



Q-TEC™ Q24A-Q60A Air Conditioners

**GREEN REFRIGERANT
R-410A**

Cooling Capacities: 24,000 to 54,000 Btuh

The Q-TEC Series self contained packaged air conditioner is designed to be installed inside a building structure against an exterior exposed wall. Q-TEC's design provides "whisper" quiet operation with total comfort for the occupants at efficiency levels up to 24% above the federal standard. This design eliminates the need for roof-mounted equipment and outside condensing units and can meet your specific architectural requirements.

Q-TEC's "quiet technology" provides extremely low sound levels (both indoor and outdoor) by using special components and materials in the construction of the unit. By using special motors, sound insulation and other sound absorbing features, we have built an air conditioner system that is significantly quieter than typical product available today.

Q-TEC is suitable for both new construction and renovation projects for schools, modular buildings and light commercial buildings. A variety of ventilation and dehumidification options are designed to address your project's indoor air quality and dehumidification requirements.

The Q-TEC Series unique design allows all maintenance and service to be performed inside the building to facilitate multi-story installations. Access to air filters and controls is accomplished through a hinged front panel for easy accessibility. All Q-TEC Series models are built on heavy duty permanent rollers for easy installation and removal from the wall sleeve for additional service access.

Q-TEC's durable, easy to clean cabinet is aesthetically pleasing and comes standard with side and bottom trim pieces. Two types of cabinet finish are available: a durable two tone (slate and platinum) vinyl covered steel, or gray pre-painted steel.

Product Features

Scroll Compressor

The Copeland scroll compressor has been designed for increased efficiency, quieter operation with reduced shutdown noise and improved reliability for longer life. Eliminates need for crankcase heater and suction line accumulator.

Compressor Sound Reduction

Compressor is mounted on full floating base with double grommets and is equipped with discharge muffler and sound cover.

Phase Rotation Monitor

Standard on all 3-phase scroll compressors. Protects against reverse rotation if power supply is not properly connected.

Indoor Blower Motor

All models feature a variable speed (ECM) motor providing super high efficiency, low sound levels and soft start capabilities. The motor is self-adjusting to provide the proper airflow rate at high static pressure for ducted installations without user adjustment or wiring changes. Optional dehumidification circuit (hot gas reheat) provides improved dehumidification when used with humidistat.

Outdoor Fan Motor

The PSC outdoor fan motor has double oil capacity sleeve bearings and is totally enclosed for extended life.

Copper Tube/Aluminum Fin Coils

Grooved copper tubing and enhanced aluminum fins provide maximum heat transfer and high energy efficiency. Optional phenolic coated coils are available.

Cabinet

Constructed of 20 gauge pre-painted or vinyl laminated galvanized steel. Choice of either two tone vinyl finish with "slate" front panels and "platinum" cabinet for designer appearance, or gray or beige painted steel. Vinyl finish is very resistant to scratching and marring and is very easy to clean. Tamper resistant fasteners are provided for access panels. Unit includes built-in rollers for easy installation into wall sleeve and removal for service if necessary. Hinged, lockable front panel for filter service and access to primary functional electrical controls.

Insulation

Cabinet is fully insulated with foil covered, high density fiberglass insulation with sealed edge treatment and special sound deadening insulation material in the compressor section. All insulation is designed to resist mold and mildew growth and facilitate ease of cleaning.

Electrical Components

Are easily accessible for routine inspection and maintenance through front service panels. Circuit breaker standard on all 208/230V models and rotary disconnect standard on all 460V models. Circuit breaker/rotary disconnect access is through lockable access panel. Lock and key provided as standard equipment.



Electric Heat Strips

Backup electric heat strips feature automatic limit safety controls. Heater packages are factory installed for all models. See Electric Heat Table for available options.

Hot Water Coil

A plenum mounted hot water coil is available for both duct-free and ducted applications.

Air Filters

One-inch disposable panel type air filters are standard. Optional two-inch pleated and two-inch fiberglass disposable air filters are available. Optional Energy Recovery Ventilator has a separate filter for exhaust air to keep ERV clean.

Refrigerant Service Ports

Located in filter compartment for easy access.

Liquid Filter Dryer

Standard on all models.

High/Low Pressure Switch

Provides refrigerant circuit high pressure and loss of charge protection. Includes lockout circuit that is resettable from room thermostat.

Compressor Control Module

Provides short cycle protection for the compressor, which extends compressor life.

Ventilation Packages

Barometric fresh air damper standard on all units and allows up to 25% outside fresh air. Optional energy recovery ventilator can provide up to 450 CFM of outside air and exhaust through the unit while maintaining indoor comfort and humidity levels. Economizer, commercial room ventilator and blank-off plate are also available.

Diagnostic Light

System service - indicates high or low pressure switch operation for compressor protection. Located inside control panel.

Stainless Steel Drain Pans

Provides extended life of the evaporator and condenser drain pans for maximum corrosion resistance.

Side Trim Piece Extension

Provides cabinet extension between interior wall and unit when wall thickness is between 12 inches to 14 inches. This is a space up to 4". Standard feature shipped with all models. Optional trim kits for thinner walls or longer wall sleeves available.

Wall Sleeve

Constructed of 16 gauge galvanized steel, coated with epoxy primer and a baked on polyester enamel paint, which allows it to withstand 1000 hours of salt spray tests per ASTM B117-03. Required for all models. Ordered separately.

- Certified to ANSI/ARI Standard 390-2003 for SPVU (Single Package Vertical Units).
- Complies with efficiency requirements of ASHRAE/IESNA 90.1-2013.
- Intertek ETL Listed to Standard for Safety Heating and Cooling Equipment ANSI/UL 1995/CSA 22.2 No. 236-05, Fourth Edition.
- Commercial Product - Not intended for Residential application.



Bard is an
ISO Certified
Manufacturer

Capacity and Efficiency Ratings

MODELS	Q24A2	Q30A2	Q36A2	Q42A2	Q48A2	Q60A2
Cooling Capacity BTUH ①	24,000	29,800	34,600	40,000	46,000	54,000
EER ②	10.00	10.00	10.00	9.20	9.50	9.10

① Capacity is certified in accordance with ANSI/ARI Standard 390-2003.

② EER = Energy Efficiency Ratio and is certified in accordance with ANSI/ARI Standard 390-2003.

All ratings based on fresh air intake being 100% closed (no outside air introduction).

Specifications - 2, 2½ and 3 Ton

MODELS	Q24A2-A	Q24A2-B	Q24A2-C	Q30A2-A	Q30A2-B	Q30A2-C	Q36A2-A	Q36A2-B	Q36A2-C
ELECTRICAL RATING – 60 HZ	230/208 - 1	230/208 - 3	460 - 3	230/208 - 1	230/208 - 3	460 - 3	230/208 - 1	230/208 - 3	460 - 3
Operating Voltage Range	197-253		414-506	197-253		414-506	197-253		414-506
COMPRESSOR – CIRCUIT A									
Voltage	230/208		460	230/208		460	230/208		460
Rated Load Amps	10.5/12.2	6.9/8.0	4.9	12.5/14.3	8.0/9.2	5.7	13.6/15.2	8.5/9.5	6.0
Branch Circuit Selection Current	12.9	8.4	5.2	14.3	9.2	5.7	16.7	10.5	6.0
Lock Rotor Amps	64	58	28	77	71/71	38	79	73	38
FAN MOTOR & CONDENSER									
Fan Motor--HP-RPM-SPD	1/5 - 1075 - 1			1/5 - 1075 - 1			1/5 - 1075 - 1		
Fan Motor-- Volts-Amps	230/208 - 1.6		460 - .8	230/208 - 1.6		460 - .8	230/208 - 1.9		460 - 1.0
Fan--DIA-CFM	20" - 1600			20" - 1600			20" - 1750		
MOTOR & EVAPORATOR									
Blower Motor HP-SPD	1/2 - Variable			1/2 - Variable			1/2 - Variable		
Blower Motor--Volts-Amps	230/208 - 1.8			230/208 - 2.7			230/208 - 3.7		
CFM Cooling & E.S.P. w/Filter (Rated-Wet Coil)	800 @ .10 ESP			1000 @ .15 ESP			1200 @ .15 ESP		
Filter Sizes (inches) STD.	1 - 16x20x1 & 1 - 16x16x1			1 - 16x20x1 & 1 - 16x16x1			1 - 16x20x1 & 1 - 16x16x1		
SHIPPING WEIGHT – LBS.	515	515	535	520	520	540	535	535	555

