

Technical Guide: CXF Series - Full Cased Microchannel Coils for Cooling Only

CXF - full-cased upflow or downflow

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6639263-UTG-A-0425

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2025-04-07

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Description

CXF indoor coils are specially designed for installation with our residential furnaces or modular air handlers as part of a matched air conditioning system.

Our residential indoor coils can be applied with indoor thermostatic expansion valves (TXVs) according to the application. Most indoor coil models are available with factory mounted TXVs. Refer to the *Technical Guide* for the matched outdoor unit to determine the required indoor expansion device for your specific application.

CXF series full-cased microchannel coils are suitable for upflow or downflow air conditioning applications. These coils cannot be used with heat pumps. The coil should not be removed from the case and used in an un-cased application.

Due to continuous product improvement, specifications are subject to change without notice. Visit us on the web at www.simplygettingthejobdone.com. Additional rating information can be found at www.ahridirectory.org.

This document is only for distribution use - it is not to be used at point of retail sale.

Certification



Assembled at a facility with an ISO 9001:2015-certified Quality Management System
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Features

Rigid case construction

The rigid case construction provides structural support and eliminates screw heads protruding from the side of the cabinet that could damage property during installation.

Cabinet

The cabinet is constructed of heavy gauge galvanized steel with a primer and finish coat that provides a high-quality corrosion resistant finish.

Foil-faced insulation

The cabinet is insulated with a single piece of cleanable foil-faced insulation. The cabinet is designed so that all edges of the insulation are contained.

Compact cabinet

With the coil and access doors removed, the cabinet has a 20.5 in. casing depth in all models, allowing ease of access in attics and applications where space is constrained.

Thermoset drain pan

The drain pan is corrosion and UV resistant with a positive slope for proper drainage. The low water retention design maximizes indoor air quality and consumer comfort.

Low leakage cabinet design

Fully gasketed doors minimize air leakage to no more than 2% when measured at 1.0 in. W.C. external static pressure, minimizing conditioned air leakage and infiltration.

Duct flange

An integral duct flange is part of the coil casing for easy installation.

TXV

All models come with factory-installed TXVs. They use Chatleff fittings, and no brazing is required.

RDS

Only 3.5 ton and larger units come with a factory-installed RDS.

Accessories

Refer to the *Price Manual* for specific model numbers.

TXV kits

TXV kits are available for flex coil applications with R-454B refrigerant. All TXV kits are non-braze, bolt-on connections including the valve assembly and equalizer tube. Do not use an orifice or any other metering device in conjunction with the TXV.

A2L refrigerant detection system (RDS) kit S1-2AC06700124

The A2L RDS kit for coils detects any A2L leakage and ensures the safe operation of the equipment. Use the A2L RDS kit with CXF coil models that do not have a factory-installed RDS.

A2L safety considerations



**Refrigerant
Safety Group
A2L**

⚠ CAUTION

Risk of fire

This unit uses a mildly flammable (A2L) refrigerant. The unit must only be repaired or serviced by trained service personnel. Before attempting to repair or service the unit, consult the *Installation Manual*. Follow all safety precautions.

⚠ WARNING

If the unit must be installed in a residence with a minimum room area less than what is determined to be the minimum from [Table 1](#), then that room must also not have any continuously operating open flames or other potential ignition sources. A flame-producing device may be present if that device is provided with an effective flame arrest.

Table 1: Minimum room area

System charge (lb -oz)	Minimum total conditioned room area (ft ²) (Z)	Minimum total conditioned room area (m ²) (Y)	Minimum airflow (CFM)
4-0	120	11.14	216
4-4	127	11.84	230
4-8	135	12.54	244
4-12	142	13.23	257
5-0	150	13.93	271
5-4	157	14.63	284
5-8	165	15.32	298
5-12	172	16.02	311
6-0	180	16.72	325
6-4	187	17.41	338
6-8	195	18.11	352
6-12	202	18.81	365
7-0	210	19.50	379
7-4	217	20.20	392
7-8	225	20.90	406
7-12	232	21.59	419
8-0	240	22.29	433
8-4	247	22.99	446
8-8	255	23.68	460
8-12	262	24.38	474
9-0	270	25.08	487
9-4	277	25.77	501
9-8	285	26.47	514
9-12	292	27.17	528
10-0	300	27.86	541
10-4	307	28.56	555
10-8	315	29.25	568
10-12	322	29.95	582
11-0	330	30.65	595
11-4	337	31.34	609
11-8	345	32.04	622

