



RoofT@ir RTL/RTH 40 to 110

Cooling Capacity: from 41 to 108 kW
 Heating Capacity: from 43 to 108 kW
 Refrigerant: R410A
 Airflow range: from 7 650 to 20 000 m³/h
 Sizes: 7
 Insulation: 25mm Glasswool

motralec

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DESCRIPTION

- Compact, light and single piece design with all panels, floor and roof exposed to weather, painted inside and outside to prevent corrosion, and, fully insulated cabinet to offer the best thermal and acoustical protection. RoofT@ir is an assembled weatherproof single package, using R410A refrigerant to improve EER, cooling only or heat pump with additional heating (optional) by electric heaters or hot water coil.
- Manufactured in factory certificated ISO 9001:2008, RoofT@ir is compliant to PED-97-23 and EN-60204-1, pre-assembled in one single package fully tested at the factory, and, designed for outdoor use and roof curb application.

PRODUCT ADVANTAGES

Technical compartments for RTL/RTH 100-110

- Weatherproof technical compartment independent from the airflow with a natural ventilation of the electrical board to stop overheating in summer. All electric cables and wires are protected.

Refrigeration system:

- R410A benefits**
 Best heat transfer and environmental friendly refrigerant with zero ODP (Ozone Depleting Potential). Stable composition compared to R407C (2 refrigerant mixture instead of 3 with R407C).
 Temperature glide less than 0.2 K during evaporation, smaller liquid line pipe and lower refrigerant charge.
- Refrigeration circuit**
 Cooling only or heat pump version designed to satisfy comfort and commercial applications with scroll compressors for higher efficiency with better resistance to liquid return and less vibration. Crankcase heater on each compressor to eliminate refrigerant migration and improve start up in winter. Tandem compressors on 1-circuit and single compressor on dualcircuits provide 2-stage cooling/heating capacity. Refrigerant brazing, fittings, and indoor coil headers are assembled in one technical compartment to ease service without disturbing unit operation.

OPERATING LIMITS

COOLING MODE

Maximum outdoor air temperature	46°C
Minimum outdoor air temperature ⁽⁶⁾	20°C

HEATING MODE

Maximum outdoor air temperature	21°C
Minimum outdoor air temperature	-10°C

MAIN FEATURES

Filters:

- Universal cells' dimensions mounted on sliding rail for easy service.
- 2 options of flat filters: G4 filter & High efficiency filter G4+ F6 compliant with EN 779.
- Factory fitted clogged filter switch wired to the IATC (option).

2-damper economizer (R1 and R2 configurations):

- Economizer allows using the greatest obtainable quantity of outdoor air energy to minimize compressor consumption.
- Economizer is equipped with 2 counteracting dampers linked together to one proportional actuator wired to IATC.
- Adjustable minimum position of outdoor air damper to control hygienic ventilation.
- The economizer is equipped with sensors wired to the IATC. According to control type, 3 combinations of sensors are available: Sensible, Enthalpy, or, Air quality control.

Additional options:

- Standard or ERP conform Roof Curb.
- Antivibration mounts.
- Smoke detector.
- Double skin.

OPTIONAL ACCESSORIES

- Bi-flow devices (expansion device, filter-dryer, sight glass) are used on each circuit.
- Outdoor coils designed for low air resistance to reduce axial fan power consumption and noise level.
- Hydrophilic blue fins provided on outdoor coils (heat pump version only) for better removal of water droplets on defrost cycle.
- Holes in the unit floor under the outdoor coils to drain defrost and rain water beyond the roof curb to the roof.
- Indoor coil (blue fins) allows for commercial or industrial applications with higher dehumidification rate.
- Extractible drain pan under indoor coil, to allow for hygienic cleaning.
- Optional low ambient operation kit ensures cooling operation down to -10 °C outdoor temperature.
- Optional electric heater CH1 & CH2, and, hot water coil.

COOLING ONLY VERSION

RTL Models		RTL 40	RTL 50	RTL 60	RTL 70	RTL 80	RTL 100	RTL 110
Cooling capacity (1)	kW	41.5	50.9	59.8	67.7	84.9	96.6	108.4
Power input	kW	12.8	16	18.4	20.9	26	30.9	36.5
EER (2)		3.3	3.2	3.3	3.2	3.3	3.1	3
Power supply		400V - 3ph + N - 50Hz						

HEAT PUMP VERSION

RTH Models		RTH 40	RTH 50	RTH 60	RTH 70	RTH 80	RTH 100	RTH 110
Cooling capacity (1)	kW	41	48.6	59	66	83.4	94.8	106.1
Power input	kW	12.8	16	18.4	20.9	26	30.9	36.5
EER - Cooling mode (2)		3.2	3	3.2	3.2	3.2	3.1	2.9
Heating capacity (3)	kW	42.9	50.2	58.2	66.5	84	96	108
Power input	kW	12.2	15.1	17.8	20.3	24.1	28.5	33.7
COP - Heating mode (4)		3.5	3.3	3.3	3.3	3.5	3.4	3.2
Power supply		400V - 3ph + N - 50Hz						

