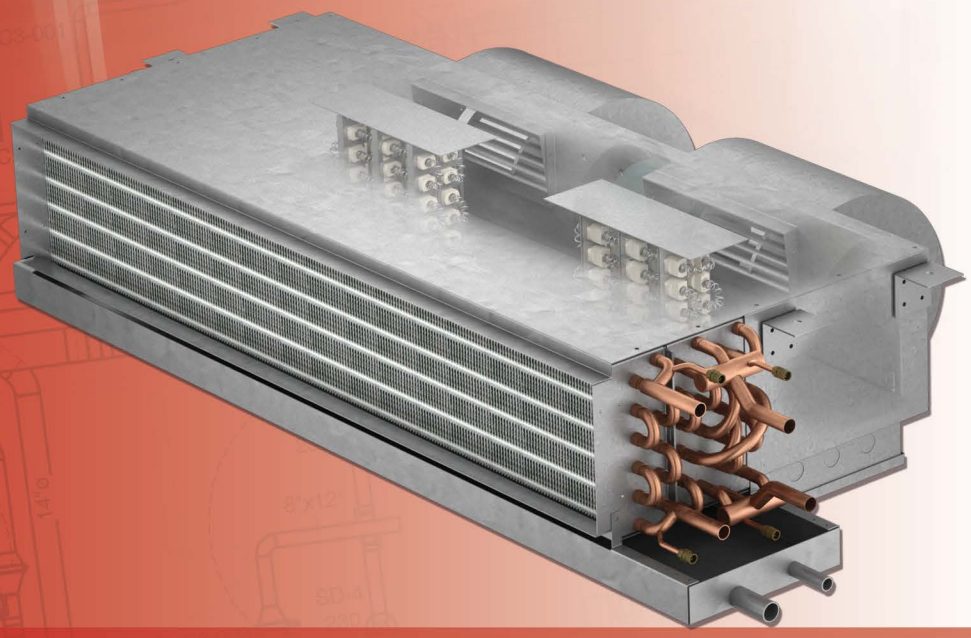
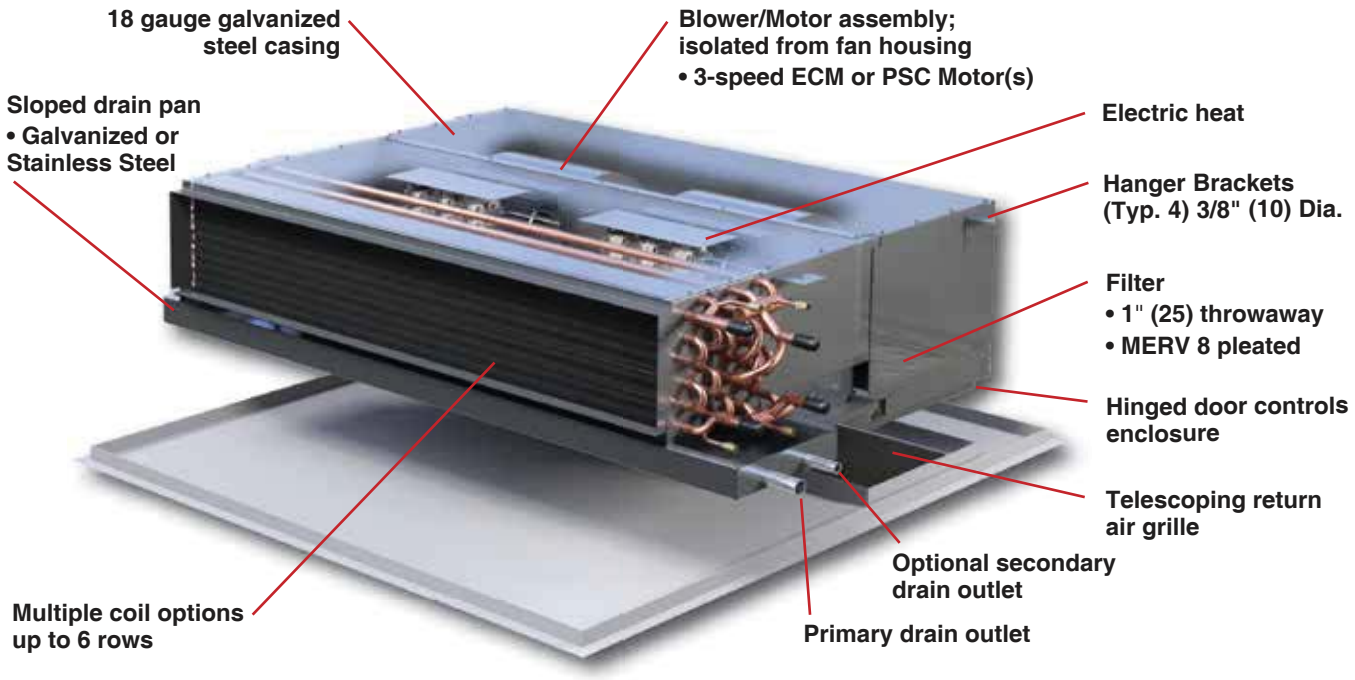
Engineered Comfort

HORIZONTAL LOW PROFILE FAN COIL UNITS – IN ROOM



Model Series 40H • 10″ High
Direct Drive Blow-through Design

Model series 40H • Low Profile, Blow-through Design



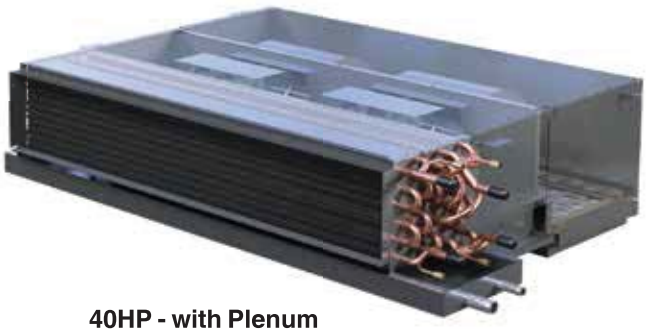
40HT - Telecoping



40HX - Exposed



40HF - Free Return



40HP - with Plenum

Model series 40H • Low Profile Horizontal Fan Coil Units

The Engineered Comfort Low Profile 40H Series fan coil units are designed for hotels, schools, apartments and residential condominiums which occupy a minimum of space and minimize field installation time and cost.

The Low Profile Horizontal Fan Coil Units 40H Series provides the following benefits:

- Airflow capacities from 300 – 1500 CFM (142 – 708 l/s).
- Compact blow through design.
- 3-speed ECM or PSC motor(s).
- Single point electrical connections.
- Blower/motor assembly isolated from fan housing with vibration isolators.

AHRI certified units available as:

2-pipe system:

- Type W: 1 or 2 row coil for heating only.
- Type Z: 3 or 4 row coil for cooling or heating.

4-pipe system:

- Type ZW: 3 or 4 row cooling coil and 1 or 2 row heating coil (Either as reheat or preheat).

Standard and Features

CONSTRUCTION

- ETL Listed. Constructed in compliance with ANSI/ UL Standard.
- 18 gauge galvanized steel casing.
- 1" (25) Throwaway filter.
- 1/2" (13) dual density insulation, exposed edges coated to prevent air erosion. Meets the requirements of NFPA 90A and UL 181.
- Single point electrical connection.
- Discharge collar for duct connection.
- Standard controls enclosure is mounted on side opposite coil connections.

FAN/MOTOR ASSEMBLIES

- Forward Curved, DWDI, direct driven blowers.
- Blower/motor assembly isolated from fan housing with vibration isolators.
- Motor power leads with quick disconnect brought into an external hinged door starter-control enclosure.
- Energy efficient 3-speed PSC fan motor(s) with thermal overload protection.
- 120, 208, 240 and 277 volt single phase motor.

COILS

- 1/2" (12.7) copper tubes with aluminum ripple fins.
- Cooling coils include a foam insulated, galvanized steel sloped drain pan with 7/8" (22.2) O.D. primary drain connection. Field reversible.
- Left hand coil unit/connection (looking in direction of airflow) is standard. Right hand is opposite.
- Manual air vent(s).
- Sweat Connections: All 5/8" (15.9) O.D. male solder except size 15 three and four row: 7/8" (22.2) O.D. male solder.

DRAIN PANS

- Positively sloped galvanized steel drain pan.
- Externally insulated with fiber-free foam.

PAINTED FINISH

- All painted cabinet exterior panels shall be finished with a durable and aesthetically attractive Appliance White Powder Coated finish.

Options and Accessories

CONSTRUCTION

- Ultra-energy efficient 3-Speed ECM Motor(s) with thermal overload protection.
- Outside air Inlet (40HP).
- 1" (25) Throwaway filter with spare.
- 1" (25) MERV 8.
- 1" (25) MERV 8 with spare.

COILS

- Automatic air vent(s).
- Coil Casing 20 ga. (1.00) stainless steel drain pan externally insulated with fiber-free foam.
- Stainless steel coil casing.
- Increased tube wall thickness 0.025" (0.635).

DRAIN PANS

- Galvanized with secondary drain pan connection.
- Stainless steel drain pan.
- Stainless steel drain pan with secondary connection.

INSULATION

- 1/2" (13) Dual density fiberglass liner.
- 1/2" (13) Foil face fiberglass liner.
- Closed cell foam liner.

CONTROL PACKAGES

- Toggle disconnect switch.
- Door interlocking disconnect switch.
- Main unit fusing.
- Drain pan float switch (24V).
- 24V transformer and fan relay packages.
- Factory installed controls – provided by others.

VALVE-PIPING PACKAGES

- Shipped loose on the models 40HT, 40HP and 40HF for field installation.
- Factory assembled and installed in an enclosure or shipped loose on model 40HX for field installation.
- 1/2" or 3/4" (13 or 19) 2 or 3 way valves.
- On/Off, 24V, modulating 0–10 vdc.
- Ball valves, Unions, P/T ports and Shut-off valves.
- Strainers and Strainer with hose bib valve.
- P/T ports and Bypass balancing valve.

OTHER OPTIONS

- LH or RH control/coil connection.
- Dust tight controls enclosure.
- Condensate pump.
- Auxiliary drip pan, galvanized or stainless steel.

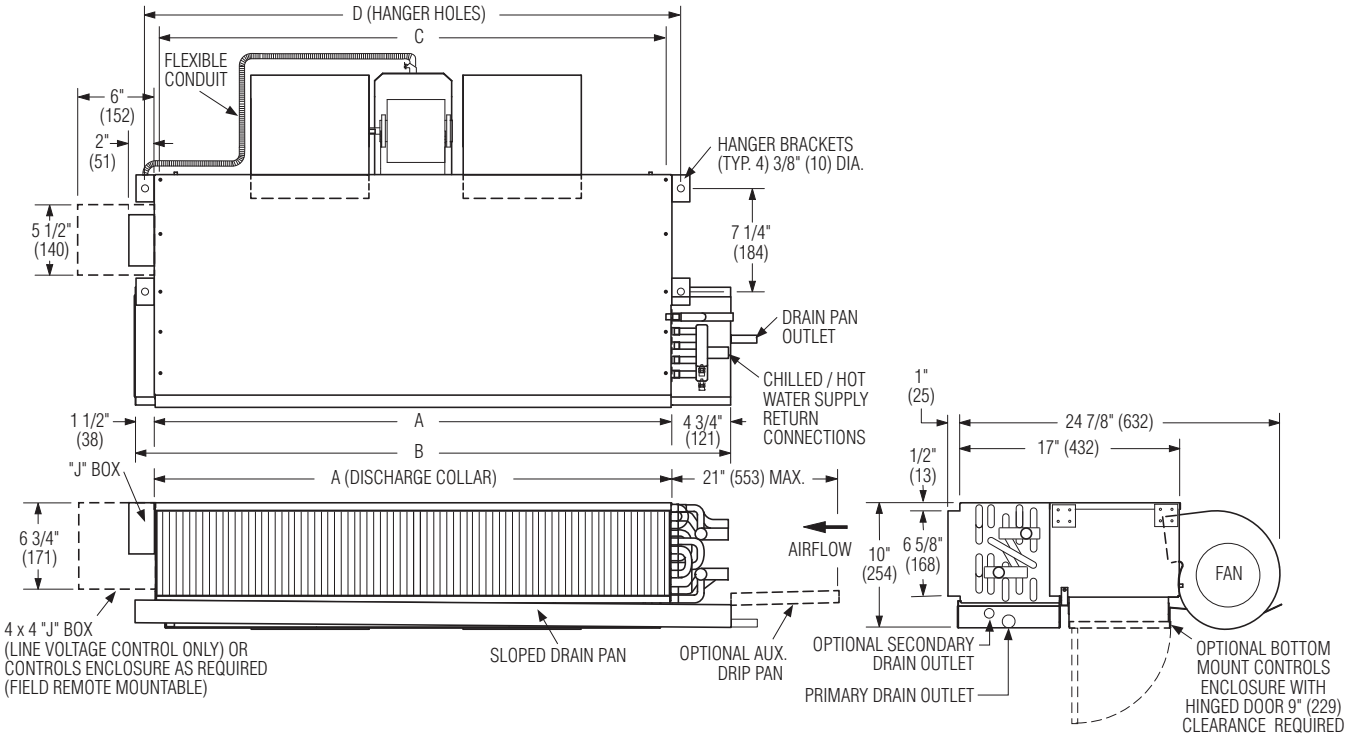
PAINTED FINISH

- All painted cabinet exterior panels shall be finished with an optional Wood Grain Finishes in order to complement the architectural décor.

Engineered Comfort

Model series 40H • Free Return • 2 or 4 Pipe Cooling/Heating
Model 40HF • Unit Sizes 3 – 15

TYPE Z Chilled/Hot Water (2-pipe).
TYPE ZW Chilled & Hot Water (4-pipe).



Dimensional Data

Unit Size	Nominal CFM (l/s)	A	B	C	D
3	300 (142)	20 (508)	26 1/2 (673)	20 3/8 (518)	22 5/8 (575)
4	400 (189)	25 (636)	31 1/2 (800)	25 3/8 (645)	27 5/8 (702)
6	600 (283)	30 (762)	36 1/2 (927)	30 3/8 (772)	32 5/8 (829)
8	800 (378)	40 (1016)	46 1/2 (1181)	40 3/8 (1026)	42 5/8 (1083)
12	1200 (566)	50 (1270)	56 1/2 (1435)	50 3/8 (1286)	52 5/8 (1337)
15	1500 (708)	60 (1524)	66 1/2 (1689)	60 3/8 (1534)	62 5/8 (1591)

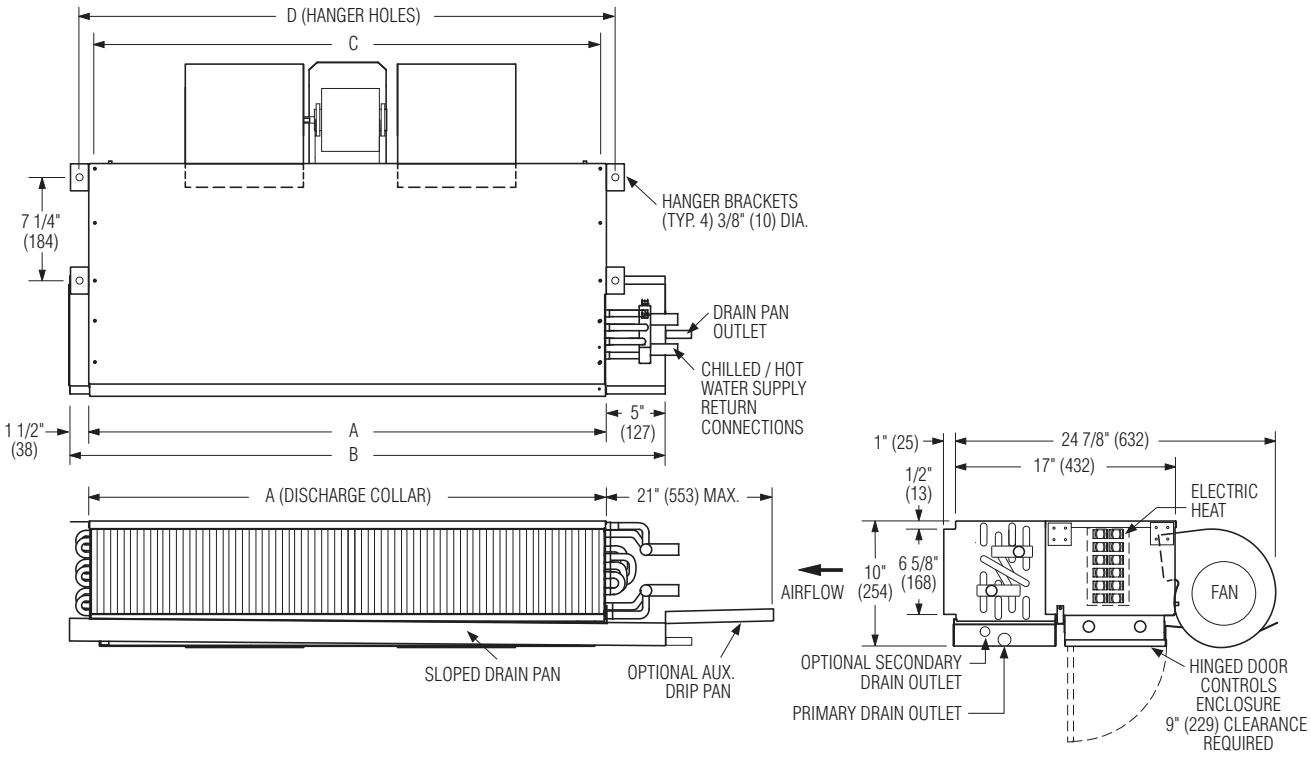
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Room Fan-Coils
AHRI Standard 440

Engineered Comfort

Model series 40H • Free Return • 2 Pipe Cooling/Heating & Electric Heat
Model: 40HF • Unit Sizes 3 – 15

TYPE ZE Chilled/Hot Water (2-pipe) and Electric Heat



Dimensional Data

Unit Size	Nominal CFM (l/s)	A	B	C	D
3	300 (142)	20 (508)	26 1/2 (673)	20 3/8 (518)	22 5/8 (575)
4	400 (189)	25 (636)	31 1/2 (800)	25 3/8 (645)	27 5/8 (702)
6	600 (283)	30 (762)	36 1/2 (927)	30 3/8 (772)	32 5/8 (829)
8	800 (378)	40 (1016)	46 1/2 (1181)	40 3/8 (1026)	42 5/8 (1083)
12	1200 (566)	50 (1270)	56 1/2 (1435)	50 3/8 (1286)	52 5/8 (1337)
15	1500 (708)	60 (1524)	66 1/2 (1689)	60 3/8 (1534)	62 5/8 (1591)

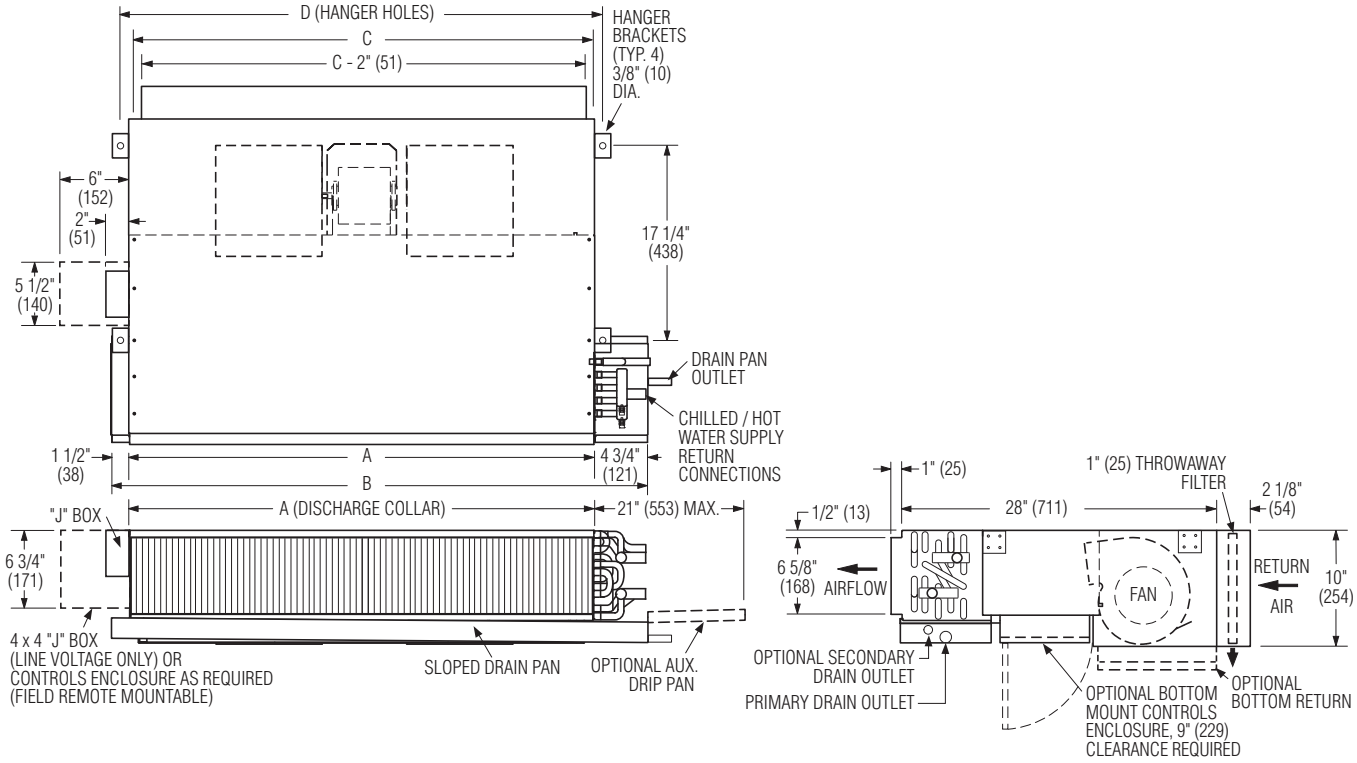
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Room Fan-Coils
AHRI Standard 440

Engineered Comfort

Model series 40H • With Plenum • 2 or 4 Pipe Cooling/Heating
Model: 40HP • Unit Sizes 3 – 15

TYPE Z Chilled/Hot Water (2-pipe).
TYPE ZW Chilled & Hot Water (4-pipe).



