

Copeland Scroll™ Compressor

Fusion for Refrigeration Applications



Product Catalogue

COPELAND™


EMERSON™

Pioneering technologies for best-in-class products

Emerson is the world's leading provider of heating, ventilation, air conditioning and refrigeration solutions for residential, commercial and industrial applications, supporting the industry with advanced technology, technical support and training services.

For more than 80 years, we have been introducing innovative technology to the market, from the first semi-hermetic and hermetic compressors in the 1940s and 1950s, the high efficiency Discus™ semi-hermetic, air conditioning and heating scroll compressors in the 1980s and 1990s, to the new Stream semi-hermetic and the digital scroll compressor technology of today.

Based on this, we have developed an unequalled range of solutions for the refrigeration and air conditioning markets. In recent years, we have become a major solution provider to the air conditioning and refrigeration industry. Our range of Copeland™ brand products addresses the diverse needs of all of these markets. With scrolls and semi-hermetic compressors available for all main refrigerants, equipped with smart electronics and capable of modulation, Emerson has taken compressor technology to new heights.

Our vision:

Emerson, with our partners,
will provide global solutions to improve human comfort,
safeguard food and protect the environment.





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Leading innovation in scroll semi-hermetic technology

Emerson's Copeland™ brand semi-hermetic compressors were the first to successfully operate with an electric motor inside the compressor casting in 1941. Building upon that success, Emerson has revolutionized the industry with its Copeland Scroll technology launched in 1987. In 2012, Emerson produced its 100 millionth scroll – a significant achievement that further demonstrates Emerson's position as a world leader in the development and application of scroll technology.

Copeland Scroll™ Fusion: Energy-efficient refrigeration

Today, Emerson is one of the world's largest manufacturer of refrigeration compressors, underscoring the company's thrust of ensuring food safety and protecting the environment. Emerson helps provide solutions to achieve high efficiency systems for cold storage warehouses, supermarkets, quick service restaurants, meat trading and processing facilities, seafood import and export establishments, agricultural depots and retail outlets using green technologies to reduce environmental impact. Leveraging Emerson's vast global network and R&D resources, the company continues to drive for the ultimate in technology solutions for the various climate control segments.

Emerson realized an increasing need for a versatile, reliable, quiet, lightweight and serviceable compressor for the cold room market and set out to develop a solution for this need. In the development process, the company brought together 70 years of semi-hermetic compressor expertise and 25 years of leadership in scroll technology. What came out of this endeavor is the newly-designed Copeland Scroll Fusion compressor which combines Emerson's revolutionary scroll technology and the serviceability of a traditional semi-hermetic compressor.

Smart and versatile

Copeland Scroll Fusion was crafted specifically to adhere to the refrigeration industry's need for field serviceable solutions. In addition, it is specially designed for medium and low temperature refrigeration with the ability to handle various refrigerants.

The compressor features a horizontal, bolted cast iron body, helping to maximize compact design, low vibration, and quiet operation associated with the Copeland Scroll design. Going one step further, an integrated economizer kit provides optimal performance and reliability by delivering subcooled liquid to the evaporator while maintaining safe compressor operating temperatures.

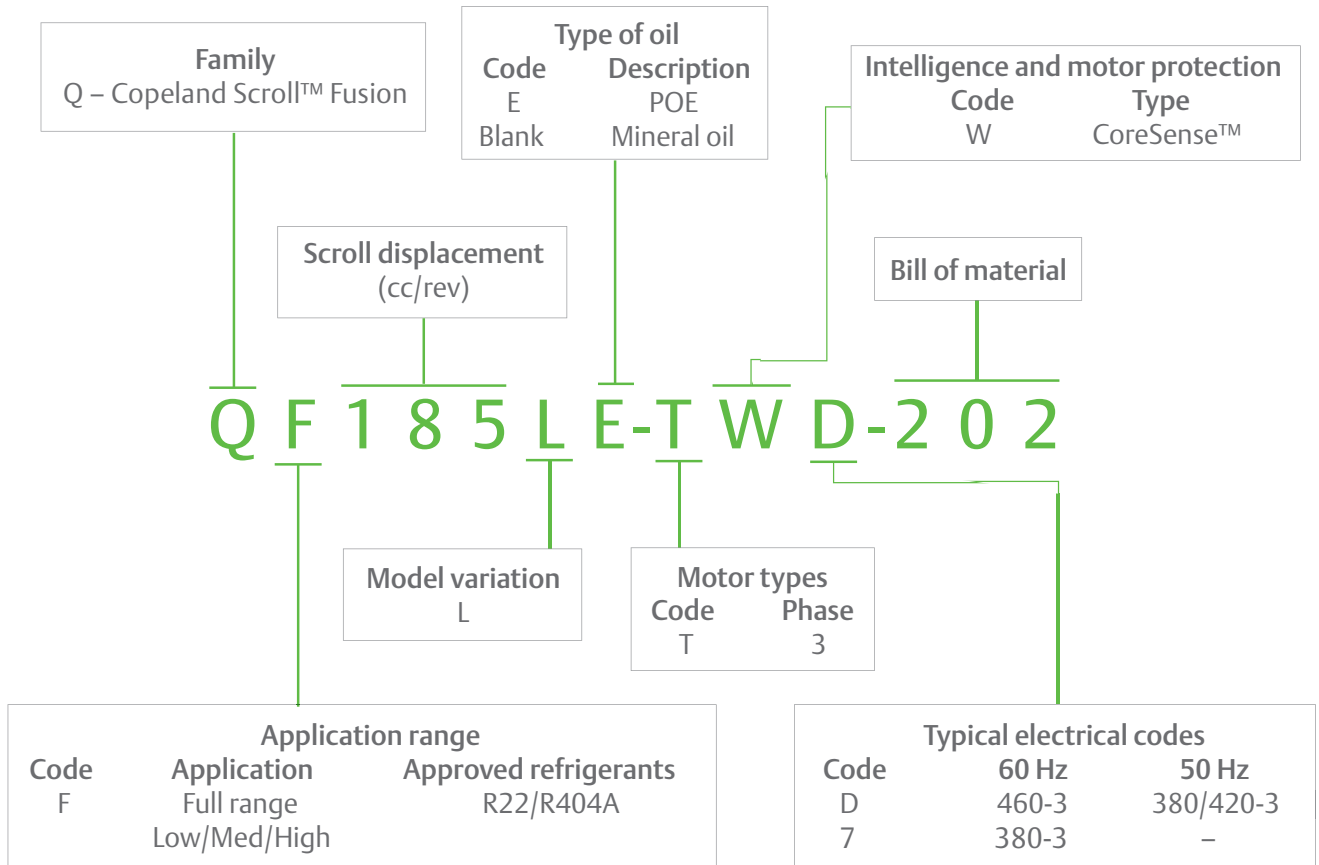
The Copeland Scroll Fusion compressor features CoreSense™ Diagnostics, which sends and interprets information regarding the compressor's operation, allowing for quicker, more accurate diagnostics, and less compressor downtime, thus providing more value to its consumers.



Fusion for refrigeration applications

Features	Benefits	BOM	
		202	203
Copeland Scroll™	Lowest sound, vibration, and service parts	✓	✓
Integrated economizer kit	Full range operation		
Plate heat exchanger	Oil/scroll cooling	✓	✓
Electronic expansion valve/coil	Maximum performance and reliability	✓	✓
Fitted tubing and insulation	Ease of installation	✓	✓
CoreSense™ Diagnostics	Optimal performance, reliability and diagnostics		
Temperature sensors	Scroll and motor overheat protection, oil temperature protection	✓	✓
Oil level sensor	Loss of oil protection	✓	✓
Differential pressure sensor	Reverse rotation protection	✓	✓
Electronic expansion valve driver	Maximum performance and reliability	✓	✓
LED display	Improved trouble shooting accuracy	✓	✓
Crankcase heater	Flooded start protection	✓	✓
Mounting kits	Low vibration	✓	✓
Suction and discharge service valve	Ease of service	✓	✓
Oil sight glass	Ease of service	✓	✓
Oil drain port/oil fill port	Ease of service	✓	✓
Oil charged	Standard feature	✓	✓
Chinese nameplate/user manual			✓
English nameplate/user manual		✓	

Nomenclature

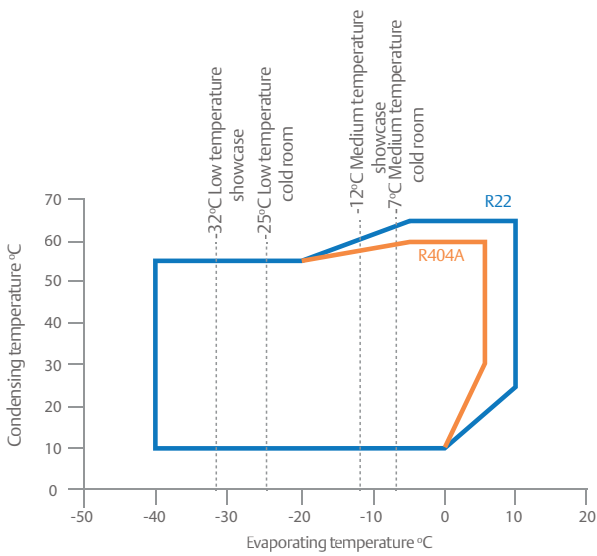


Note: QF205 has low temperature model only.

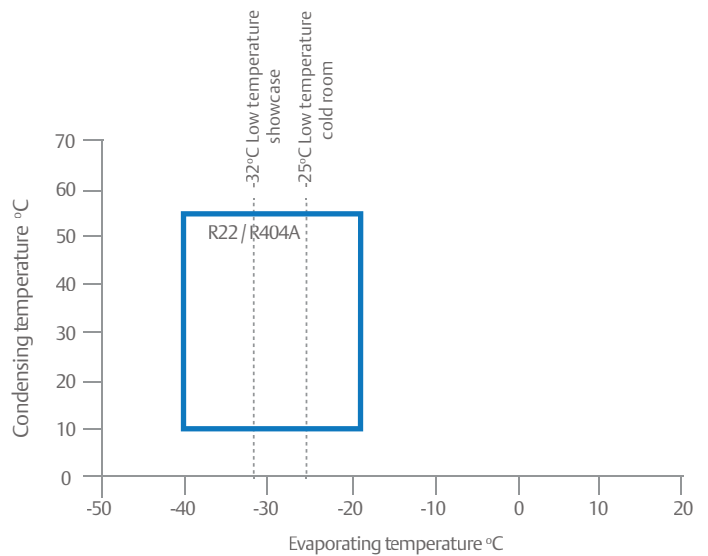
Operating envelopes

R22/R404A
QF115/QF125/QF145/QF175/QF185

R22/R404A
QF205



Note: 20°C return gas temperature. No fan cooling



Note: 20°C return gas temperature. No fan cooling

Product line-up

Capacity (kW),50 Hz

R22

Model	Medium Temp Cold Room ¹	Low Temp Cold Room ³	Medium Temp Showcase ²	Low Temp Showcase ⁴
QF115L	14.0	7.5	11.8	5.6
QF125L	15.5	8.2	13.1	5.9
QF145L	17.2	9.0	14.5	6.6
QF175L	18.8	10.0	15.9	7.4
QF185L	21.1	11.8	18.1	8.9
QF205L	—	13.4	—	10.1

Capacity (kW),50 Hz

R404A

Model	Medium Temp Cold Room ¹	Low Temp Cold Room ³	Medium Temp Showcase ²	Low Temp Showcase ⁴
QF115L	14.1	8.2	12.0	6.2
QF125L	16.1	9.4	13.8	7.1
QF145L	18.1	10.3	15.4	7.9
QF175L	21.9	11.1	18.3	8.2
QF185L	22.3	12.4	19.0	9.4
QF205L	—	14.2	—	10.8

Capacity (kW),60 Hz

R22

Model	Medium Temp Cold Room ¹	Low Temp Cold Room ³	Medium Temp Showcase ²	Low Temp Showcase ⁴
QF115L	16.1	9.0	13.5	6.7
QF125L	18.6	9.8	15.7	7.1
QF145L	20.1	10.8	17.4	7.9
QF175L	22.6	12.0	19.1	8.9
QF185L	25.3	14.2	21.7	10.6
QF205L	—	16.0	—	12.2

