Copeland™ Compressor Electronics for Copeland Stream Semi-hermetic Compressors

Copeland compressor electronics monitor and interpret data inside the compressor in order to enhance the reliability and operational performance of HVACR systems. Built upon the success of CoreSense Diagnostics introduced a few years ago, Emerson is now introducing the next generation electronics module for Stream compressors featuring a modular design using state-of-the-art electronics. This modular design with plug-in modules gives the customers the flexibility to choose the advanced features as per their system requirements. These features include advanced protection and diagnostics, Bluetooth and Modbus communication for remote monitoring, liquid injection control, dynamic envelope monitoring, digital and capacity control etc.

The benefits of Copeland compressor electronics go beyond compressor protection by assisting in system diagnosis and optimization. Providing service engineers with detailed information at the right time, system-related problems can be diagnosed faster or even before they occur. Optional plug-in modules with advanced control features and factory mounted sensors reduce the system complexity and applied costs for system manufacturers. Supermarket operators benefit from increased system uptime, reduction in food loss and reduced maintenance costs.

Copeland compressor electronic module

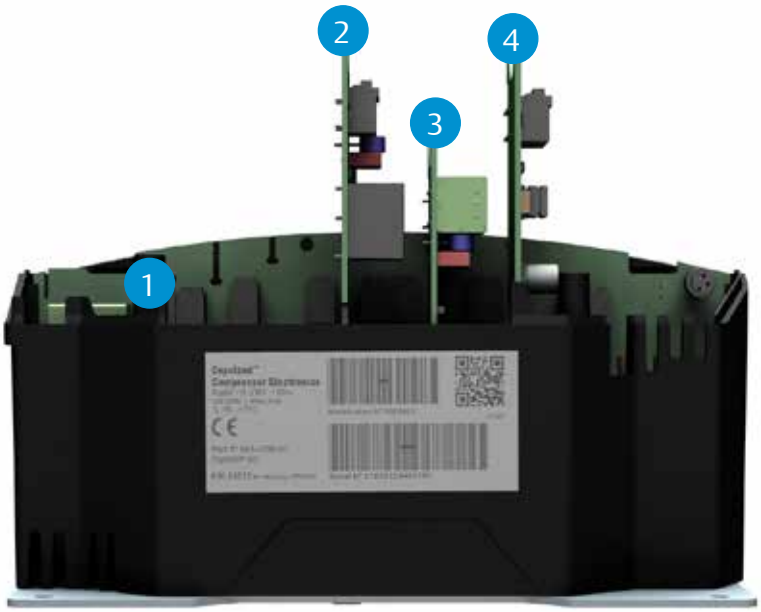
Technical Specification

- Power supply 115/230VAC
- Communication protocol (Modbus® RTU and Bluetooth®)
- Bus to system controller: RS 485
- Discharge temperature sensor
- Current sensor
- Flash memory
- Alarm reset button

Benefits

- Modularity for customer flexibility
- Optional plug-in modules with different functionalities
- Advanced protection for reliable system operation
- Diagnostics for quicker troubleshooting
- Power monitoring for operational costs monitoring
- Communication options - Bluetooth and Modbus for remote monitoring
- Compressor control for reduced system applied costs

Functions of modules



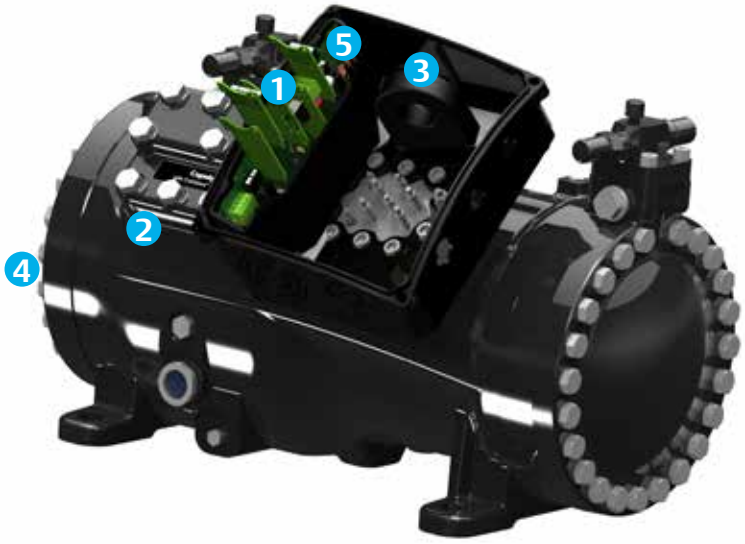
1 Base board

2 Head fan and liquid injection control

3 Digital modulation control and unloaded start

4 Modbus®

Scope of Supply



1. Optional Plug-in Modules
2. Discharge Temperature Sensor
3. Current Sensor
4. Oil Pressure Switch
5. Communication Port

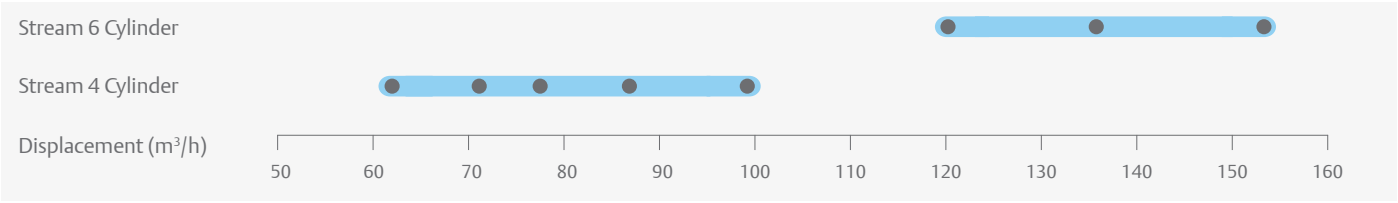
Copeland™ Stream with Compressor Electronics, Semi-Hermetic Reciprocating Compressors for HFC / HFO Blends

Stream series 4 and 6 cylinder compressors provide best-in-class performance, thereby significantly reducing the cost of operation and environmental impact compared to competing products. They are equipped with Copeland compressor electronics technology, featuring a modular design using state-of-the-art electronics (p.94). With advanced protection and diagnostics features for system reliability, reduced service costs and increased equipment uptime, Stream series is built to last in today's modern changing world.

Copeland Stream compressors are now qualified for low GWP refrigerants classified A2L, such as R454A, R454C and R455A.

