

# PHAS Series



## High Ambient Condensing Unit

Powered by **Copeland®**



### BENEFITS

- All condenser coils supplied with “Patton Coat” fin and coil protective coating
- Dual pressure control (Convertible reset) fitted on all models
- Generously sized high ambient condensers
- Oil separator fitted on all models
- Suction accumulator fitted on LT models
- Reliable high efficiency Copeland compressors
- High efficiency, low noise external rotor fan motors
- Liquid line drier & sight glass fitted on all models
- Electrical box fully wired complete with main isolator switch in IP67 enclosures
- Liquid injection valve fitted on LT models

# PHAS Series

Powered by *Copeland*®



## R404A LOW TEMP

Model	Ambient Temp. (°C)	Capacity (kW)							Power Input (kW)						
		Evaporating Temp (°C)							Evaporating Temp (°C)						
		-40	-35	-30	-25	-20	-15	-10	-40	-35	-30	-25	-20	-15	-10
PHAS750T-2F-ZF-LSAE	32	4.23	5.26	6.51	7.94	9.52	11.19	12.96	3.83	4.22	4.57	4.93	5.32	5.79	6.34
	35	4.08	5.06	6.23	7.60	9.10	10.71	12.38	3.95	4.36	4.75	5.12	5.54	6.02	6.59
	38	3.94	4.85	5.97	7.26	8.68	10.21	11.79	4.07	4.52	4.92	5.32	5.76	6.25	6.85
	40	3.85	4.72	5.78	7.02	8.40	9.87	11.40	4.16	4.62	5.04	5.47	5.91	6.42	7.02
	43	3.72	4.52	5.52	6.68	7.96	9.36	10.80	4.28	4.78	5.23	5.67	6.15	6.67	7.29
PHAS1000T-2F-ZF-LSAE	32	5.50	6.98	8.61	10.43	12.45	14.67	17.14	5.60	5.96	6.35	6.76	7.20	7.68	8.17
	35	5.27	6.69	8.25	9.97	11.89	13.99	16.31	5.82	6.20	6.61	7.04	7.49	7.97	8.48
	38	5.03	6.39	7.87	9.50	11.30	13.29	15.49	6.04	6.46	6.88	7.33	7.80	8.29	8.80
	40	4.87	6.20	7.63	9.19	10.91	12.83	14.93	6.20	6.63	7.07	7.53	8.01	8.50	9.02
	43	4.62	5.88	7.22	8.69	10.31	12.10	14.07	6.45	6.90	7.37	7.85	8.34	8.85	9.37
PHAS1300T-2F-ZF-LSAE	32	6.98	8.79	10.77	12.99	15.46	18.19	21.27	6.61	7.07	7.55	8.05	8.59	9.17	9.77
	35	6.71	8.45	10.35	12.44	14.78	17.37	20.26	6.89	7.37	7.85	8.38	8.93	9.51	10.13
	38	6.41	8.09	9.90	11.88	14.08	16.53	19.27	7.18	7.67	8.18	8.72	9.28	9.87	10.49
	40	6.21	7.85	9.60	11.51	13.61	15.98	18.60	7.37	7.88	8.40	8.95	9.52	10.11	10.74
	43	5.88	7.45	9.11	10.91	12.90	15.11	17.53	7.68	8.21	8.75	9.31	9.89	10.49	11.13
PHAS1500T-2F-ZF-LSAE	32	8.38	10.49	12.89	15.62	18.69	22.07	25.79	7.96	8.36	8.87	9.47	10.14	10.89	11.69
	35	8.04	10.07	12.37	14.96	17.87	21.09	24.59	8.32	8.73	9.25	9.86	10.55	11.31	12.13
	38	7.68	9.62	11.81	14.28	17.01	20.07	23.40	8.71	9.13	9.66	10.28	10.99	11.75	12.58
	40	7.43	9.33	11.44	13.82	16.44	19.37	22.55	8.98	9.40	9.94	10.57	11.29	12.07	12.91
	43	7.04	8.84	10.84	13.06	15.57	18.31	21.31	9.40	9.84	10.39	11.04	11.75	12.55	13.40

