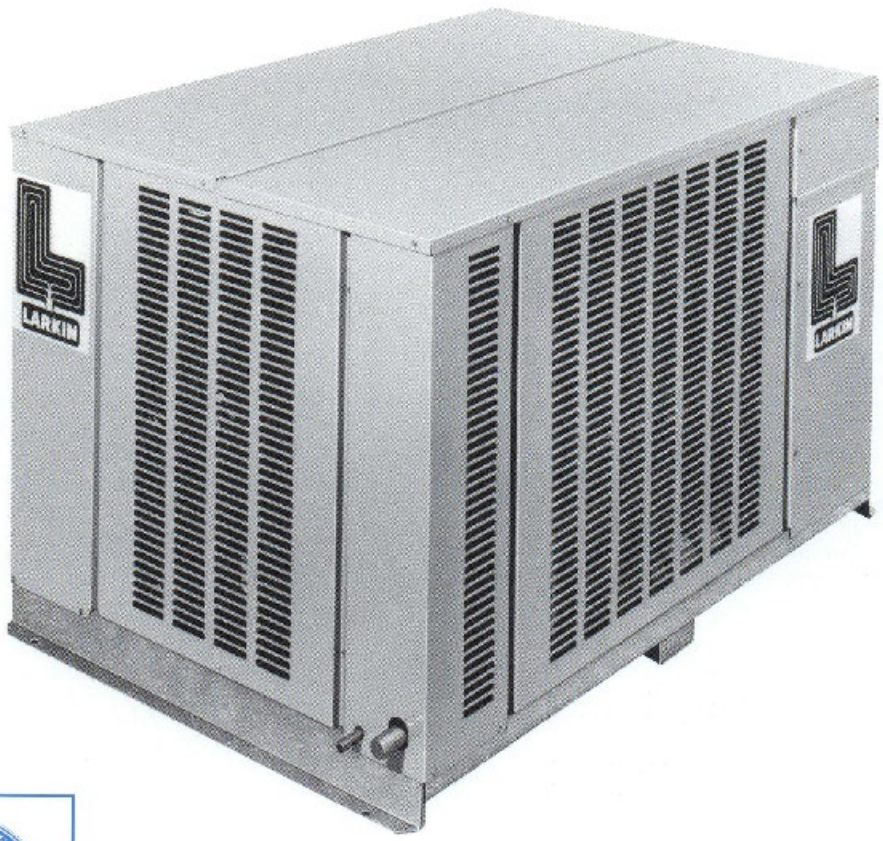
LARKIN

HORIZONTAL AIR DISCHARGE OUTDOOR DISCUS CONDENSING UNIT

MODEL LDH
3 to 10 HP



ISO 9000 REGISTERED HEATCRAFT QUALITY

LDH-92 (10/94)

LDH OUTDOOR DISCUS CONDENSING UNIT

LDH Outdoor Discus Condensing Units, Horizontal Air Discharge

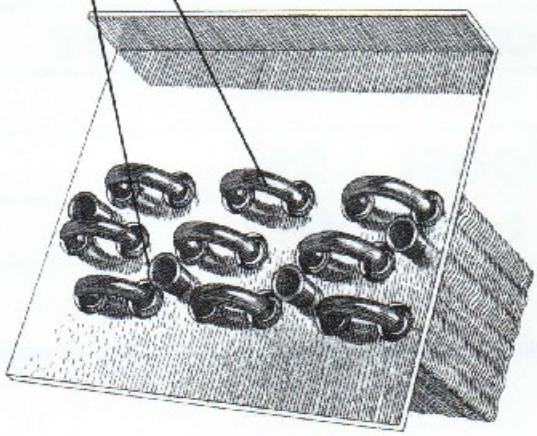
New Leak Resistant Design!

The LDH Outdoor Discus Condensing Unit features a new leak resistant design which includes:

1. The patented fully floating tube condenser coil. Refrigerant carrying copper tubes do not contact any metal support tubes; instead, the coil is constructed with expanded anchor tubes which support the coil construction and do not carry refrigerant. The coil design eliminates one of the major causes of leaks in refrigeration systems.
2. Can be applied with HFC-404A or HFC-507.
3. Pre-bent copper tubes minimize welded joints on internal piping.
3. All sweat type connections, no flare joints to leak.
4. Fixed high pressure switch eliminates capillary tube.
5. HCFC-22 models available for all temperature applications.
6. Sentronic oil safety control.

