



- ***Built-to-order***
- ***Compact footprint***
- ***Acoustic packages***
- ***Digital compressors available***
- ***Explosion proof with ETL listing***
- ***Corrosive environment protection***
- ***Low ambient mechanical operation***
- ***Wider fin spacing for long-term efficiency***



Intertek

Engineered Solutions for Value Driven Customers

By using industry-leading acoustical technology, Technical Systems can fine-tune our components to meet the exact sound performance required on your project!

We provide three different acoustical option packages for different levels of acoustical performance. Each of these packages is designed to match your system requirements as well as your project budget. Technical systems can provide anything from an economical solution for low-level needs to an aggressive sound performance solution that could help to avoid the need for costly attenuation walls in the field. No matter your sound needs, Technical Systems has an acoustical package for you!

- ***Meet local sound codes***
- ***Eliminate costly attenuation walls***
- ***Reduce installation costs***

Economy Package - 6 to 9 DBA Reduction

When a moderate level of sound performance is required, yet initial cost is important, the Economy Package provides that extra value. By utilizing uniquely-shaped fan blades made of non-flexing composite material, the fan sound is greatly reduced by choosing this package option. Additionally, fiberglass compressor wrappings further reduce compressor sound, providing competitive performance at a reasonable price.



Uniquely-shaped fan blades and compressor wraps provide budget-friendly, low-sound options.

Premium Package - 15 to 20 DBA Reduction



For applications demanding significant reduction in sound, the Premium Package and its *Whispair™ Fan Technology* provide the latest in sound and fan efficiency. The specially-shaped, all-aluminum airfoil blades and motor assemblies are specifically designed for sound performance. Compressors are surrounded by a fiberglass enclosure.

For more advanced sound reduction, specially-shaped fan blade and compressor enclosures are available.

Ultra Package - Contact Representative for Details

For applications demanding the most stringent acoustic performance, Technical Systems has the engineering expertise to create a wide variety of solutions. Contact your local Technical Systems Representative to custom select and design a system to meet your exact project needs.

Long Lasting Designs for Every Environment

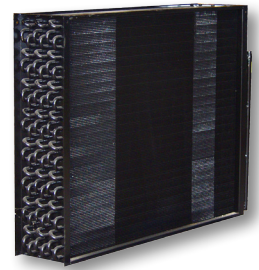
Technical Systems utilizes a variety of corrosion protection methods to ensure the long life of your equipment!

Many production facilities have harsh chemicals in the air that attack the fragile coils and steel casings of standard commercial cooling equipment, causing them to be replaced or repaired after only a few years. By using special materials and corrosion protection methods unavailable to most manufacturers, Technical Systems provides long-lasting equipment for chemical production facilities, wastewater treatment plants, off-shore oil platforms, and a multitude of other harsh or salty environments.

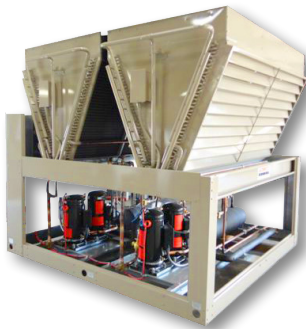
Dipped Phenolic Coil Coating

Dipped Phenolic coil coatings are the ultimate choice in coil protection. Dipped Phenolic coil coatings cover all of the coil tubes, return bends, headers, casings, and all fins including cut edges. You can rest assured that your Phenolic-coated coil will leave no coil surface exposed to the harsh environment of your application.

Additional coil coatings available. Contact factory for details.



Alternative Paint Colors



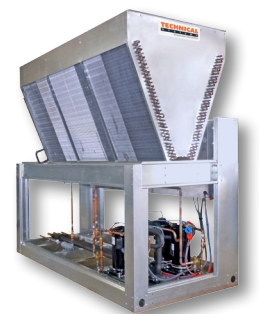
Custom paint coatings are available in a variety of enamel colors, though beige is the standard. Custom paint coatings include an exterior unit paint that is able to provide a 1,500 hour salt fog rating per ASTM B117.

Custom enamel coatings provide an additional defense against salty atmospheres.

Stainless Steel Construction

When a painted exterior is not enough to protect against the corrosive environment of your application, Technical Systems is able to construct unit cabinets out of 304 or 316-grade stainless steel. This option provides the ultimate protection for your equipment.

Stainless steel construction provides a safeguard against a wide array of corrosive environments.



Coated Refrigerant Piping



Even copper piping and brass components can oxidize and corrode over time causing costly equipment failures. However, Technical Systems offers Heresite and Phenolic coated piping configurations to prevent oxidation and corrosion.

Painting piping prevents rust and general wear and tear for your corrosive environment applications.

Engineered systems, not selected components.

Coil circuiting, refrigerant pressure drop, and good distribution are all critical components to having a system that operates properly. Technical Systems understands these challenges, and has the experience and resources needed to provide you with a complete, high-quality system. Through our sister division RAE Coils, we can provide both the condensing unit and the cooling coils for your system, balanced together for perfect performance. Utilizing a matched system by one manufacturer can be a critical step in avoiding a system that does not operate in the field as expected, or avoiding damaged compressors and reduced equipment life.

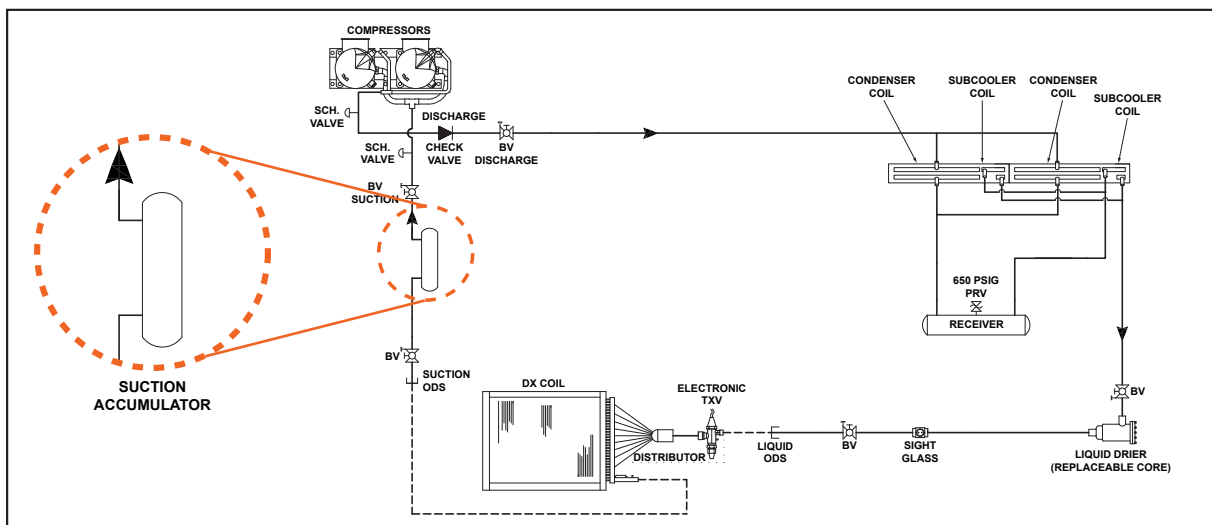
Line Loss

Have you been taking line loss into consideration when selecting your air cooled condensing units? The experts at Technical Systems have! Line loss is an important factor in ensuring that your equipment is providing the proper capacity. Line loss is the pressure drop associated with the refrigerant traveling from the evaporator coil to the compressor. The industry standard for line loss is approximately 2°F-3°F. If your line loss is not properly calculated, your equipment may not perform as expected.

Suction Accumulators

Though not commonly thought of in split systems, suction accumulators can add critical compressor protection. By preventing liquid refrigerant from entering the compressor, suction accumulators can easily help you avoid costly equipment damage. This protection is especially important in 100% Outside Air of Variable Air Volume system designs. Low loads or sudden changes in these systems can cause the cooling coil to fill with liquid and spill over into the suction lines.

Contact your local Technical Systems Representative to discuss the suction accumulator needs for your application.



Suction accumulators help protect your compressor from liquid damage

Digital Scroll Compressors

Applications such as VAV or outside air units often have large fluctuations in loads. Using fixed capacity equipment can cause temperature and humidity swings as compressors are cycled. Hot gas bypass adds installation costs and reduces efficiency. Fortunately, digital scroll compressors can be a simpler solution to these problems.

