Biral

Visibly Better

Measures Background Luminance in accordance with FAA and ICAO guidelines for use in Runway Visual Range (RVR) applications

… direct connection to Biral visibility and present weather sensors and field calibration simplify system design and reduce maintenance costs

KEY FEATURES & BENEFITS

- Designed to FAA and ICAO requirements

- 0 to 40,000 Cdm-2 measurement range

- Choice of serial digital or analogue outputs

- Simple and quick in field calibration

- Direct connection to Biral visibility and PW sensors

- Extensive self-test capabilities

- -60°C to 70°C operating range

- 2 Years Warranty

The ALS-2 Ambient Light Sensor is designed to measure background luminance as part of a of Runway Visual Range system. Mounted alongside the runway the ambient light sensor is often deployed with a visibility meter to provide the data necessary for calculation of RVR.

Designed to comply with specifications and guidelines produced by ICAO, WMO and the Federal Aviation Authority in the USA, the ALS-2 meets all the requirements for use in typical RVR systems. The ability to connect the sensor directly to a Biral visibility or present weather sensor and have the background luminance data incorporated into the visibility sensors data string simplifies system design and construction.

Available with a choice of serial data or analogue outputs the ALS-2 can be used to replace a wide range of background luminance meters in both legacy and new installations. The simple pole mounting system even incorporates an angular scale to ease installation.

A unique feature of the ALS-2 is its ability to be calibrated in the field without the need to disconnect the cable or send commands via the software interface. The ALS-2 Field

Optional heated hood prevents snow accumulating around the optical window.

Calibrator accessory simply fits over the hood and communicates with the sensor using an IR link through the optical window. The calibration can be checked and adjusted in a matter of minutes without the need for specialist staff or laboratory equipment.

Designed to operate in the harshest of weather the ALS-2 has window heating and window contamination adjustment as standard. Extensive self-test capabilities and optional heating complete the package.
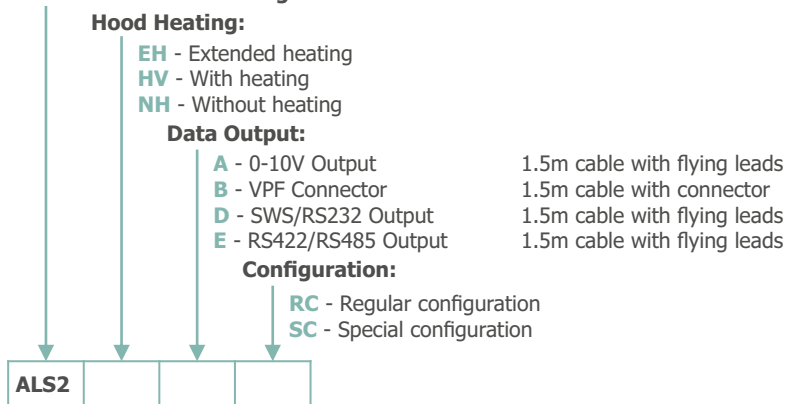

ALS-2 Calibrator connected to the ALS-2 for in situ calibration

SWS & VPF Series Sensor Configuration Information

For a detailed explanation of the configuration options please refer to the table opposite.

ALS2 - ALS-2 Ambient Light Sensor

Hood Heating:

EH - Extended heating
HV - With heating
NH - Without heating

Data Output:

A - 0-10V Output   1.5m cable with flying leads
B - VPF Connector   1.5m cable with connector
D - SWS/RS232 Output   1.5m cable with flying leads
E - RS422/RS485 Output   1.5m cable with flying leads

Configuration:

RC - Regular configuration
SC - Special configuration

ALS2			

Example: **ALS2.HV.D.RC** (Please use this code when ordering your sensor).

SWS.LW Series Sensor Configuration Information

For a detailed explanation of the configuration options please refer to the table opposite.
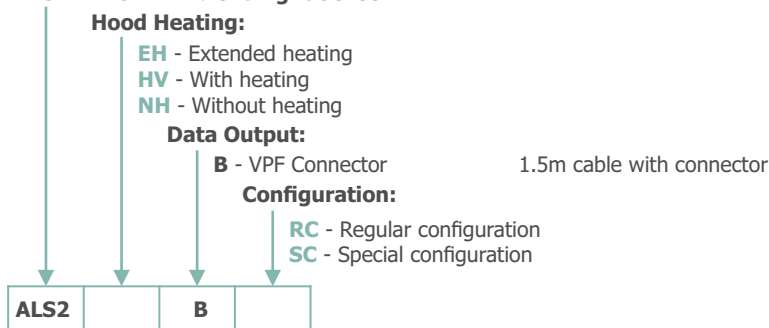
ALS2 - ALS-2 Ambient Light Sensor

Hood Heating:

EH - Extended heating
HV - With heating
NH - Without heating

Data Output:

B - VPF Connector   1.5m cable with connector

Configuration:

RC - Regular configuration
SC - Special configuration

ALS2		B	

Example: **ALS2.HV.B.RC** (Please use this code when ordering your sensor).

