

TECHNICAL SPECIFICATIONS

Q5RF Series

Single Packaged Heat Pump, Single Phase

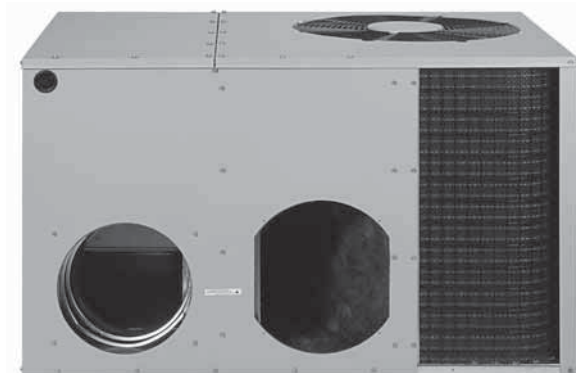
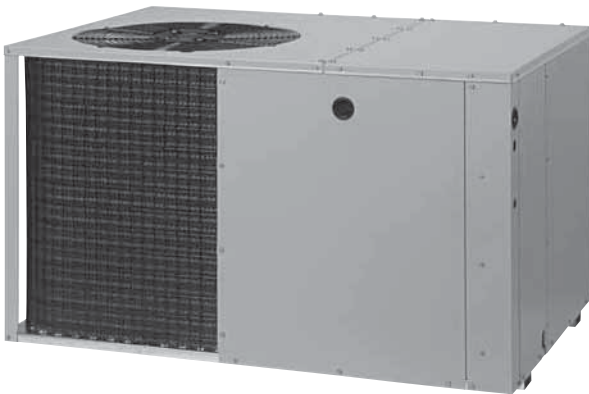
15 SEER, 12 EER, 8.0 HSPF

R-410A, 2 thru 5 Ton Units

Cooling: 24,000 to 55,000 Btuh

Heating: 23,000 to 56,000 Btuh

The Q5 Series single packaged heat pumps are high efficiency self contained cooling and heating units that can be installed on a slab. Units are ETL and ETLc listed.



WARRANTY

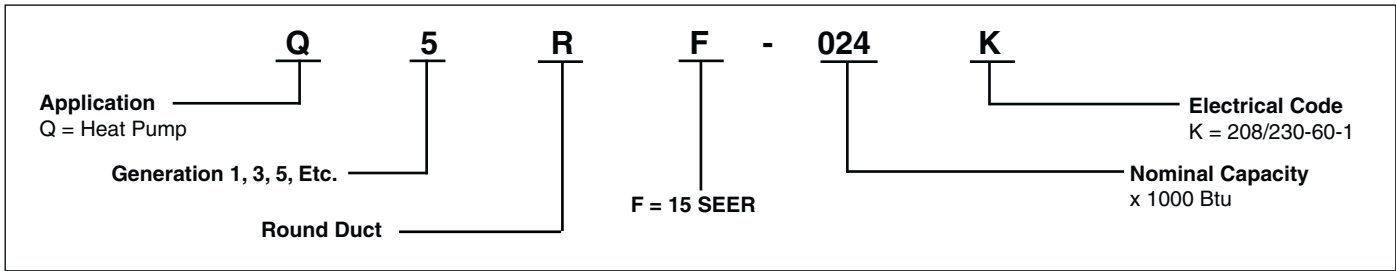
- This product offers a 10-year All-Parts Warranty.
- This product offers a 10 year Quality Pledge to replace the entire unit if the unit's compressor fails within the first 10 years of operation, to the original owner.
- Consumer product registration required for both 10 year All Parts Warranty and Quality Pledge within a limited period of time after the installation. See current warranty document or visit our consumer web site for warranty details.