By allowing the compressors to unload, digital scroll technology can eliminate hot gas bypass valves and piping and can reduce the frequency of cycling. Digital scroll compressors can increase the efficiency and reliability of your system, while still providing the precise control required in the occupied space.



20A4 LD Model Ratings

		20A4LD30	20A4LD 40	20A4LD50
Number of Circuits		2	2	2
Refrigerant Type		R410a	R410a	R410a
Compressor Data	Model	ZP182KCE	ZP235KCE	ZP285KCE
	Qty.	2 (Singles)	2 (Singles)	2 (Singles)
	HP ¹	15	20	25
Fan Data	Qty.	3	3	3
	HP	1	2	2
	Dia. (in.)	28	28	28
	RPM	1,140	1,140	1,140
Motor Data ³	RLA	70	81	109
	MCA	77	89	121
	MOCP	100	110	150
Coil Data	Rows	3	4	4
	FPI	14	14	14
	FH (in.)	85	85	85
	FL (in.)	96	96	96
Dimensions ² (in./lbs.)	Length	51	51	51
	Width	106	106	106
	Height	101-3/8	101-3/8	101-3/8
	Shipping Wt.	3,766	3,766	3,766
	Operating Wt.	4,331	4,331	4,331

Capacity Ratings		Condensing Temp. (°F)	Capacity (tons)	KW	EER	Condensing Temp. (°F)	Capacity (tons)	KW	EER	Condensing Temp. (°F)	Capacity (tons)	KW	EER
Suction Temp.	Ambient Temp.												
39°F	90°F	115.6	31.5	30.9	12.2	116.7	40.1	41.0	11.6	120.9	46.3	49.5	11.2
	95°F	120.2	30.3	32.3	11.2	121.2	38.6	43.2	10.7	125.4	44.5	51.6	10.4
	100°F	124.7	29.0	33.8	10.3	125.7	36.9	45.1	9.8	129.9	42.7	53.8	9.5
	105°F	129.2	27.7	35.4	9.4	130.3	35.3	47.2	9.0	134.3	40.7	56.2	8.7
41°F	90°F	116.3	32.6	31.2	12.5	117.5	41.6	41.8	11.9	121.8	47.8	50.0	11.5
	95°F	120.9	31.4	32.6	11.5	122.0	40.0	43.7	11.0	126.2	46.0	52.1	10.6
	100°F	125.4	30.1	34.1	10.6	126.5	38.3	45.6	10.1	130.6	44.1	54.3	9.8
	105°F	129.9	28.7	35.7	9.6	131.0	36.6	47.7	9.2	135.0	42.1	56.7	8.9
43°F	90°F	117.1	33.8	31.6	12.8	118.3	43.1	42.3	12.2	122.6	49.3	50.5	11.7
	95°F	121.6	32.5	33.0	11.8	122.7	41.4	44.1	11.3	127.1	47.4	52.6	10.8
	100°F	126.1	31.1	34.4	10.8	127.2	39.7	46.1	10.3	131.4	45.5	54.8	10.0
	105°F	130.5	29.7	36.0	9.9	131.7	37.9	48.2	9.4	135.8	43.4	57.2	9.1
45°F	90°F	117.8	34.9	31.9	13.1	119.1	44.7	42.8	12.5	123.5	50.9	51.0	12.0
	95°F	122.3	33.6	33.3	12.1	123.5	42.9	44.6	11.6	127.9	49.0	53.1	11.1
	100°F	126.7	32.2	34.7	11.1	128.0	41.1	46.6	10.6	132.3	46.9	55.4	10.2
	105°F	131.2	30.7	36.3	10.1	132.4	39.3	48.7	9.7	136.6	44.8	57.8	9.3
47°F	90°F	118.6	36.1	32.3	13.4	119.9	46.3	43.3	12.8	124.4	52.5	51.5	12.2
	95°F	123.0	34.7	33.6	12.4	124.3	44.5	45.1	11.8	128.8	50.5	53.7	11.3
	100°F	127.5	33.3	35.1	11.4	128.7	42.6	47.1	10.9	133.1	48.4	56.0	10.4
	105°F	131.9	31.8	36.7	10.4	133.2	40.6	49.3	9.9	137.4	46.1	58.4	9.5
49°F	90°F	119.3	37.3	32.6	13.7	120.7	47.8	43.7	13.1	125.3	54.1	52.1	12.5
	95°F	123.8	35.9	34.0	12.7	125.1	46.0	45.6	12.1	129.6	52.0	54.2	11.5
	100°F	128.2	34.4	35.5	11.6	129.5	44.1	47.6	11.1	133.9	49.8	56.5	10.6
	105°F	132.6	32.8	37.0	10.6	133.9	42.1	49.8	10.1	138.2	47.5	59.0	9.7

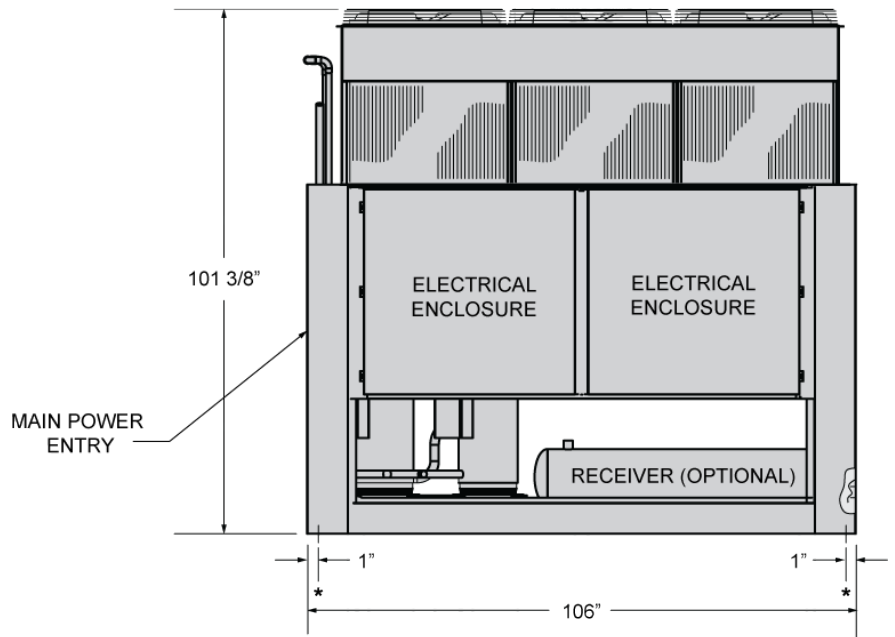
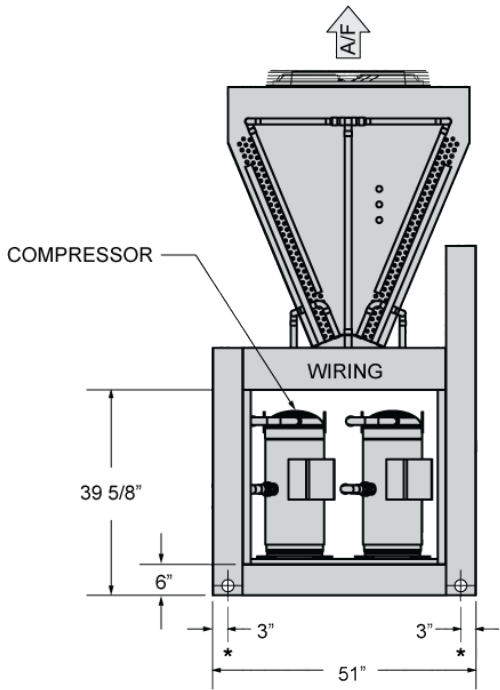
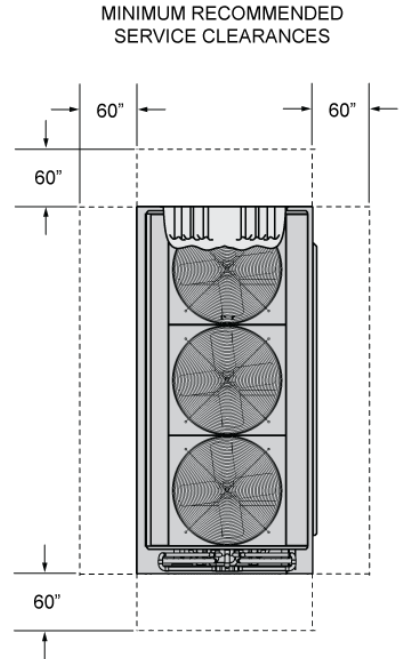
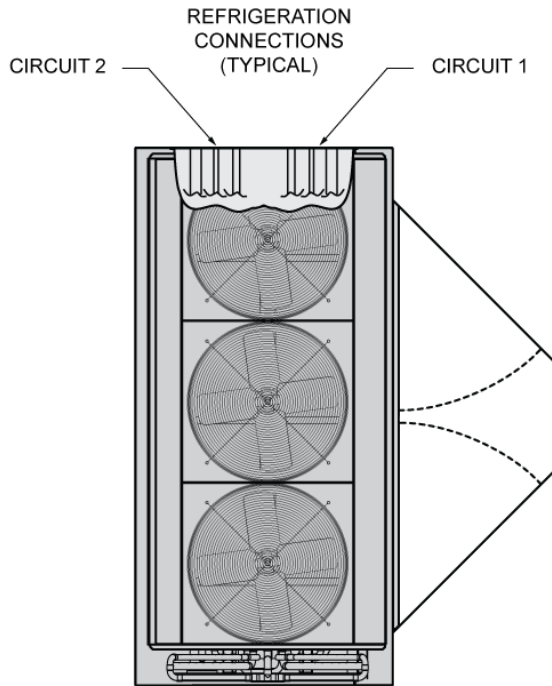
60 HZ rating

