

Copeland Scroll™ Air-cooled Condensing Units

Low Temperature Refrigeration Applications
Range From 7.5 To 15 HP



About Emerson Climate Technologies

Emerson is a global company that brings together technology and engineering to provide innovative solutions for our customers in a wide range of industrial, commercial and consumer markets. Our priority is to design, produce and deliver products, systems and solutions that make people's lives better.

Emerson Climate Technologies is the world's leading provider of heating ventilation, air conditioning and refrigeration solutions, for both residential and commercial applications. The company is synonymous with innovation, reliability, energy efficiency and commitment towards a safe and green environment.

Emerson's advanced compressors, condensing units, refrigeration components, control systems and electronic controls protect food quality while enabling operators to maximize equipment uptime and increase energy efficiency. Its integrated cold chain solutions assist retailers in food freshness preservation, transportation, refrigeration and marketing, making them the most preferred cold chain operations.

Pioneering Technologies For Best-In-Class Products

When it comes to new technologies that have set benchmarks for the industry, Emerson Climate Technologies has led from the front. For more than 80 years, Emerson has ceaselessly introduced innovative technologies and solutions to the HVACR market. From the first Semi-Hermetic and Hermetic Compressors in the 1940s and 1950s, to the high efficiency Discus™ Semi-Hermetic and Copeland Scroll™ Compressors of the 1980s and 1990s, Emerson has been the pioneer of the industry. Today, Emerson continues to build upon that success with new products such as the Copeland Scroll™ Fusion Semi-Hermetic Scroll and Stream™ line-up of Semi-Hermetic Reciprocating Compressors, both equipped with CoreSense™ technology for optimal compressor protection and system diagnostics. Through this, Emerson has developed an unequalled range of solutions for the refrigeration, heating and air conditioning markets.

KHZ* LVL Condensing Units For Low Temperature

The KHZ* LVL- 7.5 to 15HP CDU platform has been developed specifically for low temperature refrigeration applications. The condensing units are designed by integrating the highly efficient ZFI* KQE Vapor Injection compressor which delivers 20% higher efficiency compared to single stage compressors. The units are equipped with CoreSense to control the discharge line temperature using Vapor Injection thereby ensuring reliability at low temperature operation.

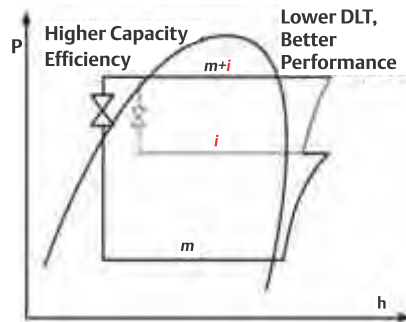
These condensing units are offered with full scope of supply and are manufactured at our Cold Chain & Distribution Center, Chakan, Pune. With this product range, we offer the widest range of Scroll Condensing Units from 2 to 15HP (ZXL, KHZ* LVL) for low temperature refrigeration applications. With local manufacturing & stocking, our customers will now be able to get the units with faster lead times and customized products according to their requirement. They feature excellent quality and are traditionally well known in the refrigeration industry.



Key Features

Vapor Injection Technology For 20% Higher Efficiency

- It allows ZFI* KQE compressors to perform higher efficiency than single-stage compressors at low temperature operation
- Improves system capacity by 40% and efficiency by 20% on average
- Low temperature operation reliability due to vapor injection technology



Scroll Efficiency and Reliability

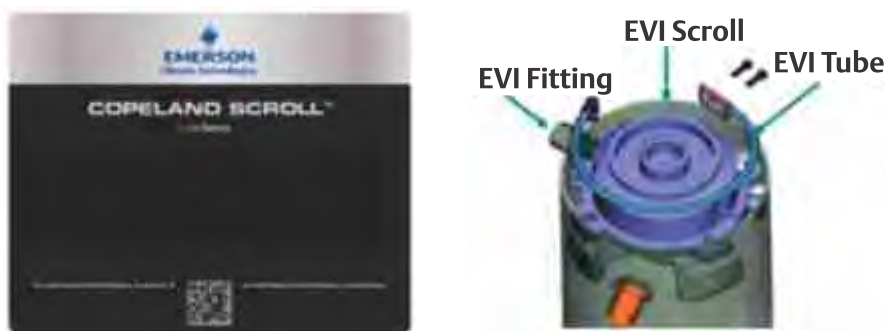
- COP improvement leads to annual electrical savings of 15–20% as compared with reciprocating systems
- 70% fewer moving parts than reciprocating
- Superior liquid handling

