5 to 100 Ton Capacity

Custom Capacities Available

LRC's remote Air Cooled Condensers (ACC) provide optimum heat transfer efficiency and are manufactured for years of dependable service. Available in 31 sizes, from 5 to 100-ton capacity, LRC's direct drive Air Cooled Condensers are designed to the latest specifications and are thoroughly tested to guarantee reliable performance. LRC's experienced team of engineers can design a single ACC unit or OEM models to meet your specific needs.

- 31 standard sizes available, from 5 to 100 nominal tons
- Single or double wide configurations
- Direct drive 1140 R.P.M. motors
- Vertical discharge standard, horizontal discharge also available
- Efficient coil design ensures maximum performance
- Galvanized steel casing provides corrosion protection for years of service
- Motors are factory wired to a control box for easy installation
- Refrigerants – R22, R134A, R404A, R410, R502 and R507
- ETL certified

Options Available – Call for details

Multi-circuiting
Controlling multiple refrigeration systems with a single ACC unit is available upon request

Fan cycling control
Can be ordered with contactors and either ambient or head pressure sensors. Fan cycling with individual contactors available on double-wide ACC motors.

Flooded condenser
3-way modulating valves (controlled by discharge pressure) can be installed prior to shipping

Motors
High efficiency motors available to save energy. Low RPM, low noise units, and variable speed fan motors and controls are available, call for details

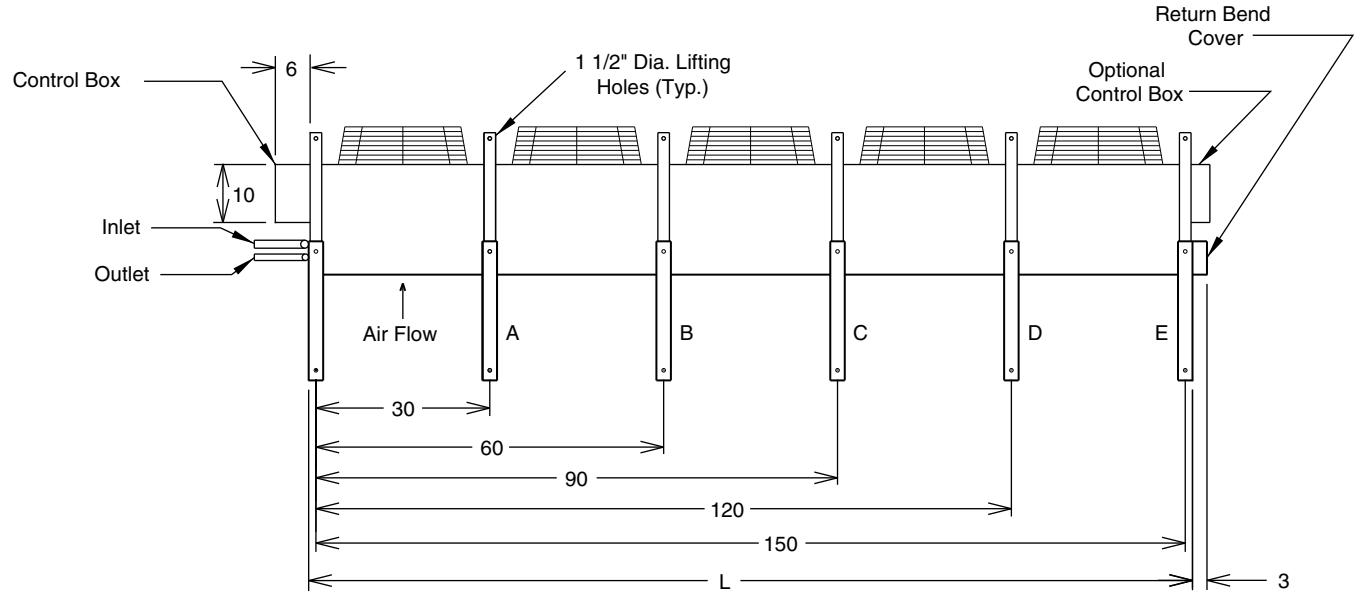
Fins
8 to 14 fins per inch available. Copper, or phenolic, epoxy, or polyester coated aluminum fins can be ordered.

