Carrier

50FF & 50FC

Packaged rooftop units with R-454B refrigerant

50FF
Cooling capacity 22 kW - 265 kW

50FC
Cooling capacity 23 kW - 273 kW
Heating capacity 22 kW - 298 kW

50FF & 50FC units

Environmental responsibility

The 50FF and 50FC ranges are contributing to a sustainable future by offering the highest seasonal efficiency performance, with R-454B low GWP refrigerant thus reducing your carbon footprint. Range performances are above regulation, up to +47% in cooling (SEER) and +19% in heating (SCOP) above Ecodesign regulation ErP (EU 2016/2281). The specific casing and frame design allows for a waste reduction by eliminating the use of wooden pallets. The Global Warming Potential (GWP) of R-454B is 466, i.e. approximately one third of that of R-410A (GWP 2088), and 30% lower than R-32 (GWP 675).

Sustainable future

Energy efficient technologies

The control system of the 50FF and 50FC ranges targets the advanced management of part load operation. The range offers best-in-class technologies such as EC motor fans, multi-scroll compressors, electronic expansion valves, improved defrost technology SEER up to 5.19 and SCOP up to 3.80. Additional savings are achieved with free-cooling, variable ventilation and energy recovery.

SEER up to 5.19
SCOP up to 3.80

Compact flexible system

The packaged system has been designed to optimize transportation and installation, both in new projects or refurbishments. The range offers a wide range of options and a wide set of configurations to customize the unit according to any particular needs: different airflow configurations and directions, fresh air management, free-cooling, energy recovery, variable airflow, heating back-up, energy meters, multizone options...

Wide range options

High reliability

The 50FF and 50FC ranges have been designed to ensure robustness throughout the lifecycle of the units. The full reliability of the units is the result of high quality material and components (powder paint, locks, fan mounting, cables) combined with the highest quality standards in terms of manufacturing and laboratory testing.

Highest quality

Extensive scope of applications

The 50FF and 50FC ranges adapt effortlessly to a wide range of applications with capacities from 20 kW to 280 kW for a wide range of operating conditions starting at -15 °C and up to 52°C* outdoor air.

From -15°C to 52°C

Cooling and heating

The range consists of autonomous compact units of horizontal design, rooftop type:

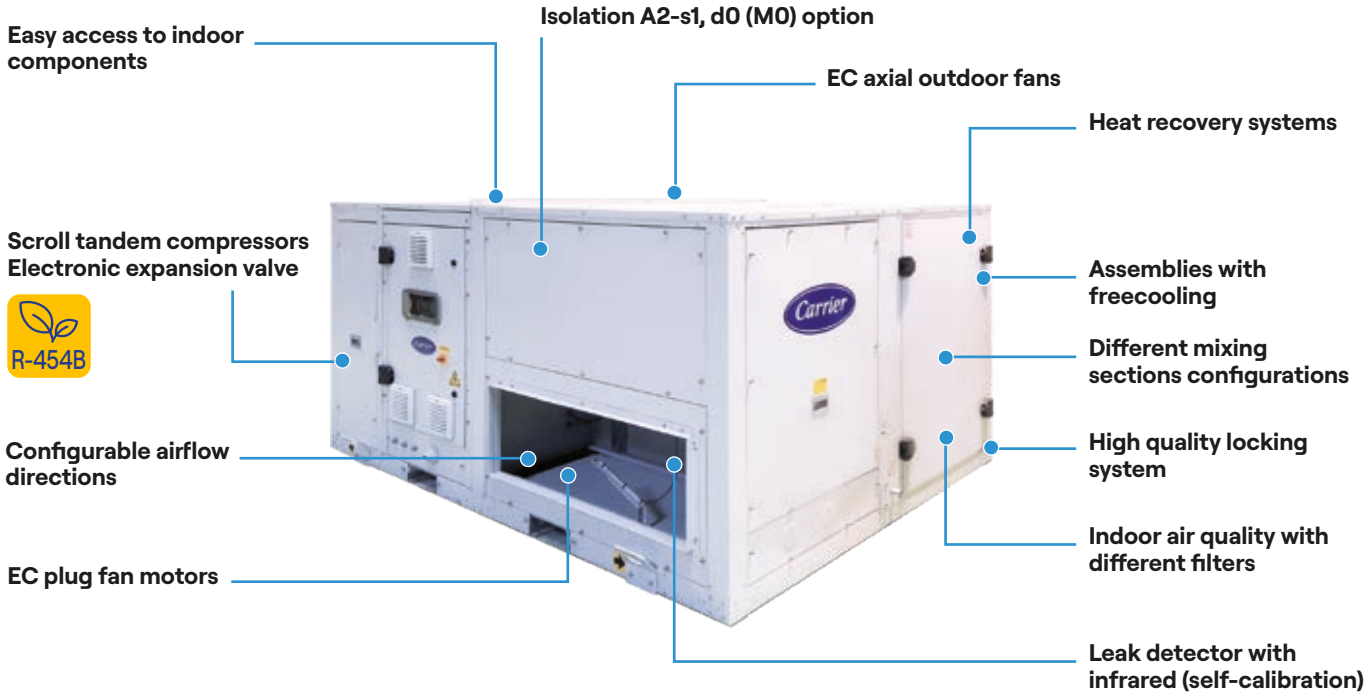
- 50FF series: for cooling-only operation.
- 50FC series: for reversible heat pump operation.

