

Quantum LLC Product catalogue



- Providing indoor climate comfort

QUANTUM LLC FAN COIL



INTRODUCTION TO THE RANGE

The Quantum LLC is a “high-pressure fan coil” for conditioning, filtering and fresh air supply. It can be fitted in a false ceiling or in a raised floor. It can therefore be maintained outside the conditioned areas, by means of removable panels which facilitate access to the filter and fan. Its distinctive feature is the small overall size and the presence of an electrical control system allowing up to 5 different fan speeds and integration to types of operating systems (standalone or BMS etc).

The Quantum LLC is available in the following versions:

- LLC xx 30/31 with three rows of cooling coils and one set of heating coils
- LLC xx 40/41 with four rows of cooling coils and one set of heating coils



There are 5 different sizes of unit 22, 31, 45, 60 and 76 giving cooling and heating duties from 1 to 7kW

CONSTRUCTION

Dynamically balanced high-pressure turbine fan with floating resilient mounting, giving significant vibration reduction. This consists of:

- A double turbine fan
- Motor with thermal cut-out

The assembly can easily be removed through a removable panel and is dynamically balanced according to the VDI2060 standard.

Cabinet made from 1.2mm galvanized sheet covered with class MO thermal and acoustic insulation

Condensate tray with regular slope, with 3 mm external class MO insulation

Cleanable EU2 filter, accessible via unit inlet (DIN 53 + 38 Class 1)

Chilled water coils (3 or 4 rows) and hot water coils (1 row) tested to 25 bars and provided with drain points

Distribution plenum with MO insulation (200 diameter spigots)

Electrical control equipment:

- For 5-speed control by fixed tapplings on motor of voltages
- 24 VAC transformer fitted for remote control
- Illuminated on/off switch
- 1.5 metre fixed lead

OPTIONS

- Intake plenum with factory-fitted acoustic insulation
- 200 mm spigot blanking caps
- 100 mm fresh air sleeve, factory fitted
- EU3 metal filter system or fabric filter
- EU2 metal filter system
- Condensate water pump
- Wide range of BMS kits

- Control kit comprising controller, valve and return sensor
- Ambient conditions sensor
- Electrical resistance heater
- 2kW on sizes 22, 31 and 45
- 4kW on sizes 45, 60 and 76

