

AIR HANDLING UNITS



Air treatment 39SQ



Options

- Outdoor installation
- Inspection section in between heating and cooling coils
- Reversed hot/chilled water coils
- Differential pressure gauges
- Differential pressure taps
- Direct-expansion R-410A refrigerant coil
- Lighting with switch
- Door safety screen
- Variable-speed drive with integrated disconnect switch
- Run-around coils for energy recovery
- Hygienic options for hospital/laboratory applications: class 3 dampers, F9 fanal filter, inspection sections
- Empty section

Features

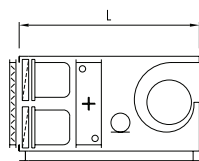
- New generation standardised air handling units for tertiary and commercial applications.
- Eurovent-certified performances.
- Standardised components for short delivery time (target 4 weeks) and competitive price positioning.
- "Clean concept" design with smooth internal surfaces for easy cleaning and better air quality.
- 60 mm double-skin construction for good thermal insulation and low-noise operation.
- Three basic configurations:
 - Exhaust unit
 - Supply unit with a single fan
 - Combined return and supply unit with two fans
- Eight sizes with air flows from 0.4 to 7.3 m³/s (1400 to 26300 m³/h).
- Galvanised steel frame and casing with large hinged access doors.
- Casing performance (EN1886): air leakage L1, thermal transmittance T3, thermal bridging TB3.
- Double or single mixing section.
- Pre-heating hot water coil.
- G4 pleated or/and F7 bag filters.
- Hot water coil or electric heaters.
- Chilled water coil.
- Belt-driven forward/backward curved fans or direct-drive plug-in fans.

Physical data

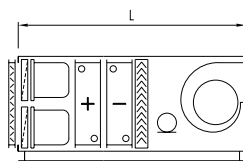
39SQ		0402	0404	0604	0606	0806	0808	1008	1010
Height (including base frame)	mm	560	800	800	1120	1120	1440	1440	1760
Width	mm	738	738	1058	1058	1378	1378	1698	1698
1 – Exhaust unit									
Air flow	m ³ /s	0.58	1.17	1.75	2.63	3.5	4.67	5.83	7.29
Length	mm	660	820	900	1060	1140	1220	1300	1540
2 – Supply unit heating									
Air flow	m ³ /s	0.58	1.17	1.75	2.63	3.5	4.67	5.83	7.29
Heating capacity	kW	24.5	48.5	74.5	112.3	140.1	188.5	243.7	304.4
Length	mm	1380	1540	1620	1780	1860	1940	2180	2340
3 – Supply unit heating and cooling									
Air flow	m ³ /s	0.54	1	1.72	2.58	3.2	4.36	5.73	7.1
Heating capacity	kW	22.5	42.6	73.3	110	132.7	181.1	241	300.2
Cooling capacity	kW	10	19.2	33.1	49.9	63	86.2	112.3	139.7
Length	mm	1860	2020	2100	2260	2340	2420	2660	2820
4 – Supply unit: mixing/heating/cooling									
Air flow	m ³ /s	0.54	1	1.72	2.58	3.2	4.36	5.73	7.1
Heating capacity	kW	22.5	42.6	73.3	110	132.7	181.1	241	300.2
Cooling capacity	kW	10	19.2	33.1	49.9	63	86.2	112.3	139.7
Length	mm	2180	2340	2420	2660	2740	3060	3220	3460
5 – Combined exhaust and supply unit									
Air flow	m ³ /s	0.54	1	1.72	2.58	3.2	4.36	5.73	7.1
Heating capacity	kW	22.5	42.6	73.3	110	132.7	181.1	241	300.2
Cooling capacity	kW	10	19.2	33.1	49.9	63	86.2	112.3	139.7
Length total	mm	3220	3540	3700	4180	4340	4820	5140	5700
Length section 1	mm						2450	2530	2930
Length section 2	mm						2370	2610	2770
Electric heater option									
Heating capacity 1	kW	7.5	7.5	18	27	36	36	45	60
Heating capacity 2	kW	11.3	15	27	36	48	60	75	90
Heating capacity 3	kW	15	22.5	36	54	72	96	120	150
Heating capacity 4	kW	18.8	30	45	63	84	120	150	180
Heating capacity 5	kW	30	37.5	54	81	108	144	180	225
Pre-heating coil option									
Heating capacity	kW	6.4	12.2	20.9	31.4	38.8	53	69.6	86.5



