# MRXBOX95-LH2 MECHANICAL SUPPLY & EXTRACT WITH HEAT RECOVERY

UP TO 95% EFFICIENT, SAP APPENDIX Q RECOGNISED.
LOFT MOUNTING DESIGN FOR LARGER HOUSES.


# BENEFITS

MRXBOX95-LH2 is designed to provide optimised balanced (supply and extract) mechanical ventilation with heat recovery. Tempered air is delivered into 'living' areas whilst extracting moisture laden air from 'wet' areas, creating comfortable well ventilated homes. The unit has the facility to commission the supply and extract fans independently on minimum speed (continuous background ventilation), boost control will control both fans to the same volume. The heat exchanger block can recover up to 95% of the normally wasted heat.

### MEETS BUILDING REGULATIONS
SAP Appendix Q recognised. Part F&L - England & Wales. Scottish technical handbook (BRE398 referenced). Technical booklet K1998.

### VERY HIGH EFFICIENCY
To meet customer requirements on SAP scores ensuring the reduction in emissions needed for code level 3 and above (25% reduction).

### LOW MAINTENANCE
High quality components such as filters and EC motors ensure lowest possible maintenance and long life motors. Filter replacement typically every 5 years.

### LOW POWER CONSUMPTION
Reducing operating and the life cycle costs.

### COMPACT
Dedicated design ensured the most compact size for duty on the market. The loft versions are specifically designed to go through the smallest loft hatches.

### LIGHTWEIGHT
A one man lift for ease of install.

### EXTREMELY LOW NOISE LEVELS
Quiet running unit, ensuring occupant acceptability.

### CREATES A HEALTHIER ENVIRONMENT
High efficiency filters removes up to 95% of dust particles.

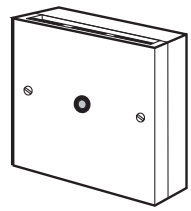
### PREVENTS CONDENSATION FROM LOFT

### EASY TO USE
Well located controls for simple installation, commissioning and use.

### OPTIONAL SUMMER BYPASS AVAILABLE
Provides cooling during warmer months. MRXBOX95B-LH2.

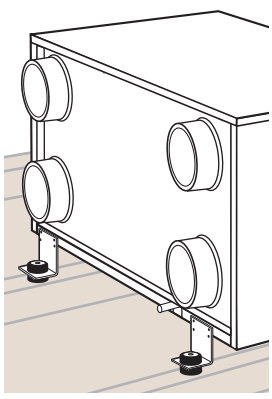
### 5 YEAR WARRANTY
5 year parts and 1 year labour warranty guarantee reduced life costs and peace of mind.

### OPTIONAL REMOTE FAIL INDICATOR
MRXBOX95LH-RFI is connected to the fan unit via low voltage wiring.

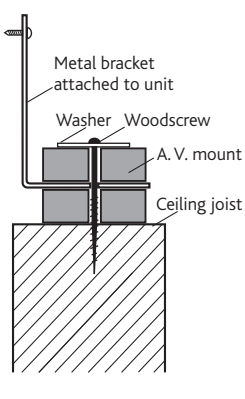


### DISCREET RUN MONITOR
Records units operational time.

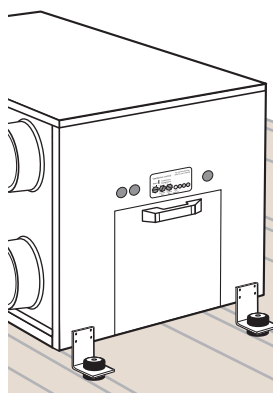
### FLEXIBLE LOFT MOUNTING OPTIONS



Option 1. Mounted on roof joists using four "L" shape metal brackets and AV mounts on long sides of unit.

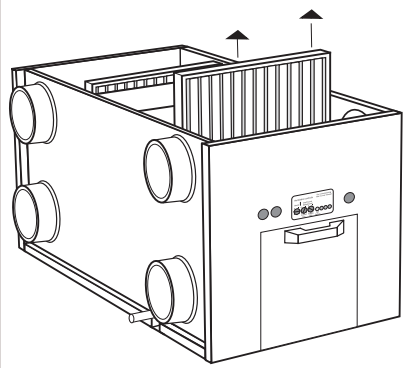



Side view example of an 'L' shaped fixing bracket and AV mount attached to ceiling joist.