Specifications - 3½, 4 and 5 Ton

MODELS	Q42A2-A	Q42A2-B	Q42A2-C	Q48A2-A	Q48A2-B	Q48A2-C	Q60A2-A	Q60A2-B	Q60A2-C
ELECTRICAL RATING – 60 HZ	230/208 - 1	230/208 - 3	460 - 3	230/208 - 1	230/208 - 3	460 - 3	230/208 - 1	230/208 - 3	460 - 3
Operating Voltage Range	197-253		414-506	197-253		414-506	197-253		414-506
COMPRESSOR – CIRCUIT A									
Voltage	230/208		460	230/208		460	230/208		460
Rated Load Amps	19.0/21.2	12.6/14.0	6.5	18.1/21.1	13.1/14.7	6.5	24.6/28.6	14.6/17.0	8.5
Branch Circuit Selection Current	21.2	14.0	6.5	23.1	16.1	7.1	28.6	17.0	8.5
Lock Rotor Amps	109	83	41	134	91	46	134	110	52
FAN MOTOR & CONDENSER									
Fan Motor--HP-RPM-SPD	1/5 - 1075 - 1			1/3 - 1100 - 1			1/3 - 1100 - 1		
Fan Motor-- Volts-Amps	230/208 - 1.9		460 - 1.0	230/208 - 1.9		460 - 1.0	230/208 - 1.9		460 - 1.0
Fan--DIA-CFM	20" - 1750			20" - 1750			20" - 1750		
MOTOR & EVAPORATOR									
Blower Motor HP-SPD	1/2 - Variable			1/2 - Variable			3/4 - Variable		
Blower Motor--Volts-Amps	230/208 - 3.7			230/208 - 3.7			230/208 - 4.9		
CFM Cooling & E.S.P. w/Filter (Rated-Wet Coil)	1200 @ .15 ESP			1400 @ .20 ESP			1550 @ .20 ESP		
Filter Sizes (inches) STD.	1 - 16x20x1 & 1 - 16x16x1			1 - 16x16x1 & 1 - 16x25x1			1 - 16x16x1 & 1 - 16x25x1		
SHIPPING WEIGHT – LBS.	550	550	570	610	610	630	625	625	645

Factory Built-in Electric Heat Table

Nominal KW	At 240V ①				At 208V ①				At 480V ②			At 460V ②		
	KW	1-Ph Amps	3-Ph. Amps	BTUH	KW	1-Ph Amps	3-Ph. Amps	BTUH	KW	3-Ph. Amps	BTUH	KW	3-Ph. Amps	BTUH
5.0	5.0	20.8		17,065	3.75	18.0		12,799						
6.0	6.0		14.4	20,478	4.50		12.5	15,359	6.0	7.2	20,478	5.52	6.9	18,840
9.0	9.0		21.7	30,717	6.75		18.7	23,038	9.0	10.8	30,717	8.28	10.4	28,260
10.0	10.0	41.7		34,130	7.50	36.1		25,598						
12.0	12.0		28.9	40,956	9.00		25.0	30,717	12.0	14.4	40,956	11.04	13.9	37,680
15.0	15.0	62.5	36.1	51,195	11.25	54.1	31.2	38,396	15.0	18.0	51,195	13.80	17.3	47,099

① These electric heaters are available in 230/208V units only.

② These electric heaters are available in 480V units only.

Indoor Blower Performance

Model	Rated ESP	① Max. ESP	② Rated CFM	③ Optional CFM	④ Continuous CFM	⑤ Dehumidification CFM	CFM @ Max. ESP
Q24A ⑥	0.10	0.5	800	N/A	800	800	700
Q30A	0.15	0.8	1000	N/A	1000	1000	910
Q36A	0.15	0.8	1200	1000	1000	1000	1175
Q42A	0.15	0.8	1200	1000	1000	1000	1175
Q48A	0.20	0.8	1400	1250	1100	1250	1175
Q60A	0.20	0.8	1550	1250	1100	1250	1400

Note: These units are equipped with a variable speed (ECM) indoor motor that automatically adjusts itself to maintain approximately the same rate of indoor airflow in both heating and cooling, dry and wet coil conditions and at both 230/208 or 460 volts.

① Max. ESP (inches WC) shown is with 1" thick disposable filter (reduced by .2 for 2" filter)

② Rated CFM (based on ducted application) for heating and cooling operation. To obtain full rated CFM on models Q36A, Q42A, Q48A and Q60A, refer to Installation Instruction supplied with unit.

③ Reduced indoor airflow option to provide lowest possible indoor air sound level. Reduces system capacity performance by approximately 2%.

④ Continuous fan CFM is the total air being circulated during continuous fan mode.

⑤ Indoor airflow during periods of high humidity when system is operating under control of optional humidistat for maximum humidity reduction.

⑥ Model Q24A -- when operating on 2nd stage heating the indoor air will increase to 1000 CFM.

Ventilation System Packages

Q-TEC models are designed to provide optional ventilation packages to meet all of your ventilation and indoor air quality requirements. All units are equipped with a barometric fresh air damper as the standard ventilation package. All ventilation packages are factory installed.

BAROMETRIC FRESH AIR DAMPER

STANDARD

The barometric fresh air damper is a standard feature on all models. It allows outside ventilation air, up to 25% of the total airflow rating of the unit, to be introduced through the air inlet openings and to be mixed with the conditioned air. The damper opens during blower operation and closes when the blower is off. Adjustable blade stops allow different amounts of outside air to be introduced into the building and can be easily locked closed if required.

BLANK OFF PLATE

OPTIONAL

A blank off plate covers the air inlet openings which restricts any outside air from entering the unit. The blank off plate should be utilized in applications where outside air is not required to be mixed with the conditioned air.

NOTE: The above vent systems are intake only without built-in exhaust capability. Building will likely require separate field installed barometric relief or mechanical exhaust elsewhere within the conditioned space. Balancing dampers in the return air grille may be required to achieve specified amount of outdoor air intake.

COMMERCIAL ROOM VENTILATOR

OPTIONAL

The built-in commercial room ventilator is internally mounted and allows outside ventilation air, up to 50% of the total airflow rating of the unit, to be introduced through the air inlet openings. It includes a built-in exhaust air damper. The commercial room ventilator (CRV) is a simple and innovative approach to improving the indoor air quality by providing fresh air intake and exhaust capability through the CRV. The damper can be easily adjusted to control the amount of fresh air supplied into the building. The CRV can be controlled by indoor blower operation or field controlled based on room occupancy. Complies with ANSI/ASHRAE Standard 62.1 "Ventilation for Acceptable Indoor Air Quality".

Two Models Available: Spring return on power loss or deactivation - Vent Option V
Power return (will not close on power loss) - Vent Option P

ENERGY RECOVERY VENTILATOR

OPTIONAL

The energy recovery ventilator (ERV) is a highly innovative approach to meeting indoor air quality ventilation requirements as established by ANSI/ASHRAE Standard 62.1. The ERV is internally mounted and allows up to 450 CFM (depending upon speed setting) of fresh air and exhaust through the unit while maintaining superior indoor comfort and humidity levels. In most cases this can be accomplished without increasing equipment sizing or operating costs. Heat transfer efficiency is up to 64% during summer and 79% during winter conditions.

The ERV consists of a unique "rotary energy recovery cassette" that provides effective sensible and latent heat transfer capabilities during summer and winter conditions. Various control schemes are addressed including limiting ventilation during building occupancy only. The ERV has a filter for the exhaust air to keep the rotary wheels clean and free of any debris introduced through the room return air grille. The intake and exhaust rates can be independently selected. Factory set on medium intake and low exhaust.

