Acoustic data

Standard: BS EN ISO3741:2010

Product **Ultimate Dmev - pt1 5-12l/s**

		Sound Power Levels dB re. 1pW Frequency Hz								Overall	Overall	Casing Breakout
Speed		63	125	250	500	1k	2k	4k	8k	L_W	L_{WA}	dBA @ 3m
1 (5l/s)	Outlet	29	28	26	17	26	20	17	20	34	29	10
	Inlet/Casing	27	26	25	20	23	18	18	22	32	28	
2 (6l/s)	Outlet	24	27	26	34	29	21	17	21	37	34	15
	Inlet/Casing	32	29	25	34	23	19	19	22	38	33	
3 (7l/s)	Outlet	27	25	30	23	29	24	18	21	35	32	12
	Inlet/Casing	29	27	28	26	25	20	19	22	35	30	
4 (8l/s)	Outlet	28	32	32	25	32	25	18	21	38	34	15
	Inlet/Casing	27	34	33	29	28	23	19	22	38	33	
5 (9l/s)	Outlet	29	31	40	28	34	29	18	21	42	37	19
	Inlet/Casing	27	32	40	32	31	26	19	22	42	36	
6 (10l/s)	Outlet	27	26	48	33	34	29	19	20	48	41	21
	Inlet/Casing	26	24	42	35	33	30	20	23	44	39	
7 (11l/s)	Outlet	26	24	42	30	37	33	20	21	44	40	22
	Inlet/Casing	28	24	39	35	35	32	21	22	42	39	
8 (12l/s)	Outlet	26	26	43	32	38	34	22	21	45	41	26
	Inlet/Casing	27	25	47	37	38	36	23	22	48	43	

Tested in accordance with BS EN ISO3741:2010 - through wall installation.
Casing breakout is hemispherical - for spherical subtract 3dB
Titon acoustic data is independently tested at Sound Research Laboratories

Acoustic data

Standard: BS EN ISO3741:2010

Product **Ultimate Dmev - pt2 13-30l/s**

		Sound Power Levels dB re. 1pW Frequency Hz								Overall	Overall	Casing Breakout
Speed		63	125	250	500	1k	2k	4k	8k	L_W	L_{WA}	dBA @ 3m
9 (13l/s)	Outlet	28	26	45	33	40	36	24	21	47	43	26
	Inlet/Casing	27	25	45	38	40	37	25	22	47	44	
10 (14l/s)	Outlet	30	28	45	34	42	39	26	21	48	45	29
	Inlet/Casing	28	26	50	39	42	40	27	23	51	46	
11 (15l/s)	Outlet	31	30	54	35	43	39	29	22	55	48	31
	Inlet/Casing	29	28	52	40	44	42	30	23	53	49	
12 (16l/s)	Outlet	47	30	58	39	47	41	32	23	58	52	34
	Inlet/Casing	30	28	55	42	47	44	33	23	56	51	
13 (20l/s)	Outlet	57	31	53	51	49	45	38	26	60	53	38
	Inlet/Casing	50	31	52	55	48	49	39	26	59	56	
14 (25l/s)	Outlet	39	35	46	53	55	51	45	35	58	58	43
	Inlet/Casing	58	41	47	60	53	53	46	34	63	60	
15 (30l/s)	Outlet	47	38	48	54	57	59	51	42	63	63	45
	Inlet/Casing	45	36	49	62	54	58	51	40	64	63	

Tested in accordance with BS EN ISO3741:2010 - through wall installation.
Casing breakout is hemispherical - for spherical subtract 3dB
Titon acoustic data is independently tested at Sound Research Laboratories

Acoustic Testing – Powered products

Acoustic testing of Titon mechanical ventilation products is measured in accordance with the following standards:-

dMEV – BS EN 13141-4 – "Ventilation for buildings. Performance testing of components/products for residential ventilation. Fans used in residential ventilation systems"

MEV – BS EN 13141-6 – "Ventilation for buildings. Performance testing of components/products for residential ventilation. Exhaust ventilation system packages used in a single dwelling"

MVHR – BS EN 13141-7 – "Ventilation for buildings. Performance testing of components/products for residential ventilation. Performance testing of a mechanical supply and exhaust ventilation units (including heat recovery) for mechanical ventilation systems intended for single family dwellings"

The results are presented in the following format which provides details of the acoustic performance of the unit at each of the standard speed settings.

The 'A' Weighted Sound Power Level in dB is an "in-duct" measurement for the Outlet and Inlet and are given across the frequency range from 125Hz to 8kHz.

The overall level is the logarithmic addition of the frequency bands to give a single figure, this is provided with and without 'A' weighting

The casing breakout is a sound pressure level at a distance of 3 meters, this figure is the lowest quoted and is usually stated in catalogue details. It is calculated from the Overall L_{WA} (sound power level) with a reduction to convert to the sound pressure at 3 meters.

