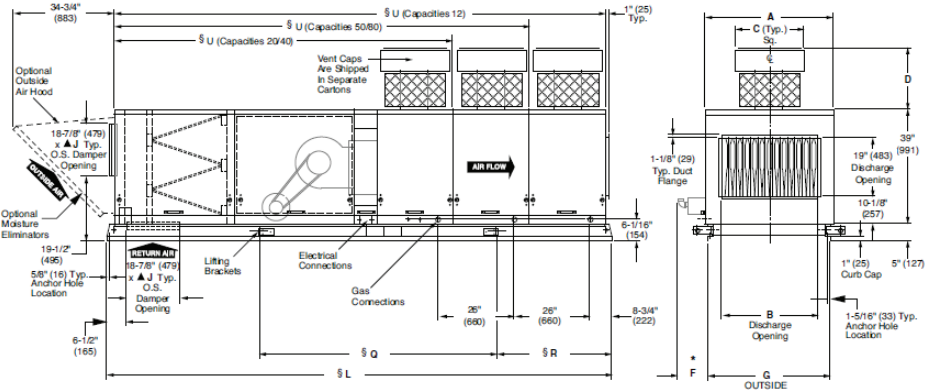
**Table 10. Dimensional data, rooftop arrangements C and E**

Capacity (CA)	A	C	D USA	D CANADA	F <sup>(a)</sup>	G	J <sup>(b)</sup>	L	Q	R	U <sup>(c)</sup>	Gas Inlet	
												NAT	LP
10	32-7/8 (835)	12 (305)	11 (279)	20-11/16 (525)	19-3/8 (492)	31-1/16 (789)	24 (610)	103-3/8 (2626)	NA	NA	98-1/4 (2496)	1/2	1/2
15	32-7/8 (835)	21-1/2 (546)	16 (406)	25-3/16 (640)	23-1/2 (597)	31-1/16 (789)	24 (610)	103-3/8 (2626)	NA	NA	98-1/4 (2496)	1/2	1/2
20	43-7/8 (1114)	23-1/2 (597)	16 (406)	25-3/16 (640)	26-1/4 (667)	42-1/16 (1068)	35 (889)	103-3/8 (2626)	NA	NA	98-1/4 (2496)	1/2	1/2
25	43-7/8 (1114)	23-1/2 (597)	16 (406)	25-3/16 (640)	34-1/2 (876)	42-1/16 (1068)	35 (889)	103-3/8 (2626)	NA	NA	98-1/4 (2496)	3/4	3/4
30	54-7/8 (1394)	26 (660)	17-1/2 (445)	26-11/16 (678)	37-1/4 (946)	53-1/16 (1348)	46 (168)	103-3/8 (2626)	NA	NA	98-1/4 (2496)	3/4	3/4
35	54-7/8 (1394)	26 (660)	17-1/2 (445)	26-11/16 (678)	45-1/2 (1156)	53-1/16 (1348)	46 (168)	103-3/8 (2626)	NA	NA	98-1/4 (2496)	3/4	3/4
40	60-3/8 (1534)	26 (660)	17-1/2 (445)	26-11/16 (678)	51 (1295)	58-9/16 (1487)	51-1/2 (1308)	103-3/8 (2626)	NA	NA	98-1/4 (2496)	3/4	3/4
50	43-7/8 (1114)	23-1/2 (597)	16 (406)	25-3/16 (640)	34-1/2 (876)	42-1/16 (1068)	35 (889)	129-5/16 (3285)	58-3/4 (1492)	38-5/8 (981)	124-1/4 (3156)	3/4	3/4
60	54-7/8 (1394)	26 (660)	17-1/2 (445)	26-11/16 (678)	37-1/4 (946)	53-1/16 (1348)	46 (168)	129-5/16 (3285)	58-3/4 (1492)	38-5/8 (981)	124-1/4 (3156)	3/4	3/4
70	54-7/8 (1394)	26 (660)	17-1/2 (445)	26-11/16 (678)	45-1/2 (1156)	53-1/16 (1348)	46 (168)	129-5/16 (3285)	58-3/4 (1492)	38-5/8 (981)	124-1/4 (3156)	3/4	3/4
80	60-3/8 (1534)	26 (660)	17-1/2 (445)	26-11/16 (678)	51 (1295)	58-9/16 (1487)	51-1/2 (1308)	129-5/16 (3285)	58-3/4 (1492)	38-5/8 (981)	124-1/4 (3156)	3/4	3/4

**Note:** Dimensions are in inches. Dimensions in parenthesis are in millimeters.

- (a) "F" Dimension is the recommended clearance to service the burner drawer.
- (b) "J" Dimension is an outside dimension for the return air damper(s); and "J" is also the inside dimension for the supply opening (without a damper).
- (c) All dimensions are tabulated for Rooftop Arrangements C & E per capacities 10 through 80 accordingly (Capacities 50/80 are shown pictorially).

**Figure 20. Rooftop arrangement: G**  
**Capacities 20–12 unit sizes (capacity 12 shown)**



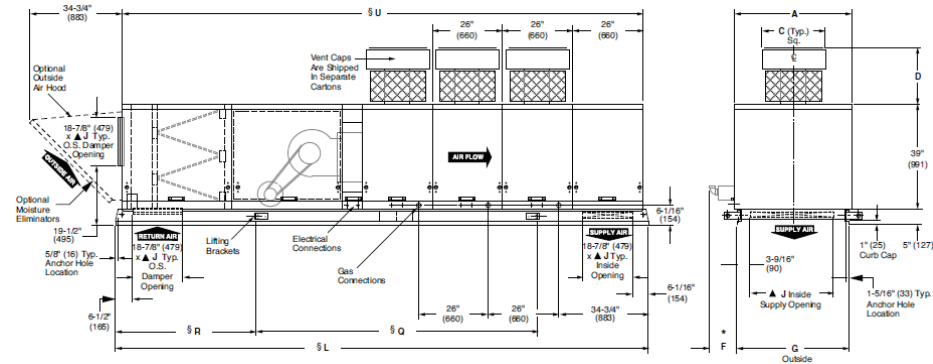
**Table 11. Dimensional data, rooftop arrangement G**

Capacity (CA)	A	B	C	D USA	D CANADA	F(a)	G	J(b)	L	Q	R	U(c)	Gas Inlet	
													NAT	LP
20	43-7/8 (1114)	23-13/16 (605)	23-1/2 (597)	16 (406)	25-3/16 (640)	26-1/4 (667)	42-1/16 (1068)	35 (889)	113-1/2 (2883)	60-5/16 (1532)	26-5/8 (676)	108-1/2 (2756)	1/2	1/2
25	43-7/8 (1114)	29-5/16 (745)	23-1/2 (597)	16 (406)	25-3/16 (640)	34-1/2 (876)	42-1/16 (1068)	35 (889)	113-1/2 (2883)	60-5/16 (1532)	26-5/8 (676)	108-1/2 (2756)	3/4	3/4
30	54-7/8 (1394)	34-13/16 (884)	26 (660)	17- 1/2 (445)	26-11/16 (678)	37-1/4 (946)	53-1/16 (1348)	46 (1168)	113-1/2 (2883)	60-5/16 (1532)	26-5/8 (676)	108-1/2 (2756)	3/4	3/4
35	54-7/8 (1394)	40-5/16 (1024)	26 (660)	17- 1/2 (445)	26-11/16 (678)	45-1/2 (1156)	53-1/16 (1348)	46 (1168)	113-1/2 (2883)	60-5/16 (1532)	26-5/8 (676)	108-1/2 (2756)	3/4	3/4
40	60-3/8 (1534)	45-13/16 (1164)	26 (660)	17- 1/2 (445)	26-11/16 (678)	51 (1295)	58-9/16 (1487)	51-1/2 (1308)	113-1/2 (2883)	60-5/16 (1532)	26-5/8 (676)	108-1/2 (2756)	3/4	3/4
50	43-7/8 (1114)	29-5/16 (745)	23-1/2 (597)	16 (406)	25-3/16 (640)	34-1/2 (876)	42-1/16 (1068)	35 (889)	139-1/2 (3543)	60-13/16 (1545)	35-1/8 (892)	134-1/2 (3416)	3/4	3/4
60	54-7/8 (1394)	34-13/16 (884)	26 (660)	17- 1/2 (445)	26-11/16 (678)	37-1/4 (946)	53-1/16 (1348)	46 (1168)	139-1/2 (3543)	60-13/16 (1545)	35-1/8 (892)	134-1/2 (3416)	3/4	3/4
70	54-7/8 (1394)	40-5/16 (1024)	26 (660)	17- 1/2 (445)	26-11/16 (678)	45-1/2 (1156)	53-1/16 (1348)	46 (1168)	139-1/2 (3543)	60-13/16 (1545)	35-1/8 (892)	134-1/2 (3416)	3/4	3/4
80	60-3/8 (1534)	45-13/16 (1164)	26 (660)	17- 1/2 (445)	26-11/16 (678)	51 (1295)	58-9/16 (1487)	51-1/2 (1308)	139-1/2 (3543)	60-13/16 (1545)	35-1/8 (892)	134-1/2 (3416)	3/4	3/4
12	60-3/8 (1534)	45-13/16 (1164)	26 (660)	17- 1/2 (445)	26-11/16 (678)	51 (1295)	58-9/16 (1487)	51-1/2 (1308)	165-1/2 (4204)	86-1/8 (2188)	35-1/8 (892)	160-1/2 (4077)	3/4	3/4

**Note:** Dimensions are in inches. Dimensions in parenthesis are in millimeters.

- (a) "F" Dimension is the recommended clearance to service the burner drawer.
- (b) "J" Dimension is an outside dimension for the return air damper(s).
- (c) All dimensions are tabulated for Rooftop Arrangements G per capacities 20 through 12 accordingly (Capacities 12 are shown pictorially).

**Figure 21. Rooftop arrangement: J**  
**Capacities 20–12 unit sizes (capacity 12 shown)**



**Table 12. Dimensional data, rooftop arrangement J**

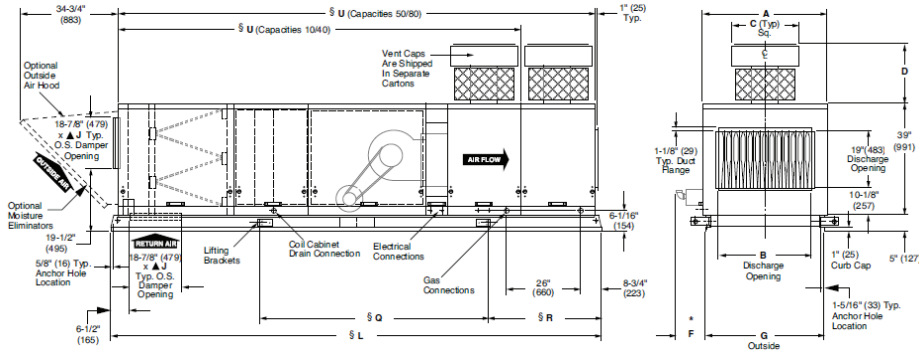
Capacity (CA)	A	C	D USA	D CANADA	F <sup>(a)</sup>	G	J <sup>(b)</sup>	L	Q	R	U <sup>(c)</sup>	Gas Inlet	
												NAT	LP
20	43-7/8 (1114)	23-1/2 (597)	16 (406)	25-3/16 (640)	26-1/4 (667)	42-1/16 (1068)	35 (889)	139-1/2 (3543)	60-13/16 (1545)	43-9/16 (1106)	134-1/2 (3416)	1/2	1/2
25	43-7/8 (1114)	23-1/2 (597)	16 (406)	25-3/16 (640)	34-1/2 (876)	42-1/16 (1068)	35 (889)	139-1/2 (3543)	60-13/16 (1545)	43-9/16 (1106)	134-1/2 (3416)	3/4	3/4
30	54-7/8 (1394)	26 (660)	17-1/2 (445)	26-11/16 (678)	37-1/4 (946)	53-1/16 (1348)	46 (1168)	139-1/2 (3543)	60-13/16 (1545)	43-9/16 (1106)	134-1/2 (3416)	3/4	3/4
35	54-7/8 (1394)	26 (660)	17-1/2 (445)	26-11/16 (678)	45-1/2 (1156)	53-1/16 (1348)	46 (1168)	139-1/2 (3543)	60-13/16 (1545)	43-9/16 (1106)	134-1/2 (3416)	3/4	3/4
40	60-3/8 (1534)	26 (660)	17-1/2 (445)	26-11/16 (678)	51 (1295)	58-9/16 (1487)	51-1/2 (1308)	139-1/2 (3543)	60-13/16 (1545)	43-9/16 (1106)	134-1/2 (3416)	3/4	3/4
50	43-7/8 (1114)	23-1/2 (597)	16 (406)	25-3/16 (640)	34-1/2 (876)	42-1/16 (1068)	35 (889)	165-1/2 (4204)	86-1/8 (2188)	44-1/4 (892)	160-1/2 (4077)	3/4	3/4
60	54-7/8 (1394)	26 (660)	17-1/2 (445)	26-11/16 (678)	37-1/4 (946)	53-1/16 (1348)	46 (1168)	165-1/2 (4204)	86-1/8 (2188)	44-1/4 (1124)	160-1/2 (4077)	3/4	3/4
70	54-7/8 (1394)	26 (660)	17-1/2 (445)	26-11/16 (678)	45-1/2 (1156)	53-1/16 (1348)	46 (1168)	165-1/2 (4204)	86-1/8 (2188)	44-1/4 (1124)	160-1/2 (4077)	3/4	3/4
80	60-3/8 (1534)	26 (660)	17-1/2 (445)	26-11/16 (678)	51 (1295)	58-9/16 (1487)	51-1/2 (1308)	165-1/2 (4204)	86-1/8 (2188)	44-1/4 (1124)	160-1/2 (4077)	3/4	3/4
12	60-3/8 (1534)	26 (660)	17-1/2 (445)	26-11/16 (678)	51 (1295)	58-9/16 (1487)	51-1/2 (1308)	191-1/2 (4864)	99-7/16 (2526)	44-1/4 (1124)	186-1/2 (4737)	3/4	3/4

**Note:** Dimensions are in inches. Dimensions in parenthesis are in millimeters.

- (a) "F" Dimension is the recommended clearance to service the burner drawer.
- (b) "J" Dimension is an outside dimension for the return air damper(s); and "J" is also the inside dimension for the supply opening (without a damper).
- (c) All dimensions are tabulated for Rooftop Arrangements J per capacities 20 through 12 accordingly (Capacities 12 are shown pictorially).

# Packaged Rooftop Arrangements

**Figure 22. Rooftop arrangement: K**  
**Capacities 10–80 unit sizes (capacity 50–80 shown)**



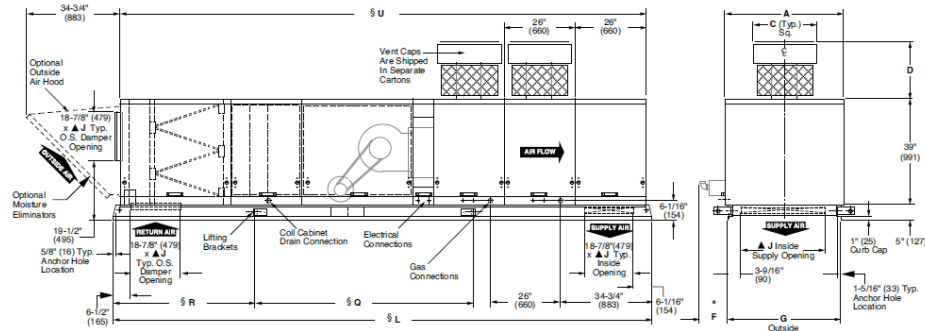
**Table 13. Dimensional data, rooftop arrangement K**

Capacity (CA)	A	B	C	D USA	D CANADA	F <sup>(a)</sup>	G	J <sup>(b)</sup>	L	Q	R	U <sup>(c)</sup>	Gas Inlet	
													NAT	LP
10	32-7/8 (835)	15-9/16 (395)	12 (305)	11 (279)	20-11/16 (525)	19-3/8 (492)	31-1/16 (789)	24 (610)	139-1/2 (3543)	52-1/2 (1334)	43-1/2 (1105)	134-1/2 (3416)	1/2	1/2
15	32-7/8 (835)	18-5/16 (465)	21-1/2 (546)	16 (406)	25-3/16 (640)	23-1/2 (597)	31-1/16 (789)	24 (610)	139-1/2 (3543)	52-1/2 (1334)	43-1/2 (1105)	134-1/2 (3416)	1/2	1/2
20	43-7/8 (1114)	23-13/16 (605)	23-1/2 (597)	16 (406)	25-3/16 (640)	26-1/4 (667)	42-1/16 (1068)	35 (889)	139-1/2 (3543)	52-1/2 (1334)	43-1/2 (1105)	134-1/2 (3416)	1/2	1/2
25	43-7/8 (1114)	29-5/16 (745)	23-1/2 (597)	16 (406)	25-3/16 (640)	34-1/2 (876)	42-1/16 (1068)	35 (889)	139-1/2 (3543)	52-1/2 (1334)	43-1/2 (1105)	134-1/2 (3416)	3/4	3/4
30	54-7/8 (1394)	34-13/16 (884)	26 (660)	17-1/2 (445)	26-11/16 (678)	37-1/4 (946)	53-1/16 (1348)	46 (1168)	139-1/2 (3543)	52-1/2 (1334)	43-1/2 (1105)	134-1/2 (3416)	3/4	3/4
35	54-7/8 (1394)	40-5/16 (1024)	26 (660)	17-1/2 (445)	26-11/16 (678)	45-1/2 (1156)	53-1/16 (1348)	46 (1168)	139-1/2 (3543)	52-1/2 (1334)	43-1/2 (1105)	134-1/2 (3416)	3/4	3/4
40	60-3/8 (1534)	45-13/16 (1164)	26 (660)	17-1/2 (445)	26-11/16 (678)	51 (1295)	58-9/16 (1487)	51-1/2 (1308)	139-1/2 (3543)	52-1/2 (1334)	43-1/2 (1105)	134-1/2 (3416)	3/4	3/4
50	43-7/8 (1114)	29-5/16 (745)	23-1/2 (597)	16 (406)	25-3/16 (640)	34-1/2 (876)	42-1/16 (1068)	35 (889)	165-1/2 (4204)	86-1/8 (2188)	35-1/8 (892)	160-1/2 (4077)	3/4	3/4
60	54-7/8 (1394)	34-13/16 (884)	26 (660)	17-1/2 (445)	26-11/16 (678)	37-1/4 (946)	53-1/16 (1348)	46 (1168)	165-1/2 (4204)	86-1/8 (2188)	35-1/8 (892)	160-1/2 (4077)	3/4	3/4
70	54-7/8 (1394)	40-5/16 (1024)	26 (660)	17-1/2 (445)	26-11/16 (678)	45-1/2 (1156)	53-1/16 (1348)	46 (1168)	165-1/2 (4204)	86-1/8 (2188)	35-1/8 (892)	160-1/2 (4077)	3/4	3/4
80	60-3/8 (1534)	45-13/16 (1164)	26 (660)	17-1/2 (445)	26-11/16 (678)	51 (1295)	58-3/4 (1487)	51-1/2 (1308)	165-1/2 (4204)	86-1/8 (2188)	35-1/8 (892)	160-1/2 (4077)	3/4	3/4

**Note:** Dimensions are in inches. Dimensions in parenthesis are in millimeters.

- (a) "F" Dimension is the recommended clearance to service the burner drawer.
- (b) "J" Dimension is an outside dimension for the return air damper(s).
- (c) All dimensions are tabulated for Rooftop Arrangements K per capacities 10 through 80 accordingly (Capacities 50/80 are shown pictorially).

**Figure 23. Rooftop arrangement: L**  
**Capacities 10–80 unit sizes (capacity 50–80 shown)**



**Table 14. Dimensional data, rooftop arrangement L**

Capacity (CA)	A	B	C	D USA	D CANADA	F(a)	G	J(b)	L	Q	R	U(c)	Gas Inlet	
													NAT	LP
10	32-7/8 (835)	15-9/16 (395)	12 (305)	11 (279)	20-11/16 (525)	19-3/8 (492)	31-1/16 (789)	24 (610)	165-1/2 (4204)	86-1/8 (2188)	44-1/4 (1124)	160-1/2 (4077)	1/2	1/2
15	32-7/8 (835)	18-5/16 (465)	21-1/2 (546)	16 (406)	25-3/16 (640)	23-1/2 (597)	31-1/16 (789)	24 (610)	165-1/2 (4204)	86-1/8 (2188)	44-1/4 (1124)	160-1/2 (4077)	1/2	1/2
20	43-7/8 (1114)	23-13/16 (605)	23-1/2 (597)	16 (406)	25-3/16 (640)	26-1/4 (667)	42-1/16 (1068)	35 (889)	165-1/2 (4204)	86-1/8 (2188)	44-1/4 (1124)	160-1/2 (4077)	1/2	1/2
25	43-7/8 (1114)	29-5/16 (745)	23-1/2 (597)	16 (406)	25-3/16 (640)	34-1/2 (876)	42-1/16 (1068)	35 (889)	165-1/2 (4204)	86-1/8 (2188)	44-1/4 (1124)	160-1/2 (4077)	3/4	3/4
30	54-7/8 (1394)	34-13/16 (884)	26 (660)	17-1/2 (445)	26-11/16 (678)	37-1/4 (946)	53-1/16 (1348)	46 (1168)	165-1/2 (4204)	86-1/8 (2188)	44-1/4 (1124)	160-1/2 (4077)	3/4	3/4
35	54-7/8 (1394)	40-5/16 (1024)	26 (660)	17-1/2 (445)	26-11/16 (678)	45-1/2 (1156)	53-1/16 (1348)	46 (1168)	165-1/2 (4204)	86-1/8 (2188)	44-1/4 (1124)	160-1/2 (4077)	3/4	3/4
40	60-3/8 (1534)	45-13/16 (1164)	26 (660)	17-1/2 (445)	26-11/16 (678)	51 (1295)	58-9/16 (1487)	51-1/2 (1308)	165-1/2 (4204)	86-1/8 (2188)	44-1/4 (1124)	160-1/2 (4077)	3/4	3/4
50	43-7/8 (1114)	29-5/16 (745)	23-1/2 (597)	16 (406)	25-3/16 (640)	34-1/2 (876)	42-1/16 (1068)	35 (889)	191-1/2 (4864)	99-7/16 (2526)	44-1/4 (1124)	186-1/2 (4737)	3/4	3/4
60	54-7/8 (1394)	34-13/16 (884)	26 (660)	17-1/2 (445)	26-11/16 (678)	37-1/4 (946)	53-1/16 (1348)	46 (1168)	191-1/2 (4864)	99-7/16 (2526)	44-1/4 (1124)	186-1/2 (4737)	3/4	3/4
70	54-7/8 (1394)	40-5/16 (1024)	26 (660)	17-1/2 (445)	26-11/16 (678)	45-1/2 (1156)	53-1/16 (1348)	46 (1168)	191-1/2 (4864)	99-7/16 (2526)	44-1/4 (1124)	186-1/2 (4737)	3/4	3/4
80	60-3/8 (1534)	45-13/16 (1164)	26 (660)	17-1/2 (445)	26-11/16 (678)	51 (1295)	58-3/4 (1487)	51-1/2 (1308)	191-1/2 (4864)	99-7/16 (2526)	44-1/4 (1124)	186-1/2 (4737)	3/4	3/4

**Note:** Dimensions are in inches. Dimensions in parenthesis are in millimeters.

- (a) "F" Dimension is the recommended clearance to service the burner drawer.
- (b) "J" Dimension is an outside dimension for the return air damper(s); and also the inside dimension for the supply opening (without a damper).
- (c) All dimensions are tabulated for Rooftop Arrangements L per capacities 10 through 80 accordingly (Capacities 50/80 are shown pictorially).



