

Models ASFC/ASFE 1:1 Ratio w/o coil
 Models ATFC/ATFE 2:1 Ratio w/o coil

Models ASWC/ASWE 1:1 Ratio w/Hot Water Coil
 Models ATWC/ATWE 2:1 Ratio w/Hot Water Coil

Models ASEC/ASEE 1:1 Ratio w/Electric Coil
 Models ATEC/ATEE 2:1 Ratio w/Electric Coil



The Carnes intermittent fan terminal unit provides constant air volume to the space for reheat applications while retaining a variable air volume system during normal cooling operation.

The primary air control assembly operates independently as a standard throttling control valve for cooling loads. As cooling loads diminish, the secondary air supply fan(s) is energized to induce warm ceiling plenum air. A wide variety of control sequences makes this fan powered unit compatible with the most energy efficient system design.

Typical Sequence of Operation

Central fan on — Day (occupied) operation.

When the central system fan is "on", the intermittent fan unit operates as a standard throttling control unit for cooling loads. As the cooling load diminishes and the control valve throttles to a minimum or closed position, the fan is energized by the P/E switch for pneumatic controls or an electric contactor for electronic controls to draw in warm plenum air or hydronically or electrically reheated air.

Central fan off — Night (unoccupied) operation.

When the central system fan is "off", the primary air supply valve is closed. The unit fan is then turned on and off by the P/E switch for pneumatic controls or an electric contactor for electronic controls on demands for heat and no heat respectively.

Note: For electronically controlled units, minimum CFM must be zero. A minimum setting other than zero may cause the damper to throttle open when central system is off.

Features Include:

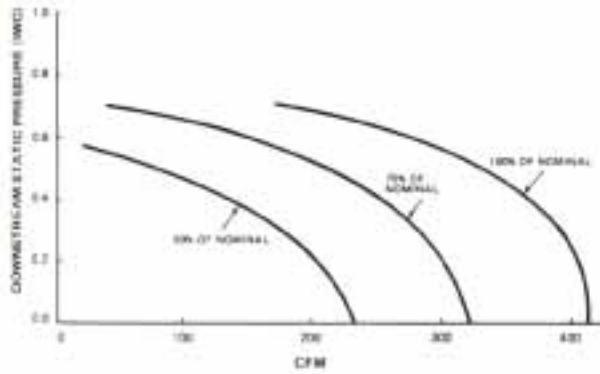
- Air flow capacities from full shut-off to 8000 CFM primary air and 3200 CFM secondary air.
- Two primary to secondary air ratio configurations are available.
- Access panel for internal fan and control components.
- Forward curved centrifugal type fan assembly(s).
- 115, 208 or 277 volt, single phase SCR speed controller.
- Permanent split capacitor type fractional horsepower motor(s).
- Fan/motor assemblies are isolated from the casing using rubber isolators to minimize vibration transmission.
- All units are equipped with pneumatic or electronic pressure independent controls.
- Field adjustable P/E switch with pneumatic controls.
- Insulation is 1½ lb. density fiberglass with surface treated to prevent erosion, meets NFPA 90A requirements.
- Velocity sensor and calibration chart for measuring air flow through the primary air damper.
- Optional ETL listing (Models ASFE/ATFE/ASWE/ATWE/ASEE/ATEE).
- Optional one or two row hot water coils (Models ASWC/ASWE/ATWC/ATWE). Coil is attached to primary air discharge.
- Optional one, two or three stage electric reheat coils (Models ASEC/ASEE/ATEC/ATEE). Coil is attached to primary air discharge.
- Optional filter rack.
- Optional quick release access panel.
- Optional fire rated tubing.
- Optional foil coated insulation (hospital, laboratory, etc. applications).

