

# Copeland Scroll™ Air-cooled Condensing Units



Low Temperature Refrigeration Applications  
Range From 7.5 To 15 HP

## About Emerson

Emerson is a global technology and engineering company providing innovative solutions for customers in industrial, commercial, and residential markets. Our Emerson Automation Solutions business helps process, hybrid, and discrete manufacturers maximize production, protect personnel and the environment while optimizing their energy and operating costs. Our Emerson Commercial and Residential Solutions business helps ensure human comfort and health, protect food quality and safety, advance energy efficiency, and create sustainable infrastructure. 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 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.

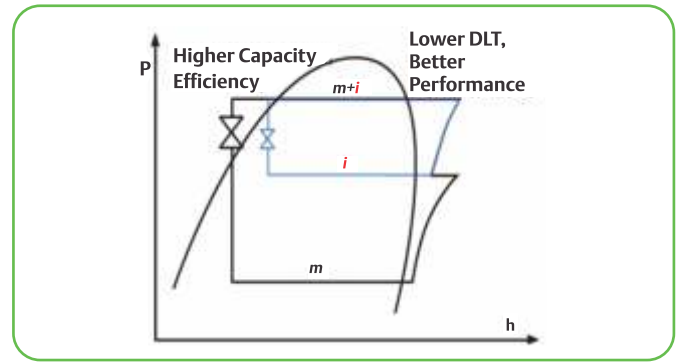
These condensing units are offered with full scope of supply and are manufactured at our Cold Chain & Distribution Center, Chakan, Pune. With this product range, we offer the widest range of Scroll Condensing Units from 2 to 15HP (ZXL, KHZ\* LVL) for low temperature refrigeration applications. With local 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

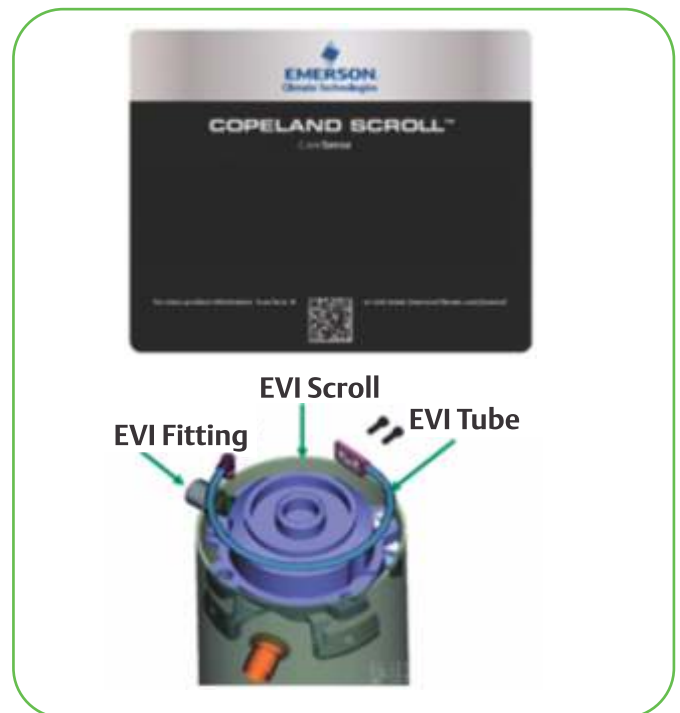
- COP improvement leads to annual electrical savings of 15–20% as compared with reciprocating systems
- 70% fewer moving parts than reciprocating
- Superior liquid handling

