

Copeland™ YF, YFI and YFJ Scroll Compressor Ranges for Low Temperature Refrigeration for Low GWP Refrigerants Classified as A2L

Copeland YF scroll compressors for low temperature applications feature an optimized design for F-Gas compliant low GWP A2L refrigerants. The scroll compressor was optimized internally and externally to create the most reliable compressor with refrigerants with a high HFO content.

The range consists of:

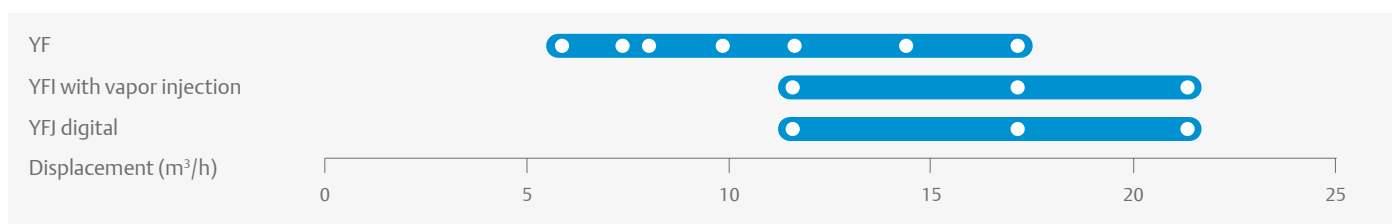
- YF*K1E models that operate with liquid injection in order to control discharge temperature and increase the operating envelope.
- YFI*K1E models that operate with vapor injection. This boosts the refrigeration system cooling capacity and efficiency.
- YFJ*K1E models that operate with digital capacity modulation and vapor injection. Capacity control is achieved by separating the scroll sets axially over a small period of time. It is a simple mechanical solution allowing precise temperature control and system efficiency and it requires no other components.

These compressors, available with displacements from 5.9 to 25.1 m³/h are designed to provide seasonal efficiencies 15% higher than traditional semi-hermetic compressors. These compressors are extremely quiet and can be fitted with an external sound shell for an additional 10 - 12 dBA sound reduction, which makes them best choice for refrigeration applications in urban and domestic areas.



YF scroll compressor

YF, YFI and YFJ Scroll Compressors Line-up



Features and Benefits

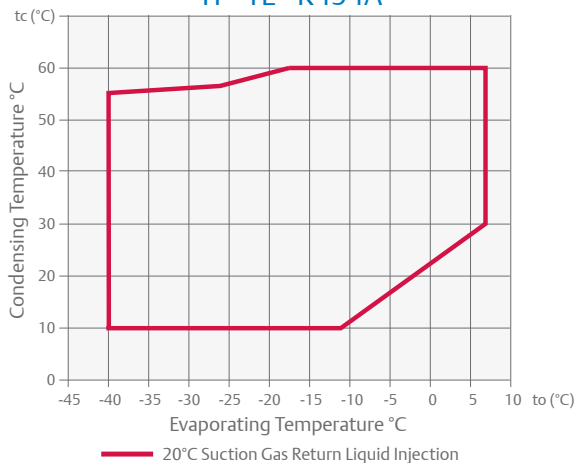
- One model for multiple refrigerants: R455A, R454A, R454C
- Fully hermetic design to avoid risk of refrigerant leakage
- Flexibility in terms of required capacity: multiple design options
- Extremely quiet operation, specially adapted to applications in urban and domestic areas
- Light weight and compact design

Maximum Allowable Pressure (PS)