Dimensional Data

Unit Size	Nominal CFM (l/s)	A	B	C	D	Filter Size Width x Height
3	300 (142)	20 (508)	26 1/2 (673)	20 3/8 (518)	22 5/8 (575)	20 x 10 (508 x 254)
4	400 (189)	25 (636)	31 1/2 (800)	25 3/8 (645)	27 5/8 (702)	25 x 10 (635 x 254)
6	600 (283)	30 (762)	36 1/2 (927)	30 3/8 (772)	32 5/8 (829)	30 x 10 (762 x 254)
8	800 (378)	40 (1016)	46 1/2 (1181)	40 3/8 (1026)	42 5/8 (1083)	2@ 20 x 10 (508 x 254)
12	1200 (566)	50 (1270)	56 1/2 (1435)	50 3/8 (1286)	52 5/8 (1337)	2@ 25 x 10 (635 x 254)
15	1500 (708)	60 (1524)	66 1/2 (1689)	60 3/8 (1534)	62 5/8 (1591)	2@ 30 x 10 (762 x 254)

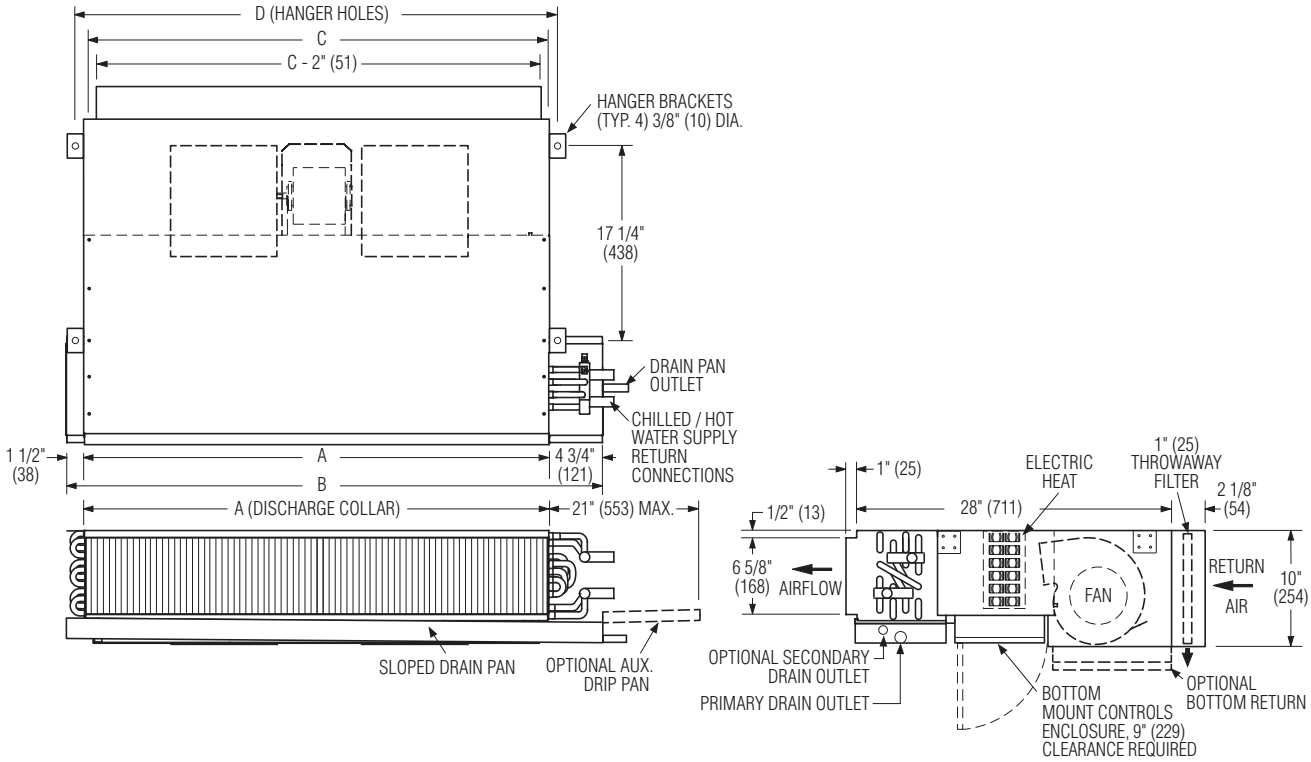
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Room Fan-Coils
AHRI Standard 440

Engineered Comfort

Model series 40H • With Plenum • 2 Pipe Cooling/Heating & Electric Heat
Model: 40HP • Unit Sizes 3 – 15

TYPE ZE Chilled Water and Electric Heat



Dimensional Data

Unit Size	Nominal CFM (l/s)	A	B	C	D	Filter Size Width x Height
3	300 (142)	20 (508)	26 1/2 (673)	20 3/8 (518)	22 5/8 (575)	20 x 10 (508 x 254)
4	400 (189)	25 (636)	31 1/2 (800)	25 3/8 (645)	27 5/8 (702)	25 x 10 (635 x 254)
6	600 (283)	30 (762)	36 1/2 (927)	30 3/8 (772)	32 5/8 (829)	30 x 10 (762 x 254)
8	800 (378)	40 (1016)	46 1/2 (1181)	40 3/8 (1026)	42 5/8 (1083)	2@ 20 x 10 (508 x 254)
12	1200 (566)	50 (1270)	56 1/2 (1435)	50 3/8 (1286)	52 5/8 (1337)	2@ 25 x 10 (635 x 254)
15	1500 (708)	60 (1524)	66 1/2 (1689)	60 3/8 (1534)	62 5/8 (1591)	2@ 30 x 10 (762 x 254)

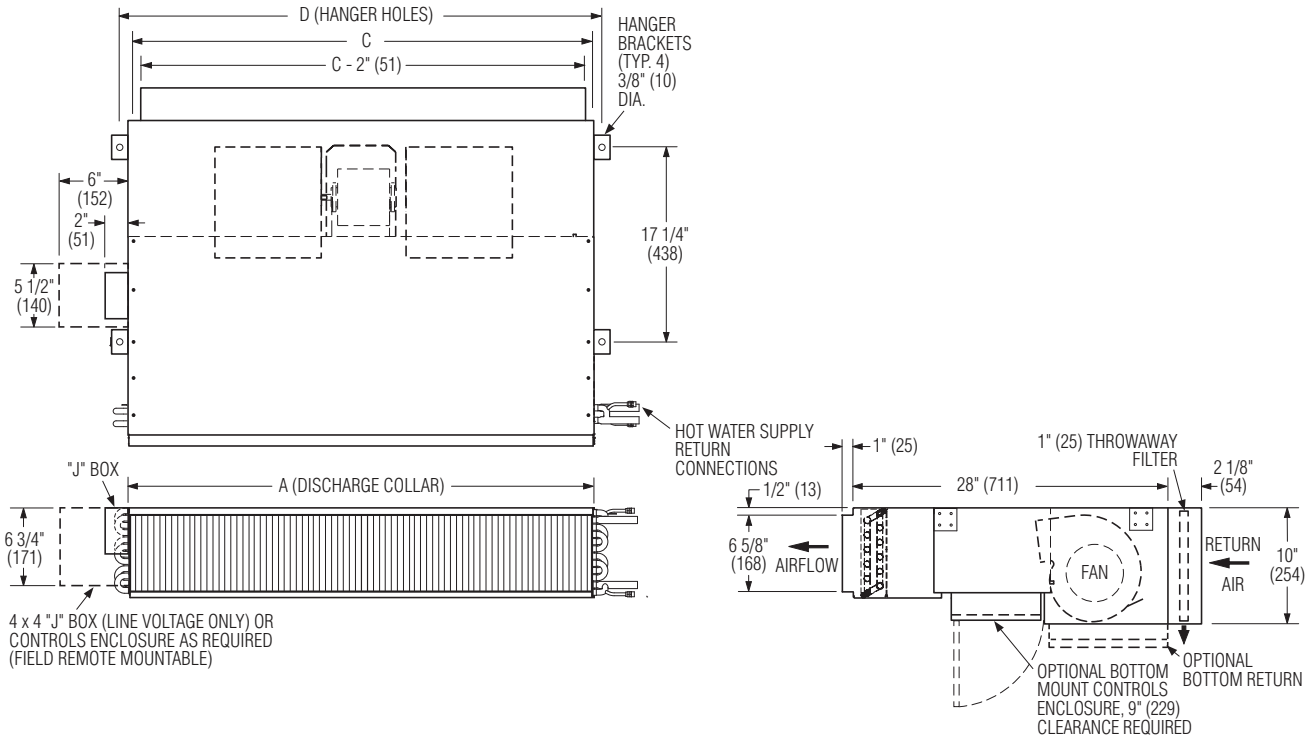
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AHRI CERTIFIED™ www.ahridirectory.org Room Fan-Coils AHRI Standard 440

Engineered Comfort

Model series 40H • With Plenum • 2-pipe Heating Only
Model: 40HP • Unit Sizes 3 – 15

TYPE W Hot Water Only (2-pipe).



Dimensional Data

Unit Size	Nominal CFM (l/s)	A	B	C	D	Filter Size Width x Height
3	300 (142)	20 (508)	26 1/2 (673)	20 3/8 (518)	22 5/8 (575)	20 x 10 (508 x 254)
4	400 (189)	25 (636)	31 1/2 (800)	25 3/8 (645)	27 5/8 (702)	25 x 10 (635 x 254)
6	600 (283)	30 (762)	36 1/2 (927)	30 3/8 (772)	32 5/8 (829)	30 x 10 (762 x 254)
8	800 (378)	40 (1016)	46 1/2 (1181)	40 3/8 (1026)	42 5/8 (1083)	2@ 20 x 10 (508 x 254)
12	1200 (566)	50 (1270)	56 1/2 (1435)	50 3/8 (1286)	52 5/8 (1337)	2@ 25 x 10 (635 x 254)
15	1500 (708)	60 (1524)	66 1/2 (1689)	60 3/8 (1534)	62 5/8 (1591)	2@ 30 x 10 (762 x 254)

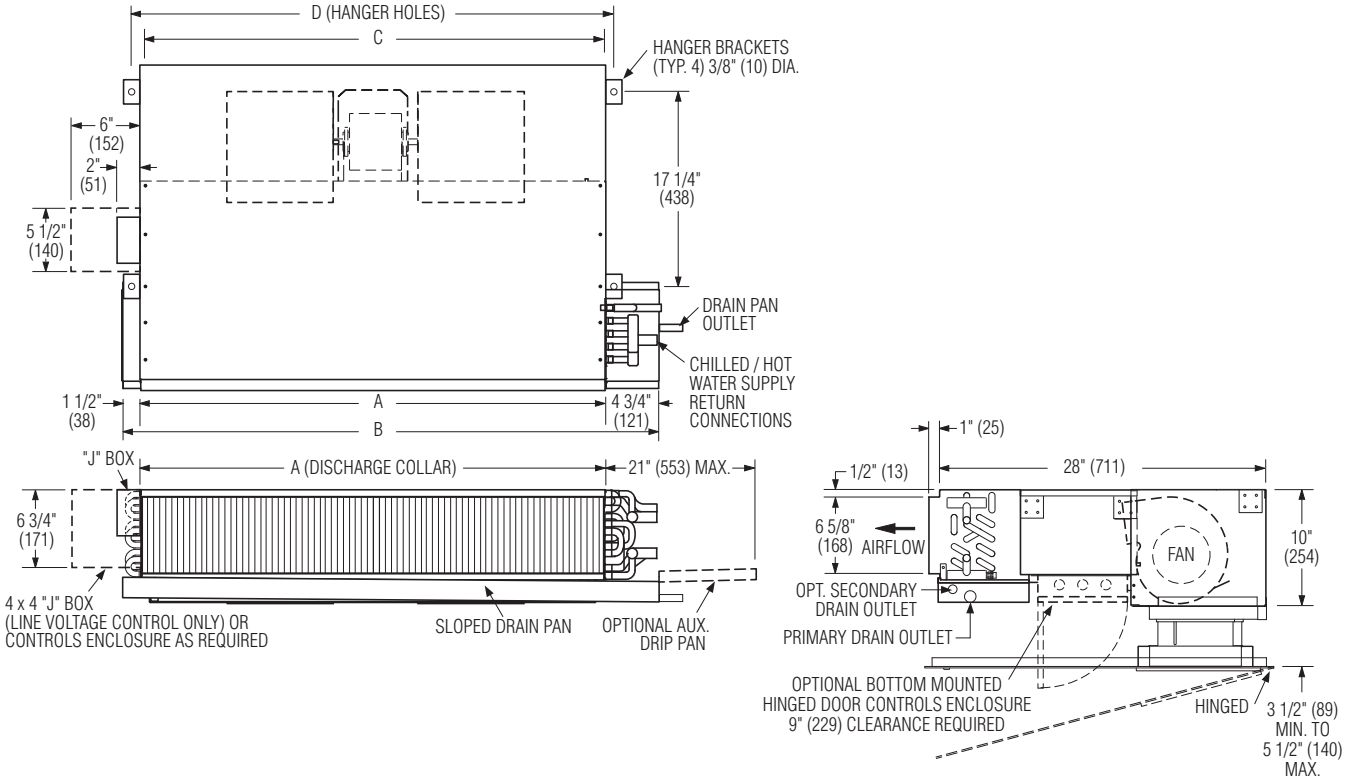
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Room Fan-Coils
AHRI Standard 440

Engineered Comfort

Model series 40H • Telescoping • 2 or 4 Pipe Cooling/Heating
Model: 40HT • Unit Sizes 3 – 15

TYPE Z Chilled/Hot Water (2-pipe).
TYPE ZW Chilled & Hot Water (4-pipe).



Dimensional Data

Unit Size	Nominal CFM (l/s)	A	B	C	D
3	300 (142)	20 (508)	26 1/2 (673)	20 3/8 (518)	22 5/8 (575)
4	400 (189)	25 (636)	31 1/2 (800)	25 3/8 (645)	27 5/8 (702)
6	600 (283)	30 (762)	36 1/2 (927)	30 3/8 (772)	32 5/8 (829)
8	800 (378)	40 (1016)	46 1/2 (1181)	40 3/8 (1026)	42 5/8 (1083)
12	1200 (566)	50 (1270)	56 1/2 (1435)	50 3/8 (1286)	52 5/8 (1337)
15	1500 (708)	60 (1524)	66 1/2 (1689)	60 3/8 (1534)	62 5/8 (1591)

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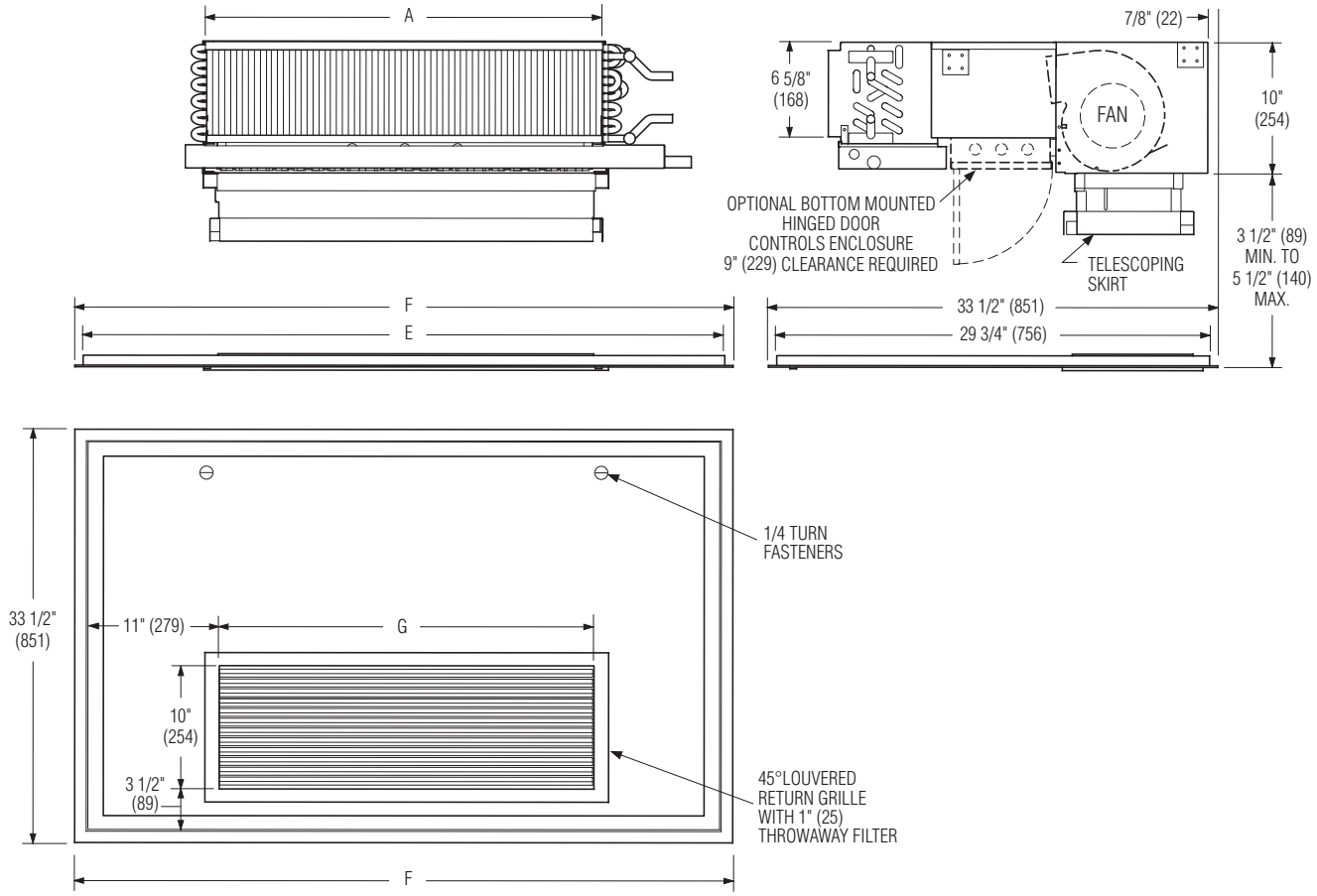
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Room Fan-Coils
AHRI Standard 440

Engineered Comfort

Model series 40H • Telescoping • 2 or 4 Pipe Cooling/Heating
Model: 40HT • Unit Sizes 3 – 15 (continued)

TYPE Z Chilled/Hot Water (2-pipe).
TYPE ZW Chilled & Hot Water (4-pipe).

BOTTOM PANEL ASSEMBLY



Dimensional Data

Unit Size	E	F	G	Filter Size Width x Height
3	39 3/4 (1010)	43 1/2 (1105)	20 (508)	20 x 10 (508 x 254)
4	44 3/4 (1137)	48 1/2 (1232)	25 (635)	25 x 10 (635 x 254)
6	49 3/4 (1264)	53 1/2 (1359)	30 (762)	30 x 10 (762 x 254)
8	59 3/4 (1518)	63 1/2 (1613)	40 (1016)	2@ 20 x 10 (508 x 254)
12	69 3/4 (1772)	73 1/2 (1867)	50 (1270)	2@ 25 x 10 (635 x 254)
15	79 3/4 (2026)	83 1/2 (2121)	60 (1524)	2@ 30 x 10 (762 x 254)

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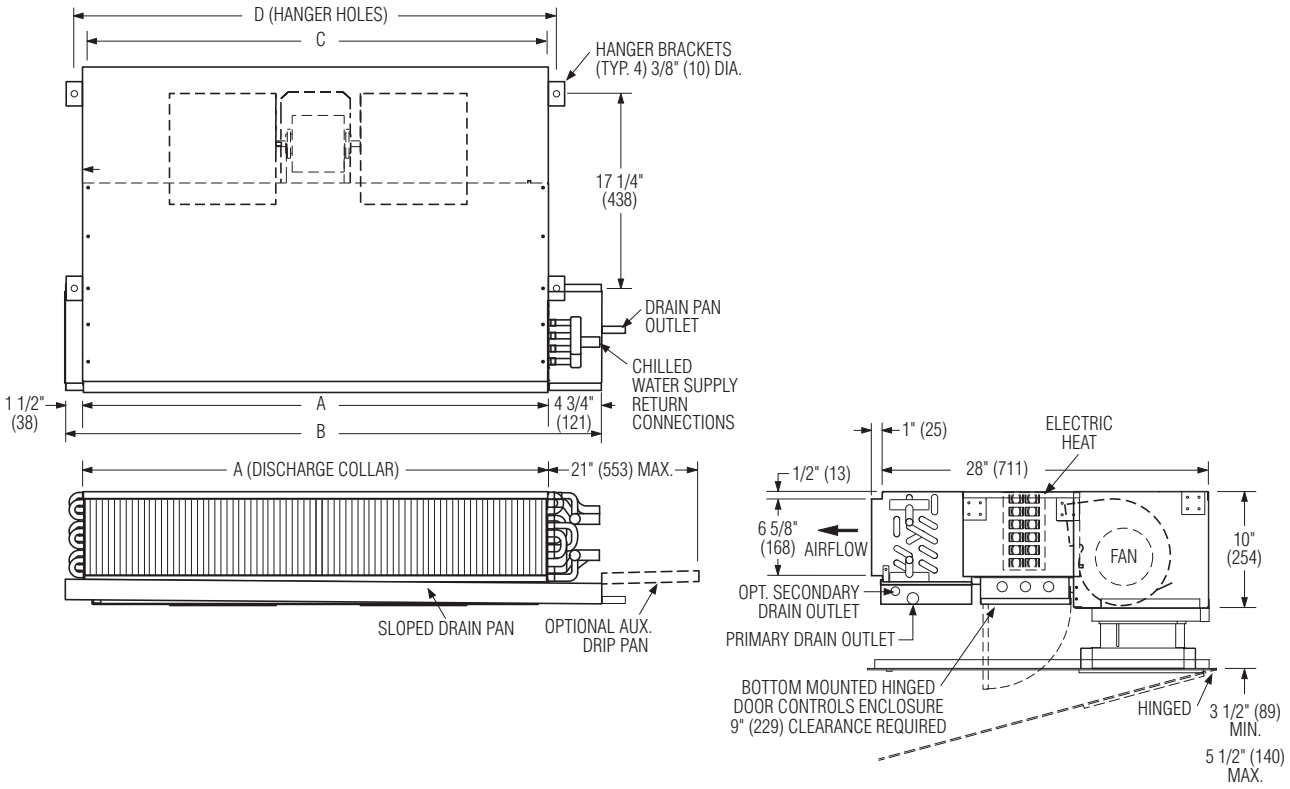
Note:

1. Left hand unit as shown, right hand unit is built as mirror image.
2. Telescoping skirt and collar assembly must be field adjusted to assure a proper fit between filter frame and louvered inlet panel assembly. In the event the louvered return grille is larger/smaller or does not align with the telescoping skirt, additional field modifications may be needed to prevent ceiling plenum air from being entrained into return plenum.
3. 1/4-turn tabs. (2) Qty. for sizes 3 and 4, (3) Qty. for sizes 6 and 8, (4) qty. for sizes 12 and 15.
4. Minimum ceiling drywall opening should be cut as Panel Assembly neck dimension E x 29 3/4" (756) plus 1/4" (6).

Engineered Comfort

Model series 40H • Telescoping • 2 Pipe Cooling and Electric Heat
Model: 40HT • Unit Sizes 3 – 15

TYPE ZE Chilled/Hot Water (2-pipe) & Electric Heat.



Dimensional Data

Unit Size	Nominal CFM (l/s)	A	B	C	D
3	300 (142)	20 (508)	26 1/2 (673)	20 3/8 (518)	22 5/8 575)
4	400 (189)	25 (636)	31 1/2 (800)	25 3/8 (645)	27 5/8 (702)
6	600 (283)	30 (762)	36 1/2 (927)	30 3/8 (772)	32 5/8 (829)
8	800 (378)	40 (1016)	46 1/2 (1181)	40 3/8 (1026)	42 5/8 (1083)
12	1200 (566)	50 (1270)	56 1/2 (1435)	50 3/8 (1286)	52 5/8 (1337)
15	1500 (708)	60 (1524)	66 1/2 (1689)	60 3/8 (1534)	62 5/8 (1591)

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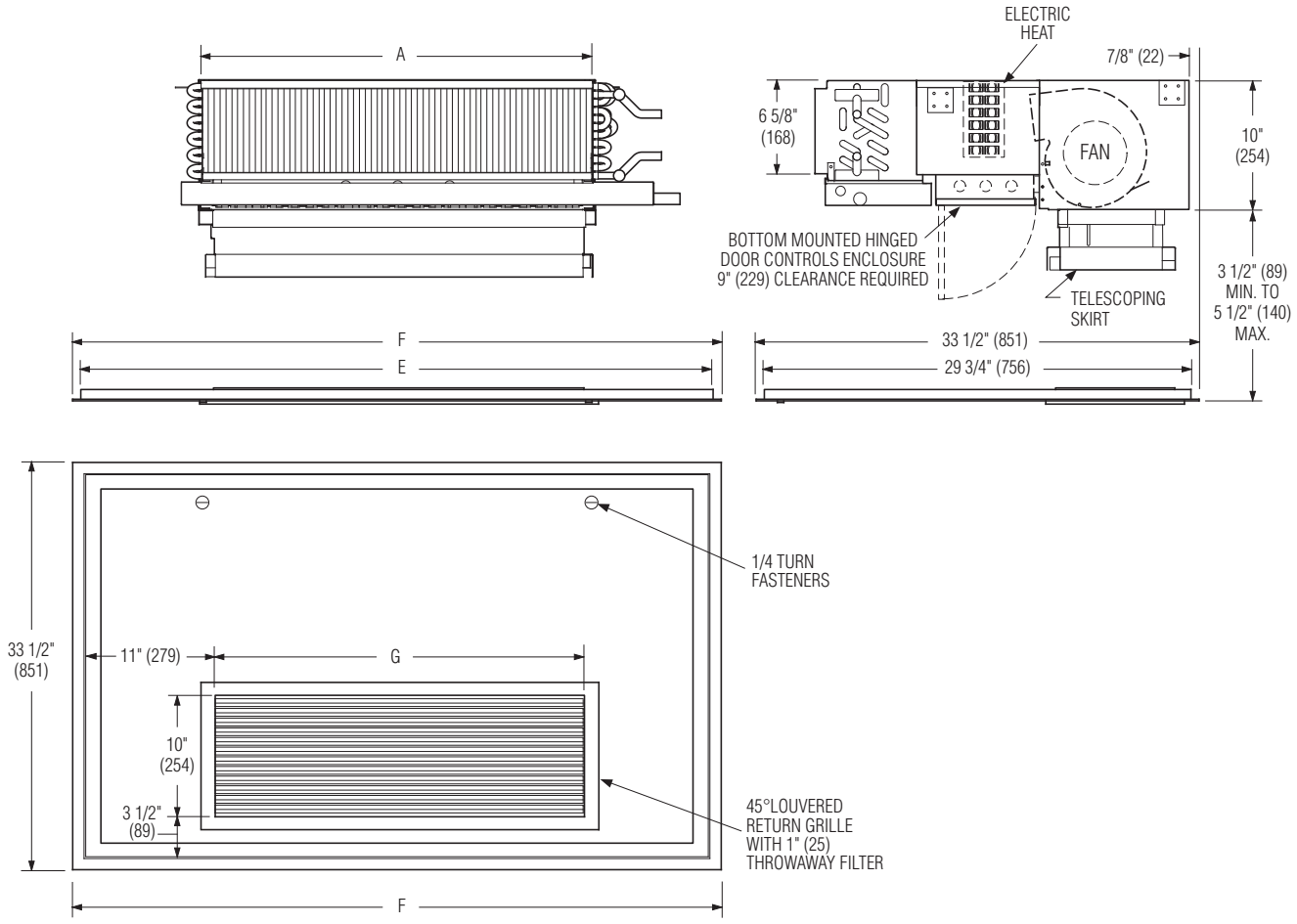
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Room Fan-Coils
AHRI Standard 440

Engineered Comfort

Model series 40H • Telescoping • 2 Pipe Cooling and Electric Heat
Model: 40HT • Unit Sizes 3 – 15 (continued)

TYPE ZE Chilled/Hot Water (2-pipe) and Electric Heat.