The range of available capacities in the series allows for the air conditioning of medium and large surface areas which are common in shopping malls, food retail, logistics and many other commercial and industrial applications.

Cooling only & reversible operation

* For 50FF units. Up to 48°C for 50FC units.

Technical insights



Standard features

- **Single duct configuration**
  For single-volume installations without extraction air energy recovery. The supply fan is connected to simple duct network with no return (or a simple one). Allows for fresh air and freecooling management.
- **Double duct configuration**
  For single-volume installations with or without extraction air energy recovery needs. Supply and return fans are connected to both duct networks. Allows for fresh air and freecooling management.
- **Exhaust air energy recovery options**
  Mandatory in many countries. Available through active (thermodynamic) or passive (heat recovery wheel) options.
- **Heating options**
  As a support element for heat pumps or as main heater in cooling only units. Available through condensation gas burners, hot water coils and electrical heaters.

Advanced applications

- **Air zoning or constant supply pressure option**
  Special application for managing more than one volume at the same time.
- **Low temperature food stocks**
  Low temperature has to be maintained for food preservation at low return temperature (15°C).
- **Refrigeration heat recovery coil**
  Energy recovery system to use hot water coming from refrigeration systems for low water temperature applications.

Technical characteristics

ECO DESIGN READY

50FC 020-093 R-454B		020	028	037	040	045	047	052	058	062	070	074	086	093
Cooling														
Cooling capacity (kW) ①		22.6	28.2	34	36.5	42.2	44.6	53.9	58.6	61.2	69.5	71.3	80.7	91.5
SEER ②		5.07	5.07	4.75	4.59	4.49	4.49	4.94	4.96	5.01	4.81	4.68	4.58	4.61
Heating														
Heating capacity (kW) ②		22.1	28.0	33.3	35.9	41.8	44.6	51.2	56.3	59.1	68.1	70.5	79.8	89.8
SCOP②		3.6	3.55	3.54	3.48	3.59	3.58	3.43	3.8	3.56	3.64	3.64	3.7	3.66
OUTDOOR CIRCUIT FAN														
		9,000	14,500	17,000	17,000	17,000	17,750	31,000	31,000	31,000	33,000	33,000	34,500	35,000
INDOOR CIRCUIT FAN														
Airflow (m^3/h)	Min	4,080	5,200	6,800	7,000	7,200	7,200	9,600	10,000	10,000	12,400	12,400	12,800	12,800
	Nom	5,100	6,500	8,500	8,750	9,000	9,000	12,000	12,500	12,500	15,500	15,500	16,000	16,000
	Max	6,120	7,800	10,200	10,500	10,800	10,800	14,400	15,000	15,000	18,600	18,600	19,200	19,200
Nominal available pressure (mmWC)		12	12	12	15	15	15	20	20	20	20	20	20	25
Sound power level (LW) (dBA)		77.5	82	82.5	82.5	83	84	85	85.5	86	86	86	86	86.5

