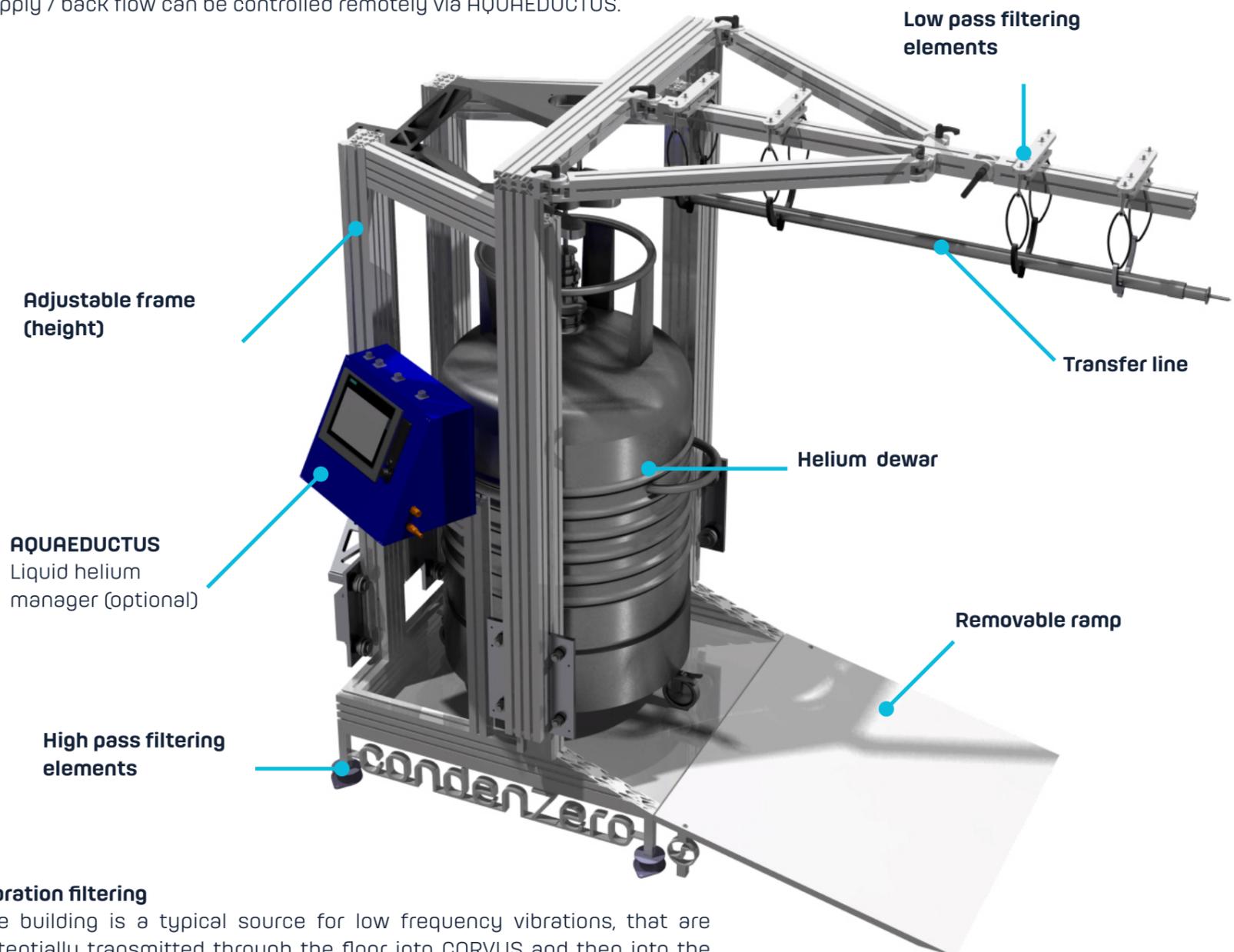


CORVUS

CORVUS is a crucial tool to make our cryo sample holders fully operational. Liquid helium supply is provided by a 100 litres helium dewar and is being transported through the transfer line into the sample holder. Cryo-TEM often requires atomic resolution and thus, all external disturbances have to be suppressed.

Vibrations that originate from the building floor, boiling of liquid helium and helium transfer are effectively damped with CORVUS. The transfer line can be removed vertically through an adjustable frame and liquid helium supply / back flow can be controlled remotely via AQUAEDUCTUS.



Vibration filtering

The building is a typical source for low frequency vibrations, that are potentially transmitted through the floor into CORVUS and then into the TEM via the transfer line. To suppress these frequencies, we use high pass filtering elements between floor and stage.

Transfer of helium and its boiling process are usually causes for higher frequency disturbances. By suspending the transfer line with variable low pass filtering elements, we can effectively counteract higher frequencies.

AQUAEDUCTUS

Supply and back flow of helium can be remotely managed (optionally) by AQUAEDUCTUS, condenZero's helium management system. We measure helium pressure in the dewar, control the needle valve for the flow of liquid helium and systematically control the back flowing helium gas to protect helium recovery lines or redirect it to roughing pumps.

For more information on AQUAEDUCTUS, please contact us.

Helium dewar

To stabilise the cryogenic state of a specimen for extended time periods, we typically use helium dewars with 100 litres capacity. We recommend a STRATOS 100SL from Cryotherm. If different models are being used, please consult with us for the perfect configuration of CORVUS.

Specifications

| | |
|----------------------|--------------------|
| High pass | 14dB @ 11 Hz |
| Low pass | Adjustable |
| Height transfer line | H = 1.7m (minimum) |
| Total height | H + 0.3m |
| Maximal total height | H + 1.4m |
| Total width | 1.3m |
| Transfer line length | 1.6m (up to 3.5m) |