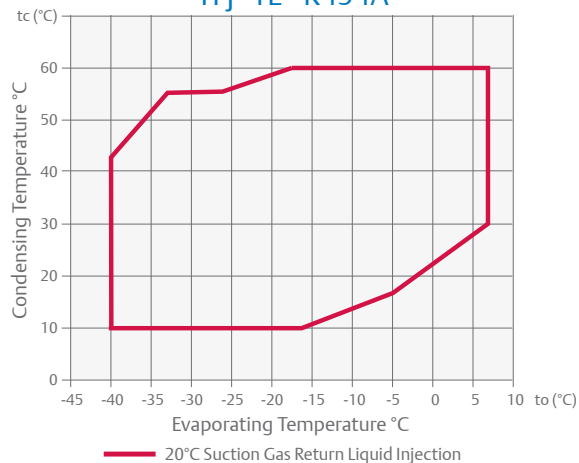
- Low Side PS 23.5 bar (g)
- High Side PS 38 bar (g)

Operating Envelope

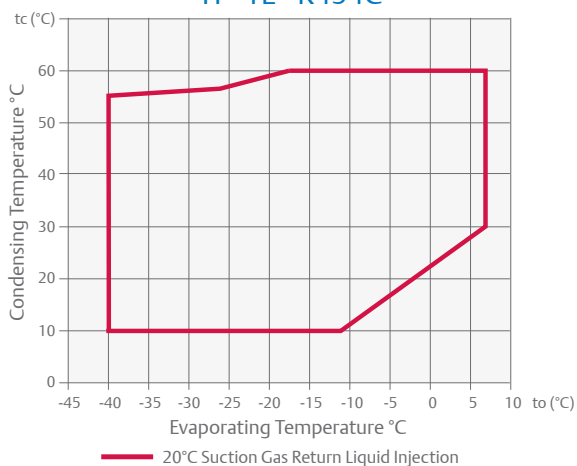
YF* 1E - R454A



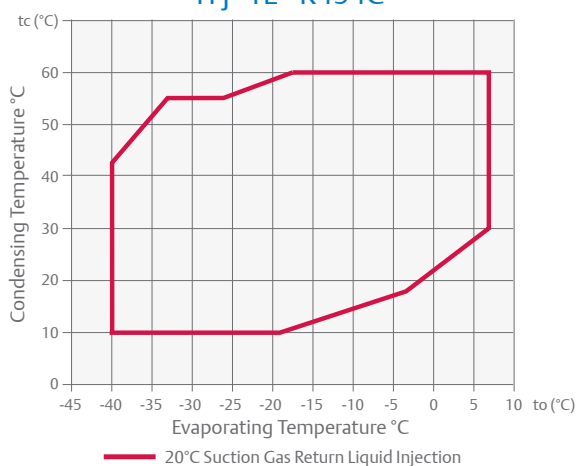
YFJ* 1E - R454A



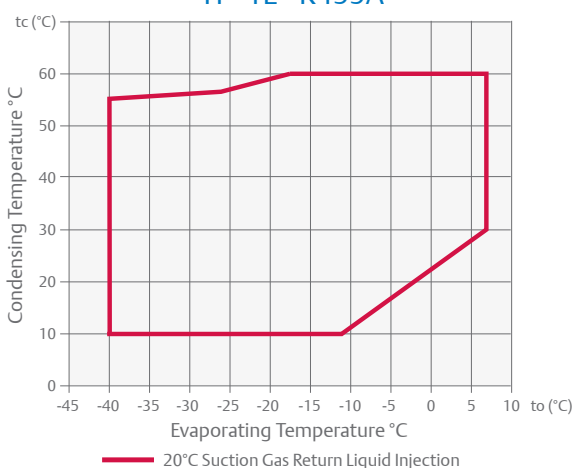
YF* 1E - R454C



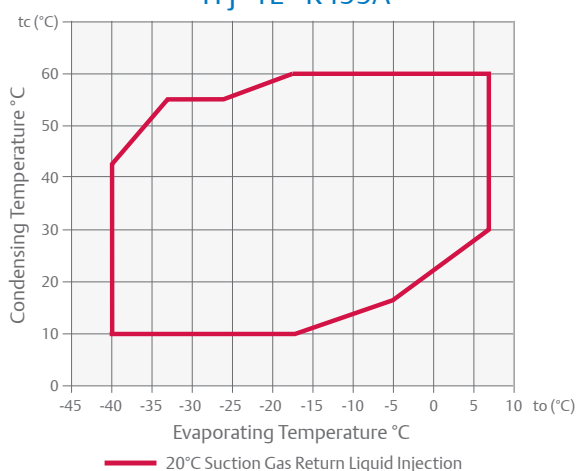
YFJ* 1E - R454C



YF* 1E - R455A



YFJ* 1E - R455A



Technical Overview

Models	Nominal hp	Displacement (m ³ /h)	Rotalock Suction (inch)	Rotalock Discharge (inch)	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**	
Models with Liquid Injection											
YF05K1E	2.0	5.9	3/4	1/2	1.3	253/248/369	25	TFD	5	26	58
YF06K1E	2.5	7.3	3/4	1/2	1.5	253/248/391	26	TFD	6	32	58
YF07K1E	2.8	8.0	3/4	1/2	1.5	253/248/391	28	TFD	6	40	60