Expanded (Locked) Auxiliary Tubes: These tubes support the coil with fins and refrigerant carrying tubes. They do not carry refrigerant and are tightly fitted on end supports and center supports.

Free-Floating Circuited Coil Tubes: These tubes carry refrigerant and never touch any sheet metal (end supports and center supports).



Standard Features

- High efficiency Copeland Discus compressors with POE oil.
- Thermally protected permanently lubricated PSC condenser fan motor(s).
- Electrical controls including compressor contactor and optional defrost control are located in easily accessible control box with a hinged cover.
- Receivers are sized for sufficient pumpdown capacity with inlet and outlet service valves.
- Cabinet is constructed from rugged prepainted steel.
- Convenient access panels for easy servicing to internal components.
- Suction and discharge vibration eliminators.
- 180-lb. head pressure valve and crankcase heater for winter operation.
- Separate subcooling circuit in condenser for added capacity and vapor free liquid.
- Demand cooling on low temp. HCFC-22 models.
- Liquid line filter drier and sight glass.
- Pressure relief valve on receiver.

Optional Features

- Liquid line solenoid valve-mounted.
- Suction filter.
- Suction accumulator.
- Oil separator.
- Fused disconnect switch.
- Off cycle defrost timer.
- Electric defrost kits:
  - A. Includes defrost timer, heater and fan contactors and terminal strip for unit coolers.
  - B. Includes defrost timer, heater and fan contactors, terminal strip and fusing for heater and fan loads.
- Coated condenser coils for protection against metal erosion in harsh environments.
- 100-lb. head pressure valve or dual OROI/ORD valves for floating head pressure control.
- Insulated and heated receiver.
- Second pre-piped receiver for additional capacity.

LDH OUTDOOR DISCUS CONDENSING UNIT

Nomenclature

L D H 0500 D 7 3

L - Larkin Discus valve semi-hermetic condensing unit.

H - Horizontal Air Discharge

Nominal Horsepower

0300	3 HP	0750	7-1/2 HP
0400	4 HP	0751	7-1/2 HP
0500	5 HP	0800	8 HP
0501	5 HP	0900	9 HP
0600	6 HP	1000	10 HP
0601	6 HP		

Application Range
- L - Low (0° F. to -40° F. Suction)
- D - High (HCFC-22)
- M - Medium (HFC-404A or HFC-507)

Refrigerant
- 2 - HCFC-22
- 6 - HFC-404A or HFC-507
- 7 - HCFC-22

Electrical Characteristics
- 2 - 208-230/60/1
- 3 - 208-230/60/3
- 4 - 460/60/3
- 9 - 230/60/1

Head Pressure Control

Refrigeration condensing units must efficiently perform at varying ambient conditions. A properly sized unit will adequately perform at even the highest summer ambient temperatures. However, in situations where the system must operate the majority of the time at less than design temperature, a means of providing adequate head pressure for refrigerant flow is desirable. The LDH unit has several methods of head pressure control available.

1. Three-Way Flooding Valve (Standard).

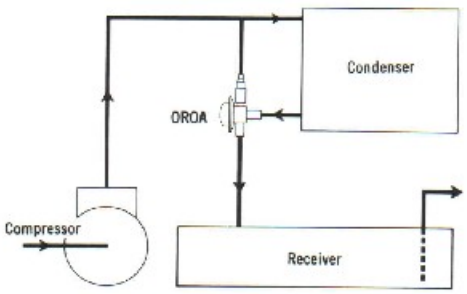
The simplest and most economical means of providing a stable head pressure in low ambients. The valve (as shown) will maintain 180 lb. PSIG in the receiver. This is accomplished by the modulation of the valve regulating flow from the condenser and the discharge line. It provides a minimum head pressure to insure refrigerant flow at the expansion valve (TXV). It also provides hot gas to the receiver for cold start situations.