Note: 1. The rating condition is based on a suction return gas 20 °C, Subcool 0 K



# PHAS Series

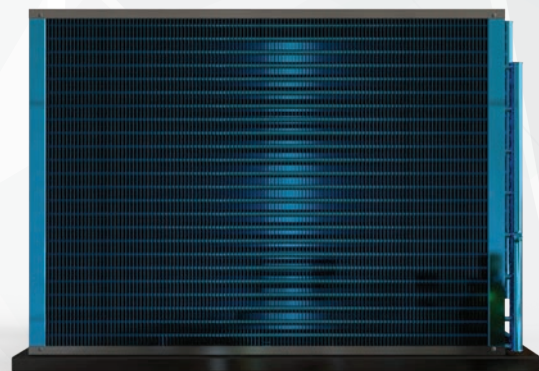


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## R448A (Dew Point) LOW TEMP

Model	Ambient Temp. (°C)	Capacity (kW)							Power Input (kW)						
		Evaporating Temp (°C)							Evaporating Temp (°C)						
		-40	-35	-30	-25	-20	-15	-10	-40	-35	-30	-25	-20	-15	-10
PHAS750T-2F-ZF-LSAE	32	3.54	4.64	5.89	7.32	8.93	10.74	12.76	4.70	4.88	5.12	5.37	5.68	6.01	6.37
	35	3.41	4.47	5.67	7.04	8.58	10.33	12.27	4.98	5.18	5.42	5.70	6.01	6.34	6.71
	38	3.27	4.29	5.44	6.75	8.24	9.88	11.74	5.29	5.51	5.75	6.04	6.35	6.71	7.09
	40	3.18	4.17	5.28	6.56	7.99	9.59	11.38	5.50	5.72	5.99	6.27	6.60	6.96	7.35
	43	3.03	3.98	5.04	6.24	7.60	9.11	10.81	5.85	6.07	6.34	6.66	6.98	7.37	7.76
PHAS1000T-2F-ZF-LSAE	32	4.77	6.18	7.81	9.66	11.77	14.14	16.74	5.75	5.90	6.15	6.50	6.95	7.49	8.15
	35	4.58	5.96	7.52	9.32	11.34	13.60	16.10	6.11	6.27	6.53	6.89	7.37	7.94	8.63
	38	4.40	5.73	7.24	8.95	10.89	13.06	15.45	6.50	6.67	6.94	7.34	7.82	8.42	9.14
	40	4.27	5.57	7.04	8.71	10.59	12.69	15.01	6.79	6.97	7.25	7.64	8.15	8.77	9.50
	43	4.08	5.33	6.74	8.33	10.11	12.11	14.30	7.24	7.44	7.73	8.15	8.69	9.33	10.10
PHAS1300T-2F-ZF-LSAE	32	5.87	7.58	9.55	11.79	14.36	17.26	20.52	5.69	6.10	6.58	7.16	7.83	8.62	9.50
	35	5.70	7.35	9.24	11.40	13.86	16.65	19.80	5.98	6.39	6.89	7.48	8.16	8.94	9.82
	38	5.53	7.12	8.93	11.01	13.37	16.05	19.02	6.29	6.72	7.23	7.81	8.50	9.28	10.17
	40	5.42	6.96	8.72	10.74	13.01	15.60	18.53	6.53	6.96	7.47	8.05	8.75	9.53	10.41
	43	5.25	6.74	8.41	10.32	12.49	14.97	17.72	6.90	7.33	7.85	8.44	9.14	9.92	10.82
PHAS1500T-2F-ZF-LSAE	32	7.05	9.05	11.43	14.20	17.38	20.93	24.89	6.82	7.17	7.70	8.39	9.23	10.24	11.38
	35	6.84	8.76	11.05	13.72	16.77	20.23	24.03	7.19	7.56	8.08	8.77	9.63	10.62	11.78
	38	6.63	8.47	10.66	13.22	16.17	19.48	23.15	7.61	7.97	8.51	9.20	10.05	11.06	12.21
	40	6.50	8.27	10.40	12.89	15.74	18.97	22.53	7.93	8.28	8.81	9.51	10.37	11.36	12.53
	43	6.30	7.99	10.01	12.37	15.10	18.17	21.55	8.43	8.77	9.30	10.01	10.86	11.87	13.06

