



Product Data

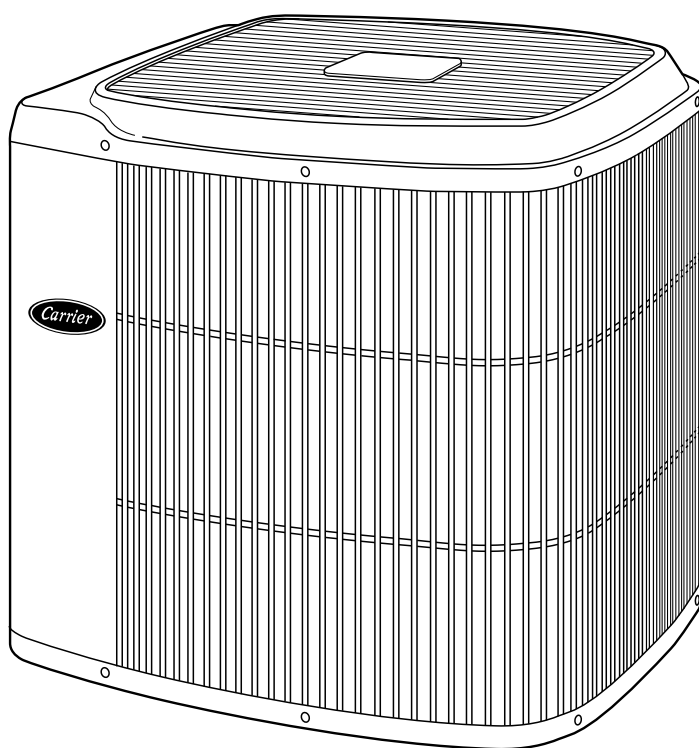
38TUA 50 Hz Air Conditioner

Sizes 024 thru 060

Quality Assurance



APPROVALS
ISO 9002
EN 29002
BS 5750 PART 2
ANSI/ASQC Q92



Model 38TUA 50 Hertz Energy-Efficient Air Conditioner incorporates innovative technology to provide quiet, reliable summer cooling performance. Built into these units are the features most desired by homeowners today, including SEER ratings of up to 11.0 when used with components as designated by manufacturer.

The Tech 2000 Silencer System features the InViroFlow design, energy-efficient fan and motor, advanced sound hood, and isolator plate.

InViroFlow Design for improved airflow pattern requiring less energy.

Energy-Efficient Fan and Fan Motor adds to quiet operation while moving air more efficiently.

Sound Hood to muffle noise from operation.

Isolator Plate eliminates compressor vibration transmission to base pan ensuring quiet operation.

FEATURES/BENEFITS

Electrical Range — Units are offered in 230 volts single phase, and 400 volts three phase.

Wide Range of Sizes — Available in nominal sizes from 024, 036, 048, and 060 to meet the needs of residential and light commercial applications.

Weather-Armor II Cabinet — Steel is protected with a heavy coating commonly called “galvanizing,” then treated with a layer of zinc phosphate. A coat of modified polyester powder coating is then applied and baked-on providing each unit with a hard, smooth finish that will last for many years.

All screws on cabinet exterior are coated for a long-lasting, rust-resistant, quality appearance.

Totally Enclosed Fan Motor — Means greater reliability under rainy conditions and dependable performance for many years. Permanent-split-capacitor-type motors provide more economical operation.

Unit Design — Copper tube and enhanced aluminum fin coil are designed for optimum heat transfer. Vertical air discharge carries sound and hot condenser air up and away from adjacent patio areas and foliage. New heat pump style drain pan for easy removal of water, dirt and leaves.

Application Versatility — The 38TUA can be combined with a wide variety of evaporator coils and blower packages to

provide quiet, dependable comfort. Unit can be installed on a roof or at ground level.

External Service Valves — Both service valves are brass, back seating type with sweat connections. Valves are externally located so refrigerant tube connections can be made quickly and easily. Each valve has a service port for ease of checking operating refrigerant pressures.

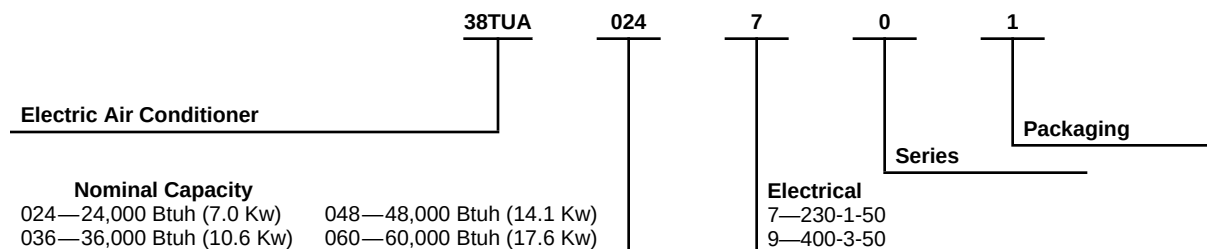
Easy Serviceability — One access panel provides access to electrical control box and compressor. For improved serviceability each compressor is equipped with a compressor terminal plug (with the

exception of the 048). Removal of top gives access to fan motor and coil.

Standard Features — All units are equipped with the Tech 2000 Silencer System consisting of energy efficient fan and motor, advanced sound hood, and compressor vibration isolator plate. Units are also equipped with short cycle protector and high- and low-pressure switches.

Safety — All units are designed and manufactured in accordance with Underwriters Laboratories (U.L. 1995) standard for safety, heating and cooling equipment.

Model number nomenclature



Physical data

UNIT SIZE	024-70	036-70, 90/71, 91	048-70, 90/71, 91	060-90
OPERATING WEIGHT (Lb/Kg)	145/65.8	230/104.3	250/113.8	303/137.4
COMPRESSOR Manufacturer & Type	Copeland & Scroll	Millennium & Scroll/ Copeland & Scroll	Millennium & Scroll/ Copeland & Scroll	Millennium & Scroll
REFRIGERANT Control Charge (Lb/Kg) @ 15 ft	4.5/2.04	22 AccuRater® (Bypass Type) 5.5/2.49		6.5/2.95 11.0/4.99
COND FAN Air Discharge Air Qty (CFM / L/S)	2600/1214	Propeller Type, Direct Drive Vertical 3300/1541		
COND COIL Face Area (Sq ft/m²)	8.7/1.81	12.0/1.11	15.2/1.41	18.3/1.70
CONNECTION (In./mm ID) Vapor Liquid	5/8 / 15.88	3/4 / 19.05	Sweat 3/8 / 9.53	7/8 / 22.23
REFRIGERANT TUBES* (In./mm OD) Vapor Liquid	5/8 / 15.88	3/4 / 19.05	Sweat 7/8 / 22.23 3/8 / 9.53	1-1/8 / 28.58

NOTE: See unit Installation Instructions for proper installation.

* Tube sizes are for lengths up to 50 ft (15.24m). For lengths over 50 ft (15.24m), consult Long-Line Application Guideline.

AccuRater® chart

UNIT SIZE-SERIES	PISTON* IDENTIFICATION NO.
024-70	59
036-70, 71, 90, 91	73
048-70, 71, 90, 91	84
060-90	98

* Piston listed is for any approved non-capillary tube coil combination.
 Piston is shipped with outdoor unit and must be installed in approved indoor coil.

Accessories

ORDERING NUMBER	DESCRIPTION
KAATD0101TDR	Time-Delay Relay — All Sizes
P251-0083 (RCD)	Low-Ambient Controller — All Sizes
KAAWS0101AAA	Winter Start Control* — All Sizes
KAAFT0101AAA	Evap Freeze Thermostat* — All Sizes
KSACY0101AAA	Cycle Protector
KSAHS0401AAA	Start Assist — Capacitor/Relay — Sizes 024 (70) and 036, 048 (70, 71)
N/A	Start Assist — Capacitor/Relay — Sizes 036, 048 (90, 91) and 060–90
KAACS0201PTC	Start Assist — PTC — All Sizes
Standard	Sound Hood
KAATX0301RPB	TXV Kit (RPB) (Size 024)
KAATX0501RPB	TXV Kit (RPB) (Sizes 036)
KAATX0601RPB	TXV Kit (RPB) (Size 048)

* Use with low-ambient controller.

ORDERING NUMBER	DESCRIPTION
KAATX0701RPB	TXV Kit (RPB) (Size 060)
KAATX1001HSO	TXV Kit (Hard Shut-off) (Size 024)
KAATX1201HSO	TXV Kit (Hard Shut-off) (Size 036)
KAATX1301HSO	TXV Kit (Hard Shut-off) (Size 048)
KAATX1401HSO	TXV Kit (Hard Shut-off) (Size 060)
Standard	Low-Pressure Switch — All Sizes
Standard	High-Pressure Switch — All Sizes
P502-8083S (RCD)	Filter Drier (Sizes 024-036)
P502-8163S (RCD)	Filter Drier (Sizes 042-060)
KAALS0101LLS	Liquid Solenoid Valve — All Sizes
KSASF0101AAA	Support Feet — All Sizes
Standard	Crankcase Heater — All Sizes

THERMOSTAT	DESCRIPTION
TSTATCCNAC01	Thermostat, Auto Changeover, Non-Programmable, °F/°C, 1-Stage Heat, 1-Stage Cool
TSTATCCPAC01	Thermostat, Auto Changeover, 7-Day Programmable, °F/°C, 1-Stage Heat, 1-Stage Cool
--HH--07AT-213	Thermostat, Manual Changeover, Non-Programmable, °F, 1-Stage Heat, 1-Stage Cool
TSTATCCSEN01	Outdoor Sensor

Accessory Description and Usage

1. Time-Delay Relay

A SPST delay relay which briefly continues operation of the indoor blower motor to provide additional cooling after the compressor cycles off.