Copeland Stream compressor

Stream Compressor Line-Up



Features and Benefits

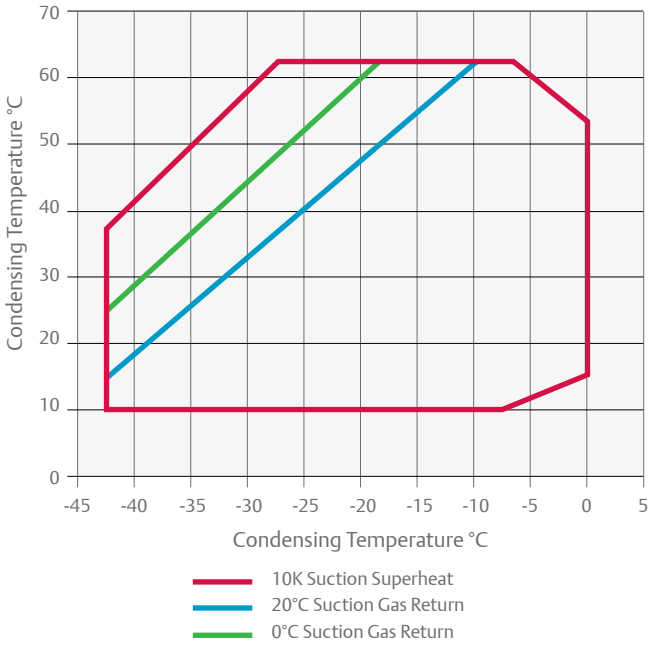
- Range of 16 models from 62 to 153m³/h
- Best-in-class seasonal efficiencies, up to 15% higher than market standard
- Multi-refrigerant compressor, compatible with R407A/F/C, R448A/ R449A, R404A, R134a, R450A, R513A, R454A, R454C and R455A.
- Stepless capacity modulation by means of inverter or digital modulation
- Wide operating envelope covering low- and medium-temperature refrigeration without cooling fan
- Reduced sound level, dimensions and weight by up to 45 kg
- Option to use compressors with additional demand cooling function in order to achieve extended low temperature operating envelope without any superheat restriction for new refrigerants R407A/F, R448A and R449A

Copeland Compressor Electronics Technology Features

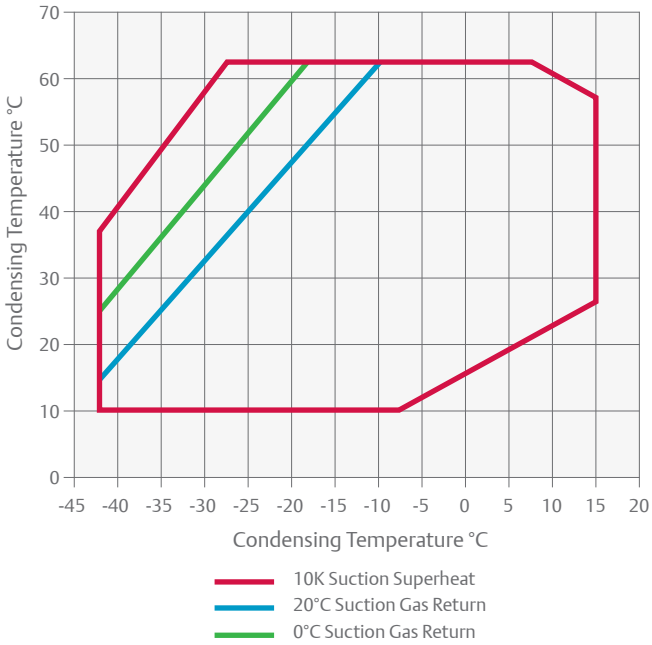
- Motor and oil protection
- Storage of compressor asset and advanced runtime information
- Runtime/alarm signalling using multi-colour LED flash-codes
- Communication to system controller via Bluetooth or Modbus®
- Individual compressor power monitoring

Operating Envelope R454A

With Small Motor



With Large Motor



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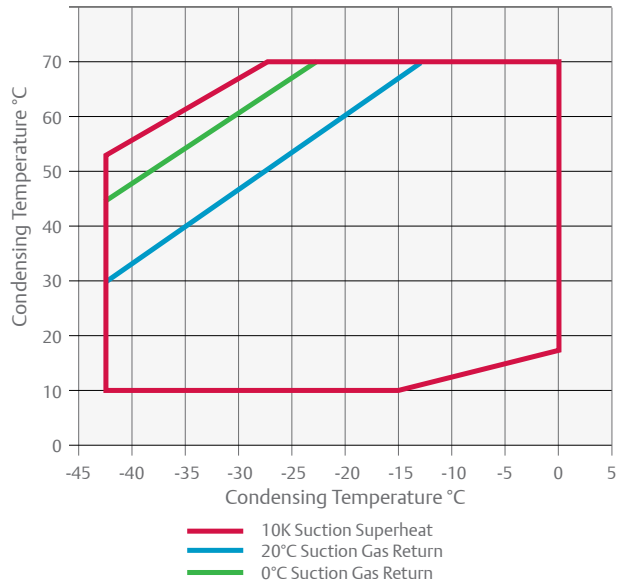
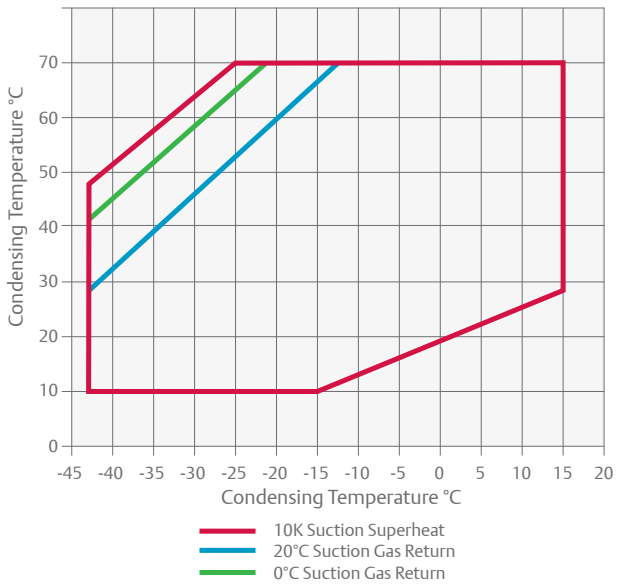
Operating Envelope R454C