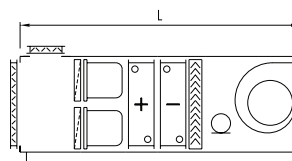
1 – Exhaust unit
Exhaust fan



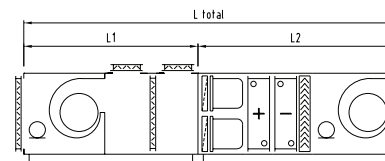
2 – Supply unit heating
Return air damper
G4+F7 filter
Heating coil 2 rows
Supply fan



3 – Supply unit heating and cooling
Return air damper
G4 + F7 filters
Heating coil 2 rows
Cooling coil 6 rows
Supply fan



4 – Supply unit: mixing/heating/cooling
Return air damper
Fresh air damper
G4 + F7 filters
Heating coil 2 rows
Cooling coil 6 rows
Supply fan



5 – Combined exhaust and supply unit
Return air damper
Fresh air damper
Exhaust damper
Mixing damper
Fresh air damper
G4 + F7 filters
Heating coil 2 rows
Cooling coil 6 rows

Standard conditions:

Heating: air -10°C/90% rh, +25°C, water 80/60°C

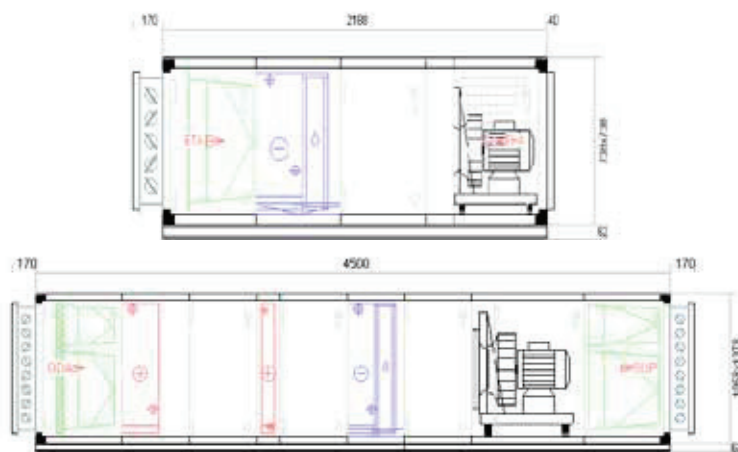
Cooling: air 28°C/50% rh, +16°C, water 7/12°C

Pre-heating: air -5°C, +5°C, water 80/70°C

External static pressure 300 Pa

Notes on dimensions:

- All dimensions are for indoor units with backward-curved fans, except size 0402 that has dimensions with a forward-curved fan
- Casing length is exclusive of return air damper
- Electric heater option: length varies with heating capacity
- Pre-heating coil option: length + 160 mm
- Contact your Carrier representative for certified dimensional drawings



Hospital exhaust and supply units with run-around coil for energy recovery

FRESH AIR UNITS WITH ENERGY RECOVERY



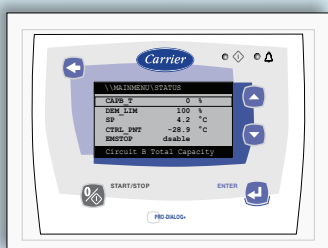
Air treatment

39SQC/R/P



Options/accessories

- Outdoor installation
- Reversed extract/supply air duct connections
- Left-hand water connections & service side
- Outdoor air pre-heater to prevent air-to-air heat exchanger freezing at very low outside air temperatures
- Air heater (hot-water or electrical heater)
- Air cooler (chilled-water coil)
- Inspection chamber between heating and cooling coils
- Pro-Dialog human interface (local or remote installation)
- Inspection windows
- Extract, exhaust, outside, supply air isolating dampers
- G4 fresh-air pre-filter
- Sound attenuators (accessory)
- Direct-expansion Carrier R-410A refrigerant coil
- JBus, BACnet communications gateways
- Cool/heat change-over coil for heat pump applications
- Coated coils
- Recirculation damper (39SQP/R)



