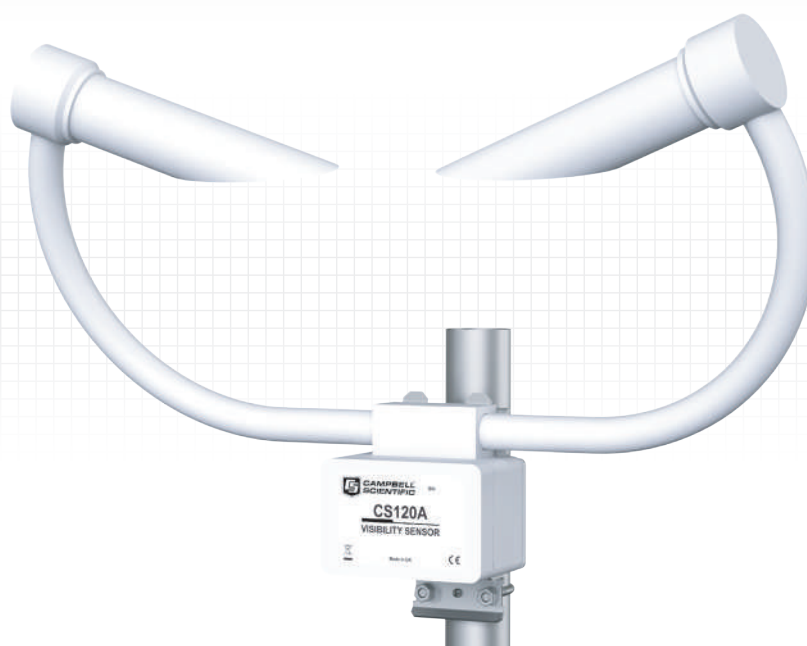


High Performance Visibility Measurements

Competitive price



Overview

The CS120A Visibility Sensor uses infrared forward-scatter technology and the proven 42° scatter angle to report meteorological observable range (MOR) for fog and snow. It combines high

performance with a very competitive price and is ideal for stand-alone applications or in combination with automatic weather stations in road, aviation, wind-energy, and marine environments.

Benefits and Features

- › Visibility range of 75 km
- › High-performance sensor at a competitive price
- › FAA-recommended 42° scatter angle for good Meteorological Observable Range (MOR) readings in all precipitation types
- › Incorporates automatic dew and hood heaters for all-weather operation
- › Simple field calibration using optional calibration kit
- › Low power—suitable for remote application
- › Automatic status check for faults or window contamination
- › Sensor design that minimizes air flow disruption at measurement volume

Technical Description

The CS120A uses continuous high-speed sampling, which improves the accuracy of the measurements taken during mixed weather such as rain and hail, while providing reliable readings during more stable events such as fog and mist. High speed sampling also allows the CS120A to better respond to suddenly changing conditions.

The CS120A has several design features. Downward facing optics minimize dirt and snow build up. Low powered heaters prevent

the formation of dew, and a higher-powered heater prevents the formation of ice. The position of the CS120A's heads and body minimizes disturbance of the airflow at the measurement volume.

The CS120A is power efficient, drawing just 3 W during normal operation including the dew heaters. Power can be reduced further by lowering the sample rate and manually controlling the heaters.



Ordering Information

Atmospheric Visibility Sensor

CS120A-L CSL Atmospheric Visibility Sensor (-25° to +60°C). Must choose a cable termination option (see below).

Cable Termination Options (choose one)

- PT** Cable terminates in stripped and tinned leads for direct connection to a datalogger's terminals.
- PW** Cable terminates in connector for attachment to a prewired enclosure. The prewired enclosure will need a cable entry seal (option -ME) for the CS120A's heater cable.

Common Accessories

- 28678** Calibration Device for the CS120A
- 28679** Optical Sensor Mount
- 28680** Configuration Cable
- 28370** 24 Vdc 3.8 A NEC Class 2 Power Supply Kit (battery not included). Must choose a kit type (see below).

Kit Type for 28370 Power Supply (choose one)

- SK** Standard Kit
- UL** UL508A Kit

Specifications

Physical

- Weight: 3 kg (6.6 lb)
- Height: 53.5 cm (21.1 in)
- Width: 64.9 cm (25.6 in)
- Depth: 26 cm (10.2 in)
- Mounting: Stainless-steel V-bolt bracket that attaches to a pole with a 32 to 52.5 mm (1.25 to 2 in) outer diameter

Visibility

- Maximum Reported Visibility: 75 km (~46 miles)
- Minimum Reported Visibility: 10 m (~33 ft)
- Visibility Accuracy

≤ 10,000 m	10,000 m to 15,000 m	> 15,000 m
±10%	±15%	±20%

- Visibility Resolution: 1 m (3.3 ft)

Electrical

DSP and Dew Heaters

- Supply Voltage: 7 to 30 Vdc
- Typical Current Consumption @12 Vdc
 - Continuous Sampling, Dew Heaters Active: 200 mA
 - Continuous Sampling, Dew Heaters Disabled: 110 mA
 - No Sampling, Dew Heaters Disabled: 21 mA
 - Dew Heaters Active, RS-232 Communications: 200 mA

Hood Heater

- Supply Voltage (ac or dc): 24 (nominal), 30 V (maximum)
- Power: 60 W

Optical/Pulse

- LED Center Wavelength: 850 nm
- LED Spectral Bandwidth: ±35 nm
- Light Pulse Rate: 1 kHz

Interface

- Serial Interface: RS-232 or RS-485, 8 bit data bytes, 1 stop bit
- Serial Data Rates: 1200 to 115,200 bps (38,400 bps default rate)
- Alarm Outputs: 2 x (0 to 5 V) outputs, 32 mA (maximum)

Environmental

- Operating Humidity Range: 0 to 100%
- Operating Temperature Range: -25° to +60°C standard (-40° to +70°C temperature range available as a special; contact Campbell Scientific for more information)
- Sensor Sealing: rated to IP66
- Wind Speed: Up to 60 m s⁻¹
- Sensor Heater Thresholds

	On	Off
Dew Heater	<35°C	>40°C
Hood Heater	<5°C	>15°C

Compliance Information

- View the EU Declaration of Conformity document for the 28678 Calibration Device at: www.campbellsci.com/28678