SUGGESTED USE: For improved efficiency ratings for certain combinations of indoor and outdoor units. (Refer to ARI Unitary Directory.)

2. Winter Start Control

A SPST delay relay which bypasses the low-pressure switch for approximately 3 minutes to permit start-up for cooling operation under low-load conditions.

SUGGESTED USE: All air conditioners which have low-pressure switch and where low-ambient controller has been added.

3. Evaporator Freeze Thermostat

A SPST temperature actuated switch which stops unit operation when evaporator reaches freeze-up conditions.

SUGGESTED USE: All units where low-ambient controller has been added.

4. Compressor Start Assist-Capacitor/Relay Type

Start capacitor and start relay gives “hard” boost to compressor motor at each start-up.

SUGGESTED USE: Installations where interconnecting tube length exceeds 50 ft.

Installations where outdoor design temperature exceeds 105°F (40.6°C).

Replacement installations with hard shut-off expansion valve on indoor coil.

5. Compressor Start Assist — PTC Type

Solid-state electrical device which gives a “soft” boost to the reciprocating compressor at each start-up.

SUGGESTED USE: Installations with marginal power supply.

Replacement installations with rapid pressure balance (RPB) expansion valve on indoor coil.

Replacement installations with undersized interconnecting refrigerant tubes.

6. Thermostatic Expansion Valve (TXV) Kit

A modulating flow control valve which meters refrigerant liquid flow rate into the evaporator in response to the superheat of the refrigerant gas leaving the evaporator. Kit includes valve, adapter tubes, and external equalizer tube. Both hard shut-off and RPB type valves are available.

SUGGESTED USE: For improved system performance in cooling mode for certain combinations of indoor and outdoor units. (Refer to ARI Unitary Directory.)

7. Low-Pressure Switch

Auto reset SPST switch activated by refrigerant pressure on low side of refrigerant circuit. Cycles compressor off if refrigerant pressure drops to about 27 psig. Prevents indoor coil freeze-up due to loss of indoor airflow. Also, provides additional protection against compressor damage due to loss of refrigerant charge.

SUGGESTED USE: Where indoor coil is exposed to “dirty” air.

All commercial installations.

8. High-Pressure Switch

Auto reset SPST switch activated by refrigerant pressure on high side of refrigerant circuit. Cycles compressor off if refrigerant pressure rises to about 425 psig. Provides additional protection against compressor damage due to loss of outdoor airflow.

SUGGESTED USE: Installations exposed to very “dirty” outdoor air.

Installations where condenser inlet air temperature exceeds 125°F (51.7°C).

9. Filter Drier

A device for removing contaminants from refrigerant circulating in an air conditioner; 1 direction flow for air conditioners.

SUGGESTED USE: All field-connected split-system air conditioners.

10. Liquid Solenoid Valve (LLS)

An electrically operated shut-off valve to be installed at the outdoor or indoor unit (depending on tubing configuration) which stops and starts refrigerant liquid flow in response to compressor operation. Maintains a column of refrigerant liquid ready for action at next compressor operation cycle.

SUGGESTED USE: For improved system performance in air conditioners for certain combinations of indoor and outdoor units (refer to ARI Unitary Directory).

In certain long-line applications (refer to Long-Line Application Guideline).

11. Support Feet

Four stick-on plastic feet which raise the unit 4 in. above the mounting pad. This allows sand, dirt, and other debris to be flushed from the unit base; minimizes corrosion.

SUGGESTED USE: Coastal installations.

Windy areas or where debris is normally circulating.

Rooftop installations.

12. Crankcase Heater

An electric resistance heater which mounts to base of compressor to keep lubricant warm during off cycles. Improves compressor lubrication on restart and minimizes chance of refrigerant slugging. May or may not include a thermostat control.

SUGGESTED USE: When interconnecting tube length exceeds 50 ft.

When unit will be operated below 55°F (12.8°C) outdoor air temperature. (Use with low-ambient controller.)

All commercial installations.

Electrical data

UNIT SIZE-SERIES	V/PH	OPER VOLTS*		COMPR		FAN FLA	MCA	MIN WIRE SIZE 60°	MIN WIRE SIZE 75°	MAX LENGTH (FT) 60°/75°C‡	MAX LENGTH (m) 60°/75°C‡	MAX FUSE† OR HACR TYPE CKT BKR AMPS
		Max	Min	LRA	RLA							
024-70	230-1	253	207	72.5	15.0	0.6	19.4	14	14	49/47	14.9/14.3	30
036-70				102.0	14.7	1.6	19.9	10	10	71/68	21.6/20.7	30
036-71				129.0	26.4	1.6	34.6	10	10	71/68	21.6/20.7	50
048-70				140.0	19.2	1.6	25.6	8	8	91/87	27.7/26.5	40
048-71				169.0	32.1	1.6	41.7	8	8	91/87	27.7/26.5	60
036-90	400-3	440	360	46.5	6.4	0.7	8.7	14	14	202/192	61.6/58.5	15
036-91				49.5	8.2	0.7	10.9	14	14	202/192	61.6/58.5	20
048-90				66.5	8.0	0.7	10.7	14	14	165/157	50.3/47.9	15
048-91				62.0	10.0	0.7	13.2	14	14	165/157	50.3/47.9	20
060-90				73.0	9.5	0.7	12.6	14	14	165/157	50.3/47.9	20

FLA — Full Load Amps

HACR — Heating, Air Conditioning, Refrigeration

LRA — Locked Rotor Amps

MCA — Minimum Circuit Amps

RLA — Rated Load Amps

* Permissible limits of the voltage range at which the unit will operate satisfactorily. Operation outside these limits may result in unit failure. If wire is applied at ambient greater than 30°C (86°F), consult Table 310-16 of the NEC (ANSI/NFPA 70).

The ampacity of nonmetallic-sheathed cable (NM), trade name ROMEX, shall be that of 60°C (140°F) conductors, per the NEC (ANSI/NFPA 70) Article 336-36.

All motors/compressors contain internal overload protection.

† Time-delay fuse.

‡ Length shown is as measured 1 way along wire path between unit and service panel for a voltage drop not to exceed 2%.

Performance summary

UNIT SIZE	INDOOR MODEL	NOMINAL AIRFLOW		COOLING CAP @ 95°F (35°C)				COOLING CAP 115°F (46°C)		
				Rated Capacity		Power KW	Rated EER	Rated Capacity		Power KW
		CFM	L/S	BTUH	KW			BTUH	KW	
24-70	F(A,B)4ASF024†	800	380	23,000	6.7	2.34	10.30	20,700	6.1	2.87
	F(A,B)4ASF030	800	380	24,000	7.0	2.33	10.40	21,031	6.2	2.86
	FG3ASA024	800	380	23,000	6.7	2.40	9.70	20,023	5.9	2.95
36-70, 71, 90, 91	F(A,B)4ASF036†	1200	560	35,000	10.3	3.76	10.40	31,600	9.3	4.56
	F(A,B)4AS(F,B)042	1200	560	36,000	10.5	3.71	10.50	32,320	9.5	4.50
	FG3ASA036	1200	560	35,000	10.3	3.69	9.80	29,395	8.6	4.48
48-70, 71, 90, 91	F(A,B)4AS(F,B)048†	1600	750	47,000	13.8	5.08	9.50	41,600	12.2	6.20
	F(A,B)4AS(F,B)060	1600	750	48,000	14.1	5.22	9.50	42,686	12.5	6.36
	FG3ASA048	1600	750	46,000	13.5	5.16	9.10	40,327	11.8	6.30
	FG3ASA060	1600	750	47,000	13.8	5.20	9.20	41,388	12.1	6.35
60-90	F(A,B)4AS(F,B)060†	1800	950	58,000	17.0	6.21	9.50	52,000	15.2	7.36
	FB4ASB070	1800	950	60,000	17.6	6.31	9.50	53,294	15.6	7.48
	FG3ASA060	1800	950	57,500	16.8	6.18	9.40	51,202	15.0	7.34

† Tested Combination

NOTES:

1. Ratings are net values reflecting the effects of circulating fan motor heat. Supplemental electric heat is not included.
2. Tested outdoor/indoor combinations have been tested in accordance with DOE test procedures for central air conditioners. Ratings for other combinations are determined under DOE computer simulation procedures.
3. Determine actual CFM values obtainable for your system by referring to fan performance data in fan coil or furnace coil literature.

Detailed cooling capacities* (S.I.)

