

Fan Coils and Blower Coils

Product Overview

Fan Coils and Blower Coils

price[®]

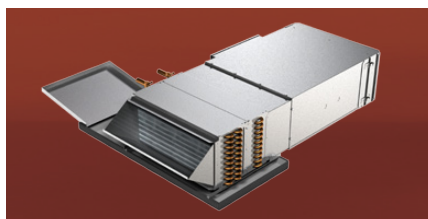
Fan Coils



Vertical Concealed FCVC Series

Factory assembled, vertical blow-through fan coils designed for concealed ducted installations furred into walls or millwork. Suitable for projects such as hotels, motels, condominiums and general commercial applications.

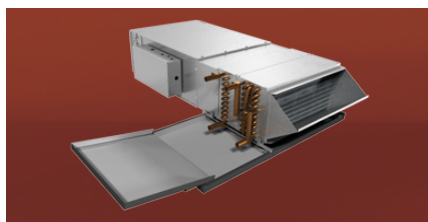
High Performance Fan Coils



Horizontal High Performance FCHG Series

The FCHG is a factory assembled, horizontal blow-through high performance fan coil designed for concealed installations above a ceiling. The low noise, high capacity and high pressure capability make it a good choice for a variety of applications.

price **GENESIS**

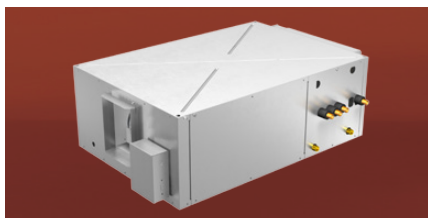


Horizontal High Performance Quiet FCHGQ Series

Factory assembled, horizontal blow-through fan coils with integral silencer designed for concealed installations above ceilings for noise-sensitive applications. Suitable for projects such as hotels, motels, condominiums, hospitals and general commercial applications.

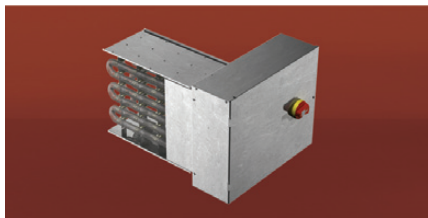
price **GENESIS**

Blower Coils



Blower Coil Horizontal BCH Series

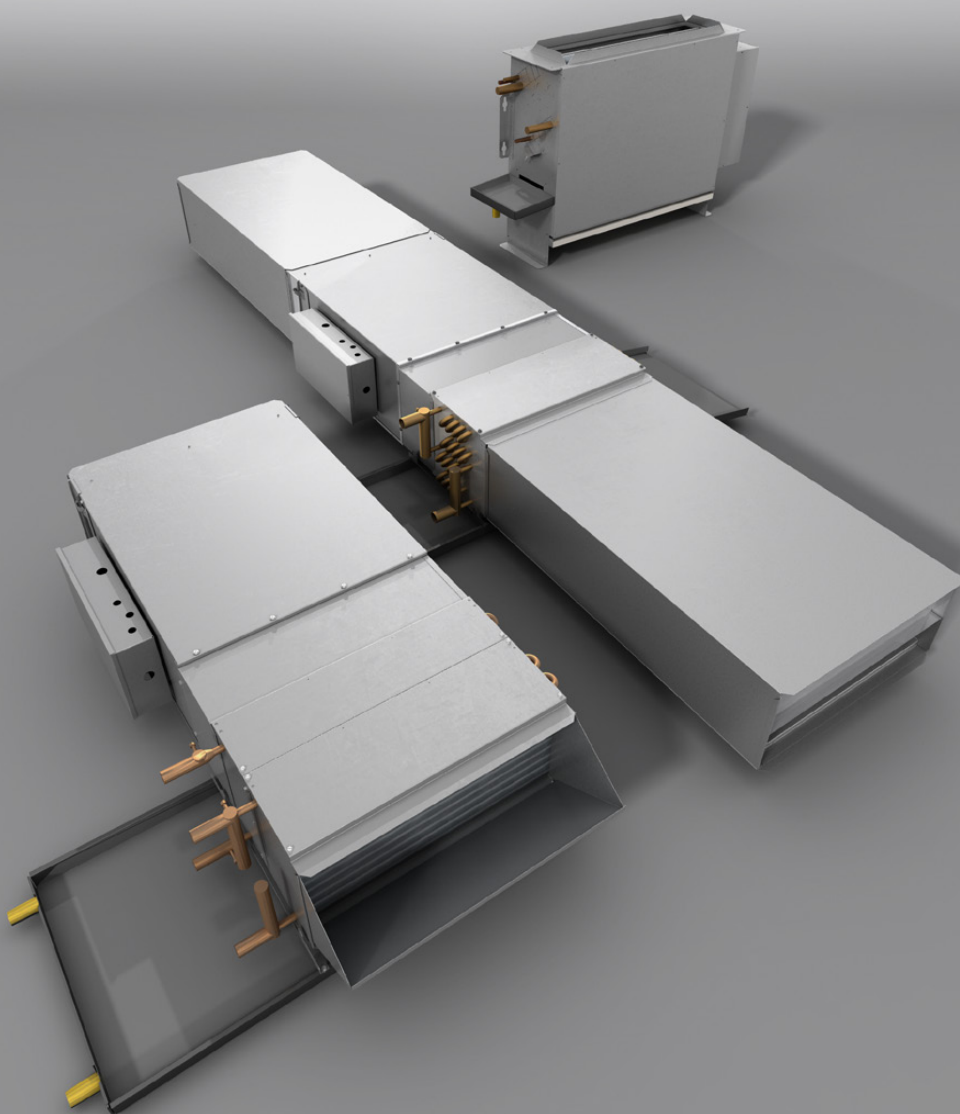
Price horizontal blower coils are an ultra low profile solution to a variety of ducted applications that require flexibility between the traditional fan coil unit and a central station air handling unit. With flows ranging from 600 to 4400 cfm, the units provide comfort cooling and heating with capacities between 1.6 and 15 tons and total static pressures up to 3.5 in. w.g.



Electric Coils

Electric heat coils are an available accessory for use with Price blower coil units. Electric heating coils are factory-mounted at the discharge of the blower coil units.

SECTION F1



Fan Coils

Overview

Benefits of Using Fan Coil Units

Fan coils have been in use for decades as a means of providing heating and cooling to individual zones. The major advantages of using fan coil units are that they allow for local control of individual zones, reduce the amount of cross-contamination between zones and allow for hydronic heating and cooling.

Hydronic systems are far more efficient than all air systems because water piping takes up a fraction of the space of ductwork. Fan coils can be selected to handle a zone's sensible cooling load, significantly reducing the air flow requirements of the main air handler needed for ventilation and latent loads only. This air flow reduction results in a smaller HVAC system which translates into energy savings. A smaller HVAC footprint and duct system can also reduce floor heights or increase leasable space. During unoccupied hours the primary air system can be shut off to save energy while the fan coils maintain space temperature.

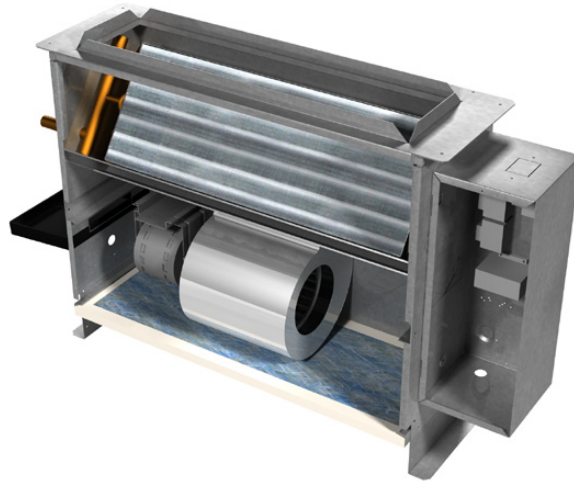
Construction

- Compact units reduced the footprint of the HVAC system and increase leasable space
- Heavy duty zinc-coated steel casings
- Unit casing's are internally lined with dual density fiberglass insulation. The insulation's high density skin provides erosion resistance while effectively attenuating noise. Insulation meets requirements of UL181 and NFPA-90A.
- Closed cell foam and foil lined fiberglass insulation are optional.
- Removable access panels provide access to the interior of the unit for cleaning, inspection and service.
- Three speed PSC motors allow for reduced energy consumption.
- ECM motors allow for reductions in energy consumption and sound along with greater control of the airflow

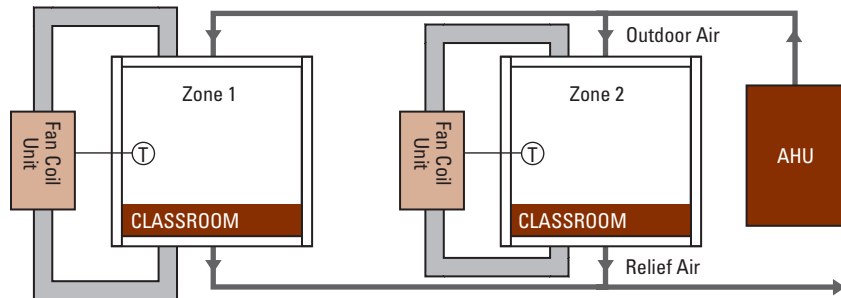
Performance

- Unit performance is AHRI certified providing reassurance that design goals will be met
- Cataloged sound performance data is the result of Price laboratory testing done in accordance with industry test standards.

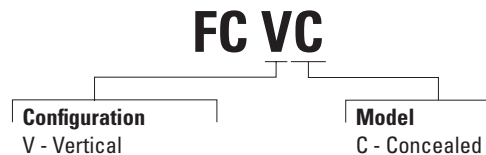
Fan Coil Unit



Typical Fan Coil Layout



Product Key



Quality Assurance

- Each Price Fan Coil unit receives a full operational check before shipment and arrives factory configured in accordance with project specifications. This means costly labor and setup delays are avoided.
- Units are ETL listed to meet UL1995 and CSA No. 236.

Water Coil Selection Guide

Fan coils are sized to handle the heating or cooling load for an individual room or zone. This load may be purely sensible, or may also have a latent portion. The required load should be calculated based on the room occupancy, geographical location and building construction.

The Price Fan Coil Selection program, All-In-One, can be used to calculate fan coil performance ratings. Using room load, entering air conditions, entering water temperature and desired water temperature rise or flow rate, select the fan coil, coil

rows and circuits to meet the desired performance. When varying the number of coil rows and circuits to achieve the required Performance, it is important to understand that there are pros and cons to changing each variable, as shown below. When using automatic flow controls, select coils with a flow rate that is available with the automatic flow control specified.

The air flow of the unit may also be adjusted to achieve the required capacity, but care should be taken when doing this. Increasing the air flow of the unit will increase both

the generated noise and energy use of the unit. Increasing the air flow will also affect the air distribution system and could lead to uncomfortable drafts in the occupied space. In all cases, the velocity across the coil should not exceed 550 feet per minute or condensate may carry over from the coil into the downstream ductwork. If a higher air flow is necessary to meet the required capacity, a larger unit size should be considered to keep generated noise and energy use to a minimum.

	Heat Transfer	Air PD	Water PD (for a given flow rate)	Cost
Increase # of Rows	↑	↑	↑	↑
Increase # of Circuits	↓		↓	

Sound Selection Procedure

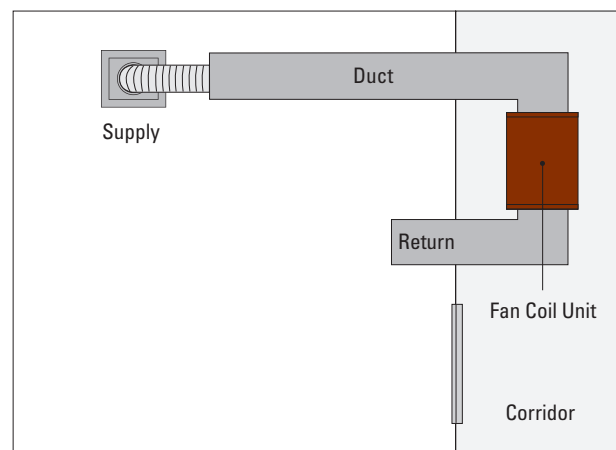
The laboratory attained sound power levels for each unit at various fan flows are presented in the Acoustical Data tables. This data is derived in accordance with ANSI/AHRI Standard 350 and shows the "raw" sound power levels of the fan coil in the 2nd through 8th octave bands with NO attenuation allowances.

The sound power levels include combined radiated and discharge noise for units operated at free-delivery conditions without enclosures or ductwork. The sound power levels are useful for comparison purposes between unit size and manufacturer but have limited value in determining the room noise level. Contact our Application Engineering group for assistance when this is required.

Generally the fan coil unit should be selected at medium speed to reduce the noise level and provide future air flow adjustment flexibility.

To reduce noise from furred in units, the fan coil should be mounted above a closet or adjacent space and ducted to a diffuser with a short run of lined duct. Acoustically lined flex on the diffuser connection will further reduce discharge sound from entering the space. A short section of lined duct on the return will also be beneficial for inlet sound reduction. A ceiling with high transmission loss will help reduce radiated sound.

Noise Reduction Design Considerations





FCVC Series

VERTICAL FAN COILS

The FCVC is designed for concealed, wall mounted installations with flexible heating/ cooling loads and minimal duct requirements. With a variety of options, such as fiber free insulation, these units are durable, easily accessible, energy efficient, and quiet.

Designed with the most highly demanded features & performance characteristics requested by engineers



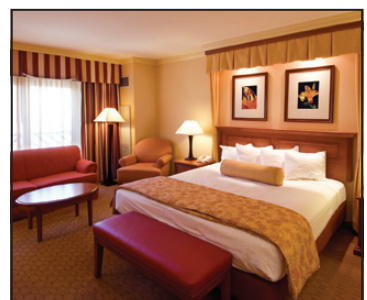
Optional PSC motor speed controller



Heating and cooling coils, 1 to 4 rows in 2 and 4 pipe configurations



Removable fan and motor deck for easy servicing



Ideal for hotels, motels, condominiums and commercial applications

Fan Coils

FCVC Series

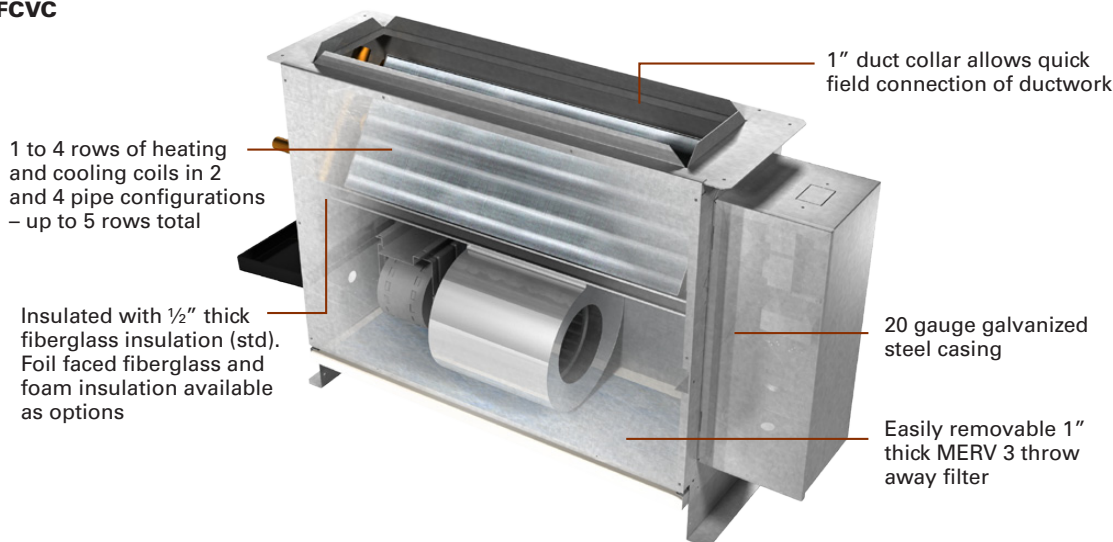
Vertical

price

Features



Model FCVC



Model

Vertical Concealed

FCVC

Factory assembled, vertical blow-through fan coils designed for concealed ducted installations furred into walls. Suitable for projects such as hotels, condominiums, nursing homes and general commercial applications.

Standard Features:

- AHRI 440 certified and labelled.
- ETL-Listed. Constructed in compliance with ANSI/UL Standard 1995.
- Constructed from 20 gauge galvanized steel.
- Insulated with 1/2 in. thick, minimum 1 1/2 lb density fiberglass insulation, which meets NFPA 90A and UL 181.
- 1 in. discharge flange for duct connection.
- Water coils with copper tubes and aluminum fins certified in accordance with the current edition of AHRI Standard 410.
- Coil manual air vent included.
- Three speed permanent split capacitor (PSC) motor.
- 115, 208/240, 277V motors available.
- Double Width double Inlet (DWDI) direct driven blowers.
- Single point power connection.
- Single wall galvanized steel drain pan externally insulated with foam.
- 1 in. thick MERV 3 throw-away filter.

Vertical Concealed (FCVC)



Optional Features

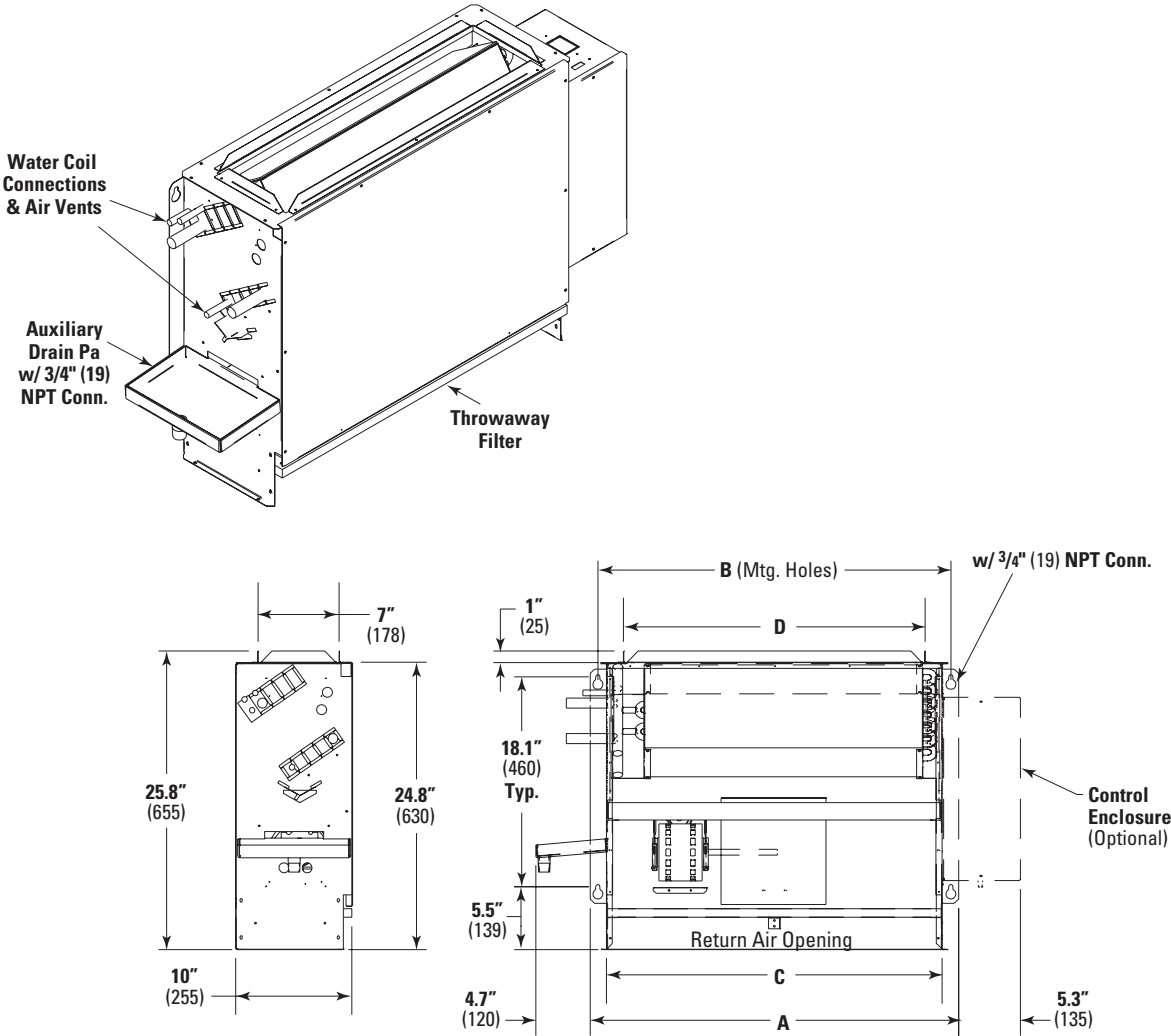
- 1 through 4 row coils available for 2 pipe systems.
- 3 and 4 rows cooling coils with 1 or 2 row heating coils for 4 pipe system applications (reheat available, 5 rows max).
- LH or RH entry pipe connections.
- Coil circuiting options to optimize performance.
- Quick connect motor wire harness.
- Factory mounted disconnect switch and motor fusing.
- Energy efficient ECMs with 3 speed or full modulating control.

- Drain pan options:
 - Single wall drain pan manufactured in 20 gauge 304 Stainless Steel, externally insulated
 - Drain pan safety overflow connection (secondary drain).
- Insulation options:
 - 5/8 in. thick Foil Faced fiberglass FB
 - 1/2 in. thick Fiber Free Foam, FF50
- 3 speed fan relay board

Dimensional Data

FAN COILS & BLOWER COILS

Vertical Concealed (FCVC)

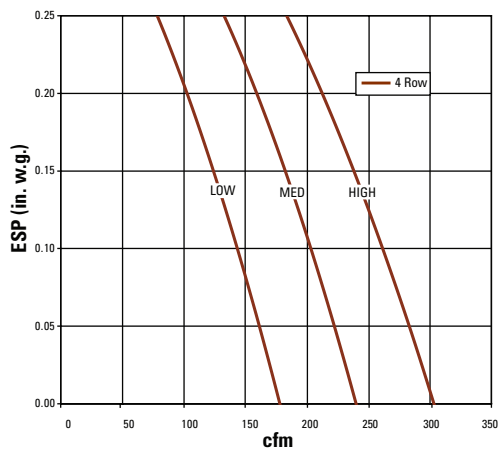


LH configuration shown. Handing determined by looking at inlet

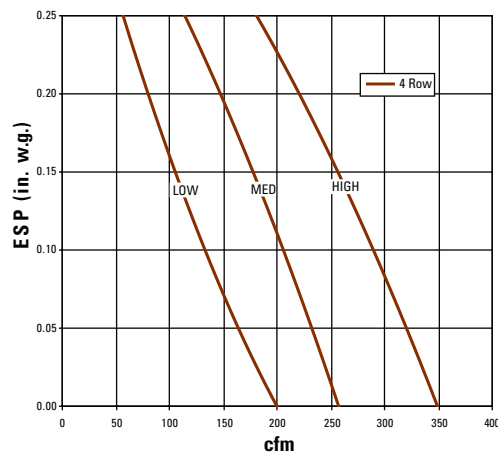
Size	Nom. cfm [L/S]	A in. [mm]	B in. [mm]	C in. [mm]	D in. [mm]	# of Blowers	Motors [HP]	
							PSC	ECM
02	200 [94]	24 [610]	22.5 [572]	21 [534]	18 [457]	1	1/30	1/8
03	300 [142]	32 [813]	30.5 [775]	29 [737]	26 [660]	1	1/30	1/8
04	400 [189]	32 [813]	30.5 [775]	29 [737]	26 [660]	2	1/10	1/8
06	600 [283]	43 [1093]	41.5 [1055]	40 [1016]	37 [940]	2	1/10	1/8
08	800 [378]	48 [1220]	46.5 [1182]	45 [1143]	42 [1067]	2	1/10	1/4
10	1000 [472]	58 [1474]	56.5 [1436]	55 [1397]	52 [1321]	4	1/10 (x2)	1/8 (x2)
12	1200 [566]	68 [1728]	66.5 [1690]	65 [1651]	62 [1575]	4	1/10 (x2)	1/4 (x2)

Fan Performance Curves - PSC Option

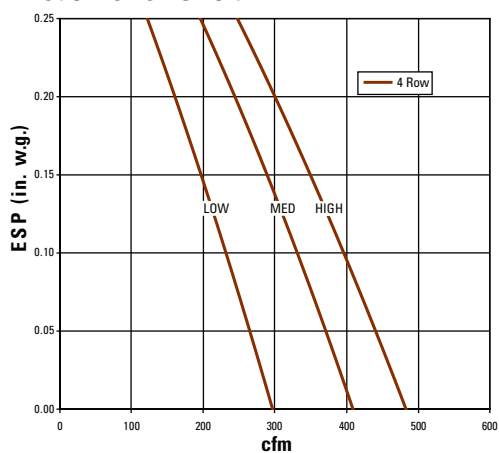
Model FCVC - Size 02



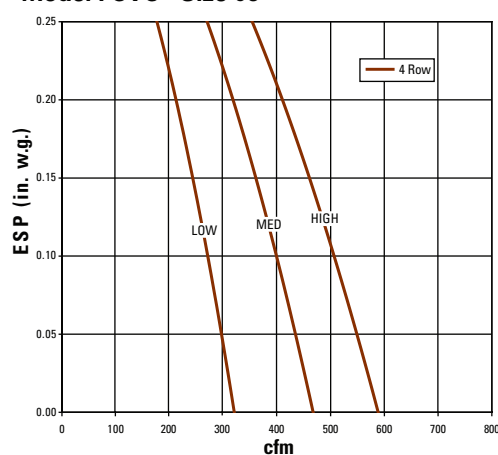
Model FCVC - Size 03



Model FCVC - Size 04



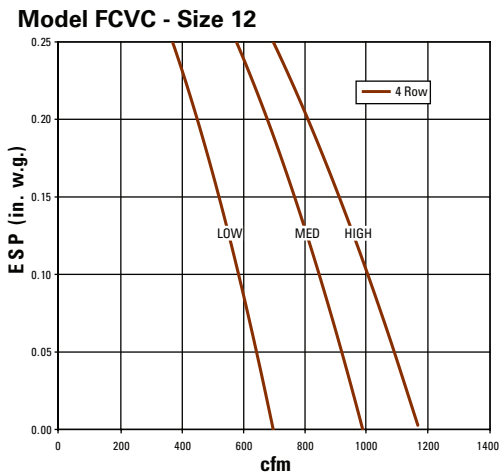
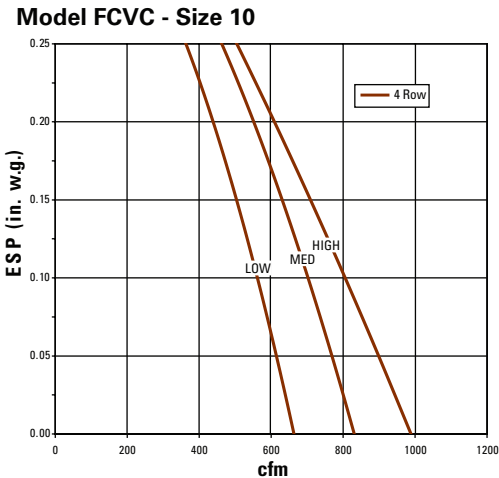
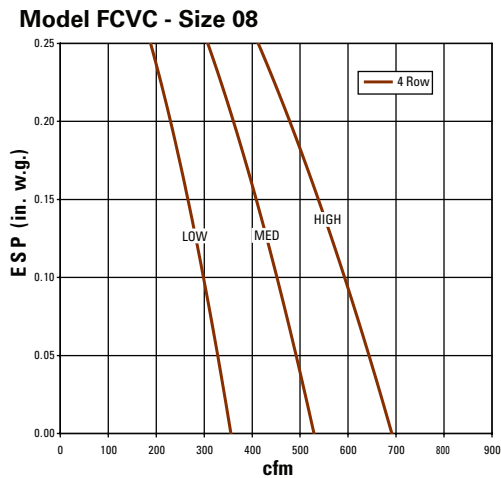
Model FCVC - Size 06



Notes:

1. Fan performance curves are for units with 4 row coils.

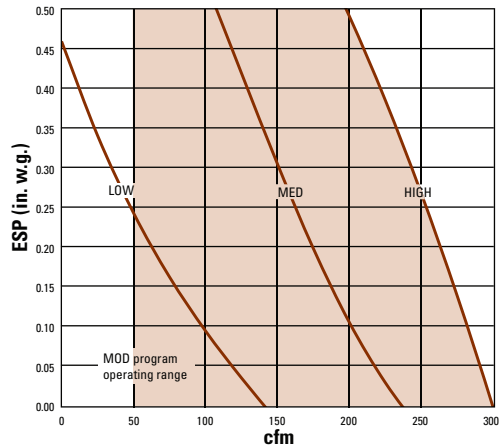
Fan Performance Curves - PSC Option



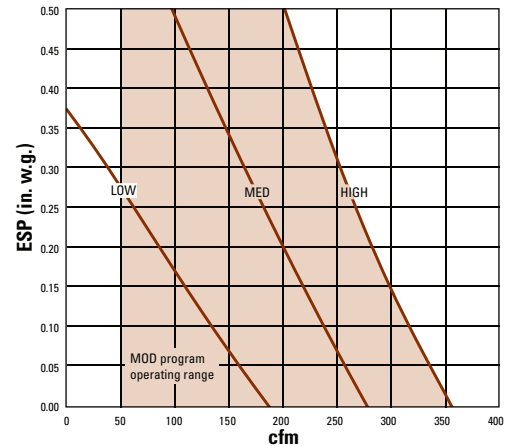
Notes:
1. Fan performance curves are for units with 4 row coils.

Fan Performance Curves - ECM Option

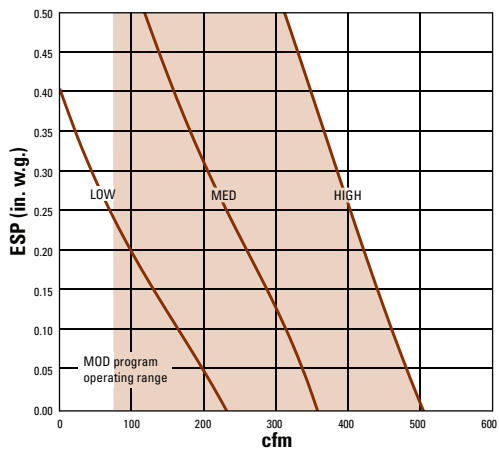
Model FCVC - Size 02



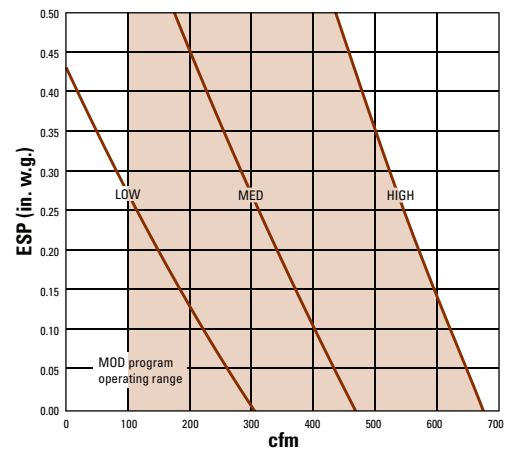
Model FCVC - Size 03



Model FCVC - Size 04



Model FCVC - Size 06

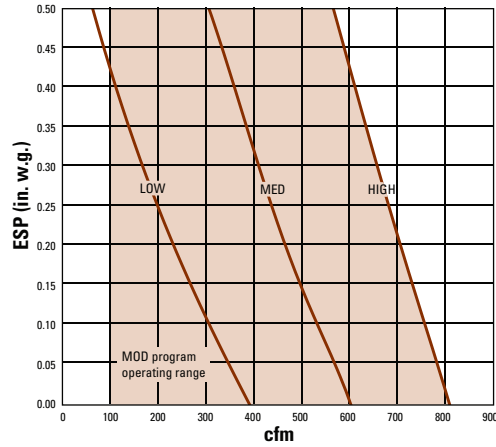


Notes:

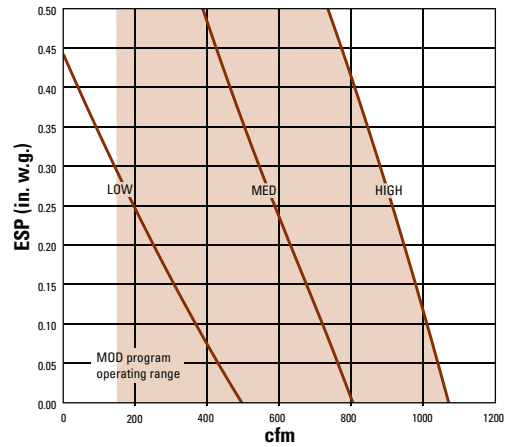
1. Fan performance curves are for units with 4 row coils.

Fan Performance Curves - ECM Option

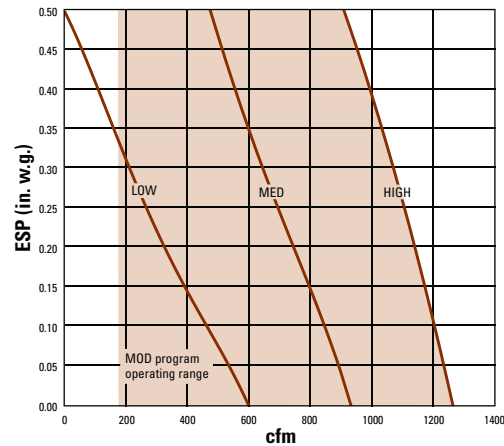
Model FCVC - Size 08



Model FCVC - Size 10



Model FCVC - Size 12



Notes:

1. Fan performance curves are for units with 4 row coils.

Non-Ducted Sound Data

FCVC Unit Size	Fan Speed	Sound Power Levels, Lw, dB, re 10-12 Watts Octave Band (Hz)						
		2	3	4	5	6	7	8
02	High	58	60	58	55	49	43	38
	Medium	54	55	54	50	43	36	31
	Low	50	50	48	42	35	26	26
03	High	59	62	59	55	54	48	40
	Medium	53	55	52	48	48	35	29
	Low	48	48	45	42	40	26	26
04	High	61	63	60	58	52	45	39
	Medium	58	61	58	55	49	40	33
	Low	53	55	53	48	40	29	27
06	High	61	63	61	57	53	46	42
	Medium	56	59	57	53	48	41	41
	Low	49	52	49	43	37	27	27
08	High	63	65	62	59	55	51	45
	Medium	56	59	56	52	49	40	32
	Low	49	51	48	43	38	26	26
10	High	63	66	64	61	55	48	41
	Medium	61	63	61	58	52	44	36
	Low	55	58	56	52	45	35	28
12	High	65	66	64	61	55	48	42
	Medium	61	63	61	57	51	43	35
	Low	54	56	54	49	41	31	27

Notes:

1. Sound data obtained in accordance with the latest edition of AHRI standard 350.
2. Sound levels are expressed in decibels, dB RE 1 x 10-12 watts.
3. Total sound power level data based on FCVC with 115/1/60 volt motor, 4 row coils, 0.0 in. ESP.



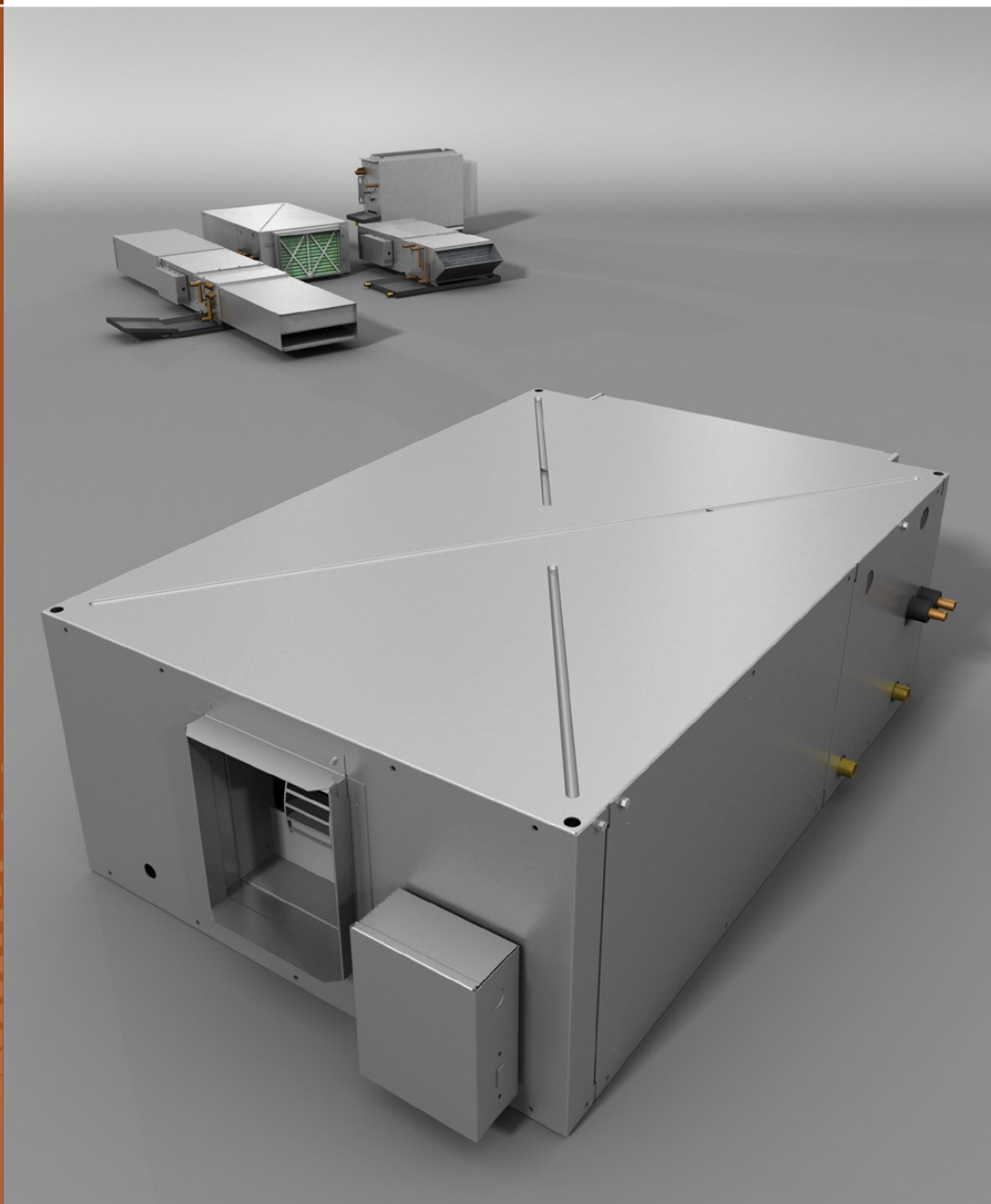
AHRI Certified Standard Ratings

Unit Type	Unit Size	Coil		Dry Flow (cfm)	Cooling Capacity		Water		Power Input (Watts)
		Rows	FPI		QT (Btu/h)	QS (Btu/h)	Flow (gpm)	WPD (ft w.g.)	
FCVC	02	3	16	260	7000	5000	1.56	1.0	60
	03			320	7300	5600	1.62	0.6	68
	04			450	10700	8300	2.35	1.0	132
	06		12	610	14100	11200	3.07	1.2	144
	08			650	19400	13100	4.41	8.7	147
	10			900	22500	17700	5.09	2.3	270
	12			1060	21200	17500	4.80	1.4	300
	02	16	270	7500	4800	1.68	1.4	62	
	03	4		300	8500	6300	1.88	0.5	65
	04			420	11900	8800	2.63	0.9	134
	06		12	520	17700	13400	3.88	2.0	136
	08			620	23700	15700	5.24	5.7	137
	10			860	26800	19700	5.97	3.5	250
	12			1030	29200	20500	6.46	2.7	300

Notes:

1. Ratings based on 80 °F DB and 67 °F WB EAT, 45 °F EWT, 10 °F temperature rise, high fan speed. Motor type is PSC and motor voltage is 115/1/60. Air flow under dry coil conditions with external static pressure.
2. For all application ratings, please contact your local Price representative

SECTION F1



High Performance Fan Coils

Overview

Benefits of High Performance Fan Coils

High performance fan coils are designed for applications where higher air volumes and static pressures than a traditional fan coil are required but a high level of Individual zone temperature control and low noise levels are also needed.

High Static Pressure

A key feature of the Price High Performance Fan coils are their high static pressure capability, allowing the use of higher efficiency filters and up to 8 rows of heating/cooling coils.

Another benefit of this higher static pressure capability is that units can accommodate longer discharge duct runs with multiple air outlets. This allows the Fan Coil to be mounted farther from the occupied space reducing acoustic concerns. As an example for a classroom application, the Fan Coil unit can be located above the hallway where noise levels are less critical. Additionally the longer length of downstream and return ductwork can be acoustically lined for further noise reduction. Due to their higher air flow capacity and static pressure capability larger rooms or spaces can be supplied with High Performance Fan Coil units. Examples include Labs, meeting rooms, halls or lecture theatres.

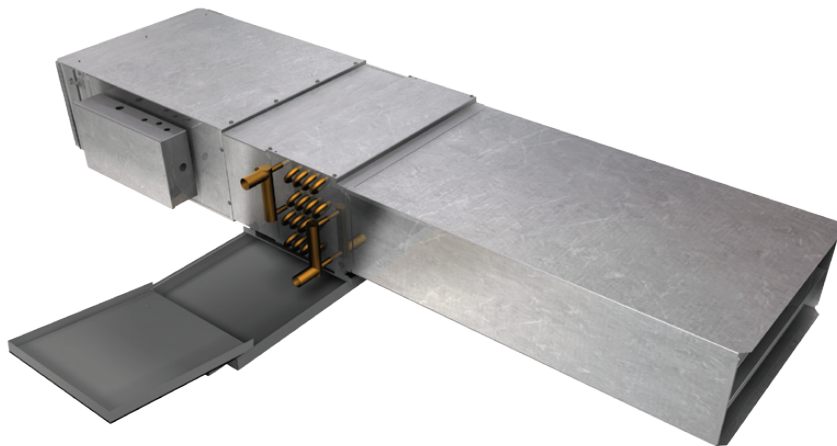
High Cooling Capacity

High Performance Fan Coils are available with up to 6 rows of cooling coils and up to 2600 cfm fan flow making them ideal for high cooling load applications. While typically selected for sensible cooling, the unit has the capacity for latent cooling as well. On Horizontal units, a condensate diverting plate ensures no condensate carry over even at higher than normal entering wet bulb temperatures. Sloped insulated drain pans are provided as standard. Optional secondary drain overflow connection and overflow switches are also available.