COMMON DATA - RANGE RTL/RTH

REFRIGERANT

Type	R410A							
Number of circuits	1	1	2	2	2	2	2	2

COMPRESSORS

Number of compressors	2	2	2	2	2	2	2	2
Assembly type	Tandem	Tandem	Single	Single	Single	Single	Single	Single
Capacity step	%	0-50-100	0-50-100	0-50-100	0-50-100	0-50-100	0-50-100	0-50-100

INDOOR COIL

Type	Copper tubes & aluminium fins							
Number of rows	3	3	3	3	3	4	4	4
Coil face area	m²	1.6	1.6	2	2.1	2.3	2.3	2.3

INDOOR FAN

Type (standard)	Forward curved centrifugal							
Quantity/Model	1/AT 15-15S	1/AT 15-15S	1/ADH 450	1/ADH 450	1/ADH 500	1/ADH 500	1/ADH 500	1/ADH 500
Air flow	m³/h	7 650	9 200	11 500	12 500	16 500	18 650	20 000
Nominal static pressure	Pa	250	250	300	300	350	350	350
Motor power	kW	1.5	2.5	5.5	5.5	7.5	7.5	7.5
Type (optional)	Forward curved centrifugal				Backward curved centrifugal			
Quantity/Model	1/AT 15-15S	1/AT 15-15S	1/RDH 450	1/RDH 450	1/RDH 500	1/RDH 500	1/RDH 500	1/RDH 500
Air flow	m³/h	7 650	9 200	11 500	12 500	16 500	18 650	20 000
Nominal static pressure	Pa	400	400	450	450	500	500	500
Motor power	kW	4	5.5	5.5	5.5	7.5	7.5	7.5

OUTDOOR COIL

Type	Copper tubes & aluminium fins							
Number of rows	2	2	2	2	2	2	2	2
Coil face area	m²	3	3	4	4	4.3	6.1	6.1

OUTDOOR FANS

Type	Propeller							
Diameter	mm	610	610	610	610	610	800	800
Quantity		2	2	4	4	4	2	2
Fan rotational speed	rpm	850	850	850	850	850	670	670
Nominal air flow	m³/h	16000	16000	32000	32000	32000	34000	34000
Total motor power	kW	1.14	1.14	2.28	2.28	2.28	2	2

SYNTHETIC FLAT FILTERS (OPTIONAL)

Number of filters	4	4	9	9	9	9	9	9
Efficiency/Filter class	> 90%/G4							
Type	Universal cells							

SYNTHETIC FLAT FILTERS (OPTIONAL)

Number of filters	4	4	9	9	9	9	9	9
Efficiency/Filter class	> 90%/F6							
Type	Universal cells							

CASING

Min. casing thickness	mm	1	1	1	1	1	1	1
Painting	type/RAL	Powder coating/9001						
Fire resistance class		M0						

DIMENSIONS & WEIGHT

Length	mm	2484	2484	3400	3400	3400	3400	3400
Width	mm	1877	1877	2227	2227	2227	2227	2227
Height	mm	1450	1450	1771	1771	1771	1813	1813
Foot print	m²	4.66	4.66	7.57	7.57	7.57	7.57	7.57
Weight (6)	kg	650	700	1100	1150	1200	1300	1350

ELECTRICAL DATA (7)

RTL/RTH Models	40		50		60		70		80		100		110		
	PE	GE	PE	GE	PE	GE	PE	GE	PE	GE	PE	GE	PE	GE	
Supply voltage	400V - 3 Ph + N/50 Hz														
Total running current	A	46	51	57	63	69	69	73	73	94	94	100	100	109	109
Maximum starting current	A	132	137	193	199	178	178	213	213	261	261	275	275	284	284
Fuse rating aM	A	50	63	63	63	80	80	80	80	100	100	100	100	125	125

PE: Standard ventilation. GE: High static pressure ventilation.

(1) Cooling capacity with Eurovent conditions: 35 °C dry bulb outdoor, 27 °C dry bulb/19 °C wet bulb entering indoor. (2) EER = Cooling capacity/Effective power input.

(3) Heating capacity with Eurovent conditions: 7 °C dry bulb/6 °C wet bulb outdoor, 20 °C entering indoor. (4) COP = Heating capacity/Power input. (5) Without option. (6)

For lower outdoor air temperature (-10 °C), in cooling mode, use low ambient kit (optional). (7) Unit without electric heater.

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