Note: 1. The rating condition is based on a suction return gas 20 C, Subcool 0 K



# PHAS Series



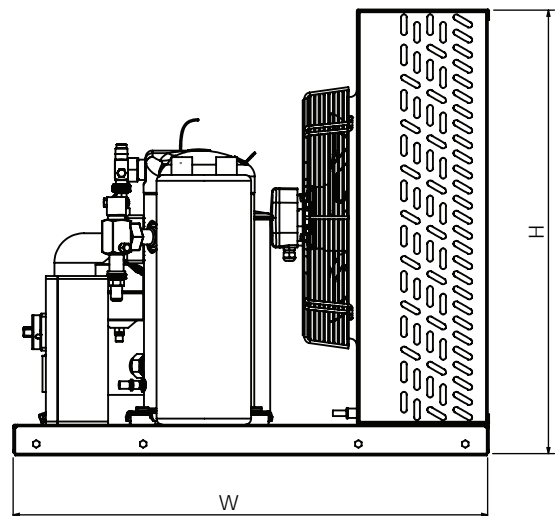
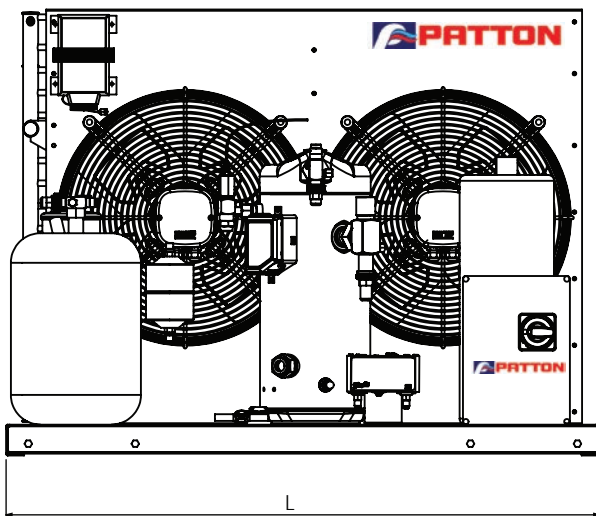
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## TECHNICAL DATA

MODEL NAME		PHAS750T-2F-ZF-LSAE	PHAS1000T-2F-ZF-LSAE	PHAS1300T-2F-ZF-LSAE	PHAS1500T-2F-ZF-LSAE
Compressor	Model	ZF25KQE-TFD	ZF34KQE-TFD	ZF41KQE-TFD	ZF49KQE-TFD
	Horse Power (hp)	7.5	10.0	13.0	15.0
	Rated Input Volt	AC 380-420V/3PH/50Hz			
	MCC Amps	16.0	25.0	29.0	30.0
Condenser	Fan Motor*	2 x 400 mm.	2 x 500 mm.	2 x 500 mm.	2 x 500 mm.
	Total Fan Power (W)	360	760	760	760
	Total Fan Current (A)	1.64	3.6	3.6	3.6
	Air Volume (L/s)	1670	2550	2360	2950
	Reciever (L)	8	12	12	14
	Suction Tube Size	1-1/8"	1-3/8"	1-3/8"	1-5/8"
Dimension	Liquid Tube Size	1/2"	5/8"	5/8"	5/8"
	[L]Length(mm)	1000	1350	1350	1350
	[W]Width (mm)	800	1000	1000	1000
	[H]Hieght(mm)	750	850	850	1010
	dB(A)@3.0 mtrs	65	68	69	69
	Weight (kg)	178	228	239	274