ECM Motor

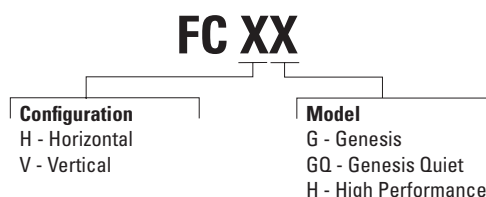
High Performance Fan Coils are available with the energy efficient Electronically commutated motor. The ECM provides several benefits over conventional Permanent Split Capacitor (PSC) technology. The standard ECM motor offers significant energy savings due to it's ultra efficient brushless design. Power losses due to magnetic, thermal and frictional effects are dramatically reduced over conventional PSC motors with efficiency gains of 20-30%. Full range speed control allows the fan speed to be optimized at the setting which meets the room load and acoustic design goals. When coupled with electronic or DDC controls ECM motors can also be operated to provide variable volume of both cooling and heating fan flows, contributing to further energy savings and enhanced comfort. The

FCHGQ Series with integral discharge silencer



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Product Key



fan speed can be remotely adjusted and monitored from a BAS system providing further opportunity for energy savings. Manual fan speed adjustment is enhanced with the optional Price Deluxe ECM speed controller which features an LED display and push button control.

Genesis units ECMs are also factory programmed with the Price Enersave™ program which maintains a constant fan flow under varying external pressures (up to 0.5" ESP). Constant flow programming ensures the fan flow will be maintained even as the filter resistance increases due to dust buildup.

Motor life of the ECM motor is extended due to it's low operating temperature and ball bearing design. The ball bearings require no lubrication and direct drive design eliminates belt adjustment or replacement.

The low operating temperature of the ECM also reduces the system cooling load.

Low Noise Levels

Price Genesis Fan Coils have been specifically designed to minimize noise levels, allowing units to be applied in noise sensitive applications such as classrooms, lecture halls and theaters. Large diameter, dynamically balanced wheels, motor isolation mounts and a rigid fully insulated casing contribute to the unit's quiet operation. An optional inlet silencer and integral discharge silencer (FCHGQ) further reduce noise levels for critical spaces. Cataloged octave band sound power levels derived from the industry recognized ASHRAE 130 test standard for both discharge and radiated sound allow accurate and reliable assessment of space sound levels.

Application Guidelines

Fan Coil Applications

High Performance fan coils offer superior performance and features which expand their application beyond traditional fan coil units. The following are a few applications to consider.

Green/LEED Buildings

Hydronic cooling is far more efficient than delivering cooled air to a zone and chilled water piping takes up a fraction of the space of ductwork. High performance fan coils can be selected to handle the zone sensible cooling load, significantly reducing the air flow requirements of the main air handler needed for ventilation and latent loads only. This air flow reduction results in a smaller HVAC system which translates into energy savings. A smaller HVAC footprint and ductwork can also reduce floor heights or increase leasable space. The ECM motor in the high performance fan coils save further energy due to their high efficiency operation and ability to turn down at lower load conditions. During unoccupied hours the primary air system can be shut off to save energy while the fan coils maintain space temperature. The high static capability of the high performance fan coil allows use of optional MERV 13 filters which reduces airborne particles and meets the requirement for obtaining USGBC LEED credit EQc5: Indoor Chemical and Pollutant Source Control.

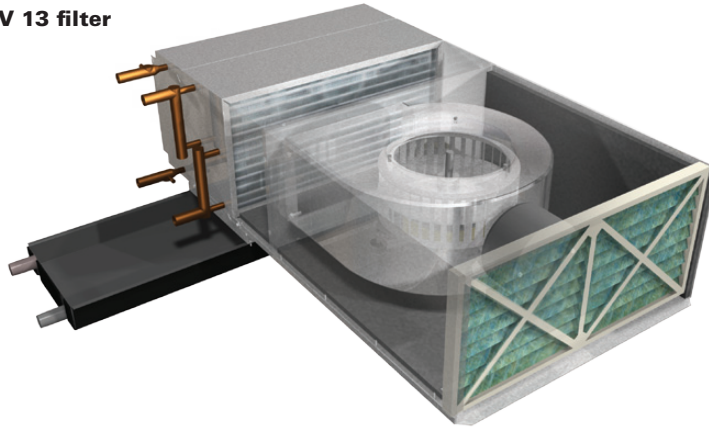
Dedicated Outdoor Air Systems

Often fan coil units are applied in a Dedicated Outdoor Air System (DOAS). In this configuration the air handler is selected to dehumidify and condition the outdoor air as well as to handle the space latent load. The fan coil unit provides sensible cooling or heating at the zone.

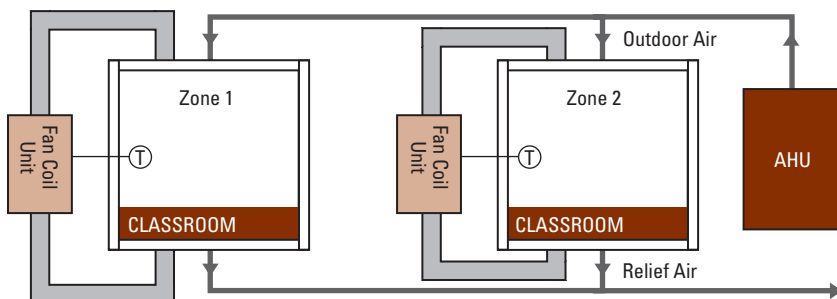
This configuration has several advantages over a conventional VAV system. Decoupling the sensible and latent loads ensures proper humidity control at each zone. Additionally the exact outdoor air requirements to each zone can be maintained, eliminating over ventilation and ensuring compliance with ASHRAE 62. The Fresh Air Inlet option with SP300 sensor of the FCHG allows accurate monitoring of the outdoor air and the ability to control the outdoor air quantity with a Demand Control Ventilation (DCV) strategy. Energy savings can be realized due to reduced terminal reheat and reduced outdoor air requirement when compared to traditional VAV systems. Additionally, the DOAS system can be turned off during unoccupied hours with the fan coils maintaining local zone temperature control.

The outdoor air can be delivered directly to the space through a separate diffuser, independent of the fan coil unit. This allows the fan coil unit to be turned off or run at

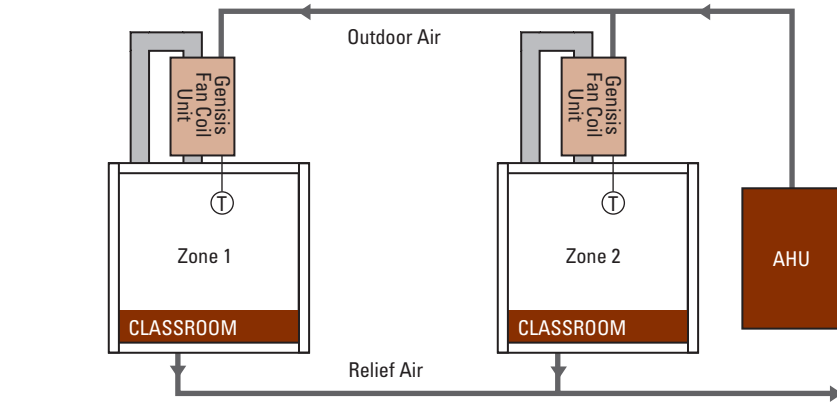
MERV 13 filter



DOAS with High Performance Fan Coil – outdoor air to diffusers



DOAS with High Performance Fan Coil – outdoor air to fan coil



low speed during part load conditions. Note that if a low supply air temperature (less than 55° F) is required for dehumidification, a high induction diffuser should be selected to prevent drafts. Appropriate choices would include the RTD twist diffuser, SPD HI high induction plaque diffuser or TBD6 slot diffuser. Another option is to duct the outdoor air into the fan coil unit. In this case the fan coil must run during part load, however ductwork is minimized.



Application Guidelines

Displacement Ventilation

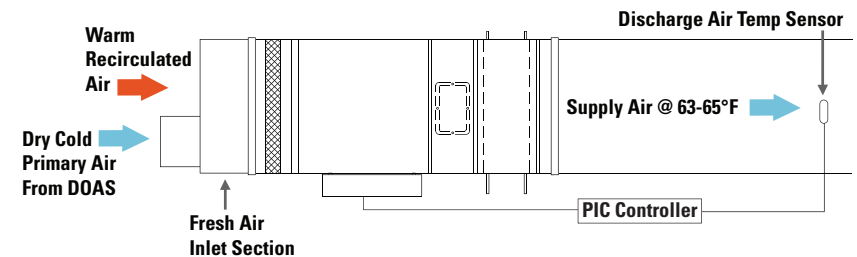
Displacement ventilation is recognized as an effective method of air distribution for increasing Indoor Air Quality (IAQ) and occupant comfort. One of the requirements for acceptable comfort is that the supply air temperature be maintained above 63° F to prevent the sensation of draft at foot level. Depending on the geographical location, this elevated supply temperature may not be adequate for humidity control.

By utilizing a Genesis fan coil with discharge air temperature control strategy this concern can be addressed. The HVAC system can be selected to achieve proper dehumidification by cooling the supply air to the necessary leaving air temperature. The dry, cold supply air enters the fan coil fresh air inlet and is mixed with the warm plenum air to raise the supply air temperature substantially. A DDC controller modulates the cooling coil valve to maintain a desired supply air temperature in accordance with the signal from the discharge air temperature (DAT) sensor. See page F1-62 for a detailed description of the Price DAT control sequence.

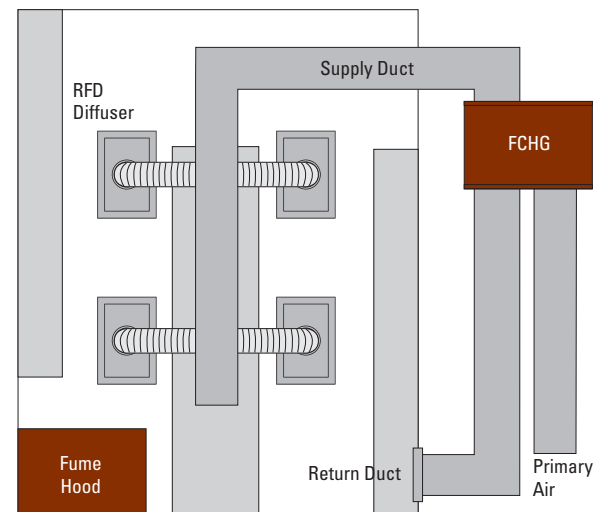
High Cooling or Heating Load

With up to 6 rows of cooling coils available high performance fan coils are ideal for handling high cooling load spaces such as areas with large solar gains or load driven labs. Energy efficient hydronic cooling effectively meets the cooling requirements without the need to deliver large quantities of conditioned air from a central HVAC system. The high static capability of the high performance fan coil easily accommodates the pressure loss of long runs of discharge ductwork as well as a variety of air outlets. In order to limit drafts due to the high air change rates in a lab a radial flow pattern diffuser such as RFD or FRFD would be recommended. In non lab areas high induction, short throw diffusers such as the SPD plaque or RTD twist models are an excellent choice. In Northern climates perimeter zones with large glass areas are a challenge due to the 'waterfall effect' of the cold air flowing down the glass, creating draft at the floor level. When floor mounted radiation or convectors are not an option it is necessary to project warm air down the glass to prevent this situation. An effective way to achieve this projection is with a high performance fan coil supplying heated air to perimeter slot diffusers. The fan coil can be sequenced to turn on when there is a call for heating with the VAV unit at minimum cooling. By decoupling the heating air distribution system from the cooling system, the perimeter slot diffuser can be selected to achieve the proper throw during heating demand without concern of draft during cooling operation when increased density of the supply air dramatically increases diffuser throw. Proper throw selection in heating can

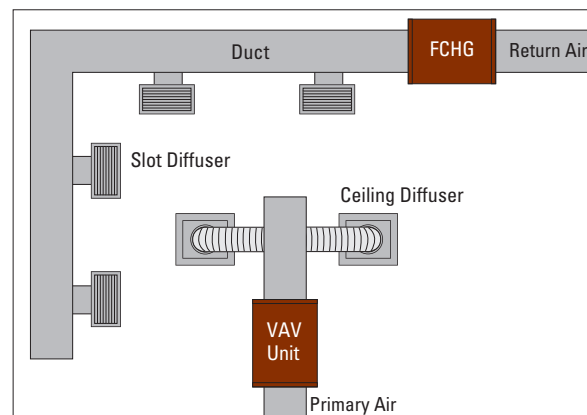
Discharge Air Temperature control for Displacement Ventilation



Lab Layout with FCHG



Perimeter Meeting Room with VAV and Fan Coil Unit



also meet the requirements of ASHRAE 62 for ventilation effectiveness, reducing the amount of outdoor air supplied. See page F1-63 for control sequence illustration.

Application Guidelines

Noise Sensitive Areas

The FCHG is inherently quiet due to its design and construction making it a good choice for classrooms, lecture theaters, conference rooms, private offices, etc. The infinite speed control and low turn down of the ECM motor allows unit selection at low speeds in order to meet the most stringent acoustic specifications. When required, tuned discharge and inlet silencers can be provided with the unit for further noise reduction. The high static capability of the high performance fan coil accommodates the addition of these accessories as well as longer runs of acoustically lined discharge and return air ductwork.

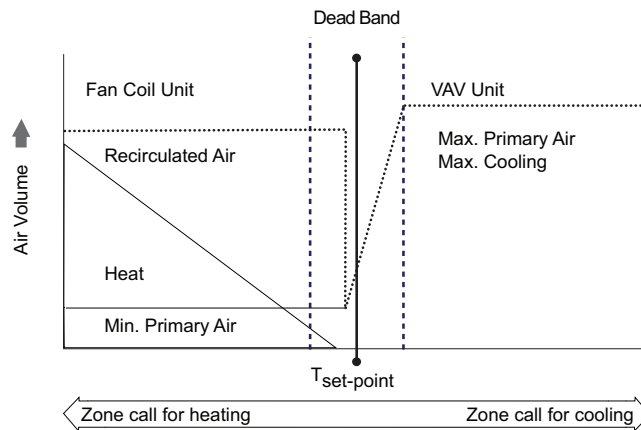
Retrofit

The FCHG is extremely well suited for building retrofits due to its low profile (maximum 15.5 in. height) which allows it to fit within a restricted ceiling plenum. Since only outdoor air needs to be supplied to the space, supply ductwork is kept to a minimum. High performance fan coils can be selected to provide heating or cooling to previously unconditioned spaces or to add capacity to existing HVAC systems.

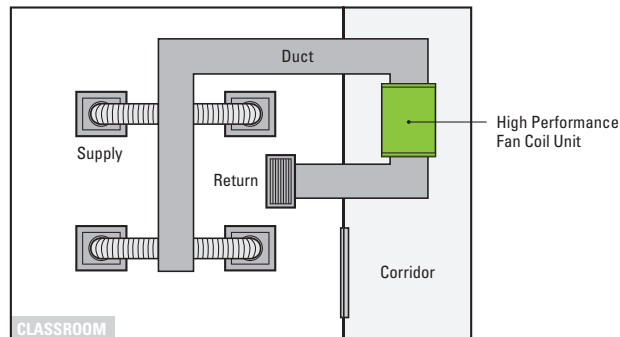
Projects with Chilled Beams

A growing trend in the HVAC industry today is the application of active chilled beams in LEED and Green projects. Active chilled beams offer the benefits of hydronic cooling without the requirement for a terminal fan or condensate removal system. However the cooling capacity of active chilled beams is limited due to the higher chilled water temperatures to avoid condensation and the restricted size of the cooling coil. To enhance cooling capacity some beam manufacturers promote increasing the primary air flow beyond minimum ventilation requirements which reduces the overall energy efficiency of the system. It can also lead to drafts in the occupied space due to the high total supply air volume. High performance fan coils are an attractive alternative for this situation. One fan coil can provide equal capacity to four 8-foot active chilled beams while reducing both the required primary air and total flow to the room. Examples of high load applications ideally suited to fan coils are labs, perimeter zones with large glass areas and spaces with high equipment density. Note that both active chilled beams and high performance fan coils can be utilized on the same project supplied from the same HVAC system, providing optimal flexibility for the various cooling loads encountered.

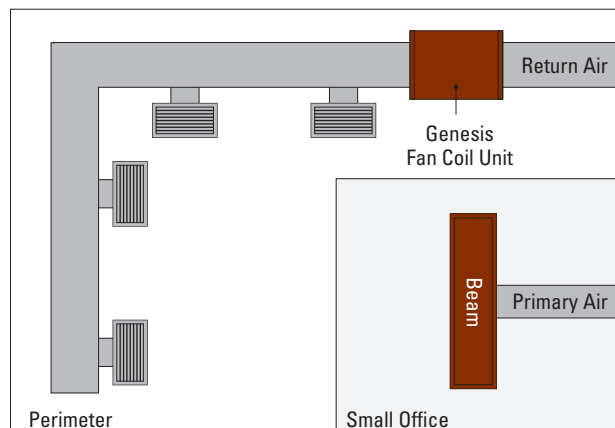
Perimeter Meeting Room Control Sequence



Classroom layout with FCHGQ



Chilled Beam layout with FCHG



Water Coil Selection Guide

Fan Coils are typically sized to handle the heating or cooling load for an individual room or zone. This load may be purely sensible or may have a latent portion. The required load should be calculated based on the room occupancy, geographical location and building construction.

Once the load is known, the entering air and water conditions for the coil must be defined. The entering air conditions will be based on the space and the entering water temperature will be based on the chiller.

To determine the approximate air flow of the required unit and therefore the unit size, the rule of thumb of 375 cfm / Ton of required cooling (1Ton = 12000 BTHU/h) can be used. This rule gives a starting point for selecting a fan coil unit size. Units should be selected near the midpoint of their flow range. This will ensure that there is adequate fan volume capacity or turn down if actual install system pressures are slightly higher or lower than the anticipated design. This will also help lower the noise generated by the fan and allow for future changes to the system. Selecting near the extremes of the operating range should be avoided.

The method of calculating coil performance must be defined. Most fan coils are selected based on a 10 or 12°F temperature rise (based on chiller requirements) but a set water flow rate (based on pump requirements) or a set leaving air temperature (for displacement ventilation) may also be used.

Once all of these variables have been determined, the Price Fan Coil selection tool can be used to calculate exact fan coil performance ratings. The number of coil rows and circuits can be adjusted to achieve the required capacity but there are pros and cons to changing each variable as shown below.

The air flow of the unit may also be adjusted to achieve the required capacity but care should be taken when increasing the air flow of the unit as the generated noise and energy use will also increase. Increasing the air flow will also affect the air distribution system and could lead to uncomfortable drafts in the occupied space. In all cases, the velocity across the coil should not exceed 550 Feet per minute or condensate may carry over from the coil into the downstream ductwork. If a higher air flow is necessary to meet the required capacity, a larger unit size should be considered to keep generated noise and energy use to a minimum.

	Heat Transfer	Air PD	Water PD (for a given flow rate)	Cost
Increase # of Rows	↑	↑	↑	↑
Increase # of Circuits	↓		↓	

Sound Selection Procedures

Horizontal Units

The laboratory attained discharge and radiated sound power levels for each unit at various fan flows is presented in the Acoustical Data tables. This data is derived in accordance with ARI Standard 880/ASHRAE Standard 130 and shows the “raw” sound power levels of the terminal in the 2nd through 7th octave bands with NO attenuation allowances.

NC levels are based on typical attenuation values as outlined in ARI standard 885 - 98, Appendix E. AHRI Standard 885-2008, Appendix E provides typical sound attenuation values for air terminal discharge sound and air terminal radiated sound. The typical attenuation values are recommended for use by manufacturers to estimate application sound levels.

In product catalogs the end use environments are not known and the factors presented in AHRI Standard 885-2008 are provided as typical attenuation values. Use of these values give the end user an estimated NC which will be expected to be applicable for many types of spaces. The suggested attenuation allowances are intended to be representative of typical jobsite construction. If your conditions differ significantly from these it is recommended you utilize the sound power level data and the procedures outlined in AHRI Standard 885-2008.

Radiated Sound

Reviewing the Acoustical Data tables it is evident that the predominant sound generated by the fan coil unit is radiated sound. Note that the cataloged radiated sound is based on a non ducted return with the unit located directly above the occupied space. There are several design considerations for reducing the radiated sound level in the space;

1. Locate the fan coil over a non critical area adjacent to the occupied space such as over a hall way, closet or storage area.
2. Supply the unit with the optional inlet silencer section.
3. Provide return air ductwork. If the return air is ducted to the air inlets, similar attenuation values to the discharge attenuation deductions can be achieved. Lined duct and acoustic flex can dramatically reduce the radiated sound as the predominant sound path is through the return air opening.
4. Avoid locating units near return air openings. This allows a direct path for radiated noise to enter the space.
5. A ceiling with high transmission loss will help reduce radiated sound.
6. Locate units in the largest plenum volume available for reduction of radiated noise.
7. Select a fan coil size which will operate in the mid to low area of its operating range. Lower fan speeds produce lower sound levels.

Discharge Sound

Although usually not as predominant as radiated sound there are also several design considerations for reducing the discharge sound level in the space;

1. Select a unit which will operate in the mid to low area of its operating range. Lower fan speeds produce lower sound levels.
2. Locate unit to allow maximum length of lined discharge duct work. Consider a larger number of smaller diffusers to minimize discharge sound.
3. The use of acoustically lined flex duct on the diffuser will reduce discharge sound.
4. Supply the Genesis Q unit with integral discharge silencer.

Vertical Units

Discharge and radiated sound power levels are presented in the Acoustical Data tables for each unit at various fan flows, and were obtained during Price Laboratory testing. This data was derived in accordance with AHRI Standard 260, and shows the “raw” sound power levels of the fan coil in the second through seventh octave bands with no attenuation allowances.

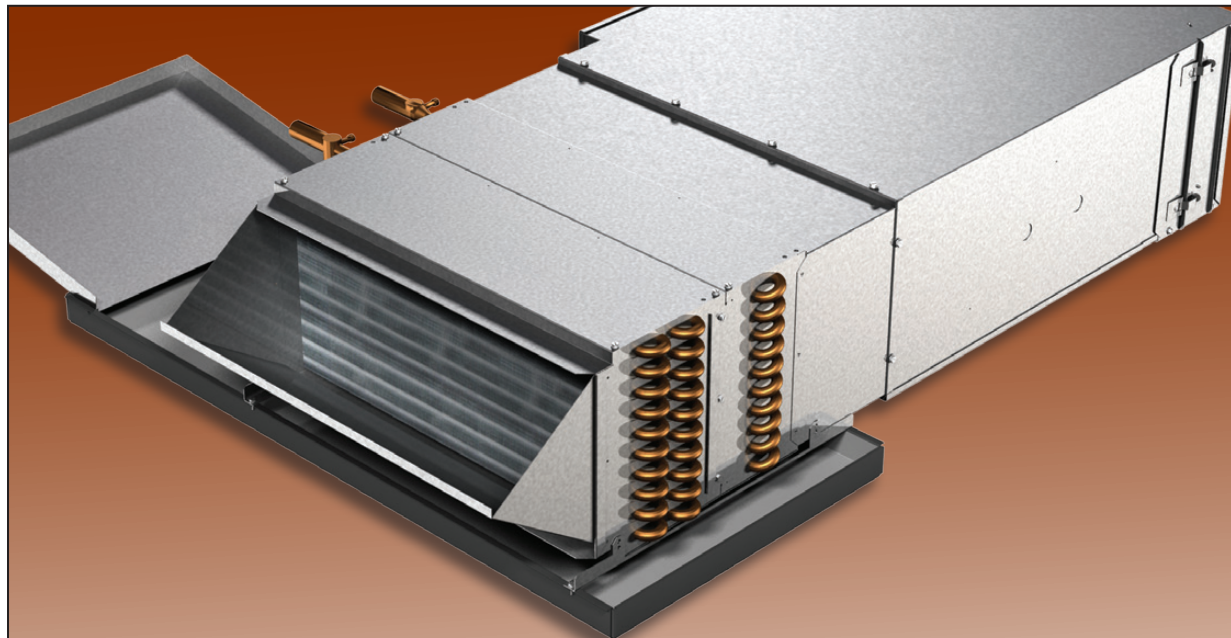
Radiated Sound

By reviewing the Acoustical Data tables, it is evident that the predominant sound generated by the fan coil unit is radiated sound. Note that the radiated sound data found in the catalogue is based on a non-ducted return with the unit located near the occupied space. There are several design considerations for reducing the radiated sound level in a space;

1. Locate the fan coil in a non-critical area adjacent to the occupied space such as a closet or storage area.
2. Walls with high transmission losses will help reduce radiated sound.
3. Select a fan coil size which will operate in the mid to low area of its operating range. Lower fan speeds produce lower sound levels.

Discharge Sound

Discharge sound is typically not as predominant as radiated sound. Selecting a unit which will operate in the mid to low area of its operating range will produce lower sound power levels



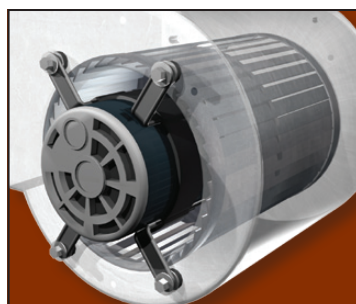
FCHG Series

HIGH PERFORMANCE FAN COILS

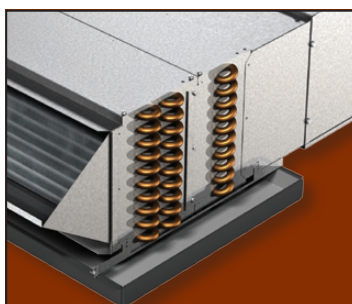
The FCHG Series fan coils offer superior performance and features that expand their application beyond traditional fan coil units. High cooling capacity and external static capability meet the requirements for higher loads, larger zones and longer lengths of discharge ductwork. Hydronic cooling and energy efficient ECM motors make the FCHG an ideal choice for LEED or Green projects, while low noise levels meet the needs of acoustically critical spaces such as classrooms and lecture halls.

Low profile design for mounting in tight ceiling cavities. Ideal for retrofit projects.

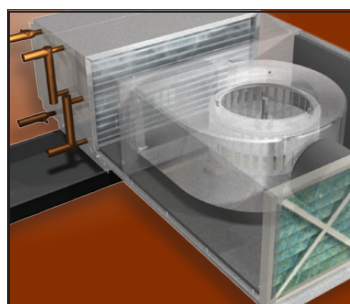
price ► **GENESIS**



Standard energy efficient and programmable ECM motor



High capacity cooling with up to a 6-row cooling coil



High static capability – up to 0.5 in. w.g.



Suitable for hotels, condominiums, hospitals, and general commercial applications

High Performance Fan Coils

FCHG Genesis® Series

Horizontal

price®

Features

PRICE ▶ GENESIS®

Drain pans can be easily removed for cleaning, and reversed for opposite side drain connections

20 gauge Galvanized steel casing

1 in. collar with slip and drive connection of ductwork

Condensate diverting section for high humidity conditions

Plenum lined with fiberglass insulation (standard), solid metal, perforated metal, foil board or fiber free foam insulation

Externally insulated single wall galvanized steel or stainless steel (optional) drain pans are positively sloped to drain connections

Heating and cooling coils 1 to 6 rows in 2 and 4 pipe configurations
– up to 8 rows in total
– preheat and reheat configuration

Manual coil air vent factory supplied

ECM Motor

Optional secondary drain connection for added security

MERV 3 throw away filter (Optional 2 in. MERV 8 or MERV 13 throw away filters tight fitted to prevent air bypass, easily removable with quick action latches)



F1-38

All Metric dimensions () are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimetre.

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High Performance Fan Coils

FCHG Genesis® Series

Horizontal

price

Product Information

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Model

Horizontal High Performance **FCHG**

The FCHG is a factory assembled, horizontal blow – through high performance fan coil designed for concealed installations above a ceiling. The low noise, high capacity and pressure capability make it a good choice for a variety of applications. The FCHG comes standard with a wide range of performance and construction features. Additional options are available to suit specific project requirements.

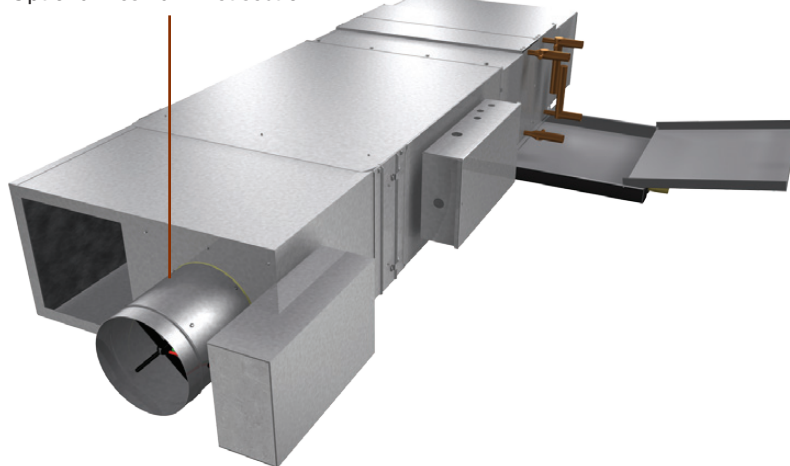
Standard Features:

- AHRI 440 certified performance data.
- Sound power levels tested in accordance with ASHRAE 130.
- ETL-Listed. Constructed in compliance with ANSI/ UL 1995 Standard.
- All casing sheet metal components are fabricated of 20GA galvanized steel.
- Water coils with copper tubes and aluminum fins are performance rated and certified in accordance with the current edition of AHRI Standard 410.
- Coil manual air vents included.
- Energy efficient ECM motor.
- 115, 208, 240 and 277 voltages available.
- Double width double Inlet (DWDI) direct driven blowers.
- Single point power connection.
- Single wall galvanized steel drain pan, thermally insulated on the outside with foam.
- Slip and drive inlet and discharge connections.
- Cooling coil with sloped bottom panel for condensate removal.
- External static pressure up to 0.5 in. w.g. with 8 rows of coils.
- Condensate diverting section on cooling and preheat units to prevent carry over.
- 1 in. MERV 3 Throwaway Filter.

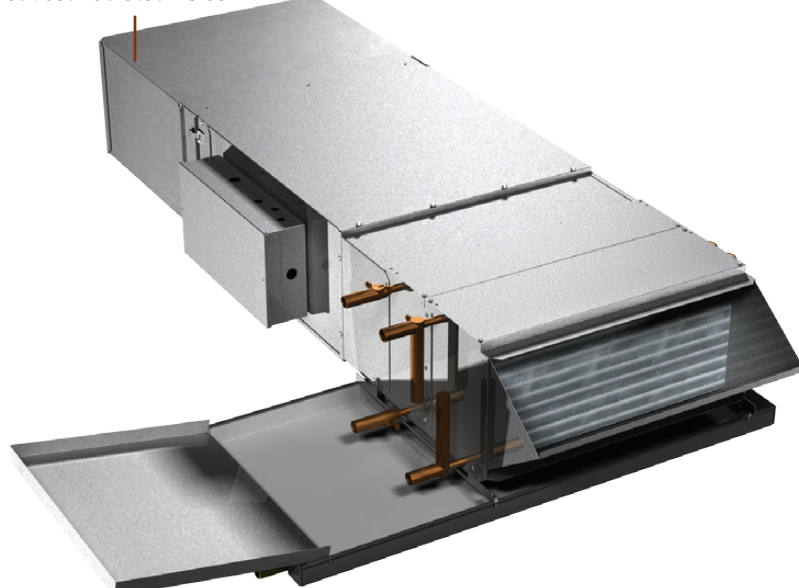
Optional Features include:

- 1 to 6 row coils available for 2-pipe systems.
- 3 to 6 rows cooling coils with 1 or 2 rows re-heat coils for 4-pipe system applications (8 rows max).
- LH or RH entry pipe connections.
- Single power supply disconnect switch.
- Single wall drain pan manufactured in 20GA 304 Stainless Steel, externally insulated w/foam.
- Drain pan safety overflow connection (secondary drain).
- PSC motor option.
- Liners:
 - Solid Metal - Perforated metal
 - Foil Faced Fiberglass - Fiber Free foam
- Fresh air inlet section with SP300 flow sensor and low leak damper.

Optional fresh air inlet section



Optional inlet silencer section for reduced radiated noise



Note: Discharge silencer is also available see FCHGQ catalogue section

- Discharge silencer - FCHGQ.
- Inlet silencer section.
- Hanger brackets.
- Spring isolators.
- Merv 8 or 13 filters.
- Electric heater

High Performance Fan Coils

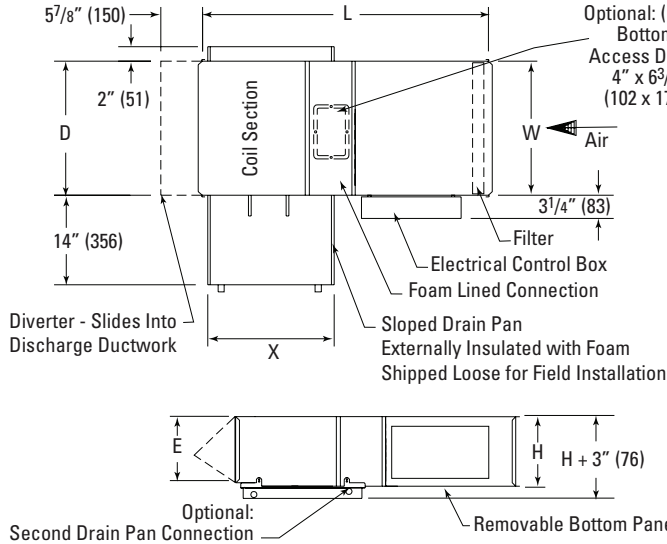
FCHG Genesis® Series

Horizontal

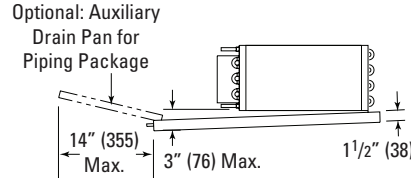
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Dimensional Data

PRICE GENESIS



LH configuration shown.
Handing determined by looking at inlet



Filter Sizes

Size	W	H	Qty
20	20 7/8 [530]	10 1/4 [260]	1
30	20 7/8 [530]	10 1/4 [260]	1
40	25 7/8 [657]	12 1/4 [311]	1
50	20 7/8 [530]	10 1/4 [260]	2
60	23 7/8 [606]	12 1/4 [311]	2
70	29 7/8 [757]	12 1/4 [311]	2

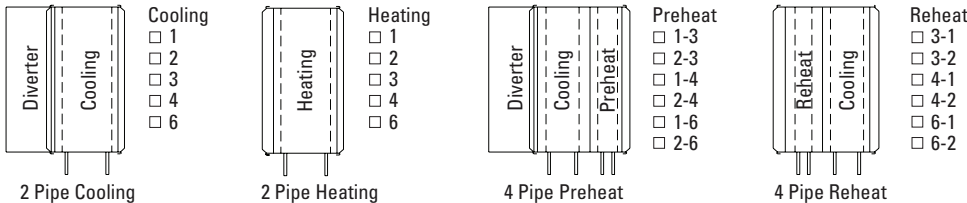
Dimensional Data - IP (in.) / SI [mm]

Unit Size	Max. Fan Flow, cfm	Outlet Duct Size		W	H
		D	E		
20	500 [237]	21 [533]	9 [229]	21 [533]	10 1/2 [267]
30	800 [377]	21 [533]	9 [229]	21 [533]	10 1/2 [267]
40	950 [448]	26 [660]	11 1/2 [292]	26 [660]	12 1/2 [318]
50	1550 [731]	42 [1067]	9 [229]	42 [1067]	10 1/2 [267]
60	2050 [968]	48 [1219]	11 1/2 [292]	48 [1219]	12 1/2 [318]
70	2800 [1324]	60 [1524]	11 1/2 [292]	60 [1524]	12 1/2 [318]

Dimensional Data - IP (in.) / SI [mm]

Connection Size		Number of Rows		
		1 - 2	3 - 4	6
20 - 60	20 - 60	7/8 [22]	7/8 [22]	1 1/8 [29]
	70	7/8 [22]	1 1/8 [29]	1 1/8 [29]

Coil Configurations



Dimensional Data
IP (in.) / SI [mm]

		Number of Rows									
		Cooling			Heating			Preheat		Reheat	
		1 & 2	3 & 4	6	1 & 2	3 & 4	6	1-3, 2-3, 1-4, 2-4	1-6, 2-6	3-1, 3-2, 4-1, 4-2	6-1, 6-2
L	20 - 40	35 5/8 [905]	37 7/8 [950]	39 1/8 [1000]	35 5/8 [905]	37 7/8 [950]	39 1/8 [1000]	42 3/8 [1077]	44 3/8 [1127]	42 3/8 [1077]	44 3/8 [1127]
	50 - 60	38 1/8 [969]	39 7/8 [1013]	41 7/8 [1064]	38 1/8 [969]	39 7/8 [1013]	41 7/8 [1064]	44 7/8 [1140]	46 7/8 [1191]	44 7/8 [1140]	46 7/8 [1191]
	70	41 1/8 [1045]	42 7/8 [1089]	44 7/8 [1140]	41 1/8 [1045]	42 7/8 [1089]	44 7/8 [1140]	47 7/8 [1216]	49 7/8 [1267]	47 7/8 [1216]	49 7/8 [1267]
X		14 1/8 [359]			n/a (no drain pan)			17 7/8 [452]		17 7/8 [452]	

Motor Data

Unit Size		Full Load Amps (Single Phase and 60Hz)									
		115 Volts		208 Volts		240 Volts		277 Volts			
		PSC	ECM	PSC	ECM	PSC	ECM	PSC	ECM	PSC	ECM
20		1/3	1/3	1.73	3.25	.81	2.25	.81	1.90	.64	1.29
30		1/4	1/2	3.22	4.86	1.29	3.13	1.25	2.54	1.37	2.06
40		1/2	1/2	5.14	5.15	2.37	3.21	2.27	2.54	2.35	2.26
50		1/4 x 2	1/2 x 2	5.93	8.72	2.58	5.29	2.47	4.11	2.63	3.47
60		1/2 x 2	1/2 x 2	10	9.6	4.42	5.91	4.3	4.64	4.32	4.6
70		1/2 x 2	3/4 x 2	13.96	19.04	5.80	13.33	6.10	11.37	5.94	7.40

Notes: 1. Based on 2 row dry coil and 2 in. MERV 8 filter. Nameplate values for amperage may be higher. Amps are based on total unit current draw.

F1-40

All Metric dimensions () are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimetre.

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High Performance Fan Coils

FCHG Genesis® Series

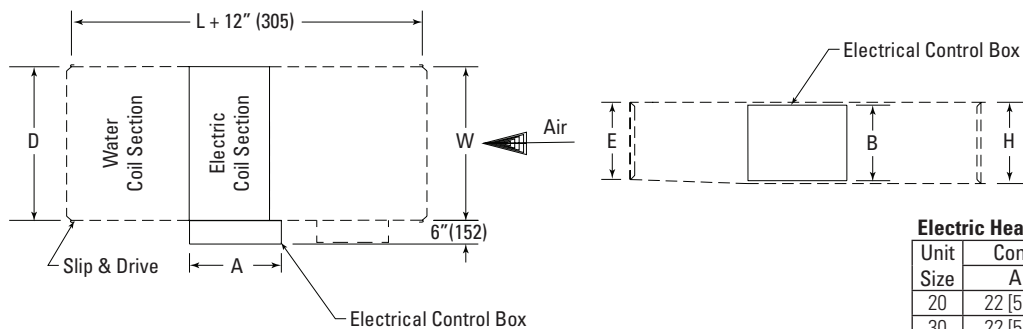
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Accessories

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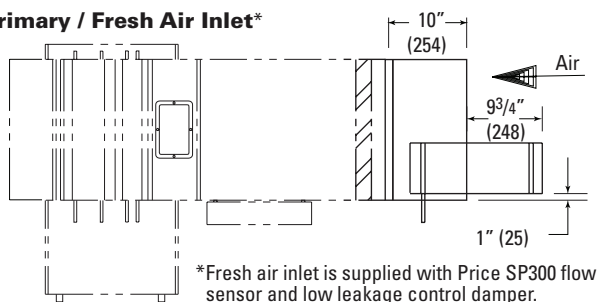
Electric Heat



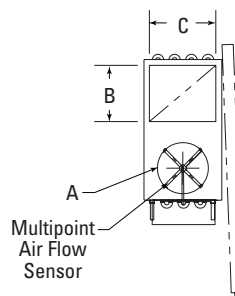
Electric Heat

Unit Size	Control Box Size	
	A	B
20	22 [558]	10 [254]
30	22 [558]	10 [254]
40	18 [457]	12 [304]
50	22 [558]	10 [254]
60	18 [457]	12 [254]
70	18 [457]	12 [254]

Primary / Fresh Air Inlet*



LH configuration shown.
Handing determined by looking at inlet



Primary/Fresh Air Inlet

Size	A
20	6, 8 [152, 203]
30	6, 8 [152, 203]
40	6, 8 [152, 203]
50	6, 8 [152, 203]
60	6, 8, 10 [152, 203, 254]
70	6, 8, 10 [152, 203, 254]

Return Air Inlet

Size	B	C
20	10 $\frac{1}{2}$ [267]	9 $\frac{1}{2}$ [241]
30	10 $\frac{1}{2}$ [267]	9 $\frac{1}{2}$ [241]
40	15 $\frac{1}{2}$ [394]	11 $\frac{1}{2}$ [292]
50	31 $\frac{1}{2}$ [800]	9 $\frac{1}{2}$ [251]
60	35 $\frac{1}{2}$ [902]	11 $\frac{1}{2}$ [292]
70	47 $\frac{1}{2}$ [1206]	11 $\frac{1}{2}$ [292]

High Performance Fan Coils

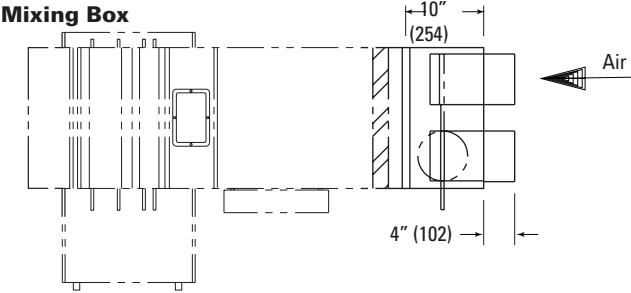
FCHG Genesis® Series

Horizontal



Accessories

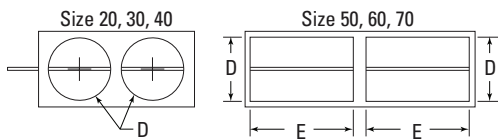
Mixing Box



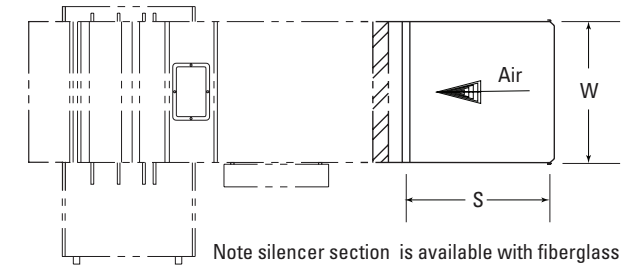
Mixing Box

Size	D	E
20	9 [229]	--
30	9 [229]	--
40	10 [254]	--
50	8 [203]	16 [406]
60	8 [203]	21 [533]
70	9 [229]	28 [711]

Mixing Box Configuration



Inlet Silencer



Inlet Silencer

Size	S, in	S, mm
20	18"	457
30	18"	457
40	18"	457
50	18"	457
60	18"	457
70	36"	914

LH configuration shown.

