

the  ultimate

UFH

UNIT COOLERS BY CENTURY

UFH Series Unit Coolers - Technical Catalog



 **CENTURY**
REFRIGERATION
DIVISION RAE CORPORATION



DOE COMPLIANT

Features/Applications

- Walk-in Coolers / Freezers
- Beverage Boxes / Produce Storage
- Air Defrost
 - 28 Selections
 - 4, 5, 6 AND 8 FPI Coils
- Electric Defrost
 - 21 Selections
 - 4, 5, and 6 FPI Coils
 - Klixon DTFD switch
- Hot Gas Defrost
 - 21 Selections
 - 4, 5, and 6 FPI Coils
 - Heated (with hot gas loop) and insulated drain pan, sideport connection on the distributor, one check valve for TXV bypass (shipped loose) and Klixon DTFD switch.
- Permanently lubricated EC motors, low noise level fans for high, medium and low temperature refrigeration applications
- 4, 5, 6 and 8 FPI spacing for accurate matching of loads
- Easy access to controls, motors, and wiring.
- Ceiling flush mount design
- Swing down drain pans
- 60 foot air throw (application dependent)

Locate units 15 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

- Insulated Drain Pans
- Heated Drain Pans
- Mounted or shipped loose thermostatic expansion valve
- Mounted or shipped loose electronic expansion valves with or without controllers
- Mounted non-fused fan motor disconnect switch standard with auxiliary contact for liquid solenoid
- Mounted non-fused heater disconnect switch
- Special Coil Coatings and Fin Materials (contact factory)
- Stainless Steel Cabinet and Drain Pan
- Opposite hand connectors
- Units circuited for water or glycol solutions
- Room thermostat , mechanical or electronic (shipped loose)



U.S. DEPARTMENT OF
ENERGY

Fully Compliant with 2020 DOE Requirements
See AWEF Tables on Page 8 & 9

Construction

Cabinet

Heavy gauge, rustproof smooth finish aluminum housing. All hardware is corrosion resistant. Full die-formed venturis minimizes noise with maximum air throw. Fan guards are heavy gauge wire basket type coated for corrosion resistance. Units mount flush to the ceiling for ease of wash down, no difficult areas above the unit to clean.

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 connection type distributors are supplied with removable nozzles. Each nozzle is sized for the specified refrigerant and temperature range. All coils require optional external equalized expansion valve. Expansion valve is located within the cabinet. On electric defrost models, the expansion valve compartment is heated during the defrost cycle.

Fan/Motor Assemblies

The fan and motor assemblies utilize an efficient, EC, external rotor-motor that reduces power consumption and has an integrated mounting assembly. The aerodynamic, polypropylene fan

blade is installed and balanced for maximum air throw and quiet operation. The permanently lubricated EC motors are suitable for low temperature applications and all motors are thermally protected 1,590 RPM motors.

Refrigerants

All coils are designed for use with many refrigerants. Specify which refrigerant when ordering.

Electrical

Factory prewired to a junction box located within the end panel of the unit. Consult specification for electrical requirements. See appropriate diagram for internal wiring schematic.