# Cooling Coil Options

## Rooftop Arrangement: K, L Coil Options Model Digit 17

Trane also offers coil cabinets and factory installed coils with our packaged air handlers. As standard equipment, we offer 4 or 6 row, single or dual circuit intertwine, DX (20 tons max.) or chilled water coils. Hot water and steam heating coils are also available. Trane coil cabinets feature draw through design to ensure even air flow across the coil face and a one piece 409 stainless steel positive drain drip pan conforming to ASHRAE standard No. 62-1989. The positive drain pan is designed for side outlet drainage piping.

**Figure 24. Cooling coils**

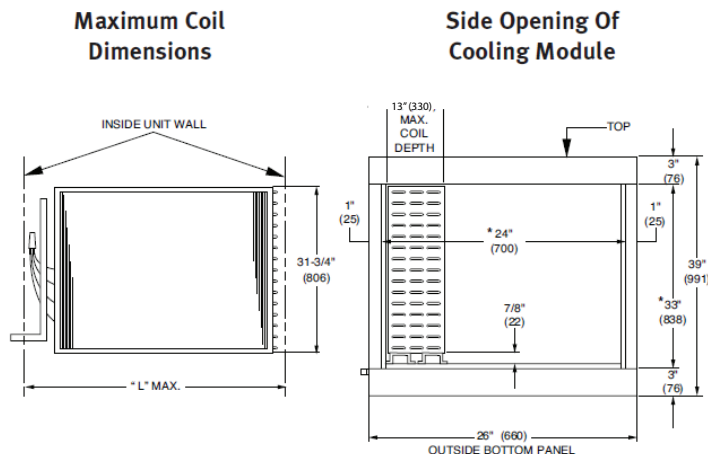


See the tables below for cooling coil performance data. If a cooling coil is to be installed upstream of a duct furnace, a 409 stainless steel heat exchanger is recommended.

**Note:** Rooftop Arrangements (K,L) should not exceed 6,300 CFM (3.0m<sup>3</sup>/s) or face velocities of 600 FPM.

### Coil Options Digit 17

- 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
- G - Chilled Water Coil, 6 Row
- 0 - None
- S - Other (Special)



Capacity (CA)	"L" Inside Max. Cabinet Openings
10/15	31- 1/4 (794)
20/25/50	42- 1/4 (1073)
30/35 60/70	53-1/4 (1353)
40/80	58-3/4 (1492)

NOTES:  
Dimensions are in inches.  
Dimensions in parenthesis are in millimeters.

## Rooftop Arrangements: K, L DX Cooling Coil Performance Data (Ref. R-410A)

**Table 15. Capacity based on 80°F EDB, 67°F EWB, 45°F sat. suction, 100°F liquid**

Capacity	Air Flow SCFM	Face Velocity FPM	4 Row					6 Row									
			Fin Spacing FPF	Coil Capacity MBH	L.A.T. DB / WB	A.P.D. IN. W.C.	WT. LBS.	Fin Spacing FPF	Coil Capacity MBH	L.A.T. DB / WB	A.P.D. IN. W.C.	WT. LBS.					
10,15	1200	240	79	40	58 / 56	0.12	63										
			104	45	56 / 55	0.16	66										
			124	48	55 / 54	0.18	69										
	1600	321	82	50	58 / 57	0.21	63										
			93	53	57 / 56	0.25	65										
			111	57	56 / 55	0.27	67										
	2000	401	83	58	60 / 58	0.30	63										
			106	65	57 / 56	0.37	66										
			123	69	57 / 56	0.40	69										
	2500	501	80	65	61 / 58	0.41	63						86	80	61 / 57	0.68	86
			109	75	58 / 57	0.52	67						100	85	57 / 56	0.73	89
			126	80	57 / 56	0.56	69						122	92	55 / 55	0.82	93
3000	601	81	72	62 / 59	0.53	63	74	84	59 / 58	0.75	83						
		106	82	60 / 58	0.67	66	84	89	58 / 57	0.87	85						
		131	90	58 / 57	0.75	70	102	97	57 / 56	0.96	89						
20,25,50	1600	217	72	58	56 / 55	0.10	80	85	70	53 / 52	0.18	113					
			84	62	55 / 54	0.11	82	104	74	52 / 51	0.21	119					
			104	67	54 / 53	0.14	86	128	78	50 / 50	0.23	126					
	2100	271	73	69	57 / 56	0.15	80	78	82	54 / 53	0.23	111					
			88	74	56 / 55	0.18	83	94	87	53 / 52	0.28	116					
			118	82	56 / 54	0.21	89	119	93	51 / 51	0.32	123					
	3000	407	72	88	60 / 57	0.29	80	80	112	55 / 54	0.45	111					
			95	98	58 / 56	0.36	84	102	122	54 / 53	0.56	118					
			117	106	56 / 55	0.41	89	122	129	53 / 52	0.61	124					
	4000	542	72	102	62 / 59	0.45	80	80	135	57 / 56	0.69	111					
			99	116	59 / 57	0.57	85	104	149	56 / 55	0.86	119					
			117	124	58 / 57	0.62	89	121	157	55 / 54	0.94	124					
4400	596	85	106	62 / 59	0.52	82	80	143	57 / 56	0.79	111						
		96	120	60 / 58	0.64	85	106	159	56 / 55	1.00	119						
		129	130	58 / 57	0.73	91	113	163	55 / 55	1.03	121						



## Cooling Coil Options

Table 15. Capacity based on 80°F EDB, 67°F EWB, 45°F sat. suction, 100°F liquid (continued)

Capacity	Air Flow SCFM	Face Velocity FPM	4 Row					6 Row				
			Fin Spacing FPF	Coil Capacity MBH	L.A.T. DB / WB	A.P.D. IN. W.C.	WT. LBS.	Fin Spacing FPF	Coil Capacity MBH	L.A.T. DB / WB	A.P.D. IN. W.C.	WT. LBS.
30,35,60,70	2400	246	82	85	57 / 55	0.13	105	72	103	53 / 52	0.18	141
			88	93	55 / 54	0.15	107	92	111	52 / 51	0.24	150
			125	100	54 / 53	0.18	117	123	119	50 / 50	0.28	162
	3000	307	75	101	58 / 56	0.18	104	72	122	54 / 53	0.27	141
			106	113	55 / 54	0.21	112	91	132	53 / 52	0.35	149
			130	120	54 / 54	0.27	119	114	140	52 / 51	0.39	159
	4000	410	79	121	59 / 57	0.30	105	75	152	55 / 54	0.45	143
			109	136	57 / 56	0.39	113	95	164	54 / 53	0.56	151
			132	147	56 / 55	0.43	119	114	173	53 / 52	0.61	159
	5000	512	75	132	61 / 58	0.42	104	73	173	57 / 55	0.62	142
			110	156	58 / 57	0.55	113	94	189	55 / 54	0.77	150
			135	170	57 / 56	0.61	120	111	199	54 / 54	0.83	157
5800	594	80	146	61 / 59	0.53	105	86	184	58 / 56	0.79	147	
		104	165	59 / 58	0.66	111	102	198	57 / 56	0.96	153	
		122	177	58 / 57	0.71	116	115	208	56 / 55	1.02	159	
40,80	3200	295	85	114	56 / 55	0.20	115	72	134	54 / 53	0.25	153
			122	127	55 / 54	0.21	126	90	143	52 / 52	0.32	161
			137	134	54 / 53	0.26	131	125	155	51 / 50	0.38	177
	4000	369	82	128	58 / 56	0.26	114	72	157	55 / 54	0.37	153
			107	143	56 / 55	0.33	122	90	168	54 / 53	0.46	161
			131	154	55 / 54	0.37	129	109	177	52 / 52	0.51	170
	5000	464	81	145	60 / 58	0.37	114	87	179	56 / 55	0.55	160
			107	164	57 / 56	0.47	122	93	196	55 / 54	0.66	163
			132	178	56 / 55	0.52	129	109	206	54 / 53	0.71	170
	6000	553	81	160	61 / 58	0.48	114	85	200	57 / 56	0.72	159
			108	182	58 / 57	0.61	122	100	224	55 / 54	0.89	166
			126	194	57 / 56	0.66	127	113	233	55 / 54	0.94	172
6500	599	77	163	62 / 59	0.53	112	80	205	58 / 57	0.79	156	
		105	187	59 / 58	0.67	121	93	229	56 / 55	0.96	163	
		116	196	58 / 57	0.71	124	105	238	55 / 55	1.01	168	

**Notes:**

1. Conversions: 2119 SCFM = 1m<sup>3</sup>/s, 196.8FPM = 1m/s, 3.412 MBH = 1kW, (°F-32) 5/9 = °C, 1 IN.W.C. = 248.8 Pa, 0.4536 kg = 1 lb.
2. Data certified in accordance with ARI Standard 410.
3. Weight listed is the total weight of the dry coil.
4. Consult Customer Service Department for special coil requirements.



**Table 16. Capacity based on 95°F EDB, 74°F EWB, 45°F sat. suction, 100°F liquid**

Capacity	Air Flow SCFM	Face Velocity FPM	4 Row					6 Row				
			Fin Spacing FPF	Coil Capacity MBH	L.A.T. DB / WB	A.P.D. IN. W.C.	WT. LBS.	Fin Spacing FPF	Coil Capacity MBH	L.A.T. DB / WB	A.P.D. IN. W.C.	WT. LBS.
10,15	1200	240	72	62	62 / 59	0.12	62	73	72	57 / 56	0.18	83
			101	70	58 / 57	0.14	66	95	78	55 / 54	0.23	88
			133	77	55 / 54	0.18	70	120	83	53 / 53	0.26	93
	1600	321	72	75	64 / 60	0.19	62	73	90	59 / 57	0.29	83
			89	82	61 / 59	0.24	64	86	95	57 / 56	0.35	86
			122	91	58 / 57	0.24	68	104	101	55 / 55	0.39	90
	2000	401	81	90	64 / 61	0.30	63	83	110	59 / 58	0.44	85
			104	100	61 / 59	0.37	66	103	119	57 / 56	0.55	89
			124	107	59 / 58	0.40	69	127	127	55 / 55	0.61	94
	2500	501	79	101	66 / 62	0.41	62	83	128	60 / 59	0.62	85
			101	112	63 / 61	0.51	66	105	140	58 / 57	0.77	90
			122	121	61 / 60	0.56	68	129	150	56 / 56	0.86	95
	3000	601	81	111	68 / 63	0.54	63	83	143	62 / 60	0.8	85
			114	121	65 / 62	0.67	67	107	158	59 / 58	1.00	90
			111	128	64 / 62	0.69	57	122	166	58 / 58	1.08	93
20,25,50	1600	217	76	91	59 / 57	0.10	80	72	105	55 / 54	0.15	109
			92	97	57 / 56	0.13	84	92	112	53 / 53	0.19	115
			116	104	55 / 54	0.15	89	127	120	51 / 50	0.23	126
	2100	271	80	106	62 / 59	0.17	81	72	130	56 / 55	0.24	109
			91	116	59 / 58	0.20	84	87	137	55 / 54	0.27	113
			117	123	57 / 56	0.23	89	104	144	53 / 53	0.33	119
	3000	407	80	136	64 / 61	0.30	81	77	170	57 / 57	0.45	110
			115	155	60 / 59	0.40	88	93	181	57 / 56	0.54	115
			144	169	58 / 57	0.45	94	120	195	55 / 54	0.61	124
	4000	542	83	159	67 / 63	0.47	82	94	205	60 / 59	0.81	115
			115	184	63 / 61	0.60	88	97	221	59 / 58	0.84	117
			141	200	61 / 59	0.68	94	112	232	57 / 57	0.91	121
	4400	596	82	165	68 / 63	0.53	82	77	215	62 / 60	0.79	110
			117	195	63 / 61	0.70	89	97	234	59 / 58	0.96	117
			130	204	62 / 61	0.74	91	126	244	58 / 57	1.09	125



## Cooling Coil Options

**Table 16. Capacity based on 95°F EDB, 74°F EWB, 45°F sat. suction, 100°F liquid (continued)**

Capacity	Air Flow SCFM	Face Velocity FPM	4 Row					6 Row				
			Fin Spacing FPF	Coil Capacity MBH	L.A.T. DB / WB	A.P.D. IN. W.C.	WT. LBS.	Fin Spacing FPF	Coil Capacity MBH	L.A.T. DB / WB	A.P.D. IN. W.C.	WT. LBS.
30,35,60,70	2400	246	84	135	59 / 57	0.15	106	75	159	55 / 54	0.19	143
			115	149	56 / 55	0.15	114	96	169	53 / 52	0.25	151
			132	157	55 / 54	0.19	119	113	175	52 / 51	0.27	158
	3000	307	89	156	61 / 59	0.23	108	73	186	56 / 55	0.27	142
			114	174	58 / 57	0.22	114	95	200	54 / 54	0.35	151
			137	187	56 / 55	0.28	120	133	210	53 / 52	0.41	166
	4000	410	83	186	64 / 60	0.31	106	84	227	58 / 57	0.46	146
			110	209	60 / 59	0.40	113	105	251	56 / 55	0.59	155
			135	225	58 / 57	0.44	120	133	266	54 / 54	0.66	166
	5000	512	83	210	66 / 62	0.43	106	85	265	60 / 58	0.72	146
			111	238	62 / 60	0.55	113	114	295	57 / 56	0.85	159
			125	250	61 / 59	0.59	117	141	315	55 / 55	0.95	169
5800	594	81	224	67 / 63	0.53	105	84	288	61 / 59	0.80	146	
		109	255	64 / 61	0.67	113	112	322	58 / 57	1.02	157	
		118	264	63 / 61	0.70	115	130	339	57 / 56	1.11	165	
40,80	3200	295	86	173	60 / 58	0.19	115	89	206	55 / 54	0.32	161
			132	189	57 / 56	0.25	129	116	225	52 / 52	0.37	173
			130	200	56 / 55	0.26	129	147	235	51 / 51	0.42	187
	4000	369	82	195	63 / 60	0.27	114	78	238	57 / 56	0.38	156
			105	215	60 / 58	0.33	121	108	260	55 / 54	0.51	170
			122	227	58 / 57	0.36	126	136	275	53 / 53	0.56	182
	5000	464	81	220	65 / 61	0.37	114	84	279	59 / 57	0.56	159
			119	245	61 / 60	0.48	125	118	307	56 / 55	0.74	174
			130	266	59 / 58	0.52	129	141	328	54 / 54	0.81	184
	6000	553	92	242	66 / 62	0.55	117	84	312	60 / 59	0.81	156
			107	272	63 / 61	0.61	122	126	348	57 / 57	1.00	178
			129	293	61 / 60	0.67	128	135	368	56 / 55	1.04	182
6500	599	87	245	67 / 63	0.60	115	81	322	61 / 59	0.80	157	
		104	280	64 / 62	0.67	121	108	359	59 / 58	1.01	169	
		124	301	62 / 61	0.74	127	123	376	57 / 57	1.09	176	

**Notes:**

1. Conversions: 2119 SCFM = 1m<sup>3</sup>/s, 196.8FPM = 1m/s, 3.412 MBH = 1kW, (°F-32) 5/9 = °C, 1 IN.W.C. = 248.8 Pa, 0.4536 kg = 1 lb.
2. Data certified in accordance with ARI Standard 410.
3. Weight listed is the total weight of the dry coil.
4. Consult Customer Service Department for special coil requirements.

## Rooftop Arrangements: K, L Chilled Water Cooling Coil Performance Data

**Table 17. Capacity based on 80°F EDB, 67°F EWB, 45°F EWT, 70 GPM**

Capacity	Air Flow SCFM	Face Velocity FPM	4 Row					6 Row				
			Fin Spacing FPF	Coil Capacity MBH	L.A.T. DB / WB	A.P.D. IN. W.C.	WT. LBS.	Fin Spacing FPF	Coil Capacity MBH	L.A.T. DB / WB	A.P.D. IN. W.C.	WT. LBS.
10,15	1000	200	84	46.7	52/ 51	0.10	64	84	54.4	49/ 48	0.15	86
			93	48.1	51/ 50	0.10	65	97	56.0	48/ 47	0.17	89
			97	50.6	50/ 49	0.11	67	120	58.0	47/ 46	0.19	93
	1600	320	84	64.1	55/ 53	0.22	64	84	78.0	51/ 50	0.33	86
			88	68.7	54/ 52	0.23	66	101	82.0	50/ 49	0.37	90
			105	73.3	52/ 51	0.25	68	125	86.0	49/ 48	0.41	95
	2900	581	84	87.7	59/ 57	0.54	64	84	112.8	55/ 54	0.81	86
			86	95.3	58/ 56	0.55	65	101	120.0	54/ 53	0.89	90
			101	102.7	57/ 55	0.60	67	128	128.0	53/ 52	0.91	95
20,25,50	1800	243	84	78.8	53/ 52	0.14	83	84	93.5	50/ 49	0.21	113
			90	84.0	52/ 51	0.15	86	103	98.0	49/ 48	0.24	119
			111	90.0	51/ 50	0.17	90	123	101.2	48/ 47	0.26	125
	3000	406	84	107.2	57/ 55	0.32	83	84	133.3	53/ 52	0.48	113
			88	116.0	56/ 54	0.33	86	102	141.2	52/ 51	0.53	119
			104	124.0	54/ 53	0.36	89	123	148.6	51/ 50	0.59	125
	4300	582	84	127.5	60/ 58	0.54	83	84	163.3	55/ 54	0.82	113
			102	138.0	58/ 56	0.60	86	103	175.0	54/ 53	0.91	119
			124	149.0	57/ 56	0.67	91	125	186.0	53/ 52	1.00	126
30,35,60,70	2000	204	84	91.7	52/ 51	0.10	106	84	107.1	49/ 48	0.16	147
			93	95.0	52/ 51	0.11	109	95	110.0	48/ 48	0.17	151
			96	99.0	51/ 50	0.11	113	123	115.0	47/ 47	0.20	163
	3200	327	84	124.2	56/ 54	0.23	107	84	151.3	52/ 51	0.34	147
			88	133.0	54/ 53	0.24	111	103	160.0	50/ 50	0.39	155
			105	142.0	53/ 52	0.26	115	124	167.0	49/49	0.42	163
	4500	460	84	148.8	58/ 56	0.39	107	84	186.6	54/ 53	0.58	147
			101	160.0	57/ 55	0.43	111	103	199.0	53/ 52	0.65	155
			103	172.0	55/ 54	0.43	115	125	210.0	52/ 51	0.71	164
5700	583	84	165.6	60/ 58	0.55	107	84	211.2	56/ 55	0.82	147	
		102	179.0	58/ 57	0.60	112	102	226.0	55/ 54	0.89	154	
		125	194.0	57/ 56	0.67	118	126	241.0	53/ 53	1.00	164	



## Cooling Coil Options

**Table 17. Capacity based on 80°F EDB, 67°F EWB, 45°F EWT, 70 GPM (continued)**

Capacity	Air Flow SCFM	Face Velocity FPM	4 Row					6 Row				
			Fin Spacing FPF	Coil Capacity MBH	L.A.T. DB / WB	A.P.D. IN. W.C.	WT. LBS.	Fin Spacing FPF	Coil Capacity MBH	L.A.T. DB / WB	A.P.D. IN. W.C.	WT. LBS.
40,80	2200	202	84	100.8	52/ 51	0.10	115	85	118.0	49/ 48	0.15	160
			95	105.0	52/51	0.11	119	92	120.0	48/ 48	0.16	163
			111	110.0	51/ 50	0.12	123	100	122.0	48/ 47	0.17	167
	3500	322	84	136.0	55/ 54	0.22	115	84	165.4	52/ 51	0.33	159
			102	146.0	54/ 53	0.25	121	101	174.0	50/ 50	0.37	167
			122	155.0	53/ 52	0.27	127	125	183.0	49/ 49	0.41	178
	4900	451	84	162.5	58/ 56	0.38	115	84	203.2	54/ 53	0.56	159
			102	175.2	56/ 55	0.42	121	102	216.0	53/ 52	0.63	168
			124	188.1	55/ 54	0.46	127	124	228.0	52/ 51	0.69	178
	6300	580	84	181.9	60/ 58	0.54	115	84	231.0	56/ 55	0.81	159
			104	198.0	58/ 57	0.60	121	104	249.0	54/ 54	0.89	168
			103	213.0	57/ 56	0.60	213	125	264.0	53/ 53	0.98	178

**Notes:**

1. Conversions: 2119 SCFM = 1m<sup>3</sup>/s, 196.8FPM = 1m/s, 3.412 MBH = 1kW, (°F-32) 5/9 = °C, 1 IN. W.C. = 248.8 Pa, 0.4536 kg = 1 lb.
2. Data certified in accordance with ARI Standard 410.
3. Weight listed is the total weight of the dry coil.
4. Consult Customer Service Department for special coil requirements.