Handing determined by looking at inlet

Note silencer section is available with fiberglass media or with additional polymer film liner protection

High Performance Fan Coils

FCHG Genesis® Series

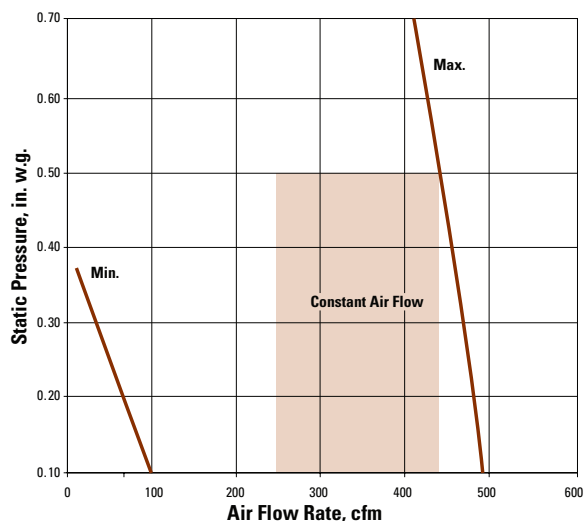
Horizontal

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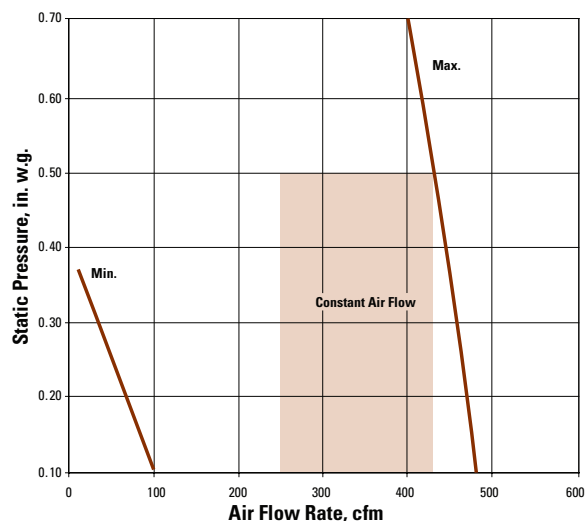
Fan Performance Curves – ECM Motor

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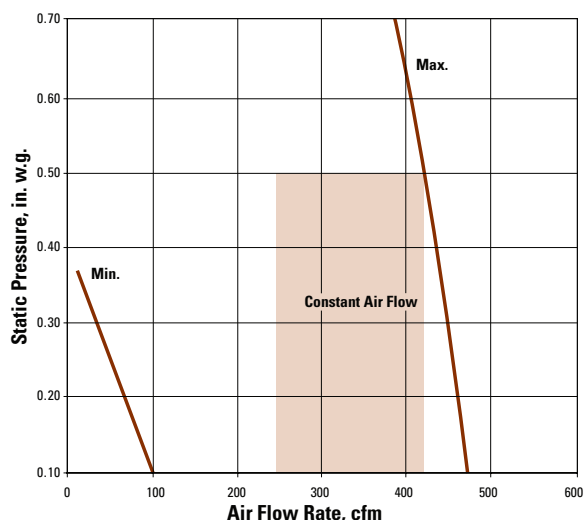
Unit Size 20 - 2 Row ECM Constant Flow



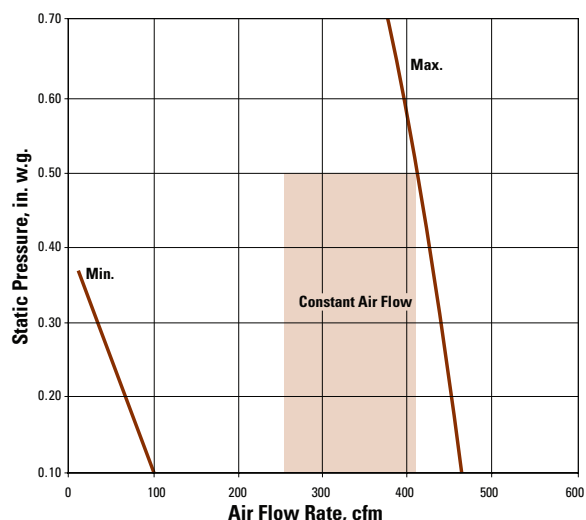
Unit Size 20 - 4 Row ECM Constant Flow



Unit Size 20 - 6 Row ECM Constant Flow



Unit Size 20 - 8 Row ECM Constant Flow



Caution to Contractors

Fan coil units are not intended for use as temporary heat or ventilation during building construction. The units are not designed nor equipped to operate in a dusty construction environment. Recirculating fan wheels can become coated with construction dust, resulting in an unbalanced wheel. This in turn can contribute to reduced motor life. Inlet air filters would provide little protection as they would quickly become plugged with construction dust.

Please Note: Price cannot warrant against unauthorized operation under conditions as outlined on this page.

Notes:

1. Fan curves include 2 in. MERV 8 filter.
2. To prevent condensate carry over in cooling applications, fan flow should not exceed 500 fpm average coil face velocity, see maximum fan flow chart.

Maximum Fan Flow Chart (Cooling Application)

Unit Size	Max. cfm
20/30	700
40	1100
50	1450
60	2050
70	2600

High Performance Fan Coils

FCHG Genesis® Series

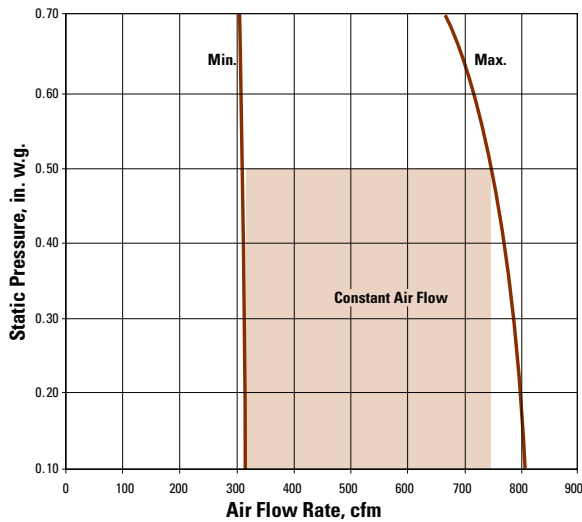
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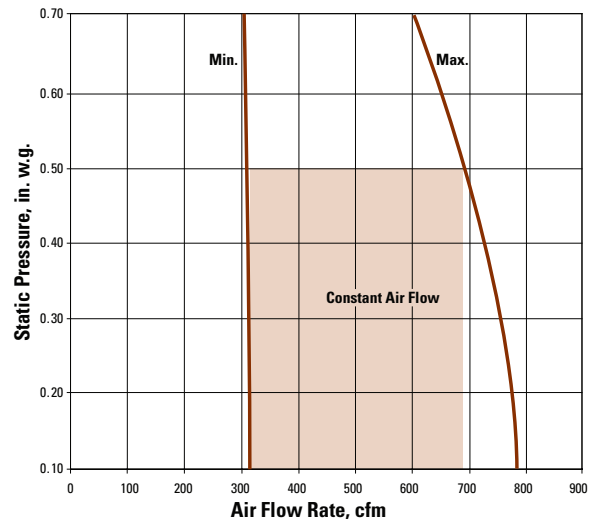
Fan Performance Curves – ECM Motor

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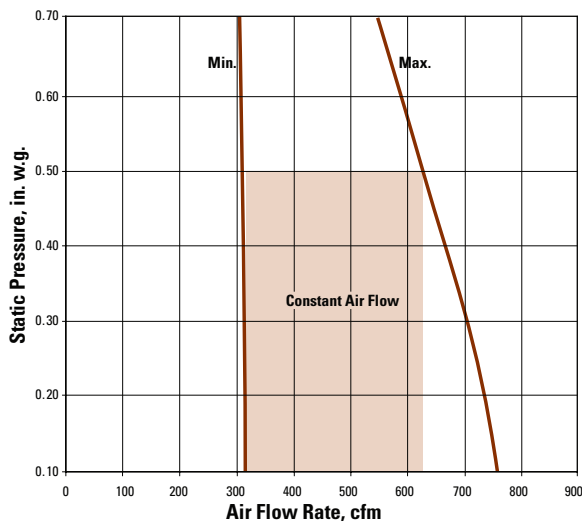
Unit Size 30 - 2 Row ECM Constant Flow



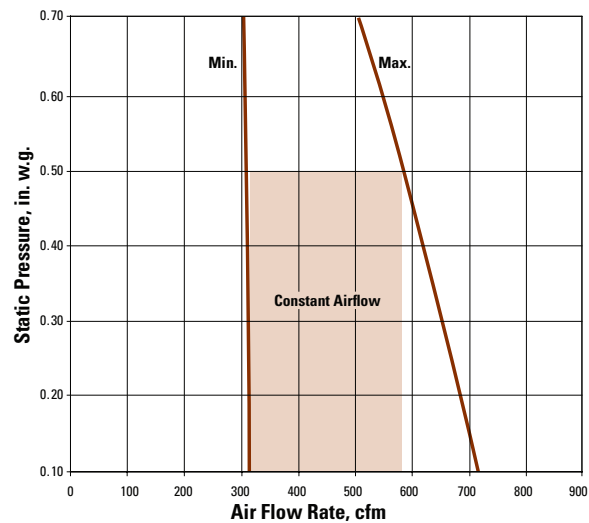
Unit Size 30 - 4 Row ECM Constant Flow



Unit Size 30 - 6 Row ECM Constant Flow



Unit Size 30 - 8 Row ECM Constant Flow



Caution to Contractors

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Please Note: Price cannot warrant against unauthorized operation under conditions as outlined on this page.

Notes:

1. Fan curves include 2 in. MERV 8 filter.
2. To prevent condensate carry over in cooling applications, fan flow should not exceed 500 fpm average coil face velocity, see maximum fan flow chart.

Maximum Fan Flow Chart (Cooling Application)

Unit Size	Max. cfm
20/30	700
40	1100
50	1450
60	2050
70	2600

High Performance Fan Coils

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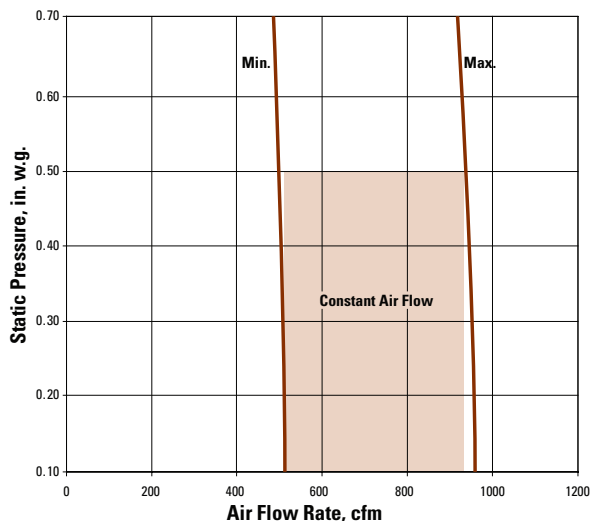
Horizontal

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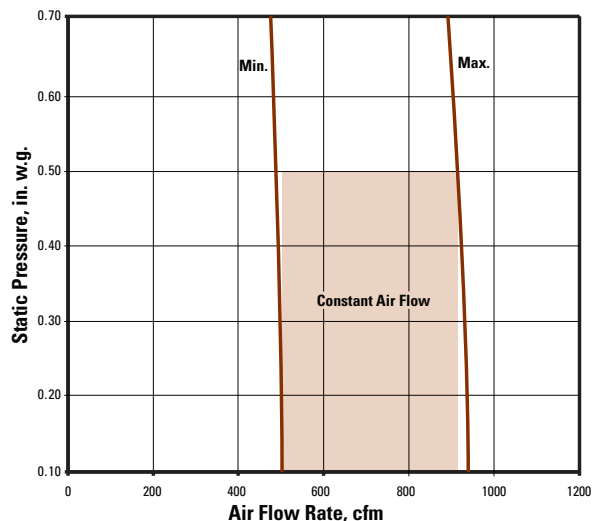
Fan Performance Curves – ECM Motor

PRICE GENESIS

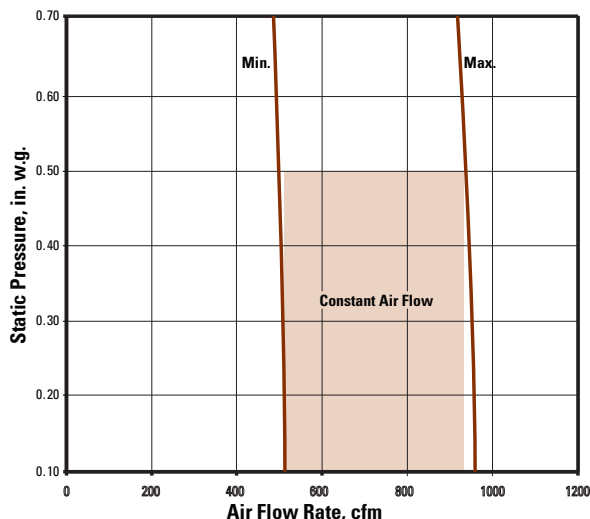
Unit Size 40 - 2 Row ECM Constant Flow



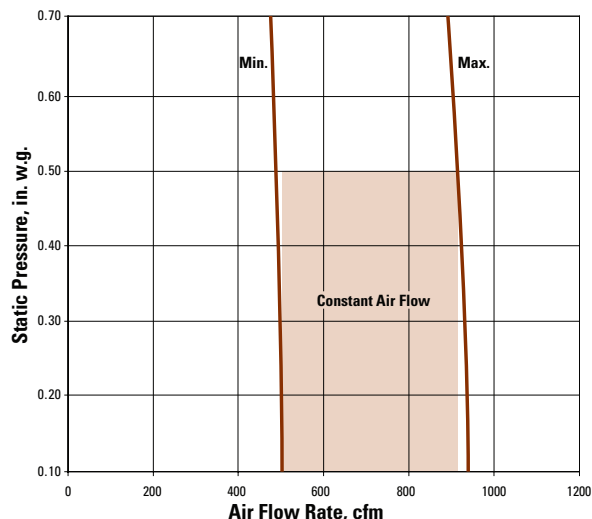
Unit Size 40 - 4 Row ECM Constant Flow



Unit Size 40 - 6 Row ECM Constant Flow



Unit Size 40 - 8 Row ECM Constant Flow



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Notes:

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Maximum Fan Flow Chart (Cooling Application)

Unit Size.	Max. cfm
20/30	700
40	1100
50	1450
60	2050
70	2600

High Performance Fan Coils

FCHG Genesis® Series

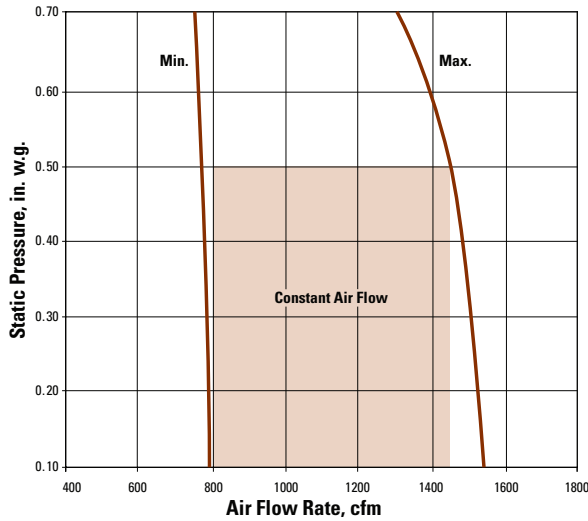
Horizontal

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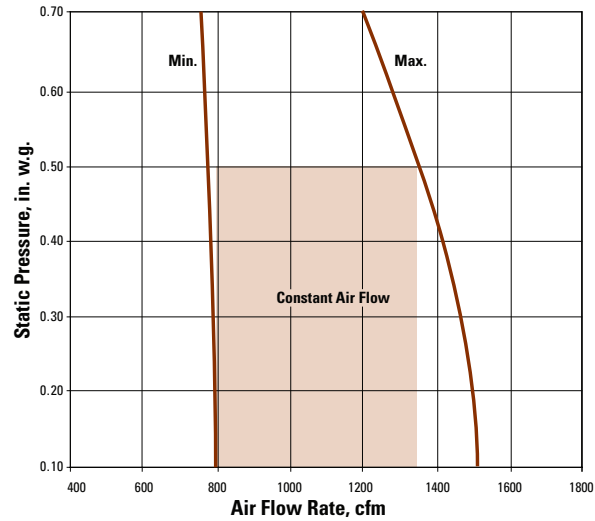
Fan Performance Curves – ECM Motor

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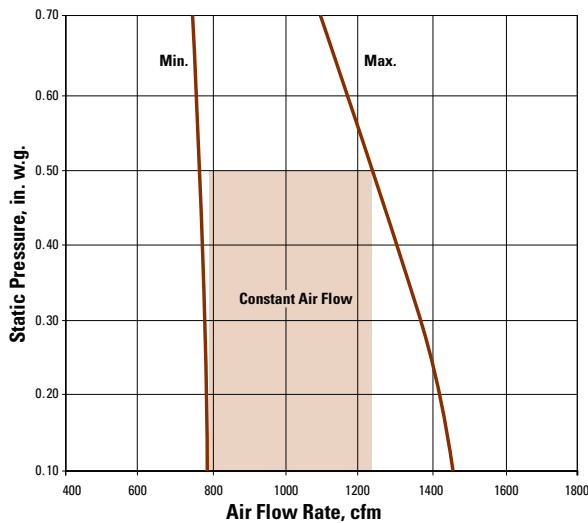
Unit Size 50 - 2 Row ECM Constant Flow



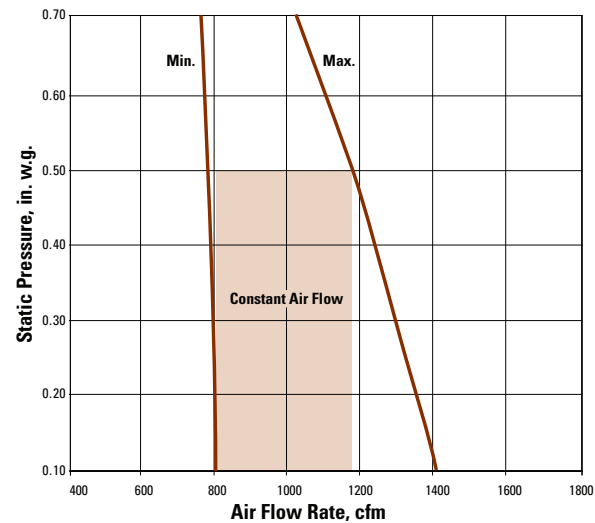
Unit Size 50 - 4 Row ECM Constant Flow



Unit Size 50 - 6 Row ECM Constant Flow



Unit Size 50 - 8 Row ECM Constant Flow



Caution to Contractors

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Notes:

1. Fan curves include 2 in. MERV 8 filter.
2. To prevent condensate carry over in cooling applications, fan flow should not exceed 500 fpm average coil face velocity; see maximum fan flow chart.

Maximum Fan Flow Chart (Cooling Application)

Unit Size	Max. cfm
20/30	700
40	1100
50	1450
60	2050
70	2600

High Performance Fan Coils

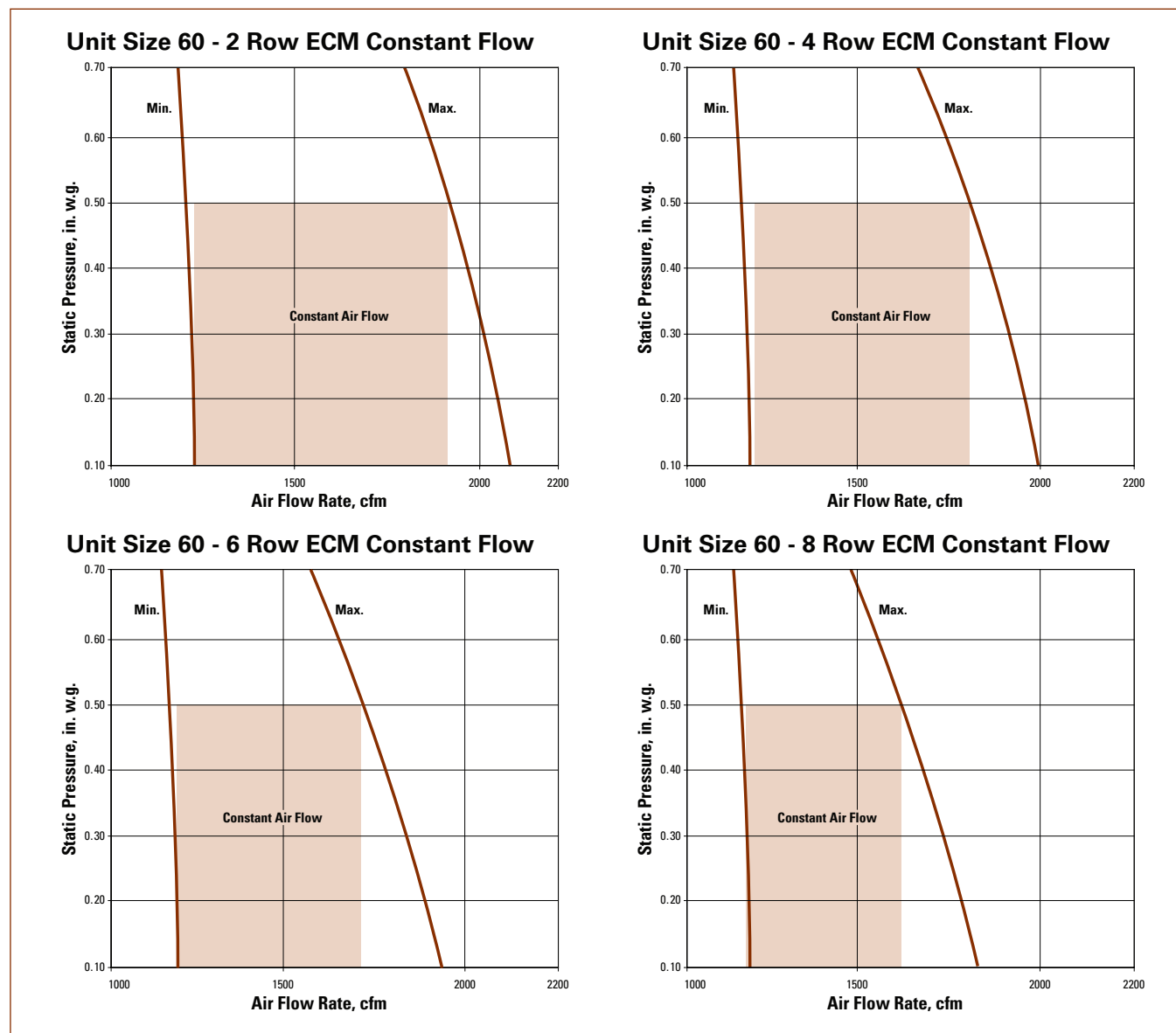
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Fan Performance Curves – ECM Motor

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Caution to Contractors

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Notes:

1. Fan curves include 2 in. MERV 8 filter.
2. To prevent condensate carry over in cooling applications, fan flow should not exceed 500 fpm average coil face velocity; see maximum fan flow chart.

Maximum Fan Flow Chart (Cooling Application)

Unit Size.	Max. cfm
20/30	700
40	1100
50	1450
60	2050
70	2600

High Performance Fan Coils

FCHG Genesis® Series

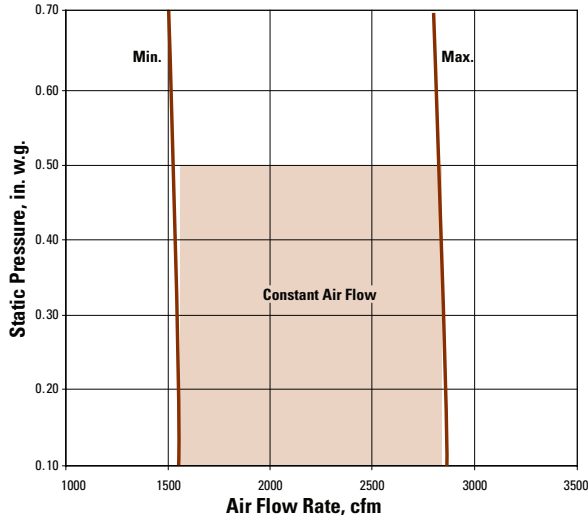
Horizontal

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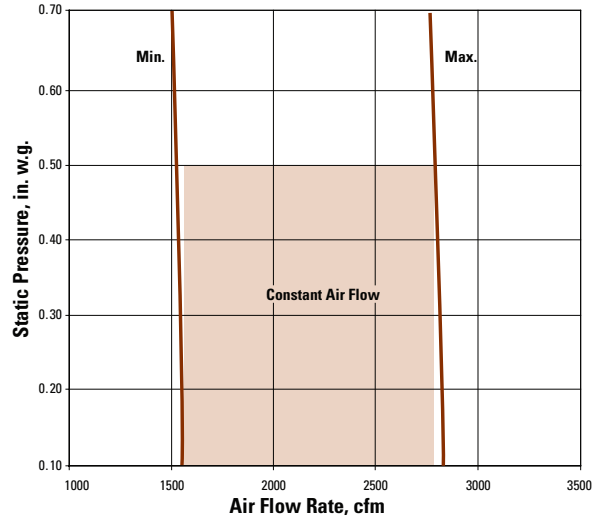
Fan Performance Curves – ECM Motor

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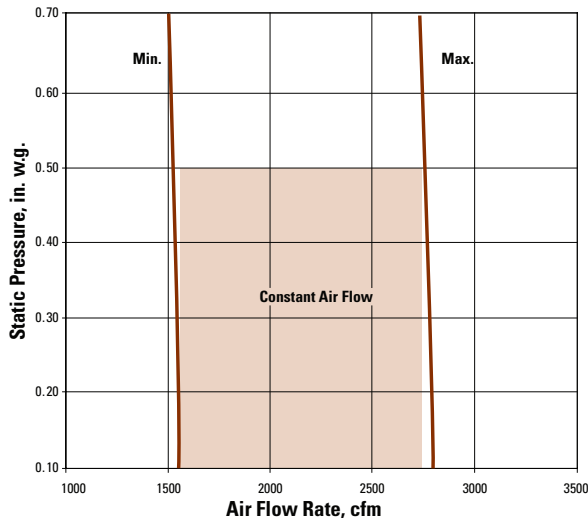
Unit Size 70 - 2 Row ECM Constant Flow



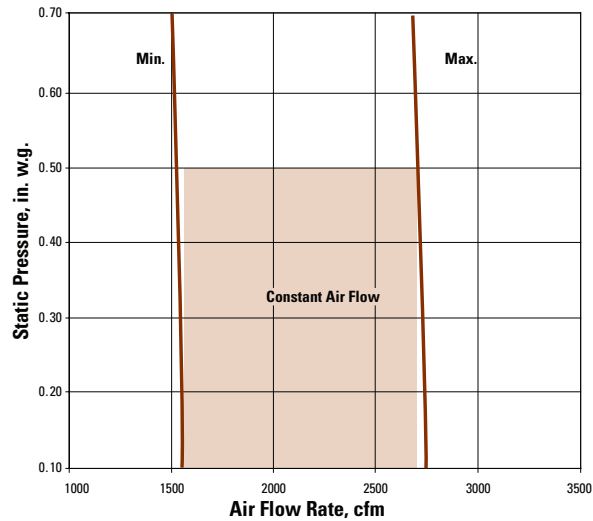
Unit Size 70 - 4 Row ECM Constant Flow



Unit Size 70 - 6 Row ECM Constant Flow



Unit Size 70 - 8 Row ECM Constant Flow



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Notes:

1. Fan curves include 2 in. MERV 8 filter.
2. To prevent condensate carry over in cooling applications, fan flow should not exceed 500 fpm average coil face velocity; see maximum fan flow chart.

Maximum Fan Flow Chart (Cooling Application)

Unit Size	Max. cfm
20/30	700
40	1100
50	1450
60	2050
70	2600

High Performance Fan Coils

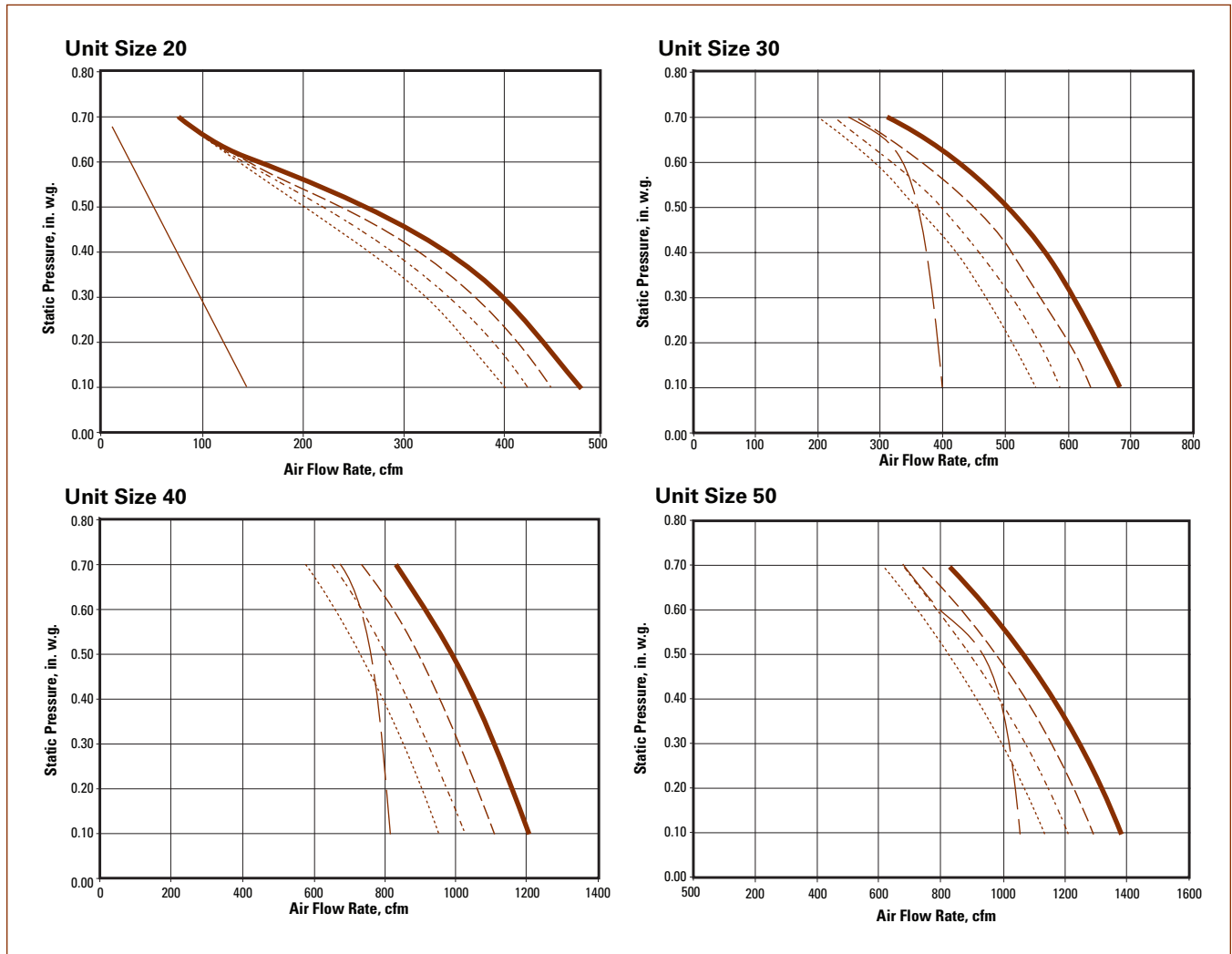
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Fan Performance Curves – PSC Motor

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Caution to Contractors

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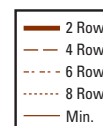
Please Note: Price cannot warrant against unauthorized operation under conditions as outlined on this page.

Notes:

1. Fan curves include 2 in. MERV 8 filter.
2. To prevent condensate carry over in cooling applications, fan flow should not exceed 500 fpm average coil face velocity; see maximum fan flow chart.
3. For motor data and power consumption comparison, refer to FCHG. Data is the same for both models.

Maximum Fan Flow Chart (Cooling Application)

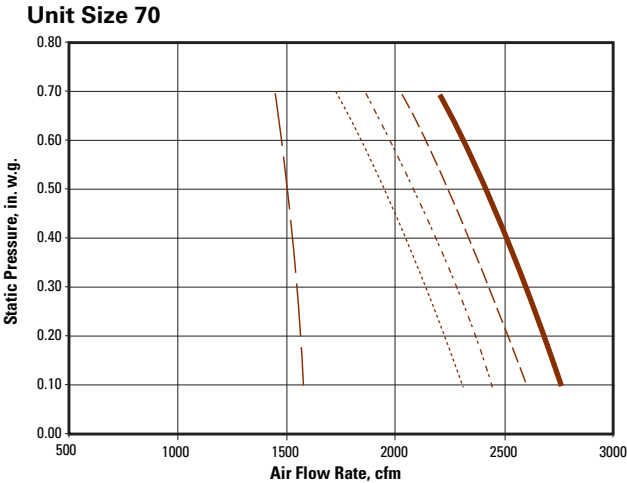
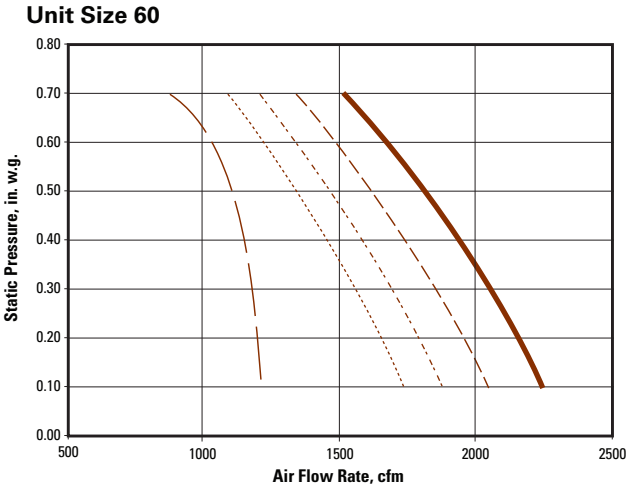
Size	Max. cfm
20/30	700
40	1100
50	1450
60	2050
70	2600



High Performance Fan Coils
FCHG Genesis® Series
Horizontal



Fan Performance Curves – PSC Motor



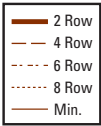
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- Notes:**
1. Fan curves include 2 in. MERV 8 filter.
 2. To prevent condensate carry over in cooling applications, fan flow should not exceed 500 fpm average coil face velocity; see maximum fan flow chart.
 3. For motor data and power consumption comparison, refer to FCHG. Data is the same for both models.

Maximum Fan Flow Chart (Cooling Application)	
Size	Max. cfm
20/30	700
40	1100
50	1450
60	2050
70	2600



High Performance Fan Coils

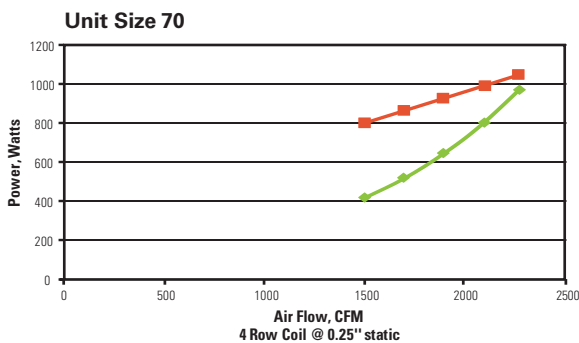
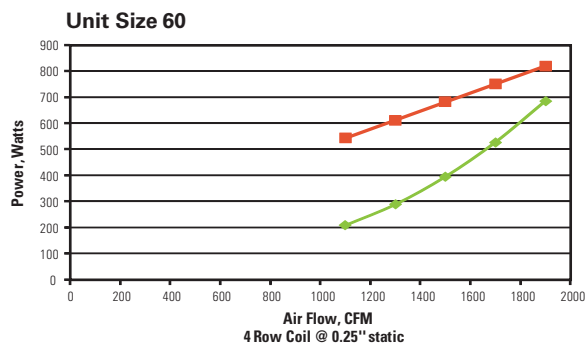
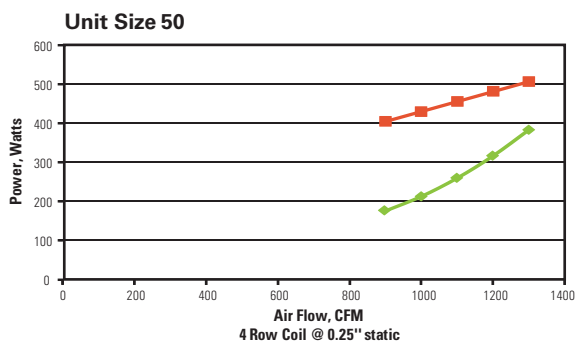
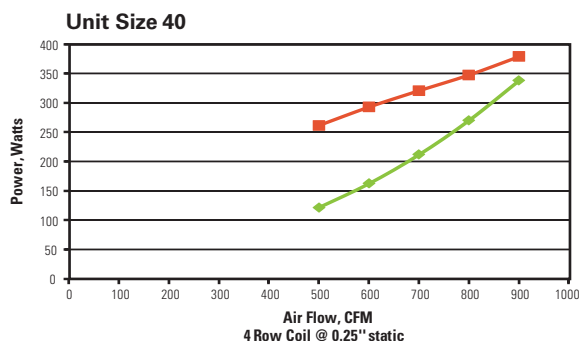
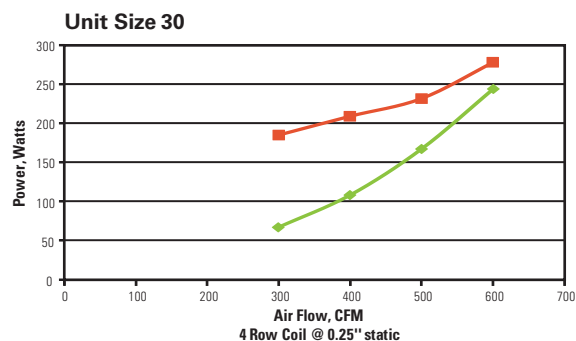
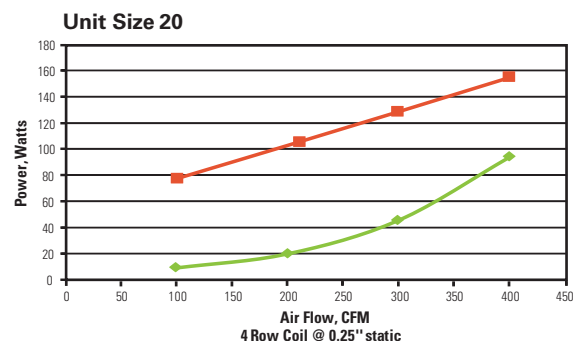
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Energy Consumption Comparison Charts

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Energy Consumption Comparison

Energy consumption graphs are presented for ECM and PSC motors above. The graphs provide the motor power consumption in Watts over the fan flow range of each size unit. The adjacent table illustrates a summary of the power consumption reduction for ECM motors at both a low and high fan flow for each size unit. At maximum flow settings the ECM power consumption is slightly lower than the PSC motor. At minimum flows the ECM provides much better results with power consumption approximately 30-50% of the PSC motor, illustrating the reduced efficiency of PSC motors at reduced speeds. Since most fan coils are selected to operate at mid to low flow the energy savings for ECM motors are substantial. This is even more pronounced when a variable fan flow strategy is selected.

