

50Hz water cooled semi-hermetic condensing units





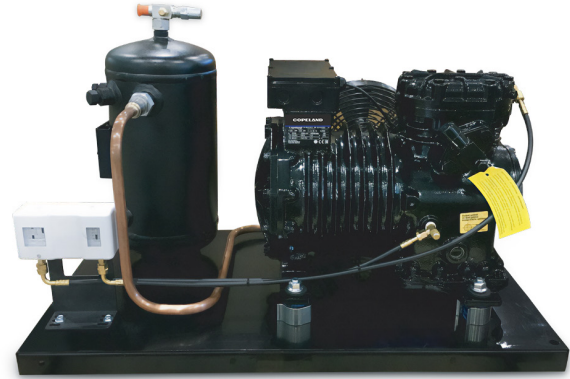
General information

The WH range of water cooled condensing units are suitable for medium and low temperature refrigeration applications:

Medium temperature WDH R134a, WMH R404a

Low temperature WDH R404a

The high side heat exchangers are specifically designed for chilled water loops.



Features

Copeland semi-hermetic compressor

- Suction and discharge valves
- Oil sight glass
- Mounting springs
- Motor protection by INT69 thermistor module
- Discharge vibration eliminator
- Side mounted compressor fan for optimal compressor cooling
- POE oil
- Internal oil pump for enhanced lubrication
- External oil pump and OPS for LHA model

Compressor cooling fan

- External rotor, axial fan with guard grill (form V)
- 230V single phase
- Power / current input: 72 W / 0.53 A
- Fan pre-wired to compressor terminal box

Tube in shell hermetic condenser

- Shell and connections : carbon steel
- Tube : copper
- Built in receiver
- Refrigerant side connections : rotalock type
- 1/2" NPT provision for safety relief valve
- Compliant to PED 97/23/EC directive
- Maximum pressure limits
: Refrigerant side 30 bar
: Water side 10 bar

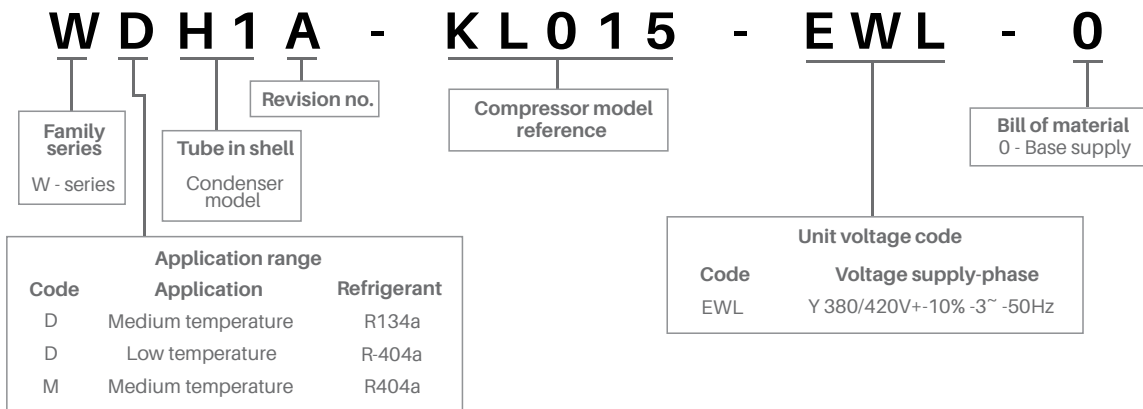
Accessories

- HP/LP dual pressure safety switch, auto reset

Capacity data

- Units are rated at 30 °C condensing, 3K sub cooling, 20°C suction gas return, 7 °C water inlet temperature