Capacity (kW),60 Hz

R404A

Model	Medium Temp Cold Room ¹	Low Temp Cold Room ³	Medium Temp Showcase ²	Low Temp Showcase ⁴
QF115LE	16.9	9.8	14.4	7.5
QF125LE	19.3	11.2	16.6	8.6
QF145LE	21.8	12.3	18.5	9.6
QF175LE	26.2	13.3	21.9	9.8
QF185LE	26.7	14.9	22.8	11.3
QF205LE	—	17.0	—	13.0

Notes: 1. Medium temp cold room, ET: -7°C / CT:50°C / RGT:20°C
2. Medium temp showcase, ET: -12°C / CT:50°C / RGT:20°C

3. Low temp cold room, ET: -25°C / CT:45°C / RGT:20°C
4. Low temp showcase, ET: -32°C / CT:45°C / RGT:20°C

Technical data

Model		R22	QF115L	QF125L	QF145L	QF175L	QF185L	QF205L
		R404A	QF115LE	QF125LE	QF145LE	QF175LE	QF185LE	QF205LE
Displacement	TWD 50 Hz	m ³ /h	19.3	21.1	23.5	26.4	30.4	36.9
MOC ¹		A	24	25	27	32	33	25
LRA ²			80	80	80	105	105	105
Motor speed		rpm	2,900					
Displacement	TW7 60 Hz	m ³ /h	23.2	25.4	28.3	31.9	36.6	43.1
MOC ¹		A	30	34	32	30	34	32
LRA ²			94	94	94	94	94	94
Motor speed		rpm	3500					
Crankcase heater	Power	W	60					
	Voltage	V	220					
Oil charge	Initial	L	2.66					
	Recharge		2.54					
Service valves	Suction	in	1-1/8					
	Discharge		1					
Dimensions	Length	mm	675					
	Width		355					
	Height		389					
Base mounting	Length	mm	350					
	Width		200					
	Bolt		M10					
Weight	Net	kg	130					
	Gross		140					

Notes: 1. MOC: Maximum operating current
2. LRA: Locked rotor current

Performance data

TWD - 50 Hz

R22

Model	Condensing temperature (°C)	Evaporating temperature °C											
		-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
QF115L	Q (kW)	65								12.8	15.1	17.6	20.3
		60								13.6	16.0	18.5	21.3
		55	2.8	3.9	5.2	6.7	8.3	10.1	12.1	14.3	16.7	19.3	22.2
		50	3.4	4.5	5.7	7.2	8.8	10.6	12.6	14.9	17.3	20.1	23.0
		45	3.8	4.8	6.1	7.5	9.1	11.0	13.1	15.4	17.9	20.7	23.8
		40	4.1	5.1	6.3	7.8	9.4	11.3	13.4	15.8	18.5	21.4	24.6
		35	4.2	5.3	6.5	7.9	9.6	11.6	13.8	16.3	19.0	22.1	25.4
		30	4.3	5.4	6.6	8.1	9.8	11.8	14.1	16.7	19.6	22.8	26.3
		25	4.4	5.4	6.7	8.2	10.0	12.1	14.5	17.2	20.2	23.5	
		20	4.4	5.5	6.8	8.4	10.2	12.4	14.9	17.7	20.9	24.3	
	15	4.5	5.6	6.9	8.6	10.5	12.8	15.4	18.3	21.6	25.3		
	10	4.6	5.7	7.1	8.8	10.9	13.3	16.0	19.1	22.6			
	P (kW)	65								8.7	8.7	8.8	8.9
		60								7.5	7.6	7.7	8.0
		55	6.3	6.3	6.3	6.3	6.4	6.4	6.4	6.6	6.7	6.9	7.2
		50	5.2	5.3	5.4	5.4	5.5	5.6	5.7	5.8	6.1	6.3	6.7
		45	4.4	4.5	4.6	4.7	4.8	4.9	5.1	5.3	5.6	5.9	6.3
		40	3.8	3.9	4.1	4.2	4.3	4.5	4.7	4.9	5.2	5.6	6.0
		35	3.3	3.5	3.6	3.8	3.9	4.1	4.3	4.6	4.9	5.3	5.8
		30	3.0	3.1	3.3	3.5	3.6	3.8	4.1	4.4	4.7	5.1	5.6
		25	2.7	2.9	3.0	3.2	3.4	3.6	3.8	4.1	4.5	4.9	
		20	2.5	2.6	2.8	2.9	3.1	3.3	3.6	3.9	4.2	4.7	
	15	2.2	2.4	2.5	2.7	2.8	3.0	3.2	3.5	3.9	4.3		
	10	1.9	2.1	2.2	2.3	2.4	2.6	2.8	3.1	3.5			
	Liquid line temperature (°C)	65								44	47	50	52
		60								42	45	47	49
		55	21	24	27	30	33	36	38	40	42	44	46
		50	17	20	23	26	29	32	35	37	39	41	43
		45	14	18	21	24	27	30	32	34	36	38	40
		40	11	14	17	20	23	26	28	30	32	34	36
		35	8	11	14	17	20	22	24	26	28	30	32
		30	5	8	11	14	17	19	21	23	25	27	28
		25	2	5	8	11	14	16	18	20	22	24	
20		-2	1	4	7	8	11	13	15	17	19		
15	-6	-3	-1	2	4	6	8	10	12	14			
10	-10	-7	-5	-3	-1	1	3	5	7				
QF125L	Q (kW)	65								14.1	16.6	19.3	22.4
		60								12.8	15.1	17.7	20.5
		55	3.5	4.8	6.1	7.7	9.4	11.3	13.5	15.9	18.6	21.6	25.0
		50	3.8	5.0	6.4	8.0	9.8	11.8	14.1	16.6	19.4	22.6	26.1
		45	4.0	5.2	6.7	8.3	10.1	12.2	14.6	17.2	20.1	23.4	27.1
		40	4.1	5.4	6.9	8.5	10.4	12.6	15.0	17.7	20.8	24.2	28.0
		35	4.2	5.5	7.0	8.7	10.6	12.9	15.4	18.2	21.4	24.9	28.9
		30	4.3	5.6	7.1	8.9	10.9	13.1	15.7	18.6	21.9	25.6	29.7
		25	4.5	5.8	7.3	9.0	11.1	13.4	16.1	19.1	22.5	26.3	
		20	4.7	5.9	7.5	9.2	11.3	13.7	16.4	19.5	23.0	27.0	
	15	4.9	6.2	7.7	9.5	11.6	14.1	16.9	20.0	23.6			
	10	5.2	6.5	8.0	9.8	12.0	14.5	17.3	20.6	24.3			
	P (kW)	65								9.4	9.5	9.7	9.9
		60							8.0	8.2	8.3	8.5	8.7
		55	6.4	6.4	6.4	6.5	6.6	6.8	7.0	7.2	7.4	7.6	7.9
		50	5.4	5.4	5.5	5.6	5.8	6.0	6.2	6.4	6.7	6.9	7.2
		45	4.6	4.7	4.8	5.0	5.2	5.4	5.6	5.9	6.1	6.4	6.7
		40	4.1	4.2	4.3	4.5	4.7	4.9	5.2	5.4	5.7	6.0	6.2
		35	3.6	3.7	3.9	4.1	4.3	4.6	4.8	5.1	5.4	5.6	5.9
		30	3.3	3.4	3.6	3.8	4.0	4.3	4.6	4.8	5.1	5.4	5.6
		25	3.0	3.2	3.3	3.5	3.8	4.0	4.3	4.6	4.8	5.1	
		20	2.8	2.9	3.1	3.3	3.5	3.8	4.0	4.3	4.5	4.7	
	15	2.5	2.6	2.8	3.0	3.2	3.4	3.7	3.9	4.1			
	10	2.2	2.3	2.5	2.6	2.8	3.0	3.2	3.5	3.6			
	Liquid line temperature (°C)	65								41	45	48	52
		60								40	43	46	48
		55	22	24	27	30	33	35	37	39	41	43	45
		50	18	21	24	27	30	32	34	36	38	40	42
		45	14	17	20	23	26	29	31	33	35	37	39
		40	11	14	17	20	23	26	28	30	32	34	36
		35	8	11	14	17	20	23	25	27	29	31	33
		30	5	8	11	14	17	19	21	23	25	27	29
		25	1	3	6	9	12	15	17	19	21	23	
20		-4	-1	2	5	8	11	13	15	17	19		
15	-8	-3	0	2	4	6	8	10	12	14			
10	-12	-9	-6	-3	-1	1	3	5	7				

Note: Based on a return gas temperature of 20°C

Performance data

TWD - 50 Hz

R22

Model	Condensing temperature (°C)	Evaporating temperature °C											
		-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
QF145L	Q (kW)	65								16.5	19.2	22.2	25.4
		60							14.6	17.2	20.0	23.1	26.5
		55	3.9	5.3	6.9	8.6	10.6	12.7	15.2	17.8	20.7	24.0	27.5
		50	4.2	5.6	7.2	8.9	10.9	13.1	15.6	18.4	21.4	24.8	28.5
		45	4.5	5.8	7.4	9.2	11.2	13.5	16.0	18.9	22.1	25.6	29.4
		40	4.7	6.0	7.6	9.4	11.4	13.8	16.4	19.4	22.7	26.3	30.3
		35	4.8	6.2	7.7	9.5	11.6	14.0	16.7	19.8	23.2	27.0	31.2
		30	5.0	6.3	7.8	9.7	11.8	14.3	17.1	20.2	23.7	27.7	32.0
		25	5.1	6.4	7.9	9.8	12.0	14.5	17.4	20.6	24.2	28.3	
		20	5.2	6.5	8.0	9.9	12.1	14.7	17.6	21.0	24.7	28.9	
		15	5.3	6.6	8.1	10.0	12.3	14.9	17.9	21.3	25.2		
	10	5.5	6.7	8.2	10.1	12.4	15.1	18.2	21.7	25.7			
	P (kW)	65								9.7	9.8	10.0	10.3
		60							8.4	8.6	8.8	9.0	9.3
		55	6.4	6.6	6.8	6.9	7.1	7.3	7.5	7.7	7.9	8.2	8.5
		50	5.5	5.7	5.9	6.1	6.3	6.5	6.7	6.9	7.2	7.5	7.9
		45	4.9	5.1	5.3	5.5	5.7	5.9	6.1	6.4	6.7	7.0	7.4
		40	4.3	4.5	4.7	4.9	5.2	5.4	5.6	5.9	6.2	6.6	7.0
		35	3.9	4.1	4.3	4.5	4.7	5.0	5.2	5.5	5.8	6.2	6.7
		30	3.6	3.8	4.0	4.2	4.4	4.6	4.9	5.2	5.5	6.0	6.4
		25	3.3	3.5	3.6	3.8	4.0	4.3	4.6	4.9	5.3	5.7	
		20	3.0	3.2	3.3	3.5	3.7	4.0	4.3	4.6	5.0	5.4	
		15	2.7	2.9	3.0	3.2	3.4	3.6	3.9	4.3	4.7		
	10	2.4	2.5	2.7	2.8	3.0	3.2	3.5	3.9	4.3			
	Liquid line temperature (°C)	65								40	44	47	50
		60								39	42	45	47
		55	20	23	26	29	32	34	36	38	40	42	44
		50	17	19	22	25	28	31	33	35	37	39	41
		45	14	17	20	23	26	28	30	32	34	36	38
		40	11	14	17	20	23	26	27	29	31	33	35
		35	8	11	14	17	20	22	24	26	28	30	32
		30	5	8	11	14	17	19	21	23	25	27	29
		25	1	3	6	9	12	15	18	20	22	24	
20		-4	0	3	6	9	11	13	15	17	19		
15		-8	-5	-2	1	4	6	8	10	12	14		
10	-12	-9	-6	-3	-1	1	3	5	7				
QF175L	Q (kW)	65								16.5	19.7	23.1	26.6
		60							15.1	18.0	21.2	24.5	28.0
		55	4.5	5.6	7.1	8.9	11.1	13.5	16.2	19.1	22.3	25.6	29.0
		50	5.5	6.5	8.0	9.8	11.9	14.3	17.0	19.9	23.0	26.4	29.9
		45	6.0	7.1	8.5	10.3	12.4	14.8	17.5	20.5	23.6	27.0	30.5
		40	6.3	7.3	8.8	10.6	12.7	15.2	17.9	20.9	24.1	27.6	31.2
		35	6.3	7.4	8.9	10.7	12.9	15.4	18.2	21.3	24.6	28.2	31.9
		30	6.2	7.4	8.9	10.8	13.1	15.7	18.6	21.8	25.2	28.9	32.8
		25	6.2	7.4	9.0	11.0	13.4	16.1	19.1	22.5	26.0	29.9	
		20	6.1	7.5	9.2	11.4	13.9	16.7	19.9	23.4	27.2	31.2	
		15	6.3	7.8	9.7	12.0	14.7	17.7	21.1	24.7	28.7		
	10	6.8	8.4	10.5	12.9	15.8	19.1	22.6	26.5	30.7			
	P (kW)	65								11.1	11.4	11.6	11.8
		60							9.7	10.0	10.2	10.5	10.8
		55	7.4	7.5	7.7	7.9	8.1	8.4	8.7	9.0	9.3	9.6	9.9
		50	6.4	6.6	6.8	7.0	7.2	7.5	7.8	8.2	8.5	8.8	9.1
		45	5.7	5.8	6.0	6.2	6.5	6.8	7.1	7.5	7.8	8.2	8.5
		40	5.0	5.2	5.4	5.6	5.9	6.2	6.6	6.9	7.3	7.6	8.0
		35	4.5	4.7	4.9	5.1	5.4	5.7	6.1	6.4	6.8	7.2	7.5
		30	4.2	4.3	4.5	4.7	5.0	5.3	5.7	6.0	6.4	6.8	7.2
		25	3.8	4.0	4.2	4.4	4.7	5.0	5.3	5.7	6.0	6.4	
		20	3.6	3.7	3.9	4.1	4.4	4.7	5.0	5.3	5.7	6.1	
		15	3.4	3.5	3.6	3.8	4.1	4.4	4.7	5.0	5.4		
	10	3.2	3.3	3.4	3.6	3.8	4.1	4.4	4.7	5.0			
	Liquid line temperature (°C)	65								41	44	48	52
		60							36	38	41	45	49
		55	21	23	25	27	29	31	33	35	38	42	46
		50	17	19	21	23	25	27	30	32	35	39	43
		45	13	15	17	19	22	24	27	29	32	35	39
		40	9	11	13	17	19	21	24	26	29	32	37
		35	5	8	11	14	17	19	21	24	26	30	34
		30	1	5	8	11	14	17	19	22	24	28	31
		25	-2	2	6	9	12	15	17	20	22	26	29
20		-6	-1	3	6	10	13	15	18	20	24		
15		-10	-4	1	4	8	11	13	16	19			
10	-13	-7	-1	2	6	9	11	14	17				

