

IZFI Condensing Unit

For Refrigeration Applications (7.5-20 HP) - Southeast Asia



Product catalogue

COPELAND[™]


EMERSON[™]

IZFI Condensing units for low temperature refrigeration applications

The IZFI scroll condensing unit platform has been developed specifically for low temperature refrigeration applications. It is designed with Emerson's highly efficient ZFI* KQE vapor injection scroll compressor, effectively delivering 45% higher efficiencies compared to any single-stage condensing unit available in the market today. The IZFI scroll condensing units are factory assembled and fully-featured using Emerson branded line components.

The units are equipped with CoreSense technology for protection and communication. CoreSense senses the discharge line temperature and regulates vapor injection to protect the condensing unit from overheating. LED display alerts the user of discharge line temperature sensor status and electronic expansion valve operation. Vapor injection regulation through CoreSense technology results in better condensing unit reliability at low temperature operation and higher system efficiencies.



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Key features

Vapor injection technology for 45% higher efficiency

- Vapor injection allows ZFI* KQE compressors to perform at higher efficiencies than single-stage compressors at low temperature operation.
- Vapor injection improves system capacity by 50% and efficiency by 45% on average.

Scroll efficiency and reliability

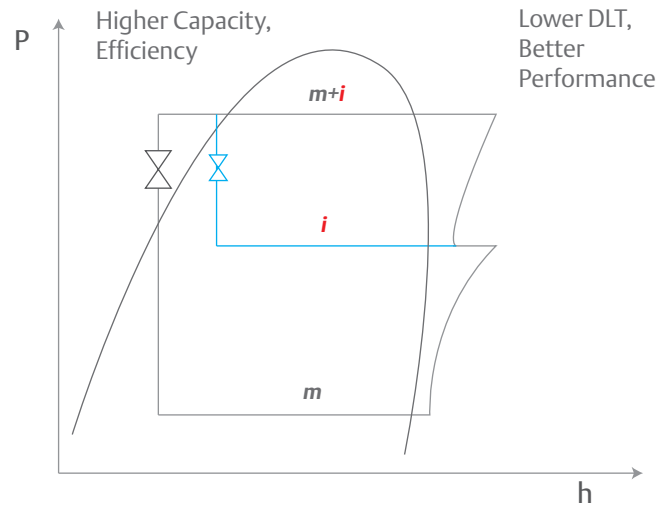
- COP improvement reduces energy consumption by up to 20%.
- 70% fewer moving parts than reciprocating.
- Superior liquid handling.

Smooth scroll movement

- Low sound and vibration leading to reliable & peaceful operation.
- No complex internal suction and discharge valves for quieter operation and higher reliability.

CoreSense™ for Copeland scroll compressors

- High discharge line temperature protection through onboard control for vapor injection.
- Direct communication function by using LED display alerts.
- Low temperature operation reliability due to vapor injection technology.