Pro-Dialog+ operator interface

Features

- Three versions in nine sizes with air flows from 0.2 to 5 m³/s (700 to 18000 m³/h).
- 39SQ units are designed to supply fresh air to any type of building. The efficient air-to-air heat exchanger recycles the heat from the exhaust air, pre-heats cold outdoor air in winter and pre-cools hot outdoor air in summer, resulting in impressive energy savings.
- Eurovent-certified performances.
- High-efficiency units with counter-flow plate (C models) or rotary heat exchangers (R models) with a thermal efficiency up to 85%.
- Casing performance (EN1886): air leakage L1, thermal transmittance T3, thermal bridging TB3.
- Standard-efficiency units with cross-flow plate heat exchangers (P models) with a thermal efficiency up to 54%.
- Plug & play installation thanks to factory-mounted control system.
- Delivered in one piece with integrated heating and cooling coils (only the 39SQR 1212 is delivered in two pieces).
- Field-separable casing in two pieces to facilitate installation in existing buildings.
- Plug fans with variable frequency drive.
- F7 efficiency filters.
- Main control system functions:
 - Air flow control: constant volume, constant pressure, variable volume (demand ventilation with CO₂ sensor)
 - Temperature control: extract or supply air temperature, room temperature sensor
 - Summer night free-cooling control
 - Alarm indication: temperature too low, coil frosting, clogged filters, etc.
 - Easy local or remote access by integrated web server (no specific software required)
 - RS485 communication port

Physical data

Model		39SQC			39SQR							39SQP							
Size		0405	0506	0606	0606	0707	0808	0909	1010	1111	1212	0405	0506	0606	0707	0808	0909	1010	
Weight																			
Unit without coils	kg	218	294	345	328	385	516	586	717	852	1043	210	275	324	395	536	578	688	
Unit with reheating and cooling coils	kg	301	399	469	428	509	660	757	952	1121	1346	277	360	423	518	712	783	923	
Unit air flow																			
Maximum	m³/s	0.43	0.72	0.88	1.25	1.70	2.22	2.81	3.47	4.20	5.00	0.68	1.04	1.25	1.70	2.22	2.81	3.47	
	m³/h	1565	2580	3150	4500	6125	8000	10125	12500	15125	18000	2450	3750	4500	6125	8000	10125	12500	
Minimum	m³/s	0.20	0.34	0.43	0.43	0.62	0.91	1.25	1.48	1.91	2.18	0.20	0.34	0.43	0.62	0.91	1.25	1.48	
	m³/h	737	1225	1549	1549	2247	3265	4501	5328	6882	7847	737	1225	1549	2247	3265	4501	5328	
Unit thermal efficiency*	%	94	94	94	77.5	78	78	79	79	79	79	62	63	63	64	64	63	62	
Unit external static pressure																			
At max. air flow (low static fan)	Pa	500	700	700	150	-	-	-	120	-	150	400	-	0	-	50	-	150	
At max. air flow (high static fan)	Pa	1550	2000	1700	600	400	1200	500	950	800	1050	650	800	650	450	1300	550	1000	
Specific unit fan power**	kW/m³/s	2.4	2.1	2.5	2.3	2.3	2.1	2.1	1.9	2	1.7	2.2	1.9	2.1	2	1.8	1.9	1.7	
Unit sound data***																			
Sound power level, casing radiated	dB(A)	68	68	71	70	73	68	73	69	73	69	67	66	69	73	67	73	69	
Sound power level, extract duct	dB(A)	74	74	77	76	79	75	79	76	79	76	77	75	79	82	77	79	78	
Sound power level, supply duct	dB(A)	84	84	88	87	89	85	89	86	89	86	84	82	86	88	84	89	86	
Heat reclaim heat exchanger		Counter-flow plate			Rotary							Cross-flow plate							
Material		Aluminium			Aluminium							Aluminium							
Capacity control		Bypass damper			Variable speed drive							Bypass damper							
Exhaust and supply fans		Plug fan (backward curved)																	
Fan diameter	mm	225	280	280	280	315	400	400	500	500	630	225	280	280	315	400	400	500	
Drive		Frequency inverter																	
Rated motor power (low static)	kW	0.55	1.1	1.5	1.5	2.2	2.2	2.2	4	5.5	5.5	1.1	1.1	1.5	2.2	2.2	2.2	4	
Rated motor power (high static)	kW	1.5	2.2	3	3	4	5.5	5.5	7.5	11	11	1.5	2.2	3	4	5.5	5.5	7.5	
Exhaust and supply air filters		Bag filter 500 mm, filter efficiency F7										Pleated filter 100 mm, filter efficiency F7							
Outside air pre-heating coil		Hot-water coil or electric heater (option)																	
Supply air reheating coil		Hot-water coil or electric heater (option)																	
Supply air cooling coil		Chilled-water coil (option)																	
Control system		Digital control with web server																	
Chassis paint colour		Colour code: RAL 7035																	