ECONOMIZER

OPTIONAL

The built-in economizer system is internally mounted behind the service door and allows outdoor air to be introduced through the air inlet openings. The amount of outdoor air varies in response to the system controls and settings defined by the end user. It includes a built-in exhaust air damper. The economizer is designed to provide "free cooling" when outside air conditions are cool and dry enough to satisfy cooling requirements without running the compressor. This in turn provides lower operating costs, while extending the life of the compressor.

Standard Features:

- One Piece Construction - Easy to install with no mechanical linkage adjustment required.
- Exhaust Air Damper - Built in with positive closed position. Provides exhaust air capability to prevent pressurization of tight buildings.
- Actuator Motor - 24 volt, power open, spring return with built in torque limiting switch.
- Proportioning Type Control - for maximum "free cooling" economy and comfort.
- Moisture Eliminator & Prefilter - permanent, washable aluminum construction.
- Enthalpy Control - adjustable to monitor outdoor temperature and humidity.
- Minimum Position Potentiometer - adjustable to control minimum damper blade position for ventilation purposes.
- Mixed Air Sensor - to monitor outside and return air to automatically modulate damper position.

Commercial Room Ventilator Performance Tables

TABLE 1

Q24A VENTILATION MODE CFM				
Damper Position	Duct Free	Static Pressure		
		0.1	0.3	0.5
A	125	120	100	75
B	135	130	115	100
C	165	160	160	140
D	255	255	235	195
E	375	320	290	265

TABLE 2

Q24A COOLING & HEATING MODE CFM				
Damper Position	Duct Free	Static Pressure		
		0.1	0.3	0.5
A	220	215	200	175
B	245	235	210	185
C	255	260	245	225
D	335	335	330	290
E	385	385	360	320

TABLE 3

Q30A Ventilation Mode CFM Q36A Ventilation Mode CFM Q42A Ventilation Mode CFM Q48A Ventilation Mode CFM				
Damper Position	Duct Free	Static Pressure		
		0.1	0.3	0.5
A	140	135	125	120
B	180	170	160	160
C	220	210	205	195
D	315	315	315	290
E	410	400	385	380

TABLE 4

Q30A COOLING & HEATING MODE CFM Q36A LOW SPEED COOLING & HEATING MODE CFM Q42A LOW SPEED COOLING & HEATING MODE CFM Q48A LOW SPEED COOLING & HEATING MODE CFM				
Damper Position	Duct Free	Static Pressure		
		0.1	0.3	0.5
A	235	230	225	220
B	265	250	245	240
C	325	315	300	290
D	400	400	390	380
E	465	460	445	430

TABLE 5

Q36A HIGH SPEED COOLING & HEATING MODE CFM Q42A HIGH SPEED COOLING & HEATING MODE CFM Q48A HIGH SPEED COOLING & HEATING MODE CFM				
Damper Position	Duct Free	Static Pressure		
		0.1	0.3	0.5
A	255	250	250	230
B	285	280	280	280
C	360	360	350	345
D	445	445	445	440
E	500	500	500	490

TABLE 6

Q60A VENTILATION MODE CFM				
Damper Position	Duct Free	Static Pressure		
		0.1	0.3	0.5
A	185	185	180	180
B	215	215	210	200
C	290	290	280	275
D	370	370	365	350
E	465	465	455	445

TABLE 7

Q60A COOLING & HEATING MODE CFM				
Damper Position	Duct Free	Static Pressure		
		0.1	0.3	0.5
A	235	230	230	215
B	265	260	255	255
C	350	350	345	340
D	470	470	455	450
E	580	570	565	560

NOTE: Ventilation airflow will increase up to 50 CFM during backup or emergency heat operation due to increased total airflow.

Energy Recovery Ventilator Performance Tables

SUMMER COOLING PERFORMANCE (INDOOR DESIGN CONDITIONS 75° DB / 62° WB)

Ambient O.D.	VENTILATION RATE – 450 CFM 65% EFFICIENCY							VENTILATION RATE – 375 CFM 66% EFFICIENCY						VENTILATION RATE – 300 CFM 67% EFFICIENCY					
	DB/WB F	VLT	VLS	VLL	HRT	HRS	HRL	VLT	VLS	VLL	HRT	HRS	HRL	VLT	VLS	VLL	HRT	HRS	HRL
105	75	21465	14580	6884	13952	9477	4475	17887	12150	5737	11805	8018	3786	14310	9720	4590	9587	6512	3075
	70	14580	14580	0	9477	9477	0	12150	12150	0	8018	8018	0	9720	9720	0	6512	6512	0
	65	14580	14580	0	9477	9477	0	12150	12150	0	8018	8018	0	9720	9720	0	6512	6512	0
100	80	31590	12150	19440	20533	7897	12635	26325	10125	16200	17374	6682	10692	21060	8100	12960	14110	5427	8683
	75	21465	12150	9314	13952	7897	6054	17887	10125	7762	11805	6682	5123	14310	8100	6210	9587	5427	4160
	70	12352	12150	202	8029	7897	131	10293	10125	168	6793	6682	111	8235	8100	135	5517	5427	90
	65	12150	12150	0	7897	7897	0	10125	10125	0	6682	6682	0	8100	8100	0	5427	5427	0
	60	12150	12150	0	7897	7897	0	10125	10125	0	6682	6682	0	8100	8100	0	5427	5427	0
95	80	31590	9720	21870	20533	6318	14215	26325	8100	18225	17374	5345	12028	21060	6480	14580	14110	4341	9768
	75	21465	9720	11744	13952	6318	7634	17887	8100	9787	11805	5345	6459	14310	6480	7830	9587	4341	5246
	70	12352	9720	2632	8029	6318	1711	10293	8100	2193	6793	5345	1447	8235	6480	1755	5517	4341	1175
	65	9720	9720	0	6318	6318	0	8100	8100	0	5345	5345	0	6480	6480	0	4341	4341	0
	60	9720	9720	0	6318	6318	0	8100	8100	0	5345	5345	0	6480	6480	0	4341	4341	0
90	80	31590	7290	24300	20533	4738	15794	26325	6075	20250	17374	4009	13365	21060	4860	16200	14110	3256	10854
	75	21465	7290	14175	13952	4738	9213	17887	6075	11812	11805	4009	7796	14310	4860	9450	9587	3256	6331
	70	12352	7290	5062	8029	4738	3290	10293	6075	4218	6793	4009	2784	8235	4860	3375	5517	3256	2261
	65	7290	7290	0	4738	4738	0	6075	6075	0	4009	4009	0	4860	4860	0	3256	3256	0
	60	7290	7290	0	4738	4738	0	6075	6075	0	4009	4009	0	4860	4860	0	3256	3256	0
85	80	31590	4860	26730	20533	3159	17374	26325	4050	22275	17374	2672	14701	21060	3240	17820	14110	2170	11939
	75	21465	4860	16605	13952	3159	10793	17887	4050	13837	11805	2672	9132	14310	3240	11070	9587	2170	7416
	70	12352	4860	7492	8029	3159	4870	10293	4050	6243	6793	2672	4120	8235	3240	4995	5517	2170	3346
	65	4860	4860	0	3159	3159	0	4050	4050	0	2672	2672	0	3240	3240	0	2170	2170	0
	60	4860	4860	0	3159	3159	0	4050	4050	0	2672	2672	0	3240	3240	0	2170	2170	0
80	75	21465	2430	19035	13952	1579	12372	17887	2025	15862	11805	1336	10469	14310	1620	12690	9587	1085	8502
	70	12352	2430	9922	8029	1579	6449	10293	2025	8268	6793	1336	5457	8235	1620	6615	5517	1085	4432
	65	4252	2430	1822	2764	1579	1184	3543	2025	1518	2338	1336	1002	2835	1620	1215	1899	1085	814
	60	2430	2430	0	1579	1579	0	2025	2025	0	1336	1336	0	1620	1620	0	1085	1085	0
75	70	12352	0	12352	8029	0	8029	10293	0	10293	6793	0	6793	8235	0	8235	5517	0	5517
	65	4252	0	4252	2764	0	2764	3543	0	3543	2338	0	2338	2835	0	2835	1899	0	1899
	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