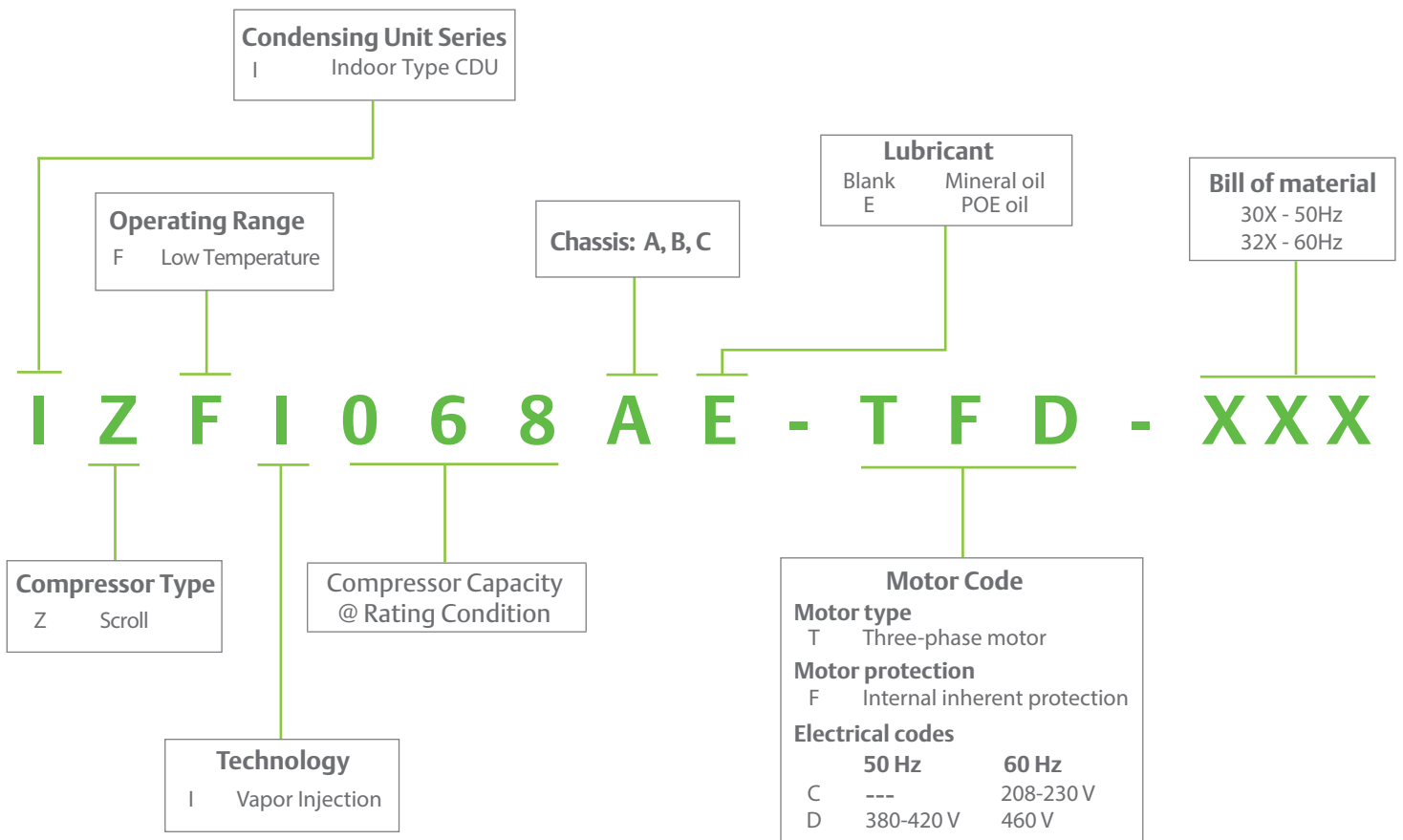
Wide range operating envelope

- Designed for low temperature operation.
- Designed for tropical ambient operation.

Save on applied costs and assembly time

- IZFI condensing units come fully assembled with full scope of supply (e.g. filter drier, sight glass, liquid line solenoid valve, electrical contactor).
- Emerson quality built condensing unit.

