



# CAL-200

## Gas Dilution Calibrator with Internal Ozone Generator

We know how important measuring ground-level ozone accurately can be. With all the base features of the CAL-100 calibrator, the Met One Instruments CAL-200 includes important additional features which are essential for the calibration of NO<sub>x</sub> and O<sub>3</sub> analysis equipment.

An internal ozone generator enables regular ozone checks and gas phase titrations (GPT).

## Features

- All the calibration ability and ease of use found in the Met One Instruments CAL-100.
- Internal ozone generator produces 3 ppm to 5 ppm of ozone.
- Ability to premix ozone and source gas before dilution to perform gas phase titrations (GPT).

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## Dilution & Span Flows

<b>Dilution Gas Inputs:</b>	1 standard 100 – 200 kPa (g) (2 optional)
<b>Source Gas Inputs:</b>	4 standard 100 – 200 kPa (g) (8 optional)
<b>Dilution Mass Flow Controller:</b>	10 SLPM, 0 Deg, 1 ATM (std), 1 SLPM, 2 SLPM, 5 SLPM or 20 SLPM (optional), 2nd MFC (optional)
<b>Source Mass Flow Controller:</b>	50 SCCM, 0 Deg, 1 ATM (std), 10 SCCM, 20 SCCM, 100 SCCM, 500 SCCM or 1 SLPM, 2 SLPM (optional), 2nd MFC (optional)
<b>Flow Accuracy (Constant Temp):</b>	Within 1 % of full scale
<b>Flow Repeatability:</b>	Within 0.15 % of full scale
<b>Linearity:</b>	Within 0.15 % of full scale
<b>Operating Gas Pressure:</b>	100 – 200 kPa
<b>Zero Drift:</b>	< 0.6 % per year
<b>Response Time:</b>	< 5 seconds
<b>Output Manifold:</b>	4 output ports standard
<b>Dilution Ratio:</b>	Variable 10:1 to 2000:1 (std configuration)
<b>Case Dimensions</b>	
<b>Rack length:</b>	597 mm (23.5”) (front to rear)
<b>Total length (with latch release):</b>	638 mm (25.1”)
<b>Chassis width:</b>	418 mm (16.5”)
<b>Front panel width:</b>	429 mm (16.9”)
<b>Chassis height:</b>	163 mm / uses 4RU (6.4”)
<b>Front panel height:</b>	175 mm (6.9”)
<b>Weight:</b>	20.5 kg

## Communication

<b>User Interface:</b>	Via front panel keypad or computer.
<b>Programmable calibrations:</b>	16 separate programmable sequences. 32 separate programmable points.
<b>Analog Input:</b>	Three analog voltage inputs (0 - 5 VDC) CAT I rated.
<b>Digital Output:</b>	RS232 port #1: Normal digital communication. RS232 port #2: Multidrop port used for multiple analyzer connections on a single RS232. USB port connection on rear panel. 25 pin connector with discrete status and user control. USB stick memory (front panel) for data logging, event logging, and parameter storage. 8 Digital Outputs, open collector max 400 mA each at 12 VDC (max total output 2A). 8 Digital Inputs, 0 - 5 VDC. CAT I rated. 1 Diluent Control, + 12 V output.

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## Power

<b>Operating Voltage:</b>	100 - 240 V VAC 50 / 60 Hz (auto-ranging).
<b>Power Consumption:</b>	165 VA maximum (typical at start-up) 95 VA after warm-up.
<b>Operating Conditions Ambient</b>	
<b>Temperature Range:</b>	0 - 45 °C (32 - 104 °F), 20 - 35 °C for optimum performance.
<b>Pressure:</b>	Maximum altitude: 3000 m above sea level.

## Ozone Generator

**Output Concentration:**

3 ppb to 5000 ppb.

**Flow Rate:**

Variable dependent on Dilution Mass Flow Controller installed.

**Repeatability:**

< 1 % short term (24 hours) 5 % long term at constant temperature and humidity.



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