Available Modules:

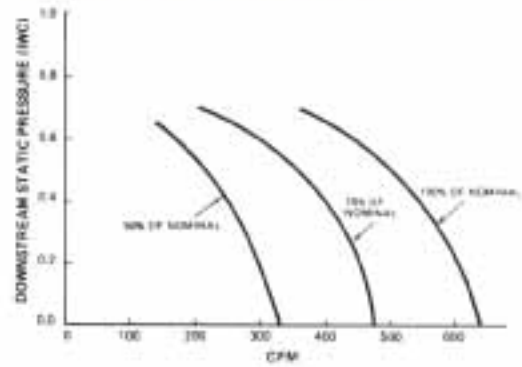
- Basic control unit—Models ASFC/ASFE/ATFC/ATFE.
- Basic control unit with hot water coil—Models ASWC/ASWE/ATWC/ATWE.
- Basic control unit with or without electric coil—Models ASEC/ASEE/ATEC/ATEE.
- Discharge sound attenuator—Model AXAA (See Section 5-Accessories).
- Multi-discharge adaptor—Model AXMA (See Section 5-Accessories).

Performance Data—Models ASFC/ATFC/ASWC/ATWC/ASEC/ATEC ASFE/ATFE/ASWE/ATWE/ASEE/ATEE CFM vs External Static Pressure