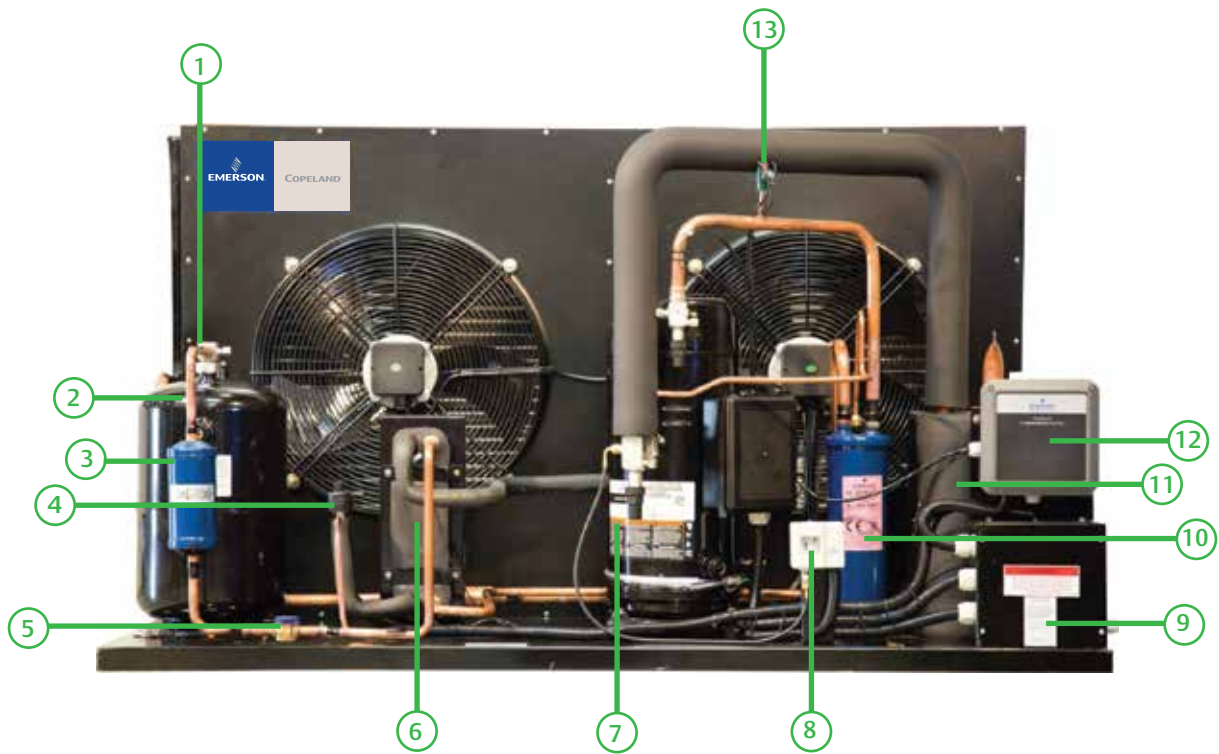
Nomenclature



Bill of material

Standard features	300/320
Compressor - rotalock connection	✓
PHE/economizer	✓
Fan motor	✓
Receiver	✓
Accumulator	✓
Sight glass / moisture indicator	✓
Filter drier	✓
Adjustable dual pressure switch	✓
Oil separator	✓
Crankcase heater	✓
CoreSense™	✓
Compressor contactor	✓
Electrical box	✓

Layout



Item	Description	Item	Description
1	Rotalock connection with schraeder valve	8	¹ Adjustable LP switch
2	Receiver	9	Terminal box
3	Filter drier	10	Oil separator
4	EXV	11	Accumulator
5	Sight glass	12	CoreSense™
6	PHE / economizer	13	² Fixed HP cut out
7	ZFI Scroll compressor		

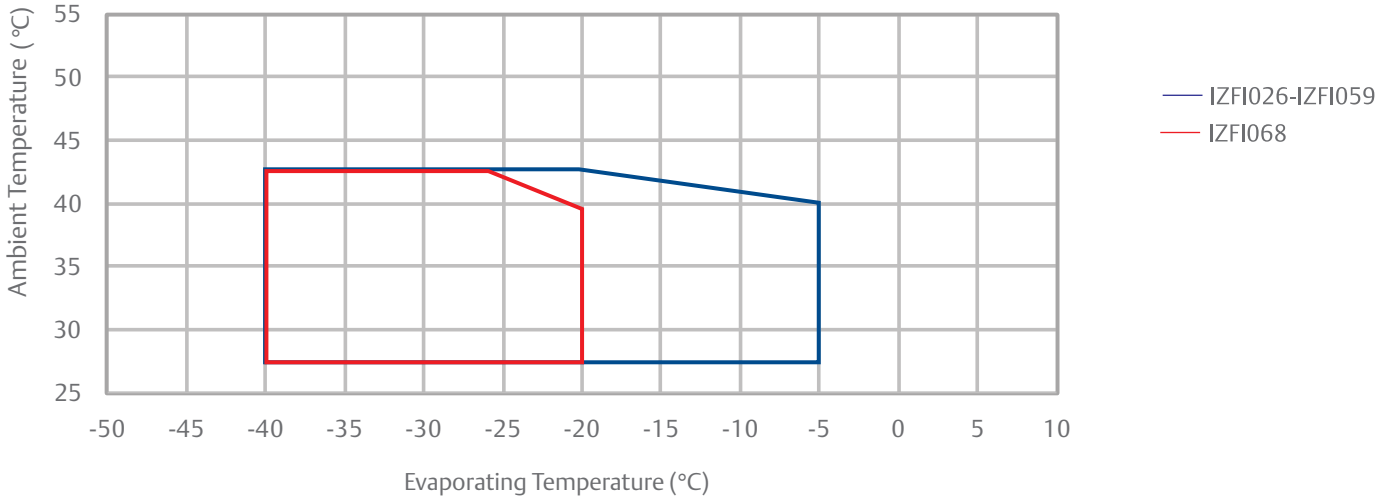
Note:

^{1,2}Adjustable LP switch and fixed HP cut out have been replaced with an adjustable dual pressure switch.

Operating envelopes

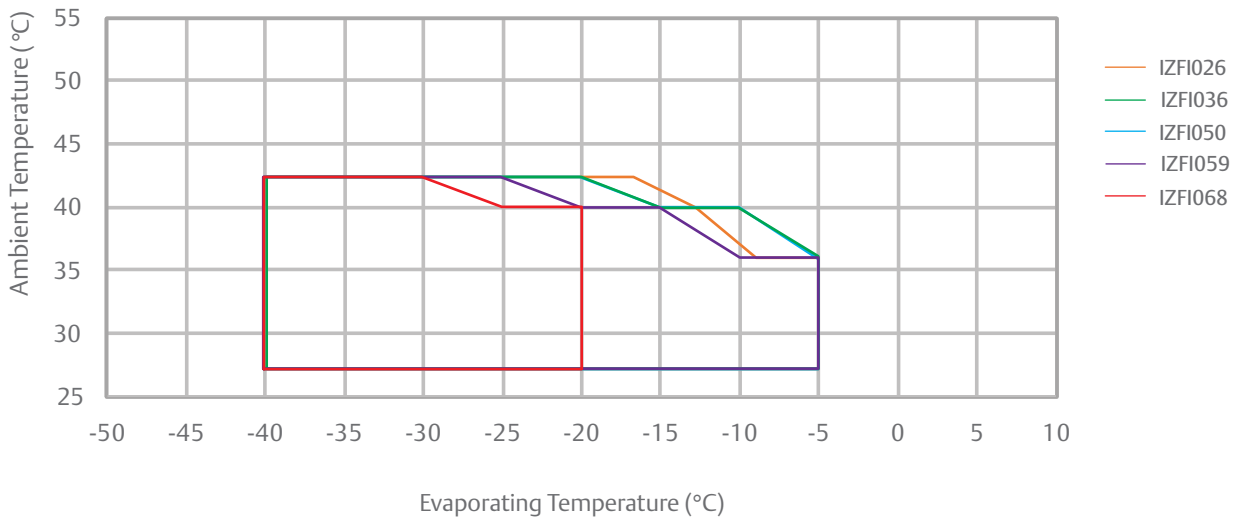
R404A

50Hz



R404A

60Hz



Performance data

R404A

50Hz

R-404A / 3 phase				Evaporating Temperature (°C)							
Model	Nominal HP		Ambient Temperature (°C)	-40	-35	-30	-25	-20	-15	-10	-5
IZFI026AE	7.5	Q	27	5.11	6.21	7.46	8.88	10.50	12.33	14.41	16.74
			32	5.09	6.13	7.31	8.67	10.23	12.01	14.02	16.28
			38	5.08	6.03	7.13	8.41	9.88	11.57	13.49	15.66
			43	5.08	5.95	6.96	8.17	9.56	11.17	13.01	15.09
		P	27	3.86	4.10	4.36	4.62	4.90	5.20	5.51	5.85
			32	4.20	4.48	4.76	5.06	5.37	5.70	6.05	6.42
			38	4.60	5.02	5.35	5.69	6.04	6.41	6.80	7.22
			43	5.20	5.57	5.94	6.33	6.72	7.13	7.57	8.03