Table 1: Minimum room area

System charge (lb -oz)	Minimum total conditioned room area (ft ²) (Z)	Minimum total conditioned room area (m ²) (Y)	Minimum airflow (CFM)
11-12	352	32.74	636
12-0	360	33.43	649
12-4	367	34.13	663
12-8	375	34.83	676
12-12	382	35.52	690
13-0	390	36.22	704
13-4	397	36.92	717
13-8	405	37.61	731
13-12	412	38.31	744
14-0	420	39.01	758
14-4	427	39.70	771
14-8	435	40.40	785
14-12	442	41.10	798
15-0	450	41.79	812
15-4	457	42.49	825
15-8	465	43.19	839
15-12	472	43.88	852
16-0	480	44.58	866
16-4	487	45.28	879
16-8	495	45.97	893
16-12	502	46.67	906
17-0	510	47.37	920
17-4	517	48.06	934
17-8	525	48.76	947
17-12	532	49.45	961
18-0	540	50.15	974
18-4	547	50.85	988
18-8	555	51.54	1001
18-12	562	52.24	1015
19-0	570	52.94	1028
19-4	577	53.63	1042
19-8	585	54.33	1055
19-12	592	55.03	1069
20-0	600	55.72	1082
20-4	607	56.42	1096
20-8	615	57.12	1109
20-12	622	57.81	1123
21-0	630	58.51	1136

ⓘ Note:

- Minimum total conditioned room area refers to the combined area of all air conditioned rooms in the residence.

If the system charge is not listed in the above table, use the formulas below to calculate the respective values:

- Minimum conditioned room area (ft²) = system charge x 29.903
- Minimum conditioned room area (m²) = system charge x 2.786
- Minimum system airflow (CFM) = system charge x 54.117

Nomenclature

Table 2: Nomenclature

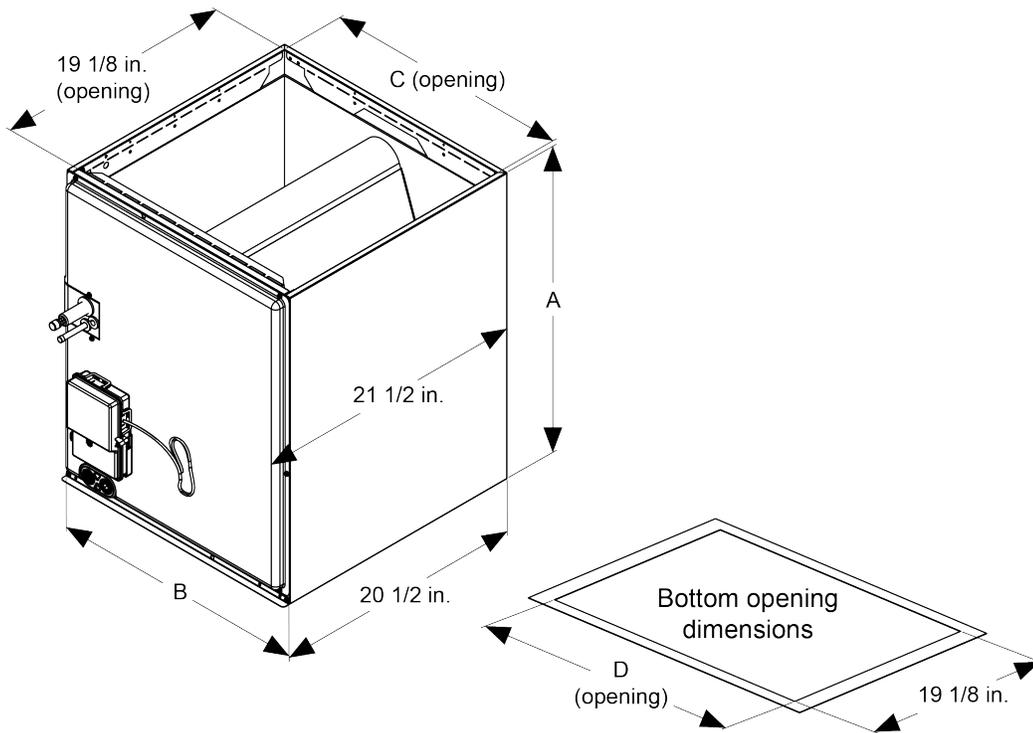
Number	Category	Option	Description
1	Product type	C	Coil (indoor)
2	Coil type	T	A coil
		S	Slab coil
		X	Microchannel heat exchanger (MCHX) coil
3	Configuration	F	Full case upflow or downflow
		H	Horizontal cased
		U	Uncased upflow or downflow
		D	Horizontal duct
		M	Multi-position cased
4, 5	Nominal capacity	18	1.5 ton
		24	2 ton
		30	2.5 ton
		36	3 ton
		42	3.5 ton
		48	4 ton
		60	5 ton
6	Cabinet	A	14.5 in.
		B	17.5 in.
		C	21 in.
		D	24.5 in.
7	Refrigerant	5	R454B
8	Metering device	A-W	TXV
		1-9	EEV
		X	No valve
9	Slab size	A	2R-14-18
		B	2R-16-18
		C	2R-20-18
		D	3R-20-14
		E	3R-22-14
		F	3R-24-14
		G	3R-28-12
		H	3R-32-12
		J	4R-28-12
10	Accessories	S	A2L sensor
		N	None (no sensor)
11	Generation (major revision)	1	First generation
		2	Second generation
		3	Third generation
		4	Fourth generation
12	Style letter (minor revision) not used for ordering	A	Style A
		B	Style B
		C	Style C
		D	Style D

