

Music/Sound Information about Doundrins Cocktail Garden

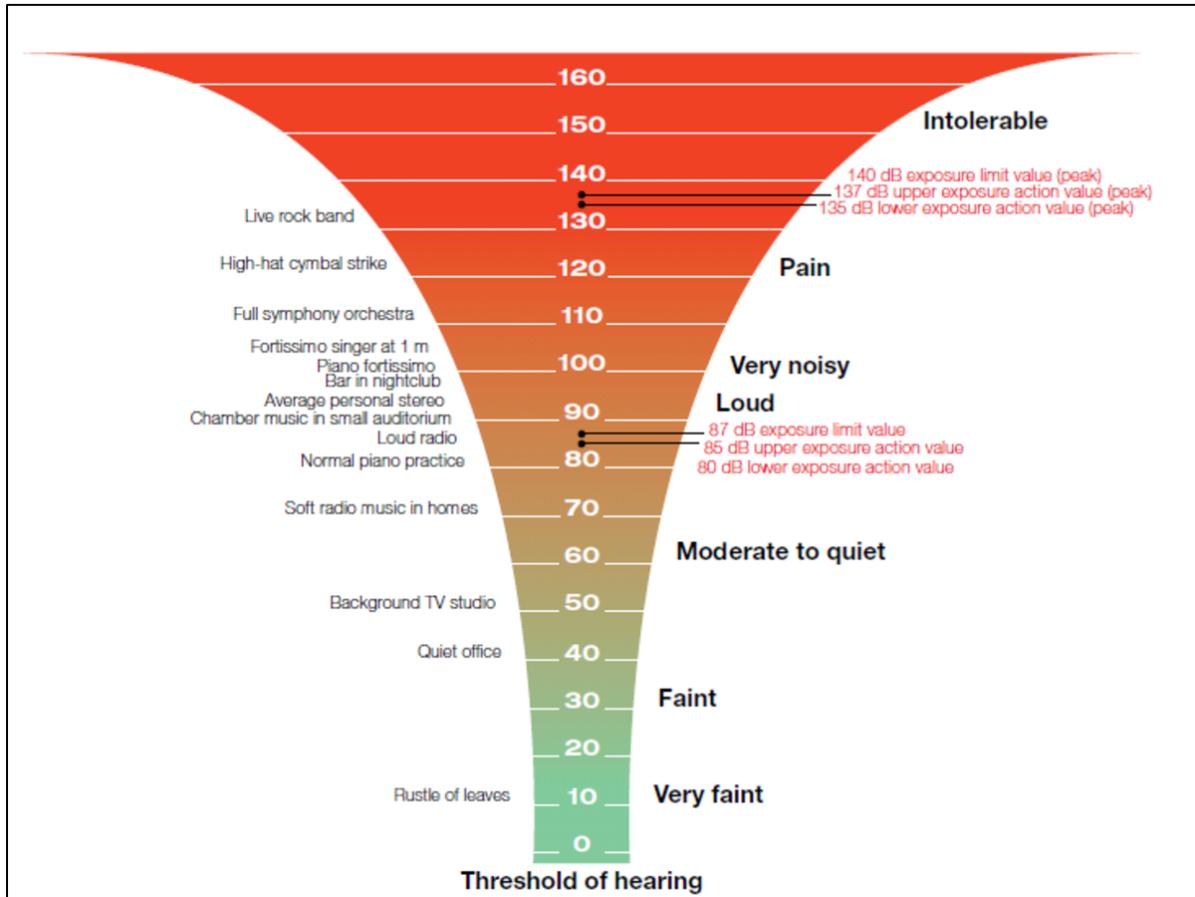
All,

We want to explain our intent and plans for the stage and live music to be held at the Doundrins Cocktail Garden. We want people to be able to enjoy live music in our facility but still be able to speak to and hear each other. The intent is for it to be more of a background than a center stage on a regular basis with a less frequent larger events. Our plans for music are such that the larger events would be reserved for weekends and holidays (ex: 4th of July) to minimize impact on working individuals. Weekends means Friday evening through Sunday afternoons. During weekdays music would be less frequent and intended to be more background, so played at a lower volume.

Below are graphics showing the decibel levels of sound that would be generated from the stage at the Doundrins Distilling outdoor cocktail garden. There are 4 charts. The first is one showing different decibel levels and what events or situations those correlate to. 2 are for Doundrins distilling cocktail garden, and 1 is meant to be a comparison to the fireman's festival. The numbers on this chart are representative of a worst case for volume of the music from the stage. They do not account for the directionality of the sound or any physical barriers between us and the people around us. All of these factors would greatly reduce the volume of the sound that could be heard at any one location. Since each house is slightly different, it does not make sense for us to do a study for each individual person.

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This first chart establishes a baseline of decibel ratings and associated events. Decibels are a logarithmic measurement of sound intensity. Every 10 decibels (dB) is a doubling of the perceptible volume. Most outdoor live rock band concerts are around 120-130 dB. This is what the Fireman's Festival would likely be at, although we reached out to the city and there are no specific regulations stating limits for that festival. Per the chart below, a typical bar in a nightclub would be around 100 dB. This would be the proposed sound level of our absolute loudest events, which would only be at that level on infrequent occasions. Further details about our plans are stated below. Note, this 20-30 dB rating difference between us and the Fireman's Festival means that the Fireman's Festival would be playing music at least 3 times as loud as our facility, even during the loudest Doundrins events.



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The next two images represent sound reduction over distance originating from the cocktail garden stage we are proposing. The first image represents the maximum volume we are proposing at our outdoor venue (100 dB). The second represents the minimum volume necessary for the music to be heard over normal conversation (85 dB). In actuality the volume on any given day produced by live music at our facility will be somewhere in the middle of these two levels. We would be targeting a volume throughout the cocktail garden between 65 and 70 decibels. Per the first chart, this is less than or equal to “soft radio music in homes.” This would put the typical volume at the closest houses between 45 to 52 decibels. This is between the volume of a quiet library and moderate rainfall per the first chart. At the maximum, those same houses would be experiencing around 60 decibels at the worst, which is still less than “soft radio music in homes”. According to the USDA the acceptable noise level in residential areas during the daytime is between 55 and 60db.

As stated above, these numbers do not account for any barriers to the sound or directionality which would further reduce perceptible sound at the closest home. Obstacles such as trees and buildings can have as much as a 5 to 10 decibel reduction in the sound level to the nearest houses. The average house walls also have a noise reduction of factor of about 50 decibels.

Music/Sound Information about Doudrins Cocktail Garden

Doudrins Distilling Maximum Stage Volume



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Doudrins Distilling Music Minimum Volume



To ensure musicians will adhere to the 100 dB limit as proposed, we have created a “BAND PERFORMANCE CONTRACT” that we have attached to your packet. The critical item related to sound is inserted verbatim below:

*9. **Sound Systems Check.** A sound check will be conducted by the Band. The Band will be required to remain under 100 decibels for their entire performance.*

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Sources/methodology:

The noise level at each distance in the charts was calculated by the inverse square law. Other sources include the USDA and Minnesota Sustainable Housing initiative.

The circles in the charts are at the distances of 10, 100, 200, 400, 800, 1000, 2000, and 3000 ft. Sound was assuming to initially be measured 10ft from the stage.

https://www.fs.usda.gov/nac/buffers/guidelines/6_aesthetics/4.html

<http://www.mnshi.umn.edu/kb/scale/soundtransmission.html>

https://www.engineeringtoolbox.com/inverse-square-law-d_890.html