

autoneum

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Autoneum Measurement Systems

# Alpha Cabin – Isokell (Combined System)



Autoneum. Mastering sound and heat.

# Alpha Cabin – Isokell Combined System

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In addition to the standard systems Alpha Cabin and Isokell, Autoneum can offer an intermediate solution in which the Alpha Cabin and the Isokell are combined in one system.

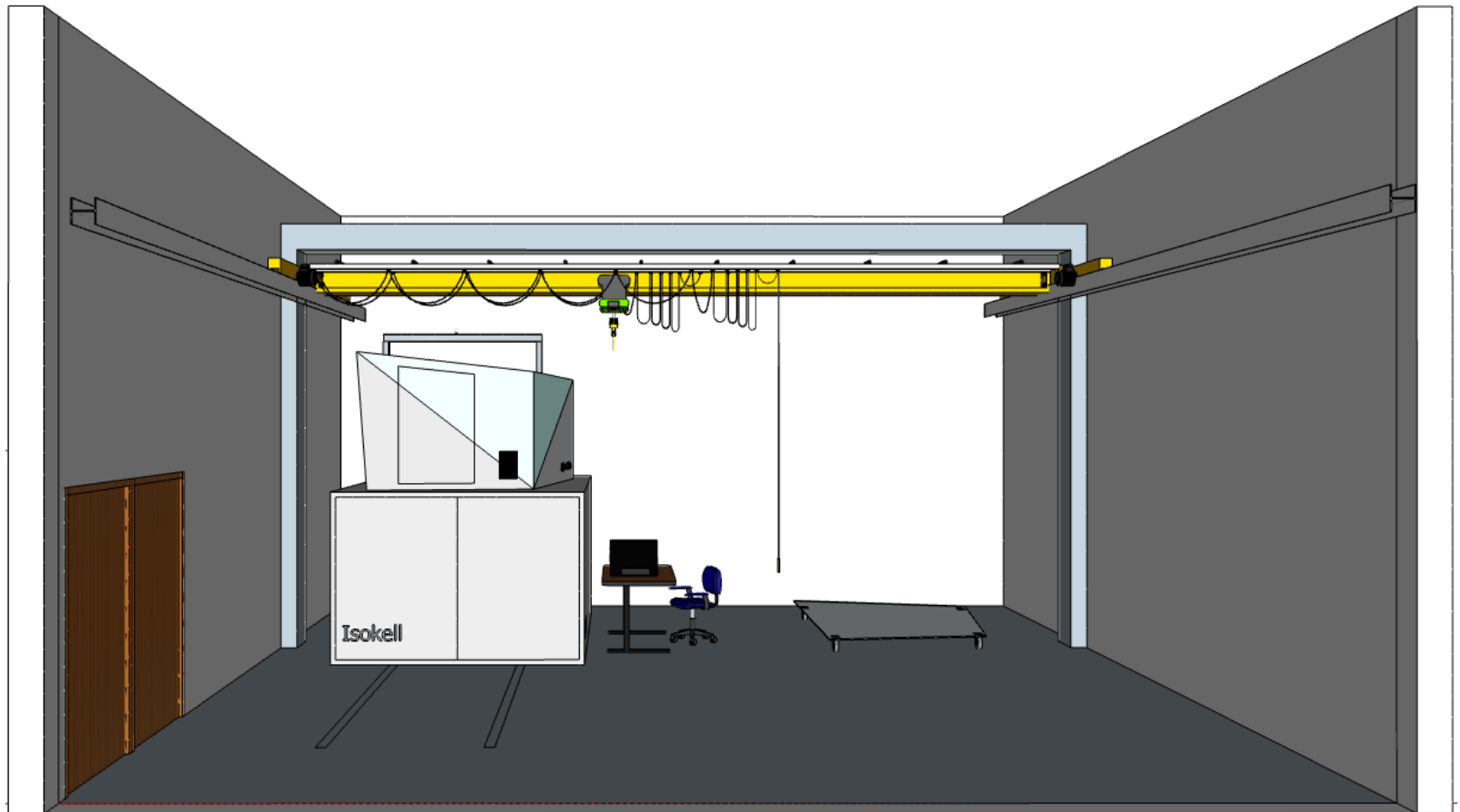
Such configuration has the advantage to have one system that can measure both Absorption and Insulation, however it presents some constrains.