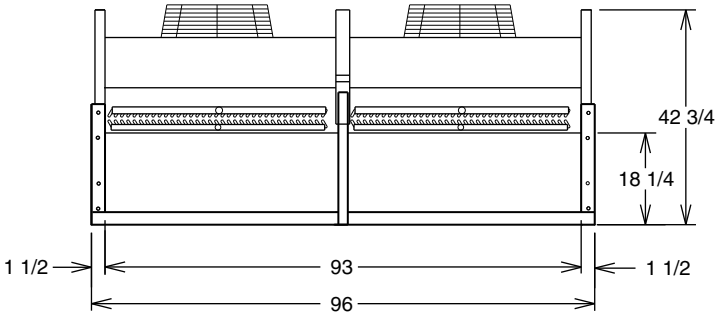
Sub-cooling unit
Can be built into the condenser upon request

Product Number Designation Example

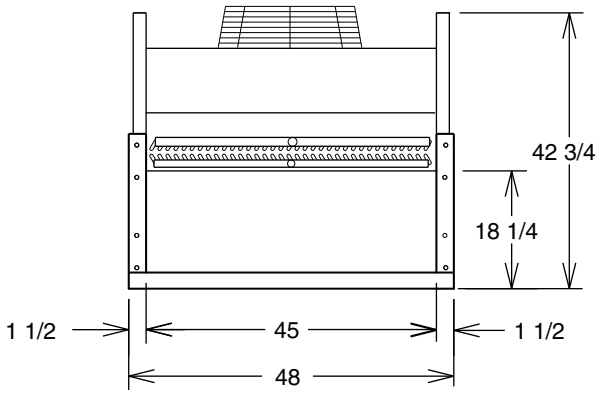
ACC-19 can be broken down as
ACC = Air Cooled Condenser
19 = BTU/H times 10,000

ACC–19 =
Air cooled condenser at 190,000 BTU/H





Header End View
Double Wide Units



Header End View
Single Wide Units

Notes

- Mounting legs are retracted for shipping, and must be lowered in position for unit installation.
- All Dimensions are in inches.
- All mounting holes are 5/8" diameter.
- Units are available in horizontal air flow arrangements. Contact LRC's Applications Engineers for details.

Physical Data (Table A)

Model Number	Fan Data Qty	Fan Data CFM	208/230/1 FLA	460/1 FLA	Ref. Chg. R-22 (lbs.)	Dimensions (in Inches) Leg(s)	L	Inlet	Outlet	Ship Wt. (lbs.)
Single Wide Units										
ACC-5	1	8,200	4.2	2.1	3.4	A	32 1/4	1 1/8	7/8	220
ACC-6	1	8,000	4.2	2.1	3.4	A	32 1/4	1 1/8	7/8	235
ACC-7	1	7,900	4.2	2.1	5.1	A	32 1/4	1 1/8	7/8	270
ACC-8	1	7,600	4.2	2.1	6.9	A	32 1/4	1 1/8	7/8	295
ACC-9	1	7,400	4.2	2.1	6.9	A	32 1/4	1 1/8	7/8	302
ACC-11	2	16,600	8.4	4.2	6.4	B	62 1/4	1 3/8	1 1/8	340
ACC-13	2	16,200	8.4	4.2	9.6	B	62 1/4	1 3/8	1 1/8	355
ACC-15	2	15,700	8.4	4.2	9.6	B	62 1/4	1 3/8	1 1/8	370
ACC-16	2	15,300	8.4	4.2	12.7	B	62 1/4	1 3/8	1 3/8	380
ACC-17	2	14,900	8.4	4.2	12.7	B	62 1/4	1 3/8	1 3/8	400
ACC-19	2	14,400	8.4	4.2	16.0	B	62 1/4	1 3/8	1 3/8	420
ACC-21	2	13,700	8.4	4.2	17.2	B	62 1/4	1 5/8	1 5/8	480
ACC-23	3	23,600	12.6	6.3	18.6	B, C	92 1/4	1 5/8	1 5/8	546
ACC-24	3	23,000	12.6	6.3	18.6	B, C	92 1/4	1 5/8	1 5/8	560
ACC-28	3	21,700	12.6	6.3	23.3	B, C	92 1/4	1 5/8	1 5/8	630
ACC-30	4	31,500	16.8	8.4	18.4	B, D	122 1/4	2 1/8	2 1/8	680
ACC-37	4	29,800	16.8	8.4	24.6	B, D	122 1/4	2 1/8	2 1/8	740
ACC-40	4	28,900	16.8	8.4	30.8	B, D	122 1/4	2 1/8	2 1/8	800
ACC-46	5	38,300	21.0	10.5	30.8	B, C, E	152 1/4	2 1/8	2 1/8	988
ACC-50	5	37,200	21.0	10.5	38.5	B, C, E	152 1/4	2 1/8	2 1/8	1,062
Double Wide Units										
ACC-25	4	33,300	16.8	8.4	12.7	B	62 1/4	(2) 1 3/8	(2) 1 1/8	760
ACC-31	4	31,500	16.8	8.4	19.1	B	62 1/4	(2) 1 3/8	(2) 1 3/8	790
ACC-35	4	30,600	16.8	8.4	31.9	B	62 1/4	(2) 1 3/8	(2) 1 3/8	890
ACC-44	6	47,300	25.2	12.6	28.1	B, C	90 1/4	(2) 1 5/8	(2) 1 5/8	1,080
ACC-51	6	46,000	25.2	12.6	37.4	B, C	90 1/4	(2) 1 5/8	(2) 1 5/8	1,190
ACC-57	6	43,300	25.2	12.6	46.7	B, C	90 1/4	(2) 1 5/8	(2) 1 5/8	1,330
ACC-61	8	63,000	33.6	16.8	36.9	B, D	122 1/4	(2) 2 1/8	(2) 2 1/8	1,440
ACC-75	8	60,000	33.6	16.8	49.3	B, D	122 1/4	(2) 2 1/8	(2) 2 1/8	1,580
ACC-80	8	57,800	33.6	16.8	61.6	B, D	122 1/4	(2) 2 1/8	(2) 2 1/8	1,700
ACC-93	10	76,600	42.0	21.0	61.6	B, C, E	152 1/4	(2) 2 1/8	(2) 2 1/8	1,975
ACC-100	10	74,400	42.0	21.0	77.1	B, C, E	152 1/4	(2) 2 1/8	(2) 2 1/8	2,125