With Small Motor

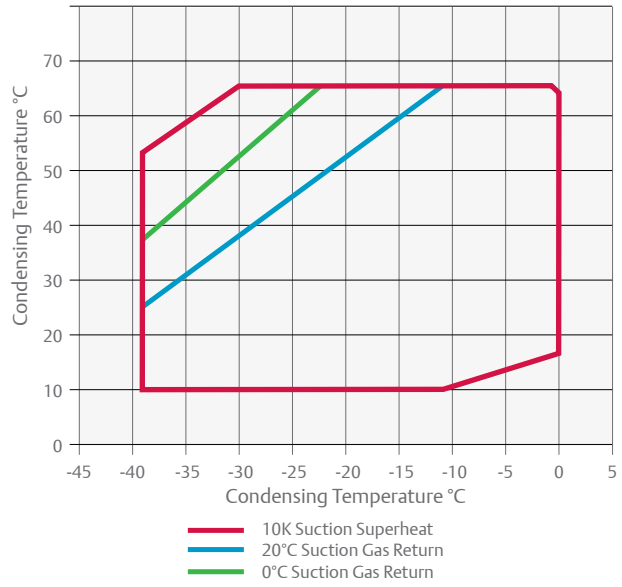


With Large Motor

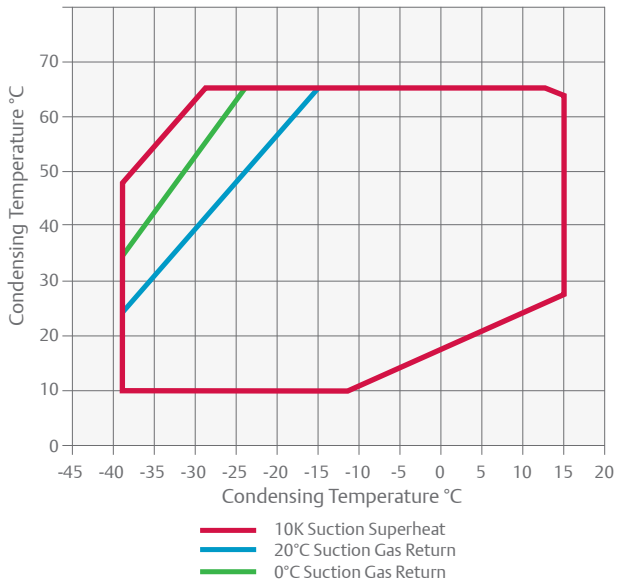


Operating Envelope R455A

With Small Motor

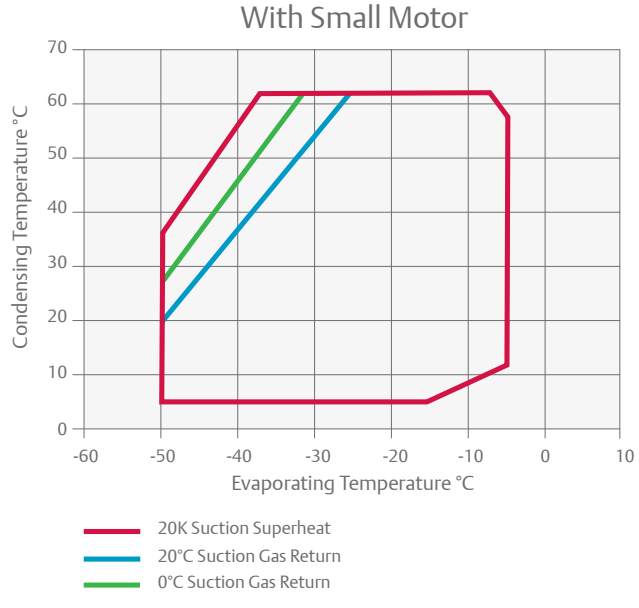


With Large Motor

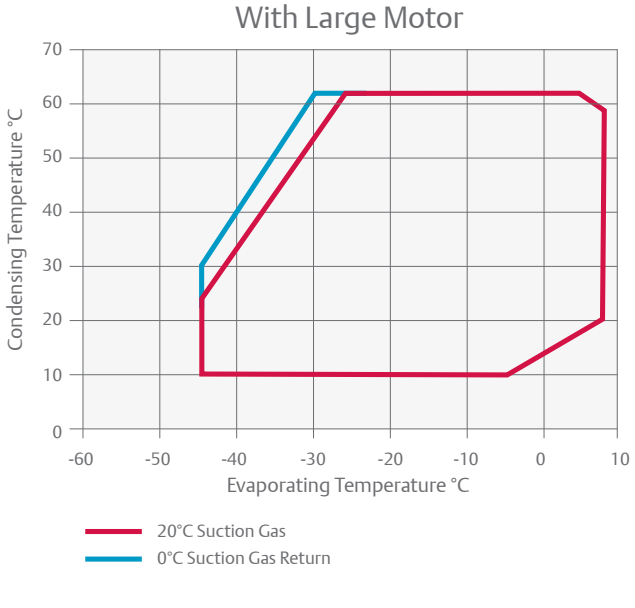


Operating Envelope R404A

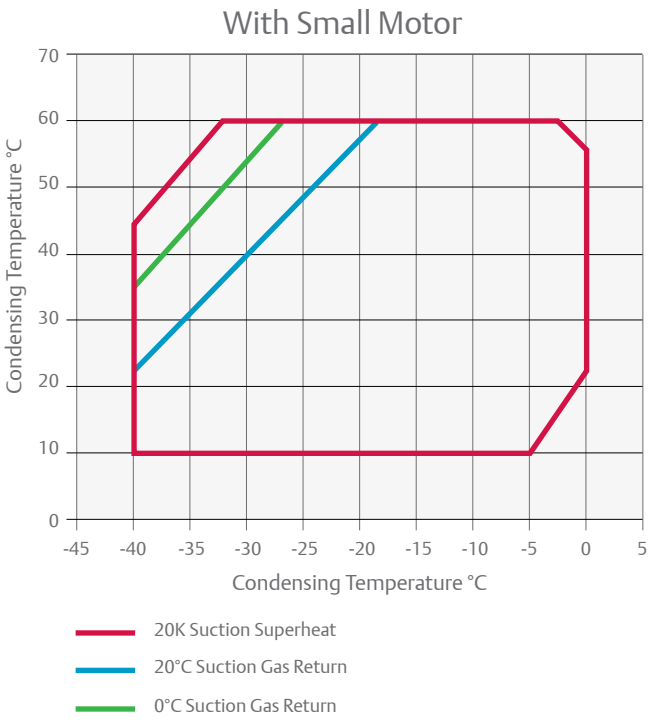
With Small Motor

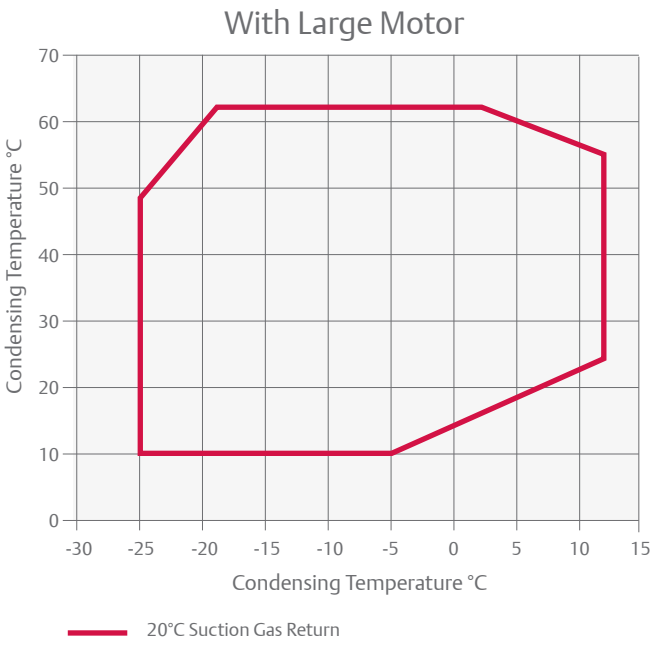


With Large Motor

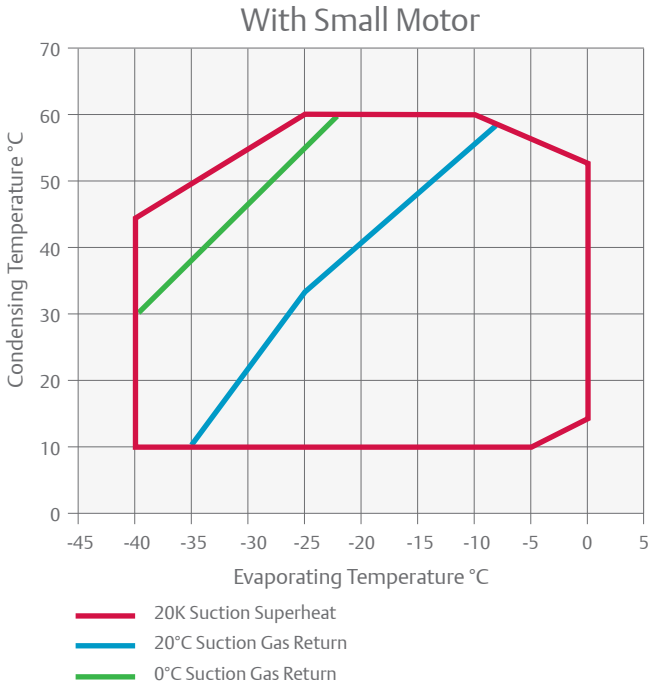


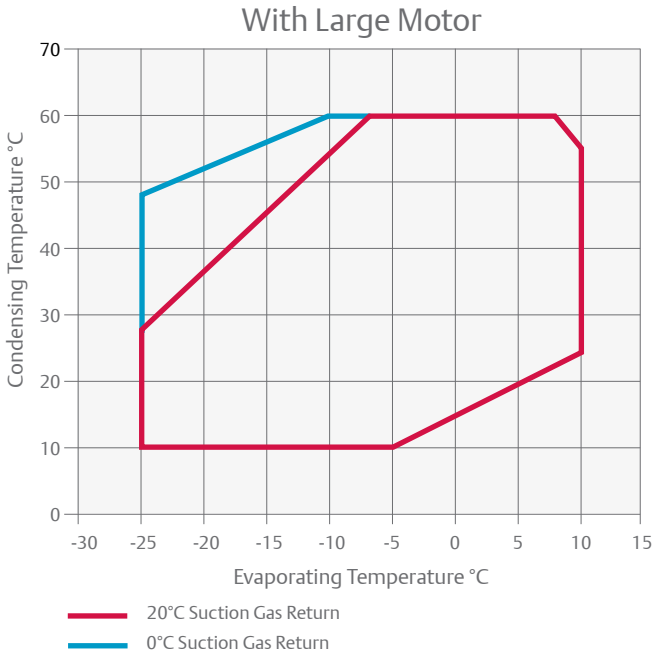
Operating Envelope R407A





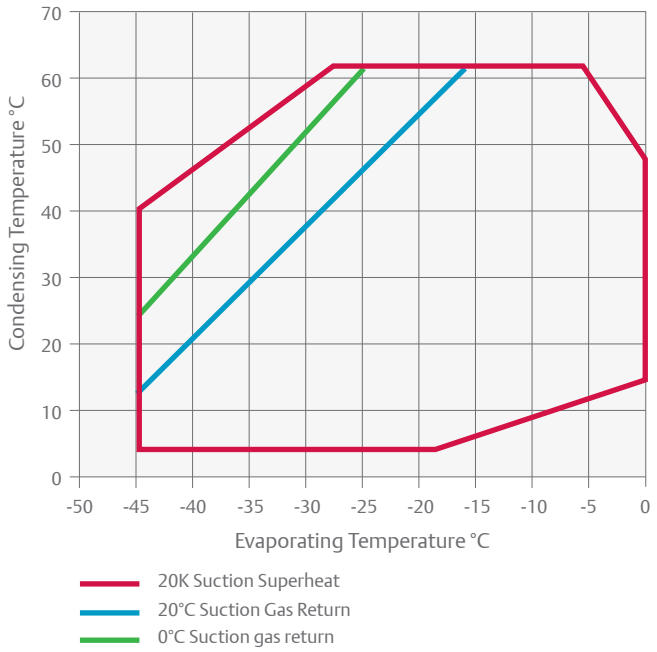
Operating Envelope R407F



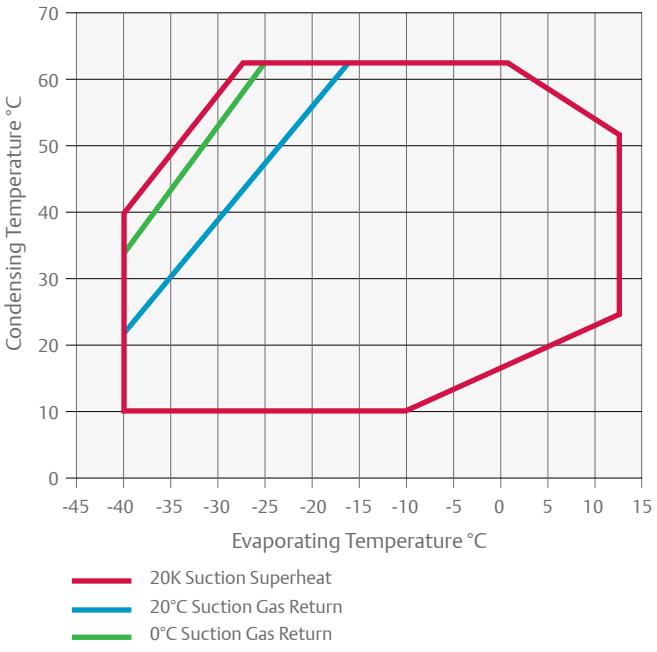


Operating Envelope R448A/R449A

With Small Motor

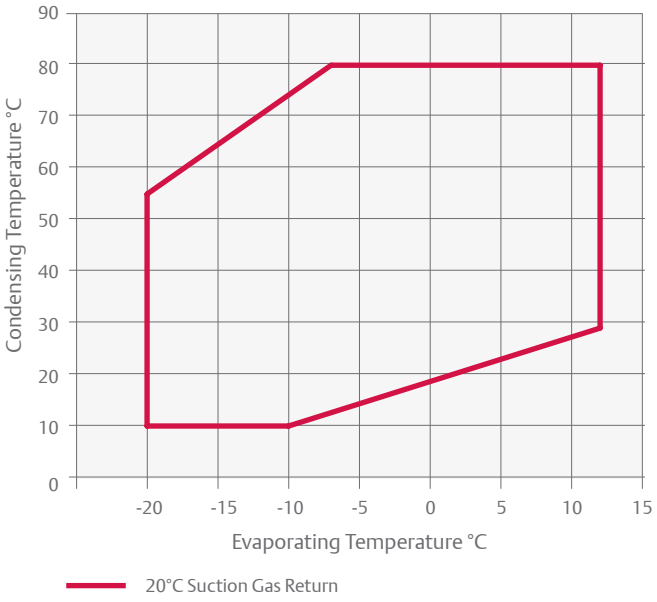


With Large Motor

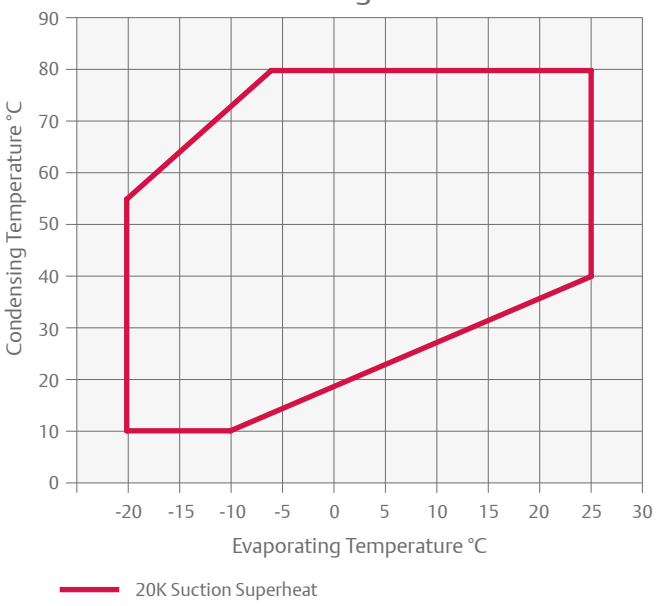


Operating Envelope R134a

With Small Motor



With Large Motor



For individual model details please refer to select software.

Technical Overview

Models	Nominal hp	Displacement (m^3/h)	Oil Quantity (l)	Length/width/height (mm)	Net Weight (kg)	Motor Version/ Code	Maximum Operating Current (A)	Locked Rotor Current (A)	Sound Pressure @1 m - dB(A) ***
						3 Ph**	3 Ph**	3 Ph**	
4MF-13	13	61.7	3.3	638/501/452	177	AWM	30.8	105	70