BOTTOM PANEL ASSEMBLY



Dimensional Data

Unit Size	E	F	G	Filter Size Width x Height
3	39 3/4 (1010)	43 1/2 (1105)	20 (508)	20 x 10 (508 x 254)
4	44 3/4 (1137)	48 1/2 (1232)	25 (635)	25 x 10 (635 x 254)
6	49 3/4 (1264)	53 1/2 (1359)	30 (762)	30 x 10 (762 x 254)
8	59 3/4 (1518)	63 1/2 (1613)	40 (1016)	2@ 20 x 10 (508 x 254)
12	69 3/4 (1772)	73 1/2 (1867)	50 (1270)	2@ 25 x 10 (635 x 254)
15	79 3/4 (2026)	83 1/2 (2121)	60 (1524)	2@ 30 x 10 (762 x 254)

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AHRI CERTIFIED™ www.ahridirectory.org Room Fan-Coils AHRI Standard 440

Note:

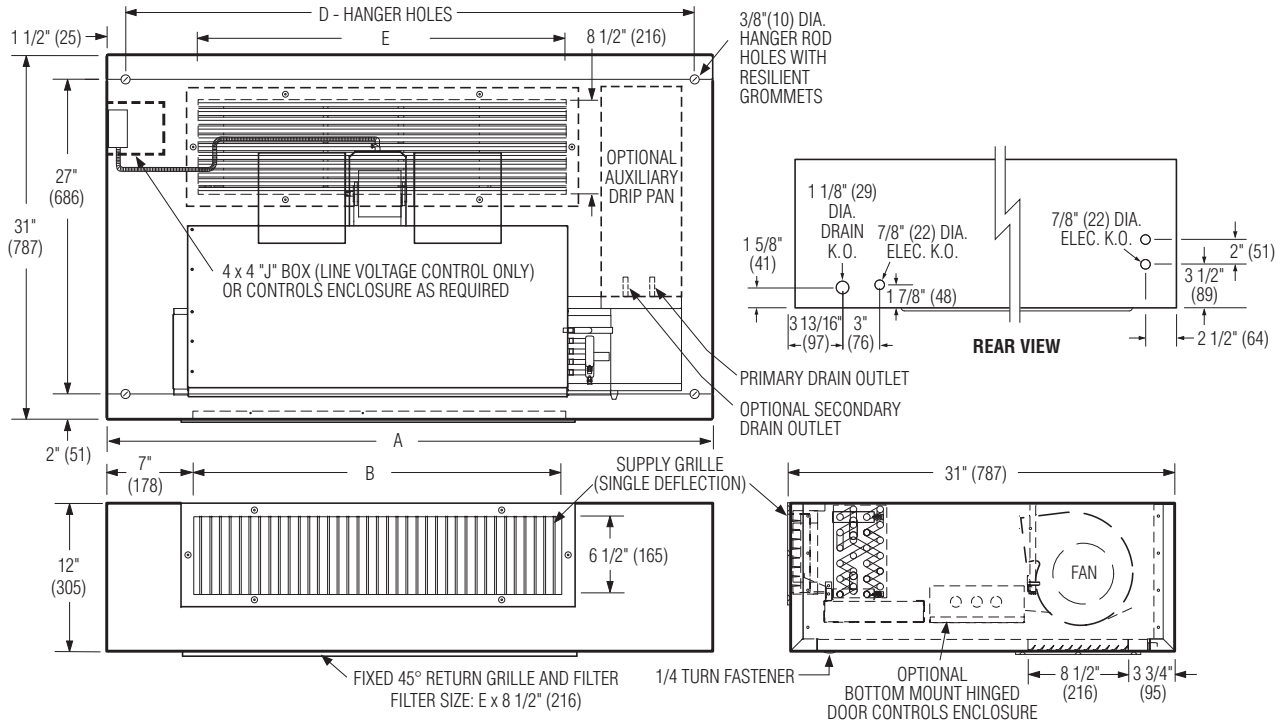
1. Left hand unit as shown, right hand unit is built as mirror image.
2. Telescoping skirt and collar assembly must be field adjusted to assure a proper fit between filter frame and louvered inlet panel assembly. In the event the louvered return grille is larger/smaller or does not align with the telescoping skirt, additional field modifications may be needed to prevent ceiling plenum air from being entrained into return plenum.
3. 1/4-turn tabs. (2) Qty. for sizes 3 and 4, (3) Qty. for sizes 6 and 8, (4) qty. for sizes 12 and 15.
4. Minimum ceiling drywall opening should be cut as Panel Assembly neck dimension E x 29 3/4" (756) plus 1/4" (6).

Model series 40H • Exposed Cabinet • 2 or 4 Pipe Cooling or/and Heating Front Supply & Bottom Return Grille

Model: 40HX • Unit Sizes 3 – 15

TYPE Z Chilled/Hot Water (2-pipe).

TYPE ZW Chilled & Hot Water (4-pipe).



Dimensional Data

Unit Size	Nominal CFM (l/s)	A	B	C	D
3	300 (142)	39 (991)	20 (508)	36 (914)	25 (635)
4	400 (189)	44 (1118)	25 (635)	41 (1041)	30 (762)
6	600 (283)	49 (1245)	30 (762)	46 (1168)	35 (889)
8	800 (378)	59 (1499)	40 (1016)	56 (1422)	45 (1143)
12	1200 (566)	69 (1753)	50 (1270)	66 (1676)	55 (1397)
15	1500 (708)	79 (2007)	60 (1524)	76 (1930)	65 (1651)

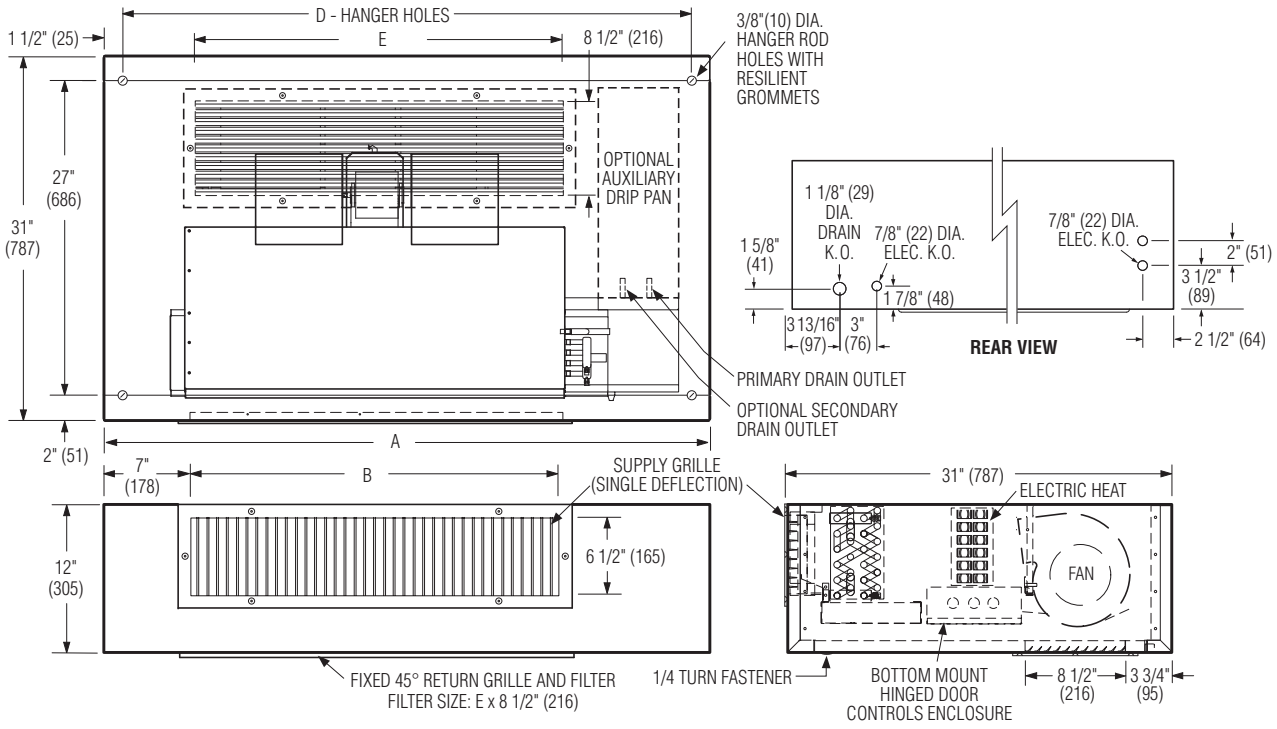
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AHRI CERTIFIED™ www.ahridirectory.org
Room Fan-Coils
AHRI Standard 440

Engineered Comfort

Model series 40H • Exposed Cabinet • 2 Pipe Cooling & Electric Heat
Front Supply & Bottom Return Grille
Model: 40HX • Unit Sizes 3 – 15

TYPE ZE Chilled/Hot Water (2-pipe) and Electric Heat.



Dimensional Data

Unit Size	Nominal CFM (l/s)	A	B	C	D
3	300 (142)	39 (991)	20 (508)	36 (914)	25 (635)
4	400 (189)	44 (1118)	25 (635)	41 (1041)	30 (762)
6	600 (283)	49 (1245)	30 (762)	46 (1168)	35 (889)
8	800 (378)	59 (1499)	40 (1016)	56 (1422)	45 (1143)
12	1200 (566)	69 (1753)	50 (1270)	66 (1676)	55 (1397)
15	1500 (708)	79 (2007)	60 (1524)	76 (1930)	65 (1651)

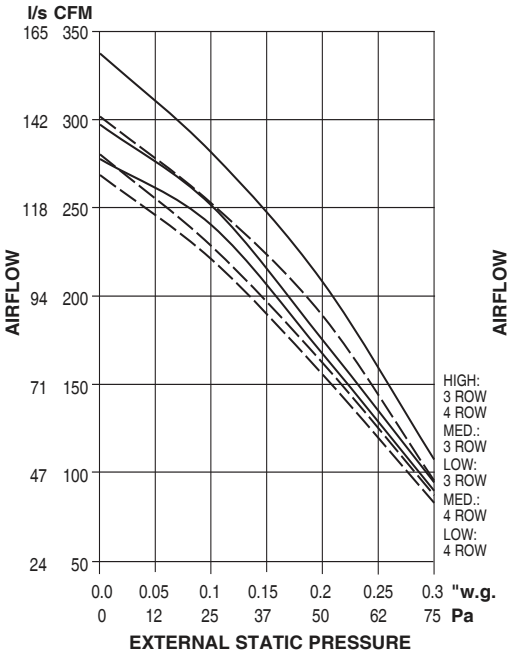
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Room Fan-Coils
AHRI Standard 440

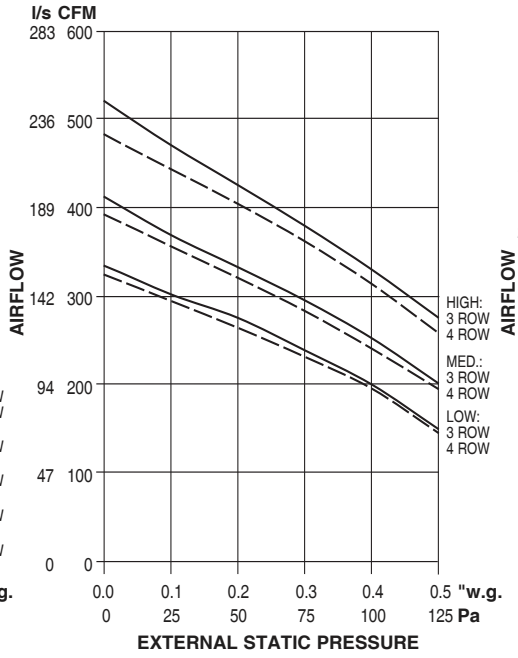
Model 40HF Free Return • PSC Motor Fan Performance Curves

Airflow vs. External Static Pressure

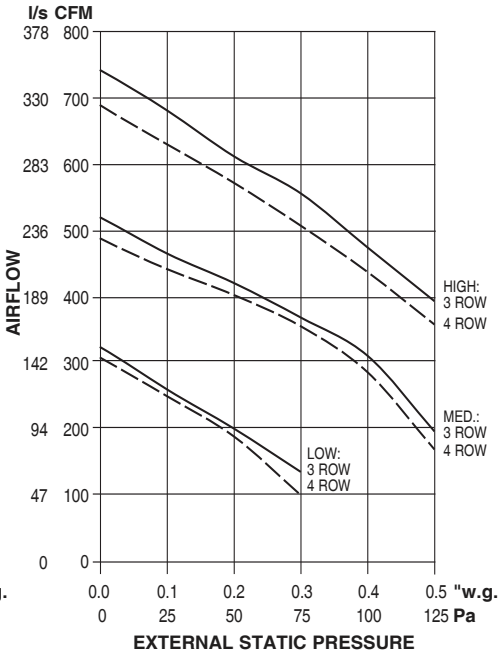
Unit Size 3



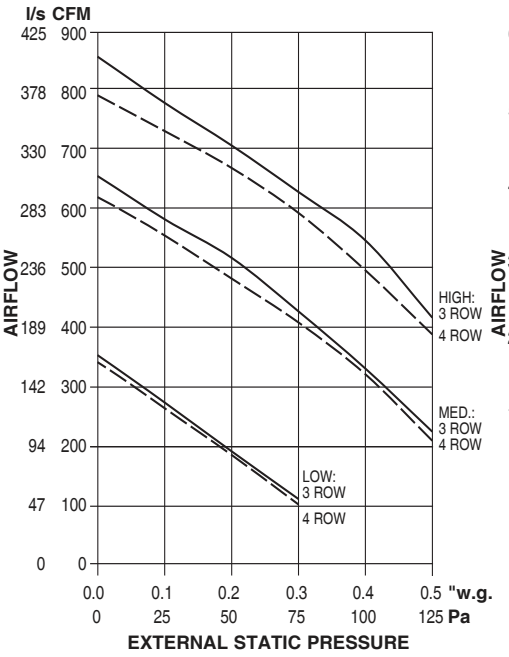
Unit Size 4



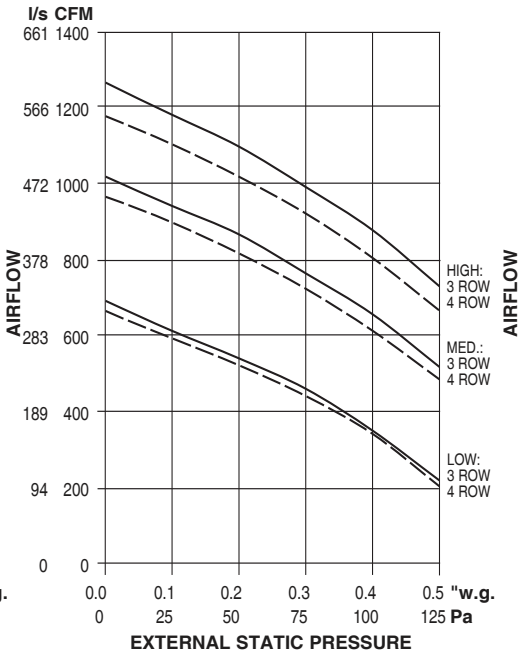
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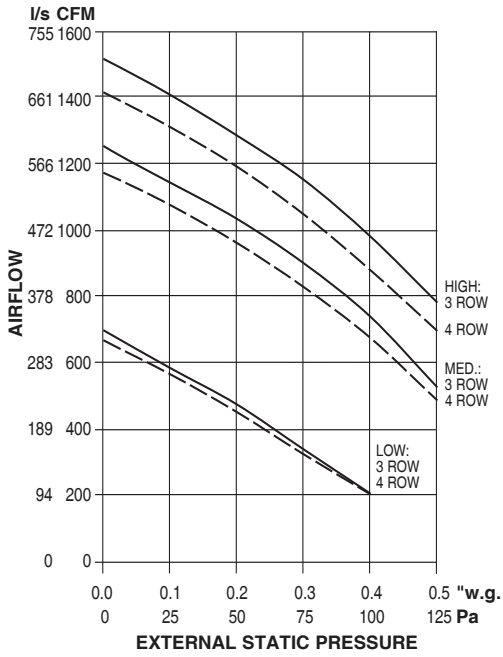
Unit Size 8



Unit Size 12



Unit Size 15

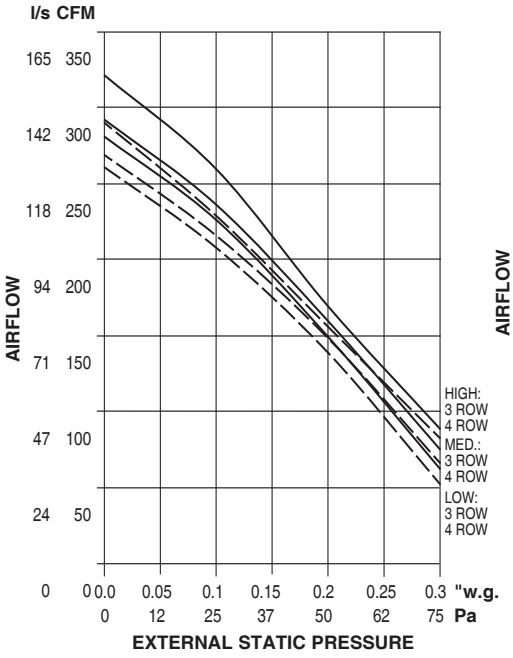


PSC Motor Fan Notes:

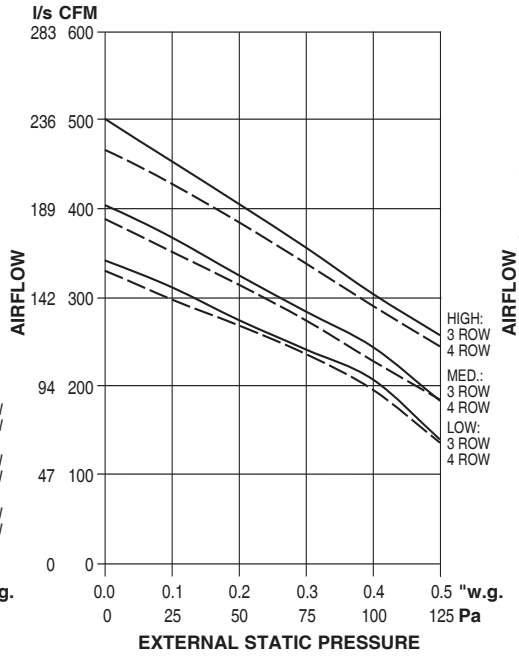
1. Permanent split capacitor (PSC) motors are of the three speed type with separate taps (High, Medium and Low) which provide variable horsepower outputs. Commonly, units are selected and sized on a conservative basis and actual airflow and/or external static pressure requirements are lower than specified. When this is the case, the unit fan motor can be run at low or medium speed, reducing power consumption and operating cost.
2. All fan curves shown are for 120 volt single phase, 3-speed PSC motors and include internal losses for cabinet, electric heater and 3 or 4 row water coil.
3. For other coil combinations and filters, adjust performance curves based on pressure losses or use Selectworks.
4. Filter pressure drops table shown on page C23.

Models 40HP Plenum & 40HT Telescoping
PSC Motor Fan Performance Curves
Airflow vs. External Static Pressure

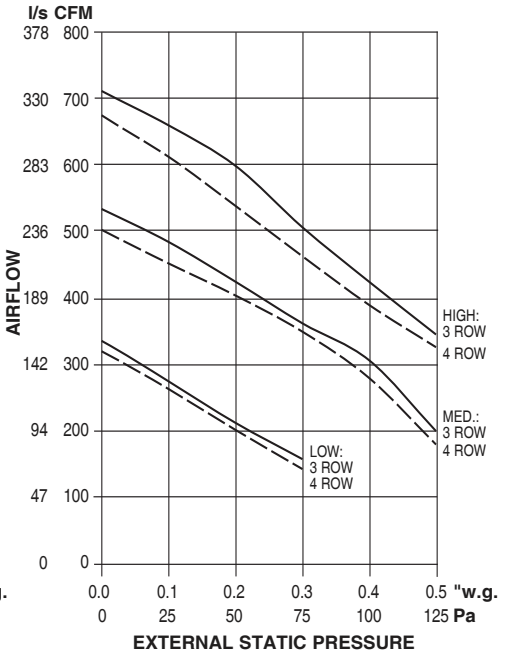
Unit Size 3



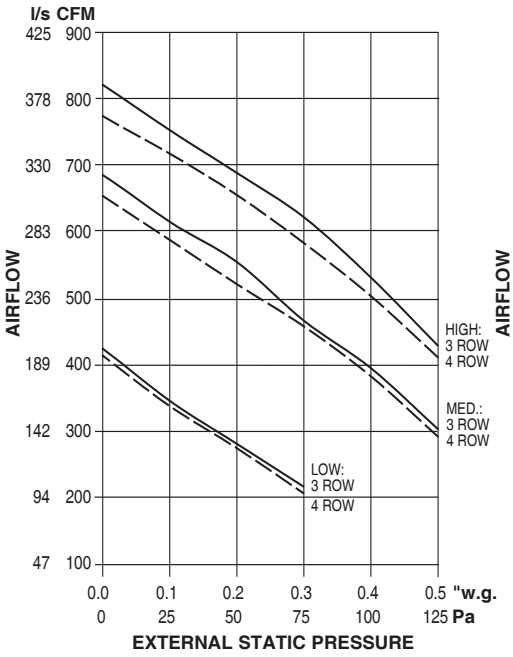
Unit Size 4



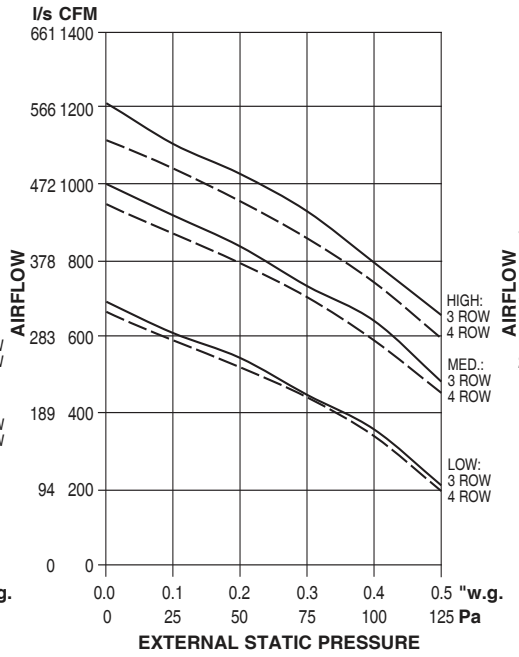
Unit Size 6



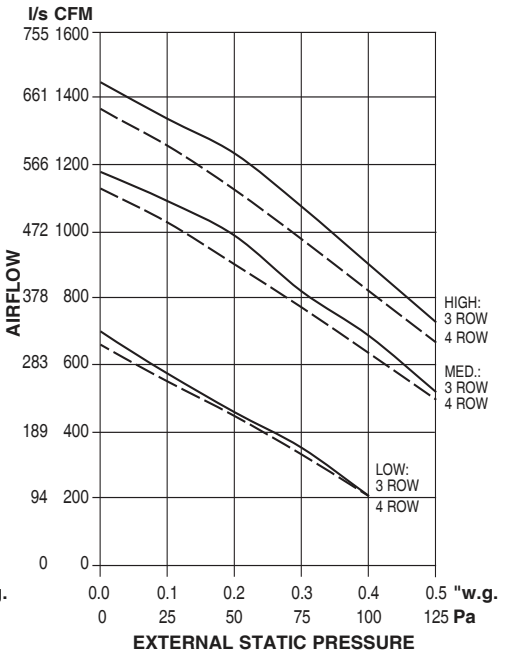
Unit Size 8



Unit Size 12



Unit Size 15



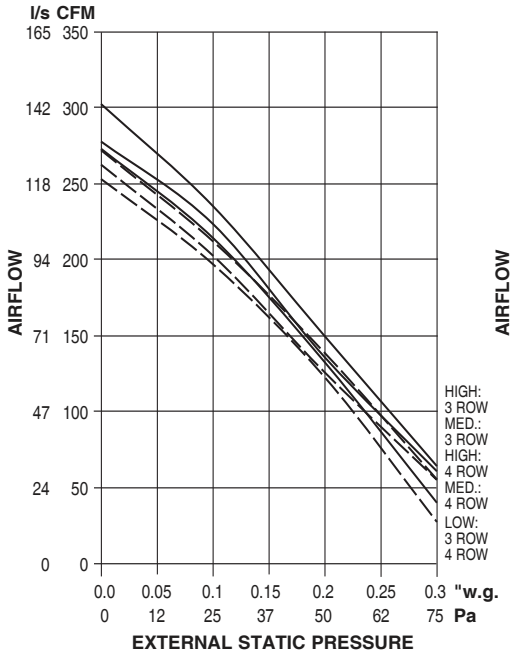
PSC Motor Fan Notes:

1. Permanent split capacitor (PSC) motors are of the three speed type with separate taps (High, Medium and Low) which provide variable horsepower outputs. Commonly, units are selected and sized on a conservative basis and actual airflow and/or external static pressure requirements are lower than specified. When this is the case, the unit fan motor can be run at low or medium speed, reducing power consumption and operating cost.
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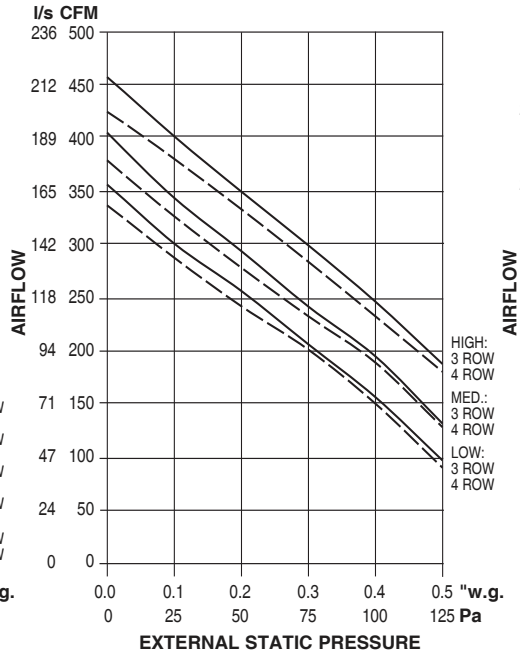
Model 40HX Exposed Cabinet • PSC Motor Fan Performance Curves

Airflow vs. External Static Pressure

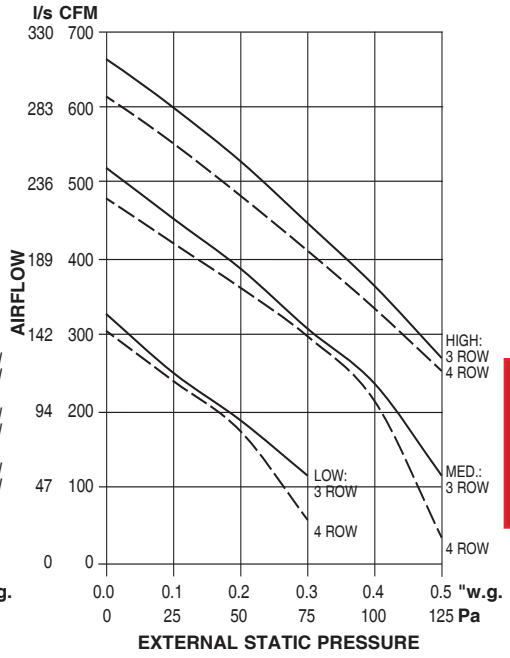
Unit Size 3



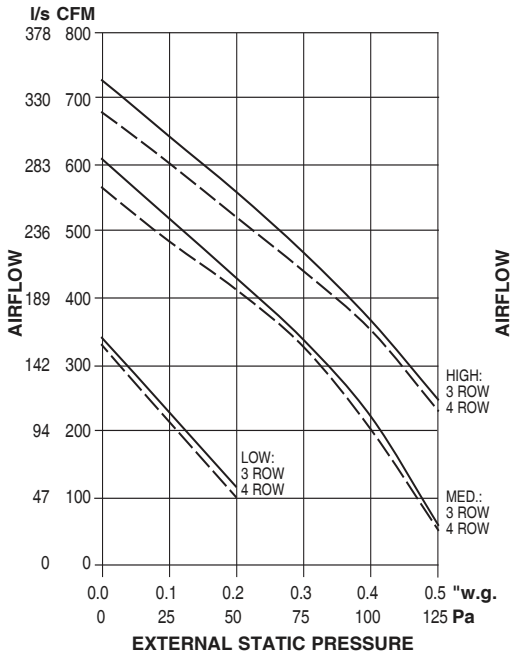
Unit Size 4



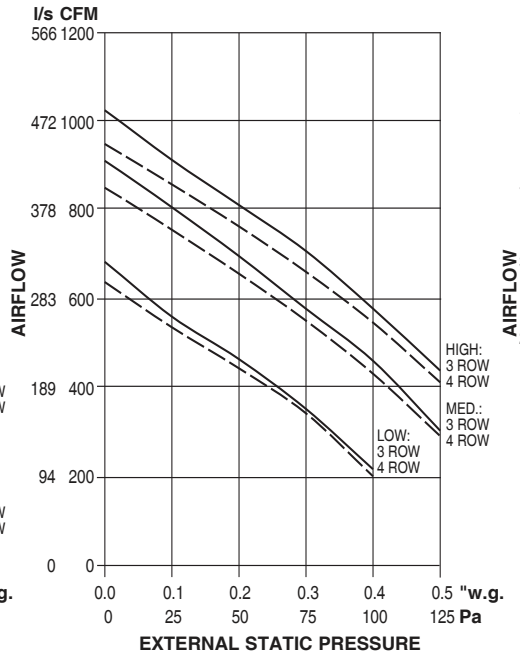
Unit Size 6



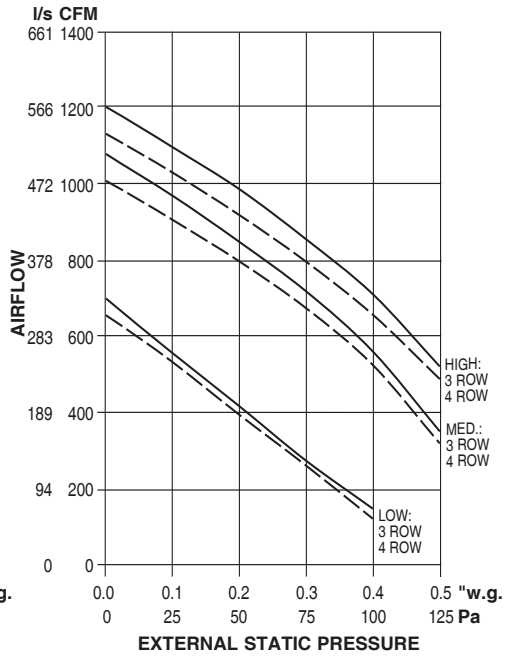
Unit Size 8



Unit Size 12



Unit Size 15



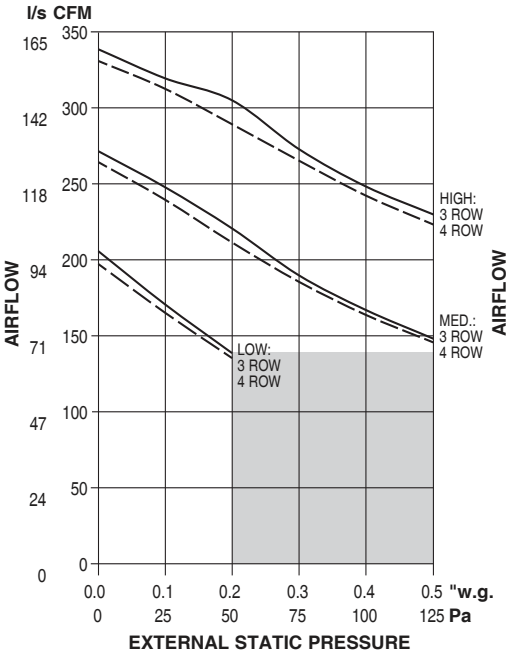
PSC Motor Fan Notes:

1. Permanent split capacitor (PSC) motors are of the three speed type with separate taps (High, Medium and Low) which provide variable horsepower outputs. Commonly, units are selected and sized on a conservative basis and actual airflow and/or external static pressure requirements are lower than specified. When this is the case, the unit fan motor can be run at low or medium speed, reducing power consumption and operating cost.
2. All fan curves shown are for 120 volt single phase, 3-speed PSC motors and include internal losses for cabinet, electric heater and 3 or 4 row water coil.
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4. Filter pressure drops table shown on page C23.

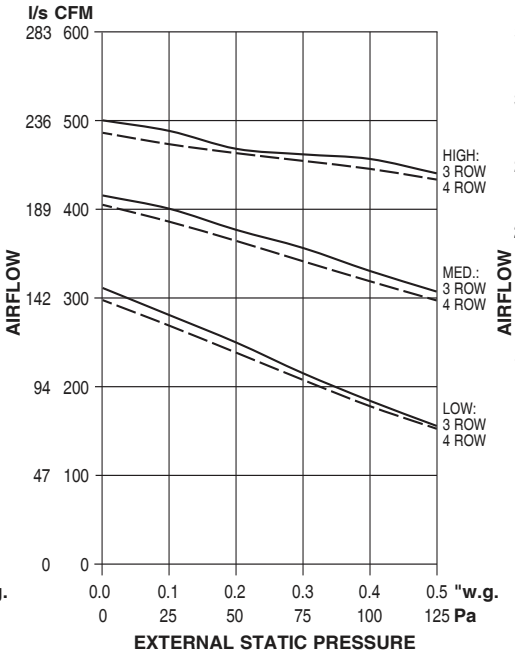
Model 40HF Free Return • 3-Speed ECM Fan Performance Curves

Airflow vs. External Static Pressure

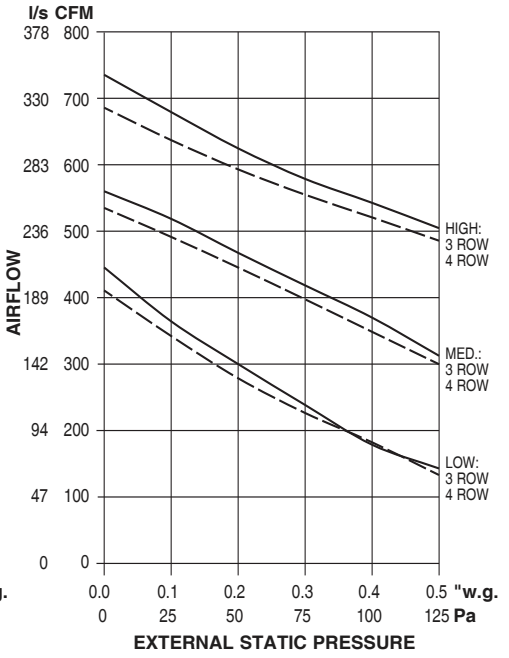
Unit Size 3



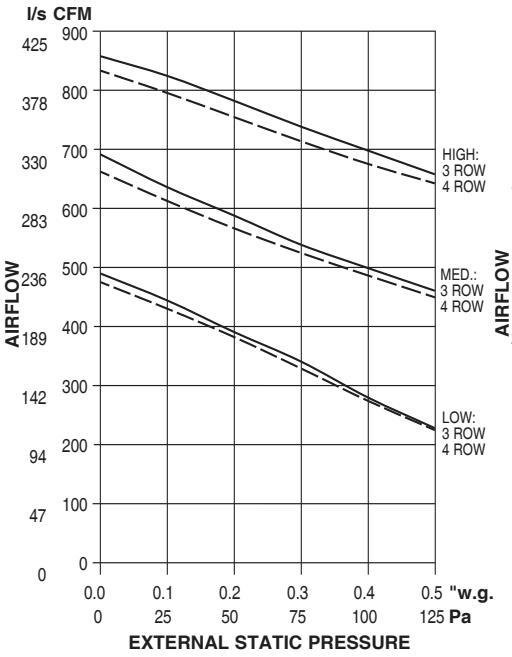
Unit Size 4



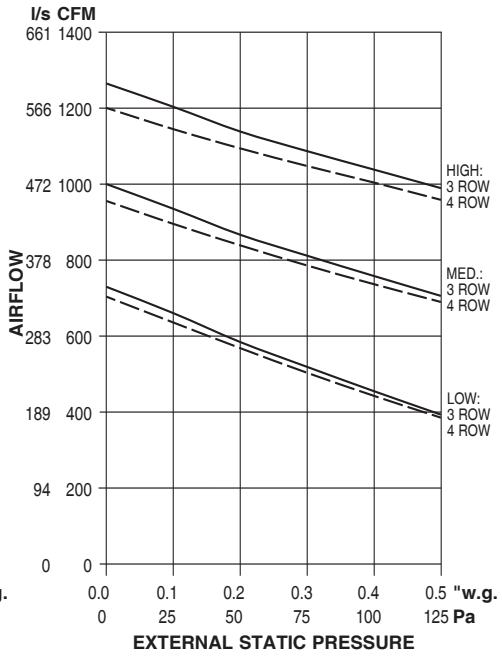
Unit Size 6



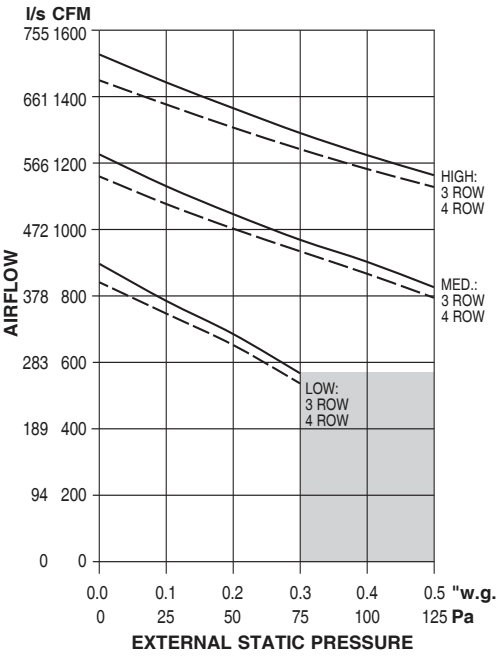
Unit Size 8



Unit Size 12



Unit Size 15

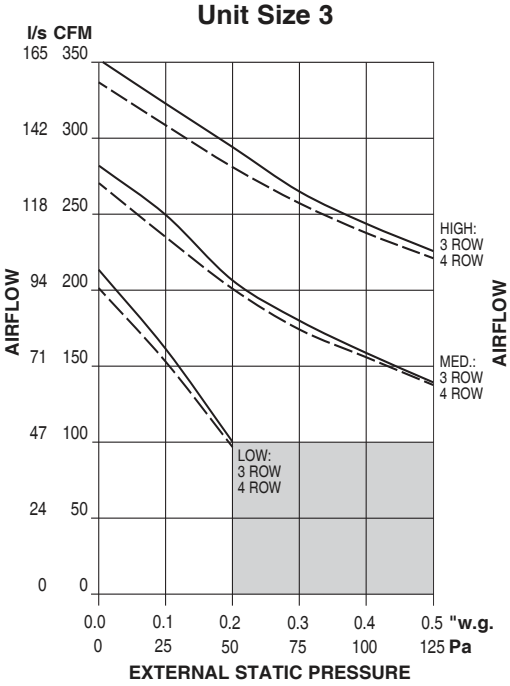


3-Speed ECM Motor Fan Notes:

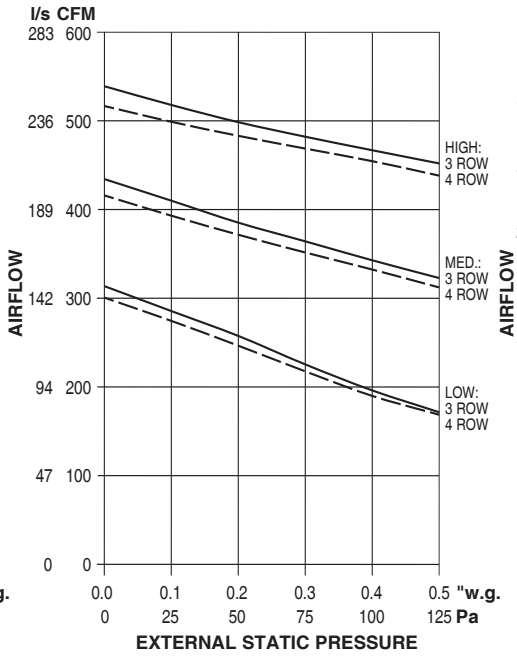
1. Fan coil units equipped with 3-speed ECM Motors have discrete inputs (High, Medium and Low) which provide variable horsepower outputs. Commonly, units are selected and sized on a conservative basis and actual airflow and/or external static pressure requirements are lower than specified. When this is the case, the unit fan motor can be run at low or medium speed, reducing power consumption and operating cost.
2. Fan curves are applicable to all models. All fan curves shown are for 120 volt single phase, 3-speed ECM Motors and include internal losses for cabinet, electric heater and 3 or 4 row water coil.
3. For other coil combinations and addition of a filter, adjust performance curves based on pressure losses or use Selectworks.
4. Area within shaded area not predictable.
5. Filter pressure drops table shown on page C23.

Models 40HP Plenum & 40HT Telescoping
3-Speed ECM Fan Performance Curves
Airflow vs. External Static Pressure

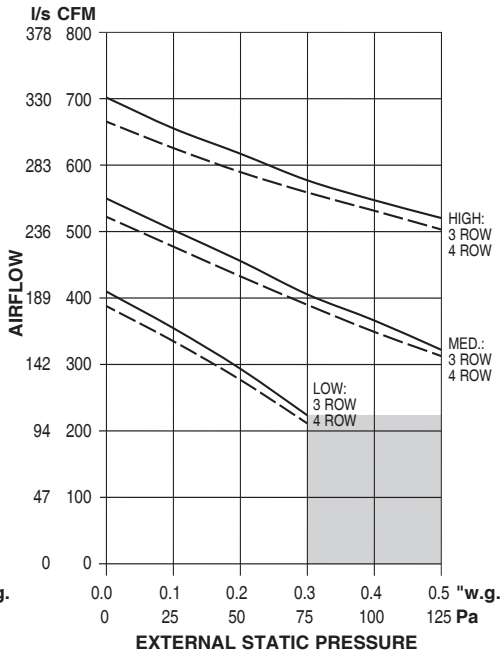
Unit Size 3



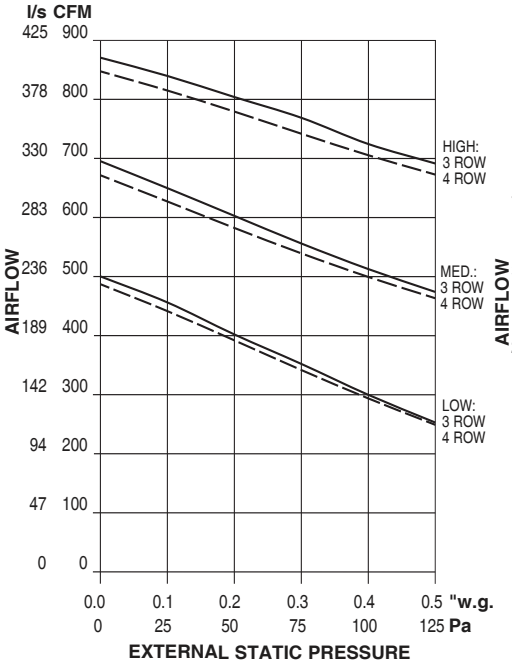
Unit Size 4



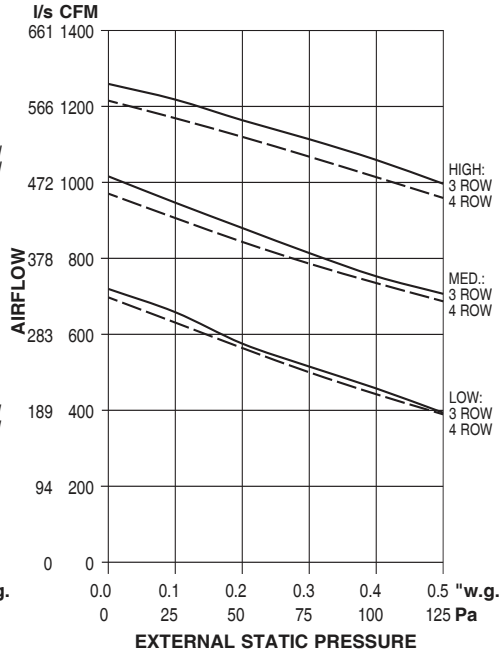
Unit Size 6



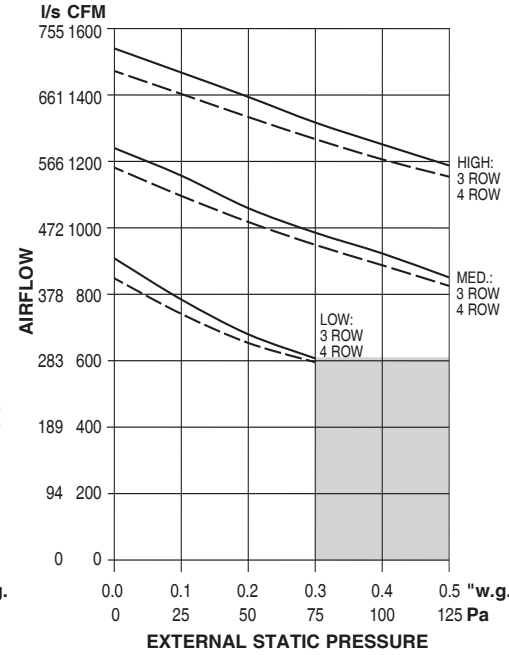
Unit Size 8



Unit Size 12



Unit Size 15

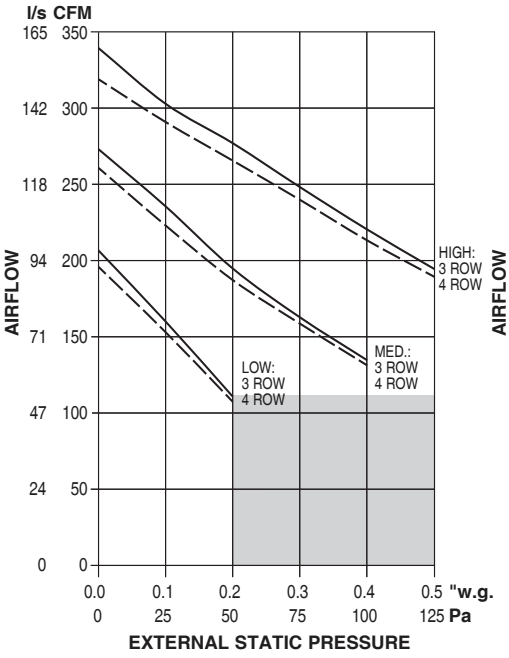


3-Speed ECM Motor Fan Notes:

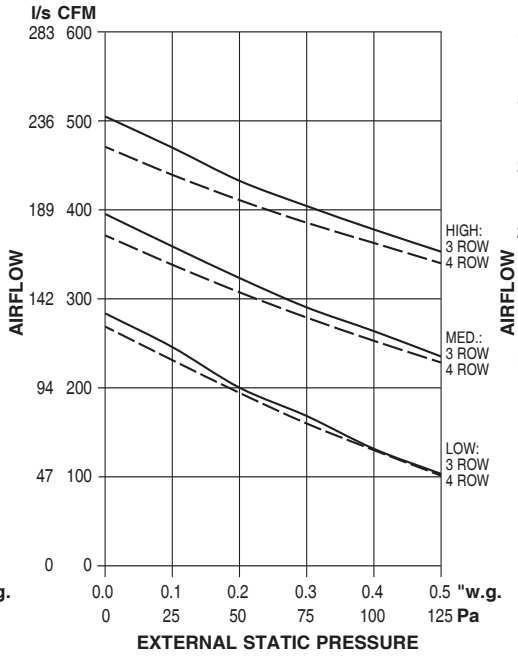
1. Fan coil units equipped with 3-speed ECM Motors have discrete inputs (High, Medium and Low) which provide variable horsepower outputs. Commonly, units are selected and sized on a conservative basis and actual airflow and/or external static pressure requirements are lower than specified. When this is the case, the unit fan motor can be run at low or medium speed, reducing power consumption and operating cost.
2. Fan curves are applicable to all models. All fan curves shown are for 120 volt single phase, 3-speed ECM Motors and include internal losses for cabinet, electric heater and 3 or 4 row water coil.
3. For other coil combinations and addition of a filter, adjust performance curves based on pressure losses or use Selectworks.
4. Area within shaded area not predictable.
5. Filter pressure drops table shown on page C23.