1 - HP shown is for each individual compressor motor

2 - All dimensions +/- 1/2"

3 - Value shown is for 460v/3-phase motor. For 208v motor, double the values shown.

Model LD30, LD40, and LD50 Drawings



- ⊕ 2 1/2" DIA. RIGGING HOLES
- * 5/8" DIA. UNIT MOUNTING HOLES
- ALL DIMENSIONS +/- 1/2"

SHIPPING WEIGHT: 3,766 lbs.
OPERATING WEIGHT: 4,331 lbs.

Model LD30 Ratings

Condensing Unit Model: 20A4LD30 **Compressor Quantity:** 2
Refrigerant: R410a **Fan Quantity:** 3
Condenser Capacity @ 1°F TD: 16,600 **Altitude:** 0 ft.

Circuit 1

Compressor: Quantity: 2 Type: ZP182KCE
Fan: Quantity: 3 Description: 1 HP, 28" dia., 1140 RPM
Coil: Rows: 3 FPI: 14 Fin Height: 85" Fin Length: 96"

Suction Temp.	Ambient Temp.	Condensing Temp.	Capacity (tons)	KW*	EER*	Condenser Capacity (tons)	TD
39°F	90°F	115.6°F	31.5	30.9	12.2	35.4	25.6°F
	95°F	120.2°F	30.3	32.3	11.2	34.7	25.2°F
	100°F	124.7°F	29.0	33.8	10.3	34.1	24.7°F
	105°F	129.2°F	27.7	35.4	9.4	33.4	24.2°F
41°F	90°F	116.3°F	32.6	31.2	12.5	36.4	26.3°F
	95°F	120.9°F	31.4	32.6	11.5	35.7	25.9°F
	100°F	125.4°F	30.1	34.1	10.6	35.0	25.4°F
	105°F	129.9°F	28.7	35.7	9.6	34.3	24.9°F
43°F	90°F	117.1°F	33.8	31.6	12.8	37.4	27.1°F
	95°F	121.6°F	32.5	33.0	11.8	36.7	26.6°F
	100°F	126.1°F	31.1	34.4	10.8	36.0	26.1°F
	105°F	130.5°F	29.7	36.0	9.9	35.2	25.5°F
45°F	90°F	117.8°F	34.9	31.9	13.1	38.4	27.8°F
	95°F	122.3°F	33.6	33.3	12.1	37.7	27.3°F
	100°F	126.7°F	32.2	34.7	11.1	36.9	26.7°F
	105°F	131.2°F	30.7	36.3	10.1	36.2	26.2°F
47°F	90°F	118.6°F	36.1	32.3	13.4	39.4	28.6°F
	95°F	123.0°F	34.7	33.6	12.4	38.7	28.0°F
	100°F	127.5°F	33.3	35.1	11.4	37.9	27.5°F
	105°F	131.9°F	31.8	36.7	10.4	37.1	26.9°F
49°F	90°F	119.3°F	37.3	32.6	13.7	40.5	29.3°F
	95°F	123.8°F	35.9	34.0	12.7	39.7	28.8°F
	100°F	128.2°F	34.4	35.5	11.6	38.9	28.2°F
	105°F	132.6°F	32.8	37.0	10.6	38.0	27.6°F

* per unit

60 HZ Rating

Model LD40 Ratings

Condensing Unit Model: 20A4LD40 **Compressor Quantity:** 2
Refrigerant: R410a **Fan Quantity:** 3
Condenser Capacity @ 1°F TD: 20,381 **Altitude:** 0 ft.

Circuit 1

Compressor: Quantity: 2 Type: ZP235KCE
Fan: Quantity: 3 Description: 2 HP, 28" dia., 1140 RPM
Coil: Rows: 4 FPI: 14 Fin Height: 85" Fin Length: 96"

Suction Temp.	Ambient Temp.	Condensing Temp.	Capacity (tons)	KW*	EER*	Condenser Capacity (tons)	TD
39°F	90°F	116.7°F	40.1	41.0	11.6	45.2	26.7°F
	95°F	121.2°F	38.6	43.2	10.7	44.4	26.2°F
	100°F	125.7°F	36.9	45.1	9.8	43.6	25.7°F
	105°F	130.3°F	35.3	47.2	9.0	42.8	25.3°F
41°F	90°F	117.5°F	41.6	41.8	11.9	46.6	27.5°F
	95°F	122°F	40.0	43.7	11.0	45.7	27.0°F
	100°F	126.5°F	38.3	45.6	10.1	44.8	26.5°F
	105°F	131°F	36.6	47.7	9.2	44.0	26.0°F
43°F	90°F	118.3°F	43.1	42.3	12.2	47.9	28.3°F
	95°F	122.7°F	41.4	44.1	11.3	47.0	27.7°F
	100°F	127.2°F	39.7	46.1	10.3	46.1	27.2°F
	105°F	131.7°F	37.9	48.2	9.4	45.2	26.7°F
45°F	90°F	119.1°F	44.7	42.8	12.5	49.3	29.1°F
	95°F	123.5°F	42.9	44.6	11.6	48.4	28.5°F
	100°F	128.0°F	41.1	46.6	10.6	47.4	28.0°F
	105°F	132.4°F	39.3	48.7	9.7	46.5	27.4°F
47°F	90°F	119.9°F	46.3	43.3	12.8	50.7	29.9°F
	95°F	124.3°F	44.5	45.1	11.8	49.7	29.3°F
	100°F	128.7°F	42.6	47.1	10.9	48.7	28.7°F
	105°F	133.2°F	40.6	49.3	9.9	47.7	28.2°F
49°F	90°F	120.7°F	47.8	43.7	13.1	52.1	30.7°F
	95°F	125.1°F	46.0	45.6	12.1	51.1	30.1°F
	100°F	129.5°F	44.1	47.6	11.1	50.1	29.5°F
	105°F	133.9°F	42.1	49.8	10.1	49.0	28.9°F

* per unit

60 HZ Rating

Model LD50 Ratings

Condensing Unit Model:	20A4LD50	Compressor Quantity:	2
Refrigerant:	R410a	Fan Quantity:	3
Condenser Capacity @ 1°F TD:	20,381	Altitude:	0 ft.

