

Sound Attenuating Ventilation Product Solutions

Cutting down on noise entering a property is very difficult whilst attempting to achieve required ventilation levels. The very fact that ventilation requires making a hole, or holes, in the building fabric means that external noise is liable to reach the dwelling occupants more easily.

There are a number of products on the market that claim to achieve high sound reduction figures however it is important all are checked with acoustic consultants. This is because the quoted sound reduction level for a trickle ventilator isn't measured in the same way as a window. For instance, a window with a sound reduction of 35dB used with a background ventilator giving a sound reduction of 35dB will result in somewhat less than 35dB. If more than one vent is required, the attenuation level becomes progressively worse.

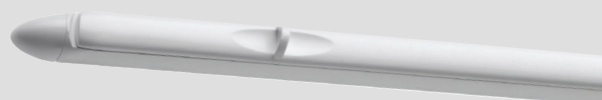


At Titon we have worked hard to develop products which perform to the highest sound attenuation levels possible, but we appreciate we cannot change the laws of physics and acoustics. We always try to make people aware of the pitfalls rather than claim that our sound attenuation products are going to solve every problem.

We have a range of products, from basic slot vents, which could perform satisfactorily in certain situations (all of our main ranges have been tested for sound attenuation), through dedicated sound attenuating vents, to mechanical products with much higher sound attenuating properties. Some products are suitable for retrofitting.

Below is a list of the main products in our ventilation portfolio, including their sound attenuating capabilities.

| Trimvent Select XS13 | | |
|---|----------------------------|----------------------------|
| Fits on the window, passive. Sizes: 4400EA or 5000EA. | | |
| Ventilation Strategy: System 1 (extract fans and background ventilators) or System 3 (central mechanical extract with background ventilators) | | |
| Sound Attenuation level: | | |
| | Open | Closed |
| 4400EA version (vent and canopy) | Dn,e,w (C;Ctr) 32 (0;1)dB | Dn,e,w (C;Ctr) 41 (0;-1)dB |
| 5000EA version (vent and canopy) | Dn,e,w (C;Ctr) 32 (-1;0)dB | Dn,e,w (C;Ctr) 35 (0;0)dB |



SF Xtra Sound Attenuator - Improved Sound Attenuation Performance

Fits on the window, passive.
For sizes, please see the table below.

Ventilation Strategy:
System 1 (extract fans and background ventilators) or
System 3 (central mechanical extract with background ventilators).



This product can also be retrofitted to a property in place of standard background ventilators subject to space being available. Acoustic and ventilation performance will vary according to the size of the pre-existing slot in the window.

Sound Attenuation level:

| | Open | Closed |
|---|------------------------------------|------------------------------------|
| V75 + C75 (2500EA) | $D_{n,e,w} (C;Ctr) = 44 (-2;-3)dB$ | $D_{n,e,w} (C;Ctr) = 55 (-1;-5)dB$ |
| V75 + C50 (2500EA) | $D_{n,e,w} (C;Ctr) = 42 (-1;-2)dB$ | $D_{n,e,w} (C;Ctr) = 55 (-2;-5)dB$ |
| V75 + standard canopy (2500EA) | $D_{n,e,w} (C;Ctr) = 40 (-1;-2)dB$ | $D_{n,e,w} (C;Ctr) = 53 (-1;-4)dB$ |
| V50 + C25 (2500EA) | $D_{n,e,w} (C;Ctr) = 39 (-1;-2)dB$ | $D_{n,e,w} (C;Ctr) = 55 (-2;-5)dB$ |
| V50 + standard canopy (2500EA) | $D_{n,e,w} (C;Ctr) = 38 (-1;-2)dB$ | $D_{n,e,w} (C;Ctr) = 55 (-2;-5)dB$ |
| V25 + C25 (2500EA) | $D_{n,e,w} (C;Ctr) = 36 (0;-2)dB$ | $D_{n,e,w} (C;Ctr) = 55 (-1;-5)dB$ |
| V25 + standard canopy (2500EA) | $D_{n,e,w} (C;Ctr) = 35 (0;-1)dB$ | $D_{n,e,w} (C;Ctr) = 54 (-1;-4)dB$ |
| Standard vent + C25 (2500EA) | $D_{n,e,w} (C;Ctr) = 35 (0;-1)dB$ | $D_{n,e,w} (C;Ctr) = 55 (1;-5)dB$ |
| Standard vent + standard SF canopy (2500EA) | $D_{n,e,w} (C;Ctr) = 32 (1;0)dB$ | $D_{n,e,w} (C;Ctr) = 52 (-2;-4)dB$ |
| V75 + C75 (Hi Spec Foam) (5000EA) | $D_{n,e,w} (C;Ctr) = 40 (-2;-3)dB$ | $D_{n,e,w} (C;Ctr) = 51 (-1;-4)dB$ |

