Important features of the IAC Acoustics 120a Series Standard Cabins

Noise Reduction

Airborne Noise Reduction

A common measure for characterizing the transmission of airborne sound from the outside to the inside of the cabins is the sound level difference D, which is defined as follows:

D = L1 - L2

L1: averaged sound pressure level over time and space in the transmitter room

L2 : averaged sound pressure level over time and space in the receiving room

The American standard ANSI / ASTM E-336-77 states that the sound level difference D is referred to as "Noise Reduction". The term "Noise Reduction" in all our brochures is the same. This designation was chosen to distinguish sound level differences from practical measurements at the installation site (D) from measurements in the laboratory.

Each location has different environmental conditions:

Hard or soft (stone) walls, floors and ceilings, hard window surfaces, rooms with or without suspended acoustic ceilings, geometrically different room conditions, a positioning of the cabin in a room corner or as an approximate room-filling version, etc., etc. The determination of airborne noise reduction is therefore of great importance. This is the only way to ensure comparability of products. See also Table 1.

Structure-borne noise reduction / impact sound insulation

Just like the airborne noise reduction, the achievable structure-borne noise reduction / impact sound insulation depends on the low-vibration / decoupled installation and the local conditions (location).

Table 1

Frequency (F) in Hz	63	125	250	500	1.000	2.000	4.000
TU München Model 120a-2 (1202-A)	34 dB	47 dB	67 dB	79 dB	87 dB	≥91 dB	≥89 dB
TU München Model 120a-3 (1203-A)	44 dB	55 dB	60 dB	76 dB	85 dB	≥91 dB	≥89 dB
Ruhr-Universität Bochum Model 120 (1202) spez. RF	30 dB	42 dB	58 dB	65 dB	63 dB	77 dB	83 dB

all values with ± 3 dB instrument accuracy
Measurement was carried out by an officially designated testing laboratory for sound measurements, e.g. DIN EN ISO 1404.

All measurements were carried out on the basis and in the essential points in accordance with the following international and national standards: ISO R / 140, ANSI / ASTM E336 77, DIN 52210, Part 1.
The noise reduction was determined for a fully assembled cabin according to the so-called reverberation chamber test method, in accordance with NORM ANSI / ASTM E 33677 "Standard Test Method for Measurement of Airborne Sound Insulation in Buildings".

Noise Reduction

The noise reduction of the fully assembled rooms of the 120a series was tested in a recognised and independent laboratory with the following results (see Table 1).

Noise reduction is defined here as the difference between the sound pressure level in a reverberation chamber outside and inside the cabin. The measurements above are in accordance with the ASTM designations: E90-70 Standard Recommendation for Laboratory Measurements of Airborne Sound Transmission in partition walls; and where applicable E-336-71 Standard Recommendation for Measurement of Airborne Noise Insulation in Buildings.

Test data

The requirements for the recognised and independent acoustics laboratory were as follows:

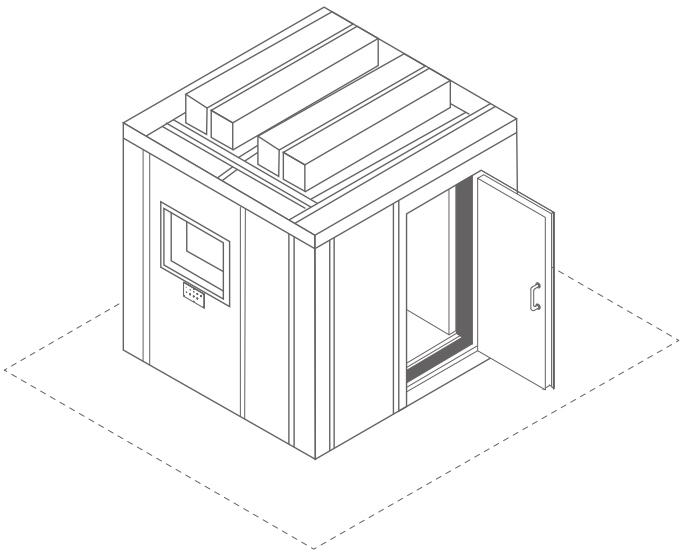
- The **test panels** for noise reduction and sound absorption measurements shall be of the same construction.
- Door construction must be known.
- Report on the **sound transmission class of the door** with at least STC-51. Test results must have been determined in accordance with the guidelines of ASTM E90-66.

Silenced Circulating Air System

All our standard cabins are equipped with a silenced ventilation air system integrated into the panel. This way it is ensured that the test person does not inhale air of lesser quality than the person(s) in the room surrounding the cabin. For this purpose, the circulating air system must be put into operation or maintained sufficiently long before the cabin is used. IAC cabins with a circulating air system should be installed in adequately ventilated rooms.

Electromagnetic or RF Shielding

Optionally, our cabins can be equipped with electromagnetic shielding. We will be pleased to provide you with follow-up measurements of the effectiveness of such shielding measures on request. All follow-up measurements are carried out by competent bodies, such as e.g. TU-München, on the basis of currently applicable standards, norms and regulations.



IAC GMBH
Sohlweg 17
41372 Niederkrüchten

T: +49 2163 9991-0
F: +49 2163 9991-23
E: deutschland@iac-gmbh.de