



Product Data

Omnizone™ Remote Air-Cooled Indoor Self-Contained Systems 5 to 20 Nominal Tons



50XCR Sizes 06-24
Remote Air-Cooled Indoor Self-Contained Systems
with Puron® Refrigerant (R-410A)

The Omnizone™ 50XCR units provide a practical and economical approach to comfort conditioning requirements for offices, factories, and other applications in existing buildings when indoor air-cooled condensers are required.

The 50XCR single-package remote air-cooled units offer:

- Optional Staged Air Volume (SAV™) fan operation
- Compact, durable, and attractive cabinet fits any working environment
- Ducted or free return with rear return connections with vertical supply air discharge
- High-efficiency cooling for commercial and industrial projects
- 2 in. and 4 in. filtration options
- Optional coated evaporator coil
- Puron® refrigerant (R-410A)
- Accessory airside economizer

Design flexibility

The 50XCR indoor packaged units are designed to provide the flexibility required in replacement, renovation, and new construction. Units are available in 6 sizes from 5 to 20 tons which meet the needs for cooling restaurants, retail stores, warehouses, offices, and building additions.

These units can be installed in the equipment room or the conditioned space and used for either ducted or free return applications. Convenient rear connections allow easy access for outside air connections and airside economizer. Unit supply air discharge is vertical.

Easy installation and maintenance

The units are completely pre-piped and wired at the factory to ensure time and money saving installation and service. Exterior access panels are easily removed to provide speedy inspection, and service work may be done from the front of the unit. Precision engineered parts translate to a quality built, reliable design that will operate efficiently, minimize service calls, and provide years of reliable operation.

Designed for customer satisfaction

Where space and styling are important considerations, 50XCR units are designed to exceed expectations. The high quality baked enamel finish will fit any environment attractively. These packaged systems provide the user with economy and product satisfaction in cooling, dehumidification, filtering, and air circulation.

Special features for outstanding performance

- Efficient two-stage or tandem scroll compressors provide quiet, reliable two-stage cooling on all units.
- Space-saver slab type evaporator coils use advanced heat transfer technology and provide peak heat transfer efficiency with large coil face area. Fins are mechanically bonded to nonferrous, seamless tubing for efficient leak-free operation.
- Quiet fan performance moves large volumes of indoor air. Compact housing and specially designed discharge air section provide superior air-handling capacity.
- Convenient front access electrical control center contains all factory pre-wired control devices.
- A stainless steel, sloped, condensate pan is standard. As a result of this

new design, the coil is easily accessed for cleaning.

- The cabinets are constructed of galvanized steel, bonderized, and coated on all external surfaces with a baked enamel finish. The paint finish is nonchalking and is capable of withstanding ASTM (American Society for Testing and Materials) Standard No. B117 500-hour salt spray test.
- Choose from a full line of room-mounted thermostats.
- The compressor is protected by several devices, including current-sensing lockout relay(s), anti-short cycle control, and high and low-pressure stats. These devices lock out the compressor(s) under abnormal operating conditions to prevent compressor damage and ensure long life.
- Staged Air Volume (SAV™) fan operation is available for all units and offers fan speed that operates at 67% of full speed for first-stage cooling operation and 100% of full speed for second-stage cooling operation.
- The 50XCR units are covered by a standard limited 5-year part warranty on the compressor and a standard limited one-year warranty on all other parts.
- Easy to understand and operate controls provide a virtually mistake-proof control operation.
- All motors are protected against single-phasing conditions.
- The management system governing the manufacture of this product is ISO 9001:2015 certified.

Environmentally balanced

Carrier's Puron® refrigerant (R-410A) enables you to make an environmentally responsible decision. Puron refrigerant (R-410A) is an HFC refrigerant that does not contain chlorine that is damaging to the ozone layer.

Table of contents

	Page
Features/Benefits	2
Model Number Nomenclature	3
AHRI Capacity Ratings	4
Physical Data	5
Options and Accessories	6
Dimensions	7
Performance Data	13
Electrical Data	25
Controls	27
Typical Piping and Wiring	28
Application Data	30
Guide Specifications	32

Model number nomenclature



50XC R 14 A A - J 5 A A - 2 AA

50XC – OMNIZONE™ Indoor Packaged Unit

Condenser Option
R – Remote-Cooled

Unit Size – Nominal Tons
06 – 5 **14** – 12
08 – 7-1/2 **16** – 15
12 – 10 **24** – 20

Return Air/Discharge Air Options
A – Rear Return, Vertical Discharge, Ducted Return
B – Rear Return, Vertical Discharge, Louvered Return
E – Rear Return, Horizontal Discharge¹, Ducted Return
F – Rear Return, Vertical Discharge, Vertical Return

Heating Coil Options
A – No Factory Installed Heating Coil

Evaporator Fan Speed
 Set by selection program

Factory-Installed Options Code
 See codes in unit price pages

Design Revision Level
2 – Design Revision 2

Reserved for later use

Condenser Coil Options

A – None
B – Liquid Line Supply Valve

Control Options

A – Standard Controls
B – Standard Controls with Disconnect
F – Two Speed fan with Standard Controls (SAV)²
G – Two Speed fan with Standard Controls with Disconnect (SAV)²

Voltage Options

1 – 575-3-60
5 – 208/230-3-60
6 – 460-3-60

Evaporator Motor Hp Options

D – 1 Hp Motor **G** – 3 Hp Motor
E – 1-1/2 Hp Motor **H** – 5 Hp Motor
F – 2 Hp Motor **J** – 7-1/2 Hp Motor

¹ Horizontal discharge not available on size 06 or 08.
² Staged Air Volume (SAV) option is not available for 575V units.

NOTE: Ratings subject to change without notice. Please use carrier ECat SCU builder for latest ratings.

AHRI Capacity Ratings^{a,b}

UNIT 50XCR/09XC	NOMINAL TONS	50XCR EVAPORATOR cfm	09XC CONDENSER cfm	NET COOLING (Btuh)	TOTAL kW	EER	IEER	
							CV	SAV
06	5	1,875	3,400	68,000	6.1	11.2	CV	13.0
							SAV	14.8
08	7-1/2	2,625	4,000	81,000	7.2	11.2	CV	13.1
							SAV	14.8
12	10	3,500	6,400	121,000	10.8	11.2	CV	13.1
							SAV	14.3
14	12	4,200	6,700	140,000	12.7	11.0	CV	14.0
							SAV	14.2
16	15	5,000	9,000	180,000	16.4	11.0	CV	12.6
							SAV	13.9
24	20	7,000	10,300	240,000	24.2	10.0	CV	11.8
							SAV	13.2

NOTE(S):

- a. Units are certified in accordance with AHRI standard 340/360.
- b. Ratings subject to change without notice. Please use Carrier ECat SCU builder for latest ratings.

LEGEND

- AHRI — Air-Conditioning, Heating, and Refrigeration Institute
- CV — Constant Volume Units
- EER — Energy Efficiency Ratio
- IEER — Integrated Energy Efficiency Ratio
- SAV — Staged Air Volume Units



Physical data



UNIT 50XCR	06	08	12	14	16	24
TONS	5	7.5	10	12	15	20
UNIT OPERATING WEIGHT (lb)	600	799	1001	1079	1231	1629
COMPRESSOR	Scroll					
Compressor Model	ZPS60	ZPS60 ^a / ZPS67 ^b	ZP54 / ZP49	ZP61 / ZP57	ZP91 / ZP67	ZP122 / ZP91
Qty	1	1	2	2	2	2
Steps of Control (stages)	2	2	2	2	2	2
Operating Charge R-410A (lb)^c	6.8	7.9	9.2	11.9	11.5	31.5
EVAPORATOR FAN	Adjustable, Belt Drive, Centrifugal Type					
Nominal cfm	1875	2625	3500	4200	5000	7000
Evaporator Fan Size	110-10R	110-10R	120-9R	120-9R	120-9R	120-11R
Number of Evaporator Fans	1	2	2	2	3	3
Max. Allowable rpm	1600	1700	2000	2000	2000	2000
Std Hp	1.0	1.0	1.0	1.5	1.5	3
Hp Range	1 - 2	1 - 2	1 - 3	1.5 - 5	1.5 - 5	3 - 7.5
Fan Shaft Size (in.)	3/4	1	1	1	1-3/16	1-3/16
Motor Shaft Size (in.)	7/8	7/8	7/8	7/8	7/8	1-1/8
Center Distance (in.) - Vertical	15.3	15.3	18.1	18.1	18.1	21.3
Center Distance (in.) - Horizontal	N/A	N/A	15.5	13	15.7	18.1
EVAPORATOR COIL	3/8-in. OD, Enhanced Copper Tube, Aluminum Fins					
Quantity Rows ... Fin/in.	3...15	4...15	3...15	4...15	4... 15	4... 15
Fin Block Size (H x L) (in.)	28x35	28x46	32x60	32x60	32x80	36x80
Face Area (sq ft)	6.8	8.9	13.3	13.3	17.7	20
RETURN AIR FILTERS						
Std 1 in., Throwaway	(2) 25 x 25	(2) 25 x 25	(8) 16 x 16	(8) 16 x 16	(8) 16 x 16 (2) 16 x 20	(4) 18 x 24 (4) 18 x 18
HIGH-PRESSURE SWITCH	Opens at 595 ± 10 psig; Closes at 443 ± 15 psig				Opens at 650± 10 psig; Closes at 500 ± 15 psig	
LOW-PRESSURE SWITCH	Opens at 53 ± 5 psig; Closes at 80 ± 7 psig					
CONDENSATE DRAIN LINE (in.)	1 at 3/4 MPT (Male Pipe Thread)					

NOTE(S):

- a. With no low ambient option selected.
- b. With low ambient option selected.
- c. Refrigerant charge is for 50XCR only. Additional charge required for line sets and remote condenser unit.

LEGEND

MPT — Male Pipe Thread

ITEM	FACTORY-INSTALLED OPTION	FIELD-INSTALLED ACCESSORY
Airside Economizer		X
Winter Start Operation	X	
Two-Speed Supply Fan	X	
Evaporator Coil Coating	X	
4-in. Filter	X	

Factory-installed options

Winter start option

Option provides a bypass of low-pressure switch on start-up for initial 90 seconds.

Two-speed supply fan

A factory installed and programmed VFD is used to operate the supply fan at 67% during first stage cooling and 100% fan speed during second stage cooling or any heating call.

Evaporator coil coating

The coating is continuous and covers the whole fin surface, tubing, manifolds, and feeder lines, if applicable. For evaporator coils with thermostatic expansion valve assemblies, valve body, head, and bulb shall be masked. A minimum of

2 in. shall be masked on all coil connection points. For the expansion valve inlet piping, if less than 6 inches in total length, expansion valve distributor and external equalizer line are not required to be coated.

4 in. filter

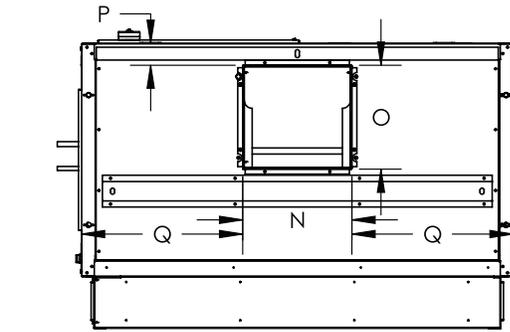
The unit is supplied with 4 in. deep pleated, 30% high-efficiency filters. The filters shall have side access capability through an access panel.

Field-installed accessories

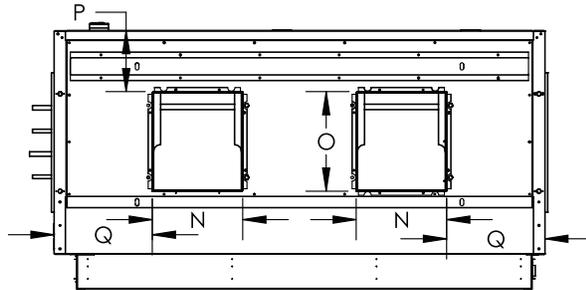
Airside Economizer

The field installed airside economizer shall have a low leak damper assembly with Honeywell W7220 economizer controller for fault detection and diagnostics (FDD).