Nomenclature



Condensing unit model		R404a					R134a				
		Evaporating temperature (°C)									
		-40	-35	-30	-25	-20	-15	-10	-5	0	5
WDH1A-KJ007-EWL	Capacity (kW)	0.75	1.03	1.36	1.75	2.21	1.49	1.90	2.39	2.95	3.61
	Power input (kW)	0.64	0.72	0.78	0.85	0.90	0.58	0.61	0.64	0.66	0.66
	Flowrate (l/s)	0.02	0.03	0.04	0.05	0.06	0.04	0.05	0.06	0.07	0.09
	Pressure drop (kPa)	0.08	0.17	0.26	0.42	0.62	0.22	0.37	0.56	0.86	1.38
WDH1A-SJ010-EWL	Capacity (kW)	1.00	1.34	1.75	2.23	2.79	1.82	2.31	2.89	3.56	4.35
	Power input (kW)	0.83	0.92	1.01	1.10	1.18	0.70	0.75	0.79	0.81	0.82
	Flowrate (l/s)	0.03	0.04	0.05	0.06	0.08	0.05	0.06	0.07	0.09	0.12
	Pressure drop (kPa)	0.17	0.26	0.41	0.67	1.15	0.37	0.56	0.86	1.47	2.33
WDH1A-KL015-EWL	Capacity (kW)	1.17	1.56	2.03	2.58	3.22	2.12	2.68	3.35	4.13	5.03
	Power input (kW)	0.91	1.01	1.11	1.21	1.31	0.86	0.92	0.97	1.00	1.02
	Flowrate (l/s)	0.04	0.05	0.06	0.08	0.10	0.05	0.07	0.09	0.11	0.15
	Pressure drop (kPa)	0.22	0.37	0.62	1.00	1.64	0.46	0.80	1.30	2.12	3.49
WDH1A-SL020-EWL	Capacity (kW)	1.44	1.93	2.53	3.24	4.07	2.69	3.41	4.26	5.26	6.43
	Power input (kW)	1.04	1.21	1.38	1.55	1.72	1.05	1.14	1.22	1.28	1.32
	Flowrate (l/s)	0.04	0.06	0.08	0.11	0.14	0.07	0.09	0.12	0.16	0.22
	Pressure drop (kPa)	0.33	0.56	1.00	1.83	3.12	0.86	1.47	2.43	4.15	7.34
WDH2A-LF020-EWL	Capacity (kW)	1.53	2.24	3.07	4.06	5.22	3.59	4.61	5.82	7.23	8.87
	Power input (kW)	1.14	1.38	1.62	1.86	2.11	1.29	1.41	1.50	1.57	1.60
	Flowrate (l/s)	0.04	0.06	0.08	0.11	0.15	0.08	0.11	0.14	0.19	0.26
	Pressure drop (kPa)	0.32	0.70	1.33	2.50	4.47	1.42	2.38	4.15	7.34	12.87
WDH2A-LJ020-EWL	Capacity (kW)	1.82	2.69	3.71	4.92	6.34	4.09	5.20	6.51	8.05	9.83
	Power input (kW)	1.33	1.62	1.91	2.19	2.46	1.63	1.74	1.84	1.91	1.95
	Flowrate (l/s)	0.05	0.07	0.10	0.14	0.21	0.10	0.13	0.17	0.23	0.32
	Pressure drop (kPa)	0.46	0.99	2.15	4.15	8.17	1.92	3.27	5.82	10.16	18.56
WDH3A-LL030-EWL	Capacity (kW)	2.52	3.61	4.90	6.43	8.20	5.17	6.63	8.37	10.40	12.75
	Power input (kW)	1.70	2.05	2.39	2.74	3.07	1.96	2.13	2.27	2.39	2.48
	Flowrate (l/s)	0.06	0.08	0.12	0.17	0.23	0.11	0.14	0.19	0.26	0.36
	Pressure drop (kPa)	0.84	1.71	3.45	6.54	12.41	2.85	4.96	8.76	15.64	28.68
WDH4A-SG040-EWL	Capacity (kW)	3.34	4.66	6.24	8.09	10.25	6.67	8.48	10.60	13.10	16.00
	Power input (kW)	2.19	2.60	3.01	3.41	3.80	2.37	2.60	2.79	2.96	3.09
	Flowrate (l/s)	0.07	0.09	0.13	0.17	0.24	0.12	0.16	0.21	0.27	0.36
	Pressure drop (kPa)	1.62	2.96	5.53	9.67	17.05	4.66	7.99	13.10	21.83	36.73
WDH4A-HA050-EWL	Capacity (kW)	4.34	5.81	7.57	9.65	12.10	7.87	9.96	12.45	15.35	
	Power input (kW)	3.16	3.67	4.17	4.65	5.12	2.86	3.10	3.32	3.50	
	Flowrate (l/s)	0.09	0.12	0.16	0.22	0.30	0.14	0.19	0.25	0.34	
	Pressure drop (kPa)	2.70	4.90	8.80	15.50	27.90	6.90	11.70	19.90	34.60	