ECM vs PSC Motor Power Consumption

Size	Fan Flow		Power Consumption, Watts					
			Low Flow			High Flow		
	Low	High	PSC	ECM	%	PSC	ECM	%
20	100	400	78	10	13	155	94	61
30	300	600	190	60	32	280	240	86
40	500	900	260	120	50	380	340	89
50	900	1300	400	190	48	500	390	78
60	1150	1900	500	200	40	800	700	88
70	1500	2400	800	400	50	1000	1075	93



Notes:

- Power consumption tested in accordance with ASHRAE Standard 130-2008. Discharge static pressure for Power Consumption test was 0.25 in. w.c. Lower discharge static pressures will result in slightly lower power consumption and higher discharge static pressures will result in higher power consumption.

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Energy Savings Example

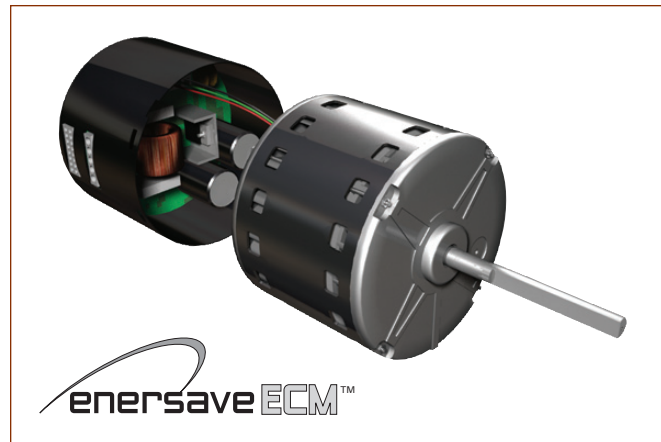
A typical job has 100 fan coil units; 60 classified as small units (size 30 @ 400 cfm each) and 40 large units (size 50 @ 1200 cfm each). Typically the building will be run 12 hours per day, 250 days per year for a total of 3000 operational hours. This example assumes an energy cost of \$ 0.10 per KWh and a monthly demand charge of \$10.00 per KW.

Operating Cost Savings

Small Units	Standard PSC Motor Energy	200Watts
	ECM Motor Energy	100Watts
	Energy Saved	100Watts
	Annual Savings per box	\$30.00
	Annual Savings per building	\$1800.00
Large Units	Standard PSC Motor Energy	500Watts
	ECM Motor Energy	300Watts
	Energy Saved	200Watts
	Annual Savings per box	\$60.00
	Annual Savings per building	\$2400.00
A) Total Operating Cost Savings (per year) =		\$4200.00

Demand Charge Reduction

Small Units	Energy Saved	100 Watts
	Annual Savings per box	\$12.00
	Annual Savings per building	\$720.00



Large Units	Energy Saved	200Watts
	Annual Savings per box	\$24.00
	Annual Savings per building	\$960.00
B) Total Demand Charge Savings (per year) =		\$1680.00
C) Total Energy Savings (per year) =		\$5880.00

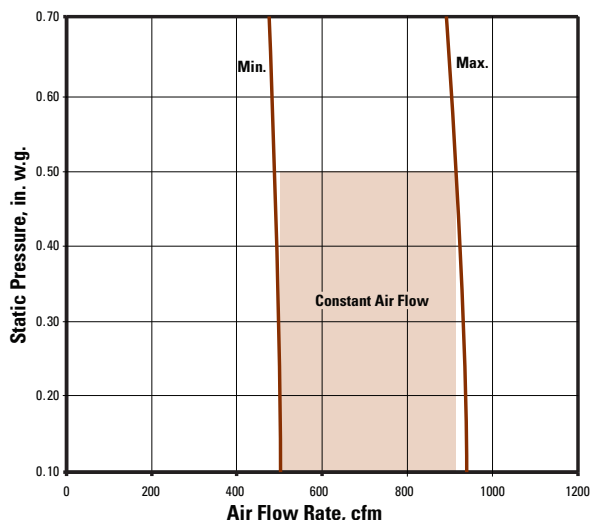
Fan Flow Selection Guidelines

The shaded area shown on the ECM fan curves gives the range of constant fan flow operation for each unit size and total coil combination for external static pressures from 0.1 to 0.5 in. of water gauge. In the shaded area the fan can be factory set to design conditions. Selection outside the shaded area is allowable. However, fan flow will vary according to the external static pressure applied to the fan.

Fan flow selections should be made near the mid-range of the unit size and coil configuration regardless of motor type. This will ensure that there is adequate fan volume capacity or turn down if actual install system pressures are slightly higher or lower than the anticipated design. This will also help lower the noise generated by the fan and allow for possible future changes to the system. Selecting on maximum or minimum fan curves should be avoided.

For cooling applications, be sure to select and set the fan flow below the 500 ft per minute (fpm) average coil face area maximum. See Maximum Fan Flow Chart under fan curves. Selecting a flow above these volumes may result in condensation carryover beyond the unit and condensation diverter.

Unit Size 40 - 4 Row ECM Constant Flow



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Sound Power Levels - Standard Unit

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Sound Power Levels, Lw, dB, re 10 ⁻¹² Watts																
Radiated Sound Power Levels										Discharge Sound Power Levels						
Unit Size	Air Flow		Octave Band						Radiated NC	Octave Band						Discharge NC
	L/s	cfm	2	3	4	5	6	7		2	3	4	5	6	7	
20	47	100	59	55	52	48	38	31	26	67	58	54	51	43	35	24
	94	200	61	58	55	53	43	35	30	69	61	57	55	48	40	27
	142	300	63	60	58	56	47	38	33	72	63	60	59	51	44	29
	212	450	66	62	61	61	52	42	36	75	67	63	63	56	49	29
30	142	300	62	60	58	56	47	37	33	65	62	59	59	52	45	22
	212	450	65	63	62	60	52	43	37	69	66	64	64	58	52	25
	283	600	69	66	65	64	57	48	40	72	70	67	68	63	58	30
	330	700	71	68	66	66	59	51	42	74	73	69	70	66	61	33
40	236	500	62	59	58	58	48	38	33	63	61	60	58	54	47	--
	307	650	65	62	60	61	52	43	35	66	65	63	62	58	52	23
	378	800	67	65	62	63	56	47	38	69	68	66	66	61	57	26
	448	950	70	67	64	66	59	50	40	72	71	69	69	64	61	29
50	378	800	66	63	62	61	52	43	37	67	66	64	64	58	53	23
	496	1050	69	66	65	65	57	48	40	70	69	68	68	63	59	28
	566	1200	71	68	67	66	59	51	42	72	71	70	70	65	61	30
	661	1400	73	70	68	69	62	54	44	75	74	72	73	68	65	33
60	566	1200	68	65	64	63	54	44	39	67	66	66	65	60	55	23
	661	1400	70	67	65	65	56	47	41	69	68	68	68	63	58	26
	850	1800	73	71	68	68	60	52	44	73	72	71	72	67	63	31
	944	2000	75	72	69	70	62	54	45	75	74	73	74	69	66	33
70	708	1500	70	65	65	63	54	46	41	70	66	67	65	61	57	24
	850	1800	73	67	67	66	57	50	43	73	69	70	68	65	61	28
	1038	2200	76	70	70	69	61	54	45	76	73	73	72	68	66	32
	1227	2600	79	73	72	71	64	57	48	79	76	76	76	72	70	35

Performance Notes:

1. Test data obtained in accordance with AHRI Standard 880-2008 and ASHRAE Standard 130-2008.
2. Sound Power Levels expressed in decibels (dB) re 10⁻¹² watts.
3. Data is raw without any corrections for room absorption, duct attenuation, or ceiling transmission loss.
4. Fan external static pressure is 0.25 in. w.g. [63 Pa] in all cases.
5. Discharge sound power levels are the same for units with or without an Inlet Silencer.
6. Radiated sound power levels are based on non-ducted return (includes inlet sound plus casing radiated).

7. NC values are calculated based on typical attenuation values outlined in Appendix E, 2002 Addendum to AHRI Standard 885-2008, "A Procedure for Estimating Occupied Space Sound Levels in the Application of air Terminals and Air Outlets".
8. **Radiated NC** is based on a mineral fiber tile ceiling and the environmental effect. The radiated attenuation deductions are as follows:

Radiated Attenuation	Octave Band					
	2	3	4	5	6	7
Total Deductions	18	19	20	26	31	36

9. **Discharge NC** is based on the environmental effect, duct lining effect, end reflection, flex duct effect and sound power division. The total discharge attenuation deductions are as follows:

Discharge Attenuation	Octave Band					
	2	3	4	5	6	7
<300	24	28	39	53	59	40
300-700 cfm	27	29	40	51	53	39
>700 cfm	29	30	41	51	52	39

10. Blanks (--) indicate NCs less than 20.

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Sound Power Levels with Fiberglass Inlet Silencers

Sound Power Levels, Lw, dB, re 10⁻¹² Watts
Radiated Sound Power Levels

Unit Size	Air Flow		Octave Band							Radiated
	L/s	cfm	2	3	4	5	6	7	NC	
20	47	100	57	50	46	42	32	28	20	
	94	200	60	52	49	46	38	32	23	
	142	300	62	54	52	50	41	35	26	
	212	450	65	57	55	54	46	39	29	
30	142	300	61	58	54	52	44	39	28	
	212	450	65	61	57	56	49	44	32	
	283	600	68	64	60	59	54	49	35	
	330	700	70	66	62	62	56	52	37	
40	236	500	60	56	54	51	42	36	28	
	307	650	63	59	57	54	46	40	31	
	378	800	66	62	59	57	50	44	34	
	448	950	68	64	61	59	53	48	36	
50	378	800	65	61	57	56	49	42	32	
	496	1050	68	64	60	59	53	47	35	
	566	1200	70	65	61	61	55	49	36	
	661	1400	72	68	63	63	58	53	39	
60	566	1200	67	61	59	57	52	45	33	
	661	1400	69	63	60	59	54	47	35	
	850	1800	72	67	63	62	58	52	38	
	944	2000	74	68	64	64	60	55	40	
70	708	1500	66	61	62	56	47	45	37	
	850	1800	68	63	64	59	50	48	39	
	1038	2200	71	66	66	62	54	52	41	
	1227	2600	74	69	68	65	57	55	44	

Performance Notes:

- Test data obtained in accordance with AHRI Standard 880-2008 and ASHRAE Standard 130-2008.
- Sound Power Levels expressed in decibels (dB) re 10⁻¹² watts.
- Data is raw without any corrections for room absorption, duct attenuation, or ceiling transmission loss.
- Fan external static pressure is 0.25 in. w.g. [63 Pa] in all cases.
- Discharge sound power levels are the same for units with or without an Inlet Silencer.
- Radiated sound power levels are based on non-ducted return (includes inlet sound plus casing radiated).
- NC values are calculated based on typical attenuation values outlined in Appendix E, 2002 Addendum to AHRI Standard 885-2008, "A Procedure for Estimating Occupied Space Sound Levels in the Application of air Terminals and Air Outlets".
- Radiated NC** is based on a mineral fiber tile ceiling and the environmental effect. The radiated attenuation deductions are as follows:

Radiated Attenuation	Octave Band						
	2	3	4	5	6	7	
Total Deductions	18	19	20	26	31	36	
- Discharge NC** is based on the environmental effect, duct lining effect, end reflection, flex duct effect and sound power division. The total discharge attenuation deductions are as follows:

Discharge Attenuation	Octave Band						
	2	3	4	5	6	7	
<300	24	28	39	53	59	40	
300-700 cfm	27	29	40	51	53	39	
>700 cfm	29	30	41	51	52	39	
- Blanks (--) indicate NCs less than 20.

AHRI 440 Standard Ratings

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Unit Size	AHRI Certified	Rows	Coil Circuits	FPI	Dry Flow (cfm)	Qt (Btu/h)	Qs (Btu/h)	Flow (GPM)	WPD (ft w.g.)	Power Input (Watts)
20	YES	4	5	10	480	12200	9800	2.78	0.4	150
30	YES	4	5	10	670	13800	12600	3.09	0.7	330
40	YES	4	5	10	890	24500	19500	5.45	2.3	330
50	YES	4	5	10	1370	37000	29300	8.18	6.1	650
60		4	10	10	1920	49800	40400	10.78	4.4	702
70		4	10	10	2600	69200	55500	14.96	5.1	1314

Notes:

- Ratings based on 80 °F DB and 67 °F WB EAT, 45 °F EWT, 10 °F temperature rise, Max fan flow setting. Motor type is ECM Constant Volume and motor voltage is 115/1/60. Air flow under dry coil conditions with 0.20 in. external static pressure and 2 in. MERV 8 filter.
- The AHRI 440 certification program only covers air flow capacities up to 1500 cfm, therefore sizes 60 and 70 are not certified.
- For all application ratings, please contact your local Price representative.



F1-54

All Metric dimensions () are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimetre.

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Electric Coil Information

General Information

Electric heat coils are an accessory available for use with Price high performance Genesis fan coils. The electric heating coils are factory-mounted in the preheat position (upstream of hydronic cooling coil and offer an alternative to hot water coils).

Advantage can be taken of the electrical power supply hookup for the fan coil when making the electrical connection for the electric coil. (Note: the electrical power supply conductor size increases when electrical coil load is added, refer to NEC codes for conductor sizing.)

Controls for the electric heat are interlocked and sequenced with the fan motor in the unit. The electric heat can be energized only after the fan is operating and then only if the warm plenum air supplied by the fan has not been sufficient to satisfy space heat requirements.

Features/Benefits of Price Electric Heat Coils:

- 3/4 in. flange-type construction provides sturdy framework for elements.
- Heavy gauge zinc-coated steel electrical cabinet and frame.
- Large electrical cabinet door hinged for easy access and designed for secure closure.
- Electric coil controls and fan coil controls are on the same side of the unit reducing design restrictions and providing ease of servicing.
- Electric coil configuration and air flow is matched to eliminate hot spots to provide efficient heat transfer and to maintain element life.
- Automatic reset thermal cutout specifically matched to each unit to protect from overheating in case the minimum air flow requirements are not met.
- Secondary thermal cutout is in the power circuit and is used as a backup in case of failure of the automatic reset thermal cutout.
- Fan is interlocked with the heating elements to ensure that the fan is operational prior to the heating elements being energized.
- High grade nickel chrome heating elements to provide superior element life and corrosion resistance.
- A single point connection is provided for both heater and fan motor. Dual point connection is available as an option.
- Electric coil units are ETL listed to meet electrical safety standards and comply with dual designation CSA 236/UL 1995.



Unit Size	Single Point Power Connection								Dual Point Power Connection							
	115V		208V		240V		277V		115V		208V		240V		277V	
	Std	SCR	Std	SCR	Std	SCR	Std	SCR	Std	SCR	Std	SCR	Std	SCR	Std	SCR
20	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
30	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
40	5.1	5.1	7.1	7.1	7.1	7.1	7.1	7.1	5.7	5.3	7.1	7.1	7.1	7.1	7.1	7.1
50	4.7	4.7	8.8	8.8	10.5	10.5	10.7	10.7	5.7	5.3	9.9	9.3	10.7	10.7	10.7	10.7
60	4.5	4.5	8.7	8.7	10.4	10.4	12	12	5.7	5.3	9.9	9.3	11.5	10.7	13.2	12.4
70	3.4	3.4	7.2	7.2	8.7	8.7	11.2	11.2	5.7	5.3	9.9	9.3	11.5	10.7	13.2	12.4

Notes: Listed by 48 Amp and 70 CFM / Kw.

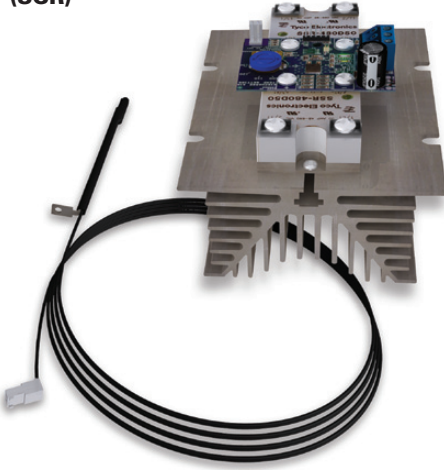
Available Options

- Positive pressure air flow switch which senses pressure differential between a factory preset pressure and the combined velocity pressure plus static pressure. If the fan fails to operate, then the positive pressure air flow switch will not allow the electric coil to operate.
- An interlocking main disconnect switch is used to de-energize the electric unit once the electrical enclosure door has been opened.
- Mercury contactors recommended for use in applications sensitive to noise. Mercury contactors provide quiet operating characteristics. Recommended for applications which have frequent demand and cycle repeatedly.

- Disconnecting contactors for applications where it is necessary to disconnect all three phase power up.
- Up to two additional stages of electric available to allow for staged heating capacity.
- SCR (Silicon Controlled Rectifier) option provides infinite heater control using a proportional signal. Element life is extended and noise from contactors is eliminated. This option may be specified compatible with pneumatic, electronic, or DDC controls. See description below. (UL and CSA certified)
- Primary or Secondary Fusing for added safety or to meet local electrical codes.

Electronic Heating Controls

Silicon Controlled Rectifier (SCR)



SCR

The Price SCR Controller is a Silicon Controlled Rectifier that provides proportional modulation to the output over its full operating range. The SCR acts like an electronic switch that turns on and off large amounts of power to the load (heater). The Price SCR uses a Zero Crossing feature that allows a soft start of the electronic load, which eliminates power surges.

Features

- Power requirements – 24 VAC, polarity sensitive.
- Large, finned aluminum Heat Sink to provide proper heat dissipation.
- Load Power ranging from 120 VAC to 480 VAC, and a current rating up to 25 or 45 amps (depending on model).
Multiple Control Input signals from stand alone controller or BAS controller: 2-10 vdc signal, 4-20 mA signal, 24 VAC Pulsed signal
- LED indication for: Firmware Version, Type of Input Signal, and Output Indication.
Factory or Field installable optional Discharge Air Temperature (DAT) Probe for maintaining outlet air

Benefits of SCR

- Proportional modulation of the heater maintains set-point more accurately than on/off control, providing maximum comfort in the space.
- Energy efficient by avoiding overshooting and undershooting and reduces operation costs.
- Quiet operation of solid state relays compared to mechanical relay or contactor pulling in and dropping out.
- SCR can be tied into existing BAS controller, or can be used in a stand alone application.

Selection Guidelines

Electric Coil Selection

When selecting electric coils, the following points should be considered:

1. Once the design air flow has been determined refer to the appropriate air flow limits to select the size of unit required to deliver the specified air flow.
2. With size and air flow known, electric reheat capacity can be calculated. Refer to the electric coil selection procedure below for details.

3. With the heating capacity known, confirm:

- a. Power Supply requirements from coil selection charts.
- b. The minimum air flow requirements are met (**at least 70 cfm/kW**), and that the discharge air temperature does not exceed 120 °F.

4. Select coil options.

5. Static pressure loss of the coil elements is negligible, therefore minimum pressure is equal to the basic unit values.

6. For stable operation of heater controls minimum discharge static pressure of 0.2 in. w.g. is recommended.

How to Use the Chart

Electric Coil Selection Procedure

The selection of an electric coil for a Fan Coil unit requires the determination of the two components of the heat loss. One component is the heat required to satisfy the space load. The second component is the heat required to raise the temperature of the recirculated plenum air to that of the space. This can be determined as follows, using the Electric Reheat Selection Chart and the equation as given below.

1. Locate the room heat loss on the MBH scale on the far left side of the chart. Convert to kW by moving horizontally to the right to the kW scale (1 kW = 3.413 MBH).

2. Calculate the kW required to heat the primary air to room temperature using the following equation:

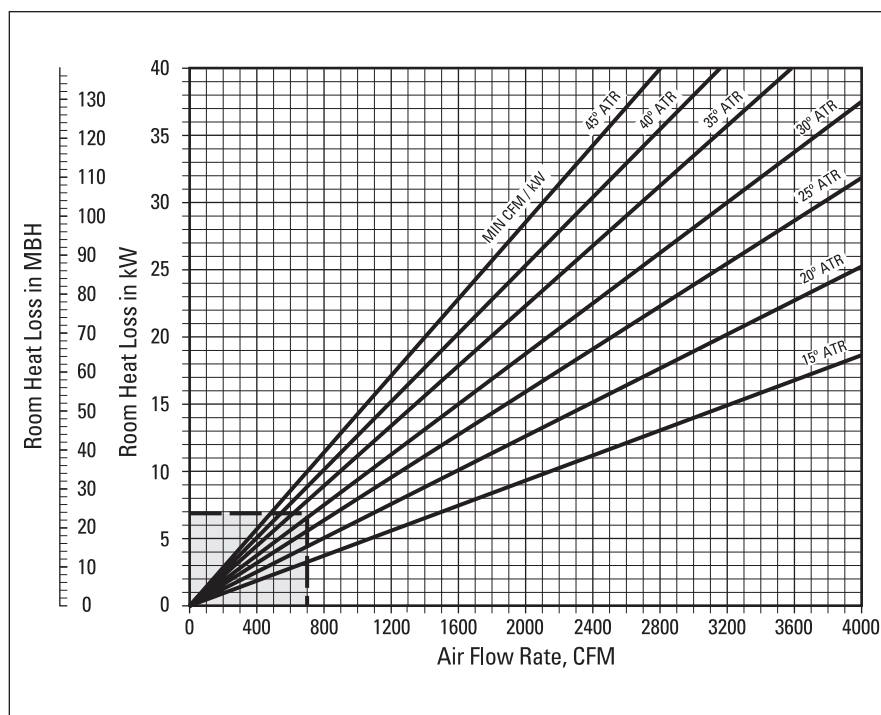
$$\text{kW} = \frac{\text{cfm} \times 1.08 \times \Delta T}{3413}$$

3. Add the kW value obtained in step 2 to the kW scale at the left side. Move horizontally to the right to the point where the kW value and the air flow volume intersect.

4. With the point of intersection from step three, the air temperature rise (ATR), can be obtained by interpolating between the air temperature rise lines on the graph.

5. To verify the selection, sum the air temperature rise and the temperature of the primary air. The sum total should be less than 120 °F.

Reheat Selection Chart



Selection Example

Select electric coil for a size 30 FCHG with an air flow of 700 cfm. Space heat loss is estimated at 20 MBH and space design temperature is 72 °F. The temperature of the primary air flow is 68 °F.

1. Space heat loss (20 MBH) = 5.9 kW.
2. Heat required to raise the temperature of the primary air:

$$\text{kW} = \frac{700 \times 1.08 \times 4}{3413} = 0.88 \text{ kW}$$

3. Total heat required = 5.9 + 2.65 = 6.8 kW

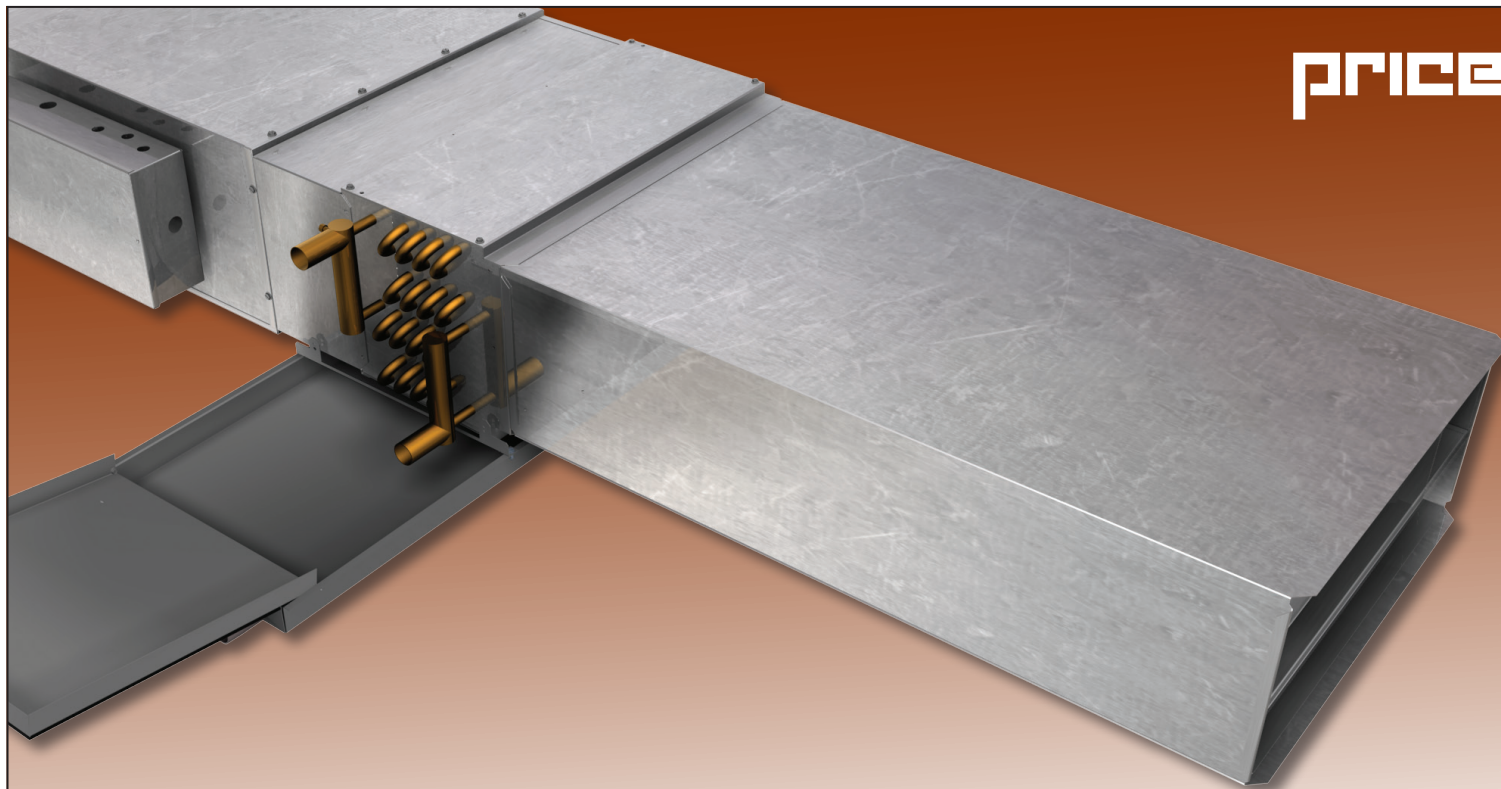
4. Air temperature rise (ATR) = 30 °F

5. Leaving air temperature = 68 °F + 30 °F = 98 °F. Since the leaving air temperature is less than the recommended maximum limit of 120 °F, the selection is satisfactory.

6. Select a suitable power supply from the Coil Selection Charts.

7. Verify minimum air flow requirements are met. (Minimum 70 cfm/kW).

$$\frac{700 \text{ cfm}}{6.8 \text{ kW}} = 103 \text{ cfm/kW}$$



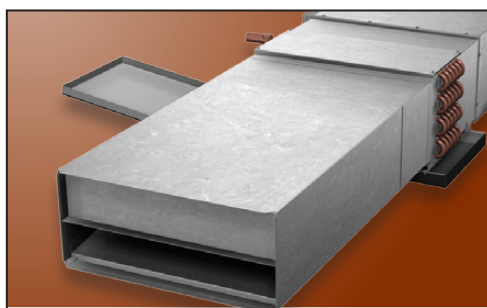
FCHGQ Series

PRICE ► GENESIS®

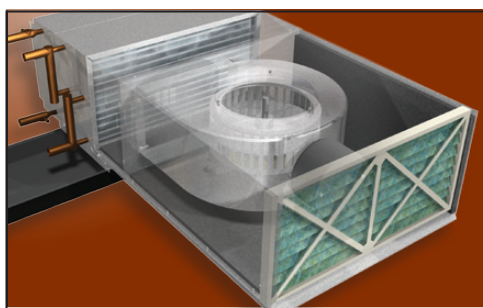
QUIET HORIZONTAL HIGH PERFORMANCE FAN COILS

Factory assembled, horizontal blow-through fan coils designed for concealed installations above ceilings in noise-sensitive applications with medium length discharge duct. The Price FCHGQ comes in six sizes with integral discharge silencers tuned for optimum noise control.

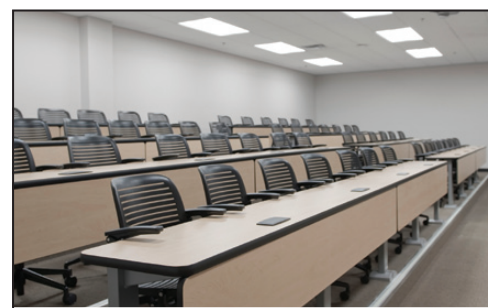
The industry's first AHRI 440 certified Quiet Horizontal High Performance Fan Coil Unit with integrated silencer.



Integral absorptive silencers for low noise levels



Available with MERV 13 filters and constant flow programming



Low sound levels, ideal for classrooms and lecture halls



www.priceindustries.com for additional product information, including product videos and brochures.

High Performance Fan Coils

FCHGQ Series

Horizontal Quiet

price

Product Information

Model

Horizontal High Performance Quiet **FCHGQ**

Factory assembled, horizontal blow-through fan coils with integral silencer designed for concealed installations above ceilings for noise-sensitive applications. Suitable for projects such as hotels, motels, condominiums, hospitals and general commercial applications.

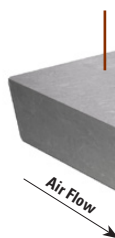
Standard Features include:

- ETL-Listed. Constructed in compliance with ANSI/UL 1995 Standard.
- AHRI 440 certified units.
- Integral absorptive silencers for low noise levels.
- Casing fabricated from 20 gauge galvanized steel.
- 1/2 in. [13] thick, min. 1.5 lb density fiberglass internal insulation, which meets NFPA 90A and UL181.
- Water coils with copper tubes and aluminum fins are performance rated and certified in accordance with the current edition of AHRI Standard 410.
- Coil manual air vents included.
- Energy efficient ECM motor.
- 115V, 208V, 240V and 277V motors available.
- Double width Double Inlet (DWDI) direct driven blowers.
- Single point power connection.
- Single wall galvanized steel drain pan, externally insulated with foam.
- Slip and drive connections on inlet and discharge.
- Sloped coil casing for condensate removal.
- External static pressure up to 0.5 in. w.g. with 8 rows of coils.
- Integral condensate diverting section built into silencer to prevent carry over.
- 1 in. MERV 3 Throwaway Filter.

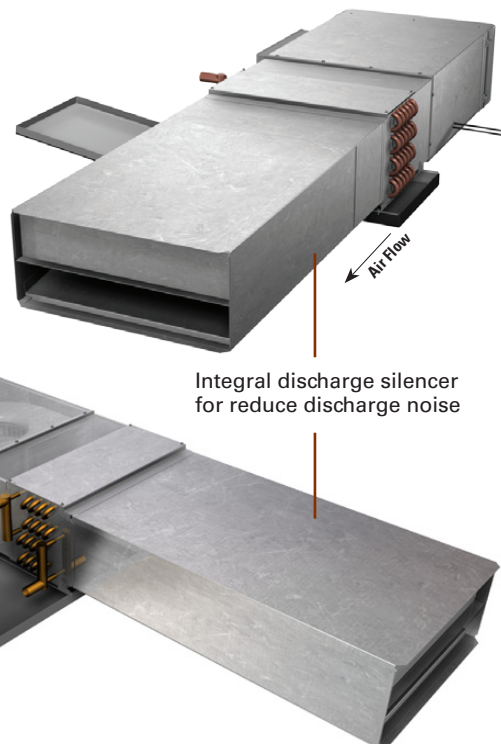
price

Patent Pending

Optional inlet silencer for reduced radiated noise



Integral discharge silencer for reduce discharge noise



Optional Features Include:

- 1 to 4, or 6 row coils available for 2 pipe systems.
- 3, 4 or 6 rows cooling coils with 1 or 2 rows re-heat coils for 4 pipe system applications (8 rows max).
- LH or RH entry pipe connections.
- Silencer Liner options:
 - Fiberglass (standard), PL (polymer film), FC (fiberglass cloth).
- Drain pan options:
 - Single wall drain pan manufactured in 20 gauge 304 Stainless Steel, externally insulated w/foam.
 - Drain pan safety overflow connection (secondary drain).
- Hanger brackets.
- Spring hanger brackets.

Casing

- Liner options:
 - Solid Metal (SM)
 - Perforated Metal (PM)
 - 1/2 Fiber Free Foam (FF50)
 - 5/8 Foil Faced Fiberglass Board (FB).
- 2 in. MERV 8 or MERV 13 pleated filter available.
- CAD - coil access door 4 in. x 6 3/4 in. [102 x 171].
- Inlet silencer for reduced radiated noise
- Fresh air inlet (FAI) option coupled with SP300 flow sensor and low-leakage damper.

FAN COILS & BLOWER COILS PERFORMANCE

High Performance Fan Coils

FCHGQ Series

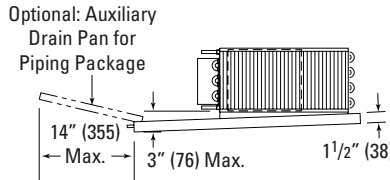
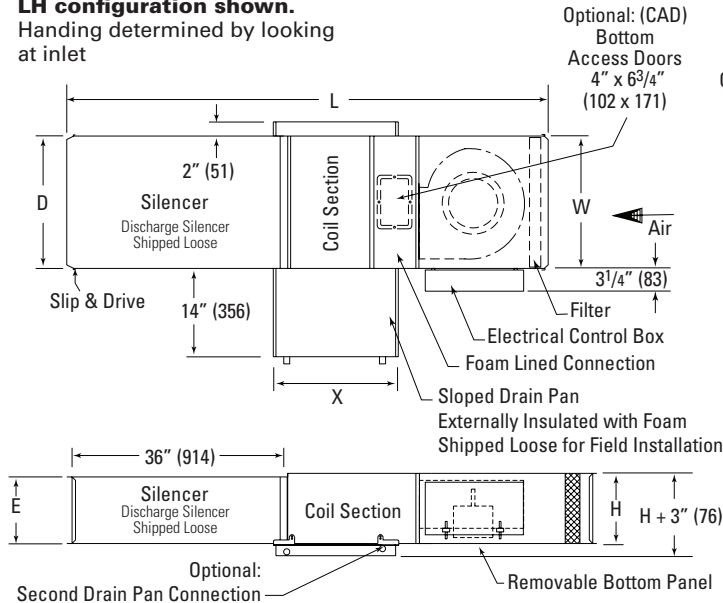
Horizontal Quiet

price[®]

Dimensional Data

LH configuration shown.

Handing determined by looking at inlet



Dimensional Data - IP (in.) / SI [mm]

Unit Size	Max. Fan Flow, cfm	Outlet Duct Size		W	H
		D	E		
20	500 [236]	21 [533]	9 [229]	21 [533]	10 1/2 [267]
30	760 [358]	21 [533]	9 [229]	21 [533]	10 1/2 [267]
40	910 [430]	26 [660]	11 1/2 [292]	26 [660]	12 1/2 [318]
50	1480 [698]	42 [1067]	9 [229]	42 [1067]	10 1/2 [267]
60	1950 [920]	48 [1219]	11 1/2 [292]	48 [1219]	12 1/2 [318]
70	2700 [1274]	60 [1524]	11 1/2 [292]	60 [1524]	12 1/2 [318]

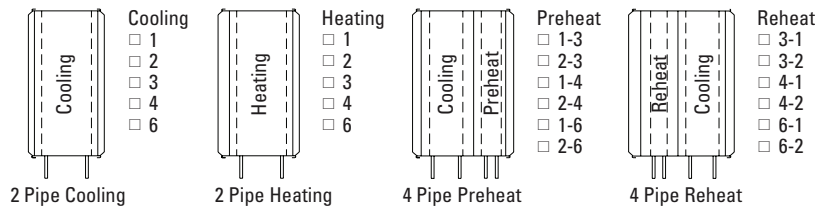
Dimensional Data - IP (in.) / SI [mm]

Connection Size	Number of Rows			
	1 & 2	3 & 5	6	
20 - 60	7/8 [22]	7/8 [22]	1 1/8 [29]	
70	7/8 [22]	1 1/8 [29]	1 1/8 [29]	

Dimensional Data IP (in.) / SI [mm]

Dimensional Data IP (in.) / SI [mm]		Number of Rows									
		Cooling			Heating			Preheat		Reheat	
		1 & 2	3 & 4	6	1 & 2	3 & 4	6	1-3, 2-3, 1-4, 2-4	1-6, 2-6	3-1, 3-2, 4-1, 4-2	6-1, 6-2
L	20 - 40	71 ⁵ / ₈ [1819]	73 ³ / ₈ [1864]	75 ³ / ₈ [1914]	71 ⁵ / ₈ [1819]	73 ³ / ₈ [1864]	75 ³ / ₈ [1914]	78 ³ / ₈ [2143]	80 ³ / ₈ [2041]	78 ³ / ₈ [2143]	80 ³ / ₈ [2041]
	50 - 60	74 ¹ / ₈ [1883]	75 ⁷ / ₈ [1927]	77 ⁷ / ₈ [1978]	74 ¹ / ₈ [1883]	75 ⁷ / ₈ [1927]	77 ⁷ / ₈ [1978]	80 ⁷ / ₈ [2282]	82 ⁷ / ₈ [2105]	80 ⁷ / ₈ [2282]	82 ⁷ / ₈ [2105]
	70	77 ¹ / ₈ [1959]	78 ⁷ / ₈ [2003]	80 ⁷ / ₈ [2054]	77 ¹ / ₈ [1959]	78 ⁷ / ₈ [2003]	80 ⁷ / ₈ [2054]	83 ³ / ₈ [2282]	85 ⁷ / ₈ [2181]	83 ³ / ₈ [2282]	85 ⁷ / ₈ [2181]
X		14 ⁷ / ₈ [359]			n/a (no drain pan)			17 ⁷ / ₈ [452]		17 ⁷ / ₈ [452]	

Coil Configurations



Filter Sizes

Size	W	H	Qty
20	20 7/8 [530]	10 1/4 [260]	1
30	20 7/8 [530]	10 1/4 [260]	1
40	25 7/8 [657]	12 1/4 [311]	1
50	20 7/8 [530]	10 1/4 [260]	2
60	23 7/8 [606]	12 1/4 [311]	2
70	29 7/8 [757]	12 1/4 [311]	2

Motor Data

Unit Size		Motor HP(s)		# of Motors	Full Load Amps (Single Phase and 60Hz)							
					115 Volts		208 Volts		240 Volts		277 Volts	
		PSC	ECM		PSC Amps	ECM Amps	PSC Amps	ECM Amps	PSC Amps	ECM Amps	PSC Amps	ECM Amps
20		1/8	1/3	1	1.73	3.25	.81	2.25	.81	1.90	.64	1.29
30		1/4	1/2	1	3.22	4.86	1.29	3.13	1.25	2.54	1.37	2.06
40		1/2	1/2	1	5.14	5.15	2.37	3.21	2.27	2.54	2.35	2.26
50		1/4 x 2	1/2 x 2	2	5.93	8.72	2.58	5.29	2.47	4.11	2.63	3.47
60		1/2 x 2	1/2 x 2	2	10	9.6	4.42	2.91	4.3	4.64	4.32	4.6
70		1/2 x 2	3/4 x 2	2	13.96	19.04	5.80	13.33	6.10	11.37	5.94	7.40

Notes: 1. Based on 2 row dry coil and 2 in. MERV 8 filter. Nameplate values for amperage may be higher. Amps are based on total unit current draw.

F1-60

All Metric dimensions () are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimetre.

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High Performance Fan Coils

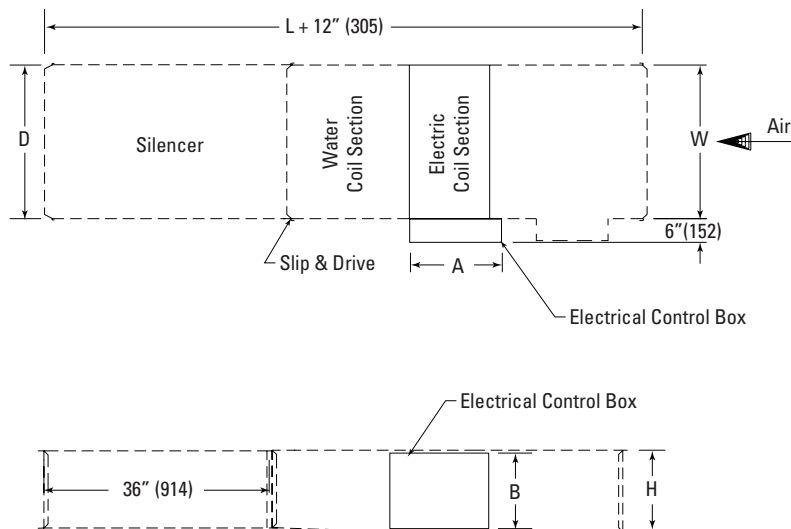
FCHGQ Series

Horizontal Quiet

price®

Accessories

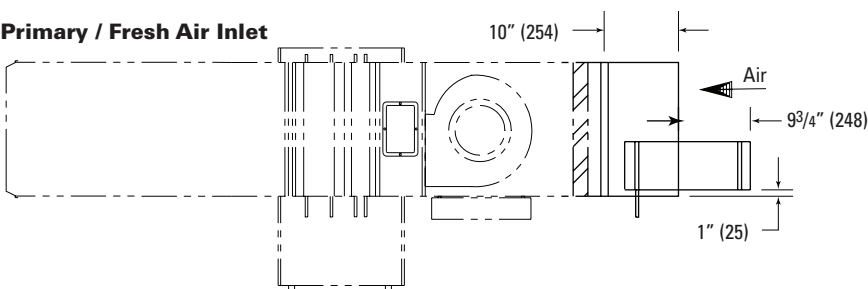
Electric Heat



Electric Heat

Unit Size	Control Box Size	
	A	B
20	22 [558]	10 [254]
30	22 [558]	10 [254]
40	18 [457]	12 [304]
50	22 [558]	10 [254]
60	18 [457]	12 [254]
70	18 [457]	12 [254]

Primary / Fresh Air Inlet



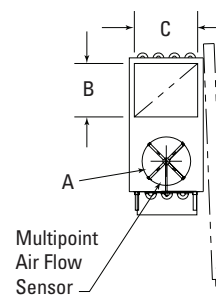
Fresh Air Inlet is supplied with Price SP300 flow sensor and low-leakage control damper.