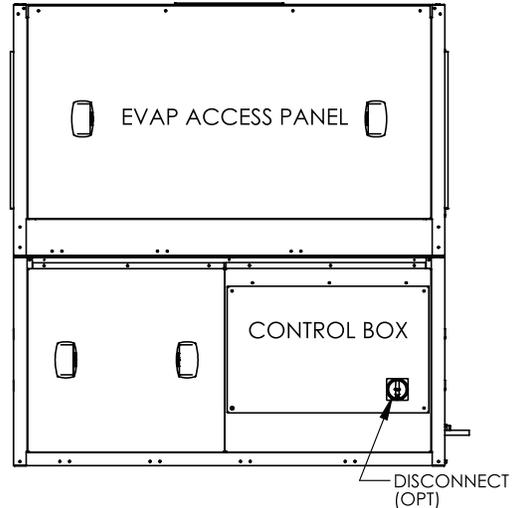
Rear Return, Vertical Discharge



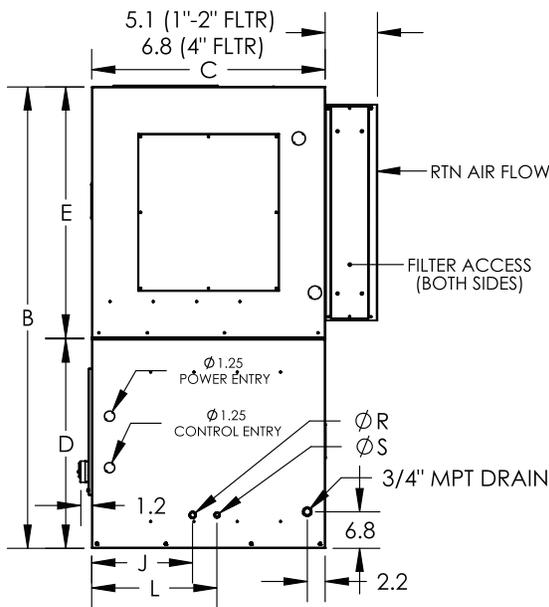
TOP VIEW SIZE 06



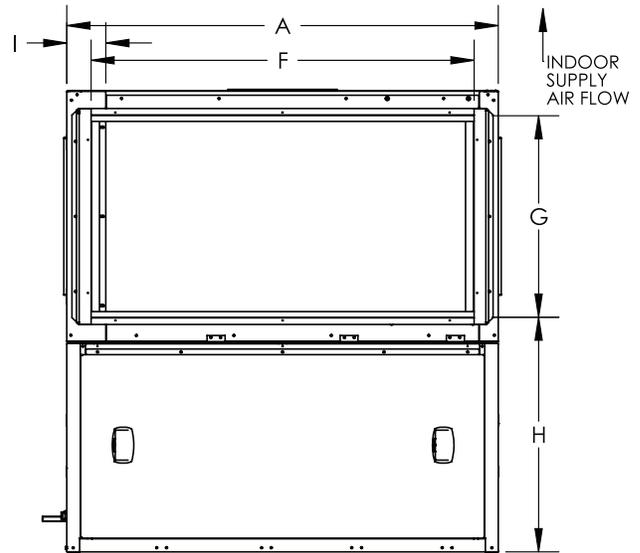
TOP VIEW SIZE 08



FRONT VIEW



RIGHT VIEW

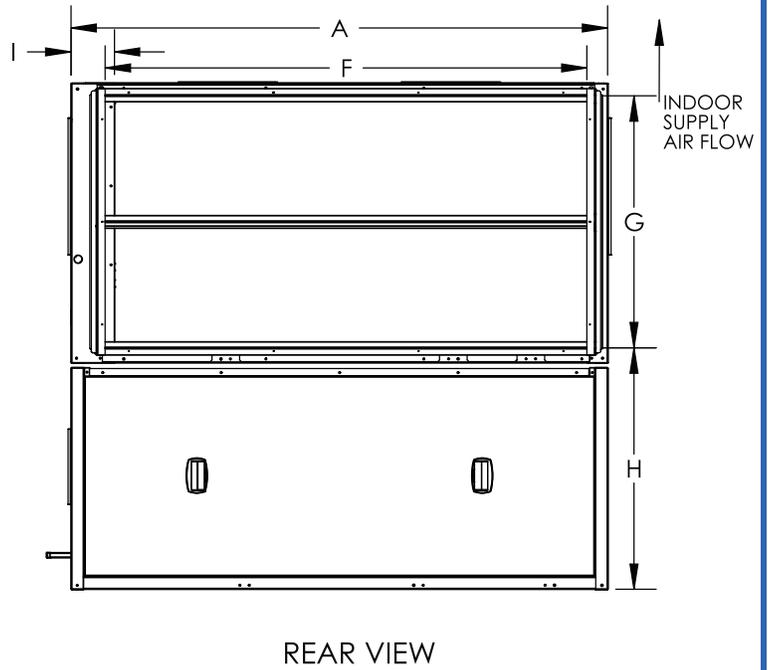
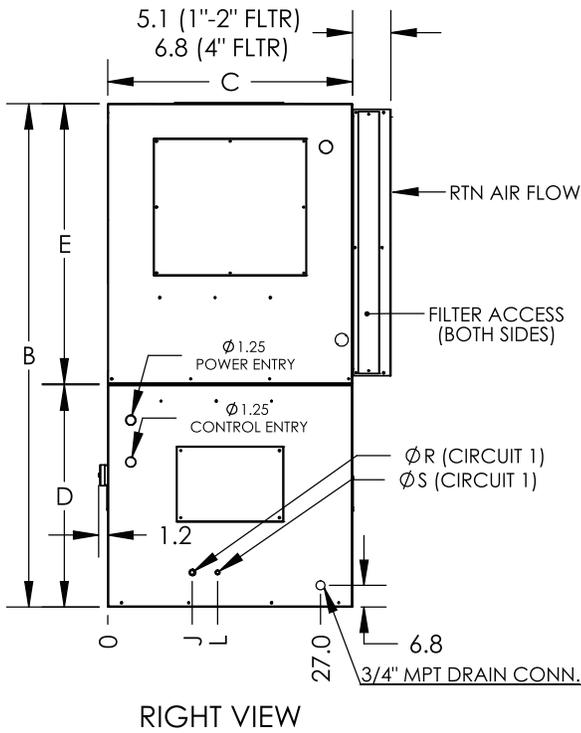
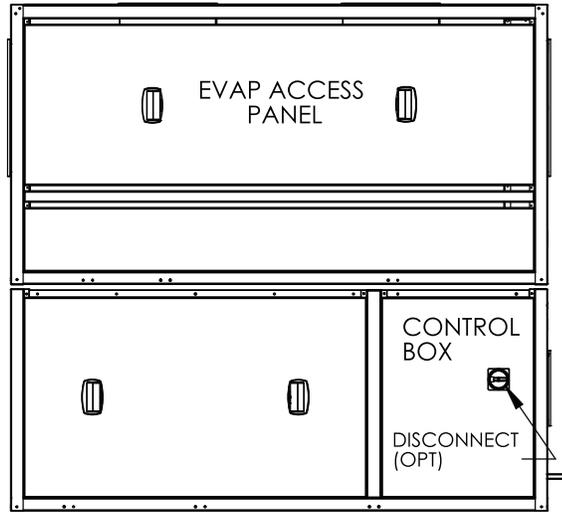
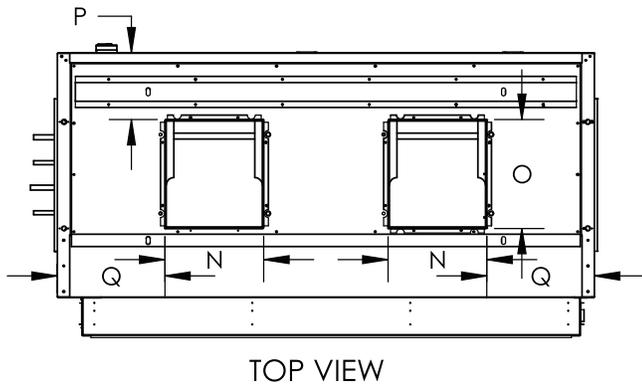


REAR VIEW

UNIT 50XCR	WIDTH	HEIGHT	DEPTH	COND SECTION	EVAP SECTION	EVAP RETURN DUCT				DISCH CONN	LIQUID CONN	EVAP SUPPLY DUCT (Blower Opening)				DISCH DIAMETER SWAGE (ID)	LIQUID DIAMETER SWAGE (ID)
	A	B	C	D	E	F	G	H	I	J	L	N	O	P	Q	R	S
06	53.1	57.0	29.0	25.8	31.0	47.2	24.8	28.9	4.8	12.4	15.4	13.4	12.8	2.7	19.8	0.625	0.5
08	53.1	57.0	29.0	25.8	31.0	47.2	24.8	28.9	4.8	12.4	15.4	13.4	12.8	2.7	7.6	0.625	0.5

NOTE: Dimensions are in inches.

Rear Return, Vertical Discharge



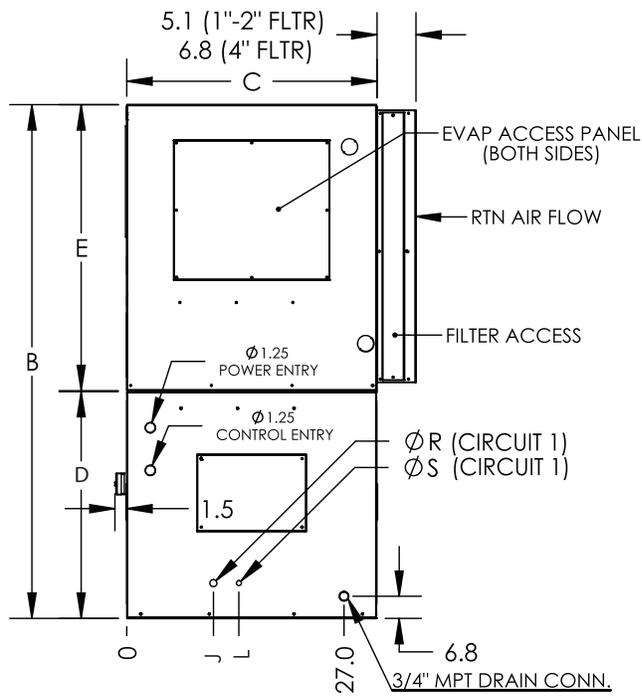
UNIT 50XCR	WIDTH	HEIGHT	DEPTH	COND SECTION	EVAP SECTION	EVAP RETURN DUCT				DISCH CONN	LIQUID CONN	EVAP SUPPLY DUCT (Blower Opening)				DISCH DIAMETER SWAGE (ID)	LIQUID DIAMETER SWAGE (ID)
	A	B	C	D	E	F	G	H	I	J	L	N	O	P	Q	R	S
12	68.0	64.0	31.2	28.5	35.5	61.1	31.8	29.4	5.5	11.1	13.9	12.5	13.8	8.5	13.6	0.875	0.625
14	68.0	64.0	31.2	28.5	35.5	61.1	31.8	29.4	5.5	11.1	13.9	12.5	13.8	8.5	13.6	0.875	0.625

NOTE: Dimensions are in inches.

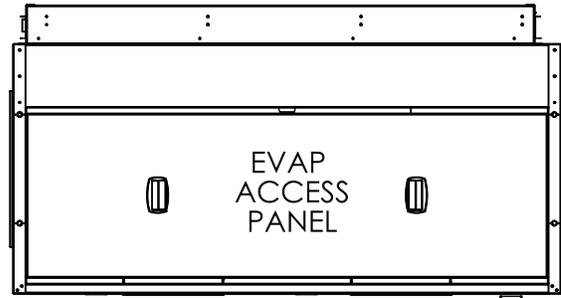
Dimensions — 50XCR12,14 (cont)