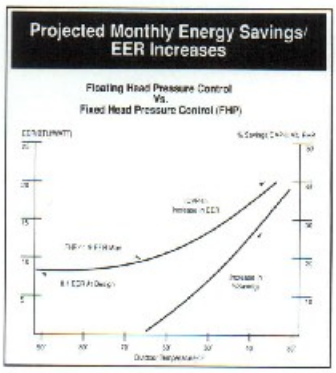
2. Larkin Floating Head Pressure Valve (Optional)

The Larkin Floating Head Pressure Valve varies from the standard three-way flooding valve in that it allows the head pressure to drop during lower ambient conditions to realize greater energy savings. This occurs because the compressor can produce the same capacity utilizing less energy. An additional benefit is that the operation of the system at these lower pressures can reduce compression ratio and allow liquid refrigerant in the condenser to become subcooled. This will enhance system operation and dramatically reduce system run time. A long term benefit is that by reducing compression ratio, the life expectancy of the compressor will be extended.

The energy savings associated with a Larkin Floating Head Pressure Valve system can be substantial as the ambient temperature drops (see chart). However, as the receiver pressure drops the pressure differential available for refrigerant flow at the TXV drops. Typically, expansion valves are oversized by one increment from the standard selection to improve flow. This does not affect valve performance in summer ambients as most expansion valves will maintain stable superheat down to 60 percent of their rating.

Three-Way Flooding Valve Piping Arrangement

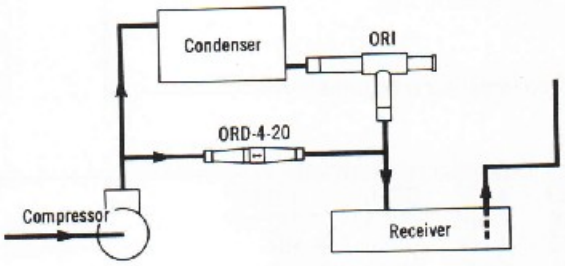




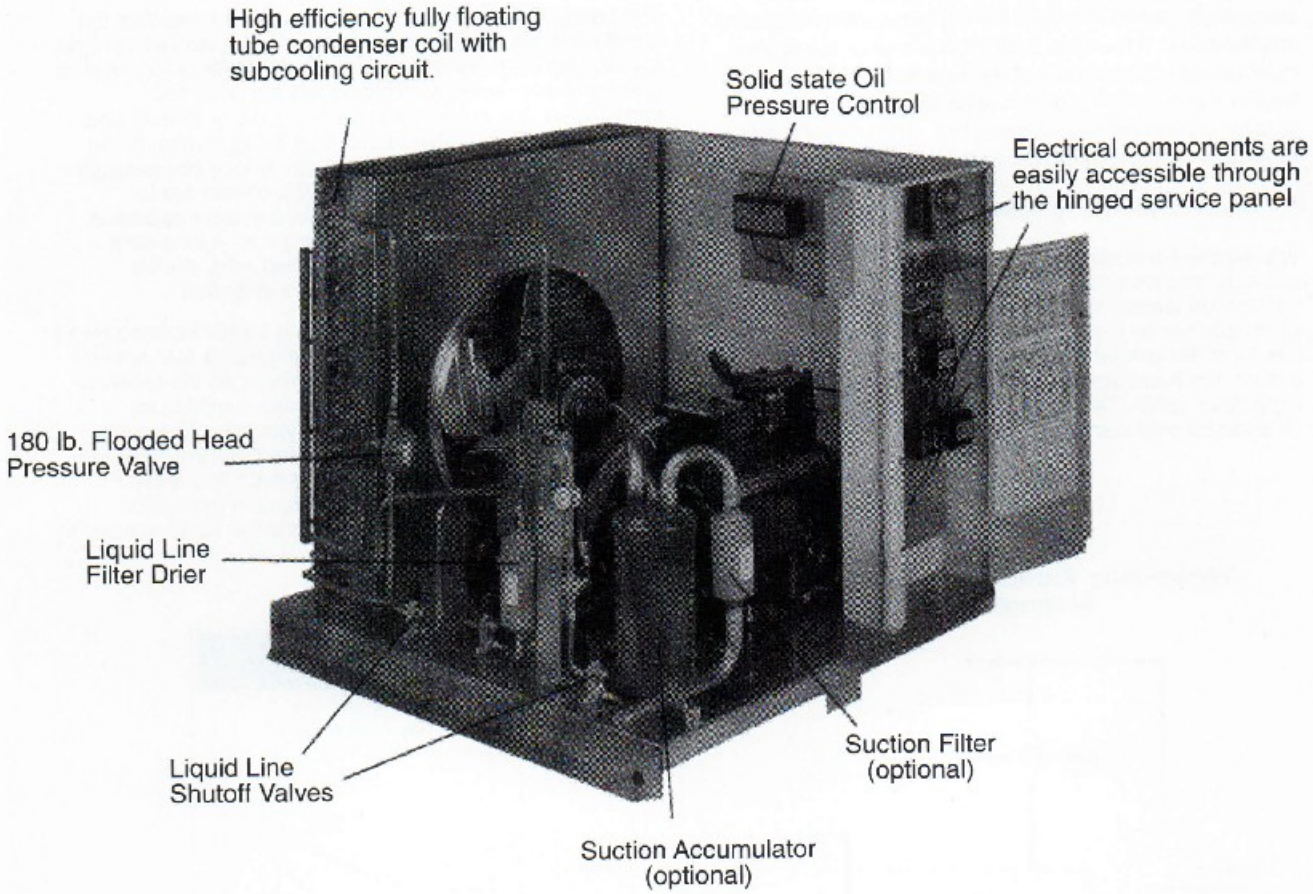
3. Adjustable Two-Valve Head Pressure System.