Circuit 1

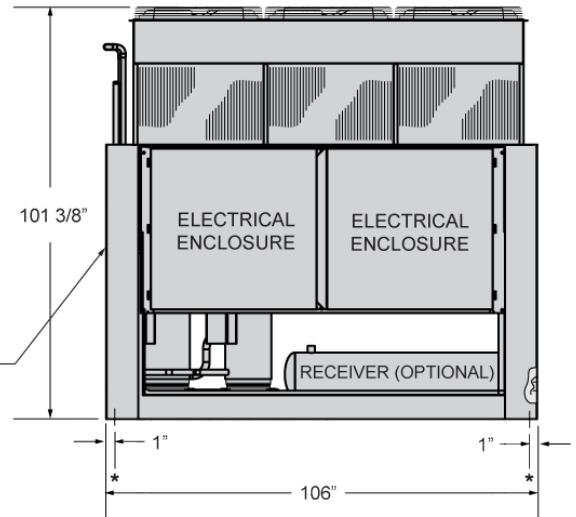
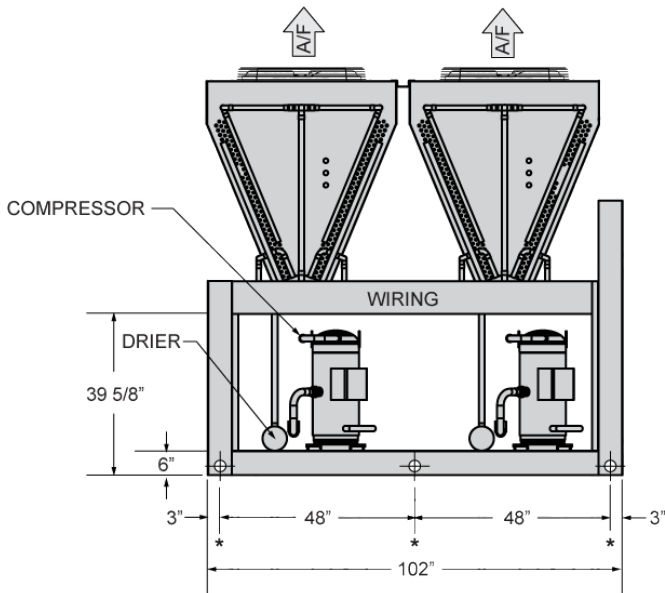
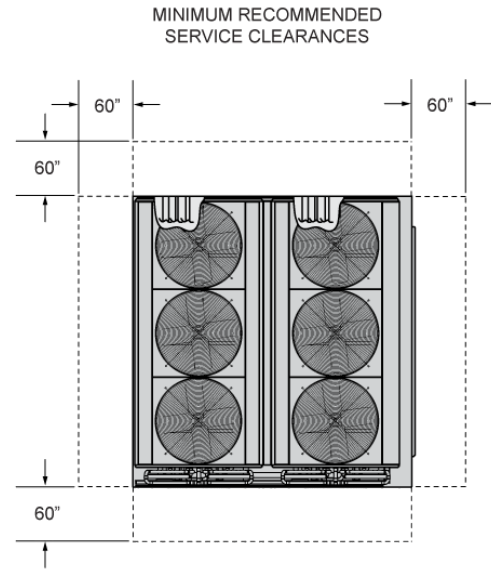
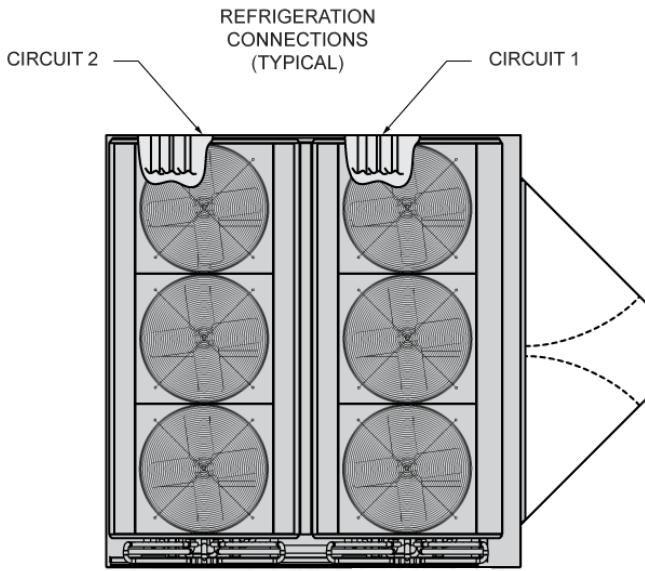
Compressor:	Quantity: 2	Type: ZP285KCE	
Fan:	Quantity: 3	Description: 2 HP, 28" dia., 1140 RPM	
Coil:	Rows: 4	FPI: 14	Fin Height: 85" Fin Length: 96"

Suction Temp.	Ambient Temp.	Condensing Temp.	Capacity (tons)	KW*	EER*	Condenser Capacity (tons)	TD
39°F	90°F	120.9°F	46.3	49.5	11.2	52.4	30.9°F
	95°F	125.4°F	44.5	51.6	10.4	51.5	30.4°F
	100°F	129.9°F	42.7	53.8	9.5	50.6	29.9°F
	105°F	134.3°F	40.7	56.2	8.7	49.6	29.3°F
41°F	90°F	121.8°F	47.8	50.0	11.5	53.9	31.8°F
	95°F	126.2°F	46.0	52.1	10.6	52.9	31.2°F
	100°F	130.6°F	44.1	54.3	9.8	52.0	30.6°F
	105°F	135°F	42.1	56.7	8.9	50.9	30°F
43°F	90°F	122.6°F	49.3	50.5	11.7	55.4	32.6°F
	95°F	127.1°F	47.4	52.6	10.8	54.3	32.1°F
	100°F	131.4°F	45.5	54.8	10.0	53.3	31.4°F
	105°F	135.8°F	43.4	57.2	9.1	52.2	30.8°F
45°F	90°F	123.5°F	50.9	51.0	12.0	56.9	33.5°F
	95°F	127.9°F	49.0	53.1	11.1	55.8	32.9°F
	100°F	132.3°F	46.9	55.4	10.2	54.7	32.3°F
	105°F	136.6°F	44.8	57.8	9.3	53.5	31.6°F
47°F	90°F	124.4°F	52.5	51.5	12.2	58.4	34.4°F
	95°F	128.8°F	50.5	53.7	11.3	57.2	33.8°F
	100°F	133.1°F	48.4	56.0	10.4	56.1	33.1°F
	105°F	137.4°F	46.1	58.4	9.5	54.9	32.4°F
49°F	90°F	125.3°F	54.1	52.1	12.5	59.9	35.3°F
	95°F	129.6°F	52.0	54.2	11.5	58.7	34.6°F
	100°F	133.9°F	49.8	56.5	10.6	57.5	33.9°F
	105°F	138.2°F	47.5	59.0	9.7	56.2	33.2°F

* per unit

60 HZ Rating

Model LM60, LM80, and LM100 Drawings



- ⊕ 2 1/2" DIA. RIGGING HOLES
- * 5/8" DIA. UNIT MOUNTING HOLES
- ALL DIMENSIONS +/- 1/2"

SHIPPING WEIGHT: 7,331 lbs.
 OPERATING WEIGHT: 7,753 lbs.

Model LM60 Ratings

Condensing Unit Model: 20A4LM60 **Compressor Quantity:** 2
Refrigerant: R410a **Fan Quantity:** 6
Condenser Capacity @ 1°F TD: 33,199 **Altitude:** 0 ft.