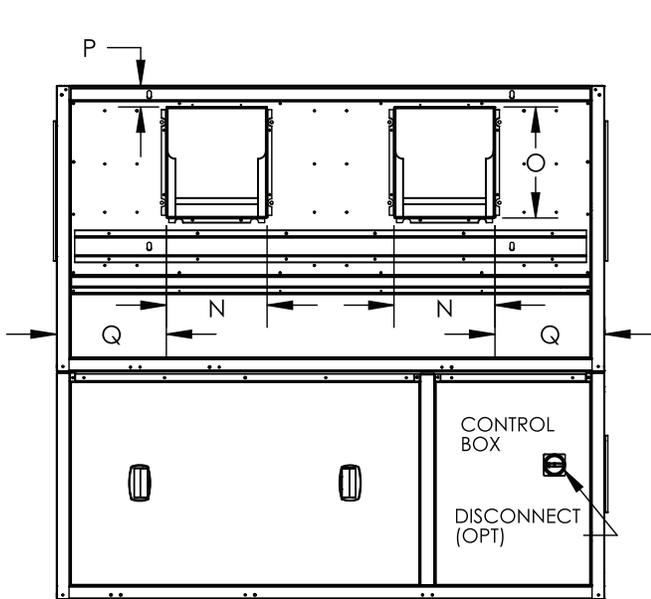
Rear Return, Horizontal Discharge



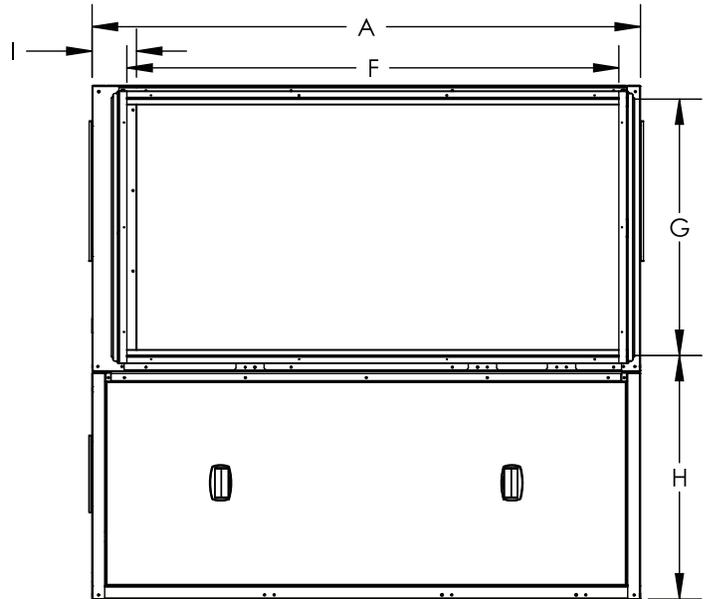
RIGHT VIEW



TOP VIEW



FRONT VIEW



REAR VIEW

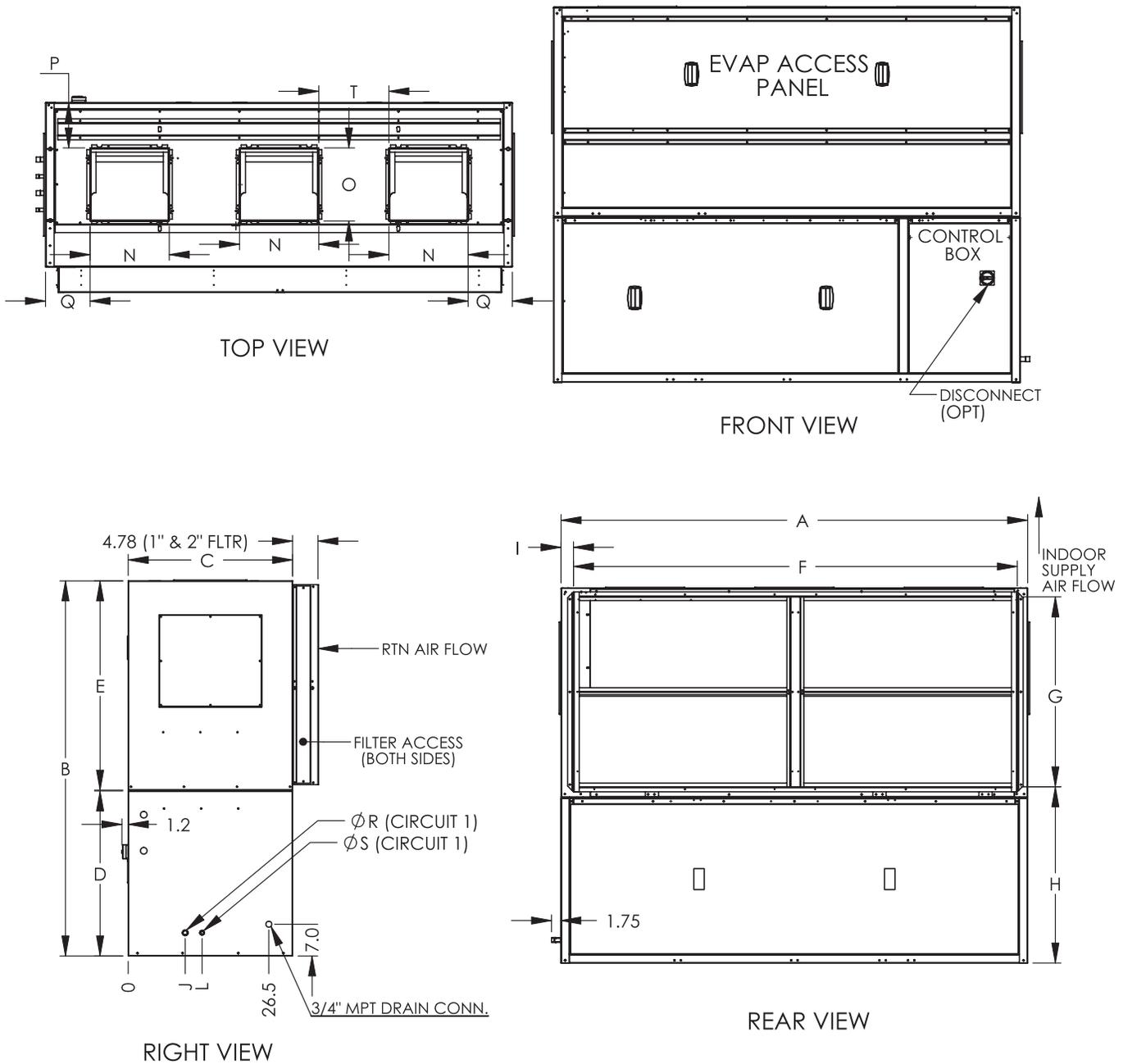
UNIT 50XCR	WIDTH	HEIGHT	DEPTH	COND SECTION	EVAP SECTION	EVAP RETURN DUCT				DISCH CONN	LIQUID CONN	EVAP SUPPLY DUCT (Blower Opening)				DISCH DIAMETER SWAGE (ID)	LIQUID DIAMETER SWAGE (ID)
	A	B	C	D	E	F	G	H	I	J	L	N	O	P	Q	R	S
12	68.0	64.0	31.2	28.5	35.5	61.1	31.8	29.4	5.5	11.1	13.9	12.5	13.8	2.7	13.6	0.875	0.625
14	68.0	64.0	31.2	28.5	35.5	61.1	31.8	29.4	5.5	11.1	13.9	12.5	13.8	2.7	13.6	0.875	0.625

NOTE: Dimensions are in inches.

Dimensions — 50XCR16, 24



Rear Return, Vertical Discharge



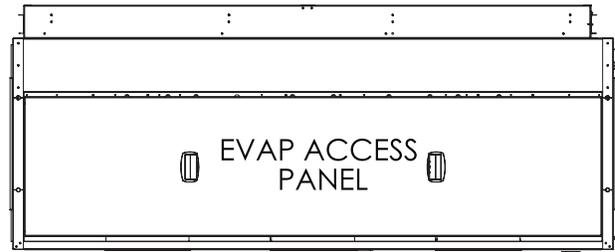
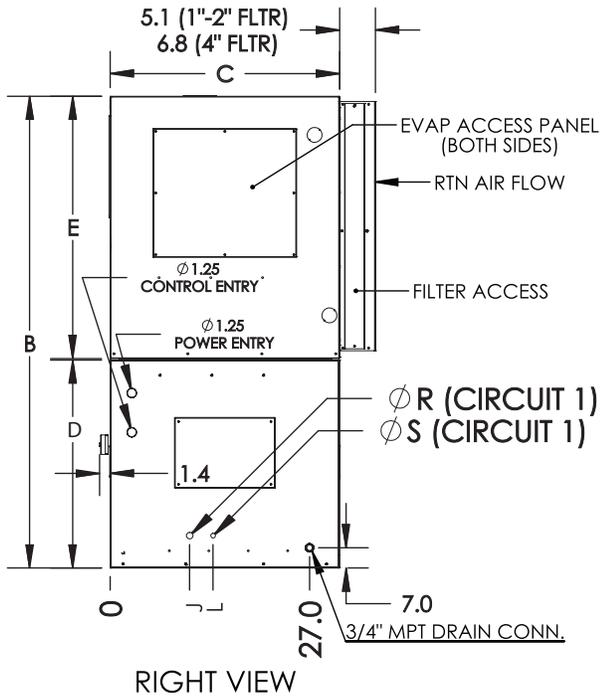
UNIT 50XCR	WIDTH	HEIGHT	DEPTH	COND SECTION	EVAP SECTION	EVAP RETURN DUCT				DISCH CONN	LIQUID CONN	EVAP SUPPLY DUCT (Blower Opening)					DISCH DIA SWAGE (ID)	LIQUID DIA SWAGE (ID)
	A	B	C	D	E	F	G	H	I	J	L	N	O	P	Q	T	R	S
16	88.0	66.7	31.2	31.2	35.5	83.7	33.8	32.3	3.1	10.8	13.9	12.5	13.8	8.5	13.5	11.7	1.125	0.625
24	88.0	70.8	31.2	31.2	39.5	83.7	37.8	32.3	2.3	10.8	13.9	14.9	13.8	8.6	8.3	13.2	1.125	0.625

NOTE: Dimensions are in inches.

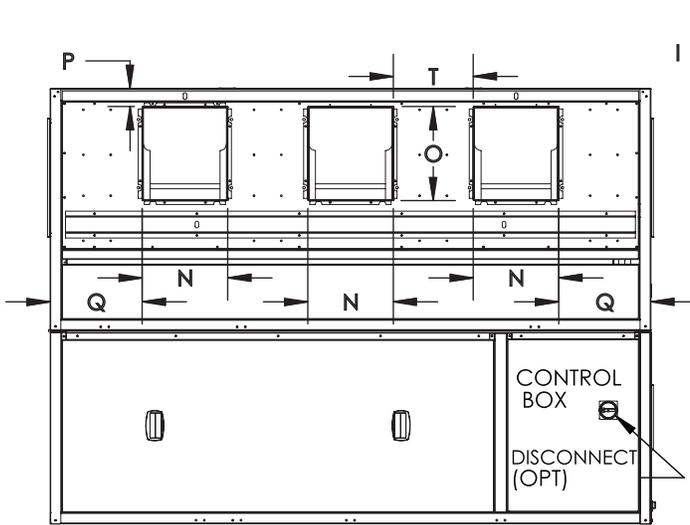
Dimensions — 50XCR16, 24 (cont)



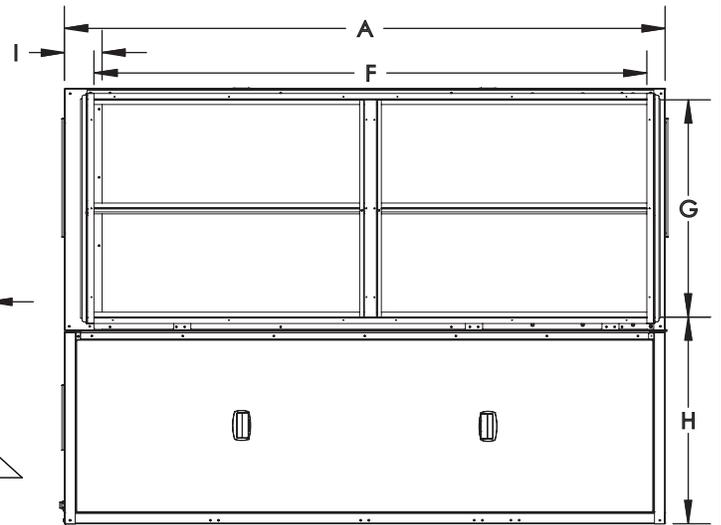
Rear Return, Horizontal Discharge



TOP VIEW



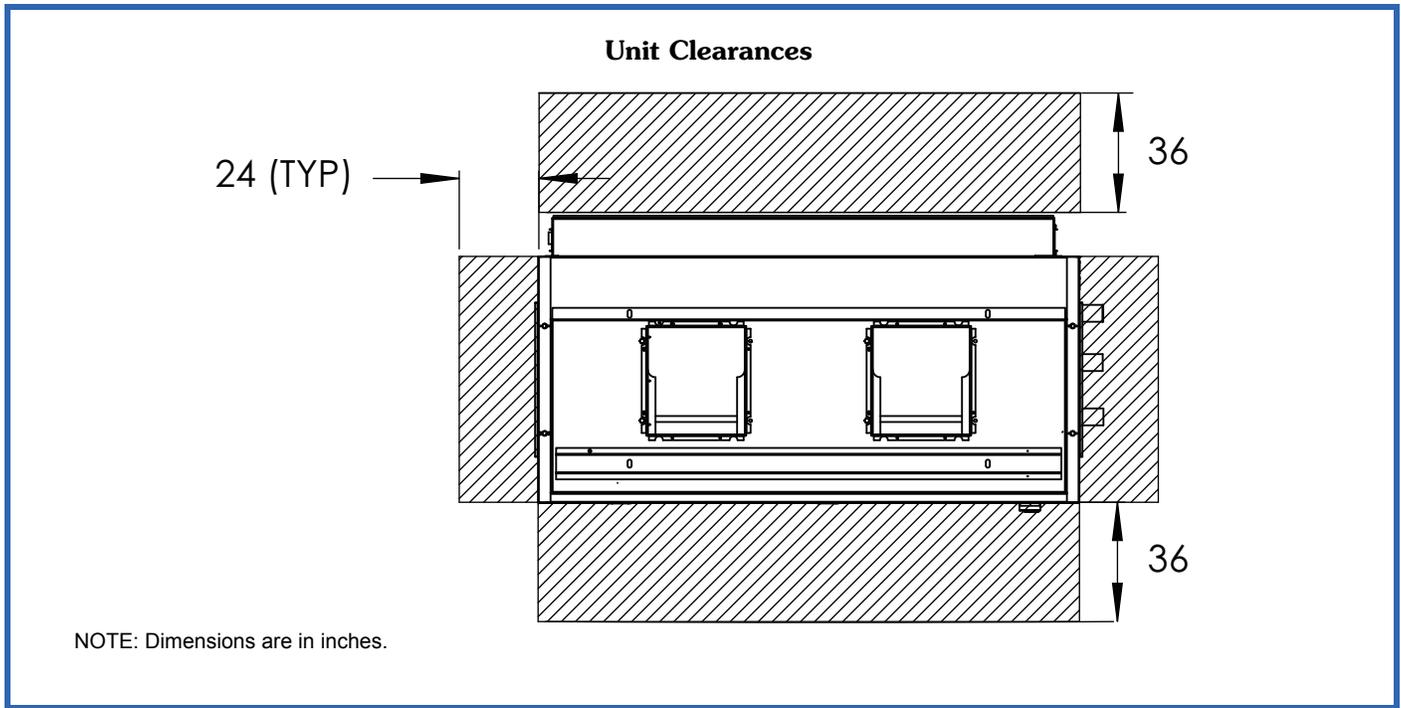
FRONT VIEW



REAR VIEW

UNIT 50XCR	WIDTH	HEIGHT	DEPTH	COND SECTION	EVAP SECTION	EVAP RETURN DUCT				DISCH CONN	LIQUID CONN	EVAP SUPPLY DUCT (Blower Opening)					DISCH DIA SWAGE (ID)	LIQUID DIA SWAGE (ID)
	A	B	C	D	E	F	G	H	I	J	L	N	O	P	Q	T	R	S
16	88.0	66.7	31.2	31.2	35.5	83.7	33.8	32.3	3.1	10.8	13.9	12.5	13.8	2.6	13.5	11.7	1.125	0.625
24	88.0	70.8	31.2	31.2	39.5	83.7	37.8	32.3	2.3	10.8	13.9	14.9	13.8	2.6	8.3	13.2	1.125	0.625

NOTE: Dimensions are in inches.