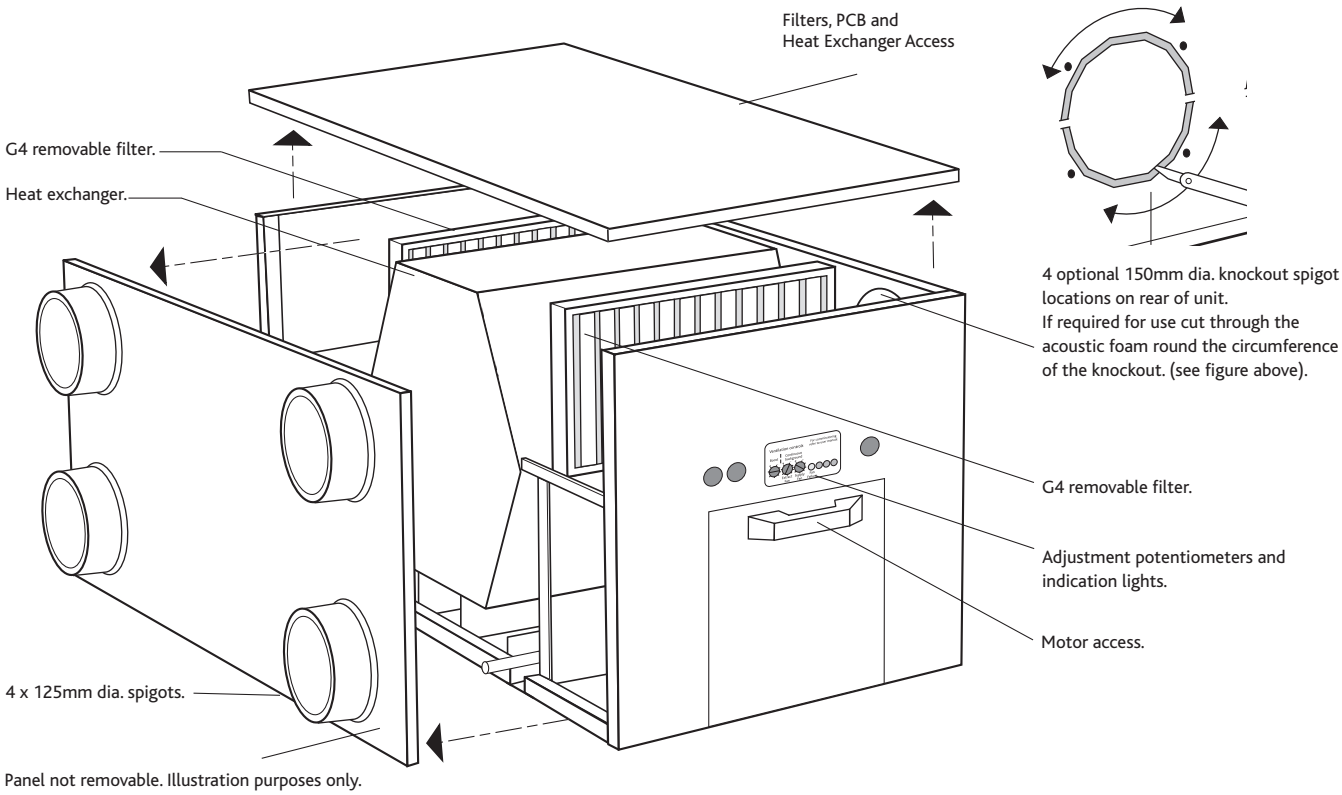


Option 2. Mounted on roof joists using four "L" shape metal brackets and AV mounts on short sides of unit.

