

Dynacalibrators

VICI Metronics Dynacalibrators enable calibrations traceable to NIST standards for almost any gas analyzer, in the lab or in the field. The design takes full advantage of all the conveniences inherent in our Dynacal[®] permeation devices to generate and deliver precise concentrations ranging from ppb to high ppm for hundreds of different compounds. Standard features on all our models, from the most basic Model 230 to the most fully equipped Model 450, facilitate accurate, reproducible, trouble-free calibrations time after time.

Standard Features

Constant Temperature System

Any calibration utilizing a permeation gas source is only as accurate as the control and stability of the permeation chamber temperature. All models feature our proprietary insulated, high mass, high heat transfer, constant temperature system, calibrated against NIST-traceable standards to insure set point accuracy to $\pm 0.1^\circ\text{C}$.

Large Permeation Chamber

The permeation chamber is big enough to accommodate several permeation devices. Higher output concentrations are obtained if multiple devices of the same gas are used; multi-component gas mixtures can be generated if each device is filled with a different non-synergistic gas.

Flexible Flow Metering System

A fixed orifice and differential pressure regulator maintain a constant carrier flow through the permeation chamber. The trace components released into the *carrier* flow from the permeation devices in the chamber mix with the *dilution* flow, which is maintained by a separate differential pressure regulator and adjusted with the needle valve of the rotameter. All flows are certified traceable to NIST standards.

The dilution flow can be varied over a wide range, generating the spectrum of concentrations required for checking analyzer linearity. A built in overflow allows the excess calibration gas to be vented while the analyzer draws a fixed sample flow from the calibrator output port.

Ease of Operation

The permeation chamber is accessed from the front panel, so changing or adding permeation devices usually requires less than 30 seconds. All indicators and controls for temperature, temperature equilibrium, carrier flow, dilution flow, instrument status, and calibration mode are on the front panel, grouped by function. This arrangement minimizes the chances for operator error, saving time and money and insuring accuracy.

Choices of Plumbing and Flow Configurations

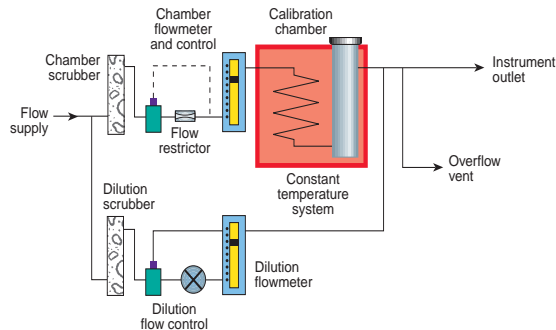
Dynacalibrators can be supplied with internal pumping systems, eliminating the cost and inconvenience of external pumps, gas cylinders, regulators, and special plumbing. Units with pumps can be equipped with accessory bypass loops that provide for external modification of the carrier and/or dilution gas streams.

Three uniquely designed models – one precisely right for your application

Model Descriptions *(Models are pictured on the front cover)*

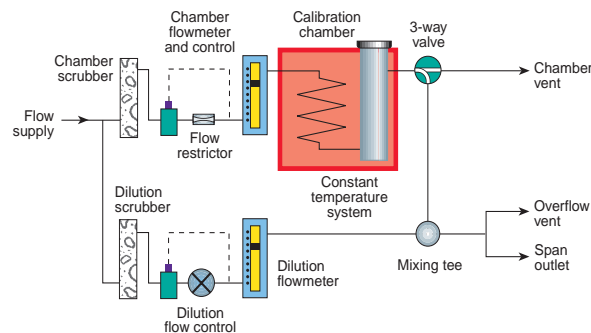
Model 230

The Model 230 is our basic calibration instrument, offering all the standard features and configurations.



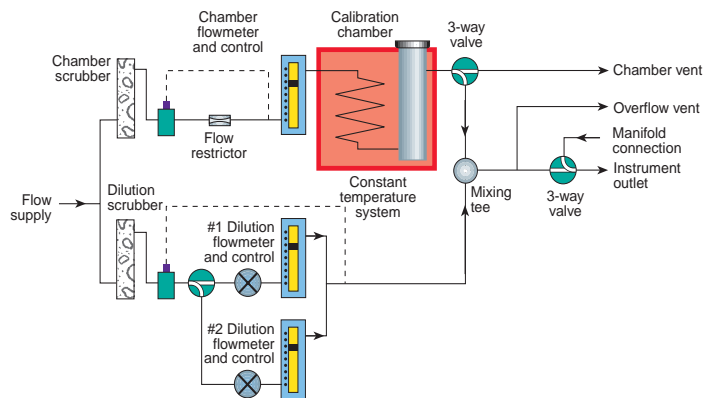
Model 340

The Model 340 adds a front panel MODE CONTROL switch to select ZERO, SPAN, or REMOTE calibration modes. In the REMOTE mode, the Model 340 can be externally programmed to deliver a ZERO and a SPAN reference on command. In the ZERO mode, scrubbed air is delivered to the STREAM OUTLET.



Model 450

The Model 450 is our most versatile calibration instrument, incorporating a second channel of dilution gas flow and a unique "through-port" feature which eliminates the necessity of changing plumbing connections between the sample manifold, the analyzer, and the calibrator for each calibration. Also included is a front panel MODE CONTROL switch to select STANDBY, ZERO, SPAN 1 (low concentration gas), SPAN 2 (high concentration gas), and REMOTE. In the REMOTE mode, the Model 450 can be externally programmed to operate in all of its functional modes.



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Generate your own continuous supply of calibration gas

Specifications

Permeation device	
Maximum length	24 cm (9.5")
Maximum diameter	1.6 cm (0.62")
Permeation chamber	Teflon [®] or Pyrex [®] Will accomodate multiple devices
Flowmeters	High resolution 15 cm graduated scale. Certified ±1% accuracy full scale, NIST traceable. Full scale ranges of 1,2,5,10, 15, and 20 L/min.
Flowmeter calibration accuracy (max % deviation from float setting)	
At maximum flow	1 %
At minimum flow	3 %
Ambient operating temperature	10°C - 40°C
Temperature indicator	Digital display
Temperature controller	Solid state proportional with 0.1°C set point accuracy, NIST traceable, and stability of ±0.01°C. Standard range is 25° to 50°C; optional expanded range is 25° to 110°C.
Temperature control range	
Standard units	2°C above ambient to 50°C
Expanded temp units	2°C above ambient to 110°C
Permeation chamber temperature equilibration time	< 1 hr
Pumps	Diaphragm pumps for continuous operation. Available for 10 or 20 L/min capacity
External gas stream supply and modification	Instruments with separate stream inlets or stream bypasses have provision for connecting dehydrators, special scrubbers, filters, etc. in series with the carrier and/or dilution gas streams
Case dimensions	17" wide x 23.75" deep x 10.5" high (43.2 cm x 60.3 cm x 26.7 cm)
Instrument weight	
Units with internal pumps	
Model 230	55 lbs. (25.0 kg)
Model 340	56 lbs. (25.4 kg)
Model 450	59 lbs. (26.8 kg)
Units without internal pumps	
Model 230	43 lbs. (19.5 kg)
Model 340	44 lbs. (20.0 kg)
Model 450	47 lbs. (21.3 kg)
Power consumption	
Units with internal pumps	
Model 230	290W
Model 340	300W
Model 450	340W
Units without internal pumps	
Model 230	100W
Model 340	110W
Model 450	145W
Instrument noise emission (at 3 ft)	
Units with internal pumps	55 - 60 dBa
Units without internal pumps	45 - 50 dBa

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Pyrex[®] is a registered trademark of Corning Glass



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