Evaporator Fan Performance — 50XCW06, 50XCA06, 50XCR06 Units^{a,b,c,d,e}

cfm	ESP (in. wg)																			
	0.00		0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80		0.90	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
1500	477	0.19	542	0.24	603	0.30	660	0.36	714	0.43	766	0.50	816	0.58	864	0.66	910	0.74	954	0.83
1600	509	0.23	570	0.28	627	0.34	682	0.41	734	0.48	784	0.55	832	0.63	878	0.71	923	0.80	966	0.89
1700	540	0.27	598	0.33	653	0.40	705	0.46	755	0.54	803	0.61	849	0.69	894	0.78	937	0.87	979	0.96
1800	572	0.32	627	0.39	679	0.45	729	0.52	777	0.60	823	0.68	868	0.76	911	0.85	953	0.94	994	1.03
1900	604	0.38	656	0.45	706	0.52	754	0.59	800	0.67	844	0.75	887	0.83	929	0.92	970	1.01	1009	1.11
2000	636	0.44	685	0.51	733	0.58	779	0.66	823	0.74	866	0.83	908	0.91	948	1.01	988	1.10	1026	1.20
2100	668	0.51	715	0.58	760	0.66	804	0.74	847	0.82	888	0.91	929	1.00	968	1.09	1006	1.19	1044	1.29
2200	699	0.59	744	0.66	788	0.74	831	0.83	872	0.91	912	1.00	951	1.09	989	1.19	1026	1.29	1062	1.39
2300	731	0.67	774	0.75	816	0.83	857	0.92	897	1.01	935	1.10	973	1.20	1010	1.30	1046	1.40	1081	1.50
2400	763	0.76	804	0.85	845	0.93	884	1.02	922	1.11	960	1.21	996	1.31	1032	1.41	1067	1.51	1101	1.62
2500	795	0.86	835	0.95	873	1.04	911	1.13	948	1.22	985	1.32	1020	1.42	1055	1.53	1089	1.63	1122	1.74
2600	826	0.97	865	1.06	902	1.15	939	1.25	975	1.35	1010	1.45	1044	1.55	1078	1.66	1111	1.77	1144	1.88
2700	858	1.09	895	1.18	931	1.28	967	1.37	1002	1.47	1036	1.58	1069	1.68	1102	1.79	—	—	—	—
2800	890	1.21	926	1.31	961	1.41	995	1.51	1029	1.61	1062	1.72	1094	1.83	—	—	—	—	—	—
2900	922	1.35	956	1.45	990	1.55	1023	1.65	1056	1.76	1088	1.87	—	—	—	—	—	—	—	—

cfm	ESP (in. wg)																			
	1.00		1.10		1.20		1.30		1.40		1.50		1.60		1.70		1.80		1.90	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
1500	997	0.92	1039	1.02	1080	1.12	1119	1.22	1158	1.33	1195	1.44	1232	1.55	1268	1.67	1303	1.79	—	—
1600	1008	0.99	1049	1.08	1088	1.18	1127	1.29	1165	1.40	1201	1.51	1237	1.62	1273	1.74	1307	1.86	—	—
1700	1020	1.05	1060	1.15	1098	1.26	1136	1.36	1173	1.47	1209	1.58	1244	1.70	1279	1.82	—	—	—	—
1800	1033	1.13	1072	1.23	1110	1.33	1147	1.44	1183	1.55	1218	1.66	1252	1.78	1286	1.90	—	—	—	—
1900	1048	1.21	1086	1.31	1122	1.42	1158	1.53	1193	1.64	1228	1.75	1262	1.87	—	—	—	—	—	—
2000	1063	1.30	1100	1.40	1136	1.51	1171	1.62	1205	1.73	1239	1.85	—	—	—	—	—	—	—	—
2100	1080	1.39	1116	1.50	1151	1.61	1185	1.72	1219	1.84	—	—	—	—	—	—	—	—	—	—
2200	1098	1.50	1132	1.61	1166	1.72	1200	1.83	—	—	—	—	—	—	—	—	—	—	—	—
2300	1116	1.61	1150	1.72	1183	1.83	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2400	1135	1.73	1168	1.84	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2500	1155	1.86	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2800	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2900	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

NOTE(S):

- a. Units are available with several motor hp and drive package combinations.
- b. Bold italics indicate field-supplied drive required.
- c. Static pressure losses for any options or accessories must be applied to external static pressure before entering the fan performance table.
- d. Interpolation is permitted; extrapolation is not.
- e. Fan performance is based on 1 in. standard throwaway filter, unit casing, and wet DX (direct expansion) coil losses at sea level.

LEGEND

- bhp** — Brake Horsepower
- ESP** — External Static Pressure

Performance data (cont)



Evaporator Fan Performance — 50XCW08, 50XCA08, 50XCR08 Units^{a,b,c,d,e}

cfm	ESP (in. wg)																			
	0.00		0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80		0.90	
	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>
2200	497	0.27	581	0.39	655	0.52	722	0.66	782	0.80	839	0.95	892	1.11	941	1.28	989	1.45	1034	1.62
2400	542	0.35	621	0.48	690	0.62	753	0.77	812	0.92	866	1.08	917	1.25	966	1.42	1012	1.60	1056	1.78
2600	587	0.45	660	0.59	726	0.74	787	0.89	843	1.06	895	1.22	945	1.40	992	1.58	1037	1.76	—	—
2800	632	0.56	701	0.71	763	0.87	821	1.04	875	1.21	925	1.38	974	1.57	1019	1.75	—	—	—	—
3000	677	0.69	742	0.85	801	1.02	856	1.19	908	1.37	957	1.56	1003	1.75	—	—	—	—	—	—
3200	723	0.84	783	1.01	839	1.19	892	1.37	942	1.56	989	1.76	—	—	—	—	—	—	—	—
3400	768	1.01	825	1.19	879	1.37	929	1.57	977	1.77	—	—	—	—	—	—	—	—	—	—
3600	813	1.19	867	1.39	918	1.58	967	1.79	—	—	—	—	—	—	—	—	—	—	—	—

cfm	ESP (in. wg)									
	1.00		1.10		1.20		1.30		1.40	
	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>
2200	1077	1.80	—	—	—	—	—	—	—	—
2400	—	—	—	—	—	—	—	—	—	—
2600	—	—	—	—	—	—	—	—	—	—
2800	—	—	—	—	—	—	—	—	—	—
3000	—	—	—	—	—	—	—	—	—	—
3200	—	—	—	—	—	—	—	—	—	—
3400	—	—	—	—	—	—	—	—	—	—
3600	—	—	—	—	—	—	—	—	—	—

NOTE(S):

- a. Units are available with several motor hp and drive package combinations.
- b. Bold italics indicate field-supplied drive required.
- c. Static pressure losses for any options or accessories must be applied to external static pressure before entering the fan performance table.
- d. Interpolation is permitted; extrapolation is not.
- e. Fan performance is based on 1 in. standard throwaway filter, unit casing, and wet DX (direct expansion) coil losses at sea level.

LEGEND

- bhp** — Brake Horsepower
- ESP** — External Static Pressure

Evaporator Fan Performance — 50XCW12, 50XCA12, 50XCR12 Units^{a,b,c,d,e}

cfm	ESP (in. wg)																			
	0.00		0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80		0.90	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
3000	381	0.26	434	0.33	492	0.41	553	0.51	614	0.63	674	0.77	730	0.93	783	1.10	831	1.29	877	1.47
3200	406	0.32	456	0.39	510	0.48	566	0.58	624	0.69	681	0.83	735	0.99	788	1.16	837	1.35	882	1.54
3400	432	0.39	478	0.46	528	0.55	581	0.65	635	0.76	689	0.90	742	1.05	793	1.22	841	1.41	887	1.61
3600	457	0.46	501	0.54	548	0.63	597	0.73	647	0.84	699	0.98	749	1.13	799	1.30	847	1.48	892	1.68
3800	483	0.54	524	0.62	568	0.72	614	0.82	661	0.93	710	1.06	758	1.21	806	1.38	852	1.56	897	1.76
4000	508	0.63	547	0.71	588	0.81	632	0.92	677	1.04	722	1.17	768	1.31	814	1.47	859	1.65	903	1.85
4200	533	0.73	570	0.82	609	0.92	650	1.03	693	1.15	736	1.28	780	1.42	823	1.58	867	1.76	910	1.95
4400	559	0.83	594	0.93	631	1.03	670	1.15	710	1.27	751	1.40	792	1.54	834	1.70	876	1.87	917	2.06
4600	584	0.95	618	1.05	653	1.16	690	1.28	728	1.40	767	1.53	806	1.68	846	1.83	886	2.01	926	2.19
4800	610	1.08	641	1.19	675	1.30	710	1.42	746	1.54	783	1.68	821	1.82	859	1.98	897	2.15	936	2.33
5000	635	1.22	666	1.33	698	1.45	731	1.57	766	1.70	801	1.84	837	1.98	873	2.14	910	2.31	946	2.49

cfm	ESP (in. wg)																			
	1.00		1.10		1.20		1.30		1.40		1.50		1.60		1.70		1.80		1.90	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
3000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3200	925	1.74	965	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3400	931	1.82	972	2.03	1010	2.24	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3600	936	1.89	977	2.11	1016	2.33	1053	2.56	1089	2.78	—	—	—	—	—	—	—	—	—	—
3800	941	1.97	982	2.19	1022	2.42	1059	2.65	—	—	—	—	—	—	—	—	—	—	—	—
4000	946	2.06	987	2.28	1027	2.51	1064	2.75	—	—	—	—	—	—	—	—	—	—	—	—
4200	951	2.16	992	2.38	1031	2.61	1069	2.85	—	—	—	—	—	—	—	—	—	—	—	—
4400	958	2.27	998	2.49	1037	2.72	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4600	965	2.39	1004	2.61	1042	2.83	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4800	974	2.53	1011	2.74	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5000	983	2.68	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

NOTE(S):

- a. Units are available with several motor hp and drive package combinations.
- b. Bold italics indicate field-supplied drive required.
- c. Static pressure losses for any options or accessories must be applied to external static pressure before entering the fan performance table.
- d. Interpolation is permitted; extrapolation is not.
- e. Fan performance is based on 1 in. standard throwaway filter, unit casing, and wet DX (direct expansion) coil losses at sea level.

LEGEND

bhp — Brake Horsepower
ESP — External Static Pressure

Performance data (cont)



Evaporator Fan Performance — 50XCW14, 50XCA14, 50XCR14 Units^{a,b,c,d,e}

cfm	ESP (in. wg)																			
	0.00		0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80		0.90	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
3500	450	0.30	495	0.46	537	0.56	583	0.65	633	0.76	687	0.89	742	1.05	793	1.23	841	1.41	885	1.60
3700	476	0.35	519	0.53	558	0.64	600	0.73	646	0.84	696	0.96	748	1.12	799	1.29	847	1.48	892	1.68
3900	502	0.41	543	0.60	580	0.72	619	0.83	661	0.93	707	1.05	756	1.19	805	1.37	852	1.56	898	1.76
4100	527	0.48	566	0.68	602	0.82	639	0.93	678	1.03	720	1.15	765	1.29	811	1.45	858	1.64	903	1.84
4300	553	0.55	591	0.77	625	0.92	659	1.04	696	1.15	735	1.26	776	1.40	820	1.55	865	1.73	909	1.93
4500	579	0.63	615	0.87	648	1.03	681	1.15	715	1.27	751	1.39	789	1.52	830	1.67	872	1.84	915	2.03
4700	604	0.72	639	0.97	671	1.14	702	1.28	734	1.40	768	1.52	804	1.65	842	1.80	882	1.96	922	2.15
4900	630	0.81	664	1.08	694	1.27	724	1.41	755	1.55	786	1.67	820	1.80	855	1.94	892	2.10	931	2.28
5100	656	0.92	688	1.20	718	1.40	746	1.56	776	1.70	806	1.83	837	1.96	870	2.10	905	2.26	941	2.43
5300	682	1.03	713	1.33	741	1.54	769	1.71	797	1.86	826	2.00	855	2.14	886	2.28	919	2.43	953	2.59
5500	707	1.15	738	1.47	765	1.69	792	1.88	819	2.03	846	2.18	874	2.32	903	2.46	934	2.62	966	2.78
5700	733	1.28	763	1.61	789	1.85	815	2.05	841	2.22	867	2.37	894	2.52	921	2.67	950	2.82	980	2.98
5900	759	1.42	787	1.77	813	2.02	838	2.23	863	2.41	888	2.57	914	2.73	940	2.88	968	3.03	996	3.19
6100	784	1.57	812	1.93	838	2.20	862	2.42	886	2.62	910	2.79	934	2.95	960	3.11	986	3.27	1013	3.43

cfm	ESP (in. wg)																			
	1.00		1.10		1.20		1.30		1.40		1.50		1.60		1.70		1.80		1.90	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
3500	925	1.78	962	1.97	997	2.15	1030	2.32	1061	2.50	—	—	—	—	—	—	—	—	—	—
3700	933	1.88	971	2.07	1007	2.27	1041	2.46	1072	2.65	1103	2.83	—	—	—	—	—	—	—	—
3900	940	1.97	979	2.17	1016	2.38	1051	2.59	1083	2.79	1114	2.99	1143	3.19	1172	3.38	1199	3.57	1225	3.76
4100	946	2.05	986	2.27	1024	2.49	1059	2.71	1093	2.93	1124	3.14	1154	3.35	1183	3.56	1211	3.77	1237	3.97
4300	951	2.15	992	2.37	1030	2.60	1067	2.83	1101	3.06	1133	3.29	1164	3.51	1194	3.73	1222	3.95	1249	4.17
4500	957	2.24	998	2.47	1036	2.71	1073	2.94	1108	3.18	1141	3.43	1173	3.66	1203	3.90	1232	4.14	1260	4.37
4700	963	2.35	1003	2.58	1042	2.81	1079	3.06	1115	3.31	1149	3.56	1181	3.81	1212	4.06	1241	4.31	1269	4.56
4900	970	2.48	1009	2.70	1047	2.93	1085	3.18	1121	3.43	1155	3.69	1188	3.95	1219	4.22	1249	4.48	1278	4.74
5100	978	2.62	1016	2.83	1053	3.06	1090	3.31	1126	3.56	1161	3.83	1194	4.10	1226	4.37	1257	4.64	—	—
5300	988	2.78	1024	2.98	1060	3.20	1096	3.44	1132	3.70	1166	3.97	1200	4.24	1232	4.52	—	—	—	—
5500	999	2.95	1033	3.15	1068	3.37	1103	3.60	1137	3.85	1172	4.11	1205	4.39	1238	4.67	—	—	—	—
5700	1012	3.15	1044	3.34	1077	3.55	1110	3.77	1144	4.02	1178	4.28	1211	4.55	—	—	—	—	—	—
5900	1025	3.36	1056	3.55	1087	3.75	1119	3.97	1152	4.20	1184	4.45	1217	4.72	—	—	—	—	—	—
6100	1040	3.60	1069	3.78	1099	3.97	1129	4.18	1160	4.41	1192	4.65	—	—	—	—	—	—	—	—

NOTE(S):

- a. Units are available with several motor hp and drive package combinations.
- b. Bold italics indicate field-supplied drive required.
- c. Static pressure losses for any options or accessories must be applied to external static pressure before entering the fan performance table.
- d. Interpolation is permitted; extrapolation is not.
- e. Fan performance is based on 1 in. standard throwaway filter, unit casing, and wet DX (direct expansion) coil losses at sea level.

