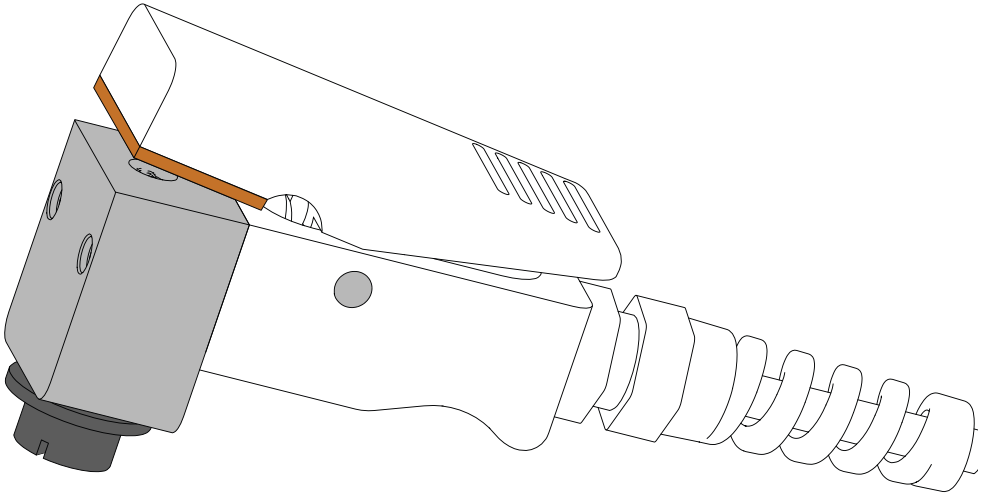




METER

SC-1

Datasheet



1. INTRODUCTION

Thank you for choosing the SC-1 Leaf Porometer from METER Group.

The SC-1 measures stomatal conductance, which is a function of the density, size, and degree of opening of plant pores. The SC-1 measures stomatal conductance by putting the conductance of a leaf in series with two known conductance elements and comparing the relative humidity (RH) measurements between them. This manual describes the functions of the SC-1 and how to make high-quality stomatal conductance measurements.

Verify all SC-1 Leaf Porometer components are included and appear in good condition:

- SC-1 sensor head ([Section 3.2](#))
- SC-1 controller ([Section 3.3](#))
- USB-to-serial cable
- USB drive with Leaf Porometer Utility (attached to manual cover)
- Calibration plate
- Bottle of deionized (DI) water
- Bottle of desiccant
(Drierite[®] indicating desiccant, 10-20 mesh)
- Dispensing cap
- Tweezers
- Leaf pads
- Bead retention screens
- Teflon filters
- Calibration filter papers
(Whatman[®] filter paper, grade #3)
- Spare hinge pin
- Short hinge pin
- White fluoropolymer agitation beads
(McMaster-Carr[®] PTFE balls, 1/8 in, part #9660K13)

The SC-1 was shipped without batteries to preserve battery life and prevent damage to the instrument. Install four AA batteries in the SC-1 controller prior to use.

3. SYSTEM

This section describes the SC-1 Leaf Porometer components and theory.

3.1 SPECIFICATIONS

MEASUREMENT SPECIFICATIONS

Stomatal Conductance

Range 0 to 1,000 mmol/(m²s)

Resolution 0.1 mmol/(m²s)

Accuracy ±10% of measurement from 0 to 500 mmol/(m²s)

NOTE: The SC-1 can measure higher than 500 mmol/(m²s) and detect relative stomatal conductance change in the high range, but absolute accuracy becomes unverifiable past 500 mmol/(m²s).

Measurement Time

30 s

PHYSICAL SPECIFICATIONS

Controller Dimensions

Length 15.8 cm (6.2 in)

Width 9.5 cm (3.8 in)

Height 3.3 cm (1.3 in)

Sensor Head Dimensions

Length 12.0 cm (4.7 in)

Width 2.5 cm (1.0 in)

Height 5.5 cm (2.2 in)

Sensor Aperture Diameter

6.35 mm (0.25 in)

Sensor Cable Length

1.2 m (4 ft)

Operating Temperature Range

Minimum	5 °C
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Maximum	40 °C
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Operating Relative Humidity Range

Minimum	1%
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Maximum	100%, with desiccant chamber
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Power

4 AA batteries

Battery Life

2 years (battery drain in sleep mode is <50 μ A)

Data Storage

4,095 measurements in flash memory

Connector Type

Serial-to-USB

COMPLIANCE

Manufactured under ISO 9001:2015

EM ISO/IEC 17050:2010 (CE Mark)

3.2 SC-1 SENSOR HEAD

This SC-1 sensor head gathers the measurements (vapor pressure, RH, etc.) that the SC-1 uses to calculate stomatal conductance in a leaf. [Figure 25](#) shows the external components of the sensor head and [Figure 26](#) shows the internal components.