Primary/Fresh Air Inlet

Size	A
20	6, 8 [152, 203]
30	6, 8 [152, 203]
40	6, 8 [152, 203]
50	6, 8 [152, 203]
60	6, 8, 10 [152, 203, 254]
70	6, 8, 10 [152, 203, 254]

Return Air Inlet

Size	B	C
20	10 1/2 [267]	9 1/2 [241]
30	10 1/2 [267]	9 1/2 [241]
40	15 1/2 [394]	11 1/2 [292]
50	31 1/2 [800]	9 1/2 [251]
60	35 1/2 [902]	11 1/2 [292]
70	47 1/2 [1206]	11 1/2 [292]



High Performance Fan Coils

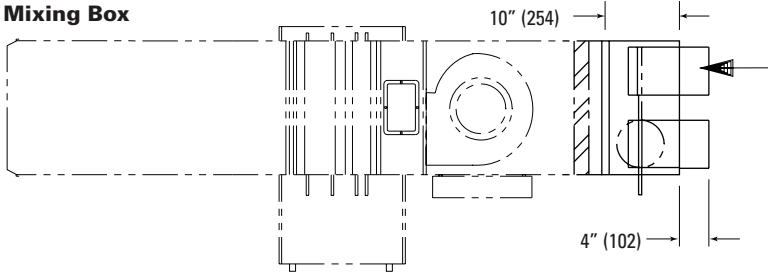
FCHGQ Series

Horizontal Quiet



Accessories

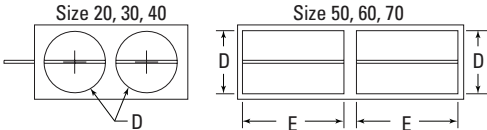
Mixing Box



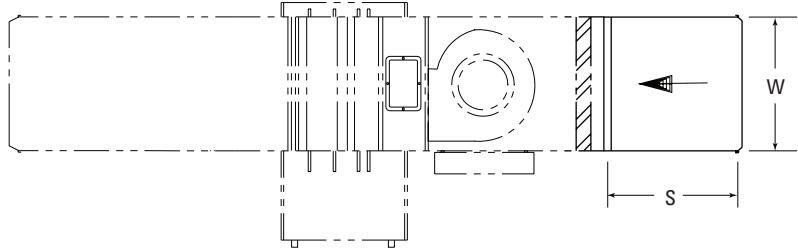
Mixing Box

Size	D	E
20	10 [254]	--
30	10 [254]	--
40	10 [254]	--
50	8 [203]	16 [406]
60	8 [203]	21 [533]
70	9 [229]	28 [711]

Mixing Box Configuration



Inlet Silencer



Inlet Silencer

Size	S, in	S, mm
20	18"	457
30	18"	457
40	18"	457
50	18"	457
60	18"	457
70	36"	914

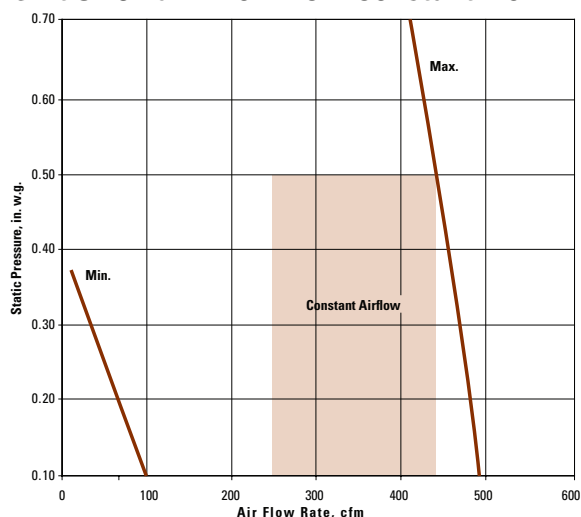
LH configuration shown.

Handing determined by looking at inlet

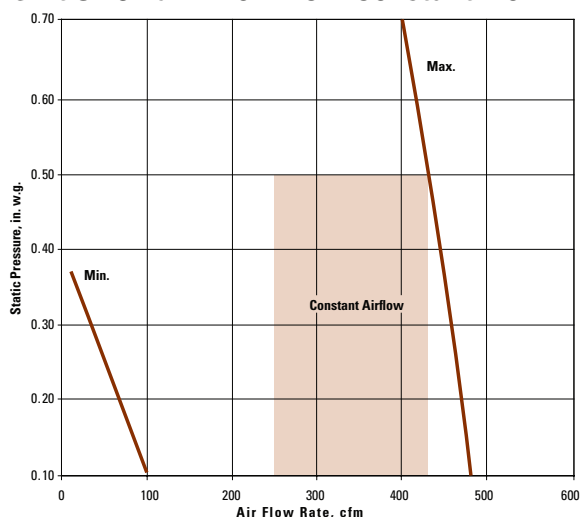
FAN COILS & BLOWER COILS

Fan Performance Curves – ECM Motor

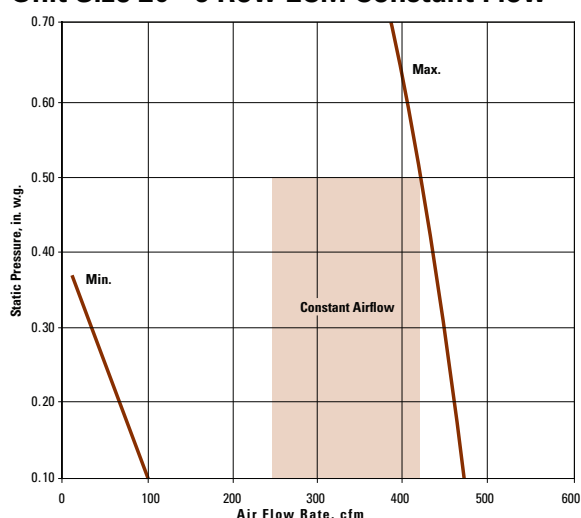
Unit Size 20 - 2 Row ECM Constant Flow



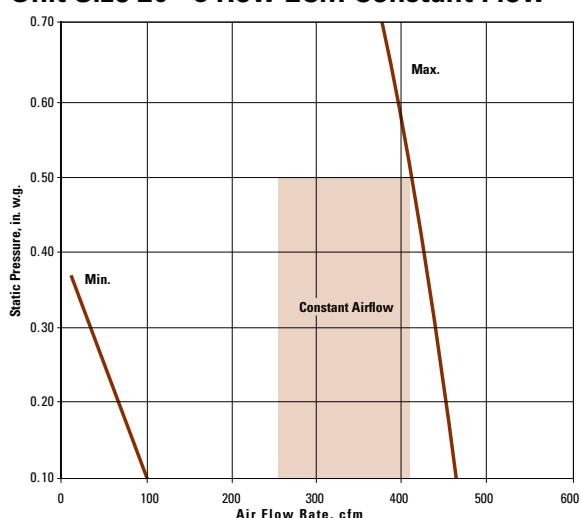
Unit Size 20 - 4 Row ECM Constant Flow



Unit Size 20 - 6 Row ECM Constant Flow



Unit Size 20 - 8 Row ECM Constant Flow



Caution to Contractors

Fan coil units are not intended for use as temporary heat or ventilation during building construction. The units are not designed nor equipped to operate in a dusty construction environment. Recirculating fan wheels can become coated with construction dust, resulting in an unbalanced wheel. This in turn can contribute to reduced motor life. Inlet air filters would provide little protection as they would quickly become plugged with construction dust.

Please Note: Price cannot warrant against unauthorized operation under conditions as outlined on this page.

Notes:

1. Fan curves include 2 in. MERV 8 filter.
2. To prevent condensate carry over in cooling applications, fan flow should not exceed 500 fpm average coil face velocity; see maximum fan flow chart.
3. For motor data and power consumption comparison, refer to FCHG. Data is the same for both models.
4. For Fan flow selection guidelines, refer to F1-77.

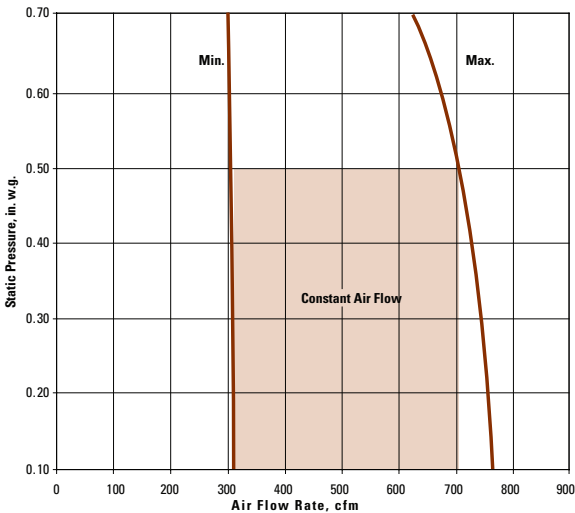
Maximum Fan Flow Chart (Cooling Application)

Size	Max. cfm
20/30	700
40	1100
50	1450
60	2050
70	2600

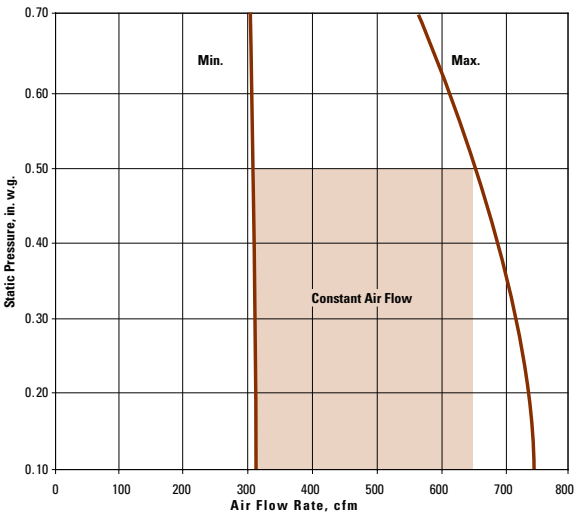
Fan Performance Curves – ECM Motor

FAN COILS & BLOWER COILS

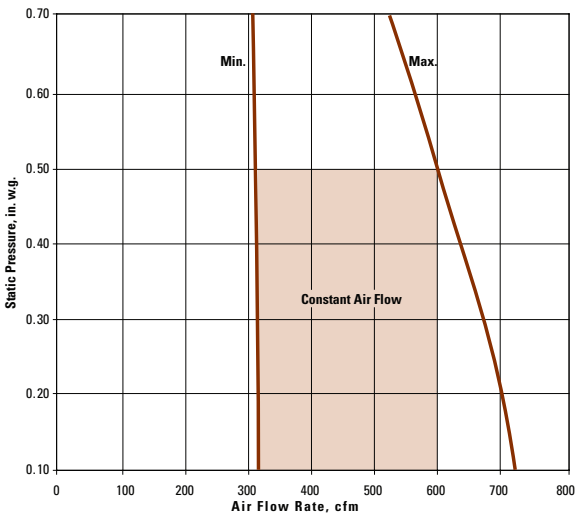
Model FCHGQ 30 - 2 Row ECM Constant Flow



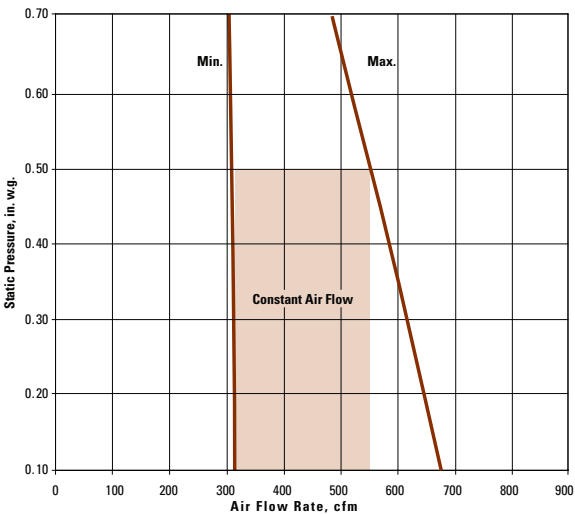
Model FCHGQ 30 - 4 Row ECM Constant Flow



Model FCHGQ 30 - 6 Row ECM Constant Flow



Model FCHGQ 30 - 8 Row ECM Constant Flow



Caution to Contractors
Fan coil units are not intended for use as temporary heat or ventilation during building construction. The units are not designed nor equipped to operate in a dusty construction environment. Recirculating fan wheels can become coated with construction dust, resulting in an unbalanced wheel. This in turn can contribute to reduced motor life. Inlet air filters would provide little protection as they would quickly become plugged with construction dust.

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- Notes:
1. Fan curves include 2 in. MERV 8 filter.

2. To prevent condensate carry over in cooling applications, fan flow should not exceed 500 fpm average coil face velocity; see maximum fan flow chart.

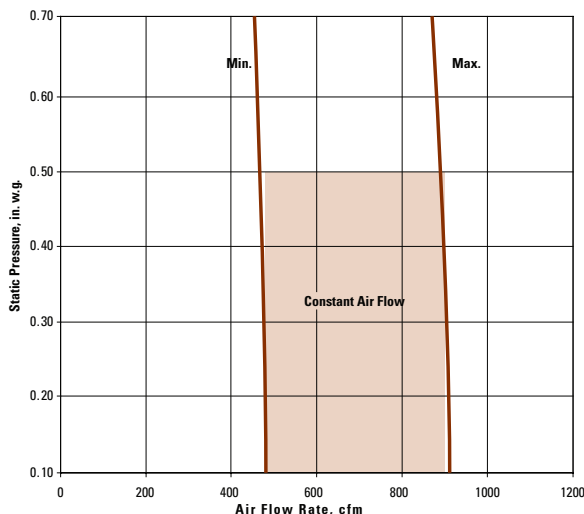
3. For motor data and power consumption comparison, refer to FCHG. Data is the same for both models.

4. For Fan flow selection guidelines, refer to F1-77.

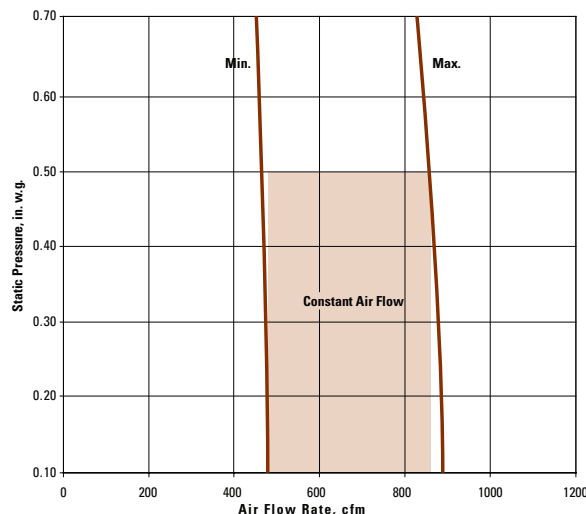
Maximum Fan Flow Chart (Cooling Application)	
Size	Max. cfm
20/30	700
40	1100
50	1450
60	2050
70	2600

Fan Performance Curves – ECM Motor

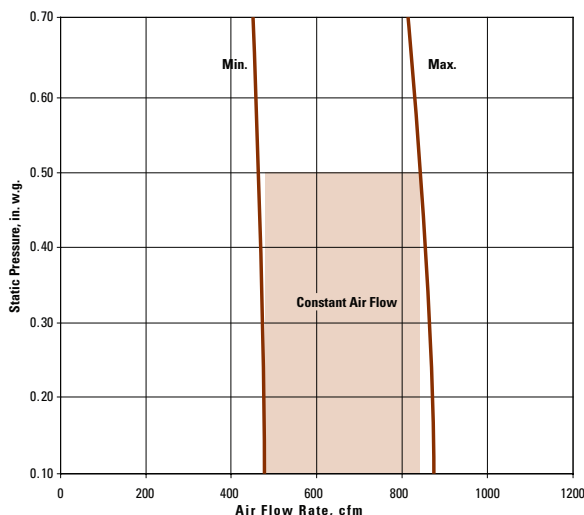
Model FCHGQ 40 - 2 Row ECM Constant Flow



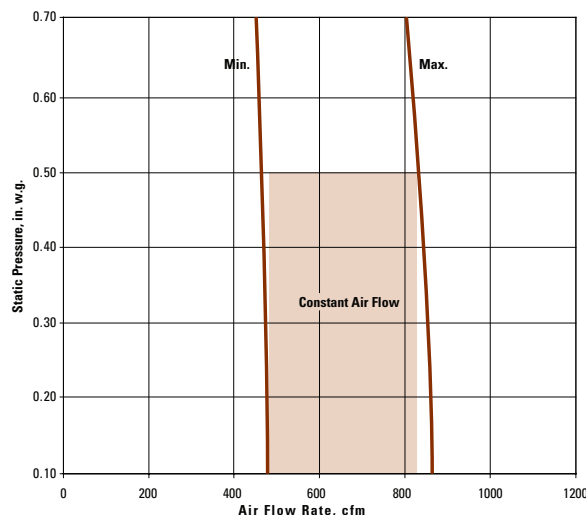
Model FCHGQ 40 - 4 Row ECM Constant Flow



Model FCHGQ 40 - 6 Row ECM Constant Flow



Model FCHGQ 40 - 8 Row ECM Constant Flow



Caution to Contractors

Fan coil units are not intended for use as temporary heat or ventilation during building construction. The units are not designed nor equipped to operate in a dusty construction environment. Recirculating fan wheels can become coated with construction dust, resulting in an unbalanced wheel. This in turn can contribute to reduced motor life. Inlet air filters would provide little protection as they would quickly become plugged with construction dust.

Please Note: Price cannot warrant against unauthorized operation under conditions as outlined on this page.

Notes:

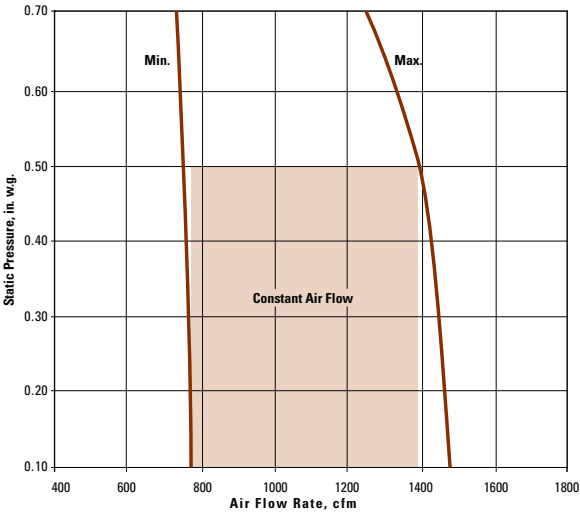
1. Fan curves include 2 in. MERV 8 filter.
2. To prevent condensate carry over in cooling applications, fan flow should not exceed 500 fpm average coil face velocity; see maximum fan flow chart.
3. For motor data and power consumption comparison, refer to FCHG. Data is the same for both models.
4. For Fan flow selection guidelines, refer to F1-77.

Maximum Fan Flow Chart (Cooling Application)

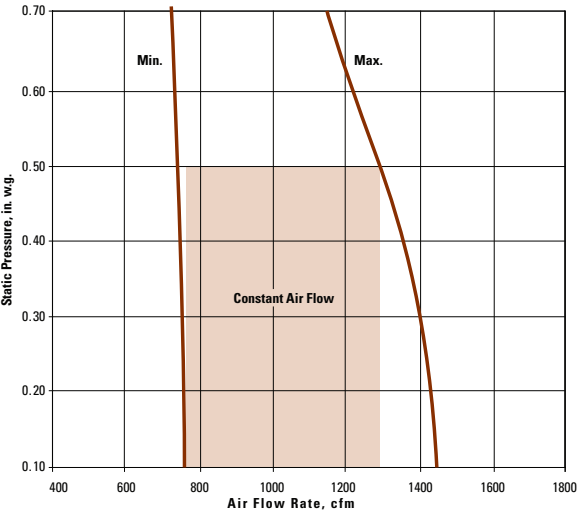
Size	Max. cfm
20/30	700
40	1100
50	1450
60	2050
70	2600

Fan Performance Curves – ECM Motor

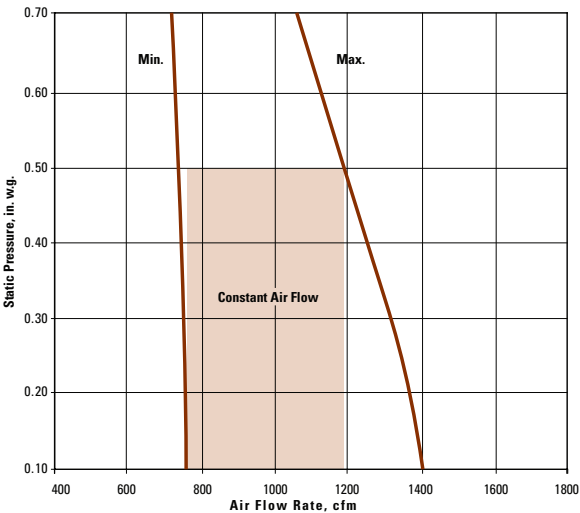
Model FCHGQ 50 - 2 Row ECM Constant Flow



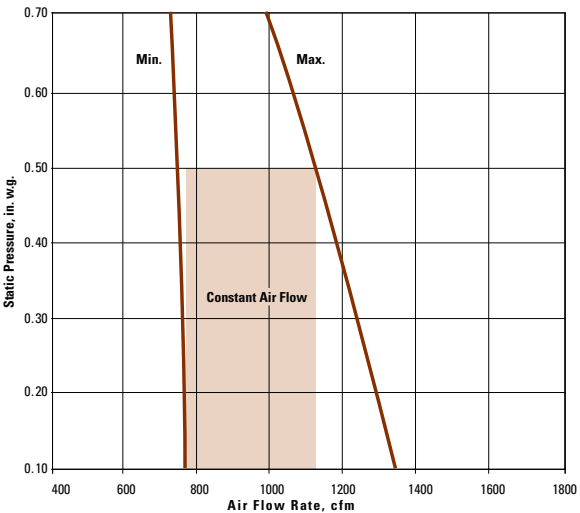
Model FCHGQ 50 - 4 Row ECM Constant Flow



Model FCHGQ 50 - 6 Row ECM Constant Flow



Model FCHGQ 50 - 8 Row ECM Constant Flow



Caution to Contractors

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Notes:

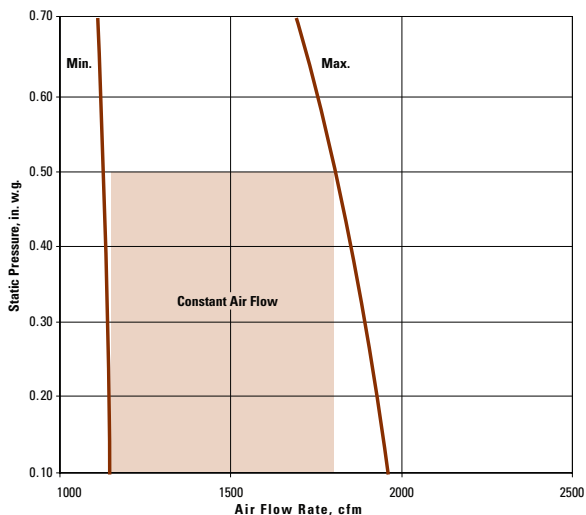
- Fan curves include 2 in. MERV 8 filter.
- To prevent condensate carry over in cooling applications, fan flow should not exceed 500 fpm average coil face velocity; see maximum fan flow chart.
- For motor data and power consumption comparison, refer to FCHG. Data is the same for both models.
- For Fan flow selection guidelines, refer to F1-77.

Maximum Fan Flow Chart (Cooling Application)

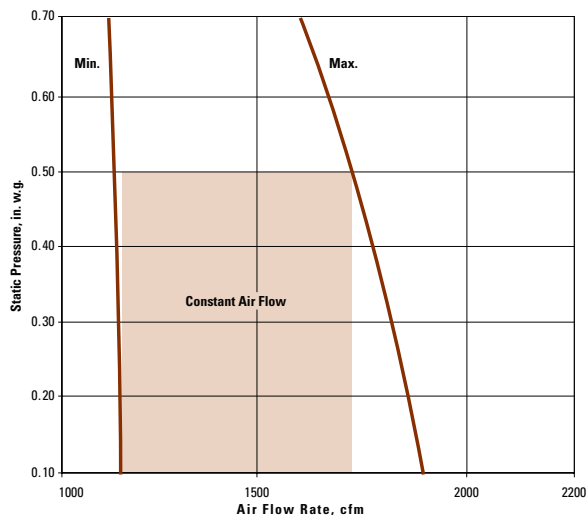
Size	Max. cfm
20/30	700
40	1100
50	1450
60	2050
70	2600

Fan Performance Curves – ECM Motor

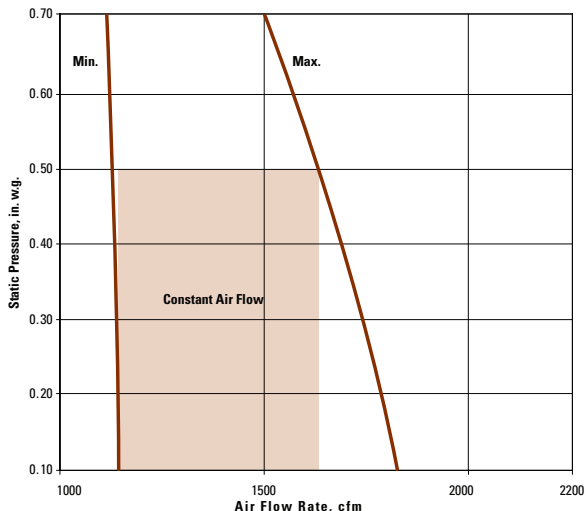
Model FCHGQ 60 - 2 Row ECM Constant Flow



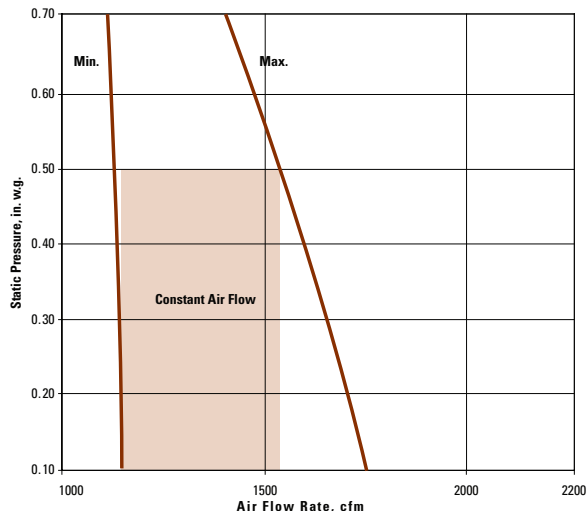
Model FCHGQ 60 - 4 Row ECM Constant Flow



Model FCHGQ 60 - 6 Row ECM Constant Flow



Model FCHGQ 60 - 8 Row ECM Constant Flow



Caution to Contractors

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Please Note: Price cannot warrant against unauthorized operation under conditions as outlined on this page.

Notes:

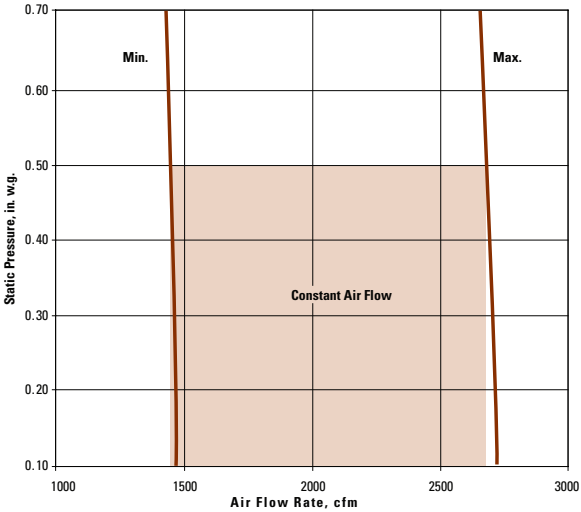
1. Fan curves include 2 in. MERV 8 filter.
2. To prevent condensate carry over in cooling applications, fan flow should not exceed 500 fpm average coil face velocity; see maximum fan flow chart.
3. For motor data and power consumption comparison, refer to FCHG. Data is the same for both models.
4. For Fan flow selection guidelines, refer to F1-77.

Maximum Fan Flow Chart (Cooling Application)

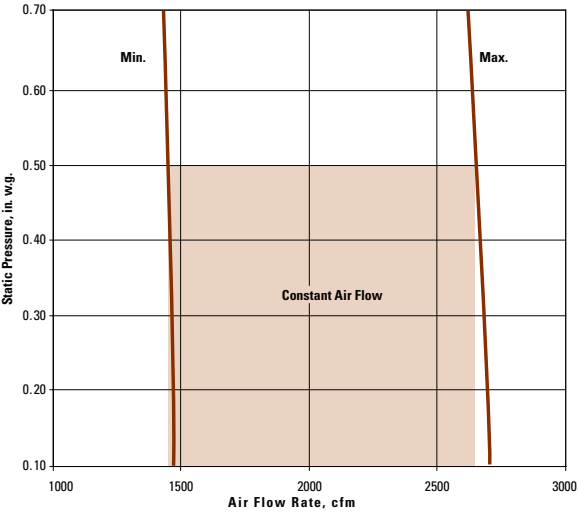
Size	Max. cfm
20/30	700
40	1100
50	1450
60	2050
70	2600

Fan Performance Curves – ECM Motor

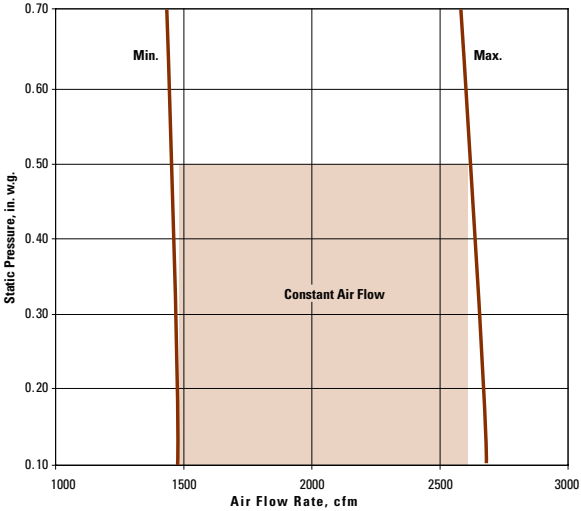
Model FCHGQ 70 - 2 Row ECM Constant Flow



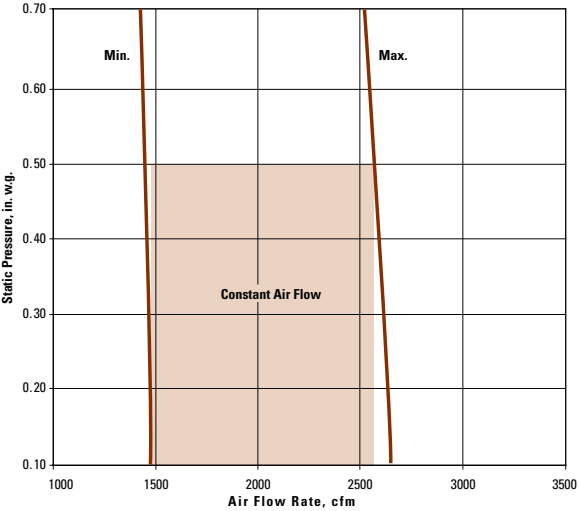
Model FCHGQ 70 - 4 Row ECM Constant Flow



Model FCHGQ 70 - 6 Row ECM Constant Flow



Model FCHGQ 70 - 8 Row ECM Constant Flow



Caution to Contractors

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Please Note:

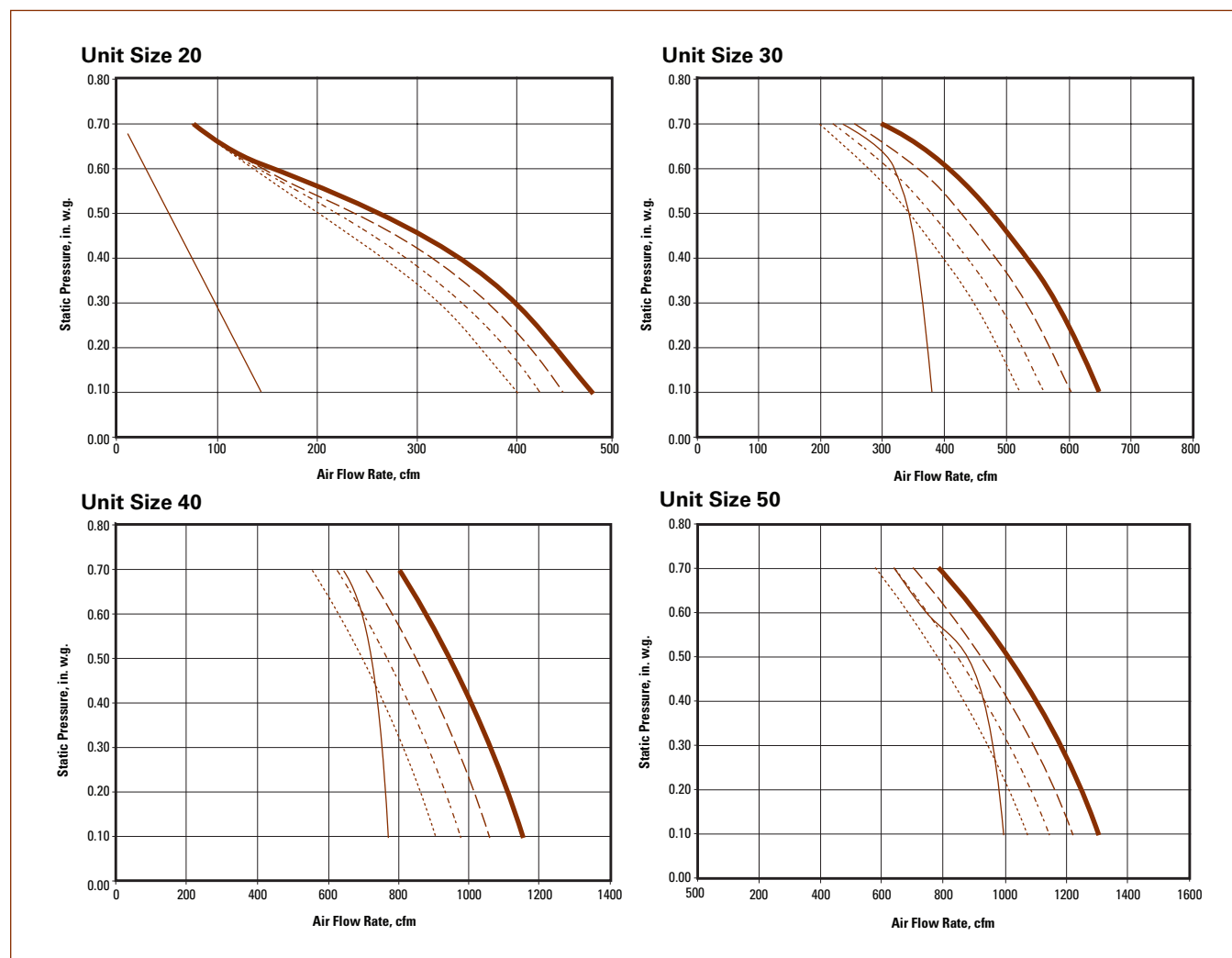
Price cannot warrant against unauthorized operation under conditions as outlined on this page.

- Notes:
- Fan curves include 2 in. MERV 8 filter.
 - To prevent condensate carry over in cooling applications, fan flow should not exceed 500 fpm average coil face velocity; see maximum fan flow chart.
 - For motor data and power consumption comparison, refer to FCHG. Data is the same for both models.
 - For Fan flow selection guidelines, refer to F1-77.

Maximum Fan Flow Chart (Cooling Application)

Size	Max. cfm
20/30	700
40	1100
50	1450
60	2050
70	2600

Fan Performance Curves – PSC Motor



Caution to Contractors

Fan coil units are not intended for use as temporary heat or ventilation during building construction. The units are not designed nor equipped to operate in a dusty construction environment. Recirculating fan wheels can become coated with construction dust, resulting in an unbalanced wheel. This in turn can contribute to reduced motor life. Inlet air filters would provide little protection as they would quickly become plugged with construction dust.

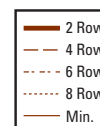
Please Note: Price cannot warrant against unauthorized operation under conditions as outlined on this page.

Notes:

1. Fan curves include 2 in. MERV 8 filter.
2. To prevent condensate carry over in cooling applications, fan flow should not exceed 500 fpm average coil face velocity; see maximum fan flow chart.
3. For motor data and power consumption comparison, refer to FCHG. Data is the same for both models.

Maximum Fan Flow Chart (Cooling Application)

Size	Max. cfm
20/30	700
40	1100
50	1450
60	2050
70	2600



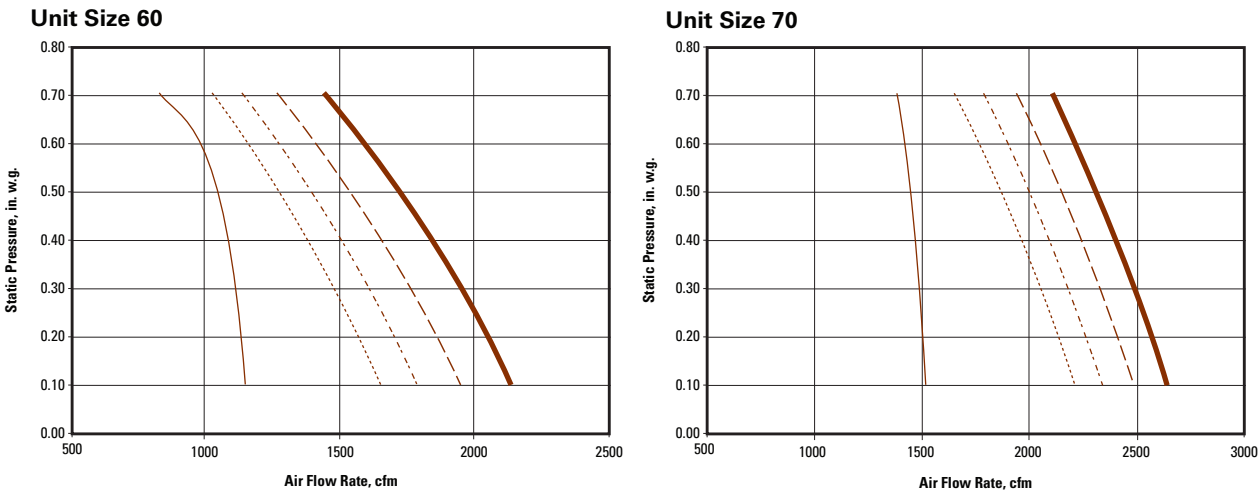
High Performance Fan Coils

FCHGQ Series

Horizontal Quiet



Fan Performance Curves – PSC Motor

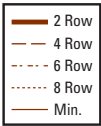


Caution to Contractors
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Please Note: Price cannot warrant against unauthorized operation under conditions as outlined on this page.

- Notes:**
- 1. Fan curves include 2 in. MERV 8 filter.
 - 2. To prevent condensate carry over in cooling applications, fan flow should not exceed 500 fpm average coil face velocity; see maximum fan flow chart.
 - 3. For motor data and power consumption comparison, refer to FCHG. Data is the same for both models.