**Table 18. Capacity based on 95°F EDB, 74°F EWB, 45°F EWT, 70 GPM**

Capacity	Air Flow SCFM	Face Velocity FPM	4 Row					6 Row				
			Fin Spacing FPF	Coil Capacity MBH	L.A.T. DB / WB	A.P.D. IN. W.C.	WT. LBS.	Fin Spacing FPF	Coil Capacity MBH	L.A.T. DB / WB	A.P.D. IN. W.C.	WT. LBS.
10,15	1000	200	84	66.4	55/ 54	0.10	64	84	77.4	50/ 49	0.15	86
			94	69.0	54/ 53	0.11	65	87	78.0	50/ 49	0.15	87
			115	73.0	52/ 51	0.12	68	106	81.0	48/ 48	0.18	91
	1600	320	84	90.7	59/ 57	0.22	64	84	110.7	54/ 53	0.33	86
			101	97.3	57/ 56	0.25	66	100	116.0	52/ 51	0.37	89
			129	103.8	55/ 54	0.25	70	120	121.0	51/ 50	0.40	93
	2900	581	84	123.4	66/ 62	0.54	64	84	159.1	59/ 58	0.81	86
			104	135.0	63/ 60	0.61	66	102	170.0	57/ 56	0.89	90
			125	145.0	61/ 59	0.66	69	126	182.0	56/ 55	1.00	95
20,25,50	1800	243	84	111.8	57/ 55	0.14	83	84	132.8	52/ 51	0.21	113
			101	119.0	55/ 54	0.16	86	101	138.6	50/ 50	0.24	118
			126	127.0	53/ 52	0.18	91	123	144.0	49/ 48	0.26	125
	3000	406	84	151.3	62/ 59	0.32	83	84	188.5	56/ 55	0.48	113
			102	163.0	60/ 58	0.36	86	102	200.0	54/ 54	0.54	119
			124	175.0	58/ 57	0.40	91	125	211.0	53/ 52	0.59	126
	4300	582	84	179.2	66/ 62	0.54	83	84	230.2	60/ 58	0.81	113
			103	195.0	64/ 61	0.60	86	104	248.0	58/ 57	0.90	119
			126	211.0	61/ 60	0.66	91	127	264.0	46/ 55	1.00	126

**Table 18. Capacity based on 95°F EDB, 74°F EWB, 45°F EWT, 70 GPM (continued)**

Capacity	Air Flow SCFM	Face Velocity FPM	4 Row					6 Row				
			Fin Spacing FPF	Coil Capacity MBH	L.A.T. DB / WB	A.P.D. IN. W.C.	WT. LBS.	Fin Spacing FPF	Coil Capacity MBH	L.A.T. DB / WB	A.P.D. IN. W.C.	WT. LBS.
30,35,60,70	2000	204	84	130.2	56/ 54	0.10	107	84	152.3	51/ 50	0.16	147
			92	134.0	55/ 53	0.11	109	91	155.0	50/ 49	0.17	150
			108	141.0	53/ 52	0.12	113	103	159.0	49/ 49	0.18	155
	3200	327	84	175.5	60/ 58	0.23	107	84	214.3	54/ 53	0.34	147
			101	188.0	58/ 56	0.26	111	100	225.0	53/ 52	0.38	154
			124	201.0	56/ 55	0.28	118	125	237.0	51/ 51	0.42	164
	4500	460	84	209.5	64/ 60	0.39	107	84	263.2	58/ 56	0.58	147
			102	226.0	61/ 59	0.43	112	103	281.0	56/ 55	0.64	155
			133	249.0	59/ 58	0.49	120	126	298.0	54/ 54	0.71	164
	5700	583	84	232.5	66/ 62	0.54	107	84	297.3	60/ 59	0.80	147
			104	254.0	64/ 61	0.59	112	104	321.0	58/ 57	0.89	155
			126	274.0	62/ 60	0.66	118	126	341.0	57/ 56	0.99	164
40,80	2200	202	84	143.1	56/ 54	0.10	115	84	167.4	51/ 50	0.15	159
			91	147.0	55/ 53	0.11	117	93	171.0	50/ 49	0.17	163
			108	155.0	53/ 52	0.12	122	101	174.0	49/ 49	0.17	167
	3500	322	84	192.1	60/ 58	0.22	115	84	234.2	54/ 53	0.33	159
			102	206.0	58/ 56	0.25	121	102	247.0	53/ 52	0.37	168
			124	220.0	56/ 55	0.27	127	125	259.0	51/ 51	0.41	178
	4900	451	84	228.6	64/ 60	0.38	115	84	286.6	58/ 56	0.56	159
			103	248.0	61/ 59	0.42	121	103	306.0	56/ 55	0.62	168
			125	266.0	59/ 58	0.45	128	125	323.0	55/ 54	0.68	178
	6300	580	84	255.4	66/ 62	0.53	115	84	326.3	60/ 59	0.79	159
			104	279.0	64/ 61	0.59	121	105	352.0	58/ 57	0.88	169
			126	301.0	62/ 60	0.65	128	127	374.0	57/ 56	0.98	179

**Notes:**

1. Conversions: 2119 SCFM = 1m<sup>3</sup>/s, 196.8FPM = 1m/s, 3.412 MBH = 1kW, (°F-32) 5/9 = °C, 1 IN. W.C. = 248.8 Pa, 0.4536 kg = 1 lb.
2. Data certified in accordance with ARI Standard 410.
3. Weight listed is the total weight of the dry coil.
4. Consult Customer Service Department for special coil requirements.



# Unit Options and Accessory Descriptions

## Gas Type

### Model Digit 12

Trane Engineered Products Heating systems are available from the factory equipped for Natural or LP gas. Natural gas units are equipped for altitudes up to 2,000 ft. (610m) above sea level and LP gas units are equipped for altitudes up to 3,000 ft. (914 m) above sea level. Please state altitude if above factory equipped altitudes when placing your order for proper factory settings.

N - Natural Gas with Standard Solid State Ignition Control

P - Propane (LP) Gas with 100% Shutoff Solid State Ignition

L - Natural Gas with 100% Shutoff Solid State Ignition Control

## Gas Control

### Model Digit 9

In order to meet your most demanding applications from Single Zone Single Stage to Multi Zone Multi Stage to Direct Digital Control (DDC) with turn down ratios as high as 7.5:1 and modulated output, Trane Engineered Products offers the following factory installed gas controls. Providing the high quality and performance you've come to rely on with Trane HVAC Products.

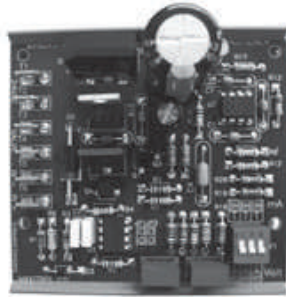
- A - One Stage Gas  
Provides On/Off gas control in response to a room or duct thermostat.
- B - Two Stage Gas  
Provides two stages of gas control Low 40% and High 100% rates of fire in response to a room or duct thermostat.
- G - Electronic Modulation with Room Sensing  
Modulates from 100% to 40% of the units rated input in response to the setpoint setting of an electronic room sensor. Electronic Modulation is capable of maintaining discharge temperature within +/- 1°F 60-85°F range.
- H - Electronic Modulation with Duct Sensing  
Modulates from 100% to 40% of the units rated input in response to the setting of a remote setpoint and an electronic duct sensor. Electronic Modulation is capable of maintaining discharge air temperature within +/- 1°F. 55-90°F. range.
- J - Electronic Modulation with Duct Sensing and Override Stat  
Same as "H" with the addition of a room override stat. The room override stat signals the electronic controller in the event that room temperature has dropped below its setpoint. In response the electronic control increases the rate of modulated input to the unit in proportion to the difference between sensed room temperature and the setpoint.

Figure 25. Gas control J



- K - Electronic Modulation with External 4-20 mA input, furnace one only  
Setup for the first furnace in multi furnace units with any additional furnaces being single stage. This Gas Control requires a Direct Digital Controller (DDC) or other external signal source. Modulates from 100% to 50% of the first furnaces rated input in response to an analog input of 4-20 mA from an external controller. Additional furnace sections of the unit are actuated by digital outputs from the external controller based upon the control program.

**Figure 26. Gas control K, L, M, N**



- L - Electronic Modulation with External 4-20 mA input, (All furnaces-capacities 50/80 and 12)  
This Gas Control requires a Direct Digital Controller (DDC) or other external signal source. Modulates from 100% to 40% of the units rated input in response to an analog input of 4-20 mA from an external controller (choose Digit "K" for 10/40 capacities).
- M - Electronic Modulation with External 0-10 VDC input, furnace one only  
Same as "K" except a 0-10 VDC input signal is required.
- N - Electronic Modulation with External 0-10 VDC input, (All furnaces-capacities 50/80 and 12)  
Same as "L" except a 0-10 VDC input signal is required (choose Digit "M" for 10/40 capacities).
- P - Remote Temperature Control, Two Stage  
Provides two stage control utilizing a T775 temperature controller, electronically sensing room or duct temperature and actuating stages based upon programmed setpoints and temperature differentials between stages.

**Figure 27. Gas control P, R, T**



- R - Remote Temperature Control, Three Stage  
Same as "P" except with three stage control.
- T - Remote Temperature Control, Four Stage  
Same as "P" except with four stage control.

## Unit Options and Accessory Descriptions

- U - S350 Modular Electronic Control System, Two Stage  
Basic system utilizes a controller module with discharge air sensor, setpoint and one stage output, a stage module with differential set point and one stage output and a display module with LCD display for temperature readout. The system stages the units rate of fire based upon sensed discharge air temperature, setpoint setting and differential setting between stages; -30 to 130 °F range.

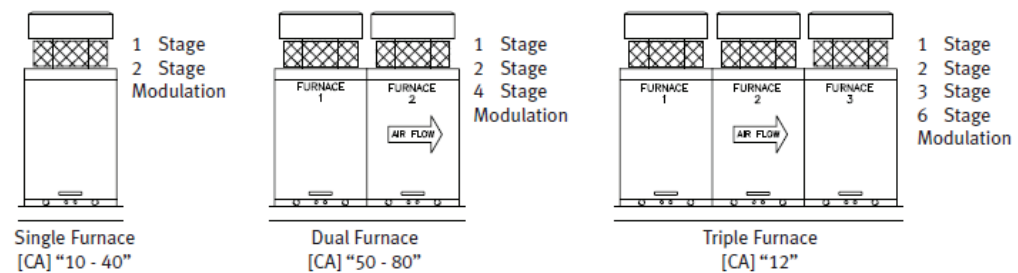
**Note:** When utilizing outside and return air with modulating damper refer to Air Control item "P" for the S350 proportional air control.

**Figure 28. Gas control U, W, X, Y**



- W - S350 Modular Electronic Control System, Three Stage  
Same as "U" with the addition of a stage module.
- X - S350 Modular Electronic Control System, Four Stage  
Same as "U" with the addition of two stage modules.
- Y - S350 Modular Electronic Control System, Six Stage  
Same as "U" with the addition of four stage modules.

**Figure 29. Gas control reference**



## Supply Voltage

### Model Digit 8

The standard supply voltages are listed below.

- A - 115 VAC, Single Phase, 60 Cycle
- B - 208 VAC, Single Phase, 60 Cycle
- C - 230 VAC, Single Phase, 60 Cycle
- D - 208 VAC, Three Phase, 60 Cycle
- E - 230 VAC, Three Phase, 60 Cycle



F - 460 VAC, Three Phase, 60 Cycle

G - 575 VAC, Three Phase, 60 Cycle

### Motor Type

#### Model Digit 16

Blower Motors are available in Open Drip Proof, Totally Enclosed, Premium Efficiency Open Drip Proof and Premium Efficiency Totally Enclosed. Motors are ball bearing type with a resilient base 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. Motors are in compliance with the Energy Policy Act (EPACT) of 1992 and any of its latest editions.

1 - Open Drip Proof Motor (ODP)

2 - Totally Enclosed (TEFC)

3 - Premium Efficiency Open Drip Proof (PEODP)

4 - Premium Efficiency Totally Enclosed (PETE)

### Motor Size

#### Model Digit 15

Motors are available from 1/2 to 15 HP. Thermal Protection is automatic for most motors up to 5 HP., a Magnetic Starter with IEC (International Electrotechnical Commission) type over current protection must be used for motors without automatic thermal protection and motors above 5 HP.

Variable Frequency Drive (VFD) operating range: 14°F to 130°F. For temperatures below 14°F, VFD must be factory-installed within the VFD Enclosure accessory (Model Digit 22, option 9), or field-mounted indoors.

A - 1/2 HP. with Contactor

B - 3/4 HP. with Contactor

C - 1 HP. with Contactor

D - 1 1/2 HP. with Contactor

E - 2 HP. with Contactor

F - 3 HP. with Contactor

G - 5 HP. with Contactor

H - 1/2 HP. with Magnetic Starter and IEC over current protection

J - 3/4 HP. with Magnetic Starter and IEC over current protection

K - 1 HP. with Magnetic Starter and IEC over current protection

L - 1 1/2 HP. with Magnetic Starter and IEC over current protection

N - 2 HP. with Magnetic Starter and IEC over current protection

P - 3 HP. with Magnetic Starter and IEC over current protection

Q - 5 HP. with Magnetic Starter and IEC over current protection

R - 7 1/2 HP. with Magnetic Starter and IEC over current protection

T - 10 HP. with Magnetic Starter and IEC over current protection

U - 15 HP. with Magnetic Starter and IEC over current protection

V - 1 HP. with Variable Frequency Drive

W - 1 1/2 HP. with Variable Frequency Drive

X - 2 HP. with Variable Frequency Drive

Y - 3 HP. with Variable Frequency Drive

Z - 5 HP. with Variable Frequency Drive

1 - 7 1/2 HP. with Variable Frequency Drive

2 - 10 HP. with Variable Frequency Drive

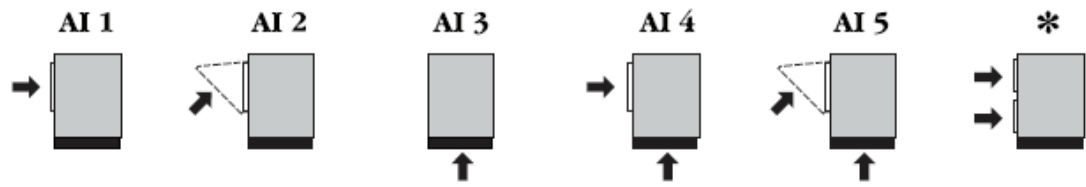
3 - 15 HP. with Variable Frequency Drive

## Air Inlet Configuration

### Model Digit 18

The Air Inlet Configuration defines the entering air openings for Trane Engineered Products. This item does not include dampers and must match the required opening for Air Control and Damper Arrangement A horizontal return air feature is offered on air inlet configurations 4 and 5. Refer to Digit 21, Accessory option D.

**Figure 30. Air inlet configuration**



1 - Horizontal Inlet (100% Outside Air or 100% Return Air)

2 - Horizontal Inlet (100% Outside Air or 100% Return Air) with Intake Hood

3 - Bottom Return Air Opening

4 - Outside and Return Air Opening

5 - Outside and Return Air Opening with Intake Hood

\* Horizontal Outside and Return Air Openings. See Accessories Section Model Digit 21, option D.

## Air Control and Damper Arrangement

### Model Digit 19

- A - Outside air damper with 2 Position spring return damper motor. Outside air damper opens upon energizing the unit blower motor.
- B - Return air damper with 2 Position spring return damper motor. Return air damper opens upon energizing the unit blower motor.
- C - Outside and return air interlocked dampers with 2 position spring return damper motor. Outside air damper opens and return air damper closes upon energizing the unit blower motor.
- E - Outside and return air interlocked dampers with modulating spring return damper motor, mixed air temperature control, and minimum position potentiometer. Outside and return air dampers modulate in response to the mixed air temperature setpoint and allow minimum outside air setting. When de-energized outside air dampers close and return air dampers open.
- H - Outside and return air interlocked dampers with modulating spring return damper motor and mixed air temperature control. Outside and return air dampers modulate in response to the mixed air temperature setpoint. When de-energized outside air dampers close and return air dampers open.
- K - Outside and return air interlocked dampers with modulating spring return damper motor and positioning potentiometer. Outside and return air dampers open and close with respect to the setting of the positioning potentiometer. When de-energized outside air dampers close and return air dampers open.
- M - Outside and return air interlocked dampers with modulating spring return damper motor. Mixed air temperature control, minimum position potentiometer, and dry bulb economizer. Outside and return air dampers modulate in response to the mixed air temperature setpoint and allow minimum outside air setting. Dampers respond to the economizer when the outside air temperature is within the set point range by opening the outside and closing the return air damper to achieve free cooling effect. When de-energized outside air dampers close and return air dampers open.
- N - Outside and return air interlocked dampers with modulating spring return damper motor and enthalpy controlled economizer outside and return air dampers modulate in response to the heat content of sensed mixed air. The air mixture is optimized to provide inlet air with the lowest possible load characteristics in both heating and cooling modes. When de-energized outside air dampers close and return air dampers open.

## Unit Options and Accessory Descriptions

- P - Outside and return air interlocked dampers with modulating damper motor and atmospheric pressure sensor. Outside and return air dampers modulate in response to sensed building pressure, typically maintaining a slightly positive building pressure in order to reduce heat loss due to infiltration.
- Q - Outside and return air interlocked dampers with modulating damper motor and CO<sub>2</sub> (carbon dioxide) monitor. Outside and return air dampers modulate in response to the CO<sub>2</sub> monitor set point. Monitor is located in the return air stream. On a rise in CO<sub>2</sub> level, the outside damper modulates open and the return air damper closes. A decrease in CO<sub>2</sub> level modulates the outside air damper closed and opens the return air damper. When the unit is de-energized, the damper motor will close the outside air damper and open the return air damper. Equipped with one normally open contact for alarm light or bell to guard against times of sustained high CO<sub>2</sub> levels. CO<sub>2</sub> monitor is shipped loose for field installation.
- R - Outside and return air interlocked dampers with modulating spring return damper motor and S350 proportional mixed air control. Outside and return air dampers modulate in response to the mixed air temperature setpoint, and allow minimum outside air setting. When de-energized outside air dampers close and return air dampers open.
- U - Outside and return air interlocked dampers with modulating spring return damper motor and 0-10VDC or 4-20mA input. Requires an external input signal from a Direct Digital Controller (DDC). Provides proportional control from a building management system or electronic controller based on programmed parameters. When de-energized outside air dampers close and return air dampers open.
- W - ASHRAE Cycle I Outside and return dampers with two position spring return damper motor and warm-up thermostat. When energized dampers open in response to the warm-up thermostat preventing cold air starts.
- X - ASHRAE Cycle II Outside and return air interlocked dampers with modulating spring return damper motor. Mixed air temperature control, minimum position potentiometer, and warm-up thermostat. Outside and return air dampers modulate in response to the mixed air temperature setpoint and allow minimum outside air setting once the warm-up thermostat has been satisfied. When de-energized outside air dampers close and return air dampers open.
- Y - ASHRAE Cycle III Outside and return air interlocked dampers with modulating spring return damper motor. Mixed air temperature control and warm-up thermostat. Outside and return air dampers modulate in response to the mixed air temperature setpoint once the warmup thermostat has been satisfied. When de-energized outside air dampers close and return air dampers open.
- Z - Manual outside and return air dampers. Dampers are locked into position utilizing a manual quadrant for field adjustment.

## Accessories

### Model Digit 21

### Mechanical Accessories

- C - Moisture eliminators  
Use in place of the bird screen with an outside air hood. The metal wire filter is designed to collect water droplets/mists and drain them to the bottom of the filter. This item includes an electrically interlocked differential pressure switch with indicator lamp in case of blockage.
- D - Horizontal return  
Locates the return air opening under the outside air opening location. For units with both outside air and return air openings Model Digit 18 (4 or 5). Includes moisture eliminators as standard when 5 is chosen.
- P - Low Leak Damper  
This item includes vinyl blade edge seals with a standard opposed blade galvanized steel damper and neoprene nylon bushings. For outside side air inlet only.
- L - 409 Stainless Steel Drip Pan  
Replaces the standard aluminized steel furnace drip pan.
- A - High Altitude Unit  
Unit is for altitudes above 2000 feet (610m). \* Two stage units include a factory installed delay timer, allowing the unit to initially fire at 100% for 10 sec. then drop back to low fire and respond to thermostat demand.  
**Note:** Specify altitude when over 2000 feet (610m).



## Unit Options and Accessory Descriptions

- 0134-0203-01 - High Pressure Regulator  
Required where main line pressure exceeds 14 inch WC (1/2 psig). Regulator to reduce gas pressure to acceptable range. One regulator per furnace required, shipped separately. When placing order, choose regulator based on main line gas pressure.
- M - Input Derate  
Unit is derated up to 50% for specific design applications.  
**Note:** Specify altitude when over 2000 feet (610m). Unit performance must be adjusted for percentage of de-rate.

## Filters

- 1 - 1" Washable Filters (Standard)
- 2 - 2" Washable Filters
- 3 - 2" Throwaway Filters
- 4 - 1" High Efficiency 30% Filters (MERV 8)
- 5- 2" High Efficiency 30% Filters (MERV 8)

**Table 19. Filter quantity and size**

Capacity	10, 15	20, 25, 50	30, 35, 60, 70	40, 80, 12
Rooftop Arrangement B,C, D,E (Qty.) Filter Size	(4)16 x 20	(4)20 x 20	(4)16 x 20 (2)20 x 20	(6)20 x 20
Rooftop Arrangement G,J, K,L (Qty.) Filter Size	(8)16 x 20	(8)20 x 20	(8)16 x 20 (4)20 x 20	(12)20 x 20

## Evaporative Cooler Accessories

- 0134-0210-01 - Fill and drain kit  
Includes 3 way valve and relay for automatic fill and drain for evaporative cooling units. Field installed.
- B - 12" CELdek® Media  
Optional high efficiency 12" media replaces standard 8" media.
- Z- Freezestat  
Automatic shutoff and drain upon meeting outside air setpoint when used with "Fill and Drain kit".
- W - 8" Glasdek®  
Optional 8" GLASdek evaporative cooler media is available in lieu of the standard 8" CELdek. GLASdek media is manufactured from a wettable fiberglass and is designed for applications requiring UL900 Class II fire rating.
- X - 12" Glasdek  
Optional 12" GLASdek evaporative cooler media is available in lieu of the standard 8" CELdek. GLASdek media is manufactured from a wettable fiberglass and is designed for applications requiring UL900 Class II fire rating.