YF09K1E	3.5	9.9	3/4	1/2	1.5	253/248/405	29	TFD	7	46	60
YF10K1E	4.0	11.7	7/8	1/2	1.9	258/263/442	37	TFD	8	52	60
YF13K1E	5.0	14.4	7/8	1/2	1.9	258/263/442	40	TFD	10	64	60
YF15K1E	6.0	17.1	7/8	1/2	1.9	258/263/442	40	TFD	13	74	62
YF19K1E	7.5	21.4	7/8	3/4	1.9	258/263/442	44	TFD	16	102	67
Models with Vapor Injection											
YFI10K1E	4.0	11.7	7/8	1/2	1.9	258/263/442	38	TFD	9	64	63
YFI15K1E	6.0	17.1	7/8	1/2	1.9	258/263/442	40	TFD	14	74	67
YFI19K1E	7.5	21.4	7/8	3/4	1.9	255/261/442	44	TFD	16	102	70
Digital Models with Vapor Injection											
YFJ10K1E	4.0	11.7	7/8	1/2	1.9	258/263/481	40	TFD	9	64	63
YFJ15K1E	6.0	17.1	7/8	1/2	1.9	258/263/481	41	TFD	14	74	67
YFJ19K1E	7.5	21.4	7/8	3/4	1.9	258/263/481	46	TFD	16	102	70

