

# E16 & ES16 SERIES ELECTRIC FURNACES UP-FLO — DOWN-FLO — HORIZONTAL

13,000 to 102,400 Btuh Electric Heating Capacity Add-On Cooling — 1-1/2 thru 5 Nominal Tons

ENGINEERING DATA

#### **HEATING UNITS**

ELECTRIC

Page 1

September 1987

### Multi-Position Line Of Electric Furnaces Provide High Efficiency Performance And Installation Flexibility

The Lennox E16 and ES16 electric furnaces are designed for multi-position installation in a basement, utility room, alcove, closet, crawlspace or attic. Versatile units are applicable to heating only, cooling only, heating-cooling or heat pump applications. Several models are available in varying sizes with a wide range of heating and cooling capacities. The E16Q models are applicable to either up-flo or down-flo installation. The ES16Q series can be installed in the horizontal position only.

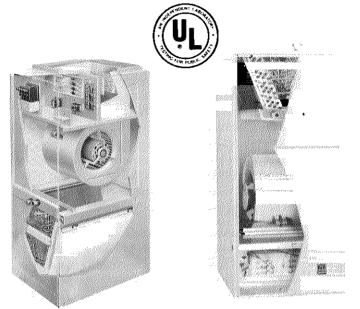
For matching condensing unit data and cooling ratings see section Cooling Units — Condensing Units. For evaporator coil data see Cooling Units — Coils Blower Coil Unit tab section. For heat pump outdoor unit and indoor unit data and ratings see tab section Heat Pumps — Matched Remote Systems.

The optional field additive "slide-in" coil installs internal to the cabinet (up stream from the blower and electric heat elements) and is specially matched to the unit for efficient air delivery and maximum capacity. For up-flo applications optional return air cabinets are available for installation on either side of the unit.

The cabinets are trim and attractive appearing with a durable electro-bonded paint finish. Removable front panels provide complete service access to cabinet interior. Variable speed direct drive blowers have sufficient capacity to handle cooling air volume requirements. Hammock style fiberglass air filters are furnished on E16 up-flo models only. Nichrome heating elements give long service life and efficient heating operation. Factory installed circuit breakers are accessible external to the cabinet. Optional accessories available include thermostat, return air cabinets, down-flo additive base, outdoor thermostat and filter kits.

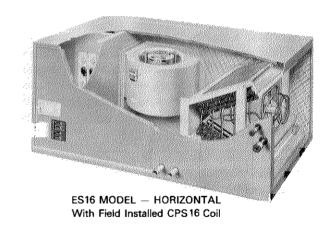
Units have been tested and rated according to Department of Energy (DOE) test procedures and Federal Trade Commission (FTC) labeling regulations in the Lennox Research Laboratory. Furnaces are U.L. listed. In addition, units and components within are bonded for grounding to meet safety standards for servicing required by UL and NEC. Blower performance data is from unit tests conducted in the Lennox Laboratory air test chamber.

Each unit is test operated at the factory and shipped assembled (except for the DX coil) with all controls mounted and prewired. The installer has only to make the necessary field duct and electrical connections.

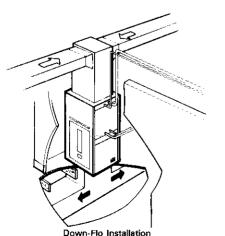


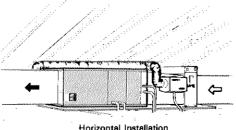
E16 MODEL — UP-FLO
With Field Installed CP16 or CP18 Coil

E16 MODEL -- DOWN-FLO
With Field Installed CP16 or CP18 Coil

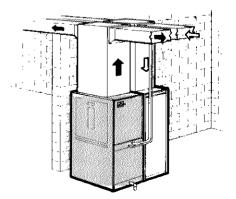


#### Typical Applications





Horizontal Installation
With Electronic Air Cleaner
And Humidifier



Up-Flo Installation With Return Air Cabinet

#### **FEATURES**

**Nichrome Heaters** — The helix wound nichrome bare wire heating elements are exposed directly in the air stream resulting in instant heat transfer, lower element temperatures and long service life. Element support frame is constructed of heavy gauge steel. Porcelain insulators are accurately located for proper element support and best heater operation. Elements may easily be removed from unit individually for service.

**Durable Cabinet** — Constructed of heavy gauge cold rolled steel with a special Lennox "Electro-Deposition" process paint finish. Cabinet interior is lined with 1/2 inch thick 1-1/2 lb. density fiberglass insulation to keep cabinet temperatures low and minimize sound transmission. Leveling holes are provided in base for up-flo units. Installer must furnish bolts and nuts. Electrical inlets are located in side panels and cabinet cap. In addition, refrigerant line and condensate drain knockouts are furnished in the cabinet for field added coils. Complete service access is accomplished by removing the front panels of the cabinet. Blower assembly slides completely out of unit for service. Return air entry is possible in either side or bottom of cabinet for up-flo models.

Cabinet and Blower Process — The cabinet and blower have a special Lennox "Electro-Deposition" process paint finish. Metal preparation consists of a special 6 station wash metal process, 1 — Spray application of a strong alkaline cleaner. 2 — Spray water rinse. 3 - Spray application of a corrosion resistant, paint bonding iron phosphate compound, 4 - Spray water rinse, 5 - Spray application of a chromic acid. 6 - Spray rinse with "de-ionized" water. After the final rinse the cabinet parts and blower enter a drying oven and are completely dried before receiving the paint finish. They are then submerged in the paint vat where an electroplating paint finish is applied. The paint solution and metal are given opposite electrical charges resulting in positive adhesion and even coverge of the paint to the metal surfaces. This process completely covers the entire surfaces, inside and out, including the edges of assembly holes. Following the paint process the finished components enter a high temperature oven where the Electro-bonded finish is baked on.

Circuit Breakers — Units are equipped with circuit breakers to provide overload and short circuit protection. Circuit breakers are factory mounted and wired in the controls compartment. Circuit breakers are current sensitive and temperature compensated to shut off heater if current draw is excessive. Breakers protrude through the element and control access panel for ease of access. Must be reset manually. Circuit breakers qualify as the disconnect means at unit in many areas and eliminate the need for a field supplied disconnect. Consult local electrical code in your area.