Note: Based on a return gas temperature of 20°C

Performance data

TWD - 50 Hz

R22

Model	Condensing temperature (°C)	Evaporating temperature °C											
		-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
QF185L	Q (kW)	65								20.3	23.6	27.0	30.3
		60							18.1	21.2	24.4	27.7	30.9
		55	4.9	6.5	8.5	10.7	13.2	15.9	18.8	21.9	25.0	28.2	31.5
		50	6.1	7.6	9.4	11.5	13.9	16.5	19.4	22.3	25.5	28.7	32.0
		45	6.8	8.2	9.9	12.0	14.4	17.0	19.8	22.8	25.9	29.2	32.6
		40	7.2	8.6	10.3	12.3	14.6	17.3	20.1	23.2	26.4	29.8	33.3
		35	7.4	8.7	10.4	12.5	14.9	17.6	20.5	23.7	27.1	30.6	34.3
		30	7.3	8.7	10.5	12.6	15.1	18.0	21.1	24.4	28.0	31.7	35.6
		25	7.2	8.7	10.6	12.8	15.5	18.5	21.8	25.3	29.1	33.1	
		20	7.1	8.7	10.7	13.2	16.1	19.3	22.8	26.6	30.7	35.0	
		15	7.0	8.8	11.1	13.8	16.9	20.4	24.2	28.4	32.8		
	10	7.1	9.1	11.7	14.7	18.1	21.9	26.1	30.6	35.4			
	P (kW)	65								12.6	12.8	13.0	13.1
		60							11.2	11.5	11.7	11.9	12.0
		55	7.8	8.3	8.7	9.1	9.5	9.8	10.1	10.4	10.7	10.9	11.0
		50	7.0	7.4	7.8	8.2	8.6	8.9	9.2	9.5	9.8	10.0	10.2
		45	6.2	6.6	7.0	7.4	7.7	8.1	8.4	8.7	9.0	9.2	9.4
		40	5.6	6.0	6.3	6.7	7.0	7.4	7.7	8.0	8.3	8.5	8.8
		35	5.1	5.4	5.7	6.1	6.4	6.7	7.0	7.4	7.7	7.9	8.2
		30	4.6	4.9	5.2	5.5	5.8	6.1	6.5	6.8	7.1	7.4	7.7
		25	4.2	4.4	4.7	5.0	5.3	5.6	6.0	6.3	6.6	6.9	
		20	3.8	4.1	4.3	4.6	4.9	5.2	5.5	5.9	6.2	6.5	
		15	3.5	3.7	3.9	4.2	4.5	4.8	5.1	5.5	5.8		
	10	3.2	3.4	3.6	3.8	4.1	4.4	4.7	5.1	5.4			
	Liquid line temperature (°C)	65								39	42	46	50
		60							34	36	39	43	47
		55	21	23	24	26	28	29	31	33	36	40	44
		50	17	19	20	22	24	25	27	30	32	36	41
		45	13	15	16	18	20	22	24	27	30	33	37
		40	9	11	10	15	17	19	21	24	27	30	34
		35	5	8	13	12	15	17	19	22	25	28	31
		30	1	5	7	10	13	15	17	20	23	26	29
		25	-2	2	5	8	11	13	15	18	21	24	27
20		-6	-1	2	6	9	11	13	16	19	22		
15		-10	-4	0	4	7	9	11	14	17			
10	-13	-7	-2	2	6	8	10	13	16				
QF205L	Q (kW)	65											
		60											
		55	6.1	7.9	10.0	12.3	14.8						
		50	6.7	8.5	10.5	12.9	15.5						
		45	7.0	8.9	11.0	13.4	16.1						
		40	7.3	9.2	11.3	13.7	16.5						
		35	7.5	9.4	11.6	14.1	16.9						
		30	7.6	9.5	11.8	14.4	17.3						
		25	7.8	9.7	12.0	14.6	17.7						
		20	7.9	9.9	12.2	15.0	18.1						
		15	8.1	10.1	12.5	15.3	18.6						
	10	8.3	10.4	12.9	15.8	19.2							
	P (kW)	65											
		60											
		55	8.9	9.4	9.8	10.2	10.6						
		50	8.0	8.4	8.8	9.1	9.6						
		45	7.2	7.5	7.9	8.3	8.7						
		40	6.6	6.8	7.2	7.5	7.9						
		35	6.0	6.3	6.5	6.9	7.3						
		30	5.6	5.7	6.0	6.3	6.7						
		25	5.1	5.2	5.5	5.8	6.2						
		20	4.7	4.8	5.0	5.3	5.7						
		15	4.2	4.3	4.4	4.7	5.2						
	10	3.7	3.7	3.9	4.2	4.6							
	Liquid line temperature (°C)	65											
		60											
		55	22	23	24	25	26						
		50	16	18	19	20	21						
		45	11	13	14	15	17						
		40	7	9	10	12	14						
		35	3	5	7	9	12						
		30	0	2	4	6	9						
		25	-4	-1	1	3	6						
20		-7	-4	-2	0	4							
15		-10	-6	-4	-2	2							
10	-13	-9	-6	-4	0								

Note: Based on a return gas temperature of 20°C

Performance data

TW7 - 60 Hz

R22

Model	Condensing temperature (°C)	Evaporating temperature °C											
		-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
QF115L	Q (kW)	65								15.3	18.1	21.1	24.3
		60								16.3	19.1	22.2	25.5
		55	3.3	4.7	6.3	8.0	10.0	12.1	14.5	17.1	20.0	23.2	26.6
		50	4.0	5.3	6.9	8.6	10.5	12.7	15.1	17.8	20.8	24.1	27.6
		45	4.5	5.8	7.3	9.0	11.0	13.2	15.7	18.4	21.5	24.9	28.6
		40	4.9	6.1	7.6	9.3	11.3	13.6	16.1	19.0	22.2	25.7	29.5
		35	5.1	6.3	7.8	9.5	11.6	13.9	16.5	19.5	22.8	26.5	30.5
		30	5.2	6.4	7.9	9.7	11.8	14.2	16.9	20.0	23.5	27.3	31.5
		25	5.3	6.5	8.0	9.9	12.0	14.5	17.4	20.6	24.2	28.2	
		20	5.3	6.6	8.1	10.0	12.3	14.9	17.9	21.3	25.0	29.2	
	15	5.4	6.7	8.3	10.3	12.6	15.4	18.5	22.0	26.0	30.4		
	10	5.5	6.8	8.5	10.6	13.1	15.9	19.2	22.9	27.1			
	P (kW)	65								10.4	10.4	10.5	10.7
		60								9.0	9.1	9.3	9.5
		55	7.5	7.6	7.6	7.6	7.6	7.7	7.7	7.9	8.0	8.3	8.7
		50	6.3	6.4	6.4	6.5	6.6	6.7	6.8	7.0	7.3	7.6	8.0
		45	5.3	5.4	5.5	5.7	5.8	5.9	6.1	6.4	6.7	7.1	7.6
		40	4.6	4.7	4.9	5.0	5.2	5.4	5.6	5.9	6.2	6.7	7.2
		35	4.0	4.2	4.4	4.5	4.7	4.9	5.2	5.5	5.9	6.4	7.0
		30	3.6	3.8	4.0	4.2	4.4	4.6	4.9	5.2	5.7	6.2	6.8
		25	3.3	3.5	3.6	3.8	4.0	4.3	4.6	5.0	5.4	5.9	
		20	3.0	3.2	3.3	3.5	3.7	4.0	4.3	4.6	5.1	5.6	
	15	2.7	2.8	3.0	3.2	3.4	3.6	3.9	4.3	4.7	5.2		
	10	2.3	2.5	2.6	2.7	2.9	3.1	3.4	3.7	4.1			
	Liquid line temperature (°C)	65								44	47	50	52
		60								42	45	47	49
		55	21	24	27	30	33	36	38	40	42	44	46
		50	17	20	23	26	29	32	35	37	39	41	43
		45	14	18	21	24	27	30	32	34	36	38	40
		40	11	14	17	20	23	26	28	30	32	34	36
35		8	11	14	17	20	22	24	26	28	30	32	
30		5	8	11	14	17	19	21	23	25	27	28	
25		2	5	8	11	14	16	18	20	22	24		
20		-2	1	4	7	8	11	13	15	17	19		
15	-6	-3	-1	2	4	6	8	10	12	14			
10	-10	-7	-5	-3	-1	1	3	5	7				
QF125L	Q (kW)	65								16.9	19.9	23.2	26.9
		60								15.3	18.1	21.2	24.7
		55	4.2	5.6	7.3	9.1	11.2	13.5	16.1	19.1	22.3	26.0	30.0
		50	4.5	6.0	7.7	9.6	11.7	14.1	16.8	19.9	23.3	27.1	31.3
		45	4.8	6.3	8.0	9.9	12.1	14.6	17.4	20.6	24.2	28.1	32.5
		40	5.0	6.5	8.2	10.2	12.4	15.0	18.0	21.3	24.9	29.1	33.6
		35	5.1	6.6	8.4	10.4	12.7	15.4	18.4	21.8	25.7	29.9	34.6
		30	5.3	6.8	8.5	10.6	13.0	15.7	18.8	22.4	26.3	30.7	35.6
		25	5.4	6.9	8.7	10.8	13.2	16.0	19.3	22.9	27.0	31.6	
		20	5.6	7.1	8.9	11.0	13.5	16.4	19.7	23.5	27.7	32.4	
	15	5.9	7.3	9.1	11.3	13.9	16.8	20.2	24.1	28.4			
	10	6.2	7.7	9.5	11.7	14.3	17.3	20.8	24.8	29.2			
	P (kW)	65								11.2	11.4	11.6	11.8
		60								9.6	9.8	10.0	10.2
		55	7.6	7.6	7.7	7.8	8.0	8.2	8.4	8.6	8.9	9.2	9.4
		50	6.4	6.5	6.6	6.8	7.0	7.2	7.5	7.7	8.0	8.3	8.6
		45	5.6	5.7	5.8	6.0	6.2	6.5	6.7	7.0	7.4	7.7	8.0
		40	4.9	5.0	5.2	5.4	5.6	5.9	6.2	6.5	6.9	7.2	7.5
		35	4.4	4.5	4.7	4.9	5.2	5.5	5.8	6.1	6.5	6.8	7.1
		30	4.0	4.1	4.3	4.5	4.8	5.1	5.4	5.8	6.1	6.5	6.8
		25	3.7	3.8	4.0	4.2	4.5	4.8	5.1	5.4	5.8	6.1	
		20	3.3	3.5	3.6	3.9	4.1	4.4	4.8	5.1	5.4	5.8	
	15	3.0	3.1	3.3	3.5	3.7	4.0	4.3	4.7	5.0			
	10	2.5	2.6	2.8	3.0	3.2	3.5	3.8	4.1	4.5			
	Liquid line temperature (°C)	65								41	45	48	52
		60								40	43	46	48
		55	22	24	27	30	33	35	37	39	41	43	45
		50	18	21	24	27	30	32	34	36	38	40	42
		45	14	17	20	23	26	29	31	33	35	37	39
		40	11	14	17	20	23	26	28	30	32	34	36
35		8	11	14	17	20	23	25	27	29	31	33	
30		5	8	11	14	17	19	21	23	25	27	29	
25		1	3	6	9	12	15	17	19	21	23		
20		-4	-1	2	5	8	11	13	15	17	19		
15	-8	-3	0	2	4	6	8	10	12	14			
10	-12	-9	-6	-3	-1	1	3	5	7				