This is similar in principle (and benefits) to the Larkin Floating Head Pressure Valve in that there is a modulation of refrigerant flow from the condenser to the receiver and also a bypass from the discharge line to maintain receiver pressure. The difference in the two-valve system is that the valves are adjustable so that receiver presure can be raised or lowered depending on application situations of the particular job.

Two-Valve Piping Arrangement



Features



LDH OUTDOOR DISCUS CONDENSING UNIT

Performance

	Model Number	Compressor Model	Capacity BTU/H @ 95° F. / 35° C. Ambient Temperature Evaporator Temperature ° F. / ° C.						
			40° F. / 4.4° C. BTU/H - K/CAL	35° F. / 1.7° C. BTU/H - K/CAL	30° F. / -1.1° C. BTU/H - K/CAL	25° F. / -3.9° C. BTU/H - K/CAL	20° F. / -6.7° C. BTU/H - K/CAL	15° F. / -9.4° C. BTU/H - K/CAL	10° F. / -12.2° C. BTU/H - K/CAL
Med. Temp. HCFC-22	LDH0500D7	2DC3-050E	58760 14808	54160 13648	49560 12489	45130 11373	40880 10302	36955 9313	33030 8324
	LDH0501D7	2DD3-050E	66190 16680	61125 15403	56060 14127	51150 12890	46400 11693	42010 10587	37620 9480
	LDH0750D7	2DL3-075E	85010 21423	78290 19729	71570 18036	65110 16408	58910 14845	53215 13410	47520 11975
	LDH0751D7	2DA3-075E	94110 23716	86750 21861	79390 20006	72330 18227	65540 16516	59285 14940	53030 13364
	LDH0800D7	3DA3-075E	113470 28594	104405 26310	95340 24026	86960 21914	78730 19840	71170 17935	63610 16030
	LDH1000D7	3DB3-100E	133280 33587	123330 31079	113380 28572	102280 25775	92630 23343	83755 21106	74880 18870
			0° F. / -17.8° C.	-10° F. / -23.3° C.	-15° F. / -26.1° C.	-20° F. / -28.9° C.	-25° F. / -31.7° C.	-30° F. / -34.4° C.	-40° F. / -40° C.
Low Temp. HCFC-22	LDH0300L2	2DF3-030E	29970 7552	22600 5695	19690 4962	16780 4228	14450 3641	12120 3054	8170 2059
	LDH0400L2	2DL3-040E	34620 8724	26780 6749	23350 5884	19920 5019	17040 4294	14160 3568	9590 2517
	LDH0600L2	2DB3-060E	41440 10443	32090 8087	28185 7103	24280 6119	21045 5303	17810 4488	12380 3119
	LDH0601L2	3DA3-060E	48810 12300	37690 9498	33030 8324	28370 7149	24525 6180	20680 5211	14340 3614
	LDH0750L2	3DB3-075E	57020 14369	44570 11232	39395 9928	34220 8623	29880 7555	25540 6436	18060 4551
	LDH0900L2	3DF3-090E	69780 17585	54540 13744	47925 12077	41310 10410	36205 9124	31100 7837	22620 5700
	LDH1000L2	3DS3-100E	74490 18771	58330 14699	51390 12950	44450 11201	38540 9712	32630 8223	23074 5814
			30° F. / -1.1° C.	25° F. / -3.9° C.	20° F. / -6.7° C.	15° F. / -9.4° C.	10° F. / -12.2° C.	0° F. / -17.8° C.	-10° F. / -23.3° C.
Med. Temp. HFC-404A & HFC-507	LDH0500M6	2DC3-050E	48200 12146	43500 10962	39600 9979	35800 9022	32000 8064	25800 6502	21900 5519
	LDH0501M6	2DD3-050E	55000 13860	50600 12751	46000 11592	41700 10508	37300 9400	30400 7661	25600 6451
	LDH0750M6	2DL3-075E	70800 17842	64400 16229	58600 14767	53100 13881	47500 11970	39000 9828	33700 8492
	LDH0751M6	2DA3-075E	78900 19883	72300 18220	66000 16632	60100 15145	54200 13658	45400 11441	40000 10080
	LDH0800M6	3DA3-075E	93500 23562	85700 21596	78200 19706	71400 17993	64500 16254	53700 13532	46800 11794
	LDH1000M6	3DB3-100E	109400 27569	101200 25502	92500 23310	84500 21294	76400 19253	64200 16178	56500 14238
			0° F. / -17.8° C.	-10° F. / -23.3° C.	-15° F. / -26.1° C.	-20° F. / -28.9° C.	-25° F. / -31.7° C.	-30° F. / -34.4° C.	-40° F. / -40° C.
Low Temp. HFC-404A & HFC-507	LDH0300L6	2DF3-030E	31680 7983	25600 6451	22500 5670	19700 4964	16900 4259	14500 3654	10300 2596
	LDH0400L6	2DL3-040E	36930 9306	30000 7560	26400 6653	23400 5897	20300 5116	17500 4410	12600 3175
	LDH0600L6	2DB3-060E	43360 10927	35700 8996	31800 8014	28000 7056	24300 6124	21200 5342	15500 3906
	LDH0601L6	3DA3-060E	51020 12857	41800 10534	37200 9374	32600 8215	28500 7182	24900 6275	18400 4637
	LDH0750L6	3DB3-075E	58250 14679	48200 12146	43100 10861	37800 9526	33400 8417	28800 7258	21600 5443
	LDH0900L6	3DF3-090E	72160 18184	59400 14969	52500 13230	46800 11794	41000 10332	35700 8996	26800 6754
	LDH1000L6	3DS3-100E	77930 19638	64800 16330	58000 14616	51100 12877	45000 11340	39600 9979	29500 7434

