



Zehnder EVO 4

Sound power measurements

always the best climate

Test methods and applicable standards

Measurements of sound power were undertaken in accordance with the comparison method as described in BS EN ISO 13141-6:2014, BS EN ISO 3743-1:2010.

Measurements of representative background noise were undertaken for case radiated noise and duct noise. The data was processed to calculate casing radiated and in-duct sound power levels in third octave bands.

In-duct sound power levels were calculated in accordance with BS EN ISO 5135:2020.



Zehnder EVO 4 is a centralised mechanical ventilation unit with high-efficiency recovery unit (recovery of heat alone in HRV units, recovery of heat and humidity in ERV units) which expels stale air while simultaneously supplying fresh air to rooms. It can be installed in homes, offices and similar locations.

EVO 4 Sound power measurements undertaken in accordance with the comparison method described in BS EN ISO 13141-6 2014, BS EN ISO 3743-1:2010 & BS EN ISO 5135:2020

	Test Point	1	2	3	4	5	6	7	8	9	10
EVO 4	Ventilation (m ³ /h)	100		200		280	300		400		
	Pressure (Pa)	40	100	80	150	50	100	175	100	175	225

Test specimen details, octave band data (L_w oct) weighted sound power (L_{WA}), and sound pressure (SPL) at 3 m (case radiated), can be seen for the Zehnder EVO MVHR units in the tables below

Working point 1: Ventilation 100 m³/h, pressure 40 Pa

Test type	Octave band centre frequency Hz (dB)							Total L_{WA}
	125	250	500	1000	2000	4000	8000	dB(A)
Supply	55.7	51.0	48.4	40.0	29.2	21.4	13.5	48.5
Extract	45.0	38.0	33.7	25.8	12.0	4.4	8.0	35.3
Exhaust	52.2	49.8	47.4	39.0	31.5	21.8	15.2	47.3
Fresh Air	46.2	40.2	33.6	21.1	8.0	3.9	7.4	35.2
Case Radiated	34.4	32.0	31.6	30.4	22.9	12.8	9.5	33.8

Working point 2: Ventilation 100 m³/h, pressure 100 Pa

Test type	Octave band centre frequency Hz (dB)							Total L_{WA}
	125	250	500	1000	2000	4000	8000	dB(A)
Supply	63.5	58.9	56.6	48.9	39.6	33.6	27.0	56.7
Extract	52.9	44.9	39.3	33.3	19.7	6.8	8.1	42.1
Exhaust	61.8	58.4	55.8	47.7	40.9	33.3	27.8	55.9
Fresh Air	52.4	47.3	40.8	29.7	17.6	6.0	7.5	42.2
Case Radiated	41.6	40.1	35.5	38.4	30.4	23.0	15.8	40.7

Working point 3: Ventilation 200 m³/h, pressure 80 Pa

Test type	Octave band centre frequency Hz (dB)							Total L_{WA}
	125	250	500	1000	2000	4000	8000	dB(A)
Supply	64.0	61.3	57.6	53.7	43.4	38.7	33.9	59.0
Extract	56.1	50.2	44.1	39.2	26.2	14.2	9.3	46.8
Exhaust	64.3	61.7	58.0	53.2	46.6	40.0	36.3	59.3
Fresh Air	52.9	50.1	43.5	35.5	21.0	9.7	8.0	44.8
Case Radiated	45.1	43.4	38.9	44.1	36.0	29.3	23.5	45.9

Working point 4: Ventilation 200 m³/h, pressure 150 Pa

Test type	Octave band centre frequency Hz (dB)							Total L _{WA}
	125	250	500	1000	2000	4000	8000	dB(A)
Supply	69.9	64.5	61.4	55.5	47.4	43.5	39.6	62.5
Extract	58.4	52.4	46.6	42.0	28.9	16.7	10.0	49.2
Exhaust	67.7	65.0	62.1	57.2	50.6	44.8	41.7	63.1
Fresh Air	58.6	53.1	45.9	35.9	23.9	12.2	8.2	48.0
Case Radiated	47.7	46.6	43.2	47.8	39.7	33.8	28.9	49.6