Operating conditions: 20 °C suction gas return temperature and 3K sub cooling



R404A/R134A

PERFORMANCE DATA

Condensing unit model		R404a				
		Evaporating temperature (°C)				
		-15	-10	-5	0	5
WMH1A-KM007-EWL	Capacity (kW)	2.04	2.52	3.07	3.69	4.4
	Power input (kW)	0.76	0.79	0.81	0.80	0.78
	Flowrate (l/s)	0.06	0.07	0.08	0.11	0.13
	Pressure drop (kPa)	0.51	0.80	1.15	1.83	2.77
WMH1A-KJ010-EWL	Capacity (kW)	2.79	3.44	4.18	5.03	5.99
	Power input (kW)	1.04	1.10	1.15	1.17	1.17
	Flowrate (l/s)	0.08	0.10	0.13	0.17	0.21
	Pressure drop (kPa)	1.07	1.73	2.77	4.44	7.17
WMH1A-SJ015-EWL	Capacity (kW)	3.47	4.26	5.16	6.20	7.37
	Power input (kW)	1.35	1.42	1.46	1.47	1.42
	Flowrate (l/s)	0.11	0.14	0.18	0.24	0.32
	Pressure drop (kPa)	1.92	3.12	5.18	8.87	15.43
WMH3A-LE020-EWL	Capacity (kW)	5.16	6.45	7.94	9.66	11.65
	Power input (kW)	1.72	1.84	1.94	2.02	2.05
	Flowrate (l/s)	0.11	0.15	0.20	0.26	0.35
	Pressure drop (kPa)	3.14	5.34	9.01	15.35	27.09
WMH4A-LF030-EWL	Capacity (kW)	7.22	8.92	10.85	13.05	15.60
	Power input (kW)	2.41	2.54	2.63	2.68	2.69
	Flowrate (l/s)	0.14	0.18	0.23	0.30	0.39
	Pressure drop (kPa)	6.47	10.26	16.30	26.29	42.94
WMH4A-LJ030-EWL	Capacity (kW)	8.05	9.92	12.10	14.55	
	Power input (kW)	2.83	3.00	3.11	3.16	
	Flowrate (l/s)	0.16	0.20	0.27	0.35	
	Pressure drop (kPa)	8.30	13.50	22.00	36.40	