PERFORMANCE DATA

Model				Cooling					Heating			
	Total Air Vol l/s	NR Guide	Fan Speed	Total Cool kW	Sens Cool kW	Air Off db	Water Flow kg/s	Water P.D. kPa	Htg kW	Heating Air Off db	Water Flow kg/s	Water P.D. kPa
LLC2230/31	81	26	SL	1.58	1.19	10.8	0.064	9	1.9	39.4	0.04	1.2
LLC2230/31	93	27	EL	1.72	1.32	11.2	0.07	10.2	2.1	38.8	0.045	1.2
LLC2230/31	103	29	L	1.84	1.44	11.5	0.075	11.4	2.28	38.3	0.048	1.3
LLC2230/31	113	31	ML	1.95	1.53	11.7	0.08	12.4	2.44	37.9	0.052	1.4
LLC2230/31	121	33	M	2.05	1.61	12	0.084	13.4	2.57	37.5	0.054	1.4
LLC3130/31	153	27	SL	2.25	1.7	13.8	0.092	7.5	2.65	34.3	0.056	1.6
LLC3130/31	175	29	EL	2.45	1.88	14.1	0.101	8.5	2.93	33.9	0.062	1.7
LLC3130/31	196	31	L	2.64	2.04	14.3	0.109	9.4	3.18	33.5	0.067	1.8
LLC3130/31	214	33	ML	2.79	2.18	14.5	0.115	10.3	3.41	33.2	0.072	2
LLC3130/31	230	35	M	2.93	2.31	14.7	0.121	11.1	3.6	33	0.076	2.1
LLC3140/41	149	27	SL	2.43	1.84	12.7	0.1	9.5	2.65	34.8	0.056	1.6
LLC3140/41	170	29	EL	2.66	2.04	13.1	0.109	10.8	2.93	34.3	0.062	1.7
LLC3140/41	190	31	L	2.85	2.21	13.3	0.117	12	3.18	33.9	0.067	1.8
LLC3140/41	207	33	ML	3.02	2.36	13.6	0.124	13.2	3.41	33.6	0.072	2
LLC3140/41	223	35	M	3.17	2.5	13.7	0.131	14.2	3.6	33.4	0.076	2.1
LLC4530/31	168	27	SL	3.04	2.28	11.8	0.124	6.8	3.4	36.8	0.072	2.3
LLC4530/31	191	29	EL	3.31	2.51	12.1	0.135	7.6	3.75	36.3	0.079	2.6
LLC4530/31	222	31	L	3.66	2.81	12.5	0.15	8.8	4.2	35.7	0.089	3
LLC4530/31	250	33	ML	3.95	3.07	12.8	0.162	10	4.6	35.2	0.097	3.3
LLC4530/31	283	35	M	4.27	3.37	13.1	0.175	11.3	5.03	34.8	0.106	3.8
LLC4540/41	163	27	SL	3.29	2.46	10.5	0.134	8.6	3.4	37.3	0.072	2.3
LLC4540/41	185	29	EL	3.58	2.71	10.8	0.146	9.7	3.75	36.8	0.079	2.6
LLC4540/41	216	31	L	3.96	3.04	11.3	0.161	11.3	4.2	36.2	0.089	3
LLC4540/41	243	33	ML	4.28	3.33	11.6	0.175	12.8	4.6	35.7	0.097	3.3
LLC4540/41	274	35	M	4.63	3.64	12	0.189	14.5	5.03	35.2	0.106	3.8
LLC6030/31	277	29	SL	4.15	3.15	13.6	0.17	6.7	4.49	33.4	0.095	3.5
LLC6030/31	312	30	EL	4.48	3.44	13.9	0.184	7.5	4.9	33	0.103	3.9
LLC6030/31	343	32	L	4.76	3.7	14.1	0.195	8.2	5.27	32.7	0.111	4.3
LLC6030/31	371	34	ML	5.01	3.92	14.2	0.206	8.8	5.59	32.5	0.117	4.7
LLC6030/31	396	36	M	5.23	4.12	14.4	0.215	9.4	5.86	32.3	0.123	5.1
LLC6040/41	269	29	SL	4.49	3.41	12.5	0.183	8.5	4.49	33.8	0.095	3.5
LLC6040/41	302	30	EL	4.85	3.73	12.8	0.198	9.5	4.9	33.4	0.103	3.9
LLC6040/41	333	32	L	5.16	4	13	0.211	10.5	5.27	33.1	0.111	4.3
LLC6040/41	360	34	ML	5.43	4.25	13.2	0.222	11.3	5.59	32.9	0.117	4.7
LLC6040/41	384	36	M	5.66	4.46	13.4	0.232	12.1	5.86	32.6	0.123	5.1
LLC7630/31	326	29	SL	5.08	3.84	13.2	0.208	11.6	6.19	35.7	0.131	6.6
LLC7630/31	384	31	EL	5.64	4.34	13.6	0.232	13.7	6.99	35.1	0.147	8
LLC7630/31	418	33	L	5.97	4.63	13.8	0.245	15	7.45	34.8	0.157	8.8
LLC7630/31	463	35	ML	6.37	4.99	14.1	0.262	16.7	8.04	34.4	0.169	10
LLC7630/31	488	37	M	6.6	5.2	14.2	0.272	17.7	8.37	34.2	0.176	10.7
LLC7640/41	317	29	SL	5.5	4.16	12.1	0.225	9.5	6.19	36.2	0.131	6.6
LLC7640/41	372	31	EL	6.11	4.7	12.5	0.25	11.1	6.99	35.6	0.147	8
LLC7640/41	405	33	L	6.46	5.01	12.8	0.265	12.1	7.45	35.2	0.157	8.8
LLC7640/41	449	35	ML	6.9	5.41	13	0.283	13.4	8.04	34.8	0.169	10
LLC7640/41	474	37	M	7.15	5.63	13.2	0.294	14.2	8.37	34.6	0.176	10.7

Design Conditions:

Cooling: CW 6° C flow / 12° C return - Air on 23° Cdb / 16.6° Cwb

Heating: LTHW 82° C flow / 71° C return - Air on 20° Cdb

External static pressure: 30Pa

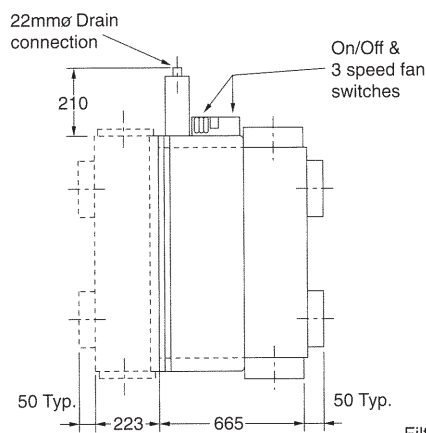
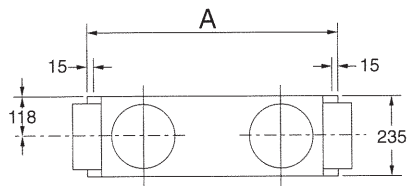
There are 5 fixed motor speed available. Unless advised otherwise the factory set speeds are:

I: L - II: ML - III: M (speeds can be easily changed on site)

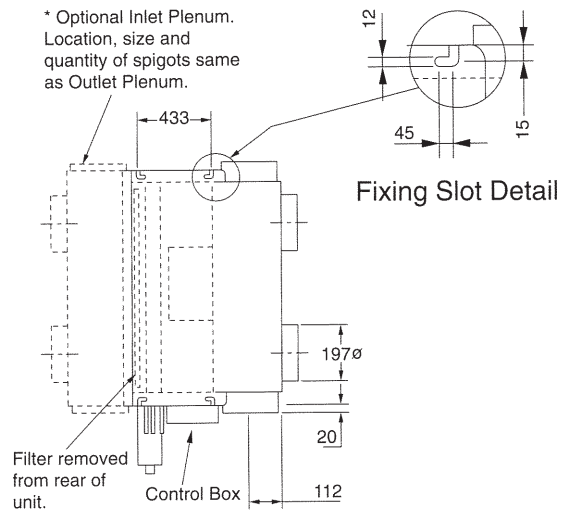
DIMENSIONAL DATA

Overall dimensions LLC Model

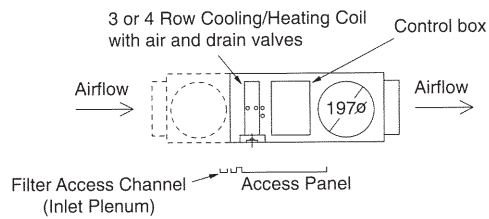
All dimensions in mm



VIEW OF UNDERSIDE



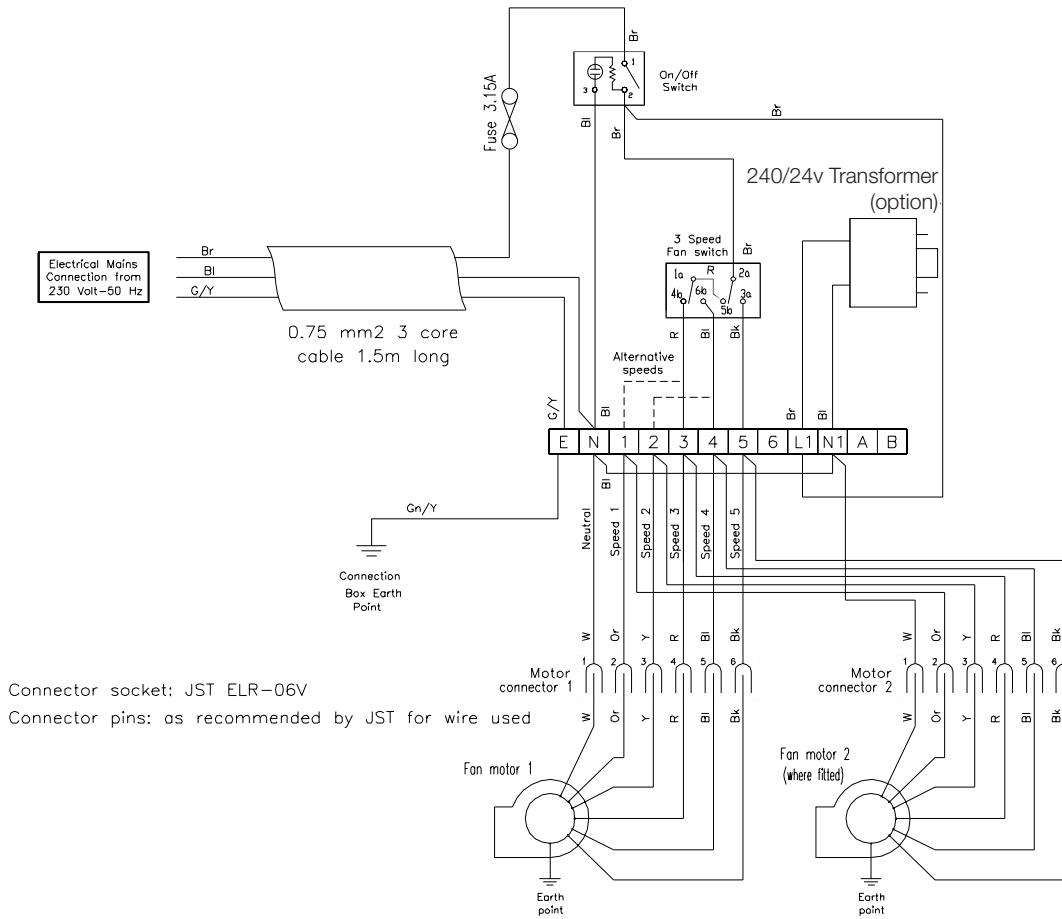
PLAN



SIDE ELEVATION