### Time Clocks

- 0134-0201-02 - 7 day time clock  
Provides single pole double throw (SPDT) relay output at setpoint time with maximum 6 set points per day, field installed.
- 0134-0201-03 - 24 hour time clock  
Provides single pole double throw (SPDT) relay output at setting time with maximum 12 set points per day, field installed.

**Figure 31. 24 Hour time clock**



### Electrical Accessories

- Q - Clogged filter switch  
Factory installed differential pressure switch with clogged filter indicator lamp located in the main electrical cabinet.
- 0134-0204-01 - Ground fault convenience outlet 115VAC  
G.F.I. outlet with manual reset in a weather resistant enclosure, field installed.
- 0134-0201-01 - Remote control panel  
Wall mounted and distinctively styled the "Trane Remote Panel" offers 6 LED status lamps with System On/Off, Fan Auto/On, Heat Auto/Off, Cool Auto/Off, Auxiliary On/Off switching and Modulating damper potentiometer mounting. Designed for E-Z Installation with plug-in terminal block wiring and wall mounting bracket. Field installed. (Auxiliary On/OFF may be used with Evaporative Cooler Fill & Drain Kit or exhaust fan) (6-1/4" W x 3-3/4" H x 1-3/8" D)
- K - Manual blower switch  
Factory installed in the electrical cabinet to provide manual blower operation (On/Auto).

**Figure 32. Remote control panel**





## Unit Options and Accessory Descriptions

---

### Duct and Room Thermostats

0134-0207-03 -	One stage duct thermostat Field installed, single pole double throw switching. 55°-175°F set point range. (2" W x 5-5/8" H x 2-7/16" D)
0134-02006 -	Two stage duct thermostat Field installed, single pole double throw switching. 55°-175°F set point range. (2" W x 5-5/8" H x 2-7/16" D)
0134-THT02569-01 -	T87K thermostat with subbase Single stage heating thermostat. Standard round styling suitable for any decor. 40°-90°F range. Mercury free.
0134-THT02569G-01 -	T87K thermostat with subbase and guard Same features as T87K thermostat with subbase except a tamper proof guard is included.
0350-0015-02 -	T83N thermostat with subbase Single stage heating thermostat with fan switch. 50°-90°F range. (2-3/8" W x 4-3/4" H x 1-1/2" D) Mercury free.

**Figure 33. T83N thermostat with subbase**



## Unit Options and Accessory Descriptions

- 0134-THT02568-01 - TH8320R programmable commercial touchscreen thermostat  
 Provides 7 day programmability for up to two stages of heating and two stages of cooling. Includes a terminal to enable an economizer or control a lighting panel when used as a time of day relay. Temperature ranges: Heating 40°-90°F, Cooling 50-99°F (4-5/8" W x 4-15/16" H x 1-1/8" D) Mercury free.

**Figure 34. TH8320R programmable commercial touchscreen thermostat**



- 0134-THT02532-01 - TH5220D two stage thermostat  
 Two stage heating and two stage cooling with system and fan switching and built in 10°F heating/cooling differential. Includes fan relay. Temperature ranges: Heating 40°-90°F, Cooling 50°-99°F (5-13/16" W x 3-9/16" H x 1-1/2" D) Mercury free.

**Figure 35. TH5220D two stage thermostat**



- 0134-0207-07 - TG511 locking thermostat cover  
 Universal locking thermostat cover for use with all thermostats listed.



## Unit Options and Accessory Descriptions

---

### Freeze and Fire Protection

- H - Return firestat  
130°-270°F setting range with single pole double throw (SPDT) output. The Return Firestat is electrically interlocked to shut down the unit upon reaching the set point with manual reset. Factory mounted in the return air stream and set at 130°. This item is utilized as a reverse air flow switch, and is included as standard with Trane Packaged Rooftop units. Order with Rooftop Duct Furnace Arrangement "A" when applicable.
- J - Supply firestat  
130°-270°F setting range with single pole double throw (SPDT) output. The Supply Firestat is electrically interlocked to shut down the unit upon reaching the setpoint with manual reset. Factory mounted in the supply air stream on units with a downturn plenum and shipped loose for units with standard horizontal discharge.
- F - Time delay freezestat  
30°-75°F setting range in 5°F increments with single pole double throw (SPDT) output. Time delay adjustment range – one minute to ten minutes in one minute increments. Manual reset by turning unit disconnect off then on. The freezestat is electrically interlocked to ensure minimum discharge air temperature. Factory mounted in the electrical compartment. Sensing bulb will be factory mounted in the supply air stream on units with a downturn plenum. Units with standard horizontal discharge will need to have the sensing bulb field installed in the supply duct work.
- Y - Ambient lockout  
Factory mounted. Disengages duct furnace(s) from firing in times of mild ambient temperatures. Control range 0°- 100 °F fixed 1 °F differential.
- Y - Ambient Lockout – Dual Furnace  
Factory mounted. Prevents firing of second furnace when first furnace is able to satisfy complete load as well as prevents firing of heating system at field selectable high ambient temperatures. Control range 0°- 100 °F fixed 1 °F differential.
- Y - Ambient Lockout – Triple Furnace  
Factory mounted. Prevents firing of second furnace when first furnace is able to satisfy complete load, prevents firing of third furnace when first and second furnaces are able to satisfy complete load as well as prevents firing of heating system at field selectable high ambient temperatures. Control range 0°- 100 °F fixed 1 °F differential.

### Interlock Relays

- 0134-0303-01 - 24 volt DPDT relay  
Plug-in, Type 2, Form C relay with 24 volt coil and double pole double throw 10 amp contacts. This relay plugs in to the Main Connection PC board in the electrical cabinet. Included with Packaged units including an evaporative cooler and outside return air dampers or may be utilized as an exhaust fan interlock. When energized at terminal "K2" of the main connection board, the blower is engaged and outside air dampers are opened to 100% position. Factory installed.
- 0134-0301-01 - 24/115 volt SPDT relay  
This relay has 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 when 24 volt DPDT relay does not apply for exhaust fan interlock or digital interface with an external control. Factory mounted and wired when applicable.  
**Note:** *Shipped loose unless otherwise specified.*
- 0134-0302-01 - 24/115/230 volt DPDT relay  
This relay has selectable coil voltage of 24, 115 or 230 volts and double pole double throw 10 amp contacts. Relay is utilized as an auxiliary relay for general purpose duty. Factory mounted and wired when applicable.  
**Note:** *Shipped loose unless otherwise specified.*
- 0134-0304-01- 24 volt 4PDT relay  
This relay has a coil voltage of 24 volts and four pole double throw 10 amp contacts. Relay is included as standard for packaged units with an Evaporative Cooler or Coil Cabinet and may be utilized as an auxiliary relay for general purpose duty. Factory mounted and wired when applicable.  
**Note:** *Shipped loose unless otherwise specified.*



### Limits and Indicator Lamps

V -	Manual reset high limit switch This field installed, non-cycling type limit opens on temperature rise at 200 °F and disengages heating.
R -	High / Low gas pressure limits High / Low gas pressure limits disengage heating upon detecting either low line pressure or high manifold pressure. Factory Installed.
T -	Status lamps Long life factory installed LED lamps located in the electrical cabinet. The status lamps are designed as a troubleshooting aid and setup for indicating Power On, Fan On, Heating energized at furnace one, two, three and cooling energized when applicable.  <b>Note:</b> Blocked inlet and clogged filter indicator lamps are standard with Moisture Eliminators and Clogged Filter Switch.
G -	Fan time delay The solid state fan time delay is standard with all packaged indoor arrangements except Rooftop Arrangement "A" duct furnace, only. The fan time delay provides a 60 second delay on and 120 second delay off, for blower operation.
0134-0218-01 -	Air flow prove switch Field installed. A Dwyer 1910-0 pressure switch suitable for duct of plenum mounting, with a range of 0.15 - 0.5" W.C. is provided. Field adjusted to appropriate set point.

### Disconnect Switches (NEMA-3R)

0134-0202-06 (115-230V, 1 Ph.) 0134-0202-07 (208-230V, 3 Ph.) 0134-0202-08 (460-575V, 3 Ph.)	30 Amp. fused disconnect Field installed.
0134-0202-01 (115-230V, 1 Ph.) 0134-0202-02 (208-230V, 3 Ph.) 0134-0202-03 (460-575V, 3 Ph.)	30 Amp. non-fused disconnect Field installed.
0134-0202-09 (208-230V, 3 Ph.) 0134-0202-10 (460-575V, 3 Ph.)	60 Amp. fused disconnect Field installed.
0134-0202-04 (208-230V, 3 Ph.) 0134-0202-05 (460-575V, 3 Ph.)	60 Amp. non-fused disconnect Field installed.

### Convenience Accessories

7 -	Through-The-Base Utility Penetrations Through the base utility penetrations allows the gas, electric and coil connections to be passed through base and curb of the unit. This results in a reduction in the number of roof penetrations, thus enhancing the integrity of the roofing materials. Electrical and coil connections will enter the unit in the blower cabinet. The gas connection will enter the furnace section through the base. Trane provides a pre-engineered piping kit to allow the gas shutoff to be accessible from the outside of the furnace section.
6 -	Service Convenience Package Includes a factory mounted magnetic circuit breaker with through-the-door on/off/reset switch and GFI convenience outlet mounted behind a hinged access door on the units' blower section. Both items are accessible from the outside of the unit via a weather proof hinged access door. This accessory also includes through-the-base utility penetrations.
N -	Double Wall Construction consists of a 24 gauge inner liner wall with 1" 1-1/2 LB density insulation. Available on the filter/damper, blower, coil and plenum cabinets only.



## Unit Options and Accessory Descriptions

---

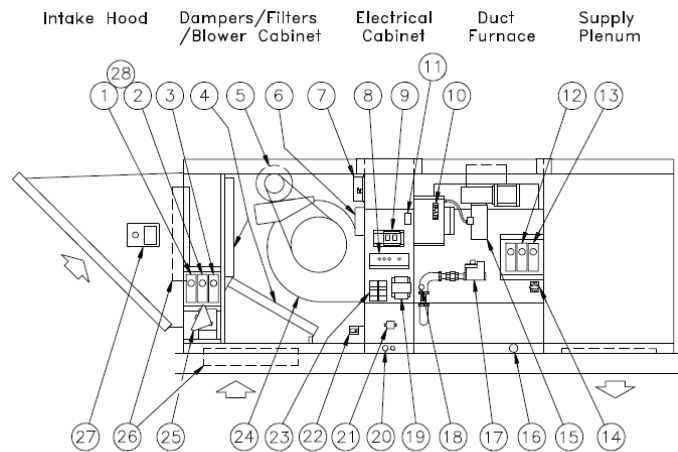
### VFD Options

#### Model Digit 22

- 1 - Field installed VFD  
Replaces the Magnetic Starter and provides soft start operation, prolonging the life of blowers and bearings as well as reducing start up noise. All VFD's are UL approved and are manufactured with a NEMA 1 plenum rated enclosure. Field installed VFD is standard for motor size selections 1-8. For a factory installed option, see VFD Option 2.
- 2 - Factory installed VFD  
UL approved with a NEMA 1 plenum rated enclosure, is mounted in the unit blower cabinet with a remote programming keypad located in the electrical cabinet.
- 3 - Remote keypad  
Allows operation of drive up to 100 ft. (30 Meters) from the drive and duplicates the functionality of the drive's local keypad. Shipped loose for field installation.
- 4 - CO<sub>2</sub> Sensor 100% Outside Air  
Factory supplied, field installed CO<sub>2</sub> monitor range 0 to 2,000 ppm, adjustable, for mounting in occupied space. Upon rise in CO<sub>2</sub> above field programmed set point, 0-10VDC or 4-20 mA signal will be sent from CO<sub>2</sub> sensor to VFD to modulate air flow between minimum set point and maximum CFM.
- 5 - CO<sub>2</sub> Sensor Mixed Air  
Factory supplied, field installed CO<sub>2</sub> monitor range 0 to 2,000 ppm, adjustable, for mounting in return air duct. Upon rise in CO<sub>2</sub> above field programmed set point, signal will drive return air damper to 100% closed and outside air damper to 100% open. 0-10VDC or 4-20 mA signal will be sent from CO<sub>2</sub> sensor to VFD to modulate air flow between minimum set point and maximum CFM.
- 6 - Pressure Sensor  
Factory supplied, field installed pressure control, range -0.1 to +0.1" W.C. VFD will modulate motor speed based on 4-20 mA signal from pressure control sensor mounted in space to maintain field programmed set point.
- 7 - 2-Speed VFD Relays  
Factory installed relays provided to energize second speed setting. Relay coil will accept 24V, 115V and 230V.
- 8 - 3-Speed VFD Relays  
Factory installed relays provided to energize second and third speed settings. Relay coil will accept 24V, 115V and 230V.
- 9 - VFD Enclosure  
A factory installed NEMA-3R enclosure will be provided to protect the VFD. Enclosure includes a small electric heater and vent fan to protect the VFD in ambient temperatures of -30 - 115°F (-34 - 46°C). Note: Enclosure only available when factory installed VFD is selected.

### Component Locations

**Figure 36. Component locations**



**Power Vent unit shown**

1. Mixed air controller
2. Return firestat
3. Economizer
4. Filters
5. Blower motor
6. Reverse air flow switch
7. Clogged filter switch
8. High voltage barrier and lamp and circuit breaker mount
9. Main connection board with fan time delay and function relays
10. Power ventor relay
11. Time delay freezestat
12. Supply firestat
13. Duct thermostat
14. Primary safety limit
15. Power ventor motor
16. Gas piping inlet
17. Gas valve
18. High limit safety switch
19. Transformer
20. Electrical wiring inlet
21. High voltage terminal block
22. Door safety switch
23. Contactor
24. Centrifugal blower
25. Damper motor
26. Outside and return dampers
27. Enthalpy controlled economizer
28. Ambient lockout

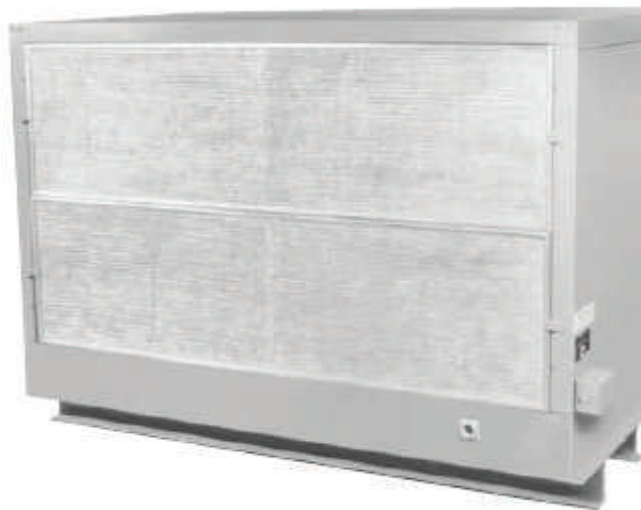


## Evaporative Cooling Module

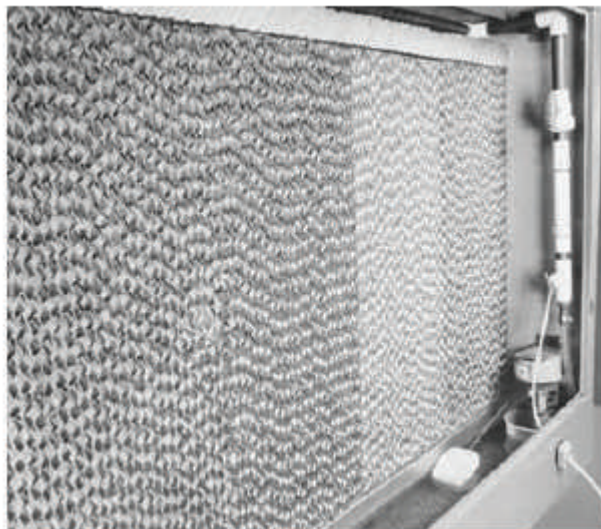
Evaporative Cooling is the simplest and most-cost effective cooling method without the use of mechanical refrigeration. Trane Evaporative Cooling systems meet a wide range of commercial, industrial, and institutional heating and ventilating requirements. The Evaporative Cooler saves up to 80% on utility charges, requires little maintenance, and replaces exhausted, stale, indoor air with cool, clean, filtered outdoor air.

The quiet, dependable Evaporative Cooler can be combined with Trane Rooftop Packaged Units (capacities 10 to 80), or Indoor Make-up Air Handlers (capacities 10 to 80, see MUA-PRC010-EN for Indoor Make-up Air Units). Evaporative Coolers are also combined in Air Handler Units (Capacities 20 or 40). In any combination, the Evaporative Cooler will replace the need for a 100% Outside Air Inlet Hood. If an Evaporative Cooler is to be installed upstream of our duct furnace section(s), a 409 stainless steel heat exchanger is recommended.

**Figure 37. Evaporative cooler module**



**Figure 38. Internal view evaporative cooler**



## Standard Features

- **High cooling efficiency:** Up to 88% saturation efficiency with standard 8" depth of CELdek® media, and up to 92% saturation efficiency with optional 12" depth media; a 2" distribution pad is included to disperse water evenly. CELdek media includes insoluble anti-rot salts and rigidifying saturants. The unique design of the CELdek pads optimizes air and water mixing for maximum cooling.
- Optional 8" or 12" GLASdek media is also available. See Accessory Options W and X.
- **Recirculating pump:** Factory wired, sealed design, durable, thermally protected motor. Permanently lubricated bearings. Standard 115 Volt, 50/60 cycle. Optional 230V motor. Protective basket screen. U.L. recognized.
- **Heavy-duty stainless steel water tank:** Stainless steel sump tank and water distributor designed to resist rust, corrosion, and scaling.
- **Ball valve:** Single-entry ball valve regulates water flow using a 1/4 turn handle.
- **Bleed-off:** Prevents excessive concentration of minerals in sump water.
- **Float valve:** Brass float valve and rod with plastic float. Maintains proper water level in sump for most efficient operation. Factory installed in cabinet.
- **Drain and overflow:** Drain is capped. Overflow controlled by float level allowing slight continued overflow. Optional automatic fill and drain kit is available for field installation.
- **Water distribution:** Copper water distributor tube for corrosion-free operation and low maintenance.
- **Intake filters:** Removable intake filters of easy-to-clean 1" aluminum mesh to remove insects, dust, and dirt from airflow.
- **Skid rails:** With lifting and anchor holes. Optional platform curb assembly available, shipped separately (see Roof Curb section).

## Performance

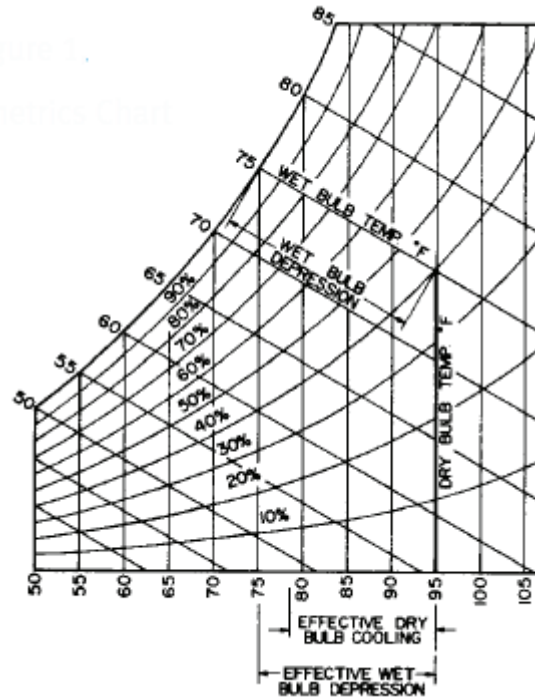
Evaporative Cooling is most commonly used in areas where the relative humidity is low and the dry bulb temperatures are high. However, cooling through evaporation can be used in most areas.

Evaporative cooling is best utilized whenever the wet bulb depression (difference between dry and wet bulb temperature) is a minimum of 15°. The efficiency of the Trane Evaporative Cooler is determined by a variety of factors: geographical location, application, air change requirements, sufficient water supply, air flow, and maintenance. In most instances, efficiency is expected to be between 77% and 88%. Heat gains in the distribution system will effect the final output temperature.

Use the psychometrics chart or actual humidity temperature readings to estimate the leaving dry bulb temperature at the outlet of the Evaporative Cooler.

Example:

- Entering Dry Bulb: 95°F
- Entering Wet Bulb: 75°F
- Wet Bulb Depression (95°F - 75°F) = 20°F
- Effective Wet Bulb Depression (20°F x .85) = 17°F
- Leaving Dry Bulb Temperature (95°F - 17°F) = 78°F
- Leaving Wet Bulb = Entering Wet Bulb = 75°F

**Figure 39. Psychometrics chart**


## Selection Method

The easiest method for selecting an evaporative cooler, is to first determine the required number of air changes per minute:

1. Using the Zone chart, choose the geographical zone in which the unit is to be installed.

**Figure 40. Zone chart**


2. Determine the internal load within the structure:
  - Normal load:** structures with normal people loads, and without high internal heat gains.
  - High load:** Structures with high equipment loads (factories, laundromats, beauty salons, restaurant kitchens), and structures with high occupancy (nightclubs, arenas).
3. Determine whether the structure has normal or high heat gains:
  - Normal gain:** Structures that have insulated roofs, or are in shaded areas. Structures that have two or more stories, or facing directions with no sun.
  - High gain:** Structures that have uninsulated roofs, unshaded areas, or rooms that are exposed to sun.
4. Using table below, determine the required air changes per minute based on zone selection and the type of heat load.

