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Acoustic Power and Sound Pressure Levels of Typical Noise Sources¹

ACOUSTIC POWER	DEGREE	PRESSURE LEVEL ²	SOURCE
32 GW	Deafening	225 dB	12" Cannon @ 12ft in front and below
25 to 40 MW		195 dB	Saturn Rocket
100 kW		170 dB	Turbojet Engine with Afterburner
10 kW		160 dB	Turbojet Engine, 7000lb. thrust
1 kW		150 dB	4-Propeller Airliner
100 W		140 dB	Artillery Fire
10 W		Threshold of Pain	130 dB
3 W	125 dB		Small Aircraft Engine
1.0 W	120 dB		Thunder
100 mW	110 dB		Close to Train
10 mW	Very Loud		100 dB
1 mW		90 dB	Symphony or a Band >90 dB regularly can cause ear damage
100 μW	Loud	80 dB	Police Whistle
10 μW		70 dB	Average Radio
1 μW	Moderate	60 dB	Normal Conversational Voice
100 nW		50 dB	Quiet Stream
10 nW	Faint	40 dB	Quiet Conversation
1 nW		30 dB	Very soft whisper
100 pW	Very Faint Threshold of Hearing	20 dB	Ticking of a Watch
10 pW		10 dB	
≤1 pW		0 dB	Absolute Silence

¹Space average sound pressure level at 10 meters = Pressure Level -28 dB

²Reference Level = 10⁻¹² watts = 1 pW = 10⁻⁵erg/s = 20 μPa = 0.00002 μbar = 0.00002 dyne/cm²

Conversion Table for Common Units of Sound Pressure

Units	Picowatts	erg/s	μPa	μbar	dyne/cm ²
1 picowatt	1	1 X 10 ⁻⁵	2 X 10 ¹	2 X 10 ⁻⁴	2 X 10 ⁻⁴
1 erg/s	1 X 10 ⁻⁷	1	2 X 10 ²	2 x 10 ⁻³	2 x 10 ⁻³
1 μPa	5 X 10 ⁻²	5 X 10 ⁻⁶	1	1 X 10 ⁻⁵	1 X 10 ⁻⁵
1 μbar	5 x 10 ³	5 X 10 ⁻²	1 X 10 ⁻⁵	1	1
1 dyne/cm ²	5 x 10 ³	5 X 10 ⁻²	1 X 10 ⁻⁵	1	1

Sound Perception

CHANGE IN SOUND LEVEL	PERCEPTION
3 dB	Barely perceptible
5 dB	Clearly Perceptible
10 dB	Twice as loud