

## **Performance & evaluation criteria for calibration workshops & ACTRIS compatibility**

ACTRIS aerosol in-situ variable: Particle number size distribution > 2 nm

Responsible CAIS-ECAC units: CCC

Instrument type: Particle Size Magnifier (PSM)

Manufacturers & instrument models: Airmodus

Technical checks & calibration:

ACTRIS compatible Particle Size Magnifier

PSM calibration

During calibration, the relationship between the saturator flow rate, particle diameter, and detection efficiency is determined. This information is encoded in the calibration file that is provided to the user.

Determination of the PSM status (several temperature and pressure values)

Inlet flow rate check

Background concentration with zero particle air

Criteria for evaluation:

< 3nm and ~3 nm and larger (<20nm):

sizing accuracy target value:  $\pm 20\%$

number concentration target value:  $\pm 50\%$

Information for the user: These criteria might change once more instruments have been tested.

Literature:

Lehtipalo, K., et al. (2022). "The standards operating procedure for Airmodus Particle Size Magnifier and nano-Condensation Nucleus Counter." J. Aerosol Sci., 159, 105896.