LEGEND

- bhp** — Brake Horsepower
- ESP** — External Static Pressure

Evaporator Fan Performance — 50XCW16, 50XCA16, 50XCR16 Units^{a,b,c,d,e}

cfm	ESP (in. wg)																			
	0.00		0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80		0.90	
	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>
4500	414	0.53	482	0.69	544	0.86	600	1.03	652	1.21	701	1.40	747	1.59	790	1.79	832	1.99	872	2.20
4750	437	0.63	502	0.79	561	0.97	615	1.15	666	1.34	714	1.53	758	1.73	801	1.94	842	2.15	881	2.37
5000	460	0.73	522	0.91	579	1.09	632	1.28	681	1.48	727	1.68	771	1.89	813	2.10	853	2.32	892	2.54
5250	483	0.85	542	1.04	597	1.23	648	1.43	696	1.63	741	1.84	784	2.06	825	2.28	865	2.50	902	2.73
5500	506	0.98	563	1.17	616	1.38	665	1.58	712	1.79	756	2.01	798	2.24	838	2.46	877	2.70	914	2.94
5750	529	1.12	584	1.33	635	1.54	682	1.75	728	1.97	771	2.20	812	2.43	851	2.67	889	2.91	926	3.15
6000	552	1.28	604	1.49	654	1.71	700	1.93	744	2.16	786	2.40	826	2.64	865	2.88	902	3.13	938	3.38
6250	575	1.45	625	1.67	673	1.90	718	2.13	761	2.37	802	2.61	841	2.86	879	3.11	916	3.37	951	3.63
6500	598	1.63	647	1.86	693	2.10	737	2.34	778	2.59	818	2.84	857	3.09	894	3.35	929	3.62	964	3.89
6750	621	1.83	668	2.07	713	2.32	755	2.57	796	2.82	835	3.08	872	3.34	909	3.61	944	3.89	978	4.16
7000	644	2.04	689	2.29	733	2.55	774	2.81	814	3.07	852	3.34	888	3.61	924	3.89	958	4.17	992	4.46
7250	667	2.27	711	2.53	753	2.80	793	3.07	832	3.34	869	3.62	905	3.90	940	4.18	973	4.47	—	—
7500	690	2.52	732	2.79	773	3.06	812	3.34	850	3.62	886	3.91	922	4.20	956	4.49	—	—	—	—
7750	713	2.79	754	3.07	794	3.35	832	3.63	869	3.92	904	4.22	939	4.52	—	—	—	—	—	—
8000	736	3.07	776	3.36	814	3.65	852	3.94	887	4.24	922	4.55	—	—	—	—	—	—	—	—

cfm	ESP (in. wg)																			
	1.00		1.10		1.20		1.30		1.40		1.50		1.60		1.70		1.80		1.90	
	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>	<i>rpm</i>	<i>bhp</i>
4500	910	2.42	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4750	919	2.59	955	2.82	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5000	929	2.77	965	3.01	999	3.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5250	939	2.97	974	3.21	1008	3.46	1042	3.71	—	—	—	—	—	—	—	—	—	—	—	—
5500	950	3.18	984	3.43	1018	3.68	1051	3.94	1083	4.21	1114	4.47	—	—	—	—	—	—	—	—
5750	961	3.40	995	3.66	1028	3.92	1061	4.19	1092	4.46	1123	4.73	—	—	—	—	—	—	—	—
6000	973	3.64	1006	3.91	1039	4.17	1071	4.45	1102	4.72	—	—	—	—	—	—	—	—	—	—
6250	985	3.90	1018	4.17	1050	4.44	1082	4.72	—	—	—	—	—	—	—	—	—	—	—	—
6500	998	4.16	1030	4.44	1062	4.73	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6750	1011	4.45	1043	4.73	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7000	1024	4.75	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7250	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7500	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7750	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

NOTE(S):

- a. Units are available with several motor hp and drive package combinations.
- b. Bold italics indicate field-supplied drive required.
- c. Static pressure losses for any options or accessories must be applied to external static pressure before entering the fan performance table.
- d. Interpolation is permitted; extrapolation is not.
- e. Fan performance is based on 1 in. standard throwaway filter, unit casing, and wet DX (direct expansion) coil losses at sea level.

LEGEND

- bhp** — Brake Horsepower
- ESP** — External Static Pressure



Evaporator Fan Performance — 50XCW24, 50XCA24, 50XCR24 Units^{a,b,c,d,e}

cfm	ESP (in. wg)																			
	0.00		0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80		0.90	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
6,000	558	1.10	619	1.37	675	1.65	728	1.93	777	2.23	824	2.53	869	2.84	912	3.15	952	3.47	992	3.79
6,300	585	1.27	644	1.55	698	1.84	749	2.14	797	2.45	843	2.76	887	3.08	928	3.41	968	3.74	1007	4.08
6,600	613	1.46	669	1.76	722	2.06	771	2.37	818	2.69	862	3.02	905	3.35	945	3.69	985	4.03	1023	4.38
6,900	641	1.67	695	1.98	746	2.29	793	2.62	839	2.95	882	3.29	923	3.63	963	3.98	1002	4.34	1039	4.70
7,200	669	1.90	721	2.22	770	2.55	816	2.88	860	3.23	902	3.58	943	3.93	982	4.30	1019	4.66	1056	5.03
7,500	697	2.14	747	2.48	794	2.82	839	3.17	882	3.53	923	3.89	962	4.26	1000	4.63	1037	5.01	1073	5.39
7,800	725	2.41	773	2.76	818	3.11	862	3.48	904	3.85	944	4.22	982	4.60	1020	4.99	1056	5.38	1091	5.77
8,000	743	2.60	790	2.96	835	3.32	878	3.69	918	4.07	958	4.45	996	4.84	1033	5.23	1068	5.63	1103	6.04
8,300	771	2.90	817	3.27	860	3.65	901	4.03	941	4.42	979	4.82	1017	5.22	1053	5.63	1087	6.04	1121	6.45
8,600	799	3.23	843	3.61	885	4.00	925	4.40	964	4.80	1001	5.21	1038	5.62	1073	6.04	1107	6.47	1140	6.89
8,900	827	3.58	869	3.98	910	4.38	949	4.79	987	5.20	1024	5.62	1059	6.05	1093	6.48	1127	6.92	—	—
9,200	855	3.96	896	4.36	935	4.78	973	5.20	1010	5.63	1046	6.06	1081	6.50	1114	6.94	—	—	—	—
9,500	883	4.35	923	4.78	961	5.21	998	5.64	1034	6.08	1069	6.53	1103	6.98	—	—	—	—	—	—
9,800	911	4.78	949	5.22	987	5.66	1023	6.11	1058	6.56	1092	7.02	—	—	—	—	—	—	—	—
10,000	929	5.08	967	5.52	1004	5.97	1039	6.43	1074	6.89	—	—	—	—	—	—	—	—	—	—

cfm	ESP (in. wg)																			
	1.00		1.10		1.20		1.30		1.40		1.50		1.60		1.70		1.80		1.90	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
6,000	1030	4.12	1067	4.46	1102	4.80	1137	5.14	1171	5.49	1203	5.84	—	—	—	—	—	—	—	—
6,300	1044	4.42	1080	4.76	1116	5.12	1150	5.47	1183	5.83	1215	6.20	1247	6.56	1278	6.94	—	—	—	—
6,600	1059	4.73	1095	5.09	1129	5.45	1163	5.82	1196	6.19	1228	6.57	1259	6.95	—	—	—	—	—	—
6,900	1075	5.06	1110	5.43	1144	5.81	1177	6.18	1209	6.57	1241	6.96	—	—	—	—	—	—	—	—
7,200	1091	5.41	1125	5.79	1159	6.18	1191	6.57	1223	6.97	—	—	—	—	—	—	—	—	—	—
7,500	1108	5.78	1141	6.18	1174	6.57	1206	6.98	—	—	—	—	—	—	—	—	—	—	—	—
7,800	1125	6.17	1158	6.58	1190	6.99	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8,000	1137	6.45	1169	6.86	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8,300	1154	6.88	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8,600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8,900	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9,200	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9,500	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9,800	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10,000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

NOTE(S):

- a. Units are available with several motor hp and drive package combinations.
- b. Bold italics indicate field-supplied drive required.
- c. Static pressure losses for any options or accessories must be applied to external static pressure before entering the fan performance table.
- d. Interpolation is permitted; extrapolation is not.
- e. Fan performance is based on 1 in. standard throwaway filter, unit casing, and wet DX (direct expansion) coil losses at sea level.

LEGEND

- bhp** — Brake Horsepower
- ESP** — External Static Pressure

Condenser Fan Performance — 50XCA06 Units^{a,b,c,d,e}

cfm	ESP (in. wg)																			
	0.00		0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80		0.90	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
2100	466	0.21	548	0.30	623	0.40	692	0.51	757	0.63	818	0.76	876	0.90	931	1.05	984	1.20	1035	1.37
2200	488	0.24	567	0.34	639	0.44	706	0.55	769	0.68	829	0.81	885	0.95	940	1.10	992	1.26	1042	1.42
2300	511	0.28	586	0.37	656	0.48	721	0.60	782	0.72	840	0.86	896	1.00	949	1.15	1000	1.31	—	—
2400	533	0.31	605	0.41	673	0.53	736	0.64	796	0.77	852	0.91	907	1.06	959	1.21	1009	1.37	—	—
2500	555	0.36	625	0.46	690	0.57	751	0.70	810	0.83	865	0.97	918	1.12	969	1.27	—	—	—	—
2600	577	0.40	644	0.51	708	0.62	767	0.75	824	0.89	878	1.03	930	1.18	980	1.34	—	—	—	—
2700	599	0.45	664	0.56	725	0.68	783	0.81	839	0.95	892	1.09	943	1.25	992	1.41	—	—	—	—
2800	621	0.50	684	0.61	744	0.74	800	0.87	854	1.01	906	1.16	956	1.32	—	—	—	—	—	—
2900	644	0.56	704	0.67	762	0.80	817	0.94	870	1.08	920	1.23	969	1.39	—	—	—	—	—	—
3000	666	0.61	725	0.74	781	0.87	834	1.01	886	1.15	935	1.31	—	—	—	—	—	—	—	—
3100	688	0.68	745	0.80	799	0.94	852	1.08	902	1.23	950	1.39	—	—	—	—	—	—	—	—
3200	710	0.75	766	0.88	818	1.01	869	1.16	918	1.31	—	—	—	—	—	—	—	—	—	—
3300	732	0.82	786	0.95	838	1.09	887	1.24	935	1.40	—	—	—	—	—	—	—	—	—	—
3400	755	0.89	807	1.03	857	1.18	905	1.33	—	—	—	—	—	—	—	—	—	—	—	—
3500	777	0.98	828	1.12	876	1.27	924	1.42	—	—	—	—	—	—	—	—	—	—	—	—

cfm	ESP (in. wg)																			
	1.00		1.10		1.20		1.30		1.40		1.50		1.60		1.70		1.80		1.90	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
2100	555	0.36	625	0.46	690	0.57	751	0.70	810	0.83	865	0.97	918	1.12	969	1.27	—	—	—	—
2200	588	0.42	654	0.53	716	0.65	775	0.78	831	0.92	885	1.06	936	1.21	986	1.37	—	—	—	—
2300	621	0.50	684	0.61	744	0.74	800	0.87	854	1.01	906	1.16	956	1.32	1004	1.48	—	—	—	—
2400	655	0.58	714	0.71	771	0.83	826	0.97	878	1.12	928	1.27	976	1.43	1023	1.60	—	—	—	—
2500	688	0.68	745	0.80	799	0.94	852	1.08	902	1.23	950	1.39	997	1.55	1042	1.72	—	—	—	—
2600	721	0.78	776	0.91	828	1.05	878	1.20	927	1.36	973	1.52	1019	1.69	1063	1.86	—	—	—	—
2700	755	0.89	807	1.03	857	1.18	905	1.33	952	1.49	997	1.66	1041	1.83	—	—	—	—	—	—
2800	788	1.02	838	1.16	886	1.31	933	1.47	978	1.64	1022	1.81	—	—	—	—	—	—	—	—
2900	821	1.15	869	1.30	916	1.46	961	1.62	1005	1.79	—	—	—	—	—	—	—	—	—	—
3000	855	1.30	901	1.45	946	1.62	989	1.78	—	—	—	—	—	—	—	—	—	—	—	—
3100	888	1.46	932	1.62	976	1.79	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3200	921	1.63	964	1.79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3300	954	1.81	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3400	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3500	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

NOTE(S):

- a. Units are available with several motor hp and drive package combinations.
- b. Bold italics indicates field-supplied drive required.
- c. Static pressure losses for any options or accessories must be applied to external static pressure before entering the fan performance table.
- d. Interpolation is permitted; extrapolation is not.
- e. Fan performance is based on 1 in. standard throwaway filter, unit casing, and wet DX (direct expansion) coil losses at sea level.