Table 3: Model nomenclature example

Number	1	2	3	4, 5	6	7	8	9	10	11	12
Option	C	X	F	18	A	5	A	A	N	1	A
Example: The CXF18A5AAN1A indoor coil is a fully cased microchannel heat exchanger (MCHX) coil and configured for upflow or downflow. The nominal capacity is 1.5 ton. The cabinet size is 14.5 in., R-454B refrigerant is in use, and a TXV metering device is installed. The slab size is 2R-14-18. An A2L sensor is not installed. CXF18A5AAN1A is a first generation, style-A model.											

Dimensions: CXF coils

Figure 1: Dimensions - CXF coils - upflow or downflow full-cased coil



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See [Table 4](#) for dimensions.

Table 4: Dimensions - CXF coil - upflow or downflow full cased coil

Model	Dimensions				Weight		Refrigerant connections line size			
	Height	Width	Opening widths		Shipping (lb)	Operating (lb)	Metering device	Liquid (in.)	Vapor (in.)	
	A (in.)	B (in.)	C (in.)	D (in.)						
CXF18A5A1N1	19 1/2	14 1/2	13 1/2	13 1/2	28	27	TXV	3/8	3/4	
CXF18B5A1N1	19	17 1/2	16 1/2	16 1/2	29	28	TXV			
CXF24A5A2N1	19 1/2	14 1/2	13 1/2	13 1/2	30	29	TXV			
CXF24B5A2N1	19	17 1/2	16 1/2	16 1/2	33	32	TXV			
CXF30A5A4N1	22 7/8	14 1/2	13 1/2	13 1/2	38	37	TXV			
CXF30B5A3N1	23	17 1/2	16 1/2	16 1/2	38	37	TXV			
CXF30C5A3N1	23	21	20	20	44	42	TXV			
CXF36B5A4N1	23	17 1/2	16 1/2	16 1/2	45	44	TXV			
CXF36B5C4N1	23	17 1/2	16 1/2	16 1/2	45	44	TXV			
CXF36C5C4N1	23	21	20	20	45	43	TXV			
CXF42C5C5S1	25	21	20	20	50	48	TXV			7/8
CXF48C5A6S1	28 3/4	21	20	20	53	51	TXV			
CXF48C5C6S1	28 3/4	21	20	20	53	51	TXV			
CXF48D5C6S1	32 3/4	24 1/2	23 1/2	23 1/2	56	54	TXV			
CXF60C5C7S1	33	21	20	20	62	60	TXV			
CXF60D5C7S1	32 3/4	24 1/2	23 1/2	23 1/2	64	62	TXV			

