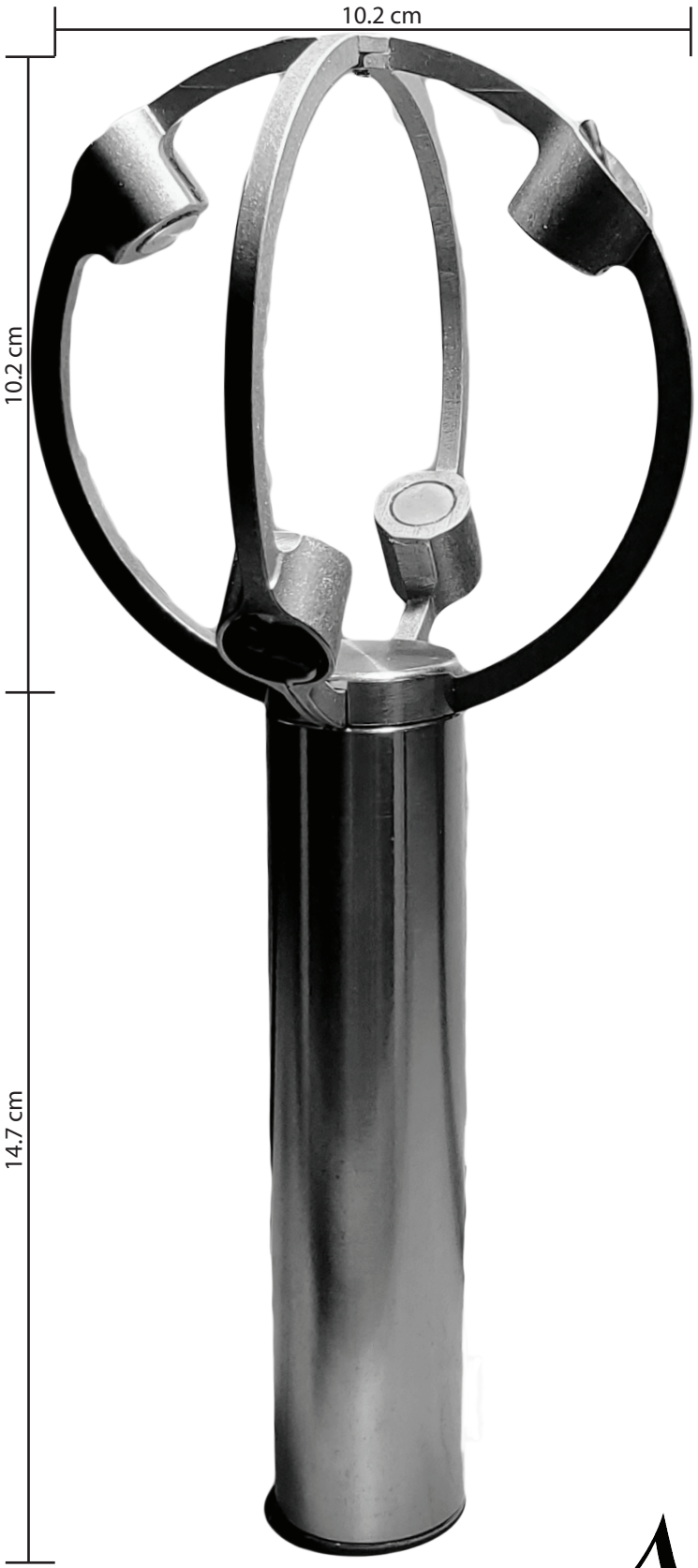
The 3D Sonic Ideal for UAS-based Flux Research



Lightweight
Weight: 225 grams

Compact
Size: 10.2 cm x 10.2 cm x 24.9 cm

Efficient
Power: 5-36 V @ 500 mW

TriSonica™ Sphere
Wind Flux Sensor

Specifically engineered to deliver more precise vertical wind measurements coupled with fast sampling rates (up to 50 Hz), the TriSonica Sphere is ideal for UAS-based atmospheric flux and turbulence research, including Eddy Covariance studies.

The TriSonica Sphere's unique spherical design (patent-pending) dramatically reduces shadow correction while increasing the accuracy of vertical wind measurements. Its all aluminum construction enhances the devices' durability while maintaining its SWaP (Size, Weight and Power) advantage over competitive sensors. This makes the TriSonica Sphere ideal for UAS/UAV deployments.

The TriSonica Sphere is a compact (measurement path of just 60 mm), lightweight (225 grams), low velocity anemometer. The TriSonica Sphere effectively and accurately provides measurements of all three dimensions (U, V and W) of air flow. Its unique design and open path geometry provides the least possible distortion of the wind field, especially vertical turbulences. With data output rates as high as 50Hz, the TriSonica Sphere is the fastest, compact 3D sonic anemometer specifically designed to capture atmospheric turbulence and flux measurements.

Anemoment
know the wind

Size, Weight and Power (SWaP) Optimized

TriSonica™ Sphere Wind Flux Sensor

WEIGHT
225 grams

SIZE
10.2 cm x 10.2 cm x 24.9 cm

POWER
5-36V @ 500mW

DIGITAL OUTPUT
RS-232, RS-422, UART-3V

DATA OUTPUT RATE
1Hz, 2Hz, 5Hz, 10Hz, 20Hz, 25Hz, 50Hz

OPERATING FREQUENCY
60 kHz

WIND DIRECTION
Range (u/v): 0-359°
Range (w): ±60°
Resolution: 1.0°
Accuracy: ±1.0°

WIND SPEED
Range: 0-50 m/s
Resolution: 0.01 m/s
Accuracy (0-10 m/s): ±0.1 m/s
Accuracy (11-30 m/s): ±1%
Accuracy (31-50 m/s): ±2%

TEMPERATURE
Range: -40° C to 80° C
Resolution: 0.01° C
Accuracy: ±2.0° C

3D ACCELEROMETER
Range (u, v, w): ±2g
Tilt (Pitch, Roll): ±90°

Optimized for use on the BlueHalo Atmospheric Characteration Payload (ACP) structure - a complete, customizable meteorological sensor suite for making low Earth atmospheric measurements that can be integrated on a wide range of UAS platforms.

The TriSonica Sphere was developed in conjunction with BlueHalo, a leading provider of advanced engineering solutions and technology to the national security community, and specifically engineered for deployment on their Atmospheric Characterization Payload (WP-V3 ACP) UAS sensor suite.

The WP-V3 ACP's rigid structure and system design ensures proper sensor spacing away from UAS propellers for accurate low Earth atmospheric measurements. The WP-V3 ACP features live display, built-in GPS, live telemetry, open SDK, and can be easily mounted on the DJI M600, the IE-V2, E900, and E1250 UAS platforms.

Within its integrated mast structure, all electronics are completely isolated from the outside environment, making it ideal for a variety of meteorological applications including:

- Atmospheric Profiling
- Wildfire Monitoring
- Storm Chasing
- Urban Terrain Profiling
- Weather Forecasting
- Education and Research

Shown with the optional TriSonica Mini Wind and Weather Sensor

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