EVAP. AIR		CONDENSER ENTERING AIR TEMPERATURES °C																				
		28			32			36			40			44			48			52		
		Capacity† (KW)		Comp. Power	Capacity† (KW)		Comp. Power	Capacity† (KW)		Comp. Power	Capacity† (KW)		Comp. Power	Capacity† (KW)		Comp. Power	Capacity† (KW)		Comp. Power	Capacity† (KW)		Comp. Power
L/S	(C) EWB	Total	Sens‡	KW**	Total	Sens‡	KW**	Total	Sens‡	KW**	Total	Sens‡	KW**	Total	Sens‡	KW**	Total	Sens‡	KW**	Total	Sens‡	KW**
38TUA024-70 Outdoor Section with F(A,B)4ASF024 Indoor Section																						
340	22	7.62	3.96	2.06	7.40	3.87	2.23	7.17	3.79	2.40	6.93	3.70	2.59	6.67	3.61	2.79	6.41	3.51	3.00	6.15	3.42	3.22
	20	7.16	4.71	2.03	6.94	4.62	2.19	6.72	4.53	2.36	6.49	4.44	2.55	6.25	4.35	2.75	6.00	4.25	2.96	5.76	4.16	3.17
	18	6.72	5.44	1.99	6.52	5.35	2.16	6.31	5.25	2.33	6.10	5.15	2.51	5.88	5.04	2.71	5.65	4.93	2.92	5.43	4.80	3.14
	16	6.40	6.00	1.97	6.21	5.89	2.13	6.02	5.77	2.31	5.83	5.65	2.49	5.63	5.52	2.69	5.43	5.37	2.90	5.22	5.22	3.11
	14	6.26	6.24	1.96	6.11	6.09	2.13	5.94	5.93	2.30	5.77	5.76	2.49	5.59	5.59	2.69	5.41	5.41	2.89	5.22	5.22	3.11
380	22	7.73	4.12	2.10	7.50	4.03	2.26	7.26	3.95	2.44	7.01	3.86	2.62	6.75	3.77	2.82	6.49	3.67	3.04	6.21	3.58	3.26
	20	7.26	4.94	2.06	7.04	4.86	2.22	6.81	4.77	2.40	6.58	4.67	2.58	6.33	4.58	2.78	6.08	4.48	2.99	5.82	4.38	3.21
	18	6.84	5.74	2.03	6.63	5.64	2.19	6.42	5.54	2.36	6.20	5.43	2.55	5.98	5.30	2.75	5.76	5.16	2.96	5.53	5.00	3.17
	16	6.54	6.30	2.01	6.35	6.18	2.17	6.16	6.06	2.34	5.96	5.92	2.53	5.76	5.75	2.73	5.57	5.57	2.94	5.37	5.37	3.15
	14	6.46	6.45	2.00	6.30	6.19	2.17	6.12	6.12	2.34	5.95	5.94	2.52	5.76	5.76	2.72	5.57	5.57	2.94	5.37	5.37	3.15
420	22	7.82	4.27	2.13	7.59	4.19	2.29	7.34	4.10	2.47	7.08	4.01	2.66	6.82	3.92	2.86	6.55	3.83	3.07	6.27	3.73	3.29
	20	7.35	5.17	2.09	7.12	5.09	2.25	6.89	5.00	2.43	6.65	4.90	2.61	6.40	4.81	2.81	6.14	4.71	3.02	5.88	4.61	3.24
	18	6.93	6.01	2.06	6.73	5.90	2.22	6.52	5.78	2.40	6.30	5.64	2.58	6.08	5.49	2.78	5.86	5.34	2.99	5.63	5.18	3.21
	16	6.66	6.57	2.04	6.47	6.43	2.20	6.28	6.27	2.38	6.09	6.09	2.56	5.90	5.90	2.76	5.70	5.70	2.97	5.49	5.49	3.19
	14	6.63	6.62	2.04	6.46	6.45	2.20	6.28	6.28	2.38	6.09	6.09	2.56	5.90	5.90	2.76	5.70	5.70	2.97	5.49	5.49	3.19

Multipliers for Determining the Performance With Other Indoor Sections

Indoor Section	Size	Cooling		Indoor Section	Size	Cooling	
		Capacity	Power			Capacity	Power
F(A,B)4ASF	024	1.00	1.00	FG3ASA	024	0.97	1.03
	030	1.02	1.00		—	—	—

38TUA036-70, 71, 90, 91 Outdoor Section with F(A,B)4ASF036 Indoor Section

500	22	11.6	5.82	3.37	11.2	5.69	3.60	10.9	5.56	3.86	10.5	5.42	4.13	10.1	5.28	4.43	9.74	5.14	4.75	9.34	4.99	5.08
	20	10.8	6.87	3.29	10.5	6.74	3.52	10.2	6.60	3.78	9.84	6.46	4.06	9.48	6.32	4.35	9.11	6.17	4.66	8.73	6.02	4.98
	18	10.2	7.90	3.22	9.86	7.76	3.46	9.54	7.62	3.71	9.21	7.47	3.99	8.88	7.32	4.28	8.54	7.16	4.59	8.19	7.00	4.90
	16	9.62	8.75	3.17	9.34	8.59	3.41	9.05	8.42	3.66	8.75	8.24	3.94	8.45	8.05	4.23	8.14	7.86	4.53	7.83	7.66	4.85
	14	9.31	9.26	3.14	9.07	9.03	3.38	8.83	8.80	3.64	8.57	8.55	3.92	8.31	8.29	4.21	8.04	8.03	4.52	7.77	7.76	4.84
560	22	11.7	6.04	3.44	11.4	5.91	3.67	11.0	5.78	3.92	10.7	5.64	4.20	10.3	5.50	4.50	9.86	5.36	4.82	9.46	5.21	5.14
	20	11.0	7.21	3.35	10.7	7.07	3.59	10.3	6.93	3.84	9.98	6.79	4.12	9.61	6.64	4.42	9.23	6.50	4.73	8.84	6.35	5.05
	18	10.3	8.33	3.28	10.0	8.19	3.52	9.70	8.04	3.78	9.37	7.88	4.05	9.03	7.72	4.35	8.68	7.54	4.65	8.33	7.35	4.97
	16	9.83	9.20	3.23	9.54	9.03	3.47	9.25	8.84	3.73	8.94	8.65	4.01	8.63	8.45	4.30	8.32	8.23	4.60	8.01	7.99	4.93
	14	9.61	9.58	3.22	9.37	9.34	3.46	9.11	9.09	3.72	8.84	8.83	3.99	8.57	8.56	4.29	8.28	8.28	4.60	7.99	7.99	4.93
640	22	11.9	6.33	3.52	11.6	6.20	3.76	11.2	6.06	4.01	10.8	5.93	4.28	10.4	5.78	4.59	9.99	5.64	4.90	9.57	5.49	5.23
	20	11.2	7.63	3.44	10.9	7.50	3.67	10.5	7.36	3.92	10.1	7.21	4.20	9.75	7.06	4.50	9.35	6.91	4.81	8.95	6.76	5.13
	18	10.5	8.87	3.37	10.2	8.71	3.60	9.89	8.55	3.86	9.54	8.37	4.13	9.20	8.16	4.43	8.85	7.94	4.74	8.51	7.70	5.06
	16	10.1	9.74	3.32	9.78	9.54	3.56	9.47	9.34	3.81	9.16	9.11	4.09	8.86	8.84	4.39	8.55	8.55	4.70	8.25	8.25	5.03
	14	9.96	9.94	3.31	9.70	9.68	3.55	9.42	9.42	3.81	9.14	9.14	4.09	8.85	8.85	4.39	8.55	8.55	4.70	8.25	8.25	5.03

Multipliers for Determining the Performance With Other Indoor Sections

Indoor Section	Size	Cooling		Indoor Section	Size	Cooling	
		Capacity	Power			Capacity	Power
F(A,B)4ASF	036	1.00	1.00	FG3ASA	036	0.93	0.98
F(A,B)4AS(F,B)	042	1.02	0.99		—	—	—

See notes on pg 7.

Detailed cooling capacities* (S.I.) continued

EVAP. AIR		CONDENSER ENTERING AIR TEMPERATURES °C																				
		28			32			36			40			44			48			52		
		Capacity† (KW)		Comp. Power	Capacity† (KW)		Comp. Power	Capacity† (KW)		Comp. Power	Capacity† (KW)		Comp. Power	Capacity† (KW)		Comp. Power	Capacity† (KW)		Comp. Power	Capacity† (KW)		Comp. Power
L/S	(C) EWB	Total	Sens‡	KW**	Total	Sens‡	KW**	Total	Sens‡	KW**	Total	Sens‡	KW**	Total	Sens‡	KW**	Total	Sens‡	KW**	Total	Sens‡	KW**
38TUA048-70, 71, 90, 91 Outdoor Section with F(A,B)4AS(F,B)048 Indoor Section																						
650	22	15.4	7.83	4.51	14.9	7.64	4.85	14.4	7.45	5.22	13.9	7.26	5.61	13.4	7.06	6.03	12.8	6.86	6.47	12.2	6.65	6.92
	20	14.4	9.23	4.41	14.0	9.05	4.75	13.5	8.85	5.11	13.0	8.65	5.49	12.5	8.45	5.91	12.0	8.24	6.34	11.4	8.04	6.78
	18	13.5	10.6	4.32	13.1	10.4	4.66	12.6	10.2	5.01	12.2	10.0	5.39	11.7	9.79	5.80	11.2	9.57	6.22	10.7	9.35	6.65
	16	12.8	11.7	4.25	12.4	11.5	4.59	12.0	11.3	4.94	11.6	11.0	5.32	11.2	10.8	5.73	10.7	10.5	6.14	10.3	10.2	6.56
	14	12.4	12.4	4.22	12.1	12.1	4.56	11.8	11.7	4.92	11.4	11.4	5.30	11.0	11.0	5.71	10.6	10.6	6.13	10.3	10.3	6.56
750	22	15.7	8.23	4.61	15.2	8.04	4.95	14.7	7.85	5.32	14.1	7.65	5.71	13.6	7.45	6.13	13.0	7.24	6.57	12.4	7.03	7.03
	20	14.7	9.82	4.51	14.3	9.63	4.85	13.8	9.43	5.21	13.2	9.23	5.59	12.7	9.02	6.00	12.2	8.81	6.43	11.6	8.60	6.88
	18	13.8	11.4	4.41	13.4	11.2	4.75	12.9	10.9	5.11	12.4	10.7	5.49	12.0	10.5	5.90	11.5	10.2	6.33	11.0	9.87	6.76
	16	13.2	12.5	4.35	12.8	12.3	4.69	12.3	12.0	5.04	11.9	11.7	5.43	11.5	11.4	5.84	11.1	11.0	6.26	10.6	10.6	6.70
	14	13.0	12.9	4.33	12.6	12.6	4.67	12.2	12.2	5.03	11.9	11.8	5.42	11.5	11.4	5.84	11.0	11.0	6.26	10.6	10.6	6.70
850	22	16.0	8.62	4.70	15.5	8.43	5.04	14.9	8.23	5.41	14.3	8.03	5.80	13.7	7.83	6.22	13.1	7.62	6.66	12.5	7.41	7.12
	20	15.0	10.4	4.60	14.5	10.2	4.93	14.0	10.0	5.29	13.4	9.79	5.68	12.9	9.58	6.09	12.3	9.36	6.53	11.7	9.14	6.97
	18	14.1	12.1	4.50	13.6	11.8	4.84	13.2	11.6	5.20	12.7	11.3	5.59	12.2	11.0	6.00	11.7	10.7	6.43	11.2	10.3	6.87
	16	13.5	13.2	4.44	13.1	12.9	4.78	12.7	12.6	5.14	12.2	12.2	5.53	11.8	11.8	5.95	11.4	11.4	6.38	11.0	11.0	6.82
	14	13.4	13.4	4.44	13.0	13.0	4.78	12.6	12.6	5.14	12.2	12.2	5.53	11.8	11.8	5.95	11.4	11.4	6.38	11.0	11.0	6.83