4MA-22	22	61.7	3.3	638/501/452	177	AWM	36.3	175	75
4ML-15	15	71.4	3.3	638/501/452	180	AWM	35.4	156	71
4MH-25	25	71.4	3.3	657/501/452	187	AWM	41.6	199	75
4MM-20	17	78.2	3.3	657/501/452	182	AWM	39.0	175	71
4MI-30	27	78.2	3.3	657/501/452	188	AWM	46.6	221	75
4MT-22	22	87.7	3.3	657/501/452	183	AWM	44.5	175	73
4MJ-33	33	87.7	3.3	657/501/452	190	AWM	52.9	221	74
4MU-25	25	99.4	3.3	657/501/452	186	AWM	51.9	199	72
4MK-35	32	99.4	3.3	688/501/452	202	AWM	61.1	255	74
6MM-30	27	120.5	3.3	695/547/450	215	AWM	59.7	255	78
6MI-40	35	120.5	3.3	695/547/450	219	AWM	71.4	304	78
6MT-35	32	135.0	3.3	725/547/450	221	AWM	67.3	255	77
6MJ-45	40	135.0	3.3	725/547/450	223	AWM	81.5	304	79
6MU-40	40	153.0	3.3	757/547/450	225	AWM	75.8	306	78
6MK-50	50	153.0	3.3	773/547/450	230	AWM	92.9	393	80

** 3 Ph: 380-420V/ 50Hz
*** @ 1m: sound pressure level at 1m distance from the compressor, free field condition

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Capacity Data

Condensing Temperature: 40°C														
R454A	Cooling Capacity (kW)							R454A	Power Input (kW)						
	Evaporating Temperature (°C)								Evaporating Temperature (°C)						
Model	-45	-35	-30	-20	-10	-5	+5	Model	-45	-35	-30	-20	-10	-5	+5