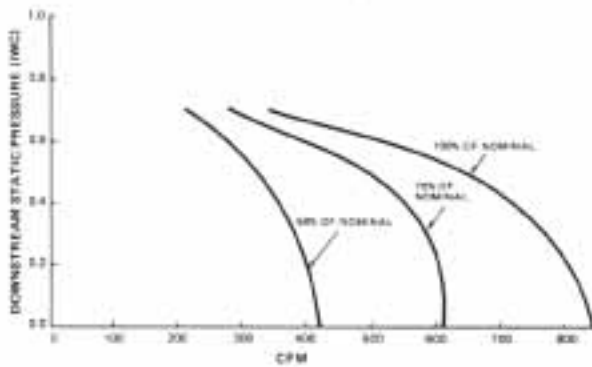
UNIT SIZE 04 1:1 and UNIT SIZE 08 2:1



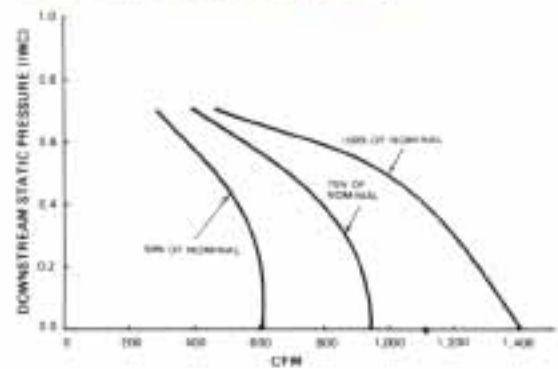
UNIT SIZE 06 1:1 and UNIT SIZE 12 2:1



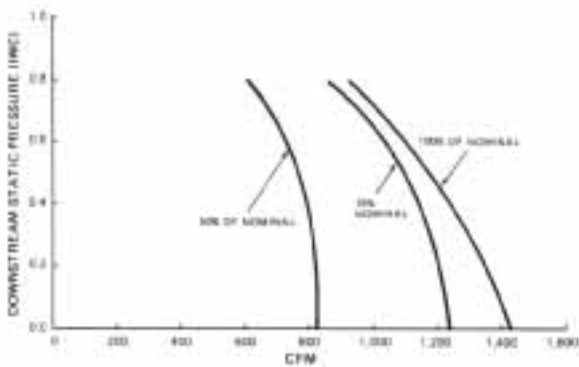
UNIT SIZE 08 1:1 and UNIT SIZE 16 2:1



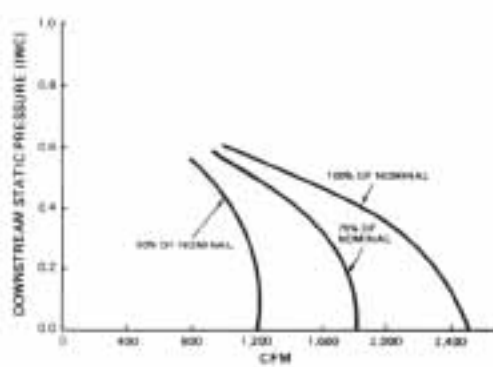
UNIT SIZE 12 1:1 and UNIT SIZE 24 2:1



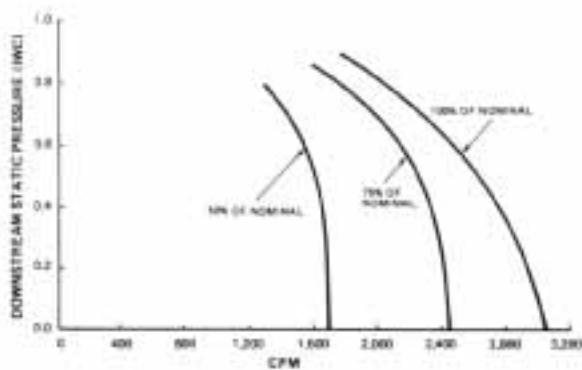
UNIT SIZE 16 1:1 and UNIT SIZE 32 2:1



UNIT SIZE 24 1:1 and UNIT SIZE 45 2:1