Multipliers for Determining the Performance With Other Indoor Sections

Indoor Section	Size	Cooling		Indoor Section	Size	Cooling	
		Capacity	Power			Capacity	Power
F(A,B)4AS(F,B)	048	1.00	1.00	FG3ASA	048	0.97	1.02
	060	1.03	1.03		060	0.99	1.02

38TUA060-90 Outdoor Section With F(A,B)4AS(F,B)060 Indoor Section

850	22	19.4	9.92	5.69	18.8	9.68	6.08	18.1	9.45	6.49	17.5	9.22	6.91	16.9	8.99	7.34	16.2	8.76	7.79	15.6	8.53	8.26
	20	18.2	11.8	5.57	17.6	11.6	5.95	17.0	11.3	6.35	16.4	11.1	6.75	15.8	10.9	7.18	15.2	10.7	7.63	14.6	10.4	8.08
	18	17.1	13.7	5.45	16.5	13.4	5.83	16.0	13.2	6.22	15.5	12.9	6.62	14.9	12.7	7.04	14.4	12.4	7.47	13.8	12.1	7.92
	16	16.2	15.1	5.37	15.8	14.8	5.74	15.3	14.6	6.12	14.8	14.3	6.52	14.3	14.0	6.94	13.8	13.6	7.38	13.3	13.3	7.82
	14	15.9	15.8	5.34	15.5	15.4	5.71	15.0	15.0	6.09	14.6	14.6	6.50	14.2	14.2	6.93	13.7	13.7	7.37	13.3	13.3	7.83
950	22	19.7	10.3	5.81	19.0	10.1	6.20	18.3	9.82	6.61	17.7	9.59	7.03	17.0	9.36	7.46	16.4	9.13	7.91	15.7	8.90	8.38
	20	18.5	12.4	5.68	17.8	12.2	6.07	17.2	11.9	6.46	16.6	11.7	6.87	16.0	11.4	7.30	15.4	11.2	7.74	14.8	11.0	8.20
	18	17.4	14.4	5.57	16.8	14.2	5.95	16.2	13.9	6.34	15.7	13.6	6.74	15.1	13.3	7.16	14.6	13.0	7.61	14.1	12.6	8.07
	16	16.6	15.9	5.49	16.1	15.6	5.87	15.6	15.3	6.25	15.1	14.9	6.65	14.6	14.5	7.08	14.1	14.1	7.53	13.6	13.6	7.99
	14	16.4	16.3	5.47	15.9	15.9	5.85	15.5	15.5	6.24	15.0	15.0	6.65	14.6	14.6	7.08	14.1	14.1	7.53	13.6	13.6	7.99
1000	22	19.8	10.5	5.86	19.1	10.2	6.26	18.4	10.0	6.67	17.8	9.77	7.09	17.1	9.54	7.52	16.5	9.31	7.97	15.8	9.08	8.44
	20	18.6	12.7	5.74	17.9	12.4	6.12	17.3	12.2	6.52	16.7	12.0	6.93	16.1	11.7	7.36	15.5	11.5	7.80	14.8	11.2	8.26
	18	17.5	14.8	5.63	16.9	14.5	6.00	16.3	14.2	6.40	15.8	13.9	6.80	15.3	13.6	7.23	14.7	13.2	7.67	14.2	12.8	8.13
	16	16.7	16.2	5.55	16.2	15.9	5.93	15.7	15.6	6.31	15.2	15.2	6.72	14.8	14.7	7.15	14.3	14.3	7.60	13.8	13.8	8.06
	14	16.6	16.5	5.54	16.1	16.1	5.92	15.7	15.7	6.31	15.2	15.2	6.72	14.7	14.7	7.15	14.3	14.3	7.60	13.8	13.8	8.06

Multipliers for Determining the Performance With Other Indoor Sections

Indoor Section	Size	Cooling		Indoor Section	Size	Cooling	
		Capacity	Power			Capacity	Power
F(A,B)4AS(F,B)	060	1.00	1.00	FG3ASA	060	0.98	1.00
FB4ASB	070	1.02	1.02		—	—	—

* Detailed cooling capacities are based on indoor and outdoor unit at the same elevation and connected by 7.62m of tubing. If other than 7.62m of tubing is used and/or indoor unit is located above outdoor unit, a slight variation in capacity may occur.

† Total and sensible capacities are net capacities. Blower motor heat has been subtracted.

‡ Sensible capacities shown are based on 27°C entering air at the indoor coil. For sensible capacities at other than 27°C, deduct 245 kw per 480 L/S CFM of indoor coil air for each degree below 27°C, or add 235 kw per 480 L/S of indoor coil air per degree above 27°C. When the required data falls between the published data, interpolation may be performed.

** System kw is total of indoor and outdoor unit kw's.

Detailed cooling capacities* (English)