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

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



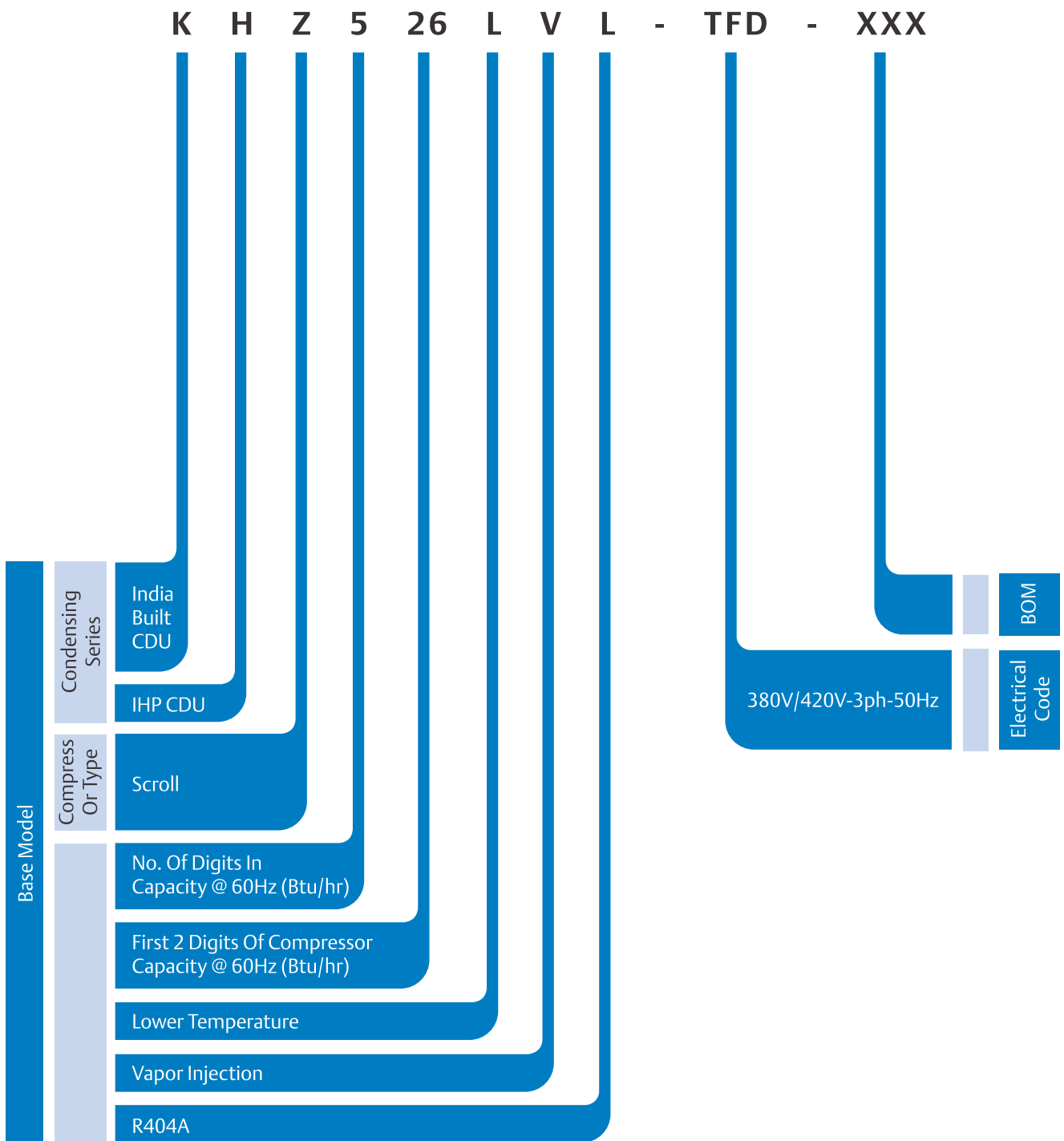
Wide Range Operating Envelope

- Designed for low temp. operation; from -40°C to -4°C evaporating temperature
- Designed for tropical ambient operation at 46°C
- Low temperature operation reliability ensured by CoreSense™

Save on Applied Costs and Assembly Time

- KHZ* LVL comes with full scope of supply (e.g. Filter Drier, Sight Glass and Moisture Indicator, Liquid Line Solenoid, Electrical Contactor) thus simplifying component sourcing
- Consistent quality achieved through factory built condensing unit