Cooling capacity: CXF coils

Table 5: Cooling capacity - CXF (coil only)

Model	Rated CFM	Entering air dry bulb/wet bulb (°F)	MBH at evaporation temperature and corresponding R-454B pressure (°F/psig)			
			35/107.9	40/118.9	45/130.7	50/143.3
CXF18A5*1	600	85/72	43.9	39.0	33.7	27.8
		80/67	35.1	30.4	24.9	19.2
		75/62	27.4	22.5	17.2	9.9
		70/57	20.4	15.5	9.7	7.3
CXF18B5*1	600	85/72	43.9	39.0	33.7	27.8
		80/67	35.1	30.4	24.9	19.2
		75/62	27.4	22.5	17.2	9.9
		70/57	20.4	15.5	9.7	7.3
CXF24A5*2	800	85/72	53.9	48.0	41.2	33.9
		80/67	43.1	37.0	30.4	23.0
		75/62	33.4	27.3	20.7	12.3
		70/57	24.7	18.6	11.8	8.7
CXF24B5*2	800	85/72	53.9	48.0	41.2	33.9
		80/67	43.1	37.0	30.4	23.0
		75/62	33.4	27.3	20.7	12.3
		70/57	24.7	18.6	11.8	8.7
CXF30B5*3	1000	85/72	74.0	65.8	56.9	47.1
		80/67	59.2	51.0	42.1	32.2
		75/62	45.9	37.8	28.8	19.5
		70/57	34.1	25.9	16.2	12.3
CXF30C5*3	1000	85/72	74.0	65.8	56.9	47.1
		80/67	59.2	51.0	42.1	32.2
		75/62	45.9	37.8	28.8	19.5
		70/57	34.1	25.9	16.2	12.3
CXF30A5*4	1000	85/72	77.6	69.2	59.8	49.6
		80/67	62.2	53.6	44.4	33.9
		75/62	48.3	39.8	30.3	20.7
		70/57	35.9	27.1	16.8	12.8
CXF36B5*4	1200	85/72	99.6	88.8	77.0	63.6
		80/67	79.8	69.0	57.1	43.8
		75/62	62.0	51.2	39.2	26.5
		70/57	46.2	35.2	21.4	16.3
CXF36C5*4	1200	85/72	99.6	88.8	77.0	63.6
		80/67	79.8	69.0	57.1	43.8
		75/62	62.0	51.2	39.2	26.5
		70/57	46.2	35.2	21.4	16.3
CXF42C5*5	1400	85/72	132.2	117.9	102.2	84.2
		80/67	106.0	91.7	75.8	57.8
		75/62	82.5	68.1	51.9	28.3
		70/57	61.5	46.8	27.5	21.0
CXF48C5*6	1600	85/72	142.1	129.7	112.3	92.8
		80/67	116.3	100.8	83.2	63.5
		75/62	90.4	74.7	55.5	31.4
		70/57	67.4	50.8	30.4	23.1
CXF48D5*6	1600	85/72	142.1	129.7	112.3	92.8
		80/67	116.3	100.8	83.2	63.5
		75/62	90.4	74.7	55.5	31.4
		70/57	67.4	50.8	30.4	23.1

Table 5: Cooling capacity - CXF (coil only)

Model	Rated CFM	Entering air dry bulb/wet bulb (°F)	MBH at evaporation temperature and corresponding R-454B pressure (°F/psig)			
			35/107.9	40/118.9	45/130.7	50/143.3
CXF60C5*7	1800	85/72	138.4	125.3	108.7	90.4
		80/67	112.1	97.6	80.7	62.2
		75/62	87.4	72.2	55.5	36.1
		70/57	65.0	49.4	31.1	23.8
<p>① Note: The table shows coil only data. Refer to the condensing unit or heat pump <i>Technical Guide</i> for the total cooling capacity and sensible capacity.</p>						

Application factors

Table 6: Application factors - rated CFM versus actual CFM - CXF coils

Percentage of rated airflow (CFM)	80%	90%	100%	110%	120%
Capacity factor	0.96	0.98	1	1.02	1.03

① **Note:** Do not exceed the minimum and maximum CFM limits shown in [Airflow data: CXF coils](#).

