

RTE

ROOF-TOP cooling only and heat pump unit
Cooling capacities from 150 up to 254 kW standard version
Heating capacities from 151 up to 266 kW standard version

R410A



Features

The rooftop units in the RTE range represent the ideal solution for air conditioning environments with average and large cubage for tertiary, commercial and industrial destination.

The units offer noteworthy advantages in terms of air quality and environmental comfort, easy installation and low noise level.

The use of ecological R410A fluid refrigerant allows to increase the unit efficiency.

The availability of many accessories, e.g. the cross flow recovery systems or the hot air generator with condensation, also confer a noteworthy versatility, making the RTE range perfectly suitable for the various system requirements.

Structure:

Self-supporting with external aluminium alloy and internal galvanised steel sandwich-type panelling with thickness of 50 mm and injected polyurethane insulation (density 42 kg/m³) for the air handling section.

Air handling section fan:

Double intake centrifugal type with blades facing forwards for greater silence, coupled using belts

and pulleys with variable pitch.

The direction of delivery air flow can be: **UPWARDS, SIDEWAYS AND DOWNWARDS.**

Condensation section fans:

Statically and dynamically balanced helical type, protected electrically by magnet circuit breakers and mechanically by grids.

Double cooling circuit:

which at the same time guarantees the respect for the environment and the increase of energy efficiency. The cooling circuit lines and the electric plant wiring are inserted into the base of the machine with the purpose of making maintenance and internal cleaning easier.

Scroll tandem compressors that guarantee low noise and high efficiency.

Internal and external coil with copper pipes and high efficiency aluminium louvers.

Air filtering:

Pleated synthetic filters with G4 efficiency or F7 rigid pocket filters (optional).

Microprocessor adjustment complete with electric control board, probes and actuators for all components.

Versions:

RTPA F cooling only version.

RTPA H heat pump.

High temperature functioning (A)

Silenced functioning (L)

SET-UPS:

SMP mixing chamber 2 dampers with rear intake.

SM2 mixing chamber 2 dampers with lateral/lower intake.

SM3 mixing chamber 3 dampers with free-cooling.

FT7 F7 (EN 779) efficiency rigid pocket filters.

REC cross flow heat recovery units with intake fan.

Gxxx condensation hot air generator.

Accessories

- **DCPR** - Pressure control device (as per standard for silenced functioning mode) Extends the functioning range of the rooftop in the summer cycle (minimum temperature of the external air up to 10 °C) and in the winter cycle in heat pump mode (maximum temperature of the external air up to 25 °C). Moreover, it makes functioning silent with partial loads. A regulation circuit board varies the number of the motor condensing fan revs on the basis of the condensation pressure, read by the relevant transducers, thus guaranteeing correct power supply of the

thermostatic valve.

- **GP** - Protection grids Protect the external coils from blows and hail.
- **T1** - Right lateral air intake (only on SM2).
- **T2** - Left lateral air intake (only on SM2).
- **T4** - Lower recirculation air intake. rear fresh air intake (only on SM2).
- **T5** - Right lateral recirculation air intake. left fresh air intake (only on SM2).
- **T6** - Left lateral recirculation air intake. right fresh air intake (only on SM2).

- **AI** - Lower intake (only on SM3).

- **PA4** - Rear air intake Return fan static pressure up to 300 Pa at nominal flow rate.

- **MA** - Upper air delivery.

- **MS** - Left air delivery nominal air flow rate.

- **MD** - Right air delivery.

- **PM4** - Delivery fan static pressure up to 400.

Pa Static pressure of the delivery fan up to 400 Pa at nominal flow rate.

- **BTR** - Water heating coil 2 row hot water coil with anti-freeze probe as per standard. They can be

managed in post-heating mode only with DP accessories. They can be coupled with the Gxxx generator.

- **V3V** - 3-way valve with servocontrol modulating for the management of the water coil mounted inside the rooftop
- **BRE** - Electric heating coil Electric heating coil with two stages fitted with twin safety thermostat, one with automatic rearm and the other with manual rearm.
They can be managed in post-heating mode only with DP accessories. The BRE cannot be coupled with the Gxxx generator.
- **PUC** - Humidification control set-up. ON/OFF contact (normally open) for humidification consent. In this case, the unit is complete with humidity probe positioned in the environment air return. A humidity probe is also supplied to be positioned downstream from the humidification section.
- **DP** - Kit for management of dehumidification and post-heating The control will force compressor functioning in order to dehumidify the air to the set humidity set. If the water or electric coil is present, post-heating can also be managed. It can be coupled with the PUC accessory (humidification contact).
- **SCSR** - Recirculation damper for SMP mixing chamber.