Model 40HX Exposed Cabinet
3-Speed ECM Fan Performance Curves
Airflow vs. External Static Pressure

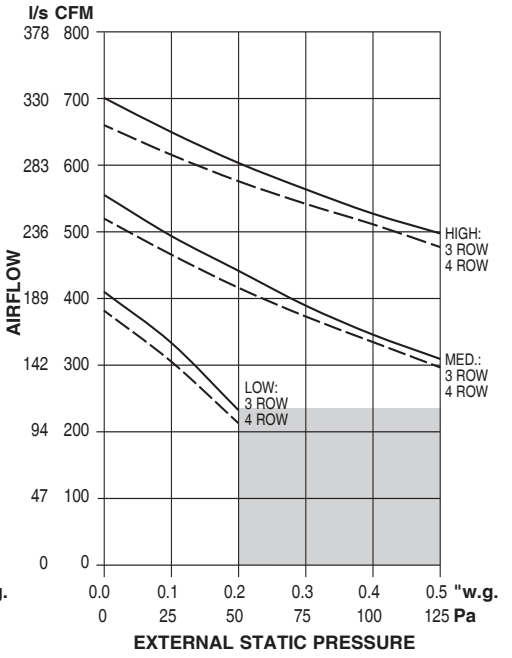
Unit Size 3



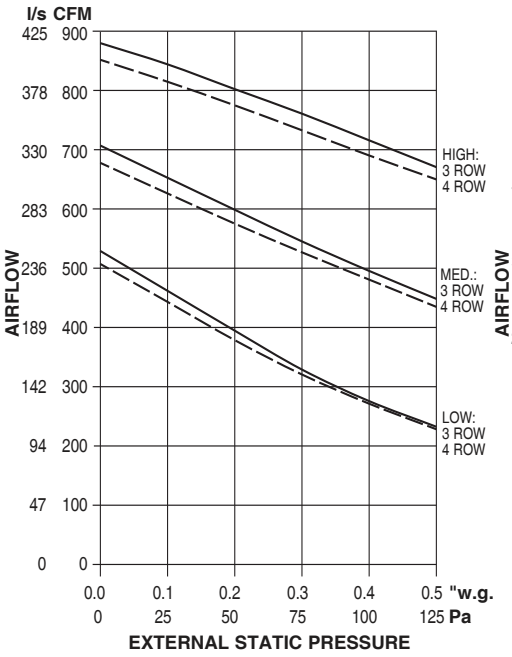
Unit Size 4



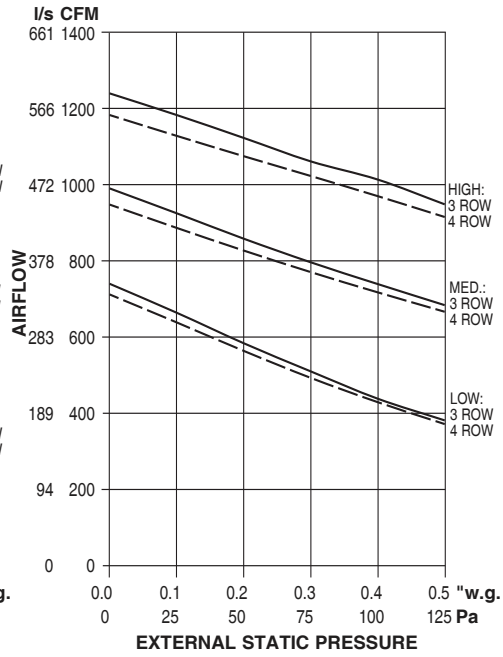
Unit Size 6



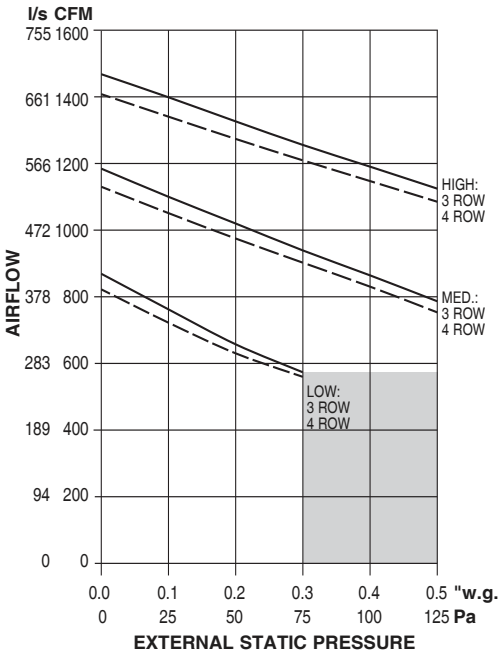
Unit Size 8



Unit Size 12



Unit Size 15



3-Speed ECM Motor Fan Notes:

1. Fan coil units equipped with 3-speed ECM Motors have discrete inputs (High, Medium and Low) which provide variable horsepower outputs. Commonly, units are selected and sized on a conservative basis and actual airflow and/or external static pressure requirements are lower than specified. When this is the case, the unit fan motor can be run at low or medium speed, reducing power consumption and operating cost.
2. Fan curves are applicable to all models. All fan curves shown are for 120 volt single phase, 3-speed ECM Motors and include internal losses for cabinet, electric heater and 3 or 4 row water coil.
3. For other coil combinations and addition of a filter, adjust performance curves based on pressure losses or use Selectworks.
4. Area within shaded area not predictable.
5. Filter pressure drops table shown on page C23.

Model Series 40H • Performance Data

Electrical Motor Characteristics

Unit Size	Voltage	No. of Fans/ Motors	3-Speed PSC Motor			3-Speed ECM		
			HP	FLA	Full Load Watts	HP	FLA	Full Load Watts
3	120	1/1	1/30	0.7	89	1/8	1.8	73
	208	1/1		0.4			0.8	
	230	1/1		0.5			0.7	
	277	1/1		0.4			0.7	
4	120	1/1	1/15	1.3	159	1/8	2.3	150
	208	1/1		0.8			1.4	
	230	1/1		0.8			1.4	
	277	1/1		0.8			1.2	
6	120	2/1	1/10	1.7	204	1/8	2.1	151
	208	2/1		0.9			1.5	
	230	2/1		0.9			1.3	
	277	2/1		0.9			1.2	
8	120	2/1	1/6	2.1	239	1/4	2.8	186
	208	2/1		1.0			1.9	
	230	2/1		1.1			1.8	
	277	2/1		1.0			1.6	
12	120	3/2	1/6 & 1/15	3.4	363	1/8 & 1/4	3.9	315
	208	3/2		1.6			2.5	
	230	3/2		1.7			2.6	
	277	3/2		1.6			2.5	
15	120	4/2	2 @ 1/6	4.1	447	2 @ 1/4	4.4	361
	208	4/2		2.0			3.0	
	230	4/2		2.1			2.9	
	277	4/2		2.0			2.7	

The FLA and watts are shown at the maximum setting for selected motor type and unit size. Refer to SelectWorks selection software for application specific data.

Electric Heating Selection

Unit Size	Electric Heat Kilowatts Range			
	120V	208V	240V	277V
3	1.0 – 1.5	1.0 – 1.5	1.0 – 1.5	1.0 – 1.5
4	1.0 – 2.0	1.0 – 2.0	1.0 – 2.0	1.0 – 2.0
6	1.0 – 3.0	1.0 – 3.0	1.0 – 3.0	1.0 – 3.0
8	1.0 – 3.0	1.0 – 4.0	1.0 – 4.0	1.0 – 4.0
10	1.0 – 3.0	1.0 – 5.0	1.0 – 5.0	1.0 – 5.0
12	1.0 – 3.0	1.0 – 6.0	1.0 – 6.0	1.0 – 6.0

NOTES:

1. Electric heat voltage must be the same as motor voltage.
2. A minimum airflow of 70 cfm per kW is required across the coil during heating. Available in the above kW's only.

   $$\Delta T = \frac{kW \times 3160}{CFM}$$

   Do not size heaters with leaving air temperature greater than 105°F (41°C).
3. Coils are wired to the control panel for a single point electrical connection.
4. The coils listed are restricted to a maximum of 48 amps (with motor) and do not require circuit fusing to meet NEC requirements.
5. Basic electric coils include: Automatic reset high limits and magnetic contactor for one stage control.
6. The basic list price does not include a disconnect switch. See control power package options for coil accessories.

Model series 40H • Filter Pressure Drop Adjustments (in w.g.)

Unit Size	Airflow		Velocity		Filter Type		Filter Size
	CFM	l/s	FPM	m/s	1" (25) Throwaway	1" (25) MERV 8	
3	340	160	245	1.245	0.046	0.140	10 x 20 (254 x 508)
	290	137	209	1.062	0.034	0.102	
	240	113	173	0.879	0.023	0.070	
	190	90	137	0.696	0.015	0.044	
	140	66	101	0.513	0.008	0.024	
4	520	245	300	1.524	0.070	0.210	10 x 25 (254 x 635)
	445	210	256	1.300	0.051	0.153	
	370	175	213	1.082	0.035	0.106	
	295	139	170	0.864	0.022	0.067	
	220	104	127	0.645	0.013	0.038	
6	760	359	365	1.854	0.104	0.311	10 x 30 (254 x 762)
	645	304	310	1.575	0.075	0.224	
	530	250	254	1.290	0.050	0.150	
	415	196	199	1.011	0.031	0.092	
	300	142	144	0.732	0.016	0.048	
8	860	406	310	1.575	0.075	0.224	2 @ 10 x 20 (254 x 508)
	695	328	250	1.270	0.049	0.146	
	530	250	191	0.970	0.028	0.085	
	365	172	131	0.665	0.013	0.040	
	200	94	72	0.366	0.004	0.012	
12	1260	595	363	1.844	0.102	0.307	2 @ 10 x 25 (254 x 635)
	1070	505	308	1.565	0.074	0.221	
	880	415	253	1.285	0.050	0.149	
	690	326	199	1.011	0.031	0.092	
	500	236	144	0.732	0.016	0.048	
15	1520	717	365	1.854	0.104	0.310	2 @ 10 x 30 (254 x 762)
	1240	585	298	1.514	0.069	0.207	
	960	453	230	1.168	0.041	0.123	
	680	321	163	0.828	0.021	0.062	
	400	189	96	0.488	0.007	0.021	



Front: 1" (25) Throwaway
Back: 1" (25) MERV 8

NOTES:

1. Pressure drop based on clean filters. Using any type of filter will lower unit airflow.
2. To determine fan airflow with the addition of a filter, add the filter pressure drop to the external static pressure on the fan curve or use Selectworks.

Model Series 40H • Low Profile • Performance Data • Sound Data

Unit Size	Fan Speed	Airflow		Sound Power Levels							dBA
				Octave Bands							
		CFM	l/s	2/125	3/250	4/500	5/1000	6/2000	7/4000	8/8000	
3	High	320	151	58	61	58	55	50	45	41	60
	Medium	290	137	56	58	55	52	48	42	36	57
	Low	270	127	56	57	55	52	46	40	34	56
4	High	510	241	64	67	61	61	55	51	47	64
	Medium	400	189	59	61	57	55	51	46	42	60
	Low	340	160	56	56	54	51	47	42	36	56
6	High	720	340	63	70	65	61	56	51	47	67
	Medium	530	250	58	61	60	55	50	44	38	61
	Low	340	160	53	53	50	45	39	30	25	51
8	High	810	382	64	70	67	63	57	53	48	68
	Medium	660	311	60	64	62	58	52	47	41	63
	Low	370	175	51	52	51	44	37	29	24	51
12	High	1210	571	67	76	69	65	60	55	51	72
	Medium	1000	472	64	72	66	61	56	50	45	68
	Low	690	326	59	65	60	55	49	43	38	61
15	High	1450	684	67	76	69	65	60	55	51	72
	Medium	1180	557	63	70	65	61	55	50	45	67
	Low	700	330	56	56	54	49	42	34	27	55

Performance Notes:

1. Sound power levels in decibels, dB re 10^{-12} watts.
2. All sound data listed by octave band is raw data without any corrections for room absorption or duct attenuation.
3. Total sound level data based on model 40HP with airflow at corresponding motor tap with 120 volt single phase, 3-speed PSC motor, 3 row coil, no filter and 0.0" external static pressure.
4. Data derived from independent tests conducted in accordance with AHRI Standard 350.

Engineered Comfort

Model series 40H • Performance Data • AHRI Standard Ratings
Cooling Capacity

AHRI CERTIFIED™ www.ahridirectory.org
Room Fan-Coils
AHRI Standard 440

Unit Size	Water Coil		Airflow CFM (Dry Flow)	Cooling Capacity		Water		Power Input (Watts)
	Rows	Conn.		QT (BTUH)	QS (BTUH)	Flow Rate (GPM)	WPD ft. w.g.	
MODEL: 40HF • FREE RETURN								
3	3	0.625	300	8200	6100	1.7	1.1	75
	4		265	9600	6500	2.0	1.9	75
4	3	0.625	470	12400	9300	2.6	2.8	150
	4		430	14900	10200	3.0	5.2	140
6	3	0.625	660	17100	12800	3.5	5.9	200
	4		600	20400	14000	4.2	10.8	190
8	3	0.625	770	20500	15200	4.3	4.5	230
	4		700	24400	16700	5.0	7.7	210
12	3	0.625	1150	29900	22200	6.2	10.7	350
	4		1060	34100	23900	7.0	9.1	310
15	3	0.875	1360	36900	26800	7.7	14.0	420
	4		1260	42100	29100	8.6	10.6	370
MODELS: 40HP • PLENUM, 40HT • TELESCOPING								
3	3	0.625	285	8000	5900	1.6	1.0	70
	4		245	9100	6100	1.9	1.7	70
4	3	0.625	450	12100	9000	2.5	2.6	140
	4		410	14400	9800	2.9	4.9	130
6	3	0.625	650	17000	12700	3.5	5.7	180
	4		580	20000	13700	4.1	10.3	170
8	3	0.625	730	19900	14600	4.1	4.2	235
	4		660	23400	15900	4.8	7.1	220
12	3	0.625	1090	29000	21400	6.0	10.1	330
	4		1000	32900	22900	6.7	8.5	290
15	3	0.875	1300	36000	26000	7.5	13.4	410
	4		1200	40700	27900	8.4	10.0	390
MODEL: 40HX • EXPOSED CABINET								
3	3	0.625	250	7300	5400	1.5	0.9	65
	4		215	8300	5500	1.7	1.4	65
4	3	0.625	380	10900	7900	2.3	2.2	130
	4		340	12700	8500	2.7	3.8	120
6	3	0.625	590	16100	11800	3.3	5.1	165
	4		490	17900	12000	3.7	8.3	155
8	3	0.625	610	17800	12700	3.7	3.4	220
	4		500	19300	12700	4.0	4.9	205
12	3	0.625	790	23900	16800	4.9	6.9	280
	4		750	27100	18200	5.6	5.9	270
15	3	0.875	1000	30700	21400	6.4	9.9	350
	4		930	34300	22900	7.1	7.2	340

NOTES:

Based on 80°F DB and 67°F WB EAT, 45°F EWT, 10°F water temperature rise, high fan speed. Motor type is 3-speed PSC, 120 volt single phase. Airflow under dry conditions. Models 40HF and 40HP tested at 0.05" w.g. external static pressure. Model 40HX tested at 0.0" w.g. external static pressure with filter.

Model series 40H • Performance Data • Heating Capacity

Unit Size	Water Coil		Airflow CFM	Heating Capacity (MBH)	LAT (°F)	Water		Power Input (Watts)
	Rows	Conn.				Flow Rate (GPM)	WPD ft. w.g.	
MODEL: 40HF • FREE RETURN								
3	1	0.625	250	9.3	103	0.5	0.14	75
	2		250	15.6	126	0.8	0.82	75
4	1	0.625	400	13.9	101	0.7	0.36	150
	2		400	23.6	123	1.2	2.11	140
6	1	0.625	500	17.5	101	0.9	0.64	200
	2		500	29.6	123	1.5	3.72	190
8	1	0.625	750	25.5	100	1.3	1.7	230
	2		750	41.1	120	2.1	1.13	210
12	1	0.625	1000	33.9	100	1.7	3.46	350
	2		1000	54.7	119	2.7	2.36	310
15	1	0.625	1400	41.3	96	2.0	0.75	420
	2		1400	73.3	117	3.7	4.85	370
MODELS: 40HP • PLENUM, 40HT • TELESCOPING								
3	1	0.625	250	9.3	103	0.5	0.14	75
	2		250	15.6	126	0.8	0.82	75
4	1	0.625	400	13.9	101	0.7	0.36	150
	2		400	23.6	123	1.2	2.11	140
6	1	0.625	500	17.5	101	0.9	0.64	200
	2		500	29.6	123	1.5	3.72	190
8	1	0.625	750	25.5	100	1.3	1.70	230
	2		750	41.1	120	2.1	1.13	210
12	1	0.625	1000	33.9	100	1.7	3.46	350
	2		1000	54.7	119	2.7	2.36	310
15	1	0.625	1400	41.3	96	2.0	0.75	420
	2		1400	73.3	117	3.7	4.85	370
MODEL: 40HX • EXPOSED CABINET								
3	1	0.625	250	9.3	103	0.5	0.14	65
	2		250	15.6	126	0.8	0.82	65
4	1	0.625	400	13.9	101	0.7	0.36	130
	2		400	23.6	123	1.2	2.11	120
6	1	0.625	500	17.5	101	0.9	0.64	165
	2		500	29.6	123	1.5	3.72	155
8	1	0.625	750	25.5	100	1.3	1.7	220
	2		750	41.1	120	2.1	1.13	205
12	1	0.625	1000	33.9	100	1.7	3.46	280
	2		1000	54.7	119	2.7	2.36	270
15	1	0.625	1400	41.3	96	2.0	0.75	350
	2		1400	73.3	117	3.7	4.85	340

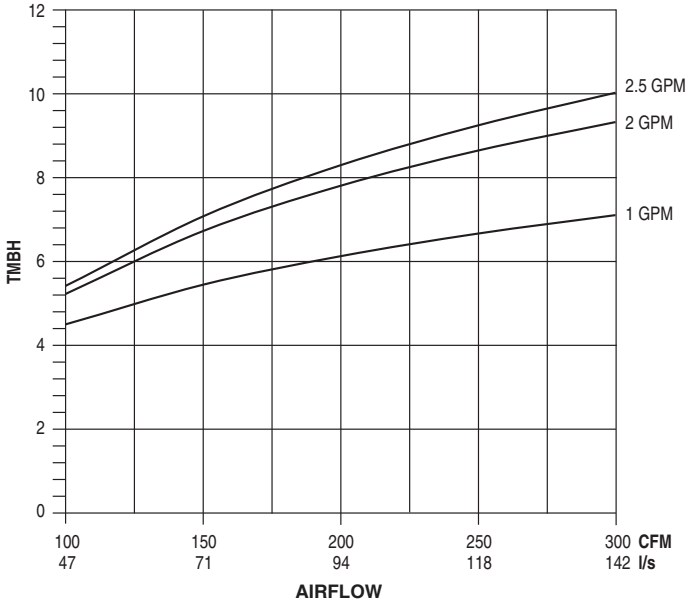
NOTES:

Based on 70°F DB EAT, 180°F EWT, 40°F water temperature drop, high fan speed. Models 40HF and 40HP tested at 0.05" w.g. external static pressure. Model 40HX tested at 0.0" w.g. external static pressure with filter.

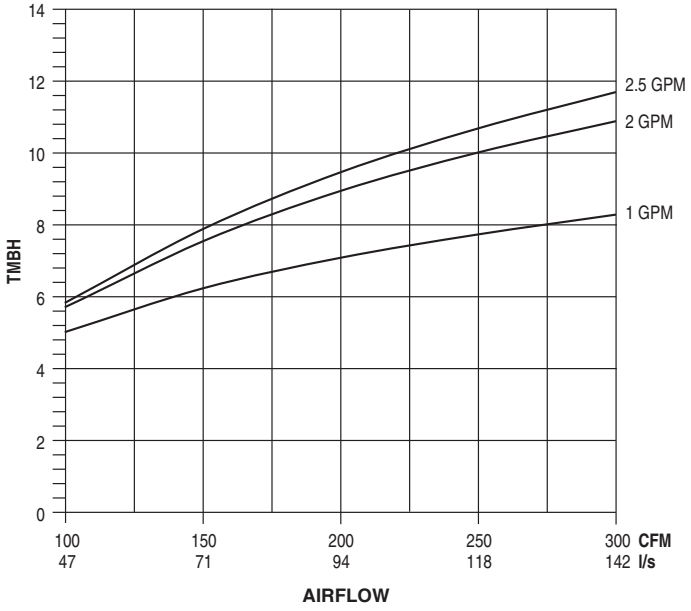
Model Series 40H • Chilled Water Coil Performance Data • Unit Size 3

Data Based on 80°F DB, 67°F WB Entering Air & 45°F Entering Water

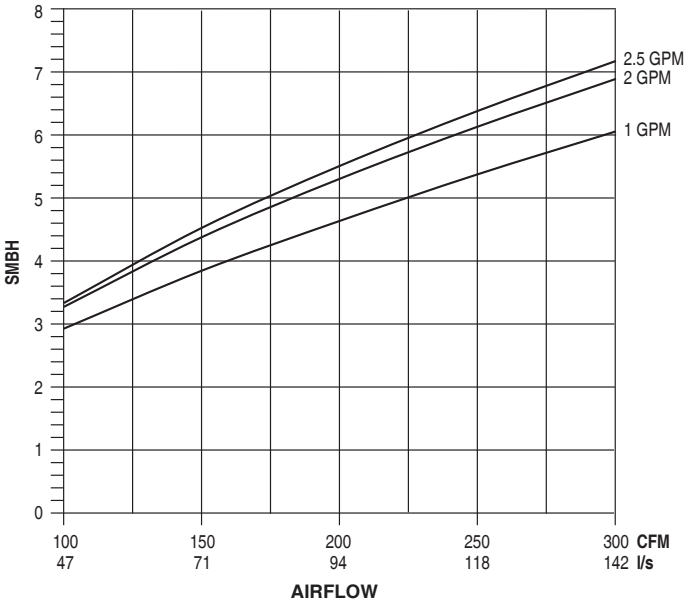
3 Row (Total MBH)



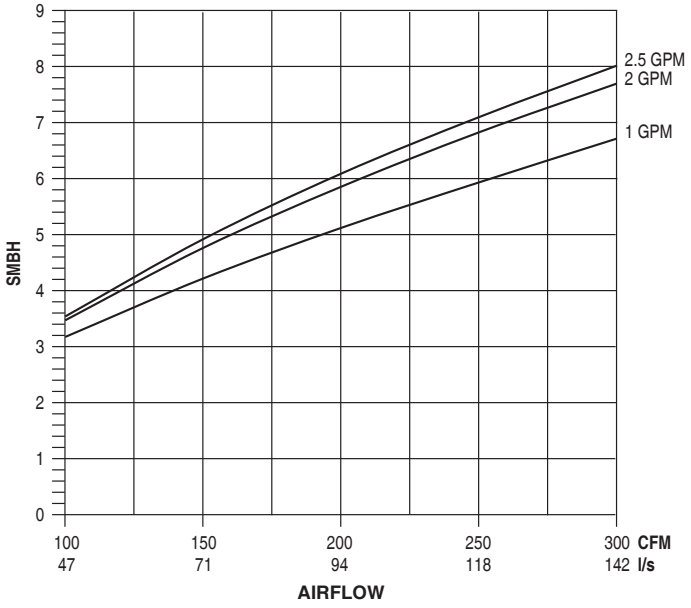
4 Row (Total MBH)



3 Row (Sensible MBH)



4 Row (Sensible MBH)



Altitude Correction Factors

Altitude (ft.)	0	1000	2000	3000	4000	5000	6000	7000
Air Density (lb./cu. ft)	0.075	0.072	0.070	0.067	0.065	0.063	0.060	0.058
Total Capacity	1000	0.988	0.986	0.983	0.981	0.979	0.977	0.975
Sensible Capacity	1000	0.960	0.930	0.900	0.860	0.830	0.800	0.770
Static Pressure	1000	0.960	0.930	0.900	0.860	0.830	0.800	0.770

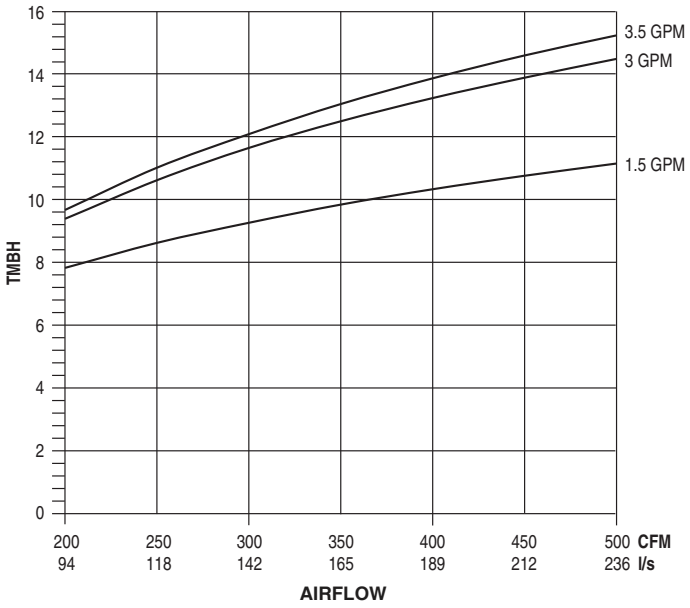
NOTES:

1. Capacity and static pressure will be affected for applications above sea level. To apply correction factors, multiply the coil capacity or fan curve data by the tabulated correction factor.
2. Connections: 3 and 4 Row 7/8" (22.2) O.D. male solder.