Maximum Fan Flow Chart (Cooling Application)	
Size	Max. cfm
20/30	700
40	1100
50	1450
60	2050
70	2600



High Performance Fan Coils

FCHGQ Series

Horizontal Quiet



Sound Power Levels - Fiberglass Discharge Silencer

Sound Power Levels, Lw, dB, re 10 ⁻¹² Watts																
Radiated Sound Power Levels									Discharge Sound Power Levels							
Unit Size	Air Flow		Octave Band						Radiated NC	Octave Band						Discharge NC
	L/s	cfm	2	3	4	5	6	7		2	3	4	5	6	7	
20	47	100	59	54	52	48	38	31	27	63	49	37	30	23	17	--
	94	200	62	57	56	53	43	35	30	66	52	40	34	27	22	22
	142	300	64	59	58	57	47	38	33	68	54	43	38	31	26	25
	212	450	66	62	61	61	52	42	36	71	58	46	42	36	31	25
30	142	300	63	61	56	57	49	40	31	67	55	39	30	20	12	24
	212	450	67	64	59	61	54	46	35	71	59	43	35	26	19	25
	283	600	70	67	62	65	59	51	38	74	63	47	40	31	25	29
	330	700	72	69	64	67	62	54	41	76	66	49	42	34	28	32
40	236	500	62	57	56	57	48	39	30	64	52	39	31	22	22	--
	307	650	65	60	58	60	52	43	33	67	56	43	35	26	27	20
	378	800	68	63	60	62	56	47	35	70	59	46	39	30	31	22
	448	950	70	65	62	65	59	51	37	73	62	49	42	33	35	25
50	378	800	66	63	60	61	53	45	35	64	55	39	32	25	15	--
	496	1050	69	66	63	64	57	49	38	67	59	42	36	29	20	--
	566	1200	71	68	64	66	60	52	40	69	61	44	38	32	23	20
	661	1400	73	70	66	68	63	55	42	72	63	47	41	35	26	23
60	566	1200	68	64	61	63	56	47	36	67	58	42	35	26	27	18
	661	1400	70	66	63	65	58	50	38	69	60	45	37	28	30	20
	850	1800	73	69	65	68	62	55	41	73	64	48	41	33	35	25
	944	2000	75	71	67	70	64	57	42	75	66	50	43	34	37	27
70	708	1500	72	64	65	63	52	45	40	68	61	46	34	26	31	--
	850	1800	75	67	67	65	55	49	42	71	64	48	38	30	35	22
	1038	2200	78	70	69	68	58	53	45	74	67	51	42	34	40	27
	1227	2600	80	72	71	71	61	56	49	77	70	54	45	37	44	30

Sound Power Levels - Fiberglass Discharge & Inlet Silencers

Sound Power Levels, Lw, dB, re 10 ⁻¹² Watts										
Radiated Sound Power Levels										
Unit Size	Air flow		Octave Band							Radiated NC
	L/s	cfm	2	3	4	5	6	7		
20	47	100	58	49	46	42	33	27	20	
	94	200	60	52	50	47	38	31	24	
	142	300	62	54	52	50	42	34	26	
	212	450	65	56	55	55	47	38	30	
30	142	300	63	59	52	52	46	42	28	
	212	450	66	62	55	56	51	48	32	
	283	600	69	65	58	60	56	53	36	
	330	700	71	67	60	62	59	56	38	
40	236	500	60	54	52	50	42	37	26	
	307	650	63	57	54	53	46	41	29	
	378	800	66	60	56	55	50	45	31	
	448	950	69	62	58	58	53	49	33	
50	378	800	65	61	55	55	49	44	30	
	496	1050	69	64	58	59	54	48	34	
	566	1200	71	65	59	60	56	51	36	
	661	1400	73	67	61	63	59	54	39	
60	566	1200	67	60	56	57	54	48	31	
	661	1400	68	62	58	59	56	50	33	
	850	1800	72	65	61	62	60	55	38	
	944	2000	74	67	62	64	62	57	40	
70	708	1500	67	60	61	56	45	43	36	
	850	1800	70	63	63	58	48	47	39	
	1038	2200	73	66	66	61	51	51	41	
	1227	2600	76	68	68	64	54	54	43	

High Performance Fan Coils

FCHGQ Series

Horizontal Quiet



Sound Power Levels - Polymer Film Lined Discharge Silencer

Sound Power Levels, Lw, dB, re 10 ⁻¹² Watts																	
Radiated Sound Power Levels									Discharge Sound Power Levels								
Unit Size	Air Flow		Octave Band						Radiated	Octave Band						Discharge	
	L/s	cfm	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC (1)	NC (2)
20	47	100	59	54	52	48	38	31	27	63	51	44	40	30	24	21	--
	94	200	62	57	56	53	43	35	30	66	53	47	45	35	29	25	22
	142	300	64	59	58	57	47	38	33	68	56	49	48	38	33	27	25
	212	450	66	62	61	61	52	42	36	71	59	53	53	43	38	27	25
30	142	300	63	61	56	57	49	40	31	67	57	46	41	28	19	27	24
	212	450	67	64	59	61	54	46	34	71	61	50	46	34	26	27	25
	283	600	70	67	62	65	59	51	38	74	65	54	50	38	32	32	29
	330	700	72	69	64	67	62	54	40	77	67	56	53	41	36	35	32
40	236	500	62	57	56	57	48	39	30	63	54	49	45	26	29	--	--
	307	650	65	60	58	60	52	43	33	67	58	53	49	31	34	22	--
	378	800	68	63	60	62	56	47	35	70	61	56	52	34	39	23	21
	448	950	70	65	62	65	59	51	37	72	64	58	55	37	42	27	24
50	378	800	66	63	60	61	53	45	34	62	56	51	46	30	18	--	--
	496	1050	69	66	63	64	57	49	37	66	60	54	50	35	23	20	--
	566	1200	71	68	64	66	60	52	39	68	62	56	52	37	26	23	--
	661	1400	73	70	66	68	63	55	41	70	65	58	55	40	29	26	22
60	566	1200	68	64	61	63	56	47	36	67	59	50	47	30	34	20	--
	661	1400	70	66	63	65	58	50	38	69	61	52	50	32	37	23	20
	850	1800	73	69	65	68	62	55	41	73	65	56	54	37	42	28	25
	944	2000	75	71	67	70	64	57	42	75	67	58	56	38	44	30	27
70	708	1500	72	64	65	63	52	45	40	69	62	56	49	30	35	23	20
	850	1800	75	67	67	65	55	49	43	72	65	59	53	34	39	26	24
	1038	2200	78	70	69	68	58	53	45	75	69	62	57	37	43	30	28
	1227	2600	80	72	71	71	61	56	49	78	72	64	60	41	47	34	31

Sound Power Levels - Polymer Film Lined Discharge and Inlet Silencers

Sound Power Levels, Lw, dB, re 10 ⁻¹² Watts										
Radiated Sound Power Levels										
Unit Size	Air flow		Octave Band					Radiated NC		
	L/s	cfm	2	3	4	5	6	7		
20	47	100	58	49	48	43	34	28	22	
	94	200	60	52	51	48	39	32	25	
	142	300	62	54	53	51	43	35	28	
	212	450	65	57	57	56	48	39	31	
30	142	300	63	59	53	53	46	41	28	
	212	450	66	62	56	57	51	47	32	
	283	600	69	65	59	61	56	52	36	
	330	700	71	67	61	63	59	55	38	
40	236	500	61	55	53	51	43	37	28	
	307	650	64	58	56	54	47	42	30	
	378	800	67	60	58	56	51	46	33	
	448	950	69	63	60	59	54	49	35	
50	378	800	65	61	55	56	49	43	31	
	496	1050	69	64	58	59	53	48	34	
	566	1200	70	66	60	61	56	50	36	
	661	1400	73	68	62	63	59	53	39	
60	566	1200	66	60	57	58	54	47	32	
	661	1400	68	62	59	60	56	50	34	
	850	1800	72	65	62	63	60	55	38	
	944	2000	73	67	63	64	62	57	40	
70	708	1500	67	61	64	58	46	45	39	
	850	1800	70	64	66	60	49	48	42	
	1038	2200	73	66	68	63	53	52	44	
	1227	2600	76	69	71	66	56	56	46	

High Performance Fan Coils

FCHGQ Series

Horizontal Quiet

price

Sound Power Level Performance Notes

1. Test data obtained in accordance with AHRI Standard 880-2008 and ASHRAE Standard 130-2008.
2. Sound Power Levels expressed in decibels (dB) re 10⁻¹² watts.
3. Data is raw without any corrections for room absorption, duct attenuation, or ceiling transmission loss.
4. Fan external static pressure is 0.25 in. w.g. [63 Pa] in all cases.
5. Discharge sound power levels are the same for units with or without an Inlet Silencer.
6. Radiated sound power levels are based on non-ducted return (includes inlet sound plus casing radiated).
7. NC values are calculated based on typical attenuation values outlined in Appendix E, 2002 Addendum to AHRI Standard 885-2008, "A Procedure for Estimating Occupied Space Sound Levels in the Application of air Terminals and Air Outlets".

Radiated NC is based on a mineral fiber tile ceiling and the environmental effect. The radiated attenuation deductions are as follows:

Radiated Attenuation	Octave Band					
	2	3	4	5	6	7
Total Deductions	18	19	20	26	31	36

Discharge

NC (1) is based on environmental effect, end reflection, flex duct and sound power division w/o lined duct per AHRI 885-2008 attenuation values.

Discharge Sound

Total Deduction	Octave Band Mid Frequency, Hz.					
	125	250	500	1000	2000	4000
<300	22	22	27	28	30	22
300-700 cfm	25	25	30	31	33	25
>700 cfm	27	27	32	33	35	27

NC (2) is based on the environmental effect, duct lining effect, end reflection, flex duct effect and sound power division. The total discharge attenuation deductions are as follows:

Discharge Attenuation	Octave Band					
	2	3	4	5	6	7
<300	24	28	39	53	59	40
300-700 cfm	27	29	40	51	53	39
>700 cfm	29	30	41	51	52	39

8. Blanks (--) indicate NCs less than 20.

FCHGQ with Polymer Film Option - Application Considerations

This option features Polymer film wrapped around fiberglass media packed inside of the silencer. The polymer film and perforated metal facing the air are separated with an acoustical standoff. This is typical industry construction for silencers where fiberglass isolation is required. Polymer film is a non-porous reflective material, therefore absorption of moisture is prevented, but less sound absorption is achieved when compared to an unlined fiberglass silencer. The Polymer film option is a good choice for areas where moisture may be encountered due to condensation or cleaning or for critical spaces such as labs, cleanrooms or surgical suites.

Normally, when polymer film is specified for the silencer, exposed fiberglass will not be permitted in the downstream ductwork due to erosion, cleaning or moisture concerns. For this reason the room NC levels above have been calculated, both without lined duct deductions **(1)** and with lined duct deductions **(2)** for the rare cases where exposed fiberglass is allowed.

It should also be noted that when polymer film is selected for the silencer, a liner option will normally be selected for the Genesis casing as well. This could be solid metal (double wall), fiber free foam or foil faced fiberglass board. All of these casing liner

options will have an effect on radiated sound (discharge sound is not affected). The cataloged radiated sound levels are for standard fiberglass construction only. For radiated sound data of casing liner options, please consult the Price Selection Software.

AHRI 440 Standard Ratings

price GENESIS

Unit Size	AHRI Certified	Rows	Coil Circuits	FPI	Dry Flow (cfm)	Qt (Btu/h)	Qs (Btu/h)	Flow (GPM)	WPD (ft w.g.)	Power Input (Watts)
20	YES	4	5	10	450	11600	9300	2.78	0.4	150
30	YES	4	5	10	640	13100	11900	3.09	0.7	330
40	YES	4	5	10	850	23200	18500	5.45	2.3	330
50	YES	4	5	10	1300	35100	27700	8.18	6.1	650
60		4	10	10	1830	48400	38900	10.47	4.1	702
70		4	10	10	2600	69200	55500	14.96	5.1	1314

Notes:

1. Ratings based on 80 °F dB and 67 °F WB EAT, 45 °F EWT, 10 °F temperature rise, Max fan flow setting. Motor type is ECM Constant Volume and motor voltage is 115/1/60. Air flow under dry coil conditions with 0.20 in. external static pressure and 2 in. MERV 8 filter.
2. The AHRI 440 certification program only covers air flow capacities up to 1500 cfm, therefore sizes 60 and 70 are not certified.
3. For all application ratings, please contact your local Price representative.



SECTION F1



Accessories

Accessories

Condensate Overflow Protection

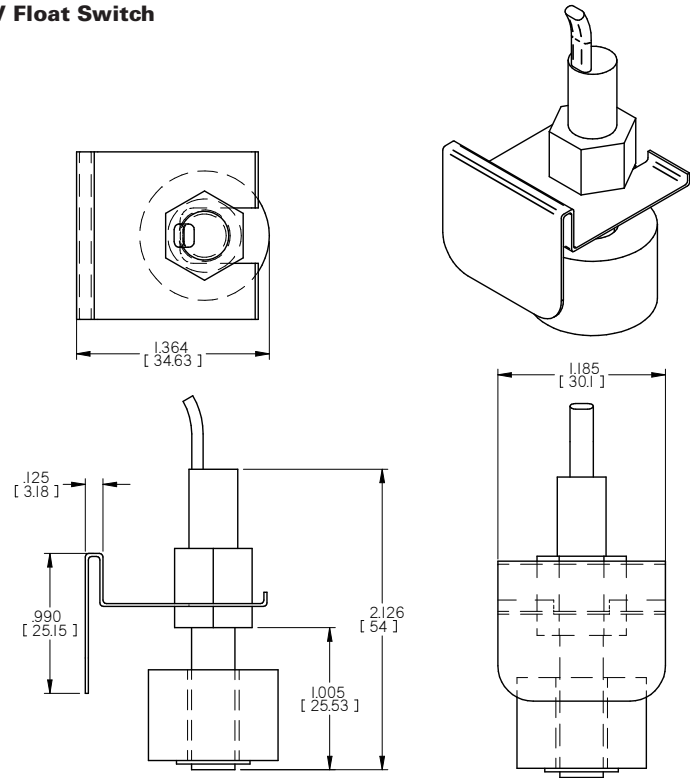
price®

Overview

To protect the building from high condensate water levels in the fan coil drain pan, an auxiliary overflow drain connection should be made available as part of the drain pan design, and/or a float switch or condensate pump can be factory-supplied for field installation.

Float Switch: Price offers a 24V normally closed float switch which installs easily into the drain pan using a stainless steel clip/bracket. When the water level rises within the drain pan, the switch triggers, and should be wired to cut the control signal to the chilled water valve. This will cause the actuator to shut-off the supply. The fan will continue to run to maintain minimum air flow rates. Once the water level in the drain pan drops to an appropriate level, the unit will resume normal operation. Float switches are used when condensate pipes use gravity for drainage.

24V Float Switch



FC-PSC3 Features

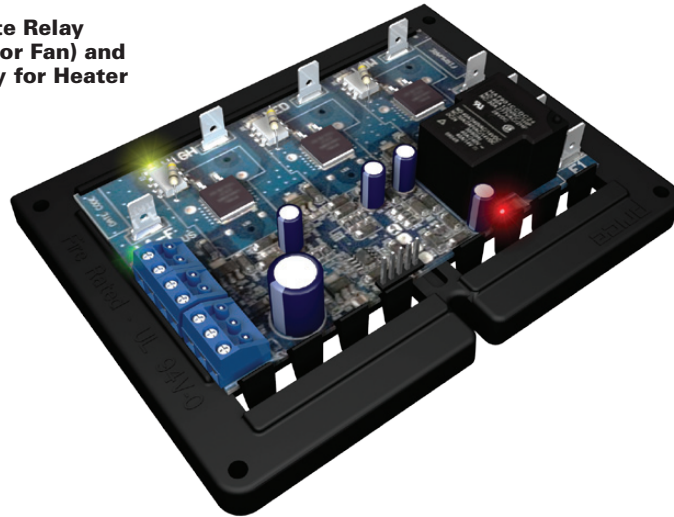
The Price FC-PS3 Controller is a Fan relay board that provides low voltage control for 3 speed fan motors in a compact and easy to troubleshoot package:

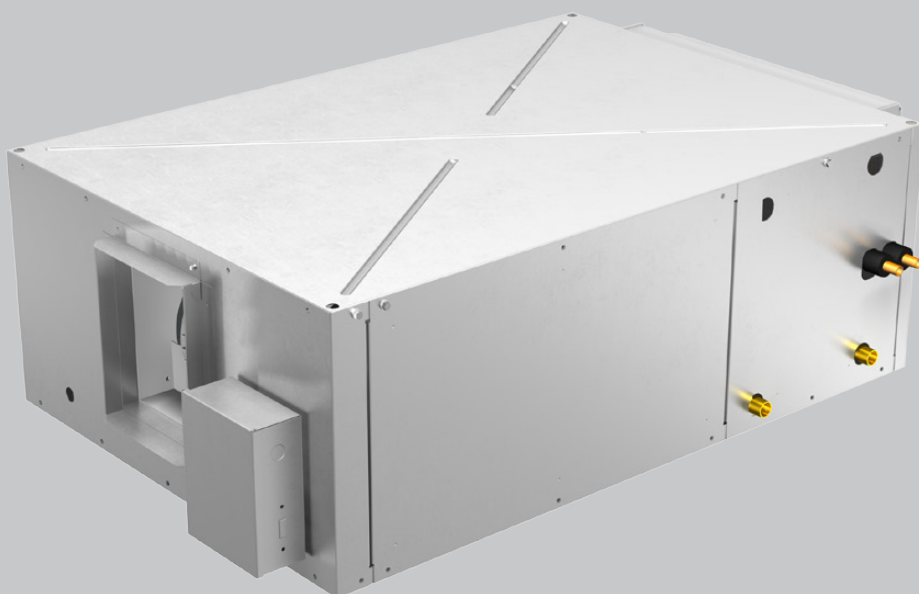
- Rated from 120-277 VAC.
- Long life, quiet relays.
 - Totally silent, solid state fan relays for units up to 4 amps.
 - Low noise, PCB relays for larger units drawing more than 4 amps.
- Integrated heater relay for units equipped with electric heat up to 30A.
 - Heater Relay is interlocked with the fan so the heater cannot engage unless is energized.
- Two input options for fan speed control
 - 0-10 VDC signal.
 - 3 Binary 24 VAC inputs.
- LEDs programmed to assist with troubleshooting.

PCB Relay Version



Solid State Relay Version (for Fan) and PCB Relay for Heater





Blower Coils

Product Overview

Benefits of Blower Coil Units

Blower coils are an ideal solution to a variety of ducted applications where cooling capacities or external static pressures cannot be met with high performance fan coils. In these applications, Blower coils can also reduce the footprint of the HVAC system as ductwork does not need to be brought in from the primary air handler. With the availability of larger capacities, a variety of coil options and mixing boxes, units are also capable of conditioning outdoor air. Units can be floor or ceiling mounted and are available with a variety of factory mounted options to reduce overall installed cost.

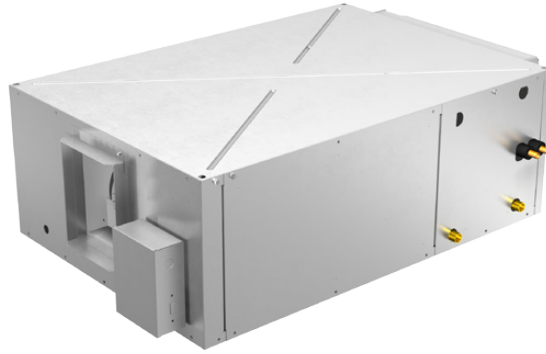
Construction

- Compact units reduced the footprint of the HVAC system and increase leasable space
- Heavy duty zinc-coated steel casing with reinforcing beads
- Casing is internally lined with fiberglass insulation. The insulation's high density skin provides erosion resistance while effectively attenuating noise. Insulation meets requirements of UL181 and NFPA-90A.
- Several liner types are available to address the issue of exposed fiberglass.
- Fan motor is isolated from the blower housing to reduce noise.
- Removable bottom access panels on horizontal units provide access to the interior of the unit for cleaning, inspection and service.
- Electric heating configuration and discharge air flow are specifically matched to eliminate element hot spots and maintain element life.

Performance

- Water Coil performance is AHRI certified providing reassurance that design goals will be met
- Cataloged sound performance data is the result of Price laboratory testing done in accordance with industry test standards.

Model BCH



Quality Assurance

- Each Price Blower Coil unit receives a full operational check before shipment and arrives factory set for the design air flow and external static pressure in accordance with project specifications. This means costly labor and setup delays are avoided.
- Units are ETL listed to meet UL1995 and CSA No. 236. Installation

Installation

- Horizontal units are generally suspended above the ceiling using hanger rods that go through the corner knock-outs provided in the units.
- All units are equipped with internal vibration isolation of the blower/motor assembly so external isolation is not necessarily required.

Application Examples

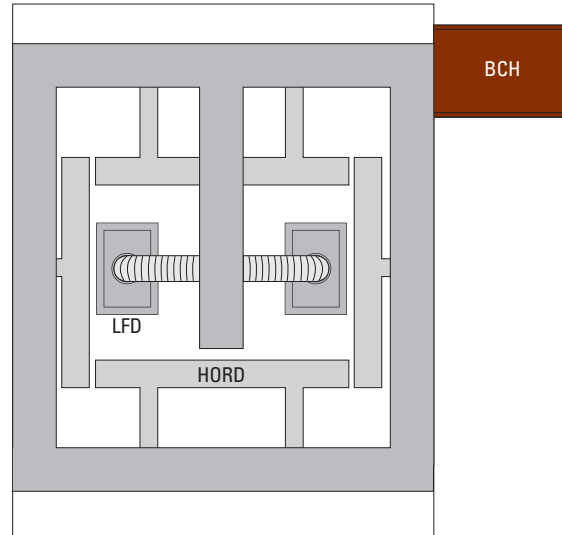
Large Public Spaces

Blower Coils are often applied to large spaces with high heating or cooling loads such as lobbies, theaters, conference rooms and Gymnasiums. The high static pressure of the blower coil allows for the use of multiple air outlets and long duct runs. Blower coils also reduce the footprint of the HVAC system as ductwork does not need to be brought in from the primary air handler. During unoccupied hours, the unit can be set to a night setback sequence to reduce the running time and save energy while maintaining space temperature.

Critical Environments

Blower Coils are capable of high static pressures and therefore are capable of supplying systems with HEPA or ULPA filters such as hospital operating rooms or isolation rooms. With up to 8 rows of cooling coils available, the BCH is also ideal for handling the high cooling loads of labs and operating rooms with high equipment density. Energy efficient hydronic cooling effectively meets the cooling requirements without the need to deliver large quantities of conditioned air from a central HVAC system. In order to limit drafts due to the high air change rates in a lab a radial flow pattern diffuser such as RFD or FRFD would be recommended.

Operating Room layout with BCH



Motor and Drive Selection

- Please use the Price Fan Coil Selection Tool to determine your application specific motor and drive. If the program is not available, follow the steps below.
- This catalog provides fan curves and air pressure drop charts for determining the motor and drive of Blower Coil units. Interpolations may be required. Contact Price applications engineering for assistance if necessary.
- Refer to the product overview for the air flow range of each unit. Once the unit size has been chosen, the total static pressure requirements at the desired air flow must be determined.
- The total static pressure is the sum of all the internal static resistances of the unit (coils, filter, etc.) and the external static pressure requirements. The external static pressure requirements are made up of the resistances of all the external components that are ducted to the unit such as: grilles, diffusers, ductwork, additional filtration, etc. If the unit is to have a ducted inlet, upstream static pressure resistances must also be taken into account.
- This catalog lists the static pressure losses of the internal components available in the blower coil units for the entire operating range of each unit. If the application air flow falls between two values, please interpolate the required static pressure loss. Once the static pressure loss of each internal component is determined, add the values to the external static pressure requirement to determine the total static pressure (TSP) required.
- Once the TSP is calculated, go to the appropriate unit fan curve and locate the flow and TSP point. From this point, the blower RPM and required BHP can be read from the chart. To determine the required size of motor, multiply the required BHP by 1.1 to account for drive losses in the belt and select the next highest standard motor size in the voltage required.

Example for a 4 Pipe BCH Blower Coil unit:

Design requirements:
Required Air flow: 3200 cfm
ESP = 0.3 in. w.g.
MERV 8 Filter
3 Row Cooling Coil
1 Row Heating Coil
Determine:
BCH unit size
Coil Pressure Drop
Blower RPM
Motor HP

Calculations:

1. From the Product Overview, we determine that 3200 cfm falls into the BCH30s operating range.
2. Next, we look up the static pressure losses of the cooling coil, heating coil and filter. We add these values to the ESP to determine the TSP.

	PD (in. w.g.)
3 row coil (wet)	0.34
1 row coil (dry)	0.08
MERV 8 filter	0.24
ESP	0.3
TSP	0.96

3. Referring to the BCH 30 fan curve, we can see that the unit produces 3200 cfm at 0.96 in. w.g. of TSP when operating at 991 RPM and will require 1.66 BHP. The unit will require a 2HP motor as shown in the formula below.
Motor HP = BHP x 1.1
Motor HP = 1.65 x 1.1
Motor HP = 1.83
Motor HP = 2HP (rounded up)

Water Coil Selection Guide

Blower Coils are typically sized to handle the heating or cooling load for an individual room or zone. This load may be purely sensible or may have a latent portion. The required load should be calculated based on the room occupancy, geographical location and building construction.

Once the load is known, the entering air and water conditions for the coil must be defined. The entering air conditions will be based on the space and the entering water temperature will be based on the chiller.

To determine the approximate air flow of the required unit and therefore the unit size, the rule of thumb of 375 cfm / Ton of required cooling (1 Ton = 12000 BTHU/h) can be used. This rule gives a starting point for selecting a blower coil unit size. Units should be selected near the midpoint of their flow range. This will ensure that there is adequate fan volume capacity or turn down if actual install system pressures are slightly higher or lower than the anticipated design. This will also help lower the noise generated by the fan and allow for future changes to the system. Selecting near the extremes of the operating range should be avoided.

Next, the method of calculating coil performance must be defined. Most blower coils are selected based on a 10 or 12°F temperature rise (based on chiller requirements) but a set water flow rate (based on pump requirements) or a set leaving air temperature (for displacement ventilation) may also be used.

Once all of these variables have been determined, the Price Fan Coil selection tool can be used to calculate exact blower coil performance ratings. The number of coil rows and circuits can be adjusted to achieve the required capacity but there are pros and cons to changing each variable as shown below.

	Heat Transfer	Air PD	Water PD (for a given flow rate)	Cost
Increase # of Rows	↑	↑	↑	↑
Increase # of Circuits	↓		↓	

The air flow of the unit may also be adjusted to achieve the required capacity but care should be taken when increasing the air flow of the unit as the generate noise and energy use will also increase. Increasing the air flow will also affect the air distribution system and could lead to uncomfortable drafts in the occupied space. In all cases, the velocity across the coil should not exceed 550 Feet per minute or condensate may carry over from the coil into the downstream ductwork. If a higher air flow is necessary to meet the required capacity, a larger unit size should be considered to keep generated noise and energy use to a minimum.

Sound Selection Procedure

The laboratory attained discharge, inlet and radiated sound power levels for each unit at various fan flows and pressures are presented in the Acoustical Data tables. This data is derived in accordance with AMCA Standard 300 and shows the "raw" sound power levels of the terminal in the 1st through 8th octave bands with NO attenuation allowances.

The actual space noise level, normally designated by NC, will be dependant on the acoustic attenuation present for the various sound paths to the space. The ASHRAE HVAC Applications Handbook (chapter 47) and AHRI Standard 885 provide procedures and typical attenuation values for estimating space noise levels. For assistance with estimating space noise levels contact our Application Engineering department.

Radiated Sound

Note that the cataloged radiated sound is based on a ducted return with the unit located directly above the occupied space. There are several design considerations for reducing the radiated sound level in the space;

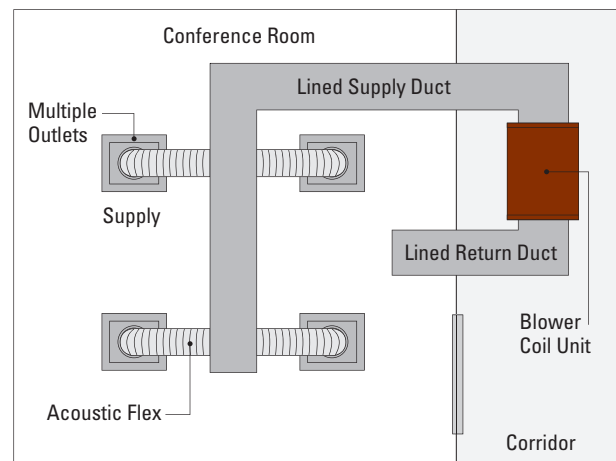
1. Locate the blower coil in a mechanical room or over a non critical area adjacent to the occupied space such as over a hall way, closet or storage area.
2. Avoid locating units near return air openings. This allows a direct path for radiated noise to enter the space.
3. A ceiling with high transmission loss will help reduce radiated sound.
4. Locate units in the largest plenum volume available for reduction of radiated noise.
5. Select a unit size which will operate in the mid to low area of its operating range. Lower fan speeds produce lower sound levels.

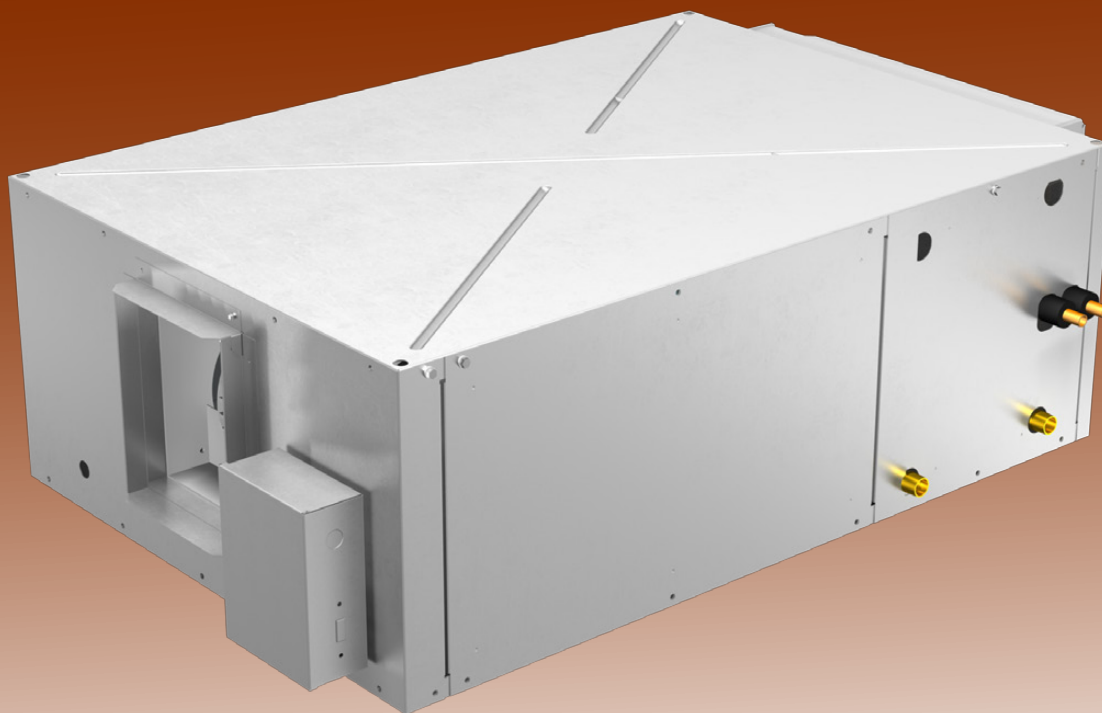
Discharge/Inlet Sound

Listed below are several design considerations for reducing the discharge and inlet sound levels in the space:

1. Select a unit which will operate in the mid to low area of its operating range. Lower fan speeds produce lower sound levels.
2. Locate unit to allow maximum length of lined discharge or inlet duct work. Consider a larger number of smaller diffusers to minimize discharge sound.
3. The use of acoustically lined flex duct on the diffuser will reduce discharge sound.
4. Supply the Q unit with integral discharge silencer.

Noise Reduction Design Considerations



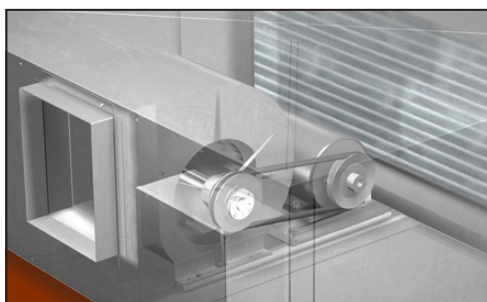


BCH Series

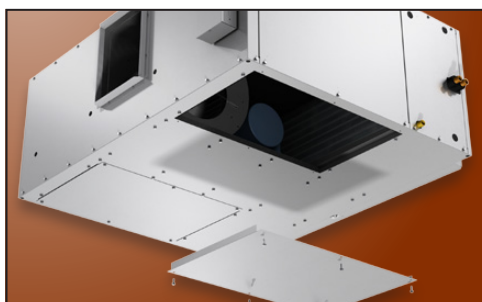
HORIZONTAL BLOWER COIL

Price horizontal blower coils are an ultra low profile solution to a variety of ducted applications that require flexibility between the traditional fan coil unit and a central station air handling unit. With flows ranging from 600 to 4400 cfm, the units provide comfort cooling and heating with capacities between 1.6 and 15 tons and total static pressures up to 3.5 in. w.g.

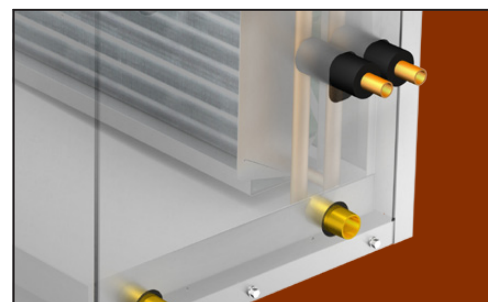
Ultra low profile solution with unique bottom access is ideal for ducted applications with restricted height.



Blower/motor assembly is isolated from the rest of the unit to reduce vibration



Bottom access panels facilitate easier, faster maintenance



Field reversible coils allow maximum flexibility in the field and eliminate costly pipe rerouting

Blower Coils

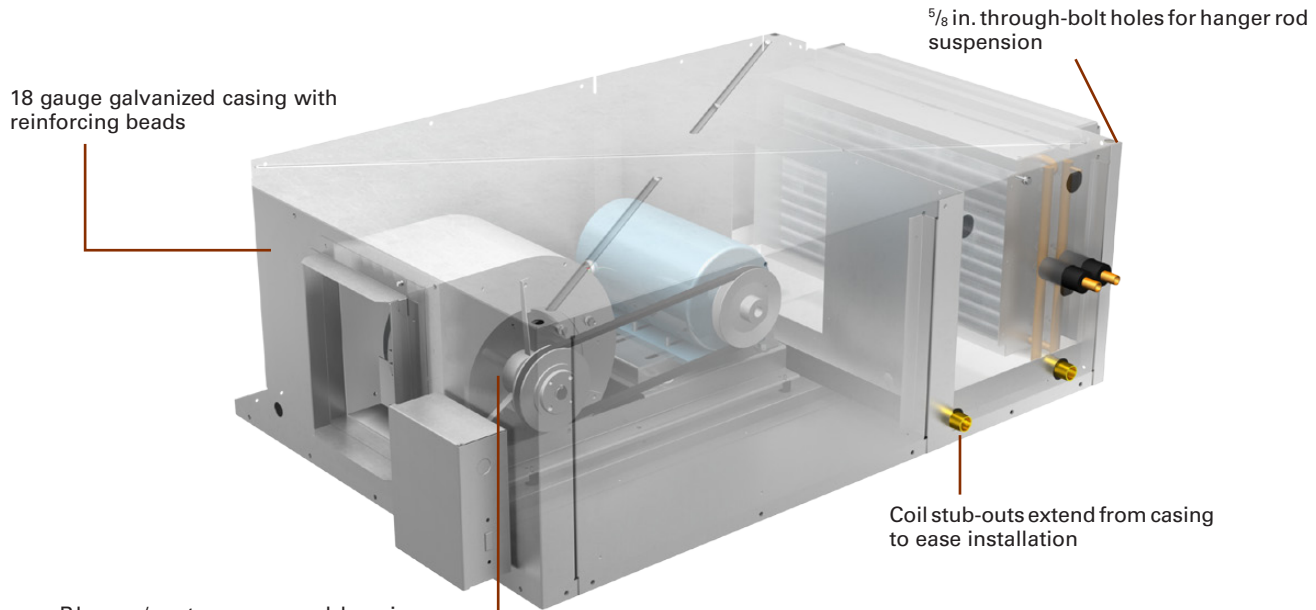
BCH Series

Horizontal

price[®]

Features

FAN COILS & BLOWER COILS



Blower/motor assembly is completely isolated from the rest of the unit to reduce vibration and structure-borne noise.

Access panels on both sides for easy entry to unit

Field reversible coils eliminate costly pipe rerouting

Two bottom access panels for easy inspection of the drive assembly

2 in. Filter rack for MERV 8 or 13 pleated filters.

Filters are accessible through side or bottom quick-release access panels



F1-84

All Metric dimensions () are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimetre.

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Blower Coils

BCH Series

Horizontal

price

Product Information

Model

Blower Coil Horizontal

BCH

Price horizontal blower coils are an ultra low profile solution to a variety of ducted applications that require flexibility between the traditional fan coil unit and a central station air handling unit. With flows ranging from 600 to 4400 cfm, the units provide comfort cooling and heating with capacities between 1.6 and 15 tons and total static pressures up to 3.5 in. w.g.

Price blower coils are shipped completely assembled from the factory to reduce field installation time. Unique standard features such as bottom access panels and field reversible coils allow for maximum flexibility in the field.

Standard Features Include: Construction

- 18 gauge galvanized steel cabinet.
- Internal insulation - fiberglass 1 in. [19 mm] thick, minimum 1.5 lb density which meets the requirements of NFPA 90a and UL181.
- Removable bottom and side access panels.
- 1 in. duct collars with slip & drive connections on inlet and discharge.
- Sloped galvanized steel drain pan with $\frac{3}{4}$ in. male NPT connection, which meets the requirements of ASHRAE 62-2001.
- $\frac{5}{8}$ in. hanger rod 'through-bolt' holes for suspension.
- 2 in. Filter rack with side and bottom tool free access panels. MERV 8 filters as standard.

Fan and motor drive assembly

- Forward curved, double width, double inlet fans, dynamically balanced.
- Fan shaft is mounted in permanently lubricated concentric lock or pillow block ball bearings.
- Motors are 1725 rpm, 60hz, single speed, continuous duty and reversible in direction.
- Motors are available in 115, 208-230 volt single phase and 208-230, 460, 600 volt 3 phase.
- Units are belt driven with variable pitch drive pulleys and adjustable motor bases.
- The blower/motor assembly is completely isolated from the rest of the unit using vibration isolators and internal flex duct.

Water Coils



- AHRI 410 certified.
- Coils have copper tubes with aluminum fins, manual air vents and 20 gauge galv steel casings.
- 1 or 2 row heating (pre/reheat), 3,4,6,8 row cooling, up to 10 rows total.
- Coils available in LH and RH configurations.
- Coils are field reversible
- Stainless steel drain pan.
- Hinged tool-free access on side panels.
- Hinged tool-free access on bottom panels.
- MERV 13 filters.
- Liners
 - o Closed cell foam
 - o Foil faced fiberglass rigid board
 - o Double wall construction
- Secondary drain connection
- Spring hanger brackets
- Mixing box
- Electric Heat

Electrical Options

Standard units come with the motor leads wired to a J-box.

- Toggle disconnect switch
- Motor fusing
- Magnetic contactors
- 24V transformer

Optional Features

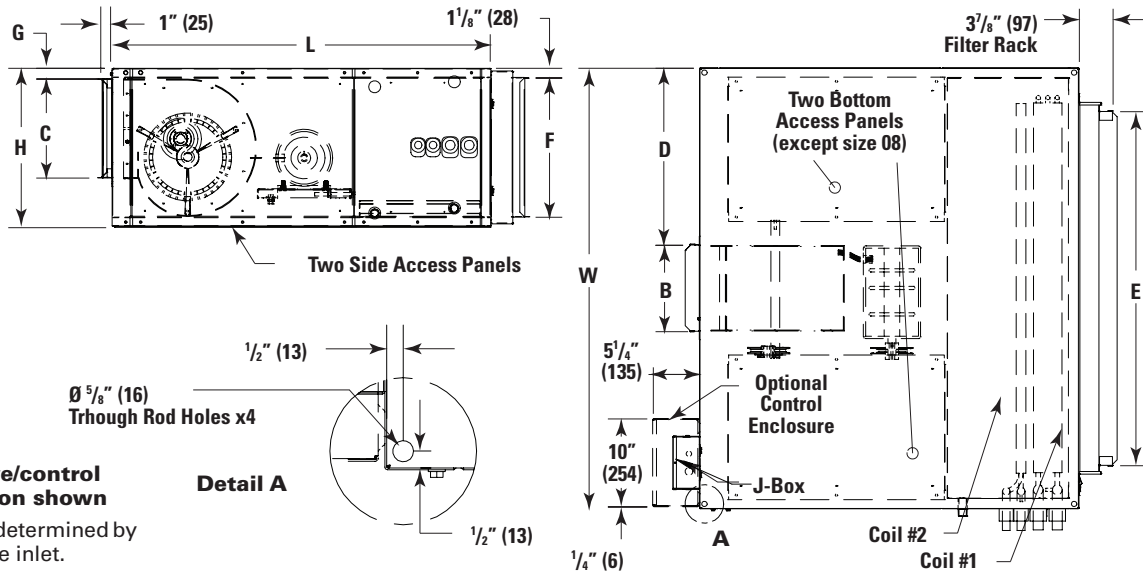
Blower Coils

BCH Series

Horizontal

price®

Dimensional Data



Dimensional Data - IP (in.) / SI (mm)

Unit Size	Nom. cfm	cfm Range	Max. TSP	W	H	L	B	C	D	E	F	G
08	800 [378]	600-1000 [283-472]	2 [498]	30 [762]	15 1/2 [394]	43 [1092]	8 1/4 [210]	10 1/4 [260]	10 7/8 [276]	20 1/4 [514]	13 3/4 [337]	1 7/8 [48]
12	1200 [566]	900-1400 [425-661]	3 [747]	38 [965]	15 1/2 [394]	43 [1092]	9 1/4 [235]	10 1/4 [260]	14 3/8 [365]	28 1/4 [718]	13 3/4 [337]	1 7/8 [48]
16	1600 [755]	1300-1800 [614-850]	3.5 [872]	44 [1118]	18 [457]	43 [1092]	8 1/4 [210]	11 1/4 [286]	17 7/8 [454]	34 1/4 [870]	15 3/4 [400]	1 1/4 [32]
20	2000 [943]	1700-2400 [802-1133]	3.5 [872]	50 [1270]	18 [457]	43 [1092]	9 1/4 [248]	11 1/4 [286]	20 7/8 [511]	40 1/4 [1022]	15 3/4 [400]	1 1/4 [32]
30	3000 [1416]	2300-3400 [1085-1605]	3.5 [872]	52 [1321]	25 [635]	50 [1270]	12 3/4 [311]	13 1/2 [343]	19 7/8 [505]	41 1/4 [1048]	22 3/4 [578]	3 1/4 [83]
40	4000 [1888]	3300-4400 [1557-2077]	3.5 [872]	65 [1651]	25 [635]	50 [1270]	12 3/4 [324]	15 3/4 [400]	26 1/8 [664]	54 1/4 [1378]	22 3/4 [578]	1 1/8 [29]

Motor Full Load Amp Data

Phase	Voltage	Nominal Horsepower						
		1/2	3/4	1	1 1/2	2	3	5
1	115	9.8	13.8	16.0	-	-	-	-
	208	5.4	7.6	8.8	11.0	-	-	-
	230	4.9	6.9	8.0	10.0	-	-	-
	277	4.5	6.4	7.4	-	-	-	-
3	208	2.4	3.5	4.6	6.6	7.5	10.6	16.7
	230	2.2	3.2	4.2	6.0	6.8	9.6	15.2
	460	1.1	1.6	2.1	3.0	3.4	4.8	7.6
	575	0.9	1.3	1.7	2.4	2.7	3.9	6.1

Notes:

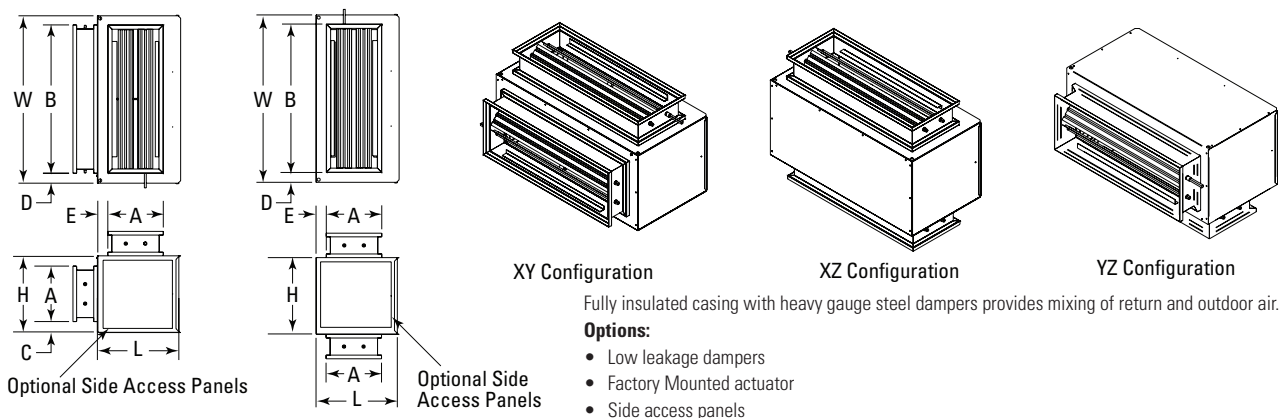
1. Motor full load amps refer to the National Electric Code (NFPA 70). Actual nameplate amps may vary.
2. Motors up to 460V are equipped with automatic thermal overload protection. 575V motors are equipped with manual motor starters.
3. Motors are rated for air over temperatures up to 104 °F [40 °C].
4. For 50 Hz motor applications, please contact your local Price representative.

