

# Defender 500 Series

# Defender

## Defender 510

Volumetric Primary Flow Standard

## Defender 520

Enhanced Volumetric Primary Flow Standard

## Defender 530+

Standardized and Volumetric Primary Flow Standard



## Defender 500 Series

Turn the Defender on. Connect it to your pump. Take measurements. It's that simple. Instantly calibrate your gas flow using Quick Start – there is no preparation involved, no messy soap bubble solutions. Defender's many user-selectable options makes customizing your calibrations easy, giving you exactly what you need in the format you prefer. All you have to do is choose between the 510, the 520 or the 530+.

		Defender 510	Defender 520	Defender 530+
<b>Model and Flow Ranges</b>		Low: 5-500 ccm Medium: 50-5,000 ccm High: 300-30,000 ccm	Low: 5-500 ccm Medium: 50-5,000 ccm High: 300-30,000 ccm	Low: 5-500 ccm Medium: 50-5,000 ccm High: 300-30,000 ccm
<b>Volumetric Accuracy</b>		1%	1%	0.75%
<b>Standardized Accuracy</b>		N/A	N/A	1%
<b>User Selectable Measurement Units</b>	Volumetric	mL/min, L/min, cc/min, cf/min	mL/min, L/min, cc/min, cf/min	mL/min, L/min, cc/min, cf/min
	Standardized	N/A	N/A	smL/min, sL/min, scc/min, scf/min
	Temperature	N/A	°C °F	°C °F
	Pressure	N/A	mmHg, PSI, kPa	mmHg, PSI, kPa
<b>Pressure Accuracy</b>		N/A	± 3.5 mmHg (typical) ± 7.0 mm (max)	± 3.5 mmHg (typical) ± 7.0 mm (max)
<b>Temperature Accuracy</b>		N/A	± 0.8 °C (typical) ± 1.3 °C (max)	± 0.8 °C (typical) ± 1.3 °C (max)
<b>Industry Applications</b>		<ul style="list-style-type: none"> <li>Industrial Hygiene</li> <li>Air Quality</li> </ul>		<ul style="list-style-type: none"> <li>Instrument Manufacturing</li> <li>Air Quality</li> <li>Personal Gas Sampling</li> </ul>

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<b>Approximate Time per Reading:</b>	1-15 seconds
<b>Reading Styles (with averaging function user-selectable from 1 to 100 measurement):</b>	Single (manual), Continuous or Burst
<b>Gas Compatibility:</b>	Non-corrosive, non-condensing, less than 70% humidity
<b>Flow Modes:</b>	Pressure or Suction
<b>Measurement Cell Style:</b>	Integrated
<b>AC Adapter/Charger:</b>	12V DC, >250ma, 2.5 mm center positive
<b>Battery System:</b>	6V rechargeable, sealed lead-acid, 6-8 hrs typical operation
<b>Battery Type (Model):</b>	Panasonic LC-R061R3P
<b>Battery Operational Time (5 cycles/min):</b>	3 hrs backlight on, 8 hrs backlight off
<b>Pressure and Suction Fittings for 510 &amp; 520:</b>	1/4" ID Hose Barb
<b>Pressure and Suction Fittings for Defender 530+</b>	1/4" ID Swagelok® compression fittings, 3/8" fittings on High Model
<b>Warranty:</b>	1 year; battery 6 months
<b>Storage Temperature:</b>	0-70° C
<b>Ambient Humidity:</b>	0-70%, non-condensing
<b>Operating Pressure (Absolute):</b>	Atmospheric, 15 PSI Max
<b>Display:</b>	Backlit graphical LCD
<b>Data Port (for PC interface):</b>	Serial (RS-232)
<b>Data Cable (for PC interface):</b>	1 meter (Defender Data Port to PC included)
<b>Protective Case:</b>	Pelican case available
<b>Dimensions (H x W x D):</b>	5.5" x 6" x 3" / 140 x 150 x 75 mm
<b>Weight:</b>	29 oz / 820 g

### RoHS and CE Compliant

Backed by ISO 17025 and Proven DryCal® Technology, the Defender 530+ helps assure compliance with environmental regulations and improves your process control.



The Butler, N.J. manufacturing facility (pictured above) is Mesa Labs NVLAP accredited ISO 17025 laboratory.