Definer™ 110

Compact and Indestructible EPA Flow Transfer Standard

The Bios Definer 110 delivers the ambient monitoring community a direct replacement to the fragile, glass-style orifice calibrators commonly used in performing audits of PM2.5, PM10 and TEOM air samplers.

The compact, durable orifice is designed to fit directly on an air sampler with a standard 1.25 inches OD inlet tube and the pressure drop across the orifice is measured with a digital manometer.

Accurate

The integral windscreen of the Definer 110 orifice reduces wind effects on calibration for precise measurements in any field condition.

Reliable

Built from Invar and polycarbonate plastic, and featuring Viton® seals throughout, the Definer 110 is virtually indestructible and won't degrade after exposure to common airborne pollutants. Moreover, as Invar is a zero coefficient of expansion material, the Definer 110 can be reliably used at any temperature and in any environment.

Compatible

The Definer 110 is compatible with most ambient airflow monitors.

PROVEN DryCal® TECHNOLOGY

Bios

Driving a Higher Standard in Flow Measurement℠

Definer™ 110 Specifications	
Flow Ranges	**Definer 110H: High flow,** 5,000 mL – 20,000 mL/min **Definer 110L: Low flow,** 500 mL – 6,000 mL/min
Accuracy	1% Volumetric
Weight	9.6 oz / 270 g
Dimensions (H x W x D)	4.7 x 2.5 x 3 in / 120 x 64 x 76 mm

Small and lightweight, the Definer 110 is easy to grab and go, making it at home in the field, where rough handling is the norm.

Available in two flow ranges, the Definer 110 features an uncertainty of just 1% of flow reading within its rated flow range.

Best of all, the Definer 110 is designed to be calibrated by Bios Series of high-precision primary standards that feature our proven DryCal® technology. Each orifice is individually calibrated at seven flow points across its range, for the highest accuracy calibration constants in our NVLAP accredited lab.

Each Definer 110 is calibrated in Bios' NVLAP – accredited flow calibration laboratory and the calibration numbers **m** and **b** are printed on the transfer standard.

Flow is then derived from the equation:

$$Q_a = m * \sqrt{(\Delta P * T_{amb} / P_{amb})} + b$$

Where:

Q_a = orifice inlet flow rate, L/min
ΔP = pressure drop across the orifice, inches of H_2O
T_{amb} = orifice inlet temperature, °K
P_{amb} = orifice inlet ambient pressure, Bars
m, b = Calibration constants

The Bios facility in Butler, N.J., (pictured above) is one of the world's most accurate ISO 17025 laboratories serving the environmental and process control industries. With the lowest gas flow measurement uncertainties of any commercial laboratory, Bios provides you with the legal protections and peace of mind valued in today's litigious business environment.

NVLAP®
NVLAP Lab Code 200661

The Definer 110 is designed for environmental monitoring professionals needing reliable air quality measurements in the field. Backed by Bios' ISO 17025 accreditation and compatible with our Proven DryCal® Technology, the Definer 110 helps ensure compliance with environmental regulations and improves your process control.

Bios

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