**Table 20. Air changes per minute**

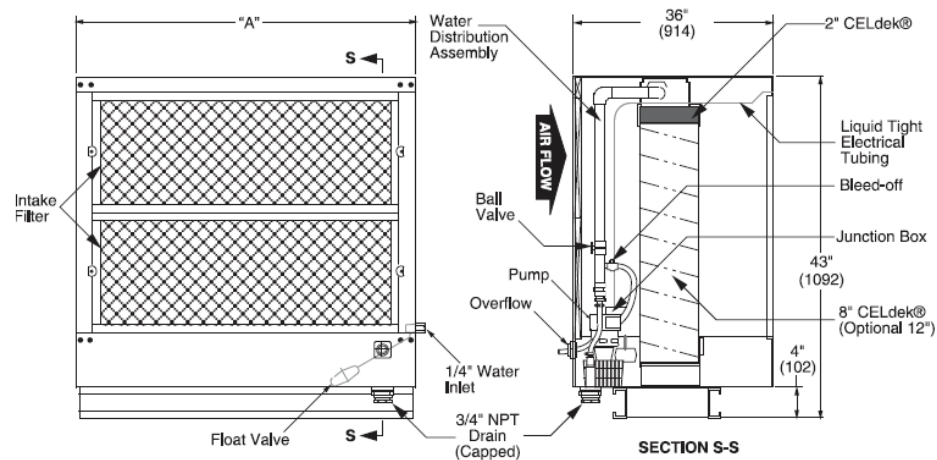
Type heat load	Zone			
	1	2	3	4
High load/high gain	3/4	1	1-1/3	2
High load/normal gain	1/2	3/4	1	1-1/3
Normal load/high gain	1/2	3/4	1	1-1/3
Normal load/normal gain	1/2	1/2	3/4	1

5. Determine the air quantity for the space chosen, by calculating the volume (L x W x H).  
Multiply this volume by the air changes per minute.

For example:

1. Structure dimensions: 25 L x 24 W x 10 H = 6000 Ft<sup>3</sup>
  2. Exterior load type: Normal
  3. Interior load type: Normal
  4. Location: Dallas, Texas- Zone 3
  5. Air changes per minute: 3/4
- Evaporative cooler requirements: 6000 Ft<sup>3</sup> x 3/4 air change / minute- 4500 CFM required.  
See Evaporative Cooler Performance Chart for unit size that would best apply.

**Figure 41. Evaporative cooling unit**



**Note:** See Table 21, p. 80 for dimension "A" values.



# Evaporative Cooling Module

Table 21. Performance and dimensional data

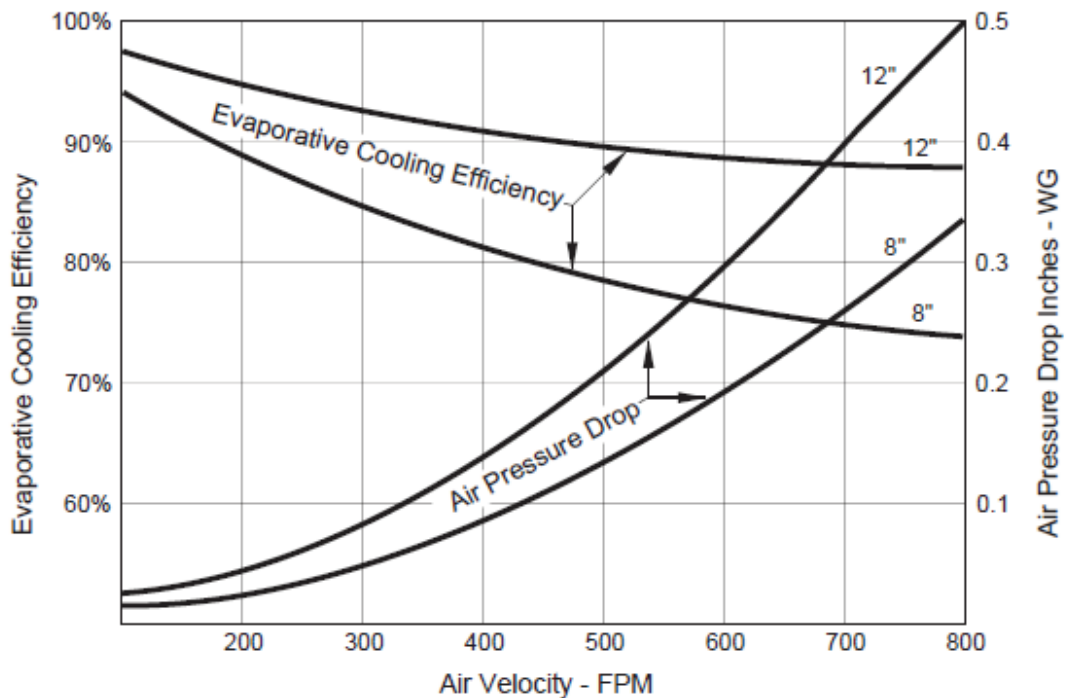
Performance and Dimensional Data													
Capacity 10-80	CFM		8" Saturation Efficiency Range		12" Saturation Efficiency Range		8" or 12" Media		Pressure Drop in. W.C.		"A" Unit Width	Shipping Wt.(a)	Operating Wt.(a)
	(cu. m/ s) MIN.	(cu. m/ s) MAX.	MIN.	MAX.	MIN.	MAX.	Face Area Ft.2 (m <sup>2</sup> )	Size In. (mm)	(KPa) MIN.	(KPa) MAX.	in. (mm)	lb. (kg)	lb. (kg)
10,15	800 (0.378)	4500 (2.124)	78	88	89	92	7.01 (0.65)	31 X 32-9/16 (787) (827)	0.03 (0.01)	0.23 (0.06)	32 3/4 (832)	137 (62)	301 (137)
20,25,50	1600 (0.755)	5500 (2.596)	77	88	88	92	9.38 (0.87)	31 X 43-9/16 (787) (1106)	0.03 (0.01)	0.2 (0.05)	43 3/4 (1111)	166 (75)	386 (175)
30,35,60,70	2400 (1.133)	8500 (4.012)	77	86	88	92	11.75 (1.09)	31 X 54-9/16 (787) (1386)	0.05 (0.01)	0.3 (0.07)	54 3/4 (1391)	192 (87)	468 (212)
40,80	3200 (1.510)	8500 (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)

(a) These weights are for the Evaporative Cooler Module only.

## CELdek® Evaporative Media

The Trane Evaporative Cooler utilizes 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 highly-turbulent mixing of air and water for optimum heat and moisture transfer. Trane Evaporative coolers utilize 8" CELdek as standard equipment. Optional 12" CELdek, 8" and 12" GLASdek® are also available. A 2" distribution pad is used to disperse water evenly over the media.

Figure 42. Evaporative cooler efficiency and air pressure drop







# Roof Curb Kits

## Standard Roof Curb Kits

Trane roof curbs are available in various types depending upon your application needs. Curbs are available in single, dual or triple furnace arrangements and air handler only units. All curb kits (see table) are knocked down for field assembly and are shipped separately. Curbs are typically available on a short lead time basis allowing the installer to set the curb in place prior to receiving the rooftop unit.

Standard curbs are 12" high. Factoring in the 4" unit base rail, overall height to the bottom of the rooftop unit is actually 16". All standard curbs are fully factory insulated. Standard Rooftop Curb Kits for Arrangements D & E include an evaporative cooler platform.

## Uninsulated Roof Curb Kits

Trane uninsulated roof curb kits are identical to the standard kits, with the exception of the insulation.

## Vibration Isolation and Seismic Curbs

Vibration isolation curbs are utilized in installations where slight rooftop vibration or noise is a concern. These curbs incorporate adjustable spring isolators into the roof curb which are specifically engineered and positioned to accommodate the rooftop unit.

Seismic curbs are designed to meet all local and federal building code seismic requirements by providing a reinforced curb constructed to allow rooftop units to be properly secured to the mounting structure and will withstand the regional seismic load.

Contact Trane for further information, including part numbers and pricing.

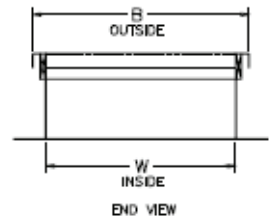
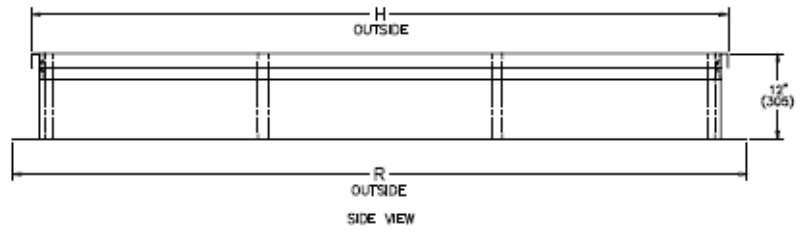
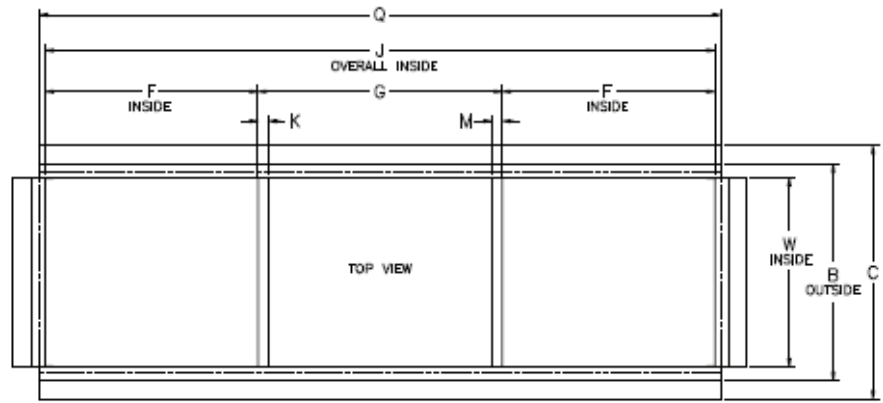
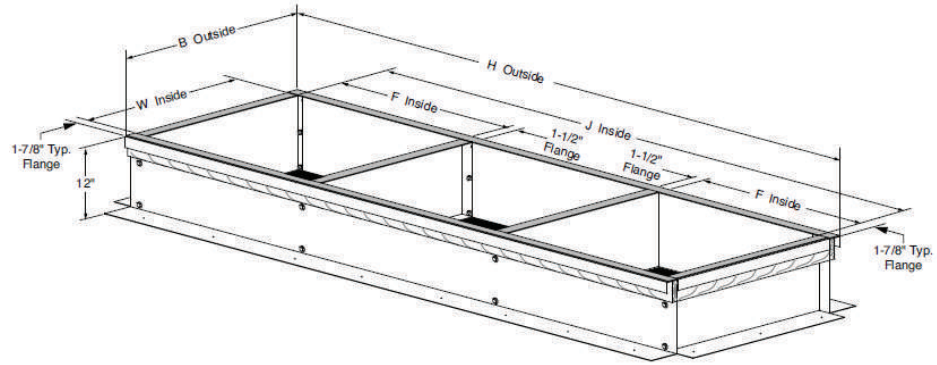
## Adaptor Curbs

Adaptor curbs are designed for retrofit installations. With the use of an adaptor curb it is not necessary to remove the existing curb, thus eliminating extensive rooftop work, time and associated construction costs.

Contact us with the existing unit model number and curb dimensions and a custom adaptor curb will be supplied to accommodate the new rooftop unit.



# Dimensional Data



**Note:** See Table 22 for tabulated dimensions.

**Table 22. Roof curb kit dimensions**

Roof Arrangement	Capacity	Trane P/N	F	G	H	J	Q	R	K	M	W	B	C
B	10/15	0134-0205-01	29-5/8	8-1/8	71-1/8	67-3/8	69	76-3/8	1-1/2	1-1/2	26-7/16	30-3/16	35-7/16
			(752)	(206)	(1,806)	(1,711)	(1,753)	(1,940)	(38)	(767)	(900)		
B	20/25	0134-0205-02	29-5/8	8-1/8	71-1/8	67-3/8	69	76-3/8	1-1/2	1-1/2	37-7/16	41-3/16	46-7/16
			(752)	(206)	(1,806)	(1,711)	(1,753)	(1,940)	(38)	(1,046)	(1,179)		
B	30/35	0134-0205-03	29-5/8	8-1/8	71-1/8	67-3/8	69	76-3/8	1-1/2	1-1/2	48-7/16	52-3/16	57-7/16
			(752)	(206)	(1,806)	(1,711)	(1,753)	(1,940)	(38)	(1,325)	(1,459)		
B	40	0134-0205-04	29-5/8	8-1/8	71-1/8	67-3/8	69	76-3/8	1-1/2	1-1/2	53-15/16	57-11/16	62-15/16
			(752)	(206)	(1,806)	(1,711)	(1,753)	(1,940)	(38)	(1,465)	(1,599)		
C	10/15	0134-0205-05	29-5/8	34-1/8	97-1/8	93-3/8	95	102-3/8	1-1/2	1-1/2	26-7/16	30-3/16	35-7/16
			(752)	(867)	(2,467)	(2,371)	(2,413)	(2,600)	(38)	(767)	(900)		
C	20/25	0134-0205-06	29-5/8	34-1/8	97-1/8	93-3/8	95	102-3/8	1-1/2	1-1/2	37-7/16	41-3/16	46-7/16
			(752)	(867)	(2,467)	(2,371)	(2,413)	(2,600)	(38)	(1,046)	(1,179)		
B	50	0134-0205-06	29-5/8	34-1/8	97-1/8	93-3/8	95	102-3/8	1-1/2	1-1/2	37-7/16	41-3/16	46-7/16
			(752)	(867)	(2,467)	(2,371)	(2,413)	(2,600)	(38)	(1,046)	(1,179)		
C	30/35	0134-0205-07	29-5/8	34-1/8	97-1/8	93-3/8	95	102-3/8	1-1/2	1-1/2	48-7/16	52-3/16	57-7/16
			(752)	(867)	(2,467)	(2,371)	(2,413)	(2,600)	(38)	(1,325)	(1,459)		
B	60/70	0134-0205-07	29-5/8	34-1/8	97-1/8	93-3/8	95	102-3/8	1-1/2	1-1/2	53-15/16	57-11/16	62-15/16
			(752)	(867)	(2,467)	(2,371)	(2,413)	(2,600)	(38)	(1,465)	(1,599)		
C	40	0134-0205-08	30-1/8	59	123	119-1/4	120-7/8	128-1/4	1-1/2	1-1/2	37-7/16	41-3/16	46-7/16
			(765)	(1,499)	(3,124)	(3,029)	(3,070)	(3,257)	(38)	(1,046)	(1,179)		
B	80	0134-0205-08	30-1/8	59	123	119-1/4	120-7/8	128-1/4	1-1/2	1-1/2	48-7/16	52-3/16	57-7/16
			(765)	(1,499)	(3,124)	(3,029)	(3,070)	(3,257)	(38)	(1,325)	(1,459)		
C	50	0134-0205-09	30-1/8	59	123	119-1/4	120-7/8	128-1/4	1-1/2	1-1/2	53-15/16	57-11/16	62-15/16
			(765)	(1,499)	(3,124)	(3,029)	(3,070)	(3,257)	(38)	(1,465)	(1,599)		
C	60/70	0134-0205-10	29-5/8	8-1/8	71-1/8	67-3/8	69	76-3/8	1-1/2	1-1/2	26-7/16	30-3/16	35-7/16
			(752)	(206)	(1,806)	(1,711)	(1,753)	(1,940)	(38)	(767)	(900)		
C	80	0134-0205-11	29-5/8	8-1/8	71-1/8	67-3/8	69	76-3/8	1-1/2	1-1/2	37-7/16	41-3/16	46-7/16
			(752)	(206)	(1,806)	(1,711)	(1,753)	(1,940)	(38)	(1,046)	(1,179)		
D	10/15	0134-0205-12	29-5/8	8-1/8	71-1/8	67-3/8	69	76-3/8	1-1/2	1-1/2	26-7/16	30-3/16	35-7/16
			(752)	(206)	(1,806)	(1,711)	(1,753)	(1,940)	(38)	(767)	(900)		



Roof Curb Kits

Table 22. Roof curb kit dimensions (continued)

Roof Arrangement	Capacity	Trane P/N	F	G	H	J	Q	R	K	M	W	B	C
D	20/25	0134-0205-13	29-5/8	8-1/8	71-1/8	67-3/8	69	76-3/8	1-1/2	1-1/2	37-7/16	41-3/16	46-7/16
			(752)	(206)	(1,806)	(1,711)	(1,753)	(1,940)	(38)	(38)	(1,046)	(1,179)	
D	30/35	0134-0205-14	29-5/8	8-1/8	71-1/8	67-3/8	69	76-3/8	1-1/2	1-1/2	48-7/16	52-3/16	57-7/16
			(752)	(206)	(1,806)	(1,711)	(1,753)	(1,940)	(38)	(38)	(1,325)	(1,459)	
D	40	0134-0205-15	29-5/8	8-1/8	71-1/8	67-3/8	69	76-3/8	1-1/2	1-1/2	53-15/16	57-11/16	62-15/16
			(752)	(206)	(1,806)	(1,711)	(1,753)	(1,940)	(38)	(38)	(1,465)	(1,599)	
D	50	0134-0205-16	29-5/8	34-1/8	97-1/8	93-3/8	95	102-3/8	1-1/2	1-1/2	37-7/16	41-3/16	46-7/16
			(752)	(867)	(2,467)	(2,371)	(2,413)	(2,600)	(38)	(38)	(1,046)	(1,179)	
E	20/25	0134-0205-17	29-5/8	34-1/8	97-1/8	93-3/8	95	102-3/8	1-1/2	1-1/2	48-7/16	52-3/16	57-7/16
			(752)	(867)	(2,467)	(2,371)	(2,413)	(2,600)	(38)	(38)	(1,325)	(1,459)	
D	80	0134-0205-18	29-5/8	34-1/8	97-1/8	93-3/8	95	102-3/8	1-1/2	1-1/2	53-15/16	57-11/16	62-15/16
			(752)	(867)	(2,467)	(2,371)	(2,413)	(2,600)	(38)	(38)	(1,465)	(1,599)	
E	40	0134-0205-19	29-5/8	34-1/8	97-1/8	93-3/8	95	102-3/8	1-1/2	1-1/2	26-7/16	30-3/16	35-7/16
			(752)	(867)	(2,467)	(2,371)	(2,413)	(2,600)	(38)	(38)	(767)	(900)	
E	50	0134-0205-20	30-1/8	59	123	119-1/4	120-7/8	128-1/4	1-1/2	1-1/2	37-7/16	41-3/16	46-7/16
			(765)	(1,499)	(3,124)	(3,029)	(3,070)	(3,257)	(38)	(38)	(1,046)	(1,179)	
E	60/70	0134-0205-21	30-1/8	59	123	119-1/4	120-7/8	128-1/4	1-1/2	1-1/2	48-7/16	52-3/16	57-7/16
			(765)	(1,499)	(3,124)	(3,029)	(3,070)	(3,257)	(38)	(38)	(1,325)	(1,459)	
E	80	0134-0205-22	30-1/8	59	123	119-1/4	120-7/8	128-1/4	1-1/2	1-1/2	53-15/16	57-11/16	62-15/16
			(765)	(1,499)	(3,124)	(3,029)	(3,070)	(3,257)	(38)	(38)	(1,465)	(1,599)	
G	20/25	0134-0205-23	37-3/16	29-3/16	107-5/16	103-9/16	105-3/16	112-9/16	1-1/2	1-1/2	37-7/16	41-3/16	46-7/16
			(944)	(741)	(2,726)	(2,631)	(2,672)	(2,859)	(38)	(38)	(1,046)	(1,179)	
G	30/35	0134-0205-24	37-3/16	29-3/16	107-5/16	103-9/16	105-3/16	112-9/16	1-1/2	1-1/2	48-7/16	52-3/16	57-7/16
			(944)	(741)	(2,726)	(2,631)	(2,672)	(2,859)	(38)	(38)	(1,325)	(1,459)	
G	40	0134-0205-25	37-3/16	29-3/16	107-5/16	103-9/16	105-3/16	112-9/16	1-1/2	1-1/2	53-15/16	57-11/16	62-15/16
			(944)	(741)	(2,726)	(2,631)	(2,672)	(2,859)	(38)	(38)	(1,465)	(1,599)	

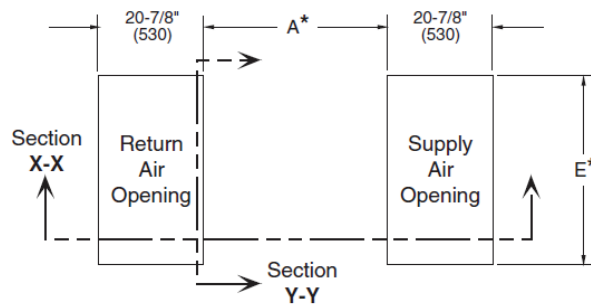
**Table 22. Roof curb kit dimensions (continued)**