INDOOR COIL AIR		OUTDOOR COIL ENTERING AIR TEMPERATURES °F																	
		75		85		95		105		115		125							
CFM	(F) EWB	Gross Capacity† (MBtuh)		Comp. Power	Gross Capacity† (MBtuh)		Comp. Power	Gross Capacity† (MBtuh)		Comp. Power	Gross Capacity† (MBtuh)		Comp. Power	Gross Capacity† (MBtuh)		Comp. Power	Gross Capacity† (MBtuh)		Comp. Power
		Total	Sens†		KW**	Total		Sens†	KW**		Total	Sens†		KW**	Total		Sens†	KW**	
38TUA024-70 Outdoor Section with F(A,B)4ASF024 Indoor Section																			
700	72	26.8	13.4	1.90	25.8	13.0	2.11	24.7	12.6	2.35	23.6	12.2	2.61	22.4	11.7	2.89	21.1	11.3	3.20
	67	24.6	16.9	1.85	23.6	16.5	2.06	22.6	16.0	2.30	21.6	15.6	2.55	20.4	15.2	2.83	19.3	14.7	3.13
	62	22.5	20.2	1.81	21.7	19.8	2.02	20.7	19.3	2.25	19.8	18.9	2.51	18.8	18.3	2.79	17.8	17.7	3.09
	57	21.7	21.7	1.80	21.0	21.0	2.01	20.2	20.2	2.24	19.4	19.4	2.50	18.6	18.6	2.78	17.7	17.7	3.08
800	72	27.3	14.0	1.95	26.3	13.6	2.16	25.1	13.2	2.39	24.0	12.8	2.65	22.7	12.3	2.93	21.4	11.9	3.24
	67	25.0	17.9	1.89	24.1	17.5	2.10	23.0	17.1	2.34	21.9	16.6	2.59	20.7	16.2	2.87	19.5	15.7	3.17
	62	23.0	21.6	1.85	22.1	21.2	2.06	21.2	20.6	2.30	20.2	20.1	2.55	19.3	19.3	2.83	18.4	18.4	3.13
	57	22.5	22.5	1.84	21.8	21.8	2.05	21.0	21.0	2.29	20.2	20.2	2.55	19.3	19.3	2.83	18.4	18.4	3.13
900	72	27.7	14.6	1.99	26.6	14.2	2.19	25.5	13.8	2.43	24.2	13.4	2.69	23.0	12.9	2.97	21.6	12.5	3.28
	67	25.4	18.9	1.93	24.4	18.5	2.14	23.3	18.1	2.37	22.2	17.6	2.63	21.0	17.2	2.91	19.8	16.7	3.21
	62	23.5	22.9	1.89	22.6	22.3	2.10	21.7	21.6	2.33	20.8	20.8	2.59	19.8	19.8	2.87	18.9	18.9	3.18
	57	23.3	23.3	1.89	22.5	22.5	2.10	21.6	21.6	2.33	20.8	20.8	2.59	19.8	19.8	2.87	18.9	18.9	3.18
Multipliers for Determining the Performance With Other Indoor Sections																			
Indoor Section		Size	Cooling				Indoor Section		Size	Cooling									
			Capacity		Power					Capacity		Power							
F(A,B)4ASF		024	1.00		1.00		FG3ASA		024	0.97		1.03							
		030	1.02		1.00				—	—		—							
38TUA036-70, 71, 90, 91 Outdoor Section with F(A,B)4ASF036 Indoor Section																			
1050	72	40.8	19.8	3.15	39.3	19.2	3.45	37.6	18.6	3.79	35.9	18.0	4.18	34.1	17.3	4.60	32.2	16.6	5.05
	67	37.3	24.8	3.04	35.9	24.2	3.34	34.4	23.5	3.68	32.7	22.9	4.07	31.0	22.2	4.48	29.3	21.5	4.93
	62	34.1	29.6	2.95	32.8	29.0	3.25	31.3	28.3	3.60	29.9	27.6	3.98	28.4	26.8	4.38	26.8	26.0	4.82
	57	32.4	32.4	2.90	31.3	31.3	3.22	30.2	30.2	3.57	29.0	29.0	3.95	27.8	27.8	4.36	26.5	26.5	4.81
1200	72	41.6	20.7	3.23	40.0	20.1	3.53	38.3	19.5	3.87	36.5	18.8	4.26	34.6	18.1	4.68	32.7	17.5	5.13
	67	38.1	26.3	3.12	36.6	25.7	3.42	35.0	25.0	3.76	33.3	24.3	4.14	31.6	23.6	4.56	29.7	22.9	5.00
	62	34.9	31.7	3.02	33.5	31.0	3.33	32.0	30.2	3.67	30.5	29.4	4.05	29.0	28.5	4.46	27.5	27.4	4.91
	57	33.7	33.7	2.99	32.6	32.6	3.30	31.4	31.4	3.65	30.1	30.1	4.04	28.8	28.8	4.46	27.4	27.4	4.91
1350	72	42.2	21.5	3.31	40.6	20.9	3.61	38.8	20.3	3.95	37.0	19.6	4.33	35.0	18.9	4.76	33.0	18.3	5.21
	67	38.7	27.7	3.19	37.1	27.1	3.49	35.5	26.4	3.83	33.7	25.7	4.21	31.9	25.0	4.63	30.1	24.2	5.08
	62	35.5	33.5	3.10	34.1	32.7	3.40	32.6	31.9	3.74	31.1	30.9	4.13	29.6	29.6	4.54	28.2	28.2	4.99
	57	34.8	34.8	3.08	33.6	33.6	3.38	32.3	32.3	3.74	31.0	31.0	4.13	29.6	29.6	4.54	28.2	28.2	4.99
Multipliers for Determining the Performance With Other Indoor Sections																			
Indoor Section		Size	Cooling				Indoor Section		Size	Cooling									
			Capacity		Power					Capacity		Power							
F(A,B)4ASF		036	1.00		1.00		FG3ASA		036	0.93		0.98							
F(A,B)4AS(F,B)		042	1.02		0.99				—	—		—							

See notes on pg 9.

Detailed cooling capacities* (English) continued

INDOOR COIL AIR		OUTDOOR COIL ENTERING AIR TEMPERATURES °F																	
		75		85		95		105		115		125							
CFM	(F) EWB	Gross Capacity† (MBtuh)		Comp. Power	Gross Capacity† (MBtuh)		Comp. Power	Gross Capacity† (MBtuh)		Comp. Power	Gross Capacity† (MBtuh)		Comp. Power	Gross Capacity† (MBtuh)		Comp. Power	Gross Capacity† (MBtuh)		Comp. Power
		Total	Sens‡	KW**	Total	Sens‡	KW**	Total	Sens‡	KW**	Total	Sens‡	KW**	Total	Sens‡	KW**	Total	Sens‡	KW**
38TUA048-70, 71, 90, 91 Outdoor Section with F(A,B)4AS(F,B)048 Indoor Section																			
1400	72	54.8	26.9	4.21	52.5	26.1	4.65	50.1	25.2	5.14	47.6	24.3	5.68	45.0	23.3	6.28	42.2	22.4	6.91
	67	50.0	33.7	4.07	47.9	32.8	4.51	45.7	31.9	4.99	43.4	31.0	5.53	41.0	30.0	6.10	38.5	29.0	6.71
	62	45.7	40.3	3.95	43.8	39.4	4.39	41.7	38.4	4.87	39.7	37.4	5.39	37.5	36.3	5.96	35.4	35.1	6.54
	57	43.7	43.7	3.90	42.1	42.1	4.34	40.6	40.6	4.83	38.9	38.9	5.37	37.1	37.1	5.94	35.3	35.3	6.54
1600	72	55.9	28.2	4.30	53.5	27.3	4.74	51.0	26.4	5.24	48.4	25.5	5.78	45.6	24.5	6.37	42.8	23.5	7.01
	67	51.1	35.8	4.16	48.8	34.9	4.60	46.5	33.9	5.08	44.1	33.0	5.61	41.6	32.0	6.20	39.0	31.0	6.81
	62	46.7	43.1	4.04	44.8	42.1	4.47	42.7	41.0	4.96	40.6	39.9	5.49	38.5	38.4	6.06	36.5	36.5	6.67
	57	45.5	45.5	4.01	43.9	43.9	4.45	42.1	42.1	4.94	40.3	40.3	5.48	38.4	38.4	6.07	36.5	36.5	6.67
1800	72	56.7	29.4	4.39	54.3	28.5	4.83	51.7	27.6	5.32	49.0	26.6	5.86	46.2	25.7	6.46	43.2	24.7	7.09
	67	51.9	37.8	4.24	49.6	36.9	4.68	47.2	36.0	5.16	44.7	35.0	5.70	42.1	33.9	6.28	39.4	32.9	6.89
	62	47.7	45.7	4.12	45.6	44.6	4.56	43.6	43.3	5.04	41.5	41.5	5.58	39.6	39.6	6.17	37.5	37.5	6.79
	57	47.0	47.0	4.11	45.2	45.2	4.55	43.4	43.4	5.04	41.6	41.6	5.58	39.6	39.6	6.17	37.5	37.5	6.79
Multipliers for Determining the Performance With Other Indoor Sections																			
Indoor Section		Size	Cooling				Indoor Section		Size	Cooling									
			Capacity		Power					Capacity		Power							
F(A,B)4AS(F,B)		048	1.00		1.00		FG3ASA		048	0.97		1.02							
		060	1.03		1.03				060	0.99		1.02							
38TUA060-90 Outdoor Section with F(A,B)4AS(F,B)060 Indoor Section																			
1750	72	68.6	33.6	5.29	65.6	32.5	5.81	62.6	31.4	6.37	59.6	30.3	6.95	56.6	29.2	7.56	53.6	28.2	8.21
	67	62.7	42.4	5.13	60.0	41.3	5.64	57.3	40.2	6.18	54.6	39.1	6.74	51.9	38.0	7.33	49.1	36.9	7.96
	62	57.4	51.0	4.99	55.0	49.8	5.48	52.6	48.7	6.00	50.2	47.5	6.55	47.8	46.3	7.14	45.3	44.8	7.75
	57	55.1	55.1	4.93	53.2	53.2	5.43	51.3	51.3	5.95	49.3	49.3	6.51	47.3	47.3	7.11	45.1	45.1	7.74
1800	72	68.9	33.9	5.31	65.9	32.8	5.84	62.8	31.7	6.40	59.8	30.6	6.98	56.8	29.5	7.59	53.8	28.5	8.24
	67	63.0	42.9	5.16	60.3	41.8	5.66	57.5	40.7	6.20	54.8	39.6	6.77	52.0	38.5	7.36	49.2	37.4	7.99
	62	57.6	51.7	5.02	55.2	50.5	5.51	52.8	49.4	6.03	50.4	48.2	6.58	48.0	46.9	7.17	45.5	45.3	7.78
	57	55.5	55.5	4.96	53.6	53.6	5.46	51.6	51.6	5.99	49.7	49.7	6.55	47.6	47.6	7.15	45.4	45.4	7.79
2000	72	69.8	35.1	5.43	66.7	34.0	5.95	63.5	32.8	6.51	60.4	31.7	7.09	57.4	30.7	7.70	54.2	29.6	8.35
	67	63.8	45.0	5.26	61.0	43.8	5.77	58.2	42.7	6.32	55.4	41.6	6.88	52.6	40.5	7.48	49.7	39.3	8.11
	62	58.6	54.5	5.12	56.1	53.2	5.62	53.7	52.0	6.15	51.2	50.5	6.70	48.9	48.9	7.30	46.6	46.6	7.94
	57	57.2	57.2	5.09	55.1	55.1	5.60	53.1	53.1	6.13	51.0	51.0	6.70	48.9	48.9	7.30	46.5	46.5	7.94
2150	72	70.4	36.0	5.51	67.2	34.8	6.03	64.0	33.7	6.59	60.8	32.6	7.18	57.7	31.5	7.78	54.5	30.4	8.43
	67	64.4	46.5	5.34	61.5	45.3	5.85	58.6	44.2	6.40	55.7	43.0	6.96	52.9	41.9	7.56	49.9	40.8	8.19
	62	59.2	56.4	5.20	56.7	55.1	5.70	54.2	53.6	6.23	51.9	51.9	6.79	49.6	49.6	7.40	47.3	47.3	8.04
	57	58.3	58.3	5.18	56.1	56.1	5.69	54.0	54.0	6.23	51.9	51.9	6.79	49.6	49.6	7.40	47.3	47.3	8.04

* Detailed cooling capacities are based on indoor and outdoor unit at the same elevation and connected by 25 ft of tubing. If other than 25 ft of tubing is used and/or indoor unit is located above outdoor unit, a slight variation in capacity may occur.

