

HEAD Noise Metrics

Description

With the HEAD Noise Metrics software tool, you can calculate various noise metrics. The currently version provides the noise metrics developed within the FVV project no. 841 (“Objectification of Subjective Judgments”), which allow the calculation of objective parameters for assessing frequently criticized noise patterns of combustion engines and their components. These parameters are based on extensive listening tests conducted within the FVV project, which provided subjective judgments of the noise patterns. In order to define the objective parameters, the sounds were analyzed in detail and the respective relevant acoustic parameters were determined. From the combination of these parameters, the objective parameters were then developed by means of regression analysis in a way as to match the results of the listening tests as closely as possible.

The objective parameters rate the noise patterns on a scale from 1 (“noise not acceptable”) to 10 (“no annoying noise detectable”).

The following noise examples can be evaluated with the HEAD Noise Metrics software tool (the acoustic quantities in brackets are those the calculation of the objective parameters is based on):

- Diesel clattering, idle (loudness, modulation depth)
- Diesel clattering, partial load, stationary (loudness, modulation depth)
- Diesel clattering, partial load, transient (loudness, modulation depth)
- Diesel clattering truck (loudness, hearing model pulse content, modulation depth)
- Diesel injector ticking, idle (loudness, kurtosis)
- Otto injector ticking, idle (kurtosis)
- Otto blaring, passenger vehicle (loudness, hearing model pulse content)
- Otto rattling, passenger vehicle (loudness, hearing model pulse content)
- Otto howling (loudness for rating, spec. prominence for detection)

During the installation of the HEAD Noise Metrics software tool, the sound examples used in the FVV project are copied to your computer (under “My Files\NoiseSamples”).

Requirements for using the software tool

Please install the HEAD Noise Metrics software tool on a computer that already has the ArtemiS analysis software from HEAD acoustics (version 11.00.100 or newer) installed. For calculating the objective parameters, the Noise Metrics tool starts the existing ArtemiS software and opens preconfigured project templates copied to your computer during the installation of the software tool.

These templates also contain analyses not included with the ArtemiS base version. In order to calculate all objective parameters, you also need the ArtemiS Tool Packs 02, 03, 06 and 07.

In order for the noise metrics to be calculated exactly as defined in the FVV project, the included project templates must not be modified.