LEGEND

- bhp** — Brake Horsepower
- ESP** — External Static Pressure

Condenser Fan Performance — 50XCA08 Units^{a,b,c,d,e}

cfm	ESP (in. wg)															
	0.00		0.10		0.20		0.30		0.40		0.50		0.60		0.70	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
2500	555	0.36	625	0.46	690	0.57	751	0.70	810	0.83	865	0.97	918	1.12	969	1.27
2650	588	0.42	654	0.53	716	0.65	775	0.78	831	0.92	885	1.06	936	1.21	986	1.37
2800	621	0.50	684	0.61	744	0.74	800	0.87	854	1.01	906	1.16	956	1.32	1004	1.48
2950	655	0.58	714	0.71	771	0.83	826	0.97	878	1.12	928	1.27	976	1.43	1023	1.60
3100	688	0.68	745	0.80	799	0.94	852	1.08	902	1.23	950	1.39	997	1.55	1042	1.72
3250	721	0.78	776	0.91	828	1.05	878	1.20	927	1.36	973	1.52	1019	1.69	1063	1.86
3400	755	0.89	807	1.03	857	1.18	905	1.33	952	1.49	997	1.66	1041	1.83	—	—
3550	788	1.02	838	1.16	886	1.31	933	1.47	978	1.64	1022	1.81	—	—	—	—
3700	821	1.15	869	1.30	916	1.46	961	1.62	1005	1.79	—	—	—	—	—	—
3850	855	1.30	901	1.45	946	1.62	989	1.78	—	—	—	—	—	—	—	—
4000	888	1.46	932	1.62	976	1.79	—	—	—	—	—	—	—	—	—	—
4150	921	1.63	964	1.79	—	—	—	—	—	—	—	—	—	—	—	—
4300	954	1.81	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4450	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

cfm	ESP (in. wg)													
	0.80		0.90		1.00		1.10		1.20		1.30		1.40	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
2500	1018	1.43	1066	1.60	1112	1.78	—	—	—	—	—	—	—	—
2650	1034	1.54	1080	1.71	1125	1.89	—	—	—	—	—	—	—	—
2800	1050	1.65	1095	1.83	—	—	—	—	—	—	—	—	—	—
2950	1068	1.77	—	—	—	—	—	—	—	—	—	—	—	—
3100	1086	1.90	—	—	—	—	—	—	—	—	—	—	—	—
3250	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3400	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3550	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3700	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3850	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4000	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4150	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4300	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4450	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4600	—	—	—	—	—	—	—	—	—	—	—	—	—	—

NOTE(S):

- a. Units are available with several motor hp and drive package combinations.
- b. Bold italics indicates field-supplied drive required.
- c. Static pressure losses for any options or accessories must be applied to external static pressure before entering the fan performance table.
- d. Interpolation is permitted; extrapolation is not.
- e. Fan performance is based on 1 in. standard throwaway filter, unit casing, and wet DX (direct expansion) coil losses at sea level.

LEGEND

- bhp** — Brake Horsepower
- ESP** — External Static Pressure

Condenser Fan Performance — 50XCA12 Units^{a,b,c,d,e}

cfm	ESP (in. wg)															
	0.00		0.10		0.20		0.30		0.40		0.50		0.60		0.70	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
4100	389	0.41	451	0.53	506	0.66	557	0.80	605	0.94	651	1.10	695	1.26	—	—
4300	408	0.47	467	0.60	520	0.73	569	0.87	616	1.02	661	1.18	704	1.35	745	1.53
4500	427	0.54	484	0.67	535	0.81	583	0.96	628	1.11	672	1.28	714	1.45	754	1.63
4700	446	0.62	501	0.76	550	0.90	596	1.05	641	1.21	683	1.37	724	1.55	763	1.73
4900	465	0.70	518	0.84	566	0.99	611	1.15	653	1.31	694	1.48	734	1.66	773	1.85
5100	484	0.79	535	0.94	581	1.09	625	1.25	666	1.42	706	1.59	745	1.78	783	1.97
5300	503	0.88	552	1.04	597	1.20	640	1.37	680	1.54	719	1.72	757	1.90	793	2.10
5500	522	0.99	569	1.15	613	1.32	654	1.49	694	1.66	732	1.85	769	2.04	804	2.23
5700	541	1.10	587	1.27	629	1.44	670	1.62	708	1.80	745	1.98	781	2.18	816	2.38
5900	560	1.22	604	1.39	646	1.57	685	1.75	722	1.94	758	2.13	794	2.33	828	2.53
6100	578	1.35	622	1.53	662	1.71	700	1.90	737	2.09	772	2.29	807	2.49	840	2.70
6300	597	1.48	639	1.67	679	1.86	716	2.05	752	2.25	786	2.45	820	2.66	—	—
6500	616	1.63	657	1.82	696	2.02	732	2.21	767	2.42	801	2.62	833	2.83	—	—
6700	635	1.78	675	1.98	712	2.18	748	2.39	782	2.59	815	2.81	—	—	—	—
6900	654	1.95	693	2.15	729	2.36	764	2.57	798	2.78	830	3.00	—	—	—	—

cfm	ESP (in. wg)													
	0.80		0.90		1.00		1.10		1.20		1.30		1.40	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
2500	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2650	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2800	793	1.81	—	—	—	—	—	—	—	—	—	—	—	—
2950	801	1.92	838	2.12	—	—	—	—	—	—	—	—	—	—
3100	810	2.04	846	2.24	—	—	—	—	—	—	—	—	—	—
3250	819	2.16	855	2.37	889	2.58	—	—	—	—	—	—	—	—
3400	829	2.30	864	2.51	898	2.72	—	—	—	—	—	—	—	—
3550	839	2.44	874	2.65	—	—	—	—	—	—	—	—	—	—
3700	850	2.59	884	2.80	—	—	—	—	—	—	—	—	—	—
3850	861	2.74	894	2.96	—	—	—	—	—	—	—	—	—	—
4000	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4150	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4300	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4450	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4600	—	—	—	—	—	—	—	—	—	—	—	—	—	—

NOTE(S):

- a. Units are available with several motor hp and drive package combinations.
- b. Bold italics indicates field-supplied drive required.
- c. Static pressure losses for any options or accessories must be applied to external static pressure before entering the fan performance table.
- d. Interpolation is permitted; extrapolation is not.
- e. Fan performance is based on 1 in. standard throwaway filter, unit casing, and wet DX (direct expansion) coil losses at sea level.

LEGEND

- bhp** — Brake Horsepower
- ESP** — External Static Pressure

Condenser Fan Performance — 50XCA14 Units^{a,b,c,d,e}

cfm	ESP (in. wg)															
	0.00		0.10		0.20		0.30		0.40		0.50		0.60		0.70	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
6000	496	1.03	533	1.17	570	1.36	608	1.58	646	1.82	683	2.06	719	2.31	755	2.56
6250	517	1.17	552	1.31	588	1.50	624	1.72	660	1.97	696	2.22	732	2.48	766	2.74
6500	537	1.31	571	1.46	605	1.65	640	1.88	675	2.13	710	2.39	744	2.66	—	—
6750	558	1.47	590	1.62	623	1.81	657	2.05	691	2.30	724	2.57	757	2.85	—	—
7000	579	1.64	610	1.79	642	1.99	674	2.23	707	2.49	739	2.76	—	—	—	—
7250	599	1.82	629	1.98	660	2.18	691	2.42	723	2.68	—	—	—	—	—	—
7500	620	2.02	649	2.18	679	2.38	709	2.62	—	—	—	—	—	—	—	—
7750	641	2.23	669	2.39	697	2.59	726	2.84	—	—	—	—	—	—	—	—
8000	661	2.45	688	2.61	716	2.82	—	—	—	—	—	—	—	—	—	—
8250	682	2.69	708	2.85	—	—	—	—	—	—	—	—	—	—	—	—
8500	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8750	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9250	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9500	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

cfm	ESP (in. wg)									
	0.80		0.90		1.00		1.10		1.20	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
6000	789	2.81	—	—	—	—	—	—	—	—
6250	—	—	—	—	—	—	—	—	—	—
6500	—	—	—	—	—	—	—	—	—	—
6750	—	—	—	—	—	—	—	—	—	—
7000	—	—	—	—	—	—	—	—	—	—
7250	—	—	—	—	—	—	—	—	—	—
7500	—	—	—	—	—	—	—	—	—	—
7750	—	—	—	—	—	—	—	—	—	—
8000	—	—	—	—	—	—	—	—	—	—
8250	—	—	—	—	—	—	—	—	—	—
8500	—	—	—	—	—	—	—	—	—	—
8750	—	—	—	—	—	—	—	—	—	—
9000	—	—	—	—	—	—	—	—	—	—
9250	—	—	—	—	—	—	—	—	—	—
9500	—	—	—	—	—	—	—	—	—	—

NOTE(S):

- a. Units are available with several motor hp and drive package combinations.
- b. Bold italics indicates field-supplied drive required.
- c. Static pressure losses for any options or accessories must be applied to external static pressure before entering the fan performance table.
- d. Interpolation is permitted; extrapolation is not.
- e. Fan performance is based on 1 in. standard throwaway filter, unit casing, and wet DX (direct expansion) coil losses at sea level.

LEGEND

- bhp** — Brake Horsepower
- ESP** — External Static Pressure

Condenser Fan Performance — 50XCA16 Units^{a,b,c,d,e}

cfm	ESP (in. wg)																			
	0.00		0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80		0.90	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
6250	474	1.16	524	1.37	570	1.58	612	1.79	653	2.01	691	2.23	727	2.45	762	2.67	795	2.90	827	3.13
6500	493	1.28	541	1.49	585	1.70	627	1.92	666	2.14	704	2.37	739	2.59	773	2.82	806	3.05	838	3.28
6750	512	1.41	558	1.62	601	1.84	642	2.06	680	2.28	717	2.51	752	2.74	785	2.97	817	3.20	849	3.44
7000	531	1.54	576	1.76	618	1.98	657	2.20	695	2.43	730	2.66	764	2.89	797	3.13	829	3.36	860	3.60
7250	550	1.68	593	1.90	634	2.13	672	2.36	709	2.59	744	2.82	778	3.06	810	3.29	841	3.53	871	3.77
7500	569	1.83	611	2.06	650	2.28	688	2.52	724	2.75	758	2.99	791	3.22	823	3.46	853	3.71	883	3.95
7750	588	1.99	629	2.22	667	2.45	704	2.68	739	2.92	772	3.16	804	3.40	836	3.64	866	3.89	895	4.14
8000	607	2.15	646	2.38	684	2.62	720	2.86	754	3.10	787	3.34	818	3.59	849	3.83	878	4.08	907	4.33
8250	626	2.32	664	2.56	701	2.80	736	3.04	769	3.28	801	3.53	832	3.78	862	4.03	891	4.28	920	4.53
8500	645	2.50	682	2.74	718	2.98	752	3.23	784	3.48	816	3.73	846	3.98	876	4.23	905	4.48	933	4.74
8750	664	2.69	700	2.93	735	3.18	768	3.43	800	3.68	831	3.93	861	4.18	890	4.44	918	4.70	—	—
9000	683	2.88	718	3.13	752	3.38	784	3.63	816	3.89	846	4.14	875	4.40	904	4.66	—	—	—	—
9250	702	3.09	736	3.34	769	3.59	801	3.85	832	4.10	861	4.36	890	4.62	—	—	—	—	—	—
9500	721	3.30	754	3.56	787	3.81	818	4.07	848	4.33	877	4.59	—	—	—	—	—	—	—	—
9750	740	3.52	772	3.78	804	4.04	834	4.30	864	4.56	—	—	—	—	—	—	—	—	—	—

cfm	ESP (in. wg)																			
	1.00		1.10		1.20		1.30		1.40		1.50		1.60		1.70		1.80		1.90	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
6250	858	3.37	888	3.60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6500	868	3.52	898	3.76	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6750	879	3.68	908	3.92	936	4.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7000	889	3.84	918	4.09	946	4.33	973	4.58	—	—	—	—	—	—	—	—	—	—	—	—
7250	900	4.02	929	4.26	956	4.51	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7500	912	4.20	940	4.45	967	4.70	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7750	923	4.39	951	4.64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8000	935	4.58	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8250	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8500	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8750	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9250	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9500	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9750	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

NOTE(S):

- a. Units are available with several motor hp and drive package combinations.
- b. Bold italics indicates field-supplied drive required.
- c. Static pressure losses for any options or accessories must be applied to external static pressure before entering the fan performance table.
- d. Interpolation is permitted; extrapolation is not.
- e. Fan performance is based on 1 in. standard throwaway filter, unit casing, and wet DX (direct expansion) coil losses at sea level.

