

IN101T | AirPhoton Basic Integrating Turbo Nephelometer



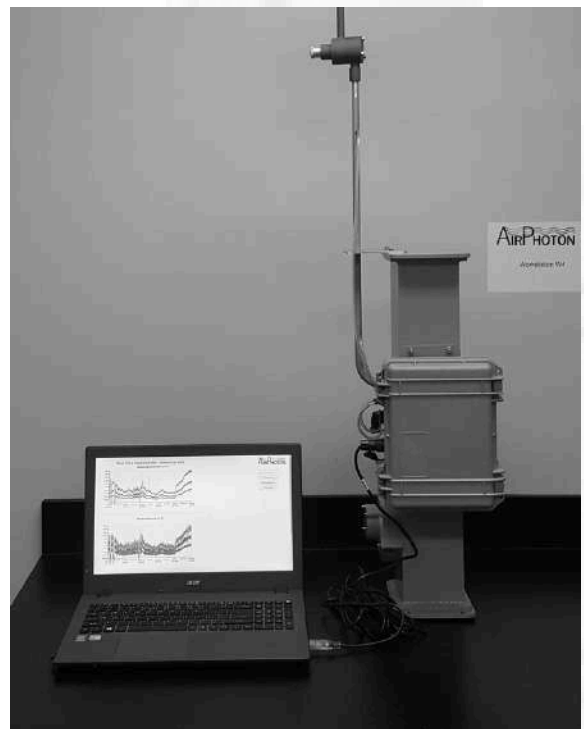
AirPhoton Nephelometers provide real-time measurements of aerosol optical properties. We achieve a high degree of sensitivity due to a large angular range and design features which minimize stray light. We produce several different models of nephelometers. Our more advanced models allow for data collection at multiple size cuts.

All of them are weather hardened for field deployment and can operate over a large range of heat and humidity. They are deployed globally by both the SPARTAN network and NASA's MAIA mission.

The different models are described in the following pages. All models can be used with our communications module allowing for internet or cell network control and monitoring of the instrument.

Also note that our philosophy is to collect and measure particles under ambient conditions. We can, at additional cost and upon request, provide a nafion tube system to dry the aerosols.

When combined with the GRASP retrieval algorithm, our nephelometers provide a wealth of information beyond what is possible with a standard nephelometer - e.g. retrieving aerosol size distribution, concentration or refractive index -.



Our basic nephelometer designed for robust operation under a wide range of conditions. While its rugged design allows for field deployment, it is also a highly sensitive instrument which can be used in the laboratory or modified for use in aircraft. In this regard, the IN101T is highly versatile and can work in different environments and for different purposes.



Capabilities

- Forward and Back Scatter measurements
- Three wavelengths
- High Speed fan

Suggested use

Measurements of all particle sizes at normal ambient conditions as well as for situations where higher pressure intake is required – i.e. high altitudes, clean condition or long inlet tubes.

Specifications

- Dimensions: 9" x 10" x 24" / 22.9 x 25.4 x 61.0 cm
- Mass: 6.7 kg
- Operating temperature: -30 to +45°C
- Wavelengths: 450, 532, and 632 nm
- Angular range: 7° to 90° ; 90° to 170°
- Full scattering = forward + back scattering
- Standard range: 0.0-3,000Mm⁻¹
- Extended range: 20,000Mm⁻¹ (upon request)
- Lower detectable limit:
 $< 0.15 \text{ Mm}^{-1}$ (60 sec AVG)
 $< 0.06 \text{ Mm}^{-1}$ for Backscattering (60 sec AVG)
- Time resolution: 15 sec standard – 1 sec minimum
- Sensitivity: $< 0.1 \text{ Mm}^{-1}$
- Clean air reference option provides automatic zero for span calibration
- Data Interfaces: 4GB SD card (possible up to 32GB), RS 485, and USB