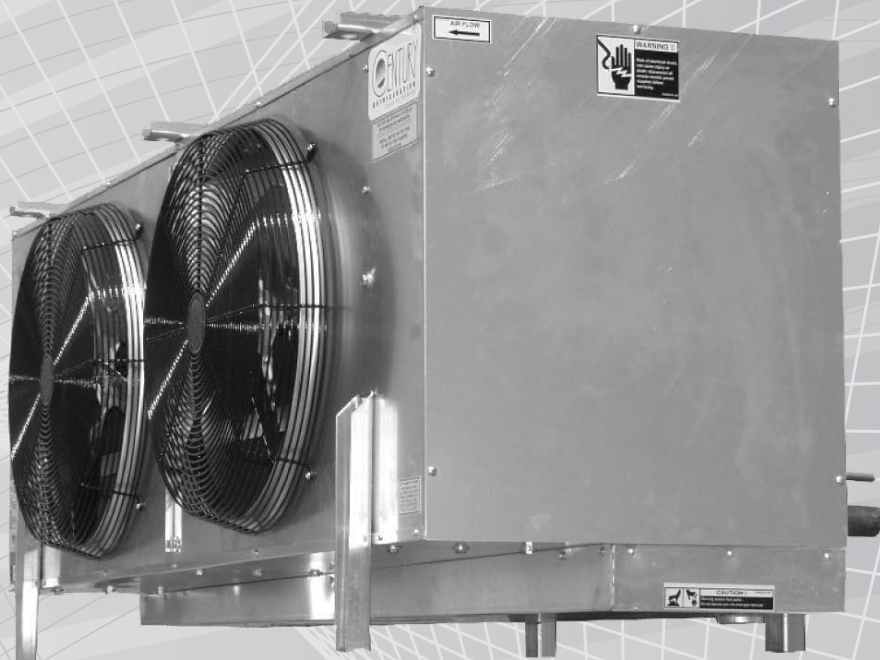


# A SERIES

Unit Coolers - Technical Catalog



 **CENTURY**  
**REFRIGERATION**  
DIVISION RAE CORPORATION

# Features/Applications

## Air Defrost

- For medium-sized cooler applications above +35°F
- 32 models available from 15,372 to 161,520 BTUH at a 10° TD
- Fin spacing at 4, 5, 6, or 8 per inch
- 90 to 130 feet air throw (additional distance available with extended throw cone)

## Electric Defrost

- For medium-sized cooler/freezer applications down to a -40°F evaporator temperature
- 45 models available from 10,089 to 128,869 BTUH at a 10° TD.
- Fin spacing at 4, 5, or 6 per inch
- 90 to 130 feet air throw (additional distance available with extended throw cone)
- Heated and insulated drain pan and adjustable defrost termination/fan delay is standard

## Hot Gas Defrost

- For medium-sized cooler/freezer applications down to a -40°F evaporative temperature
- 45 models available 10,089 to 128,869 BTUH at a 10° TD.
- Fin spacing at 4, 5, or 6 per inch
- 90 to 130 feet air throw (additional distance available with extended throw cone)
- Heated (with hot gas loop) and insulated drain pan, sideport connection on the distributor, one (1) check valve for TXV bypass (shipped loose) and adjustable defrost termination/fan delay are standard.

## For Use In:

Medium/large-sized walk-in coolers and freezers • Distribution facilities • Dock arrangements • Storage facilities • And many other applications.

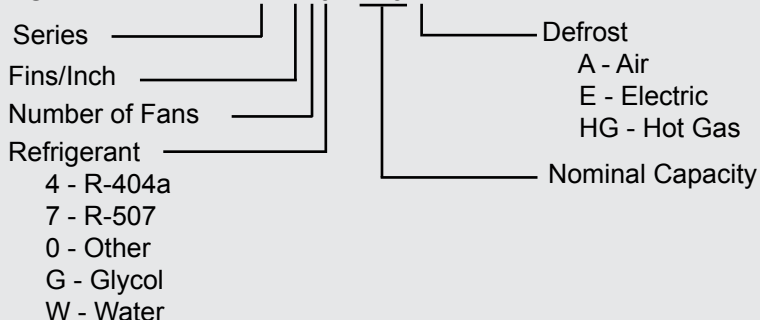
Locate units 26 inches from walls for best results. Condensate drain lines must be adequately heat traced in rooms below freezing. Support piping adequately with suction line "P" traps at each unit. Locate liquid line solenoid close to TXV. Use externally equalized TXV.