Working point 5: Ventilation 280 m³/h, pressure 50 Pa

Test type	Octave band centre frequency Hz (dB)							Total L _{WA}
	125	250	500	1000	2000	4000	8000	dB(A)
Supply	65.9	64.6	61.8	56.9	48.4	45.3	42.5	62.6
Extract	60.3	56.4	49.4	43.9	33.2	23.8	16.3	51.9
Exhaust	68.1	66.5	62.7	57.6	51.9	45.9	42.8	64.0
Fresh Air	58.0	53.6	47.1	37.5	26.2	15.9	9.6	48.6
Case Radiated	48.2	49.1	44.2	49.5	42.0	35.9	31.0	51.4

Working point 6: Ventilation 300 m³/h, pressure 100 Pa

Test type	Octave band centre frequency Hz (dB)							Total L _{WA}
	125	250	500	1000	2000	4000	8000	dB(A)
Supply	69.0	66.8	64.5	58.7	51.3	48.3	45.9	65.1
Extract	62.5	58.3	51.4	45.4	35.3	26.3	19.0	53.9
Exhaust	70.6	69.3	65.6	60.1	55.0	49.4	47.0	66.7
Fresh Air	60.2	56.3	50.8	41.0	30.5	21.2	13.1	51.9
Case Radiated	51.3	51.5	46.4	51.6	44.8	39.0	34.6	53.8

Working point 7: Ventilation 300 m³/h, pressure 175 Pa

Test type	Octave band centre frequency Hz (dB)							Total L _{WA}
	125	250	500	1000	2000	4000	8000	dB(A)
Supply	70.5	68.7	66.3	60.4	53.5	50.0	47.8	66.9
Extract	63.8	59.4	52.3	46.6	36.3	26.7	19.2	55.0
Exhaust	72.8	71.5	67.5	61.8	57.2	51.6	49.6	68.7
Fresh Air	61.5	57.5	52.3	41.7	31.4	21.5	13.2	53.1
Case Radiated	53.0	53.0	47.9	53.2	46.7	40.9	37.0	55.4

Working point 8: Ventilation 400 m³/h, pressure 100 Pa

Test type	Octave band centre frequency Hz (dB)							Total L _{WA}
	125	250	500	1000	2000	4000	8000	dB(A)
Supply	72.0	72.4	70.2	63.1	58.8	54.6	53.3	70.5
Extract	67.6	63.8	57.4	49.8	43.0	34.8	28.8	59.3
Exhaust	75.2	73.7	70.8	64.6	61.6	55.5	53.9	71.8
Fresh Air	64.7	61.4	57.0	46.4	38.0	29.7	22.2	57.2
Case Radiated	55.2	56.5	52.3	56.4	51.6	45.6	42.1	59.3

Working point 9: Ventilation 400 m³/h, pressure 175 Pa

Test type	Octave band centre frequency Hz (dB)							Total L _{WA}
	125	250	500	1000	2000	4000	8000	dB(A)
Supply	73.3	72.2	70.5	63.5	60.3	55.7	54.5	70.9
Extract	68.6	64.6	58.0	50.4	43.2	34.9	28.7	60.1
Exhaust	76.6	75.3	72.2	65.3	63.2	57.0	55.3	73.1
Fresh Air	65.0	61.3	56.9	46.6	38.1	29.8	22.2	57.1
Case Radiated	57.0	58.0	53.2	57.4	52.9	47.0	43.6	60.4

Working point 10: Ventilation 400 m³/h, pressure 225 Pa

Test type	Octave band centre frequency Hz (dB)							Total L _{WA}
	125	250	500	1000	2000	4000	8000	dB(A)
Supply	74.4	73.7	71.1	64.2	61.7	56.4	55.2	71.7
Extract	68.5	64.5	58.0	50.6	43.6	35.1	28.8	60.1
Exhaust	77.4	75.8	72.8	65.6	63.9	57.6	56.0	73.7
Fresh Air	65.4	62.6	56.9	47.0	38.4	29.9	22.3	57.6
Case Radiated	58.3	58.8	54.0	57.8	53.6	47.8	44.5	61.0