Note: Based on a return gas temperature of 20°C

Performance data

TW7 - 60 Hz

R22

Model	Condensing temperature (°C)	Evaporating temperature °C											
		-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
QF145L	Q (kW)	65								19.9	23.2	26.7	30.6
		60							17.6	20.7	24.1	27.7	31.8
		55	4.7	6.3	8.2	10.3	12.7	15.3	18.2	21.4	24.9	28.7	32.9
		50	5.1	6.7	8.6	10.7	13.1	15.7	18.7	22.0	25.6	29.6	34.0
		45	5.4	7.0	8.8	11.0	13.4	16.1	19.2	22.6	26.4	30.6	35.1
		40	5.7	7.2	9.1	11.2	13.7	16.5	19.7	23.2	27.1	31.5	36.2
		35	5.9	7.4	9.3	11.4	14.0	16.9	20.2	23.8	27.9	32.4	37.4
		30	6.1	7.6	9.5	11.7	14.3	17.3	20.7	24.5	28.7	33.4	38.6
		25	6.2	7.8	9.7	11.9	14.6	17.7	21.2	25.2	29.6	34.5	
		20	6.4	8.0	9.9	12.2	15.0	18.2	21.8	26.0	30.6	35.7	
	15	6.7	8.2	10.2	12.6	15.4	18.8	22.5	26.8	31.6			
	10	7.0	8.6	10.6	13.1	16.0	19.4	23.4	27.8	32.8			
	P (kW)	65								11.6	11.8	12.0	12.3
		60							10.1	10.3	10.5	10.8	11.1
		55	7.6	7.9	8.1	8.3	8.5	8.7	9.0	9.2	9.5	9.8	10.2
		50	6.6	6.9	7.1	7.4	7.6	7.8	8.1	8.3	8.7	9.0	9.4
		45	5.8	6.1	6.3	6.6	6.8	7.1	7.3	7.6	8.0	8.4	8.9
		40	5.2	5.5	5.7	5.9	6.2	6.4	6.7	7.1	7.4	7.9	8.4
		35	4.7	4.9	5.2	5.4	5.7	6.0	6.3	6.6	7.0	7.5	8.0
		30	4.3	4.5	4.8	5.0	5.2	5.5	5.9	6.2	6.7	7.1	7.7
		25	4.0	4.2	4.4	4.6	4.9	5.2	5.5	5.9	6.3	6.8	
		20	3.6	3.8	4.0	4.2	4.5	4.8	5.1	5.5	6.0	6.5	
	15	3.3	3.5	3.6	3.9	4.1	4.4	4.7	5.1	5.6			
	10	2.9	3.1	3.2	3.4	3.6	3.9	4.3	4.7	5.2			
	Liquid line temperature (°C)	65								40	44	47	50
		60								39	42	45	47
		55	20	23	26	29	32	34	36	38	40	42	44
		50	17	19	22	25	28	31	33	35	37	39	41
		45	14	17	20	23	26	28	30	32	34	36	38
		40	11	14	17	20	23	26	27	29	31	33	35
35		8	11	14	17	20	22	24	26	28	30	32	
30		5	8	11	14	17	19	21	23	25	27	29	
25		1	3	6	9	12	15	18	20	22	24		
20		-4	0	3	6	9	11	13	15	17	19		
15	-8	-5	-2	1	4	6	8	10	12	14			
10	-12	-9	-6	-3	-1	1	3	5	7				
QF175L	Q (kW)	65							19.8	23.7	27.7	31.9	
		60							18.1	21.6	25.4	29.4	33.6
		55	5.4	6.8	8.5	10.7	13.3	16.2	19.4	22.9	26.7	30.7	34.8
		50	6.6	7.9	9.6	11.8	14.3	17.2	20.4	23.9	27.6	31.6	35.8
		45	7.3	8.5	10.2	12.4	14.9	17.8	21.0	24.5	28.3	32.4	36.6
		40	7.6	8.8	10.6	12.7	15.3	18.2	21.5	25.1	28.9	33.1	37.4
		35	7.6	8.9	10.7	12.9	15.5	18.5	21.9	25.6	29.5	33.8	38.3
		30	7.5	8.9	10.7	13.0	15.8	18.9	22.4	26.2	30.3	34.7	39.3
		25	7.4	8.9	10.8	13.3	16.1	19.4	23.0	27.0	31.3	35.9	
		20	7.4	9.0	11.1	13.7	16.7	20.2	24.0	28.2	32.7	37.5	
	15	7.6	9.4	11.7	14.5	17.7	21.4	25.4	29.9	34.6			
	10	8.2	10.2	12.7	15.7	19.2	23.1	27.4	32.1	37.1			
	P (kW)	65								13.3	13.6	13.9	14.2
		60							11.6	12.0	12.3	12.6	12.9
		55	8.9	9.1	9.3	9.5	9.8	10.1	10.4	10.8	11.1	11.5	11.8
		50	7.8	8.0	8.2	8.4	8.7	9.1	9.4	9.8	10.2	10.6	10.9
		45	6.9	7.0	7.3	7.6	7.9	8.2	8.6	9.0	9.4	9.8	10.2
		40	6.1	6.3	6.5	6.8	7.1	7.5	7.9	8.3	8.7	9.1	9.6
		35	5.5	5.7	5.9	6.2	6.5	6.9	7.3	7.7	8.1	8.6	9.0
		30	5.0	5.2	5.4	5.7	6.0	6.4	6.8	7.2	7.6	8.1	8.5
		25	4.5	4.7	4.9	5.2	5.5	5.9	6.3	6.7	7.2	7.6	
		20	4.2	4.3	4.5	4.8	5.1	5.4	5.8	6.3	6.7	7.2	
	15	3.8	3.9	4.1	4.3	4.6	5.0	5.4	5.8	6.2			
	10	3.4	3.5	3.7	3.9	4.2	4.5	4.9	5.3	5.7			
	Liquid line temperature (°C)	65								41	44	48	52
		60							36	38	41	45	49
		55	21	23	25	27	29	31	33	35	38	42	46
		50	17	19	21	23	25	27	30	32	35	39	43
		45	13	15	17	19	22	24	27	29	32	35	39
		40	9	11	13	17	19	21	24	26	29	32	37
35		5	8	11	14	17	19	21	24	26	30	34	
30		1	5	8	11	14	17	19	22	24	28	31	
25		-2	2	6	9	12	15	17	20	22	26	29	
20		-6	-1	3	6	10	13	15	18	20	24		
15	-10	-4	1	4	8	11	13	16	19				
10	-13	-7	-1	2	6	9	11	14	17				

Note: Based on a return gas temperature of 20°C

Performance data

TW7 - 60 Hz

R22

Model	Condensing temperature (°C)	Evaporating temperature °C											
		-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
QF185L	Q (kW)	65								24.3	28.3	32.4	36.4
		60							21.7	25.4	29.3	33.2	37.1
		55	5.8	7.8	10.2	12.9	15.9	19.1	22.6	26.2	30.0	33.8	37.7
		50	7.3	9.1	11.3	13.8	16.7	19.8	23.2	26.8	30.6	34.4	38.4
		45	8.2	9.9	11.9	14.4	17.2	20.3	23.7	27.3	31.1	35.0	39.1
		40	8.7	10.3	12.3	14.8	17.6	20.7	24.2	27.8	31.7	35.8	39.9
		35	8.9	10.4	12.5	15.0	17.9	21.1	24.6	28.5	32.5	36.7	41.1
		30	8.8	10.4	12.6	15.2	18.2	21.6	25.3	29.3	33.6	38.0	42.7
		25	8.7	10.4	12.7	15.4	18.6	22.2	26.2	30.4	35.0	39.8	
		20	8.5	10.4	12.9	15.8	19.3	23.2	27.4	32.0	36.9	42.1	
	15	8.4	10.6	13.3	16.6	20.3	24.5	29.1	34.1	39.4			
	10	8.5	11.0	14.0	17.6	21.8	26.4	31.4	36.8	42.6			
	P (kW)	65								15.2	15.4	15.6	15.8
		60							13.4	13.7	14.0	14.2	14.4
		55	9.4	9.9	10.5	10.9	11.4	11.8	12.2	12.5	12.8	13.0	13.2
		50	8.4	8.9	9.4	9.9	10.3	10.7	11.1	11.4	11.7	12.0	12.2
		45	7.6	8.0	8.5	8.9	9.3	9.7	10.1	10.4	10.8	11.0	11.3
		40	6.8	7.2	7.7	8.1	8.5	8.9	9.2	9.6	9.9	10.2	10.5
		35	6.1	6.5	6.9	7.3	7.7	8.1	8.5	8.8	9.2	9.5	9.8
		30	5.6	5.9	6.3	6.7	7.1	7.4	7.8	8.2	8.5	8.9	9.2
		25	5.0	5.4	5.7	6.1	6.5	6.8	7.2	7.6	8.0	8.4	
		20	4.6	4.9	5.2	5.5	5.9	6.3	6.7	7.1	7.5	7.9	
	15	4.1	4.4	4.7	5.0	5.4	5.8	6.2	6.6	7.0			
	10	3.7	3.9	4.2	4.5	4.9	5.3	5.7	6.1	6.6			
	Liquid line temperature (°C)	65								39	42	46	50
		60							34	36	39	43	47
		55	21	23	24	26	28	29	31	33	36	40	44
		50	17	19	20	22	24	25	27	30	32	36	41
		45	13	15	16	18	20	22	24	27	30	33	37
		40	9	11	10	15	17	19	21	24	27	30	34
35		5	8	13	12	15	17	19	22	25	28	31	
30		1	5	7	10	13	15	17	20	23	26	29	
25		-2	2	5	8	11	13	15	18	21	24	27	
20		-6	-1	2	6	9	11	13	16	19	22		
15	-10	-4	0	4	7	9	11	14	17				
10	-13	-7	-2	2	6	8	10	13	16				
QF205L	Q (kW)	65											
		60											
		55	7.3	9.5	12.0	14.7	17.8						
		50	8.0	10.2	12.7	15.5	18.6						
		45	8.4	10.6	13.2	16.0	19.3						
		40	8.8	11.0	13.6	16.5	19.8						
		35	9.0	11.3	13.9	16.9	20.3						
		30	9.2	11.5	14.1	17.2	20.8						
		25	9.3	11.6	14.4	17.6	21.2						
		20	9.5	11.9	14.7	18.0	21.7						
	15	9.7	12.1	15.0	18.4	22.3							
	10	10.0	12.5	15.5	19.0	23.0							
	P (kW)	65											
		60											
		55	10.7	11.2	11.7	12.2	12.7						
		50	9.6	10.0	10.5	11.0	11.5						
		45	8.7	9.1	9.5	9.9	10.4						
		40	7.9	8.2	8.6	9.0	9.5						
		35	7.3	7.5	7.8	8.2	8.7						
		30	6.7	6.9	7.2	7.6	8.0						
		25	6.1	6.3	6.5	6.9	7.4						
		20	5.6	5.7	5.9	6.3	6.8						
	15	5.0	5.1	5.3	5.7	6.2							
	10	4.4	4.5	4.7	5.0	5.5							
	Liquid line temperature (°C)	65											
		60											
		55	22	23	24	25	26						
		50	16	18	19	20	21						
		45	11	13	14	15	17						
		40	7	9	10	12	14						
35		3	5	7	9	12							
30		0	2	4	6	9							
25		-4	-1	1	3	6							
20		-7	-4	-2	0	4							
15	-10	-6	-4	-2	2								
10	-13	-9	-6	-4	0								