LEGEND

- bhp** — Brake Horsepower
- ESP** — External Static Pressure



Condenser Fan Performance — 50XCA24 Units^{a,b,c,d,e}

cfm	ESP (in. wg)															
	0.00		0.10		0.20		0.30		0.40		0.50		0.60		0.70	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
8,500	613	2.20	657	2.54	698	2.87	737	3.22	773	3.56	808	3.91	841	4.27	873	4.63
8,800	634	2.45	677	2.79	717	3.14	755	3.49	790	3.85	824	4.21	857	4.58	889	4.95
9,100	656	2.70	697	3.06	736	3.42	773	3.78	808	4.15	841	4.53	873	4.91	904	5.29
9,400	678	2.98	718	3.35	756	3.72	791	4.09	826	4.47	858	4.86	890	5.25	920	5.64
9,700	699	3.28	738	3.65	775	4.04	810	4.42	844	4.81	876	5.21	907	5.61	936	6.02
10,000	721	3.59	759	3.98	795	4.37	829	4.77	862	5.17	893	5.58	923	5.99	953	6.41
10,300	742	3.92	779	4.32	814	4.73	848	5.14	880	5.55	911	5.97	940	6.39	969	6.82
10,600	764	4.27	800	4.69	834	5.10	867	5.53	898	5.95	928	6.38	958	6.81	—	—
10,900	786	4.65	821	5.07	854	5.50	886	5.93	917	6.37	946	6.81	—	—	—	—
11,200	807	5.04	841	5.48	874	5.92	905	6.36	935	6.81	—	—	—	—	—	—
11,500	829	5.46	862	5.91	894	6.36	925	6.81	954	7.27	—	—	—	—	—	—
11,800	850	5.90	883	6.36	914	6.82	944	7.29	—	—	—	—	—	—	—	—
12,100	872	6.36	904	6.83	934	7.30	—	—	—	—	—	—	—	—	—	—
12,400	894	6.84	925	7.32	—	—	—	—	—	—	—	—	—	—	—	—
12,700	915	7.35	—	—	—	—	—	—	—	—	—	—	—	—	—	—

cfm	ESP (in. wg)													
	0.80		0.90		1.00		1.10		1.20		1.30		1.40	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
8,500	904	5.00	933	5.37	962	5.75	990	6.13	1017	6.52	1043	6.91	—	—
8,800	919	5.33	948	5.71	976	6.10	1004	6.49	1030	6.89	—	—	—	—
9,100	934	5.68	963	6.07	991	6.47	1018	6.87	—	—	—	—	—	—
9,400	949	6.04	978	6.44	1005	6.85	—	—	—	—	—	—	—	—
9,700	965	6.42	993	6.84	—	—	—	—	—	—	—	—	—	—
10,000	981	6.83	—	—	—	—	—	—	—	—	—	—	—	—
10,300	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10,600	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10,900	—	—	—	—	—	—	—	—	—	—	—	—	—	—
11,200	—	—	—	—	—	—	—	—	—	—	—	—	—	—
11,500	—	—	—	—	—	—	—	—	—	—	—	—	—	—
11,800	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12,100	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12,400	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12,700	—	—	—	—	—	—	—	—	—	—	—	—	—	—

NOTE(S):

- a. Units are available with several motor hp and drive package combinations.
- b. Bold *italics* indicates field-supplied drive required.
- c. Static pressure losses for any options or accessories must be applied to external static pressure before entering the fan performance table.
- d. Interpolation is permitted; extrapolation is not.
- e. Fan performance is based on 1 in. standard throwaway filter, unit casing, and wet DX (direct expansion) coil losses at sea level.

LEGEND

- bhp** — Brake Horsepower
- ESP** — External Static Pressure

Electrical Data^{a,b,c,d}

UNIT 50XCR	V-PH-Hz	VOLTAGE RANGE		COMPRESSOR NO. 1		COMPRESSOR NO. 2	
		Min	Max	RLA	LRA	RLA	LRA
06	208/230-3-60	187	253	18.3	136	—	—
	460-3-60	414	506	8.8	66	—	—
	575-3-60	518	632	6.6	55	—	—
08	208/230-3-60	187	253	23.0	149	—	—
	460-3-60	414	506	11.0	75	—	—
	575-3-60	518	632	8.0	54	—	—
12	208/230-3-60	187	253	15.6	110	15.9	110
	460-3-60	414	506	7.8	52	7.1	52
	575-3-60	518	632	5.8	39	5.1	39
14	208/230-3-60	187	253	19.6	136	19.2	136
	460-3-60	414	506	8.2	66	8.7	66
	575-3-60	518	632	6.6	55	6.9	55
16	208/230-3-60	187	253	28.7	191	23.0	149
	460-3-60	414	506	13.3	100	11.0	75
	575-3-60	518	632	10.0	78	8.0	54
24	208/230-3-60	187	253	40.7	240	28.7	191
	460-3-60	414	506	19.3	140	13.3	100
	575-3-60	518	632	15.6	107	10.0	78

NOTE(S):

- In compliance with NEC requirements for multimotor and combination load equipment (NEC Articles 430 and 440), the overcurrent protective device for the unit shall be fuse or HACR circuit breaker. Canadian units may be fuse or circuit breaker.
- Wire sizing amps are a sum of 125% of the compressor RLA plus 100% of indoor fan motor FLA.
- Motors are protected against primary single phasing condition.
- Indoor-fan motors are 3-phase motors of same voltage as unit.

LEGEND

- FLA** — Full Load Amps
LRA — Locked Rotor Amps
NEC — National Electrical Code
RLA — Rated Load Amps



Fan Electrical Data

MOTOR CODE	HP	V-PH-Hz	VOLTAGE RANGE		FLA
			Min	Max	
D	1.00	208/230-3-60	187	253	3.2/3.2
		460-3-60	414	506	1.6
		575-3-60	518	632	1.1
E	1.50	208/230-3-60	187	253	4.6/4.8
		460-3-60	414	506	2.4
		575-3-60	518	632	1.6
F	2.00	208/230-3-60	187	253	6.0/5.8
		460-3-60	414	506	2.9
		575-3-60	518	632	2.1
G	3.00	208/230-3-60	187	253	9.2/8.6
		460-3-60	414	506	4.3
		575-3-60	518	632	3.4
H	5.00	208/230-3-60	187	253	14.5/13.6
		460-3-60	414	506	6.8
		575-3-60	518	632	5.4
J	7.50	208/230-3-60	187	253	21.5/19.4
		460-3-60	414	506	9.7
		575-3-60	518	632	7.5

LEGEND

FLA — Full Load Amps



Operating sequence

All units require the addition of a thermostat or DDC control package to complete the control circuit. The sequence of operation may vary depending on which package is selected.

Room-mounted thermostat

The unit uses an electronic, communicating electronic, or mechanical thermostat mounted in the conditioned space.

Fan circulation

When the thermostat selector switch is set to the FAN position, the evaporator-fan motor will operate to provide air circulation.

Cooling

The supply fan will operate continuously or when the compressor runs, depending on the setting of the thermostat fan selector switch. When the thermostat closes (on a call for cooling), the control relay condenser-fan contactor and compressor contactor(s) close. The control relay will start the indoor fan if it is not already running. The condenser-fan contactor will start the condenser fan and the compressor contactor(s) will immediately start the compressor(s).

A second stage will close if additional cooling demand is required, and will start the second-stage compressor. When the thermostat is satisfied, the second-stage compressor will stop first, and then the first-stage compressor will stop when cooling demand is satisfied. The condenser will also stop as soon as both cooling stages are satisfied.

A 5-minute timer, TDR (time-delay relay), will prevent the compressor(s) from restarting for 5 minutes after any compressor has stopped or any heating operation.

2-speed fan operation

For dual-stage units, fan speed shall operate at 67% of full speed for first-stage cooling operation and 100% of full speed for second-stage cooling operation.

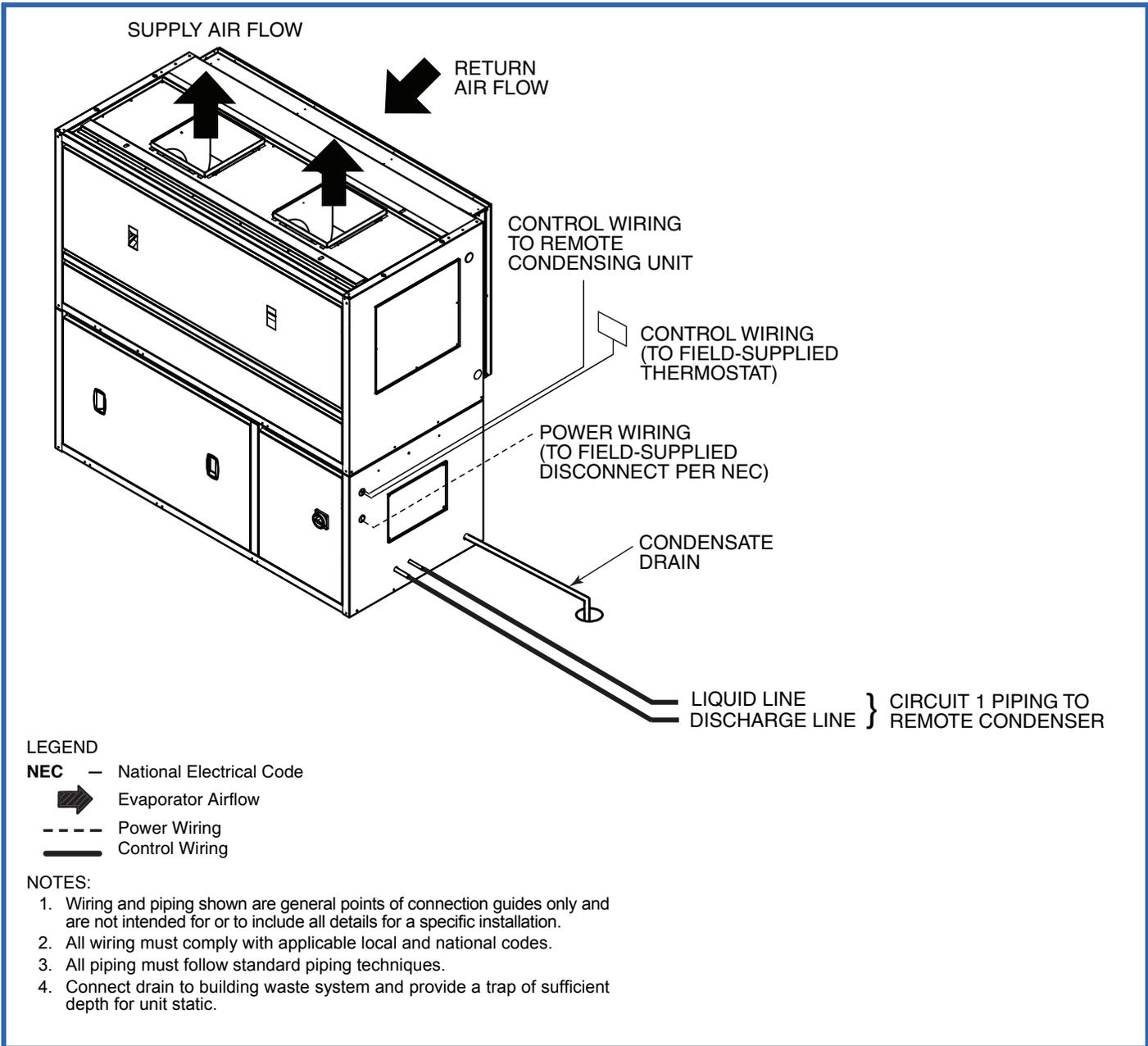
All units

The control circuit incorporates a current sensing lockout relay (Cycle-LOC™ device) that locks off the compressor(s) when any safety device is activated (low or high-pressure switches, or compressor internal overload). If any compressor safety device opens, the compressor will stop. High and low-pressure switches and compressor motor overload protectors will reset automatically when the condition which caused the device to trip has dropped below the reset condition. To reset the Cycle-LOC control device, manually turn the control power OFF, then back ON.

Heating

The supply fan will operate continuously or when heat source (steam or hot water) is enabled. The hot water coil, heat source control, and control valve shall be field provided.

Typical piping and wiring



Location

For best results unit must be properly located and installed. Selected location should not be adjacent to an acoustically sensitive space, for example a conference room or executive office. The best location is in mechanical rooms near areas like elevators, restrooms, stairways, or similar spaces. The mechanical room should use construction methods which will help isolate the transmission of acoustical energy.

Moving units into existing buildings

The 50XCR units are designed to pass through most 36 in. door openings. The filter rack may also be removed.

Unit isolation

Unit compressors are internally isolated and the compressor compartment is lined with acoustical insulation. If additional vibration isolation is desired, rubber in-shear pads are recommended under the four corners of the unit. Spring isolation is not recommended. All duct connections to the unit should be made with flexible connections to prevent any transmission of vibration to the ductwork.

Evaporator ductwork

Supply duct should be properly supported and the aspect ratio as close to square as possible. Duct should be sized for a maximum of 2000 fpm velocity in areas outside the equipment room. The duct should be lined with acoustical insulation for a minimum of 10 ft beyond the equipment room. A flexible duct connection should be used on the connection to the unit to prevent transmission of any unit vibrations into the duct. Units with two or more supply fans require a "pair of pants" duct connection. Refer to the installation instructions for more details. Return duct may be attached to the unit, but is not necessary. The return to the unit should prevent line of sight visibility to the space. Insulated return duct is also recommended for acoustically sensitive spaces. Maximum velocity should not exceed 1000 fpm over occupied spaces. Adequate return area is essential for proper operation.

Piping traps

All 50XCR units have a drain for the condensate from the evaporator coil. The condensate trap should have a depth adequate to allow 2 in. of water in the trap with the unit running. Provide a clean-out on the trap and vent and pitch the trap for proper drainage.