LDH OUTDOOR DISCUS CONDENSING UNIT

Specifications

Model	Compressor		Connections		Receiver (90% Full)		Approx. Shipping Weight LBS/*KG*
	Model	HP	Liquid IN/*CM*	Suction IN/*CM*	Standard LBS/*KG*	Optional* LBS/*KG*	
LDH0500D7/M6	2DC3-050E	5	1/2 *1.27*	1 1/8 *2.86*	40 *18.1*	65 *29.5*	650 *294.8*
LDH0501D7/M6	2DD3-050E	5	1/2 *1.27*	1 1/8 *2.86*	40 *18.1*	65 *29.5*	650 *294.8*
LDH0750D7/M6	2DL3-075E	7.5	5/8 *1.59*	1 1/8 *2.86*	80 *36.3*	105 *47.6*	850 *385.6*
LDH0751D7/M6	2DA3-075E	7.5	5/8 *1.59*	1 1/8 *2.86*	80 *36.3*	105 *47.6*	850 *385.6*
LDH0800D7/M6	3DA3-075E	8	5/8 *1.59*	1 3/8 *3.49*	80 *36.3*	105 *47.6*	875 *396.9*
LDH1000D7/M6	3DB3-100E	10	5/8 *1.59*	1 3/8 *3.49*	80 *36.3*	105 *47.6*	900 *408.2*
LDH0300L2/L6	2DF3-030E	3	1/2 *1.27*	1 1/8 *2.86*	40 *18.1*	65 *29.5*	650 *294.8*
LDH0400L2/L6	2DL3-040E	4	1/2 *1.27*	1 1/8 *2.86*	40 *18.1*	65 *29.5*	650 *294.8*
LDH0600L2/L6	2DB3-060E	6	1/2 *1.27*	1 1/8 *2.86*	40 *18.1*	65 *29.5*	650 *294.8*
LDH0601L2/L6	3DA3-060E	6	5/8 *1.59*	1 3/8 *3.49*	80 *36.3*	105 *47.6*	850 *385.6*
LDH0750L2/L6	3DB3-075E	7.5	5/8 *1.59*	1 3/8 *3.49*	80 *36.3*	105 *47.6*	850 *385.6*
LDH0900L2/L6	3DF3-090E	9	5/8 *1.59*	1 3/8 *3.49*	80 *36.3*	105 *47.6*	875 *396.9*
LDH1000L2/L6	3DS3-100E	10	5/8 *1.59*	1 3/8 *3.49*	80 *36.3*	105 *47.6*	900 *408.2*

