

# ACTRIS statement on the list of compliant instruments

Updated: 10.12.2024

ACTRIS provides high-quality data on short-lived components of the atmosphere. The data quality assurance / quality control procedures of these components are provided by the respective Topical Centres (TCs) and the Data Centre (DC). This includes standard operation procedures and guidelines for measurements, instrument calibrations, and data processing. The TCs are the hubs of technical expertise in their field and are responsible for defining the quality criteria to be required for the measurements. The quality criteria are, whenever feasible, based on existing standards and/or on scientific literature. The quality criteria are or will be publicly available at the respective TC website for the needs of data providers, data users and instrument manufacturers. Besides that, also calibration procedures, target uncertainties, and evaluation criteria to conclude the calibration results are to be well documented and available at the respective TC.

As the ACTRIS requirements for each instrument type are openly available, the manufacturers can check whether their instruments are ACTRIS compliant. Furthermore, the manufacturers are encouraged to demonstrate the compliance of their instruments by sending the instrument to the respective TC for an instrument performance workshop. The cost of this ACTRIS service is to be paid by the manufacturer, unless otherwise agreed. Each TC shall keep, if applicable, a list of instruments (manufacturer and model) that have been demonstrated to be compliant with the ACTRIS requirements. This list of compliant instruments is provided upon request by the TC. No information on instruments that did not pass the performance criteria or have not been tested is to be included on the list of compliant instruments. As ACTRIS is not a certification organization, no specific certificate beyond the normal intercomparison or test report is sent to the manufacturer. ACTRIS provides a standard statement for manufacturers to use for instruments that have been tested to be ACTRIS-compliant (Annex 1).

It is to be noted that this approach is applicable only if the entire instrument is available on the market. The list of ACTRIS-compliant instruments cannot be provided for fully or partially homemade instruments due to their large individual differences (However, they must be still tested for compliance at the TC). A list of instrument types, for which a list is provided is annexed to this document. It is also to be noted that operating an ACTRIS-compliant instrument is not enough to produce ACTRIS quality data, as the operating conditions and procedures and data processing affect the quality of the data produced. These, as well as individual instrument performance, are regularly monitored by the TCs for instruments at ACTRIS National Facilities. If a list of ACTRIS-compliant instruments (for a certain variable) is available, it should be used as guidance when purchasing instruments at an ACTRIS National Facility. Instruments which are not on this list but meet the ACTRIS requirements on paper can also be considered. The performance

of such instruments must be still validated at the TC as part of normal ACTRIS operation. The standard statement for manufacturers to use with their instruments for stating compliance with ACTRIS measurements is provided in Annex 1, and the list of instrument types for which the lists of compliant instruments are available is provided in Annex 2 of this document.

# Annex 1

Standard statement for manufacturers to state in their material the tested compliance with ACTRIS requirements:

“The model **[instrument model]** by **[instrument manufacturer]** has been tested by ACTRIS to meet the ACTRIS requirements for measuring **[parameters from the test report]**”

The manufacturers are allowed to use the standard ACTRIS logo (black, white, or coloured) linked to the instruments, stating compliance. The manufacturers, however, are not entitled to modify the logo or use it in other contexts.



# Annex 2

List of instrument types for which ACTRIS provides a whitelist (updated 12/2024)

## **Aerosol in situ measurements:**

List of compliant instruments available:

Instruments for all ACTRIS aerosol in situ variables

## **Aerosol remote sensing:**

List of compliant instruments available:

Photometers

List of compliant instruments in development:

Ceilometers

List of compliant instruments not available:

Lidars

## **Cloud in situ measurements:**

List of compliant instruments not available:

All ACTRIS cloud in situ variables

## **Cloud remote sensing:**

List of compliant instruments available:

All ACTRIS cloud remote sensing instruments

## **Reactive trace gases in situ measurements:**

List of compliant instruments not available:

All instruments for all ACTRIS reactive trace gases in situ measurements

## **Reactive trace gases remote sensing:**

List of compliant instruments not available:

All ACTRIS reactive trace gases remote sensing instruments