Filters

Unit	Filter Sizes (in.)		Quantity
	H	W	
BCH 08	14.345	10.875	2
BCH 12	14.375	14.875	2
BCH 16	16.875	17.875	2
BCH 20	16.875	20.875	2
BCH 30	23.875	21.375	2
BCH 40	23.875	27.875	2

Accessories

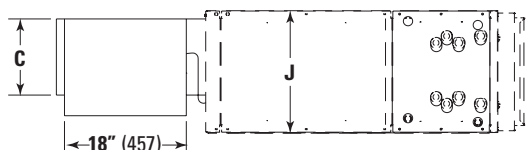
Mixing Box



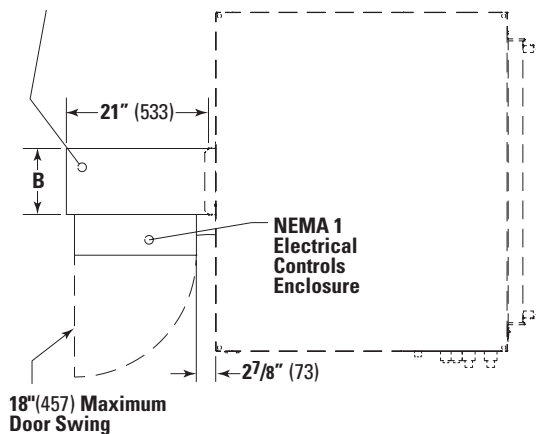
Dimensional Data - IP (in.) / SI [mm]

Unit Size	A	B	C	D	E	L	W	H
BCH08	9 ¹ / ₄ [235]	16 ¹ / ₄ [413]	2 ¹ / ₈ [54]	2 ¹ / ₈ [54]	1 ⁵ / ₈ [41]	14 ¹ / ₈ [359]	20 ¹ / ₄ [514]	13 ¹ / ₄ [337]
BCH12	9 ¹ / ₄ [235]	24 ¹ / ₄ [616]	2 ¹ / ₈ [54]	2 ¹ / ₈ [54]	1 ⁵ / ₈ [41]	14 ¹ / ₈ [359]	28 ¹ / ₄ [718]	13 ¹ / ₄ [337]
BCH16	11 ¹ / ₄ [286]	30 ¹ / ₄ [768]	2 ³ / ₈ [60]	2 ¹ / ₈ [54]	1 ⁷ / ₈ [48]	16 ⁵ / ₈ [422]	34 ¹ / ₄ [870]	15 ³ / ₄ [400]
BCH20	11 ¹ / ₄ [286]	36 ¹ / ₄ [921]	2 ³ / ₈ [60]	2 ¹ / ₈ [54]	1 ⁷ / ₈ [48]	16 ⁵ / ₈ [422]	40 ¹ / ₄ [1022]	15 ³ / ₄ [400]
BCH30	16 ¹ / ₄ [413]	37 ¹ / ₄ [946]	3 ³ / ₈ [86]	2 ¹ / ₈ [54]	2 ⁷ / ₈ [73]	23 ⁵ / ₈ [600]	41 ¹ / ₄ [1048]	22 ³ / ₄ [578]
BCH40	16 ¹ / ₄ [413]	48 [1219]	3 ³ / ₈ [86]	3 ¹ / ₄ [83]	2 ⁷ / ₈ [73]	23 ⁵ / ₈ [600]	54 ¹ / ₄ [1378]	22 ³ / ₄ [578]

Electric Heat



Not Insulated Slide-In Electric Coil Section



Dimensional Data - IP (in.) / SI [mm]

Unit Size	B	C	J
08	8 ¹ / ₄ [210]	10 ¹ / ₄ [260]	12 [305]
12	9 ¹ / ₄ [235]	10 ¹ / ₄ [260]	12 [305]
16	8 ¹ / ₄ [210]	11 ¹ / ₄ [286]	12 [305]
20	9 ¹ / ₄ [248]	11 ¹ / ₄ [286]	12 [305]
30	12 ¹ / ₄ [311]	13 ¹ / ₂ [343]	17 [432]
40	12 ³ / ₄ [324]	15 ³ / ₄ [400]	17 [432]

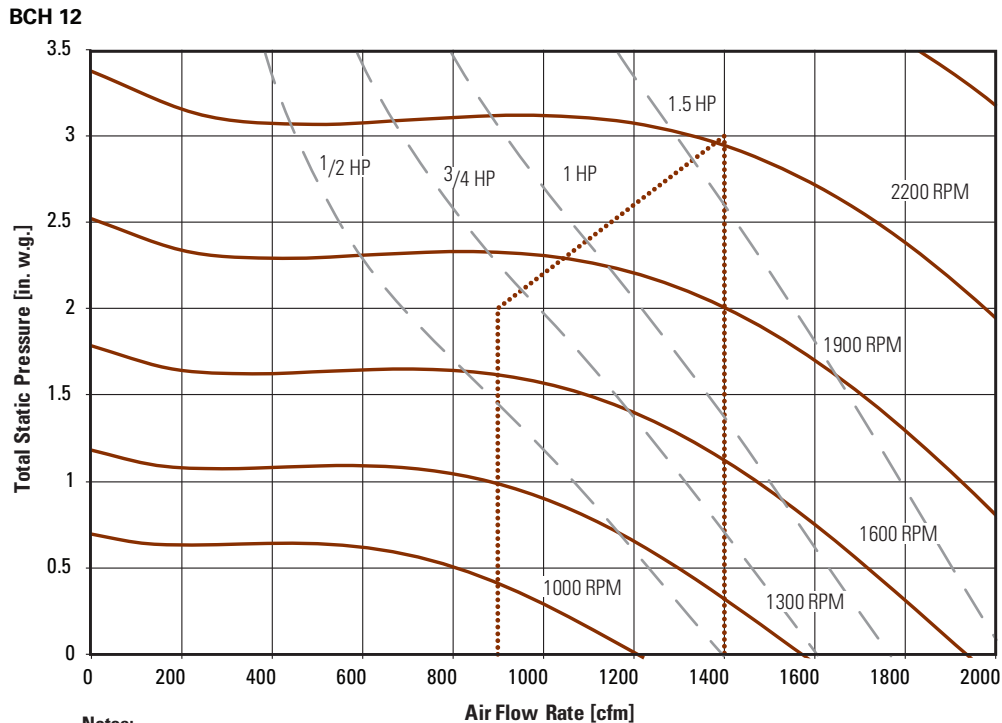
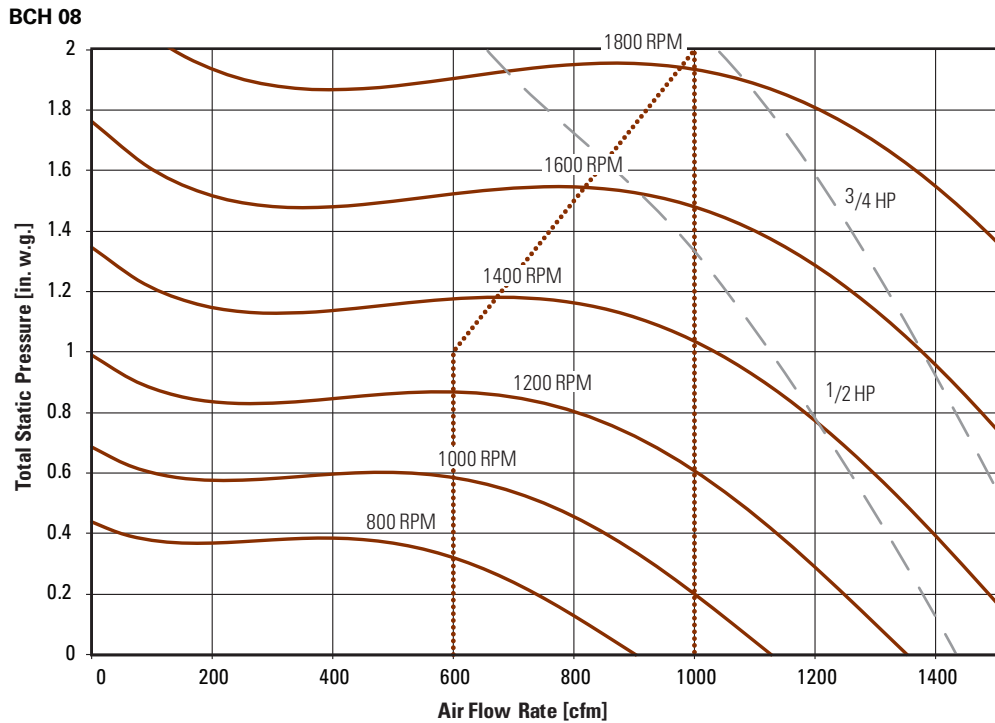
- Hinged access door
- Automatic reset thermal cutout
- Manual reset thermal cutout
- Fan interlocked with heating elements
- Magnetic contactors where required
- 20 ga. galvanized steel construction
- High grade nickel chrome heating elements
- Single point electrical connection
- Supply voltage:

Single phase:	Three phase:
- 115V	- 208V
- 208V	- 480V
- 240V	- 600V
- 277V	

LH coil/drive/control configuration shown

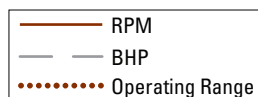
*Handing is determined by looking at the inlet.

Fan Performance Curves

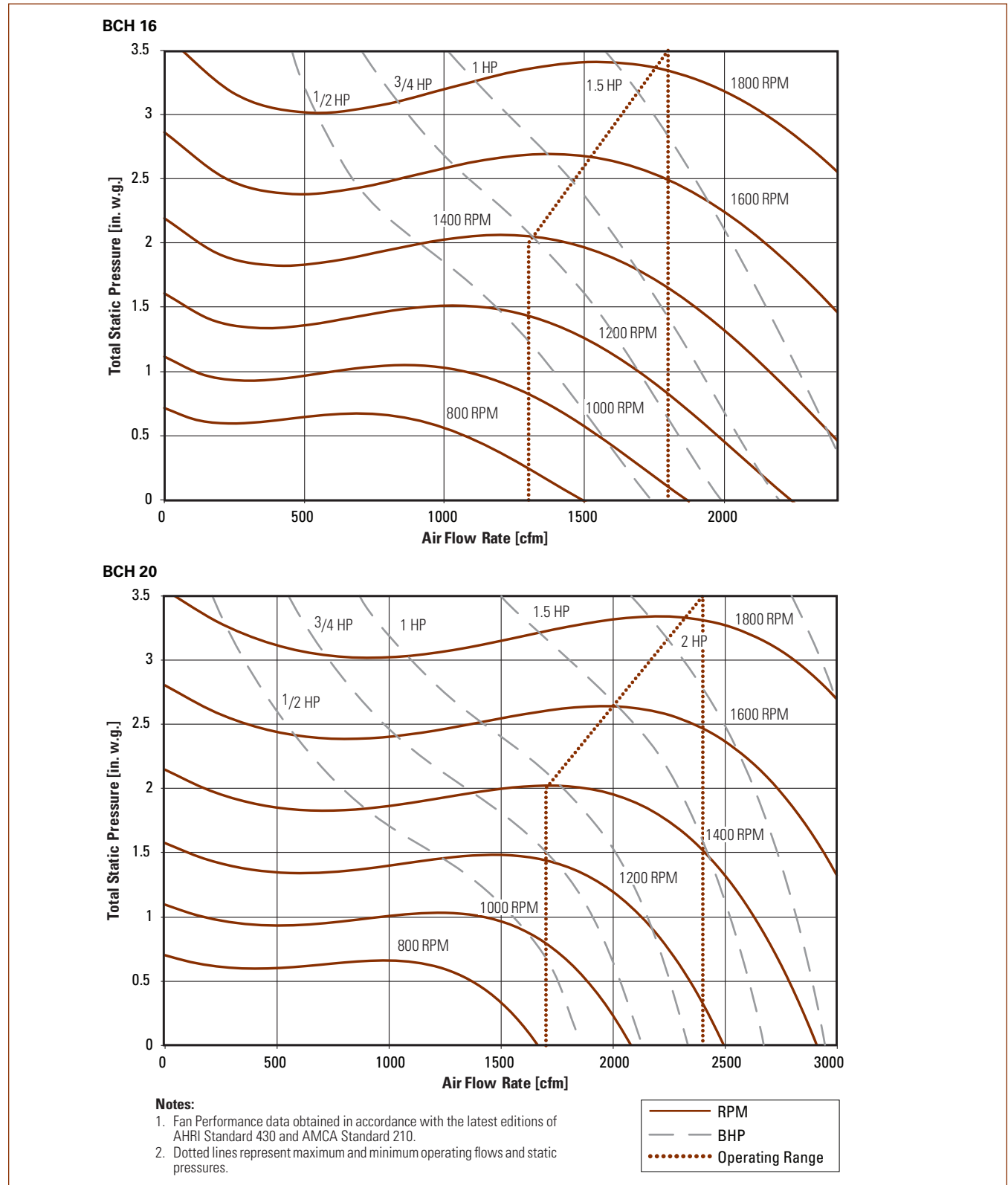


Notes:

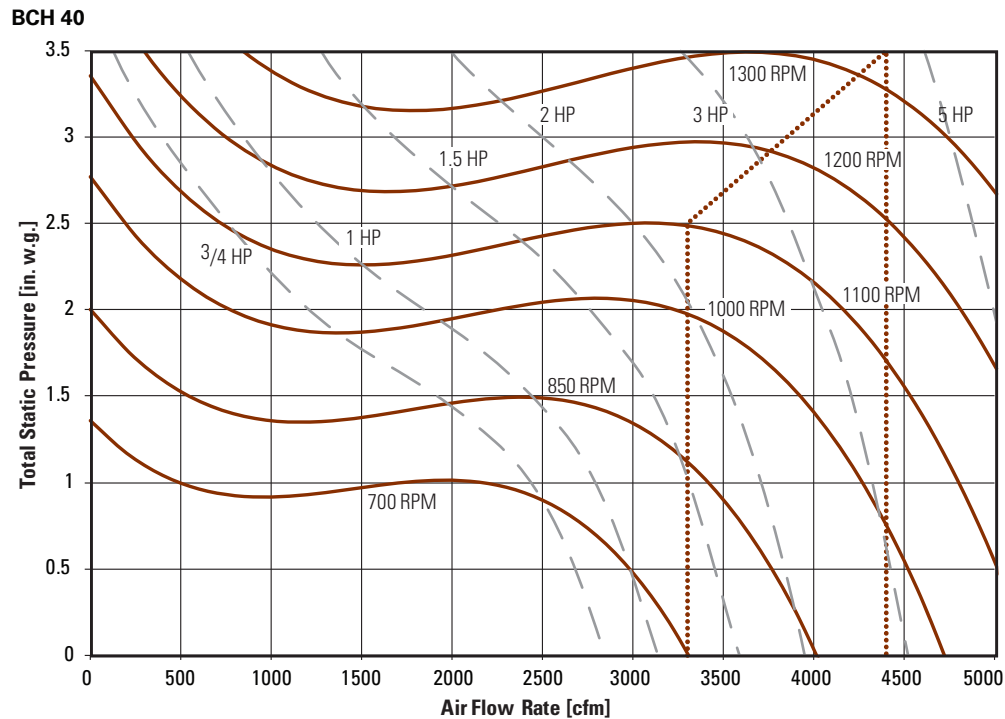
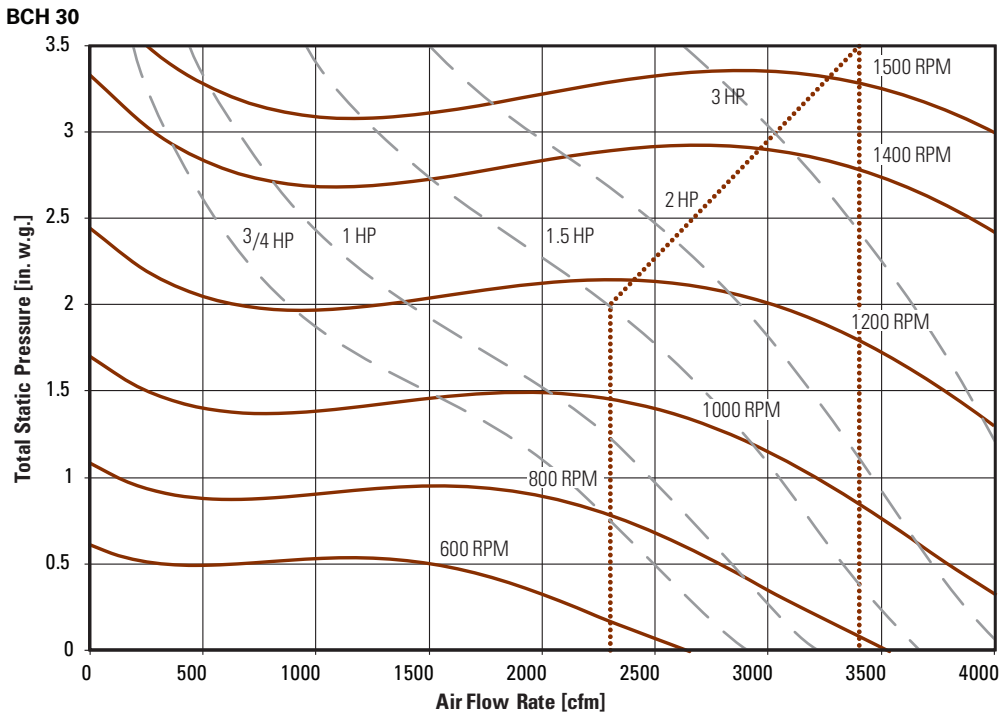
1. Fan Performance data obtained in accordance with the latest editions of AHRI Standard 430 and AMCA Standard 210.
2. Dotted lines represent maximum and minimum operating flows and static pressures.



Fan Performance Curves

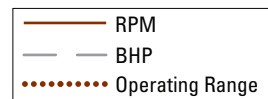


Fan Performance Curves



Notes:

1. Fan Performance data obtained in accordance with the latest editions of AHRI Standard 430 and AMCA Standard 210.
2. Dotted lines represent maximum and minimum operating flows and static pressures.



Component Static Pressure Losses

Unit	Flow (cfm)	Wet Coil				Dry Coil				2 in. MERV 8 Filters		2 in. MERV 13 Filters		Mixing Box
		3	4	6	8	1	2	3	4	6	8			
BCH 08	600	0.15	0.21	0.32	0.43	0.04	0.08	0.12	0.16	0.24	0.32	0.12	0.12	0.03
	700	0.20	0.27	0.42	0.55	0.05	0.10	0.15	0.20	0.31	0.41	0.14	0.14	0.04
	800	0.25	0.33	0.52	0.69	0.06	0.13	0.19	0.25	0.38	0.51	0.17	0.17	0.05
	900	0.30	0.41	0.61	0.84	0.07	0.16	0.23	0.31	0.47	0.62	0.21	0.21	0.07
	1000	0.36	0.48	0.73	0.97	0.09	0.19	0.28	0.37	0.56	0.74	0.24	0.24	0.09
BCH 12	900	0.19	0.27	0.40	0.53	0.04	0.09	0.14	0.18	0.28	0.37	0.13	0.13	0.03
	1100	0.26	0.35	0.56	0.74	0.06	0.13	0.19	0.26	0.39	0.52	0.18	0.18	0.05
	1200	0.30	0.41	0.61	0.86	0.07	0.15	0.22	0.30	0.45	0.60	0.20	0.20	0.06
	1300	0.35	0.46	0.70	0.98	0.08	0.17	0.26	0.34	0.51	0.68	0.22	0.22	0.07
	1400	0.39	0.53	0.79	1.11	0.09	0.19	0.29	0.39	0.58	0.77	0.25	0.25	0.08
BCH 16	1300	0.19	0.25	0.40	0.53	0.04	0.09	0.14	0.19	0.28	0.37	0.14	0.14	0.04
	1500	0.24	0.32	0.48	0.68	0.05	0.12	0.18	0.24	0.35	0.47	0.17	0.17	0.05
	1600	0.27	0.36	0.54	0.71	0.06	0.13	0.20	0.26	0.39	0.53	0.18	0.18	0.06
	1700	0.30	0.39	0.59	0.79	0.07	0.15	0.22	0.29	0.44	0.58	0.20	0.20	0.07
	1800	0.33	0.43	0.65	0.87	0.07	0.16	0.24	0.32	0.48	0.64	0.22	0.22	0.08
BCH 20	1700	0.23	0.31	0.46	0.61	0.05	0.11	0.17	0.22	0.34	0.45	0.16	0.16	0.04
	1900	0.28	0.37	0.55	0.73	0.06	0.14	0.20	0.27	0.41	0.54	0.19	0.19	0.05
	2000	0.29	0.40	0.60	0.80	0.07	0.15	0.22	0.29	0.44	0.59	0.20	0.20	0.06
	2200	0.34	0.45	0.70	0.94	0.08	0.17	0.26	0.35	0.52	0.69	0.23	0.23	0.07
	2400	0.39	0.52	0.79	1.09	0.09	0.20	0.30	0.40	0.60	0.80	0.27	0.27	0.08
BCH 30	2300	0.20	0.26	0.41	0.54	0.05	0.10	0.15	0.20	0.30	0.40	0.15	0.15	0.03
	2600	0.24	0.32	0.48	0.67	0.06	0.12	0.18	0.25	0.37	0.49	0.17	0.17	0.04
	2800	0.27	0.36	0.55	0.75	0.06	0.14	0.21	0.28	0.42	0.56	0.19	0.19	0.05
	3000	0.31	0.41	0.61	0.82	0.07	0.16	0.23	0.31	0.47	0.62	0.21	0.21	0.06
	3200	0.34	0.46	0.68	0.91	0.08	0.17	0.26	0.35	0.52	0.70	0.24	0.24	0.07
	3400	0.38	0.50	0.76	1.01	0.09	0.19	0.29	0.38	0.58	0.77	0.26	0.26	0.07
BCH 40	3300	0.23	0.31	0.46	0.62	0.05	0.12	0.18	0.24	0.35	0.47	0.17	0.17	0.04
	3600	0.27	0.36	0.53	0.71	0.06	0.14	0.20	0.27	0.41	0.54	0.19	0.19	0.05
	3800	0.29	0.39	0.58	0.78	0.07	0.15	0.22	0.30	0.45	0.60	0.21	0.21	0.06
	4000	0.32	0.42	0.64	0.85	0.07	0.16	0.24	0.32	0.49	0.65	0.22	0.22	0.06
	4200	0.35	0.46	0.69	0.92	0.08	0.18	0.26	0.35	0.53	0.70	0.24	0.24	0.07
	4400	0.37	0.50	0.75	1.00	0.09	0.19	0.29	0.38	0.57	0.76	0.26	0.26	0.08

Casing Radiated Sound Power Levels

Sound Power Levels, Lw, dB re 10 ⁻¹² Watts																																					
Unit Size	Air flow L/s cfm		0.5 in. w.g. [125 Pa] Octave Band								1.0 in. w.g. [250 Pa] Octave Band								1.5 in. w.g. [375 pa] Octave Band								2.0 in. w.g. [500 Pa] Octave Band										
			1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8			
8	283	600	66	62	55	49	43	38	35	35	69	65	58	52	46	42	39	38	70	66	60	54	48	44	41	41	71	68	61	55	49	45	43	42			
	378	800	69	65	59	52	46	41	37	35	72	68	61	55	49	45	41	39	73	70	63	57	51	47	44	41	74	71	64	58	52	48	45	42			
	425	900	70	67	61	54	48	43	39	37	72	70	63	57	51	46	43	41	73	71	65	58	53	49	46	43	74	73	66	60	54	50	47	44			
	472	1000	70	69	63	56	50	45	41	39	72	72	65	59	53	49	45	43	73	73	67	60	55	51	48	45	74	75	68	62	56	52	49	46			
12	425	900	74	63	55	52	49	44	40	38	76	67	59	55	53	50	47	44	77	69	60	57	56	53	51	48	78	70	62	58	57	55	54	51			
	472	1000	74	64	56	53	50	45	41	38	76	67	59	56	54	50	48	45	77	69	61	58	56	54	51	48	78	71	62	59	58	56	54	51			
	566	1200	74	64	58	55	51	46	42	39	76	68	61	58	55	52	49	45	77	70	62	59	58	55	53	49	78	72	64	61	59	57	55	52			
	661	1400	74	65	59	56	52	47	43	39	76	69	62	59	56	53	50	46	77	71	64	61	59	56	54	50	78	72	65	62	61	58	56	52			
0.75 in. w.g. [187.5 Pa] Octave Band										1.5 in. w.g. [375 pa] Octave Band										2.5 in. w.g. [625 Pa] Octave Band										3.5 in. w.g. [875 Pa] Octave Band							
16	614	1300	72	70	61	56	50	46	43	44	75	72	63	58	53	49	47	48	77	74	65	60	55	52	50	51	79	76	66	61	56	53	52	53			
	661	1400	72	69	61	56	51	47	44	44	75	72	63	58	53	50	48	48	77	74	64	60	55	52	51	51	79	76	65	61	56	54	52	53			
	755	1600	72	70	62	56	52	49	45	45	75	72	63	59	55	52	49	49	78	74	65	60	57	54	52	52	79	76	66	61	58	56	54	54			
	850	1800	73	72	63	58	54	51	48	47	76	74	65	60	57	54	52	50	79	76	67	62	59	57	55	53	80	77	68	63	60	58	56	55			
20	850	1800	75	70	64	58	56	54	52	49	73	70	65	59	58	56	54	52	72	71	65	60	59	57	56	54	71	71	65	60	60	58	57	56			
	944	2000	75	71	64	59	57	56	54	50	74	71	65	60	59	58	56	53	72	71	65	61	60	59	58	56	72	72	66	61	61	60	59	57			
	1038	2200	78	72	66	60	59	57	55	52	76	72	66	61	60	59	58	55	75	73	67	62	62	61	59	57	74	73	67	63	62	61	60	58			
	1133	2400	82	74	68	62	60	59	57	53	80	74	68	63	62	61	59	56	78	75	69	64	63	62	61	58	77	75	69	64	64	63	62	59			
0.75 in. w.g. [187.5 Pa] Octave Band										1.5 in. w.g. [375 pa] Octave Band										2.5 in. w.g. [625 Pa] Octave Band										3.5 in. w.g. [1000 Pa] Octave Band							
30	1133	2400	65	61	57	54	49	44	41	39	69	66	62	56	53	48	45	43	72	70	66	57	55	50	48	45	75	72	68	58	57	51	49	47			
	1274	2700	67	62	58	56	51	47	44	41	71	67	63	58	55	50	47	44	74	71	66	59	58	52	50	47	76	73	69	60	60	54	52	48			
	1416	3000	68	63	59	58	54	49	45	42	71	68	63	59	58	52	49	46	75	71	67	60	61	55	52	48	77	74	69	61	62	56	54	50			
	1605	3400	68	64	60	60	58	53	48	45	72	69	65	61	62	56	51	48	75	72	68	62	65	58	54	51	77	75	70	63	67	59	56	52			
40	1605	3400	73	68	65	60	53	50	47	43	76	70	68	61	57	52	49	47	79	72	70	62	60	53	51	49	81	73	72	63	63	54	53	51			
	1746	3700	73	68	66	60	54	50	48	44	76	70	68	61	57	53	50	47	78	72	70	62	61	54	52	49	80	73	72	63	64	55	53	51			
	1888	4000	73	69	66	61	56	52	49	45	76	71	69	62	59	54	52	48	78	73	71	63	62	56	54	50	80	74	73	64	65	57	55	52			
	2077	4400	74	71	68	63	58	54	52	47	76	73	71	65	61	57	54	51	79	75	73	66	65	58	56	53	81	76	75	66	68	59	57	55			

Notes:

1. Test data obtained in accordance with AHRI standard 260.
2. Sound Power Levels expressed in decibels (dB) re 10⁻¹² watts.
3. Unit Total Static Pressure includes External Static and Internal Pressure Drop such as Cooling Coils and Filters.
4. Test data obtained using standard unit lined with 1 in., 1.5 lb density fiberglass insulation.

Inlet Sound Power Levels

Sound Power Levels, Lw, dB re 10 ⁻¹² Watts																																					
Unit Size	Air flow L/s cfm		0.5 in. w.g. [125 Pa] Octave Band								1.0 in. w.g. [250 Pa] Octave Band								1.5 in. w.g. [375 pa] Octave Band								2.0 in. w.g. [500 Pa] Octave Band										
			1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8			
8	283	600	74	67	61	58	48	43	40	42	74	68	62	59	49	44	42	43	74	68	62	59	49	45	42	43	74	69	63	60	50	45	43	44			
	378	800	74	72	65	62	53	48	46	45	74	73	66	63	54	49	48	46	74	73	67	64	55	50	49	46	75	73	67	64	55	50	49	46			
	425	900	75	73	67	64	55	50	48	46	75	74	68	65	56	51	50	47	76	75	68	65	57	52	50	47	76	75	69	66	57	53	51	47			
	472	1000	77	75	68	65	57	52	50	47	77	75	69	66	58	53	51	47	77	76	70	67	59	54	52	48	77	76	70	67	59	55	53	48			
12	425	900	70	66	61	57	52	43	43	46	72	68	63	59	53	46	45	47	73	69	64	60	54	48	46	47	74	70	65	61	55	49	48	48			
	472	1000	71	67	63	58	53	45	44	47	73	70	65	60	54	48	47	48	74	71	66	61	56	49	48	48	75	72	67	62	56	51	49	49			
	566	1200	73	70	66	60	55	48	48	48	75	72	68	63	57	51	50	49	76	74	69	64	58	53	52	50	77	75	70	65	59	54	53	51			
	661	1400	76	72	68	63	58	51	50	50	78	75	70	65	60	54	53	52	79	76	72	66	61	56	54	52	80	77	72	67	62	57	55	53			

Notes:

1. Test data obtained in accordance with AHRI standard 260, free inlet configuration.
2. Sound Power Levels expressed in decibels (dB) re 10⁻¹² watts.
3. Unit Total Static Pressure includes External Static and Internal Pressure Drop such as Cooling Coils and Filters.

Discharge Sound Power Levels

Sound Power Levels, Lw, dB re 10 ⁻¹² Watts																																			
Unit Size	Air flow L/s cfm		0.5 in. w.g. [125 Pa] Octave Band								1.0 in. w.g. [250 Pa] Octave Band								1.5 in. w.g. [375 pa] Octave Band								2.0 in. w.g. [500 Pa] Octave Band								
			1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	
8	283	600	84	74	69	65	63	60	60	56	85	79	74	70	70	66	66	63	90	84	79	74	73	71	71	68	94	87	84	77	76	74	73	71	
	378	800	87	78	73	69	68	65	65	61	87	80	76	72	72	69	69	66	91	83	80	75	75	73	73	70	95	87	83	78	78	76	75	73	
	425	900	89	80	75	71	70	67	67	64	89	81	77	73	74	70	71	68	92	84	80	76	76	74	74	71	95	87	83	79	79	76	76	74	
	472	1000	91	83	78	73	73	70	70	67	91	83	78	75	75	72	72	70	93	84	81	77	77	75	75	73	96	87	84	79	79	77	77	75	
12	425	900	88	77	74	71	69	66	66	63	89	79	76	73	72	69	69	66	92	82	79	75	75	72	72	69	95	85	81	78	76	74	74	71	
	472	1000	91	79	76	73	71	69	69	66	91	80	77	75	74	71	71	69	93	83	80	77	76	73	73	71	96	85	82	78	77	75	75	73	
	566	1200	96	84	81	78	77	74	74	71	94	84	81	78	77	75	75	73	96	85	82	79	78	76	76	74	98	87	84	80	80	78	78	76	
	661	1400	102	89	86	82	82	79	78	76	99	87	85	81	81	79	78	77	99	88	85	82	81	79	79	78	100	89	86	83	82	80	80	79	
			0.75 in. w.g. [187.5 Pa] Octave Band								1.5 in. w.g. [375 pa] Octave Band								2.5 in. w.g. [625 Pa] Octave Band								3.5 in. w.g. [875 Pa] Octave Band								
16	614	1300	82	77	73	71	72	68	68	66	84	80	76	73	75	71	71	69	85	82	79	75	76	72	72	69	85	84	81	76	80	72	70	67	
	661	1400	84	78	75	72	73	70	70	68	85	80	77	74	76	72	72	70	86	82	79	76	77	73	73	70	86	84	81	77	81	73	71	68	
	755	1600	89	82	78	75	76	73	73	72	88	82	78	75	78	75	75	73	88	83	80	77	79	75	75	73	87	84	81	78	83	75	74	71	
	850	1800	93	85	81	77	79	76	76	75	91	84	80	77	80	77	77	76	90	84	81	78	81	77	77	75	89	84	82	79	85	77	76	73	
20	850	1800	87	80	76	74	76	73	74	72	87	79	77	75	79	75	76	74	89	82	80	78	81	77	77	75	90	84	82	80	82	79	77	75	
	944	2000	91	82	79	77	79	76	77	75	89	81	79	77	81	77	78	77	90	83	81	79	82	79	79	78	91	85	82	81	84	80	80	77	
	1038	2200	95	85	82	79	81	78	79	77	92	83	81	79	82	79	80	79	92	84	82	80	83	81	81	80	92	86	83	82	85	82	81	79	
	1133	2400	99	88	85	81	83	80	81	79	95	86	83	81	84	81	82	81	94	86	83	82	85	82	83	81	94	87	84	83	86	83	83	81	
			0.75 in. w.g. [187.5 Pa] Octave Band								1.5 in. w.g. [375 pa] Octave Band								2.5 in. w.g. [625 Pa] Octave Band								3.5 in. w.g. [1000 Pa] Octave Band								
30	1133	2400	99	75	73	81	73	70	71	66	89	80	76	77	76	73	73	69	89	83	81	78	79	76	76	72	94	85	85	81	82	78	78	74	
	1274	2700	95	77	76	82	76	73	74	70	89	80	77	78	78	75	75	72	90	83	81	79	81	77	78	74	95	85	85	81	83	80	80	76	
	1416	3000	92	80	78	83	80	76	77	74	89	81	79	80	81	77	77	74	91	83	82	80	82	79	79	76	96	85	85	82	84	81	81	78	
	1605	3400	89	83	82	84	84	80	80	78	89	83	81	81	83	80	80	78	92	84	83	82	84	81	81	79	97	85	85	83	86	82	83	80	
40	1605	3400	79	81	81	81	81	77	77	74	88	82	81	81	82	79	78	75	92	83	82	82	86	80	80	77	87	85	84	84	92	82	81	78	
	1746	3700	82	82	83	81	83	79	79	76	90	83	82	82	84	80	80	77	92	84	83	83	87	82	81	78	88	85	85	85	93	83	82	80	
	1888	4000	84	83	84	81	85	81	81	78	91	84	83	83	85	82	82	79	93	85	84	84	89	83	83	80	89	86	85	86	94	84	84	81	
	2077	4400	86	85	86	82	86	84	83	81	91	86	85	84	86	84	84	82	92	86	85	85	90	85	85	82	89	87	86	87	95	86	85	83	

Notes:

1. Test data obtained in accordance with AHRI standard 260, ducted discharge configuration.
2. Sound power levels include duct end corrections.
3. Unit Total Static Pressure includes External Static and Internal Pressure Drop such as Cooling Coils and Filters.

Nominal Cooling Capacities

Unit Size	Nominal cfm	Rows	# Circuits	Connection size	Total Btu/H	Sensible Btu/H	gpm	Fluid PD
8	800	3	2	7/8	21574	16086	4.30	10.19
			4	7/8	18048	14765	3.58	1.07
		4	2	7/8	27243	19129	5.42	21.36
			4	7/8	23711	17756	4.71	2.37
		6	3	7/8	33664	22470	6.70	15.25
			6	7/8	29630	20842	5.88	1.85
		8	3	7/8	39135	25016	7.80	27.14
			6	7/8	35788	23600	7.12	3.42
		3	3	7/8	30462	23224	6.05	7.84
			5	7/8	26671	21811	5.29	1.57
12	1200	4	3	7/8	38711	27706	7.68	16.45
			5	7/8	34954	26255	6.94	3.40
		6	4	7/8	49199	33103	9.79	17.38
			6	7/8	46076	31839	9.16	5.23
		8	5	7/8	56210	36429	11.17	15.96
			8	7/8	52471	34865	10.42	4.29
		3	4	7/8	42611	31921	8.49	9.26
			6	7/8	38773	30473	7.72	2.76
		4	5	7/8	52011	37248	10.31	9.69
			8	7/8	46812	35242	9.29	2.61
16	1600	6	6	1 1/8	66805	44708	13.29	13.67
			9	1 1/8	62501	42959	12.44	4.37
		8	7	1 1/8	76468	49253	15.23	15.34
			10	1 1/8	72994	47785	14.55	5.81
		3	4	1 1/8	53290	39691	10.58	15.50
			6	1 1/8	48982	38060	9.73	4.49
		4	5	1 1/8	64891	46343	12.91	16.20
			8	1 1/8	59191	44135	11.74	4.10
		6	7	1 1/8	81758	55084	16.27	15.00
			10	1 1/8	77128	53210	15.34	5.68
20	2000	8	8	1 1/8	94234	60954	18.77	18.05
			12	1 1/8	89349	58901	17.75	6.28
		3	6	1 1/8	78234	58725	15.53	15.33
			10	1 1/8	69800	55553	13.86	3.72
		4	8	1 1/8	94345	68218	18.72	13.63
			12	1 1/8	86775	65305	17.23	4.80
		6	10	1 3/8	121551	82118	24.19	15.58
			14	1 3/8	115147	79530	22.90	5.91
		8	12	1 5/8	139704	90704	27.78	15.19
			17	1 5/8	133187	87973	26.48	5.36
30	3000	3	8	1 3/8	102661	77519	20.39	13.10
			12	1 3/8	94061	74284	18.68	3.89
		4	10	1 3/8	125428	90695	24.89	13.80
			14	1 3/8	117529	87648	23.33	5.25
		6	12	1 5/8	162582	109638	32.36	19.00
			17	1 5/8	154463	106350	30.67	6.67
		8	14	1 5/8	187362	121371	37.27	21.40
			17	1 5/8	182997	119530	36.33	12.00

Notes:

- Nominal cooling capacities are based on 80 °F DB, 67 °F WB entering air temperature and 45 °F entering water temperature, 10 °F water temperature rise.
- For all application ratings, please contact your local Price Representative.