KHZ* LVL CDU – Nomenclature

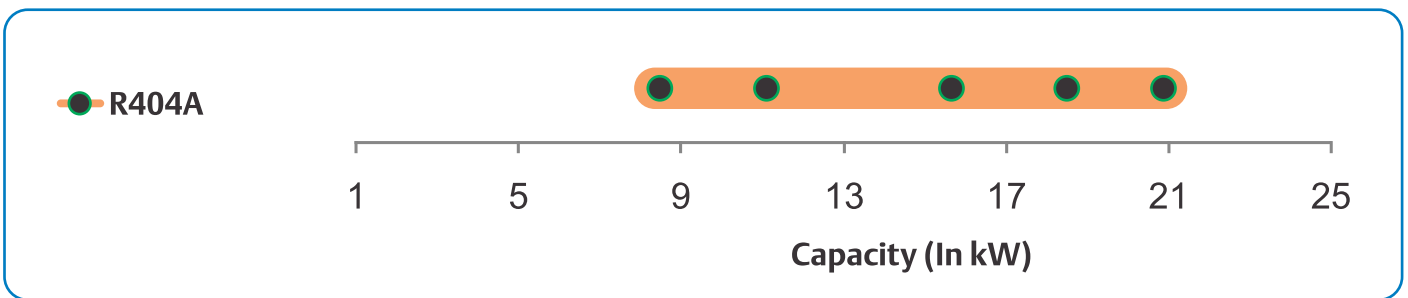


KHZ* LVL Copeland Scroll™ Indoor CDU

Standard Bill Of Material

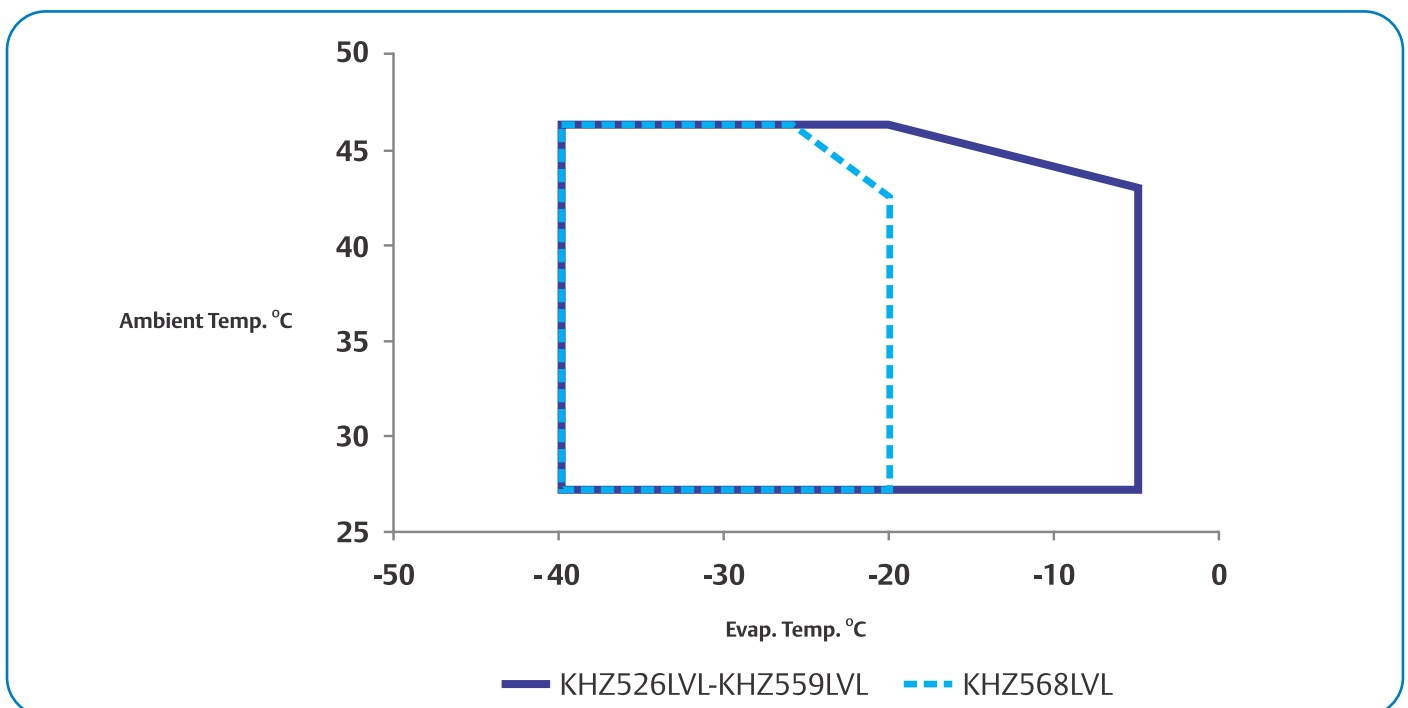
Standard BOM Content	300
Compressor - Rotalock Connection	✓
Economizer PHE Circuit	✓
Fan Motor	✓
Receiver	✓
Accumulator	✓
Sight Glass/Moisture Indicator	✓
Filter Drier	✓
Adjustable HP & Fixed HP	✓
Oil Separator	✓
Crankcase Heater*	✓
CoreSense™	✓
Compressor Contactor	✓
Electrical Box	✓

Product Range



Note: The above capacity data are at the following condition.
 Ambient Temp. +38°C, Evaporating Temp. - 25°C, Return Gas Temp. +18.3°C, Subcooling 2.8K

R404A Operating Envelope



Performance Data Capacity & Power (kW) at 50 Hz, TFD

R-404A / 3 phase			Evaporating Temperature (°C)											
Model	Nominal HP	Ambient Temp. (°C)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	7	
KHZ526LVL	7.5	Q	27	4.95	6.03	7.27	8.69	10.33	12.20	14.36	16.80	19.24	21.68	22.66
			32	4.92	5.94	7.11	8.48	10.05	11.88	13.97	16.37	18.77	21.17	22.13
			38	4.90	5.83	6.92	8.20	9.70	11.46	13.47	15.79	18.11	20.43	21.36
			43	4.89	5.74	6.75	7.96	9.38	11.06	13.01	15.27	17.53	19.79	20.69
			46	4.89	5.68	6.65	7.80	9.18	10.81	12.72	14.93	17.45	20.32	-
		P	27	3.87	4.07	4.27	4.47	4.69	4.91	5.14	5.39	5.64	5.89	5.99
			32	4.22	4.44	4.67	4.90	5.13	5.38	5.63	5.90	6.17	6.44	6.55
			38	4.72	4.98	5.24	5.50	5.76	6.04	6.31	6.61	6.91	7.21	7.33
			43	5.25	5.53	5.82	6.10	6.39	6.68	6.99	7.31	7.63	7.95	8.08
			46	5.62	5.92	6.22	6.52	6.82	7.14	7.46	7.80	8.15	8.54	-