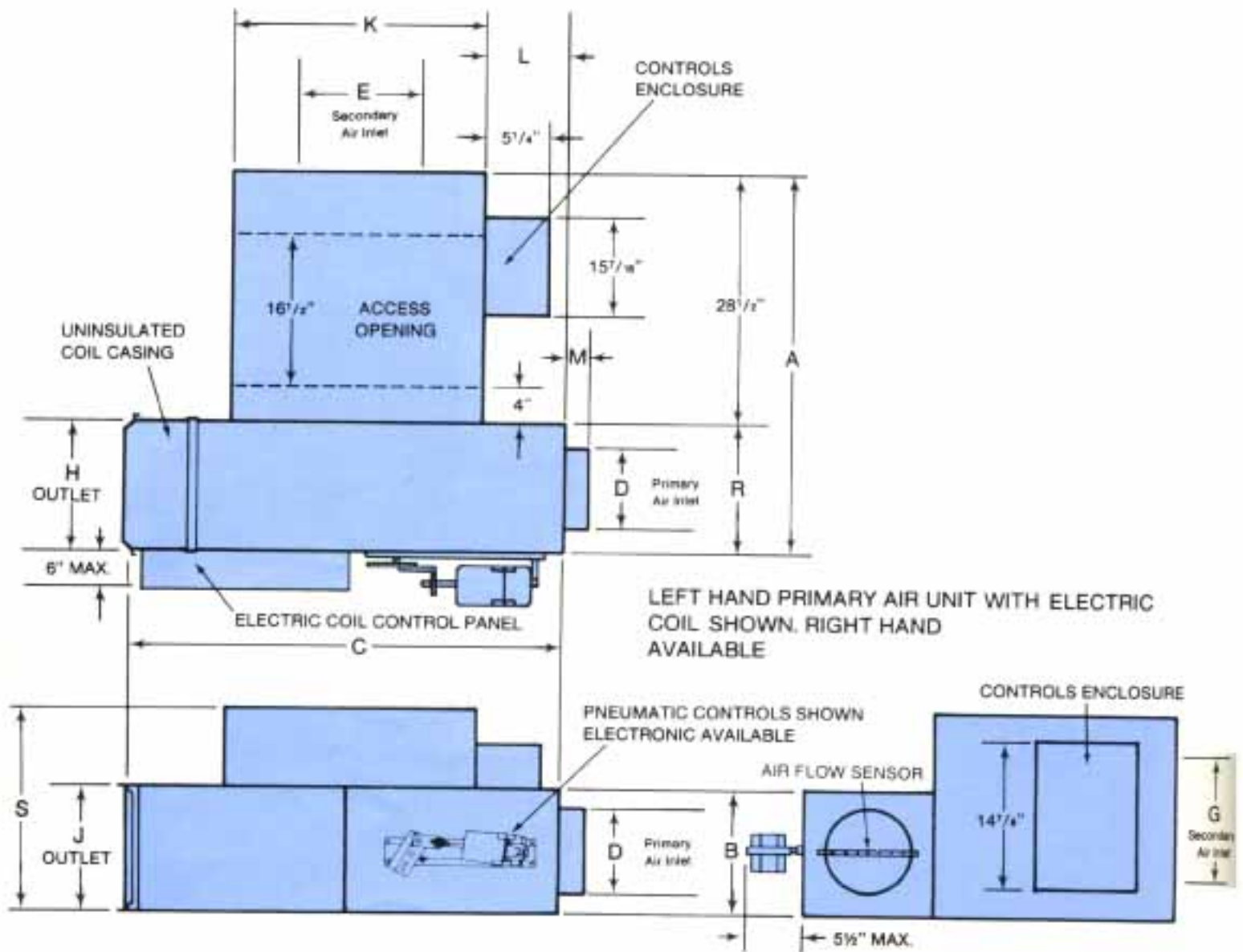
UNIT SIZE 32 1:1 and UNIT SIZE 60 2:1



MOTOR FULL LOAD AMPS

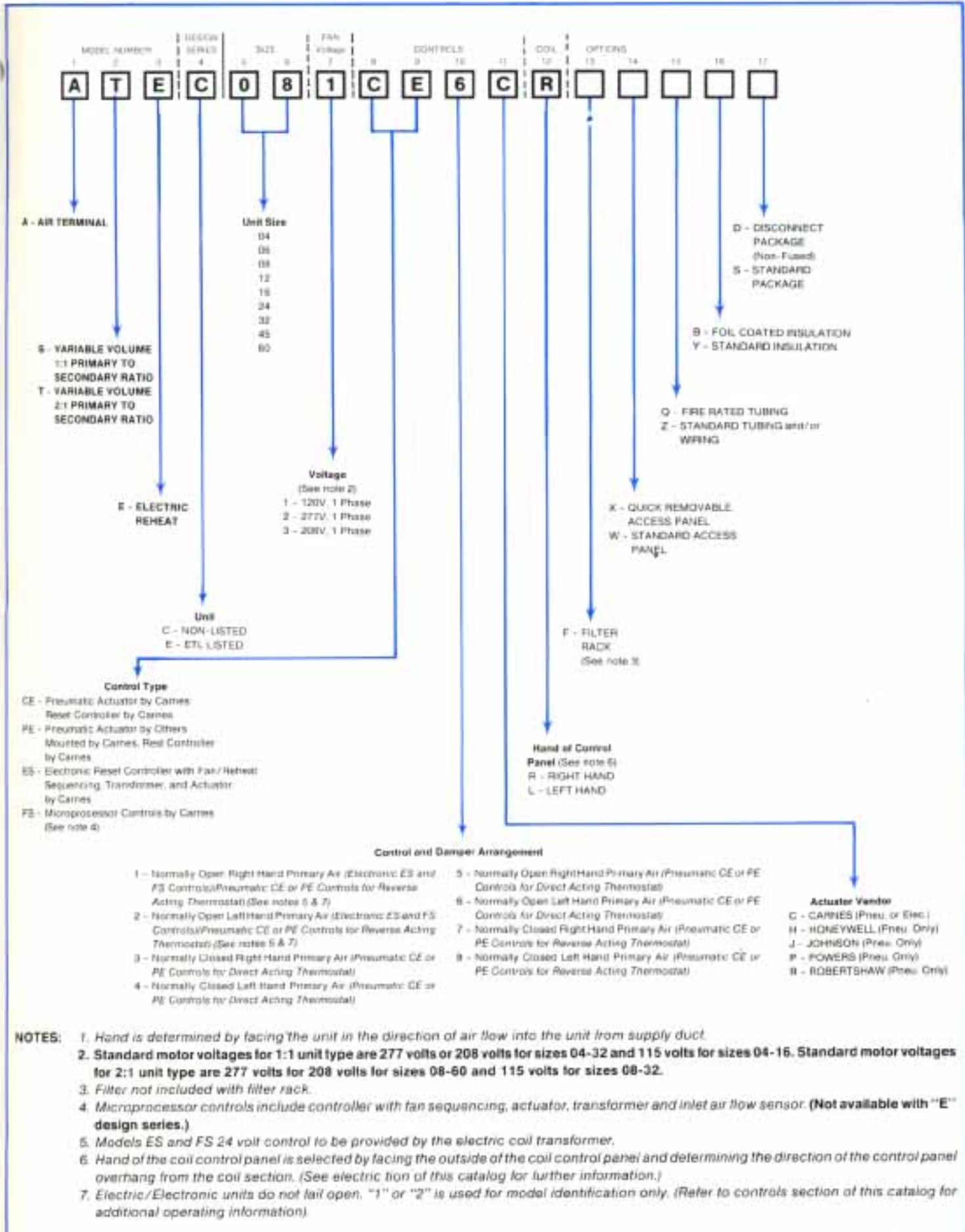
Unit Size 2:1	Unit Size 1:1	HP	Volts	Full Load Amps
08	04	1/8	115	2.1
			208/277	1.1
12	06	1/6	115	3.0
			208/277	1.5
16	08	1/4	115	4.2
			208/277	2.1
24	12	1/3	115	6.4
			208/277	3.2
32	16	1/2	115	8.2
			208/277	4.1
45	24	(2)1/3	115	12.8
			208/277	6.4
60	32	(2)1/2	115	16.4
			208/277	8.2