FEATURES and BENEFITS

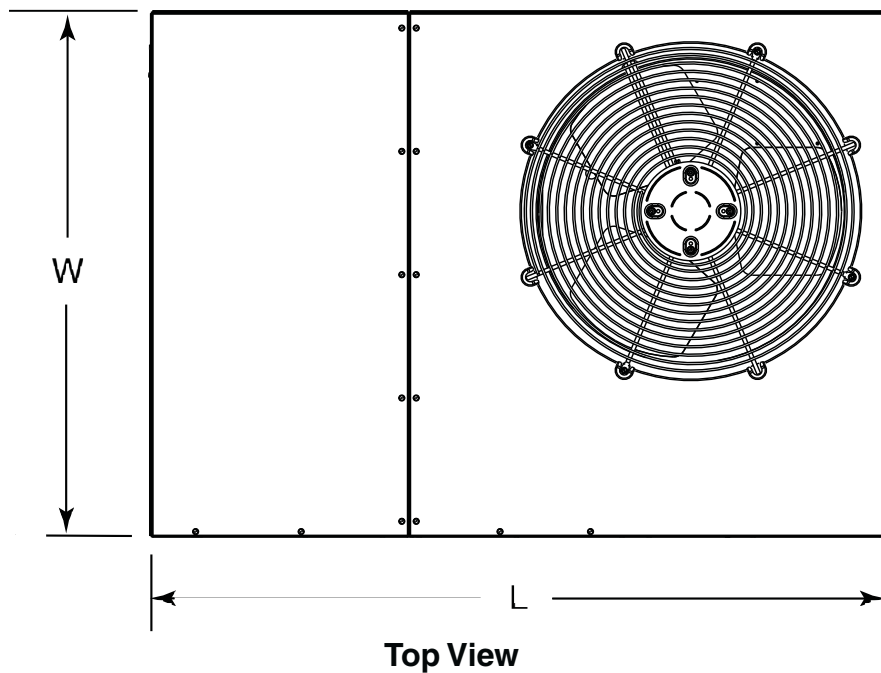
- **State-of-the-art Copeland Ultra-Tech Scroll compressor:** provides two stage heat/cool.
- **R-410A Refrigerant:** Environmentally friendly.
- **Designed using galvanized steel:** With a polyester urethane coat finish. The 950 hour salt spray finish resists corrosion 50% better than comparable units.
- **Both indoor and outdoor coils:** Are designed to optimize heat transfer, minimize size and cost, and increase durability and reliability.
- **The service valves are easily accessible:** And simplify servicing of the refrigeration system.
- **A wire guard coated with Earth Friendly Epoxy and mesh hail guard that will never rust:** Protects the coil from being damaged by balls, lawnmowers, hail, etc.
- **Designed to make servicing easier:** For the contractor, access panels are provided to all major components and the compressor.
- **0" clearance:** To combustibles on duct side of the unit allows for installations in tight areas.
- **Easy access:** To evaporator for cleaning and general maintenance.
- **Drain trap:** Design optimizes drainage capabilities.
- **Easy to install:** Electric heat strip provides up to 20 kw of heat output.
- **Compact footprint and profile:** Make the Q5 Series easy to install and transport.
- **High and low pressure switches:** Added compressor protection.
- **Suction Accumulator:** Protection from liquid flood back and future compressor failures.
- **Demand Defrost Standard:** Provides additional energy savings in heating by defrosting only when necessary.
- **Three Minute Restart Time Delay:** When the unit shuts down, a three minute delay keeps the unit from restarting, eliminating the highest cause for compressor failure.
- **Quiet operation and low vibration:** Swept-wing fan blade combined with custom Venturi condenser fan.
- **Compressor sound blanket is standard.**
- **Protected Distributor Tubes:** Both indoor and outdoor coils include very high abrasion resistance fiberglass sleeves to prevent leaks from tubing rubbing together.
- **Energy Efficient:** Brushless DC (ECM) Blower Motor.