4MF-13		8.8*	12.2*	21.8	33.4	40.5		4MF-13		7.0*	8.2*	8.2	12.6	13.5	
4MA-22		9.1*	12.6*	22.4	34.8	42.7	62.3	4MA-22		7.1*	8.2*	8.2	12.4	13.3	14.3
4ML-15		11.1*	15.0*	26.2	40.2	49.0		4ML-15		8.5*	9.9*	9.9	14.9	15.9	
4MH-25		10.8*	14.7*	26.2	40.6	49.7	72.0	4MH-25		8.1*	9.5*	9.5	14.5	15.4	16.6
4MM-20		12.5*	16.7*	28.9	44.4	54.3		4MM-20		9.5*	11.0*	11.0	16.5	17.7	
4MI-30		12.0*	16.5*	29.1	44.7	54.4	78.2	4MI-30		9.2*	10.8*	10.8	16.2	17.3	18.8
4MT-22		13.8*	18.4*	31.8	48.5	59.0		4MT-22		10.9*	12.6*	12.6	18.9	20.2	
4MJ-33		13.5*	18.8*	33.1	50.5	61.4	88.1	4MJ-33		10.3*	12.1*	12.1	18.3	19.5	21.3
4MU-25		15.6*	20.9*	36.3	55.5	67.6		4MU-25		12.0*	13.9*	13.9	21.3	23.0	
4MK-35		15.7*	21.2*	36.9	56.4	68.7	99.4	4MK-35		12.0*	13.9*	13.9	21.1	22.6	24.9
6MM-30		18.9*	25.4*	44.4	67.7	82.1		6MM-30		14.5*	16.8*	16.8	25.5	27.3	
6MI-40		18.3*	25.0*	44.2	68.0	83.0	120.5	6MI-40		14.2*	16.6*	16.6	25.1	26.8	29.2
6MT-35		22.0*	28.4*	49.6	76.0	92.5	133.5	6MT-35		16.6*	18.6*	18.6	28.3	30.2	33.0
6MJ-45		21.1*	29.1*	49.7	75.4	91.5		6MJ-45		16.0*	19.1*	19.1	28.9	30.9	
6MU-40		23.3*	31.3*	54.9	83.4	101.0		6MU-40		18.0*	20.9*	20.9	32.4	34.8	
6MK-50		23.3*	31.3*	54.7	83.8	102.0	148.0	6MK-50		18.5*	21.2*	21.2	31.8	34.0	37.3