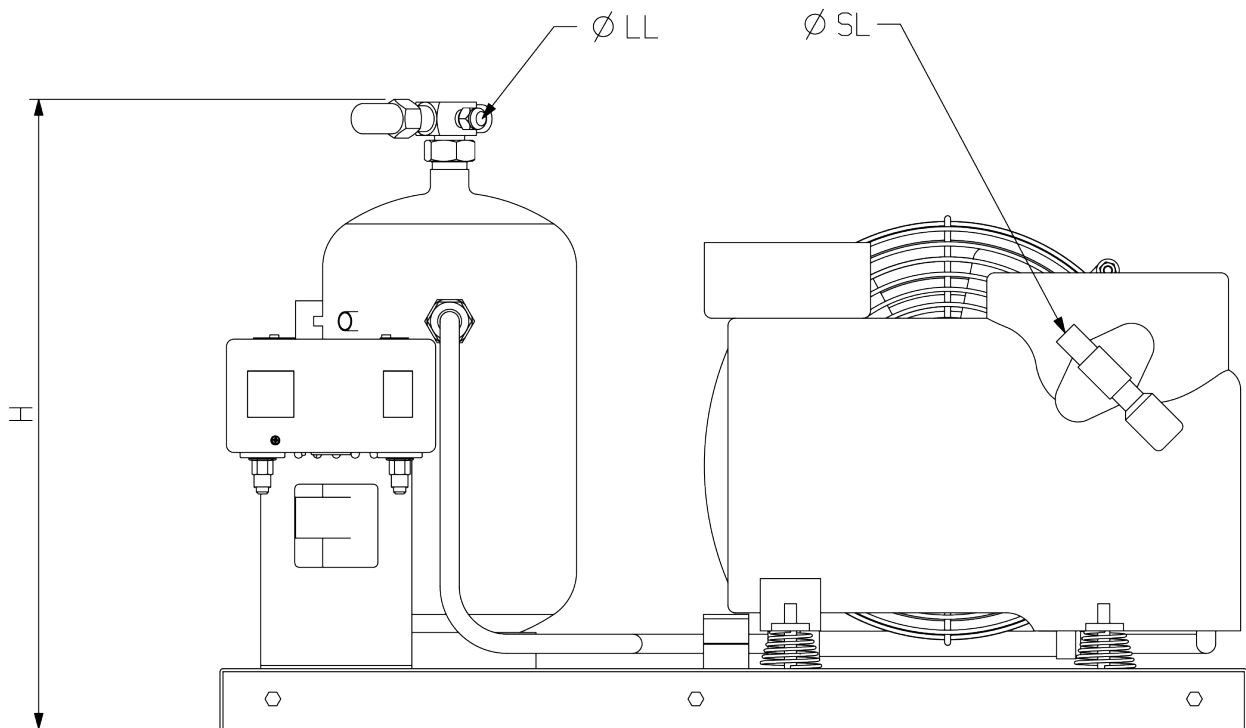
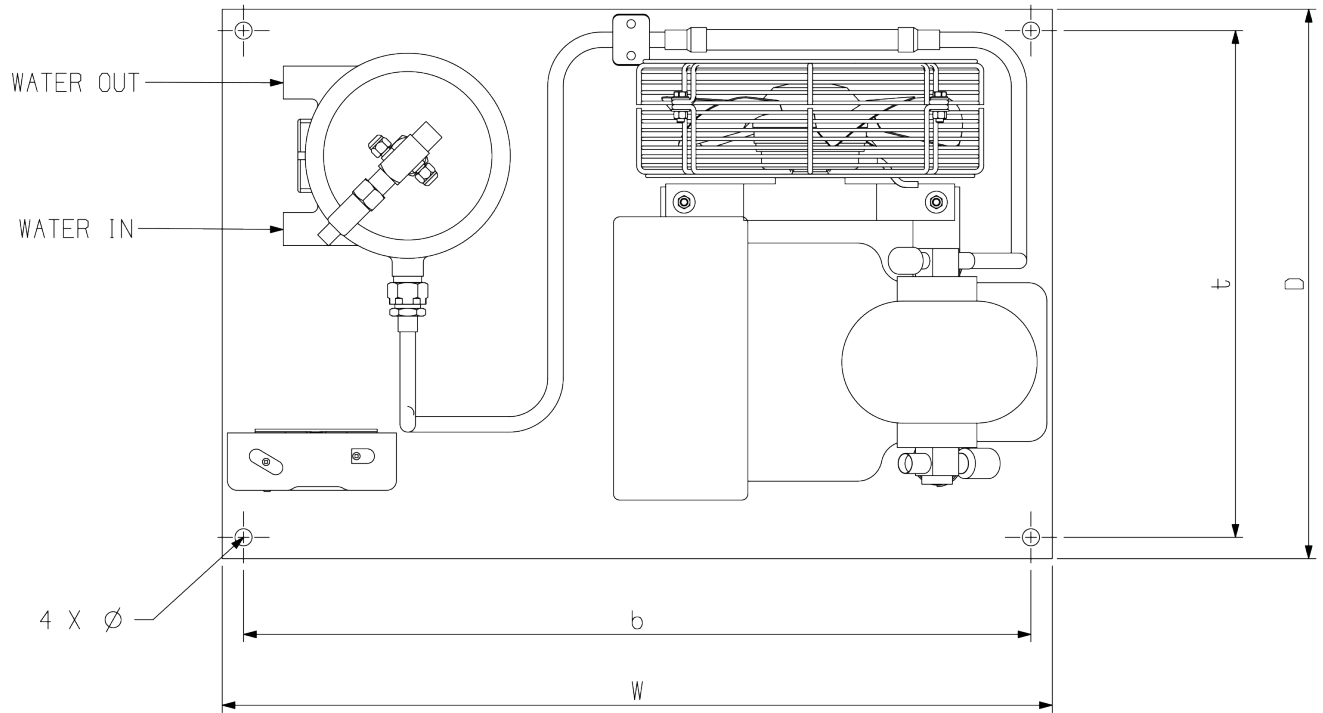
Operating conditions: 20 °C suction gas return temperature and 3K sub cooling