### REMOVABLE G4 FILTERS



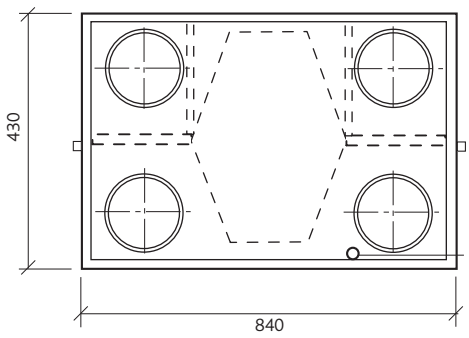
## UNIT COMPONENTS



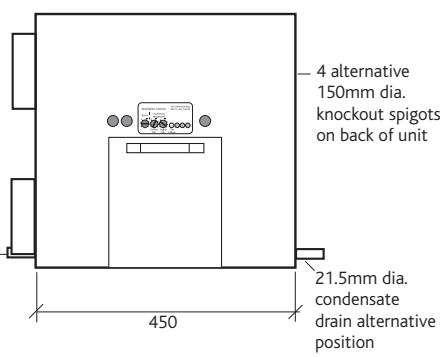

## DIMENSIONS (MM)

**Weight 21 Kg**

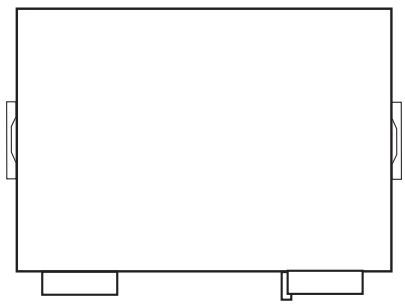
**View from front 4 X 125mm spigots**



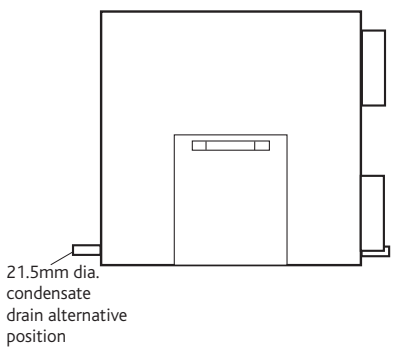

**Side view (controls)**




**View from top**



**Side view (non controls)**



## ELECTRICAL CONNECTION

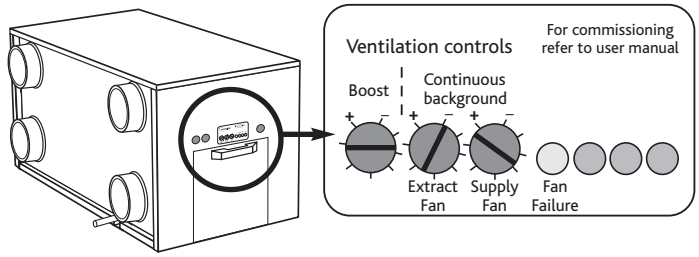
Please note: the electrical connection of the unit must be be carried out by a qualified electrician.

**Electrical details:-**

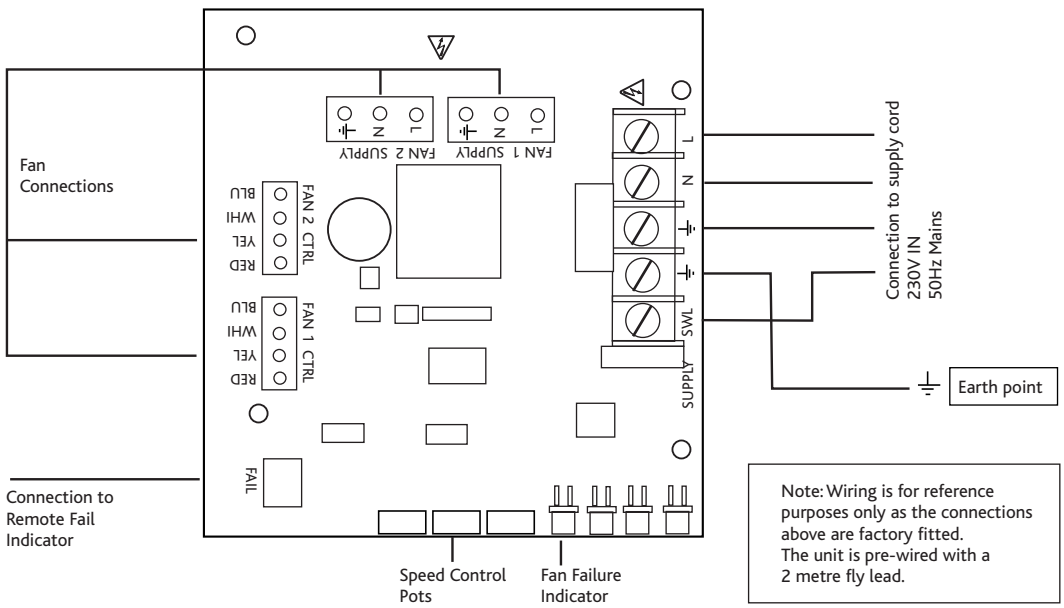
| | |
|---|---|
| **Voltage:** | 240V 1ph 50Hz |
| **Consumption:** | LH2 - 2.2 Amp |
| **Fuse rating:** | 3 Amp |