Roof Arrangement	Capacity	Trane P/N	F	G	H	J	Q	R	K	M	W	B	C
G	50	0134-0205-26	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)	1-1/2 (38)	1-1/2 (38)	37-7/16 (951)	41-3/16 (1,046)	46-7/16 (1,179)
J & K	20/25		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)	1-1/2 (38)	1-1/2 (38)	48-7/16 (1,230)	52-3/16 (1,325)	57-7/16 (1,459)
G	60/70	0134-0205-27	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)	1-1/2 (38)	1-1/2 (38)	53-15/16 (1,370)	57-11/16 (1,465)	62-15/16 (1,599)
J & K	30/35		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)	1-1/2 (38)	1-1/2 (38)	53-15/16 (1,370)	57-11/16 (1,465)	62-15/16 (1,599)
G	80	0134-0205-28	37-5/16 (948)	80-15/16 (2,056)	159-5/16 (4,046)	155-9/16 (3,951)	157-1/4 (3,994)	164-1/2 (4,178)	1-1/2 (38)	1-1/2 (38)	53-15/16 (1,370)	57-11/16 (1,465)	62-15/16 (1,599)
J & K	12		37-5/16 (948)	80-15/16 (2,056)	159-5/16 (4,046)	155-9/16 (3,951)	157-1/4 (3,994)	164-1/2 (4,178)	1-1/2 (38)	1-1/2 (38)	53-15/16 (1,370)	57-11/16 (1,465)	62-15/16 (1,599)
J & K	80	0134-0205-29	37-5/16 (948)	80-15/16 (2,056)	159-5/16 (4,046)	155-9/16 (3,951)	157-1/4 (3,994)	164-1/2 (4,178)	1-1/2 (38)	1-1/2 (38)	53-15/16 (1,370)	57-11/16 (1,465)	62-15/16 (1,599)
L	40		37-5/16 (948)	80-15/16 (2,056)	159-5/16 (4,046)	155-9/16 (3,951)	157-1/4 (3,994)	164-1/2 (4,178)	1-1/2 (38)	1-1/2 (38)	53-15/16 (1,370)	57-11/16 (1,465)	62-15/16 (1,599)
J & K	50	0134-0205-30	37-5/16 (948)	80-15/16 (2,056)	159-5/16 (4,046)	155-9/16 (3,951)	157-1/4 (3,994)	164-1/2 (4,178)	1-1/2 (38)	1-1/2 (38)	37-7/16 (951)	41-3/16 (1,046)	46-7/16 (1,179)
L	20/25		37-5/16 (948)	80-15/16 (2,056)	159-5/16 (4,046)	155-9/16 (3,951)	157-1/4 (3,994)	164-1/2 (4,178)	1-1/2 (38)	1-1/2 (38)	48-7/16 (1,230)	52-3/16 (1,325)	57-7/16 (1,459)
J & K	60/70	0134-0205-31	37-5/16 (948)	80-15/16 (2,056)	159-5/16 (4,046)	155-9/16 (3,951)	157-1/4 (3,994)	164-1/2 (4,178)	1-1/2 (38)	1-1/2 (38)	48-7/16 (1,230)	52-3/16 (1,325)	57-7/16 (1,459)
L	30/35		37-5/16 (948)	80-15/16 (2,056)	159-5/16 (4,046)	155-9/16 (3,951)	157-1/4 (3,994)	164-1/2 (4,178)	1-1/2 (38)	1-1/2 (38)	48-7/16 (1,230)	52-3/16 (1,325)	57-7/16 (1,459)
K	10/15	0134-0205-32	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)	1-1/2 (38)	1-1/2 (38)	26-7/16 (671)	30-3/16 (767)	35-7/16 (900)
J	12		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)	1-1/2 (38)	1-1/2 (38)	26-7/16 (671)	30-3/16 (767)	35-7/16 (900)
L	80	0134-0205-33	36-15/16 (938)	107-11/16 (2,735)	185-5/16 (4,707)	181-9/16 (4,612)	183-1/4 (4,655)	190-1/2 (4,839)	1-1/2 (38)	1-1/2 (38)	53-15/16 (1,370)	57-11/16 (1,465)	62-15/16 (1,599)
J	12		36-15/16 (938)	107-11/16 (2,735)	185-5/16 (4,707)	181-9/16 (4,612)	183-1/4 (4,655)	190-1/2 (4,839)	1-1/2 (38)	1-1/2 (38)	53-15/16 (1,370)	57-11/16 (1,465)	62-15/16 (1,599)
L	50	0134-0205-34	36-15/16 (938)	107-11/16 (2,735)	185-5/16 (4,707)	181-9/16 (4,612)	183-1/4 (4,655)	190-1/2 (4,839)	1-1/2 (38)	1-1/2 (38)	37-7/16 (951)	41-3/16 (1,046)	46-7/16 (1,179)
J	12		36-15/16 (938)	107-11/16 (2,735)	185-5/16 (4,707)	181-9/16 (4,612)	183-1/4 (4,655)	190-1/2 (4,839)	1-1/2 (38)	1-1/2 (38)	37-7/16 (951)	41-3/16 (1,046)	46-7/16 (1,179)
L	30/70	0134-0205-35	36-15/16 (938)	107-11/16 (2,735)	185-5/16 (4,707)	181-9/16 (4,612)	183-1/4 (4,655)	190-1/2 (4,839)	1-1/2 (38)	1-1/2 (38)	48-7/16 (1,230)	52-3/16 (1,325)	57-7/16 (1,459)
J	12		36-15/16 (938)	107-11/16 (2,735)	185-5/16 (4,707)	181-9/16 (4,612)	183-1/4 (4,655)	190-1/2 (4,839)	1-1/2 (38)	1-1/2 (38)	48-7/16 (1,230)	52-3/16 (1,325)	57-7/16 (1,459)
L	10/15	0134-0205-36	37-5/16 (948)	80-15/16 (2,056)	159-5/16 (4,046)	155-9/16 (3,951)	157-1/4 (3,994)	164-1/2 (4,178)	1-1/2 (38)	1-1/2 (38)	26-7/16 (671)	30-3/16 (767)	35-7/16 (900)
J	12		37-5/16 (948)	80-15/16 (2,056)	159-5/16 (4,046)	155-9/16 (3,951)	157-1/4 (3,994)	164-1/2 (4,178)	1-1/2 (38)	1-1/2 (38)	26-7/16 (671)	30-3/16 (767)	35-7/16 (900)

**Note:** Dimensions listed apply to both insulated and uninsulated roof curb types. Roof curb kit part numbers listed are the insulated roof curb type; contact customer service for uninsulated part numbers."



# Rooftop Curb Specifications



Capacity (CA)	E*
10/15	26 (660)
20/25/50	37 (940)
30/35	48 (1219)
60/70	53- 1/2 (1359)

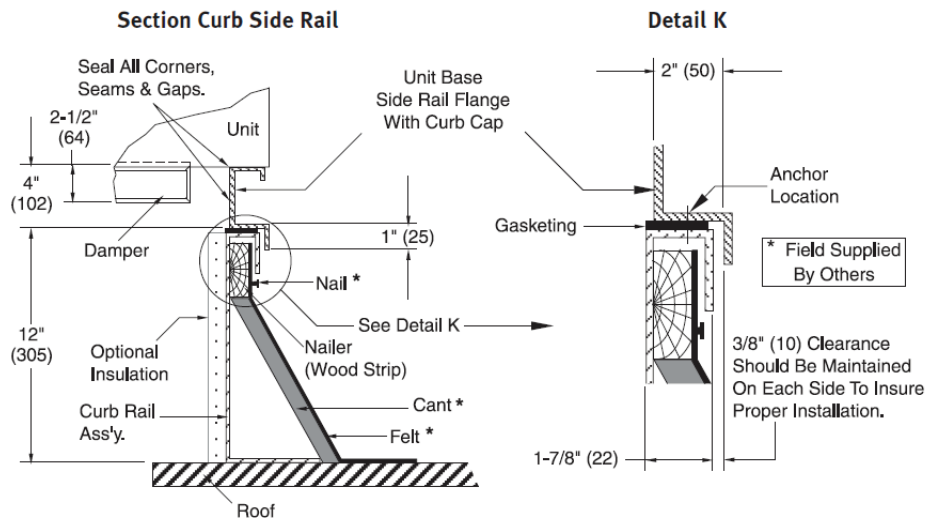
\* All dimensions have been calculated to include a one (1) inch clearance around return and supply ducts.

**Note:** Dimensions are in inches. Dimensions in parenthesis are in millimeters.

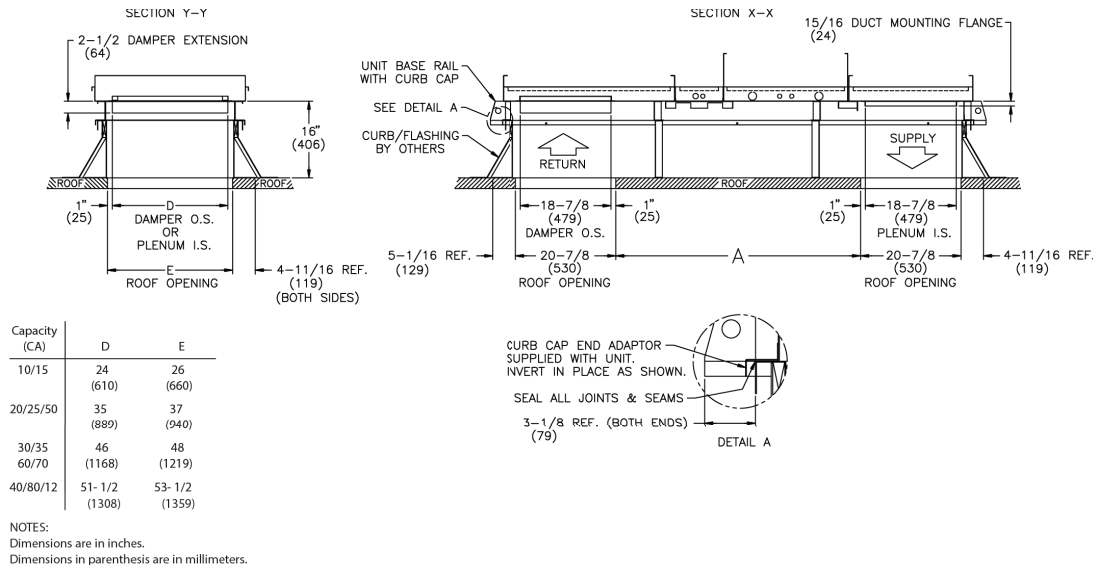
**Table 23. Rooftop curb specifications**

Furnace	**Rooftop Arrangement [RA]	Capacity [CA]	Unit Specifications (References)				* Dimension A
			Blower		Coil	Supply Plenum	
			Standard	High CFM			
Single	C, E	10 - 40	✓			✓	50- 3/8 (1,292)
	J	20 - 40		✓		✓	87- 1/16 (2,211)
	L	10 - 40		✓	✓	✓	113 (943)
Dual	C, E	50 - 80	✓			✓	76- 3/16 (3,531)
	J	50 - 80		✓		✓	113 (2,871)
	L	50 - 80		✓	✓	✓	139 (3,531)
Tri	J	12		✓		✓	139 (3,531)

**Note:** \*\* Rooftop Arrangements [RA] B, D, G, and K are without a supply plenum. Use the same return air dimensions for these units rooftop openings. Refer to unit submittals for more detail.

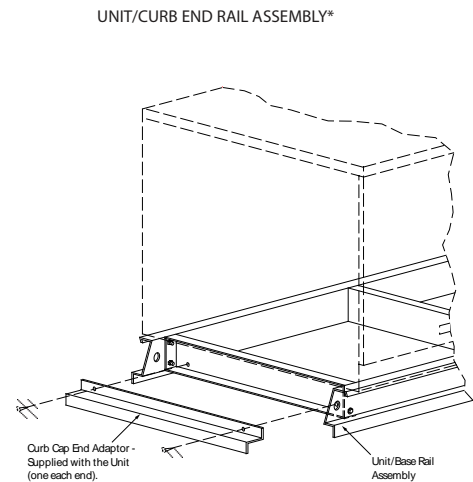
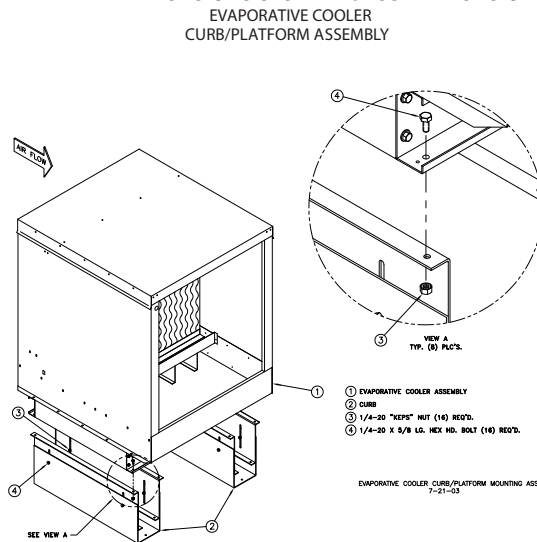


## Roof Curb Assembly



### Notes:

- Refer to Roof Curb Specifications for "A" dimensions and references to sections X-X and Y-Y.
- Dimensions are in inches. Dimensions in parenthesis are in millimeters.



**Note:** \* For Field Installations: These Crossbrace/Curb Adaptors (2 adaptors ship with each rooftop arrangement) must be repositioned in the field when the unit is mounted on a curb or a platform (one for each end). Simply remove the screws, turn the piece over (end for end) and secure in place using the holes/hardware provided. All joints and seams must be sealed completely in the field to prevent leaks.



# Engineered Products Specification Guide

## A. General

### A.1 Standards and Certifications

- A.1.a ETL Certified duct furnace(s) which conform to the latest ANSI standards for efficiency and safe performance.
- A.1.b Electrical safety is in compliance with UL 1995 safety standard for heating, ventilating and cooling equipment.

### A.2 Fuel Types

Rooftop unit will be suitable for operation with:

- Natural Gas
- LP (propane) Gas

### A.3 Mechanical Arrangement

Rooftop unit will consist of a:

#### A.3.a Furnace section consisting of a:

- Single Furnace (100-400 MBh units)
- Dual Furnace (500-800 MBh units)
- Triple Furnace (1200 MBh units)

The firing rate of each furnace will not exceed 400 MBh and will contain its own Heat Exchanger, Flue Collector, Venting, Burners, Safety and Ignition Controls.

#### A.3.b Blower Section containing supply blower(s) and blower motor. The blower motor will be interlocked electrically and disengage the blower motor and control circuit upon opening the service panel.

#### A.3.c Electrical Cabinet that is isolated from the air stream with a non removable access panel interior to the outer service panel. Provision for component mounting, wire routing and high voltage isolation.

#### A.3.d Rooftop unit will be provided with:

- Outside air and Return air opposed blade dampers.
- Outside air opposed blade dampers.
- Return air opposed blade dampers.
- No dampers.

#### A.3.e Filter Section will accommodate 1 inch or 2 inch washable, or pleated high-efficiency filters; or 2 inch throwaway and be of a V-bank design for minimal pressure drop.

#### A.3.f Supply plenum will be provided with down flow discharge.

#### A.3.g Return air will enter through a bottom return air opening.

#### A.3.g.1 (opt.) For units with both outside and return air, return air opening will be located horizontally on the rear of the unit under the outside air inlet.

#### A.3.h A Cooling Coil Section constructed of 20 ga. galvanized steel may be provided with the unit.

#### A.3.h.1 Direct Expansion (DX) Evaporator Coil certified by ARI may be provided.

#### A.3.h.2 Chilled Water Coil certified by ARI will be provided.

#### A.3.i An Evaporative Cooler with 8 inch CELdek® media may be provided. The Evap. cooler will be of a self cleaning design with a stainless steel water tank, regulated water flow and overflow protection. The cooler will have a cabinet assembly of heavy-gauge aluminized steel with weatherproof finish, a U.L. recognized thermally protected sealed recirculating pump motor, two inch distribution pad, and corrosion resistant PVC water distribution tubes.

#### A.3.i.1 (opt.) An automatic Fill and Drain Kit may be provided for field installation.

#### A.3.i.2 (opt.) A platform Mounting Curb will be provided.

#### A.3.i.3 (opt.) High-Efficiency 12 inch deep CELdek® media may be provided.

#### A.3.i.4 (opt.) UL900 Class II fire rated 8 inch GLASdek® media will be provided.



- A.3.i.5** (opt.) UL900 Class II fire rated 12 inch GLASdek media will be provided.
- A.3.j** (opt.) The unit will mount on a factory supplied roof curb, that is shipped un-assembled with hardware package and gasket attached. Curb and rail will total 16" high and supplied with a cross-member which allows isolation of return and supply air streams. Curb will be
- Insulated.
  - (opt.) Spring Isolated.
  - (opt.) Adaptor Type.
  - Seismic Rated.

### A.4 Electrical Systems

- A.4.a** All electrical components and fixtures will carry UL or ETL listing, certification and/or recognition.
- A.4.b** All wire will be rated to meet or exceed electrical requirements for voltage, ampacity, dielectric strength of sheathing and temperature rating per location.
- A.4.c** Standard control relays will be socket mounted with terminal block connections.
- A.4.d** All high voltage wiring is enclosed in flexible metallic sheathed BX cable and include an identifying marker corresponding to the wiring diagram.
- A.4.e** All control wiring will terminate at terminal strips (single point connection) and include an identifying marker corresponding to the wiring diagram.

### A.5 Mounting

Rooftop unit will be mounted on metal rails with downrolled outer edges with lifting and anchor holes and be suitable for slab or suspension mounting.

### A.6 Standard Safety Provisions

- A.6.a** Rooftop unit is provided with a low voltage circuit breaker rated for 150% of the unit's normal 24 volt operating load.
- A.6.b** An access interlock switch is installed in the blower compartment and will disengage the blower upon opening the service panel. An override or cheat switch shall be incorporated into the interlock switch for serviceability.
- A.6.c** Each duct furnace will be provided with a primary limit switch 24V high temperature limit switch and a (redundant) combination gas valve.
- A.6.d** Rooftop units will contain a Reverse Air Flow Interlock Switch. The normally closed switch when activated will cause gas valves to close.
- A.6.e** A Drafter Prove switch is installed in all power vented units and disengage gas flow if for any reason the drafter has failed to operate.
- A.6.f** Warning labels will be visible in accessible areas of the installation where unsafe conditions could occur.

### A.7 Optional Safety Provisions

- A.7.a** A high pressure interlock switch and shutoff valve will be provided for each furnace section.
- A.7.b** A low pressure interlock switch and shutoff valve will be provided for each furnace section.
- A.7.c** Rooftop unit will be provided with a Firestat located in the return air stream. If the return air temperature reaches the set point (typically 130 °F) the unit will close all gas valves, return dampers to their normal position and shut down the blower.
- A.7.d** Rooftop unit will be provided with a Firestat located in the supply air stream. If the supply air temperature reaches the set point (typically 150 °F) the unit will close all gas valves, return dampers to their normal position and shut down the blower.
- A.7.e** Rooftop unit will be provided with a Time Delay Freeze-stat with the sensing bulb located in the discharge air stream. Wired as an interlock to prevent cold air discharge.
- A.7.f** Rooftop unit will be provided with a manually reset high limit switch wired in series to the lead furnace high limit. If the set point is reached the gas valve will close and the blower will continue to run until the sensed temperature is below the set point.
- A.7.g** A Clogged Filter Pressure Switch with adjustable operating range and normally open switch will be installed to sense increased suction pressure by the blower due to filter obstruction. Provision for remote indication will be provided by terminal block connection points.

**A.7.h** Rooftop unit will be provided with an Ambient Lockout Thermostat and wired as an interlock to prevent duct furnace(s) from firing during times of mild ambient temperatures.

### **B. Burners**

**B.1** Burners will be die formed with stamped porting and stainless steel port protectors to prevent scale or foreign matter from obstructing the burner ports. Burner construction will consist of: (std.) Corrosion Resistant Aluminized Steel. (opt.) Type 409 Stainless Steel.

**B.2** Burners must be individually removable for ease of cleaning and servicing. The entire burner assembly must be easily removable with a slide-out drawer design. The pilot must be accessible through a pilot access plate without removing the burner assembly.

**B.3** (opt.) Burners will be fitted with orifices suitable for higher elevations (over 2000 feet).

### **C. Heat Exchanger**

The Heat Exchanger construction will consist of:

- (std.) 20-gauge aluminized steel tube sections, and 18-gauge aluminized steel headers
- (opt.) 20-gauge 409 stainless steel tube sections, and 20-gauge headers
- (opt.) 20-gauge 321 stainless steel tube sections, and 20-gauge headers

### **D. Venting System**

**D.1** The Flue Collector construction will consist of: (std.) Corrosion resistant aluminized steel. (opt.) Type 409 stainless steel.

**D.2** Rooftop will be provided with:

Natural Venting - A square flue vent cap designed for gravity venting will be provided. Outside air for combustion will enter at the base of vent cap through a protective grille. Products of combustion will be discharged through the upper section of the flue vent cap. (opt.) An A.G.A./C.G.A. approved extended vent cap will be provided.

Power Venting - A power vent fan for venting will be provided. Outside air for combustion and products of combustion will have individual air inlet and discharge grilles located in the upper section of the furnace service panel. A drafter prove switch will be installed and its normally open contacts wired in series with the main gas valve.

### **E. Drip Pan**

The Positive Drain Drip Pan construction will consist of:

- (std.) Corrosion resistant aluminized steel
- (opt.) Type 409 stainless steel.

### **F. Cabinetry**

**F.1** Cabinetry will be die-formed, 20-gauge galvanized steel and finished in air-dry enamel.

**F.2** Hinged Access Doors will be provided by the manufacturer on the blower and filter cabinet doors. Doors will be double wall construction and incorporate dual quick opening tool-less latches. Door stops will be included to prevent against closure while open.

**F.3** Filter, Damper and Blower sections and cooling coil section will be insulated with fire resistant, environmentally safe, odorless, one-inch fiber material.

### **G. Dampers**

Dampers will be of the opposed blade type, constructed of galvanized steel with neoprene nylon bushings, blades to be mechanically interlocked. (opt.) Low Leak Damper (outside air only) will be of the opposed blade type, constructed of galvanized steel with neoprene nylon bushings and vinyl blade edge seals; blades to be mechanically interlocked.

### **H. Filter Rack**

Filter Rack will be constructed of galvanized steel with access through the side service panel.

### **I. Intake Hood**

Intake hood will be constructed of galvanized steel and include a:

- (std) bird screen
- (opt) moisture eliminator

### **J. Supply Blower**

Supply Blower will be belt driven, forward curved, centrifugal type blower assembly, statically and dynamically balanced with double inlet. The blower wheel will be fixed on a shaft, supported with super quiet rubber cartridges for vibration isolation, and ball bearing.

### K. Blower Motor

#### K.1 Type

**K.1.a** Motor will be Single Speed, Ball Bearing Drive, Permanently Lubricated, EPACT compliant, Standard NEMA Frame Size and Service Factor, with Resilient Base and Class "B" Windings:

- (a) Relay. (std. 1/2 - 1 HP)
- (b) Contactor. (std. 1-1/2 - 5 HP)
- (c) Magnetic starter. (std. 7-1/2 - 15 HP)
- (d) Variable Frequency Drive

**K.1.b** Motor will operate at:

- (a) 115V/1/60
- (b) 208V/1/60
- (c) 230V/1/60
- (d) 208V/3/60
- (e) 230V/3/60
- (f) 460V/3/60
- (g) 575V/3/60

**K.1.c** Motor will have a horse power rating of: (1/2 - 15 HP)

**K.2** Motor wiring will be enclosed in flexible metallic sheathed BX conduit.

**K.3** Control-Motor will be activated through a:

- (a) Contactor. (std. 1/2 - 5 HP)
- (b) Magnetic starter. (std. 7-1/2 - 15 HP)
- (c) Variable Frequency Drive (1-15 HP)

**K.4** Motor Protection will be provided with:

- (a) Internal thermal protection. (Relay/Contactor actuated)
- (b) IEC overload protection. (Magnetic starter)

### L. Gas and Ignition Systems

**L.1 Ignition System** A solid state ignition control system which ignites the pilot by spark during each cycle of operation will be provided. When pilot flame is proven, main burner valve will open to allow gas flow to burners. Pilot and burners must be extinguished during the off cycle. (opt.) Ignition system will be 100% shutoff type.