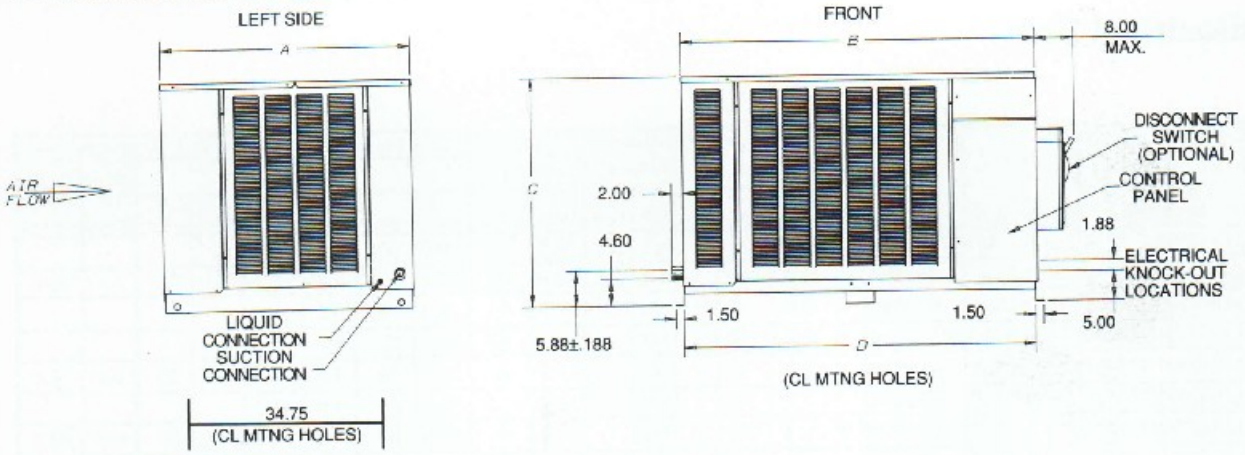
*Total receiver capacity based on an optional second receiver included in the system.