MODEL IDENTIFICATION CODE

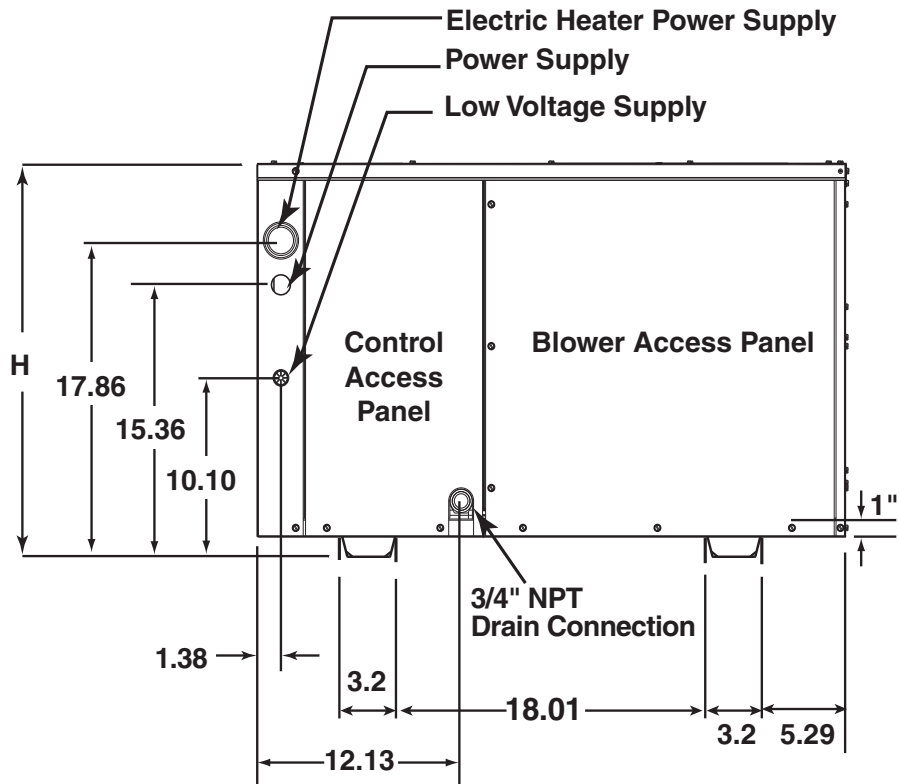


DIMENSIONS

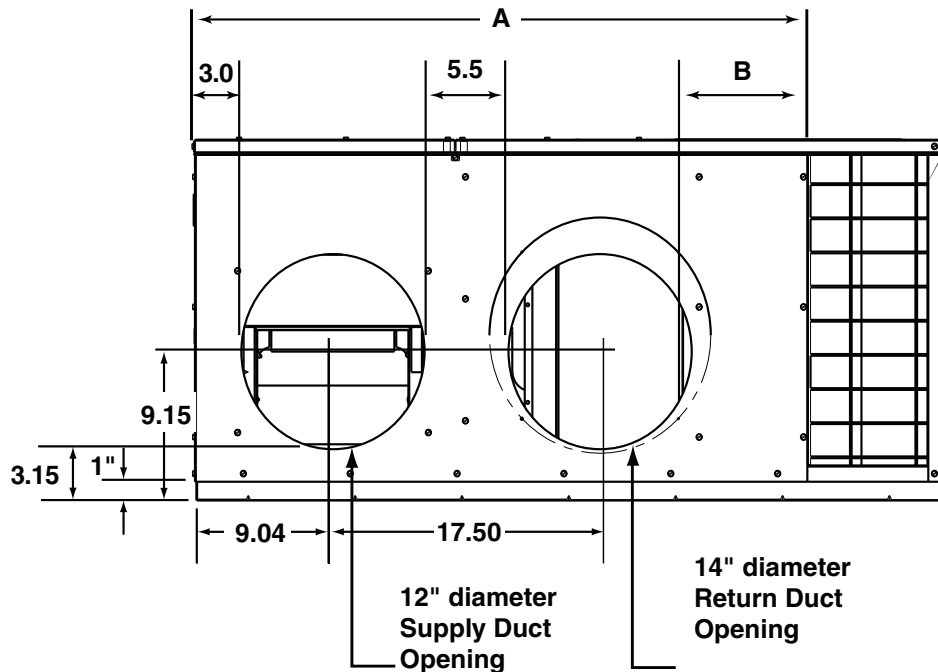


Model Number Q5RF-	(L) Length	(W) Width	(H) Height	A	B
X24K	49	35	30.2	40.15	7.61
X36K	49	35	30.2	35.02	2.48
X48K	49	35	38.2	35.02	2.48
X60K	63	35	38.2	35.02	2.48