### 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

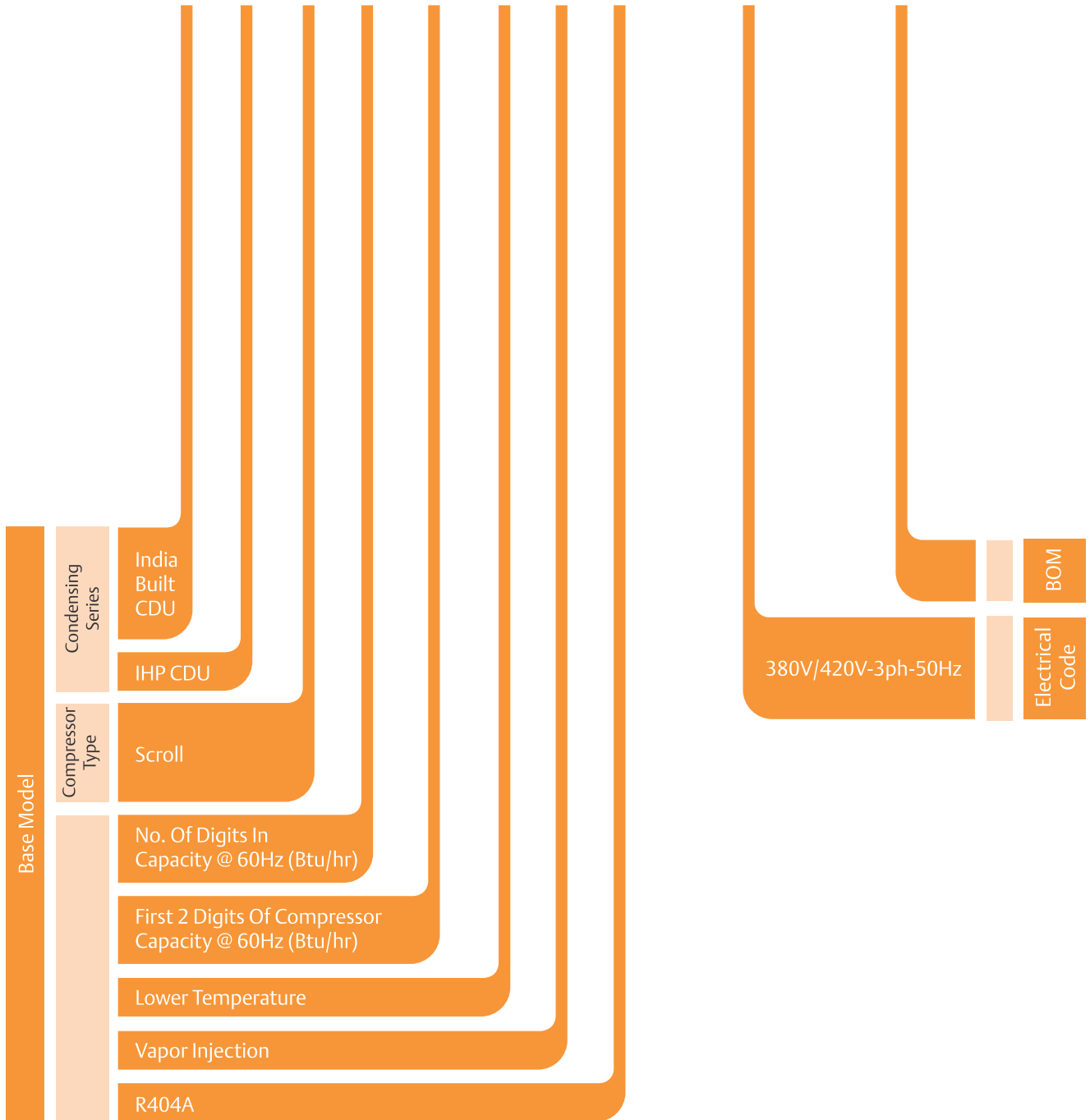
- Designed for low temp. operation; from -40°C to -4°C evaporating temperature
- Designed for tropical ambient operation at 46°C
- Low temperature operation reliability ensured by CoreSense™