# Alpha Cabin – Isokell

## Cabin Moving Operation

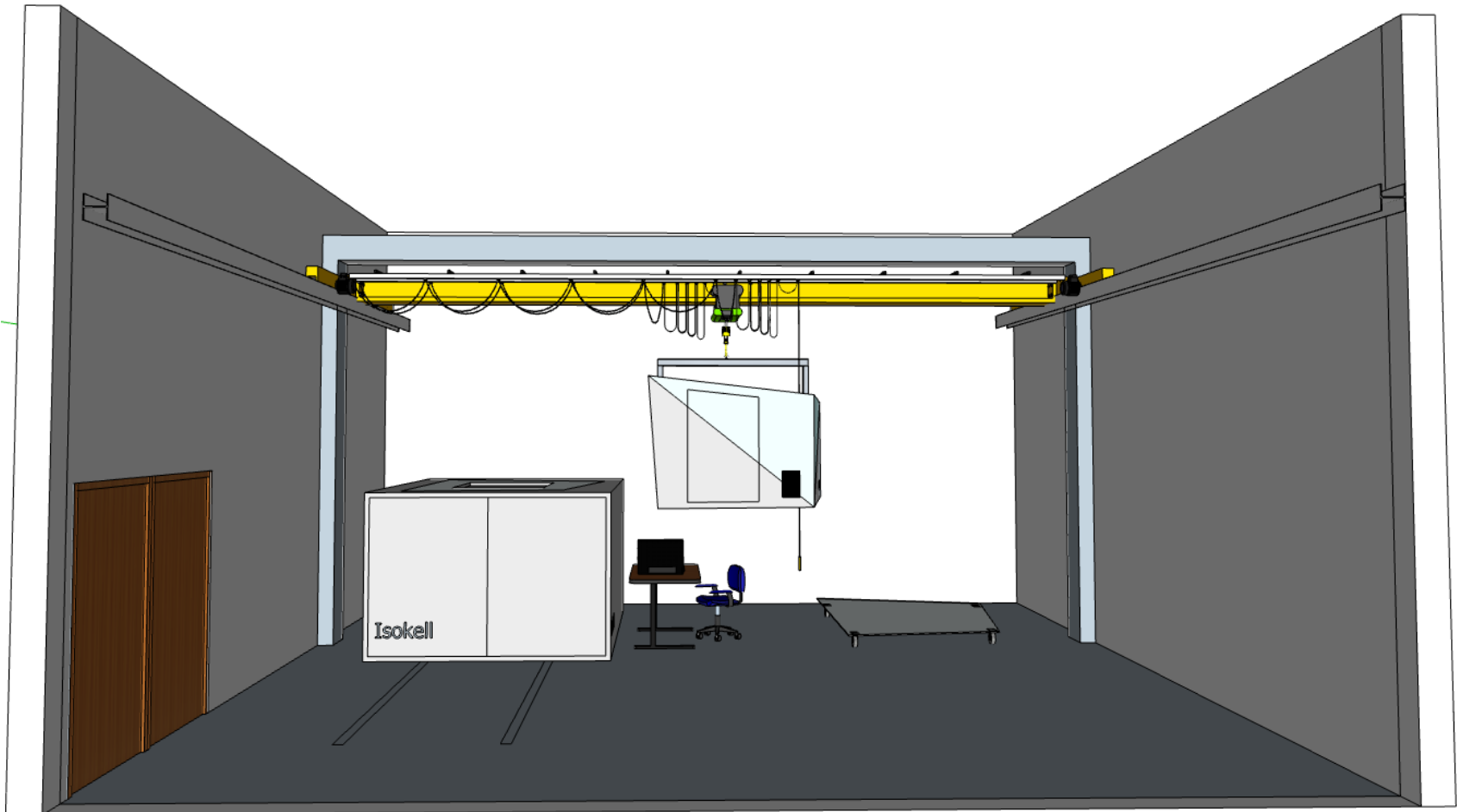
The reception chamber (Alpha Cabin) must be moved every time it is required to perform measurements different from the configuration in which has been set it up.