Nominal Heating Capacities

Unit Size	Air Flow	Connection size	10 °F Temperature Drop				20 °F Temperature Drop				30 °F Temperature Drop				
			Sensible Btu/h	LAT	gpm	Fluid PD	Sensible Btu/h	LAT	gpm	Fluid PD	Sensible Btu/h	LAT	gpm	Fluid PD	
1 Row															
8	800	5/8	2	29747	88.4	5.45	5.04	26756	85.2	2.45	1.07	23849	82.1	1.45	0.39
			3	29025	87.6	5.30	3.24	25511	83.9	2.34	0.64	22161	80.3	1.35	0.22
12	1200	5/8	2	43193	87.3	7.92	12.45	39321	84.6	3.60	2.71	35525	81.9	2.17	1.01
			3	42367	86.8	7.77	7.43	37898	83.6	3.47	1.52	33580	80.5	2.05	0.54
16	1600	7/8	3	60422	89.8	12.42	18.07	55537	87.0	5.70	3.92	50770	84.3	3.47	1.48
			5	58997	89.0	12.12	8.59	53069	85.6	5.44	1.75	47410	82.3	3.24	0.62
20	2000	7/8	4	72649	88.5	14.93	17.50	66428	85.6	6.81	3.71	60413	82.9	4.13	1.38
			6	71189	87.8	14.63	10.87	63923	84.5	6.56	2.20	56956	81.3	3.89	0.78
30	3000	1 1/8	5	107817	88.1	22.16	18.94	99089	85.5	10.16	4.10	90595	82.8	6.19	1.56
			8	105520	87.4	21.68	9.10	95138	84.2	9.76	1.87	85176	81.2	5.82	0.67
40	4000	1 1/8	5	143405	88.1	29.47	37.87	132828	85.6	13.62	8.36	122432	83.2	8.36	3.22
			8	140941	87.5	28.96	17.31	128570	84.6	13.19	3.65	116563	81.9	7.96	1.34
2 Row															
8	800	7/8	3	53078	116.2	10.91	15.44	48927	111.4	5.02	3.37	44844	106.7	3.06	1.28
			5	51919	114.8	10.67	6.97	46910	109.1	4.81	1.44	42071	103.5	2.87	0.52
12	1200	7/8	4	76969	114.1	15.82	21.97	70959	109.5	7.28	4.76	65053	105.0	4.44	1.80
			8	74514	112.3	15.31	10.01	66702	106.3	6.84	2.01	59209	100.5	4.04	0.70
16	1600	7/8	6	105470	115.8	21.67	27.20	97154	111.0	9.96	5.82	89022	106.3	6.08	2.19
			12	102044	113.8	20.97	15.25	91227	107.6	9.36	3.04	80854	101.6	5.52	1.06
20	2000	7/8	6	129362	114.6	26.58	42.28	119671	110.2	12.27	9.14	110144	105.8	7.52	3.46
			12	125624	112.9	25.81	23.27	113191	107.2	11.61	4.71	101215	101.7	6.91	1.67
30	3000	1 1/8	10	190497	113.6	39.15	28.35	175448	108.9	17.99	6.07	160707	104.4	10.97	2.28
			17	186051	112.2	38.23	17.32	167739	106.6	17.20	3.51	150121	101.1	10.25	1.25
40	4000	1 1/8	10	253937	113.5	52.18	53.81	235607	109.3	24.16	11.73	217522	105.1	14.85	4.48
			17	249152	112.4	51.20	31.77	227283	107.4	23.31	6.61	206045	102.5	14.07	2.41

Notes:

- Nominal Heating Capacities are based on 180 °F EWT and 55 °F EAT.
- Leaving air temperature is not to exceed 104 °F [40 °C] with the standard motor. Please contact Applications Engineering for higher temperature motor applications.
- For all application ratings and for information on four and six row heating coil capacities, please contact your local Price representative

Product Information

General Information

Electric heat coils are an available accessory for use with Price blower coil units. The electric heating coils have been specifically designed to suit Price blower coil. Electric heating coils are factory-mounted at the discharge outlet of the terminal unit.

Controls for the electric heat are interlocked and sequenced with the recirculating fan in the unit. The electric heat can be energized only after the recirculating fan is operating and then only if the warm plenum air supplied by the recirculating fan has not been sufficient to satisfy space heat requirements.

Benefits of Electric Coils vs Hot Water Coils

Electric coils offer an alternative to hot water reheat coils as an optional accessory for blower coil. The benefits are:

- No need for water lines which can lead to potential leaks, damaging property and reduced installation costs.
- Advantage can be taken of the electrical power supply hookup for the blower coil when making the electrical connection for the electric coil. (Note: the electrical power supply conductor size increases when electrical reheat coil load is added, refer to NEC codes for conductor sizing.)
- No pressure drop across the coils, therefore reduced fan HP requirements.

Features/Benefits of Price Electric Heat Coils:

- Heavy gauge zinc-coated steel electrical cabinet and frame.
- Large electrical cabinet door hinged for easy access and designed for secure closure.
- Electric coil controls and blower coil unit controls are on the same side of the unit reducing design restrictions and providing ease of servicing.
- Electric coil configuration and air flow is matched to eliminate hot spots to provide efficient heat transfer and to maintain element life.
- Automatic reset thermal cutout specifically matched to each unit to protect from overheating in case the minimum air flow requirements are not met.
- Secondary thermal cutout is in the power circuit and is used as a backup in case of failure of the automatic reset thermal cutout.
- Recirculating fan is interlocked with the heating elements to ensure that the fan is operational prior to the heating elements being energized.
- High grade nickel chrome heating elements are an available option to



provide superior element life and corrosion resistance.

- A single point connection is provided for both heater and fan motor (except 600v/3 ϕ). Dual point connection is available as an option on special request.
- Electric coil units are ETL listed to meet electrical safety standards and comply with dual designation CSA 236/UL 1995.

Available Options

- An interlocking main disconnect switch is used to de-energize the electric unit once the electrical enclosure door has been opened.
- Positive pressure air flow switch which senses pressure differential between a factory preset pressure and the combined velocity pressure plus static pressure. If the recirculating fan fails to operate, then the positive pressure air flow switch will not allow the electric coil to operate.
- Mercury contactors recommended for use in applications sensitive to noise. Mercury contactors provide quiet operating characteristics. Recommended for applications which have frequent demand and cycle repeatedly.
- Disconnecting contactors for applica-

tions where it is necessary to disconnect all three phase power up.

- Up to two additional stages of electric available to allow for staged heating capacity.
- SCR (Silicon Controlled Rectifier) option provides infinite heater control using a proportional signal. Element life is extended and noise from contactors is eliminated. This option may be specified compatible with pneumatic, electronic, or DDC controls. See description below. (UL and CSA certified)
- Primary or Secondary Fusing for added safety or to meet local electrical codes.

Conventional Staged Heater

- **Pneumatic**
- **Electronic**
- **Digital (DDC)**

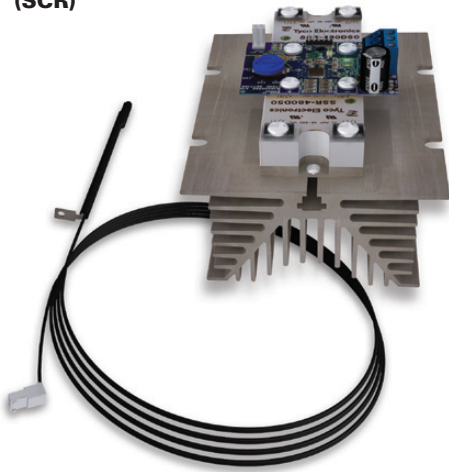
Maximum 3 Stages

SCR Heater

- **Pneumatic** proportional (with the addition of a pneumatic-electric transducer).
- **Digital (DDC)** proportional, pulsed AC, or pulsed DC.

Electronic Heating Controls

Silicon Controlled Rectifier (SCR)



SCR

The Price SCR Controller is a Silicon Controlled Rectifier that provides proportional modulation to the output over its full operating range. The SCR acts like an electronic switch that turns on and off large amounts of power to the load (heater). The Price SCR uses a Zero Crossing feature that allows a soft start of the electronic load, which eliminates power surges.

Features

- Power requirements – 24 VAC, polarity sensitive.
- Large, finned aluminum Heat Sink to provide proper heat dissipation.
- Load Power ranging from 120 VAC to 480 VAC, and a current rating up to 25 or 45 amps (depending on model). Multiple Control Input signals from stand alone controller or BAS controller: 2-10 vdc signal, 4-20 mA signal, 24 VAC Pulsed signal
- LED indication for: Firmware Version, Type of Input Signal, and Output Indication. Factory or Field installable optional Discharge Air Temperature (DAT) Probe for maintaining outlet air

Benefits of SCR

- Proportional modulation of the heater maintains set-point more accurately than on/off control, providing maximum comfort in the space.
- Energy efficient by avoiding overshooting and undershooting and reduces operation costs.
- Quiet operation of solid state relays compared to mechanical relay or contactor pulling in and dropping out.
- SCR can be tied into existing BAS controller, or can be used in a stand alone application.

Selection Parameters

Supply Voltage/Phase Selection

Common Supply Voltages:

Electric coils for Blower Coils units can be ordered for a variety Voltage supplies. When possible, a single point connection is provided for the heater and fan motor. **Table 1**, below, indicates compatible heater/fan motor voltages.

	Heater Volts/Phase	Fan Motor Volts/Phase
Single Point Connection	115V/1PH	115V/1PH
	208V/1PH	208V/1PH
	240V/1PH	240V/1PH
	277V/1PH	277V/1PH
	480V/1PH* 3wire	277V/1PH
	208V/3PH	208V/1PH
	480V/3PH* 4wire	277V/1PH
Two Point Connection	600V/3PH	Various

NEC Code Requirements

In order to comply with NEC Code requirements for fan terminals with electric heat the following factory supplied options are available

- a) All heaters are furnished with a fan interlock contact as standard. An optional air flow switch (pressure type) is also available.
- b) Optional door interlock disconnect to disconnect power to the heater and fan terminal immediately upon opening of the control panel door.
- c) Supplemental heater fusing circuit is required if total of heater and motor amps exceeds 48 amps.
- d) Standard contactors are of the de-energizing type. Optional disconnecting contactors provide a full-line break to assure all wires are de-energized when the contactor is open.

Selection Guidelines

Electric Coil Selection

In selecting electric coils, consider the following:

1. Once the design air flow has been determined refer to the appropriate fan performance curves and select the model size of unit required to deliver the specified air flow.
2. With the model size and air flow known, electric coil capacity can be calculated. Refer to the electric coil selection procedure for details.
3. With the heating capacity (kW) of the unit known, Select the Power supply voltage based on maximum recommended kW, referring to the coil selection chart.
4. Verify that minimum air flow requirements of 70 cfm/kW [33L/s per kW] are met, and that the discharge air temperature does not exceed 120 °F. Refer to example.
5. Select options.

Coil Selection Chart –

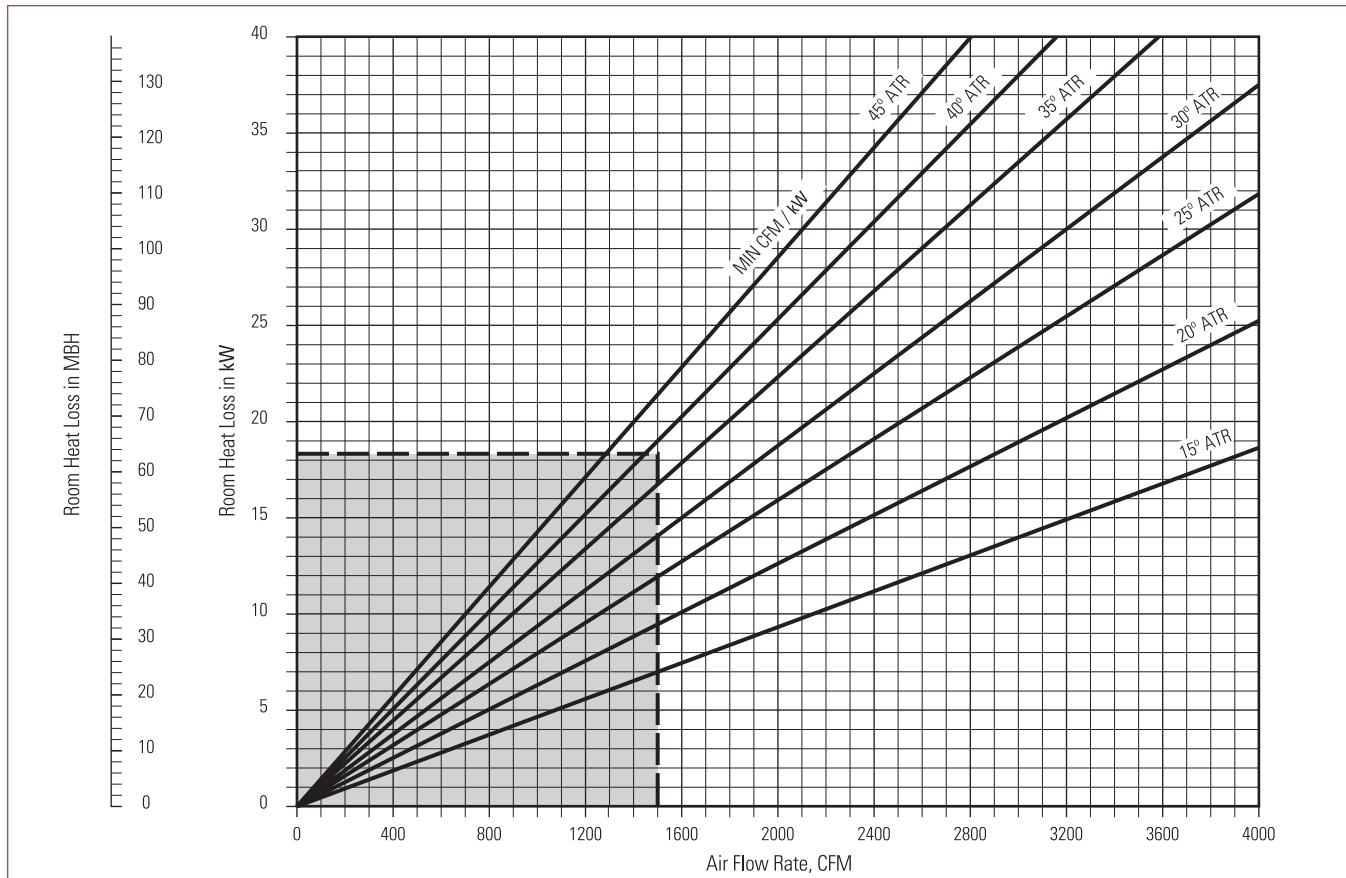
Max – kW for Conventional

Size	1 Phase Voltage				3 Phase Voltage			
	115	208	240	277	208	230	460	600
	kW	kW	kW	kW	kW	kW	kW	kW
8	5.5	9.9	11.5	13.2	13.9	14.2	14.2	14.2
12	5.5	9.9	11.5	13.2	13.9	14.2	14.2	20
16	5.5	9.9	11.5	13.2	13.9	14.2	14.2	25.7
20	5.5	9.9	11.5	13.2	17.2	19.2	25	26
30	5.5	9.9	11.5	13.2	17.2	19.2	25	37.2
40	5.5	9.9	11.5	13.2	17.2	19.2	25	37.2

Notes

1. ETL certified assemblies.
2. Minimum kW:
Single Phase = 0.5 kW per stage.
Three Phase = 1.5 kW per stage.
3. The recommend limit of 48 Amps may be exceeded. This requires supplemental fusing to meet NEC code requirements. Contact your local Price representative for further details.
4. Maximum kW limitations is the lesser of
 - a) coil selection chart
 - or
 - b) minimum air flow requirements of 70 cfm/kW [33 L/s per kW].

Electric Coil Selection Chart



How To Use the Chart

Electric Coil Selection Procedure

The selection of an electric coil for a blower coil requires the determination of the two components of the heat loss. One component is the heat required to satisfy the space load. The second component is the heat required to raise the temperature of the primary air to that of the space. This can be determined as follows, using the Electric Coil Selection Chart and the equation as given below.

1. Locate the room heat loss on the MBH scale on the far left side of the chart. Convert to kW by moving horizontally to the right to the kW scale (1 kW = 3.413 MBH).
2. Calculate the kW required to heat the recirculated plenum air to room temperature using the following equation:

$$\text{kW} = \frac{\text{cfm} \times 1.08 \times \Delta T}{3413}$$
3. Add the kW value obtained in step 2 to the kW scale at the left side. Move horizontally to the right to the point where the kW value and the air flow volume intersect.

4. With the point of intersection from 3, the air temperature rise (ATR), can be obtained by interpolating between the air temperature n/se lines on the graph.
5. To verify the selection, sum the air temperature rise and the temperature of the recirculated plenum air. The sum total should be less than 120 °F.

Example

Select an electric coil for a Size 16 Model BCH, with a fan capacity of 1500 cfm. Space heat loss is estimated at 56 MBH and space design temperature is 72 °F. The temperature of primary air is 68 °F.

1. Space heat loss (56 MBH) = 16.4 kW
2. Heat required to raise the temperature of the recirculated plenum air.

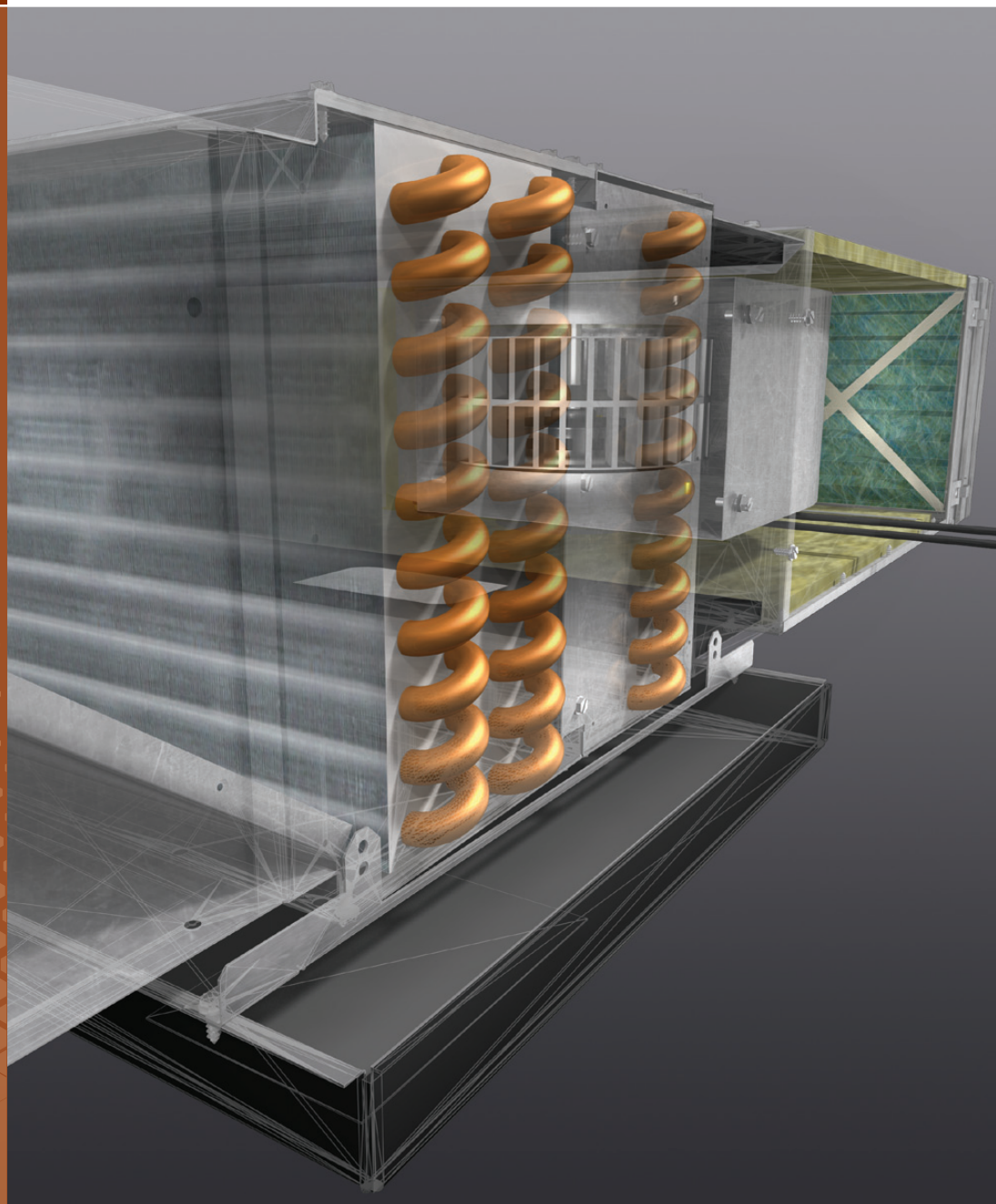
$$\text{kW} = \frac{1500 \times 1.08 \times 4}{3413} = 1.9 \text{ kW}$$
3. Total heat required = 16.4 + 1.9 = 18.3 kW.
4. Air temperature rise (ATR) = 38.5 °F.

5. Leaving air temperature - 68° + 38.5° = 106.5 °F. Since the leaving air temperature is less than the recommended maximum limit of 120 °F, the selection is satisfactory.
6. Select a suitable power supply from Table 3.
7. Verify minimum air flow requirements are met.

$$\frac{1500 \text{ cfm}}{18.3 \text{ kW}} = 82 \text{ cfm/kw}$$

- 82 cfm per kW is greater than 70 cfm per kW from Table 1 — a satisfactory selection.

SECTION F1



**Suggested
Specifications**

Vertical Concealed

General - FCVC

Furnish and install Price FCVC Fan Coil Units where indicated on the plans and in the specifications. Units shall be 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 ETL listed in compliance with UL/ANSI Standard 1995, and performance certified with the latest edition of AHRI Standard 440.

Construction

All unit casing shall be fabricated of 20 gauge galvanized steel panels. All exterior panels shall be insulated with 1/2 in. thick insulation with a maximum K-value of .24 (Btu • in)/(h • ft² • °F) and rated for a maximum air velocity of 3600 fpm. Insulation shall conform to UL 181 for erosion and NFPA 90A for flame spread (25) and smoke developed (50) rating per ASTM E-84 and UL 723.

All units shall have a minimum 1 in. duct collar on the discharge.

Option: Provide Foil Board insulation in lieu of standard. 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 UL 181.

Option: Provide Polymeric Closed Cell Foam Insulation in lieu of standard. 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 UL 181. Polyethylene insulation is not acceptable.

Unit mounting shall be by wall brackets with 3/8" slots or floor mounted.

Option: Units are equipped with leveling legs to provide 1" of adjustment in cases where units are installed on uneven flooring.

Sound

Units shall have published sound power level data tested in accordance with AHRI Standard 350-2000 (non-ducted equipment)

Fan Motor Assembly

Fan blower shall be a dynamically balanced, forward curved, DWDI centrifugal type constructed of zinc coated galvanized steel for corrosion resistance. Motors shall be direct coupled to the blower with isolation provided between motor and blower assembly. All motors shall be UL and CSA listed with automatic reset thermal overload protection. Motors shall be 3-speed, single phase, 60 Hz permanent split capacitor (PSC) type for 115 V (208 V, 230 V, or 277 V), permanently lubricated, with sleeve bearings.

Option: Supply an electronically commutated motor (ECM) complete with a single phase integrated controller/inverter that operates the wound stator and senses motor position to electronically commutate the stator. Motor rotor shall be permanent magnet type with near zero rotor losses. Motor shall be permanently lubricated with ball bearings. Motor shall maintain a minimum of 70% efficiency over its entire operating range. Provide manual fan speed control for field adjustment of fan air flow set-point. Speed control shall accept as standard a (0-10VDC) (0-20mA) signal for remote fan adjustment from a BAS.

Option: Motors shall have quick connectors to allow service and removal without the need for tools.

Coils

All cooling and heating coils shall optimize rows and fins per inch to meet the specified capacity. Coils shall have seamless copper tubes and shall be mechanically expanded to provide an efficient, permanent bond between the tube and fin. Fins shall have high efficiency aluminum surface optimized for heat transfer, air pressure drop and carryover.

All coils shall be hydrostatically tested at 360 psi minimum air pressure, and rated for a maximum of 300 psi working pressure at 200 °F.

Cooling and heating coils shall be in separate coil casings for servicing if required.

Drain Pans

All units shall be supplied with a primary and auxiliary condensate drain pans. Both drain pans shall be single wall, galvanized steel for corrosion resistance. The primary drain pan shall extend under the entire cooling coil and drain into the auxiliary pan. Drain pans shall be of one-piece construction and be positively sloped for condensate removal.

Drain pans shall be externally insulated with a fire retardant 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 UL 181.

Option: Provide primary and auxiliary drain pans constructed entirely of heavy gauge type 304 stainless steel for superior corrosion resistance. Stainless steel drain pans shall be externally insulated and meet or exceed the requirements stated above.

Option: Provide a secondary drain connection on the auxiliary drain pan for condensate overflow.

Filters

All units shall be furnished with a minimum 1 in. nominal glass fiber MERV 3 throwaway filter.

Electrical

Units shall be furnished with single point power connection. Provide an electrical junction box with terminal strip for motor and other electrical terminations.

Vertical Exposed

General - FCVE

Furnish and install Price FCVE Fan Coil Units where indicated on the plans and in the specifications. Units shall be 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 ETL listed in compliance with UL/ANSI Standard 1995, and performance certified with the latest edition of AHRI Standard 440.

Construction

All unit casing shall be fabricated of 18 gauge painted steel panels. Internal components shall be fabricated of 20 gauge galvanized steel. All exterior panels shall be insulated with 1/2 in. thick insulation with a maximum K-value of .24 (Btu • in)/(h • ft² • °F) and rated for a maximum air velocity of 3600 fpm. Insulation shall conform to UL 181 for erosion and NFPA 90A for flame spread (25) and smoke developed (50) rating per ASTM E-84 and UL 723.

All units shall be supplied with a stamped louver supply grille.

Option: Provide Foil Board insulation in lieu of standard. 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 UL 181.

Option: Provide Polymeric Closed Cell Foam Insulation in lieu of standard. 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 UL 181. Polyethylene insulation is not acceptable.

Unit mounting shall be by wall brackets with 3/8" slots or floor mounted.

Option: Units are equipped with leveling legs to provide 1" of adjustment in cases where units are installed on uneven flooring.

Option: Extended end pockets provide a 6" extension (total of 14") to the piping side of the cabinet to provide additional room for valves or to cover up an existing opening in retrofits.

Paint

All FCVE units shall be provided with a powder coated epoxy finish.

Sound

Units shall have published sound power level data tested in accordance with AHRI Standard 350-2000 (non-ducted equipment)

Fan Motor Assembly

Fan blower shall be a dynamically balanced, forward curved, DWDI centrifugal type constructed of zinc coated galvanized steel for corrosion resistance. Motors shall be direct coupled to the blower with isolation provided between motor and blower assembly. All motors shall be UL and CSA listed with automatic reset thermal overload protection. Motors shall be 3-speed, single phase, 60 Hz permanent split capacitor (PSC) type for 115 V (208 V, 230 V, or 277 V), permanently lubricated, with sleeve bearings.

Option: Supply an electronically commutated motor (ECM) complete with a single phase integrated controller/inverter that operates the wound stator and senses motor position to electronically commutate the stator. Motor rotor shall be permanent magnet type with near zero rotor losses. Motor shall be permanently lubricated with ball bearings. Motor shall maintain a minimum of 70% efficiency over its entire operating range. Provide manual fan speed control for field adjustment of fan air flow set-point. Speed control shall accept as standard a (0-10VDC) (0-20mA) signal for remote fan adjustment from a BAS.

Option: Motors shall have quick connectors to allow service and removal without the need for tools.

Coils

All cooling and heating coils shall optimize rows and fins per inch to meet the specified capacity. Coils shall have seamless copper tubes and shall be mechanically expanded to provide an efficient, permanent bond between the tube and fin. Fins shall have high efficiency aluminum surface optimized for heat transfer, air pressure drop and carryover.

All coils shall be hydrostatically tested at 360 psi minimum air pressure, and rated for a maximum of 300 psi working pressure at 200 °F.

Cooling and heating coils shall be in separate coil casings for servicing if required.

Drain Pans

All units shall be supplied with a primary and auxiliary condensate drain pans. Both drain pans shall be single wall, galvanized steel for corrosion resistance. The primary drain pan shall extend under the entire cooling coil and drain into the auxiliary pan. Drain pans shall be of one-piece construction and be positively sloped for condensate removal.

Drain pans shall be externally insulated with a fire retardant 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 UL 181.

Option: Provide primary and auxiliary drain pans constructed entirely of heavy gauge type 304 stainless steel for superior corrosion resistance. Stainless steel drain pans shall be externally insulated and meet or exceed the requirements stated above.

Option: Provide a secondary drain connection on the auxiliary drain pan for condensate overflow.

Filters

All units shall be furnished with a minimum 1 in. nominal glass fiber MERV 3 throwaway filter.

Electrical

Units shall be furnished with single point power connection. Provide an electrical junction box with terminal strip for motor and other electrical terminations.

High Performance Fan Coils Suggested Specification

price®

Horizontal Genesis® Series

General – FCHG

Furnish and install Price FCHG Fan Coil Units where indicated on the plans and in the specifications. Units shall be factory assembled, tested and shipped as two-pieces, with the drain pan shipped loose for field installation by others. All units shall be capable of meeting or exceeding the scheduled capacities for cooling, heating and air delivery. All unit dimensions for each size shall be considered maximums. Units shall be ETL listed in compliance with UL/ANSI Standard 1995, and be certified as complying with the latest edition of AHRI Standard 440.

General – FCHGQ

Furnish and install Price FCHGQ Fan Coil Units where indicated on the plans and in the specifications. Units shall be factory assembled, tested and shipped with silencer attached and drain pan shipped loose for field installation by others. All units shall be capable of meeting or exceeding the scheduled capacities for cooling, heating and air delivery. All unit dimensions for each size shall be considered maximums. Units shall be ETL listed in compliance with UL/ANSI Standard 1995, and be certified as complying with the latest edition of AHRI Standard 440.

Construction

All unit casings shall be fabricated of heavy gauge galvanized steel panels. Unit casing shall have a bottom access panel to allow removal of fan and servicing of the unit. All units shall have a slip and drive duct collar connection on the discharge. All exterior panels shall be insulated with 1/2 in. thick insulation with a maximum K-value of .24 (Btu•in)/(h•ft²•°F) and rated for a maximum air velocity of 3600 fpm. Insulation shall conform to UL 181 for erosion and NFPA 90A for flame spread (25) and smoke developed (50) rating per ASTM E-84 and UL 723.

Option: Provide Closed Cell Foam Insulation in lieu of standard. 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 UL 181.

Option: Provide Foil Board insulation in lieu of standard. 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 UL 181.

Option: Provide Solid Metal liner system in lieu of standard. 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 UL 181.

Option: Provide Perforated Metal liner system in lieu of standard. 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 UL 181. Polyethylene insulation is not acceptable.

Unit mounting shall be by hanger brackets provided at four or six locations. Hanger brackets shall be shipped loose for field installation by others.

Sound

Units shall have published sound power level for octave band 2-7 data tested in accordance with current AHRI Standard 880 (Performance Rating of Air Terminals).

Sound ratings of air distribution assemblies shall not exceed __ NC at __ static pressure drop across the unit, and the downstream static pressure of __. Use attenuation values found in appendix E of AHRI Standard 885-2008: "A procedure for estimating occupied space sound levels in the application of air terminals and air outlets".

Fan Motor Assembly

Fan blower shall be a dynamically balanced, forward curved, DWDI centrifugal type constructed of zinc coated galvanized steel for corrosion resistance. Motors shall be direct coupled to the blower with isolation provided between motor and blower assembly. All motors shall be UL and CSA listed with automatic reset thermal overload protection. Motors shall be electronically commutated DC brushless motors complete with a single phase integrated controller/inverter that operates the wound stator and senses motor position to electronically commutate the stator. All motors shall be designed for synchronous rotation. Motor rotor shall be permanent magnet type with near zero rotor losses. Motor shall be permanently lubricated

with ball bearings. Motor shall maintain a minimum of 70% efficiency over its entire operating range. Provide manual fan speed control for field adjustment of fan air flow set-point. Speed control shall accept as standard a (0 - 10VDC) (0 - 20mA) signal for remote fan adjustment from a BAS.

Option: Supply a permanently split capacitance (PSC) motor with electronic speed controller which allows continuously adjustable fan speed from maximum to minimum. Speed control shall be matched to operate with the motor. Speed control shall be equipped with a minimum voltage stop to ensure motor will not operate in the stall mode. Voltage stop shall be factory set.

Silencers

Silencer sections shall consist of 22 gauge solid metal casing, 22 gauge perforated liners, and absorptive acoustic fiberglass liner.

Acceptable methods of silencer construction shall be button lock, Pittsburgh lock and welds. In situations where these methods are not feasible, rivets can be used. Screws or other mechanical fasteners on the silencer will not be acceptable.

The silencer noses and perforated liners shall be rigidly fastened to the casing of the silencer on both the top and bottom.

The silencer section acoustic media shall be shot free inorganic glass fiber with long, resilient fibers, bonded with thermosetting resin, and contain 50% recycled media. Glass fiber shall be packed with a minimum 10% compression to eliminate voids and settling; density shall be consistent with that used to generate catalog test data. Combustion ratings for silencer acoustical media shall be equal to or less than the combustion ratings noted below when tested in accordance with ASTM E84, UL713, and NFPA 255:

Flame spread Classification: 25

Smoke Development Rating: 50

Option: The silencer shall be provided with a thin layer of Polymer film securely wrapped around the internal acoustic media to prevent contamination from moisture and airborne particulate that may be present in the duct system. Acoustic stand-off shall run the entire length of the internal baffles and be located between the perforated metal liner and the Polymer film to ensure the highest level of acoustic performance.

Horizontal Genesis® Series

Coils

Coils shall have seamless copper tubes and shall be mechanically expanded to provide an efficient, permanent bond between the tube and fin. Fins shall have high efficiency aluminum surface optimized for heat transfer, air pressure drop and carryover. All coils shall be performance rated and certified in accordance with the current edition of AHRI Standard 410. All coils shall be hydrostatically tested at 360 psig minimum air pressure, and rated for a maximum of 300 psig working pressure at 200 °F. The cooling coil bottom plate shall be sloped towards the drainage slots to ensure condensate removal into the drain pan even if the fan is off.

Option: Provide a stainless Steel bottom panel on the cooling coil.

Drain Pans

Primary condensate drain pans shall be single wall, galvanized steel for corrosion resistance, and extend under the entire cooling coil. Drain pans shall be of one-piece construction and be positively sloped for condensate removal. Drain shall be field reversible for right or left hand connections. The drain pan shall be externally insulated with fire retardant foam insulation. The insulation shall carry no more than a 25/50 Flame Spread and Smoke Developed Rating per ASTM E-84, UL 723 and an Antimicrobial Performance Rating of 0, no observed growth, per UL 181.

Option: Provide a single wall primary drain pan constructed entirely of heavy gauge type 304 stainless steel for superior corrosion resistance. Stainless steel drain pans shall be externally insulated and meet or exceed the requirements stated above.

Option: Provide a secondary drain connection on the primary drain pan for condensate overflow.

Filters

Standard: Provide a 1 in. MERV 3 throwaway filter.

Option: Provide a 2 in. pleated MERV 8 or MERV 13 filter.

Electrical

Units shall be furnished with single point power connection. Provide a NEMA 1 electrical enclosure or controls enclosure with terminal strip for motor and other electrical terminations.

Blower Coils Suggested Specification

price®

Horizontal

General – BCH Series

Furnish and install Price BCH Horizontal Blower Coil Units where indicated on the plans and in the specifications. Units shall be factory assembled, tested and shipped as one-piece except where noted. All units shall be capable of meeting or exceeding the scheduled capacities for cooling, heating and air delivery. All unit dimensions for each size shall be considered maximums. Units shall consist of a fan, motor, drive assembly and coil in a draw-through configuration, completely enclosed in the unit casing. All units shall be ETL listed in compliance with UL Standard 1995.

Construction

All unit cabinets shall be fabricated of minimum 18 gauge galvanized steel. Top panels shall be reinforced with formed beads for increased rigidity. All exterior panels shall be single wall insulated with 1 in. thick fiberglass insulation rated for a maximum air velocity of 3600 fpm. Insulation shall conform to UL 181 for air erosion and NFPA 90A for flame spread (25) and smoke developed (50) rating per ASTM E-84 and UL 723.

All units shall be supplied with two side access panels fabricated from the same material as the cabinet. All units (except size 08) shall also be supplied with two bottom access panels. Access panels shall be fastened with perimeter screws in extruded holes for extended service life. A closed cell gasket shall be supplied in between panels and the cabinet to prevent air leakage/ infiltration and vibration.

Units shall be supplied with 1 in. slip and drive duct collar connections on the inlet and discharge. Unit mounting shall be provided by $\frac{3}{16}$ in. diameter hanger rod holes in the top and bottom panels for 'through-bolt' type suspension installation.

Option: Provide Polymeric Closed Cell Foam Insulation in lieu of standard. 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 UL 181. Polyethylene insulation is not acceptable.

Option: Provide Foil Board insulation in lieu of standard. 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 UL 181.

Option: Provide Solid Metal liner system fabricated in lieu of standard. The liner shall be fabricated from the same material as the casing. 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 UL 181

Option: Provide hinged tool free access panels on the side and bottom of the unit. Panels shall be capable of pivoting on either side and be completely removable.

Fan and Motor Assembly

All units shall be furnished with belt-driven centrifugal fans consisting of housing, wheel, fan shaft, bearings, motor drive assembly, and support structure. The fan and motor assembly shall be mounted on vibration type isolators inside the cabinet and ducted to exterior of the unit using a flexible duct connection.

The supply fan shall consist of a double width double inlet forward curved steel fan wheel mounted in a formed steel housing. The fan wheel shall be dynamically balanced. The wheel shall be mounted on a solid steel shaft rotating in permanently lubricated concentric lock or pillow block ball bearings rated in accordance with ABMA for an L10 design life of 100000 hours.

The blower shall be driven by a V-belt system consisting of cast iron or steel sheaves. Driven sheaves shall be supplied with a tapered bushing, keyed to fit the blower shaft. Drive sheaves shall be variable pitch and set at mid-position for the required RPM. All sheaves are rated and selected based on motor horsepower. Motors shall be mounted on an adjustable base for belt tensioning.

Motors

Fan motors shall be of standard NEMA design and rated for 1725 RPM, 60 Hz operation. All motors are open drip proof type, single speed motors rated for continuous duty and reversible in direction. Motors up to three horsepower shall be 56 Frame size and five horsepower motors shall be 184T frame size. All motors shall be equipped with integral thermal overload protection or an overload protector mounted in the control enclosure.

Water Coils

All water coils shall be rated in accordance with the latest addition of AHRI 410. Coils shall be $\frac{1}{2}$ in. O.D. seamless copper tubes with collared aluminum fins. All tubes shall be mechanically expanded to provide an efficient bond between tube and fin. All water coils shall be provided with a manual

air vent fitting to allow for coil venting. All coils shall be hydrostatically tested at 360 psig minimum air pressure, and rated for a maximum of 300 psig working pressure at 200 °F. Water coils shall be field reversible from left hand to right hand configuration.

Condensate Drain Pan

All water coils shall be supplied with a condensate drain pan, designed in accordance with ASHRAE 62-2004. Primary condensate drain pans shall be single wall, galvanized steel for corrosion resistance, and extend under the entire cooling coil. Drain pans shall be of one-piece construction and be positively sloped for condensate removal.

Option: Provide a single wall primary drain pan constructed entirely of heavy gauge type 304 stainless steel for superior corrosion resistance.

Option: Provide a secondary drain connection on the primary drain pan for condensate overflow.

Filter Section

Provide a 2 in. filter section with access panels on both sides and the bottom of the frame. Filters shall be removable from either side or the bottom of the unit.

Provide 2 in. pleated MERV 8 throwaway filter.

Option: Provide 2 in. pleated MERV 13 throwaway filter.

Mixing Box

Option: Provide a fully insulated mixing box section with factory assembled and installed control dampers. The mixing box shall be fabricated as described in the construction section. The mixing box dampers shall be heavy gauge formed steel blade dampers in a heavy gauge steel frame. Damper drive linkage shall be factory furnished and installed.

Option: Provide low leakage dampers on the mixing box section with pressure sensitive, PVC blade edge seals and flexible metal jamb seals.

Option: Provide formed steel side access panels to the interior of the mixing box section.

Option: Provide factory installed damper actuator mounted directly to the damper shaft to be field wired.

Electrical

The unit fan motor shall be completely factory wired to an external electrical enclosure for single point power connection.

Horizontal

Electric Coils

Electric coils shall be factory-mounted and of the capacity scheduled on the drawings. Blower Coil and heater assembly shall be UL 1995 and ETL certified. The heater frame and cabinet shall be constructed of heavy gauge galvanized steel. Heating elements shall be open-coil type constructed of high grade 80/20 NiCr resistance wire. Elements shall be low density and designed to minimize hot spots and nuisance cycling of the thermal resets. Coil elements shall be insulated from the frame using floating ceramic bushings.

Electric coils shall be supplied with contactors, relays, and transformers as required. Two thermal cutouts of automatic reset and manual reset type shall be provided as primary and secondary overload protection, respectively. Fused secondary thermal cutout devices are not acceptable. A differential pressure switch shall be provided to ensure air flow is present before heater is energized. A door-interlock disconnect switch shall be provided to cut power to the electric coil prior to accessing components in the control enclosure.

Modulating Control (SCR) option:

Where desired, heater shall be capable of providing proportional control of reheat capacity using an analog input signal (0-10 VDC, 4-20 mA, or PWM) from a room thermostat or from the unit controller. The SCR shall pulse the coil on and off in proportion to the heating demand indicated by the room thermostat. The SCR controller shall provide solid state switching with zero crossover for silent operation. Magnetic or mercury contactors are not acceptable for control of reheat capacity.

SCR with Discharge Air Temperature (DAT) control option:

Heater shall be supplied with SCR controller featuring discharge air temperature sensor. The controller shall feature adjustable discharge air temperature set-point controlled by a dial on the SCR controller. The SCR shall pulse the coil in proportion to the heating demand indicated by the room thermostat, while ensuring the discharge air temperature does not exceed the set-point indicated on the dial. Upon sensing DAT above set-point, the controller shall reduce the heater output in order to maintain desired discharge air temperature set-point. Discharge air temperature set-point shall be variable from 70-130 °F [21-54 °C].

- Staged Reheat Control, Quiet option (Price SilentGuard™)
- Electric heaters shall be supplied with Price 'SilentGuard™' control circuit board or equivalent, to be complete with:
- Quiet PCB relays with indicator LEDs for up to 3 stages of electric heat.
- Integrated differential air pressure switch (with control algorithm to prevent nuisance tripping).
- Blinking status LED to aid in troubleshooting of heater. Status LED shall indicate heater condition and fault; eg: no air flow, tripped manual /automatic reset, etc.
- Automatic reset 24VAC control circuit fusing.

The electric heater circuit board shall be capable of automatically adjusting to accept either a 24VAC switched HOT or switched COMMON signal from the controller in order to energize the PCB relays. The electric heater and circuit board shall be ETL listed.