Note : \* All Fan 220-240V/1PH/50Hz

## DIMENSION



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# PHAS Series

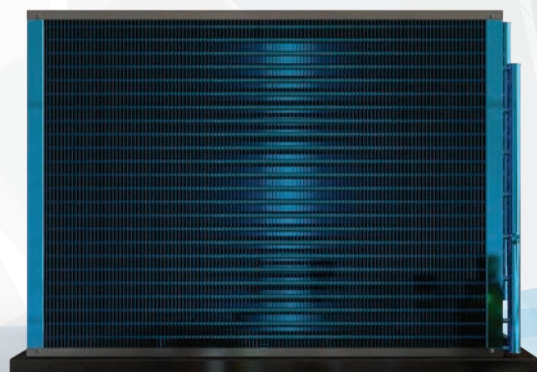
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## R404A MEDIUM TEMP

Model	Ambient Temp. (°C)	Capacity (kW)							Power Input (kW)						
		Evaporating Temp (°C)							Evaporating Temp (°C)						
		-20	-15	-10	-5	0	5	10	-20	-15	-10	-5	0	5	10
PHAS650T-2F-ZB-LSE	32	8.25	9.91	11.76	13.82	16.08	18.54	21.17	5.14	5.26	5.38	5.51	5.65	5.78	5.94
	35	7.84	9.43	11.20	13.14	15.29	17.61	20.12	5.47	5.59	5.71	5.85	5.98	6.13	6.28
	38	7.42	8.93	10.60	12.44	14.49	16.70	19.10	5.84	5.95	6.08	6.21	6.34	6.48	6.62
	40	7.15	8.59	10.20	11.98	13.92	16.06	18.35	6.08	6.21	6.33	6.46	6.60	6.73	6.89
	43	6.71	8.07	9.57	11.26	13.09	15.09	17.25	6.49	6.61	6.74	6.86	7.00	7.14	7.28
PHAS800T-2F-ZB-LSE	32	9.67	11.88	14.27	16.88	19.68	22.69	25.97	6.42	6.57	6.76	6.96	7.17	7.38	7.54
	35	9.14	11.29	13.61	16.11	18.76	21.63	24.76	6.82	6.95	7.12	7.32	7.55	7.75	7.91
	38	8.55	10.66	12.90	15.27	17.84	20.59	23.48	7.27	7.38	7.54	7.74	7.93	8.13	8.32
	40	8.15	10.23	12.40	14.73	17.20	19.84	22.65	7.57	7.67	7.83	8.01	8.21	8.41	8.59
	43	7.48	9.53	11.62	13.86	16.19	18.69	21.36	8.10	8.16	8.31	8.47	8.66	8.85	9.03
PHAS900T-2F-ZB-LSE	32	11.29	13.59	16.17	18.99	22.06	25.44	29.06	7.03	7.21	7.40	7.62	7.87	8.12	8.41
	35	10.77	12.96	15.41	18.07	21.03	24.22	27.66	7.43	7.62	7.81	8.03	8.26	8.52	8.79
	38	10.20	12.31	14.63	17.17	19.95	22.97	26.25	7.89	8.07	8.26	8.47	8.70	8.94	9.20
	40	9.81	11.88	14.11	16.54	19.24	22.18	25.32	8.21	8.38	8.57	8.79	9.00	9.22	9.48
	43	9.22	11.16	13.29	15.60	18.12	20.90	23.87	8.72	8.90	9.08	9.28	9.49	9.70	9.94
PHAS1000T-2F-ZB-LSE	32	13.22	16.03	19.14	22.54	26.27	30.31	34.56	7.98	8.22	8.47	8.76	9.05	9.34	9.64
	35	12.60	15.29	18.27	21.52	25.05	28.90	32.95	8.46	8.69	8.95	9.23	9.52	9.80	10.10
	38	11.93	14.53	17.35	20.47	23.84	27.46	31.31	8.99	9.20	9.47	9.73	10.01	10.30	10.59
	40	11.46	13.98	16.74	19.73	23.01	26.47	30.21	9.37	9.58	9.83	10.09	10.35	10.65	10.92
	43	10.74	13.15	15.79	18.61	21.68	24.96	28.44	9.96	10.17	10.39	10.66	10.92	11.20	11.49
PHAS1200T-2F-ZB-LSE	32	15.11	18.26	21.84	25.80	30.04	34.62	39.44	8.95	9.23	9.55	9.88	10.23	10.54	10.84
	35	14.39	17.35	20.74	24.52	28.60	32.92	37.46	9.48	9.77	10.08	10.40	10.72	11.06	11.38
	38	13.70	16.45	19.66	23.19	27.05	31.15	35.50	10.03	10.33	10.63	10.95	11.29	11.62	11.93
	40	13.22	15.86	18.87	22.29	26.05	29.99	34.10	10.42	10.71	11.04	11.35	11.65	11.99	12.32
	43	12.51	14.93	17.79	20.95	24.42	28.14	32.08	11.05	11.32	11.61	11.93	12.26	12.59	12.89