Conditions: Suction Gas Return 20°C / Subcooling 0K, 100% loaded
*Conditions: Suction Superheat 10K, Subcooling 0K
Preliminary data

Condensing Temperature: 40°C														
R454C	Cooling Capacity (kW)							R454C	Power Input (kW)						
	Evaporating Temperature (°C)								Evaporating Temperature (°C)						
Model	-45	-35	-30	-20	-10	-5	+5	Model	-45	-35	-30	-20	-10	-5	+5
4MF-13		7.3*	11.3	18.9	29.4	36.0		4MF-13		5.7*	6.7	8.6	10.3	11.1	
4MA-22		6.9*	11.2	19.3	30.4	37.4	54.3	4MA-22		5.7*	6.8	8.7	10.4	11.0	11.8
4ML-15		8.5*	13.2	21.8	33.9	41.4	-	4ML-15		6.9*	8.0	10.2	12.2	13.1	-
4MH-25		8.3*	12.9	21.6	34.0	41.8	61.2	4MH-25		6.6*	7.7	10.0	12.0	12.8	13.9
4MM-20		9.7*	14.7	24.1	37.3	45.6	-	4MM-20		7.7*	8.9	11.3	13.6	14.5	-
4MI-30		9.1*	14.4	24.1	37.6	46.1	66.8	4MI-30		7.5*	8.8	11.3	13.4	14.3	15.6
4MT-22		10.4*	15.9	26.0	40.2	49.0	-	4MT-22		8.7*	10.2	13.0	15.6	16.7	-
4MJ-33		10.2*	16.2	27.5	42.7	52.1	75.0	4MJ-33		8.4*	9.9	12.8	15.2	16.2	17.7
4MU-25		11.9*	18.3	30.3	46.9	57.2	-	4MU-25		9.8*	11.4	14.6	17.7	19.1	-
4MK-35		11.9*	18.6	30.8	47.6	58.1	84.2	4MK-35		9.7*	11.4	14.6	17.3	18.5	20.5
6MM-30		14.5*	22.2	36.8	57.1	69.7	-	6MM-30		11.7*	13.6	17.4	20.9	22.5	-
6MI-40		14.2*	22.0	36.7	57.2	70.0	102.0	6MI-40		11.7*	13.6	17.4	20.8	22.2	24.3
6MT-35		17.1*	25.5	41.5	63.7	77.6	-	6MT-35		13.5*	15.5	19.8	23.7	25.4	-
6MJ-45		16.2*	24.7	40.8	63.4	77.6	113.0	6MJ-45		13.0*	15.1	19.4	23.3	24.9	27.2
6MU-40		17.6*	27.1	44.7	69.4	84.7	-	6MU-40		14.6*	17.0	21.9	26.7	28.7	-
6MK-50		17.5*	27.2	45.0	70.1	85.8	124.5	6MK-50		15.1*	17.3	22.0	26.3	28.2	31.1

Conditions: Suction Gas Return 20°C / Subcooling 0K, 100% loaded
*Conditions: Suction Superheat 10K, Subcooling 0K
Preliminary data

Capacity Data

Condensing Temperature: 40°C														
R455A	Cooling Capacity (kW)							R455A	Power Input (kW)						
	Evaporating Temperature (°C)								Evaporating Temperature (°C)						
Model	-45	-35	-30	-20	-10	-5	+5	Model	-45	-35	-30	-20	-10	-5	+5
4MF-13		7.4	10.4*	19.4	30.1	36.7		4MF-13		7.4	7.1*	9.2	11.1	11.9	
4MA-22		7.1	11.7	20.1	31.7	38.9	56.5	4MA-22		7.1	7.2	9.4	11.2	11.9	12.8
4ML-15		9.5	13.0*	23.6	36.7	44.9		4ML-15		9.5	8.6*	11.0	13.1	14.1	
4MH-25		9.2	14.1	23.6	37.1	45.6	66.6	4MH-25		9.2	8.2	10.7	12.8	13.7	14.9
4MM-20		10.7	14.6*	26.1	40.4	49.5		4MM-20		10.7	9.5*	12.1	14.6	15.6	
4MI-30		10.3	16.0	26.8	41.4	50.5	72.7	4MI-30		10.3	9.4	12.1	14.4	15.3	16.8
4MT-22		11.5	15.6*	28.2	43.6	53.2		4MT-22		11.5	10.9*	13.9	16.7	17.9	
4MJ-33		11.3	17.7	29.8	46.4	56.6	81.4	4MJ-33		11.3	10.6	13.6	16.2	17.3	19.0
4MU-25		13.4	18.5*	33.3	51.3	62.6		4MU-25		13.4	12.2*	15.6	19.0	20.5	
4MK-35		13.1	20.1	33.5	51.9	63.3	91.5	4MK-35		13.1	12.1	15.5	18.5	19.8	22.0
6MM-30		16.4	22.3*	40.4	62.6	76.3		6MM-30		16.4	14.6*	18.7	22.5	24.1	
6MI-40		15.4	23.5	39.0	60.8	74.6	109.0	6MI-40		15.4	14.5	18.6	22.2	23.8	26.1
6MT-35		18.9	25.4*	45.1	69.1	84.1		6MT-35		18.9	16.6*	21.2	25.5	27.3	
6MJ-45		18.2	27.1	44.6	69.3	84.9	123.5	6MJ-45		18.2	16.1	20.8	25.0	26.7	29.3
6MU-40		20.2	27.4*	49.8	77.2	94.2		6MU-40		20.2	18.1*	23.5	28.6	30.8	
6MK-50		19.9	30.2	50.0	77.8	95.3	138.5	6MK-50		19.9	18.5	23.5	28.2	30.2	33.4