50FF 020-093 R-454B		020	028	037	040	045	047	052	058	062	070	074	086	093
Cooling														
Cooling capacity (kW) ①		22.5	28	33.9	36.4	42	44.5	49.3	53.7	59.3	68	72.1	80	89.5
SEER ②		5.06	5.06	4.75	4.58	4.48	4.48	4.86	4.79	4.71	4.69	4.71	4.52	4.45
OUTDOOR CIRCUIT FAN														
		9,000	14,500	17,000	17,000	17,000	17,750	31,000	31,000	31,000	33,000	33,000	34,500	35,000
INDOOR CIRCUIT FAN														
Airflow (m^3/h)	Min	4,080	5,200	6,800	7,000	7,200	7,200	9,600	10,000	10,000	12,400	12,400	12,800	12,800
	Nom	5,100	6,500	8,500	8,750	9,000	9,000	12,000	12,500	12,500	15,500	15,500	16,000	16,000
	Max	6,120	7,800	10,200	10,500	10,800	10,800	14,400	15,000	15,000	18,600	18,600	19,200	19,200
Nominal available pressure (mmWC)		12	12	12	15	15	15	20	20	20	20	20	20	25
Sound power level (LW) (dBA)		80.5	85.5	85.5	85.0	86	87	85	85.5	86	86	86	86	86.5

50FC 100-280 R-454B	100	110	120	130	145	160	170	180	200	220	250	280
Cooling												
Cooling capacity kW (*)	97.7	107	116	126	141	155	163	176	195	215	247	273
SEER (**)	4.91	4.79	4.69	4.91	4.76	4.71	4.72	5.04	4.86	4.84	4.75	4.70
Heating												
Heating capacity kW (*)	97.2	107	118	127	144	158	166	184	203	228	271	298
SCOP (**)	3.53	3.53	3.51	3.51	3.49	3.44	3.45	3.47	3.46	3.47	3.46	3.44
OUTDOOR CIRCUIT FAN	EC ELECTRONIC FANS											
Nominal airflow m^3/h	44,000	44,000	44,000	58,000	58,000	64,000	64,000	80,000	86,000	86,000	120,000	120,000
INDOOR CIRCUIT FAN	EC PLUG-FANS											
Nominal air flow m^3/h	18,000	19,800	21,600	23,400	26,100	28,800	30,600	32,400	36,000	39,000	40,500	45,000
Nominal available pressure (mmWC)	25	25	25	30	35	35	35	35	35	35	35	35
Minimum air flow m^3/h	10,800			14,040				19,440			24,300	
Maximum air flow m^3/h	25,920			36,720				46,800			54,000	
RADIATED SOUND LEVEL												
Radiated sound power level (dB(A))	86.0	86.5	87.0	87.5	88.0	88.3	88.5	88.5	89.3	90.5	92.0	93.0

50FF 100-280 R-454B	100	110	120	130	145	160	170	180	200	220	250	280
Cooling												
Cooling capacity KW (*)	97.4	107	116	126	141	155	163	175	194	212	245	265
SEER (**)	5.10	4.93	4.84	5.08	4.91	4.86	4.87	5.19	5.01	5.00	4.90	4.85
OUTDOOR CIRCUIT FAN	EC ELECTRONIC FANS											
Nominal air flow m^3/h	44,000	44,000	44,000	58,000	58,000	64,000	64,000	80,000	86,000	86,000	120,000	120,000
INDOOR CIRCUIT FAN	EC PLUG-FANS											
Nominal air flow m^3/h	18,000	19,800	21,600	23,400	26,100	28,800	30,600	32,400	36,000	39,000	40,500	45,000
Nominal available pressure (mmWC)	25	25	25	30	35	35	35	35	35	35	35	35
Minimum air flow m^3/h	10,800			14,040				19,440			24,300	
Maximum air flow m^3/h	25,920			36,720				46,800			54,000	
RADIATED SOUND LEVEL												
Radiated sound power level (dB(A))	86.0	86.5	87.0	87.5	88.0	88.3	88.5	88.5	89.3	90.5	92.0	93.0

* Cooling capacity calculated in accordance with the EN-14511-2022 standard given for indoor temperature conditions 27°C, 19°C WB and 35°C outdoor temperature.
** Heating capacity calculated in accordance with the EN-14825-2022 standard given for indoor temperature conditions 20°C and 6°C WB outdoor temperature.

Eurovent certified data

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