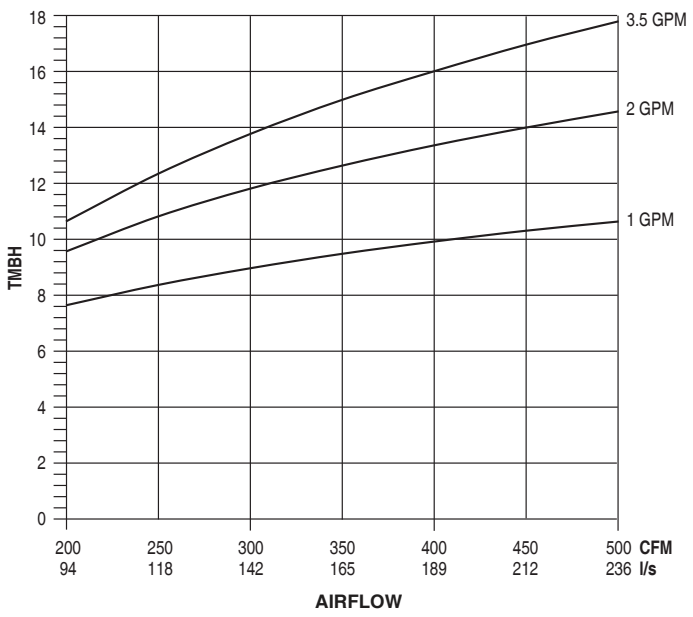
Model Series 40H • Chilled Water Coil Performance Data • Unit Size 4

Data Based on 80°F DB, 67°F WB Entering Air & 45°F Entering Water

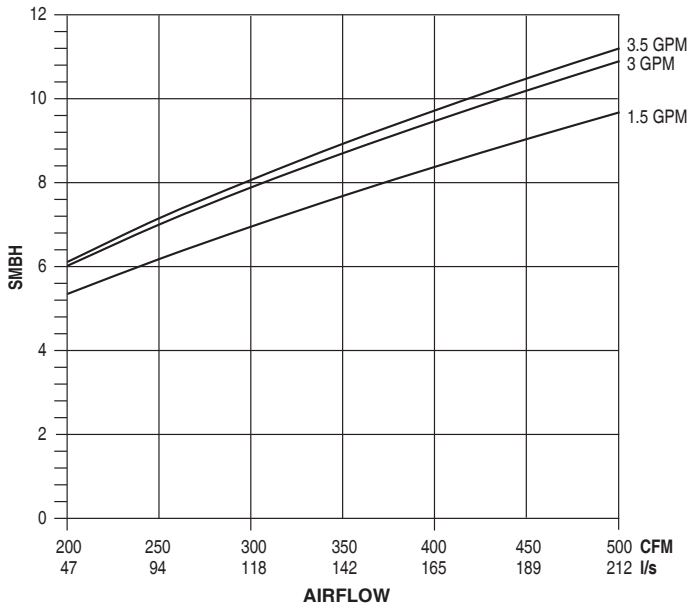
3 Row (Total MBH)



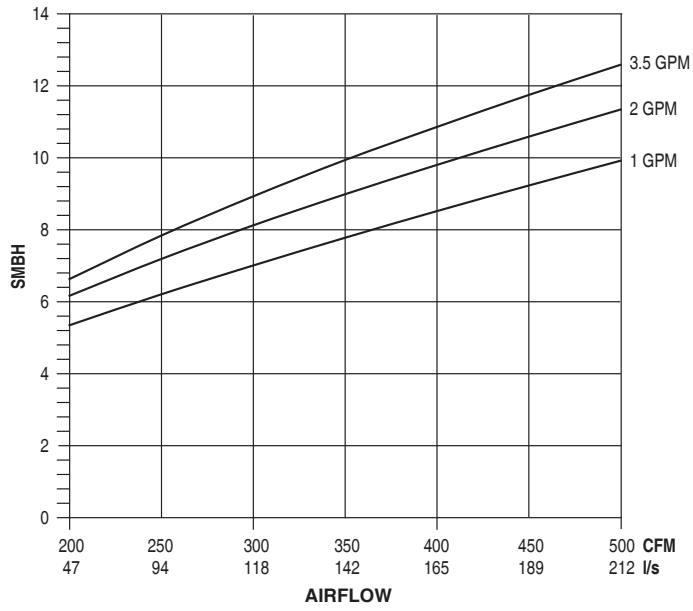
4 Row (Total MBH)



3 Row (Sensible MBH)



4 Row (Sensible MBH)



Altitude Correction Factors

Altitude (ft.)	0	1000	2000	3000	4000	5000	6000	7000
Air Density (lb./cu. ft)	0.075	0.072	0.070	0.067	0.065	0.063	0.060	0.058
Total Capacity	1000	0.988	0.986	0.983	0.981	0.979	0.977	0.975
Sensible Capacity	1000	0.960	0.930	0.900	0.860	0.830	0.800	0.770
Static Pressure	1000	0.960	0.930	0.900	0.860	0.830	0.800	0.770

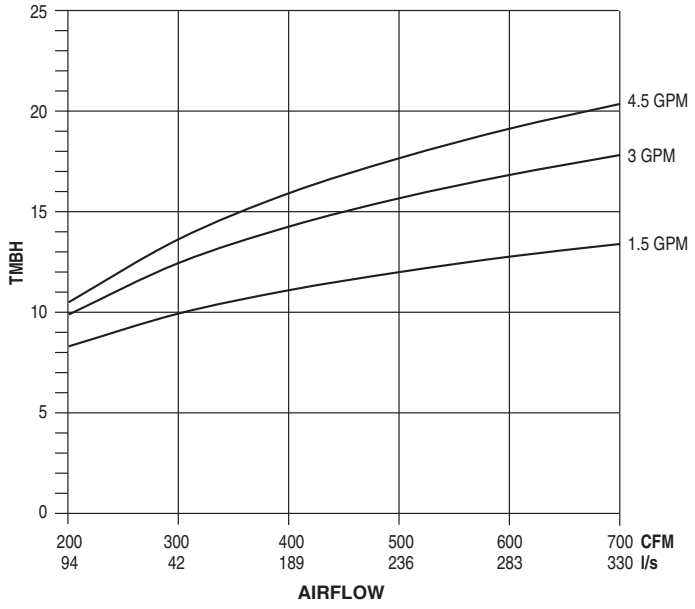
NOTES:

1. Capacity and static pressure will be affected for applications above sea level. To apply correction factors, multiply the coil capacity or fan curve data by the tabulated correction factor.
2. Connections: 3 and 4 Row 7/8" (22.2) O.D. male solder.

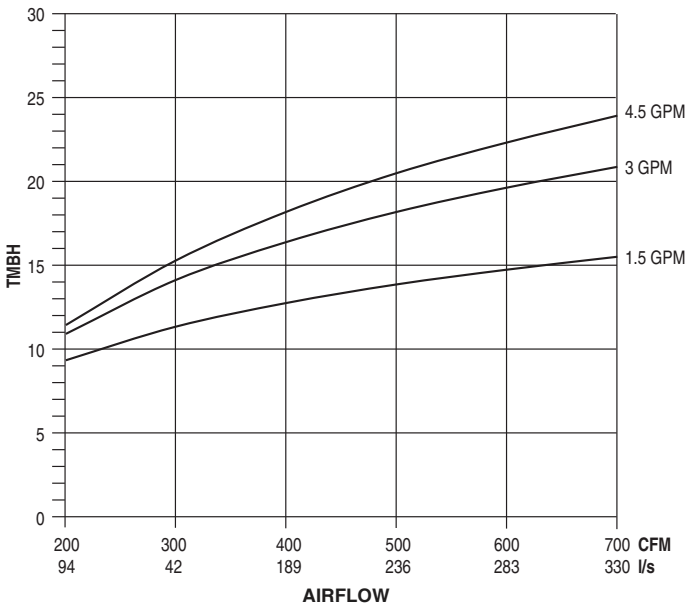
Chilled Water Coil Performance Data • Unit Size 6

Model Series 40H • Data Based on 80°F DB, 67°F WB Entering Air & 45°F Entering Water

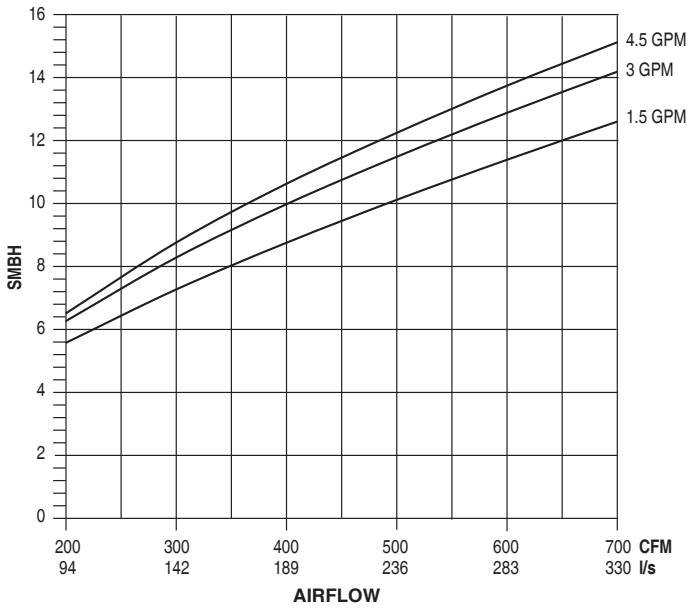
3 Row (Total MBH)



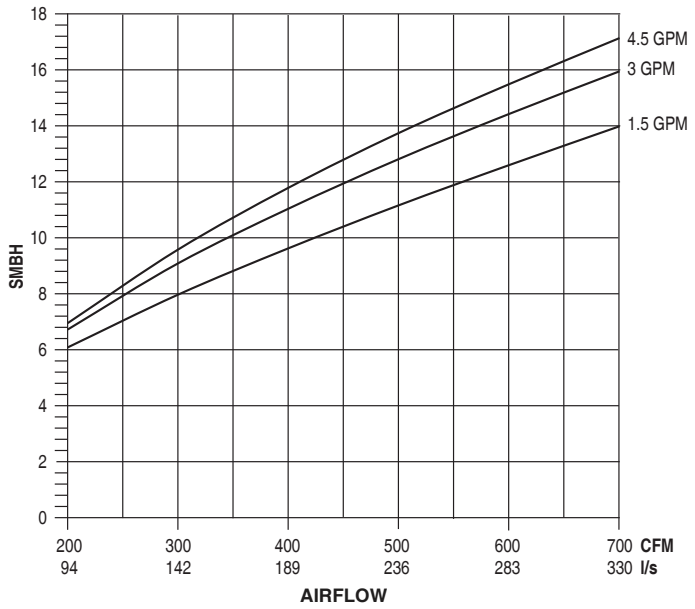
4 Row (Total MBH)



3 Row (Sensible MBH)



4 Row (Sensible MBH)



Altitude Correction Factors

Altitude (ft.)	0	1000	2000	3000	4000	5000	6000	7000
Air Density (lb./cu. ft)	0.075	0.072	0.070	0.067	0.065	0.063	0.060	0.058
Total Capacity	1000	0.988	0.986	0.983	0.981	0.979	0.977	0.975
Sensible Capacity	1000	0.960	0.930	0.900	0.860	0.830	0.800	0.770
Static Pressure	1000	0.960	0.930	0.900	0.860	0.830	0.800	0.770

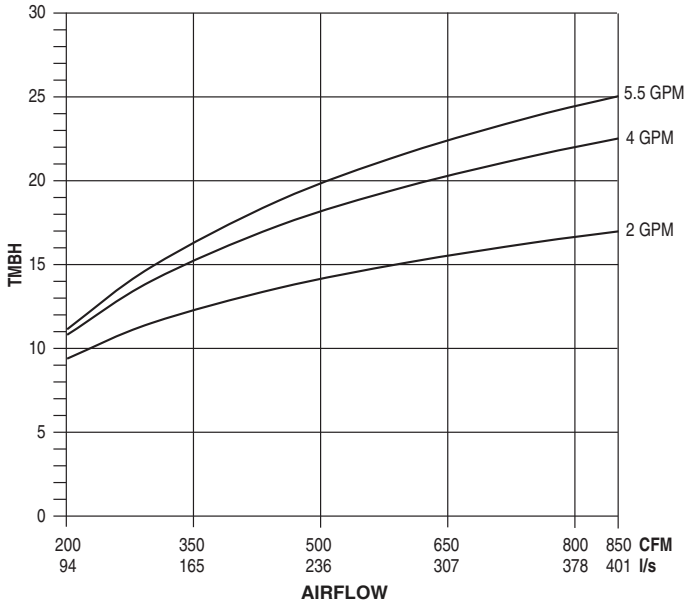
NOTES:

1. Capacity and static pressure will be affected for applications above sea level. To apply correction factors, multiply the coil capacity or fan curve data by the tabulated correction factor.
2. Connections: 3 and 4 Row 7/8" (22.2) O.D. male solder.

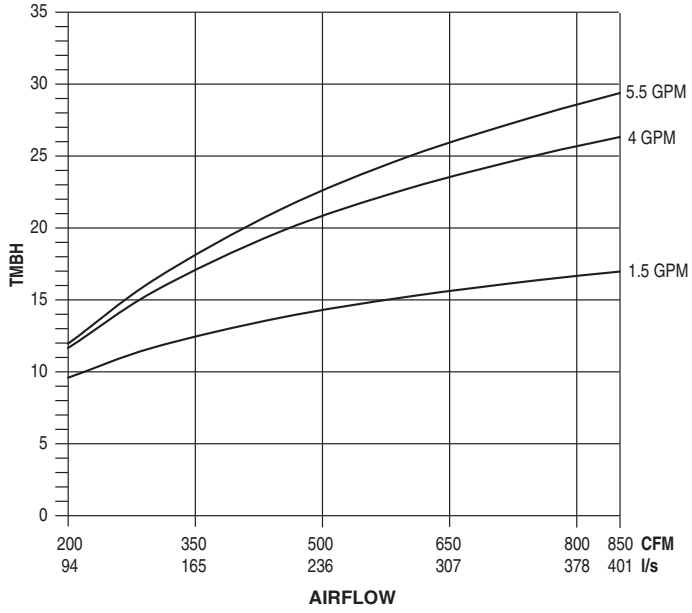
Model Series 40H • Chilled Water Coil Performance Data • Unit Size 8

Data Based on 80°F DB, 67°F WB Entering Air & 45°F Entering Water

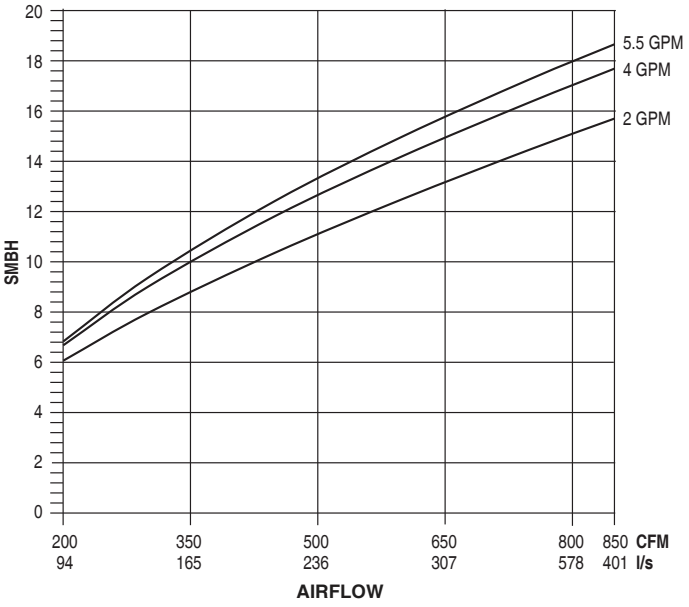
3 Row (Total MBH)



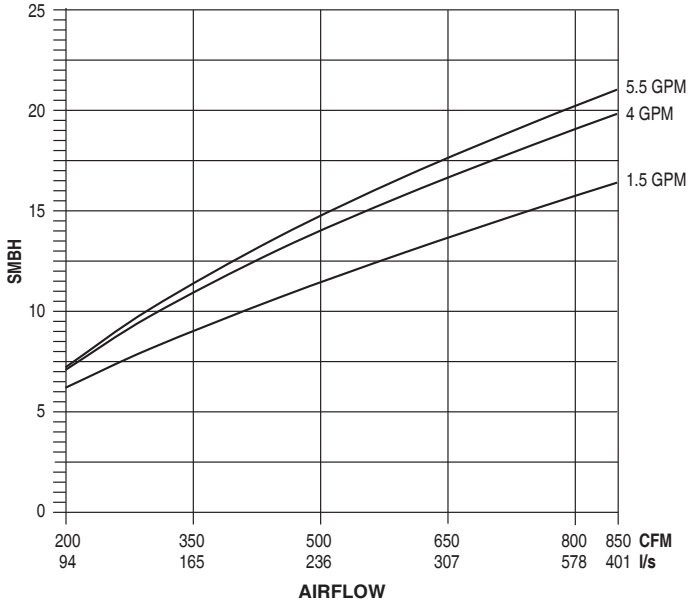
4 Row (Total MBH)



3 Row (Sensible MBH)



4 Row (Sensible MBH)



Altitude Correction Factors

Altitude (ft.)	0	1000	2000	3000	4000	5000	6000	7000
Air Density (lb./cu. ft)	0.075	0.072	0.070	0.067	0.065	0.063	0.060	0.058
Total Capacity	1000	0.988	0.986	0.983	0.981	0.979	0.977	0.975
Sensible Capacity	1000	0.960	0.930	0.900	0.860	0.830	0.800	0.770
Static Pressure	1000	0.960	0.930	0.900	0.860	0.830	0.800	0.770

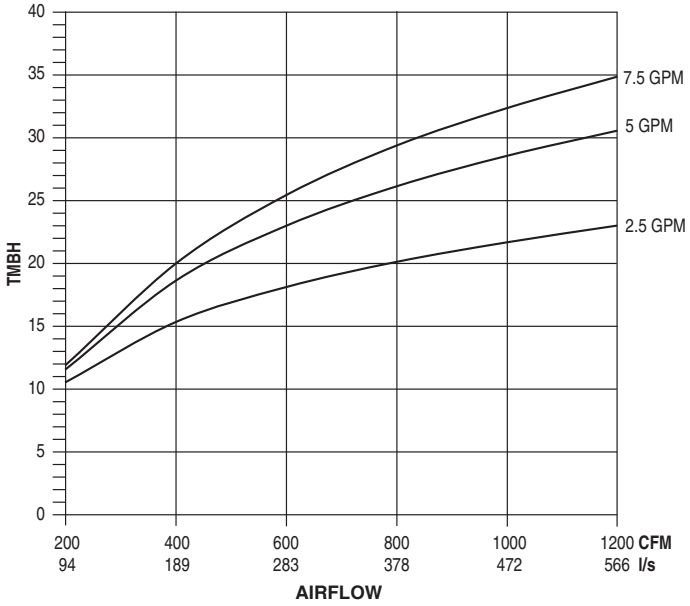
NOTES:

1. Capacity and static pressure will be affected for applications above sea level. To apply correction factors, multiply the coil capacity or fan curve data by the tabulated correction factor.
2. Connections: 3 and 4 Row 7/8" (22.2) O.D. male solder.

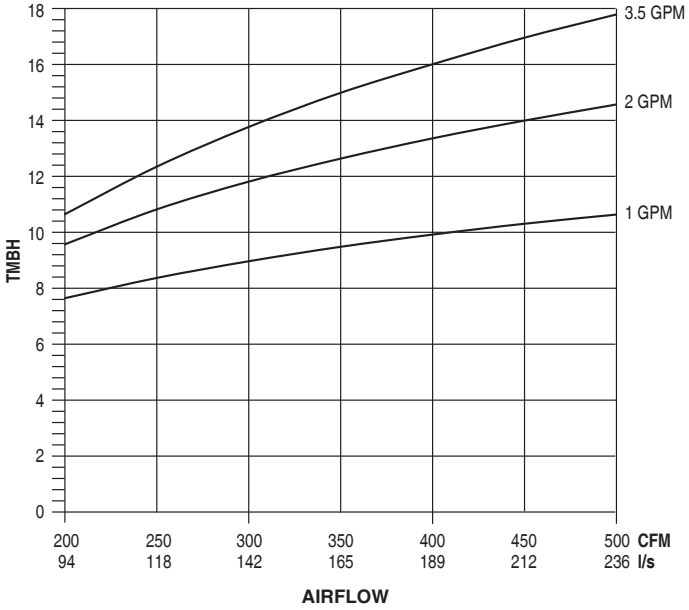
Model Series 40H • Chilled Water Coil Performance Data • Unit Size 12

Data Based on 80°F DB, 67°F WB Entering Air & 45°F Entering Water

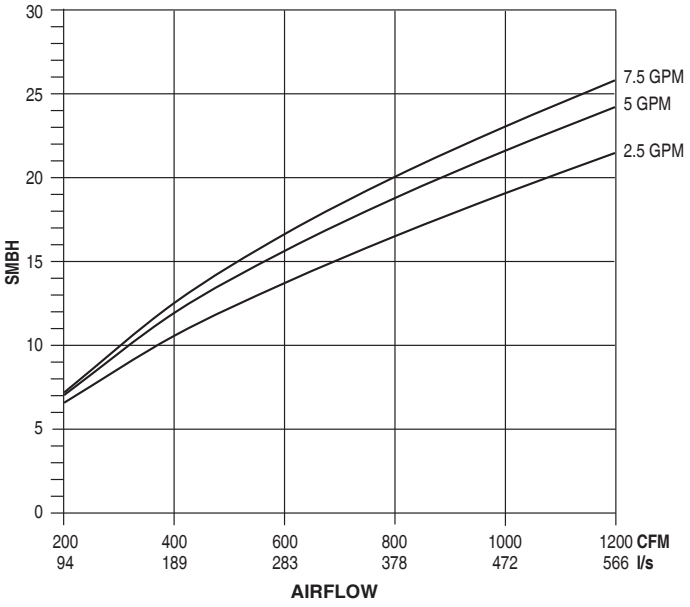
3 Row (Total MBH)



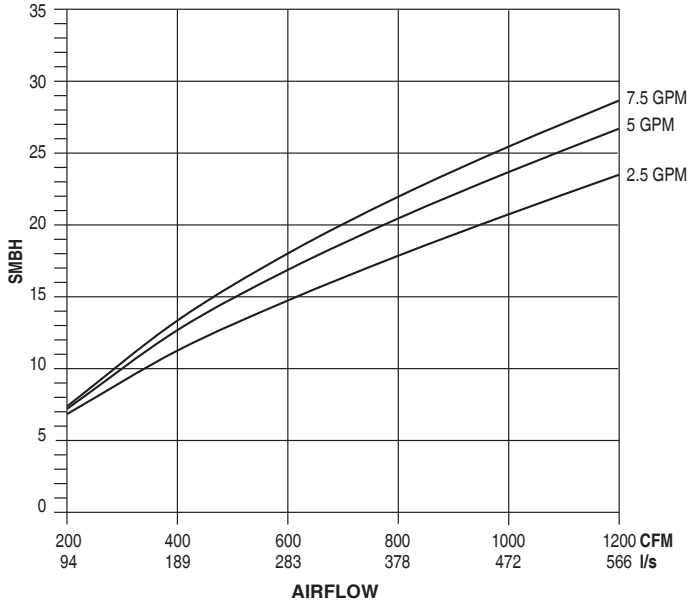
4 Row (Total MBH)



3 Row (Sensible MBH)



4 Row (Sensible MBH)



Altitude Correction Factors

Altitude (ft.)	0	1000	2000	3000	4000	5000	6000	7000
Air Density (lb./cu. ft)	0.075	0.072	0.070	0.067	0.065	0.063	0.060	0.058
Total Capacity	1000	0.988	0.986	0.983	0.981	0.979	0.977	0.975
Sensible Capacity	1000	0.960	0.930	0.900	0.860	0.830	0.800	0.770
Static Pressure	1000	0.960	0.930	0.900	0.860	0.830	0.800	0.770

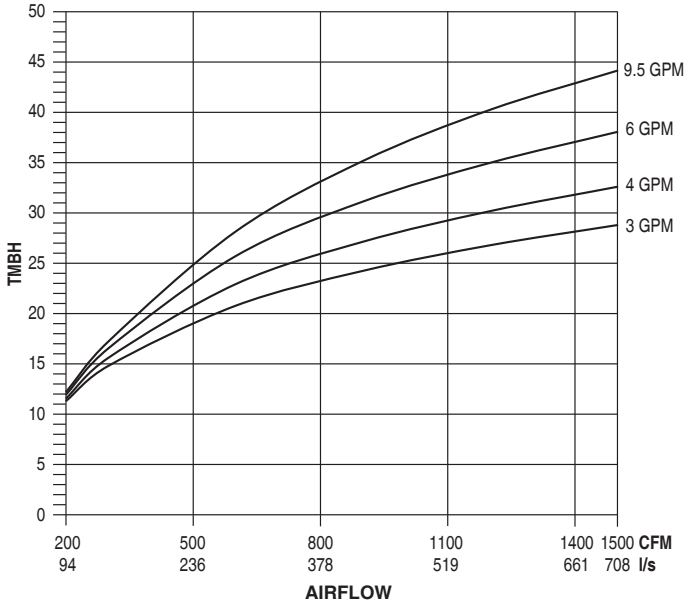
NOTES:

1. Capacity and static pressure will be affected for applications above sea level. To apply correction factors, multiply the coil capacity or fan curve data by the tabulated correction factor.
2. Connections: 3 and 4 Row 7/8" (22.2) O.D. male solder.