† Total and sensible capacities are net capacities. Blower motor heat has been subtracted.

‡ Sensible capacities shown are based on 80°F entering air at the indoor coil. For sensible capacities at other than 80°F, deduct 835 Btuh per 1000 CFM of indoor coil air for each degree below 80°F, or add 835 Btuh per 1000 CFM of indoor coil air per degree above 80°F. When the required data falls between the published data, interpolation may be performed.

** System kw is total of indoor and outdoor unit kw's.

Condenser only ratings (S.I.)

SST °C		CONDENSER ENTERING AIR TEMPERATURES °C								
		20	24	28	32	36	40	44	48	52
38TUA024-70										
-2	TCG	5.75	5.55	5.34	5.13	4.90	4.67	4.43	4.19	3.94
	KW	1.38	1.53	1.69	1.85	2.03	2.22	2.41	2.61	2.81
	SDT	28.5	33.2	37.7	42.1	46.4	50.6	54.8	58.9	63.0
0	TCG	6.15	5.94	5.73	5.50	5.27	5.03	4.79	4.53	4.28
	KW	1.38	1.52	1.68	1.85	2.03	2.22	2.42	2.62	2.83
	SDT	28.5	33.2	37.8	42.2	46.6	50.8	55.0	59.2	63.3
2	TCG	6.57	6.36	6.13	5.90	5.66	5.41	5.16	4.89	4.63
	KW	1.37	1.52	1.68	1.86	2.04	2.23	2.43	2.64	2.85
	SDT	28.5	33.4	38.0	42.5	46.8	51.1	55.3	59.5	63.6
4	TCG	7.01	6.78	6.55	6.30	6.06	5.80	5.54	5.27	4.99
	KW	1.37	1.52	1.68	1.86	2.04	2.23	2.44	2.65	2.87
	SDT	28.6	33.5	38.2	42.7	47.1	51.4	55.7	59.8	63.9
6	TCG	7.46	7.23	6.98	6.73	6.47	6.20	5.93	5.65	5.36
	KW	1.37	1.52	1.69	1.86	2.05	2.24	2.45	2.66	2.89
	SDT	28.6	33.6	38.4	43.0	47.4	51.8	56.0	60.2	64.3
8	TCG	7.93	7.69	7.43	7.16	6.89	6.62	6.33	6.04	5.74
	KW	1.37	1.52	1.69	1.86	2.05	2.25	2.46	2.68	2.90
	SDT	28.6	33.8	38.6	43.2	47.8	52.1	56.4	60.6	64.7
10	TCG	8.42	8.17	7.90	7.62	7.34	7.05	6.75	6.45	6.14
	KW	1.37	1.52	1.69	1.87	2.06	2.26	2.47	2.69	2.92
	SDT	28.6	33.9	38.7	43.5	48.1	52.5	56.8	61.0	65.2
38TUA036-70, 71, 90, 91										
-2	TCG	9.08	8.75	8.41	8.07	7.73	7.38	7.02	6.65	6.29
	KW	2.15	2.35	2.57	2.80	3.05	3.30	3.57	3.85	4.14
	SDT	31.2	35.5	39.7	43.9	48.0	52.0	56.0	60.0	64.0
0	TCG	9.74	9.40	9.04	8.68	8.32	7.95	7.57	7.19	6.80
	KW	2.16	2.36	2.59	2.83	3.07	3.33	3.61	3.89	4.19
	SDT	31.6	35.9	40.1	44.3	48.5	52.5	56.5	60.5	64.5
2	TCG	10.4	10.0	9.67	9.29	8.91	8.52	8.13	7.73	7.33
	KW	2.18	2.38	2.61	2.85	3.10	3.36	3.64	3.93	4.23
	SDT	32.0	36.3	40.5	44.8	48.9	53.0	57.0	61.0	65.0
4	TCG	11.1	10.7	10.3	9.94	9.53	9.13	8.71	8.29	7.87
	KW	2.20	2.40	2.63	2.87	3.12	3.39	3.68	3.97	4.28
	SDT	32.4	36.8	41.0	45.2	49.4	53.5	57.5	61.5	65.5
6	TCG	11.8	11.4	11.0	10.6	10.2	9.75	9.32	8.88	8.44
	KW	2.22	2.42	2.65	2.89	3.15	3.43	3.71	4.01	4.32
	SDT	32.9	37.2	41.5	45.7	49.9	54.1	58.1	62.1	66.1
8	TCG	12.6	12.2	11.7	11.3	10.9	10.4	9.95	9.49	9.02
	KW	2.24	2.45	2.67	2.92	3.18	3.46	3.75	4.06	4.37
	SDT	33.4	37.7	42.0	46.3	50.5	54.6	58.7	62.7	66.7
10	TCG	13.3	12.9	12.5	12.0	11.6	11.1	10.6	10.1	9.63
	KW	2.26	2.47	2.70	2.95	3.21	3.49	3.79	4.10	4.42
	SDT	33.8	38.3	42.6	46.8	51.0	55.2	59.3	63.3	67.3
38TUA048-70, 71, 90, 91										
-2	TCG	11.8	11.4	11.0	10.5	10.0	9.57	9.10	8.61	8.11
	KW	2.93	3.19	3.48	3.78	4.09	4.42	4.75	5.08	5.42
	SDT	33.9	38.1	42.2	46.3	50.4	54.4	58.3	62.1	66.0
0	TCG	12.7	12.2	11.8	11.3	10.8	10.3	9.80	9.29	8.77
	KW	2.98	3.24	3.53	3.83	4.15	4.49	4.83	5.18	5.53
	SDT	34.5	38.7	42.9	47.0	51.1	55.1	59.0	62.9	66.7
2	TCG	13.5	13.1	12.6	12.1	11.6	11.0	10.5	9.97	9.43
	KW	3.02	3.28	3.58	3.89	4.21	4.56	4.91	5.27	5.63
	SDT	35.2	39.4	43.5	47.6	51.7	55.8	59.8	63.7	67.5
4	TCG	14.4	13.9	13.4	12.9	12.3	11.8	11.2	10.7	10.1
	KW	3.07	3.33	3.63	3.94	4.28	4.63	4.99	5.36	5.74
	SDT	35.9	40.1	44.2	48.3	52.4	56.5	60.5	64.4	68.3
6	TCG	15.3	14.8	14.3	13.7	13.2	12.6	12.0	11.4	10.8
	KW	3.12	3.39	3.69	4.01	4.34	4.70	5.07	5.46	5.84
	SDT	36.6	40.8	44.9	49.1	53.2	57.2	61.3	65.2	69.1
8	TCG	16.3	15.7	15.2	14.6	14.0	13.4	12.8	12.2	11.5
	KW	3.17	3.45	3.75	4.07	4.41	4.77	5.16	5.55	5.95
	SDT	37.4	41.6	45.7	49.8	53.9	58.0	62.1	66.0	69.9
10	TCG	17.3	16.7	16.1	15.5	14.9	14.3	13.6	13.0	12.3
	KW	3.23	3.51	3.81	4.14	4.48	4.85	5.24	5.65	6.06
	SDT	38.2	42.4	46.5	50.6	54.7	58.8	62.8	66.8	70.8
38TUA060-90										
-2	TCG	14.9	14.4	13.9	13.4	13.0	12.5	12.0	11.5	11.0
	KW	3.64	3.94	4.25	4.58	4.91	5.26	5.62	6.00	6.38
	SDT	33.2	37.4	41.5	45.6	49.6	53.6	57.6	61.5	65.5
0	TCG	15.9	15.4	14.9	14.4	13.9	13.3	12.8	12.3	11.8
	KW	3.71	4.02	4.34	4.67	5.01	5.37	5.74	6.12	6.52
	SDT	33.8	38.1	42.3	46.3	50.4	54.4	58.3	62.3	66.2
2	TCG	17.0	16.4	15.9	15.3	14.8	14.2	13.6	13.1	12.5
	KW	3.78	4.09	4.43	4.77	5.12	5.48	5.86	6.25	6.66
	SDT	34.5	38.8	43.0	47.1	51.1	55.1	59.1	63.0	66.9
4	TCG	18.1	17.5	16.9	16.3	15.7	15.1	14.5	13.9	13.3
	KW	3.85	4.17	4.51	4.87	5.23	5.60	5.99	6.39	6.80
	SDT	35.2	39.5	43.7	47.9	51.9	55.9	59.8	63.8	67.7
6	TCG	19.2	18.6	17.9	17.3	16.7	16.1	15.4	14.8	14.2
	KW	3.92	4.25	4.60	4.97	5.34	5.72	6.11	6.52	6.94
	SDT	35.9	40.3	44.5	48.7	52.7	56.7	60.7	64.6	68.4
8	TCG	20.4	19.7	19.0	18.4	17.7	17.0	16.4	15.7	15.0
	KW	4.00	4.34	4.70	5.07	5.45	5.84	6.25	6.66	7.09
	SDT	36.7	41.0	45.3	49.5	53.6	57.6	61.5	65.4	69.3
10	TCG	21.6	20.9	20.2	19.4	18.7	18.0	17.3	16.6	15.9
	KW	4.08	4.43	4.79	5.18	5.57	5.97	6.38	6.81	7.25
	SDT	37.5	41.8	46.1	50.3	54.4	58.4	62.3	66.2	70.1