Electrical Data

Model Numbers	Compressor	Power Supply	Compressor		Condenser Fan Motor			Air Defrost		Electric Defrost Units				Reduced Amp Elec. Def. Units[1]			
												Unit Cooler Amps				Unit Cooler Amps	
			RLA	LRA	Qty.	HP	FLA	MCA	MOP	MCA	MOP	Fan Motors	Defrost Heaters	MCA	MOP	Fan Motors	Defrost Heaters
LDH0500D7/M63	2DC3-050E	208-230/60/3	20.0	120	1	1/3	3.5	28.5	40	39.0	50	8.8	39.0	-	-	-	-
LDH0500D7/M64	2DC3-050E	460/60/3	9.4	60	1	1/2	1.9	13.6	20	20.0	25	4.4	20.0	18.0	25	4.4	18.0
LDH0500D7/M65	2DC3-050E	575/60/3	6.9	49	1	1/2	1.2	9.9	15	13.8	15	3.9	13.1	-	-	-	-
LDH0501D7/M63	2DD3-050E	208-230/60/3	20.0	120	1	1/3	3.5	28.5	40	39.0	50	8.8	39.0	-	-	-	-
LDH0501D7/M64	2DD3-050E	460/60/3	9.4	60	1	1/2	1.9	13.7	20	20.0	25	4.4	20.0	18.0	25	4.4	18.0
LDH0501D7/M65	2DD3-050E	575/60/3	7.1	49	1	1/2	1.2	10.1	15	14.0	20	3.9	13.1	-	-	-	-
LDH0750D7/M63	2DL3-075E	208-230/60/3	28.3	169	2	1/3	7	42.4	60	68.0	80	15.0	68.0	65.0	80	15.0	65.0
LDH0750D7/M64	2DL3-075E	460/60/3	12.4	85	2	1/2	3.8	19.3	30	40.0	50	7.8	40.0	25.0	30	4.8	25.0
LDH0750D7/M65	2DL3-075E	575/60/3	11.9	67	2	1/2	2.4	17.2	25	21.1	30	3.9	13.1	-	-	-	-
LDH0751D7/M63	2DA3-075E	208-230/60/3	28.7	169	2	1/3	7	42.9	60	68.0	80	15.0	68.0	65.0	80	15.0	65.0
LDH0751D7/M64	2DA3-075E	460/60/3	12.6	85	2	1/2	3.8	19.6	30	40.0	50	7.8	40.0	25.0	30	4.8	25.0
LDH0751D7/M65	2DA3-075E	575/60/3	11.9	67	2	1/2	2.4	17.3	25	21.2	30	3.9	13.1	-	-	-	-
LDH0800D7/M63	3DA3-075E	208-230/60/3	36.8	215	2	1/3	7	53.0	80	68.0	90	15.0	68.0	65.0	90	12.0	65.0
LDH0800D7/M64	3DA3-075E	460/60/3	17.9	106	2	1/2	3.8	26.2	40	40.0	50	7.8	40.0	-	-	-	-
LDH0800D7/M65	3DA3-075E	575/60/3	14.7	84	2	1/2	2.4	20.8	30	25.0	40	4.2	20.8	-	-	-	-
LDH1000D7/M63	3DB3-100E	208-230/60/3	39.1	215	2	1/3	7	55.9	80	82.0	90	22.9	82.0	65.0	90	9.1	65.0
LDH1000D7/M64	3DB3-100E	460/60/3	17.9	106	2	1/2	3.8	26.2	40	48.0	50	11.5	48.0	45.0	50	11.5	45.0
LDH1000D7/M65	3DB3-100E	575/60/3	14.8	84	2	1/2	2.4	20.9	30	41.6	50	4.2	41.6	-	-	-	-
LDH0300L2/L63	2DF3-030E	208-230/60/3	15.1	102	1	1/3	3.5	22.4	30	31.2	40	8.8	30.5	25.0	40	2.7	25.0
LDH0300L2/L64	2DF3-030E	460/60/3	9.2	52	1	1/2	3.8	13.4	20	17.8	25	4.4	10.0	-	-	-	-
LDH0300L2/L65	2DF3-030E	575/60/3	6.0	41	1	1/2	1.2	8.7	15	12.6	15	3.9	10.0	-	-	-	-
LDH0400L2/L63	2DL3-040E	208-230/60/3	23.6	161	1	1/3	3.5	33.0	50	41.8	60	8.8	39.0	-	-	-	-
LDH0400L2/L64	2DL3-040E	460/60/3	9.2	60	1	1/2	3.8	13.4	20	20.0	25	4.4	20.0	18.0	25	4.4	18.0
LDH0400L2/L65	2DL3-040E	575/60/3	6.9	49	1	1/2	1.2	9.9	15	13.8	20	3.9	13.1	-	-	-	-
LDH0600L2/L63	2DB3-060E	208-230/60/3	25.3	161	2	1/3	7.0	35.2	50	44.0	60	8.8	39.0	-	-	-	-
LDH0600L2/L64	2DB3-060E	460/60/3	11.9	80	2	1/2	3.8	16.8	25	21.2	30	4.4	20.0	-	-	-	-
LDH0600L2/L65	2DB3-060E	575/60/3	8.6	63	2	1/2	2.4	12.0	20	15.9	20	3.9	13.1	-	-	-	-
LDH0601L2/L63	3DA3-060E	208-230/60/3	24.0	150	2	1/3	7.0	37.0	60	45.8	60	8.8	39.0	45.0	60	8.0	39.0
LDH0601L2/L64	3DA3-060E	460/60/3	10.8	77	2	1/2	3.8	17.3	25	21.7	30	4.4	20.0	-	-	-	-
LDH0601L2/L65	3DA3-060E	575/60/3	9.4	62	2	1/2	2.4	14.2	20	18.1	25	3.9	13.1	-	-	-	-
LDH0750L2/L63	3DB3-075E	208-230/60/3	28.2	161	2	1/3	7.0	42.3	60	68.0	80	15.0	68.0	65.0	80	15.0	65.0
LDH0750L2/L64	3DB3-075E	460/60/3	14.4	83	2	1/2	3.8	21.8	30	40.0	50	4.8	40.0	30.0	40	4.8	30.0
LDH0750L2/L65	3DB3-075E	575/60/3	9.9	67	2	1/2	2.4	14.7	20	18.6	25	3.9	13.1	-	-	-	-
LDH0900L2/L63	3DF3-090E	208-230/60/3	35.0	215	2	1/3	7.0	50.8	80	68.0	80	15.0	68.0	65.0	80	14.0	65.0
LDH0900L2/L64	3DF3-090E	460/60/3	15.1	106	2	1/2	3.8	22.7	30	40.0	50	4.8	40.0	30.0	40	4.8	30.0
LDH0900L2/L65	3DF3-090E	575/60/3	14.7	84	2	1/2	2.4	20.8	30	25.0	40	4.2	20.8	-	-	-	-
LDH1000L2/L63	3DS3-100E	208-230/60/3	37.7	215	2	1/3	7.0	54.1	80	69.1	90	15.0	68.0	65.0	90	10.8	65.0
LDH1000L2/L64	3DS3-100E	460/60/3	16.7	106	2	1/2	3.8	24.6	40	40.0	50	4.8	40.3	30.0	40	4.8	30.0
LDH1000L2/L65	3DS3-100E	575/60/3	15.1	84	2	1/2	2.4	21.2	30	25.4	40	4.2	20.8	-	-	-	-