# Available Options

- Additional air throw distance available with extended throw cones
- Insulated drain pans on air defrost units
- Opposite hand connections
- Units circuited for water or glycol solutions
- Mounted non-fused fan motor disconnect switch standard with auxillary contact for liquid solenoid
- Mounted non-fused heater disconnect switch
- Mounted or shipped loose TXV
- Mounted or shipped loose electronic expansion valves with or without controllers
- Various fin materials, coatings and casing arrangements available for corrosive atmosphere applications
- Stainless steel hardware, fasteners, and/or housings
- Low noise fan blades
- Motor and fan blade combinations for higher external static pressure applications and/or hazardous duty applications
- ECM or VFD compatible motors can be supplied with overloads and single-point wiring connection
- ECM motors for 115-208-230/1 phase applications to comply with federal standards (1/3 HP motors available in 115-208-203/1; 1/2 HP motors available in 208-230)
- Room thermostat, mechanical or electrical (shipped loose)
- Reheat factory mounted (contact your Century Representative for details)
- Lower operating temperatures available (contact your Century Representative for details)
- Extra legs for rack or floor mounted applications

# Nomenclature

## MODEL KEY



## WHEN ORDERING PLEASE SPECIFY:

- Complete Model Number
- Refrigerant
- Room Temperature
- Saturated Suction Temperature
- Liquid Temperature
- Electrical Characteristic
  - Motors (Voltage/Phase)
  - Heaters (Voltage/Phase)
  - Control Voltage
- Accessories

# Construction

## Cabinet

Cabinets are made of heavy-gauge, rust-proof smooth finish aluminum housing. All hardware is corrosion resistant. Full die-formed venturies minimize noise with maximum air throw. Fan guards are heavy-gauge wire basket-type coated for corrosion protection.

## Coil

Coils are copper tube, full-collared die-formed aluminum plate fin and tube sheets. Tubes are mechanically expanded for maximum heat transfer. Coils are leak tested at 350 PSIG under water. Solder distributors have removable nozzles. Each nozzle is sized for the specified refrigerant and temperature range. All coils use an external equalized expansion valve. Expansion valve is located within the cabinet. The expansion valve compartment is heated during the defrost cycle on electric defrost models.

## Fans

Fans are 20 inch heavy duty aluminum blades with steel hubs that are statically and dynamically balanced for smooth operation. They are selected for maximum air throw.

## Motors

Motors are permanently lubricated for reduced maintenance time and costs and suitable for low

temperature applications. Motors are heavy duty, high efficiency, full ball bearing and have internal thermal overloads. Motors are suitable for single-point group fusing. Fan motors are pre-wired to terminal blocks. 1/4 HP motors are 1160 RPM. 1/2 HP motors are 1760 RPM.

## Refrigerants

Coils are designed for use with many refrigerants.