**Powerful Blowers** — Units are equipped with variable speed direct drive blowers. Each blower is statically and dynamically balanced as an assembly before it is installed in furnace. Motor is resiliently mounted. A choice of blower speeds is available. See blower performance tables. Change in blower speed is easily accomplished by a simple change in wiring.

**Blower Cooling Relay** — Relay is furnished as standard equipment and factory installed in element and control compartment. Relay activates blower for cooling operation.

**Thermal Sequencer Relay** — Factory installed and wired in element and control compartment. Sequencer brings the heating elements on and off the line, in 5 kw increments, with a time delay between each element. In addition, sequencer initiates and stops blower operation simultaneously with first element on and last element off.

Limit Controls — Each heating element is equipped with an accurately located limit control with a fixed temperature "off" setting and automatic reset. In addition, elements have supplemental thermal cutoff safety fuses providing positive protection in case of hazardous overheating.

**Transformer** — 24 volt (70VA) transformer is furnished as standard equipment and factory installed in the element and control compartment.

Large Air Filter (E16 Up-Flo Models Only) — A large hammock wraparound type filter is furnished standard. Media is one inch thick oil impregnated fiberglass. Filter mounting rack design provides quick and simple replacement of media.

Filter Kit (Optional) — Available on down-flo and horizontal models. Field installs in the return air duct exterior to the unit. 16 x 20 x 1 frame filter is included with kit. 2 kits are required on E16Q4 and E16Q5 down-flo models. Filter media is washable or vacuum cleanable polyurethane coated with oil for increased efficiency. See specification table and dimension drawing.

Additive Coil (Optional) — Field additive "slide-in" up-flo, horizontal or down-flo coils are available for cooling or heat pump operation. Addition of coil to unit cabinet requires no costly, time consuming plenum or duct changes. Simply remove coil access panels and slide coil in place. CH16-51FF and CH16-65V models are in a separate cabinet and attach to return air end of ES16Q5 unit. For complete data on coils see individual bulletins in section Cooling Units — Coils-Blower Coil Units or Heat Pumps — Matched Remote Systems.

Return Air Cabinets (Optional — Up-Flo Only) — Simplifies return air duct connection to E16 up-flo model cabinets. May be installed on either side of the E16 unit. Return air cabinet is constructed of heavy gauge steel with a electro-bonded paint finish. Shipped knocked down and field assembled.

**Down-flo Additive Base (Optional)** — An optional additive base is required for models with electric heat installed in the down-flo position on combustible floors. Base is not furnished and must be ordered extra for field installation. See Specifications table.

Thermostat (Not Furnished) — Heating thermostat is optional equipment and must be ordered extra. For all season applications a heating-cooling thermostat is available with the outdoor unit. Several models can be two stage controlled, see electric heat data table. For two stage heating operation a two stage heating thermostat is required and must be specified when ordering.

Outdoor Thermostat (Optional) — An outdoor thermostat can be used to lock out some of the heating elements on units where two stage control is applicable. Outdoor thermostat maintains the heating load on the low power input as long as possible before allowing the full power load to come on the line. Thermostat (LB-29740BA) and mounting box (M-1595) must be ordered extra.

#### E16 SERIES UP-FLOW AND DOWN-FLO SPECIFICATIONS

Model No.		**E16Q2-00, E16Q2-05 E16Q2-10, E16Q2-15	**E16Q3-00, E16Q3-10, E16Q	E16Q3-15	**E16Q4-00, E16Q4-10 E16Q4-15, E16Q4-20 E16Q4-25		**E16Q5-00, E16Q5-15 E16Q5-20, E16Q5-25 E16Q5-30	
Blower wheel nominal diam. x width (in.)		9 x 7	10 x 8		10 x 8		12 x 12	
Blower mot	or hp	<del>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</del>	1/3	1,	′3	1/	2	3/4
Up-Flow	Net free f	îlter area (sq. ft.)	5.3	6.	.3	9.0		8.7
Models Onl	Y Filter cut	size (in.)	32 x 26 x 1	40 x 2	26 x 1	52 x 26 x 1		50 x 26 x 1
Tons of cod	oling that car	n be added	1-1/2 or 2	2-1/2	or 3	3, 3-1/2 or 4		4 or 5
Shipping weight (lbs.)		121	127		160		192	
Number of packages in shipment		1	1		1		1	
***************************************	CP16 Up-Flow or Down-Flow		CP16-26V	CP16-31V	CP16-41V	CP16-46V	CP16-51V	CP16-65V
†Optional	*CP16 Dow	n-Flow Drain Pan	LB-53197CA	LB-53197CB	LB-53197CC	LB-53197CD	LB-53197CE	LB-53197CF
Additive Coil	CP18 Up-Fid	ow or Down-Flow	CP18-21/26V	CP18-31/41V		CP18-46/51V		CP18-65V
	*CP18 Dow	n-Flow Drain Pan	LB-53197CG	LB-53197CH		LB-53197CE		LB-53197CF
Optional Down-Flow Additive Base		LB-34695BA	LB-35695BB		LB-34695BC		LB-34695BD	
Optional Filter Kit Down-Flow Models Only		LB-53149CB	LB-51349CB		††LB-51349CB		††LB-51349CB	
Optional Return Air Model No.		RA10-16-49		RA10-16-53				
Cabinet (Up-Flow only) Shipping wt. (lbs.)		54			56			
Electrical characteristics		208-240 volt/60 hertz/1 phase					and the state of t	

#### **ES16 SERIES HORIZONTAL SPECIFICATIONS**

Model No.	ES16Q2-00, ES16Q2-05 ES16Q2-10, ES16Q2-15	ES16Q3-00, ES16Q3-05 ES16Q3-10, ES16Q3-15 ES16Q3-20	ES16Q4-00, ES16Q4-05 ES16Q4-10, ES16Q4-15 ES16Q4-20	ES16Q5-00, ES16Q5-15 ES16Q5-20		
Blower wheel nominal diam. x width (in.)	9 x 7	10 x 8	10 x 8	12 x 9		
Blower motor hp	1/3	1/3	1/2	3/4		
Tons of cooling that can be added	1-1/2 or 2	2-1/2 or 3	3 or 3-1/2	4 or 5		
Shipping weight (lbs.)	121	131	140	116		
Number of packages in shipment	1	1	1	1		
Optional Additive Coils	CPS16-26V	CPS16-31V CPS16-41/46V	CPS16-41/46V	CH16-51FF or CH16-65V		
Optional Filter Kit	LB-51349CB — All Models					
Electrical characteristics	208-240 volt/60 hertz/1 phase					