Acoustic data

Titon®

Standard: BS EN 13141-7:2004

Product **HRV1 Qplus**

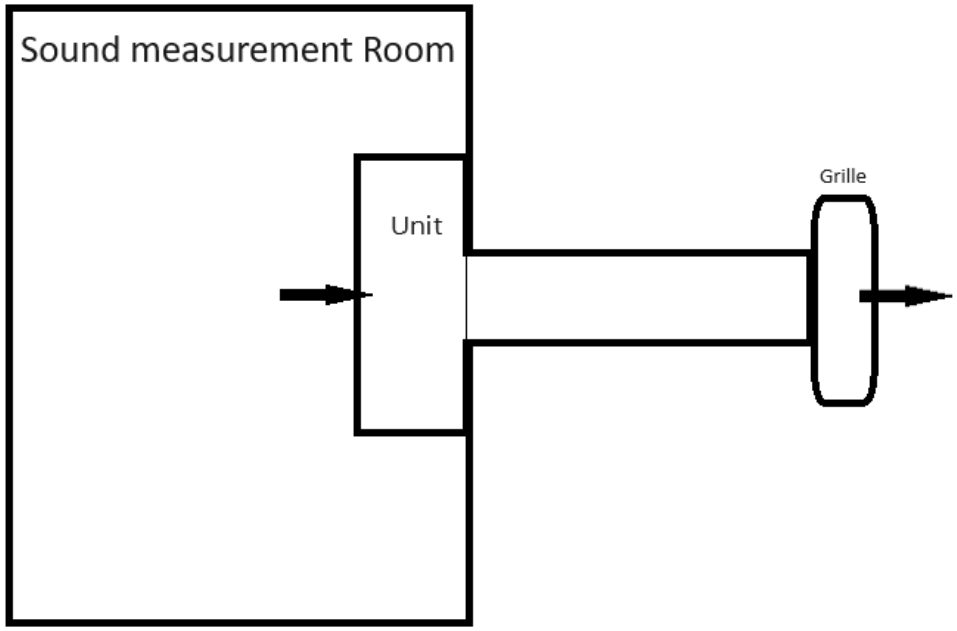
		'A' Weighted Sound Power Levels dB re. 1pW Frequency Hz							Overall L_W	Overall L_{WA}	Casing Breakout dBA @ 3m
Speed		125	250	500	1k	2k	4k	8k			
1	Outlet	31	32	36	24	16	18	22	49	39	9
	Inlet	26	24	29	18	16	18	22	43	32	
	Breakout	11	15	23	14	13	18	22	31	27	
2	Outlet	42	42	49	40	31	21	22	59	51	14
	Inlet	31	32	35	24	17	18	22	48	38	
	Breakout	16	21	29	19	15	18	22	37	31	
3	Outlet	45	46	50	55	37	27	23	63	57	16
	Inlet	33	36	36	31	20	18	22	51	41	
	Breakout	22	26	31	26	17	18	22	41	34	
4	Outlet	49	50	51	58	42	33	26	67	60	20
	Inlet	36	39	39	36	24	19	22	54	44	
	Breakout	23	28	35	31	20	19	22	43	37	
5	Outlet	51	53	54	56	46	38	30	69	60	23
	Inlet	39	42	41	39	28	20	22	57	47	
	Breakout	26	35	37	34	24	22	22	47	40	
6	Outlet	54	56	57	57	50	42	36	72	63	27
	Inlet	42	45	45	41	32	23	22	59	49	
	Breakout	28	33	44	36	28	24	22	50	45	
7	Outlet	58	59	60	60	54	46	41	75	66	32
	Inlet	44	47	49	45	37	27	23	62	53	
	Breakout	30	36	49	39	32	28	22	54	50	
8	Outlet	59	63	63	63	59	50	46	77	69	33
	Inlet	47	51	51	47	42	31	25	65	56	
	Breakout	32	38	49	42	37	32	24	55	51	

Measurements taken at full speed with a resistance of 50Pa, then at the nominal speed settings of the unit and corresponding pressure.
Inlet and outlet levels are Induct

dMEV - Installation setup used during testing

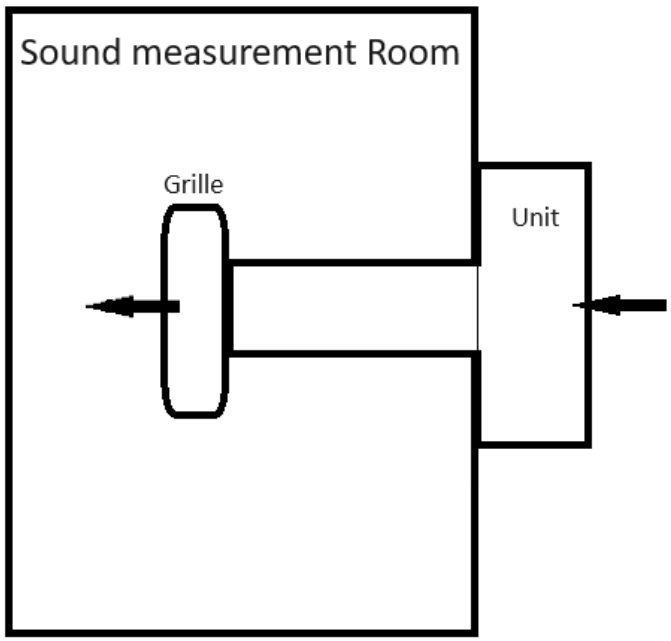
The installation setup for all acoustic measurements is as per instruction set out in BS EN 13141-6.