Note: 1. The rating condition is based on a suction return gas 20 C, Subcool 0 K



# PHAS Series

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## R448A (Dew Point) MEDIUM TEMP

Model	Ambient Temp. (°C)	Capacity (kW)							Power Input (kW)						
		Evaporating Temp (°C)							Evaporating Temp (°C)						
		-20	-15	-10	-5	0	5	10	-20	-15	-10	-5	0	5	10
PHAS650T-2F-ZB-LSE	32	7.99	9.92	12.00	14.29	16.84	19.69	22.87	5.14	5.51	5.68	5.89	6.15	6.46	6.84
	35	7.58	9.45	11.48	13.69	16.15	18.92	22.00	5.50	5.87	6.04	6.27	6.52	6.82	7.20
	38	7.17	9.01	10.97	13.11	15.48	18.13	21.11	5.78	6.24	6.43	6.64	6.91	7.22	7.60
	40	6.90	8.71	10.62	12.72	15.02	17.62	20.52	5.94	6.51	6.70	6.91	7.18	7.49	7.87
	43	6.52	8.27	10.13	12.15	14.37	16.85	19.65	6.24	6.93	7.11	7.33	7.60	7.92	8.30
PHAS800T-2F-ZB-LSE	32	8.75	10.83	13.19	15.86	18.87	22.21	25.92	5.34	5.59	5.91	6.29	6.71	7.17	7.65
	35	8.40	10.42	12.71	15.31	18.23	21.47	25.06	5.59	5.84	6.18	6.57	7.01	7.48	7.99
	38	8.04	9.99	12.22	14.73	17.54	20.69	24.14	5.83	6.11	6.46	6.87	7.33	7.82	8.37
	40	7.79	9.72	11.89	14.34	17.10	20.15	23.55	6.00	6.29	6.64	7.07	7.54	8.06	8.62
	43	7.42	9.28	11.38	13.75	16.41	19.37	22.64	6.25	6.55	6.93	7.37	7.86	8.41	9.00
PHAS900T-2F-ZB-LSE	32	10.02	12.60	15.44	18.55	21.94	25.67	29.70	6.58	6.74	6.94	7.19	7.50	7.88	8.34
	35	9.50	12.03	14.80	17.81	21.12	24.71	28.62	6.97	7.15	7.36	7.63	7.93	8.32	8.77
	38	8.96	11.44	14.13	17.05	20.27	23.75	27.51	7.38	7.58	7.81	8.08	8.39	8.77	9.23
	40	8.58	11.01	13.65	16.53	19.67	23.06	26.75	7.67	7.89	8.12	8.39	8.71	9.09	9.54
	43	7.99	10.37	12.93	15.74	18.77	22.06	25.60	8.10	8.34	8.60	8.87	9.20	9.58	10.04
PHAS1000T-2F-ZB-LSE	32	11.84	14.87	18.21	21.88	25.92	30.41	35.29	7.31	7.54	7.79	8.10	8.49	8.93	9.47
	35	11.19	14.22	17.50	21.07	25.02	29.35	34.09	7.79	8.02	8.28	8.61	8.99	9.45	9.99
	38	10.51	13.51	16.74	20.22	24.05	28.26	32.82	8.27	8.52	8.80	9.14	9.54	9.99	10.56
	40	10.01	13.00	16.19	19.64	23.39	27.50	31.99	8.62	8.88	9.17	9.51	9.91	10.38	10.94
	43	9.24	12.21	15.35	18.72	22.39	26.36	30.71	9.15	9.42	9.73	10.09	10.49	10.98	11.53
PHAS1200T-2F-ZB-LSE	32	13.75	17.19	21.06	25.35	30.10	35.36	40.97	8.05	8.30	8.57	8.92	9.30	9.75	10.32
	35	13.05	16.41	20.16	24.33	28.99	34.06	39.54	8.55	8.82	9.12	9.46	9.84	10.31	10.88
	38	12.33	15.57	19.22	23.27	27.78	32.68	38.11	9.05	9.37	9.68	10.06	10.45	10.92	11.45
	40	11.86	15.04	18.60	22.58	26.99	31.78	37.04	9.39	9.71	10.05	10.42	10.83	11.33	11.88
	43	11.06	14.19	17.64	21.48	25.74	30.35	35.47	9.91	10.25	10.63	11.00	11.44	11.97	12.50

