Environmental Noise	
Weakest sound heard	0dB
Whisper Quiet Library at 6'	30dB
Normal conversation at 3'	60-65dB
Telephone dial tone	80dB
City Traffic (inside car)	85dB
Train whistle at 500', Truck Traffic	90dB
Jackhammer at 50'	95dB
Subway train at 200'	95dB
Level at which sustained exposure may result in hearing loss	*90 - 95dB*
Hand Drill	98dB
Power mower at 3'	107dB
Snowmobile, Motorcycle	100dB
Power saw at 3'	110dB
Sandblasting, Loud Rock Concert	115dB
Pain begins	*125dB*
Pneumatic riveter at 4'	125dB
Even short term exposure can cause permanent damage - Loudest recommended exposure WITHhearing protection	*140dB*
Jet engine at 100'	140dB
12 Gauge Shotgun Blast	165dB
Death of hearing tissue	180dB
Loudest sound possible	194dB

Specification 1 – Lowest level of sound detected: Ideally we would want to be able to pick up a whisper as our lowest sound, but we have to at least be able to pick up sound from a normal conversation. Based on the chart above we chose spec values that we thought made sense. The volume level of a whisper is 30dB and normal conversation occurs at a level of 60dB. So our ideal lowest range of hearing would be 30dB while our marginal would be 60dB.

Specification 2 – Frequencies amplified: The frequency ranges that we would want to amplify would/could be different per user but the general range of frequencies that could be amplified would fall between approximately 60 – 8000 Hz. These are the values that fall on the audiogram that is used to determine where a person has hearing loss so we should be able to amplify these frequencies accordingly.

Specification 3 – Maximum amplification: A maximum amplification is needed to protect the user and not cause any damage to their ear. Referring to the same chart above it breaks down the dB levels and shows where hearing loss and pain occur. This helped us to determine that 90dB would be ideal with a tolerance of +-5dB. This should hopefully ensure that we do not cause harm to the user.