Conditions: Suction Gas Return 20°C / Subcooling 0K, 100% loaded
*Conditions: Suction Superheat 10K, Subcooling 0K
Preliminary data

Condensing Temperature: 40°C														
R407A	Cooling Capacity (kW)							R407A	Power Input (kW)						
	Evaporating Temperature (°C)								Evaporating Temperature (°C)						
Model	-45	-35	-30	-20	-10	-5	+5	Model	-45	-35	-30	-20	-10	-5	+5
4MF-13		7.1*	10.3*	19.9	31.2	38.3		4MF-13		6.1*	7.3*	9.7	11.8	12.7	
4MA-22				20.3	32.6	40.3	59.9	4MA-22				9.5	11.7	12.6	14.0
4ML-15		9.2*	13.0*	24.3	38.0	46.6		4ML-15		7.4*	8.8*	11.4	13.8	14.9	
4MH-25				23.8	37.8	46.7	69.2	4MH-25				11.4	13.7	14.6	15.9
4MM-20		10.4*	14.5*	26.7	41.6	51.0		4MM-20		8.3*	9.7*	12.7	15.3	16.5	
4MI-30				26.7	42.1	51.9	76.5	4MI-30				12.6	15.0	16.1	17.8
4MT-22		11.2*	15.5*	28.7	44.7	54.8		4MT-22		9.4*	11.1*	14.5	17.5	18.9	
4MJ-33				29.7	46.8	57.7	85.1	4MJ-33				14.2	17	18.2	20.1
4MU-25		12.3*	17.3*	32.6	50.9	62.4		4MU-25		10.6*	12.4*	16.2	19.9	21.6	
4MK-35				33.5	52.6	64.7	95.1	4MK-35				16.2	19.5	20.9	23.4
6MM-30		15.1*	21.2*	39.7	61.9	75.8		6MM-30		12.6*	14.9*	19.4	23.6	25.5	
6MI-40				40.8	64.2	79.0	116.5	6MI-40				19.3	23.3	25	27.6
6MT-35		18.4*	25.1*	45.7	71.0	86.9		6MT-35		14.5*	16.8*	21.9	26.9	29.1	
6MJ-45				45.4	71.4	87.9	129.5	6MJ-45				21.5	26.1	28.0	31.0
6MU-40		20.9*	27.8*	50.3	78.7	96.7		6MU-40		16.6*	19.0*	24.4	30.1	32.8	
6MK-50				50.6	79.4	97.6	143.5	6MK-50				24.4	29.8	32.3	36.4

Conditions: Suction Gas Return 20°C, Subcooling 0K
* Conditions: Suction Superheat 10K, Subcooling 0K

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Capacity Data

Condensing Temperature: 40°C															
R407F	Cooling Capacity (kW)							R407F	Power Input (kW)						
	Evaporating Temperature (°C)								Evaporating Temperature (°C)						
Model	-45	-35	-30	-20	-10	-5	+5	Model	-45	-35	-30	-20	-10	-5	+5
4MF-13		7.8*	11.1*	19.7*	32.5	39.9		4MF-13		6.5*	7.7*	10.2*	12.4	13.3	
4MA-22				20.7*	34.8	43	63.8	4MA-22				10.2*	12.4	13.2	14.4
4MH-25				24.2*	40.4	49.9	73.8	4MH-25				11.9*	14.4	15.4	16.8
4ML-15		9.9*	13.8*	24.2*	39.8	48.9		4ML-15		7.8*	9.2*	12.0*	14.6	15.7	
4MM-20		11.0*	15.3*	26.6*	43.5	53.4		4MM-20		8.7*	10.3*	13.3*	16.0	17.2	
4MI-30				26.9*	44.4	54.8	80.7	4MI-30				13.1*	15.8	17.0	18.6
4MT-22		12.7*	17.4*	29.9*	48.5	59.5		4MT-22		10.0*	11.7*	15.1*	18.3	19.7	
4MJ-33				30.2*	49.5	60.9	89.8	4MJ-33				14.8*	17.8	19.2	21.1
4MU-25		14.0*	19.3*	33.3*	54.6	66.9		4MU-25		11.2*	13.2*	17.2*	21.0	22.8	
4MK-35				33.7*	55.3	68.3	101.0	4MK-35				16.8*	20.4	22.1	24.4
6MM-30		17.2*	23.7*	40.7*	66	80.7		6MM-30		13.6*	15.8*	20.4*	24.8	26.7	
6MI-40				41.2*	67.9	83.5	122.5	6MI-40				20.2*	24.4	26.2	28.9
6MT-35		19.8*	27.0*	45.8*	74.1	90.4		6MT-35		15.3*	18.0*	23.1*	28.0	30.3	
6MJ-45				45.8*	75.2	92.6	136.0	6MJ-45				22.9*	27.6	29.7	32.8
6MU-40		20.1*	27.7*	48.5*	82.7	101.5		6MU-40		16.9*	19.8*	25.9*	31.7	34.4	
6MK-50				51.3*	84.5	104	153.5	6MK-50				25.8*	31.3	33.7	37.5

Conditions: Suction Gas Return 20°C, Subcooling 0K
* Conditions: Suction Superheat 10K, Subcooling 0K

Condensing Temperature 40°C															
R448A/ R449A	Cooling Capacity (kW)							R448A/ R449A	Power Input (kW)						
	Evaporating Temperature (°C)								Evaporating Temperature (°C)						
Model	-45	-35	-30	-20	-10	-5	5	Model	-45	-35	-30	-20	-10	-5	5
4MA-22		7.8*	11.3*	21.2	34.3	42.7	63.5	4MA-22		6.2*	7.4*	9.8	11.8	12.6	13.7
4MF-13	3.8*	8.2*	11.1*	19.6	30.4	37.3		4MF-13	4.5*	6.3*	7.4*	9.8	12.2	13.1	
4MH-25		9.4*	13.5*	24.7	39.1	48.0	70.3	4MH-25		7.6*	8.9*	11.6	14.1	15.1	16.7
4ML-15	4.3*	10.5*	14.3*	25.2	38.7	47.1		4ML-15	5.2*	7.6*	8.9*	11.6	14.2	15.4	
4MI-30		10.8*	15.4*	28.1	44.1	54.0	78.6	4MI-30		8.2*	9.8*	13.0	15.6	16.7	18.2
4MM-20	4.9*	11.8*	16.0*	27.8	42.5	51.5		4MM-20	5.8*	8.5*	9.9*	12.9	15.6	16.9	
4MJ-33		12.1*	17.0*	30.9	48.7	59.8	87.6	4MJ-33		9.2*	11.0*	14.5	17.6	18.9	20.6
4MT-22	5.9*	13.5*	18.2*	31.3	47.7	57.8		4MT-22	6.6*	9.7*	11.3*	14.6	17.8	19.2	
4MK-35		13.7*	19.2*	34.7	54.8	67.5	98.9	4MK-35		10.7*	12.7*	16.7	20.4	22.0	24.4
4MU-25	6.5*	14.3*	19.5*	34.2	53.2	65.1		4MU-25	7.4*	10.8*	12.7*	16.6	20.5	22.4	
6MI-40		17.1*	23.9*	42.8	66.6	81.4	118.0	6MI-40		13.0*	15.3*	19.6	23.5	25.2	28.0
6MM-30	6.6*	17.6*	24.1*	41.8	63.2	76.3		6MM-30	8.8*	13.1*	15.4*	19.9	23.9	25.6	
6MT-35	7.5*	19.8*	26.9*	46.5	70.0	84.3		6MT-35	9.7*	14.6*	17.2*	22.2	26.9	29.0	
6MJ-45		19.5*	27.2*	48.1	74.5	91.0	132.0	6MJ-45		14.3*	17.0*	22.2	26.9	28.8	31.7
6MK-50		21.1*	29.4*	52.7	82.2	101.0	147.0	6MK-50		16.4*	19.2*	25.0	30.3	32.7	36.7
6MU-40	8.3*	22.2*	30.5*	53.4	81.8	99.4		6MU-40	10.9*	16.3*	19.1*	24.6	29.8	32.1	