LEGEND

VLT = Ventilation Load – Total	HRT = Heat Recovery – Total
VLS = Ventilation Load – Sensible	HRS = Heat Recovery – Sensible
VLL = Ventilation Load – Latent	HRL = Heat Recovery – Latent

WINTER HEATING PERFORMANCE (INDOOR DESIGN CONDITIONS 70°F DB)

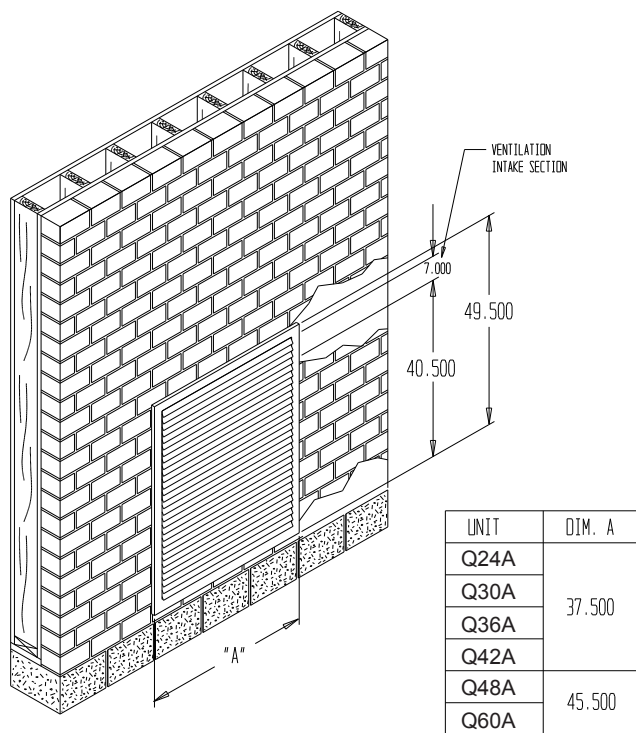
Ambient O.D.	VENTILATION RATE					
	450 CFM 80% EFFICIENCY		375 CFM 81% EFFICIENCY		300 CFM 82% EFFICIENCY	
DB/°F	VLT	VLS	VLT	VLS	VLT	VLS
65	2430	1944	2025	1640	1620	1328
60	4860	3888	4050	3280	3240	2656
55	7290	5832	6075	4920	4860	3985
50	9720	7776	8100	6561	6480	5313
45	12150	9720	10125	8201	8100	6642
40	14580	11664	12150	9841	9720	7970
35	17010	13608	14175	11481	11340	9298
30	19440	15552	16200	13122	12960	10627
25	21870	17496	18225	14762	14580	11955
20	24300	19440	20250	16402	16200	13284
15	26730	21384	22275	18042	17820	14612

LEGEND

WVL = Winter Ventilation Load
WHR = Winter Heat Recovery

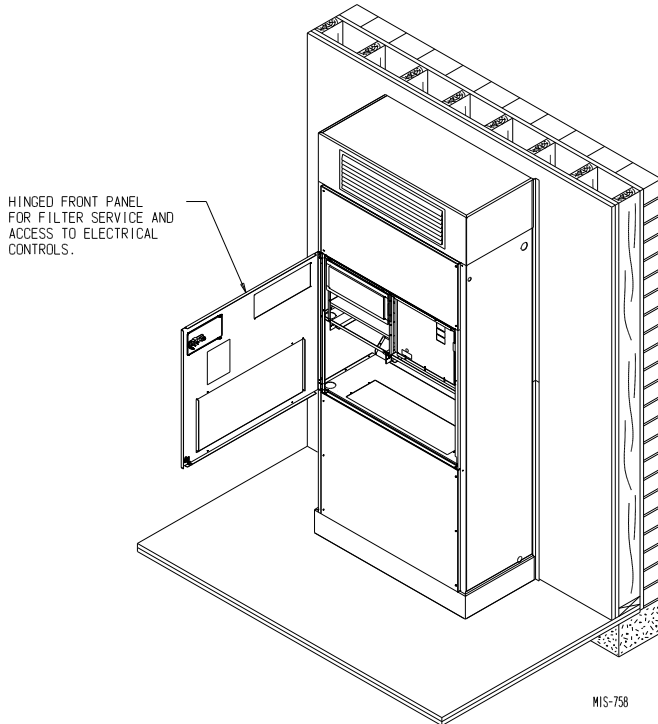
NOTE: Sensible performance only is shown for winter application.

