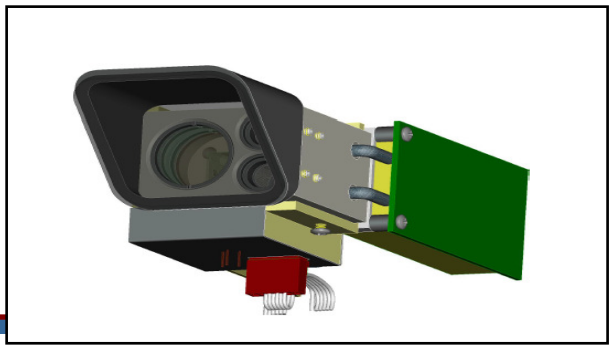
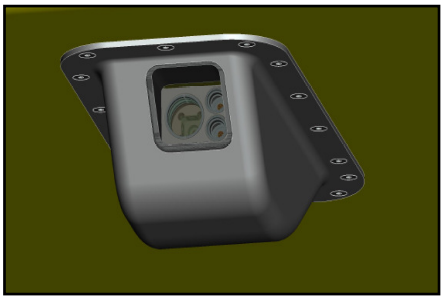
AIMS

Airborne Icing Measurement System



Features

- *In-Situ measurement of cloud properties (liquid water content, particle size, and density)*
- *Provides in-flight warning of atmospheric hazards such as potential icing and volcanic ash*
- *Deployable on aircraft, UAVs, balloons*
- *Compact and rugged design*
- *MATLAB based data analysis tool*



Dragon-Eye UAV

Overview

AIMS is a small optical based sensor that measures the liquid water content, drop size, density and phase of clouds. The innovation is a new capability for measuring cloud properties in-flight.

Low power infrared lasers illuminate the interior of the cloud and the resulting backscattered signal is analyzed in real-time to determine cloud properties. Using serial communications, the cloud property data is saved to an on-board data logger and can be transmitted to a ground station via RF link.

The compact and rugged design can withstand the aircraft flight environment making it ideal for small aircraft, UAVs or weather balloons. This sensor provides the atmospheric science community with real-time data about the characteristics of clouds. It provides essential information to forecasters previously not available from ground based or satellite systems.

In addition to enhanced weather forecasting, this data can be provided to the aircraft industry for the purpose of icing and volcanic ash avoidance. There currently exists a significant need for this type of data, but no effective or low-cost means to provide it. AIMS fills this void.

Applications

- General Aviation Safety
- Aircraft/UAV Icing and Ash Avoidance
- Enhanced Weather Forecasting
- Meteorological Research

Output

- Mean Droplet Size
- Liquid Water Content
- Mean Droplet Density
- Ice Content
- Volcanic Ash Content

Specifications

Dimension.....2” x 4” x 8”
Weight.....2 lbs
Power input.....12 VDC
Max Power.....5 Watts
Temperature.....-60°F to 150°F
Sensitivity.....5 – 50 micron
1 – 1000 parts/cm3
0 – 100% ice content
Communication.....RS232, Ethernet
Safety.....Eye Safe Class 1 Laser
Diagnostics.....Start up BIT

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