DIMENSIONS Continued



Side View



Back (Duct) View

ELECTRICAL SPECIFICATIONS

Q5RF Models

Model No. Q5RF-	X24K	X36K	X48K	X60K
Electric Rating — 60 Hz (a)				
Operating Voltage Range	187 - 253	187 - 253	187 - 253	187 - 253
Min. Circuit Ampacity (a)	18.1	26.1	37.7	40.1
Field Wire Size — AWG (a)	10	10	8	6
Delay Fuse — Max. (b)	30	40	50	60
Total Unit — AMPS	15.5	21.9	32.4	34.3
Compressor				
Volts	208 - 230	208 - 230	208 - 230	208 - 230
Rated Load Amps	10.2	16.6	21.1	23
Lock Rotor Amps	52	82	96	118
Condenser Motor				
Fan Motor — HP - RPM	1/5 - 825	1/4 - 1100	1/2 - 2 speeds	1/2 - 2 speeds
Fan Motor — Amps	1.2	1.2	5.3	5.3
Fan Dia. — CFM	20" - 2800	20" - 3000	20" - 3600	24" - 4000
Evaporator Motor - 5 speed (ECM)				
Blower Motor — HP	1/2	1/2	3/4	3/4
Blower Motor — Amps	4.1	4.1	6	6
Refrigerant (R-410A) — Oz.				
	140	163	197	240
Shipping Weight -- Lbs.				
	335	340	385	435

- (a) Amperage and wire size based on refrigeration system only with 60° C wire, 50 ft. length. See Electrical Data tables for supplemental electric heaters. Refer to National Electric Code for additional derating factors for field installed conductors.
 (b) Use time delay fuse or "HACR" type circuit breaker.

BLOWER PERFORMANCE - ECM

Model Number		External Static Pressure Drop (in WC)							
Q5RF		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
X24K	* Tap T1	990	790	560	540				
	** Tap T2	1040	850	600	550	500			
	*** Tap T3	1080	920	800	720	680	620	570	520
	*** Tap T4	1160	1100	1040	1000	960	900	850	820
	*** Tap T5	1330	1300	1250	1200	1170	1130	1080	1030
X36K	* Tap T1	1020	840	600	500				
	** Tap T2	1060	900	750	700	650	600	540	500
	*** Tap T3	1280	1240	1200	1180	1140	1100	1070	1010
	*** Tap T4	1480	1450	1420	1390	1360	1320	1290	1240
	*** Tap T5	1580	1550	1520	1480	1450	1420	1380	1350
X48K	* Tap T1	1150	1090	1030	1000	950	900	850	800
	** Tap T2	1300	1270	1240	1200	1160	1120	1090	1050
	*** Tap T3	1460	1430	1400	1370	1340	1300	1250	1200
	** Tap T4	1520	1480	1450	1420	1390	1360	1330	1300
	*** Tap T5	1740	1710	1680	1650	1620	1590	1540	1500
X60K	* Tap T1	1150	1100	1060	1030	980	950	900	870
	** Tap T2	1250	1200	1170	1150	1130	1100	1060	1020
	*** Tap T3	1560	1530	1500	1470	1450	1420	1390	1360
	** Tap T4	1750	1700	1670	1630	1600	1580	1560	1530
	*** Tap T5	1960	1930	1900	1860	1830	1800	1770	1740

- * Denotes factory set low cooling & heating speed
 ** Denotes factory set high cooling & heating speed
 *** Denotes factory set electric heating speed

COPPER WIRE SIZE — AWG (1% Voltage Drop)				
Supply Wire Length-Feet				Supply Circuit Ampacity
200	150	100	50	
6	8	10	14	15
4	6	8	12	20
4	6	8	10	25
4	4	6	10	30
3	4	6	8	35
3	4	6	8	40
2	3	4	6	45
2	3	4	6	50

Wire Size based on N.E.C. for 60° type copper conductors.