NOTE: This unit must be earthed.

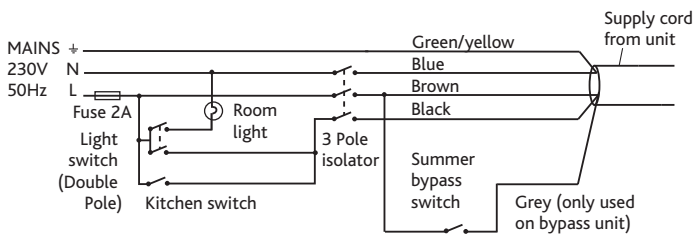
The three core cable from the mains power supply should be connected to a fixed wiring installation, via a fused isolator, in accordance with current IEE wiring regulations.



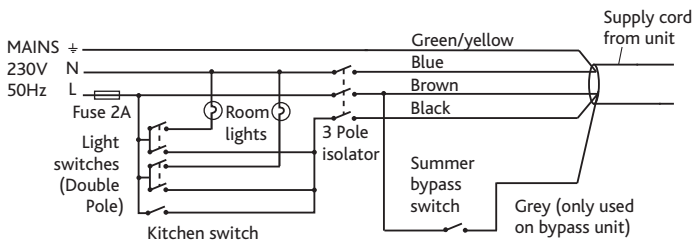

Detail of unit control on side panel.