Circuit 1

Compressor: Quantity: 1 Type: ZPT364KCE
Fan: Quantity: 3 Description: 1 HP, 28" dia., 1140 RPM
Coil: Rows: 3 FPI: 14 Fin Height: 85" Fin Length: 96"

Circuit 2

Compressor: Quantity: 1 Type: ZPT364KCE
Fan: Quantity: 3 Description: 1 HP, 28" dia., 1140 RPM
Coil: Rows: 3 FPI: 14 Fin Height: 85" Fin Length: 96"

Suction Temp.	Ambient Temp.	Condensing Temp.	Capacity (tons)	KW*	EER*	Condenser Capacity (tons)	TD
39°F	90°F	115.6°F	62.7	62.1	12.1	70.5	25.6°F
	95°F	120.1°F	60.3	64.8	11.2	69.3	25.1°F
	100°F	124.6°F	57.9	67.8	10.2	68.1	24.6°F
	105°F	129.2°F	55.2	71.0	9.3	66.7	24.2°F
41°F	90°F	116.3°F	65.0	62.7	12.4	72.5	26.3°F
	95°F	120.8°F	62.5	65.4	11.5	71.2	25.8°F
	100°F	125.3°F	59.9	68.4	10.5	69.9	25.3°F
	105°F	129.8°F	57.2	71.5	9.6	68.5	24.8°F
43°F	90°F	117°F	67.3	63.3	12.7	74.6	27°F
	95°F	121.5°F	64.7	66.1	11.7	73.2	26.5°F
	100°F	126°F	62.0	69.1	10.8	71.8	26°F
	105°F	130.5°F	59.2	72.2	9.8	70.3	25.5°F
45°F	90°F	117.7°F	69.6	64.0	13.1	76.6	27.7°F
	95°F	122.2°F	66.9	66.7	12.0	75.2	27.2°F
	100°F	126.7°F	64.1	69.7	11.0	73.7	26.7°F
	105°F	131.1°F	61.2	72.8	10.1	72.2	26.1°F
47°F	90°F	118.5°F	71.9	64.7	13.3	78.7	28.5°F
	95°F	123.0°F	69.1	67.5	12.3	77.2	28.0°F
	100°F	127.4°F	66.3	70.4	11.3	75.7	27.4°F
	105°F	131.8°F	63.3	73.5	10.3	74.1	26.8°F
49°F	90°F	119.3°F	74.3	65.5	13.6	80.8	29.3°F
	95°F	123.7°F	71.5	68.2	12.6	79.3	28.7°F
	100°F	128.1°F	68.5	71.1	11.6	77.6	28.1°F
	105°F	132.5°F	65.4	74.3	10.6	76.0	27.5°F

* per unit

60 HZ Rating

Model LM80 Ratings

Condensing Unit Model: 20A4LM80 **Compressor Quantity:** 2
Refrigerant: R410a **Fan Quantity:** 6
Condenser Capacity @ 1°F TD: 40,673 **Altitude:** 0 ft.

Circuit 1

Compressor: Quantity: 1 Type: ZPT470KCE
Fan: Quantity: 3 Description: 2 HP, 28" dia., 1140 RPM
Coil: Rows: 4 FPI: 14 Fin Height: 85" Fin Length: 96"

Circuit 2

Compressor: Quantity: 1 Type: ZPT470KCE
Fan: Quantity: 3 Description: 2 HP, 28" dia., 1140 RPM
Coil: Rows: 4 FPI: 14 Fin Height: 85" Fin Length: 96"

Suction Temp.	Ambient Temp.	Condensing Temp.	Capacity (tons)	KW*	EER*	Condenser Capacity (tons)	TD
39°F	90°F	116.4°F	79.4	81.9	11.6	89.5	26.4°F
	95°F	120.9°F	76.2	85.4	10.7	87.9	25.9°F
	100°F	125.5°F	73.0	89.3	9.8	86.3	25.5°F
	105°F	130°F	69.8	93.5	9.0	84.7	25°F
41°F	90°F	117.2°F	82.3	82.8	11.9	92.1	27.2°F
	95°F	121.7°F	79.1	86.4	11.0	90.4	26.7°F
	100°F	126.2°F	75.7	90.2	10.1	88.7	26.2°F
	105°F	130.7°F	72.4	94.4	9.2	87.1	25.7°F
43°F	90°F	118°F	82.3	83.7	12.2	94.8	28°F
	95°F	122.4°F	82.0	87.3	11.3	93.1	27.4°F
	100°F	126.9°F	78.5	91.2	10.3	91.3	26.9°F
	105°F	131.4°F	75.0	95.4	9.4	89.5	26.4°F
45°F	90°F	118.8°F	88.4	84.7	12.5	97.6	28.8°F
	95°F	123.2°F	84.9	88.3	11.5	95.7	28.2°F
	100°F	127.7°F	81.3	92.2	10.6	93.8	27.7°F
	105°F	132.1°F	77.7	96.4	9.7	92.0	27.1°F
47°F	90°F	119.6°F	91.6	85.6	12.8	100.4	29.6°F
	95°F	124.0°F	88.0	89.3	11.8	98.4	29.0°F
	100°F	128.4°F	84.3	93.2	10.9	96.5	28.4°F
	105°F	132.9°F	80.4	97.5	9.9	94.5	27.9°F
49°F	90°F	120.4°F	94.7	86.6	13.1	103.2	30.4°F
	95°F	124.8°F	91.0	90.3	12.1	101.2	29.8°F
	100°F	129.2°F	87.2	94.2	11.1	99.1	29.2°F
	105°F	133.6°F	83.3	98.5	10.1	97.1	28.6°F

* per unit

60 HZ Rating

Model LM100 Ratings

Condensing Unit Model: 20A4LM100 **Compressor Quantity:** 2
Refrigerant: R410a **Fan Quantity:** 6
Condenser Capacity @ 1°F TD: 40,763 **Altitude:** 0 ft.

Circuit 1

Compressor: Quantity: 1 Type: ZPT570KCE
Fan: Quantity: 3 Description: 2 HP, 28" dia., 1140 RPM
Coil: Rows: 4 FPI: 14 Fin Height: 85" Fin Length: 96"

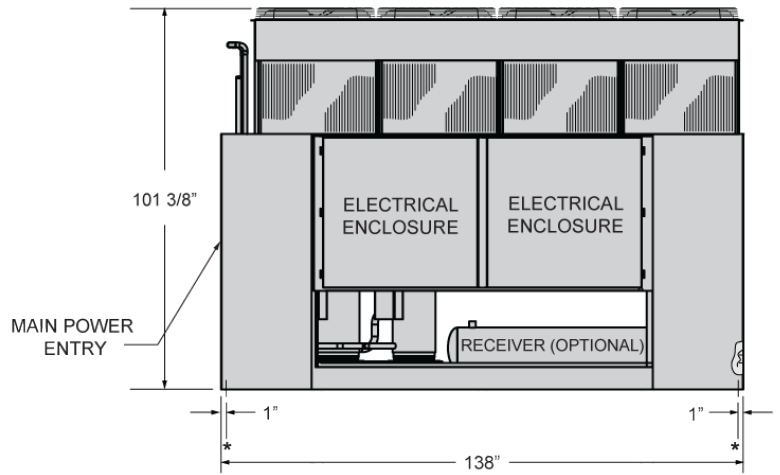
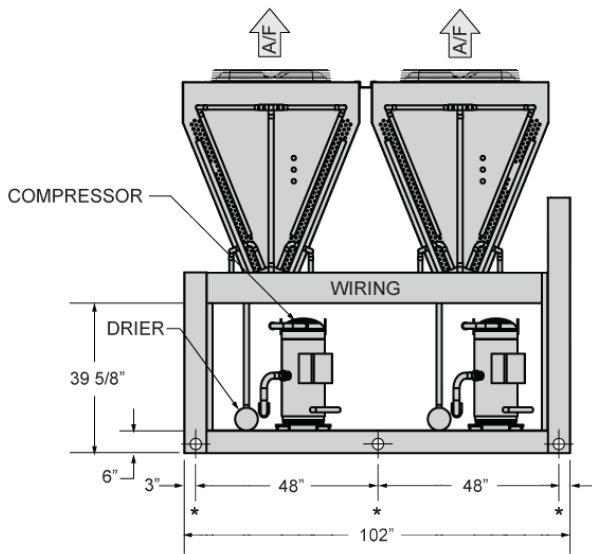
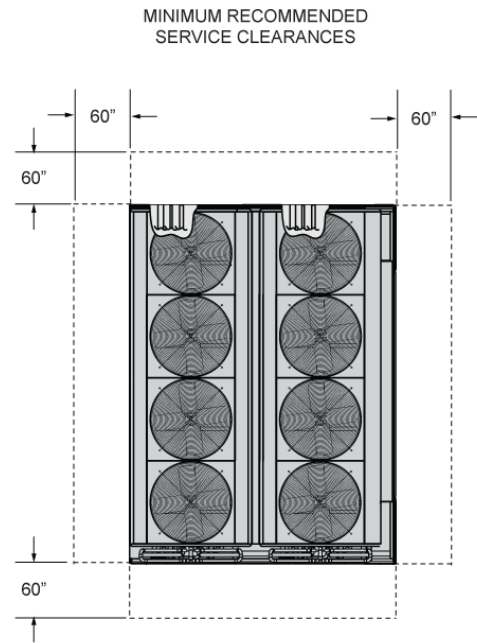
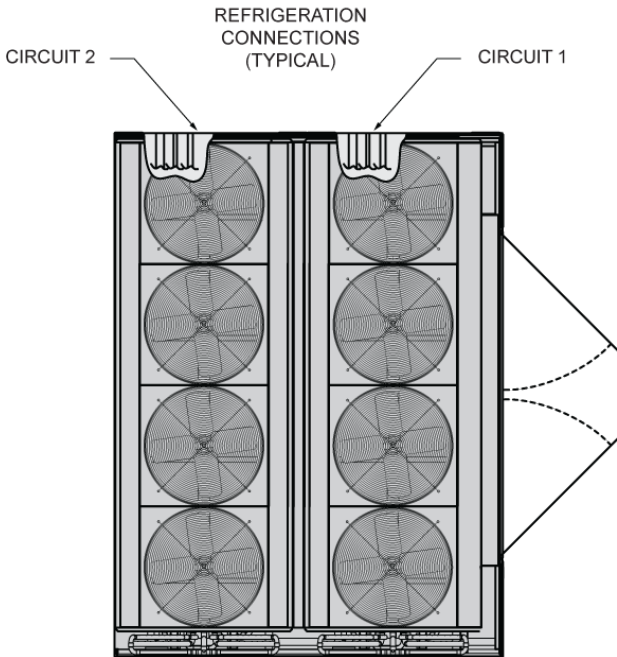
Circuit 2

