

The Environics® Series 6103 Ozone Transfer Standard / Multi-Gas Calibrator automatically performs zero, precision, span and multi-point calibrations using NO, NO₂, SO₂, CO, O₃, hydrocarbons and other gases of interest. The 6103 meets or exceeds all U.S. Environmental Protection Agency and NCORE requirements.

The Series 6103 consists of a single chassis supporting up to 3 thermal mass flow controllers (MFCs), an ozone generation module, photometer, glass output manifold, mixing chamber, a reaction chamber for gas phase titration, and control electronics.



The internal photometer measures the actual amount of ozone generated, and corrects for errors, using closed-loop PID control. The photometer also allows an external source of ozone to be analyzed and displayed on the screen. The external ozone is connector to a separate sample port, allowing for simultaneous gas blending while monitoring the external ozone source.

The internal ultra-violet (UV) based ozone generator is temperature controlled and includes a precision photo-optical feedback circuit to compensate for lamp aging effects providing stable ozone generation. The ozone generator is factory calibrated using a NIST traceable photometer standard.

The instrument may also be remotely operated using contact closures or the RS-232 serial data interface, both are standard in the Series 6103. LEADS compatibility allows seamless integration of Environics calibrators into your existing collection system. LEADS is a commercial system for collecting, integrating, and processing meteorological, air quality, and water quality data.

The S6103 comes standard with two mass flow controllers, but a third can be added to support a larger range of dilutions. The mass flow controllers are calibrated to a NIST (National Institute of Standards and Technology) traceable primary standard. The calibration data consists of a comparison of desired versus actual flow over the full dynamic range of the instrument with linear interpolation between points. Calibration data is stored in non-volatile memory and may be updated by the user with a suitable standard.

PRODUCT FEATURES AND BENEFITS

- User-friendly interactive software reduces training time and error.
- An automated, pressure decay leak test to determine if the system has any internal leaks.
- Automatic calculation of dilution and span gas flows based on commanded concentration eliminates the need for manual computation and allows rapid transition from point to point.
- Internally-stored calibration data improves accuracy by as much as a factor of ten. MFCs are factory calibrated at 11 points.
- Internally-stored ozone generator calibration data insures linear, repeatable ozone generation without photometer control. The ozone generator is factory calibrated at 3 points (up to 11 points are available).
- Ozone generator pressure compensation ensures repeatable and stable ozone generation at pressures other than the original calibration pressure.

SOFTWARE

- **Concentration mode:** In response to software prompting, user selects gas port, span (cylinder) gas concentration, output gas flow (total) and output gas concentration. Series 6103 automatically delivers concentrations at the total flow specified.
- **Generate Ozone:** Allows user to specify, then generate a precise concentration of ozone.
- **Photometer:** Allows an external source of ozone to be analyzed and displayed on the screen. Also allows user to control the ozone generator when PID control loop is enabled.
- **Gas Phase Titration:** Utilizes blend and generate ozone routines to lead user through GPT using "excess NO" method.
- **Flow Mode:** Allows user to manually command a desired rate of flow for each mass flow controller, individually or together, and with or without ozone.
- **Display:** Allows user to monitor flow rates for each mass flow controller separately. Also provides ozone oven, pressure and photometer diagnostic information.
- **Maintain Ports:** User enters the name of the span gas in the source cylinder, its concentration (ppm) and the port to which the cylinder is connected.

SPECIFICATIONS

Mass Flow Controller (as a percent of setpoint)*

	From 10 to 100% of Full Scale Flow
Accuracy:	
Concentration:	± 1.0%
Flow:	± 1.0%
Repeatability	± 0.05%

* Mass flow controllers are calibrated using a NIST traceable Primary Flow Standard, using a Reference Temperature of 25° C (77°F) and a Reference Pressure of 760mm Hg (29.92 in. Hg)

Warm up time: 30 minutes

Ozone Generator

Concentration Range: 0.02 - 0.5 ppm at 5 – 10 slpm
Optional Ranges: 0.05 - 1 ppm at 5 – 10 slpm
Other ranges available upon request

UV Photometer

Repeatability: ±1 ppb
Linearity: 0.3% F.S.O.
Noise: ±1 ppb
Precision: 1 ppb

Mechanical

Inlets

Balance: External ¼" Swagelok™*
Span(s): External ¼" Swagelok™*

Outlet

Three external ¼" Swagelok™*
*(or compatible fitting)

Operating Pressures at inlets

Minimum: 15 psig (1.03 Bar)
Nominal: 25 psig (1.72 Bar)
Maximum: 30 psig (2.07 Bar)

Wetted Surfaces

Tubing:	Teflon™
Glass Chambers	Pyrex™
MFC's:	Stainless Steel
Seals:	Viton™

Operating temperatures

32° - 122° F (0° - 50° C)

Performance Temperature Range

59° - 95° F (15° - 35° C)

Weight

Standard: 27 lbs.

Dimensions (w x h x d)

Portable:	17" x 7" x 15"
Rack:	19" x 7" x 15"

Electrical

Standard: 100 VAC to 250 VAC, (50/60 Hz)
Current: 2 Amps (maximum)

Operating Modes

Front panel keypad
Internal timer control
RS-232 serial data interface
I/O control (8 inputs / 8 outputs) programmable through software

Data I/O

RS-232 serial data interface
I/O Control (8 inputs / 8 outputs)

OPTIONS

- Rack Mount
- Permeation Oven
- 3rd Mass Flow Controller



Or [click here](#) to learn more

69 Industrial Park Road East, Tolland, CT 06084
(860) 872-1111 Fax: (860) 870-9333
<http://www.environics.com>
info@environics.com
Copyright 2021 Environics Inc. Printed in USA