KHZ536LVL	10	Q	27	6.41	7.82	9.49	11.34	13.34	15.44	17.62	19.85	-	-	-
			32	6.23	7.62	9.23	11.03	12.94	14.95	17.02	19.12	-	-	-
			38	6.00	7.34	8.90	10.60	12.41	14.30	16.23	18.18	-	-	-
			43	5.79	7.09	8.58	10.21	11.93	13.71	15.51	17.34	-	-	-
			46	6.08	7.44	9.01	10.75	12.60	14.52	16.50	18.50	-	-	-
		P	27	4.71	4.97	5.25	5.54	5.84	6.15	6.48	6.83	-	-	-
			32	5.10	5.39	5.71	6.04	6.38	6.73	7.11	7.50	-	-	-
			38	5.61	5.96	6.34	6.73	7.13	7.54	7.98	8.44	-	-	-
			43	6.08	6.49	6.92	7.37	7.83	8.31	8.80	9.33	-	-	-
			46	6.38	6.83	7.30	7.79	8.29	8.81	9.35	9.92	-	-	-

KHZ550LVL	15	Q	27	8.60	10.48	12.64	15.11	17.92	21.12	24.74	28.82	-	-	-
			32	8.40	10.24	12.33	14.70	17.40	20.46	23.92	27.83	-	-	-
			38	8.14	9.91	11.91	14.15	16.70	19.59	22.85	26.54	-	-	-
			43	7.89	9.60	11.51	13.64	16.06	18.79	21.89	25.39	-	-	-
			46	7.73	9.40	11.25	13.32	15.65	18.28	21.28	24.66	-	-	-
		P	27	6.05	6.45	6.83	7.21	7.59	7.98	8.40	8.85	-	-	-
			32	6.58	7.01	7.42	7.83	8.24	8.67	9.12	9.61	-	-	-
			38	7.32	7.78	8.23	8.67	9.12	9.58	10.07	10.60	-	-	-
			43	8.01	8.50	8.98	9.45	9.93	10.42	10.94	11.50	-	-	-
			46	8.47	8.98	9.47	9.96	10.45	10.96	11.50	12.08	-	-	-

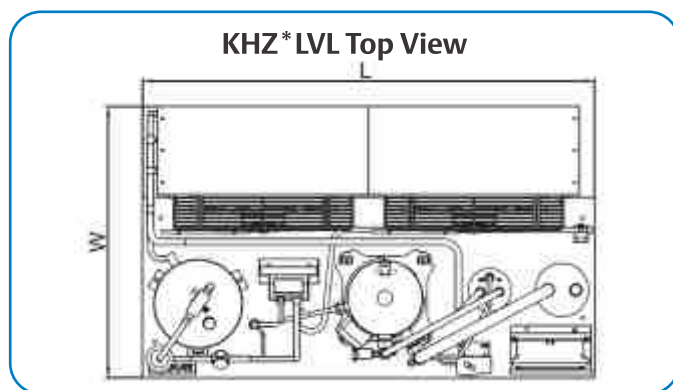
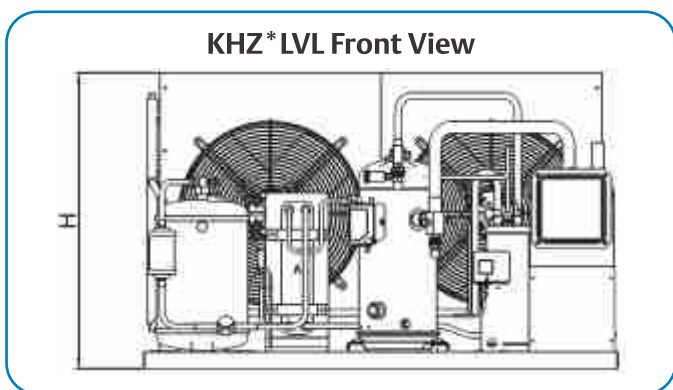
KHZ559LV	18	Q	27	10.29	12.59	15.21	18.21	21.65	25.58	30.04	35.09	-	-	-
			32	10.02	12.26	14.81	17.71	21.03	24.81	29.11	33.98	-	-	-
			38	9.66	11.83	14.27	17.05	20.21	23.81	27.91	32.56	-	-	-
			43	9.34	11.44	13.79	16.44	19.46	22.91	26.83	31.29	-	-	-
			46	9.14	11.19	13.48	16.06	18.99	22.34	-	-	-	-	-
		P	27	7.27	7.78	8.28	8.77	9.27	9.79	10.36	11.00	-	-	-
			32	7.92	8.48	9.02	9.55	10.09	10.65	11.27	11.95	-	-	-
			38	8.83	9.43	10.02	10.60	11.18	11.80	12.47	13.20	-	-	-
			43	9.68	10.33	10.96	11.58	12.20	12.86	13.57	14.35	-	-	-
			46	10.25	10.92	11.57	12.21	12.86	13.55	-	-	-	-	-