Compressor: Quantity: 1 Type: ZPT570KCE
Fan: Quantity: 3 Description: 2 HP, 28" dia., 1140 RPM
Coil: Rows: 4 FPI: 14 Fin Height: 85" Fin Length: 96"

Suction Temp.	Ambient Temp.	Condensing Temp.	Capacity (tons)	KW*	EER*	Condenser Capacity (tons)	TD
39°F	90°F	120.6°F	91.6	98.0	11.2	103.8	30.6°F
	95°F	125.1°F	88.1	102.1	10.4	102.0	30.1°F
	100°F	129.5°F	84.5	106.4	9.5	100.2	29.5°F
	105°F	134°F	80.5	111.1	8.7	98.2	29°F
41°F	90°F	121.4°F	94.6	99.0	11.5	106.6	31.4°F
	95°F	125.9°F	91.0	103.1	10.6	104.8	30.9°F
	100°F	130.3°F	87.4	107.5	9.8	102.8	30.3°F
	105°F	134.7°F	83.4	112.1	8.9	100.8	29.7°F
43°F	90°F	122.3°F	97.6	100.0	11.7	109.5	32.3°F
	95°F	126.7°F	94.0	104.1	10.8	107.6	31.7°F
	100°F	131.1°F	90.1	108.5	10.0	105.5	31.1°F
	105°F	135.5°F	86.0	113.2	9.1	103.3	30.5°F
45°F	90°F	123.2°F	100.7	101.0	12.0	112.5	33.2°F
	95°F	127.6°F	96.9	105.2	11.0	110.4	32.6°F
	100°F	131.9°F	92.9	109.6	10.2	108.2	31.9°F
	105°F	136.2°F	88.8	114.2	9.3	106.0	31.2°F
47°F	90°F	124.1°F	103.8	102.1	12.2	115.5	34.1°F
	95°F	128.4°F	99.9	106.2	11.3	113.3	33.4°F
	100°F	132.7°F	95.8	110.6	10.4	111.0	32.7°F
	105°F	137.0°F	91.5	115.3	9.5	108.6	32.0°F
49°F	90°F	125.0°F	107.0	103.1	12.5	118.5	35.0°F
	95°F	129.3°F	102.9	107.4	11.5	116.2	34.3°F
	100°F	133.6°F	98.6	111.8	10.6	113.8	33.6°F
	105°F	137.8°F	94.2	116.5	9.7	111.3	32.8°F

* per unit

60 HZ Rating



- ⊕ 2 1/2" DIA. RIGGING HOLES
- * 5/8" DIA. UNIT MOUNTING HOLES
- ALL DIMENSIONS +/- 1/2"

SHIPPING WEIGHT: 8,718 lbs.
 OPERATING WEIGHT: 9,282 lbs.

Model LM120-2 Ratings

Condensing Unit Model: 20A4LM120-2 **Compressor Quantity:** 2
Refrigerant: R410a **Fan Quantity:** 8
Condenser Capacity @ 1°F TD: 54,349 **Altitude:** 0 ft.

Circuit 1

Compressor: Quantity: 1 Type: ZPT770KCE
Fan: Quantity: 4 Description: 2 HP, 28" dia., 1140 RPM
Coil: Rows: 4 FPI: 14 Fin Height: 85" Fin Length: 128"

Circuit 2

Compressor: Quantity: 1 Type: ZPT770KCE
Fan: Quantity: 4 Description: 2 HP, 28" dia., 1140 RPM
Coil: Rows: 4 FPI: 14 Fin Height: 85" Fin Length: 128"

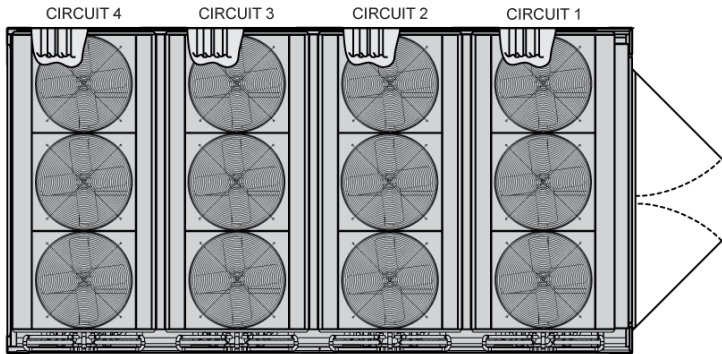
Suction Temp.	Ambient Temp.	Condensing Temp.	Capacity (tons)	KW*	EER*	Condenser Capacity (tons)	TD
39°F	90°F	122.1°F	126.8	140.2	10.9	145.0	32.1°F
	95°F	126.5°F	121.7	146.5	10.0	142.5	31.5°F
	100°F	130.9°F	116.5	153.1	9.1	139.9	30.9°F
	105°F	135.4°F	110.9	160.3	8.3	137.2	30.4°F
41°F	90°F	122.9°F	130.8	141.7	11.1	149.0	32.9°F
	95°F	127.4°F	125.5	148.2	10.2	146.2	32.4°F
	100°F	131.7°F	120.2	154.7	9.3	143.5	31.7°F
	105°F	136.1°F	114.5	161.8	8.5	140.7	31.1°F
43°F	90°F	123.8°F	134.8	143.3	11.3	152.9	33.8°F
	95°F	128.2°F	129.4	149.8	10.4	150.0	33.2°F
	100°F	132.5°F	123.9	156.4	9.5	147.2	32.5°F
	105°F	136.9°F	118.0	163.6	8.7	144.2	31.9°F
45°F	90°F	124.7°F	138.9	145.1	11.5	156.9	34.7°F
	95°F	129°F	133.3	151.4	10.6	153.9	34°F
	100°F	133.4°F	127.5	158.2	9.7	150.8	33.4°F
	105°F	137.7°F	121.5	165.3	8.8	147.7	32.7°F
47°F	90°F	125.6°F	142.9	146.8	11.7	160.9	35.6°F
	95°F	129.9°F	137.2	153.2	10.7	157.8	34.9°F
	100°F	134.2°F	131.2	160.0	9.8	154.5	34.2°F
	105°F	138.5°F	125.0	167.1	9.0	151.2	33.5°F
49°F	90°F	126.5°F	147.1	148.6	11.9	164.9	36.5°F
	95°F	130.8°F	141.1	155.1	10.9	161.6	35.8°F
	100°F	135.0°F	135.1	161.7	10.0	158.3	35.0°F
	105°F	139.3°F	128.6	168.9	9.1	154.8	34.3°F