#### **E16 SERIES ELECTRIC HEAT RATINGS**

Model Number	Output Btuh	tA.F.U.E.
E16Q2-05	16,000	100%
E16Q2-10	31,000	100%
E16Q2-15	45,000	100%
E16Q3-05	16,000	100%
E16Q3-10	31,000	100%
E16Q3-15	46,000	100%
E16Q3-20	61,000	100%
E16Q4-10	31,000	100%
E16Q4-15	46,000	100%
E16Q4-20	61,000	100%
E16Q4-25	75,000	100%
E16Q5-15	46,000	100%
E16Q5-20	62,000	100%
E16Q5-25	75,000	100%
E16Q5-30	91,000	100%

†Annual Fuel Utilization Efficiency based on DOE test procedures and according to FTC labeling regulations.

#### **ES16 SERIES ELECTRIC HEAT RATINGS**

Model Number	Output Btuh	†A.F.U.E.
ES16Q2-05	15,000	98.8%
ES16Q2-10	30,000	98.8%
ES16Q2-15	47,000	98.8%
E\$16Q3-05	16,000	99.0%
ES16Q3-10	31,000	99.0%
ES16Q3-15	45,000	99.0%
ES16Q3-20	63,000	99.0%
ES16Q4-05	16,000	99.0%
ES16Q4-10	31,000	99.0%
ES16Q4-15	46,000	99.0%
ES16Q4-20	64,000	99.0%
ES16Q5-15	46,000	99.3%
ES16Q5-20	65,000	99.3%

†Annual Fuel Utilization Efficiency based on DOE test procedures and according to FTC labeling regulations.

<sup>\*\*</sup>Up-Flow Application only.

\*For CP16 or CP18 coils in down-flow applications a special drain pan must be ordered extra for field installation.

\*For CP16 or CP18 coils in down-flow applications a special drain pan must be ordered extra for field installation.

tFor complete coil data see individual bulletins in section Cooling Units — Coils-Blower Coil Units or Heat Pumps — Matched Remote Systems.

<sup>112</sup> kits required for E16Q4 and E16Q5 down-flow models.

#### **ELECTRIC HEAT DATA**

Model No.	No. of Elements	No. of	Voits	Kw	Btuh		num Circuit An	
.7,0401 140.	& Phase	Steps	Input	Input	Input	Circuit 1	Circuit 2	Circuit 3
AND THE PROPERTY OF THE PROPER	***************************************	ANTONIA	208	3.8	13,000	26.0		
E16Q2-05	1	_	220	4.2	14,300	***************************************	***************************************	***************************************
ES16Q2-05	(1 phase)	1	230	4.6	15,700	30.0		
			240	5.0	17,100	1		
******************************			208	7.5	25,600	49.0		
E16Q2-10	2		220	8.4	28,700	70.0		
ES16Q2-10	(1 phase)	2	230	9.2	31,400	56.0		
10   (1 p	( i priaso)		240	10.0	34,100	56.0		
		**************************************	THE RESIDENCE AND ADDRESS OF THE PARTY OF TH					
tE16Q2-15			208	11.2	38,200	49.0	23.0	
	3	3	220	12.6	43,000			
tES16Q2-15	(1 phase)		230	13.7	46,700	56.0	26.0	
*******************		*************************	240	15.0	51,200			
			208	3.8	13,000	26.0		
E16Q3-05	1	1	220	4.2	14,300			
ES16Q3-05	(1 phase)	'	230	4.6	15,700	29.0		
			240	5.0	17,100			
			208	7.5	25,600	49.0		
E16Q3-10	2	_	220	8.4	28,700	***************************************		***************************************
ES16Q3-10	(1 phase)	2	230	9.2	31,400	56.0		
== · · ·			240	10.0	34,100	1 50.0		
WHE CHANGE OF THE PROPERTY AND THE PROPE	***************************************	······································	208	11.2	38,200	49.0	23.0	<del></del>
†E16Ω3-15	3		220	12.6		43.0	23.0	
		3			43,000		20.0	
tES16Q3-15	(1 phase)		230	13.7	46,700	56.0	26.0	
		*****	240	15.0	51,200			
			208	15.1	51,500	49.0	45.0	
†E16Q3-20	4	4	220	16.9	57,700			
tES16Q3-20	(1 phase)	7	230	18.5	63,100	56.0	52.0	
***************************************			240	20.0	68,300	7		
		***************************************	208	3.8	13,000	28.0		
E04004.0E	1 1	_	220	4.2	14,300	31.0		
ES16Q4-05	(1 phase)	1	230	4.6	15,700			
	1		240	5.0	17,100			
*********************	# ************************************	<del>  </del>	208	7.5	25,600	50.0		
E16Q4-10	2		220	8.4	28,700		***************************************	
ES16Q4-10	(1 phase)	2	230	9.2	31,400	E7 0		
E310Q4-10	(1 pilase)		240	10.0		57.0		
******************************		·//			34,100			ļ.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
+F1604 1E	1 , 1		208	11.2	38,200	50.0	23.0	
tE16Q4-15	3	3	220	12.6	43,000			
tES16Q4-15	(1 phase)		230	13.7	46,700	57.0	26.0	
			240	15.0	51,200			
			208	15.1	51,500	50.0	45.0	
tE16Q4-20	4	Λ	220	16.9	57,700			
tES16Q4-20	(1 phase)	4	230	18.5	63,100	57.0	52.0	
			240	20.0	68,300			
		***************************************	208	18.6	63,500	50.0	45.0	23.0
	5	_	220	20.8	71,000			
tE16Q4-25	(1 phase)	5	230	22.7	77,500	57.0	52.0	26.0
	`` [		240	25.0	85,300	37.0	JZ.0	20.0
<del>)</del>			208	11.2		E3 A	22.0	
†E16Q5-15	,			***************************************	38,200	52.0	23.0	
	3 (1 - 5 )	3	220	12.6	43,000			
tES16Q5-15	(1 phase)		230	13.7	46,700	59.0	26.0	
***************************************		· · · · · · · · · · · · · · · · · · ·	240	15.0	51,200	***************************************		
			208	15.1	51,500	52.0	45.0	
†E16Ω5-20	4	4	220	16.9	57,700			
tES16Q5-20	(1 phase)	nase) <u>230</u>	18.5	63,100	59.0	52.0		
			240	20.0	68,300			
			208	18.6	63,500	52.0	45.0	23.0
1 <b>2</b> 1005 55	ll 5	_	220	20.8	71,000	***************************************		***************************************
tE16Q5-25	(1 phase)	5	230	22.7	77,500	59.0	52.0	26.0
	(, p,1030)		240	25.0	85,300	33.0	52.0	20.0
***************************************		************************************	208			E2 2	AF O	45.5
				22.5	76,800	52.0	45.0	45.0
†E16Q5-30	6 (1 = 6 = -2)	6	220	25.2	86,000	=		
	(1 phase)		230	27.5	93,800	59.0	52.0	52.0
	11	İ	240	30.0	102,400			I

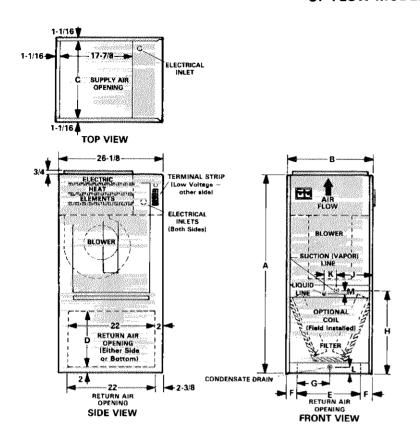
<sup>\*</sup>Refer to National Electrical Code manual to determine wire, fuse and disconnect size requirements.

Use wires suitable for at least 167°F.

†May be used with two stage heating.

#### **DIMENSIONS** (inches)

#### **UP-FLOW MODELS**



#### **U.L. INSTALLATION CLEARANCES**

Cabinet	0 inch
Plenum and Outlet duct on blower/coil units	0 inch
Plenum and warm air duct within 3 feet of cabinet	1 inch
Floor	*Combustible

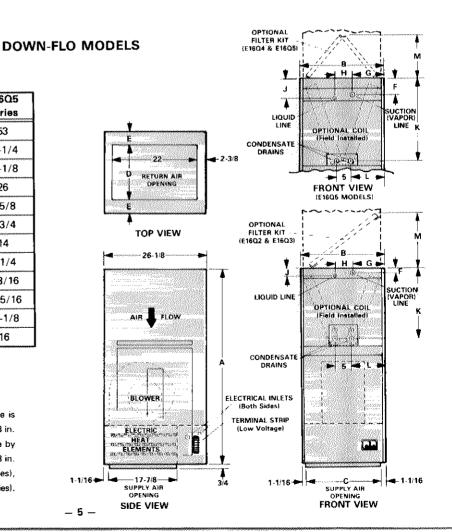
<sup>\*</sup>When unit is installed in the down-flo position with electric heat on a combustible floor the optional down-flo base is required.

Model No.	E16Q2 Series	E16Q3 Series	E16Q4 Series	E16Q5 Series
А	49,	49	53	53
В	16-1/4	21-1/4	26-1/4	31-1/4
С	14-1/8	19-1/8	24-1/8	29-1/8
D	14	14	18	18
Е	11	14	21	26
F	2-5/8	3-5/8	2-5/8	2-5/8
G	5-1/2	7	10-1/2	13
Н	21-1/8	21-1/8	24-11/16	22
J	6-1/4	8-7/8	10-3/8	14
K	3-3/4	3-3/4	4-3/4	5-1/4
L	2	2	1-3/4	1-5/16
М	1	1	3/4	1/2

Model No.	E16Q2 Series	E16Q3 Series	E16Q4 Series	E16Q5 Series
Α	49	49	53	53
В	16-1/4	21-1/4	26-1/4	31-1/4
С	14-1/8	19-1/8	24-1/8	29-1/8
D	11	14	21	26
E	2-5/8	3-5/8	2-5/8	2-5/8
F	1-1/2	1-1/2	1-1/2	4-3/4
G	6-1/4	8-7/8	10-3/8	14
Н	3-3/4	3-3/4	4-3/4	5-1/4
J	2-3/8	2-3/8	1-3/4	5-3/16
К	112-13/16	*14-13/16	**17-3/16	21-5/16
Ł	5-5/8	8-1/8	10-5/8	13-1/8
М	17-1/4	15-1/2	18	16

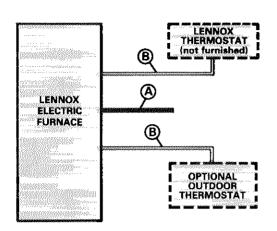
- \*17-3/8 with CP16-41V or CP18-31/41V down-flow coils.
- \*\*21-3/4 with CP16-51V or CP18-46/51V down-flow coils.
- t14-13/16 with CP18-21/26V down-flow coil.

NOTE — When installing on a combustible floor, an additive base is required. Make an opening in the floor — 15-5/8 in. wide by 20-1/8 in. front to rear for LB-34695BA base (E16Q2 series), 21-3/8 in. wide by 20-1/8 in. front to rear for LB-34695BB base (E16Q3 series), 26-3/8 in. wide by 20-1/8 in. front to rear for LB-34695BC base (E16Q4 series), 31-3/8 in. wide by 20-1/8 in. front to rear for LB-34695BD (E16Q5 series).



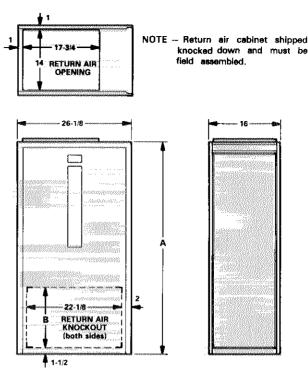
### OPTIONAL RETURN AIR CABINET (For Up-Flow Models Only)

#### **FIELD WIRING**



- A Two wire power for each circuit required. (not furnished) See Electrical Data table.
- B Two wire low voltage (not furnished) 18 ga. minimum.

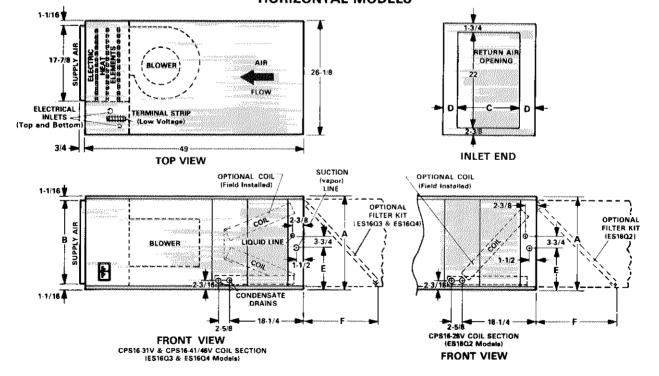
NOTE - All wiring must conform to NEC and local electrical codes.



Model No.	RA10-16-49	RA10-16-53
Α	49	53
В	14	16

#### **DIMENSIONS** (inches)

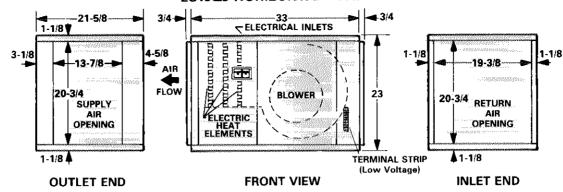
#### ES16Q2 — ES16Q3 — ES16Q4 HORIZONTAL MODELS



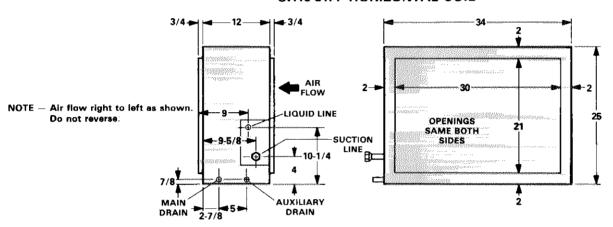
Model No.	Α	В	С	D	Е	F	
ES16Q2 Series	16-1/4	14-1/8	11	2-5/8	6-1/4	17-1/4	
ES16Q3 Series	04.4.4	s 21-1/4 19-1/8	10.1/0	14	3-5/8	8-7/8	15-1/2
ES16Q4 Series	21-1/4	19-1/6	14	3-5/6	0-7/8	15-1/2	

#### **DIMENSIONS** (inches)

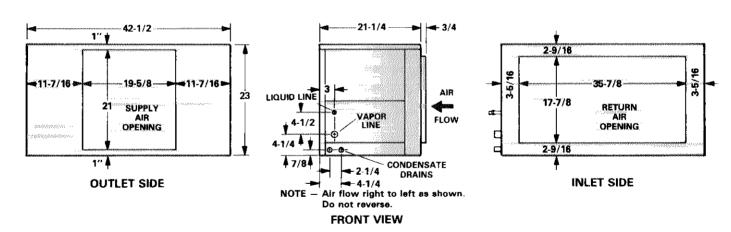
#### **ES16Q5 HORIZONTAL MODELS**



#### **CH16-51FF HORIZONTAL COIL**

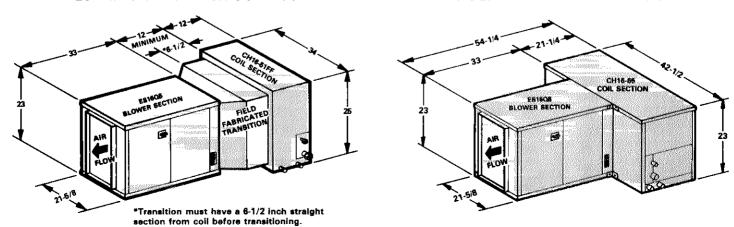


#### CH16-65V HORIZONTAL COIL



#### ES16Q5 UNIT WITH CH16-51FF COIL

#### ES16Q5 UNIT WITH CH16-65V COIL



#### **BLOWER DATA**

#### **BLOWER PERFORMANCE**

#### E16Q2 UP-FLOW OR DOWN-FLOW ES16Q2 HORIZONTAL WITH †ELECTRIC HEAT ONLY

#### E16Q2 UP-FLOW WITH CP16-26 OR CP18-21/26 COIL ES16Q2 HORIZONTAL WITH CPS16-26 COIL WITH †ELECTRIC HEAT

External Static	Air Volume	(cfm) @ Vari	ous Speeds
Pressure (in. wg.)	High	Medium	Low
0	1355	1085	955
.05	1335	1085	955
.10	1305	1085	955
.15	1275	1075	955
.20	1240	1060	955
.25	1205	1045	950
.30	1170	1020	925
.40	1100	970	890
.50	1000	900	840
.60	915	835	775

NOTE - All cfm is measured external to the unit with the air filter in place.
†Electric heat resistance reflects heater with maximum resistance (3 elements). To
determine resistance of heater with less elements, deduct 0.05 external static
pressure (in. wg.) per element.

External Static	Air Volume (cfm) @ Various Speeds			
Pressure (in. wg.)	High	Medium	Low	
0	1175	1015	915	
.05	1150	995	905	
.10	1120	980	900	
.15	1090	960	895	
.20	1060	940	885	
.25	1030	920	875	
.30	1000	895	860	
.40	930	840	815	
.50	840	750	725	
.60	690			

NOTE — All cfm is measured external to the unit with the air filter in place. †Electric heat resistance reflects heater with maximum resistance (3 elements). To determine resistance of heater with less elements, deduct 0.05 external static pressure (in. wg.) per element.

#### E16Q2 DOWN-FLOW WITH CP16-26 COIL AND †ELECTRIC HEAT

External Static	Air Volum	e (cfm) @ Vari	ous Speeds
Pressure (in. wg.)	High	Medium	Low
0	1160	1020	945
.05	1135	1000	945
.10	1105	980	925
.15	1070	960	910
.20	1040	940	890
.25	1005	915	865
.30	960	885	835
.40	890	820	760
.50	790	725	665

NOTE — All cfm is measured external to the unit with the air filter in place. †Electric heat resistance reflects heater with maximum resistance (3 elements). To determine resistance of heater with less elements, deduct 0.05 external static pressure (in. wg.) per element.

#### E16Q2 DOWN-FLOW WITH CP18-21/26 COIL AND TELECTRIC HEAT

External Static	Air Volume (cfm) @ Various Speeds		
Pressure (in. wg.)	High	Medium	Low
0	1030	945	910
.05	1005	925	885
.10	980	900	865
.15	950	870	<b>84</b> 0
.20	920	845	815
.25	890	815	785
.30	850	760	755
.40	760	705	660
.50	640	560	

NOTE — All cfm is measured external to the unit with the air filter in place. tElectric heat resistance reflects heater with maximum resistance (3 elements). To determine resistance of heater with less elements, deduct 0.05 external static pressure (in. wg.) per element.

#### E16Q3 UP-FLOW OR DOWN-FLOW ES16Q3 HORIZONTAL WITH †ELECTRIC HEAT

External Static	Air V	Air Volume (cfm) @ Various Speeds			
Pressure (in. wg.)	High	Med-High	Med-Low	Low	
0	1550	1365	1130	945	
.05	1545	1360	1130	945	
.10	1540	1355	1130	940	
.15	1530	1350	1130	940	
.20	1520	1345	1130	935	
.25	1510	1340	1125	930	
.30	1500	1335	1120	925	
.40	1475	1315	1105	905	
.50	1435	1280	1080	880	
.60	1370	1225	1025	835	

NOTE — All cfm is measured external to the unit with the air filter in place. †Electric heat resistance reflects heater with maximum resistance (3 elements). To determine resistance of heater with less elements, deduct 0.05 external static pressure (in, wg.) per element.

# E16Q3 UP-FLOW WITH CP16-31 OR CP18-31/41 COIL AND †ELECTRIC HEAT

External Static	Air Volume (cfm) @ Vari			peeds
Pressure (in. wg.)	High	Med-High	Med-Low	Low
0	1520	1360	1115	950
.05	1520	1360	1110	950
.10	1510	1360	1110	945
.15	1510	1350	1100	940
.20	1490	1340	1090	930
.25	1470	1325	1085	925
.30	1450	1310	1080	920
.40	1400	1275	1055	890
.50	1350	1230	1020	860
.60	1280	1170	980	810

NOTE - All cfm is measured external to the unit with the air filter in place. †Electric heat resistance reflects heater with maximum resistance (4 elements). To determine resistance of heater with less elements, deduct 0.05 external static pressure (in. wg.) per element.

#### **BLOWER DATA**

#### **BLOWER PERFORMANCE**

#### E16Q3 UP-FLOW OR DOWN-FLOW WITH CP16-41 COIL AND †ELECTRIC HEAT

External Static	Air V	Air Volume (cfm) @ Various Speeds			
Pressure (in. wg.)	High	Med-High	Med-Low	Low	
0	1530	1350	1090	920	
.05	1510	1340	1085	915	
.10	1490	1320	1080	910	
.15	1465	1310	1075	905	
.20	1450	1295	1070	895	
.25	1420	1280	1060	885	
.30	1400	1260	1050	880	
.40	1350	1225	1030	850	
.50	1295	1180	985	810	
.60	1230	1120	925	740	

NOTE — All cfm is measured external to the unit with the air filter in place. †Electric heat resistance reflects heater with maximum resistance (4 elements). To determine resistance of heater with less elements, deduct 0.05 external static pressure (in. wg.) per element.

#### E16Q3 DOWN-FLOW WITH CP16-31 OR CP18-31/41 COIL AND TELECTRIC HEAT

External Static	Air Volume (cfm) @ Various Speeds			peeds
Pressure (in. wg.)	High	Med-High	Med-Low	Low
0	1490	1365	1130	950
.05	1470	1350	1125	940
.10	1450	1330	1115	930
.15	1430	1315	1105	920
.20	1410	1295	1090	910
.25	1380	1275	1075	900
.30	1350	1250	1060	890
.40	1300	1205	1030	860
.50	1230	1145	980	810
.60	1140	1065	905	720

NOTE — All cfm is measured external to the unit with the air filter in place. †Electric heat resistance reflects heater with maximum resistance (4 elements). To determine resistance of heater with less elements, deduct 0.05 external static pressure (in. wg.) per element.

#### E16Q4 UP-FLOW WITH CP16-46 COIL AND TELECTRIC HEAT

External Static	Air Volume (cfm) @ Various Sp		ous Speeds
Pressure (in. wg.)	High	Medium	Low
0	1920	1460	1070
.05	1885	1450	1070
.10	1840	1440	1080
.15	1810	1430	1080
.20	1770	1415	1085
.25	1730	1400	1085
.30	1690	1380	1085
.40	1620	1335	1070
.50	1540	1280	1050
.60	1450	1210	1000

NOTE — All cfm is measured external to the unit with the air filter in place. tElectric heat resistance reflects heater with maximum resistance (5 elements). To determine resistance of heater with less elements, deduct 0.05 external static pressure (in. wg.) per element.

## ES16Q3 HORIZONTAL WITH CPS16-31 or CPS16-41/46 COIL AND †ELECTRIC HEAT

External Static	Air V	Air Volume (cfm) @ Various Speeds			
Pressure (in. wg.)	High	Med-High	Med-Low	Low	
0	1450	1340	1165	980	
.05	1430	1325	1150	970	
.10	1400	1300	1135	960	
.15	1380	1280	1120	945	
.20	1350	1260	1100	930	
.25	1320	1240	1085	915	
.30	1290	1210	1060	900	
.40	1230	1160	1010	860	
.50	1160	1090	960	810	
.60	1070	1010	890	750	

NOTE — All cfm is measured external to the unit with the air filter in place. †Electric heat resistance reflects heater with maximum resistance (4 elements). To determine resistance of heater with less elements, deduct 0.05 external static pressure (in. wg.) per element.

### E16Q4 UP-FLOW OR DOWN-FLOW WITH †ELECTRIC HEAT ONLY

External Static	Air Volume (cfm) @ Various Speeds			
Pressure (in. wg.)	High	Medium	Low	
0	2040	1530	1180	
.05	2020	1540	1180	
.10	1995	1550	1175	
.15	1970	1555	1170	
.20	1945	1555	1165	
.25	1920	1550	1160	
.30	1890	1540	1150	
.40	1830	1520	1130	
.50	1750	1490	1110	
.60	1660	1470	1090	

NOTE — All cfm is measured external to the unit with the air filter in place. felectric heat resistance reflects heater with maximum resistance (5 elements). To determine resistance of heater with less elements, deduct 0.05 external static pressure (in. wg.) per element.

## E16Q4 UP-FLOW WITH CP16-51 OR CP18-46/51 COIL AND TELECTRIC HEAT

External Static	ternal Static Air Volume (cfm) @ Vario		ous Speeds
Pressure (in. wg.)	Hìgh	Medium	Low
0	1930	1420	1070
.05	1900	1410	1080
.10	1865	1400	1080
.15	1830	1390	1090
.20	1790	1380	1090
.25	1760	1370	1090
.30	1720	1360	1080
.40	1640	1320	1070
.50	1560	1280	1060
.60	1460	1220	1010

NOTE — All cfm is measured external to the unit with the air filter in place. †Electric heat resistance reflects heater with maximum resistance (5 elements). To determine resistance of heater with less elements, deduct 0.05 external static pressure (in. wg.) per element.

## BLOWER DATA BLOWER PERFORMANCE

#### E16Q4 DOWN-FLOW WITH CP16-46 COIL AND †ELECTRIC HEAT

#### E16Q4 DOWN-FLO WITH CP16-51 COIL AND †ELECTRIC HEAT

High

1870

1830

Air Volume (cfm) @ Various Speeds

Medium

1500

1480

Low

1130

1130

External Static	Air Volum	e (cfm) @ Vario	us Spee
Pressure (in. wg.)	High	Medium	Low
0	1870	1495	1150
.05	1820	1480	1130
.10	1770	1460	1120
.15	1730	1440	1110
.20	1700	1420	1100
.25	1660	1395	1100
.30	1630	1370	1090
.40	1550	1320	1080
.50	1480	1270	1050
.60	1400	1200	1010

٠.,.	1400	1120	 .10	1790	1460	1140	
	1440	1110	.15	1755	1440	1140	
	1420	1100	.20	1720	1420	1135	
	1395	1100	.25	1680	1390	1130	
	1370	1090	.30	1650	1360	1120	
	1320	1080	.40	1570	1310	1090	
	1270	1050	.50	1480	1250	1050	
	1200	1010	.60	1390	1190	1010	

**External Static** 

Pressure

(in. wg.)

.05

NOTE — All cfm is measured external to the unit with the air filter in place. †Electric heat resistance reflects heater with maximum resistance (5 elements). To determine resistance of heater with less elements, deduct 0.05 external static pressure (in. wg.) per element.

NOTE - All cfm is measured external to the unit with the air filter in place. †Electric heat resistance reflects heater with maximum resistance (5 elements). To determine resistance of heater with less elements, deduct 0.05 external static pressure (in. wg.) per element.

#### E16Q4 DOWN-FLOW WITH CP18-46/51 COIL AND †ELECTRIC HEAT

### ES16Q4 HORIZONTAL WITH †ELECTRIC HEAT ONLY

External Static	Air Volum	e (cfm) @ Vario	us Speed
Pressure (in. wg.)	High	Medium	Low
0	1770	1490	1170
.05	1740	1475	1160
.10	1710	1460	1150
.15	1680	1440	1140
.20	1650	1420	1130
.25	1610	1390	1120
.30	1570	1360	1110
.40	1500	1310	1080
.50	1420	1240	1040
.60	1330	1160	1010

External Static	Air Volum	e (cfm) @ Vario	us Spee
Pressure (in. wg.)	High	Medium	Low
0	2000	1570	1175
.05	1960	1550	1170
.10	1930	1535	1160
.15	1880	1520	1150
.20	1840	1500	1140
.25	1800	1475	1130
.30	1760	1450	1120
.40	1675	1400	1000
.50	1580	1350	1060
.60	1490	1280	1020
.70	1390	1200	950

NOTE — All cfm is measured external to the unit with the air filter in place. †Electric heat resistance reflects heater with maximum resistance (5 elements). To determine resistance of heater with less elements, deduct 0.05 external static pressure (in. wg.) per element.

NOTE — All cfm is measured external to the unit with the air filter in place. †Electric heat resistance reflects heater with maximum resistance (4 elements). To determine resistance of heater with less elements, deduct 0.05 external static pressure (in. wg.) per element.

# ES16Q4 HORIZONTAL WITH CPS16-41/46 COIL AND †ELECTRIC HEAT

### E16Q5 UP-FLOW OR DOWN-FLOW WITH †ELECTRIC HEAT ONLY

External Static	Air Volum	e (cfm) @ Vario	us Speed
Pressure (in. wg.)	High	Medium	Low
0	1620	1430	1160
.05	1595	1410	1155
.10	1570	1385	1145
.15	1535	1360	1130
.20	1500	1330	1110
.25	1465	1300	1090
.30	1430	1270	1060
.40	1350	1200	1010
.50	1265	1135	945
.60	1175	1060	880
.70	1080	985	800

External Static	c Air Volume (cfm) @ Various Speeds					
Pressure (in. wg.)	High	Med-High	Medium	Med-Low	Low	
0	2855	2610	2315	1985	1715	
.05	2830	2585	2290	1970	1695	
.10	2800	2560	2265	1945	1670	
.15	2775	2535	2240	1925	1645	
.20	2745	2510	2210	1905	1620	
.25	2715	2480	2185	1880	1590	
.30	2680	2445	2160	1850	1560	
.40	2605	2375	2100	1795	1500	
.50	2510	2295	2030	1725	1430	
.60	2380	2190	1955	1640	1360	

NOTE — All cfm is measured external to the unit with the air filter in place. †Electric heat resistance reflects heater with maximum resistance (4 elements). To determine resistance of heater with less elements, deduct 0.05 external static pressure (in. wg.) per element.