KHZ568LVL	20	Q	27	11.56	14.12	17.08	20.47	24.34	-	-	-	-	-
			32	11.25	13.73	16.60	19.87	23.62	-	-	-	-	-
			38	10.83	13.22	15.96	19.09	22.67	-	-	-	-	-
			43	10.45	12.75	15.38	18.38	21.81	-	-	-	-	-
			46	10.21	12.45	15.01	17.93	21.27	-	-	-	-	-
		P	27	8.38	9.00	9.60	10.20	10.81	-	-	-	-	-
			32	9.15	9.82	10.47	11.12	11.78	-	-	-	-	-
			38	10.21	10.94	11.65	12.35	13.08	-	-	-	-	-
			43	11.21	12.00	12.75	13.51	14.28	-	-	-	-	-
			46	11.87	12.69	13.47	14.26	15.06	-	-	-	-	-

Q: Cooling Capacity (kW) P: Total Power Input (kW) SuperHeat: 10K

KHZ* LAL Technical Data R404A

	KHZ526LVL	KHZ536LVL	KHZ550LVL	KHZ559LVL	KHZ568LVL
Electrical Code	TFD	TFD	TFD	TFD	TFD
Compressor Model	ZFI26KQE	ZFI36KQE	ZFI50KQE	ZFI59KQE	ZFI68KQE
Receiver (Lit)	12	18	21	21	21
Chassis Size (LxWxH) mm	1130 X 680 x 695	1330 X 820 x 822	1640 X 820 x 942	1640 X 820 x 942	1640 X 820 x 942
No. Of Fans/Fan Motor Power	2/470W	2/800W	2/800W	2/800W	2/800W
Air Flow In m3/hr	4111	6300	7500	7500	7500
Return Gas Line	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
Locked Rated Amperes	74	102	118	118	139
Rated Load Amperes	12.3	14.6	21.7	23.0	20.2
Maximum Operating Current	13.7	16.0	25	29	30
Net Weight (kg Including Oil)	126	141	247	247	250
Oil Type	POE	POE	POE	POE	POE



Typical Liquid Line Temperature In °C

R404A Evap. Temp °C	Ambient Temp. °C				
	27	32	38	43	46
-40	-17.1	-14.6	-11.9	-9.2	7.8
-35	-12.8	-10.2	-7.4	-4.7	-3.3
-30	-8.4	-5.7	-3.0	-0.2	1.2
-25	-4.0	-1.2	1.6	4.3	5.7
-20	0.6	3.3	6.0	8.6	10.1
-15	6.7	8.8	11.4	14.1	15.4
-10	10.7	12.6	14.9	17.3	18.5
-5	14.4	16.0	17.9	19.9	21.6
0	18.1	19.4	20.9	22.3	-
5	20.5	21.2	22.1	22.5	-

Disclaimer

Technical data given was correct at the time of printing. Updates may occur, and should you need confirmation of a specific value, please contact Emerson Climate Technologies stating clearly the information required. Emerson Climate Technologies 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. The information given herein is based on data and tests which Emerson Climate Technologies believes to be reliable and which are in accordance with today's technical knowledge. It is intended for use by persons having the appropriate technical knowledge and skill, at their own discretion and risk. The products given here are designed and adapted for stationary applications only. For transport applications, Please consult with your Emerson Climate representative.

Note

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

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