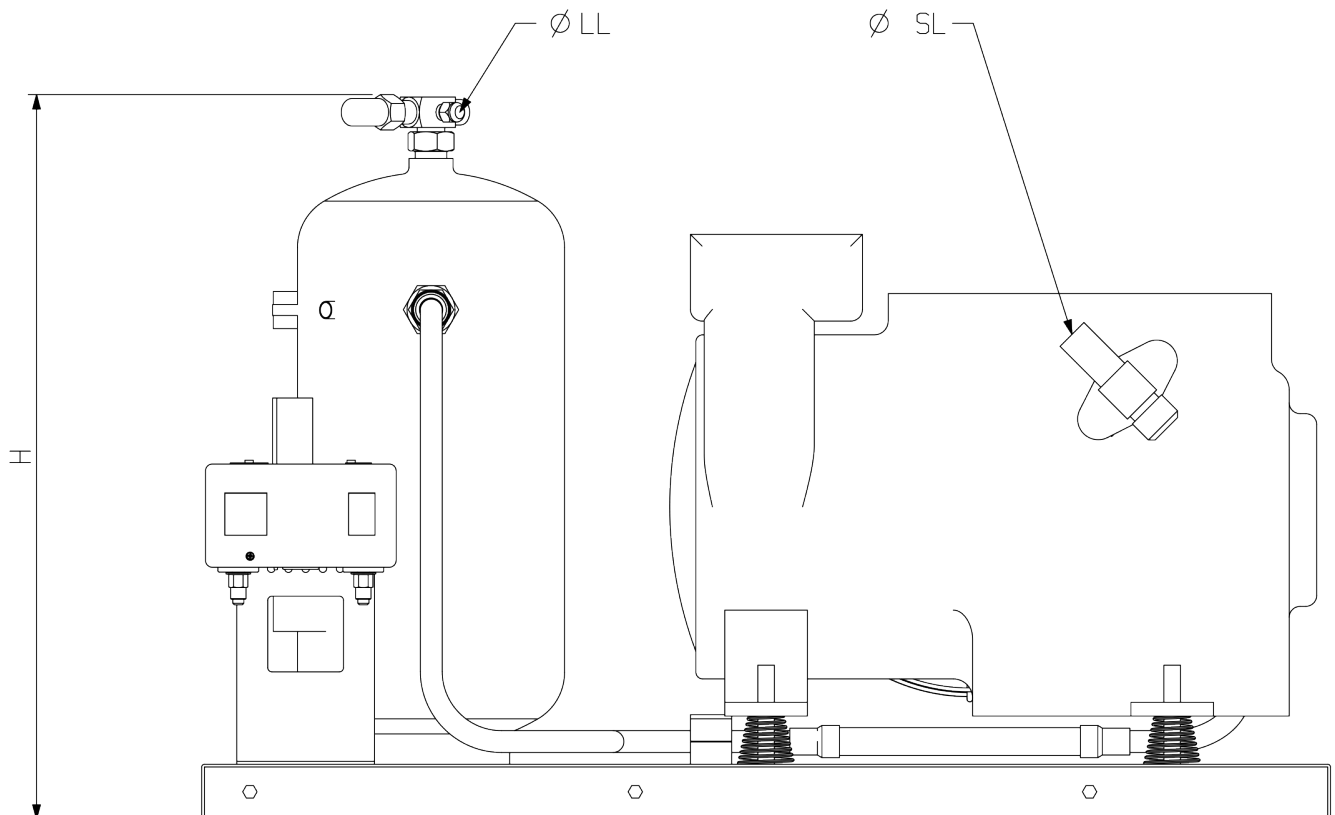
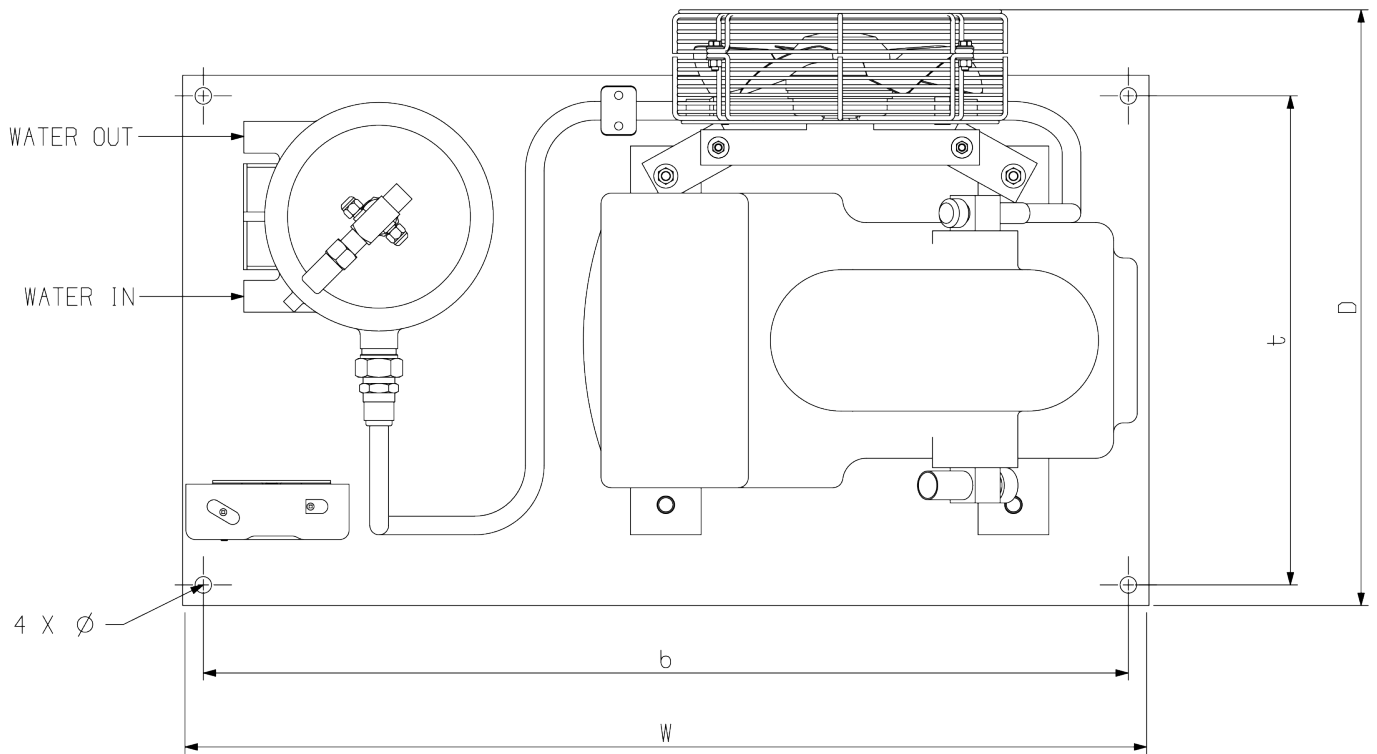
MECHANICAL DATA

