



Table of Sound Levels and Corresponding Sound Pressure and Sound Intensity

To get a feel for decibels, look at the table below which gives values for the sound pressure levels of common sounds in our environment. Also shown are the corresponding sound pressures and sound intensities.

From these, you can see that the decibel scale gives numbers in a much more manageable range.

Chart of sound levels <i>L</i> and corresponding sound pressure and sound intensity			
Examples	Sound Pressure Level dB SPL	Sound Pressure <i>p</i> N/m ² = Pa	Sound Intensity <i>I</i> watts/m ²
Jet aircraft, 50 m away		200	100
Threshold of pain	130	63.2	10
Threshold of discomfort	120	20	1
Chainsaw 1m distance	110	6.3	0.1
Disco, 1 m from speaker	100	2	0.01
Diesel truck, 10 m away	90	0.63	0.001
Curbside of busy road, 5 m	80	0.2	0.0001
Vacuum cleaner, distance 1 m	70	0.063	0.00001
Conversational speech, 1m	60	0.02	0.000001
Average home	50	0.0063	1E-07
Quiet room	40	0.002	1E-08
Quiet bedroom at night	30	0.00063	1E-09
Background in TV studio	20	0.0002	1E-10
Rustling leaf	10	0.000063	1E-11
Threshold of hearing	0	0.00002	1E-12

Sound Pressure and Decibel Values for Typical Sounds

0 dB	Threshold of hearing
10 dB	Slow moving air
20 dB	Studio for Sound Movies
30 dB	Soft Whisper at five feet
40 dB	Hearing Test Booth
50 dB	Average residence, no children
60 dB	Conversational Speech at 4'
70 dB	Intercom Outbound Audio Level at 4'
80 dB	Very Noisy Restaurant
90 dB	Printing Presses running in a Print Shop
100 dB	Looms inside a Textile Mill
110 dB	Pipe making shop
120 dB	50 HP Siren at 100 feet
140 dB	Jet aircraft at 100 feet
180 dB	Rocket Launching Pad

3M™ Wireless Communication System Model XT-1 Technical Data - #131

3M Wireless Communications System Model XT-1's volume control and Night Volume feature to comply with City Decibel Level output ordinance.

With the concern over environmental noise today, many communities restrict the audio level of drive-thru intercom systems during normal day-time business hours and for business operations during night time. Usually, this audio level is specified to be below some number at the property line.

Audio levels are measured in terms of "Sound Pressure Level" with the unit of change being the "Decibel". For example, the city of South Plainfield, NJ requires that sound levels not exceed 65 decibels SPL (sound pressure level) in an industrial area. Taking this into consideration, 3M intercom systems provide an adjustable menu speaker volume to assure compliance with city sound ordinances.

The 3M XT-1 Intercom System can be adjusted at installation to produce an audio sound pressure level of 65 decibels (*) at a distance of 4 feet on axis to the center of the speaker. It is VERY easy for the installation company to verify this reading using an Audio dB meter (set to A weighting, slow response). Please note that sound diminishes at the rate of 6 decibels every time the distance from the sound source is doubled. So, at a distance of 8 feet, the level is 59 decibels, at 16 feet it is 53 decibels and so on.

The 3M XT-1 Intercom System also provides an AUTOMATIC reduction of sound volume for night time operation to maintain compliance with cities that require lower operating sound levels after normal business hours. This feature assures compliance 24 hours a day.

To give you a reference of comparative audio levels, please peruse the attached list of typical sound levels. Be aware that acoustic barriers (shrubby, trees, fences, walls, etc) will reduce the distance faster than shown in the chart.

(* These level measurements assume the use of recommended 3M components.)

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REVISIONS

REV	DATE	COMMENT	CHECKED BY
1	02/10/20	ZBA SPECIAL PERMIT & SITE PLAN REVIEW	DJO JAB



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PROJECT No.: W181086
DRAWN BY: DJO
CHECKED BY: JAB
DATE: 01/16/2020
CAD LD.: W181086-CVL-1

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR



PROPOSED DEVELOPMENT

888 ASHLEY BOULEVARD
BRISTOL COUNTY
NEW BEDFORD, MASSACHUSETTS
MAP #127C, LOT #134
BK.4155, PG.343

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REVISION 1 - 02/10/20