### 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

**K H Z 5 26 L V L - TFD - XXX**

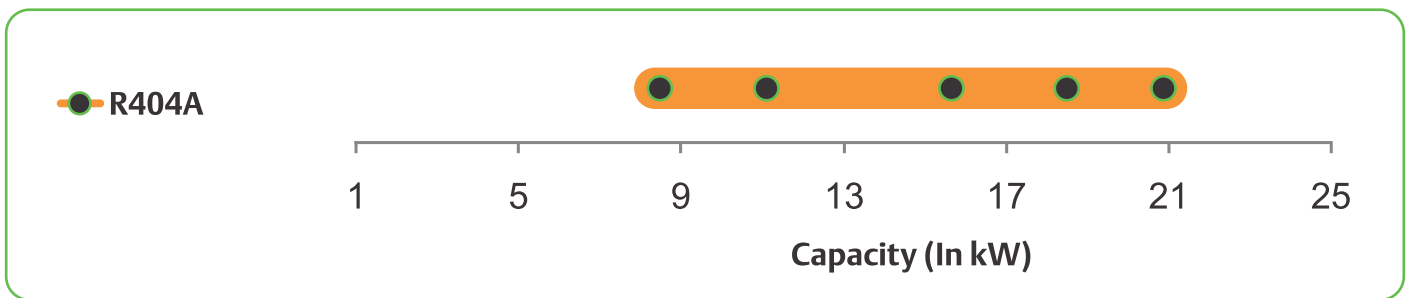


# KHZ\* LVL Copeland Scroll™ Indoor CDU

## Standard Bill Of Material

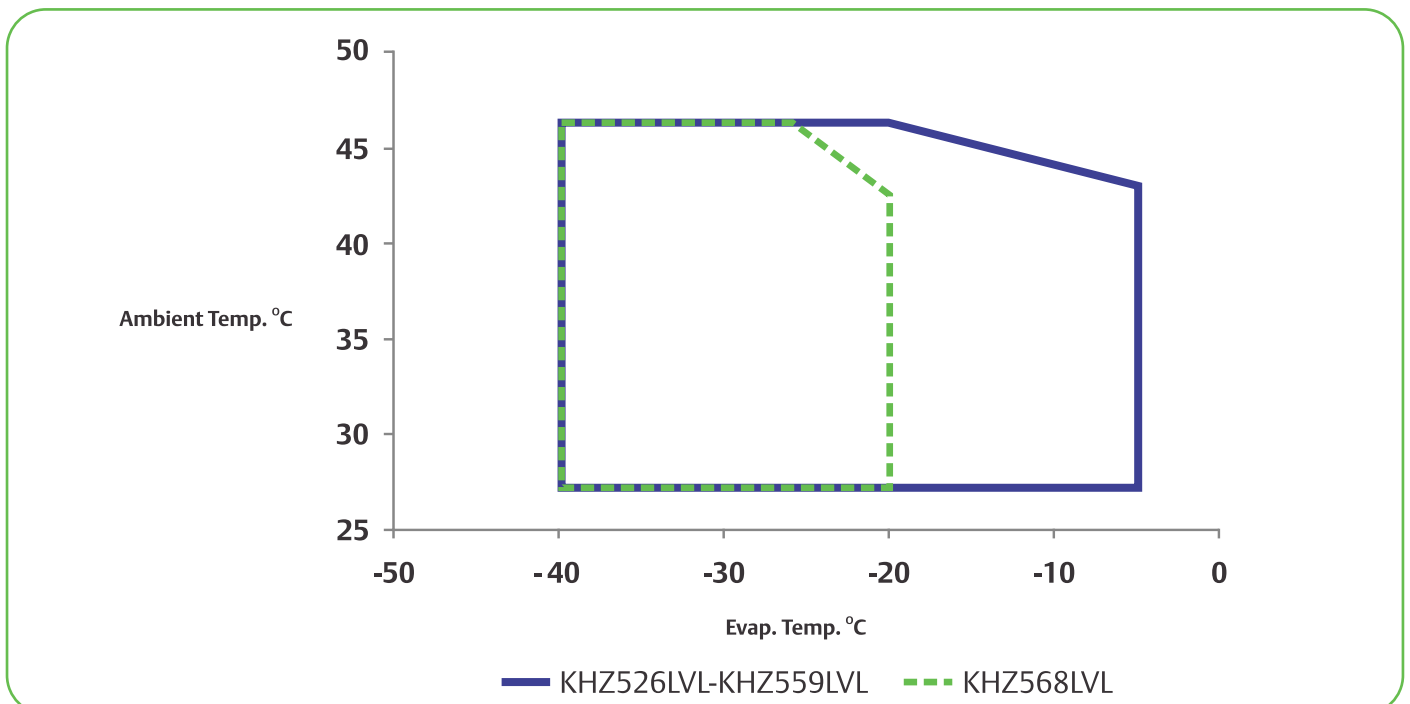
Standard BOM Content	300
Compressor - Rotalock Connection	✓
Economizer PHE Circuit	✓
Fan Motor	✓
Receiver	✓
Accumulator	✓
Sight Glass/Moisture Indicator	✓
Filter Drier	✓
Adjustable HP & Fixed HP	✓
Oil Separator	✓
Crankcase Heater*	✓
CoreSense™	✓
Compressor Contactor	✓
Electrical Box	✓