**L.2 Valve** Rooftop units will be provided with a gas valve suitable for NEC Class 2 use, for a maximum inlet of 0.5-psi (14 inch WC) on natural gas. The 24 volt combination automatic gas valves must include a main operating valve, pilot safety valve, pressure regulator, manual main and pilot shutoff valve and adjustable pilot valve. (opt.) Unit will be provided with a high pressure gas regulator valve.

### M. Gas Controls

**(a std.)** Single Stage Unit will be provided with one stage of heat. Ignition is the full rate of the furnace(s) rated input.

**(b)** Two Stage Unit will be provided with two stages of heat. Ignition will be at low fire (one half) of the rated input.

**(c)** Electronic Modulating Gas Unit will be provided with modulated heat output. An automatic valve in series with the modulating valve will be provided to cycle the unit. Ignition will be at full fire (100 percent rated input) and modulate the gas input from 100 to 40% rated input. The Modulating Gas valve will operate in response to:

1. Room Thermostat
2. Duct Thermostat with remote temperature adjustment.
3. Duct Thermostat with remote temperature adjustment and an override room thermostat which will increase the rate of modulated input to the unit in proportion to the difference in room temperature.

**(d)** Electronic Modulating Gas DDC Unit will be provided with modulated heat output. An automatic valve in series with the modulating valve will be provided to cycle the unit. Ignition will be at full fire (100% rated input) and modulate the gas input from 100 to 40% of the rated input. The modulating gas valve will operate in response to a 4-20 mA input from an external DDC control.

**(e)** Electronic Modulating Gas DDC Unit will be provided with modulated heat output. An automatic valve in series with the modulating valve will be provided to cycle the unit. Ignition will be at full fire (100% rated input) and modulate the gas input from 100 to 40% of the rated input. The modulating gas valve will operate in response to a 0-10 VDC input from an external DDC control.

- (f) Three Stage (Triple Furnace Units) Unit will be provided with one stage of heat per furnace. Ignition will be determined by an Electronic Step Control. Each stage of fire will have no less than a 4 °F temperature differential setting. The unit will fire at one third (33%) of the rooftop unit(s) rated input per stage. Furnace One will always fire first and disengage last.
- (g) Four Stage Unit will be provided with two stages of heat per furnace. Ignition will be determined by an Electronic Step Control. Each stage of fire will have no less than a 4 °F temperature differential setting. The unit will fire at one quarter (25%) of the rooftop unit(s) rated input per stage. Furnace One will always fire first and disengage last.
- (h) Six Stage (Triple Furnace Units) Unit will be provided with two stages of heat per furnace. Ignition will be determined by an Electronic Step Control. Each stage of fire will have no less than a 4 °F temperature differential setting. The unit will fire at one sixth (16.5%) of the rooftop unit(s) rated input per stage. Furnace One will always fire first and disengage last.
- (i) One Stage with Electronic Modulation DDC (Dual Furnace Units) Unit will be provided with modulated heat output on furnace one and one stage of heat on furnace two. Ignition will be determined by an Electronic Step Control. Each stage of fire will have no less than a 4 °F temperature differential setting. The rooftop unit will fire at approximately one half (50%) of the rooftop unit's rated input and modulate from 50 - 25% fire on furnace one. Additional stages of fire will engage as the 50% of fire has been maintained for the duration of a delay setting at the electronic step control with respect to each set point. Furnace One will always fire first and disengage last.
- (j) Two Stage with Electronic Modulation DDC (Triple Furnace Units) Unit will be provided with modulated heat output on furnace one and one stage of heat on furnace two and three. Ignition will be determined by an Electronic Step Control. Each stage of fire will have no less than a 4 °F temperature differential setting. The rooftop unit will fire at approximately one third (33%) of the rooftop unit(s) rated input and modulate from 33 - 16.5% fire on furnace one. Additional stages of fire will engage as the 33% of fire has been maintained for the duration of a delay setting at the electronic step control with respect to each set point. Furnace One will always fire first and disengage last.

### N. Damper Control

#### N.1 Type

- N.1.a** Damper motor will be:
- (a) Two position with spring return.
  - (b) Modulating.
  - (c) Modulating with spring return.

**N.1.b** Motor will operate at 24 volts.

#### N.2 Wiring

Motor and control wiring will be harnessed with terminal block connections. Wire will have a temperature rating of at least 105°C outside of the duct furnace.

### O. Damper Control

- (a) Two position spring return motor with outside air damper will be provided. The motor will power the outside air damper full open when the unit is on and full closed when the unit is off.
- (b) Two position spring return motor with return air damper will be provided. The motor will power the return air damper full open when the unit is on and full closed when the unit is off.
- (c) Two position spring return motor with interlocked outside and return air dampers will be provided. The motor will 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. When the unit is off the motor will drive the outside air dampers full closed and the return air dampers full open.
- (d) Modulating motor with spring return and interlocked outside and return air dampers will be provided. The motor will modulate the position of the outside and return air dampers in response to a thermostatic controller located in the mixed air stream. Units will 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 dampers full closed and the return air dampers full open.
- (e) Modulating motor with spring return and interlocked outside and return air dampers will be provided. The motor will modulate the position of the outside and return air dampers in response to a thermostatic controller located in the mixed air stream. When the unit is off the motor will drive the outside air dampers full closed and the return air dampers full open.
- (f) Modulating motor with spring return and interlocked outside and return air dampers will be provided. The motor will position the outside and return air dampers in response to a manually set potentiometer. When the unit is off the motor will drive the outside air dampers full closed and the return air dampers full open.

- (g) Modulating motor with spring return and interlocked outside and return air dampers will be provided. The motor will modulate the position of the outside and return air dampers in response to a thermostatic controller and dry bulb located in the mixed air stream. Units will 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 dampers full closed and the return air dampers full open.
- (h) Modulating motor with spring return and interlocked out-side and return air dampers will be provided. The motor will 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 dampers full closed and the return air dampers full open.
- (i) Modulating motor and interlocked outside and return air dampers will be provided. The motor will modulate the position of the outside and return air dampers in response to a pressure sensor located in the building.
- (k) Modulating motor with interlocked outside and return air dampers will be provided. The motor will modulate the position of the outside and return air dampers in response to a carbon dioxide monitor located in the return air duct. When the unit is off the motor will drive the outside air dampers full closed and the return air dampers full open.
- (l) Modulating motor with spring return and interlocked outside and return air dampers will be provided. The motor will 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 dampers full closed and the return air dampers full open.
- (m) Modulating motor with spring return and interlocked outside and return air dampers will be provided. The motor will modulate the position of the outside and return air dampers in response to a 4-20 mA or 0-10 VDC analog signal supplied by an external DDC controller. When the unit is off the motor will drive the outside air dampers full closed and the return air dampers full open.
- (n) Two position spring return motor with interlocked outside and return air dampers will be provided. The motor will 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 I)
- (o) Modulating motor with spring return and interlocked outside and return air dampers will be provided. The motor will 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 will also be provided with a minimum position potentiometer for minimum outside air damper position. (ASHRAE Cycle II)
- (p) Modulating motor with spring return and interlocked outside and return air dampers will be provided. The motor will 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 will 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 dampers full closed and the return air dampers full open. (ASHRAE Cycle III)
- (q) Manual outside and return air dampers with manual quadrant will be provided.

### P. Accessories

- (a) **Moisture Eliminators**  
Moisture eliminators will be provided by the manufacturer to eliminate the possibility of moisture carryover entering the unit through the outside air hood. A differential pressure switch and indicator light will be provided in case of blockage.
- (b) **Horizontal Rear Return**  
Return air will be located horizontally on the rear of the unit under the outside air inlet. Moisture eliminators will be provided by the manufacturer for the outside air hood.
- (c) **Low Leak Dampers**  
Low leak dampers with vinyl blade edge seams and neoprene nylon bushings will be provided by the manufacturer. Dampers will be of the galvanized steel opposed blade type.
- (d) **409 Stainless Steel Drip Pan**  
Will be provide by the manufacturer in the furnace section.
- (e) **High Altitude Unit** Unit will be orificed for operation at \_\_\_\_\_ feet above sealevel elevation. Two stage units will include a factory installed delay timer allowing the unit to initially fire at 100% for ten seconds and then operate under the direction of the gas valve controller.
- (f) **High Pressure Regulator** Will be provided by the manufacturer to reduce the incoming gas pressure to specified main line gas pressure (inches of water column), up to 14 inch WC
- (g) **Input Derate Unit** will be derate \_\_\_\_\_ % of rated input, up to 50%.

- (h)** Filters will consist of:
  - (h.1)** 1 inch Washable (Standard)
  - (h.2)** 2 inch Washable (Optional)
  - (h.3)** 2 inch Throwaway (Optional)
  - (h.4)** 1 inch 30% Pleated (Optional)
  - (h.5)** 2 inch 30% Pleated (Optional)
- (i)** Evaporative Cooler Accessories will include:
  - (i.1)** Fill and Drain Kit  
Will consist of a 3 way valve and relay for automatic fill and drain operation of the Evaporative Cooler.
  - (i.2)** 12 inch Celdek® Media  
High Efficiency 12" Celdek Media will be utilized in the Evaporative cooler.
  - (i.3)** Freezestat  
An automatic reset freezestat will be provided by the manufacturer to control the operation of the fill and drain kit.
  - (i.4)** 8 inch Glasdek ®  
Will be provided by the manufacturer to conform with UL900 Class II fire rating requirements.
  - (i.5)** 12 inch Glasdek  
Will be provided by the manufacturer to conform with UL900 Class II fire rating requirements.
- (j)** 7 Day Time Clock  
A seven day time clock will be provided by the manufacturer and offer SPDT relay output and a maximum of six setpoints per day.
- (k)** 24 Hour Time Clock  
A 24 hour time clock will be provided by the manufacturer and offer SPDT relay output and a maximum of twelve setpoints per day.
- (l)** Clogged Filter Switch  
A factory installed clogged filter switch with indicator light located in the main electrical cabinet or remote control panel (when specified) will be provided by the manufacturer.
- (m)** Convenience Outlet  
A GFI with manual reset convenience outlet in a weather proof enclosure will be provided by the manufacturer and field installed and require a separate 115 volt service.
- (n)** Remote Control Panel  
A wall mounted control panel will be provided by the manufacturer. The panel will consist of a non metallic enclosure and 6 LED status lamps. The lamps will indicate System on/off, Fan on/off, Heat on/off, Cool on/off, Auxiliary on/off (Evaporative cooler on/off or Exhaust fan operation) and modulating damper control (when specified).
- (o)** Manual Blower Switch  
A factory installed manual blower switch located in the electrical cabinet will be provided by the manufacturer.
- (p)** Duct Thermostats
  - (p.1)** Single stage duct thermostat with an operating range of 55°-175 °F and SPDT operation will be provided by the manufacturer.
  - (p.2)** Two stage duct thermostat with an operating range of 55°-175 °F and SPDT operation will be provided by the manufacturer
- (q)** Room Thermostats (All Mercury free)
  - (q.1)** T87K Honeywell Thermostat w/ Subbase  
A single stage heating and subbase for fan on operation will be provided by the manufacturer.
  - (q.2)** T87K Honeywell Thermostat w/ Subbase and Guard  
A single stage heating thermostat including a subbase for fan operation and tamper proof guard will be provided by the manufacturer.
  - (q.3)** T834N Thermostat with Subbase  
A single stage heating thermostat with fan switch with a 50°-90 °F operating range will be provided by the manufacturer.

- (q.4)** TB8220U Programmable Commercial Thermostat  
The manufacturer will provide a 7 day programmable thermostat capable of two stages of heating and two stages of cooling.
- (q.5)** TH5220D Two Stage Thermostat  
The manufacturer will provide a two stage heating and two stage cooling thermostat with system and fan switching and built in 10 °F heating / cooling differential.
- (q.6)** TG511 Locking Thermostat Cover  
A Universal locking thermostat cover. Will be provided by the manufacturer.
- (r)** Return Firestat  
A return firestat with a setpoint range of 130° - 270 °F and SPDT switching capabilities will be provided by the manufacturer.
- (s)** Supply Firestat  
A supply firestat with a setpoint range of 130° - 270 °F and SPDT switching capabilities will be provided by the manufacturer.
- (t)** Time Delay Freezestat  
A SPDT time delay freezestat with a setpoint range of 30° - 75 °F and a 1 to 10 minute adjustable time delay will be provided by the manufacturer.
- (u)** Ambient Lockouts
- (u.1)** Ambient Lockout  
A factory mounted ambient lockout control capable of disengaging the duct furnace during times of mild temperatures will be provided by the manufacturer.
- (u.2)** Ambient Lockout – Dual Furnace  
A factory mounted ambient lockout control capable of preventing firing of second furnace when first furnace is able to satisfy complete load as well as preventing firing of heating system at field selectable high ambient temperatures.
- (u.3)** Ambient Lockout – Triple Furnace  
A factory mounted ambient lockout control capable of preventing firing of second furnace when first furnace is able to satisfy complete load, preventing firing of third furnace when first and second furnaces are able to satisfy complete load as well as preventing firing of heating system at field selectable high ambient temperatures.
- (v)** Interlock Relays
- (v.1)** 24 volt DPDT relay A 24 volt type 2 Form C relay with 24 volt coil and DPDT 10 amp contacts will be provided by the manufacturer. The relay will be capable of plugging into the main connection PC board.
- (v.2)** 24/115 volt SPDT relay A relay with selectable coil voltages of 24 or 115 and SPDT 10 amp contacts will be provided by the manufacturer.
- (v.3)** 24/115/230 volt DPDT relay A relay with selectable coil voltages of 24, 115 or 230 and DPDT 10 amp contacts will be provided by the manufacturer.
- (v.4)** 24 volt 4PDT relay A relay with a coil voltage of 24 and 4PDT 10 amp contacts will be provided by the manufacturer.
- (w)** Manual Reset High Limit Switch  
Will be provided by the manufacturer to disengage the furnace at a temperature of 200 °F. The switch will be of the non-recycling manual reset type.
- (x)** High / Low Gas Pressure Switches  
Will be provide by the manufacturer to disengage the furnace(s) upon detection of high manifold or low incoming line pressures.
- (y)** Status Lamps  
Long life factory installed LED lamps will be provided in the electrical cabinet by the manufacturer to aid in troubleshooting and equipment setup. Power on, Fan on, Heating energized at furnace one, two or three and cooling energized will be provided when applicable.
- (z)** Air Flow Prove Switch  
Will be provided by the manufacturer to verify airflow through the unit. The switch will be a Dwyer 1910-0 pressure switch suitable for duct mounting with a range of .15 – .50" WC
- (aa)** Field Installed Disconnect Switches
- (aa.1)** 30 amp fused disconnect switch, NEMA-3R rated, will be provided by the manufacturer to be field mounted.

## Engineered Products Specification Guide

---

- (aa.2)** 30 amp non fused disconnect switch, NEMA-3R rated, will be provided by the manufacturer to be field mounted.
- (aa.3)** 60 amp fused disconnect switch, NEMA-3R rated, will be provided by the manufacturer to be field mounted.
- (aa.4)** 60 amp non fused disconnect switch, NEMA-3R rated, will be provided by the manufacturer to be field mounted.
- (bb)** Variable Frequency Drive Options
  - (bb.1)** Field Installed VFD  
Will be provided by manufacturer to provide overload protection and soft start operation. VFD to be UL approved manufactured with a NEMA 1 plenum rated enclosure.
  - (bb.2)** Factory Installed VFD  
Will be provided by manufacturer to provide overload protection and soft start operation. VFD to be UL approved manufactured with a NEMA 1 plenum rated enclosure. VFD to be factory mounted in the unit blower cabinet and factory wired with a remote programming keypad located in the electrical cabinet.
  - (bb.3)** Remote Keypad  
Will be provided by manufacturer for field installation up to 100 feet (30 Meters) from the drive. The remote keypad will duplicate the functionality of the drive's local keypad.
  - (bb.4)** CO<sub>2</sub> Sensor 100% Outside Air  
Will be provided by manufacturer for field installation. CO<sub>2</sub> monitor range 0 to 2,000 ppm, adjustable, for mounting in occupied space. Upon rise in CO<sub>2</sub> above field programmed setpoint, 0-10VDC or 4-20 mA signal will be sent from CO<sub>2</sub> sensor to VFD to modulate air flow between minimum setpoint and maximum CFM.
  - (bb.5)** CO<sub>2</sub> Mixed Air  
Will be provided by manufacturer for field installation. CO<sub>2</sub> monitor range 0 to 2,000 ppm, adjustable, for mounting in return air duct. Upon rise in CO<sub>2</sub> above field programmed setpoint, signal will drive return air damper to 100% closed and outside air damper to 100% open. 0-10VDC or 4-20 mA signal will be sent between CO<sub>2</sub> sensor to VFD to modulate air flow between minimum setpoint and maximum CFM.
  - (bb.6)** Pressure Sensor  
Will be provided by manufacturer for field installation. Pressure control range -0.1 to +0.1" WC. VFD will modulate motor speed based on 4-20 mA signal from pressure control sensor mounted in space to maintain field programmed setpoint.
  - (bb.7)** 2-Speed VFD Relays  
Factory installed DPDT relays provided to energize second speed setting. Relay coil will accept 24V, 115V and 230V.
  - (bb.8)** 3-Speed VFD Relays  
Factory installed DPDT relays provided to energize second and third speed settings. Relay coil will accept 24V, 115V and 230V.
  - (bb.9)** VFD Enclosure  
A factory installed NEMA-3R enclosure will be provided to protect the factory installed VFD in outdoor applications. Enclosure will include a small electric heater and vent fan to protect the VFD in ambient temperatures of -30 - 115°F (-34 - 46°C).
- (cc)** Through-The-Base Utility Penetrations  
Will be provided by the manufacturer. Electric and coil connections will enter the unit in the blower cabinet. The gas connection will enter the duct furnace portion of the unit through the base, the manufacturer will provide pre-engineered piping kit to allow the gas shut off to be accessible from the outside of the duct furnace.
- (dd)** Service Convenience Package  
Will be factory installed by the manufacturer. The service convenience package will consist of a factory mounted switch type disconnect and GFI convenience outlet mounted on the hinged access door. Utility connections will be through-the-base. Through-the-base utility penetrations for the electric and coil connections will enter the unit in the blower cabinet. The gas connection will enter the duct furnace portion of the unit through the base, the manufacturer will provide pre-engineered piping kit to allow the gas shut off to be accessible from the outside of the duct furnace.
- (ee)** Double Wall Cabinet Construction  
Will be factory installed and in accordance with the latest edition of ASHRAE standard no. 62 and 62.1. Double wall construction will be utilized in the Blower, Filtration, Coil and Down Discharge Plenum sections of the unit where applicable. 1" fiber material will be used between the cabinet walls for insulation purposes.





# Unit Selection Procedure

## Step 1

To properly select a unit, two of the three following items must be known: Temperature Rise (TR) required, Cubic Feet per Minute of air delivery (CFM) required, Output (BTU/H OUT) required.

From any two of these items the third item can be determined, as well as the Input (BTU/H IN) required as follows. (The value 1.085 represents a constant.)

$$\text{TR} = \text{BTU/H Out} \div (1.085 \times \text{CFM})$$

$$\text{CFM} = \text{BTU/H} \div (1.085 \times \text{TR})$$

$$\text{BTU/H Out} = (\text{CFM} \times 1.085) \times \text{TR}$$

$$\text{BTU/H In} = \text{BTU/H out} \div \text{Efficiency } .80 \text{ or } .79$$

With any two of the three required values, match these requirements to a unit with the nearest Input (BTU/H), Temperature Rise (TR) and Air Flow (CFM) capabilities keeping in mind that - BTU/H OUT = BTU/H IN x Efficiency.

Refer to Packaged Rooftop Arrangement Reference to match a Capacity range (BTU/H), Air Delivery (CFM) and Temperature Rise (TR) with a Indoor Arrangement and proceed to the Chart and Tables listed for that arrangement. The top portion of Quick Sizer Charts allows the use of Temperature Rise and CFM to determine Capacity, or Temperature Rise and Capacity to determine CFM, or Capacity and CFM to determine Temperature Rise. Follow the top chart down to the corresponding filter and cooling range for the selection.

## Step 2

Once Capacity, Temperature Rise and CFM have been determined, go to the Accessory Pressure Losses Table for the arrangement and calculate pressure losses for unit accessories. Add the losses for Filters, Dampers, Rainhood with Screen or Moisture Eliminators (if used at ductwork inlet), Evaporative Cooler or Cooling Coil and losses due to Duct Work (External Static Pressure) to determine the Total External Pressure.

### Step 3A 2000 feet altitude and below

Refer to the Performance Table for the selection and determine RPM and BHP for the Total External Pressure. Go to the table row that most closely matches unit Capacity, Temperature Rise and CFM, follow the row out to the column that equals the Total External pressure for RPM and BHP values.

### Step 3B above 2000 feet altitude

To correct for altitude, see the table below to determine the correction factor from temperature and altitude for the system. Correct the ESP from Duct Work to actual ESP for altitude then add internal static pressure (ISP) from accessories as shown below. Refer to the Performance Table for the selected unit. Go to the row that most closely matches unit Capacity, Temperature Rise and CFM, follow the row out to the column that equals the corrected Actual ESP for RPM and BHP values. The BHP value can now be corrected to Actual BHP for altitude as shown below.

$$\text{Actual TSP} = \text{Duct ESP} \times \text{Factor} + \text{Accs. ISP}$$

$$\text{Actual BHP} = \text{Cat. BHP} \div \text{Factor}$$



## Unit Selection Procedure

Table 24. Correction factors for altitude

		Altitude (Feet) and Barometric Pressure (BP) ("In. Hg")													
TEMP °F	Altitude BP	0' 39.92	500' 29.38	1000' 28.86	1500' 28.33	2000' 27.82	2500' 27.31	3000' 26.82	3500' 26.32	4000' 25.84	4500' 25.36	5000' 24.9	5500' 24.43	6000' 23.98	
-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	



# Cooling Coil Selection Procedure

Cooling coils are used in air handling systems to cool and dehumidify an air stream for comfort purposes. To reduce the cooling load in buildings, most applications recirculate a large percentage of the air. Usually recirculated air is 75-80% of the airflow with the remainder being outside fresh air. Some codes require 100% outside air, particularly for hospitals and schools. Also many engineers specify higher percentages of outside air to meet the requirements of ASHRAE Standard 62.1-2004 "Ventilation for Acceptable Indoor Air Quality".