SST — Saturated Temperature Entering Compressor (°C)

TCG — Gross Cooling Capacity (Kw)

KW — Total Power (Kw)

SDT — Saturated Temperature Leaving Compressor (°C)

Condenser only ratings (English)

SST °F		CONDENSER ENTERING AIR TEMPERATURES °F							
		55	65	75	85	95	105	115	125
38TUA024-70									
30	TCG	21.4	20.5	19.6	18.5	17.5	16.4	15.2	14.0
	KW	1.14	1.32	1.52	1.74	1.99	2.24	2.52	2.80
	SDT	67.3	79.8	91.5	103.0	114.0	124.0	135.0	145.0
35	TCG	23.5	22.5	21.5	20.4	19.3	18.1	16.9	15.7
	KW	1.13	1.31	1.52	1.74	1.99	2.25	2.53	2.83
	SDT	66.9	79.8	91.8	103.0	114.0	125.0	135.0	146.0
40	TCG	25.6	24.6	23.5	22.4	21.2	20.0	18.7	17.4
	KW	1.13	1.31	1.51	1.74	1.99	2.26	2.55	2.85
	SDT	66.4	79.8	92.1	104.0	115.0	126.0	136.0	147.0
45	TCG	27.8	26.8	25.6	24.4	23.2	21.9	20.6	19.2
	KW	1.13	1.31	1.52	1.75	2.00	2.27	2.57	2.88
	SDT	66.0	79.7	92.4	104.0	116.0	127.0	137.0	148.0
50	TCG	30.2	29.1	27.9	26.6	25.3	23.9	22.5	21.0
	KW	1.14	1.31	1.52	1.75	2.01	2.28	2.58	2.90
	SDT	66.0	79.6	92.7	105.0	117.0	128.0	138.0	149.0
55	TCG	32.6	31.4	30.2	28.8	27.4	26.0	24.5	22.9
	KW	1.14	1.31	1.52	1.75	2.01	2.29	2.60	2.93
	SDT	66.2	79.3	93.0	105.0	117.0	128.0	139.0	150.0
38TUA036-70, 71, 90, 91									
30	TCG	34.0	32.5	30.9	29.2	27.6	25.9	24.1	22.3
	KW	1.82	2.07	2.35	2.66	3.00	3.35	3.73	4.14
	SDT	74.3	85.2	95.9	106.0	117.0	127.0	137.0	147.0
35	TCG	37.2	35.6	33.9	32.2	30.4	28.6	26.7	24.8
	KW	1.84	2.09	2.37	2.68	3.03	3.39	3.78	4.20
	SDT	75.2	86.2	97.0	108.0	118.0	128.0	138.0	148.0
40	TCG	40.7	38.9	37.1	35.3	33.3	31.4	29.4	27.4
	KW	1.87	2.12	2.40	2.71	3.06	3.44	3.84	4.26
	SDT	76.1	87.3	98.1	109.0	119.0	130.0	140.0	150.0
45	TCG	44.3	42.4	40.5	38.6	36.5	34.4	32.3	30.1
	KW	1.89	2.15	2.43	2.75	3.10	3.49	3.89	4.33
	SDT	77.2	88.4	99.4	110.0	121.0	131.0	141.0	151.0
50	TCG	48.1	46.1	44.1	42.0	39.8	37.6	35.3	33.0
	KW	1.92	2.18	2.46	2.78	3.14	3.53	3.95	4.39
	SDT	78.3	89.6	101.0	111.0	122.0	132.0	143.0	152.0
55	TCG	52.1	50.1	47.9	45.6	43.3	40.9	38.4	36.0
	KW	1.96	2.21	2.50	2.83	3.18	3.58	4.01	4.46
	SDT	79.4	91.0	102.0	113.0	123.0	134.0	144.0	154.0
38TUA048-70, 71, 90, 91									
30	TCG	44.2	42.3	40.2	38.1	35.8	33.5	31.2	28.8
	KW	2.52	2.84	3.20	3.60	4.04	4.49	4.96	5.44
	SDT	79.8	90.4	101.0	111.0	121.0	132.0	141.0	151.0
35	TCG	48.4	46.3	44.1	41.8	39.5	37.0	34.5	32.0
	KW	2.57	2.90	3.27	3.67	4.12	4.59	5.08	5.59
	SDT	81.5	92.0	102.0	113.0	123.0	133.0	143.0	153.0
40	TCG	52.8	50.5	48.2	45.7	43.2	40.6	37.9	35.2
	KW	2.63	2.97	3.34	3.75	4.20	4.69	5.21	5.73
	SDT	83.2	93.8	104.0	115.0	125.0	135.0	145.0	155.0
45	TCG	57.4	55.0	52.5	49.9	47.2	44.4	41.5	38.6
	KW	2.70	3.04	3.41	3.83	4.29	4.79	5.33	5.88
	SDT	84.9	95.6	106.0	116.0	127.0	137.0	147.0	157.0
50	TCG	62.2	59.7	57.0	54.2	51.4	48.4	45.3	42.2
	KW	2.77	3.11	3.50	3.92	4.39	4.90	5.45	6.02
	SDT	86.8	97.5	108.0	118.0	129.0	139.0	149.0	159.0
55	TCG	67.3	64.5	61.7	58.8	55.7	52.5	49.2	45.8
	KW	2.85	3.20	3.59	4.02	4.49	5.01	5.57	6.17
	SDT	88.8	99.6	110.0	120.0	131.0	141.0	151.0	161.0
38TUA060-90									
30	TCG	55.6	53.2	50.8	48.4	46.0	43.6	41.2	38.8
	KW	3.16	3.55	3.97	4.41	4.87	5.36	5.87	6.41
	SDT	78.1	89.0	99.7	110.0	120.0	130.0	140.0	150.0
35	TCG	60.7	58.1	55.5	52.8	50.3	47.7	45.1	42.4
	KW	3.23	3.64	4.07	4.53	5.01	5.51	6.04	6.60
	SDT	79.7	90.7	101.0	112.0	122.0	132.0	142.0	152.0
40	TCG	66.2	63.3	60.4	57.6	54.8	52.0	49.1	46.3
	KW	3.31	3.73	4.18	4.66	5.16	5.67	6.22	6.79
	SDT	81.3	92.4	103.0	114.0	124.0	134.0	144.0	154.0
45	TCG	71.8	68.8	65.7	62.6	59.5	56.5	53.4	50.3
	KW	3.40	3.83	4.29	4.79	5.31	5.84	6.41	7.00
	SDT	83.1	94.2	105.0	116.0	126.0	136.0	146.0	155.0
50	TCG	77.9	74.6	71.3	67.9	64.5	61.1	57.9	54.5
	KW	3.49	3.94	4.42	4.93	5.47	6.02	6.60	7.21
	SDT	84.9	96.2	107.0	118.0	128.0	138.0	148.0	158.0
55	TCG	84.3	80.7	77.1	73.5	69.7	66.1	62.5	58.9
	KW	3.59	4.05	4.54	5.07	5.63	6.21	6.81	7.43
	SDT	86.9	98.2	109.0	120.0	130.0	140.0	150.0	160.0

SST — Saturated Temperature Entering Compressor (°F)
TCG — Gross Cooling Capacity (1000 Btuh)
KW — Total Power (Kw)
SDT — Saturated Temperature Leaving Compressor (°F)

System Design

1. Intended for outdoor installation with free air inlet and outlet. Outdoor fan external static pressure available is less than 0.01-in. wg.
2. Minimum outdoor operating air temperature without low-ambient operation accessory is 55°F (12.8°C).
3. Maximum outdoor operating air temperature is 125°F (51.7°C).
4. For reliable operation, unit should be level in all horizontal planes.
5. Maximum elevation of indoor coil above or below base of outdoor unit is: indoor coil above = 50 ft (15.24m), indoor coil below = 150 ft (45.72m). (See items 6 and 7 following.)
6. For interconnecting refrigerant tube lengths greater than 50 ft (15.24m), consult Long-Line Application Guideline available from equipment distributor.
7. Crankcase heater required when interconnecting refrigerant tube length exceeds 50 ft (15.24m).
8. Not more than 3 ft (914mm) of refrigerant tube should be buried in the ground. If necessary to bury tubes under a sidewalk, provide a minimum 6-in. (152mm) vertical rise to the valve connections at the unit.
9. Use only copper wire for electric connection at unit. Aluminum and clad aluminum are not acceptable for the type of connector provided.
10. Mixmatches of indoor coil capacity more than 1 size larger than outdoor unit capacity may result in inadequate indoor comfort.
11. Do not apply capillary tube indoor coils to these units.

Dimensions

S.I.