ELECTRICAL DATA

Model Number		Multiple Supply Circuit Option																								
		Single Supply Circuit Option					Circuit A					Circuit B					Circuit C									
		Heater Element kw	Minimum Circuit Ampacity	Copper Wire Size			Maximum Over-current Protection	Minimum Circuit Ampacity	Copper Wire Size			Maximum Over-current Protection	Minimum Circuit Ampacity	Copper Wire Size			Maximum Over-current Protection	Minimum Circuit Ampacity	Copper Wire Size			Maximum Over-current Protection				
		60°C	75°C	90°C			60°C	75°C	90°C			60°C	75°C	90°C			60°C	75°C	90°C			60°C	75°C	90°C		
Q5RF-X24K	0	18.1	12	12	12	25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5	43.1	6	8	8	45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8	57.6	4	6	6	60	14.0	14	14	20	43.7	6	8	8	45	--	--	--	--	--	--	--	--	--	--	--
	10	68.1	4	4	6	70	14.0	14	14	20	54.1	6	6	8	60	--	--	--	--	--	--	--	--	--	--	--
Q5RF-X36K	0	26.1	10	10	10	40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5	51.1	6	6	8	60	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8	65.6	4	4	6	70	22.0	10	10	35	43.7	6	8	8	45	--	--	--	--	--	--	--	--	--	--	--
	10	76.1	3	4	4	80	22.0	10	10	35	54.1	6	6	8	60	--	--	--	--	--	--	--	--	--	--	--
	15	101.1	1	2	3	110	47.0	6	8	8	54.1	6	6	8	60	--	--	--	--	--	--	--	--	--	--	--
	20	--	--	--	--	--	22.0	10	10	35	29.1	10	10	10	30	50.0	6	8	8	8	60	--	--	--	--	--
Q5RF-X48K	0	37.7	8	8	8	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5	62.7	4	6	6	70	31.7	8	8	50	31.0	8	8	8	35	--	--	--	--	--	--	--	--	--	--	--
	8	77.3	3	4	4	90	31.7	8	8	50	45.6	6	8	8	50	--	--	--	--	--	--	--	--	--	--	--
	10	87.7	2	3	4	90	31.7	8	8	50	56.0	4	6	6	60	--	--	--	--	--	--	--	--	--	--	--
	15	112.7	0	2	2	125	56.7	4	6	70	56.0	4	6	6	60	--	--	--	--	--	--	--	--	--	--	--
	20	--	--	--	--	--	31.7	8	8	50	31.0	8	8	8	35	50.0	6	8	8	8	60	--	--	--	--	--
Q5RF-X60K	0	137.7	00	0	1	150	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5	--	--	--	--	--	31.7	8	8	50	56.0	4	6	6	60	50.0	6	8	8	60	--	--	--	--	--	--
	8	40.1	6	8	8	60	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10	65.1	4	4	6	80	34.1	8	8	50	31.0	8	8	8	35	--	--	--	--	--	--	--	--	--	--	--
	15	79.6	3	4	4	90	34.1	8	8	50	45.6	6	8	8	50	--	--	--	--	--	--	--	--	--	--	--
	20	90.1	2	3	4	100	34.1	8	8	50	56.0	4	6	6	60	--	--	--	--	--	--	--	--	--	--	--
Q5RF-X80K	0	115.1	0	1	2	125	59.1	4	6	70	56.0	4	6	6	60	--	--	--	--	--	--	--	--	--	--	--
	5	--	--	--	--	--	34.1	8	8	50	31.0	8	8	8	35	50.0	6	8	8	60	--	--	--	--	--	--
	10	140.1	00	0	1	150	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	15	--	--	--	--	--	34.1	8	8	50	56.0	4	6	6	60	50.0	6	8	8	60	--	--	--	--	--	--
	20	--	--	--	--	--	34.1	8	8	50	56.0	4	6	6	60	50.0	6	8	8	60	--	--	--	--	--	--
	25	--	--	--	--	--	34.1	8	8	50	56.0	4	6	6	60	50.0	6	8	8	60	--	--	--	--	--	--

If electric heat is installed, and the overcurrent rating exceeds 60A, internal circuit breakers must be installed in addition to branch circuit protection at the distribution panel.

SYSTEM HEATING AND COOLING CAPACITIES

Model Number Q5RF	Cooling Btuh	SEER	EER	Heating Btuh 47°F	HSPF
X24K	24,000	15	12	23,000	8.0
X36K	34,600	15	12	34,600	8.0
X48K	46,500	15	12	44,000	8.0
X60K	55,000	15	12	56,000	8.0

ACCESSORIES

Heater Application Matrix

Model Number Q5RF-	H3HK-005H-01B 917166B	H3HK-008H-01B 917167B	H3HK-010H-01B 917168B	H3HK-015H-01B 917169B	H3HK-020H-01B 917170B	H3HK-015H-21B 917172B	H3HK-020H-21B 917173B
X24K	X(0)	X(0)	X(2)	NA	NA	NA	NA
X36K	X (0)	X(2)	X(2)	X(2 or 3)	NA	X(0 or 1)	NA
X48K	X (2)	X(2)	X(2)	X(2 or 3)	X(3)	X(0 or 1)	X(1)
X60K	X (2)	X(2)	X(2)	X(2 or 3)	X(3)	X(0 or 1)	X(1)