** 3 Ph: 380-420V/ 50Hz

*** @ 1m: sound pressure level at 1m distance from the compressor, free field condition

Capacity Data

Condensing Temperature 40°C															
R455A	Cooling Capacity (kW)							R455A	Power Input (kW)						
	Evaporating Temperature (°C)								Evaporating Temperature (°C)						
Model	-35	-30	-25	-20	-15	-10	-5	Model	-35	-30	-25	-20	-15	-10	-5
Models with Liquid injection															
YF05K1E	1.1	1.5	1.8	2.3	2.8	3.4	4.1	YF05K1E	1.1	1.1	1.2	1.3	1.3	1.4	1.5
YF06K1E	1.5	1.9	2.4	2.9	3.6	4.3	5.2	YF06K1E	1.2	1.3	1.3	1.4	1.4	1.5	1.5
YF07K1E	1.6	2.1	2.6	3.2	3.9	4.7	5.7	YF07K1E	1.3	1.4	1.4	1.5	1.6	1.6	1.7
YF09K1E	2.0	2.5	3.2	3.9	4.8	5.9	7.1	YF09K1E	1.6	1.7	1.8	1.9	1.9	2.0	2.1
YF10K1E	2.4	3.0	3.8	4.7	5.7	6.9	8.3	YF10K1E	1.9	2.0	2.1	2.2	2.3	2.4	2.5
YF13K1E	2.9	3.7	4.6	5.7	6.9	8.5	10.2	YF13K1E	2.3	2.4	2.6	2.7	2.8	2.9	3.0
YF15K1E	3.4	4.3	5.4	6.7	8.2	10.0	12.0	YF15K1E	2.8	2.9	3.0	3.1	3.3	3.4	3.5
YF19K1E	4.3	5.4	6.7	8.3	10.2	12.4	14.9	YF19K1E	3.4	3.6	3.7	3.9	4.1	4.2	4.4
Models with Vapor Injection															
YFI10K1E	3.4	4.2	5.2	6.3	7.5	8.9	10.5	YFI10K1E	2.3	2.4	2.5	2.6	2.7	2.8	2.9
YFI15K1E	5.0	6.2	7.6	9.1	11.0	13.0	15.3	YFI15K1E	3.3	3.5	3.6	3.7	3.9	4.0	4.2
YFI19K1E	6.2	7.7	9.5	11.5	13.7	16.3	19.1	YFI19K1E	4.1	4.3	4.5	4.7	4.9	5.0	5.2
Digital Models with Vapor Injection															
YFJ10K1E	3.4	4.2	5.2	6.3	7.5	8.9	10.5	YFJ10K1E	2.3	2.4	2.5	2.6	2.7	2.8	2.9
YFJ15K1E	5.0	6.2	7.6	9.1	11.0	13.0	15.3	YFJ15K1E	3.3	3.5	3.6	3.7	3.9	4.0	4.2
YFJ19K1E	6.2	7.7	9.5	11.5	13.7	16.3	19.1	YFJ19K1E	4.1	4.3	4.5	4.7	4.9	5.0	5.2

Conditions: Suction Gas Return 20°C / Subcooling 0K

Preliminary Data

Capacity Data

Condensing Temperature 40°C															
R454C	Cooling Capacity (kW)							R454C	Power Input (kW)						
	Evaporating Temperature (°C)								Evaporating Temperature (°C)						
Model	-35	-30	-25	-20	-15	-10	-5	Model	-35	-30	-25	-20	-15	-10	-5
Models with Liquid Injection															
YF05K1E	1.1	1.4	1.7	2.1	2.6	3.2	3.8	YF05K1E	1.0	1.0	1.1	1.1	1.2	1.3	1.4
YF06K1E	1.4	1.7	2.1	2.7	3.3	4.0	4.8	YF06K1E	1.1	1.2	1.3	1.3	1.4	1.5	1.5
YF07K1E	1.5	1.9	2.3	2.9	3.6	4.4	5.3	YF07K1E	1.2	1.3	1.4	1.4	1.5	1.6	1.7
YF09K1E	1.8	2.3	2.9	3.6	4.4	5.4	6.5	YF09K1E	1.5	1.5	1.6	1.7	1.8	1.9	1.9
YF10K1E	2.2	2.8	3.4	4.2	5.2	6.4	7.7	YF10K1E	1.7	1.8	1.9	2.0	2.1	2.2	2.3
YF13K1E	2.7	3.4	4.2	5.2	6.3	7.7	9.3	YF13K1E	2.1	2.2	2.3	2.4	2.5	2.6	2.7
YF15K1E	3.2	4.0	5.0	6.1	7.5	9.1	11.0	YF15K1E	2.5	2.6	2.7	2.8	2.9	3.0	3.2
YF19K1E	4.0	5.0	6.2	7.6	9.3	11.3	13.5	YF19K1E	3.0	3.2	3.3	3.5	3.6	3.7	3.9
Models with Vapor Injection															
YFI10K1E	3.2	4.0	4.9	6.0	7.1	8.5	9.9	YFI10K1E	2.1	2.2	2.3	2.4	2.5	2.6	2.7
YFI15K1E	4.7	5.8	7.2	8.7	10.4	12.4	14.5	YFI15K1E	3.1	3.3	3.4	3.6	3.7	3.8	4.0
YFI19K1E	5.8	7.3	9.0	10.9	13.1	15.5	18.2	YFI19K1E	3.9	4.1	4.3	4.4	4.6	4.8	5.0
Digital Models with Vapor Injection															
YFJ10K1E	3.2	4.0	4.9	6.0	7.1	8.5	9.9	YFJ10K1E	2.1	2.2	2.3	2.4	2.5	2.6	2.7
YFJ15K1E	4.7	5.8	7.2	8.7	10.4	12.4	14.5	YFJ15K1E	3.1	3.3	3.4	3.6	3.7	3.8	4.0
YFJ19K1E	5.8	7.3	9.0	10.9	13.1	15.5	18.2	YFJ19K1E	3.9	4.1	4.3	4.4	4.6	4.8	5.0