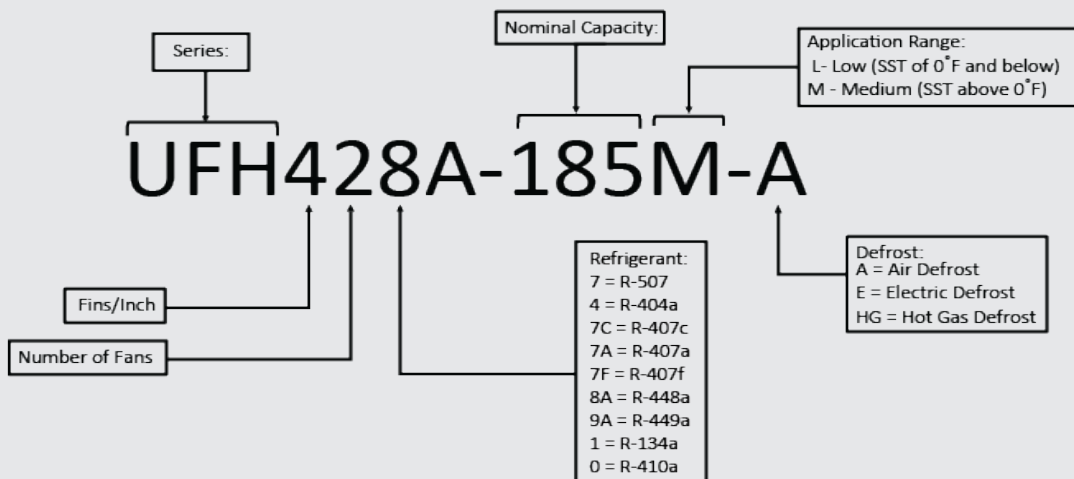
Defrost

Standard unit is suitable for air defrost applications (above 35° F room). Electric defrost and hot gas defrost models (below 35° F room) are available. Removable, low watt density resistance heaters are prewired with termination and fan delay controls.

Drain Pan

Drain pans are designed to swing down for ease of access and cleaning.

Nomenclature



R448a/R449a, R407c/R407a/R407f

Capacity

UFH Series Model	CFM	FPM	Evaporating Temperature °F (80% RH with a 10°F TD)									
			-40°	-30°	-20°	-10°	0°	+10°	+20°	+25°	+35°	+45°
420-63	1,831	533	5,200	5,825	6,292	6,695	7,115	7,596	8,790	9,056	9,451	10,116
420-79	1,760	512	6,580	7,283	7,860	8,361	8,888	9,497	11,086	11,464	12,075	13,082
430-95	2,747	527	7,149	7,986	8,621	9,210	9,811	10,455	13,292	13,694	14,291	15,299
430-122	2,640	507	9,974	11,125	11,971	12,567	13,359	14,294	16,780	17,350	18,270	19,789
440-160	3,520	512	13,107	14,642	15,778	16,767	17,820	18,758	22,226	22,976	24,186	26,186
450-202	4,400	509	17,222	19,174	20,495	21,927	23,356	24,993	27,995	28,398	29,843	32,146
460-240	5,280	512	19,776	22,049	23,539	24,897	26,469	28,327	33,621	34,732	36,559	38,829
520-74	1,805	525	5,792	6,512	7,080	7,568	8,053	8,619	9,928	10,232	10,712	11,486
520-96	1,733	504	7,291	8,076	8,767	9,366	9,970	10,679	12,194	12,558	13,104	14,036
530-114	2,707	520	8,000	9,055	9,725	10,409	11,107	11,855	15,011	15,470	16,195	17,366
530-146	2,627	504	11,095	12,414	13,436	14,266	15,046	16,127	18,671	19,268	20,206	21,721
540-192	3,467	504	14,748	16,253	17,613	18,793	19,998	21,405	24,140	24,879	26,005	27,876
550-240	4,351	503	19,037	21,197	23,103	24,500	26,208	28,069	31,410	32,396	33,444	36,115
560-288	5,200	504	22,204	24,495	26,512	28,151	29,670	31,801	37,414	38,731	40,816	44,282
620-83	1,774	516	-	-	7,744	8,312	8,865	9,501	10,909	11,232	11,796	12,673
620-106	1,723	501	-	-	9,568	10,262	10,944	11,742	13,380	13,796	14,433	15,480
630-126	2,693	517	-	-	10,848	11,491	12,292	13,142	16,582	17,073	17,926	19,258
630-161	2,597	499	-	-	14,646	15,668	16,689	17,665	20,415	21,049	22,144	23,859
640-213	3,446	501	-	-	19,235	20,602	21,951	23,546	26,938	27,279	28,594	30,698
650-267	4,329	501	-	-	25,135	26,735	28,713	30,834	34,402	35,510	37,405	39,616
660-317	5,168	501	-	-	28,971	30,813	32,550	34,912	40,620	41,893	44,022	47,389
820-92	1,760	512	-	-	-	-	-	-	-	13,032	13,708	14,786
820-118	1,669	486	-	-	-	-	-	-	-	15,641	16,442	17,699
830-140	2,640	507	-	-	-	-	-	-	-	19,696	20,715	22,343
830-180	2,503	481	-	-	-	-	-	-	-	23,740	25,042	27,085
840-238	3,337	485	-	-	-	-	-	-	-	31,566	33,127	36,027
850-300	4,172	483	-	-	-	-	-	-	-	39,991	42,220	45,807
860-355	5,006	485	-	-	-	-	-	-	-	47,395	49,973	53,995