Fan diameter is 24" Fan Horsepower is 3/4 FLA is Full Load Amps

Finding the Right Condenser

To determine the proper Air Cooled Condenser for your project, you must first determine the Total Heat of Rejection (THR) of the condenser. The formula to determine Total Heat of Rejection values is net refrigeration at the evaporator (compressor capacity) plus the heat absorbed by the refrigerant in the compressor (heat rejection). Heat rejection will vary depending on the compressor type and operating conditions.

If heat rejection values are not available, THR can be estimated using the following formula:

THR = (Compressor cap.) **x** (Heat Rejection Factor from Table D) **x** (Altitude Corr. Factor, Table C)

Table D contains heat rejection factors for suction cooled compressors. (For open compressors, contact LRC for details.) For systems beyond the ranges of Table D, use the following equation to estimate THR:

THR = Compressor Capacity (BTU/H) + (3413 **x** KW) **x** (Altitude Cor. Factor, Table C)

Altitude affects compressor capacity. If the compressor is installed above sea level, use the Altitude Cor. factor from Table C.

Project Example

(assuming THR is not available)

Ambient Temp.	95° F
Condensing Temp.	120° F
Evaporator Temp.	20° F
Altitude	2,000 ft
Refrigerant	R-22
Compressor	Suction Cooled
Compressor cap.	250,000 BTU/H

Step 1– Estimate Condenser THR

From Table D, using 20° F in the Evaporator column, and 120° F in the Condensing row, will give you a Heat Rejection Factor of 1.38.

THR = 275,000 (Compressor cap.) **x** 1.38 (Heat Rejection Factor) **x** 1.05 (Altitude Cor. Factor) = 398,475 BTUH

Step 2– Find Design Condenser T.D.

Design Condenser T.D. = 120°F (Condensing Temp.) – 95°F (Ambient Temp.) = 25°F T.D.

Step 3– Condenser Selection

Convert the BTUH figure from Step 1 to MBH

398,475 (BTUH) ÷ 1000 = 398.5 MBH

From Table B, use the 25°F T.D. (from Step 2) column to find a condenser that meets or exceeds the 398.5 MBH value. The unit best suited to this project would be ACC-28 (401.0 MBH).

Step 4 – Determine Actual T.D. and Condensing Temperature

The actual condenser T.D. can be calculated by dividing the design THR (from Step 1) by the condenser rating at 1° F T.D (from Table B). For ACC-28, the rating at 1°F T.D is 16.04 MBH.