Installation Overview

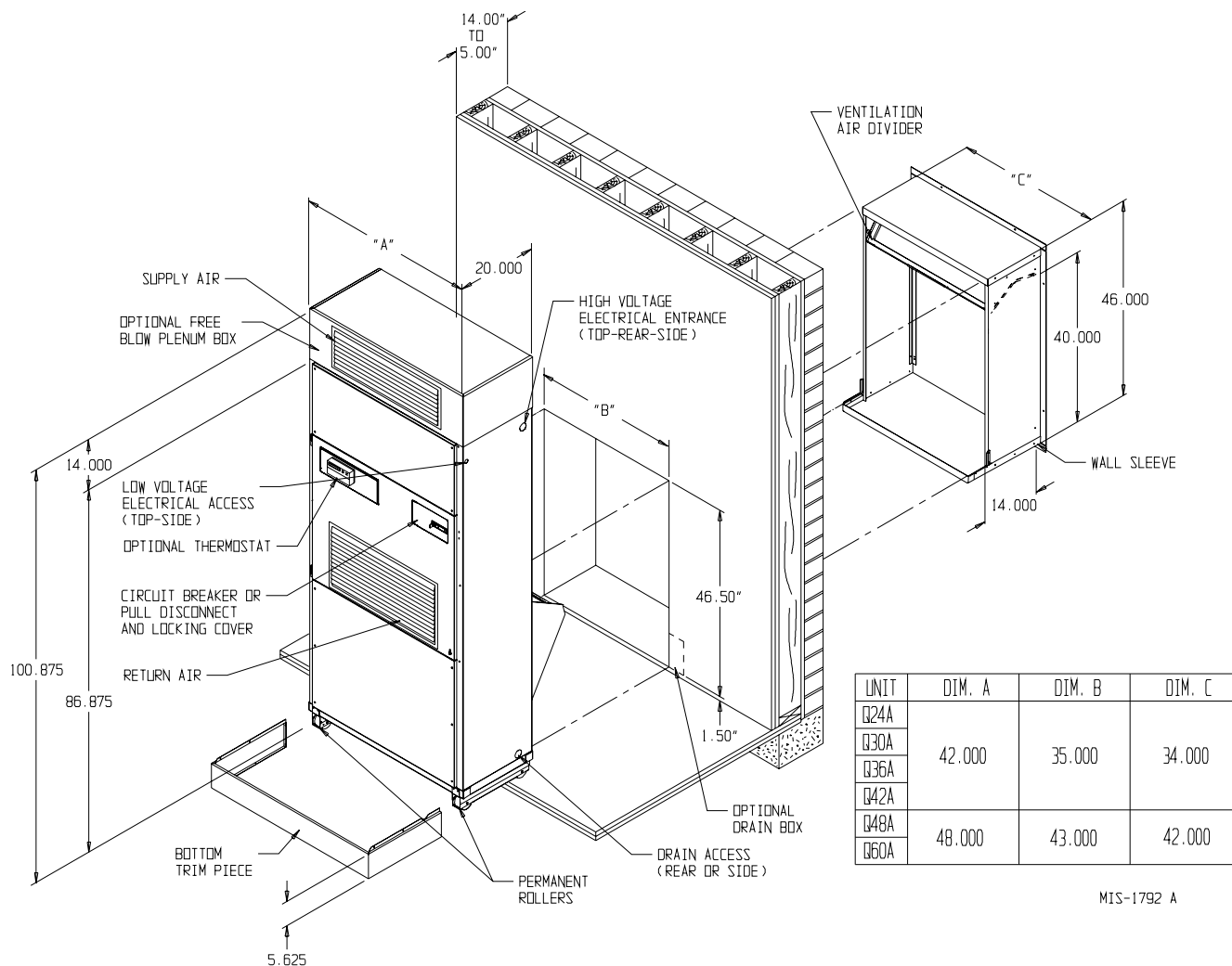


Outside louver grille

MIS-1791

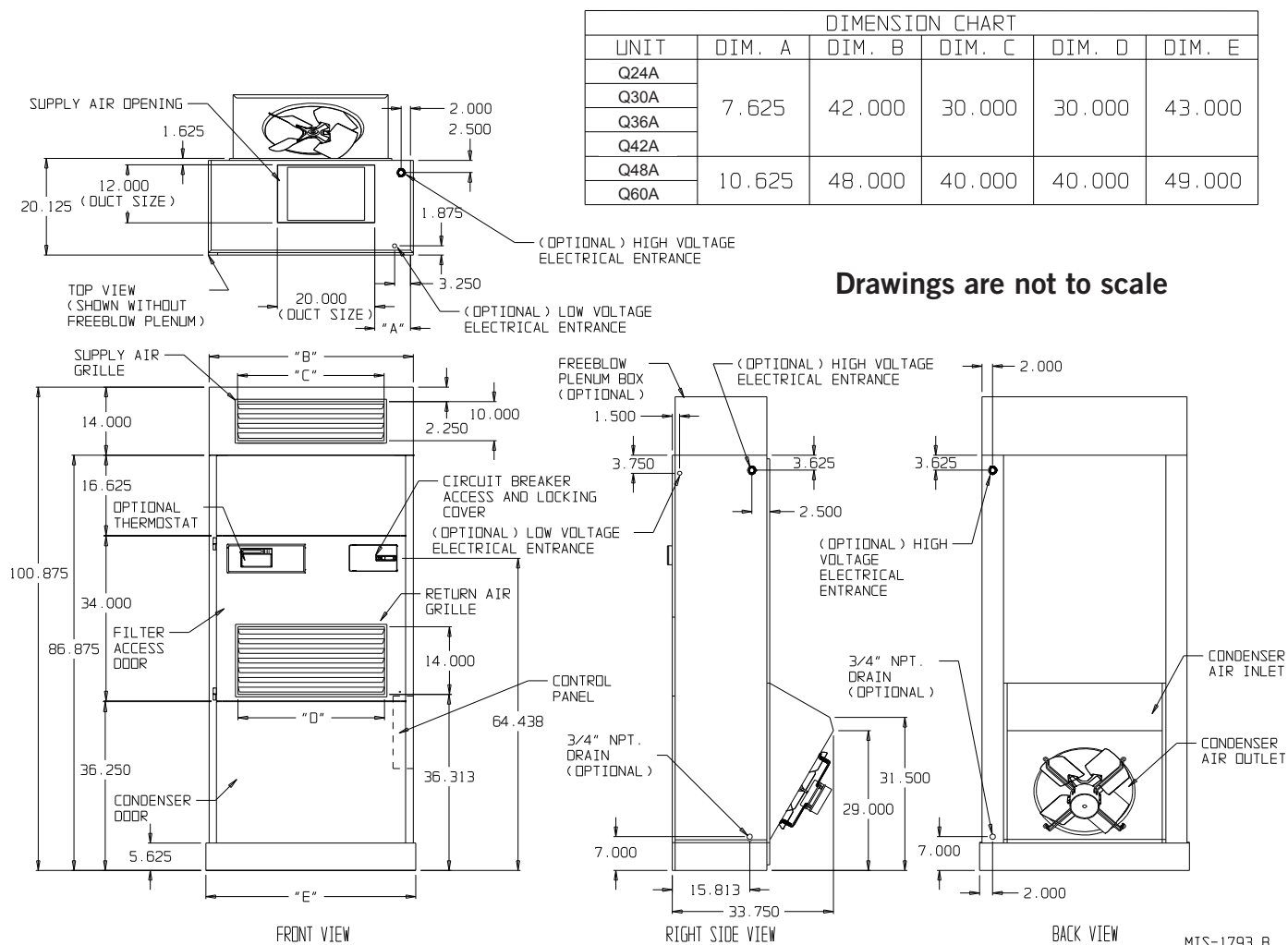


Unit installed with duct-free plenum box



MIS-1792 A

Dimensions of Basic Unit for Architectural and Installation Requirements (Nominal)



MIS-1793 B

Optional Hot Water Coil Performance-Heating Capacity @ 180°F Water & 70° Return Air

GPM	CFM									
	800	900	1000	1100	1200	1300	1400	1500	1600	1700
1.5	32,000	32,667	33,333	34,000	34,500	35,000	35,500	36,000	36,400	36,750
2	42,000	43,200	44,400	45,600	46,400	47,200	48,000	48,500	49,000	49,500
3	49,000	51,667	53,750	57,000	59,400	61,750	64,000	65,200	66,000	67,000
4	56,000	59,000	62,000	65,000	69,000	73,000	77,000	79,500	82,000	84,000
5	59,000	62,583	66,167	69,750	72,833	75,917	79,000	81,000	83,000	85,000
6	62,000	66,167	70,333	74,500	77,000	79,500	82,000	83,500	85,000	86,500
7	63,500	67,708	71,917	76,125	78,917	81,708	84,500	86,500	88,000	89,200
8	65,000	69,250	73,500	77,750	80,833	83,917	87,000	88,900	90,500	91,750
9	66,000	70,525	75,050	79,575	82,883	86,192	89,500	91,500	93,000	94,500
10	67,000	71,800	76,600	81,400	84,933	88,467	92,000	94,500	96,000	97,500

Electrical Specifications - Standard Models

MODEL	Rated Volts & Phase	No. Field Power Circuits	Single Circuit				Dual Circuit									
			③ Minimum Circuit Ampacity	① Maximum External Fuse or Ckt. Brkr.	② Field Power Wire Size	② Ground Wire	③ Minimum Circuit Ampacity		① Maximum External Fuse or Ckt. Breaker		② Field Power Wire Size		② Ground Wire Size			
							Ckt. A	Ckt. B	Ckt. A	Ckt. B	Ckt. A	Ckt. B	Ckt. A	Ckt. B		
Q24A2-A0Z	230/208-1	1	22	30	10	10										
A05		1	30	30	10	10										
A10		1	55	60	6	10										
Q24A2-B0Z	230/208-3	1	17	20	12	12										
B06		1	25	25	10	10										
B09		1	33	35	8	10										
Q24A2-C0Z	460-3	1	10	15	14	14										
C06		1	12	15	14	14										
C09		1	17	20	12	12										
Q30A2-A0Z	230/208-1	1	25	35	8	10										
A05		1	32	35	8	10										
A10		1	57	60	6	10										
Q30A2-B0Z	230/208-3	1	18	25	10	10										
B06		1	25	25	10	10										
B09		1	34	35	8	10										
B12		1	43	45	6	10										
Q30A2-C0Z	460-3	1	11	15	14	14										
C06		1	14	15	14	14										
C09		1	18	20	12	12										
C12		1	23	25	10	10										
Q36A2-A0Z	230/208-1	1	29	45	8	10										
A05		1	34	45	8	10										
A10		1	58	60	6	8										
A15		1 or 2	84	90	4	8	58	25	60	25	6	10	10	10		
Q36A2-B0Z	230/208-3	1	21	30	10	10										
B06		1	26	30	10	10										
B09		1	35	35	8	10										
B15		1	53	60	6	10										
Q36A2-C0Z	460-3	1	12	15	14	14										
C06		1	14	15	14	14										
C09		1	18	20	12	12										
C15		1	27	30	10	10										
Q42A2-A0Z	230/208-1	1	35	50	8	10										
A05		1	35	50	8	10										
A10		1	58	60	6	8										
A15		1 or 2	83	90	4	8	58	25	60	25	6	10	10	10		
Q42A2-B0Z	230/208-3	1	26	35	8	10										
B06		1	26	35	8	10										
B09		1	35	35	8	10										
B15		1	53	60	6	10										
Q42A2-C0Z	460-3	1	13	15	14	14										
C06		1	14	15	14	14										
C09		1	18	20	12	12										
C15		1	27	30	10	10										
Q48A2-A0Z	230/208-1	1	37	50	8	10										
A05		1	37	50	8	10										
A10		1	58	60	6	10										
A15		1 or 2	83	90	4	8	58	25	60	25	8	10	10	10		
Q48A2-B0Z	230/208-3	1	28	40	8	10										
B06		1	28	40	8	10										
B09		1	35	40	8	10										
B15		1	53	60	6	10										
Q48A2-C0Z	460-3	1	14	20	12	12										
C06		1	14	20	12	12										
C09		1	18	20	12	12										
C15		1	27	30	10	10										
Q60A2-A0Z	230/208-1	1	45	60	8	10										
A10		1	59	60	6	10										
A15		1 or 2	84	90	4	8	59	25	60	25	8	10	10	10		
Q60A2-B0Z	230/208-3	1	31	45	8	10										
B09		1	36	45	8	10										
B15		1	55	60	6	10										
Q60A2-C0Z	460-3	1	16	20	12	12										
C09		1	19	20	12	12										
C15		1	28	30	10	10										