Capacity Based on 10° TD.

- Ratings omitted due to face velocities or temperature limits

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

- Low temperature applications are defined as below 20°F SST.

Catalog application ratings are outside the scope of ANSI/CAN/AHRI Standard 1250. For DOE compliant models, Net Capacities and AWEF numbers can be found at www.regulations.doe.gov

R507/R404a

Capacity

UFH Series Model	CFM	FPM	Evaporating Temperature °F (80% RH with a 10°F TD)									
			-40°	-30°	-20°	-10°	0°	+10°	+20°	+25°	+35°	+45°
420-63	1,831	533	3,673	4,107	4,427	4,679	4,906	5,638	5,979	6,030	6,071	6,228
420-79	1,760	512	4,639	5,114	5,504	5,814	6,096	7,000	7,545	7,683	7,866	8,196
430-95	2,747	527	4,840	5,488	5,940	6,279	6,573	8,541	9,056	9,134	9,195	9,434
430-122	2,640	507	7,034	7,815	8,269	8,751	9,189	10,627	11,446	11,653	11,923	12,421
440-160	3,520	512	9,366	10,289	11,055	11,665	12,060	14,252	15,175	15,445	15,794	16,444
450-202	4,400	509	12,533	13,612	14,691	15,442	16,283	17,909	18,788	19,032	19,299	19,945
460-240	5,280	512	14,095	15,498	16,633	17,340	18,209	21,375	22,971	23,361	23,496	24,490
520-74	1,805	525	4,077	4,556	4,942	5,247	5,517	6,301	6,702	6,767	6,830	7,012
520-96	1,733	504	5,076	5,686	6,089	6,459	6,790	7,660	8,108	8,164	8,201	8,389
530-114	2,707	520	5,554	6,115	6,641	7,042	7,384	9,551	10,153	10,252	10,345	10,627
530-146	2,627	504	7,797	8,651	9,336	9,754	10,272	11,793	12,553	12,686	12,811	13,187
540-192	3,467	504	10,266	11,465	12,242	12,967	13,396	15,210	16,119	16,240	16,327	16,708
550-240	4,351	503	13,822	15,022	16,222	17,110	18,114	19,832	21,185	21,460	21,483	22,245
560-288	5,200	504	15,459	17,248	18,431	19,503	20,257	23,625	25,297	25,777	26,427	27,128
620-83	1,774	516	-	-	5,369	5,723	6,034	6,847	7,305	7,386	7,473	7,681
620-106	1,723	501	-	-	6,599	7,025	7,404	8,333	8,839	8,909	8,960	9,177
630-126	2,693	517	-	-	7,268	7,729	8,119	10,435	11,127	11,250	11,380	11,698
630-161	2,597	499	-	-	10,105	10,731	11,161	12,752	13,611	13,772	13,943	14,369
640-213	3,446	501	-	-	13,277	14,112	14,858	16,798	17,550	17,698	17,822	18,269
650-267	4,329	501	-	-	17,518	18,758	19,696	21,466	23,003	23,334	23,362	24,233
660-317	5,168	501	-	-	20,002	21,236	22,064	25,420	27,095	27,394	27,706	28,005
820-92	1,760	512	-	-	-	-	-	-	-	8,447	8,590	8,859
820-118	1,669	486	-	-	-	-	-	-	-	9,982	10,075	10,407
830-140	2,640	507	-	-	-	-	-	-	-	12,802	13,012	13,420
830-180	2,503	481	-	-	-	-	-	-	-	15,321	15,580	16,105
840-238	3,337	485	-	-	-	-	-	-	-	20,450	20,943	22,034
850-300	4,172	483	-	-	-	-	-	-	-	25,901	26,464	27,043
860-355	5,006	485	-	-	-	-	-	-	-	30,601	31,073	31,448