# Alpha Cabin – Isokell

## Cabin Moving Operation

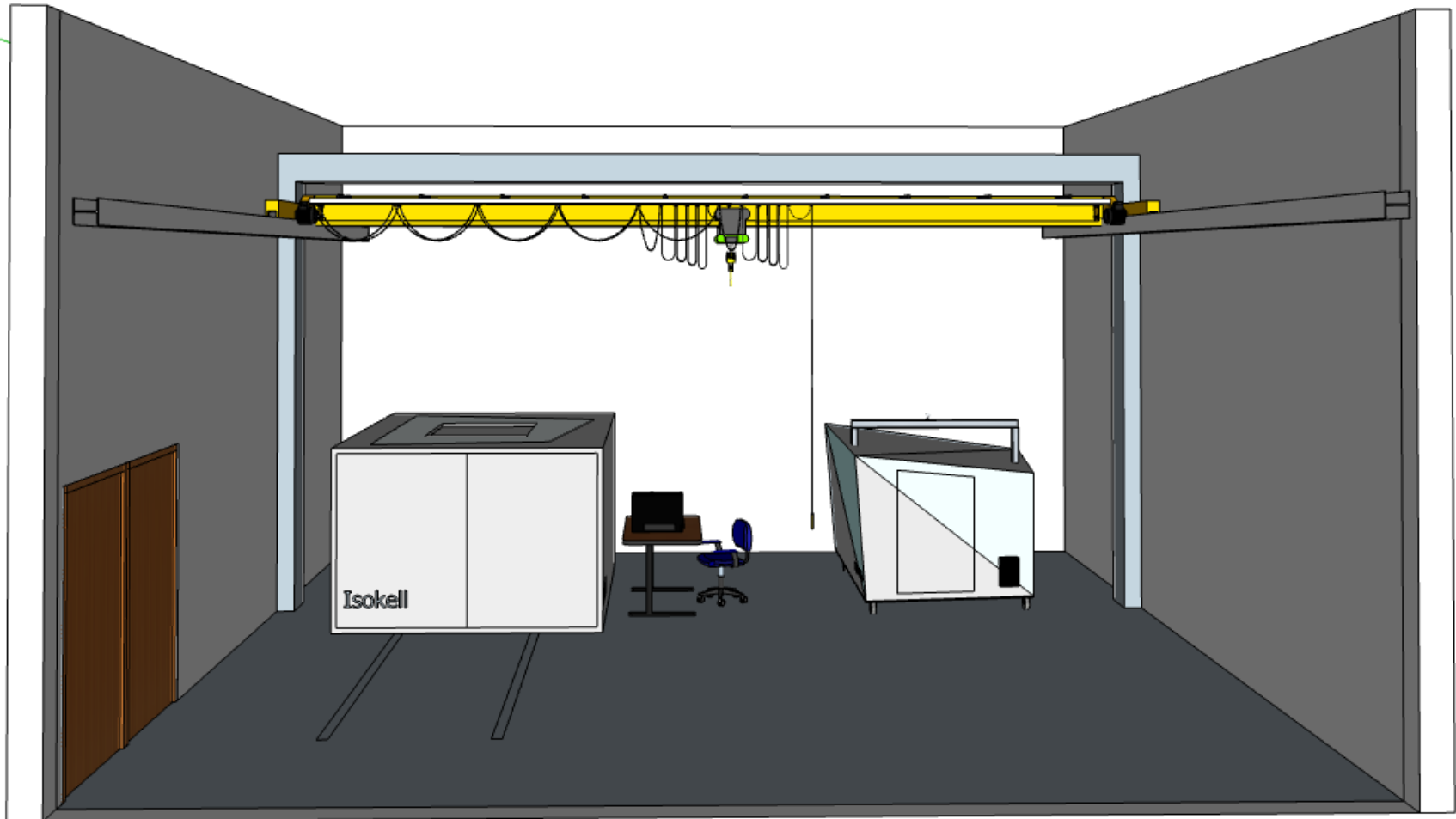
An overhead crane (1.5t) must be installed in the room in order to allow the moving of the reception chamber from the Isokell housing to the Alpha Cabin floor and vice-versa.