* per unit

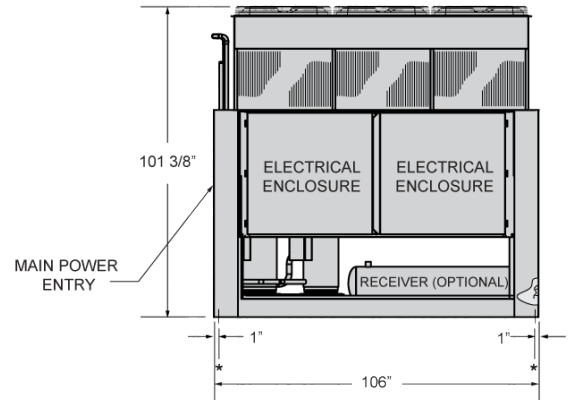
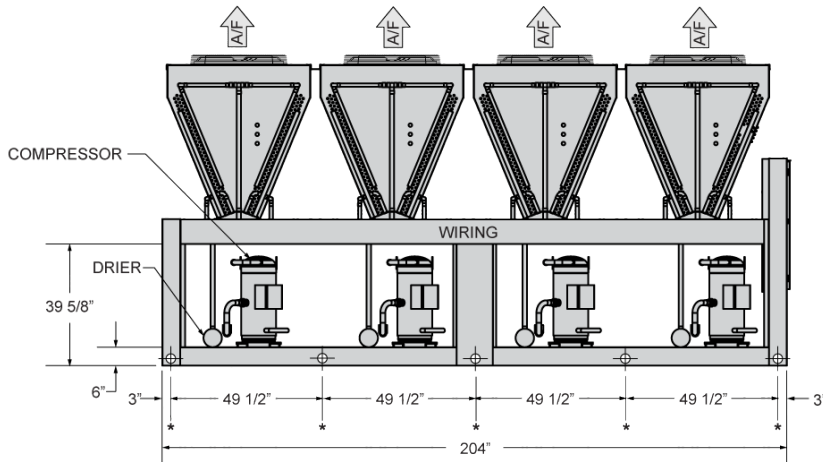
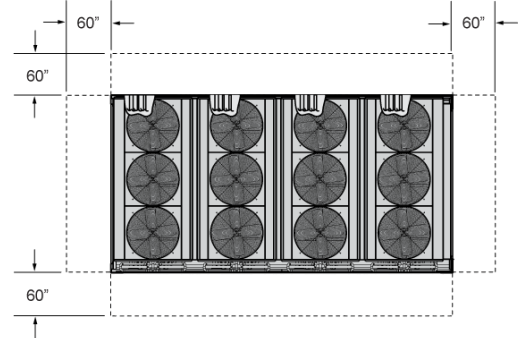
60 HZ Rating

Model LM120-4, LM160, and LM200 Drawings

REFRIGERATION CONNECTIONS (TYPICAL)



MINIMUM RECOMMENDED SERVICE CLEARANCES



- ⊕ 2 1/2" DIA. RIGGING HOLES
- * 5/8" DIA. UNIT MOUNTING HOLES
- ALL DIMENSIONS +/- 1/2"

SHIPPING WEIGHT: 14,123 lbs.
OPERATING WEIGHT: 14,963 lbs.

Model LM120-4 Ratings

Condensing Unit Model: 20A4LM120-4 **Compressor Quantity:** 4
Refrigerant: R410a **Fan Quantity:** 12
Condenser Capacity @ 1°F TD: 66,398 **Altitude:** 0 ft.

Circuit 1 & 3

Compressor: Quantity: 2 Type: ZPT364KCE
Fan: Quantity: 6 Description: 1 HP, 28" dia., 1140 RPM
Coil: Rows: 3 FPI: 14 Fin Height: 170" Fin Length: 96"

Circuit 2 & 4

Compressor: Quantity: 2 Type: ZPT364KCE
Fan: Quantity: 6 Description: 1 HP, 28" dia., 1140 RPM
Coil: Rows: 3 FPI: 14 Fin Height: 170" Fin Length: 96"

Suction Temp.	Ambient Temp.	Condensing Temp.	Capacity (tons)	KW*	EER*	Condenser Capacity (tons)	TD
39°F	90°F	115.6°F	125.5	124.1	12.1	141.1	25.6°F
	95°F	120.1°F	120.7	129.6	11.2	138.6	25.1°F
	100°F	124.6°F	115.7	135.5	10.2	136.1	24.6°F
	105°F	129.2°F	110.4	141.9	9.3	133.4	24.2°F
41°F	90°F	116.3°F	129.9	125.4	12.4	145.1	26.3°F
	95°F	120.8°F	125.0	130.9	11.5	142.5	25.8°F
	100°F	125.3°F	119.8	136.8	10.5	139.8	25.3°F
	105°F	129.8°F	114.4	143.1	9.6	137.0	24.8°F
43°F	90°F	117°F	134.5	126.6	12.7	149.1	27°F
	95°F	121.5°F	129.4	132.2	11.7	146.4	26.5°F
	100°F	126°F	124.0	138.1	10.8	143.6	26°F
	105°F	130.5°F	118.3	144.4	9.8	140.6	25.5°F
45°F	90°F	117.7°F	139.2	127.9	13.1	153.3	27.7°F
	95°F	122.2°F	133.8	133.5	12.0	150.4	27.2°F
	100°F	126.7°F	128.2	139.4	11.0	147.4	26.7°F
	105°F	131.1°F	122.5	145.7	10.1	144.4	26.1°F
47°F	90°F	118.5°F	143.9	129.4	13.3	157.4	28.5°F
	95°F	123.0°F	138.3	135.0	12.3	154.4	28.0°F
	100°F	127.4°F	132.5	140.8	11.3	151.3	27.4°F
	105°F	131.8°F	126.6	147.1	10.3	148.1	26.8°F
49°F	90°F	119.3°F	148.6	130.9	13.6	161.6	29.3°F
	95°F	123.7°F	142.9	136.4	12.6	158.5	28.7°F
	100°F	128.1°F	137.0	142.3	11.6	155.3	28.1°F
	105°F	132.5°F	130.8	148.5	10.6	151.9	27.5°F

* per unit

60 HZ Rating

Model LM160 Ratings

Condensing Unit Model: 20A4LM160 **Compressor Quantity:** 4
Refrigerant: R410a **Fan Quantity:** 12
Condenser Capacity @ 1°F TD: 81,524 **Altitude:** 0 ft.

Circuit 1 & 3

Compressor: Quantity: 2 Type: ZPT470KCE
Fan: Quantity: 6 Description: 2 HP, 28" dia., 1140 RPM
Coil: Rows: 4 FPI: 14 Fin Height: 170" Fin Length: 96"

Circuit 2 & 4

Compressor: Quantity: 2 Type: ZPT470KCE
Fan: Quantity: 6 Description: 2 HP, 28" dia., 1140 RPM
Coil: Rows: 4 FPI: 14 Fin Height: 170" Fin Length: 96"

Suction Temp.	Ambient Temp.	Condensing Temp.	Capacity (tons)	KW*	EER*	Condenser Capacity (tons)	TD
39°F	90°F	116.4°F	158.7	163.8	11.6	178.9	26.4°F
	95°F	120.9°F	152.5	170.8	10.7	175.7	25.9°F
	100°F	125.5°F	146.0	178.7	9.8	172.5	25.5°F
	105°F	130°F	139.5	187.0	9.0	169.4	25°F
41°F	90°F	117.2°F	164.6	165.6	11.9	184.2	27.2°F
	95°F	121.7°F	158.1	172.8	11.0	180.8	26.7°F
	100°F	126.2°F	151.5	180.5	10.1	177.5	26.2°F
	105°F	130.7°F	144.7	188.9	9.2	174.2	25.7°F
43°F	90°F	118°F	170.7	167.5	12.2	189.6	28°F
	95°F	122.4°F	164.0	174.5	11.3	186.1	27.4°F
	100°F	126.9°F	157.1	182.3	10.3	182.6	26.9°F
	105°F	131.4°F	150.0	190.8	9.4	179.0	26.4°F
45°F	90°F	118.8°F	176.8	169.3	12.5	195.1	28.8°F
	95°F	123.2°F	169.9	176.5	11.5	191.4	28.2°F
	100°F	127.7°F	162.7	184.4	10.6	187.6	27.7°F
	105°F	132.1°F	155.4	192.7	9.7	184.0	27.1°F
47°F	90°F	119.6°F	183.2	171.2	12.8	200.7	29.6°F
	95°F	124.0°F	175.9	178.5	11.8	196.8	29.0°F
	100°F	128.4°F	168.5	186.3	10.9	192.9	28.4°F
	105°F	132.9°F	160.8	194.9	9.9	189.0	27.9°F
49°F	90°F	120.4°F	189.4	173.2	13.1	206.4	30.4°F
	95°F	124.8°F	182.1	180.5	12.1	202.3	29.8°F
	100°F	129.2°F	174.4	188.5	11.1	198.2	29.2°F
	105°F	133.6°F	166.5	197.0	10.1	194.1	28.6°F

* per unit

60 HZ Rating

Model LM200 Ratings

Condensing Unit Model: 20A4LM200 **Compressor Quantity:** 4
Refrigerant: R410a **Fan Quantity:** 12
Condenser Capacity @ 1°F TD: 81,524 **Altitude:** 0 ft.