Capacity Based on 10° TD.

- Ratings omitted due to face velocities or temperature limits

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

- Low temperature applications are defined as below 20°F SST.

Catalog application ratings are outside the scope of ANSI/CAN/AHRI Standard 1250. For DOE compliant models, Net Capacities and AWEF numbers can be found at www.regulations.doe.gov

Electrical Data

Specifications

UFH Series Model	Fan Motor Data				Defrost Heater Data			Connection (in.)					Approx. Refrig. Charge (lbs.) ³	Ship Weight (lbs.)	Operating Weight (lbs.)	Sound ⁴ Pressure dB(A) 10'
	Qty.	Watts	Amps		Amps		Watts ²	Liquid		Suction		Hot Gas ¹				
			115/1	230/1	230/1	230/3		Qty.	Size	Qty.	Size					
420-63	2	63	3.44	1.72	8.7	-	2,000	1	1/2	1	7/8	7/8	2	104	80	59.03
420-79	2	63	3.44	1.72	8.7	-	2,000	1	1/2	1	7/8	7/8	3	109	83	58.76
430-95	3	63	5.16	2.58	13	-	3,000	1	1/2	1	7/8	7/8	3	141	108	60.79
430-122	3	63	5.16	2.58	13	-	3,000	1	1/2	1	1 1/8	7/8	5	150	116	60.52
440-160	4	63	6.88	3.44	17.4	-	4,000	1	1/2	1	1 1/8	7/8	6	186	145	61.77
450-202	5	63	8.6	4.3	-	12.6	5,000	1	1/2	1	1 1/8	7/8	7	229	179	62.74
460-240	6	63	10.3	5.16	-	15	6,000	1	1/2	1	1 1/8	7/8	9	263	206	63.53
520-74	2	63	3.44	1.72	8.7	-	2,000	1	1/2	1	7/8	7/8	2	103	79	58.92
520-96	2	63	3.44	1.72	8.7	-	2,000	1	1/2	1	7/8	7/8	3	109	85	58.72
530-114	3	63	5.16	2.58	13	-	3,000	1	1/2	1	7/8	7/8	3	140	107	60.68
530-146	3	63	5.16	2.58	13	-	3,000	1	1/2	1	1 1/8	7/8	5	149	115	60.49
540-192	4	63	6.88	3.44	17.4	-	4,000	1	1/2	1	1 1/8	7/8	6	185	144	61.73
550-240	5	63	8.6	4.3	-	12.6	5,000	1	1/2	1	1 3/8	7/8	7	227	177	62.69
560-288	6	63	10.3	5.16	-	15	6,000	1	1/2	1	1 3/8	7/8	9	260	203	63.49
620-83	2	63	3.44	1.72	8.7	-	2,000	1	1/2	1	7/8	7/8	2	105	81	58.83
620-106	2	63	3.44	1.72	8.7	-	2,000	1	1/2	1	7/8	7/8	3	110	86	58.7
630-126	3	63	5.16	2.58	13	-	3,000	1	1/2	1	7/8	7/8	3	146	105	60.68
630-161	3	63	5.16	2.58	13	-	3,000	1	1/2	1	1 1/8	7/8	5	152	119	60.46
640-213	4	63	6.88	3.44	17.4	-	4,000	1	1/2	1	1 1/8	7/8	6	186	148	61.71
650-267	5	63	8.6	4.3	-	12.6	5,000	1	1/2	1	1 3/8	7/8	7	233	183	62.68
660-317	6	63	10.3	5.16	-	15	6,000	1	1/2	1	1 3/8	7/8	9	266	209	63.47
820-92	2	63	3.44	1.72	Available Air Defrost Only			1	1/2	1	7/8	-	2	107	83	58.73
820-118	2	63	3.44	1.72				1	1/2	1	7/8	-	3	114	90	58.51
830-140	3	63	5.16	2.58				1	1/2	1	1 1/8	-	3	146	112	60.52
830-180	3	63	5.16	2.58				1	1/2	1	1 1/8	-	5	157	123	60.27
840-238	4	63	6.88	3.44				1	1/2	1	1 1/8	-	6	195	154	61.52
850-300	5	63	8.6	4.3				1	1/2	1	1 3/8	-	8	240	190	62.49
860-355	6	63	10.3	5.16				1	1/2	1	1 3/8	-	9	276	219	63.28

