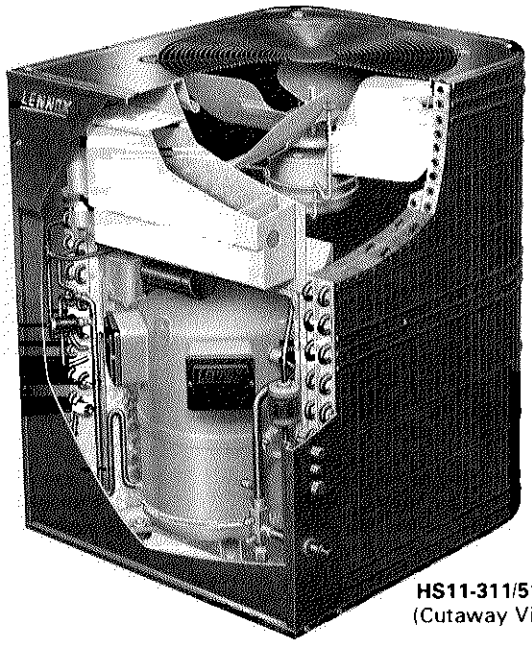
LENNOX®

HS11-311/511V AND HS11-411/651V LANDMARK® II CONDENSING UNITS EXPANSION VALVE AIR CONDITIONING SYSTEM

*49,000 to 63,000 Btuh Cooling Capacity

*At ARI Standard 210 Ratings

- High Efficiency Systems
- Lennox LANDMARK® Two Speed Compressor
- Refrigerant Lines Available
- Optional Latent Load Discriminator T.M.
- Two Stage Control
- Large Condenser Coil With Copper Tubes
- Two Speed Direct Drive Fan (HS11-311/511V)
- Quality Construction
- Durable Long-Life Cabinet
- Factory Assembled
- Complete Service Access



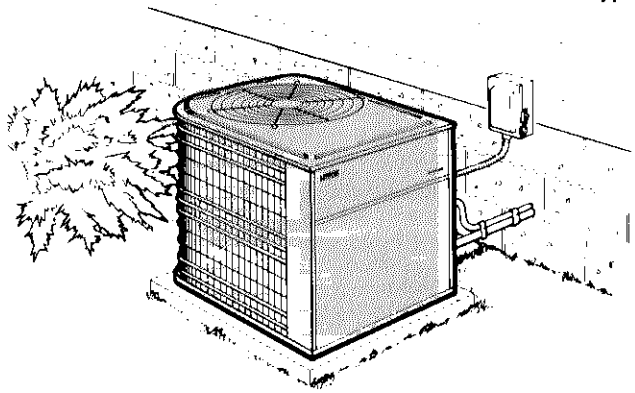
HS11-311/511V
(Cutaway View)

HS11-311/511V
(Cased View)

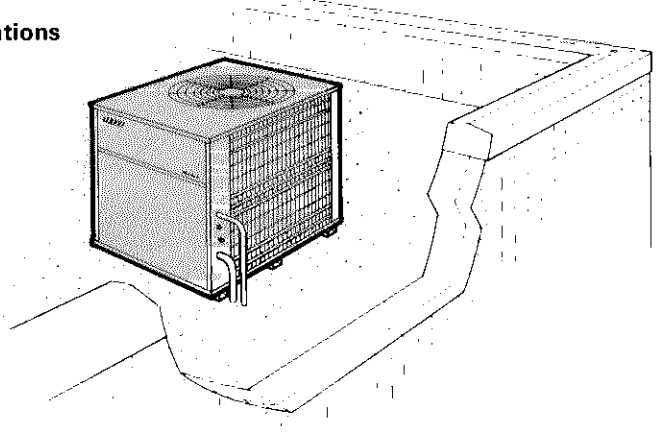
Condensing Units Equipped With Lennox LANDMARK® Two Speed Compressor For Operating Reliability And Economy

The HS11 series condensing units can be installed in residential, apartment house and commercial applications. Units are designed for highly efficient energy usage and service free operation. The units are applicable to expansion valve systems only. Equipped with the Lennox LANDMARK two speed compressor, staged to deliver the precise cooling capacity required. Low speed compressor operation provides increased economy during periods of reduced loads. Optional Latent Load Discriminator T.M. controls latent cooling capacity to reduce operating cost. The low height and upward discharge of air makes it easy to conceal the unit among shrubs on a slab at ground level or out of sight on a roof. Ease of service, extremely quiet operation and maximum Btu's of cooling per watt of power input have been carefully researched and utilized in these highly dependable condensing units. Matching Lennox evaporator unit selection provides application versatility and a wide range of cooling capacities to tailor fit any installation requirements. To determine the capacity of a given system select the appropriate refrigerant evaporating temperature balance point between the condensing unit and evaporator unit. Use the condensing unit capacity curves included in this bulletin and the evaporator performance curves furnished with the matching expansion valve evaporator unit bulletin indexed in section Coils — Blower Coil Units. The rugged galvanized steel cabinet has a durable outdoor enamel finish for maximum protection from the weather. Compressor and controls are located in separate compartment completely isolating them from the weather and also keeping the sound level at a minimum. On-off cycling of compressor crankcase heater reduces energy consumption. Large direct drive fan draws large air volumes through the entire condenser coil quietly and with low power consumption. Vertical discharge of air results in minimum air noise and protects lawns and shrubs from hot air wilt. Wrap-around "U" configuration of condenser coil provides extra large surface area for maximum cooling capacity. Rugged non-corrosive steel wire condenser air discharge grille, condenser coil guard and a deluxe heating-cooling thermostat are furnished. Condensing units are shipped completely factory assembled, piped and wired. In addition, each unit is test operated at the factory insuring proper operation. Installer has only to set condensing unit in desired location, connect refrigerant lines and make necessary field wiring connection to complete the installation.

Typical Applications



HS11-311/511V unit on a slab at ground level.



HS11-411/651V unit installed on a roof.

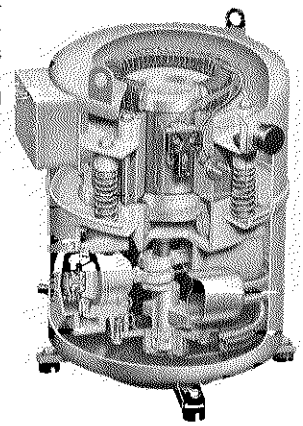
NOTE — Specifications, Ratings and Dimensions subject to change without notice.

Durable Steel Cabinet — Heavy gauge galvanized steel cabinet is subject to a five station zinc phosphate metal wash process. This preparation process results in a perfect bonding surface for the finish coat of baked-on outdoor enamel. The attractive enamel finish gives the cabinet long lasting protection from the weather. Drainage holes are furnished in base section for moisture removal. Heavy duty steel supports under HS11-411/651V base and six resilient circular rubber mounts under HS11-311/511V base raise the unit off of the mounting surface away from damaging moisture. A non-corrosive PVC (poly vinyl chloride) coated steel wire condenser coil guard is furnished standard on all models.

Accessible Control Box — Large size and conveniently located in the compressor and controls compartment for easy access. All controls are pre-wired at the factory.

Compressor and Controls Compartment — Separate compressor and controls compartment protects all components from weather conditions and keeps sound transmission at a minimum. Large removable access panel provides complete service access and is lined with thick fiberglass insulation.

Dependable Lennox LANDMARK® Compressor — Equipped with Lennox L7 two speed compressor designed for superior operating efficiency and sound ratings. L7 two speed operation gives staging control to fit varying cooling load requirements, extends service life of the compressor and provides operation economy during periods of reduced loads. Reliable compressor is hermetically sealed with built-in protection from excessive current and temperatures. Suction cooled and overload protected. The large housing, spring loaded discharge valve, high intake ports and crankcase heater result in effective "slugging protection. In addition, the large volume shell provides abundant oil reserve and superior muffling. Oil pump is designed specifically for two speed compressor operation assuring positive lubrication even during low speed operation. Special synthetic oil withstands high temperatures without breakdown. Crankshaft is statically and dynamically balanced. Contoured piston yields increased volumetric efficiency. Strategically located discharge mufflers result in extremely quiet operation. Motor is located within refrigerant flow pattern resulting in low motor winding temperatures. Twin internally mounted motor inwinding temperature sensing thermostats provide safe operation. Solid-state overload protector is furnished in the unit control box. The L7 operates at 1750 rpm at low speed and 3500 rpm at high speed. A positive interlock between speeds prevents both speeds from being energized simultaneously. The entire running gear assembly is spring mounted within the sealed housing. In addition, the compressor is installed in the unit on resilient rubber mounts assuring quiet and vibration free operation.



Quiet Condenser Air Movement — The condenser air moving compartment contains only the necessary components for air moving. This permits straight-through the coil and vertical discharge of air resulting in minimum restriction and extremely quiet operation. Direct drive fan motor has permanently lubricated ball bearings and is totally enclosed for maximum protection from weather, dust and corrosion. A rain shield on the motor provides additional protection from moisture. Condenser fan service access is accomplished by removal of fan guard. The corrosion resistant PVC coated steel wire fan guard is furnished as standard. HS11-311/511V model only are equipped with a two speed thermostatically controlled motor. Low speed fan operation provides extra quiet operating sound level. A non-adjustable thermostat, sensing the condensing temperature, will automatically switch the fan to low speed at approximately 75°F ambient temperature and switches fan to high speed at approximately 90°F ambient temperature when larger air volumes are required.

Large Condenser Coil — Lennox designed and fabricated coil is constructed of precisely spaced ripple-edge aluminum fins fitted to copper tubes in a wrap-around "U" shaped configuration providing extra large surface area for maximum strength and contact area. Each joint is silver soldered resulting in leak proof construction. Copper tubing provides maximum coil life and ease of service. Coil is thoroughly tested under pressure to insure leak proof construction. Entire coil is easily accessible for cleaning.

Hi-Capacity Drier — Furnished as standard and factory installed. Drier traps any moisture or dirt that could contaminate the refrigerant system.

Refrigerant Line Connections, Electrical Inlets and Service Valves — Liquid line connection is made with compression fitting and suction line connection is sweat fitting. Brass service valves prevent corrosion and provide access to refrigerant system. Liquid line service valve, liquid line gauge port and suction and liquid line connections are accessible outside of the cabinet. Suction service valve and suction line gauge port are located inside the compressor compartment. Refrigerant line connections, service valves and field wiring inlets are all conveniently located in one central area of the service access end of the unit. See dimension drawing.

High Pressure Switch — Shuts off unit if abnormal operating conditions cause the discharge pressure to rise above setting. Protects the compressor from excessive condensing pressure. Manual reset.

Low Pressure Switch — Shuts off unit if suction pressure falls below setting. Provides loss of charge and freeze-up protection. Automatic reset.

Heating-Cooling Thermostat (Furnished) — A deluxe wall mounted combination single stage heating — two stage cooling thermostat is furnished as standard equipment. Mode of operation indicator lights are provided that give visual readout of "LOW" or "HIGH" speed compressor operation. A green light indicates the compressor is operating in the "LOW" speed mode and an amber light comes on for the "HIGH" speed mode. Thermostat is equipped with a temperature setting dial, system selector switch (Off-Heat-Auto-Cool) and fan control switch (Auto-On). The fan switch provides a choice of intermittent or continuous blower operation during either heating or cooling cycles.

Solid State Timed-Off Control — Furnished and factory installed. Prevents compressor short-cycling and also allows time for suction and discharge pressure to equalize, permitting the compressor to start in an unloaded condition. Automatic reset control will shut the compressor off and hold it off for 5 minutes.

Crankcase Heater — Compressor crankcase heater, furnished standard, is thermostatically controlled and temperature actuated to operate only when required. In addition, heater is "off" during compressor on cycles resulting in increased energy savings. Crankcase heater prevents migration of liquid refrigerant into the compressor and ensures proper compressor lubrication of all times.

Refrigerant Line Kits — Lines are available in several lengths and must be ordered extra. The refrigerant lines (suction & liquid) are shipped refrigerantion clean. Lines are cleaned, dried and pressurized at the factory and sealed by means of a rubber plug. Plug fits tight enough to hold high pressure in the lines. These plugs should not be removed until connections are ready to be made. Thus the system is assured of completely clean and dry lines for the installation. Suction line is fully insulated. Lines are furnished with a flare fitting (evaporator unit connection) on one end and less any fitting (stubbed) on the opposite end for connection to the condensing unit. Compression fitting (nut and ferrule) is furnished for liquid line connection with the mating half of the fittings on the condensing unit. Fitting is easily removed and adapted to the line set tubing for a leak proof connection.

Latent Load Discriminator Kit (Optional) — Latent Load Discriminator control is made possible with the use of the Lennox L7 two speed compressor and a dehumidistat (field installed) to sense relative humidity. The Lennox "Latent Load Discriminator" Kit controls the speed of the indoor evaporator unit blower motor to obtain maximum operating efficiency of the system. Kit contains a latent load control box and dehumidistat. The dehumidistat allows the indoor blower to stay in high speed mode, which is the most energy efficient mode, until such time as the humidity rises to a selected level, then the blower will drop to low speed when the compressor is in low speed. This feature will give dehumidity control only when required and allow the system to operate in a high sensible heat removal, high efficiency mode at most times of the year. The kit (LB-34857BA) must be ordered extra and field installed.

Low Ambient Kit (Optional) — Condensing units will operate satisfactorily down to 35°F outdoor air temperature without any additional controls. For cases where operation of the unit is required below 35°F a Low Ambient Control Kit (BM-3434) can be added in the field, enabling it to operate properly down to 0°F.

Approvals — Condensing units have been thoroughly tested with matching evaporator units in the Lennox Research Laboratory environmental test room and accurately rated according to ARI Standard 210 conditions. In addition, units have been sound tested in the Lennox reverberant sound test room and rated according to ARI Standard 270. Units coming within the scope of this standard (135,000 Btuh or less) carry the ARI Certification Seal and are Certified under the ARI Certification Program. Condensing units and components within are bonded for grounding to meet safety standards for servicing required by U.L. and NEC. Units are also U.L. Listed and CSA Approved.

SELECTOR

Condensing Unit Model No. and ★ARI Standard 270 SRN	ARI Standard 210 Ratings				Lennox Evaporator Unit		
	*Btuh Cooling Capacity	Total Unit Watts	†SEER (Btuh/ Watts)	Dehumidifying Capacity	Up-flo	Down-flo	Horizontal
HS11-311/511V (19) High Speed Compressor Operation (18) Reduced Ambient	50,000	6000	9.4	23%	C5-805FF	-----	-----
	49,000	5700	9.3	25%	-----	CR4-51FF	CH3-65FF
HS11-411/651V (19) (High Speed Compressor Operation)	63,000	7700	9.4	26%	C5-920FF	-----	-----
	61,000	7200	9.3	29%	C5-805FF	-----	-----
	62,000	7300	9.3	27%	-----	CR4-65FF	CH3-65FF

†Proposed Department of Energy Seasonal Energy Efficiency.
*Rated in accordance with ARI Standard 210; 450 cfm evaporator air volume per ton of cooling, 95F outdoor air temperature, 80db/67wb entering evaporator air with 30 ft. of connecting refrigerant lines.
★Rated in accordance with ARI Standard 270.

SPECIFICATIONS

Model No.			HS11-311/511V	HS11-411/651V
Condenser	Net face area (sq. ft.)	Outer coil	15.1	18.3
		Inner coil	7.2	17.6
	Tube diameter (in.) & No. of rows		3/8 — 1.48	3/8 — 2.00
	Fins per inch		20	20
Condenser Fan	Diameter (in.) & No. of blades		20 — 4	24 — 4
	Motor hp		1/4	1/4
	Cfm (factory setting)		3200	4100
	Rpm (factory setting)		1075	825
	Watts (factory setting)		310	350
**Refrigerant — 22 charge furnished			8 lbs. — 0 oz.	13 lbs. — 12 oz.
Liquid line (o.d. in.) connection (compression)			3/8	3/8
Suction line (o.d. in.) connection (sweat)			*1-1/8	*1-1/8
Shipping weight (lbs.) 1 Package			275	350

*NOTE — Reducer fitting required for line connection (7/8). Fitting is not furnished and must be provided by installer.
**Refrigerant charge is sufficient for 25 ft. length line set.

REFRIGERANT LINE KITS

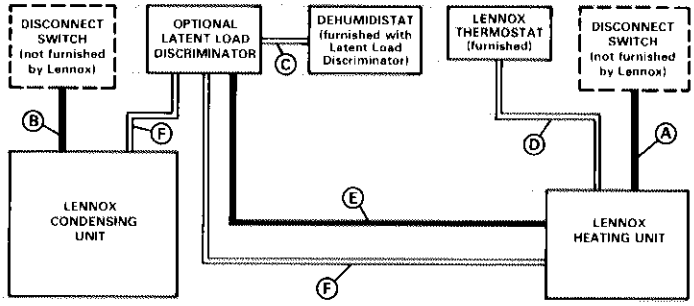
Condensing Unit Model No.	Line Set Model No.	Length Suction & Liquid Lines (ft.)	Liquid Line (o.d. in.)	Suction Line (o.d. in.)
HS11-311/511V HS11-411/651V	L10-65-30	30	3/8	7/8
	L10-65-40	40		
	L10-65-50	50		

ELECTRICAL DATA

Model No.		HS11-311/511V	HS11-411/651V
Line voltage data		230v/60hz/1ph	230v/60hz/1ph
Compressor	Rated load amps	21.6	32.1
	Power factor	.97	.97
	Locked rotor amps	133.0	163.0
Outdoor Coil Fan Motor	Full load amps	1.4	1.9
	Locked rotor amps	2.4	3.3
Recommended fuse size (amps)		50.0	70.0
*Minimum circuit ampacity		28.4	42.2

*Refer to National Electrical Code manual to determine wire, fuse and disconnect size requirements.
NOTE — Extremes of operating range are plus and minus 10% of line voltage.

FIELD WIRING



A — Two wire power (not furnished)

B — Two wire power (not furnished) — see electrical data

C — Two wire low voltage (not furnished) — 18 ga. minimum

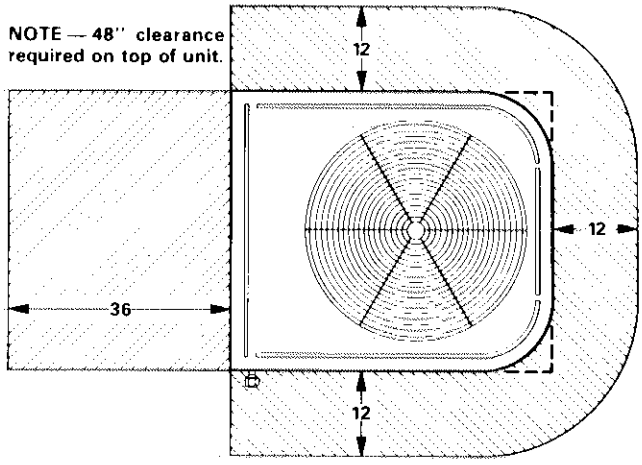
D — Six wire low voltage (not furnished) — 18 ga. minimum

E — Three wire high voltage (not furnished)

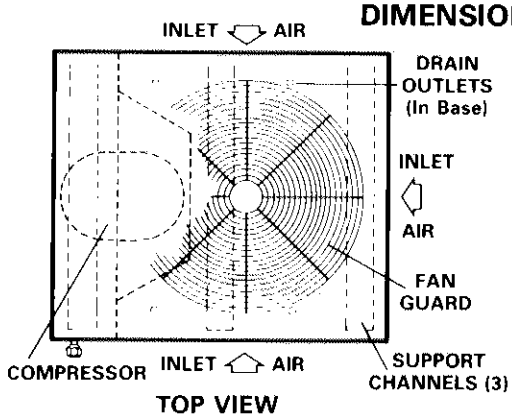
F — Three wire low voltage (not furnished) — 18 ga. minimum —
Note Run (F) directly between condensing unit and heating unit or blower-coil unit when optional latent load discriminator is not used.

All wiring must conform to NEC and local electrical codes.

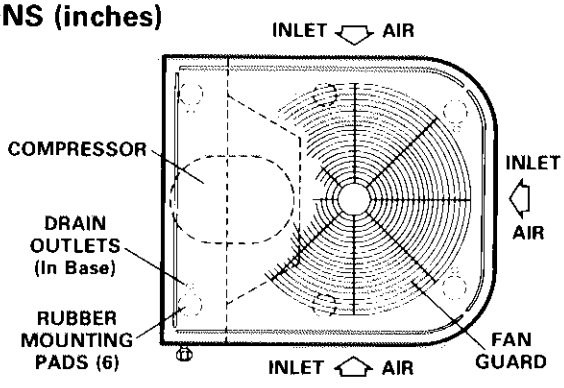
INSTALLATION CLEARANCES (inches)



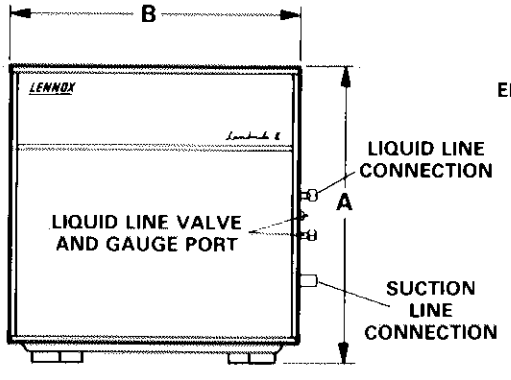
DIMENSIONS (inches)



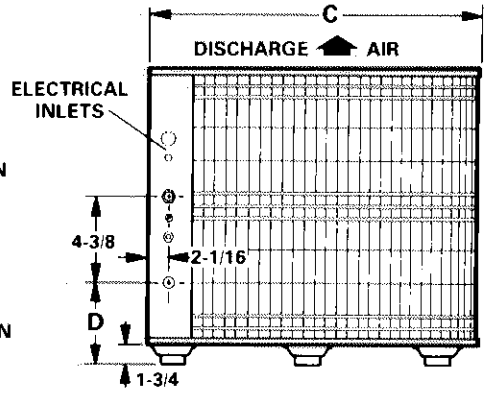
TOP VIEW
(HS11-411/651V)



TOP VIEW
(HS11-311/511V)



FRONT VIEW



SIDE VIEW

Model No.	A	B	C	D
HS11-311/511V	34-1/16	25-7/8	29-7/8	7-3/4
HS11-411/651V	33-7/8	32-1/8	34-1/16	7-11/16

RATINGS

HS11-311/511V CONDENSING UNIT
(Low Speed Compressor Operation — Low Evaporator Unit Air)

Evaporator Unit Model No.	Evaporator Air 80F Dry Bulb		Outdoor Air Temperature Entering Condenser (F)											
			75			85			95			105		
	Entering Wet Bulb Degrees (F)	Total Air Volume (cfm)	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input
C5-805FF	63	1000	29,600	.98	1740	27,700	.99	1950	25,400	1.00	2100	24,100	1.00	2300
		1125	30,400	.99	1750	28,500	1.00	1950	26,300	1.00	2120	24,900	1.00	2320
		1250	31,000	1.00	1760	29,100	1.00	1960	27,200	1.00	2130	25,500	1.00	2330
	67	1000	32,200	.74	1770	30,800	.76	1970	28,300	.78	2140	26,800	.81	2340
		1125	33,000	.77	1780	31,100	.80	1970	29,200	.83	2140	27,400	.86	2350
		1250	33,600	.80	1790	31,700	.83	1980	29,900	.86	2150	28,000	.90	2360
	71	1000	34,700	.56	1800	32,800	.57	1990	31,100	.58	2170	29,200	.60	2390
		1125	35,500	.59	1810	33,600	.60	2000	31,700	.61	2180	30,000	.63	2400
		1250	36,200	.60	1820	34,300	.62	2000	32,500	.63	2180	30,700	.66	2410
CR4-51FF CH3-65FF	63	1000	29,400	.98	1550	27,700	.99	1850	26,000	1.00	2110	24,300	1.00	2300
		1125	29,900	.99	1560	28,200	1.00	1860	26,500	1.00	2120	24,800	1.00	2320
		1250	30,400	1.00	1570	28,700	1.00	1870	27,000	1.00	2130	25,400	1.00	2330
	67	1000	31,700	.72	1580	30,000	.75	1880	28,300	.78	2160	26,600	.80	2340
		1125	32,100	.77	1590	30,400	.80	1880	28,900	.83	2160	27,100	.86	2350
		1250	32,700	.80	1600	31,000	.84	1880	29,200	.88	2160	27,600	.91	2360
	71	1000	33,900	.63	1610	32,200	.65	1900	30,500	.67	2170	28,800	.69	2400
		1125	34,500	.69	1620	32,800	.70	1900	31,100	.71	2180	29,300	.74	2410
		1250	34,900	.70	1630	33,200	.73	1910	31,500	.76	2180	29,700	.78	2410

NOTE — All values are gross capacities and do not include evaporator unit blower motor heat deductions.

HS11-311/511V CONDENSING UNIT
(Low Speed Compressor Operation — Maximum Evaporator Unit Air)

Evaporator Unit Model No.	Evaporator Air 80F Dry Bulb		Outdoor Air Temperature Entering Condenser (F)											
			75			85			95			105		
	Entering Wet Bulb Degrees (F)	Total Air Volume (cfm)	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input
C5-805FF	63	1600	32,100	.99	2000	30,200	1.00	2240	28,300	1.00	2440	26,400	1.00	2690
		1800	32,600	1.00	2010	30,700	1.00	2250	28,800	1.00	2450	26,900	1.00	2690
		2000	33,100	1.00	2070	31,200	1.00	2260	29,300	1.00	2470	27,300	1.00	2720
	67	1600	34,900	.89	2080	33,000	.93	2250	31,100	.97	2450	29,300	1.00	2690
		1800	35,400	.96	2090	33,500	.98	2250	31,500	1.00	2470	29,600	1.00	2710
		2000	35,900	1.00	2100	34,000	1.00	2260	32,000	1.00	2470	30,100	1.00	2720
	71	1600	37,100	.66	2110	35,200	.69	2280	33,000	.72	2490	30,900	.76	2740
		1800	37,700	.69	2120	35,800	.72	2280	33,800	.76	2490	31,800	.80	2750
		2000	38,300	.73	2130	36,400	.76	2300	34,500	.79	2500	32,300	.83	2760
CR4-51FF CH3-65FF	63	1600	32,000	.98	1990	30,400	1.00	2250	28,800	1.00	2450	27,000	1.00	2690
		1800	32,900	.99	2020	31,300	1.00	2260	29,500	1.00	2460	28,700	1.00	2720
		2000	33,500	1.00	2040	31,900	1.00	2260	30,200	1.00	2470	28,900	1.00	2730
	67	1600	34,300	.89	2050	32,800	.93	2250	31,100	.97	2450	29,300	1.00	2700
		1800	35,200	.94	2060	33,600	.97	2260	31,900	1.00	2460	30,200	1.00	2720
		2000	35,900	.99	2070	34,300	1.00	2270	32,700	1.00	2480	30,900	1.00	2730
	71	1600	36,600	.66	2080	35,000	.69	2280	33,300	.72	2490	31,600	.76	2750
		1800	37,300	.69	2090	35,700	.72	2290	33,900	.75	2500	32,400	.79	2760
		2000	37,800	.71	2100	36,300	.75	2300	34,600	.79	2500	32,900	.83	2760

NOTE — All values are gross capacities and do not include evaporator unit blower motor heat deduction.

RATINGS

HS11-311/511V CONDENSING UNIT
(High Speed Compressor Operation — Maximum Evaporator Unit Air)

Evaporator Unit Model No.	Evaporator Air 80F Dry Bulb		Outdoor Air Temperature Entering Condenser (F)											
	Entering Wet Bulb Degrees (F)	Total Air Volume (cfm)	85			95			105			115		
			Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input
C5-805FF	63	1600	50,100	.89	4710	47,300	.93	5040	44,600	.96	5080	41,900	.99	5510
		1800	51,100	.94	4750	48,300	.97	5100	45,500	1.00	5230	42,700	1.00	5590
		2000	52,100	.99	4800	49,200	1.00	5170	46,300	1.00	5280	43,600	1.00	5660
	67	1600	54,100	.72	4960	51,300	.73	5260	48,400	.76	5580	45,700	.78	5430
		1800	55,100	.74	5030	52,300	.77	5330	49,400	.78	5640	46,600	.81	6010
		2000	56,000	.77	5090	53,200	.79	5400	50,200	.81	5700	47,300	.85	6140
	71	1600	57,600	.55	5190	54,800	.56	5480	51,900	.57	5790	49,100	.59	6150
		1800	58,600	.56	5250	55,700	.58	5550	52,800	.59	5870	49,900	.60	6210
		2000	59,600	.58	5310	56,700	.60	5610	53,700	.61	5940	50,800	.63	6290
CR4-51FF CH3-65FF	63	1600	49,500	.91	4310	47,100	.92	4580	44,700	.96	5100	42,300	.99	5450
		1800	50,600	.95	4370	48,000	.97	4610	45,700	.99	5170	43,200	1.00	5490
		2000	51,400	.97	4400	49,000	.95	4670	46,600	1.00	5200	44,100	1.00	5540
	67	1600	52,700	.71	4450	50,200	.73	4760	47,700	.75	5250	45,300	.76	5610
		1800	53,600	.74	4490	51,300	.75	4800	48,800	.76	5300	46,400	.79	5670
		2000	54,500	.75	4540	52,100	.76	4840	49,500	.79	5350	47,200	.80	5710
	71	1600	55,800	.56	4610	53,300	.56	4910	51,000	.57	5430	48,500	.58	5780
		1800	56,800	.57	4660	54,400	.57	4980	52,000	.59	5490	49,300	.59	5830
		2000	57,600	.57	4700	55,200	.58	5040	52,800	.58	5550	50,400	.60	5870

NOTE — All values are gross capacities and do not include evaporator unit blower motor heat deduction.

HS11-411/651V CONDENSING UNIT
(Low Speed Compressor Operation — Low Evaporator Unit Air)

Evaporator Unit Model No.	Evaporator Air 80F Dry Bulb		Outdoor Air Temperature Entering Condenser (F)											
	Entering Wet Bulb Degrees (F)	Total Air Volume (cfm)	75			85			95			105		
			Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input
C5-920FF	63	1200	36,900	.89	2540	34,800	.93	2750	32,700	.97	2920	30,600	1.00	3120
		1350	37,300	.94	2550	35,200	.98	2750	33,200	1.00	2930	31,100	1.00	3140
		1500	37,800	.98	2560	35,700	1.00	2760	33,700	1.00	2940	31,600	1.00	3160
	67	1200	39,500	.73	2570	37,400	.75	2770	35,300	.77	2950	33,200	.79	3170
		1350	40,000	.75	2580	37,900	.78	2770	35,800	.81	2960	33,700	.83	3170
		1500	40,500	.80	2590	38,400	.82	2780	36,300	.84	2960	34,200	.87	3180
	71	1200	42,000	.57	2600	39,900	.58	2790	37,900	.59	2980	35,800	.61	3210
		1350	42,500	.58	2610	40,400	.60	2800	38,400	.62	2990	36,300	.63	3220
		1500	43,200	.61	2620	41,100	.62	2800	39,000	.63	3000	36,800	.66	3220
C5-805FF	63	1200	36,100	.92	2500	34,100	.94	2700	32,100	.96	2870	29,900	.99	3070
		1350	36,700	.94	2510	34,700	.98	2710	32,700	1.00	2880	30,600	1.00	3080
		1500	37,200	.98	2520	35,200	1.00	2710	33,200	1.00	2890	31,200	1.00	3100
	67	1200	38,800	.73	2530	36,800	.75	2720	34,800	.77	2900	32,700	.79	3110
		1350	39,400	.76	2540	37,400	.78	2730	35,300	.80	2910	33,300	.83	3120
		1500	39,900	.78	2550	37,900	.81	2730	35,900	.84	2910	33,900	.87	3120
	71	1200	41,300	.57	2560	39,300	.58	2750	37,300	.59	2920	35,200	.61	3160
		1350	41,900	.59	2570	39,900	.60	2750	37,900	.61	2940	35,800	.63	3160
		1500	40,500	.61	2580	40,500	.62	2760	38,500	.63	2950	36,500	.65	3170
CH3-65FF CR4-65FF	63	1200	35,900	.92	2490	33,900	.94	2690	32,000	.96	2850	30,000	.99	3050
		1350	36,400	.94	2500	34,400	.97	2690	32,900	1.00	2860	30,500	1.00	3070
		1500	37,200	.98	2510	35,200	1.00	2690	33,100	1.00	2870	31,200	1.00	3080
	67	1200	38,700	.73	2520	36,700	.75	2710	34,500	.77	2880	32,600	.79	3090
		1350	39,300	.76	2530	37,300	.78	2710	35,200	.80	2890	33,100	.83	3100
		1500	39,800	.79	2540	37,800	.81	2720	35,700	.83	2890	33,700	.86	3100
	71	1200	41,200	.55	2550	39,200	.57	2730	37,200	.59	2920	35,000	.61	3130
		1350	41,800	.59	2560	39,800	.60	2740	37,700	.61	2920	35,600	.63	3140
		1500	40,400	.61	2570	40,500	.62	2740	38,100	.63	2930	36,800	.65	3150

NOTE — All values are gross capacities and do not include evaporator unit blower motor heat deduction.

RATINGS

HS11-411/651V CONDENSING UNIT
(Low Speed Compressor Operation — Maximum Evaporator Unit Air)

Evaporator Unit Model No.	Evaporator Air 80F Dry Bulb		Outdoor Air Temperature Entering Condenser (F)											
			75			85			95			105		
	Entering Wet Bulb Degrees (F)	Total Air Volume (cfm)	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input
C5-920FF	63	2000	40,100	1.00	2510	38,200	1.00	2720	36,700	1.00	2910	34,600	1.00	3130
		2250	41,200	1.00	2520	39,300	1.00	2730	37,200	1.00	2920	35,200	1.00	3140
		2500	41,900	1.00	2530	40,000	1.00	2740	37,800	1.00	2930	35,700	1.00	3150
	67	2000	43,100	.87	2540	41,200	.91	2740	39,000	.95	2940	36,700	.99	3160
		2250	43,500	.93	2550	41,600	.96	2750	39,400	.99	2950	37,000	1.00	3170
		2500	44,000	.99	2560	42,100	1.00	2760	39,900	1.00	2960	37,500	1.00	3180
	71	2000	45,900	.67	2570	44,000	.69	2770	41,900	.71	2970	39,700	.73	3190
		2250	46,300	.70	2580	44,400	.72	2780	42,400	.74	2980	40,100	.77	3200
		2500	46,700	.73	2590	44,800	.75	2790	42,900	.77	2990	40,400	.80	3210
C5-805FF	63	2000	39,500	.99	2490	37,500	1.00	2690	35,300	1.00	2870	33,100	1.00	3100
		2250	40,100	1.00	2500	38,100	1.00	2700	35,900	1.00	2880	33,600	1.00	3110
		2500	40,400	1.00	2510	38,400	1.00	2710	36,200	1.00	2890	34,000	1.00	3120
	67	2000	42,800	.87	2520	40,400	.91	2720	38,300	.94	2900	36,000	.97	3130
		2250	42,900	.91	2530	40,900	.95	2730	38,800	.99	2910	36,500	1.00	3140
		2500	43,300	.99	2540	41,300	1.00	2740	39,100	1.00	2920	36,800	1.00	3150
	71	2000	45,100	.66	2550	43,100	.68	2750	41,000	.70	2930	38,800	.72	3160
		2250	45,300	.68	2560	43,300	.71	2760	41,300	.74	2940	39,100	.76	3170
		2500	45,700	.71	2570	43,700	.74	2770	41,800	.77	2950	39,400	.80	3180
CR4-65FF CH3-65FF	63	2000	38,200	.98	2470	36,500	1.00	2680	35,000	1.00	2860	32,100	1.00	3090
		2250	39,400	.99	2480	37,700	1.00	2690	35,700	1.00	2870	33,600	1.00	3100
		2500	39,900	1.00	2490	38,200	1.00	2700	36,100	1.00	2880	34,100	1.00	3110
	67	2000	41,400	.86	2500	39,700	.90	2710	37,500	.94	2890	35,200	.97	3120
		2250	41,900	.91	2510	40,200	.95	2720	38,000	.99	2900	35,700	1.00	3130
		2500	42,600	.98	2520	40,900	.99	2730	38,400	1.00	2910	36,300	1.00	3140
	71	2000	43,900	.66	2530	42,200	.68	2740	40,900	.70	2920	38,400	.72	3150
		2250	44,400	.69	2540	42,700	.71	2750	41,200	.73	2930	38,800	.76	3160
		2500	44,600	.71	2550	42,900	.74	2760	41,500	.77	2940	39,000	.80	3170

NOTE — All values are gross capacities and do not include evaporator unit blower motor heat deductions.

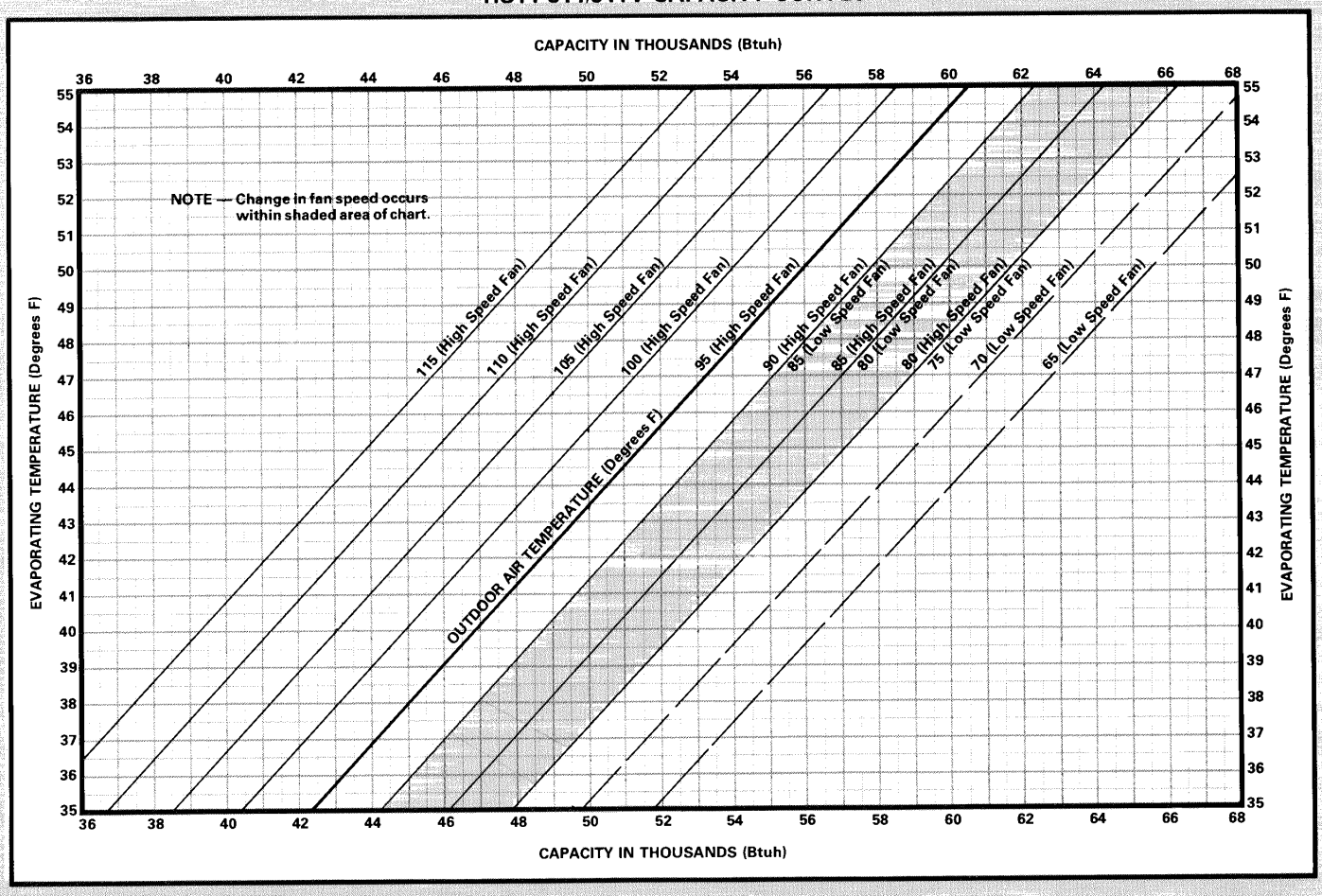
HS11-411/651V CONDENSING UNIT
(High Speed Compressor Operation — Maximum Evaporator Unit Air)

Evaporator Unit Model No.	Evaporator Air 80F Dry Bulb		Outdoor Air Temperature Entering Condenser (F)											
	Entering Wet Bulb Degrees (F)	Total Air Volume (cfm)	85			95			105			115		
			Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input
C5-920FF	63	2000	63,900	.88	5950	60,800	.90	6200	57,600	.94	6450	54,500	.96	6590
		2250	64,800	.92	5990	61,600	.95	6220	58,300	.97	6470	55,200	.98	6620
		2500	65,800	.97	6100	62,500	1.00	6250	59,200	1.00	6620	56,000	1.00	6700
	67	2000	68,000	.71	6220	64,800	.73	6520	61,700	.74	6820	58,500	.75	7460
		2250	69,200	.74	6280	66,000	.75	6610	62,700	.77	6950	59,500	.79	7500
		2500	70,200	.77	6330	67,000	.78	6630	63,700	.81	7040	60,500	.83	7540
	71	2000	72,200	.54	6490	69,000	.55	6730	65,700	.56	7080	62,500	.57	7590
		2250	73,300	.56	6540	70,100	.57	6910	66,800	.58	7170	63,600	.59	7680
		2500	74,400	.58	6590	71,100	.59	6986	67,700	.60	7260	64,500	.61	7760
C5-805FF	63	2000	62,400	.88	5630	59,500	.90	5940	56,400	.93	6150	53,500	.95	6520
		2250	63,700	.91	5690	60,500	.94	6000	57,500	.96	6280	54,400	.97	6580
		2500	64,500	.94	5730	61,200	.98	6040	58,200	1.00	6310	55,100	1.00	6650
	67	2000	66,700	.69	5890	63,500	.71	6170	60,300	.73	6500	57,300	.75	6780
		2250	67,800	.72	5960	64,700	.74	6290	61,500	.76	6570	58,400	.78	6880
		2500	68,600	.75	6020	65,500	.77	6320	62,200	.79	6630	59,200	.81	6960
	71	2000	70,500	.54	6110	67,400	.56	6460	64,300	.57	6790	61,100	.58	7090
		2250	71,700	.56	6190	68,500	.57	6530	65,500	.58	6880	62,200	.59	7180
		2500	72,600	.56	6230	69,400	.58	6630	66,300	.59	6960	63,000	.60	7280
CR4-65FF CH3-65FF	63	2000	62,900	.89	5650	60,400	.90	5920	57,400	.92	6430	54,800	.95	6600
		2250	63,800	.92	5710	61,400	.95	6010	58,400	.96	6490	55,800	.98	6690
		2500	64,700	.95	5750	62,100	.97	6070	59,300	.99	6550	56,500	1.00	6750
	67	2000	66,400	.71	5850	63,800	.71	6170	61,000	.73	6690	58,700	.74	6880
		2250	67,300	.72	5930	64,900	.74	6230	61,800	.74	6760	59,200	.76	6960
		2500	68,100	.74	5950	65,400	.75	6290	62,600	.76	6790	59,900	.78	7010
	71	2000	69,900	.55	6070	67,300	.55	6410	64,500	.56	6820	61,600	.56	7150
		2250	70,800	.56	6130	68,200	.56	6470	65,300	.57	6870	62,600	.57	7210
		2500	71,500	.56	6170	68,100	.56	6530	66,000	.57	6920	63,300	.57	7370

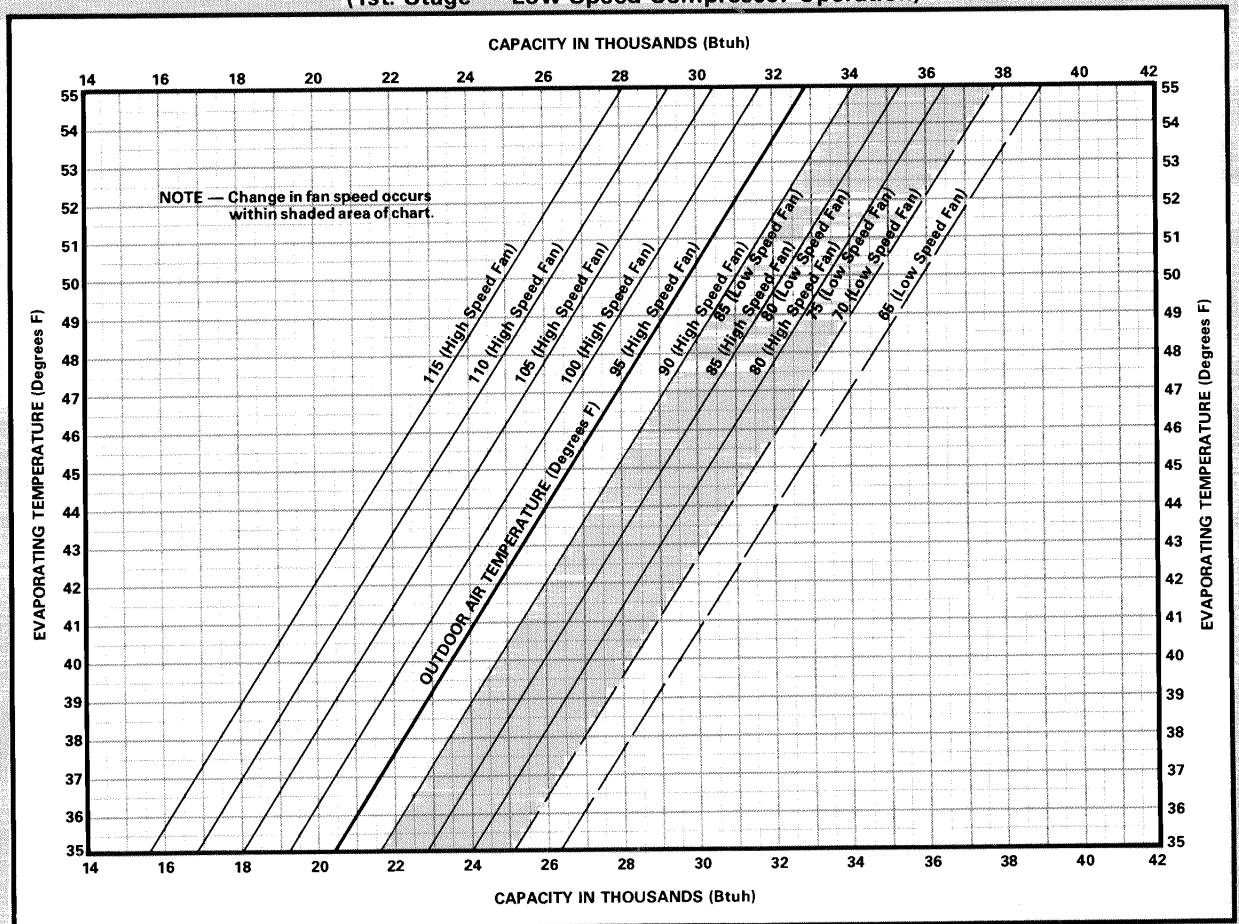
NOTE — All values are gross capacities and do not include evaporator unit blower motor heat deduction.

PERFORMANCE CURVES

HS11-311/511V CAPACITY CURVES

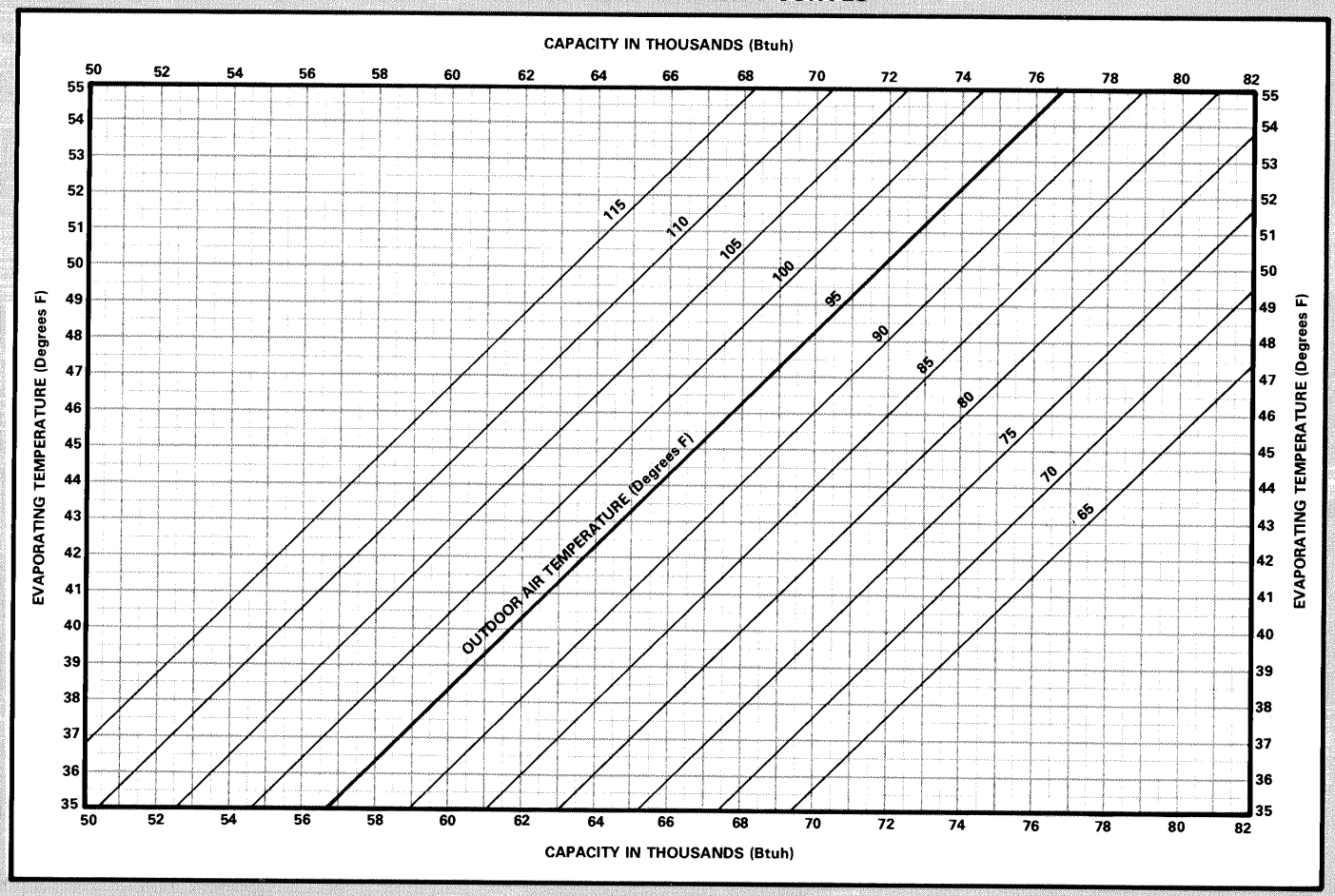


HS11-311//511V CAPACITY REDUCTION CURVES
(1st. Stage — Low Speed Compressor Operation)



PERFORMANCE CURVES

HS11-411/651V CAPACITY CURVES



HS11-411/651V CAPACITY REDUCTION CURVES
(1st. Stage — Low Speed Compressor Operation)