Note: Based on a return gas temperature of 20°C

Performance data

TWD - 50 Hz

R404A

Model	Condensing temperature (°C)	Evaporating temperature °C											
		-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
QF115LE	Q (kW)	65								12.2	14.1	16.2	
		60								13.1	15.2	17.5	
		55	3.8	5.0	6.2	7.4	8.8	10.3	12.0	14.0	16.3	18.9	
		50	4.0	5.2	6.4	7.8	9.3	10.9	12.8	14.9	17.4	20.2	
		45	4.2	5.4	6.7	8.2	9.7	11.5	13.6	15.9	18.6	21.6	
		40	4.4	5.7	7.1	8.6	10.2	12.1	14.3	16.8	19.7	22.9	
		35	4.7	6.0	7.4	9.0	10.7	12.7	15.1	17.7	20.7	24.2	
		30	4.9	6.2	7.7	9.3	11.2	13.3	15.7	18.5	21.7	25.4	
		25	5.2	6.5	8.0	9.6	11.6	13.8	16.3	19.3	22.7	26.5	
		20	5.4	6.7	8.2	9.9	11.9	14.2	16.9	19.9	23.4	27.5	
	15	5.5	6.8	8.3	10.1	12.1	14.5	17.3	20.4	24.1	28.3		
	10	5.5	6.8	8.3	10.1	12.2	14.7	17.5	20.8	24.6			
	P (kW)	65								9.5	9.5	9.5	
		60								8.4	8.5	8.5	
		55	6.0	6.3	6.5	6.8	7.0	7.2	7.3	7.5	7.5	7.6	
		50	5.3	5.6	5.8	6.0	6.2	6.4	6.5	6.7	6.8	6.9	
		45	4.7	4.9	5.1	5.3	5.5	5.7	5.9	6.0	6.2	6.3	
		40	4.3	4.4	4.6	4.8	5.0	5.2	5.3	5.5	5.6	5.8	
		35	3.9	4.0	4.2	4.3	4.5	4.7	4.9	5.1	5.2	5.4	
		30	3.5	3.6	3.8	4.0	4.1	4.3	4.5	4.7	4.9	5.1	
		25	3.2	3.3	3.5	3.6	3.8	4.0	4.2	4.4	4.6	4.8	
		20	3.0	3.1	3.2	3.3	3.5	3.7	3.9	4.1	4.3	4.6	
	15	2.7	2.8	2.9	3.0	3.2	3.4	3.6	3.9	4.1	4.4		
	10	2.5	2.5	2.6	2.7	2.9	3.1	3.3	3.6	3.9			
	Liquid line temperature (°C)	65								46	47	50	
		60								43	45	47	
		55	24	27	30	32	34	36	38	40	42	44	
		50	18	22	25	28	31	33	35	37	39	41	
		45	14	17	20	23	26	29	32	34	36	38	
		40	10	13	16	19	22	25	28	30	32	34	
35		6	9	12	15	18	21	24	26	28	30		
30		2	5	8	11	14	17	20	22	24	26		
25		-2	1	4	7	10	13	16	18	20	22		
20		-6	-3	0	3	6	9	12	14	16	18		
15	-10	-7	-4	-1	2	5	8	10	12	14			
10	-13	-10	-7	-4	-1	2	4	6	8				
QF125LE	Q (kW)	65								13.7	15.8	18.1	
		60								14.9	17.2	19.9	
		55	4.2	5.6	7.0	8.5	10.1	11.8	13.8	16.0	18.6	21.5	
		50	4.5	5.9	7.4	9.0	10.7	12.5	14.7	17.1	19.9	23.1	
		45	4.8	6.2	7.7	9.4	11.2	13.2	15.5	18.1	21.1	24.6	
		40	5.1	6.5	8.1	9.7	11.6	13.8	16.3	19.1	22.4	26.1	
		35	5.3	6.8	8.3	10.1	12.1	14.4	17.0	20.0	23.5	27.5	
		30	5.6	7.0	8.6	10.4	12.5	14.9	17.7	20.9	24.6	28.8	
		25	5.8	7.2	8.9	10.7	12.9	15.4	18.3	21.7	25.7	30.1	
		20	6.0	7.5	9.1	11.0	13.3	15.9	19.0	22.5	26.7	31.4	
	15	6.3	7.7	9.3	11.3	13.6	16.3	19.5	23.3	27.6	32.6		
	10	6.5	7.8	9.5	11.5	13.9	16.7	20.1	24.0	28.5			
	P (kW)	65								10.4	10.6	10.7	
		60								9.2	9.4	9.5	
		55	6.5	6.8	7.1	7.3	7.6	7.8	8.0	8.2	8.3	8.5	
		50	5.7	6.0	6.3	6.5	6.7	6.9	7.1	7.3	7.5	7.7	
		45	5.1	5.4	5.6	5.8	6.0	6.2	6.4	6.6	6.8	7.0	
		40	4.6	4.9	5.1	5.3	5.5	5.7	5.8	6.0	6.2	6.4	
		35	4.2	4.4	4.6	4.8	5.0	5.2	5.4	5.6	5.8	6.0	
		30	3.9	4.1	4.2	4.4	4.6	4.8	5.0	5.2	5.4	5.6	
		25	3.6	3.8	3.9	4.1	4.2	4.4	4.6	4.8	5.0	5.2	
		20	3.3	3.5	3.6	3.7	3.9	4.0	4.2	4.4	4.7	4.9	
	15	3.0	3.1	3.2	3.4	3.5	3.7	3.8	4.0	4.3	4.5		
	10	2.7	2.8	2.9	3.0	3.1	3.2	3.4	3.6	3.9			
	Liquid line temperature (°C)	65								46	48	49	
		60								43	45	47	
		55	23	26	29	32	35	37	39	41	43	45	
		50	18	21	24	27	30	33	36	38	40	42	
		45	14	17	20	23	26	29	32	35	37	39	
		40	10	14	17	20	23	26	29	32	34	36	
35		6	11	14	17	20	23	26	28	30	32		
30		2	6	9	12	15	18	21	24	26	28		
25		-2	2	5	8	11	14	17	20	22	24		
20		-6	-3	0	3	6	9	12	15	17	19		
15	-10	-7	-5	-2	1	4	7	9	11	13			
10	-13	-9	-6	-3	0	2	3	4	5				

Note: Based on a return gas temperature of 20°C

Performance data

TWD - 50 Hz

R404A

Model	Condensing temperature (°C)	Evaporating temperature °C											
		-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
QF145LE	Q (kW)	65								14.8	17.5	20.4	
		60								16.6	19.4	22.5	
		55	5.0	6.1	7.4	9.0	10.9	13.0	15.4	18.1	21.0	24.3	
		50	5.7	6.7	8.1	9.8	11.7	13.9	16.4	19.2	22.3	25.8	
		45	6.0	7.1	8.5	10.3	12.3	14.6	17.2	20.2	23.5	27.1	
		40	6.2	7.3	8.8	10.6	12.7	15.1	17.9	21.0	24.5	28.4	
		35	6.2	7.4	8.9	10.8	13.0	15.6	18.6	21.9	25.6	29.6	
		30	6.2	7.5	9.1	11.0	13.4	16.1	19.2	22.8	26.7	31.0	
		25	6.2	7.6	9.3	11.4	13.9	16.8	20.1	23.8	27.9	32.5	
		20	6.4	7.8	9.6	11.9	14.5	17.6	21.1	25.0	29.4	34.2	
	15	6.7	8.3	10.2	12.6	15.4	18.7	22.4	26.6	31.2	36.4		
	10	7.4	9.0	11.1	13.7	16.7	20.2	24.1	28.6	33.5			
	P (kW)	65								11.0	11.1	11.2	
		60								9.7	9.8	10.0	
		55	7.3	7.5	7.7	7.9	8.1	8.2	8.4	8.6	8.8	9.0	
		50	6.4	6.6	6.8	7.0	7.1	7.3	7.5	7.8	8.0	8.2	
		45	5.6	5.8	6.0	6.2	6.4	6.6	6.8	7.1	7.3	7.6	
		40	5.0	5.2	5.4	5.6	5.8	6.0	6.2	6.5	6.8	7.1	
		35	4.5	4.7	4.9	5.1	5.3	5.5	5.7	6.0	6.3	6.6	
		30	4.1	4.3	4.4	4.6	4.8	5.0	5.3	5.6	5.9	6.2	
		25	3.8	3.9	4.1	4.2	4.4	4.6	4.9	5.2	5.5	5.9	
		20	3.5	3.6	3.7	3.9	4.0	4.3	4.5	4.8	5.2	5.5	
	15	3.2	3.2	3.3	3.5	3.6	3.8	4.1	4.4	4.8	5.2		
	10	2.8	2.9	2.9	3.0	3.2	3.4	3.6	3.9	4.3			
	Liquid line temperature (°C)	65								46	47	48	
		60								43	45	46	
		55	22	25	28	31	34	36	38	40	42	44	
		50	18	22	25	28	31	33	35	37	39	41	
		45	14	17	20	23	26	29	32	34	36	38	
		40	10	13	16	19	22	25	28	31	33	35	
35		6	9	12	15	18	21	24	27	29	31		
30		2	6	9	12	15	18	21	23	25	27		
25		-2	2	6	9	12	15	17	19	21	23		
20		-6	0	4	6	8	10	12	14	16	18		
15	-10	-5	-2	0	2	4	6	8	10	12			
10	-14	-8	-4	-1	0	1	2	3	4				
QF175LE	Q (kW)	65								16.0	19.2	22.2	
		60								19.1	22.4	25.5	
		55	5.7	5.8	7.0	8.9	11.5	14.6	18.0	21.5	24.9	28.2	
		50	6.4	6.8	8.1	10.2	12.9	16.2	19.7	23.3	26.9	30.2	
		45	6.8	7.3	8.8	11.1	14.0	17.3	21.0	24.7	28.4	31.8	
		40	6.9	7.6	9.2	11.7	14.7	18.2	21.9	25.7	29.5	32.9	
		35	7.0	7.8	9.6	12.1	15.3	18.8	22.7	26.6	30.3	33.9	
		30	7.0	7.9	9.8	12.5	15.7	19.4	23.3	27.3	31.1	34.7	
		25	7.1	8.2	10.2	13.0	16.3	20.0	24.0	28.0	31.9	35.4	
		20	7.5	8.7	10.8	13.6	17.0	20.8	24.8	28.9	32.8	36.3	
	15	8.2	9.5	11.7	14.6	18.1	21.9	25.9	30.0	33.9	37.4		
	10	9.4	10.8	13.0	16.0	19.5	23.4	27.4	31.5	35.4			
	P (kW)	65								12.1	12.4	12.7	
		60								10.8	11.1	11.4	
		55	7.8	8.0	8.2	8.5	8.8	9.1	9.4	9.7	10.1	10.4	
		50	6.8	7.1	7.3	7.6	7.9	8.2	8.5	8.9	9.2	9.6	
		45	6.1	6.3	6.6	6.9	7.2	7.5	7.9	8.2	8.6	8.9	
		40	5.5	5.8	6.0	6.3	6.6	6.9	7.3	7.6	8.0	8.4	
		35	5.1	5.3	5.6	5.8	6.1	6.5	6.8	7.2	7.5	7.9	
		30	4.7	4.9	5.2	5.4	5.7	6.0	6.4	6.7	7.1	7.4	
		25	4.4	4.6	4.8	5.1	5.3	5.6	5.9	6.3	6.6	6.9	
		20	4.0	4.2	4.4	4.6	4.9	5.2	5.5	5.8	6.1	6.4	
	15	3.6	3.8	4.0	4.2	4.4	4.7	4.9	5.2	5.5	5.8		
	10	3.2	3.3	3.4	3.6	3.8	4.0	4.3	4.5	4.8			
	Liquid line temperature (°C)	65											
		60								40	43	46	
		55	23	25	27	29	31	33	35	37	40	43	
		50	19	21	23	25	27	29	32	34	37	40	
		45	14	17	19	21	24	26	29	31	34	37	
		40	10	13	15	18	21	23	26	28	31	34	
35		6	9	12	15	18	20	23	25	28	31		
30		2	6	9	12	16	18	21	23	26	29		
25		-1	3	6	10	13	16	19	21	24	27		
20		-5	0	4	7	11	14	17	19	22			
15	-9	-3	1	5	9	12	14	17	20				
10	-12	-6	-1	3	7	10	12	15	18				