# Alpha Cabin – Isokell

## Cabin Moving Operation

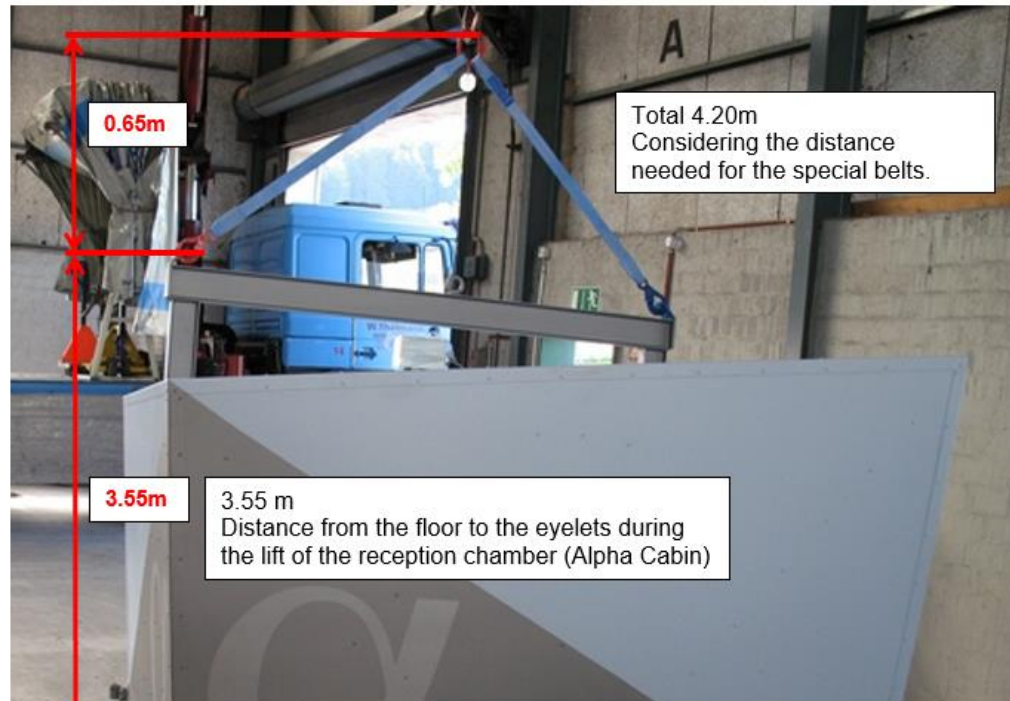
The cable connections between the electronics and the chamber must be unplugged during the moving.