## 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	-	-	-	-	-

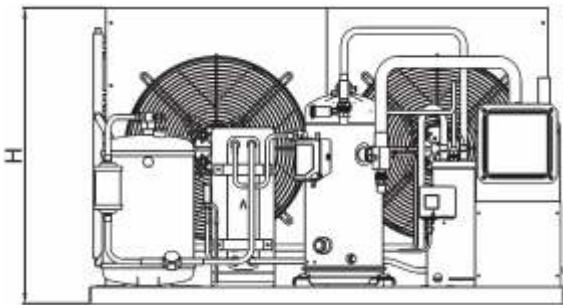
KHZ568LVL	20	Q	27	11.56	14.12	17.08	20.47	24.34	-	-	-	-	-
			32	11.25	13.73	16.60	19.87	23.62	-	-	-	-	-
			38	10.83	13.22	15.96	19.09	22.67	-	-	-	-	-
			43	10.45	12.75	15.38	18.38	21.81	-	-	-	-	-
			46	10.21	12.45	15.01	17.93	21.27	-	-	-	-	-
		P	27	8.38	9.00	9.60	10.20	10.81	-	-	-	-	-
			32	9.15	9.82	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

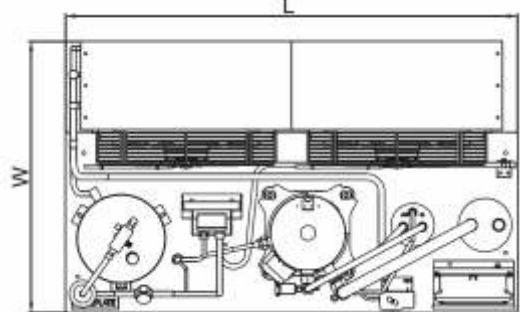
## KHZ\* LAL Technical Data R404A

	KHZ526LVL	KHZ536LVL	KHZ550LVL	KHZ559LVL	KHZ568LVL
<b>Electrical Code</b>	TFD	TFD	TFD	TFD	TFD
<b>Compressor Model</b>	ZFI26KQE	ZFI36KQE	ZFI50KQE	ZFI59KQE	ZFI68KQE
<b>Receiver (Lit)</b>	12	18	21	21	21
<b>Chassis Size (LxWxH) mm</b>	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
<b>No. Of Fans/Fan Motor Power</b>	2/470W	2/800W	2/800W	2/800W	2/800W
<b>Air Flow In m3/hr</b>	4111	6300	7500	7500	7500
<b>Return Gas Line</b>	1 1/8	1 3/8	1 5/8	1 5/8	1 5/8
<b>Liquid Line Size (in)</b>	1/2	1/2	5/8	5/8	5/8
<b>Locked Rated Amperes</b>	74	102	118	118	139
<b>Rated Load Amperes</b>	12.3	14.6	21.7	23.0	20.2
<b>Maximum Operating Current</b>	13.7	16.0	25	29	30
<b>Net Weight (kg Including Oil)</b>	126	141	247	247	250
<b>Oil Type</b>	POE	POE	POE	POE	POE

**KHZ\* LVL Front View**



**KHZ\* LVL Top View**



### 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

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