IZFI036BE	10	Q	27	6.44	7.91	9.58	11.43	13.44	15.61	17.94	20.42
			32	6.33	7.74	9.33	11.11	13.04	15.13	17.39	19.76
			38	6.25	7.55	9.04	10.70	12.53	14.52	16.64	18.92
			43	6.23	7.43	8.81	10.37	12.09	13.97	16.00	18.14
		P	27	4.61	4.95	5.29	5.63	5.98	6.32	6.68	7.03
			32	4.95	5.36	5.76	6.15	6.53	6.92	7.29	7.66
			38	5.38	5.89	6.37	6.84	7.29	7.73	8.14	8.55
			43	5.76	6.36	6.93	7.47	7.98	8.48	8.96	9.40

IZFI050CE	15	Q	27	9.02	10.64	12.74	15.24	18.06	21.14	24.37	27.70
			32	8.79	10.37	12.42	14.85	17.59	20.55	23.68	26.85
			38	8.45	10.01	12.00	14.35	16.98	19.84	22.80	25.83
			43	8.12	9.66	11.61	13.89	16.45	19.20	-	-
		P	27	6.07	6.54	7.01	7.48	7.96	8.49	9.04	9.66
			32	6.59	7.09	7.60	8.11	8.64	9.20	9.81	10.46
			38	7.29	7.84	8.39	8.95	9.53	10.15	10.80	11.52
			43	7.95	8.53	9.12	9.73	10.36	11.02	-	-

IZFI059CE	18	Q	27	10.92	12.87	15.40	18.39	21.76	25.40	29.23	33.13
			32	10.62	12.53	15.00	17.90	21.16	24.69	28.35	32.09
			38	10.19	12.07	14.47	17.28	20.42	23.78	27.27	30.79
			43	9.78	11.63	13.97	16.71	19.74	-	-	-
		P	27	7.37	7.97	8.59	9.22	9.87	10.57	11.34	12.19
			32	8.03	8.67	9.34	10.02	10.73	11.49	12.31	13.22
			38	8.91	9.61	10.34	11.09	11.88	12.70	13.59	14.55
			43	9.73	10.49	11.27	12.09	12.92	-	-	-

IZFI068CE	20	Q	27	12.32	14.53	17.36	20.71	24.47	-	-	-
			32	11.98	14.13	16.89	20.14	23.78	-	-	-
			38	11.48	13.58	16.26	19.41	22.90	-	-	-
			43	10.99	13.08	15.69	-	-	-	-	-
		P	27	8.58	9.31	10.07	10.85	11.67	-	-	-
			32	9.36	10.14	10.96	11.81	12.71	-	-	-
			38	10.41	11.27	12.16	13.10	14.08	-	-	-
			43	11.40	12.33	13.28	-	-	-	-	-

Q: Cooling Capacity (kW), P: Total Power Input (kW), Return Gas Temperature: 18.30 °C

Performance data

R404A

60Hz

R-404A / 3 phase				Evaporating Temperature (°C)							
Model	Nominal HP		Ambient Temperature (°C)	-40	-35	-30	-25	-20	-15	-10	-5
IZFI026AE	7.5	Q	27	6.20	7.64	9.20	10.91	12.79	14.86	17.13	19.64
			32	6.06	7.45	8.96	10.59	12.39	14.35	16.51	18.88
			38	5.84	7.18	8.60	10.14	11.82	13.65	15.67	17.88
			43	5.61	6.89	8.23	9.69	11.26	12.98	14.87	-
		P	27	4.83	5.20	5.59	6.01	6.46	6.93	7.44	8.00
			32	5.19	5.62	6.07	6.53	7.02	7.53	8.08	8.67
			38	5.72	6.24	6.75	7.29	7.84	8.41	9.01	9.66
			43	6.28	6.87	7.46	8.06	8.67	9.31	9.98	-

IZFI036BE	10	Q	27	7.65	9.42	11.32	13.46	15.91	18.71	21.96	25.71
			32	7.55	9.19	11.00	13.03	15.36	18.07	21.21	24.82
			38	7.54	9.02	10.66	12.53	14.70	17.23	20.20	23.64
			43	7.68	8.98	10.45	12.15	14.17	16.53	-	-
		P	27	6.08	6.57	7.02	7.47	7.96	8.53	9.20	10.04
			32	6.49	7.03	7.54	8.06	8.61	9.25	10.00	10.90
			38	7.04	7.67	8.25	8.85	9.47	10.18	11.02	12.01
			43	7.60	8.27	8.92	9.57	10.27	11.04	-	-