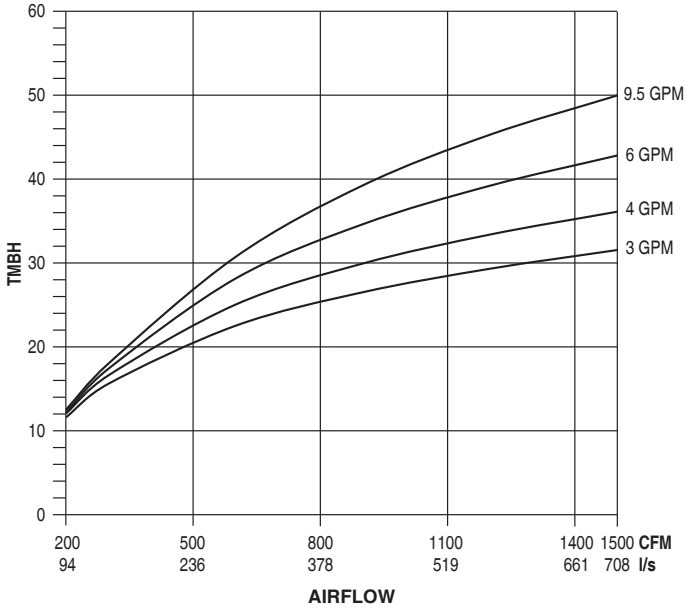
Model Series 40H • Chilled Water Coil Performance Data • Unit Size 15

Data Based on 80°F DB, 67°F WB Entering Air & 45°F Entering Water

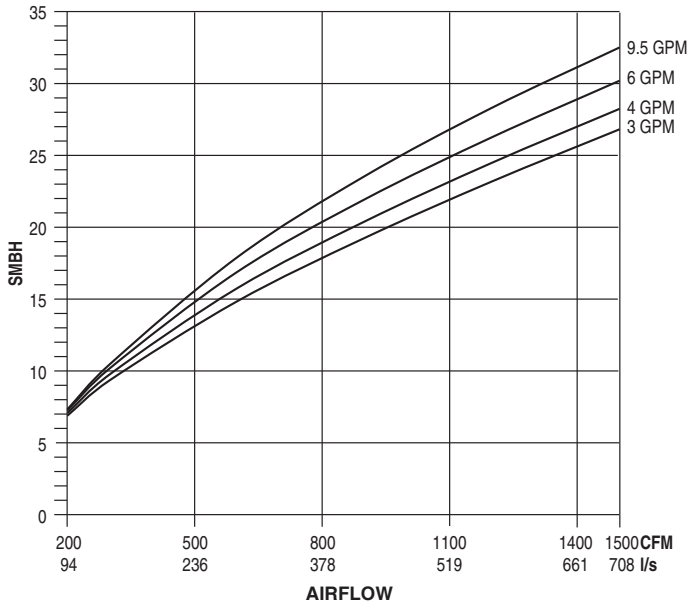
3 Row (Total MBH)



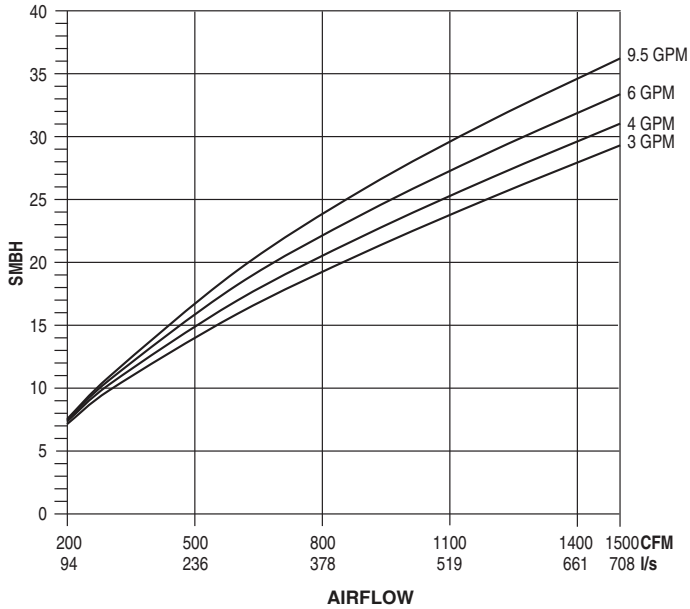
4 Row (Total MBH)



3 Row (Sensible MBH)



4 Row (Sensible MBH)



Altitude Correction Factors

Altitude (ft.)	0	1000	2000	3000	4000	5000	6000	7000
Air Density (lb./cu. ft)	0.075	0.072	0.070	0.067	0.065	0.063	0.060	0.058
Total Capacity	1000	0.988	0.986	0.983	0.981	0.979	0.977	0.975
Sensible Capacity	1000	0.960	0.930	0.900	0.860	0.830	0.800	0.770
Static Pressure	1000	0.960	0.930	0.900	0.860	0.830	0.800	0.770

NOTES:

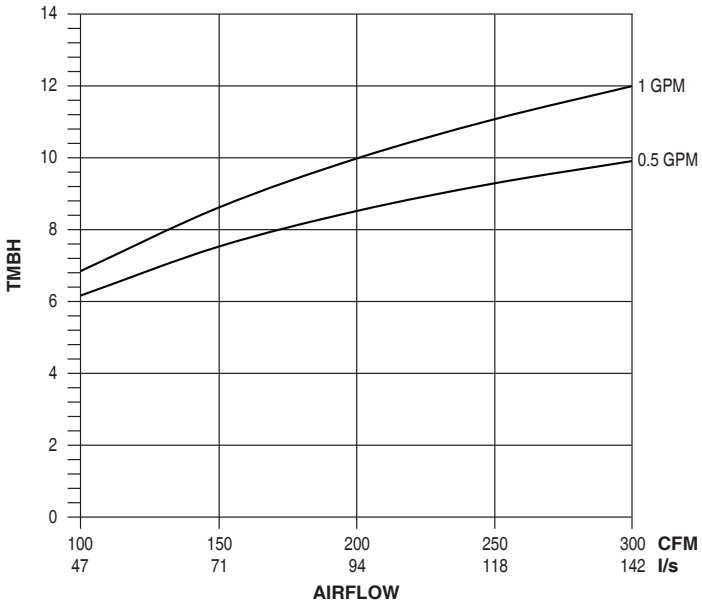
1. Capacity and static pressure will be affected for applications above sea level. To apply correction factors, multiply the coil capacity or fan curve data by the tabulated correction factor.
2. Connections: 3 and 4 Row 7/8" (22.2) O.D. male solder.

Engineered Comfort

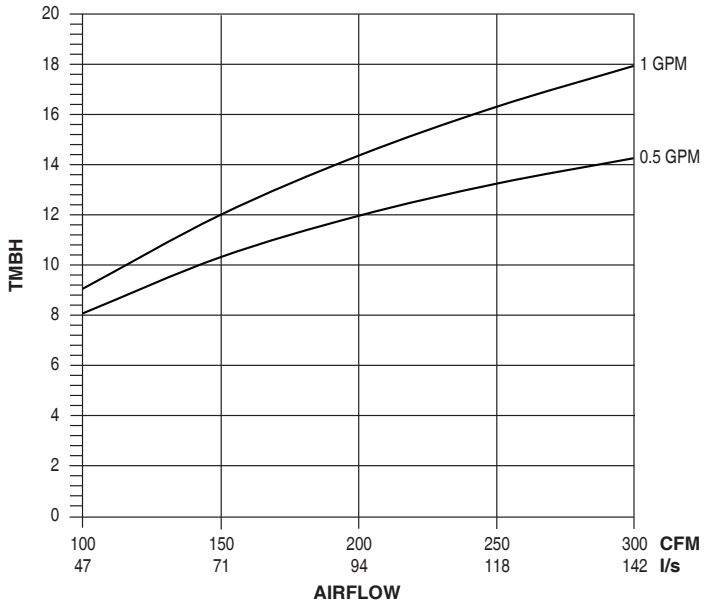
Model Series 40H • Hot Water Coil Performance Data • Unit Size 3

Data Based on 70°F DB Entering Air & 180°F Entering Water

1 Row (Total MBH)

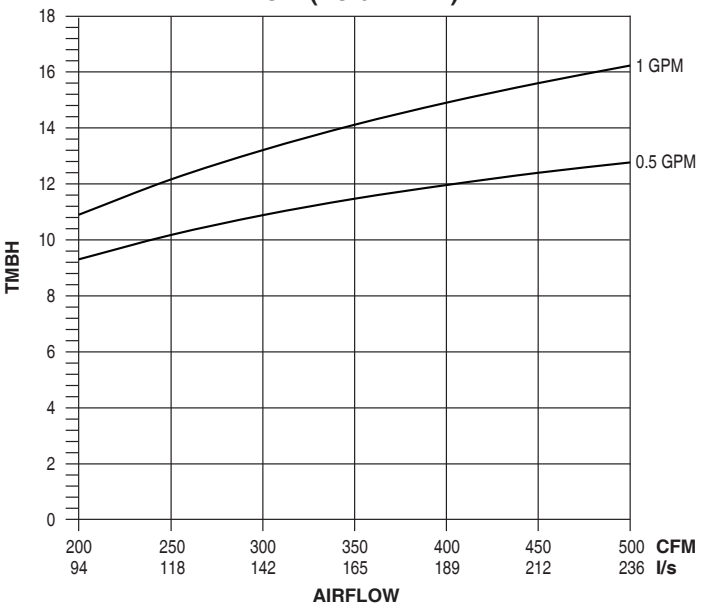


2 Row (Total MBH)

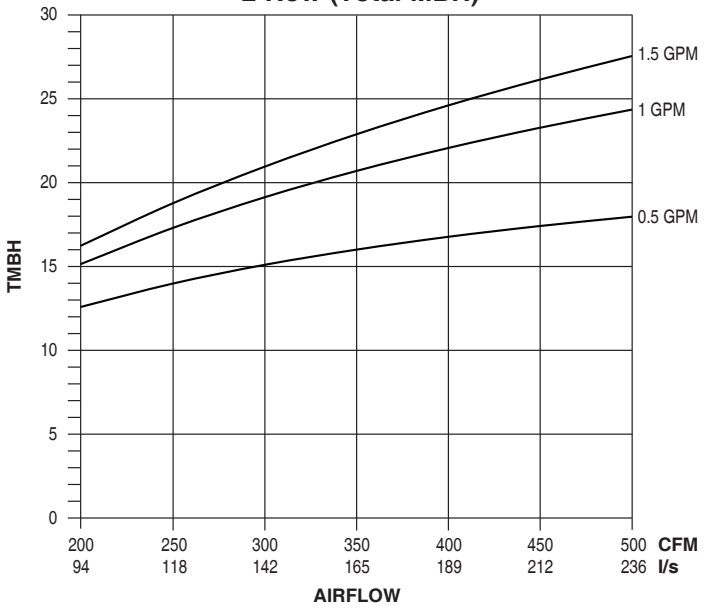


Unit Size 4

1 Row (Total MBH)



2 Row (Total MBH)



NOTES:

1. Capacities are in MBH (kW), ***thousands of Btu per hour (kiloWatts)***.
2. MBH (kW) values are based on a Δt (temperature difference) of 110°F (61°C) between entering air and entering water. For other Δt's; multiply the MBH (kW) values by the factors below.
3. Air Temperature Rise.
   ATR (°F) = 927 x $\frac{MBH}{CFM}$, ATR (°C) = 829 x $\frac{kW}{l/s}$
4. Water Temp. Drop.
   WTD (°F) = 2.04 x $\frac{MBH}{GPM}$, WTD (°C) = .224 x $\frac{kW}{l/s}$
5. Connections: Size 3 and size 4, one and two row 5/8" (16) O.D. male solder.

Altitude Correction Factors:

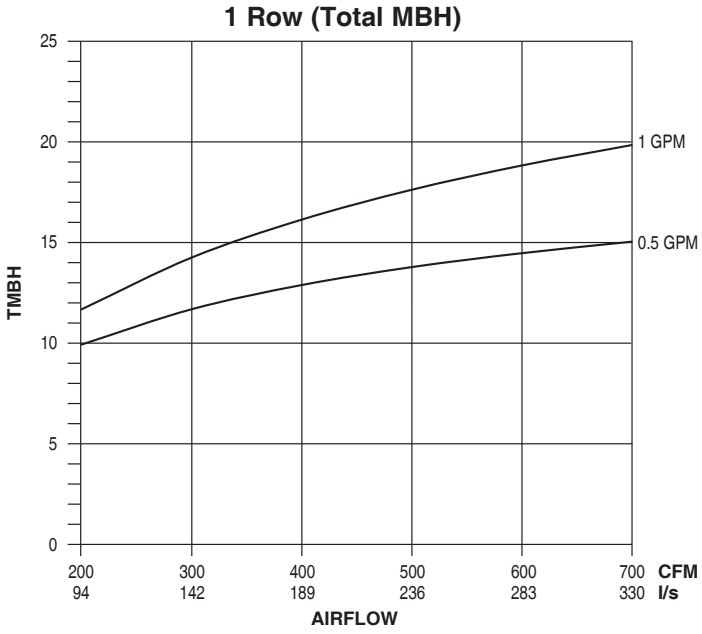
Altitude ft. (m)	Sensible Heat Factor
0 (0)	1.00
2000 (610)	0.94
3000 (914)	0.90
4000 (1219)	0.87
5000 (1524)	0.84
6000 (1829)	0.81
7000 (2134)	0.78

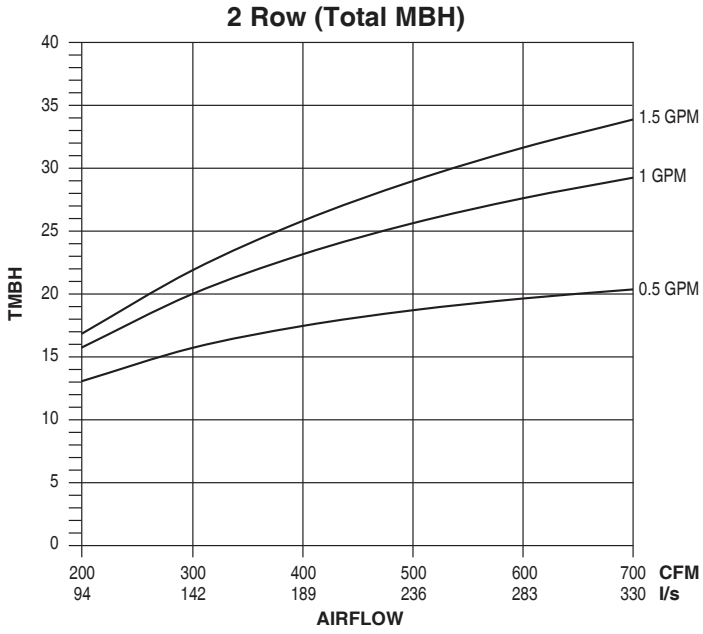
Correction factors at other entering conditions:

Δt °F (°C)	50 (28)	60 (33)	70 (39)	80 (44)	90 (50)	100 (56)	110 (61)	120 (67)	130 (72)	140 (78)	150 (83)
Factor	.455 (.459)	.545 (.541)	.636 (.639)	.727 (.721)	.818 (.820)	.909 (.918)	1.00 (1.00)	1.09 (1.10)	1.18 (1.18)	1.27 (1.28)	1.36 (1.36)

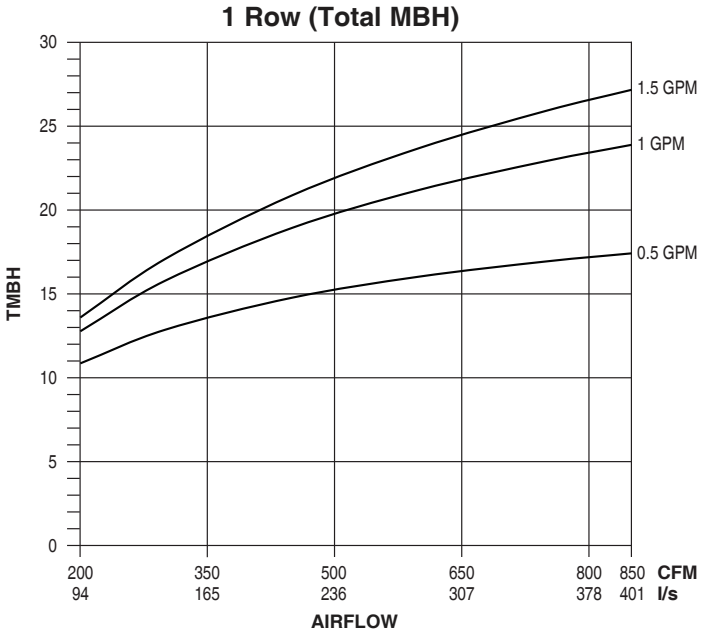
Model Series 40H • Hot Water Coil Performance Data • Unit Size 6

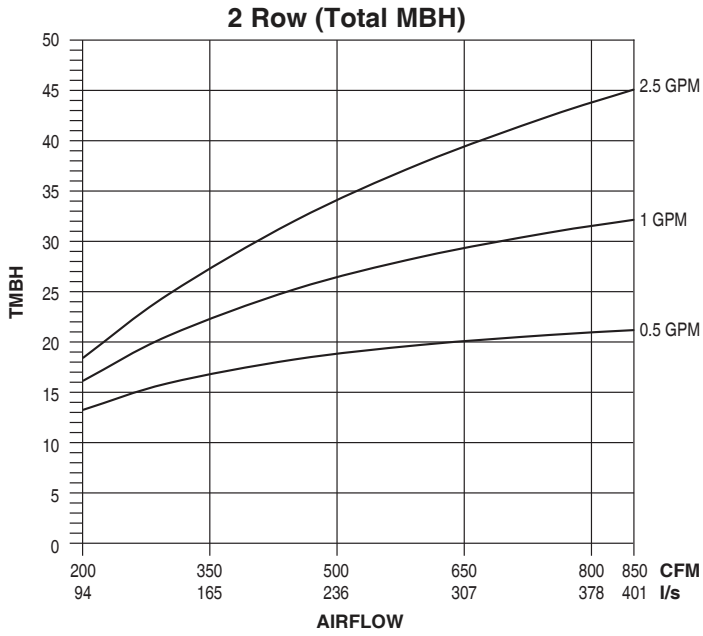
Data Based on 70°F DB Entering Air & 180°F Entering Water





Unit Size 8





NOTES:

1. Capacities are in MBH (kW), ***thousands of Btu per hour (kiloWatts)***.
2. MBH (kW) values are based on a Δt (temperature difference) of 110°F (61°C) between entering air and entering water. For other Δt's; multiply the MBH (kW) values by the factors below.
3. Air Temperature Rise.
   ATR (°F) = 927 x $\frac{MBH}{CFM}$, ATR (°C) = 829 x $\frac{kW}{l/s}$
4. Water Temp. Drop.
   WTD (°F) = 2.04 x $\frac{MBH}{GPM}$, WTD (°C) = .224 x $\frac{kW}{l/s}$
5. Connections: Size 6 and size 8, one and two row 5/8" (16) O.D. male solder.

Altitude Correction Factors:

Altitude ft. (m)	Sensible Heat Factor
0 (0)	1.00
2000 (610)	0.94
3000 (914)	0.90
4000 (1219)	0.87
5000 (1524)	0.84
6000 (1829)	0.81
7000 (2134)	0.78

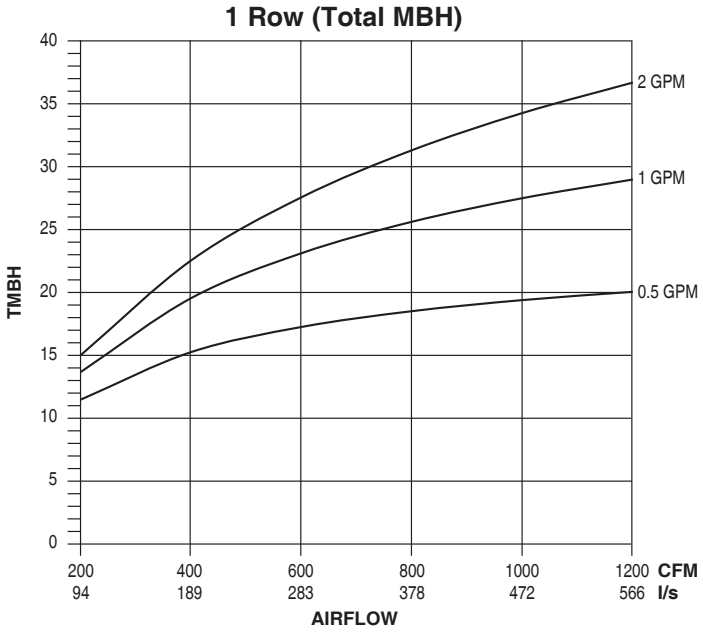
Correction factors at other entering conditions:

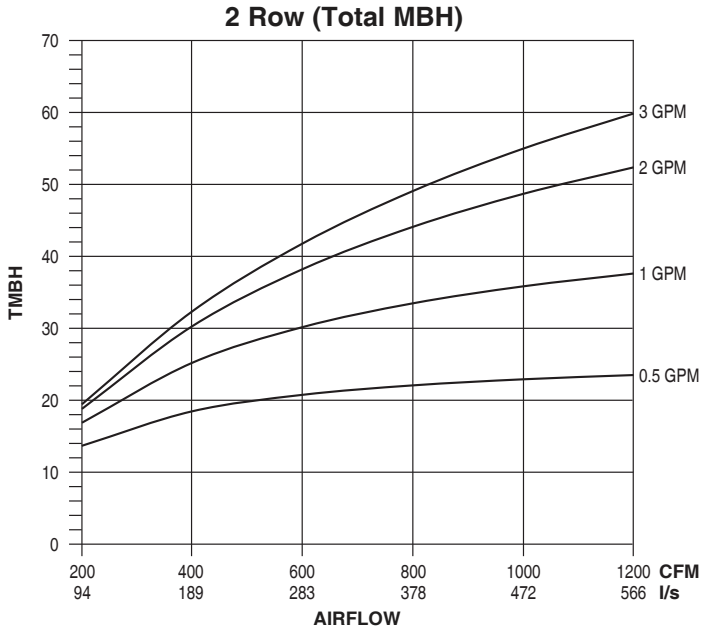
Δt °F (°C)	50 (28)	60 (33)	70 (39)	80 (44)	90 (50)	100 (56)	110 (61)	120 (67)	130 (72)	140 (78)	150 (83)
Factor	.455 (.459)	.545 (.541)	.636 (.639)	.727 (.721)	.818 (.820)	.909 (.918)	1.00 (1.00)	1.09 (1.10)	1.18 (1.18)	1.27 (1.28)	1.36 (1.36)

Engineered Comfort

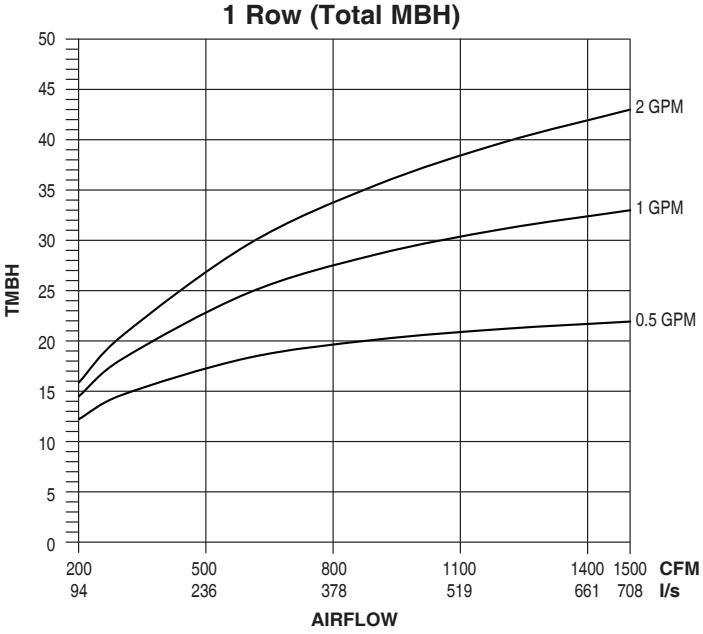
Model Series 40H • Hot Water Coil Performance Data • Unit Size 12

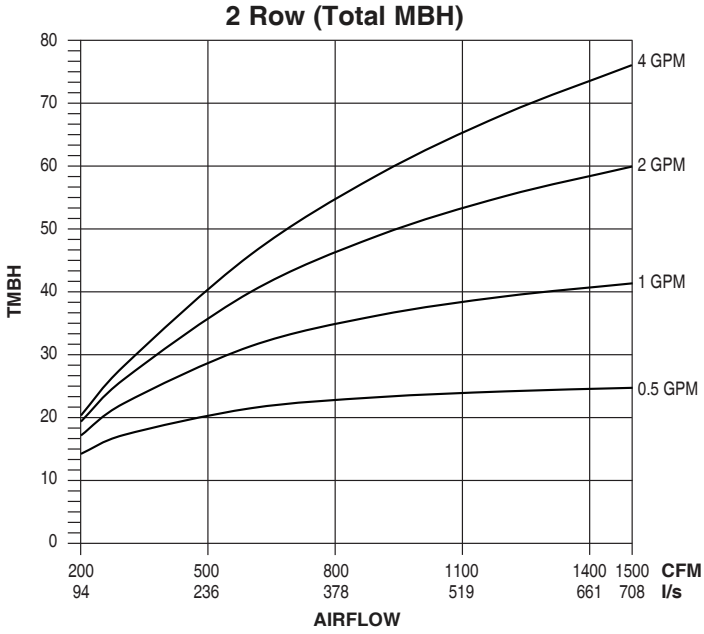
Data Based on 70°F DB Entering Air & 180°F Entering Water





Unit Size 15





NOTES:

1. Capacities are in MBH (kW), ***thousands of Btu per hour (kiloWatts)***.
2. MBH (kW) values are based on a Δt (temperature difference) of 110°F (61°C) between entering air and entering water. For other Δt's; multiply the MBH (kW) values by the factors below.
3. Air Temperature Rise.
   ATR (°F) = 927 x $\frac{MBH}{CFM}$, ATR (°C) = 829 x $\frac{kW}{l/s}$
4. Water Temp. Drop.
   WTD (°F) = 2.04 x $\frac{MBH}{GPM}$, WTD (°C) = .224 x $\frac{kW}{l/s}$
5. Connections: Size 12 and size 15, one and two row 5/8" (16) O.D. male solder.