Actual T.D. = 398.5 (Design THR) ÷ 16.04 (Rating @ 1°F T.D) = 24.8°F T.D

The actual condensing temperature is the actual T.D. plus the ambient temperature. Actual Condensing Temp. = 24.8°F T.D + 95°F (Ambient Temp.) = 119.8°F

Capacities (Table B)

Model Number	Fan Qty	# of Cir.	Max. # Cir.	Cap./ Cir. (lbs)	BTUH/ Cir. 1° TD	Condenser capacities for R22. 1° TD	10° TD	15° TD	20° TD	25° TD	30° TD
Single Wide Units											
ACC-5	1	3	35	1.1	94.0	3.29	32.9	49.3	65.8	82.2	98.7
ACC-6	1	3	35	1.1	102.9	3.60	36.0	54.0	72.0	90.0	108.0
ACC-7	1	3	35	1.7	167.3	4.35	43.5	65.2	87.0	108.7	130.4
ACC-8	1	4	35	1.7	178.8	4.65	46.5	69.7	93.0	116.2	139.5
ACC-9	1	4	35	1.7	143.4	5.02	50.2	75.3	100.4	125.5	150.6
ACC-11	2	5	35	1.3	188.6	6.60	66.0	99.0	132.0	165.0	198.0
ACC-13	2	7	35	1.4	301.5	7.84	78.4	117.6	156.8	196.0	235.2
ACC-15	2	7	35	1.4	333.5	8.67	86.7	130.1	173.4	216.7	260.2
ACC-16	2	7	35	1.8	359.2	9.34	93.4	140.1	186.8	233.5	280.2
ACC-17	2	8	35	1.6	288.6	10.10	101.0	151.5	202.0	252.5	303.0
ACC-19	2	8	35	2.0	304.0	10.64	106.4	159.1	212.8	266.0	319.2
ACC-21	2	10	35	1.7	270.7	11.64	116.4	174.6	232.8	291.0	349.2
ACC-23	3	10	35	1.9	500.4	13.01	130.1	195.1	260.2	325.2	390.3
ACC-24	3	11	35	1.7	539.2	14.02	140.2	210.3	280.4	350.5	420.6
ACC-28	3	13	35	1.8	458.3	16.04	160.4	240.6	320.8	401.0	481.2
ACC-30	4	13	35	1.4	667.3	17.35	173.5	260.2	347.0	433.7	520.4
ACC-37	4	16	35	1.5	577.1	20.20	202.0	303.0	404.0	505.0	606.0
ACC-40	4	17	35	1.8	611.1	21.39	213.9	320.8	427.8	534.7	641.7
ACC-46	5	18	35	1.7	887.7	23.08	230.8	346.2	461.6	577.0	692.4
ACC-50	5	21	35	1.8	777.4	27.21	272.1	408.1	544.2	680.2	816.3
Double Wide Units											
ACC-25	4	5	70	2.5	190.6	13.34	133.4	200.1	266.8	333.5	400.2
ACC-31	4	7	70	2.7	334.2	17.38	173.8	260.7	347.6	434.5	521.4
ACC-35	4	7	70	4.6	364.8	18.97	189.7	284.5	379.4	474.2	569.1
ACC-44	6	10	70	2.8	501.2	26.06	260.6	390.9	521.2	651.5	781.8
ACC-51	6	11	70	3.4	539.2	28.04	280.4	420.6	560.8	701.0	841.2
ACC-57	6	13	70	3.6	457.7	32.04	320.4	480.6	640.8	801.0	961.2
ACC-61	8	13	70	2.8	667.7	34.72	347.2	520.8	694.4	868.0	1041.6
ACC-75	8	16	70	3.1	578.6	40.50	405.0	607.5	810.0	1012.5	1215.0
ACC-80	8	17	70	3.6	613.9	42.97	429.7	644.5	859.4	1074.2	1289.1
ACC-93	10	18	70	3.4	898.7	46.73	467.3	700.9	934.6	1168.2	1401.9
ACC-100	10	21	70	3.7	777.3	54.41	544.1	816.1	1088.2	1360.3	1632.3

All capacities are in MBH (MBH x 1000 = BTUH)
For R12 or R134A multiply above rating by .95
For R502,R404, or R507 multiply above rating by .98