¹ Drain pan hot gas connection on hot gas models only.

² Watts shown at 230. Watts reduced at 208 amperage.

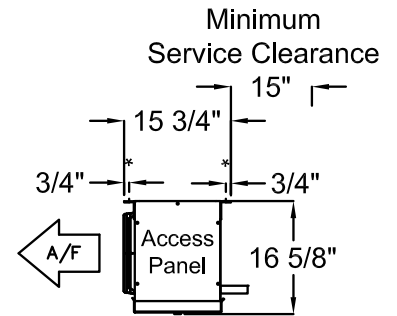
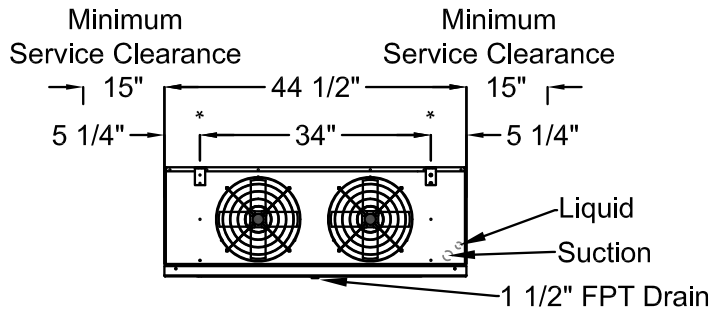
^{††} Ship Weight includes 10% safety factor

³ Refrigerant Charge based on 404a refrigerant

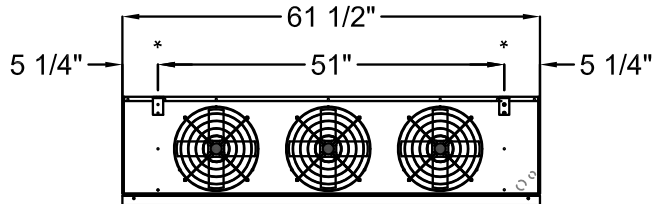
⁴ Sound pressure levels provided are based on free field propagation of sound. For applied sound pressure levels, surrounding reflective surfaces must be considered. Reference ASHRAE Handbooks for directivity factors and equation to estimate installed sound pressure levels.