## Alpha Cabin – Isokell

# Cabin Moving Operation – Room requirements

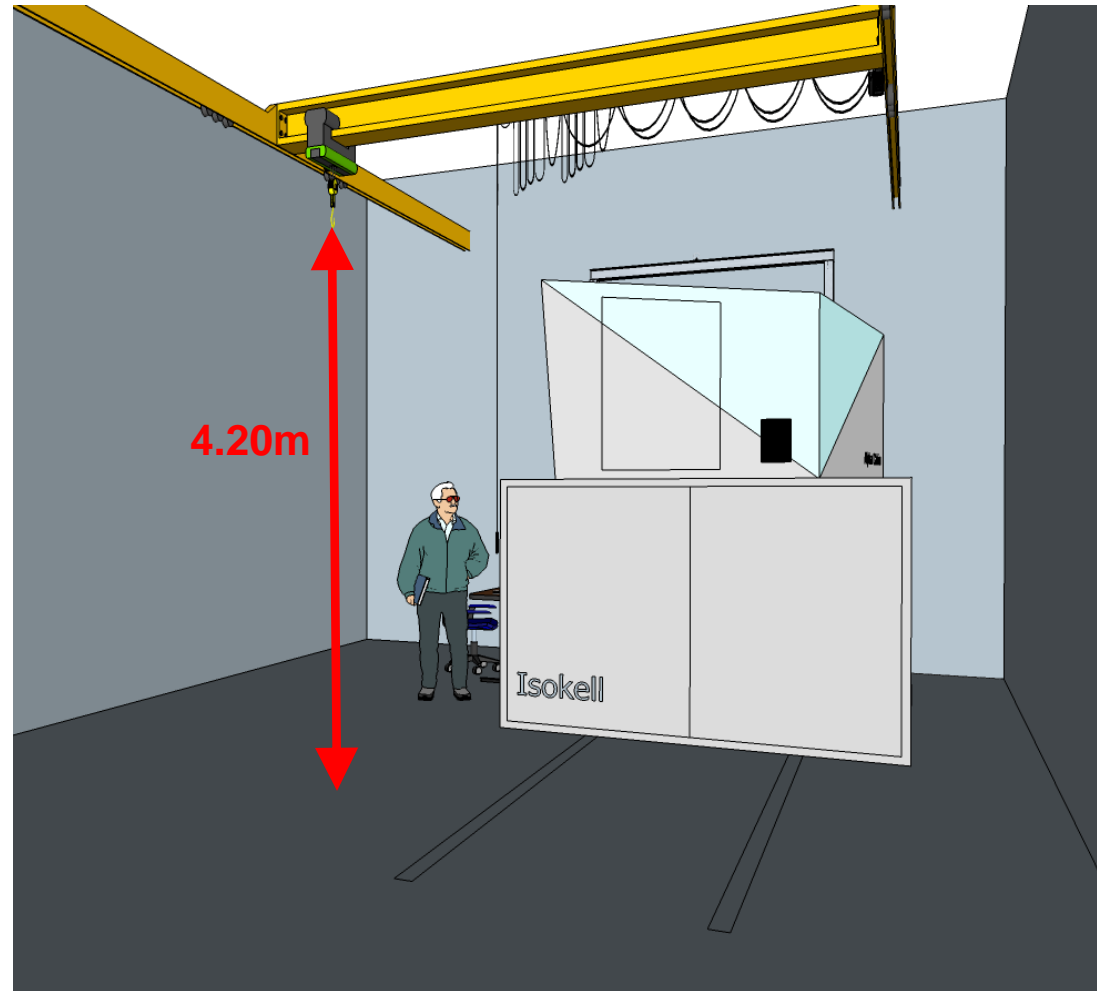
The Isokell is 3.40m height and during the moving of the Alpha Cabin the chamber must be lifted 10-15 cm over the edge of the Isokell lower chamber. The edge is about 15cm, and the height of the Alpha Cabin during the lift is then  $3.4\text{m} + 0.65\text{m} + 0.15\text{m} = 4.20\text{m}$ .



