



Innovative Technology for Earth and Space



The AirPhoton
IMAP 100
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IMAP 100

Integrating Multi-Angle Polarization Polarimeter With GRASP Data Retrieval

The IMAP measures scattering by particles as a function of scattering angle, wavelength, linear polarization in up to 4 distinct size bins.



Using the GRASP retrieval algorithm, the IMAP 100 can provide:

- A complete size distribution
- Particle mass using a derived particle density
- The real refractive index of the particles for each size distribution
- Sphericity factor
- Full phase function



Video of IMAP
and GRASP Retrieval



IMAP Webpage

IMAP Specifications



Angular ranges measured: 8

View angles centered at 5°, 10.5°, 32°, 64°, 95°, 116.5°, 142° and 170°

Instantaneous field of view ~2°

Wavelengths: 3

470 nm, 529 nm and 621 nm

Polarization orientations: 2

Parallel and perpendicular to the scattering plane

Size measurements:

4 size bins ranging from PM1 to PM10

GRASP Data Retrieval



The GRASP algorithm is a powerful tool that allows us to maximize the information content of the instrument measurements. GRASP has been applied to ESA and NASA satellite data as well as combinations of ground and satellite instruments.

IMAP Data Sheet

Instrument size: 25 cm x 44 cm x 30cm

Inlet height: 117 cm

Flow rate: 1.5 to 12 liters per minute

Data: Saved to an SD card. Real time data access via USB, RS485, RS232

Remote Access via Wifi or Cell Network: AirPhoton Com 100 module (not included)

Calibration: Operational daily provided by clean air reference

Gas calibration: CO₂ and clean air every 3 – 6 months depending on operating conditions

Power: Mains AC power. 120- or 240-Volt systems (50 and 60Hz). 60 W maximum load. A 5-Amp circuit breaker is included that also acts as the on-off switch.