Standard condenser circuiting are based on: 25ºF TD for R22
20ºF TD for R12 or R134A
15ºF TD for R404A, R502 or R507

Altitude Correction (Table C)

Sea Level	1.000
1,000 FT.	1.030
2,000 FT.	1.050
3,000 FT.	1.075
4,000 FT.	1.100
5,000 FT.	1.125
6,000 FT.	1.150
7,000 FT.	1.175
8,000 FT.	1.205
9,000 FT.	1.230
10,000 FT.	1.260

Heat Rejection Factors (Table D)

Evap. Temp.	Condensing Temperature 90°	100°	105°	110°	115°	120°	125°	130°
-40	1.62	1.67	1.71	1.76	1.80	1.86	1.88	1.94
-35	1.58	1.63	1.67	1.70	1.75	1.79	1.81	1.87
-30	1.54	1.59	1.62	1.65	1.69	1.74	1.75	1.80
-25	1.50	1.55	1.58	1.61	1.65	1.69	1.73	1.75
-20	1.46	1.51	1.54	1.57	1.61	1.64	1.68	1.73
-15	1.43	1.48	1.51	1.53	1.57	1.60	1.64	1.68
-10	1.40	1.45	1.47	1.50	1.53	1.56	1.61	1.64
0	1.35	1.39	1.41	1.44	1.47	1.50	1.53	1.56
5	1.34	1.38	1.40	1.43	1.46	1.49	1.53	1.56
10	1.30	1.34	1.36	1.39	1.41	1.44	1.48	1.51
15	1.29	1.33	1.35	1.37	1.40	1.42	1.46	1.49
20	1.25	1.29	1.31	1.33	1.35	1.38	1.41	1.44
25	1.24	1.28	1.30	1.32	1.34	1.37	1.40	1.43
30	1.21	1.25	1.26	1.28	1.30	1.33	1.36	1.38
40	1.18	1.21	1.22	1.24	1.26	1.28	1.30	1.33
50	1.14	1.17	1.18	1.20	1.22	1.24	1.26	1.28

Call our applications engineers if you have any questions on how to select a condenser.

Features

Construction

- Each condenser consists of a casing, condenser coil, direct drive motor(s) and fan(s), approved fan guards and mounting legs.
- Housings are constructed from heavy gauge galvanized steel to provide maximum rigidity and corrosion protection.
- Headers are seamless, heavy walled copper tubing, and shall be no longer than 45".
- Tube sheets are mill finished aluminum with drawn collars.

environmentally safe refrigerants as well as standard refrigerants.

- Every coil is 1 % leak tested with dry nitrogen to guarantee it is leak free.
- Fins are made of formed corrugated aluminum for optimum heat transfer. Phenolic , epoxy, or polyester coated fins are available f or additional corrosion protection.
- Tubes are seamless 1/2" copper, and are mechanically expanded for permanent fin/tube contact.
- Headers are heavy walled copper tubing, and are brazed to the coil.

- Direct drive motors include thermal protection and lifetime bearing lubrication.
- All motors are factory wired to a control panel, with a single power input for easy wiring connections.
- Motor assemblies are housed in a welded, heavy gauge wire structure that is zinc-chromate coated for corrosion protection.
- Each unit is designed for maximum energy efficiency, and is balanced to minimize noise and eliminate vibration.

- Fan blades are made of heavy gauge aluminum and are riveted to a coated steel spider assembly.
- Blades are designed to move air evenly through the coil with a minimum amount of noise.
- Fan guards are epoxy coated heavy gauge steel for long lasting corrosion protection.
- Multi-fan units have baffled fan sections to prevent air short-circuiting.

Visit www.lrccoil.com for details on additional ACC features

- Multicircuiting
- Condenser Splitting/Head Pressure Controls
- Pressure Valve Installation
- Refrigerant Charge
- Installation and Maintenance data
- Wiring diagrams

Our Application Engineers are ready to help you design the system you need. Call us today, 562-944-1969, and we'll get you the right LRC product for your project.

UR UNCONDITIONAL GUARANTE

We're proud of the workmanship that goes into every LRC product. Because of our exacting design and manufacturing standards, and our thorough testing prior to shipping, we unconditionally guarantee our products to be free from manufacturing defects for one year. You can count on LRC Coil for quality heat transfer products.

At LRC, we are continously working to improve our products, therefore, we reserve the right to make changes without notice.