IZFI050CE	15	Q	27	10.64	12.55	15.02	17.95	21.27	24.85	28.61	32.48
			32	10.36	12.24	14.64	17.50	20.70	24.15	27.79	31.47
			38	9.95	11.79	14.13	16.88	19.97	23.28	26.75	30.23
			43	9.56	11.38	13.67	16.34	19.33	-	-	-
		P	27	7.75	8.32	8.90	9.48	10.09	10.74	11.44	12.22
			32	8.38	8.99	9.61	10.25	10.91	11.60	12.36	13.18
			38	9.22	9.89	10.56	11.26	11.98	12.74	13.57	14.45
			43	10.00	10.73	11.46	12.20	12.98	-	-	-

IZFI059CE	18	Q	27	13.09	15.44	18.44	21.99	26.00	30.30	34.78	39.35
			32	12.72	15.01	17.95	21.41	25.27	29.42	33.72	38.05
			38	12.19	14.44	17.29	20.63	24.35	28.32	-	-
			43	11.68	13.89	16.68	19.93	-	-	-	-
		P	27	9.51	10.27	11.04	11.85	12.71	13.63	14.62	15.73
			32	10.31	11.13	11.98	12.85	13.78	14.77	15.83	17.00
			38	11.39	12.29	13.22	14.18	15.20	16.28	-	-
			43	12.41	13.37	14.37	15.42	-	-	-	-

IZFI068CE	20	Q	27	14.72	17.34	20.69	24.65	29.08	-	-	-
			32	14.28	16.84	20.13	23.95	28.24	-	-	-
			38	13.66	16.17	19.35	23.05	27.17	-	-	-
			43	13.06	15.53	18.63	-	-	-	-	-
		P	27	10.98	11.90	12.85	13.86	14.93	-	-	-
			32	11.93	12.93	13.98	15.05	16.22	-	-	-
			38	13.23	14.32	15.47	16.66	17.94	-	-	-
			43	14.44	15.62	16.85	-	-	-	-	-

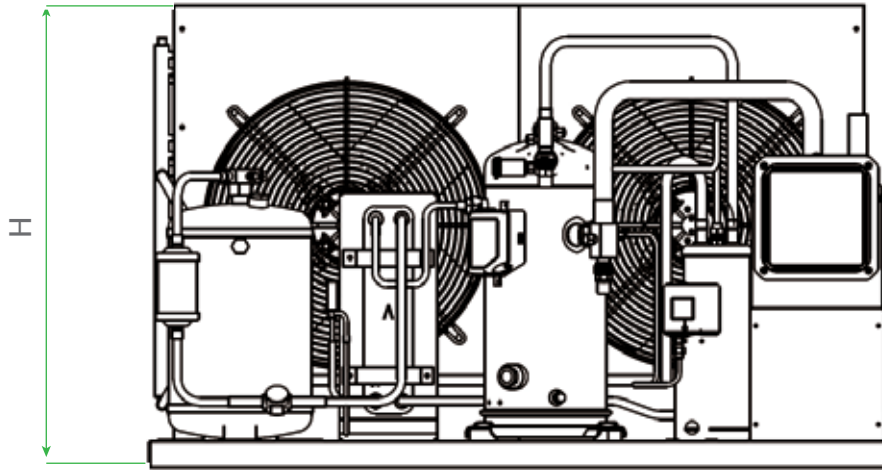
Q: Cooling Capacity (kW), P: Total Power Input (kW), Return Gas Temperature: 18.30 °C