Application limitations

Adhere to the following:

- These units must be installed in accordance with all national and local safety codes.
- Airflow must be within the minimum and maximum limits approved for electric heat, indoor coils, and outdoor units.

Coil technical data: CXF coils

Table 7: Coil technical data - CXF coil

Model	Application	Refrig. conn. types	Face area (sq. ft.)	Fins per in.	Coil size	Fin type	Shipping weight (lb)	Installed weight (lb)
CXF18A5A1N1	Cooling	Sweat	3.1	20	(2) 13 x 17	Lanced	28	27
CXF18B5A1N1	Cooling	Sweat	3.1	20	(2) 13 x 17	Lanced	29	28
CXF24A5A2N1	Cooling	Sweat	3.1	20	(2) 13 x 17	Lanced	30	29
CXF24B5A2N1	Cooling	Sweat	3.1	20	(2) 13 x 17	Lanced	33	32
CXF30A5A4N1	Cooling	Sweat	3.8	18	(2) 16 x 17	Lanced	38	37
CXF30B5A3N1	Cooling	Sweat	3.4	20	(2) 14 x 17	Lanced	38	37
CXF30C5A3N1	Cooling	Sweat	3.4	20	(2) 14 x 17	Lanced	44	42
CXF36B5A4N1	Cooling	Sweat	3.8	18	(2) 16 x 17	Lanced	45	44
CXF36B5C4N1	Cooling	Sweat	3.8	18	(2) 16 x 17	Lanced	45	44
CXF36C5C4N1	Cooling	Sweat	3.8	18	(2) 16 x 17	Lanced	45	43
CXF42C5C5S1	Cooling	Sweat	4.4	18	(2) 19 x 17	Lanced	50	48
CXF48C5A6S1	Cooling	Sweat	5.5	18	(2) 23 x 17	Lanced	53	51
CXF48C5C6S1	Cooling	Sweat	5.5	18	(2) 23 x 17	Lanced	53	51
CXF48D5C6S1	Cooling	Sweat	5.5	18	(2) 23 x 17	Lanced	56	54
CXF60C5C7S1	Cooling	Sweat	6.3	16	(2) 27 x 17	Lanced	62	60
CXF60D5C7S1	Cooling	Sweat	6.3	16	(2) 27 x 17	Lanced	64	62

Airflow data: CXF coils

Table 8: Static pressure vs airflow based on wet coil

Models	Airflow	Static
Upflow A type		
CXF18A5*1	525	0.10
	600	0.12
	675	0.14
CXF18B5*1	525	0.09
	600	0.11
	675	0.13
CXF24A5*2	700	0.17
	800	0.20
	900	0.24
CXF24B5*2	700	0.13
	800	0.16
	900	0.19
CXF30B5*3	875	0.19
	1000	0.24
	1125	0.28
CXF30C5*3	875	0.20
	1000	0.26
	1125	0.32
CXF30A5*4	875	0.19
	1000	0.24
	1125	0.29
CXF36B5*4	1050	0.22
	1200	0.27
	1350	0.33
CXF36C5*4	1050	0.17
	1200	0.21
	1350	0.25
CXF42C5*5	1225	0.22
	1400	0.27
	1575	0.33
CXF48C5*6	1400	0.22
	1600	0.28
	1800	0.35
CXF48D5*6	1400	0.17
	1600	0.21
	1800	0.26

Table 8: Static pressure vs airflow based on wet coil

Models	Airflow	Static
Upflow A type		
CXF60C5*7	1550	0.18
	1800	0.23
	2050	0.28

Table 9: CFM tonnage

Tonnage	350	400	450
1.0	350	400	450
1.5	525	600	675
2.0	700	800	900
2.5	875	1000	1125
3.0	1050	1200	1350
3.5	1225	1400	1575
4.0	1400	1600	1800
5.0	1550	1800	2050