Condensing unit model	Compressor model	Receiver capacity (l)	Width/depth [W/D] (mm)	Base mounting Ø [b x t] (mm)	Height [H] (mm)	Suction Ø [SL] (")	Liquid Ø [LL] (")	Water inlet (")	Water outlet (")	Net weight (kg)	Gross weight (kg)
WDH1A-KJ007-EWL	KJ-7X-EWL	4.6	680/450	645 x 415 (14)	417	5/8	1/2	G 1/2	G 1/2	61	76
WDH1A-SJ010-EWL	KSJ-10X-EWL	4.6	680/450	645 x 415 (14)	417	5/8	1/2	G 1/2	G 1/2	61	76
WDH1A-KL015-EWL	KL-15X-EWL	4.6	680/450	645 x 415 (14)	417	5/8	1/2	G 1/2	G 1/2	61	76
WDH1A-SL020-EWL	KSL-20X-EWL	4.6	680/450	645 x 415 (14)	417	5/8	1/2	G 1/2	G 1/2	61	76
WDH2A-LF020-EWL	LF-20X-EWL	4.6	820/506	785 x 415 (14)	425	7/8	1/2	G 1/2	G 1/2	105	120
WDH2A-LJ020-EWL	LJ-20X-EWL	4.6	820/506	785 x 415 (14)	425	7/8	1/2	G 1/2	G 1/2	105	120
WDH3A-LL030-EWL	LL-30X-EWL	8.1	820/506	785 x 415 (14)	527	1 1/8	1/2	G 1/2	G 1/2	113	128
WDH4A-SG040-EWL	LSG-40X-EWL	8.1	820/506	785 x 415 (14)	527	1 1/8	1/2	G 1/2	G 1/2	113	128
WDH4A-HA050-EWL	LHA-50X-EWL	8.1	1000/536	965 x 475 (14)	527	1 1/8	5/8	G 1/2	G 1/2	128	143
WMH1A-KM007-EWL	KM-7X-EWL	4.6	680/450	645 x 415 (14)	417	1/2	1/2	G 1/2	G 1/2	61	76
WMH1A-KJ010-EWL	KJ-10X-EWL	4.6	680/450	645 x 415 (14)	417	5/8	1/2	G 1/2	G 1/2	61	76
WMH1A-SJ015-EWL	KSJ-15X-EWL	4.6	680/450	645 x 415 (14)	417	5/8	1/2	G 1/2	G 1/2	61	76
WMH3A-LE020-EWL	LE-20X-EWL	8.1	820/506	785 x 415 (14)	527	7/8	1/2	G 1/2	G 1/2	106	121
WMH4A-LF030-EWL	LF-30X-EWL	8.1	820/506	785 x 415 (14)	527	7/8	1/2	G 1/2	G 1/2	109	124
WMH4A-LJ030-EWL	LJ-30X-EWL	8.1	820/506	785 x 415 (14)	527	7/8	1/2	G 1/2	G 1/2	113	128