Circuit 1 & 3

Compressor: Quantity: 2 Type: ZPT570KCE
Fan: Quantity: 6 Description: 2 HP, 28" dia., 1140 RPM
Coil: Rows: 4 FPI: 14 Fin Height: 170" Fin Length: 96"

Circuit 2 & 4

Compressor: Quantity: 2 Type: ZPT570KCE
Fan: Quantity: 6 Description: 2 HP, 28" dia., 1140 RPM
Coil: Rows: 4 FPI: 14 Fin Height: 170" Fin Length: 96"

Suction Temp.	Ambient Temp.	Condensing Temp.	Capacity (tons)	KW*	EER*	Condenser Capacity (tons)	TD
39°F	90°F	120.6°F	183.1	196.1	11.2	207.5	30.6°F
	95°F	125.1°F	176.3	204.3	10.4	204.0	30.1°F
	100°F	129.5°F	169.0	212.9	9.5	200.4	29.5°F
	105°F	134°F	161.1	222.3	8.7	196.5	29°F
41°F	90°F	121.4°F	189.2	197.9	11.5	213.3	31.4°F
	95°F	125.9°F	182.1	206.3	10.6	209.5	30.9°F
	100°F	130.3°F	174.7	214.9	9.8	205.6	30.3°F
	105°F	134.7°F	166.7	224.2	8.9	201.6	29.7°F
43°F	90°F	122.3°F	195.2	200.0	11.7	219.1	32.3°F
	95°F	126.7°F	187.9	208.3	10.8	215.1	31.7°F
	100°F	131.1°F	180.2	217.0	10.0	211.0	31.1°F
	105°F	135.5°F	172.1	226.4	9.1	206.7	30.5°F
45°F	90°F	123.2°F	201.4	202.1	12.0	225.0	33.2°F
	95°F	127.6°F	193.8	210.5	11.0	220.8	32.6°F
	100°F	131.9°F	185.9	219.1	10.2	216.5	31.9°F
	105°F	136.2°F	177.6	228.4	9.3	211.9	31.2°F
47°F	90°F	124.1°F	207.7	204.2	12.2	230.9	34.1°F
	95°F	128.4°F	199.9	212.5	11.3	226.6	33.4°F
	100°F	132.7°F	191.6	221.3	10.4	222.0	32.7°F
	105°F	137.0°F	182.9	230.6	9.5	217.2	32.0°F
49°F	90°F	125.0°F	214.1	206.3	12.5	237.0	35.0°F
	95°F	129.3°F	205.9	214.7	11.5	232.4	34.3°F
	100°F	133.6°F	197.3	223.7	10.6	227.5	33.6°F
	105°F	137.8°F	188.4	232.9	9.7	222.5	32.8°F

* per unit

60 HZ Rating

Technical Systems air cooled condensing units are designed for easy handling and reduced installation costs. All condensing units are pressure tested prior to shipment. Units are ETL certified and labeled. Internal power and control wiring are ready for field connection to utilities.

Cabinet

All Technical Systems condensing units are constructed of heavy duty mill galvanized steel panels. Units are base rail configured for distributed roof loadings, convenient handling and easier installation. Lifting points and mounting holes are available on each unit.

Compressors

All condensing unit models incorporate reliable Copeland Scroll® compressors. The hermetic sealed scroll compressors are statically and dynamically balanced with full pressure lubrication and charged with oil for smooth and quiet operation. Each compressor is equipped with crankcase heater, suction and discharge service valves, and inherent overload and overheat protector consisting of winding embedded sensors. Compressor motors are suction gas cooled. Compressors are rated in accordance with ASHRAE 23.1.

Condenser(s)

Condenser coils are constructed of 1/2" O.D. seamless copper tubes with die-formed tempered aluminum plate fins. Tubes are arranged in a staggered row pattern and mechanically expanded into fins for full contact and optimum heat transfer. Fins are formed with full collars and completely cover tube surface.

Condenser casings are heavy duty, corrosion resistant, mill galvanized 16-gauge steel. Coils are circuited to match refrigeration circuits. Fans are baffled to prevent crossover air flow. Headers are constructed of heavy wall seamless copper tubing. Coils are leak tested underwater at 650 PSIG.

“True” Subcooling Coil

A separate “true” subcooling coil, integral with the condenser, is provided on each circuit to eliminate the possibility of liquid flashing and to increase unit efficiency. Subcooling coil comes out at condenser “P” traps, then enters subcooling circuit.

Condenser Fans

Fans are direct drive propeller type with steel hubs and aluminum blades. Fans discharge vertically to minimize noise generation and air recirculation. Fans rotate within a formed (spun) venturi and are protected with an epoxy powder coated fan guard. Condenser plenum is compartmentalized to prevent air crossover.

Fan motors are three-phase, 1140 RPM and are specifically designed for vertical shaft and direct drive applications. Motors feature permanently lubricated ball bearings and have inherent overload protection. Fan/motor assembly is mounted in steel rod mounting bracket to reduce air turbulence and vibration.

Refrigeration Circuit

All units utilize 410a refrigerant. Dual compressor models have independent refrigeration circuits with a liquid line shut off and charging connection. All refrigerant containing vessels are constructed in accordance with UL or ASME Section VIII.

Controls

All unit operating and safety controls are UL and NEC certified. Controls include branch and subcircuit fusing, contactors, relays and pressure controls. Manual high pressure safety control and automatic low pressure operating control are standard. Control panels are constructed to NEMA 3R requirements and are UL 508 listed and labeled.

Standard Features

- High pressure safety control, manual reset
- Low pressure operating control, auto reset
- Shipped with dry nitrogen holding charge
- Direct drive condenser fans
- Epoxy powder coated fan guards
- Three-phase motors with permanently lubricated ball bearings
- Fan cycling head pressure control to +20°F
- Sub-circuit fan motor fusing with internal overload motor protector
- Fan motor contactors
- Fan motor fuses
- Plate fin/full tube collar condenser coils
- True subcooling circuit
- Baffled condenser plenum
- Fused control circuit
- Energy efficient Copeland® scroll compressors
- Compressor service valves
- Internal compressor overload protection
- Compressor fusing
- Compressor contactors
- Time delay between compressors
- Compressor isolator pads
- Power terminal blocks
- Separate 115 volt control circuit terminal blocks
- Control relays
- Compressor crankcase heater
- Field auxiliary control terminals
- NEMA 3R panel with UL 508 label
- ETL certified unit label
- 1/2" closed cell foam insulation on suction piping

Available Options

- Liquid tight flexible conduit
- Unit phase failure monitor
- Alarm circuit with dry contacts
- Unit fused or non-fused disconnect
- Unit circuit breaker
- Adjustable guaranteed off timer
- Control circuit transformer with or without convenience outlet
- Compressor circuit breakers
- TEAO fan motors
- High altitude fan assemblies
- Flooded condenser head pressure control
- VFD condenser fan controlled
- Painted cabinet, enamel
- Receiver hand valves with pressure relief
- Liquid receiver
- Liquid line drier (sealed or replaceable core) and sight glass
- Standard hot gas bypass per circuit
- Liquid line solenoid (mounted or shipped loose)
- 3 valve bypass for suction and liquid line replaceable core filters and driers
- Oil-filled refrigerant pressure gauges with manual shut off valves
- Suction accumulator
- PLC controller
- Special materials and coatings for corrosive or coastal environments
- Phenolic dipped condenser coil protection
- Acoustical compressor and fan solutions
- Hazardous and explosion-proof construction (ETL listed for Class 1, Div. 2*)
- Flooded condenser systems for mechanical cooling ambient to -20°F
- High altitude fan assemblies
- Digital scroll compressors (limited sizes available)

*Consult factory for more information