Note: Based on a return gas temperature of 20°C

Performance data

TWD - 50 Hz

R404A

Model	Condensing temperature (°C)	Evaporating temperature °C											
		-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
QF185LE	Q (kW)	65								18.1	21.2	24.3	
		60								20.3	23.5	26.9	
		55	6.5	7.5	9.0	11.0	13.3	15.9	18.9	22.1	25.6	29.2	
		50	6.9	8.0	9.7	11.8	14.3	17.1	20.2	23.7	27.3	31.1	
		45	7.0	8.4	10.2	12.4	15.0	18.1	21.4	25.0	28.8	32.9	
		40	7.1	8.6	10.5	12.9	15.7	18.9	22.4	26.2	30.2	34.4	
		35	7.2	8.7	10.8	13.3	16.3	19.6	23.3	27.2	31.5	35.9	
		30	7.2	8.9	11.1	13.8	16.9	20.3	24.2	28.3	32.7	37.2	
		25	7.3	9.1	11.4	14.2	17.5	21.1	25.0	29.3	33.8	38.6	
		20	7.5	9.4	11.9	14.8	18.1	21.9	26.0	30.4	35.1	40.0	
	15	8.0	10.0	12.5	15.5	19.0	22.8	27.1	31.6	36.5	41.5		
	10	8.6	10.7	13.3	16.4	20.0	24.0	28.3	33.0	38.0			
	P (kW)	65								13.5	13.8	14.1	
		60								12.1	12.5	12.8	
		55	8.8	9.0	9.3	9.6	9.9	10.3	10.6	11.0	11.3	11.7	
		50	7.8	8.0	8.3	8.6	8.9	9.3	9.7	10.0	10.4	10.7	
		45	7.0	7.2	7.5	7.8	8.1	8.5	8.9	9.3	9.6	10.0	
		40	6.3	6.5	6.8	7.1	7.5	7.8	8.2	8.6	8.9	9.3	
		35	5.7	5.9	6.2	6.5	6.9	7.2	7.6	8.0	8.4	8.7	
		30	5.2	5.4	5.7	6.0	6.4	6.7	7.1	7.5	7.8	8.2	
		25	4.8	5.0	5.2	5.5	5.9	6.2	6.6	7.0	7.3	7.7	
		20	4.3	4.5	4.8	5.1	5.4	5.7	6.1	6.5	6.8	7.1	
	15	3.9	4.1	4.3	4.6	4.9	5.2	5.6	5.9	6.2	6.5		
	10	3.4	3.5	3.7	4.0	4.3	4.6	4.9	5.3	5.6			
	Liquid line temperature (°C)	65											
		60								39	42	46	
		55	23	24	25	27	29	31	33	35	39	43	
		50	18	20	22	24	26	27	29	32	35	39	
		45	14	16	18	20	22	24	26	29	32	36	
		40	10	12	15	17	19	21	23	26	29	33	
35		6	9	12	15	17	19	21	24	27	30		
30		2	6	9	13	15	17	19	22	25	28		
25		-1	3	7	11	13	15	17	20	23	26		
20		-5	0	4	8	11	13	15	18	21			
15	-8	-3	2	6	9	11	13	16	19				
10	-11	-6	-1	4	7	9	11	14	17				
QF205LE	Q (kW)	65											
		60											
		55	7.0	8.4	10.3	12.5	15.1						
		50	7.5	9.0	11.0	13.4	16.1						
		45	7.9	9.5	11.6	14.2	17.0						
		40	8.2	10.0	12.2	14.9	17.9						
		35	8.4	10.3	12.7	15.5	18.6						
		30	8.7	10.7	13.2	16.1	19.4						
		25	8.9	11.0	13.7	16.7	20.1						
		20	9.1	11.4	14.2	17.4	20.9						
	15	9.4	11.8	14.7	18.0	21.8							
	10	9.8	12.3	15.3	18.8	22.7							
	P (kW)	65											
		60											
		55	10.8	10.8	11.1	11.4	11.8						
		50	9.3	9.5	9.8	10.2	10.6						
		45	8.2	8.4	8.7	9.2	9.7						
		40	7.2	7.5	7.9	8.3	8.8						
		35	6.4	6.7	7.2	7.6	8.1						
		30	5.8	6.1	6.6	7.0	7.5						
		25	5.3	5.6	6.1	6.5	6.9						
		20	4.9	5.2	5.6	6.0	6.4						
	15	4.6	4.9	5.2	5.6	5.9							
	10	4.2	4.5	4.8	5.1	5.4							
	Liquid line temperature (°C)	65											
		60											
		55	21	23	25	27	29						
		50	16	18	20	22	24						
		45	11	13	16	19	21						
		40	7	9	13	16	18						
35		3	6	10	14	16							
30		0	3	7	11	14							
25		-3	0	4	9	12							
20		-6	-3	2	7	10							
15	-9	-5	0	5	8								
10	-11	-7	-2	3	6								

Note: Based on a return gas temperature of 20°C

Performance data

TW7 - 60 Hz

R404A

Model	Condensing temperature (°C)	Evaporating temperature °C											
		-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
QF115LE	Q (kW)	65								14.7	16.9	19.4	
		60								15.7	18.2	21.0	
		55	4.6	6.0	7.4	8.9	10.5	12.4	14.4	16.8	19.5	22.7	
		50	4.8	6.2	7.7	9.3	11.1	13.1	15.4	17.9	20.9	24.3	
		45	5.0	6.5	8.1	9.8	11.7	13.8	16.3	19.1	22.3	25.9	
		40	5.3	6.8	8.5	10.3	12.3	14.6	17.2	20.2	23.6	27.5	
		35	5.6	7.2	8.9	10.7	12.9	15.3	18.1	21.2	24.9	29.0	
		30	5.9	7.5	9.2	11.2	13.4	16.0	18.9	22.2	26.1	30.5	
		25	6.2	7.8	9.6	11.6	13.9	16.6	19.6	23.1	27.2	31.8	
		20	6.4	8.0	9.8	11.9	14.3	17.0	20.2	23.9	28.1	33.0	
	15	6.6	8.1	10.0	12.1	14.5	17.4	20.7	24.5	28.9	34.0		
	10	6.6	8.2	10.0	12.1	14.6	17.6	21.0	25.0	29.5			
	P (kW)	65								11.4	11.4	11.4	
		60								10.1	10.1	10.2	
		55	7.2	7.6	7.9	8.1	8.4	8.6	8.8	9.0	9.1	9.1	
		50	6.4	6.7	6.9	7.2	7.4	7.7	7.9	8.0	8.1	8.2	
		45	5.7	5.9	6.2	6.4	6.7	6.9	7.1	7.2	7.4	7.5	
		40	5.1	5.3	5.5	5.8	6.0	6.2	6.4	6.6	6.8	6.9	
		35	4.6	4.8	5.0	5.2	5.4	5.6	5.9	6.1	6.3	6.4	
		30	4.2	4.4	4.5	4.7	5.0	5.2	5.4	5.6	5.9	6.1	
		25	3.9	4.0	4.2	4.3	4.6	4.8	5.0	5.3	5.5	5.8	
		20	3.6	3.7	3.8	4.0	4.2	4.4	4.7	4.9	5.2	5.5	
	15	3.3	3.4	3.5	3.6	3.8	4.1	4.3	4.6	4.9	5.3		
	10	3.0	3.0	3.1	3.3	3.5	3.7	4.0	4.3	4.7			
	Liquid line temperature (°C)	65								46	47	50	
		60								43	45	47	
		55	24	27	30	32	34	36	38	40	42	44	
		50	18	22	25	28	31	33	35	37	39	41	
		45	14	17	20	23	26	29	32	34	36	38	
		40	10	13	16	19	22	25	28	30	32	34	
35		6	9	12	15	18	21	24	26	28	30		
30		2	5	8	11	14	17	20	22	24	26		
25		-2	1	4	7	10	13	16	18	20	22		
20		-6	-3	0	3	6	9	12	14	16	18		
15	-10	-7	-4	-1	2	5	8	10	12	14			
10	-13	-10	-7	-4	-1	2	4	6	8				
QF125LE	Q (kW)	65								16.5	18.9	21.8	
		60								17.9	20.6	23.8	
		55	5.0	6.7	8.4	10.2	12.1	14.2	16.6	19.2	22.3	25.8	
		50	5.4	7.1	8.9	10.7	12.8	15.0	17.6	20.5	23.9	27.7	
		45	5.7	7.5	9.3	11.2	13.4	15.8	18.6	21.8	25.4	29.5	
		40	6.1	7.8	9.7	11.7	14.0	16.6	19.5	22.9	26.8	31.3	
		35	6.4	8.1	10.0	12.1	14.5	17.2	20.4	24.0	28.2	33.0	
		30	6.7	8.4	10.3	12.5	15.0	17.9	21.2	25.1	29.5	34.6	
		25	7.0	8.7	10.6	12.9	15.5	18.5	22.0	26.1	30.8	36.2	
		20	7.2	8.9	10.9	13.2	15.9	19.1	22.8	27.0	32.0	37.7	
	15	7.5	9.2	11.2	13.5	16.3	19.6	23.5	27.9	33.1	39.1		
	10	7.8	9.4	11.4	13.8	16.7	20.1	24.1	28.8	34.2			
	P (kW)	65								12.5	12.7	12.9	
		60								11.0	11.2	11.4	
		55	7.8	8.2	8.5	8.8	9.1	9.3	9.6	9.8	10.0	10.2	
		50	6.9	7.2	7.5	7.8	8.1	8.3	8.5	8.8	9.0	9.2	
		45	6.1	6.4	6.7	7.0	7.2	7.5	7.7	7.9	8.2	8.4	
		40	5.5	5.8	6.1	6.3	6.6	6.8	7.0	7.2	7.5	7.7	
		35	5.1	5.3	5.5	5.8	6.0	6.2	6.4	6.7	6.9	7.2	
		30	4.7	4.9	5.1	5.3	5.5	5.7	5.9	6.2	6.4	6.7	
		25	4.3	4.5	4.7	4.9	5.1	5.3	5.5	5.7	6.0	6.3	
		20	4.0	4.1	4.3	4.5	4.6	4.8	5.1	5.3	5.6	5.9	
	15	3.7	3.8	3.9	4.0	4.2	4.4	4.6	4.9	5.1	5.5		
	10	3.3	3.3	3.4	3.6	3.7	3.9	4.1	4.4	4.6			
	Liquid line temperature (°C)	65								46	48	49	
		60								43	45	47	
		55	23	26	29	32	35	37	39	41	43	45	
		50	18	21	24	27	30	33	36	38	40	42	
		45	14	17	20	23	26	29	32	35	37	39	
		40	10	14	17	20	23	26	29	32	34	36	
35		6	11	14	17	20	23	26	28	30	32		
30		2	6	9	12	15	18	21	24	26	28		
25		-2	2	5	8	11	14	17	20	22	24		
20		-6	-3	0	3	6	9	12	15	17	19		
15	-10	-7	-5	-2	1	4	7	9	11	13			
10	-13	-9	-6	-3	0	2	3	4	5				