Conditions: Suction Gas Return 20°C / Subcooling 0K
* Conditions: Suction Superheat 10K, Subcooling 0K
Preliminary Data

Capacity Data

Condensing Temperature: 40°C														
R404A	Cooling Capacity (kW)							R404A	Power Input (kW)						
	Evaporating Temperature (°C)								Evaporating Temperature (°C)						
Model	-45	-35	-30	-20	-10	-5	+5	Model	-45	-35	-30	-20	-10	-5	+5
4MA-22		10.5	14.3	23.6	36.0	43.5	62.0	4MA-22		7.3	8.6	11.0	13.0	13.7	14.7
4MF-13	3.6*	10.7	14.0	22.8	34.8	42.2		4MF-13	5.0*	7.4	8.7	11.0	13.0	13.9	
4MH-25		12.4	16.7	27.5	42.2	51.3	73.6	4MH-25		8.6	10.1	13.0	15.4	16.3	17.5
4ML-15	4.8*	13.3	17.4	27.9	42.0	50.8		4ML-15	6.3*	9.0	10.5	13.3	15.8	16.7	
4MI-30		14.4	19.4	31.2	46.8	56.3	79.5	4MI-30		9.8	11.5	14.5	17.0	18	19.5
4MM-20	5.7*	15.1	19.6	30.9	46.1	55.4		4MM-20	7.1*	10.1	11.6	14.6	17.0	18.2	
4MJ-33		16.2	21.4	34.6	52.4	63.4	90.4	4MJ-33		10.9	12.6	16.0	19.0	20.2	21.8
4MT-22	6.7*	17.0	21.9	34.7	52.0	62.7		4MT-22	8.0*	11.5	13.2	16.6	19.5	20.7	
4MK-35		18.3	24.0	38.8	58.9	71.3	102.0	4MK-35		12.6	14.6	18.5	22.0	23.5	25.7
4MU-25	7.2*	18.6	24.1	38.5	58.1	70.2		4MU-25	9.0*	12.9	14.9	18.8	22.3	23.7	
6MI-40		21.9	28.9	46.7	70.8	85.8	122.5	6MI-40		15.2	17.6	22.2	26.1	27.7	30.1
6MM-30	8.9*	22.7	29.3	46.5	70.2	85.1		6MM-30	11.0*	15.7	18.0	22.5	26.3	27.8	
6MJ-45		24.3	32.3	52.5	79.5	96.1	136.5	6MJ-45		16.8	19.6	24.9	29.5	31.4	33.9
6MT-35	10.3*	25.6	33	52.5	79.3	95.9		6MT-35	12.3*	17.5	20.1	25.3	29.7	31.5	
6MK-50		27.3	36.3	58.7	88.6	107.0	152.0	6MK-50		19.4	22.5	28.3	33.5	35.9	39.9
6MU-40	11.0*	28.4	36.8	58.7	89.0	108.0		6MU-40	13.8*	19.7	22.7	28.5	33.6	35.8	

Conditions Suction Gas Return 20°C, Subcooling 0K
* Conditions Suction superheat 10K, Subcooling 0K

Condensing Temperature: 40°C														
R134a	Cooling Capacity (kW)							R134a	Power Input (kW)						
	Evaporating Temperature (°C)								Evaporating Temperature (°C)						
Models	-45	-35	-30	-20	-10	-5	+5	Models	-45	-35	-30	-20	-10	-5	+5
4MA-22				13.1	21.3	26.6	40.1	4MA-22				5.9	7.3	7.9	8.7
4MF-13				12.2	20.4	25.6	38.9	4MF-13				5.8	7.2	7.8	8.7
4MH-25				15.0	24.6	30.7	46.4	4MH-25				7.0	8.7	9.4	10.4
4ML-15				15.0	24.5	30.5	46.0	4ML-15				6.9	8.5	9.3	10.4
4MI-30				16.8	27.1	33.7	50.7	4MI-30				7.6	9.4	10.3	11.4
4MM-20				16.6	27.0	33.6	50.3	4MM-20				7.7	9.4	10.2	11.4
4MJ-33				18.9	30.3	37.6	56.4	4MJ-33				8.7	10.7	11.5	12.8
4MT-22				19.0	30.6	38.1	57.2	4MT-22				8.7	10.8	11.7	13.0
4MK-35				21.0	34.0	42.2	63.3	4MK-35				9.7	12.2	13.3	14.9
4MU-25				20.7	33.9	42.3	63.8	4MU-25				9.8	12.2	13.3	15.0
6MI-40				24.8	40.2	50.2	76.0	6MI-40				12.0	14.6	15.8	17.8
6MM-30				25.2	40.7	50.7	76.1	6MM-30				11.7	14.6	15.8	17.7
6MJ-45				28.5	45.6	56.7	85.3	6MJ-45				13.0	16.2	17.8	20.3
6MT-35				28.5	46.0	57.1	85.2	6MT-35				13.3	16.5	17.9	20.0
6MK-50				29.8	49.1	61.7	94.3	6MK-50				15.2	18.8	20.5	23.3
6MU-40				31.5	50.6	62.9	94.5	6MU-40				14.6	18.4	20.1	23.0

Conditions Suction Gas Return 20°C, Subcooling 0K
* Conditions Suction Superheat 10K, Subcooling 0K

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