Dimensions

Two Fan Models

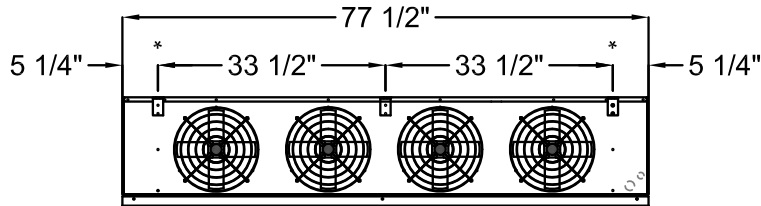


Three Fan Models

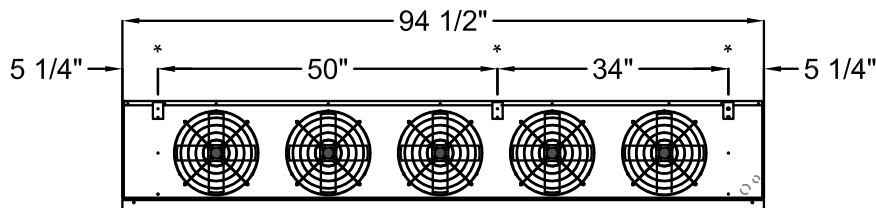


*1/2" Mounting Slot Locations
All Dimensions +/- 1/4"

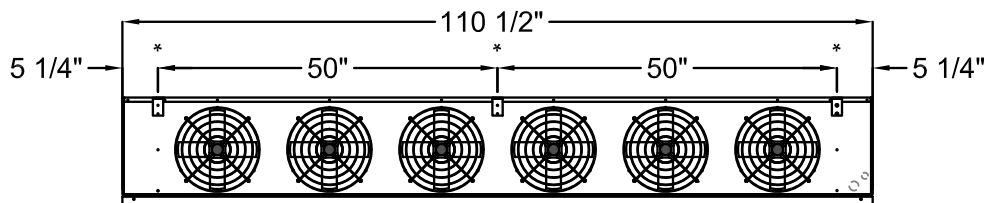
Four Fan Models



Five Fan Models



Six Fan Models



AWEF Tables

AWEF Data Medium Temperature Application							
Model	R448a	R449a	R407a	R407c	R407f	R507	R404a
	AWEF	AWEF	AWEF	AWEF	AWEF	AWEF	AWEF
UFH420-63M	9.00	9.00	9.00	9.00	9.00	9.00	9.00
UFH420-79M	9.00	9.00	9.00	9.00	9.00	9.00	9.00
UFH430-95M	9.00	9.00	9.00	9.00	9.00	9.00	9.00
UFH430-122M	9.00	9.00	9.00	9.00	9.00	9.00	9.00
UFH440-160M	9.00	9.00	9.00	9.00	9.00	9.00	9.00
UFH450-202M	9.00	9.00	9.00	9.00	9.00	9.00	9.00
UFH460-240M	9.00	9.00	9.00	9.00	9.00	9.00	9.00
UFH520-74M	9.00	9.00	9.00	9.00	9.00	9.00	9.00
UFH520-96M	9.00	9.00	9.00	9.00	9.00	9.00	9.00
UFH530-114M	9.00	9.00	9.00	9.00	9.00	9.00	9.00
UFH530-146M	9.00	9.00	9.00	9.00	9.00	9.00	9.00
UFH540-192M	9.00	9.00	9.00	9.00	9.00	9.00	9.00
UFH550-240M	9.00	9.00	9.00	9.00	9.00	9.00	9.00
UFH560-288M	9.00	9.00	9.00	9.00	9.00	9.00	9.00
UFH620-83M	9.00	9.00	9.00	9.00	9.00	9.00	9.00
UFH620-106M	9.00	9.00	9.00	9.00	9.00	9.00	9.00
UFH630-126M	9.00	9.00	9.00	9.00	9.00	9.00	9.00
UFH630-161M	9.00	9.00	9.00	9.00	9.00	9.00	9.00
UFH640-213M	9.00	9.00	9.00	9.00	9.00	9.00	9.00
UFH650-267M	9.00	9.00	9.00	9.00	9.00	9.00	9.00
UFH660-317M	9.00	9.00	9.00	9.00	9.00	9.00	9.00
UFH820-92M	9.00	9.00	9.00	9.00	9.00	9.00	9.00
UFH820-118M	9.00	9.00	9.00	9.00	9.00	9.00	9.00
UFH830-140M	9.00	9.00	9.00	9.00	9.00	9.00	9.00
UFH830-180M	9.00	9.00	9.00	9.00	9.00	9.00	9.00
UFH840-238M	9.00	9.00	9.00	9.00	9.00	9.00	9.00
UFH850-300M	9.00	9.00	9.00	9.00	9.00	9.00	9.00
UFH860-355M	9.00	9.00	9.00	9.00	9.00	9.00	9.00