## Step 1

To select the least expensive coil to meet the specified performance criteria the following information is required:

- Unit Size
- Airflow in SCFM or ACFM and Altitude. (see "Fan Selection at Altitude").
- Entering air Dry Bulb and Wet Bulb temperatures based on ratio of outside to return air.
- Cooling load MBH (1000's BTU/Hr) or leaving air Wet Bulb.

## Step 2

For chilled water coils, the following additional information is required (see [Table 17, p. 59](#) and [Table 18, p. 60](#)):

- Fluid type: water, ethylene glycol, propylene glycol and percent of mixture.
- Entering fluid temperature °F.
- Leaving fluid temperature °F or rate of flow GPM.
- Chilled water tables are based on:
  - 45° F entering water temperature.
  - Entering air temperature of 80°F DB/67°F WB.
  - Data is certified in accordance with ARI Standard 410.
  - Capacities based on 95° F DB/74° F WB information is also shown. For other than these conditions, please consult the factory.

## Step 3

For DX (refrigerant) coils, the following additional information is required (see [Table 15, p. 55](#) and [Table 16, p. 57](#)):

- Refrigerant type.
- Suction temperature °F.
- Liquid temperature °F.
- Type of circuiting desired.
- Hot gas bypass required?
- DX tables are based on:
  - 45° F entering water temperature.
  - Entering air temperature of 80°F DB/67°F WB.
  - R-410A refrigerant.
- Capacities based on:
  - 95°F DB/74°F WB information are also shown.
  - 100 °F liquid temperature.
  - Data is certified in accordance with ARI Standard 410. For other than these conditions, please consult the factory.

## Step 4

When specifying a coil one of the most important pieces of information is the airflow in SCFM. As stated in the "Fan Selection at Altitude" section SCFM means STANDARD CFM or air at a density



## Cooling Coil Selection Procedure

of 0.075 lb./cu. feet A fan must be selected using ACFM or ACTUAL CFM. A cooling coil or heating coil must be selected using SCFM. Up to an altitude of approx. 1,500 feet above sea level very little error would be introduced in the selection of a cooling coil. For altitudes above 1,500 feet above sea level the coil must be selected using SCFM. The relationship between ACFM and SCFM is shown by the following equation.  $SCFM = ACFM \times (\text{Actual Density} \div 0.075)$

The term "0.075 ÷ Actual Density" is referred to as the density correction factor, here in called the "Factor". This factor can be found in Table 24. The aforementioned equation can then be re-written as:

$$SCFM = (ACFM \div \text{Factor}).$$

Example: A cooling coil must be selected at 5,000 feet altitude. The unit delivers 10,000 ACFM. What is the SCFM? At 5,000 feet altitude, the factor from the Correction Factors for Altitude table is 1.20 therefore:

$$SCFM = 10,000 \text{ ACFM} \div 1.20 = 8,333 \text{ SCFM}$$

### Step 5

The entering air temperatures, both wet bulb and dry bulb must also be considered when selecting a coil. A majority of units usually use recirculated air with a percentage of outside air. The cooling coil must be selected using the mixed air temperature entering the coil.

The following example shows how to calculate the mixed air temperature.

25% Outside air at 95 °F DB/75 °F WB

75% recirculated air at 78 °F DB/67 °F WB

The mixed dry bulb is simply the proportional value between the outside and recirculated dry bulb temperatures.

$$(.25 \times 95) + (.75 \times 78) = 82.3 \text{ °F}$$

The mixed wet bulb temperatures must be calculated using either the humidity ratio from a psychrometric chart or from the table below. "The enthalpy of saturated air at various wet bulb temperatures". Using the table below, the enthalpy of the outside air at 75 °F WB is 38.62 BTU/lb. and the recirculated air at 67 °F WB is 31.63 BTU/lb.; the mixed enthalpy is:

$$(.25 \times 38.62) + (.75 \times 31.63) = 33.38 \text{ BTU/lb.}$$

Using this value in the table below, the interpolated wet bulb temperature is 69.1 °F. Therefore, the final mixed temperatures are: 82.3 °F DB/69.1 °F WB

**Table 25. Enthalpy of saturated air at various wet bulb temperatures**

Wet Bulb Temp.	BTU per Pound	Wet Bulb Temp.	BTU per Pound	Wet Bulb Temp.	BTU per Pound
50.0	20.38	60.0	26.40	70.0	34.12
50.5	20.64	60.5	26.75	70.5	34.55
51.0	20.90	61.0	27.10	71.0	34.99
51.5	21.17	61.5	27.45	71.5	35.42
52.0	21.45	62.0	27.81	72.0	35.87
52.5	21.73	62.5	28.17	72.5	36.31
53.0	22.01	63.0	28.54	73.0	36.77
53.5	22.29	63.5	28.91	73.5	37.22
54.0	22.59	64.0	29.29	74.0	37.68
54.5	22.88	64.5	29.67	74.5	38.15
55.0	23.18	65.0	30.05	75.0	38.61
55.5	23.48	65.5	30.44	75.5	39.09
56.0	23.79	66.0	30.83	76.0	39.56
56.5	24.10	66.5	31.23	76.5	40.04
57.0	24.42	67.0	31.63	77.0	40.53
57.5	24.74	67.5	32.03	77.5	41.02
58.0	25.06	68.0	32.44	78.0	41.51

**Table 25. Enthalpy of saturated air at various wet bulb temperatures (continued)**

<b>Wet Bulb Temp.</b>	<b>BTU per Pound</b>	<b>Wet Bulb Temp.</b>	<b>BTU per Pound</b>	<b>Wet Bulb Temp.</b>	<b>BTU per Pound</b>
58.5	25.39	68.5	32.86	78.5	42.01
59.0	25.73	69.0	33.27	79.0	42.51
59.5	26.06	69.5	33.70	79.5	43.02



# Approximate Unit Net and Ship Weights

*Note: All unit weights are less motor, outside air hood, cooling coils with drain pan, VFD and VFD accessories.*

**Table 26. Approximate unit net and ship weights (lbs.)**

ROOF TOP ARRANGEMENT "A"					
	NET WT.	SHIP.WT.		NET WT.	SHIP.WT.
GR-G-10	256	367	GR-P-10	262	373
GR-G-15	307	418	GR-P-15	298	409
GR-G-20	365	484	GR-P-20	356	475
GR-G-25	405	524	GR-P-25	395	514
GR-G-30	469	596	GR-P-30	455	582
GR-G-35	510	637	GR-P-35	495	622
GR-G-40	558	690	GR-P-40	543	675
GR-G-50	795	952	GR-P-50	777	934
GR-G-60	914	1081	GR-P-60	885	1052
GR-G-70	994	1161	GR-P-70	964	1131
GR-G-80	1087	1259	GR-P-80	1058	1230
GR-G-12	1617	1820	GR-P-12	1573	1776
ROOF TOP ARRANGEMENT "C"					
	NET WT.	SHIP.WT.		NET WT.	SHIP.WT.
GR-G-10	705	923	GR-P-10	712	930
GR-G-15	756	974	GR-P-15	748	966
GR-G-20	884	1112	GR-P-20	875	1103
GR-G-25	925	1153	GR-P-25	915	1143
GR-G-30	1068	1307	GR-P-30	1054	1293
GR-G-35	1117	1356	GR-P-35	1102	1341
GR-G-40	1201	1445	GR-P-40	1187	1431
GR-G-50	1345	1598	GR-P-50	1325	1578
GR-G-60	1546	1811	GR-P-60	1518	1783
GR-G-70	1636	1901	GR-P-70	1606	1871
GR-G-80	1765	2034	GR-P-80	1737	2006
ROOF TOP ARRANGEMENT "E"					
	NET WT.	SHIP.WT.		NET WT.	SHIP.WT.
GR-G-10	835	1072	GR-P-10	842	1079
GR-G-15	886	1123	GR-P-15	878	1115
GR-G-20	1037	1284	GR-P-20	1028	1275
GR-G-25	1078	1325	GR-P-25	1068	1315
GR-G-30	1244	1502	GR-P-30	1230	1488
GR-G-35	1294	1552	GR-P-35	1279	1537
GR-G-40	1389	1652	GR-P-40	1375	1638
GR-G-50	1499	1785	GR-P-50	1479	1765
GR-G-60	1722	2020	GR-P-60	1694	1992
GR-G-70	1812	2110	GR-P-70	1782	2080
GR-G-80	1953	2257	GR-P-80	1925	2229

ROOF TOP ARRANGEMENT "B"					
	NET WT.	SHIP.WT.		NET WT.	SHIP.WT.
GR-G-10	576	742	GR-P-10	583	749
GR-G-15	627	793	GR-P-15	619	785
GR-G-20	740	916	GR-P-20	731	907
GR-G-25	781	957	GR-P-25	771	947
GR-G-30	907	1092	GR-P-30	893	1078
GR-G-35	958	1143	GR-P-35	943	1128
GR-G-40	1032	1222	GR-P-40	1018	1208
GR-G-50	1195	1423	GR-P-50	1175	1403
GR-G-60	1377	1616	GR-P-60	1349	1588
GR-G-70	1468	1707	GR-P-70	1438	1677
GR-G-80	1589	1833	GR-P-80	1561	1805

ROOF TOP ARRANGEMENT "D"					
	NET WT.	SHIP.WT.		NET WT.	SHIP.WT.
GR-G-10	705	904	GR-P-10	712	911
GR-G-15	757	956	GR-P-15	749	948
GR-G-20	893	1102	GR-P-20	884	1093
GR-G-25	935	1144	GR-P-25	925	1134
GR-G-30	1083	1301	GR-P-30	1069	1287
GR-G-35	1134	1352	GR-P-35	1119	1337
GR-G-40	1220	1443	GR-P-40	1206	1429
GR-G-50	1348	1595	GR-P-50	1328	1575
GR-G-60	1554	1812	GR-P-60	1526	1784
GR-G-70	1644	1902	GR-P-70	1614	1872
GR-G-80	1777	2140	GR-P-80	1749	2012
ROOF TOP ARRANGEMENT "G"					
	NET WT.	SHIP.WT.		NET WT.	SHIP.WT.
GR-G-20	982	1206	GR-P-20	973	1197
GR-G-25	1025	1249	GR-P-25	1015	1239
GR-G-30	1218	1452	GR-P-30	1204	1438
GR-G-35	1261	1495	GR-P-35	1246	1480
GR-G-40	1343	1583	GR-P-40	1329	1569
GR-G-50	1427	1689	GR-P-50	1407	1669
GR-G-60	1677	1951	GR-P-60	1649	1923
GR-G-70	1759	2033	GR-P-70	1729	2003
GR-G-80	1886	2166	GR-P-80	1858	2138
GR-G-12	2420	2741	GR-P-12	2376	2697

## Approximate Unit Net and Ship Weights

**Table 26. Approximate unit net and ship weights (lbs.) (continued)**

ROOF TOP ARRANGEMENT "J"					
	NET WT.	SHIP.WT.		NET WT.	SHIP.WT.
GR-G-20	1116	1378	GR-P-20	1107	1369
GR-G-25	1157	1419	GR-P-25	1147	1409
GR-G-30	1367	1644	GR-P-30	1353	1627
GR-G-35	1409	1683	GR-P-35	1394	1668
GR-G-40	1499	1779	GR-P-40	1485	1765
GR-G-50	1597	1898	GR-P-50	1577	1878
GR-G-60	1863	2177	GR-P-60	1835	2149
GR-G-70	1944	2258	GR-P-70	1914	2228
GR-G-80	2079	2400	GR-P-80	2051	2372
GR-G-12	2620	2981	GR-P-12	2576	2937

ROOF TOP ARRANGEMENT "K"					
	NET WT.	SHIP.WT.		NET WT.	SHIP.WT.
GR-G-10	886	1137	GR-P-10	893	1144
GR-G-15	937	1188	GR-P-15	929	1180
GR-G-20	1132	1394	GR-P-20	1123	1385
GR-G-25	1174	1436	GR-P-25	1164	1426
GR-G-30	1385	1659	GR-P-30	1371	1645
GR-G-35	1428	1702	GR-P-35	1413	1687
GR-G-40	1519	1799	GR-P-40	1505	1785
GR-G-50	1614	1915	GR-P-50	1594	1934
GR-G-60	1881	2195	GR-P-60	1853	2207
GR-G-70	1964	2278	GR-P-70	1934	2288
GR-G-80	2099	2420	GR-P-80	2071	2432

ROOF TOP ARRANGEMENT "L"					
	NET WT.	SHIP.WT.		NET WT.	SHIP.WT.
GR-G-10	1055	1344	GR-P-10	1062	1351
GR-G-15	1106	1395	GR-P-15	1098	1387
GR-G-20	1316	1617	GR-P-20	1307	1608
GR-G-25	1358	1659	GR-P-25	1348	1649
GR-G-30	1589	1903	GR-P-30	1575	1889
GR-G-35	1630	1944	GR-P-35	1615	1929
GR-G-40	1730	2051	GR-P-40	1716	2037
GR-G-50	1756	2096	GR-P-50	1736	2076
GR-G-60	2043	2397	GR-P-60	2015	2369
GR-G-70	2125	2479	GR-P-70	2095	2449
GR-G-80	2269	2630	GR-P-80	2241	2602

OUTSIDE AIR HOOD	
W/BI RD SCREEN WEIGHT ADDER	
Capacity [CA]	
10	43
15	43
20	51
25	51
30	59
35	59
40	63
50	51
60	59
70	59
80	63
12	63



## Approximate Unit Net and Ship Weights

---

### **Cooling Coil Weight Adder**

Refer to coil weights in the Cooling Coil Options tables.

### **Double Wall Construction Adder**

For units with double wall construction, add an additional 10% of the base unit weight.

### **VFD Enclosure Shipping Weight Adder**

Small Enclosure (1-5 HP VFD): 95 lbs.

Large Enclosure (7.5-15 HP VFD): 135 lbs.





# Approximate Motor Shipping Weights

	A - (115/1/60)				B - (208/1/60)				C - (230/1/60)			
	1 ODP	2 TE	3 PEODP	4 PETE	1 ODP	2 TE	3 PEODP	4 PETE	1 ODP	2 TE	3 PEODP	4 PETE
1/2 HP	20	24	32	30	21	24	32		21	24	32	30
3/4 HP	23	30	30	41	23	30	30		25	30	30	41
1 HP	32	32	40	44	32	32			32	32	40	44
1-1/2 HP	40	41	47	57	40	41			40	41	47	57
2 HP	42	67	65	64	50	67			42	48	65	64
3 HP	78	86			78	86			78	86		90
5 HP					87				87	99	95	
7-1/2 HP					134	138			134	138		
10 HP					165				140	161		
15 HP												
	D - (208/3/60)				E - (230/3/60)				F - (460/3/60)			
	1 ODP	2 TE	3 PEODP	4 PETE	1 ODP	2 TE	3 PEODP	4 PETE	1 ODP	2 TE	3 PEODP	4 PETE
1/2 HP	19	18	22	22	19	18	22	22	19	18	22	22
3/4 HP	27	26	27		27	22	27	31	27	22	27	31
1 HP	24	26	36	37	24	26	36	37	24	26	36	37
1-1/2 HP	28	34	40	42	28	34	40	42	28	34	40	42
2 HP	35		46	49	35		46	49	35		46	49
3 HP	48		69	69	48		69	69	48		69	69
5 HP			76	77			76	77			76	77
7-1/2 HP			117	136			117	136			117	136
10 HP			128	158			128	158			128	158
15 HP			217	255			217	255			217	255
	G - (575/3/60)											
	1 ODP	2 TE	3 PEODP	4 PETE								
1/2 HP	22	18										
3/4 HP	20	22										
1 HP	28	26	33	38								
1-1/2 HP			40	42								
2 HP			46	48								
3 HP			66	69								
5 HP			74	91								
7-1/2 HP			114	143								
10 HP			145	153								
15 HP			234	302								

**Motor Type (MT) Legend:**

- ODP - Open Drip Proof
- TE - Totally Enclosed
- PEODP - Premium Efficiency Open Drip Proof
- PETE - Premium Efficiency Totally Enclosed



# Approximate Roof Curb Kits Ship Weights

**Table 27. Roof curb kits approximate ship weights (lbs.)**

Rooftop Arrangement	Capacity	Trane P/N	Approx. Shipping Weight (lbs)
B	10/15	0134-0205-01	115
B	20/25	0134-0205-02	133
B	30/35	0134-0205-03	151
B	40	0134-0205-04	161
C	10/15	0134-0205-05	150
C	20/25	0134-0205-06	168
B	50		
C	30/35	0134-0205-07	186
B	60/70		
C	40	0134-0205-08	196
B	80		
C	50	0134-0205-09	197
C	60/70	0134-0205-10	217
C	80	0134-0205-11	227
D	10/15	0134-0205-12	145
D	20/25	0134-0205-13	163
D	30/35	0134-0205-14	181
D	40	0134-0205-15	191
D	50	0134-0205-16	198
E	20/25		
D	60/70	0134-0205-17	216
E	30/35		
D	80	0134-0205-18	226
E	40		
E	10/15	0134-0205-19	180
E	50	0134-0205-20	227
E	60/70	0134-0205-21	247
E	80	0134-0205-22	257
G	20/25	0134-0205-23	179
G	30/35	0134-0205-24	197
G	40	0134-0205-25	207
G	50	0134-0205-26	210
J & K	20/25		
G	60/70	0134-0205-27	228
J & K	30/35		

## Approximate Roof Curb Kits Ship Weights

**Table 27. Roof curb kits approximate ship weights (lbs.) (continued)**

G	80	0134-0205-28	238
G	12	0134-0205-29	381
J & K	80		
L	40		
J & K	50	0134-0205-30	338
L	20/25		
J & K	60/70	0134-0205-31	366
L	30/35		
K	10/15	0134-0205-32	192
J	12	0134-0205-33	418
L	80		
L	50	0134-0205-34	375
L	30/70	0134-0205-35	403
L	10/15	0134-0205-36	310

**Note:** *Approximate Shipping Weights listed apply to both insulated and uninsulated roof curb types. Roof curb kit part numbers listed are the insulated roof curb type; contact customer service for uninsulated part numbers.*



# Motor Electrical Data

Table 28. Full load current in amperes

	A - (115/1/60)				B - (208/1/60)				C - (230/1/60)			
	1 ODP	2 TE	3 PEODP	4 PETE	1 ODP	2 TE	3 PEODP	4 PETE	1 ODP	2 TE	3 PEODP	4 PETE
1/2 HP	7.2	8.0	5.2	4.6	3.7	4.0	2.8		3.8	4.0	2.6	2.3
3/4 HP	11.6	11.0	8.0	6.3	5.2	5.4	4.2		5.3	5.5	4.0	3.2
1 HP	13.0	13.4	8.6	8.5	6.6	6.8			6.5	6.7	4.3	4.3
1-1/2 HP	18.0	15.2	12.5	12.6	9.3	8.2			9.0	7.6	6.3	6.3
2 HP	21.0	23.0	17.6	17.6	11.3	11.7			10.5	8.1	8.8	8.8
3 HP	33.0	34.0			17.7	17.5			16.5	17.0		11.8
5 HP					23.5				21.0	23.0	19.1	
7-1/2 HP					33.0	31.0			31.0	29.0		
10 HP					49.0				39.0	38.0		
15 HP												
	D - (208/3/60)				E - (230/3/60)				F - (460/3/60)			
	1 ODP	2 TE	3 PEODP	4 PETE	1 ODP	2 TE	3 PEODP	4 PETE	1 ODP	2 TE	3 PEODP	4 PETE
1/2 HP	2.1	2.2	1.8	2.0	2.2	2.2	1.8	1.7	1.1	1.1	0.9	1.0
3/4 HP	3.0	3.2	2.5		3.4	2.8	2.4	2.8	1.7	1.4	1.2	1.4
1 HP	3.4	3.7	3.0	3.3	3.4	3.6	2.8	3.0	1.7	1.8	1.4	1.5
1-1/2 HP	4.8	5.0	4.3	4.5	4.8	4.8	4.2	4.1	2.4	2.4	2.1	2.1
2 HP	6.2		6.0	5.7	6.3		5.5	5.4	3.1		2.8	2.7
3 HP	9.2		8.5	8.6	8.6		8.0	8.2	4.3		4.0	4.1
5 HP			12.8	12.0			12.0	11.2			6.0	5.6
7-1/2 HP			21.0	21.0			19.2	18.8			9.6	9.4
10 HP			26.0	27.0			25.0	25.0			12.5	12.5
15 HP			37.4	38.9			35.4	37.0			17.7	18.5
	G - (575/3/60)											
	1 ODP	2 TE	3 PEODP	4 PETE								
1/2 HP	0.8	0.9										
3/4 HP	1.1	1.1										
1 HP	1.3	1.7	1.1	1.1								
1-1/2 HP			1.7	1.6								
2 HP			2.1	2.2								
3 HP			3.1	3.1								
5 HP			5.2	5.2								
7-1/2 HP			7.6	7.6								
10 HP			10.0	10.0								
15 HP			14.1	15.1								

**Motor Type (MT) Legend:**

ODP - Open Drip Proof

TE - Totally Enclosed

PEODP - Premium Efficiency Open Drip Proof

PETE - Premium Efficiency Totally Enclosed





Notes

---





Trane - by Trane Technologies (NYSE: TT), a global innovator - creates comfortable, energy efficient indoor environments for commercial and residential applications. For more information, please visit [trane.com](http://trane.com) or [tranetechnologies.com](http://tranetechnologies.com).

Trane has a policy of continuous product and product data improvements and reserves the right to change design and specifications without notice. We are committed to using environmentally conscious print practices.