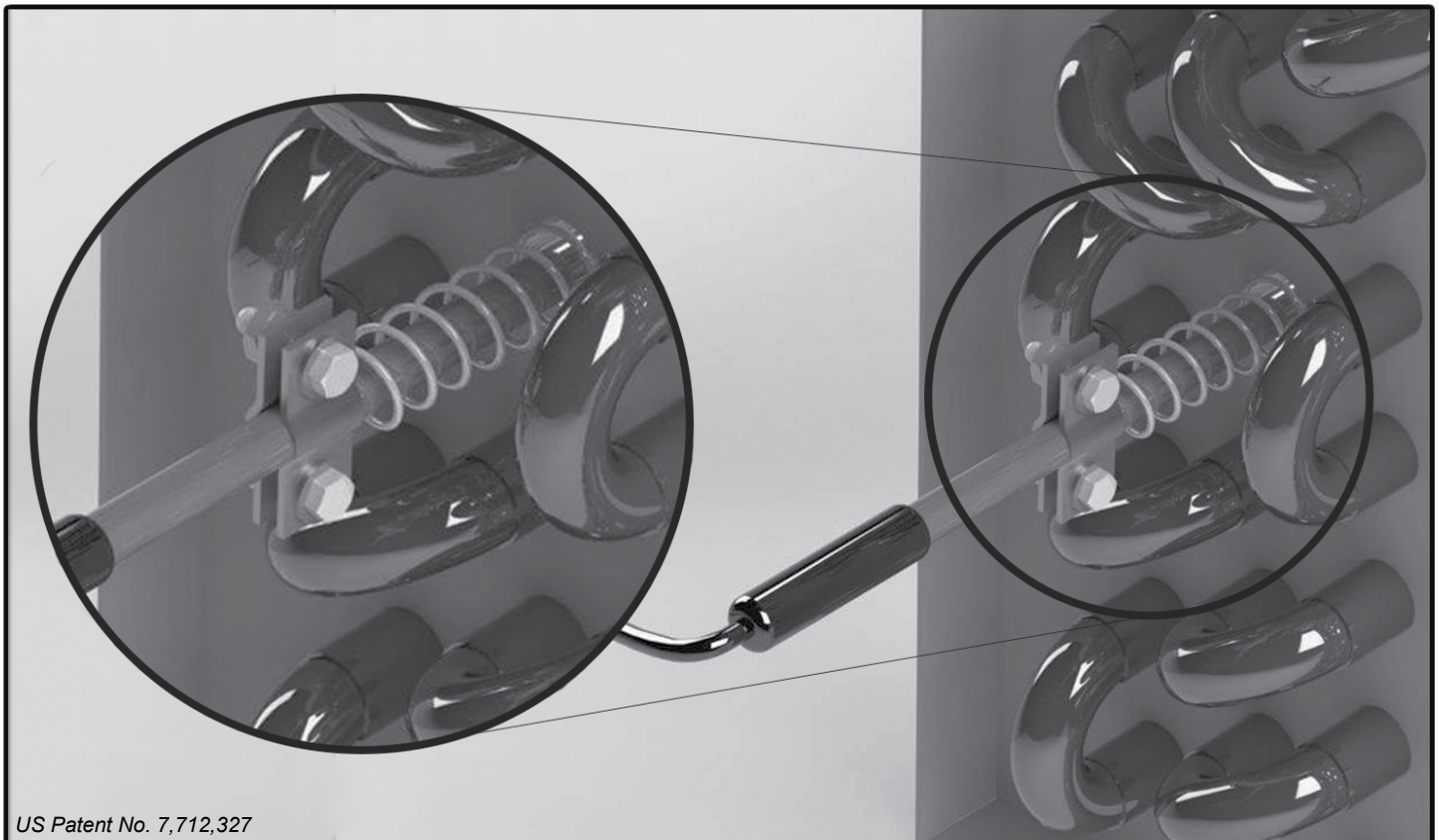
## Defrost

Electric Defrost models include pre-wired terminal blocks and low-watt density heaters that are housed internal to the coil for a rapid and efficient defrost. Lower coil heaters and drain pan heaters help provide fast and reliable condensate drainage. Standard operating control includes an adjustable defrost termination with fan delay.

Hot Gas Defrost models include an auxiliary side port connection on the distributor, insulated drain pan with a hot gas loop in the pan, and a check valve shipped loose. An adjustable defrost termination/fan delay switch is also provided with this option for temperature termination of the defrost period.

## Mounting

Century offers both ceiling and rack or floor mounting for each model.



US Patent No. 7,712,327

Defrost elements are installed in the open tube locations within the evaporator coil. The radiant heat is trapped by the cabinet, accelerating defrost. The heater elements are held in place with a spring and bracket to keep the element from creeping during defrost.