ELECTRICAL DATA

Condensing unit model	Compressor model	Compressor maximum operating current (A)	Compressor locked rotor current (A)
WDH1A-KJ007-EWL	KJ-7X-EWL	2.4	12.2
WDH1A-SJ010-EWL	KSJ-10X-EWL	3.0	15.5
WDH1A-KL015-EWL	KL-15X-EWL	3.4	19.1
WDH1A-SL020-EWL	KSL-20X-EWL	4.7	23.3
WDH2A-LF020-EWL	LF-20X-EWL	5.5	37.6
WDH2A-LJ020-EWL	LJ-20X-EWL	5.6	37.6
WDH3A-LL030-EWL	LL-30X-EWL	7.3	53.0
WDH4A-SG040-EWL	LSG-40X-EWL	8.5	68.5
WDH4A-HA050-EWL	LHA-50X-EWL	12.4	85.3
WMH1A-KM007-EWL	KM-7X-EWL	2.4	12.2
WMH1A-KJ010-EWL	KJ-10X-EWL	3.2	15.5
WMH1A-SJ015-EWL	KSJ-15X-EWL	3.4	19.1
WMH3A-LE020-EWL	LE-20X-EWL	5.7	37.6
WMH4A-LF030-EWL	LF-30X-EWL	6.8	50.6
WMH4A-LJ030-EWL	LJ-30X-EWL	7.4	50.6





A photograph of a modern office interior. The main feature is a wall made of vertical, light-colored slats. The word "COPELAND" is mounted on this wall in large, bold, black, sans-serif capital letters. To the right, a blue wall features the text "ENGINEERED FOR SUSTAINABILITY" in gold, italicized, sans-serif capital letters. The floor is a light-colored tile with a dark grey patterned area.

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About Copeland

Copeland, a global provider of sustainable climate solutions, combines category-leading brands in compression, controls, software and monitoring for heating, cooling and refrigeration. With best-in-class engineering and design and the broadest portfolio of modulated solutions, we're not just setting the standard for compressor leadership; we're pioneering its evolution. Combining our technology with our smart energy management solutions, we can regulate, track and optimize conditions to help protect temperature-sensitive goods over land and sea, while delivering comfort in any space. Through energy-efficient products, regulation-ready solutions and expertise, we're revolutionizing the next generation of climate technology for the better.

To learn more, visit copeland.com

2021/MEA/72 Copeland W-Series 50Hz water cooled semi-hermetic condensing units
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