## UNIT SERVING KITCHEN AND BATHROOM

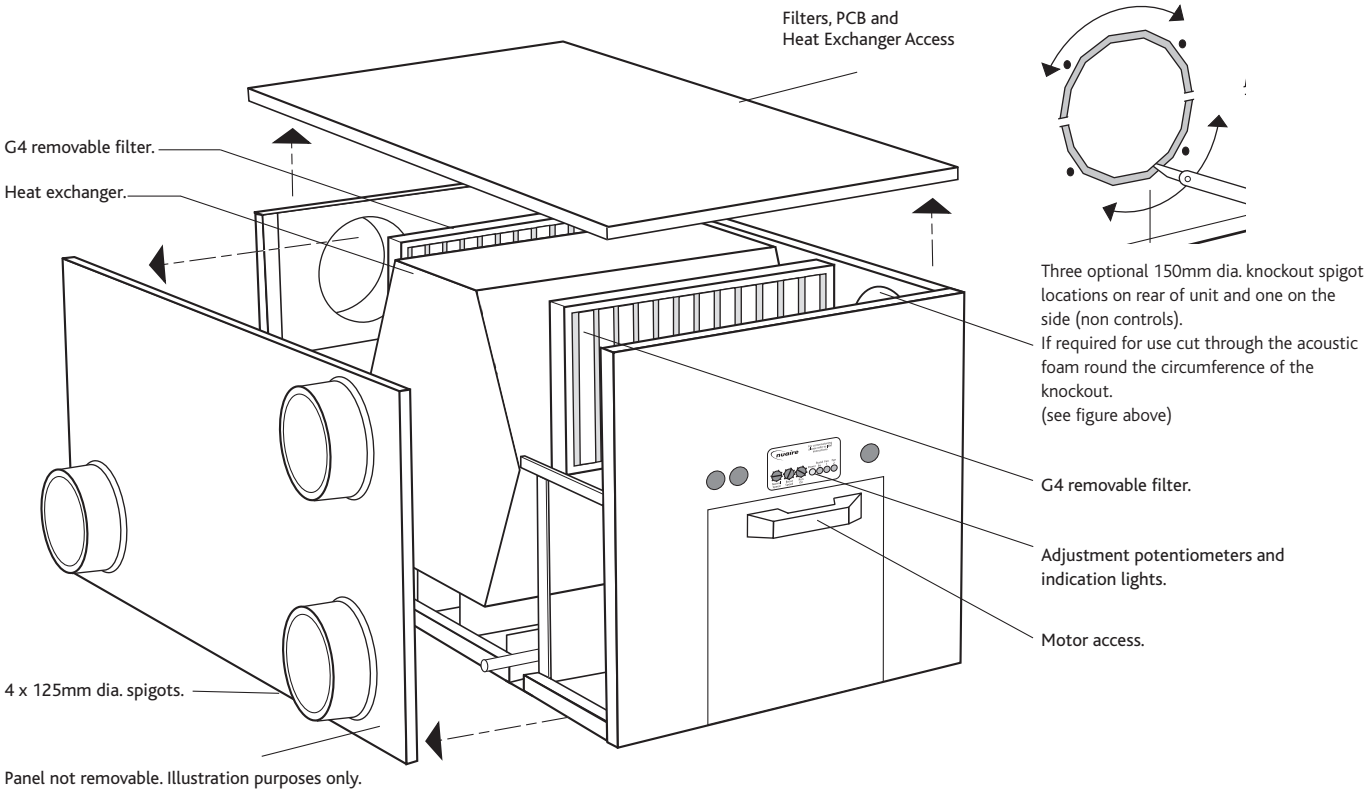



## UNIT SERVING KITCHEN AND TWO BATHROOMS



## GENERAL ARRANGEMENT

### OPTIONAL SUMMER BYPASS - MRXBOX95B-LH2

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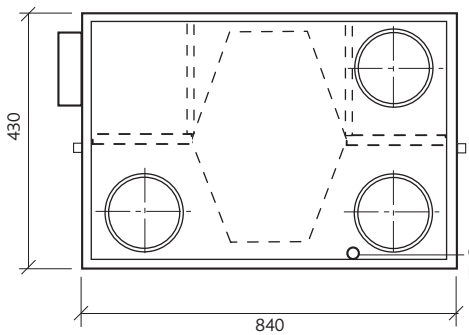


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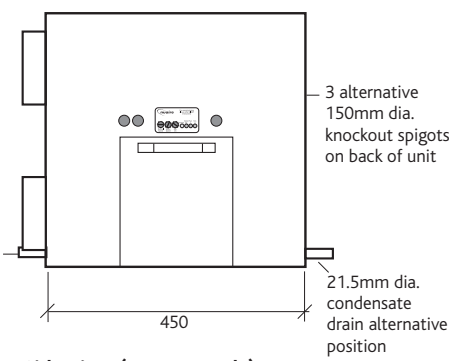
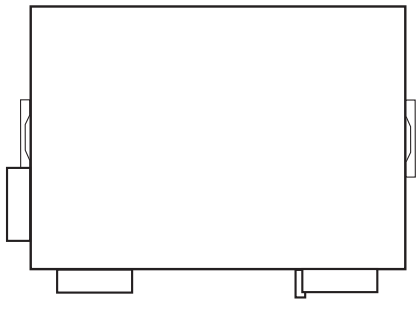
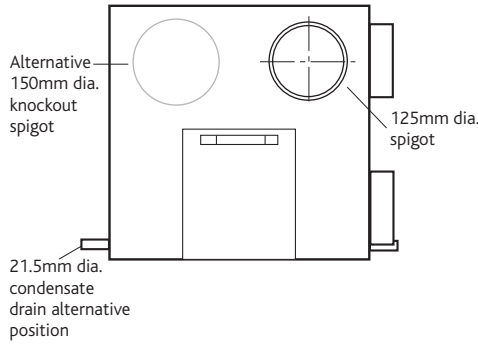