Conditions: Suction Gas Return 20°C / Subcooling 0K
Preliminary Data

Condensing Temperature 40°C															
R454A	Cooling Capacity (kW)							R454A	Power Input (kW)						
	Evaporating Temperature (°C)								Evaporating Temperature (°C)						
Model	-35	-30	-25	-20	-15	-10	-5	Model	-35	-30	-25	-20	-15	-10	-5
Models with Liquid Injection															
YF05K1E	1.4	1.7	2.1	2.6	3.2	3.9	4.7	YF05K1E	1.2	1.3	1.3	1.4	1.5	1.6	1.7
YF06K1E	1.7	2.1	2.7	3.3	4.0	4.8	5.7	YF06K1E	1.4	1.5	1.5	1.6	1.7	1.7	1.8
YF07K1E	1.9	2.3	2.9	3.6	4.3	5.3	6.3	YF07K1E	1.6	1.6	1.7	1.7	1.8	1.9	1.9
YF09K1E	2.3	2.9	3.7	4.5	5.5	6.6	7.9	YF09K1E	1.9	2.0	2.1	2.2	2.3	2.5	2.7
YF10K1E	2.7	3.4	4.3	5.2	6.4	7.7	9.2	YF10K1E	2.2	2.3	2.4	2.5	2.6	2.7	2.8
YF13K1E	3.4	4.2	5.2	6.4	7.8	9.4	11.4	YF13K1E	2.7	2.8	2.9	3.1	3.2	3.3	3.4
YF15K1E	4.0	5.0	6.2	7.6	9.2	11.2	13.4	YF15K1E	3.2	3.3	3.5	3.6	3.8	3.9	4.1
YF19K1E	5.2	6.5	8.1	9.9	12.1	14.6	17.6	YF19K1E	3.9	4.1	4.4	4.6	4.8	5.1	5.3
Models with Vapor Injection															
YFI10K1E	3.8	4.8	5.8	7.0	8.4	9.9	11.7	YFI10K1E	2.5	2.6	2.8	2.9	3.0	3.2	3.3
YFI15K1E	5.6	7.0	8.5	10.3	12.3	14.5	17.0	YFI15K1E	3.6	3.8	4.0	4.3	4.4	4.6	4.8
YFI19K1E	7.0	8.7	10.7	12.9	15.4	18.2	21.3	YFI19K1E	4.5	4.8	5.1	5.3	5.6	5.8	6.0
Digital Models with Vapor Injection															
YFJ10K1E	3.8	4.8	5.8	7.0	8.4	9.9	11.7	YFJ10K1E	2.5	2.6	2.8	2.9	3.0	3.2	3.3
YFJ15K1E	5.6	7.0	8.5	10.3	12.3	14.5	17.0	YFJ15K1E	3.6	3.8	4.0	4.3	4.4	4.6	4.8
YFJ19K1E	7.0	8.7	10.7	12.9	15.4	18.2	21.3	YFJ19K1E	4.5	4.8	5.1	5.3	5.6	5.8	6.0

Conditions: Suction Gas Return 20°C / Subcooling 0K
Preliminary Data