AWEF Tables

AWEF Data Low Temperature Application							
Model	R448a	R449a	R407a	R407c	R407f	R507	R404a
	AWEF	AWEF	AWEF	AWEF	AWEF	AWEF	AWEF
UFH420-63L	4.15	4.15	4.15	4.15	4.15	4.15	4.15
UFH420-79L	4.15	4.15	4.15	4.15	4.15	4.15	4.15
UFH430-95L	4.15	4.15	4.15	4.15	4.15	4.15	4.15
UFH430-122L	4.15	4.15	4.15	4.15	4.15	4.15	4.15
UFH440-160L	4.15	4.15	4.15	4.15	4.15	4.15	4.15
UFH450-202L	4.15	4.15	4.15	4.15	4.15	4.15	4.15
UFH460-240L	4.15	4.15	4.15	4.15	4.15	4.15	4.15
UFH520-74L	4.15	4.15	4.15	4.15	4.15	4.15	4.15
UFH520-96L	4.15	4.15	4.15	4.15	4.15	4.15	4.15
UFH530-114L	4.15	4.15	4.15	4.15	4.15	4.15	4.15
UFH530-146L	4.15	4.15	4.15	4.15	4.15	4.15	4.15
UFH540-192L	4.15	4.15	4.15	4.15	4.15	4.15	4.15
UFH550-240L	4.15	4.15	4.15	4.15	4.15	4.15	4.15
UFH560-288L	4.15	4.15	4.15	4.15	4.15	4.15	4.15
UFH620-83L	4.15	4.15	4.15	4.15	4.15	4.15	4.15
UFH620-106L	4.15	4.15	4.15	4.15	4.15	4.15	4.15
UFH630-126L	4.15	4.15	4.15	4.15	4.15	4.15	4.15
UFH630-161L	4.15	4.15	4.15	4.15	4.15	4.15	4.15
UFH640-213L	4.15	4.15	4.15	4.15	4.15	4.15	4.15
UFH650-267L	4.15	4.15	4.15	4.15	4.15	4.15	4.15
UFH660-317L	4.15	4.15	4.15	4.15	4.15	4.15	4.15
UFH820-92L	4.15	4.15	4.15	4.15	4.15	4.15	4.15
UFH820-118L	4.15	4.15	4.15	4.15	4.15	4.15	4.15
UFH830-140L	4.15	4.15	4.15	4.15	4.15	4.15	4.15
UFH830-180L	4.15	4.15	4.15	4.15	4.15	4.15	4.15
UFH840-238L	4.15	4.15	4.15	4.15	4.15	4.15	4.15
UFH850-300L	4.15	4.15	4.15	4.15	4.15	4.15	4.15
UFH860-355L	4.15	4.15	4.15	4.15	4.15	4.15	4.15

Notes

Notes

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

now
presenting...

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

ABOUT RAE CORPORATION

RAE Corporation was founded in 1971 and is located in the MidAmerica Industrial Park in Pryor, Oklahoma. RAE employs more than 350 people, is represented throughout the country and markets equipment throughout the world. RAE manufactures air and water cooled condensing units, air and water cooled chillers, air cooled condensers, fluid coolers, heat transfer coils, industrial coils, unit coolers, corrosive environment equipment and an assortment of other engineered cooling systems, all of which are either UL- or ETL-approved. RAE has five divisions: Technical Systems, Refrigeration Systems, Century Refrigeration, RAE Coils and ZeroCool Systems.



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We reserve the right to change or revise specifications and product design in connection with any feature of our products. Such changes do not entitle the buyer to corresponding changes, improvements, additions or replacement for equipment previously sold or shipped.

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