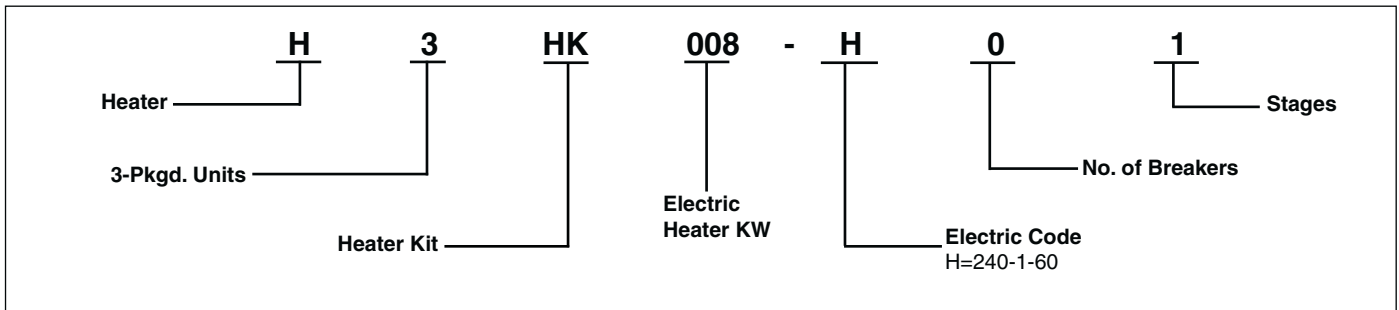
NA = Not Approved

() = Number of internal circuit breaker kits required.

X = Branch circuit protection only

NOTE: Blower performance heating values based on 10kw heater kit for X24k, and X36k. 15kw values used for X48k.

MODEL IDENTIFICATION CODE



Description	Part Number
4-Pole single circuit adaptor	913350
6-Pole single circuit adaptor	913556
Circuit Breaker Single Phase (2-pole)	913554
Extreme high wind kit - ground mount	903694

HEAT PUMP COOLING EXPANDED RATINGS

Q5RF-X24K High Speed

CFM	O.D.T		65°F			75°F			85°F			95°F			105°F			115°F		
	E.D.B.	.W.B.	T.C.	S.C.	K.W.	T.C.	S.C.	K.W.	T.C.	S.C.	K.W.	T.C.	S.C.	K.W.	T.C.	S.C.	K.W.	T.C.	S.C.	K.W.
700	80	62	25.4	20.3	1.42	24.4	20.1	1.59	23.3	20.2	1.78	22.1	19.8	1.98	20.9	20.5	2.21	19.6	19.2	2.47
	80	67	27.5	16.5	1.44	26.4	16.4	1.61	25.3	16.6	1.80	24.0	16.2	2.01	22.6	15.9	2.23	21.0	14.9	2.49
	80	72	30.2	12.8	1.47	28.9	12.7	1.64	27.6	12.9	1.82	26.1	12.7	2.03	24.5	12.4	2.26	22.7	12.6	2.51
	75	63	25.6	16.2	1.43	24.6	16.0	1.60	23.5	16.1	1.78	22.3	15.8	1.99	21.0	14.4	2.22	19.5	15.5	2.47
800	80	62	26.1	21.9	1.43	25.1	22.3	1.60	24.0	21.8	1.79	22.8	21.4	1.99	21.6	20.9	2.22	20.3	20.2	2.48
	80	67	28.2	17.7	1.45	27.1	18.2	1.62	25.8	17.7	1.80	24.5	17.5	2.01	23.0	17.4	2.24	21.4	17.3	2.50
	80	72	30.7	13.5	1.47	29.4	14.2	1.64	27.8	13.7	1.83	26.4	13.6	2.04	24.8	13.6	2.26	23.1	13.6	2.52
	75	63	26.3	17.3	1.43	25.2	17.7	1.60	24.0	17.3	1.79	22.8	17.0	1.99	21.4	16.9	2.22	19.9	16.8	2.48
900	80	62	26.7	23.7	1.44	25.7	23.7	1.61	24.6	23.0	1.79	23.5	22.3	2.00	22.3	21.5	2.23	21.0	20.9	2.49
	80	67	28.8	19.2	1.45	27.6	19.4	1.62	26.3	18.9	1.81	24.9	18.8	2.02	23.4	18.6	2.25	21.8	18.6	2.50
	80	72	31.0	14.6	1.48	29.7	14.9	1.65	28.3	14.5	1.83	26.8	14.4	2.04	25.2	14.3	2.27	23.4	14.4	2.53
	75	63	26.8	18.7	1.44	25.7	18.8	1.61	24.5	18.3	1.79	23.2	18.2	2.00	21.8	18.0	2.23	20.3	17.9	2.48