Note: 1. The rating condition is based on a suction return gas 20 C, Subcool 0 K



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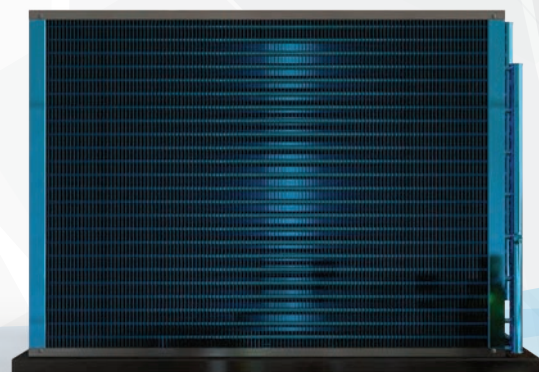
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## R134a (Dew Point) MEDIUM TEMP

Model	Ambient Temp. (°C)	Capacity (kW)							Power Input (kW)						
		Evaporating Temp (°C)							Evaporating Temp (°C)						
		-15	-10	-5	0	5	10	15	-15	-10	-5	0	5	10	15
PHAS650T-2F-ZB-LSE	32	7.39	9.05	10.93	13.07	15.42	18.06		3.26	3.34	3.44	3.55	3.70	3.88	
	35	7.15	8.77	10.59	12.65	14.94	17.47		3.45	3.53	3.63	3.74	3.89	4.08	
	38	6.91	8.47	10.25	12.23	14.45	16.89		3.65	3.74	3.83	3.95	4.10	4.30	
	40	6.74	8.28	10.02	11.95	14.11	16.48		3.79	3.87	3.97	4.10	4.25	4.45	
	43	6.50	7.98	9.65	11.52	13.61	15.90		4.01	4.11	4.21	4.33	4.48	4.68	
PHAS800T-2F-ZB-LSE	32	8.30	10.26	12.52	15.08	17.97	21.16		4.12	4.24	4.37	4.50	4.60	4.65	
	35	8.00	9.91	12.11	14.61	17.42	20.55		4.34	4.45	4.58	4.71	4.82	4.87	
	38	7.70	9.55	11.70	14.13	16.87	19.91		4.56	4.68	4.81	4.94	5.04	5.09	
	40	7.51	9.32	11.41	13.80	16.49	19.48		4.71	4.83	4.97	5.10	5.20	5.26	
	43	7.20	8.95	10.98	13.30	15.91	18.83		4.95	5.08	5.22	5.35	5.46	5.51	
PHAS900T-2F-ZB-LSE	32	9.49	11.75	14.35	17.29	20.57	24.23		4.49	4.61	4.76	4.91	5.02	5.08	
	35	9.15	11.34	13.88	16.74	19.96	23.50		4.72	4.86	5.00	5.15	5.26	5.32	
	38	8.81	10.93	13.39	16.20	19.33	22.78		4.97	5.11	5.26	5.40	5.51	5.57	
	40	8.58	10.65	13.07	15.80	18.90	22.31		5.15	5.29	5.44	5.58	5.69	5.75	
	43	8.24	10.24	12.58	15.25	18.22	21.53		5.40	5.55	5.71	5.86	5.98	6.04	
PHAS1000T-2F-ZB-LSE	32	10.89	13.48	16.47	19.86	23.65	27.84		5.09	5.24	5.41	5.57	5.68	5.73	
	35	10.50	13.02	15.93	19.25	22.94	27.00		5.36	5.51	5.68	5.83	5.95	6.01	
	38	10.10	12.56	15.37	18.60	22.20	26.18		5.65	5.80	5.98	6.13	6.25	6.31	
	40	9.85	12.23	15.00	18.17	21.70	25.61		5.84	6.00	6.17	6.33	6.46	6.52	
	43	9.45	11.75	14.43	17.50	20.95	24.76		6.16	6.31	6.49	6.66	6.78	6.84	
PHAS1200T-2F-ZB-LSE	32	12.43	15.41	18.83	22.68	26.90	31.52		6.75	6.93	7.12	7.29	7.42	7.46	
	35	11.92	14.82	18.15	21.95	26.07	30.54		7.05	7.23	7.41	7.57	7.70	7.77	
	38	11.43	14.24	17.44	21.10	25.18	29.60		7.36	7.54	7.75	7.92	8.03	8.08	
	40	11.13	13.82	16.98	20.58	24.56	28.87		7.56	7.75	7.94	8.13	8.26	8.32	
	43	10.65	13.23	16.25	19.72	23.61	27.86		7.88	8.06	8.29	8.48	8.60	8.65	