2 Dimensional Data—Models ASEC/ATEC/ASEE/ATEE-Intermittent Volume Fan Powered Units with Electric Coil



DIMENSION IN INCHES																	
Unit Type	Unit Size	Prim. Nom. CFM	Sec. Nom. CFM	Fan H.P.	A	B	C	D	Secondary Air Inlet		S & Drive Outlet		K	L	M	R	S
									E	G	H	J					
ASEC ASEE 1:1 Ratio	04	400	400	1/8	38 1/2	8	39 1/2	6	10	8	10	8	19 1/2	5 1/2	2 1/4	10	18
	06	600	600	1/8	40 1/2	10	42 1/2	7	12	10	12	10	24	5 1/2	2 1/4	12	18
	08	800	800	1/8	40 1/2	10	45 1/2	8	14	12	12	10	26	5 1/2	2 1/4	12	18
	12	1200	1200	1/8	42 1/2	12	52	10 1/2	16	14	14	12	31	6 1/4	2 1/4	14	18
	16	1600	1600	1/8	44 1/2	14	53 1/2	12	18	16	16	14	33 1/2	6 1/4	2 1/4	16	18
	24	2400	2400	(2) 1/8	46 1/2	16	69 1/2	14	20	18	18	16	42	13 1/4	2 1/4	18	18
ATEC ATEE 2:1 Ratio	32	3200	3200	(2) 1/8	48 1/2	18	71 1/2	16	24	18	20	18	46 1/2	12 1/4	2 1/4	20	20
	08	800	400	1/8	40 1/2	10	41 1/2	8	10	8	12	10	19 1/2	8	2 1/4	12	18
	12	1200	600	1/8	42 1/2	12	45 1/2	10	12	10	14	12	24	7 1/4	2 1/4	14	18
	16	1600	800	1/8	44 1/2	14	49 1/2	12	14	12	16	14	26	9 1/4	2 1/4	16	18
	24	2400	1200	1/8	46 1/2	16	55 1/2	14	16	14	18	16	31	10 1/4	2 1/4	18	18
	32	3200	1600	1/8	48 1/2	18	57 1/2	16	18	16	20	18	33 1/2	10 1/4	2 1/4	20	18
	45	4500	2400	(2) 1/8	52 1/2	18	71 1/2	18 x 16	20	18	24	18	42	15 1/4	3 1/4	24	18
	60	6000	3200	(2) 1/8	60 1/2	18	71 1/2	24 x 16	24	18	32	18	46 1/2	12 1/4	3 1/4	32	20

Refer to Section 4 of this catalog for additional electric coil information.



- NOTES:**
1. Hand is determined by facing the unit in the direction of air flow into the unit from supply duct.
 2. Standard motor voltages for 1:1 unit type are 277 volts or 208 volts for sizes 04-16. Standard motor voltages for 2:1 unit type are 277 volts for 208 volts for sizes 08-60 and 115 volts for sizes 08-32.
 3. Filter not included with filter rack.
 4. Microprocessor controls include controller with fan sequencing, actuator, transformer and inlet air flow sensor. (Not available with "E" design series.)
 5. Models ES and FS 24 volt control to be provided by the electric coil transformer.
 6. Hand of the coil control panel is selected by facing the outside of the coil control panel and determining the direction of the control panel overhang from the coil section. (See electric coil section of this catalog for further information.)
 7. Electric/Electronic units do not fail open. "1" or "2" is used for model identification only. (Refer to controls section of this catalog for additional operating information.)