① Maximum size of the time delay fuse or HACR type circuit breaker for protection of field wiring conductors.

② Based on 75°C copper wire. All wiring must conform to the National Electrical Code and all local codes.

③ These "Minimum Circuit Ampacity" values are to be used for sizing the field power conductors. Refer to the National Electric Code (latest revision), article 310 for power conductor sizing.

CAUTION: When more than one field power conductor circuit is run through one conduit, the conductors must be derated. Pay special attention to note 8 of table 310 regarding Ampacity Adjustment Factors when more than three conductors are in a raceway.

Electrical Specifications - Dehumidification Models

MODEL	Rated Volts & Phase	No. Field Power Circuits	Single Circuit				Dual Circuit							
			③ Minimum Circuit Ampacity	① Maximum External Fuse or Ckt. Brkr.	② Field Power Wire Size	② Ground Wire	③ Minimum Circuit Ampacity		① Maximum External Fuse or Ckt. Breaker		② Field Power Wire Size		② Ground Wire Size	
							Ckt. A	Ckt. B	Ckt. A	Ckt. B	Ckt. A	Ckt. B	Ckt. A	Ckt. B
Q24A2DA0Z	230/208-1	1	22	30	10	10								
A05		1	30	30	10	10								
A10		1	55	60	6	10								
Q24A2DB0Z	230/208-3	1	17	20	12	12								
B06		1	25	25	10	10								
B09		1	33	35	8	10								
Q24A2DC0Z	460-3	1	10	15	14	14								
C06		1	12	15	14	14								
C09		1	17	20	12	12								
Q30A2DA0Z	230/208-1	1	25	35	8	10								
A05		1	32	35	8	10								
A10		1	57	60	6	10								
Q30A2DB0Z	230/208-3	1	18	25	10	10								
B06		1	25	25	10	10								
B09		1	34	35	8	10								
B12		1	43	45	6	10								
Q30A2DC0Z	460-3	1	11	15	14	14								
C06		1	14	15	14	14								
C09		1	18	20	12	12								
C12		1	23	25	10	10								
Q36A2DA0Z	230/208-1	1	29	45	8	10								
A05		1	34	45	8	10								
A10		1	58	60	6	8								
A15		1 or 2	84	90	4	8	58	25	60	25	6	10	10	10
Q36A2DB0Z	230/208-3	1	21	30	10	10								
B06		1	26	30	10	10								
B09		1	35	35	8	10								
B15		1	53	60	6	10								
Q36A2DC0Z	460-3	1	12	15	14	14								
C06		1	14	15	14	14								
C09		1	18	20	12	12								
C15		1	27	30	10	10								
Q42A2DA0Z	230/208-1	1	35	50	8	10								
A05		1	35	50	8	10								
A10		1	58	60	6	8								
A15		1 or 2	83	90	4	8	58	25	60	25	6	10	10	10
Q42A2DB0Z	230/208-3	1	26	35	8	10								
B06		1	26	35	8	10								
B09		1	35	35	8	10								
B15		1	53	60	6	10								
Q42A2DC0Z	460-3	1	13	15	14	14								
C06		1	14	15	14	14								
C09		1	18	20	12	12								
C15		1	27	30	10	10								
Q48A2DA0Z	230/208-1	1	37	50	8	10								
A05		1	37	50	8	10								
A10		1	58	60	6	10								
A15		1 or 2	83	90	4	8	58	25	60	25	8	10	10	10
Q48A2DB0Z	230/208-3	1	28	40	8	10								
B06		1	28	40	8	10								
B09		1	35	40	8	10								
B15		1	53	60	6	10								
Q48A2DC0Z	460-3	1	14	20	12	12								
C06		1	14	20	12	12								
C09		1	18	20	12	12								
C15		1	27	30	10	10								
Q60A2DA0Z	230/208-1	1	45	60	8	10								
A10		1	59	60	6	10								
A15		1 or 2	84	90	4	8	59	25	60	25	8	10	10	10
Q60A2DB0Z	230/208-3	1	31	45	8	10								
B09		1	36	45	8	10								
B15		1	55	60	6	10								
Q60A2DC0Z	460-3	1	16	20	12	12								
C09		1	19	20	12	12								
C15		1	28	30	10	10								

- ① Maximum size of the time delay fuse or HACR type circuit breaker for protection of field wiring conductors.
- ② Based on 75°C copper wire. All wiring must conform to the National Electrical Code and all local codes.
- ③ These "Minimum Circuit Ampacity" values are to be used for sizing the field power conductors. Refer to the National Electric Code (latest revision), article 310 for power conductor sizing.

CAUTION: When more than one field power conductor circuit is run through one conduit, the conductors must be derated. Pay special attention to note 8 of table 310 regarding Ampacity Adjustment Factors when more than three conductors are in a raceway.

