

## SWS-250 Visibility & Present Weather Sensor

Measures visibility and identifies a wide range of present and past weather conditions

... easy integration with ground based aviation systems in RVR and METAR applications

- Present and past weather codes
- WMO Table 4680 & METAR outputs
- Instantaneous and averaged visibility outputs
- 39 WMO 4680 codes
- Transmissometer equivalent EXCO output (TEXCO)
- Easy integration of Biral ALS-2 ambient light sensor
- Simple field calibration

The SWS-250 is optimised for use in aviation applications where both visibility and extended present and past weather information is required.

The sensor measures: visibility (MOR, EXCO and TEXCO), fog, haze, drizzle, snow, hail and other non-frozen precipitation according to WMO table 4680. METAR coded outputs are also provided.

For ultimate visibility performance the visual range extends to 75km allowing use in meteorological observation networks and research applications.

The enhanced present weather information from the SWS-250 is due to the backscatter receiver which allows detailed precipitation analysis and

the use of algorithms developed for Biral's flagship VPF-750 present weather sensor.

Contamination monitoring of all optical windows is provided as standard. The contamination status is reported in the main data output and the visibility reading is automatically compensated. A comprehensive self-test capability ensures the user is always aware of the sensor's status.

Easy integration of the Biral ALS-2 ambient light sensor makes the SWS-250 perfect for use in aviation applications where both RVR and METAR data are needed.

Calibration in the field can be accomplished quickly and simply by a single operator using the optional calibration kit.

**SWS-250**  
*Visibly Better*

*Biral have been manufacturing and supplying worldwide high specification Visibility and Present Weather Sensors since 1997.*

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## SWS-250 Specifications

### Visibility & Present Weather Measurement

Measures	Visibility, present and past weather
Output	Serial data
Range (visibility)	Default 10m to 75km
Measurement Error	<=4.5% at 600m, <=5.0% at 1,500m, <=5.1% at 2km, <=12.5% at 15km <=20% at 30km
Measurement principle	Forward scatter meter with 39° to 51° angle
Precipitation detection threshold	Rain: 0.015mm/hr (0.0006 in/hr) Snow: 0.0015mm/hr (0.00006 in/hr)
Maximum rain rate	~500 mm/hr (20in/hr)
Rain intensity accuracy	≤ 15%

### Outputs and Reports

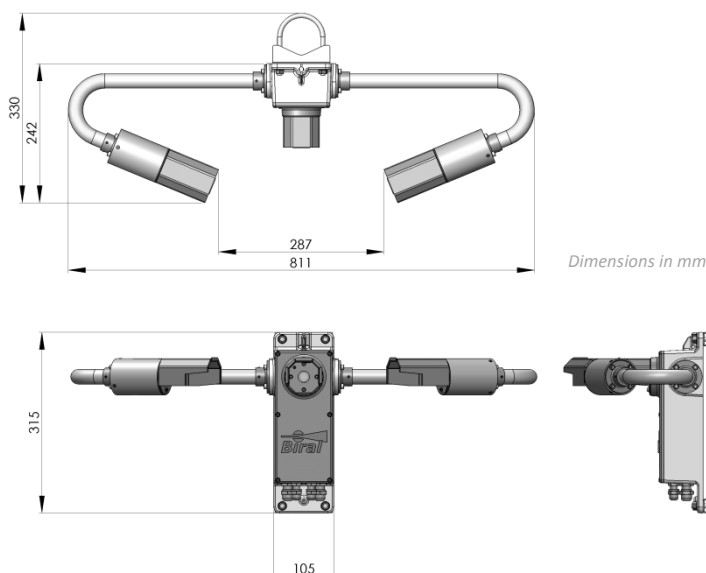
Output rate (seconds)	10 to 300 (selectable)
Serial outputs	RS232, RS422 and RS485
WMO Codes	39 from table 4680
METAR Codes	34 present and past weather

### Power Requirements

Sensor power	9-36 VDC
Hood heating power	24 V AC or DC
Basic sensor	3.5 W
Window heaters	2.5 W
Hood heaters	36 W

### Additional Features

Hood heaters	Fitted as standard
Window heaters	Fitted as standard
Window contamination monitoring	Fitted as standard to all sensor head windows



### Environmental

Operating temperature	-40°C to +60°C
Operating humidity	0 – 100% RH
Protection rating	IP66/IP67

### Certification & Compliance

CE certified
EMC compliance with EN61326-1997, 1998, 2001
RoHS and WEEE compliant

### Physical

Material	Powder paint coated aluminium
Weight (incl. mounting kit)	3.5 kg
Length	0.81 m
Warranty	3 Years
Lifetime	>10 Years

### Maintenance

Self-test capability	As standard
User confidence check	6 months recommended
Window cleaning	Automatic compensation and warnings
Field calibration	With optional calibration kit

### Included With Sensor

The SWS sensor is delivered in sturdy recyclable foam filled packaging with:

- Pole mounting kit ( 2 x U-bolt and saddles)
- User manual and calibration certificates

### Accessories - Optional

Power and data cables
Mains power adaptor
Calibration kit
ALS-2 Ambient Light Sensor
Hard shell transport case

Specifications subject to change E.& O.E.