Q5RF-X36K High Speed

CFM	O.D.T		65°F			75°F			85°F			95°F			105°F			115°F		
	E.D.B.	E.W.B.	T.C.	S.C.	K.W.	T.C.	S.C.	K.W.	T.C.	S.C.	K.W.	T.C.	S.C.	K.W.	T.C.	S.C.	K.W.	T.C.	S.C.	K.W.
1050	80	62	36.4	29.5	2.13	35.0	29.2	2.36	33.5	29.3	2.60	31.8	28.8	2.87	30.1	29.6	3.17	28.3	27.8	3.51
	80	67	39.2	24.0	2.16	37.7	23.9	2.39	36.0	24.1	2.63	34.2	23.6	2.90	32.3	23.2	3.21	30.1	22.0	3.55
	80	72	42.9	18.5	2.21	41.1	18.4	2.43	39.2	18.7	2.68	37.0	18.3	2.94	34.6	18.0	3.24	32.3	18.3	3.59
	75	63	36.6	23.4	2.14	35.2	23.2	2.36	33.7	23.4	2.61	32.0	22.9	2.87	30.1	21.0	3.18	28.1	22.5	3.51
1200	80	62	37.4	31.8	2.14	35.9	32.3	2.37	34.4	31.5	2.62	32.7	30.9	2.88	31.1	30.1	3.19	29.3	29.1	3.53
	80	67	40.1	25.8	2.17	38.5	26.5	2.40	36.8	25.8	2.64	34.9	25.5	2.91	32.9	25.5	3.22	30.7	25.3	3.56
	80	72	43.4	19.6	2.21	41.4	20.5	2.44	39.5	19.8	2.68	37.5	19.6	2.95	35.3	19.6	3.25	32.9	19.6	3.60
	75	63	37.5	25.1	2.14	36.0	25.7	2.37	34.4	25.0	2.62	32.6	24.7	2.88	30.7	24.6	3.18	28.7	24.4	3.52
1350	80	62	38.3	34.2	2.14	36.8	34.3	2.38	35.3	32.9	2.63	33.8	32.1	2.90	32.1	31.0	3.20	30.2	30.0	3.55
	80	67	40.8	27.9	2.18	39.2	28.2	2.41	37.4	27.5	2.65	35.5	27.4	2.92	33.4	27.1	3.22	31.1	27.1	3.56
	80	72	43.8	21.1	2.22	42.0	21.5	2.44	40.1	20.9	2.69	38.0	20.8	2.96	35.7	20.7	3.26	33.3	20.7	3.60
	75	63	38.2	27.1	2.15	36.7	27.3	2.38	35.0	26.6	2.62	33.2	26.4	2.89	31.2	26.1	3.19	29.1	26.0	3.53