Dimensions & weights	Length Dim. A	Weight kg	No. of Spigots		Min. no. of spigot used		Coil conns. (mm)	
			Total	Front	Total	Front	CW	LTHW
LLC22	710	30	4	2	2	1	15	15
LLC31	910	39	4	2	2	1	15	15
LLC45	1280	49	5	3	2	1	15	15
LLC60	1460	54	5	3	3	2	15	15
LLC76	1900	73	6	4	3	2	15	15

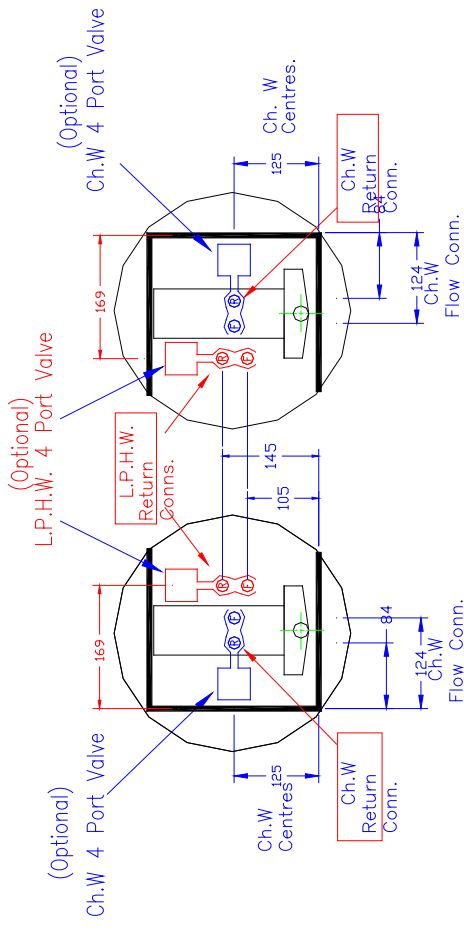
WIRING DIAGRAM



Electrical Data:					
Model	LLC22	LLC31	LLC45	LLC60	LLC76
Voltage	230/1/50				
Motor power input - Watts	66	118	144	187	252
Nominal current - Amps	0.33	0.62	0.77	0.9	1.24

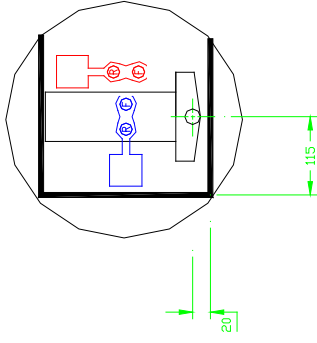
Speeds:			
	Ref.	Wire No.	Colour
Super Low	SL	1	Orange
Extra Low	EL	2	Yellow
Low	L	3	Red
Medium Low	ML	4	Blue
Medium	M	5	Black