Cooling Application Data - Outdoor Temperature °F ①											
Model	(DB/WB) ②	Cooling Capacity	75°F	80°F	85°F	90°F	95°F	100°F	105°F	110°F	115°F
Q24A2	75/62	Total Cooling Sensible Cooling	26,600 19,300	24,800 18,700	23,400 18,100	22,100 17,600	20,900 17,200	20,100 16,800	19,400 16,600	19,000 16,400	18,600 16,200
	80/67	Total Cooling Sensible Cooling	28,400 18,700	27,000 18,300	25,900 17,900	24,900 17,600	24,000 17,300	23,400 17,100	22,900 17,000	22,600 16,900	22,400 16,800
	85/72	Total Cooling Sensible Cooling	33,900 19,200	31,600 18,600	29,800 18,000	28,100 17,500	26,700 17,000	25,600 16,600	24,700 16,200	24,100 15,900	23,600 15,500
Q30A2	75/62	Total Cooling Sensible Cooling	30,600 23,200	29,300 22,700	28,200 22,200	27,100 21,700	26,000 21,200	25,000 20,800	24,000 20,300	23,100 19,900	22,100 19,400
	80/67	Total Cooling Sensible Cooling	32,600 22,500	31,900 22,200	31,300 22,000	30,600 21,700	29,800 21,400	29,100 21,100	28,300 20,800	27,500 20,500	26,600 20,200
	85/72	Total Cooling Sensible Cooling	38,900 23,100	37,300 22,600	36,000 22,100	34,600 21,600	33,100 21,000	31,900 20,400	30,500 19,900	29,300 19,200	28,000 18,600
Q36A2	75/62	Total Cooling Sensible Cooling	34,900 26,800	33,700 26,300	32,500 25,900	31,300 25,400	30,200 24,900	29,000 24,400	27,800 23,800	26,700 23,200	25,500 22,700
	80/67	Total Cooling Sensible Cooling	37,200 26,000	36,700 25,800	36,100 25,600	35,400 25,400	34,600 25,100	33,800 24,800	32,800 24,400	31,800 24,000	30,700 23,600
	85/72	Total Cooling Sensible Cooling	44,300 26,700	42,900 26,200	41,500 25,700	40,000 25,300	38,500 24,600	37,000 24,000	35,400 23,300	33,900 22,500	32,300 21,800
Q42A2	75/62	Total Cooling Sensible Cooling	40,400 29,500	39,000 29,000	37,600 28,500	36,200 27,800	34,800 27,300	33,600 26,600	32,300 26,000	31,000 25,400	29,800 24,700
	80/67	Total Cooling Sensible Cooling	43,100 28,600	42,500 28,400	41,700 28,200	40,900 27,800	40,000 27,500	39,100 27,100	38,100 26,700	37,000 26,200	35,800 25,700
	85/72	Total Cooling Sensible Cooling	51,400 29,300	49,700 28,800	47,900 28,400	46,200 27,600	44,500 27,000	42,800 26,200	41,100 25,500	39,400 24,600	37,600 23,700
Q48A2	75/62	Total Cooling Sensible Cooling	46,900 34,400	45,100 33,500	43,300 32,700	41,700 31,900	40,100 31,200	38,600 30,600	37,200 29,800	35,900 29,200	34,700 28,700
	80/67	Total Cooling Sensible Cooling	50,100 33,300	49,100 32,800	48,100 32,400	47,100 31,900	46,000 31,500	45,000 31,100	43,900 30,600	42,800 30,200	41,700 29,800
	85/72	Total Cooling Sensible Cooling	59,700 34,100	57,400 33,300	55,300 32,600	53,200 31,700	51,100 30,900	49,200 30,100	47,300 29,200	45,500 28,300	43,800 27,500
Q60A2	75/62	Total Cooling Sensible Cooling	53,400 38,500	52,200 38,300	50,800 37,800	49,100 37,000	47,000 36,000	44,800 34,600	42,200 33,100	39,400 31,200	36,400 29,000
	80/67	Total Cooling Sensible Cooling	57,000 37,300	56,900 37,500	56,400 37,400	55,500 37,000	54,000 36,300	52,200 35,200	49,800 33,900	47,000 32,200	43,800 30,200
	85/72	Total Cooling Sensible Cooling	67,900 38,200	66,500 38,100	64,800 37,600	62,700 36,800	60,000 35,600	57,100 34,100	53,700 32,300	50,000 30,200	46,000 27,800

① Below 65°F, unit requires a factory or field installed low ambient control.

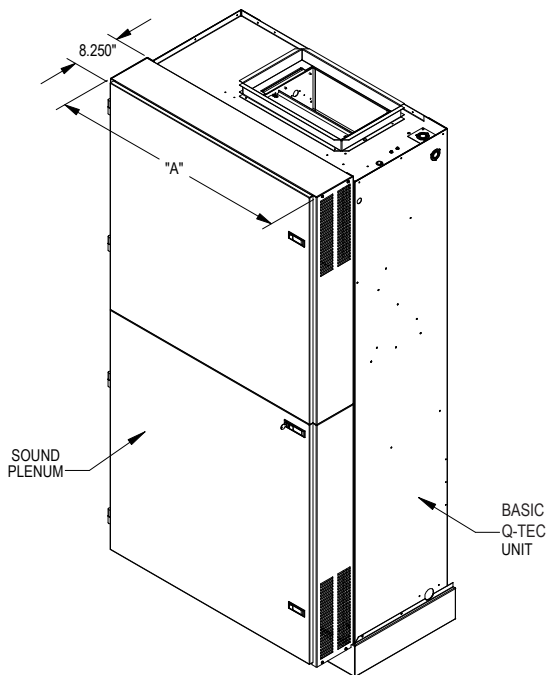
② Return air temp. °F.

QSP-Series Sound Plenum

The QSP3 - QSP5 Series Sound Plenum has been designed for use with ALL Bard Q-TEC Series units, both Generation I and Generation II systems. Installation is quick and easy with removal/replacement of six (6) existing screws from the unit cabinet. Once installed the sound plenum enhances the current quiet operation of the Q-TEC Series units, and the hinged door with cam locks provides easy access to the basic Q-TEC system. Model selection is based on equipment cabinet size and finish.

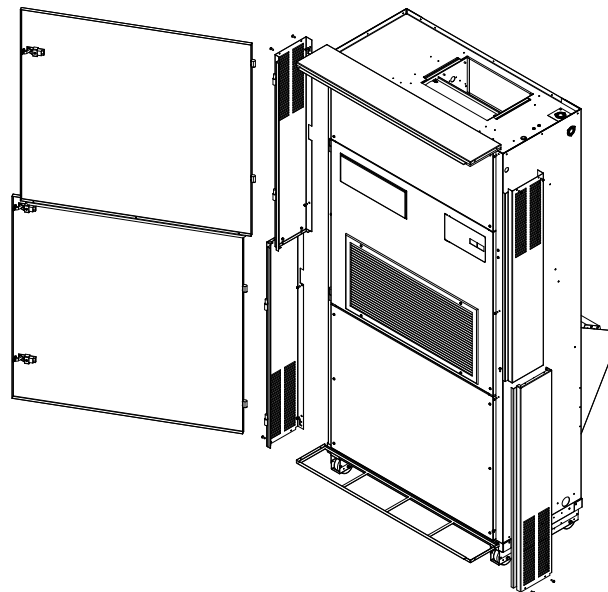
Sound Plenum Part Number	Cabinet Finish	Equipment Selection
QSP3-X QSP3-4 QSP3-V	Painted Steel - Beige Painted Steel - Buckeye Gray Texture Vinyl ①	Q24A - Q42A Q24A - Q42A Q24A - Q42A
QSP5-X QSP5-4 QSP5-V	Painted Steel - Beige Painted Steel - Buckeye Gray Texture Vinyl ①	Q48A - Q60A Q48A - Q60A Q48A - Q60A

① Front Panels Slate Finish, Side Panels Platinum Gray matching Q-TEC™ vinyl cabinet finishes.



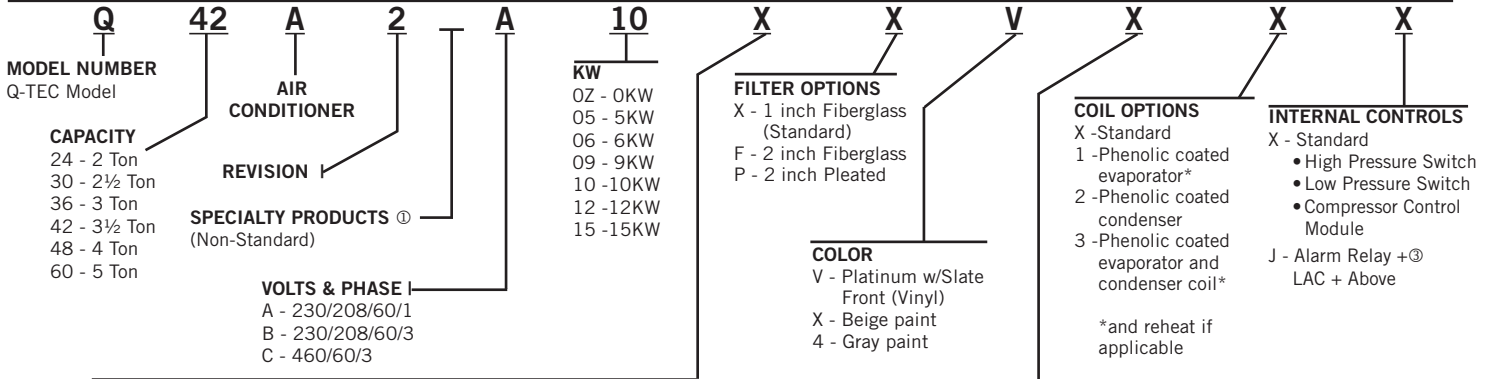
Features:

- Two Plenum Finishes To Match Unit Cabinets
 - Vinyl or Painted Steel
- Compatible With New or Existing Units
- Removable Cam Lock Hinge Doors
- Easy Unit Service Access
- Sound Absorbing Insulation
- Reduces Equipment dBA Operating Levels
 - Up to 5 dBA with Energy Recovery Ventilator option.
 - Provides general muffling of basic unit operation. Actual sound reduction may vary depending on system operating conditions and other site variables.