**View from top**

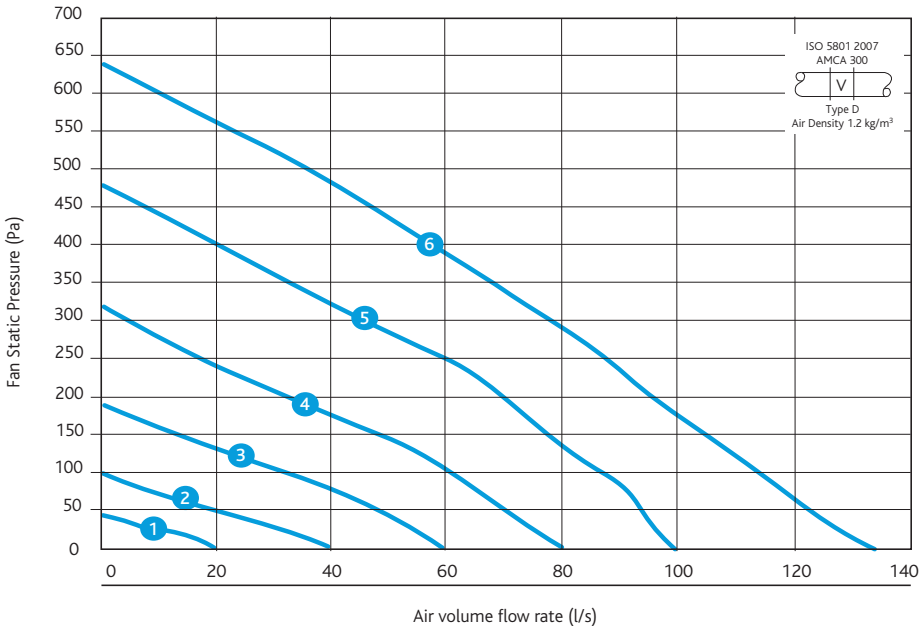


**Side view (non controls)**

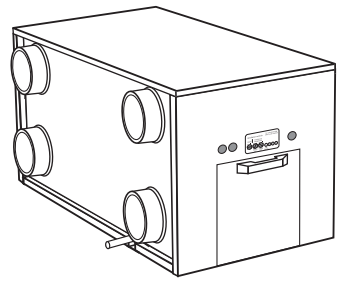


## PERFORMANCE - MRXBOX95-LH2

MRXBOX95-LH2




## Casing



## Code descriptions

**MR-XBOX95-LH2**

**1 2 3 4 5**

1. Multi-room supply and extract heat recovery
2. Product range
3. Efficiency
4. Loft application
5. H2 = High 2 Model

## SAP APPENDIX Q TEST RESULTS

| Application | Specific fan power (W/l/s) | Heat exchange efficiency % | Energy Saving Trust Best Practice Performance Compliant |
|---|---|---|---|
| **Kitchen Plus 1 wet room** | 0.81 | 91 | Yes |
| **Kitchen Plus 2 wet rooms** | 0.77 | 91 | Yes |
| **Kitchen Plus 3 wet rooms** | 0.78 | 91 | Yes |
| **Kitchen Plus 4 wet room** | 0.86 | 91 | Yes |
| **Kitchen Plus 5 wet rooms** | 0.96 | 91 | Yes |
| **Kitchen Plus 6 wet rooms** | 1.09 | 90 | No |

## MRXBOX95-LH2

## ELECTRICAL & SOUND

| Curve | Maximum power consumption (Watts) | | Sound Power Levels dB re 1pW 63 | 125 | 250 | 500 | 1K | 2K | 4K | 8K | dBA @3m |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 16 | Open inlet | 36 | 33 | 34 | 24 | 22 | 19 | 20 | 23 | 13 |
| | | Open outlet | 40 | 38 | 39 | 38 | 32 | 30 | 29 | 30 | 22 |
| | | Breakout | 40 | 38 | 36 | 30 | 21 | 21 | 20 | 18 | 14 |
| 2 | 30 | Open inlet | 40 | 39 | 41 | 30 | 28 | 24 | 21 | 24 | 18 |
| | | Open outlet | 41 | 49 | 49 | 49 | 42 | 41 | 30 | 33 | 32 |
| | | Breakout | 41 | 49 | 46 | 41 | 31 | 32 | 21 | 20 | 24 |
| 3 | 62 | Open inlet | 43 | 42 | 54 | 38 | 37 | 31 | 30 | 33 | 29 |
| | | Open outlet | 50 | 53 | 59 | 60 | 52 | 52 | 42 | 34 | 42 |
| | | Breakout | 50 | 52 | 56 | 52 | 41 | 43 | 33 | 30 | 34 |
| 4 | 106 | Open inlet | 44 | 46 | 57 | 43 | 42 | 37 | 30 | 33 | 33 |
| | | Open outlet | 50 | 58 | 65 | 63 | 58 | 59 | 50 | 40 | 47 |
| | | Breakout | 50 | 57 | 62 | 55 | 47 | 50 | 41 | 36 | 40 |
| 5 | 170 | Open inlet | 46 | 48 | 58 | 52 | 48 | 42 | 30 | 33 | 36 |
| | | Open outlet | 51 | 61 | 70 | 74 | 64 | 64 | 56 | 48 | 55 |
| | | Breakout | 51 | 60 | 67 | 66 | 53 | 55 | 47 | 44 | 47 |
| 6 | 277 | Open inlet | 50 | 54 | 62 | 62 | 55 | 47 | 39 | 38 | 43 |
| | | Open outlet | 56 | 65 | 72 | 77 | 69 | 69 | 61 | 54 | 58 |
| | | Breakout | 56 | 64 | 69 | 69 | 60 | 60 | 52 | 50 | 51 |