UNIT	SERIES	ELECTRICAL CHARACTERISTICS		A	B	C	D	E	F	G	H	J	K	L	M	N	SHIPPING WEIGHT
				mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
38TUA024	0	X	O	706.4	571.5	698.5	71.4	176.2	546.1	555.6	15.9	208.0	304.8	371.5	279.4	60.3	65.8
38TUA036	0	X	X	706.4	762.0	887.4	101.4	247.7	393.7	555.6	19.1	208.0	412.8	260.4	285.8	74.6	99.8
38TUA036	1	X	X	706.4	762.0	887.4	101.4	247.7	393.7	555.6	19.1	208.0	412.8	260.4	285.8	74.6	108.9
38TUA048	0	X	X	858.8	762.0	887.4	101.4	247.7	546.1	708.0	22.2	208.0	425.5	266.7	342.9	74.6	111.6
38TUA048	1	X	X	858.8	762.0	887.4	101.4	247.7	546.1	708.0	22.2	208.0	425.5	266.7	342.9	74.6	116.1
38TUA060	0	O	X	1011.2	762.0	887.4	101.4	247.7	698.5	860.4	22.2	208.0	425.5	266.7	381.0	74.6	137.4

230-1-50

400-3-50

X = YES
O = NO

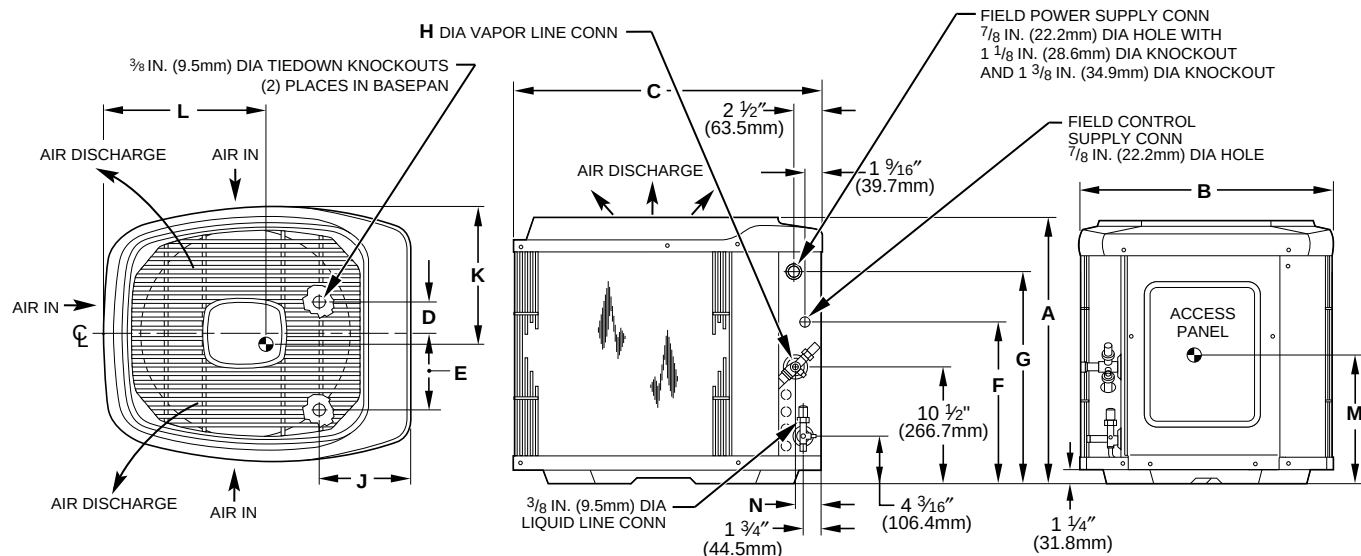
ENGLISH

UNIT	SERIES	ELECTRICAL CHARACTERISTICS		A	B	C	D	E	F	G	H	J	K	L	M	N	SHIPPING WEIGHT
				In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	Lb.
38TUA024	0	X	O	27 ¹³ / ₁₆	22 ¹ / ₂	27 ¹ / ₂	2 ¹³ / ₁₆	6 ¹⁵ / ₁₆	21 ¹ / ₂	21 ⁷ / ₈	⁵ / ₈	8 ³ / ₁₆	12	14 ⁵ / ₈	11	2 ³ / ₈	145
38TUA036	0	X	X	27 ¹³ / ₁₆	30	34 ¹⁵ / ₁₆	4	9 ³ / ₄	15 ¹ / ₂	21 ⁷ / ₈	³ / ₄	8 ³ / ₁₆	16 ¹ / ₄	10 ¹ / ₄	11 ¹ / ₄	2 ¹⁵ / ₁₆	220
38TUA036	1	X	X	27 ¹³ / ₁₆	30	34 ¹⁵ / ₁₆	4	9 ³ / ₄	15 ¹ / ₂	21 ⁷ / ₈	³ / ₄	8 ³ / ₁₆	16 ¹ / ₄	10 ¹ / ₄	11 ¹ / ₄	2 ¹⁵ / ₁₆	240
38TUA048	0	X	X	33 ¹³ / ₁₆	30	34 ¹⁵ / ₁₆	4	9 ³ / ₄	21 ¹ / ₂	27 ⁷ / ₈	⁷ / ₈	8 ³ / ₁₆	16 ¹ / ₄	10 ¹ / ₄	13 ¹ / ₂	2 ¹⁵ / ₁₆	246
38TUA048	1	X	X	33 ¹³ / ₁₆	30	34 ¹⁵ / ₁₆	4	9 ³ / ₄	21 ¹ / ₂	27 ⁷ / ₈	⁷ / ₈	8 ³ / ₁₆	16 ¹ / ₄	10 ¹ / ₄	13 ¹ / ₂	2 ¹⁵ / ₁₆	256
38TUA060	0	O	X	39 ¹³ / ₁₆	30	34 ¹⁵ / ₁₆	4	9 ³ / ₄	27 ¹ / ₂	33 ⁷ / ₈	⁷ / ₈	8 ³ / ₁₆	16 ¹ / ₄	10 ¹ / ₄	15	2 ¹⁵ / ₁₆	303

230-1-50

400-3-50

X = YES
O = NO



UNIT SIZE	MINIMUM MOUNTING PAD DIMENSIONS (mm)	MINIMUM MOUNTING PAD DIMENSIONS (In.)
24	508.0 x 685.8	20 x 27
36, 48, 60	660.4 x 812.8	26 x 32

NOTES:

1. Allow 30 In. (762.0mm) clearance to service side of unit, 48 In. (1219.2mm) above unit, 6 In. (152.4mm) on one side, 12 In. (304.8mm) on remaining side, and 24 In. (609.6mm) between units for proper airflow.
2. Minimum outdoor operating ambient in cooling mode is 55°F (13°C) (unless low ambient control is used), max. 125°F (52°C).
3. Series designation is the 13th position of the unit model number.
4. Center of gravity ●.

GENERAL

System Description

Outdoor-mounted, air-cooled, split-system air conditioner unit suitable for ground or rooftop installation. Unit consists of a hermetic compressor, an air-cooled coil, propeller-type condenser fan, and a control box. Unit will discharge supply air upward as shown on contract drawings. Unit will be used in a refrigeration circuit to match up to a packaged fan coil or coil unit.

Quality Assurance

Unit shall be manufactured in a facility registered to ISO9002/BS5750 Part II, International Standard for quality systems.

Unit will be rated in accordance with the latest edition of ARI Standard 210 and 270.

Unit construction will comply with latest edition of ANSI/ASHRAE and with NEC (U.S.A. Standard).

Unit will be constructed in accordance with UL standards.

Unit cabinet will be capable of withstanding Federal Test Method Standard No. 141 (Method 6061) 500-hr salt spray test (U.S.A. Standard).

Air-cooled condenser coils will be leak tested at 150 psig (1034 KPa) and pressure tested at 300 psig (2068 KPa).

Delivery, Storage, and Handling

Unit will be shipped as single package only and is stored and handled per unit manufacturer’s recommendations.

PRODUCTS

Equipment

Factory assembled, single piece, air-cooled air conditioner unit. Contained within the unit enclosure is all factory wiring, piping, controls, compressor, refrigerant charge (R-22), and special features required prior to field start-up.

Unit Cabinet

Unit cabinet will be constructed of galvanized steel, bonderized, and coated with a powder coat paint.

Fans

Condenser fan will be direct-drive propeller type, discharging air upward.

Condenser fan motors will be totally enclosed, 1-phase type with class B insulation and permanently lubricated bearings.

Shafts will be corrosion resistant.

Fan blades will be statically and dynamically balanced.

Condenser fan openings will be equipped with PVC-coated steel wire safety guards.

Compressor

Compressor will be hermetically sealed.

Compressor will be mounted on rubber vibration isolators.

Condenser Coil

Condenser coil will be air cooled.

Coil will be constructed of aluminum fins mechanically bonded to copper tubes which are then cleaned, dehydrated, and sealed.

Refrigeration Components

Refrigeration circuit components will include liquid line shut-off valve with sweat connections, suction shut-off valves with sweat connections, system charge of refrigerant R-22, and compressor oil.

Operating Characteristics

The capacity of the unit will meet or exceed _____ Btuh (kw) at a suction temperature of _____ °F (°C). The power consumption at full load will not exceed _____ kw.

Combination of the unit and the evaporator or fan coil unit will have a total net cooling capacity of _____ Btuh (kw) or greater at conditions of _____ CFM (L/S) entering air temperature at the evaporator at _____ °F (°C) wet bulb and _____ °F (°C) dry bulb, and air entering the unit at _____ °F (°C).

Electrical Requirements

Nominal unit electrical characteristics will be _____ v, _____ phase, 50 hertz. The unit will be capable of satisfactory operation within voltage limits of _____ v to _____ v.

Unit electrical power will be single point connection.

Control circuit will be 24v.

Special Features

Refer to section of this literature identifying accessories and descriptions for specific features and available enhancements.