Altitude Correction Factors:

Altitude ft. (m)	Sensible Heat Factor
0 (0)	1.00
2000 (610)	0.94
3000 (914)	0.90
4000 (1219)	0.87
5000 (1524)	0.84
6000 (1829)	0.81
7000 (2134)	0.78

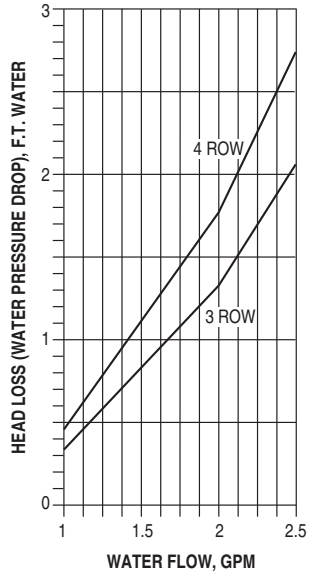
Correction factors at other entering conditions:

Δt °F (°C)	50 (28)	60 (33)	70 (39)	80 (44)	90 (50)	100 (56)	110 (61)	120 (67)	130 (72)	140 (78)	150 (83)
Factor	.455 (.459)	.545 (.541)	.636 (.639)	.727 (.721)	.818 (.820)	.909 (.918)	1.00 (1.00)	1.09 (1.10)	1.18 (1.18)	1.27 (1.28)	1.36 (1.36)

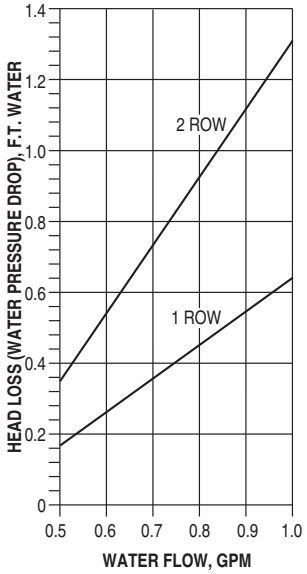
Model series 40H • Coil Performance Data • Pressure Drop

Unit Size 3

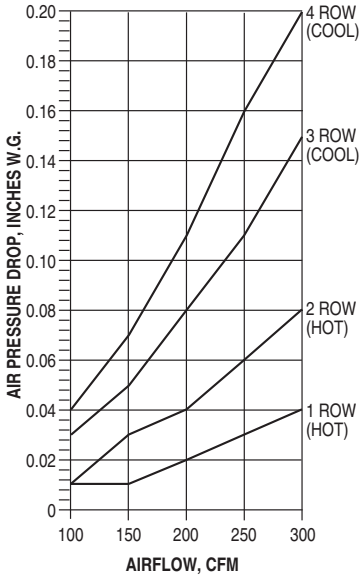
Chilled Water Pressure Drop



Hot Water Pressure Drop

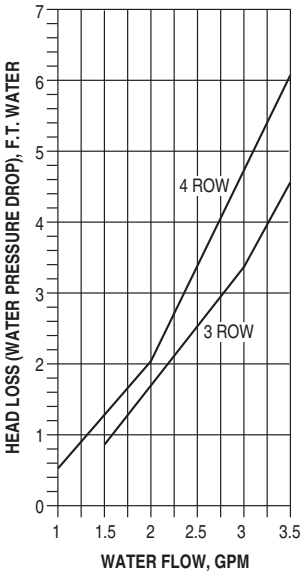


Chilled and Hot Water Air Pressure Drop

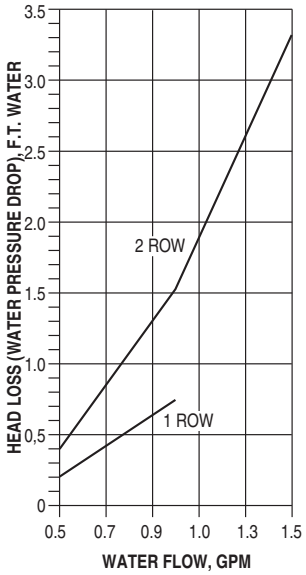


Unit Size 4

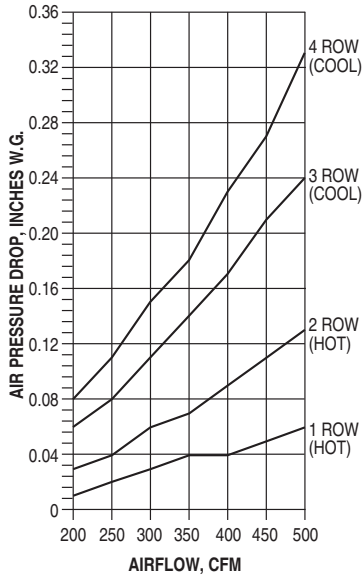
Chilled Water Pressure Drop



Hot Water Pressure Drop



Chilled and Hot Water Air Pressure Drop



Metric Conversion Factors:

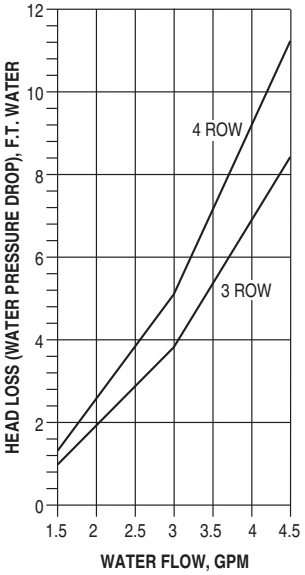
1. Water Flow (liters per second)
   l/s = gpm x 0.6309
2. Water Head Loss (kilopascals):
   kPa = ft. w.g. x 2.9837
3. Airflow Volume (liters per second)
   l/s = CFM x 0.472
4. Air Pressure Drop (Pascals):
   Pa = in. w.g. x 248.6
5. Heat (kilowatts):
   kW = Mbh x 0.293
6. Air Temperature Rise.
   $ATR = 927 \times \frac{Mbh}{CFM}$
7. Water Temp. Drop.
   $WTD = 2.04 \times \frac{Mbh}{GPM}$

Engineered Comfort

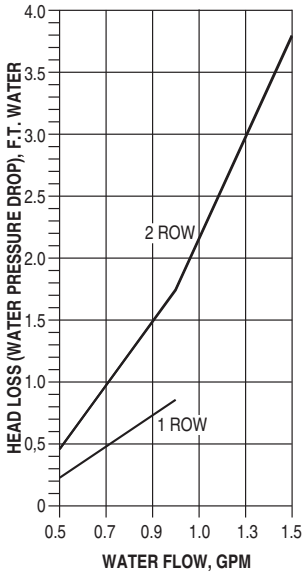
Model series 40H • Coil Performance Data • Pressure Drop

Unit Size 6

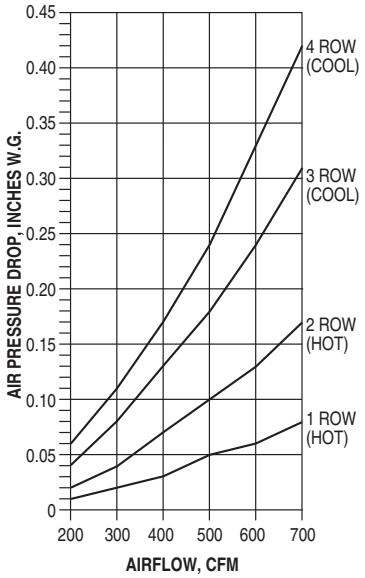
Chilled Water Pressure Drop



Hot Water Pressure Drop

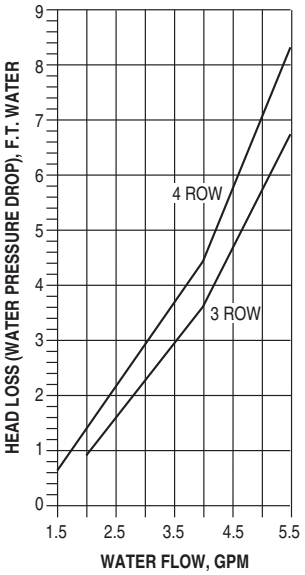


Chilled and Hot Water Air Pressure Drop

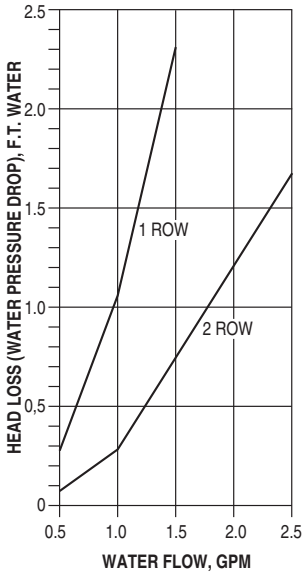


Unit Size 8

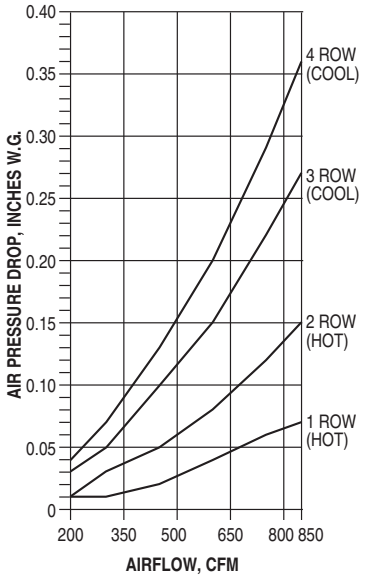
Chilled Water Pressure Drop



Hot Water Pressure Drop



Chilled and Hot Water Air Pressure Drop



Metric Conversion Factors:

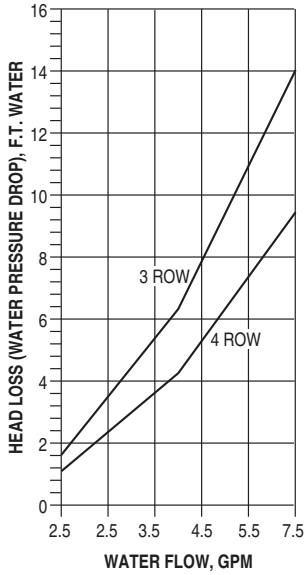
1. Water Flow (liters per second)
   l/s = gpm x 0.6309
2. Water Head Loss (kilopascals):
   kPa = ft. w.g. x 2.9837
3. Airflow Volume (liters per second)
   l/s = CFM x 0.472
4. Air Pressure Drop (Pascals):
   Pa = in. w.g. x 248.6
5. Heat (kilowatts):
   kW = Mbh x 0.293
6. Air Temperature Rise.
   $ATR = 927 \times \frac{Mbh}{CFM}$
7. Water Temp. Drop.
   $WTD = 2.04 \times \frac{Mbh}{GPM}$

Engineered Comfort

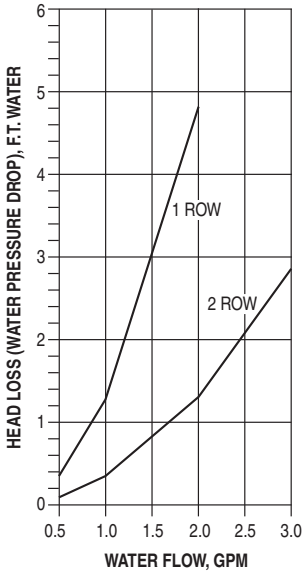
Model series 40H • Coil Performance Data • Pressure Drop

Unit Size 12

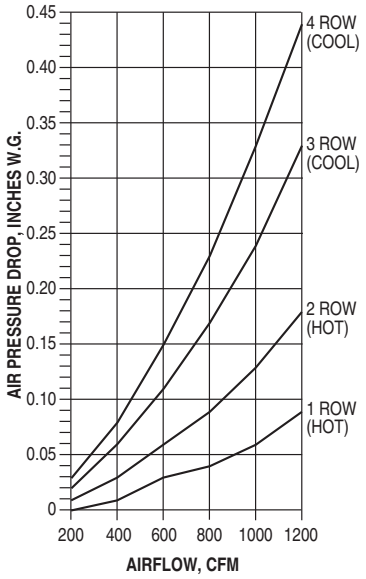
Chilled Water Pressure Drop



Hot Water Pressure Drop

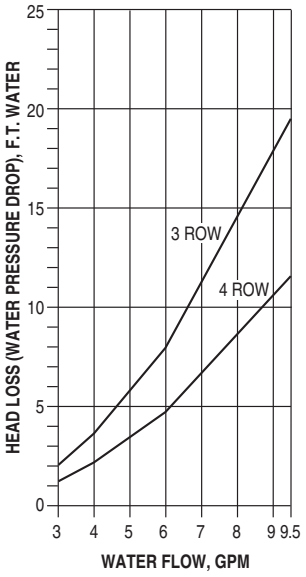


Chilled and Hot Water Air Pressure Drop

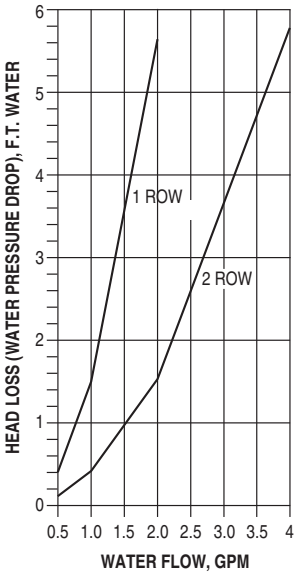


Unit Size 15

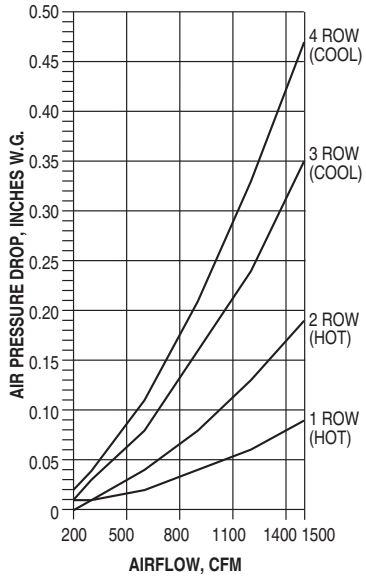
Chilled Water Pressure Drop



Hot Water Pressure Drop



Chilled and Hot Water Air Pressure Drop



Metric Conversion Factors:

1. Water Flow (liters per second)
   l/s = gpm x 0.6309
2. Water Head Loss (kilopascals):
   kPa = ft. w.g. x 2.9837
3. Airflow Volume (liters per second)
   l/s = CFM x 0.472
4. Air Pressure Drop (Pascals):
   Pa = in. w.g. x 248.6
5. Heat (kilowatts):
   kW = Mbh x 0.293
6. Air Temperature Rise.
   $ATR = 927 \times \frac{Mbh}{CFM}$
7. Water Temp. Drop.
   $WTD = 2.04 \times \frac{Mbh}{GPM}$

Model Series 40H • Suggested Specifications

1. General

   Furnish and install Engineered Comfort Model 40H Series Low Profile Horizontal Fan Coil Units where indicated on the plans and in the specifications.

2. Constriction

   a. All units shall be Direct Drive – Blow Through configuration and completely factory assembled, tested and shipped as one piece. All units shall be capable of meeting or exceeding the scheduled capacities for cooling, heating and air delivery. All unit dimensions, for each model and size, shall be considered maximums. Units shall be UL or ETL, listed in compliance with UL/ANSI Standard, and be certified as complying with the latest edition of AHRI Standard 440 and meets the requirements of NFPA 90A and UL 181.

   b. All unit chassis shall be fabricated of heavy gauge galvanized steel panels able to meet 125 hour salt spray test per ASTM B-117. 18 ga. (1.31) galvanized steel channel frame. All panels shall be insulated with 1/2" (13) thick closed cell Fiber-free/ foam and rated for air velocity of 6000 FPM Insulation must meet all requirements of ASTM C1071 (including C665), UL 181 for erosion, and carry a 25/50 rating for flame spread/smoke developed per ASTM E-84, UL 723 and NFPA 90A.

   c. Unit cabinet shall have side and bottom full size access panels (if applicable) on 40H for ease of maintenance and service and motor blower removal. Access panels shall be attached to casing with screws.

   Optional

   - Aluminum foil-faced insulation (steri-liner), meets ASTM Standards C-665 and C-1136 for biological growth in insulation. All exposed edges shall be sealed to prevent any fibers from reaching the air stream.
   - Close cell fiber-free liner. Insulation shall conform to UL 181 for erosion and NFPA 90A for fire, smoke and melting, and comply with a 25/50 Flame Spread and Smoke Developed Index per ASTM E-84 or UL 723. Additionally, insulation shall comply with Antimicrobial Performance Rating of 0, no observed growth, per ASTM G-21.

   d. Unit shall be blow through type with fan dynamically balanced, forwardly curved; DWDI centrifugal type constructed of 18 (1.31) gauge zinc coated galvanized steel for corrosion resistance. The fan assembly shall be removable for servicing the motor and blower at, or away from the unit.

5. Motor

   Motor shall be direct drive, isolated from blower and fan housing in two locations with rubber isolators to eliminate any motor vibration being transmitted to the fan housing and duct. Motors shall be high efficiency, permanently lubricated sleeve bearing. Motor wires shall be brought into external hinged door starter- control enclosure to facilitate wiring and service. Motors shall of the Permanent Split Capacitor type with UL and CSA listed automatic reset thermal overload protection and three separate horsepower taps.

6. Sound

   Units shall have discharge and radiated sound power levels published and tested in accordance with AHRI Standard 880.

7. Coils

   All water coils shall be AHRI 410 certified and tagged with an AHRI 410 label. All coils shall be pressure tested under water at 1.5 times the working pressure classification indicated in the Contract Documents, but the test pressure in no case shall be less than 300 psig. Coils shall have 1/2" (13) O.D. seamless copper tubes, and collared and corrugated aluminum fins. Tube wall thickness of 0.016 to be standard. Coil frames shall be constructed of minimum G-90 galvanized steel. Water velocity in the tubes shall not exceed eight (8) feet per second and the coil face velocity shall not exceed 500 fpm.

   For 4 pipe system a separate heating coil shall be furnished in the reheat position as standard.

   Optional

   - For 4 pipe system, a separate heating coil shall be furnished in the preheat position.
   - Coil tube wall thickness shall be 0.025 in
   - All coils without piping packages shall be provided with a manual air vent fitting to reduce potential air locks within coil.
   - All coils shall be provided with an auto air vent fitting to allow for coil venting.

8. Primary condensate drain pans shall be heavy gauge galvanized steel, and extend under the entire cooling coil. Drain pans shall be of one-piece construction, have at least 1" (25) height side and be positively sloped for condensate removal.

   The drain pan shall be externally insulated with minimum 3/8" thick fire retardant, closed cell foam insulation. The insulation shall carry no more than a 25/50 Flame Spread and Smoke Developed Rating per ASTM E-84 and UL 723 and an Antimicrobial Performance Rating of "0", no observed growth, per ASTM G-21.

   Optional

   - Provide a primary drain pan constructed entirely of heavy gauge stainless steel for superior corrosion resistance. Stainless steel drain pans shall be externally insulated and meet or exceed the requirements stated above.
   - Provide a secondary drain connection on the primary drain pan for condensate overflow.
   - Provide a condensate overflow switch in the primary drain pan for condensate overflow.

9. Standard units can be ordered without filters (40HF excluded).

   Optional Filter:

   - Unit to be furnished with a minimum 1" (25) nominal glass fiber throwaway filter. Filters shall be tight fitting to prevent air bypass.
   - Provide unit with 1" (25) or 2" (51) pleated filters rated at 25-30% efficiency and MERV 8 based on ASHRAE 52.2

10. Electrical

    Units shall be furnished with a hinged door starter-control enclosure and wired single point power connection. All power and control wiring shall conform to National Electric Code Standards. Within the control enclosure it shall include all required devices, including but not limited to, service switch, relay, control power transformers and control packages, low voltage remote shutdown relays, etc.

    Optional

    - 4" x 4" (102 x 102) junction box or controls enclosure (field remote mountable).

11. Electric heat

    a. Furnish an electric resistance heating assembly as an integral part of the fan coil unit, with the heating capacity, voltage and kilowatts scheduled. The heater assembly shall be designed and rated for installation on the fan coil unit without the use of duct extensions or transitions, and be located in the unit as to not expose the fan assembly to excessive leaving air temperatures that could affect motor performance.

    b. The heater and unit assembly shall be listed for zero clearance and meet all NEC requirements, and be ETL listed with the unit as an assembly in compliance with UL/ANSI Standard. A NEMA 1 enclosure with hinges shall be placed at the side of the fan coil to provide easy access. All motor wiring and heater terminates in the enclosure for single point electrical connection.

    c. All heating elements shall be open coil type high grade Class A 80/20 nickel/chrome wire mounted in ceramic insulators and located in an insulated heavy gauge galvanized steel housing. All elements shall terminate in a machine staked stainless steel terminal secured with stainless steel hardware for corrosion resistance. The element support brackets shall be spaced no greater than 3-1/2" (90) on center. All internal wiring shall be rated for 221°F (105°C) minimum. All heaters shall include over temperature protection consisting of an automatic reset primary

Model Series 40H • Suggested Specifications (continued)

thermal limit and back up secondary thermal limit. All heaters shall be single stage unless noted otherwise on the plans. All units with electric heat shall be provided with an incoming line power distribution block, designated to accept single point power wiring capable of carrying 125% of the calculated load current.

d. Automatic reset thermal cutouts and an airflow switch shall be furnished for heater protection. A Class 2 transformer shall be provided for low voltage control. The airflow switch shall prove adequate fan airflow before the electric heater can be energized. All devices shall be serviceable through the hinged enclosure and without removing heating element from the unit.

Optional

- Toggle or Door Interlocking Disconnect Switch.
- Power circuit fusing.
- Quiet Type Contactors.
- Dust Tight Control Enclosure.

12. Piping – Valve Packages.

Optional

- Provide a factory assembled valve piping package (ships loose).

Engineered Comfort

NOTES: