

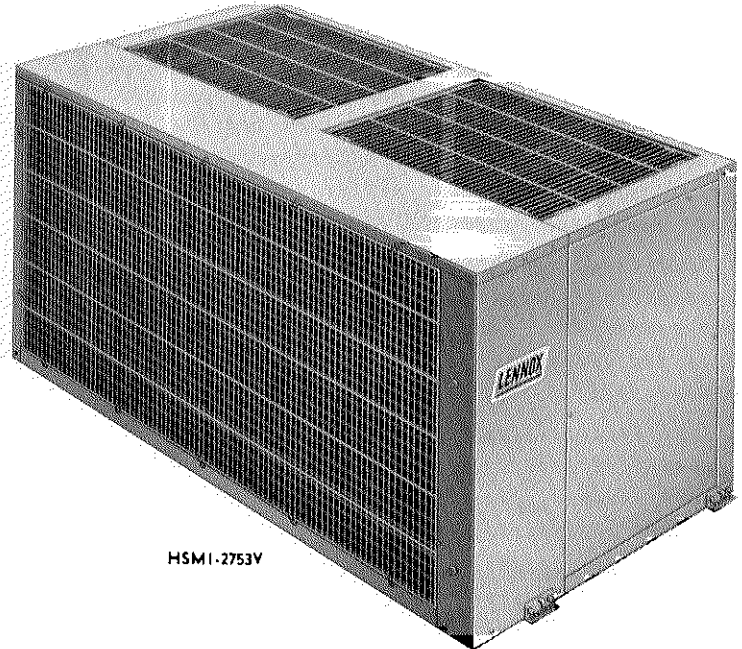


**DIRECT MULTIZONE SYSTEM
*CONDENSING UNITS—HSM1 SERIES**
199,000 To 281,000 Btuh at ARI Standard 210 Conditions

*This bulletin includes HSM1-1853V and HSM1-2753V models only.
HS6 953V & HS6-1353V condensing units are also applicable to DMS units,
data appears in Condensing Unit section of Lennox Engineering Handbook.

ENGINEERING DATA
COMBINATION UNIT
DIRECT MULTIZONE
SYSTEMS
Page 29
April 1, 1971
Supersedes 6-1-68

- Twin Lennox L2 Compressors
- Dual Circuit Condenser Coil
- Two Stage Control
- Complete Service Access
- Dual Axial Flow Fans
- Weather Resistant Finish
- Power Supply Choice
- Condenser Guard Furnished
- Large Access Panels



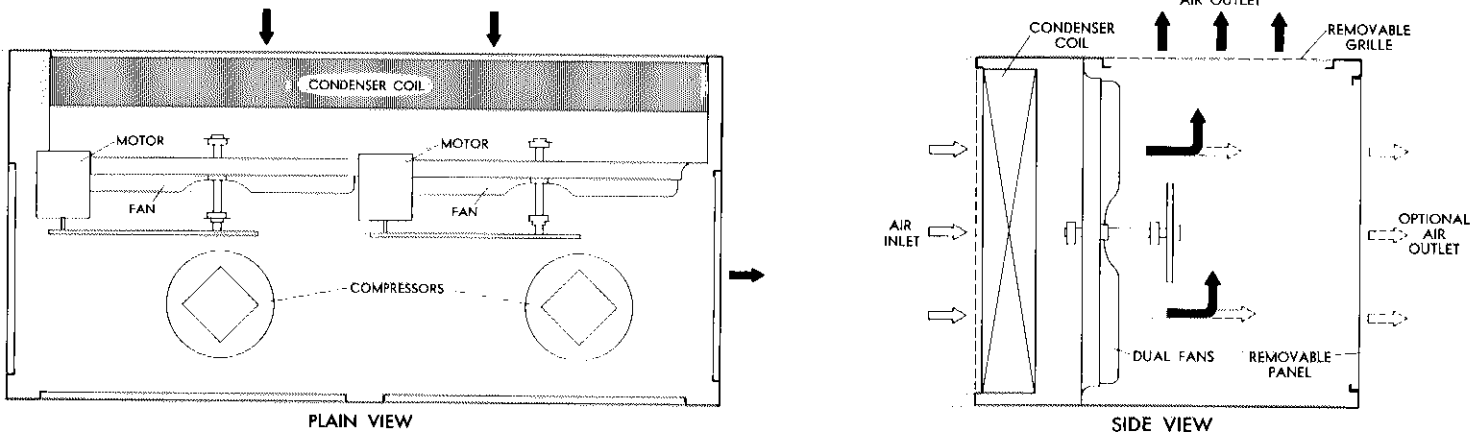
HSM1-2753V

Rugged DX Condensing Unit Designed And Controlled For Lennox Direct Multizone Systems

Designed to provide just the right amount of cooling required in Lennox Direct Multizone Systems. Twin Lennox L2 compressors in separate refrigeration circuits are staged to deliver the precise cooling capacity required. First stage compressor operation is initiated by a control relay. After the first stage is activated the system suction pressure dictates the amount of cooling capacity delivered. The first stage refrigeration circuit handles the cooling load until the suction temperature is higher than 35F, at that point the second stage system is activated. The second stage system will cycle (under

timed-off protection) only when the first stage system suction temperature is higher than 35F. The refrigerant line sets furnished with the DMS unit include a factory installed modulating discharge bypass valve which requires connection into the distributor downstream from the expansion valve on the DMS evaporator. When the first stage system has so little cooling load that the suction temperature drops below 33F the modulating bypass valve will begin to open sending hot discharge gas into the evaporator thoroughly modulating the refrigeration capacity to exactly fit the needs of the system.

Parts Arrangement and Air Pattern



NOTE: Specifications, ratings and dimensions subject to change without notice.

FEATURES

Dependable Lennox Compressors—Twin Lennox L2 compressors in separate refrigeration circuits are staged to deliver the precise cooling capacity required. Lennox L2 compressors are a result of many years research and development. The large can, spring loaded discharge valve, crankcase heater and high suction intake ports result in effective slugging protection. Crankshaft is statically and dynamically balanced and has patented 3 mode oil pumping providing positive pressure lubrication. Contoured pistons give increased volumetric efficiency. 17 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 overloads and discharge temperature limiter for safe operation. Compressors are resiliently mounted in the unit and in addition, the entire running gear assembly is resiliently mounted within the sealed can.

Dual Circuit Condenser Coil—Lennox designed and fabricated has extra refrigerant tubes in each coil circuit for sub-cooling of liquid refrigerant. Coil is constructed of ripple-edge aluminum fins mechanically bonded to seamless copper tubes. Pressure leak tested at 450-500 psi.

Twin Axial Fans—Accurately positioned dual fans pull large volumes of air through the entire condenser coil resulting in high refrigerant cooling capacity. Motor(s) are permanently lubricated and overload protected.

U. L. Listed—Labeled under Underwriters Laboratories Standard UL-465 and UL-303.

Dual Pressure Controls—Each refrigeration circuit has a factory installed dual pressure control. High and low pressure reset are both automatic. However, the high pressure control may be field adjusted to allow manual reset, if desired. See installation instructions.

Timed Off Control—Each compressor has a factory installed and wired timed off control. Allows a maximum of twelve compressor starts per hour. It prevents compressor short cycling and allows time for suction and discharge pressure to equalize permitting the motor to start in an unloaded condition.

Refrigerant Line Connection—Rotolock fittings are provided on condensing unit for connection of the line sets furnished with the DMS unit.

Refrigerant System Service Valves—Each refrigeration circuit includes a liquid line valve, discharge service valve, suction service valve and a liquid level indicator.

Accessible Control Box—Large box is conveniently located for easy service access. Wiring inlets are provided in cabinet for power supply entry. See dimension drawing.

Rugged Cabinet—Heavy gauge galvanized steel cabinet has a five station zinc phosphate metal preparation for the finish coat of baked-on outdoor acrylic enamel. Heavy duty hoisting lugs are provided on cabinet base. A rugged steel coil guard is furnished as standard.

SPECIFICATIONS

Model No.		HSM1-1853V	HSM1-2753V
Condenser	Net face area (sq. ft.)	22.4	23.9
	Tube diameter (in.)	1/2	1/2
	Number of rows	4	6
	Fins per inch	13	13
Condenser Fans (2)	Diameter (in.) & No. of blades	(2) 36 4	(2) 36-4
	Motor hp	(2) 1	(2) 1-1/2
	Air volume (cfm) (factory set)	11,500	13,000
	Fan speed (rpm) (factory set)	610	700
	Motor watts (factory set)	1980 (total)	3000 (total)
*Refrigerant-22 (furnished)		holding	holding
Net weight (lbs) (1 pkg.)		1650	1965

* See Miscellaneous Engineering Data Section.

ELECTRICAL DATA

Model No.		HSM1-1853V			HSM1-2753V		
Line voltage data (60 Hertz - 3 phase)		208/240	440/480	550/600	208/240	440/480	550/600
*Compressors (2)	Full load amps	64.6	29.2	23.8	87.0	41.0	31.4
	Power factor	.85	.85	.85	.85	.85	.85
	Locked rotor amps	370.0	186.0	152.0	480.0	256.0	184.0
*Condenser fan motors (2)	Full load amps	6.0	3.0	2.4	8.0	4.0	3.2
	Locked rotor amps	48.0	24.0	19.2	64.0	32.0	25.6
Maximum unit amps		70.6	32.2	26.2	95.0	45.0	34.6
AWG Wire size	1' to 100' run	2	8	10	1	6	8
	101' to 200' run	1	6	8	0	4	6
Time delay fuse, fusetron (amps)		90	40	30	110	60	40
Maximum allowable fuse (amps)		110	50	40	125	70	50
Disconnect ratings (hp)		30	30	30	40	40	40

* Data shown is with both compressors and condenser fans operating.

NOTE—All fuses, disconnects and wiring must conform to NEC and local codes. Wire sizes shown are according to NEC for copper conductors.

NOTE—If other than time delay fuses are used the next larger amp rating may be required.

NOTE—Extremes of operating range are plus and minus 10% of line voltage.

RATINGS

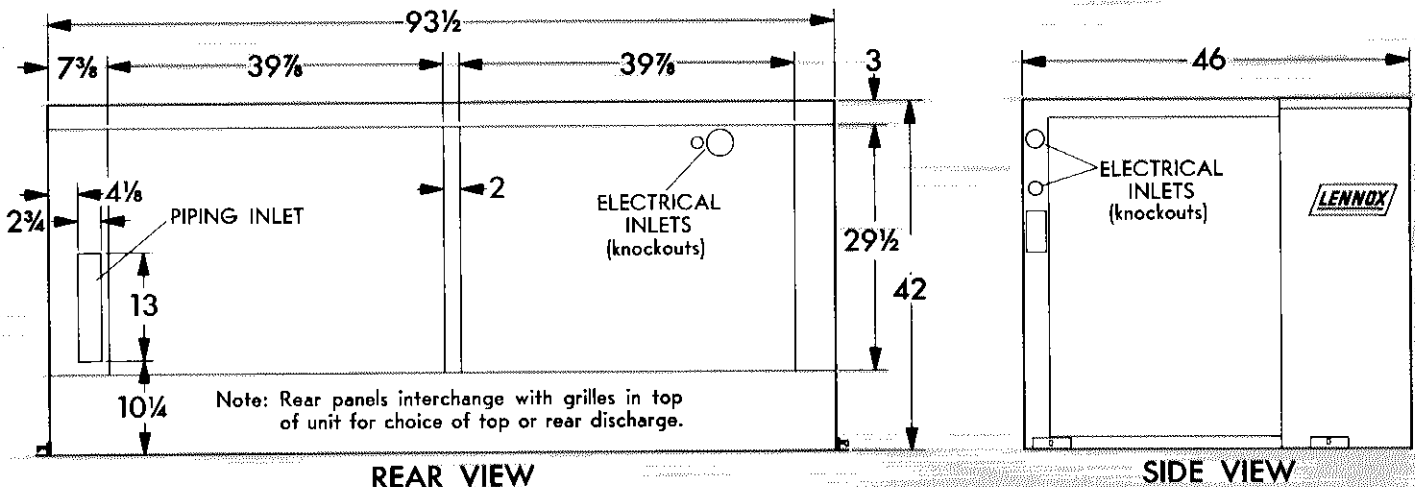
HSM1-1853V CONDENSING UNIT

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
EVMS1-185 C275-185 CR275-185	63	6000	192,000	.87	17,200	181,200	.90	18,300	171,000	.93	19,800	161,000	.96	21,400
		6750	195,200	.91	17,300	184,000	.94	18,500	173,700	.97	20,000	163,000	1.00	21,600
		7500	198,300	.95	17,500	187,000	.97	18,600	176,000	1.00	20,200	165,300	1.00	21,800
	67	6000	206,500	.69	17,900	195,000	.71	19,100	184,300	.73	20,800	173,500	.75	22,400
		6750	210,100	.72	18,100	198,400	.74	19,300	187,300	.76	21,000	176,800	.78	22,700
		7500	213,500	.74	18,300	201,500	.75	19,400	190,000	.77	21,200	179,000	.79	22,900
	71	6000	221,000	.54	18,600	209,000	.55	19,800	197,500	.56	21,700	186,000	.57	23,400
		6750	225,000	.55	18,800	212,000	.56	20,000	200,100	.57	21,900	189,000	.58	23,600
		7500	228,000	.56	19,000	215,000	.57	20,200	203,200	.58	22,100	191,500	.59	23,900
EVMS1-275 C275-275 CR275-275	63	6000	203,000	.89	17,800	192,000	.91	18,900	181,000	.94	20,500	170,000	.98	22,100
		6750	207,000	.92	17,900	194,300	.96	19,100	183,000	.99	20,700	172,000	1.00	22,300
		7500	209,400	.97	18,100	197,000	1.00	19,200	185,200	1.00	20,800	174,000	1.00	22,400
	67	6000	219,000	.70	18,600	207,000	.72	19,700	195,000	.73	21,500	183,000	.75	23,200
		6750	222,000	.73	18,700	209,500	.75	19,800	197,000	.77	21,700	185,500	.79	23,400
		7500	225,500	.75	18,900	212,200	.78	19,900	199,500	.80	21,900	187,300	.83	23,600
	71	6000	234,000	.54	19,300	220,200	.55	20,400	208,000	.56	22,400	195,500	.57	24,200
		6750	237,300	.56	19,400	223,200	.57	20,600	210,000	.58	22,600	197,600	.59	24,400
		7500	241,000	.57	19,600	226,000	.58	20,700	213,000	.59	22,800	200,000	.60	24,600

HSM1-2753V CONDENSING UNIT

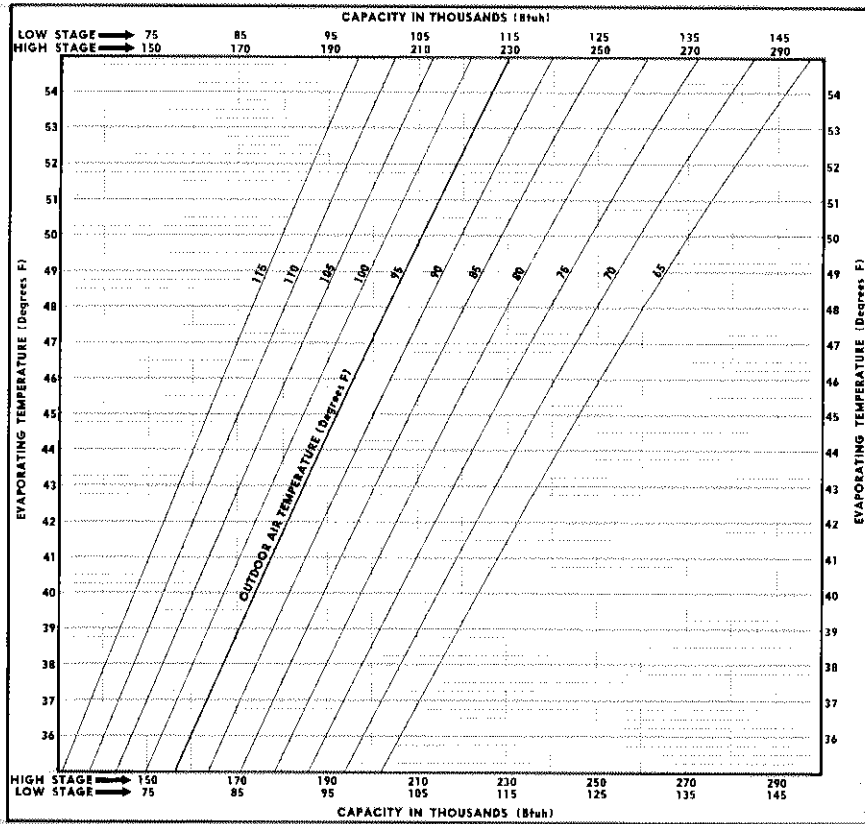
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EVMS1-275 C275-275 CR275-275	63	8800	272,500	.91	24,200	256,000	.94	25,800	241,000	.97	27,500	226,000	1.00	29,500
		9900	277,500	.96	24,400	260,300	.99	26,100	245,000	1.00	27,800	229,000	1.00	29,800
	67	8800	293,500	.72	25,200	276,000	.74	27,000	260,000	.75	28,800	244,000	.78	30,900
		9900	300,000	.74	25,600	281,000	.76	27,300	264,500	.79	29,100	248,000	.82	31,200
	71	8800	315,000	.55	26,300	296,000	.56	28,100	279,000	.57	30,000	262,000	.58	32,200
		9900	322,000	.55	26,600	302,500	.57	28,400	284,000	.58	30,300	267,000	.60	32,500

DIMENSIONS (inches)



PERFORMANCE CURVES

HSM1-1853V CAPACITY CURVES



HSM1-2753V CAPACITY CURVES