COIL CONNECTIONS AND POSITION



RIGHT HAND

LEFT HAND

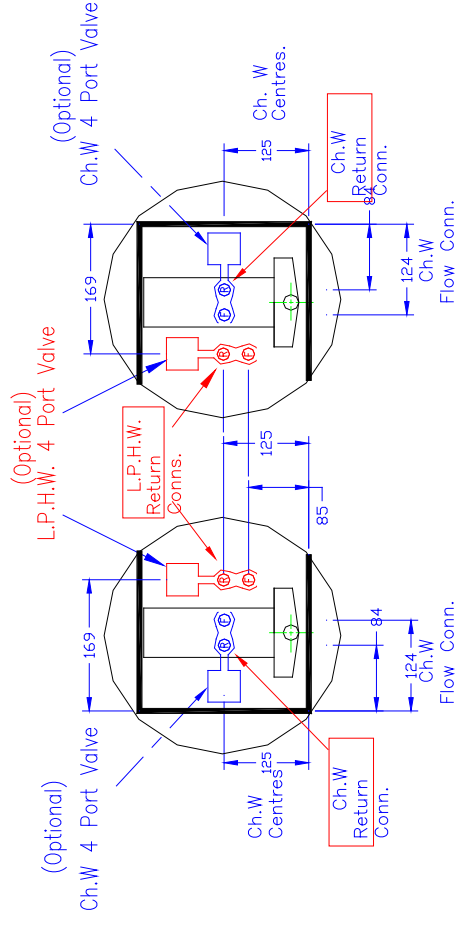


3-1 Coils

CONDENSATE

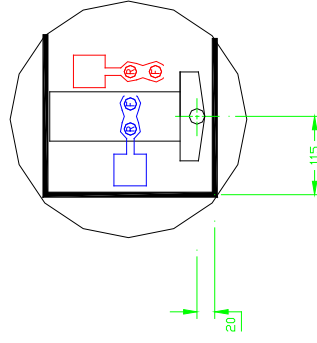
Note:

All pipe connections are 15mm
Condensate connection is 22mm



RIGHT HAND

LEFT HAND



4-1 Coils

CONDENSATE

QUANTUM LLC WATERSIDE FAN COIL UNIT SPECIFICATION

Casings

The casing shall consist of durable 18 gauge galvanized sheet steel reinforced to form a rigid structure. All edges to be radiused and access panels to be fixed with easy-release self-straightening fasteners.

Discharge Plenum

The discharge plenum shall be wholly lined with Class 0 acoustic insulation. The plenum shall be provided with 200mm diameter spigots for duct connection.

Drip Tray

The drip tray shall be manufactured such that when the unit is mounted level there shall be a positive fall for the condensate water to the drain connection (22mm) from all areas of the drip tray. There shall be no areas where water can collect in pools. The drip tray shall be of single component construction and be located under the coil assembly and extend to include the valve pack arrangement. The tray shall be fully insulated with closed cell foam insulation Class 0.

Fans

Double inlet double width fans shall be used driven by a motor using cradle type resilient mountings. The fan impellers shall be at least 160mm diameter and of "Tablock" construction to ensure good performance and low noise. Each impeller shall be dynamically balanced.

Motors

Motors shall be 5-speed permanent split capacitor type. The motors used shall comply with BS5000 Part 11 1973 (revised 1989). A multi position switch shall achieve speed control. Motors are to have maintenance free sealed for life bearings and built-in thermal overload protection.

Insulation

Dual function thermal and acoustic insulation shall be used and shall be to Class 0 specification.

Coils

All heat exchangers shall be tested at a minimum of 25-bar pressure. The coils shall be manufactured using solid drawn copper tubes and aluminium fins. Each coil shall be fitted with an air vent and drain cock.

Coil Connections

All are to be BS2871 Part 1 1971 and suitable for brazed or compression fittings. Coil connections shall be 15mm plain copper at 40mm centres to enable easy fitting of standard water control valves.

Filters

Standard filters shall be of the cleanable type. They shall have a performance qualification of G2 in accordance with EN779 (EU2) and flame resistance to DIN 53438 Class 1.

Controls

All units shall be fitted with an illuminated On/Off switch and three-speed selector switch; the control box shall be of a removable arrangement with a single screw access to terminal strips for customer connection. A transformer, if required, will be mounted externally.

Packaging

Units shall be supplied with suitable packaging to prevent damage and dust contamination. Units shall be clearly marked with the model identification and site reference and supplied with installation instructions. The units will be despatched on pallets with maximum 5 units per pallet.

Certification

Units shall be supplied with a CE label designating that they comply with CE requirements for safety.



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Due to Lennox's ongoing commitment to quality, the Specifications, Ratings and Dimensions are subject to change without notice and without incurring liability.

Improper installation, adjustment, alteration, service or maintenance can cause property damage or personal injury.

Installation and service must be performed by a qualified installer and servicing agency



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