Note: 1. The rating condition is based on a suction return gas 20 C, Subcool 0 K



# PHAS Series

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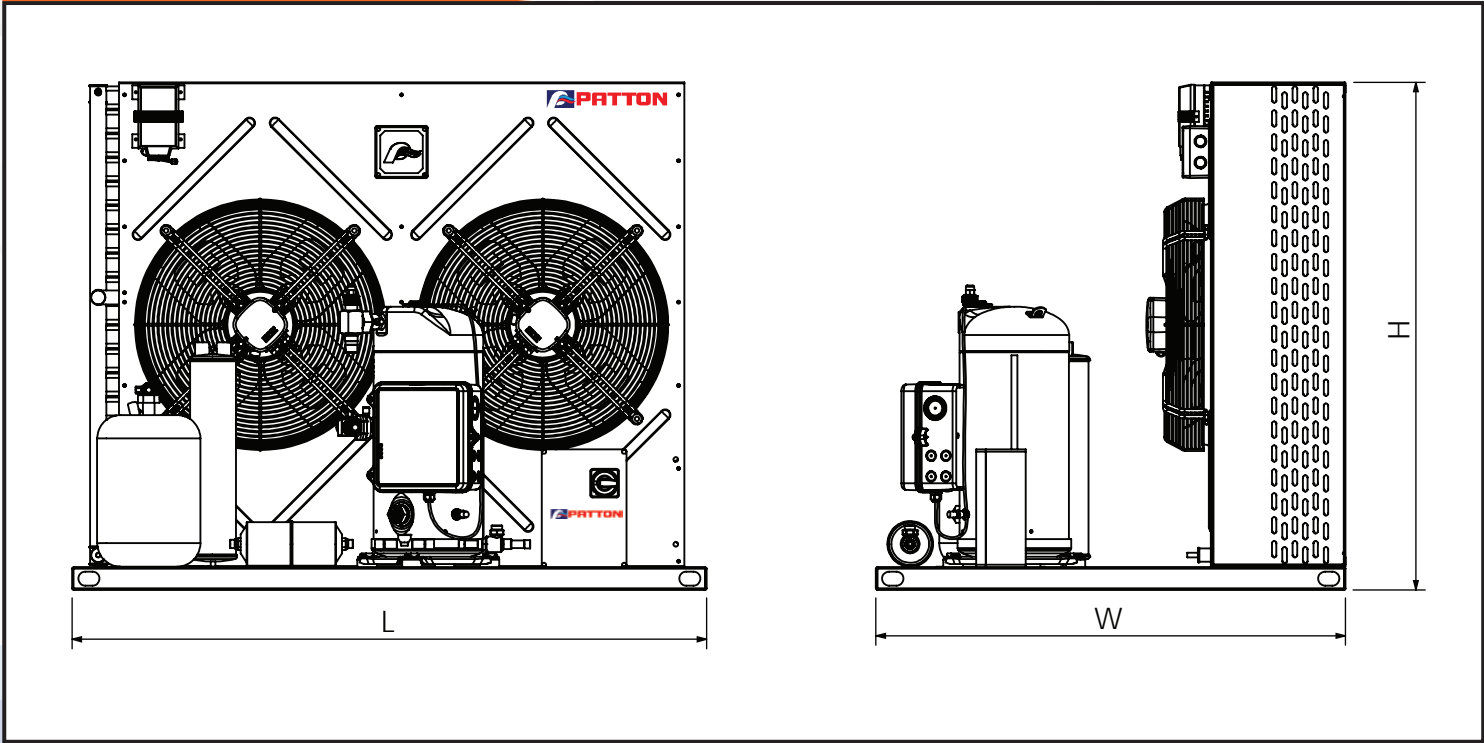


## TECHNICAL DATA

MODEL NAME		PHAS650T-2F-ZB-LSE	PHAS800T-2F-ZB-LSE	PHAS900T-2F-ZB-LSE	PHAS1000T-2F-ZB-LSE	PHAS1200T-2F-ZB-LSE
Compressor	Model	ZB48KQE-TFD	ZB58KQE-TFD	ZB66KQE-TFD	ZB76KQE-TFD	ZB88KQE-TFD
	Horse Power (hp)	6.5	8.0	9.0	10.0	12.0
	Rated Input Volt	AC 380-420V/3PH/50Hz				
	MCC Amps	14.0	15.9	17.5	20.4	21.3
Condenser	Fan Motor*	2 x 400 mm.	2 x 500 mm.	2 x 500 mm.	2 x 500 mm.	2 x 500 mm.
	Total Fan Power (W)	360	760	760	760	760
	Total Fan Current (A)	1.7	3.6	3.6	3.6	3.6
	Air Volume (L/s)	1670	2360	2360	2950	3610
	Reciever (L)	8	14	14	14	14
	Suction Tube Size	7/8"	1-1/8"	1-1/8"	1-3/8"	1-3/8"
	Liquid Tube Size	5/8"	5/8"	5/8"	5/8"	5/8"
Dimension	[L]Length(mm)	1000	1350	1350	1350	1350
	[W]Width (mm)	800	1000	1000	1000	1000
	[H]Hleght(mm)	830	850	850	1010	1110
	dB(A)@3.0 mtrs	65	68	68	68	68
	Weight (kg)	183	208	210	212	228

Note : \* All Fan 220-240V/1PH/50Hz

## DIMENSION



Products, specifications and technical data contained in this document are subject to change without prior notice.