## Capacity

A Series Model	CFM	FPM*	Evaporating Temperature °F									
			-40°	-30°	-20°	-10°	0°	+10°	+20°	+25°	+35°	+45°
410-126	3,310	623	9,991	11,221	12,152	12,884	13,511	14,127	14,819	15,222	16,191	17,448
410-137	4,030	759	10,863	12,200	13,213	14,009	14,691	15,360	16,113	-	-	-
410-169	3,220	606	13,400	15,050	16,300	17,281	18,122	18,948	19,876	20,416	21,717	23,402
410-185	3,810	717	14,669	16,475	17,843	18,917	19,838	20,741	21,758	-	-	-
420-253	6,630	624	20,061	22,530	24,401	25,870	27,130	28,365	29,756	30,564	32,511	35,034
420-275	8,060	759	21,805	24,490	26,523	28,120	29,489	30,832	32,343	-	-	-
420-338	6,440	606	26,800	30,100	32,599	34,562	36,245	37,895	39,753	40,832	43,433	46,805
420-371	7,620	717	29,417	33,039	35,782	37,936	39,783	41,595	43,634	-	-	-
430-379	9,940	624	30,051	33,751	36,553	38,754	40,641	42,492	44,575	45,785	48,702	52,482
430-413	12,090	759	32,747	36,779	39,833	42,231	44,287	46,304	48,574	-	-	-
430-507	9,750	612	40,201	45,150	48,899	51,843	54,367	56,843	59,629	61,249	65,150	70,207
430-556	11,430	717	44,086	49,514	53,625	56,853	59,621	62,336	65,392	-	-	-
440-679	12,970	610	53,839	60,467	65,488	69,431	72,811	76,126	79,859	82,027	87,252	94,025
440-745	15,240	717	59,072	66,345	71,853	76,179	79,888	83,526	87,621	-	-	-
440-841	16,120	614	66,684	74,894	81,112	85,996	90,183	94,289	98,912	101,598	108,069	116,458
510-140	3,270	616	11,656	13,091	14,178	15,031	15,763	16,481	17,289	17,758	18,890	20,356
510-153	3,930	740	12,739	14,307	15,495	16,428	17,228	18,012	18,895	-	-	-
510-185	3,170	597	15,403	17,299	18,735	19,863	20,830	21,779	22,847	23,467	24,962	26,899
510-206	3,784	712	17,151	19,262	20,862	22,118	23,195	24,251	25,440	-	-	-
520-281	6,540	616	23,395	26,275	28,457	30,170	31,639	33,080	34,701	35,644	37,914	40,857
520-307	7,860	740	25,560	28,707	31,090	32,962	34,567	36,141	37,913	-	-	-
520-371	6,340	597	30,888	34,691	37,571	39,833	41,772	43,675	45,816	47,060	50,057	53,943
520-413	7,568	712	34,384	38,618	41,824	44,342	46,501	48,619	51,002	-	-	-
530-422	9,810	616	35,142	39,469	42,746	45,320	47,526	49,690	52,126	53,542	56,952	61,373
530-461	11,790	740	38,381	43,106	46,685	49,496	51,906	54,269	56,930	-	-	-
530-556	9,510	597	46,332	52,036	56,357	59,750	62,659	65,512	68,724	70,590	75,086	80,915
530-620	11,352	712	51,619	57,974	62,787	66,568	69,808	72,987	76,566	-	-	-
540-745	12,680	597	62,067	69,709	75,497	80,042	83,939	87,762	92,064	94,564	100,587	108,396
540-830	15,208	716	69,102	77,610	84,054	89,115	93,453	97,709	102,499	-	-	-
540-925	15,920	606	77,012	86,493	93,675	99,315	104,150	108,893	114,231	117,333	124,806	134,495
610-150	3,260	614	-	-	15,624	16,565	17,372	18,163	19,053	19,571	20,817	22,433
610-164	3,880	730	-	-	17,083	18,112	18,993	19,858	20,832	-	-	-
610-193	3,050	574	-	-	20,104	21,314	22,352	23,370	24,515	25,181	26,785	28,864
610-212	3,760	708	-	-	22,082	23,412	24,552	25,670	26,928	-	-	-
620-301	6,520	614	-	-	31,353	33,241	34,859	36,447	38,234	39,272	41,773	45,016
620-328	7,760	730	-	-	34,165	36,222	37,986	39,716	41,663	-	-	-
620-387	6,100	574	-	-	40,312	42,739	44,820	46,861	49,158	50,493	53,709	57,878
620-424	7,520	708	-	-	44,167	46,827	49,106	51,343	53,860	-	-	-
630-451	9,780	614	-	-	46,978	49,806	52,231	54,609	57,287	58,842	62,590	67,449
630-492	11,640	730	-	-	51,248	54,334	56,979	59,574	62,495	-	-	-
630-581	9,150	574	-	-	60,503	64,146	67,269	70,332	73,780	75,784	80,611	86,868
630-636	11,280	708	-	-	66,247	70,236	73,656	77,010	80,785	-	-	-
640-779	12,200	574	-	-	81,143	86,029	90,217	94,325	98,949	101,636	108,110	116,502
640-852	15,040	708	-	-	88,754	94,098	98,680	103,173	108,231	-	-	-
640-978	15,536	592	-	-	101,877	108,012	113,270	118,428	124,234	127,608	135,735	146,272
810-165	3,160	595	-	-	-	-	-	-	-	21,926	23,323	25,133
810-208	2,950	555	-	-	-	-	-	-	-	27,641	29,401	31,684
820-330	6,320	595	-	-	-	-	-	-	-	43,852	46,646	50,267
820-417	5,900	555	-	-	-	-	-	-	-	55,413	58,943	63,518
830-495	9,480	595	-	-	-	-	-	-	-	65,779	69,968	75,400
830-626	8,850	555	-	-	-	-	-	-	-	83,187	88,485	95,354
840-839	11,800	555	-	-	-	-	-	-	-	111,492	118,593	127,799
840-1050	15,132	576	-	-	-	-	-	-	-	139,531	148,418	159,939

Capacity based on 10° TD.