Controls

All units require a room mounted 24-v thermostat to complete the control system. Carrier has several versions of thermostats to meet a wide range of job conditions, including fully programmable and light-activated versions.

Operational limits

Airflow

300 to 500 cfm per ton

Evaporator entering air temperature cooling (db):

Cooling

Maximum 95°F

Minimum 65°F

Condenser

Nominal airflow

350 cfm per ton

Range: 300 to 500 cfm per ton

Condenser entering air temperature cooling (db):

Maximum 115°F

Minimum without low ambient 55°F

Minimum with low ambient 0°F

Sound considerations

All units are acoustically insulated. When installed in or near areas requiring additional sound attenuation:

- Locate unit in equipment room or closet
- Use acoustic lining in ductwork
- Provide square duct elbows with acoustic lining and turning vanes
- Locate the first supply outlet no less than 10 ft from a lined elbow.
- If unit is located in the conditioned space, return air opening from the space should be a lined elbow or equivalent.
- For critical applications, use packaged sound attenuators or duct silencers. Sound attenuation may be used on both evaporator air and condenser air.

Refrigerant piping

For applications with condensers located above the cooling unit, hot gas loops above the condenser prevent liquid in condenser from draining at shutdown. Loops and check valves in the discharge line prevent oil and condenser refrigerant from draining to compressor at shutdown. If condenser is below the cooling unit, a loop at the condenser may be omitted. If piping runs prevent drainback, loops may be omitted.

Regardless of remote condenser location, a check valve must be installed in the discharge line in each refrigerant circuit, as close to compressor as possible. The check valve prevents migration of refrigerant back to the compressor.

Refrigerant piping OD should not be smaller than unit connection size.

Liquid lift

The amount of liquid lift available before refrigerant flashing occurs depends on the amount of liquid subcooling in the system.

All 09XC condensers have positive subcooling when applied with optimum charge. With subcooling, it is possible to overcome an appreciable friction drop and/or static head (due to elevation of the liquid metering device above the condenser).

When 09XC condensers are applied with minimum charge, no positive subcooling in condenser is realized; therefore, if subcooling is required it must be obtained by external means.

Winter start modifications

When starting 50XCR remote air-cooled units under low-ambient temperature conditions, the compressor may pull suction pressure down below low-pressure switch cutout setting, causing the compressor to shut off. At extremely low ambient temperatures, the low-pressure switch may be open during the off cycle, preventing the compressor from starting. In these cases, winter start control is required.

Condenser Usage

UNIT 50XCR	CONDENSER QUANTITY					
	09XC SIZE					
	06	08	12	14	16	24
06	1					
08		1				
12			1			
14				1		
16					1	
24						1

NOTE: Where there are no quantities of condensers listed, the combination is not recommended.

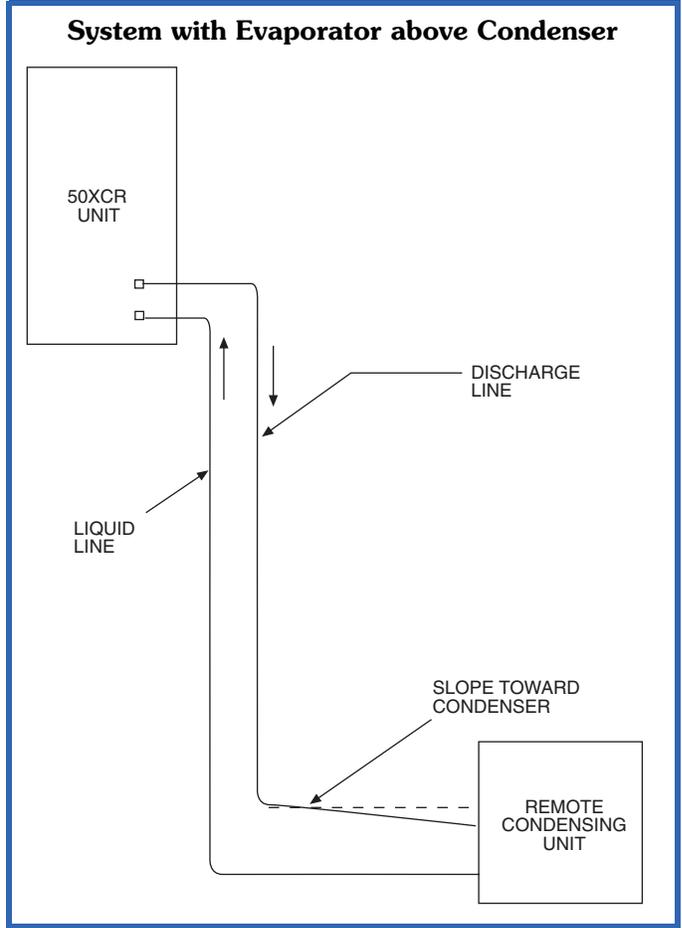
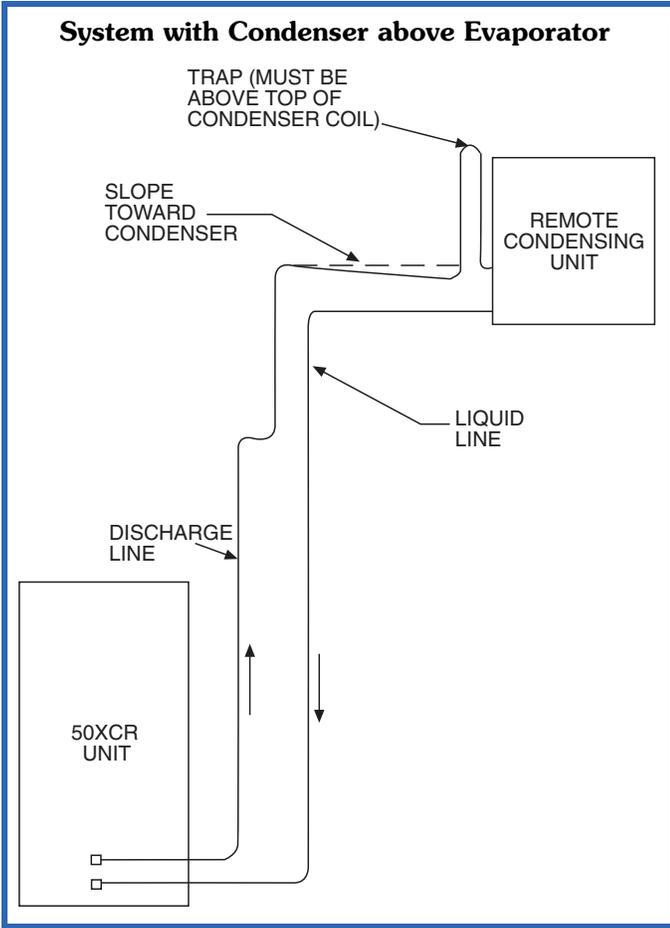
Recommended Line Sizes (in.)

50XC UNIT SIZE	CIRCUIT	LENGTH OF RUN (ft)									
		0 to 15		16 to 25		26 to 50		51 to 75		76 to 100	
		DIS	LIQ	DIS	LIQ	DIS	LIQ	DIS	LIQ	DIS	LIQ
06	1	5/8	1/2	7/8	1/2	7/8	1/2	7/8	5/8	7/8	5/8
08	1	5/8	1/2	7/8	1/2	7/8	1/2	7/8	5/8	7/8	5/8
12	1	7/8	5/8	7/8	5/8	1-1/8	5/8	1-1/8	5/8	1-1/8	5/8
14	1	7/8	5/8	7/8	5/8	1-1/8	5/8	1-1/8	5/8	1-1/8	5/8
16	1	1-1/8	5/8	1-1/8	5/8	1-1/8	5/8	1-3/8	7/8	1-3/8	7/8
24	1	1-1/8	5/8	1-1/8	5/8	1-3/8	7/8	1-3/8	7/8	1-3/8	7/8

LEGEND

DIS — Discharge

LIQ — Liquid



Indoor Packaged Remote Air-Cooled Unit Constant Volume Application

HVAC Guide Specifications

Size Range: **5 to 20 Tons**

Carrier Model Number: **50XCR**

Part 1 — General

1.01 SYSTEM DESCRIPTION

Indoor packaged vertical air-cooled cooling unit using hermetic scroll compressors for cooling duty. Unit shall discharge supply air vertically or horizontally (sizes 12-24) as shown on contract drawings.

1.02 QUALITY ASSURANCE

- A. Units shall be rated in accordance with AHRI (Air-Conditioning, Heating and Refrigeration Institute) Standard 340/360, latest revision, as appropriate.
- B. Unit shall be designed to conform to ANSI/ASHRAE (American National Standards Institute/American Society of Heating, Refrigerating and Air-Conditioning Engineers) 15, latest revision safety code..
- C. The management system governing the manufacture of this product is ISO 2001:2015 certified.
- D. Insulation, adhesive, and liner system shall meet NFPA (National Fire Protection Association) 90A requirements for flame spread and smoke generation.
- E. Unit shall be ETL and ETL, Canada certified.

1.03 DELIVERY, STORAGE, AND HANDLING

Units shall be stored and handled according to manufacturer's recommendations.

Part 2 — Products

2.01 EQUIPMENT

A. General:

Factory-assembled, single-piece, air-cooled cooling unit. Unit shall consist of scroll refrigerant compressor(s), evaporator fan section with belt drive centrifugal fans and motor, evaporator coil section with direct expansion coil and drain pan, and a system charge of refrigerant (R-410A). Unit may be used with or without return ductwork.

B. Unit Cabinet:

1. Cabinet shall be constructed of minimum 18 gauge zinc surface alloyed steel with a baked enamel finish. Unit shall be capable of withstanding ASTM (American Society for Testing and Materials) B117 500-hour salt spray test.
2. Cabinet shall be fully insulated.
3. Configurations include vertical or horizontal discharge with a ducted or louvered return.
4. Unit drain pan shall be stainless steel and shall have positive double slope to the drain to prevent standing water in pan.
5. Panels for servicing shall be easily removable.

C. Evaporator Fan Section:

1. Fans shall be double inlet, centrifugal wheel with forward curved blades designed for continuous

operation. Fan wheel shall be constructed of steel with corrosion resistant finish, and statically and dynamically balanced.

2. Fan shall be belt drive with an adjustable pitch motor pulley and fixed pitch fan pulley, with permanently lubricated ball-bearing type bearings.
3. Motor shall be 3-phase high-efficiency NEMA (National Electrical Manufacturing Association) frame ODP (open drip proof) of the same voltage as the compressor(s). Motor shall have permanently lubricated ball bearings.
4. Units with Staged Air Volume (SAV™) may be equipped with a variable frequency drive to operate at 67% of full speed for first stage cooling and 100% of full speed for second stage cooling. Compressors shall be two-stage (size 06-08) or single circuit tandem (size 12-24) for two-stage cooling operation.

D. Compressor:

Hermetic scroll compressors shall be internally protected with high pressure relief. Compressors shall be factory mounted with vibration isolators.

E. Coils:

1. Evaporator coil shall have aluminum plate fins mechanically bonded to seamless copper tubes with all joints brazed. Tube sheet openings shall be swaged to prevent tube wear. Coils shall be full face.
2. Direct expansion coil shall be designed and tested in accordance with ANSI/ASHRAE 15, latest revision safety code.
3. Coil and drain pan shall be accessible through service access panels for cleaning.

F. Filter:

Filter frame shall be installed upstream of the cooling coil, designed to take a 1 in. or 2 in. thick disposable type commercially available filter. Filters shall be accessible from either side of the unit and filter rack shall be usable with ducted or free return. Disposable filters will be supplied with the unit. 4 in. filter racks are available.

G. Operating Characteristics:

Unit shall be capable of providing a constant volume of conditioned air at a specified static pressure within the unit's normal operating range. Unit shall have dual-stage cooling capacity control on all units. Sizes 06 and 08 have one compressor, with two stages. Sizes 12-24 have two compressors in tandem on a single circuit. Unit shall be capable of starting and operating at up to 115°F outdoor ambient.

H. Controls and Safeties:

1. Units shall be furnished with a control terminal block for connection of thermostats.
2. Unit shall require a room-mounted thermostat to be mounted in the conditioned space. Thermostat shall be digital type. Thermostat shall control fan operation and be capable of turning unit on and off.

3. Units shall have the following factory-installed safeties: high and low-pressure switches, motor and compressor overtemperature, current lock-out, and inherent automatic fan motor overload.
- I. Electrical Requirements:

Units shall have a short circuit current rating (SCCR) of no less than 5 kA. All electrical power wiring shall enter the unit cabinet at a single location. Control circuit shall be 24-v, suitable for a field-supplied 24-v thermostat.
 - J. Refrigerant Components:

Refrigerant circuit components shall include thermal expansion valves, distributor with nozzle, filter driers, and charging service valves on each circuit. Suction line shall have a refrigerant loop to prevent refrigerant drain back to the compressor. Suction piping shall be insulated with closed cell piping insulation.
 - K. Special Features:
 1. Supply Air Discharge Plenum:

Plenum shall be provided to permit free-blow horizontal air distribution with movable vanes to adjust airflow in horizontal and vertical direction. Plenum is field installed and shall be fully insulated.
2. Thermostats:

A complete line of thermostats shall be available to meet any application control requirements.
 3. Evaporator coil coating:

The coating shall be continuous and cover the whole fin surface, tubing, manifolds, and feeder lines if applicable. For evaporator coils with thermostatic expansion valve assemblies, valve body, head, and bulb shall be masked. A minimum of 2 in. shall be masked on all coil connection points. For expansion valve inlet piping if less than 6 in. total length, expansion valve distributor, and external equalizer line are not required to be coated.
 4. Winter start kit:

Will provide a bypass of low pressure switch on start-up for initial 90 seconds.