Biral

Configuration Options Explained

Option	Description
Heating Options	A heated hood is available to stop snow from accumulating around the optical window. The hood heating option is only required in regions where snow is experienced. Extended sensor heating allowing operation at -60°C is available; hood heating is included in this option.
	Option **EH**: Extended heating
	Option **HV**: Hood heating included
	Option **NH**: No hood heating
Data Output	There are four output options for the ALS-2.
	Option **A**: Two 0-10V analogue outputs of brightness. 0-4,000 cd m^{-2} and 0-40,000 cd m^{-2}. Supplied with an unterminated 1.5m combined power and data cable.
	Option **B**: For direct connection to a VPF or SWS-LW sensor with ALS-2 option. 1.5m cable terminated with a circular connector.
	Option **D**: For either direct connection to a SWS sensor with ALS-2 option, or Serial RS232 output to a host system. Supplied with an unterminated 1.5m combined power and data cable.
	Option **E**: Serial RS422/RS485 output to a host system. Supplied with an unterminated 1.5m combined power and data cable.
Configuration	Reserved for customer specific configurations.
	Option **RC**: No customer specific configuration.
	Option **SC**: Special customer specific configuration.

ALS-2
Ambient Light Sensor
Specifications

Ambient Light Measurement

Measures	Luminance (ambient light)
Output	Serial data. Optional analogue outputs
Measurement range: Serial Data Analogue outputs	0-40,000 cd m^{-2} (0.5-11,700 fL) 0-4,000 cd m^{-2} Low output 0-40,000 cd m^{-2} High output
Resolution	1 cd m^{-2} (0.29 fL)
Measurement error	≤ 10% of value or 2 cd m^{-2} (0.58 fL), whichever is greatest
Spectral response	Wavelength sensitivity range 420-675 nm, peak 565 nm. Analogous to CIE luminous spectral efficiency.
Field of view	6°
Averaging period	60 s

Outputs

Serial data outputs	RS232, RS422 OR RS485
Analogue outputs (Option)	2 voltage outputs, high and low range 0-10 Vdc

Power Requirements

Sensor Power	9-36Vdc
Hood heating power	24Vac or dc
Sensor & window heater Hood heater Extended heating	2W 12W 18W (includes hood heater)

Additional Features

Window heater	Fitted as standard
Window contamination monitoring and compensation	Fitted as standard

Environmental

Operating temperature With extended heating	-40°C to +70°C -60°C to +70°C
Operating humidity	0 – 100% RH
Protection rating	IP66

Certification & Compliance

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

Physical

Material	Aluminium. Powder paint finish, with hard anodize base layer
Weight	1.5kg
Elevation angle range from horizontal	0° to 45°
Warranty	2 years
Lifetime	>10 years

Maintenance

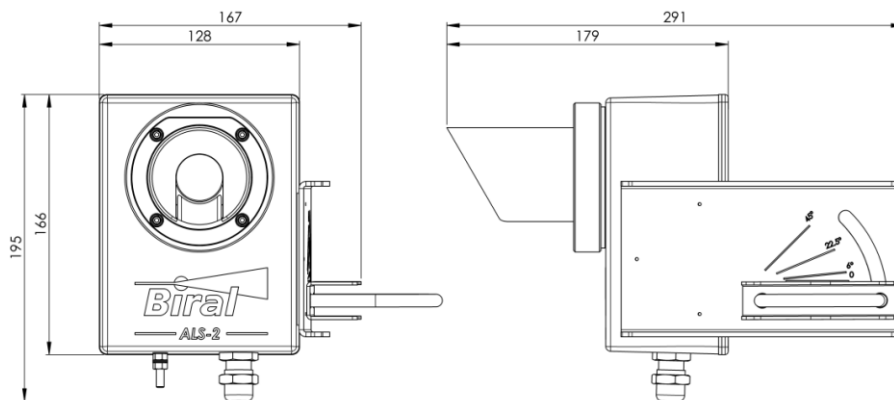| Self-test capability	As standard
User confidence check	6 months recommended
Window Cleaning	Automatic compensation and warnings
Field calibration	With optional calibration kit

Included with Sensor

The sensor is delivered in sturdy recyclable foam filled packaging with:
- Pole mounting kit (1 x U-bolt and saddle)
- User manual and calibration certificates

Accessories – Optional

ALS-2.CAL	Ambient Light Sensor Calibrator
ALS2.WTY	1 Year Extended Warranty

Specifications are subject to review and change without notice. E&OE.

Dimensions in mm