Hemisphical Free field dBA

The maximum power consumption shown above (Watts) is consumed on units running continuously, not taking into account any heat recovery saving and based on SAP Appendix Q testing.

# CONSULTANTS SPECIFICATION

## OPERATION

The supply and extract ventilation unit shall be positioned as indicated on the drawings and shall be in accordance with the particular fan schedule in the specification.

The combined supply and extract with heat recovery unit, shall supply filtered fresh air to each of the habitable rooms and vitiated air shall be extracted from the wet areas e.g. bathroom, en-suite, w.c, kitchen, utility rooms, etc. The supply air shall be pre-heated by the warm extract air via the integrated counter-flow heat exchanger element. The extracted air shall also be filtered before it reaches the heat exchanger block.

The ventilation unit shall vary its speed and therefore the ventilation rate, as it receives signals from one of the following:

- Switched live signal from light / remote switches.

When signals are received, the fan shall alter its speed to adjustable, normal and boost rates.

The unit shall have the facility to commission the supply and extract fans independently on minimum speed (continuous background ventilation), boost control will control both fans to the same volume, via inbuilt minimum and maximum speed adjustment;. The fans shall have infinitely variable speed control.

## MRXBOX95-LH2 - UNIT SPECIFICATION

The unit shall be fully insulated providing excellent thermal and acoustic characteristics and shall be complete with a multi plate counter flow high efficiency heat exchanger block, with a thermal efficiency of up to 95%. The heat exchanger shall be protected by G4 grade filters on fresh air inlet and system extract. The heat exchanger and filters shall be accessible via the top access panel, enabling quick and easy maintenance.

The unit shall have low energy, high efficiency EC fan/motor assemblies with sealed for life bearings, the impellers shall be backward curved centrifugal type. The motors shall be suitable of an ambient temperature of 40°C.

The unit shall be supplied complete with an insulated condensate drip tray and 21.5mm drain connection.

The unit shall be suitable for 150mm or 125mm circular ducting. Anti-vibration mounts are supplied with each unit to prevent vibration being transmitted to the ceiling timbers.

The breakout noise level and power requirements shall be as detailed by the unit manufacturer and in accordance with the ventilation equipment schedule.

## OPTIONAL SUMMER BYPASS - MRXBOX95B-LH2

The bypass damper opens when a 230V signal is applied to the unit (via a manual switch, supplied). This opens the damper via an actuator. When the switch signal is de-activated the unit returns to its original state (air through the heat exchanger). Outside air supplied through the bypass is still filtered, so the air quality is optimal, irrespective of the bypass setting (Open or closed).

## MRXBOX95-LH2 - CONTROL OPTIONS

All versions shall have the following functions integrally mounted within the fan unit on a purpose made PCB, all such components pre-wired and factory fitted by the manufacturer: -

- Independent control of background supply and extract flow rates.
- Single control of boost ventilation rates
- Run time monitor included
- Integral Fan failure indication.
- Integral S/L terminal for boost from remote switch, e.g. light switch.

## OPTIONAL CONTROL

MRXBOX95LH-RFI Remote fail indicator.
Units shall be the MRXBOX95-LH2 as manufactured by Nuaire.