Inlet/Casing breakout power levels – The Inlet and Casing are measured together as the inlet is on the face of the Casing. The dMEV is installed in the measuring room with a 0.5m duct through the wall and a Grille terminating in a separate room, so that only the Casing breakout and the inlet noise is measured.



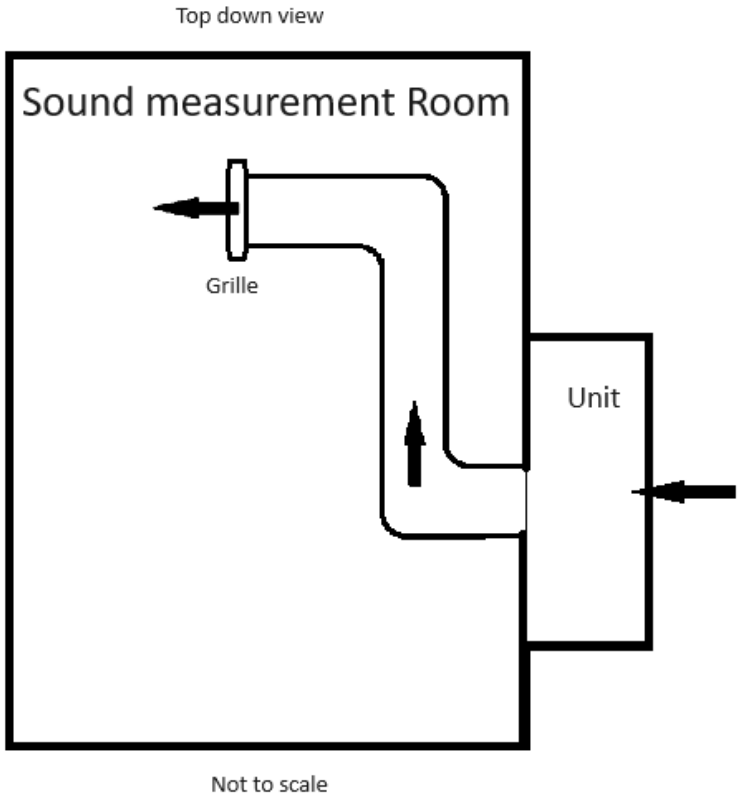
Not to scale

Outlet sound power levels – The dMEV is installed in the separate room a 0.5m duct through the wall and a Grille terminating in the measuring room so that only the outlet sound is measured.



Not to scale

Outlet (in room setup) sound power levels – The dMEV is installed in a separate room connected to a 0.5m duct through the wall with a 90° bend and a straight duct of 2m long terminated with a 90° bend and a Grille in the measuring room.



Glossary

Sound Power Level – is a measurement of the actual sound level created at the source, it is not therefore affected by the environment in which the product is installed. This will always be the highest levels quoted as no reductions have been applied for either the environment or distance from the source. Actual installed levels will therefore be significantly lower than these figures but they are useful from which to base any system calculations.

Sound Pressure Level – this must be quoted at a given distance and is dependant on both the distance from the source and environment (a hard walled reflective surface will have a higher level than a soft furnished room which absorbs more sound). Titon levels are given at a distance of 3m (which is commonly quoted) and are free field, hemispherical radiation.

Free field – An environment in which there are no reflective surfaces (useful to describe the sound pressure levels for comparative purposes)

Hemispherical radiation – Sound radiates from a source in all directions, where the product is mounted on a wall or ceiling some sound if reflected from this mounting face. The casing sound pressure levels are based on hemispherical radiation which will be slightly higher than spherical radiation.

'A'Weighting – this is a correction to the frequency bands to replicate the sensitivity of the human ear to different frequencies. The weighting can be removed from the octave bands if required, the corrections are given in the table below.

Frequency Hz	125	250	500	1000	2000	4000	8000
'A' Weighting	-16	-9	-3	0	1	1	-1

Octave band – sound is produced at various frequencies and is therefore measured across a range of frequency or Octave bands (as the above table). The figures can be combined to give an overall level using logarithmic addition.

In Duct levels – a measurement of sound that is taken inside the duct of a ventilation system, this is likely to be a higher level than a non ducted measurement.

Casing Breakout – a measurement of the sound that breaks out of the casing of a unit, the sound from the inlet and outlets of the unit does not form part of this measurement.