MCA = Minimum Circuit Ampacity
MOP = Maximum Overcurrent Protection
[1]Reduced nameplate amperage (if applicable) must be requested at time of order.

Dimensional Diagrams



Dimensions

Model No.	Dimensions				
	A IN/*CM*	B IN/*CM*	C IN/*CM*	D IN/*CM*	No. Fans
LDH0500D7/M6	43-3/8 *110.19*	45-1/4 *114.94*	39-1/4 *99.70*	43-7/8 *111.46*	1
LDH0501D7/M6	43-3/8 *110.19*	45-1/4 *114.94*	39-1/4 *99.70*	43-7/8 *111.46*	1
LDH0750D7/M6	43-3/8 *110.19*	64-1/4 *163.20*	39-1/4 *99.70*	62-7/8 *159.72*	2
LDH0751D7/M6	43-3/8 *110.19*	64-1/4 *163.20*	39-1/4 *99.70*	62-7/8 *159.72*	2
LDH0800D7/M6	43-3/8 *110.19*	64-1/4 *163.20*	39-1/4 *99.70*	62-7/8 *159.72*	2
LDH1000D7/M6	43-3/8 *110.19*	64-1/4 *163.20*	39-1/4 *99.70*	62-7/8 *159.72*	2
LDH0300L2/L6	43-3/8 *110.19*	45-1/4 *114.94*	39-1/4 *99.70*	43-7/8 *111.46*	1
LDH0400L2/L6	43-3/8 *110.19*	45-1/4 *114.94*	39-1/4 *99.70*	43-7/8 *111.46*	1
LDH0600L2/L6	43-3/8 *110.19*	45-1/4 *114.94*	39-1/4 *99.70*	43-7/8 *111.46*	1
LDH0601L2/L6	43-3/8 *110.19*	64-1/4 *163.20*	39-1/4 *99.70*	62-7/8 *159.72*	2
LDH0750L2/L6	43-3/8 *110.19*	64-1/4 *163.20*	39-1/4 *99.70*	62-7/8 *159.72*	2
LDH0900L2/L6	43-3/8 *110.19*	64-1/4 *163.20*	39-1/4 *99.70*	62-7/8 *159.72*	2
LDH1000L2/L6	43-3/8 *110.19*	64-1/4 *163.20*	39-1/4 *99.70*	62-7/8 *159.72*	2

Since products improvement is a continuing effort at Heatcraft, we reserve the right to make changes in specifications without notice.

A Product Line of

HEATCRAFT *Inc.*

Refrigeration Products Division

LARKIN

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♻ Please recycle.