- **SRP** - Recirculation damper for the SMP mixing chamber and modulating servocontrol (joined dampers).
- **SCMP** - Recirculation damper for the SMP mixing chamber and modulating servocontrol with spring return.
- **SCS2** - Recirculation damper for SM2 mixing chamber.
- **SR2** - Recirculation damper for the SM2 mixing chamber and modulating servocontrol.
- **SCM2** - Recirculation damper for the SM2 mixing chamber and modulating servocontrol on return and modulating servocontrol with spring return on fresh air.
- **SCM3** - Modulating servocontrols with spring control for SM3 or REC set-ups.
- **FCH** - Enthalpy Free-cooling Only with 3-damper mixing chamber. Manages the flow of external and return air, making reference to their enthalpy values.
- **PR2** - Remote panel Allows to perform rooftop control operations from a distance.
- **SSV** - RS485 serial interface for supervision Serial board necessary for the interface with supervision systems.
- **SQA** - Air quality probe. It analyses the quality of the air on the basis of a SnO2 sensor with VOC mixed gas, evaluating contamination by polluting gases. The presence of the probe coupled to the

rooftop allows:

- to set a sensitivity threshold depending on the envisioned maximum contamination of the air.
- the ventilation of the rooms only when necessary, thus guaranteeing energy saving.
- **CAF** - For protection of the external air inlets in the mixing chambers with 2 dampers or recovery unit. As per standard with SM3.
- **CF** - Stainless steel flue, double isolated wall with inspection cap and measuring sump with flue gas temperature thermometer.
- **PF** - Filters dirtying pressure switch.
- **RUB** - Cocks on the liquid and pressing line (cooling only version).

NOTE: for further information refer to the technical manual.

Accessories coupling		Size 480-530-600-700-800				
Version		cooling only (F)			Heat pumps (H)	
Functioning	std	L	A (no 700 - 800)	std	L	A (no 700 - 800)
DCPR	✓	standard	✓	✓	standard	✓
TP	✓	✓	✓	standard	standard	standard
GP	✓	✓	✓	✓	✓	✓
T1	✓	✓	✓	✓	✓	✓
T2	✓	✓	✓	✓	✓	✓
T4	✓	✓	✓	✓	✓	✓
T5	✓	✓	✓	✓	✓	✓
T6	✓	✓	✓	✓	✓	✓
AI	✓	✓	✓	✓	✓	✓
PA4	✓	✓	✓	✓	✓	✓
MA	✓	✓	✓	✓	✓	✓
PM4	✓	✓	✓	✓	✓	✓
BTR	✓	✓	✓	✓	✓	✓
V3V	✓	✓	✓	✓	✓	✓
BRE (1)	✓	✓	✓	✓	✓	✓
PUC	✓	✓	✓	✓	✓	✓
DP	✓	✓	✓	✓	✓	✓
SCSR	✓	✓	✓	✓	✓	✓
SRP	✓	✓	✓	✓	✓	✓
SCMP	✓	✓	✓	✓	✓	✓
SCS2	✓	✓	✓	✓	✓	✓
SR2	✓	✓	✓	✓	✓	✓
SCM2	✓	✓	✓	✓	✓	✓
SCM3	✓	✓	✓	✓	✓	✓
FCH	✓	✓	✓	✓	✓	✓
PR2	✓	✓	✓	✓	✓	✓
SSV	✓	✓	✓	✓	✓	✓
SQA	✓	✓	✓	✓	✓	✓
CAF	✓	✓	✓	✓	✓	✓
CF (only with Gxxx)	✓	✓	✓	✓	✓	✓
PF	✓	✓	✓	✓	✓	✓
RUB	✓	✓	✓	-	-	-
VT	✓	✓	✓	✓	✓	✓

(1) Not available with Gxxx set-ups.

Technical data

RTE F		Standard					High temperature (A)		
		480	530	600	700	800	480	530	600
Cooling capacity	kW	160,6	189,8	210,9	247	274,4	167,3	195,6	223,6
Sensitive nominal cooling capacity	kW	119,5	147,1	159,3	184,5	201,5	123,3	149,6	150,5
Compressor input power	kW	39,3	43,1	47	58	69,9	36,9	40,9	45,1
EER	W/W	4,09	4,40	4,49	4,26	3,93	4,53	4,78	4,96

RTE H		Standard					High temperature (A)		
		480	530	600	700	800	480	530	600
Cooling capacity	kW	155,7	188,3	207,9	245,8	272,2	163,7	190,5	219,3
Sensitive nominal cooling capacity	kW	120,5	145,9	157,8	183,1	201,2	122,8	147,4	158,8
Compressor input power	kW	41,4	43,8	48,8	59,1	70,9	37,5	42,4	47,6
EER	W/W	3,76	4,30	4,26	4,16	3,84	4,37	4,49	4,61
Heating capacity	kW	158,1	186,4	212,7	242,2	278,8	167,3	191,6	217,2
Compressor input power	kW	28,7	31,5	37	49,2	60,4	29,5	31,8	36,9
COP	W/W	5,51	5,92	5,75	4,92	4,62	5,67	6,03	5,89
Nominal air flow rate internal fans	m³/h	26.500	29.500	31.500	35.000	38.500	26.500	29.500	31.500
Minimum air flow for the handling section	m³/h	22.500	25.000	26.800	29.800	32.700	22.500	25.000	26.800
Maximum air flow for the handling section	m³/h	30.500	34.000	36.300	40.300	44.300	30.500	34.000	36.300
Compressors	Type	Scroll tandem							
	n°	4							
Cooling circuits	n°	2							
External fans	Type	Axial							
	n°	4							
Nominal air flow rate	m³/h	74.600	72.400	69.200	84.400	80.600	72.400	69.200	67.400
Internal fans	n°	1							
Maximum available pressure	Pa	200							
Air filters	Type	G4							
Thickness	mm	50							
Evaporator	Type	3	4	4	4	4	4	4	4
Sound pressure level	dB(A)	82	83	84	87	88	82	83	84
Electrical power supply V/Ph/Hz		400/3/50							