NOTE — All cfm is measured external to the unit with the air filter in place. †Electric heat resistance reflects heater with maximum resistance (6 elements). To determine resistance of heater with less elements, deduct 0.05 external static pressure (in. wg.) per element.

#### **BLOWER DATA**

#### **BLOWER PERFORMANCE**

## E16Q5 UP-FLOW WITH CP16-65 OR CP18-65 COIL AND †ELECTRIC HEAT

External Static	Air Volume (cfm) @ Various Speeds					
Pressure (in. wg.)	High	Med-High	Medium	Med-Low	Low	
0	2525	2340	2105	1860	1655	
.05	2490	2305	2080	1835	1610	
.10	2450	2270	2050	1805	1575	
.15	2410	2240	2020	1775	1540	
.20	2370	2205	1990	1745	1505	
.25	2330	2170	1960	1715	1470	
.30	2290	2135	1930	1785	1440	
.40	2210	2060	1860	1615	1370	
.50	2120	1970	1790	1545	1295	
.60	2020	1880	1700	1465	1215	

NOTE — All cfm is measured external to the unit with the air filter in place. †Electric heat resistance reflects heater with maximum resistance (6 elements). To determine resistance of heater with less elements, deduct 0.05 external static pressure (in. wg.) per element.

#### E16Q5 DOWN-FLOW WITH CP18-65 COIL AND †ELECTRIC HEAT

External Static	Air	Air Volume (cfm) @ Various Speeds					
Pressure (in. wg.)	High	Med-High	Medium	Med-Low	Low		
0	2500	2280	2010	1810	1530		
.05	2480	2260	1980	1780	1505		
.10	2450	<b>223</b> 0	1960	1760	1485		
.15	2410	2200	1940	1730	1465		
.20	2370	2170	1910	1705	1445		
.25	2330	2140	1880	1675	1420		
.30	2290	2110	1885	1645	1400		
.40	2230	2080	1800	1580	1350		
.50	2150	2010	1730	1520	1280		
.60	2050	1930	1650	1450	1200		

NOTE — All cfm is measured external to the unit with the air filter in place. †Electric heat resistance reflects heater with maximum resistance (6 elements). To determine resistance of heater with less elements, deduct 0.05 external static pressure (in. wg.) per element.

#### ES16Q5 HORIZONTAL WITH CH16-51FF COIL AND †ELECTRIC HEAT

External Static	Air	Volume (cf	m) @ Vari	ous Speeds	
Pressure (in. wg.)	High	Med-High	Medium	Med-Low	Low
0	2410	2280	2130	1850	1630
.05	2375	2265	2100	1830	1610
.10	2340	2250	2075	1810	1585
.15	2310	2225	2050	1790	1560
.20	2275	2200	2015	1760	1535
.25	2240	2170	1985	1735	1510
.30	2205	2140	1950	1710	1480
.40	2135	2070	1880	1650	1430
.50	2055	1990	1810	1585	1370
.60	1970	1910	1740	1520	1300

NOTE — All cfm is measured external to the unit with the air filter in place. †Electric heat resistance reflects heater with maximum resistance (4 elements). To determine resistance of heater with less elements, deduct 0.05 external static pressure (in. wg.) per element.

#### E16Q5 DOWN-FLOW WITH CP16-65 COIL AND †ELECTRIC HEAT

External Static	Air Volume (cfm) @ Various Speeds					
Pressure (in. wg.)	High	Med-High	Medium	Med-Low	Low	
0	2490	2350	2165	1930	1680	
.05	2460	2320	2140	1900	1655	
.10	2430	2290	2110	1870	1630	
.15	2395	2255	2080	1845	1605	
.20	2360	2220	2050	1815	1580	
.25	2325	2185	2020	1785	1550	
.30	2285	2140	1980	1750	1520	
.40	2200	2050	1900	1675	1460	
.50	2090	1955	1800	1575	1380	
.60	1930	1815	1650	1430	1270	

NOTE — All cfm is measured external to the unit with the air filter in place. tElectric heat resistance reflects heater with maximum resistance (6 elements). To determine resistance of heater with less elements, deduct 0.05 external static pressure (in. wg.) per element.

### ES16Q5 HORIZONTAL WITH †ELECTRIC HEAT ONLY

External Static	Air	Volume (cf	m) @ Vari	Various Speeds	
Pressure (in. wg.)	High	Med-High	Medium	Med-Low	Low
0	2600	2400	2180	1880	1615
.05	2570	2360	2160	1860	1600
.10	2530	2330	2130	1840	1585
.15	2500	2300	2110	1820	1570
.20	2470	2280	2090	1800	1555
.25	2435	2250	2060	1780	1540
.30	2400	2220	2035	1760	1525
.40	2330	2160	1985	1720	1490
.50	2260	2100	1930	1680	1450
.60	2180	2030	1870	1620	1410
.70	2110	1960	1810	1570	1360

NOTE — All cfm is measured external to the unit with the air filter in place. tElectric heat resistance reflects heater with maximum resistance (4 elements). To determine resistance of heater with less elements, deduct 0.05 external static pressure (in. wg.) per element.

#### ES16Q5 HORIZONTAL WITH CH16-65V COIL AND †ELECTRIC HEAT

External Static	Alr	Air Volume (cfm) @ Various Speeds					
Pressure (in. wg.)	High	Med-High	Medium	Med-Low	Low		
0	2480	2310	2130	1840	1600		
.05	2450	2280	2100	1820	1580		
.10	2420	2260	2080	1810	1560		
.15	2390	2220	2050	1790	1540		
.20	2360	2200	2030	1770	1520		
.25	2330	2160	2000	1750	1500		
.30	2300	2140	1970	1730	1470		
.40	2230	2080	1920	1680	1420		
.50	2160	2010	1860	1630	1370		
.60	2080	1910	1790	1570	1280		
.70	2010						

NOTE — All cfm is measured external to the unit with the air filter in place.

1Electric heat resistance reflects heater with maximum resistance (4 elements). To determine resistance of heater with less elements, deduct 0.05 external static pressure (in. wg.) per element.