## Alpha Cabin – Isokell

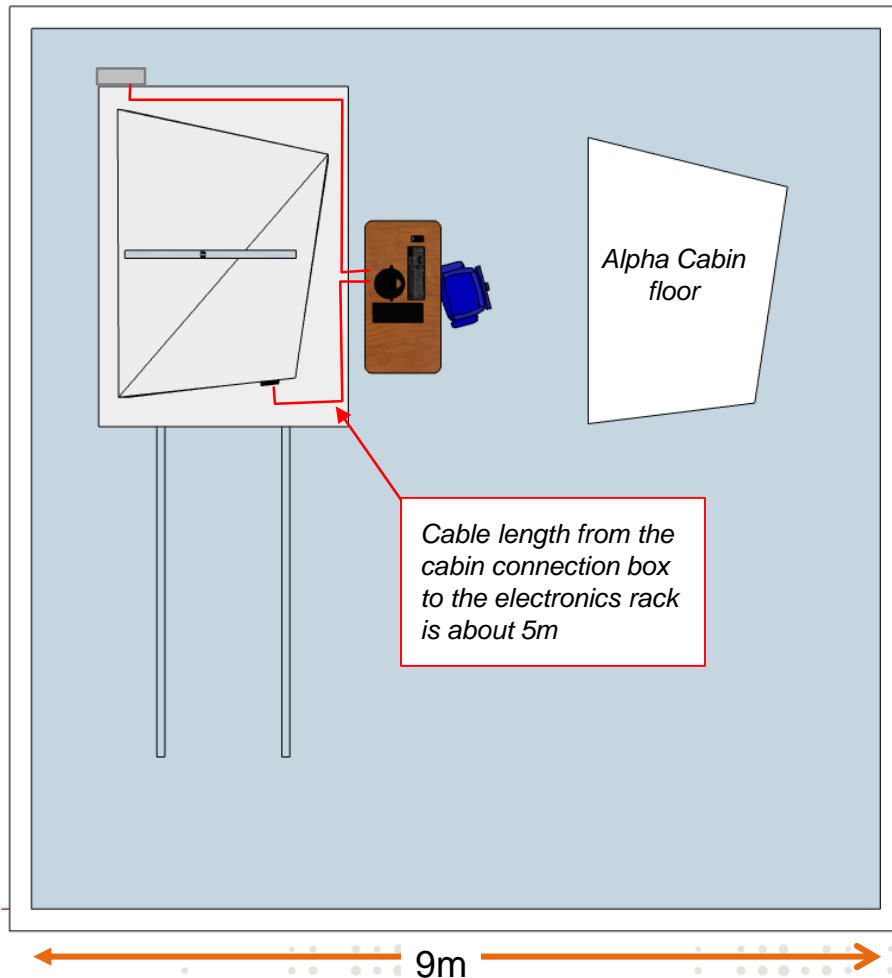
# Cabin Moving Operation – Room requirements

Therefore, the distance from the floor to the crane hook in the upper position should be minimum 4.20m.



# Alpha Cabin – Isokell

## Room requirements



A minimum room size is about 12 x 9 meters gives a comfortable workspace. However other solutions are possible.



## Alpha Cabin – Isokell

# Room requirements for Absorption measurements

Acoustic absorption measurements must be performed at normal room temperatures in an atmosphere of

- at least **50% relative humidity**.
- a temperature between **20 and 28 degrees Celsius**.

This high relative humidity is most conveniently maintained if the Alpha Cabin is installed in a room that is not too big.



# Alpha Cabin – Isokell

## Room requirements

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	Alpha Cabin	Isokell
<b>Acoustic Environment</b>	A normal laboratory environment is normally sufficient [40-50dB(A)].	Maximum back ground noise level maximum 75dB(A) [over all].
<b>Floor Surface</b>	A horizontal floor is necessary, otherwise, normally no special measures are necessary.	Floor surface must be even, smooth and in level. A tolerance of maximum +/- 5 mm over the surface.
<b>Atmospheric Environment</b>	<ul style="list-style-type: none"> <li>- at least 50% relative humidity</li> <li>- between 20 and 28 degrees Celsius</li> </ul>	No special requirements.
<b>Other requirements</b>		Supply of compressed air (min. pressure 4.5 bar), with an appropriate pressure gauge for control purposes, is required.

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## PROs

- ✓ 2 systems in 1 (cheaper solution)
- ✓ Shared electronics and PC

## CONs

- ✗ The reception chamber must be moved frequently
- ✗ Electronics can be damage during the moving of the chamber
- ✗ The cable connections between the electronics and the chamber must di unplugged during the moving
- ✗ Only one type of measurement is possible at the time
- ✗ Difficulties to keep the required environmental conditions in a large room