RTE F		Silenziosa L				
		480	530	600	700	800
Cooling capacity	kW	157,6	189,3	215,6	245,4	268
Sensitive nominal cooling capacity	kW	123,7	147,2	160,3	184,3	199,6
Compressor input power	kW	40,7	42,9	45,1	58,7	73,3
EER	W/W	3,87	4,41	4,78	4,18	3,66

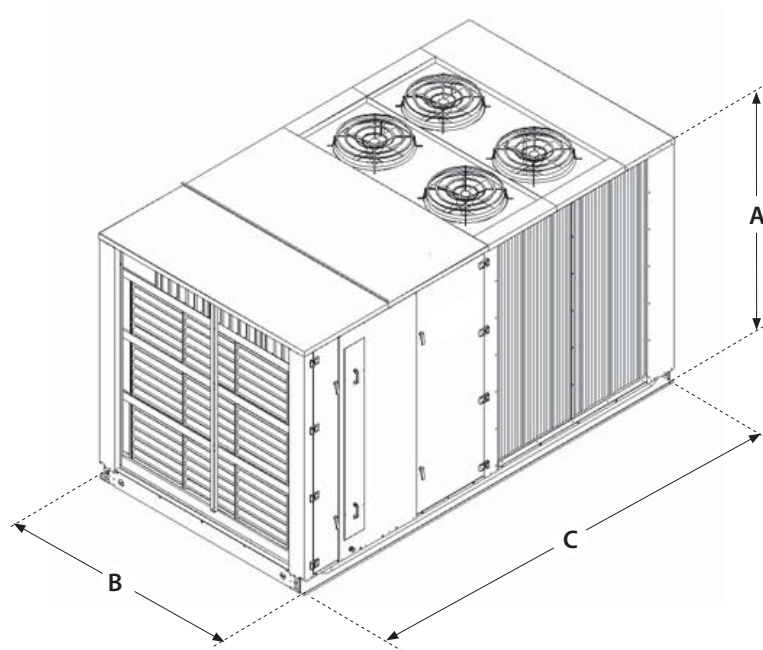
RTE H		Standard				
		480	530	600	700	800
Cooling capacity	kW	154,4	188,3	211,8	242,5	266
Sensitive nominal cooling capacity	kW	119,1	145,9	159,8	182,5	198,7
Compressor input power	kW	42,6	43,8	46,5	60,7	74,6
EER	W/W	3,62	4,30	4,55	4,00	3,57
Heating capacity	kW	157	186,7	205,8	238,9	262,8
Compressor input power	kW	28,6	31,5	36,4	48,9	58,5
COP	W/W	5,49	5,93	5,65	4,89	4,49
Nominal air flow rate internal fans	m³/h	26.500	29.500	31.500	35.000	38.500
Minimum air flow for the handling section	m³/h	22.500	25.000	26.800	29.800	32.700
Maximum air flow for the handling section	m³/h	30.500	34.000	36.300	40.300	44.300
Compressors	Type	Scroll tandem				
	n°	4				
Cooling circuits	n°	2				
External fans	Type	Axial				
	n°	4				
Nominal air flow rate	m³/h	74.600	72.400	69.200	84.400	80.600
Internal fans	n°	1				
Maximum available pressure	Pa	200				
Air filters	Type	G4				
Thickness	mm	50				
Evaporator	Type	3	4	4	4	4
Sound pressure level	dB(A)	82	83	84	87	88
Electrical power supply V/Ph/Hz		400/3/50				

Cooling capacity
RH 50% (Twb 19°C), Text 35°C RH 50%; Operation with 30% of ambient air and expelled (version with mixing chamber with three dampers SM3). Nominal air flow.

Heating capacity
Heating capacity Tin 20°C RH 50%, Text 7°C RH 70%. Operation with 30% of ambient air and expelled (version with mixing chamber with three dampers SM3). Nominal air flow.

Sound pressure:
Sound pressure in free field, at 10 m distance from the external surface of the unit (in accordance with UNI EN ISO 3744)

Dimensional data (mm)



RTE			480	530	600	700	800
Height	A	mm	2450	2450	2.450	2.450	2450
Width	B	mm	2350	2350	2.350	2.350	2350
Depth	C	mm	4200	4200	4.200	5.500	5500
Depth RTE		kg	2100	2200	2300	2700	2800
Depth RTE H		kg	2200	2300	2400	2800	2900

Dimensions and weights of the basic set-up unit.