



- **Definer™ 1020**  
500 SLM Primary Piston Prover



**Bios**  
Driving a Higher Standard  
in Flow Measurement<sup>SM</sup>



**Bios meets the highest quality assurance standards for gas flow measurement uncertainty, including industry-leading ISO 17025, ANSI Z-540 and NIST 150 laboratory accreditation by the National Voluntary Laboratory Accreditation Program (NVLAP) administered by the National Institute of Standards and Technology (NIST).**

### **Bios Definer™ 1020**

Proven DryCal® Technology, redefined. Introducing the Bios Definer™ 1020, our first high flow primary piston prover.

**It's everything you expect from Bios. Liquid-free precision, delivered instantly.**

The Definer 1020 breaks all the rules of high flow primary gas flow standards. Verify up to 500 standard liters per minute of gas flow – without a bell prover. Add a Definer 1020 to your flow lab and actually gain space. Its bench-top design measures only 24W” x 30H” x 12D” and weighs just 90 pounds. Transport your Definer 1020 on a moment's notice – by hand, or by air freight within a Bios shipping container.

And it gets better. The Definer 1020 doesn't require routine maintenance, or replaceable or consumable parts – just factory recalibration once each year.

#### **Flexible Ways of Working**

Select your preferred flow units. Take measurements manually, or in your choice of two hands-free continuous modes.

With the Definer 1020, your calibration process is flexible – and always ready. Its push-button operation means reliable, reproducible results with minimal user-training, so any staff member can step in, whenever needed.

#### **Optimizer Software**

The Definer 1020 comes standard with Bios Optimizer Collect light software. Use the Optimizer Collect light to transfer real-time calibration data directly to a Microsoft Excel® preconfigured spreadsheet for viewing and storage.

To take your calibration process to another level, upgrade to Bios Optimizer Collect and add the Bios Integrator™ Command, Control and Readout Device. With the Optimizer Collect, the Definer 1020 and the Integrator 110 you can fully automate your analog MFC and MFM calibrations. In no time at all, perform multi-set point verifications of your analog mass flow controllers and meters across their full operating ranges.





## Bios Definer™ 1020

500 SLM Primary Piston Prover

With Proven DryCal® Technology.  
Engineered for the process measurement community.






### Customizing Your Calibrations

The Definer 1020's navigation menu offers many customizable calibration options to get you the results you need, in the format you prefer. Take flow measurements one at a time, or automate the process using hands-free Continuous or Burst modes. Select the number of flow measurements in the average, from 1 to 100 measurements. Input gas Sensor Factors in order to scale your readings to match thermal mass flow devices being calibrated with surrogate gases

<b>Flow Ranges</b>	5-500 sL/min*
<b>Accuracy, 5-500 SL/min</b>	±0.25% of reading
<b>Weight</b>	90 lbs / 41 kg
<b>Dimensions (H x W x D)</b>	24W" x 30H" x 12D"

\*At a gas pressure of 760 mmHg, and a gas temperature of 25° centigrade with standardization temperature set to 21.1° centigrade.

User-Selectable Flow Units	
<b>Volumetric Flow</b>	L/min    cf/min
<b>Standard Flow</b>	SL/min    scf/min
<b>Pressure</b>	mmHg    PSI    kPa
<b>Temperature</b>	°C    °F

-  **Reliable**  
More than 15 years of Proven DryCal® Technology
-  **Accurate**  
NVLAP-accredited; backed by ISO 17025, ANSI Z-540, NIST Handbook 150
-  **Portable**  
May be moved within the lab, or shipped for annual recalibration
-  **Simple**  
Automatic operation; no user-interpretation or external calculations required
-  **Convenient**  
Bios Optimizer™ 110 software transfers measurements to Windows-based PCs

Bios Definer™ 1020 Specifications	
Data Cable:	1 meter, for use with data port, Bios Optimizer™ software, and PC serial port
Data Port:	RS-232 (serial), for use with data cable and Bios Optimizer™ software
Display:	Graphical LCD with backlight
Flow Measurement Cell:	Integrated (all-in-one design; no additional flow models)
Flow Measurement Style:	Single (manual), Continuous or Burst, with averaging function user-selectable from 1 to 100
Flow Measurement Type:	Volumetric (primary by nature), Standardized
Flow Mode:	Pressure or suction
Gas Compatibility:	Noncorrosive, noncondensing, noncombustible gases, less than 70% humidity
Humidity (Ambient):	0-70%, noncondensing
Inlet and Outlet Fittings:	1 1/2" Swagelok® compression fitting
Overpressure Release Fitting:	1/2" Swagelok® compression fitting
Storage Temperature:	0-70° C
Power:	External power module Input: 100-240 VAC, 1.6A (max), 50-60 Hz Output: 12 VDC, 3.0 A
Pressure (Operating):	10 - 19.5 PSI (absolute)
Pressure Transducer:	0-20 PSI (absolute), accuracy ±0.05% FS (typical), ±0.10% (max)
Purge fittings:	1/4" Swagelok® compression fittings
RoHS Compliant	Yes
Storage Temperature:	0-70°C
Temperature (Operating):	15-35°C
Temperature Sensor:	Accuracy ±0.03% (max), measured in the gas flow stream
Valve Operation:	Air supply: 80-100 PSI (not provided) Fitting: 1/4" Swagelok® compression
Warranty:	1 year

Bios primary standards feature patented, Proven DryCal® Technology supported by world-class laboratory accreditation, delivering unmatched precision and reliability.



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.



#### Laser safety statement

The Definer 1020 uses lasers for timing of the piston displacement during gas flow measurement. The Definer 1020 is certified as a "Class 1" laser product as radiation emitted inside the instrument is completely confined within the housing. There are no customer user serviceable parts inside the Definer 1020 and opening the unit will void the Definer 1020s calibration.



## Bios

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