

Sound Conversion Chart

$$\text{dBA} = 33.2 * \text{LOG}_{10}(\text{Sones}) + 28$$

| dB (SPL) | Source (with distance) |
|----------|---|
| 194 | Theoretical limit for a sound wave at 1 atmosphere environmental pressure; pressure waves with a greater intensity behave as shock waves. |
| 180 | Krakatoa volcano explosion at 1 mile in air [1] ↗ |
| 160 | M1 Garand being fired at 1 meter (3 ft) |
| 150 | Jet engine at 30 m (100 ft) |
| 140 | Low Caliber Rifle being fired at 1m (3 ft); the engine of a Formula One car at 1 meter (3 ft) |
| 130 | Threshold of pain; civil defense siren at 100 ft (30 m) |
| 120 | Train horn at 1 m (3 ft). Perforation of eardrums. |
| 110 | Football stadium during kickoff at 50 yard line; chainsaw at 1 m (3 ft) |
| 100 | Jackhammer at 2 m (7 ft); inside disco |
| 90 | Loud factory, heavy truck at 1 m (3 ft) |
| 80 | Vacuum cleaner at 1 m (3 ft), curbside of busy street, PLVI of City |
| 70 | Busy traffic at 5 m (16 ft) |
| 60 | Office or restaurant inside |
| 50 | Quiet restaurant inside |
| 40 | Residential area at night |
| 30 | Theatre, no talking |
| 20 | Whispering |
| 10 | Human breathing at 3 m (10 ft) |
| 0 | Threshold of human hearing (with healthy ears); sound of a mosquito flying 3 m (10 ft) away |

| Sones | dB | Sones | dB | Sones | dB | Sones | dB | Sones | dB | Sones | dB |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1.00 | 28.00 | 13.00 | 64.98 | 25.00 | 74.41 | 37.00 | 80.06 | 49.00 | 84.11 | 61.00 | 87.27 |
| 2.00 | 37.99 | 14.00 | 66.05 | 26.00 | 74.98 | 38.00 | 80.45 | 50.00 | 84.41 | 62.00 | 87.51 |
| 3.00 | 43.84 | 15.00 | 67.05 | 27.00 | 75.52 | 39.00 | 80.82 | 51.00 | 84.69 | 63.00 | 87.74 |
| 4.00 | 47.99 | 16.00 | 67.98 | 28.00 | 76.05 | 40.00 | 81.19 | 52.00 | 84.97 | 64.00 | 87.97 |
| 5.00 | 51.21 | 17.00 | 68.85 | 29.00 | 76.55 | 41.00 | 81.54 | 53.00 | 85.25 | 65.00 | 88.19 |
| 6.00 | 53.83 | 18.00 | 69.68 | 30.00 | 77.04 | 42.00 | 81.89 | 54.00 | 85.52 | 66.00 | 88.41 |
| 7.00 | 56.06 | 19.00 | 70.45 | 31.00 | 77.51 | 43.00 | 82.23 | 55.00 | 85.78 | 67.00 | 88.63 |
| 8.00 | 57.98 | 20.00 | 71.19 | 32.00 | 77.97 | 44.00 | 82.56 | 56.00 | 86.04 | 68.00 | 88.84 |
| 9.00 | 59.68 | 21.00 | 71.90 | 33.00 | 78.41 | 45.00 | 82.89 | 57.00 | 86.30 | 69.00 | 89.05 |
| 10.00 | 61.20 | 22.00 | 72.57 | 34.00 | 78.85 | 46.00 | 83.20 | 58.00 | 86.55 | 70.00 | 89.26 |
| 11.00 | 62.57 | 23.00 | 73.21 | 35.00 | 79.26 | 47.00 | 83.51 | 59.00 | 86.79 | 71.00 | 89.46 |
| 12.00 | 63.83 | 24.00 | 73.82 | 36.00 | 79.67 | 48.00 | 83.82 | 60.00 | 87.03 | 72.00 | 89.66 |