\*Recommended maximum face velocity of 625 FPM for a wet coil application.

- Ratings omitted due to face velocities or temperature limits.

**Electrical Data**

**Specifications**

A Series Model	Fan Motor Data								Defrost Heater Data <sup>6</sup>				Connection (in.)			Approx. Refrig. Charge (lbs.) <sup>3</sup>	Ship Weight (lbs.)	Operating Weight (lbs.)
	Qty.	HP <sup>7</sup>	Amps <sup>1,4</sup>				Amps <sup>2</sup>				Watts <sup>5</sup>	Liquid	Suction	Hot Gas <sup>8</sup>				
			115/1	230/1	230/3	460/3	575/3	230/1	230/3	460/3					575/3			
410-126	1	1/4	4	2.1	1.4	0.7	0.6	16.9	10.3	5.2	4.2	3,880	1/2	1 1/8	1 1/8	7	267	167
410-137	1	1/2	6	3	2	1	0.9	16.9	10.3	5.2	4.2	3,880	1/2	1 1/8	1 1/8	7	268	168
410-169	1	1/4	4	2.1	1.4	0.7	0.6	21.8	12.9	7.3	5.8	5,020	1/2	1 3/8	1 1/8	11	287	191
410-185	1	1/2	6	3	2	1	0.9	21.8	12.9	7.3	5.8	5,020	1/2	1 3/8	1 1/8	11	292	196
420-253	2	1/4	8	4.2	2.8	1.4	1.2	32.2	19.6	9.8	7.8	7,414	1/2	1 3/8	1 1/8	14	404	270
420-275	2	1/2	12	6	4	2	1.8	32.2	19.6	9.8	7.8	7,414	1/2	1 3/8	1 1/8	14	408	273
420-338	2	1/4	8	4.2	2.8	1.4	1.2	41.8	24.9	14	11.2	9,622	5/8	1 5/8	1 1/8	21	449	322
420-371	2	1/2	12	6	4	2	1.8	41.8	24.9	14	11.2	9,622	1 1/8	1 5/8	1 1/8	21	455	328
430-379	3	1/4	12	6.3	4.2	2.1	1.8	47.6	28.9	14.5	11.6	10,954	5/8	1 5/8	1 3/8	20	554	385
430-413	3	1/2	18	9	6	3	2.7	47.6	28.9	14.5	11.6	10,954	1 1/8	2 1/8	1 3/8	20	566	396
430-507	3	1/4	12	6.3	4.2	2.1	1.8	-	37	20.8	16.6	14,232	1 1/8	2 1/8	1 3/8	31	614	455
430-556	3	1/2	18	9	6	3	2.7	-	37	20.8	16.6	14,232	1 1/8	2 1/8	1 3/8	31	618	459
440-679	4	1/4	16	8.4	5.6	2.8	2.4	-	47.4	26.6	21.3	18,250	1 1/8	2 1/8	1 5/8	41	769	589
440-745	4	1/2	24	12	8	4	3.6	-	47.4	26.6	21.3	18,250	1 1/8	2 1/8	1 5/8	41	774	595
440-841	4	1/2	24	12	8	4	3.6	-	62.3	31.6	25.3	22,450	1 3/8	2 1/8	1 5/8	50	848	679
510-140	1	1/4	4	2.1	1.4	0.7	0.6	16.9	10.3	5.2	4.2	3,880	1/2	1 1/8	1 1/8	7	269	170
510-153	1	1/2	6	3	2	1	0.9	16.9	10.3	5.2	4.2	3,880	1/2	1 1/8	1 1/8	7	269	170
510-185	1	1/4	4	2.1	1.4	0.7	0.6	21.8	12.9	7.3	5.8	5,020	1/2	1 3/8	1 1/8	11	269	170
510-206	1	1/2	6	3	2	1	0.9	21.8	12.9	7.3	5.8	5,020	1/2	1 3/8	1 1/8	11	417	283
520-281	2	1/4	8	4.2	2.8	1.4	1.2	32.2	19.6	9.8	7.8	7,414	5/8	1 5/8	1 1/8	14	419	285
520-307	2	1/2	12	6	4	2	1.8	32.2	19.6	9.8	7.8	7,414	5/8	1 5/8	1 1/8	14	420	285
520-371	2	1/4	8	4.2	2.8	1.4	1.2	41.8	24.9	14	11.2	9,622	1 1/8	1 5/8	1 1/8	21	461	334