Sonair

Fits through the wall, mechanical supply with filter.

Ventilation Strategy:
System 1 (extract fans and background ventilators) or
System 3 (central mechanical extract with background ventilators).
This product can also form part of a Sonair system, approved to comply with Part F of the building regulations.



Sound Attenuation level:

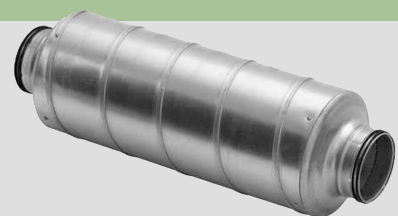
| | Open |
|-----------|---|
| Sonair A+ | $D_{n,e,w} 52 (-1;-3)dB$ G2 or F6 |
| Sonair F+ | $D_{n,e,w} 55 (-2;-4)dB$ F6 $D_{n,e,w} 56 (-2;-6)dB$ G6 |

Sometimes the best way to achieve the best acoustic performance in new build applications is to upgrade from a traditional ventilation strategy, e.g. Extract fans in bathrooms and trickle vents in windows, to a central extract system, mechanical extract with fewer - sound attenuating - vents, or all the way to mechanical ventilation with heat recovery. The latter system means there are no direct apertures to the outside in living areas of the property.

Circular Silencer

Fits to the ducting to reduce noise levels generated by whole house systems.
For sizes, please see the table below.

Ventilation Strategy:
System 3 (central mechanical extract with background ventilators) or
System 4 (mechanical extract with heat recovery).



Sound Attenuation level:

| Part No. | Connection Ø mm | Silencer Ø mm | Length mm | Frequency Hz | | | | | | | |
|-----------|--------------------|------------------|--------------|--------------|-----|-----|-----|----|----|----|----|
| | | | | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k |
| CA100600 | 100 | 200 | 600 | 1 | 7 | 12 | 25 | 43 | 48 | 35 | 20 |
| CA125600 | 125 | 224 | 600 | 1 | 5 | 10 | 22 | 39 | 37 | 26 | 16 |
| CA125900 | 125 | 224 | 900 | 1 | 7 | 14 | 30 | 50 | 50 | 37 | 21 |
| CA1251200 | 125 | 224 | 1200 | 2 | 9 | 18 | 39 | 50 | 50 | 47 | 26 |
| CA150600 | 150 | 260 | 600 | 1 | 4 | 8 | 19 | 37 | 28 | 17 | 11 |

Rectangular Silencer

Fits to the ducting to reduce noise levels generated by whole house systems.
For sizes, please see the table below.

Ventilation Strategy:

System 3 (central mechanical extract with background ventilators) or
System 4 (mechanical extract with heat recovery).

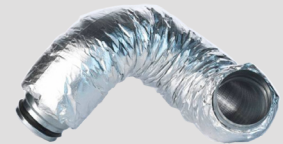


Sound Attenuation level:

| Material | Static Insertion Loss - dB | | | | | | | |
|--|----------------------------|-----|-----|------|------|------|------|------|
| | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k |
| 204x60mm x 0.5m Long Duct Silencer | -1 | -3 | 5 | 6 | 12 | 18 | 12 | 9 |
| 204x60mm x 1.0m Long Duct Silencer | -1 | 0 | 11 | 12 | 13 | 37 | 23 | 15 |
| 204x60mm x 1.5m Long Duct Silencer | 5 | 6 | 16 | 20 | 32 | 47 | 35 | 20 |
| 204x60mm x 0.5m Long Hi-Flow Duct Silencer | 1.1 | 1.4 | 2.4 | 6 | 10.9 | 17.9 | 22.9 | 24.9 |
| 204x60mm x 1.0m Long Hi-Flow Duct Silencer | 1.8 | 0.3 | 3.3 | 11.1 | 21.4 | 33.9 | 35.9 | 25.2 |
| 204x60mm x 1.5m Long Hi-Flow Duct Silencer | 3.6 | 2.4 | 7 | 16 | 28.6 | 39.8 | 37.2 | 25.8 |
| 220x90mm x 0.5m Long Duct Silencer | 1.9 | 2.7 | 3 | 6.5 | 9.8 | 18.6 | 25.4 | 26.7 |
| 220x90mm x 1.0m Long Duct Silencer | 1.4 | 4.6 | 4.1 | 13 | 18.2 | 34.5 | 43.1 | 34 |
| 220x90mm x 1.5m Long Duct Silencer | 0.1 | 1.8 | 3.1 | 18.1 | 26.6 | 43.7 | 46.1 | 34.3 |

Sound Attenuators - Semi Flexible (for use with Titon HRV Q Plus Range)

Designed for Titon's MVHR range.
Reduces both duct and breakout sound levels.
Provides both acoustic and thermal insulation.
Isolates unit to ducting to help prevent noise transmission through vibrations.



Inline attenuation figures - Length 500mm

| Dn (mm) | L (mm) | Attenuation, dB - Mid-frequency, Hz | | | | | | | |
|---------|--------|-------------------------------------|-----|------|------|------|------|------|------|
| | | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 125 | 500 | 6.3 | 7.1 | 15.2 | 19.9 | 20.3 | 26.1 | 17.1 | 12.9 |
| 150 | 500 | 8.3 | 9.3 | 18.8 | 19.4 | 16.7 | 25 | 19.8 | 13.8 |

Inline attenuation figures - Length 1000mm

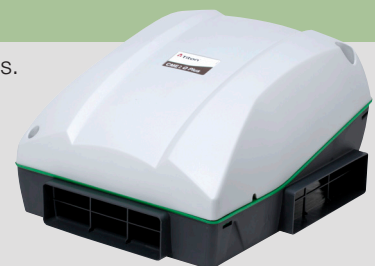
| Dn (mm) | L (mm) | Attenuation, dB - Mid-frequency, Hz | | | | | | | |
|---------|--------|-------------------------------------|------|------|------|------|------|------|------|
| | | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 125 | 1000 | 12.4 | 20.1 | 33.6 | 29.8 | 29.5 | 33.6 | 32.1 | 23.6 |
| 150 | 1000 | 11.1 | 11.8 | 34.2 | 28.5 | 26.3 | 34.9 | 27.2 | 21.8 |

CME2 Q Plus

Fits whole house ducted system (with background ventilators), extracting from the wet rooms.
Sizes: One model, SAP Appendix Q Best Practise performance.

Ventilation Strategy:

System 3 (central mechanical extract with background ventilators) or
System 4 (mechanical extract with heat recovery). This system can also form part of a Sonair system, approved to comply with Part F of the Building Regulations.



Sound Attenuation level:

| | Induct Inlet | Standard running speed casing breakout |
|--------------|--------------|--|
| CME 2 Q Plus | 30dBA @3m | 33dB(A) @ 3m |

HRV Q Plus

Fits whole house ducted system (with background ventilators), extracting from the wet rooms and recovering the heat from the extracted air. This heat is then re-distributed to the habitable rooms. Sizes: Six models, SAP Appendix Q Best Practise performance.

Ventilation Strategy: System 4 (mechanical extract with heat recovery).



Sound Attenuation level:

| Product | % of Max flow | Airflow | dB(A) @ 3m Hemispherical | | | dB(A) @ 3m Spherical |
|----------------------|---------------|----------------|--------------------------|---------------|-----------------|----------------------|
| | | | Induct Inlet | Induct Outlet | Casing Breakout | Casing Breakout |
| HRV1.25 Q Plus Eco | 40% | 22l/s @ 10Pa | 28 | 41 | 20 | 17 |
| | 61% | 34l/s @ 23Pa | 36 | 49 | 28 | 25 |
| | 100% | 56l/s @ 50Pa | 43 | 57 | 36 | 33 |
| HRV1.35 Q Plus Eco | 37% | 22l/s @ 12Pa | 28 | 39 | 19 | 16 |
| | 65% | 39l/s @ 38Pa | 40 | 52 | 29 | 26 |
| | 100% | 60l/s @ 100Pa | 47 | 61 | 36 | 33 |
| HRV1.75 Q Plus Eco | 39% | 30l/s @ 18Pa | 26 | 36 | 22 | 19 |
| | 60% | 47l/s @ 47Pa | 31 | 46 | 22 | 19 |
| | 100% | 78l/s @ 100Pa | 40 | 54 | 30 | 27 |
| HRV2 Q Plus Eco | 33% | 27l/s @ 8Pa | 20 | 33 | 16 | 13 |
| | 70% | 57l/s @ 56Pa | 35 | 51 | 32 | 29 |
| | 100% | 81l/s @ 100Pa | 41 | 56 | 37 | 34 |
| HRV2.85 Q Plus Eco | 31% | 29l/s @ 7Pa | 22 | 33 | 14 | 11 |
| | 66% | 61l/s @ 40Pa | 34 | 47 | 24 | 21 |
| | 100% | 93l/s @ 100Pa | 42 | 56 | 34 | 31 |
| HRV3 Q Plus Eco | 33% | 36l/s @ 10Pa | 25 | 35 | 21 | 18 |
| | 68% | 73l/s @ 48Pa | 36 | 49 | 29 | 26 |
| | 100% | 108l/s @ 100Pa | 45 | 57 | 37 | 34 |
| HRV10 Q Plus Eco | 41% | 44l/s @ 22Pa | 27 | 38 | 27 | 24 |
| | 69% | 75l/s @ 51Pa | 36 | 48 | 37 | 34 |
| | 100% | 108l/s @ 100Pa | 43 | 57 | 51 | 48 |
| HRV10M Q Plus Eco | 41% | 44l/s @ 22Pa | 27 | 38 | 23 | 20 |
| | 69% | 75l/s @ 51Pa | 36 | 48 | 33 | 30 |
| | 100% | 108l/s @ 100Pa | 43 | 57 | 46 | 43 |
| HRV10.25 Q Plus Eco | 39% | 56l/s @ 12Pa | 32 | 47 | 35 | 32 |
| | 66% | 95l/s @ 44Pa | 43 | 62 | 45 | 42 |
| | 100% | 144l/s @ 100Pa | 48 | 70 | 54 | 51 |
| HRV10.25M Q Plus Eco | 39% | 56l/s @ 12Pa | 32 | 47 | 30 | 27 |
| | 66% | 95l/s @ 44Pa | 43 | 62 | 39 | 36 |
| | 100% | 144l/s @ 100Pa | 48 | 70 | 49 | 46 |
| H200 Q Plus Eco | 47% | 39l/s @ 20Pa | 25 | 37 | 25 | 22 |
| | 64% | 53l/s @ 37Pa | 30 | 21 | 31 | 28 |
| | 100% | 83l/s @ 100Pa | 39 | 54 | 41 | 38 |

Trimbox NO₂ Filter

Effective in reducing pollutants in the home, improving Indoor Air Quality (IAQ) and reducing the risk of Toxic Home Syndrome. Compatible with Titon's range of MVHR units. Sizes: 2 models (with 3 or 4 carbon filters)

Ventilation Strategy: System 4 (mechanical extract with heat recovery).



Sound Attenuation level:

| | Octave Band (Hz) Static Insertion Loss, dB | | | | | | | |
|---|--|-----|-----|-----|------|------|------|------|
| | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| Trimbox NO ₂ (3 filter) unit | 7 | 8 | 5 | 9 | 16 | 27 | 33 | 36 |
| Trimbox NO ₂ (4 filter) unit | 6 | 7 | 6 | 10 | 19 | 35 | 35 | 40 |

Inlet and outlet levels are Induct (BS EN 13141-7 clause 6.4.2 requirement), casing breakout is hemispherical - for spherical subtract 3dB. Titon acoustic data is independently tested at Sound Research Laboratories. Data is specifically tested for the Eco unit (100% bypass) - non bypass variants with deeper heat exchangers will offer lower acoustic levels. The full acoustic results at various speed settings are available on request, or visit www.titon.co.uk