MIS-2267

Q-TEC Model Nomenclature



VENTILATION OPTIONS

- X - Barometric Fresh Air Damper (Standard)
- B - Blank-off Plate
- E - Economizer (Not available on dehumidification versions)
- P - Commercial Ventilator - Motorized w/Exhaust Power Return
- V - Commercial Ventilator - Motorized w/Exhaust Spring Return
- R - Energy Recovery Ventilator w/Independent Intake & Exhaust Control

CLIMATE CONTROL

STANDARD UNITS

- X - None ②
- D - Electronic/Prog ④
- H - Electronic/Prog/CO₂ ⑤
- B - CS9BE-THO (BACnet IP or Ethernet)
- C - CS9BE-THOC w/CO₂ (BACnet IP or Ethernet)

DEHUMIDIFICATION UNITS

- X - None ②
- E - Electronic/Prog/Humidistat ⑥
- I - Electronic Prog/Humidistat/CO₂ ⑥
- J - CS9BE-THO (BACnet IP or Ethernet)
- K - CS9BE-THOC w/CO₂ (BACnet IP or Ethernet)

NOTE: ① Insert "D" for dehumidification with hot gas reheat. Reference 7960-700 for complete details.

② If "X" control option is selected, then thermostat and humidistat, if applicable, or DDC control system must be field supplied.

③ Not available with "X" climate control option, and for all other climate control options is a single sensor that functions with unit mounted thermostat.

④ 8403-060 Thermostat.

⑤ 8403-060 Thermostat & 8403-067 CO₂ Controller.

Required Field Installed Accessories - One Size/Color Must Be Used For Each Installation

Outdoor Louver Grilles:

QLS2-10 (for 2 - 3½ Ton Models)	QLS4-10 (for 4 - 5 Ton Models)	Standard Clear Painted Enamel Finish
QLS2-20 (for 2 - 3½ Ton Models)	QLS4-20 (for 4 - 5 Ton Models)	Standard Medium Bronze Painted Enamel Finish
QLS2-30 (for 2 - 3½ Ton Models)	QLS4-30 (for 4 - 5 Ton Models)	Standard Dark Bronze Painted Enamel Finish
QLS2-** (for 2 - 3½ Ton Models)	QLS4-** (for 4 - 5 Ton Models)	Optional Finish (See Form F1974)

Contact your Bard Sales Representative for Custom Finish Louver information

Wall Sleeves: Note - Maximum dimension in inches of wall is shown ()

For all 2 through 3½ ton units	QWS42A (14")	QWS42A-16 (16")	QWS42A-19 (19")	QWS42A-20 (20")	QWS42A-23 (23")	QWS42A-30 (30")
For all 4 through 5 ton units	QWS48A (14")	QWS48A-16 (16")	QWS48A-19 (19")	QWS48A-20 (20")	QWS48A-23 (23")	QWS48A-30 (30")

Optional Field Installed Accessories - Additional Items As Determined By Job Specifications

Drain Kit:

QCDS48A Rear condensate drain system allows easy removal of unit from wall sleeve. Fits all models.

NOTE: The following accessory items must be selected so that the finish (color) is matched to the Q**A model that they will be used with.

Side Trim Extension Kits: (Note: Standard Side Trim Kit supplied with unit covers space up to 4" between interior wall & back of unit.) Unit Compatibility

QSTX42A-V-S10 Platinum vinyl	QSTX42A-4-S10 Gray paint	QSTX42A-X-S10 Beige paint	Up to 9.5" - Normally used in place of standard 4" trim pieces	All models
QSTX42A-V-S13 Platinum vinyl	QSTX42A-4-S13 Gray paint	QSTX42A-X-S13 Beige paint	Up to 12.5" - Normally used in place of standard 4" trim piece	All models
QSTX42A-V-S16 Platinum vinyl	QSTX42A-4-S16 Gray paint	QSTX42A-X-S16 Beige paint	Up to 15.5" - Normally used in place of standard 4" trim piece	All models

Duct-Free Plenum Boxes:

QPB42-V Platinum vinyl	QPB42-4 Gray paint	QPB42-X Beige paint	Front supply, 4-way deflection grille	2 - 3½ Ton
QPBS42-V Platinum vinyl	QPBS42-4 Gray paint	QPBS42-X Beige paint	Same as QPB42, plus 2-way deflection grille on each side	2 - 3½ Ton
QPBS42-V-8 Platinum vinyl	QPBS42-4-8 Gray paint	QPBS42-X-8 Beige paint	Same as QPBS42 and 8" Height ①	2 - 3½ Ton
QPB48-V Platinum vinyl	QPB42-4 Gray paint	QPB42-X Beige paint	Front supply, 4-way deflection grille	4 - 5 Ton
QPBS48-V Platinum vinyl	QPBS42-4 Gray paint	QPBS42-X Beige paint	Same as QPB48, plus 2-way deflection grille on each side	4 - 5 Ton
QPBS48-V-8 Platinum vinyl	QPBS48-4-8 Gray paint	QPBS48-X-8 Beige paint	Same as QPBS48 and 8" Height ①	4 - 5 Ton

Top Fill Systems for Finishing Plenum Boxes to Ceilings:

QPBX42-9-V Platinum vinyl	QPBX42-9-4 Gray paint	QPBX42-9-X Beige paint	Use with QPB42 or QPBS42 (adjusts to ceilings up to 9' 6")	2 - 3½ Ton
QPBX42-10-V Platinum vinyl	QPBX42-10-4 Gray paint	QPBX42-10-X Beige paint	Use with QPB42 or QPBS42 (adjusts to ceilings up to 10' 2")	2 - 3½ Ton
QPBX48-9-V Platinum vinyl	QPBX48-9-4 Gray paint	QPBX48-9-X Beige paint	Use with QPB48 or QPBS48 (adjusts to ceilings up to 9' 6")	4 - 5 Ton
QPBX48-10-V Platinum vinyl	QPBX48-10-4 Gray paint	QPBX48-10-X Beige paint	Use with QPB48 or QPBS48 (adjusts to ceilings up to 10' 2")	4 - 5 Ton

Cabinet Extensions for Ducted Applications:

QCX10A-V Platinum vinyl	QCX10A-4 Gray paint	QCX10A-X Beige paint	20" height (adjusts for ceilings up to 9' 4"; add QPBX42-9 for 9'4" to 10' finished ceiling heights)	2 - 3½ Ton
QCX15A-V Platinum vinyl	QCX15A-4 Gray paint	QCX15A-X Beige paint	20" height (adjusts for ceilings up to 9' 4"; add QPBX48-9 for 9'4" to 10' finished ceiling heights)	4 - 5 Ton

Hot Water Coils with Plenum Boxes:

QPBHW42-F-V Platinum vinyl	QPBHW42-F-4 Gray paint	QPBHW42-F-X Beige paint	Duct-Free plenum box	2 - 3½ Ton
QPBHW48-F-V Platinum vinyl	QPBHW48-F-4 Gray paint	QPBHW48-F-X Beige paint	Duct-Free plenum box	4 - 5 Ton
QPBHW42-D-V Platinum vinyl	QPBHW42-D-4 Gray paint	QPBHW42-D-X Beige paint	Ducted plenum box	2 - 3½ Ton
QPBHW48-D-V Platinum vinyl	QPBHW48-D-4 Gray paint	QPBHW48-D-X Beige paint	Ducted plenum box	4 - 5 Ton

NOTE: The same top fill system and cabinet extensions can be used with hot water coil plenum boxes as with standard plenum boxes.

① 8" Plenum Box height may affect sound level of supply air and unit.



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Due to our continuous product improvement policy, all specifications subject to change without notice.

Before purchasing this appliance, read important energy cost and efficiency information available from your retailer.

Form No.
S3411
May, 2017

Supersedes: S3411-116