Q5RF-X48K High Speed

CFM	O.D.T		65°F			75°F			85°F			95°F			105°F			115°F		
	E.D.B.	E.W.B.	T.C.	S.C.	K.W.	T.C.	S.C.	K.W.	T.C.	S.C.	K.W.	T.C.	S.C.	K.W.	T.C.	S.C.	K.W.	T.C.	S.C.	K.W.
1250	80	62	47.5	37.1	2.91	45.8	36.8	3.18	43.9	37.0	3.48	41.7	36.3	3.80	39.4	38.2	4.16	36.9	35.7	4.55
	80	67	51.6	30.5	2.97	49.8	30.3	3.23	47.6	30.6	3.53	45.3	30.0	3.85	42.7	29.4	4.21	39.9	27.4	4.61
	80	72	56.8	23.7	3.02	54.7	23.7	3.30	52.3	24.1	3.59	49.6	23.6	3.91	46.6	23.2	4.27	43.1	23.6	4.67
	75	63	48.0	29.7	2.92	46.3	29.5	3.19	44.3	29.7	3.49	42.1	29.0	3.81	39.7	26.5	4.17	37.0	28.5	4.56
1450	80	62	49.1	40.6	2.93	47.3	41.4	3.20	45.3	40.4	3.50	43.1	39.9	3.82	40.8	39.4	4.18	38.4	38.1	4.58
	80	67	53.2	33.0	2.98	51.2	33.9	3.25	49.0	33.1	3.55	46.5	32.7	3.87	43.8	32.6	4.23	40.8	32.4	4.63
	80	72	58.1	25.4	3.04	55.8	26.6	3.31	53.1	25.8	3.60	50.2	25.5	3.92	47.3	25.5	4.28	44.1	25.5	4.69
	75	63	49.5	32.0	2.94	47.6	32.9	3.21	45.6	32.0	3.50	43.3	31.6	3.82	40.7	31.4	4.18	38.0	31.1	4.58
1650	80	62	50.5	44.3	2.95	48.7	44.5	3.22	46.7	43.3	3.52	44.6	42.3	3.84	42.4	40.9	4.20	39.9	39.7	4.61
	80	67	54.4	35.9	3.00	52.4	36.4	3.27	50.0	35.5	3.56	47.5	35.4	3.88	44.7	35.0	4.24	41.6	35.0	4.64
	80	72	58.6	27.5	3.04	56.4	28.1	3.32	53.9	27.3	3.62	51.1	27.2	3.94	48.1	27.0	4.30	44.8	27.1	4.70
	75	63	50.7	34.8	2.95	48.7	35.1	3.22	46.6	34.3	3.52	44.2	34.0	3.84	41.6	33.6	4.19	38.7	33.5	4.59

Q5RF-X60K High Speed

CFM	O.D.T		65°F			75°F			85°F			95°F			105°F			115°F		
	E.D.B.	E.W.B.	T.C.	S.C.	K.W.	T.C.	S.C.	K.W.	T.C.	S.C.	K.W.	T.C.	S.C.	K.W.	T.C.	S.C.	K.W.	T.C.	S.C.	K.W.
1500	80	62	57.9	48.0	3.55	55.8	47.5	3.84	53.4	47.4	4.19	50.8	46.1	4.59	47.9	45.1	5.05	44.3	43.1	5.62
	80	67	62.5	40.6	3.61	60.3	39.6	3.90	57.7	38.5	4.26	54.9	37.2	4.65	51.7	35.9	5.11	47.6	34.1	5.68
	80	72	69.2	32.7	3.70	66.7	31.8	3.99	63.7	30.8	4.33	60.5	29.7	4.73	56.8	28.5	5.20	51.8	26.9	5.76
	75	63	58.4	39.4	3.56	56.2	38.5	3.85	53.9	37.3	4.20	51.2	36.0	4.60	48.2	34.7	5.06	44.4	33.0	5.63
1650	80	62	59.1	50.6	3.56	57.0	50.7	3.86	54.5	50.0	4.20	51.8	49.1	4.60	48.9	47.5	5.07	45.2	45.2	5.64
	80	67	63.9	42.4	3.63	61.5	41.4	3.92	58.8	40.2	4.26	55.6	39.0	4.66	52.6	37.7	5.12	48.3	35.9	5.69
	80	72	70.3	34.0	3.71	67.7	33.1	4.01	64.6	32.1	4.35	61.1	30.9	4.74	57.0	29.7	5.20	51.8	27.9	5.76
	75	63	59.6	41.1	3.58	57.4	40.1	3.87	54.9	39.0	4.21	52.1	37.7	4.61	49.0	36.4	5.08	45.1	34.6	5.64
1800	80	62	60.2	53.7	3.58	58.0	53.2	3.87	55.5	53.0	4.22	52.8	51.5	4.62	49.9	49.6	5.08	46.3	46.3	5.66
	80	67	64.9	44.2	3.65	62.5	43.2	3.93	59.7	42.0	4.27	56.7	40.8	4.67	53.4	39.4	5.14	49.0	37.6	5.71
	80	72	71.0	35.3	3.72	68.3	34.3	4.02	65.0	33.3	4.35	60.9	32.0	4.74	57.2	30.7	5.20	52.4	28.9	5.77
	75	63	60.6	42.9	3.59	58.3	41.8	3.88	55.7	40.7	4.22	52.9	39.4	4.62	49.8	38.0	5.09	45.7	36.2	5.65

