



CASE STUDY

Measurement Day at HBK Virum with DTU Students

On a bright and sunny day, students from the Technical University of Denmark (DTU) embarked on an educational journey to HBK Virum. The objective was to gain hands-on experience in measuring industrial noise levels using our advanced sound level meters, the B&K 2245 and HBK 2255



BACKGROUND

For students studying environmental acoustics, it is crucial to bridge the gap between theoretical knowledge and practical application. When studying the theory of acoustics, it is crucial to understand sound propagation, noise control, and the impact to the environment and human health. In practice, measurements can be affected by real-world issues such as unexpected interruptions,

equipment malfunctions or environmental challenges. The goal is to improve the acoustics of public spaces while ensuring compliance with environmental regulations. To achieve this, both theoretical knowledge and practical application must be understood. This dual approach not only enhances the technical expertise of students but also prepares them to tackle contemporary challenges in sustainable development and urban planning as they enter the work force.

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HBK 2255



B&K 2245

CHALLENGE

The primary goals of the measurement day were:

- To familiarise students with the practical use of sound level meters
- To understand the principles of industrial noise measurement
- To analyse and interpret the data collected from various industrial sources to assess the likelihood of annoyance
- To identify real world problems and find solutions based on the measurements

Equipment used

Students used a combination of B&K 2245 and HBK 2255 sound level meters, as these advanced, single-channel, class 1 devices are designed for complex workloads.

Methodology

Preparation: Students were briefed on the day's activities and the functionalities of the sound level meters. They were divided into small groups, each selecting different industrial sources around the HBK Virum facility.

Measurement: Each group used the B&K 2245 or HBK 2255 sound level meters to measure noise levels at various points around the industrial sources.

Analysis: After the measurements, students reviewed the data and performed calculations according to the environmental noise standard ISO 1996.

RESULT

The data collected revealed variations in noise levels across different industrial sources. Key findings included:

- Capturing representative data: if an air handling unit is on the roof of a building, selecting the measurement location and isolating the signal from the background can be complex
- Environmental impacts: in addition to the noise from the specified devices under test, students had to contend with noise from a local kindergarten, birdsong, and road traffic

Each group presented their finding along with a review of what they would do differently next time.

CONCLUSION

The measurement day at HBK Virum was a resounding success, providing DTU students with invaluable practical experience. The use of B&K 2245 and HBK 2255 sound level meters not only enhanced their understanding of industrial noise measurement but also equipped them with the skills to analyse and interpret complex data. This hands-on experience is crucial for their future careers in environmental and industrial acoustics.

Following the measurement day, several students completed additional measurements, and this data will be used as part of a study and presentation at Internoise 2024 in Nantes France.

Would you like to know more about the specific features of the sound level meters used?

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