* Thermal efficiency of supply air at 2 m/s with the effect of supply air fan, outside air -10°C, extract air 22°C/50%.

** Specific fan power with clean filters at 2 m/s and 200 Pa.

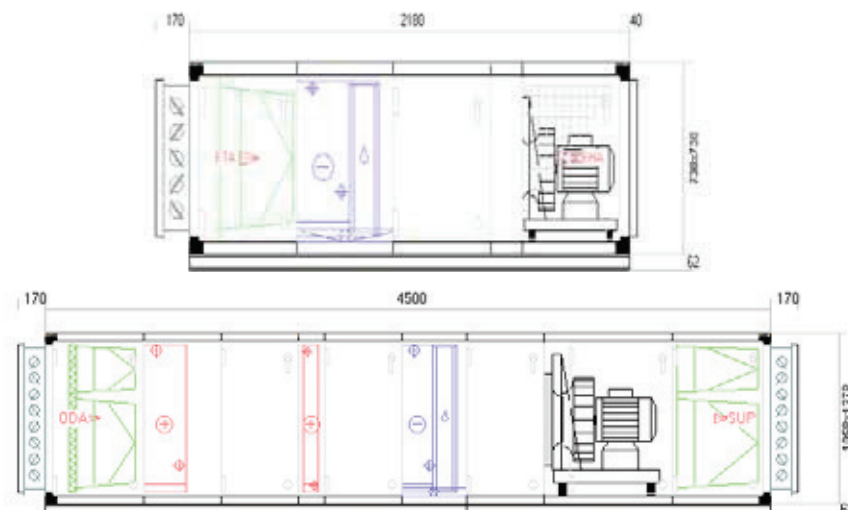
*** Sound power at 2 m/s and 200 Pa.

Data for standard unit without optional coils and dampers.

Electrical data

Model 39		SQC 0405	SQC 0506	SQC 0606	SQR 0606	SQR 0707	SQR 0808	SQR 0909	SQR 1010	SQR 1111	SQR 1212
		SQP 0405	SQP 0506	SQP 0606		SQP 0707	SQP 0808	SQP 0909	SQP 1010		
Power circuit		Built-in main disconnect switch									
Nominal power supply	V-ph-Hz	400-3-50 neutral									
Voltage range	V	360-440									
Maximum unit power	kW	3.6	5.8	7.7	7.7	10.5	14.1	14.1	18.9	27.3	27.3
Maximum supply cable size	mm²	2.5	4	4	4	6	6	6	10	16	16
Main switch	A	25	25	25	25	40	40	40	63	63	63
Short circuit unit capacity	kA	15	15	15	15	15	15	15	15	15	15
Recommended power line fuse protection	A	20	25	25	25	35	35	35	50	63	63
Control circuit power	Built-in 24 V control transformer										

Note: Electric pre-heater and reheater have separate power supply.



Hospital exhaust and supply units with run-around coil for energy recovery