Technical data

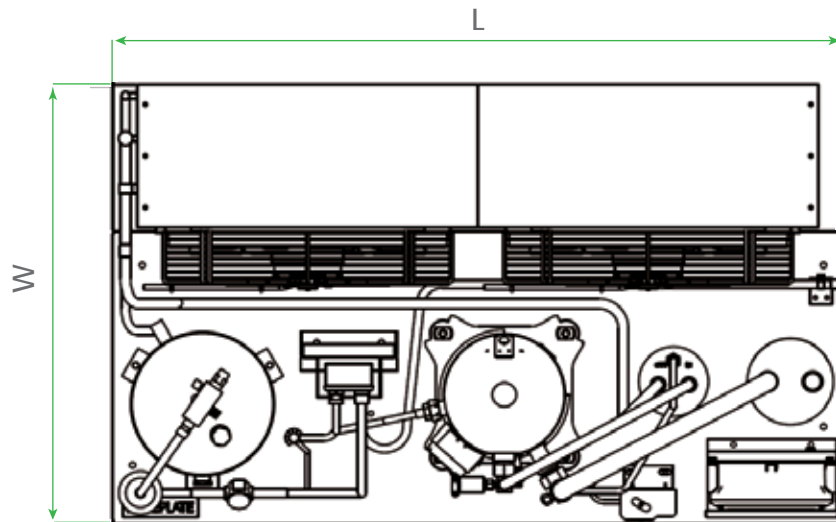
Model Name		Vapor Injection				
		IZFI026AE	IZFI036BE	IZFI050CE	IZFI059CE	IZFI068CE
Compressor Model		ZFI26KQE	ZFI36KQE	ZFI50KQE	ZFI59KQE	ZFI68KQE
Motor Code	50Hz	TFD	TFD	TFD	TFD	TFD
	60Hz	TFD/TFC	TFD/TFC	TFD/TFC	TFD/TFC	TFD/TFC
Receiver (Liters)		12	18	21	21	21
No. of Fans/ Fan Motor Power		2/470W	2/800W	2/800W	2/800W	2/800W
Air Flow in m ³ /hr	50Hz	4111	6300	7500	7500	7500
	60Hz	4111	6300	7400	7400	7400
Return Gas Line Size (in)		1 1/8	1 3/8	1 5/8	1 5/8	1 5/8
Liquid Line Size (in)		1/2	1/2	5/8	5/8	5/8
Voltage	50Hz	380-420				
	60Hz	460/208-230				
Locked Rotor Amperes	50Hz	74	102	118	118	139
	60Hz	75/156	99/224	125/239	125/248	139/338.7
Rated Load Amperes	50Hz	12.3	14.6	21.7	23.0	20.2
	60Hz	12.3/23.9	14.6/31.3	21.7/41.2	23.0/49.5	20.2/57.1
Maximum Operating Current	50Hz	13.7	16.0	25.0	29.0	30.0
	60Hz	13.7/26.0	16.0/36.7	25.0/51.4	29.0/57.7	30.0/67.9
Net Weight (kg Including Oil)		126	141	247	247	250
Oil Type		POE				

Dimensional drawings

Front View



Top View



	IZFI026AE	IZFI036BE	IZFI050CE	IZFI059CE	IZFI068CE
Chassis Size (LxWxH)cm	113 x 68 x 70	133 x 82 x 83	164 x 82 x 95	164 x 82 x 95	164 x 82 x 95

Typical liquid line temperature

R404A

Evaporating Temperature (°C)	Ambient Temperature (°C)			
	27	32	38	43
-40	-17.1	-14.6	-11.9	-9.2
-35	-12.8	-10.2	-7.4	-4.7
-30	-8.4	-5.7	-3.0	-0.2
-25	-4.0	-1.2	-1.6	-4.3
-20	0.6	3.3	6.0	8.6
-15	6.7	8.8	11.4	14.1
-10	10.7	12.6	14.9	17.3
-5	14.4	16.0	17.9	---

Note: Liquid line temperatures in the above table should be used for expansion valve sizing.



General information

Technical data are correct at the time of printing. Updates may occur, and should you need confirmation of a specific value, please contact Emerson clearly stating the information required.

Emerson cannot be held responsible for errors in capacities, dimensions, etc., stated herein. Products, specifications and data in this literature are subject to change without notice.

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The suitability for this has to be assured from the plant manufacturer, which may include making appropriate tests.

Note:

The components listed in this catalogue are not released for use with caustic, poisonous or flammable substances. Emerson cannot be held responsible for any damage caused by using these substances.

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