520-413	2	1/2	12	6	4	2	1.8	41.8	24.9	14	11.2	9,622	1 1/8	1 5/8	1 1/8	21	463	336
530-422	3	1/4	12	6.3	4.2	2.1	1.8	47.6	28.9	14.5	11.6	10,954	1 1/8	1 5/8	1 3/8	21	569	400
530-461	3	1/2	18	9	6	3	2.7	47.6	28.9	14.5	11.6	10,954	1 1/8	2 1/8	1 3/8	21	574	406
530-556	3	1/4	12	6.3	4.2	2.1	1.8	-	37	20.8	16.6	14,232	1 1/8	2 1/8	1 3/8	31	642	438
530-620	3	1/2	18	9	6	3	2.7	-	37	20.8	16.6	14,232	1 1/8	2 1/8	1 3/8	31	635	476
540-745	4	1/4	16	8.4	5.6	2.8	2.4	-	47.4	26.6	21.3	18,250	1 1/8	2 1/8	1 5/8	41	774	595
540-830	4	1/2	24	12	8	4	3.6	-	47.4	26.6	21.3	18,250	1 1/8	2 1/8	1 5/8	41	793	613
540-925	4	1/2	24	12	8	4	3.6	-	63.2	31.6	25.3	22,450	1 3/8	2 5/8	1 5/8	50	872	703
610-150	1	1/4	4	2.1	1.4	0.7	0.6	16.9	10.3	5.2	4.2	3,880	1/2	1 1/8	1 1/8	7	273	173
610-164	1	1/2	6	3	2	1	0.9	16.9	10.3	5.2	4.2	3,880	1/2	1 1/8	1 1/8	7	311	211
610-193	1	1/4	4	2.1	1.4	0.7	0.6	21.8	12.9	7.3	5.8	5,020	1/2	1 1/8	1 1/8	11	296	200
610-212	1	1/2	6	3	2	1	0.9	21.8	12.9	7.3	5.8	5,020	1/2	1 3/8	1 1/8	11	298	202
620-301	2	1/4	8	4.2	2.8	1.4	1.2	32.2	19.6	9.8	7.8	7,414	5/8	1 3/8	1 1/8	14	422	288
620-328	2	1/2	12	6	4	2	1.8	32.2	19.6	9.8	7.8	7,414	5/8	1 3/8	1 1/8	14	425	291
620-387	2	1/4	8	4.2	2.8	1.4	1.2	41.8	24.9	14	11.2	9,622	1 1/8	1 5/8	1 1/8	21	470	343
620-424	2	1/2	12	6	4	2	1.8	41.8	24.9	14	11.2	9,622	1 1/8	1 5/8	1 1/8	21	473	346
630-451	3	1/4	12	6.3	4.2	2.1	1.8	47.6	28.9	14.5	11.6	10,954	1 1/8	1 5/8	1 3/8	21	649	480
630-492	3	1/2	18	9	6	3	2.7	47.6	28.9	14.5	11.6	10,954	1 1/8	1 5/8	1 3/8	21	583	413
630-581	3	1/4	12	6.3	4.2	2.1	1.8	-	37	20.8	16.6	14,232	1 1/8	2 1/8	1 3/8	31	642	483
630-636	3	1/2	18	9	6	3	2.7	-	37	20.8	16.6	14,232	1 1/8	2 1/8	1 3/8	31	646	487
640-779	4	1/4	16	8.4	5.6	2.8	2.4	-	47.4	26.6	21.3	18,250	1 1/8	2 1/8	1 5/8	41	806	626
640-852	4	1/2	24	12	8	4	3.6	-	47.4	26.6	21.3	18,250	1 1/8	2 1/8	1 5/8	41	810	631
640-978	4	1/2	24	12	8	4	3.6	-	63.2	31.6	25.3	22,450	1 3/8	2 1/8	1 5/8	50	1001	832
810-165	1	1/4	4	2.1	1.4	0.7	0.6	<b>Available Air Defrost Only</b>					1/2	7/8	-	7	279	179
810-208	1	1/4	4	2.1	1.4	0.7	0.6						1/2	1 1/8	-	7	300	162
820-330	2	1/4	8	4.2	2.8	1.4	1.2						5/8	1 1/8	-	14	434	300
820-417	2	1/4	8	4.2	2.8	1.4	1.2						1 1/8	1 3/8	-	21	488	361
830-495	3	1/4	12	6.3	4.2	2.1	1.8						1 1/8	1 3/8	-	21	596	427
830-626	3	1/4	12	6.3	4.2	2.1	1.8						1 1/8	1 3/8	-	31	666	507
840-839	4	1/4	16	8.4	5.6	2.8	2.4						1 1/8	1 5/8	-	41	934	760
840-1050	4	1/2	24	12	8	4	3.6						1 3/8	1 5/8	-	50	839	660

