

# Gas Calibration System

## Ecotech GasCal 1100 Dilution Calibrator

The Ecotech GASCAL 1100 Gas Dilution Calibrator is ideal for stand alone use or incorporation into ambient air or emissions monitoring systems. It is designed to provide a simple means to perform precise gas dilution calibrations, ozone analyser precision checks and gas phase titrations using the optional internal ozone generator

### Features

- Single and multipoint calibrations performed using precision mass flow controllers
- Gas phase titrations (USEPA Method) and ozone precision checks using an internal ozone generator
- Setup via front panel display and keypad or a computer
- Remote control provided using a data acquisition system or suitable gas analyser
- Mass flow controller zero stability drift less than 0.6 % full scale per year
- Purge option for flushing of calibration gas lines



### Description

The GasCal 1100 uses the latest technology in a simple and effective way to precisely control the dilution of gas standards for calibration of ambient air and emission monitoring analysers. The calibrator may be connected with up to 4 external gas cylinders for precise dilution of these gas standards with dilution gas in order to generate a wide range of user configurable gas concentrations sequences.

Gas phase titrations and ozone analyser precision checks may also be performed using the GasCal 1100's extremely stable internal ozone generator. The ozone generator produces a continuous flow of ozone using the photochemical reaction of oxygen with ultraviolet light with a wavelength of 185nm. The ultraviolet lamp used to stimulate this reaction is maintained at 50.0 deg/C +/- 0.1deg C by a proportional temperature controller and the ozone flow of 100 sccm is kept stable using a precision mass flow controller.

The GasCal 1100 may be programmed either directly through its front panel keypad and display or through the use of a computer. This enables up to twenty calibration sequences to be configured that may then be automatically initiated through the use of status inputs from either a data acquisition system or analyser.



**Dilution & Span Flows**

Input dilution gases:	1 standard
Input source gases:	4 standard (1 available for purge)
Dilution Mass Flow Controller:	0-10 slpm (std), 0-2, 0-5 or 0-20 slpm (optional)
Source Mass Flow Controller:	0-50 sccm (std), 0-20, 0-100 or 0- 500sccm (optional)
Flow accuracy (constant temp):	+/- 1.0% of full scale
Flow repeatability:	+/- 0.15% of full scale
Linearity:	+/- 0.15% of full scale
Operating Gas Pressure:	170-200 kPa (dilution), 140-170 kPa (source)
Zero drift:	< 0.58% per annum
Response time:	< 5 seconds
Output Manifold:	4 output ports standard
Dilution ratio:	Variable, subject to MFC choice

**Ozone Generator (optional)**

Output:	50 ppb to 1000 ppb @ 3 slpm
Output flow rate:	0.1 to 10 slpm
Repeatability:	< 1% short term (24 hours) 5% long term at constant temperature

**Interface**

Programming:	Via front panel keyboard or computer
Programmable calibrations:	20 defined sequences, each cycling through up to 5 points may be programmed for automatic initiation by digital inputs from a data logger or suitable analyser
Digital Inputs:	8 digital input bits used for start/stop of calibration sequences
Digital Input types:	Relay contact closures or TTL logic inputs
Digital Outputs:	8 digital outputs used for sequence indication and/or alarm indication
Display:	Four line illuminated LCD display for status and programming
Memory:	Non volatile protected, automatic startup after power failure

**System:**

Operating temperature:	0-50 deg C (20-35 deg C for optimum performance)
Input voltage:	90-260 VAC 50/60 Hz, selectable 115 VAC or 230 VAC
Dimensions:	19" Rack mounting (180mm H x 450mm W x 440mm D)
Weight:	11 kg

For further information please contact our nearest office

**ECOTECH**  
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**Head Office:** Tel: (61 3) 9894 2399 e-mail: ecotech@ecotech.com.au  
**New South Wales:** Tel: (02) 9748 7111 e-mail: sydney@ecotech.com.au  
**Western Australia:** Tel: (08) 9361 7665 e-mail: perth@ecotech.com.au



[www.ecotech.com.au](http://www.ecotech.com.au)

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