Note: Based on a return gas temperature of 20°C

Performance data

TW7 - 60 Hz

R404A

Model	Condensing temperature (°C)	Evaporating temperature °C											
		-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
QF145LE	Q (kW)	65								17.8	21.0	24.5	
		60								19.9	23.3	27.0	
		55	6.0	7.3	8.9	10.8	13.0	15.6	18.5	21.7	25.2	29.1	
		50	6.8	8.1	9.7	11.7	14.0	16.7	19.7	23.1	26.8	30.9	
		45	7.2	8.6	10.3	12.3	14.7	17.5	20.7	24.2	28.2	32.5	
		40	7.4	8.8	10.5	12.7	15.2	18.2	21.5	25.2	29.4	34.0	
		35	7.5	8.9	10.7	13.0	15.6	18.7	22.3	26.2	30.7	35.5	
		30	7.4	8.9	10.9	13.3	16.1	19.4	23.1	27.3	32.0	37.2	
		25	7.5	9.1	11.1	13.6	16.6	20.1	24.1	28.5	33.5	39.0	
		20	7.6	9.3	11.5	14.2	17.4	21.1	25.3	30.0	35.3	41.1	
	15	8.1	9.9	12.2	15.1	18.5	22.4	26.9	31.9	37.5	43.6		
	10	8.8	10.8	13.3	16.4	20.0	24.2	29.0	34.3	40.2			
	P (kW)	65								13.1	13.3	13.4	
		60								11.6	11.8	12.0	
		55	8.8	9.0	9.2	9.5	9.7	9.9	10.1	10.3	10.6	10.8	
		50	7.7	7.9	8.1	8.3	8.6	8.8	9.1	9.3	9.6	9.9	
		45	6.8	7.0	7.2	7.4	7.7	7.9	8.2	8.5	8.8	9.1	
		40	6.0	6.2	6.5	6.7	6.9	7.2	7.5	7.8	8.1	8.5	
		35	5.5	5.6	5.8	6.1	6.3	6.6	6.9	7.2	7.5	7.9	
		30	5.0	5.1	5.3	5.5	5.8	6.0	6.3	6.7	7.1	7.5	
		25	4.6	4.7	4.9	5.1	5.3	5.6	5.9	6.2	6.6	7.1	
		20	4.2	4.3	4.4	4.6	4.8	5.1	5.4	5.8	6.2	6.6	
	15	3.8	3.9	4.0	4.2	4.4	4.6	4.9	5.3	5.7	6.2		
	10	3.4	3.4	3.5	3.6	3.8	4.1	4.4	4.7	5.1			
	Liquid line temperature (°C)	65								46	47	48	
		60								43	45	46	
		55	22	25	28	31	34	36	38	40	42	44	
		50	18	22	25	28	31	33	35	37	39	41	
		45	14	17	20	23	26	29	32	34	36	38	
		40	10	13	16	19	22	25	28	31	33	35	
35		6	9	12	15	18	21	24	27	29	31		
30		2	6	9	12	15	18	21	23	25	27		
25		-2	2	6	9	12	15	17	19	21	23		
20		-6	0	4	6	8	10	12	14	16	18		
15	-10	-5	-2	0	2	4	6	8	10	12			
10	-14	-8	-4	-1	0	1	2	3	4				
QF175LE	Q (kW)	65								19.1	23.0	26.6	
		60								22.9	26.9	30.7	
		55	6.9	7.0	8.3	10.7	13.8	17.5	21.6	25.8	29.9	33.8	
		50	7.7	8.1	9.7	12.2	15.5	19.4	23.6	28.0	32.3	36.3	
		45	8.2	8.8	10.5	13.3	16.8	20.8	25.1	29.6	34.0	38.1	
		40	8.3	9.1	11.1	14.0	17.6	21.8	26.3	30.9	35.4	39.5	
		35	8.3	9.3	11.5	14.5	18.3	22.6	27.2	31.9	36.4	40.6	
		30	8.4	9.5	11.8	15.0	18.9	23.3	28.0	32.7	37.3	41.6	
		25	8.5	9.8	12.2	15.6	19.6	24.0	28.8	33.6	38.2	42.5	
		20	8.9	10.4	12.9	16.3	20.4	25.0	29.8	34.6	39.3	43.6	
	15	9.8	11.4	14.0	17.5	21.7	26.3	31.1	36.0	40.7	44.9		
	10	11.2	12.9	15.6	19.2	23.4	28.0	32.9	37.8	42.4			
	P (kW)	65								14.5	14.9	15.2	
		60								13.0	13.3	13.7	
		55	9.3	9.6	9.9	10.2	10.6	10.9	11.3	11.7	12.1	12.5	
		50	8.2	8.5	8.8	9.1	9.5	9.9	10.3	10.7	11.1	11.5	
		45	7.3	7.6	7.9	8.3	8.6	9.0	9.4	9.8	10.3	10.7	
		40	6.6	6.9	7.2	7.6	7.9	8.3	8.7	9.2	9.6	10.0	
		35	6.1	6.4	6.7	7.0	7.4	7.8	8.2	8.6	9.0	9.4	
		30	5.6	5.9	6.2	6.5	6.9	7.3	7.7	8.1	8.5	8.9	
		25	5.2	5.5	5.7	6.1	6.4	6.8	7.1	7.5	7.9	8.3	
		20	4.8	5.0	5.3	5.6	5.9	6.2	6.6	6.9	7.3	7.7	
	15	4.4	4.5	4.8	5.0	5.3	5.6	5.9	6.3	6.6	6.9		
	10	3.8	3.9	4.1	4.3	4.6	4.8	5.1	5.4	5.7			
	Liquid line temperature (°C)	65											
		60								40	43	46	
		55	23	25	27	29	31	33	35	37	40	43	
		50	19	21	23	25	27	29	32	34	37	40	
		45	14	17	19	21	24	26	29	31	34	37	
		40	10	13	15	18	21	23	26	28	31	34	
35		6	9	12	15	18	20	23	25	28	31		
30		2	6	9	12	16	18	21	23	26	29		
25		-1	3	6	10	13	16	19	21	24	27		
20		-5	0	4	7	11	14	17	19	22			
15	-9	-3	1	5	9	12	14	17	20				
10	-12	-6	-1	3	7	10	12	15	18				

Note: Based on a return gas temperature of 20°C

Performance data

TW7 - 60 Hz

R404A

Model	Condensing temperature (°C)	Evaporating temperature °C											
		-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
QF185LE	Q (kW)	65								21.8	25.4	29.2	
		60								24.3	28.2	32.3	
		55	7.8	9.1	10.8	13.1	15.9	19.1	22.7	26.5	30.7	35.0	
		50	8.2	9.6	11.6	14.1	17.1	20.5	24.3	28.4	32.8	37.4	
		45	8.5	10.0	12.2	14.9	18.1	21.7	25.7	30.0	34.6	39.5	
		40	8.6	10.3	12.6	15.5	18.9	22.7	26.9	31.4	36.2	41.3	
		35	8.6	10.5	13.0	16.0	19.6	23.5	27.9	32.7	37.7	43.0	
		30	8.6	10.7	13.3	16.5	20.2	24.4	29.0	33.9	39.2	44.7	
		25	8.8	10.9	13.7	17.1	20.9	25.3	30.0	35.2	40.6	46.3	
		20	9.0	11.3	14.3	17.7	21.8	26.3	31.2	36.5	42.1	48.0	
	15	9.5	11.9	15.0	18.6	22.8	27.4	32.5	38.0	43.8	49.9		
	10	10.3	12.8	16.0	19.7	24.0	28.8	34.0	39.6	45.6			
	P (kW)	65								16.2	16.6	16.9	
		60								14.6	15.0	15.3	
		55	10.6	10.9	11.2	11.5	11.9	12.3	12.8	13.2	13.6	14.0	
		50	9.4	9.6	10.0	10.3	10.7	11.2	11.6	12.1	12.5	12.9	
		45	8.4	8.6	9.0	9.3	9.8	10.2	10.7	11.1	11.5	11.9	
		40	7.6	7.8	8.2	8.5	8.9	9.4	9.8	10.3	10.7	11.1	
		35	6.9	7.1	7.5	7.8	8.3	8.7	9.1	9.6	10.0	10.4	
		30	6.3	6.5	6.8	7.2	7.6	8.1	8.5	9.0	9.4	9.8	
		25	5.7	6.0	6.3	6.7	7.1	7.5	7.9	8.4	8.8	9.2	
		20	5.2	5.4	5.7	6.1	6.5	6.9	7.3	7.7	8.2	8.5	
	15	4.6	4.9	5.1	5.5	5.9	6.3	6.7	7.1	7.5	7.8		
	10	4.0	4.2	4.5	4.8	5.2	5.5	5.9	6.3	6.7			
	Liquid line temperature (°C)	65											
		60								39	42	46	
		55	23	24	25	27	29	31	33	35	39	43	
		50	18	20	22	24	26	27	29	32	35	39	
		45	14	16	18	20	22	24	26	29	32	36	
		40	10	12	15	17	19	21	23	26	29	33	
35		6	9	12	15	17	19	21	24	27	30		
30		2	6	9	13	15	17	19	22	25	28		
25		-1	3	7	11	13	15	17	20	23	26		
20		-5	0	4	8	11	13	15	18	21			
15	-8	-3	2	6	9	11	13	16	19				
10	-11	-6	-1	4	7	9	11	14	17				
QF205LE	Q (kW)	65											
		60											
		55	8.3	10.0	12.3	15.0	18.2						
		50	9.0	10.8	13.2	16.1	19.4						
		45	9.4	11.4	14.0	17.0	20.5						
		40	9.8	11.9	14.6	17.8	21.4						
		35	10.1	12.4	15.2	18.6	22.4						
		30	10.4	12.8	15.8	19.3	23.3						
		25	10.7	13.2	16.4	20.1	24.2						
		20	10.9	13.7	17.0	20.8	25.1						
	15	11.3	14.2	17.6	21.7	26.1							
	10	11.7	14.7	18.4	22.6	27.2							
	P (kW)	65											
		60											
		55	12.9	13.0	13.3	13.7	14.2						
		50	11.2	11.4	11.8	12.2	12.8						
		45	9.8	10.1	10.5	11.0	11.6						
		40	8.6	9.0	9.4	10.0	10.6						
		35	7.7	8.1	8.6	9.1	9.7						
		30	7.0	7.4	7.9	8.4	9.0						
		25	6.4	6.8	7.3	7.8	8.3						
		20	5.9	6.3	6.7	7.2	7.7						
	15	5.5	5.8	6.2	6.7	7.1							
	10	5.1	5.4	5.8	6.1	6.4							
	Liquid line temperature (°C)	65											
		60											
		55	21	23	25	27	29						
		50	16	18	20	22	24						
		45	11	13	16	19	21						
		40	7	9	13	16	18						
35		3	6	10	14	16							
30		0	3	7	11	14							
25		-3	0	4	9	12							
20		-6	-3	2	7	10							
15	-9	-5	0	5	8								
10	-11	-7	-2	3	6								

Note: Based on a return gas temperature of 20°C

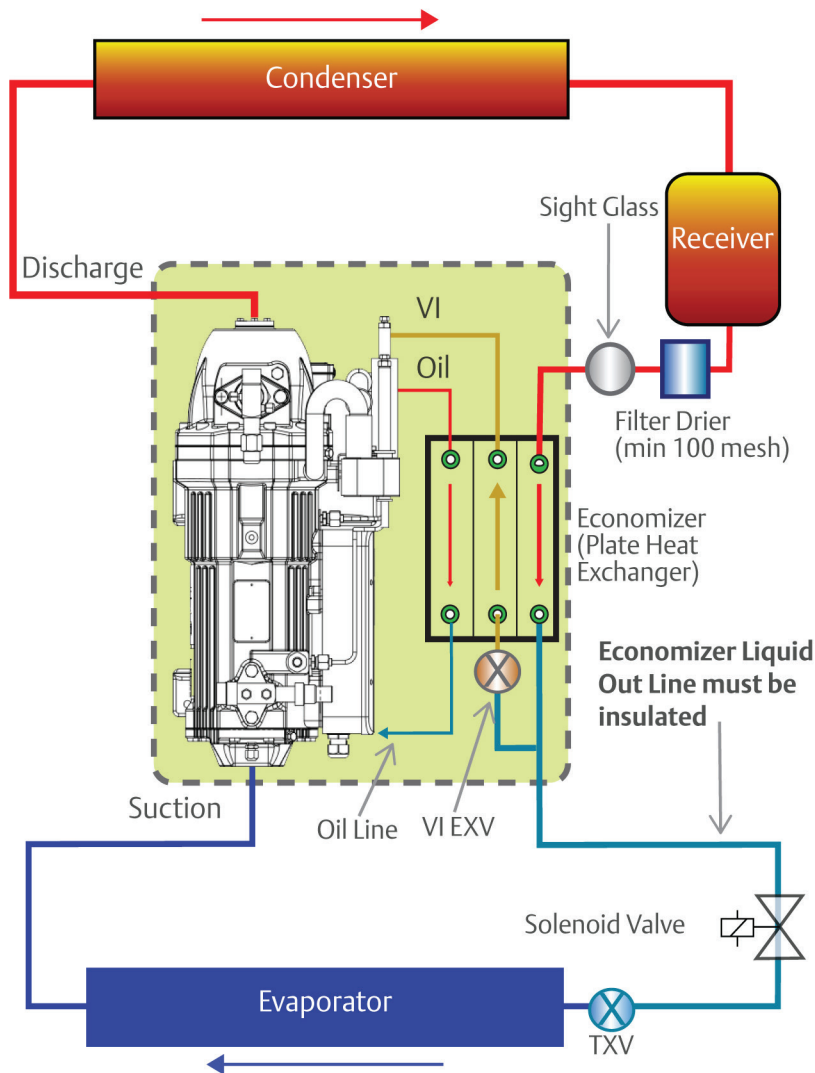
Economizer and liquid line temperatures

Copeland Scroll™ Fusion is equipped with integrated economizer to improve low temperature operating efficiency and provide a reliable low temperature envelope. Vapor injection subcools the main liquid line and cools the compressor oil by the economizer’s plate heat exchanger. This underscores the importance of insulating the liquid line from the economizer to the evaporator. The subcooled liquid will increase the capacity of the expansion valve; therefore, users must follow the manufacturers’ liquid line temperature correction factors for proper selection of expansion valves. See “liquid line temperature” under performance tables on pages 9 to 20.