<sup>1</sup> Values shown for motors with HP < 1, single phase, are ECM values.

<sup>2</sup> Value for heater amps is total. Multiple circuits are required to keep circuits within NEC guidelines of 48.0 amp. Two or more heater electrical circuits are required on units exceeding 48.0 total amps.

<sup>3</sup> Refrigerant charge based on R-404a refrigerant.

<sup>4</sup> See table on pg. 7 for EC motor RLA.

<sup>5</sup> Watts shown at 230/460. Watts reduced at 208 amperage.

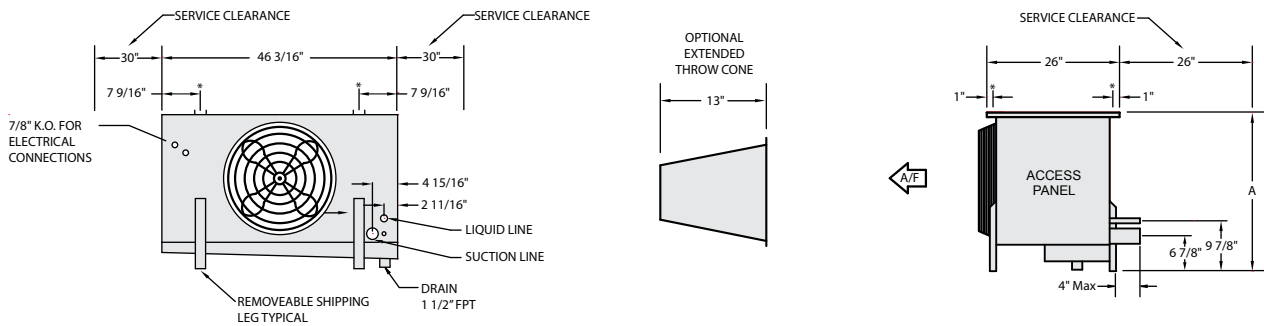
<sup>6</sup> Electric defrost models.

<sup>7</sup> 1/2 HP EC Motors are actually 3/4 HP.

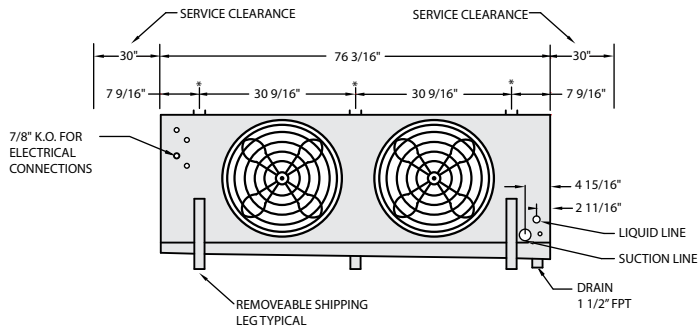
<sup>8</sup> Drain pan hot gas connection on hot gas models only.

# Dimensions<sup>1</sup>

## One Fan Models



## Two Fan Models

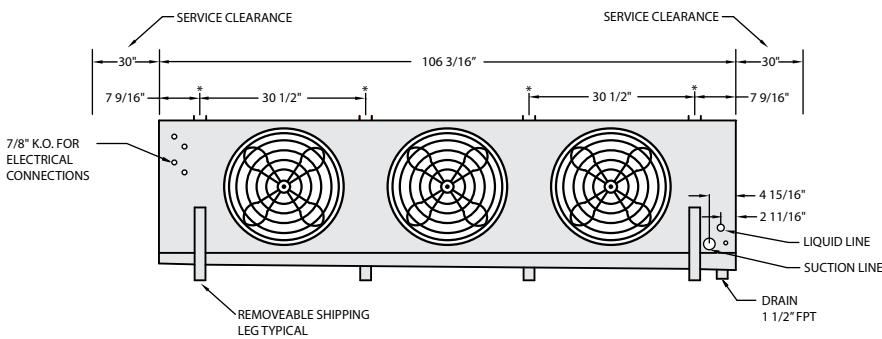


A Series Model	A (Height)
440-841	37 1/16"
540-925	
640-978	
840-1050	
All Other Models	31 1/16"

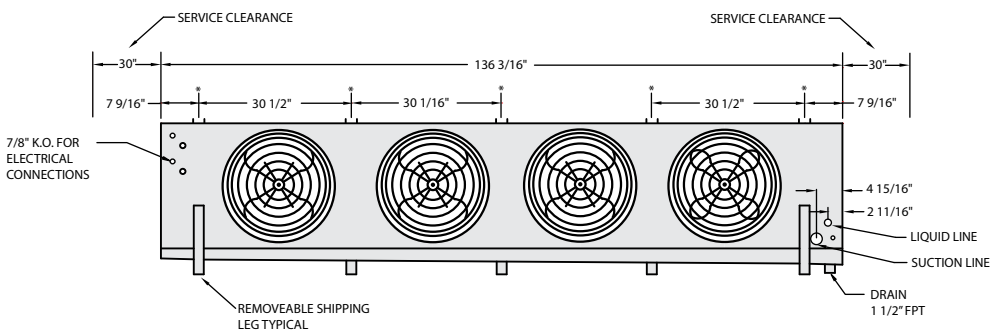
\* 13/16" diameter unit mounting holes

<sup>1</sup>All dimensions +/- 1/2"

## Three Fan Models



## Four Fan Models



# Sound / Air Throw Data

A Series Nominal Fan Performance						
Fan Option	Sound Pressure A-weighted 10 ft <sup>(1)</sup>				Air Throw (ft) <sup>2</sup>	Air Throw w/ Cone (ft) <sup>2</sup>
	1 fan	2 fan	3 fan	4 fan		
Standard 1/4 HP Fan	67	70	72	73	90	120
Standard 1/2 HP Fan	69	72	74	75	130	160

<sup>1</sup> Sound pressure levels provided are based on free field propagation of sound. For applied sound pressure levels, surrounding reflective surfaces must be considered. Reference ASHRAE Handbooks for directivity factors and equation to estimate installed sound pressure levels.

<sup>2</sup> Air throw distance provided may vary based on application.

<sup>4</sup> Single Phase EC Motor RLA			
HP	115V	208V	230V*
1/4	2.7	1.3	1.2
1/2	---	2.1	2.1

\*note 1/2 HP 230/1 EC Motors are actually 3/4 HP

## Product Benefits:

### **Adaptability-**

Century systems go where others can't. Your Century system is engineered to meet your specific project application and job requirements in-house with no need for modification in the field. With Century's extensive inventory of components, your order can be shipped when you need it.

### **Durability-**

Your Century system will be built with heavy gauge construction and the highest quality components to optimize efficiency for the life expectancy of your system. Century systems are engineered for ***Time Tested Toughness.***

### **Serviceability-**

Your Century system will have easily accessible components and appropriate fin spacing to allow for easy maintenance. Century systems are engineered to be serviceable with a minimal amount of OEM components. A large inventory of replacement parts ensures professional, reliable service throughout the lifetime of your Century system.

### **Reduced Total Cost of Ownership-**

The adaptability, durability, and serviceability of your Century system results in reduced installation costs, maintenance costs, and utility costs throughout the lifetime of your system. Century systems are designed for customers requiring long-term, dependable systems.

## The current refrigeration market...

### **Commercial Refrigeration**

- Shipped from stock
- No modifications available; one size fits all equipment
- Lightweight construction
- Convenience store and restaurant applications
- Options/kits shipped loose for field assembly/installation
- Cheaper, lower quality materials

### **Industrial Refrigeration**

- Central refrigeration plant
- Dedicated mechanical rooms
- Stationary Engineer requirements
- PLC (Microprocessor) controls
- Steel construction
- Requires extensive piping in the field

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## **Comdustrial™ Refrigeration**

***Comdustrial™ Refrigeration Systems are the ideal balance of the commercial and industrial refrigeration markets.***

- Industrial quality equipment in Commercial capacity ranges
- Built-to-order refrigeration systems with exceptional lead times
- Professionally represented by systems oriented Sales Representatives
- Systems based approach to your application
- Project specific submittal packages and drawings
- Quality materials for long-term equipment life



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