Pumpdown cycle

Copeland Scroll Fusion compressors have an inherently superior liquid handling capability so a pumpdown at each thermostat cycle is not recommended. Although, a pumpdown cycle before defrost will be helpful in reducing defrost time. Copeland Scroll Fusion compressors are fitted with spring loaded low-leak check valves. Therefore, an external check valve is not necessary. When a pumpdown cycle finishes, the compressor will stop and will contain a very large volume of high pressure gas in the top cap area, which will leak back to suction and cause a significant rise that could reset the low pressure switch. The control circuit should not allow the compressor to restart. Restart should only occur when the thermostat closes.

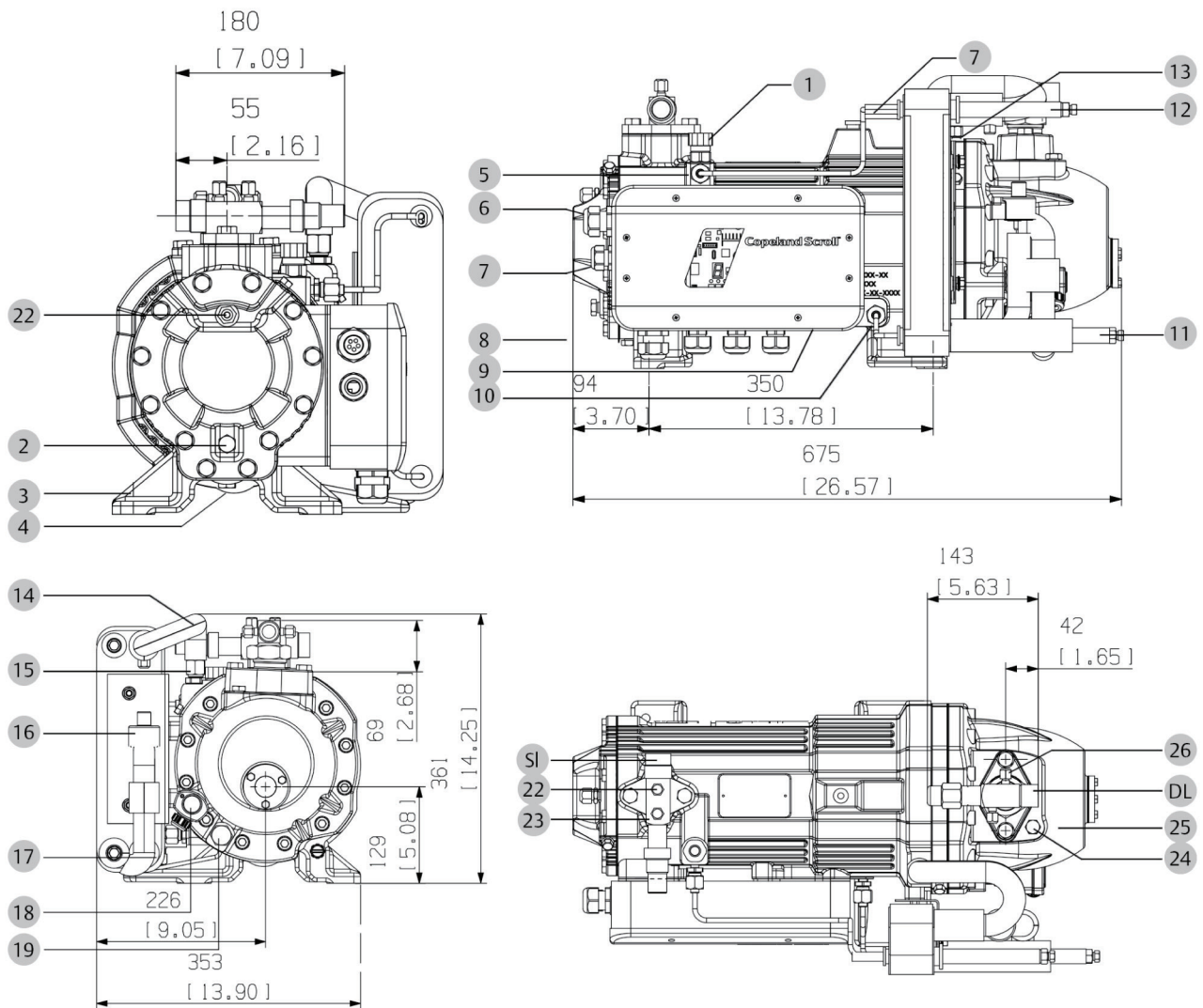
Schematic diagram



VI: Vapor injection
 EXV: Electronic expansion valve
 TXV: Thermostatic expansion valve
 --- Fusion standard BOM

Note: Sight glass is provided and installed as standard ex-factory only in TWD models.

Dimensional drawings



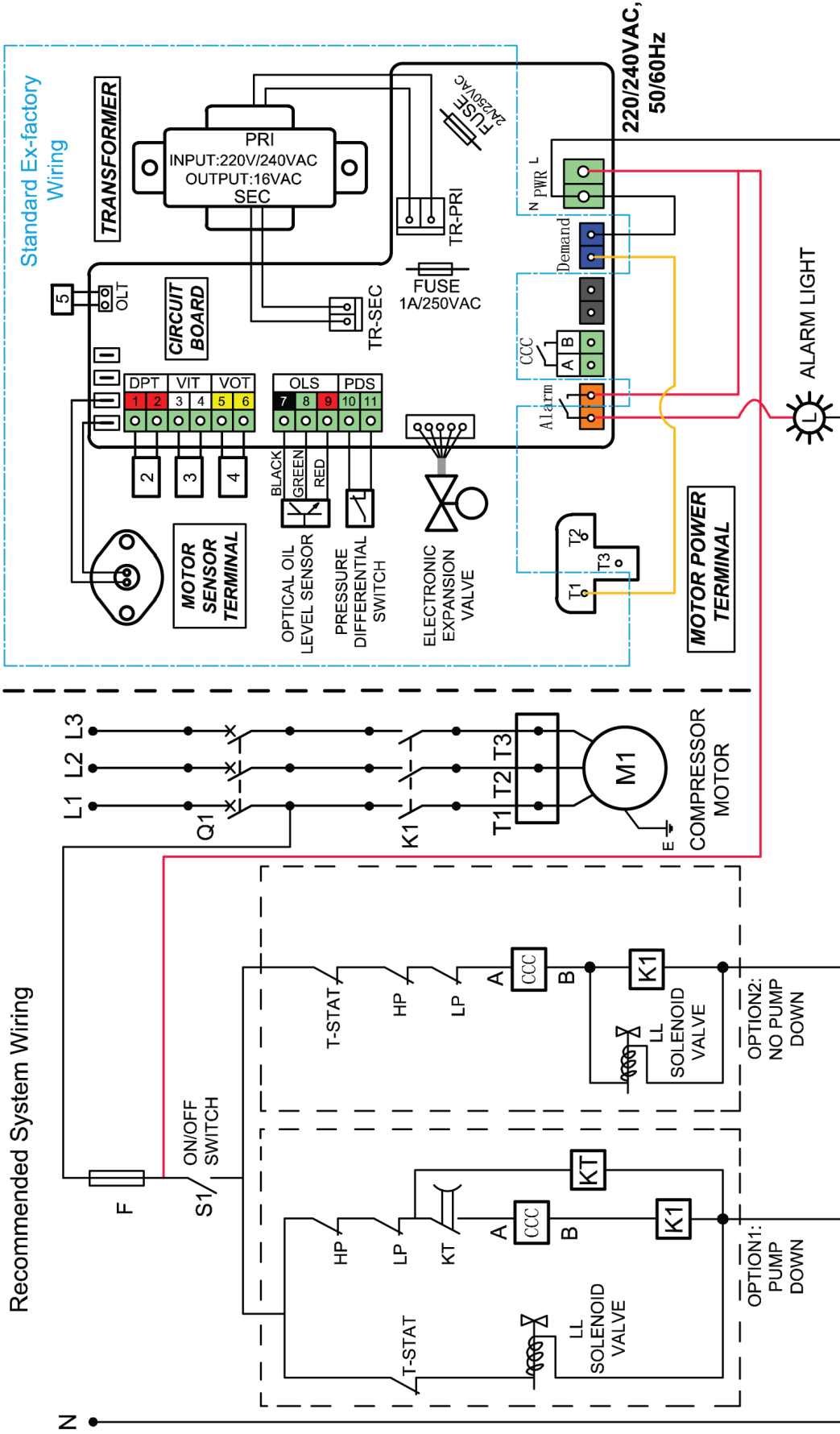
All dimensions are in mm

No.	Connection/Port	Size
1	DPS (differential pressure switch)	3/4" - 16UNF
3	Bolt-mounting	M10
5	Nut-oil out fitting	M16
7	Connector EXV/oil temperature sensor	
9	Connector optional	
11	Liquid out	3/4"
13	DLT sensor	
15	Nut-EVI fitting	M20
17	Vapor in temperature sensor	
19	Built-in oil screen	M20
21	Crankcase heater	
23	Suction valve	28.7 ID
25	Discharge valve	25.7 ID

No.	Connection/Port	Size
2	Plug low-pressure connection	1/4" - 18NPTF
4	Plug oil drain	1/4" - 18NPTF
6	Connector DLT/VIT/VOT/optical OLS/DPS	
8	Screw grounding	M5
10	Nut-oil in fitting	M16
12	Liquid in	3/4"
14	Vapor out temperature sensor	
16	EXV coil	
18	Optical oil level sensor	7/8" - 14UNF
20	Oil level sight glass	
22	Low pressure port	
24	Plug high-pressure connection	1/4" - 18NPTF
26	High pressure port	

SL: Suction line
DL: Discharge line

Wiring diagram



- Recommended System Wiring**
- K1 - COMPRESSOR CONTACTOR
 - Q1 - CIRCUIT BREAKER
 - KT - TIME DELAY RELAY
- Standard Ex-factory Wiring**
- CHECK LIST**
- CHECK WIRING OF COMPRESSOR MOTOR POWER SUPPLY
 - CHECK WIRING OF "PWR" TERMINAL (N,L)
 - CHECK WIRING OF "CCC" TERMINAL
 - CHECK WIRING OF "Alarm" TERMINAL
- CHECK LIST**
- COMPRESSOR CONTACTOR COIL RELAY
 - DISCHARGE PORT TEMP.SENSOR
 - VAPOR IN TEMP.SENSOR
 - VAPOR OUT TEMP.SENSOR
 - OIL TEMP.SENSOR
- OPTION1:**
PUMP DOWN
- OPTION2:**
NO PUMP DOWN
- Demand-COMPRESSOR ON/OFF FEEDBACK SIGNAL (PARALLEL CONNECT WITH K1)**

Notes

Lined area for writing notes, consisting of horizontal lines spaced evenly down the page.

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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