DEFENDER

The Next Generation in Dry Calibration

- **A true "primary standard" based on volume displacement**

- **Designed exclusively for the occupational health and safety industry**

- **Highly accurate and repeatable**
  - Volumetric accuracy is 1% of reading (510, 520, and 530 models)
  - Standardized accuracy is 1.2% of reading (530 model)
  - Laboratory accuracy certified by NIST through NVLAP and backed by ISO 17025 accreditation, ANSI Z-540, and NIST Handbook 150

- **CalChek® automatic calibration with AirChek® 2000 and Leland Legacy® pumps**

- **Choice of 3 wide flow ranges**
  - 5 to 500 ml
  - 50 ml to 5 L
  - 300 ml to 30 L

- **Intuitive menu-driven operation**

- **Easy jarless calibration for cyclones**

- **Integrated serial PC interface and DryCal Pro Software for data transfer to a PC**

- **520 and 530 models include automatic temperature and pressure sensors for enhanced audit trail**

- **530 models sense ambient temperature and pressure and standardize calibration readings based on the data**

- **RoHS compliant — lead-free components**

Backed by proven DryCal® technology, the Defender primary standard pump calibrators integrate exciting new features based on 10 years of product feedback and ongoing research. Defender calibrators are designed exclusively for the occupational health and safety industry. With a choice of 3 wide flow ranges, Defender can be used for fast, accurate calibration of personal air samplers and other volumetric instruments.

The advanced 520 and 530 models include automatic features for enhanced audit trail. The integrated temperature sensors and pressure transducers are directly in the flow stream to record ambient conditions of the calibration process. The Defender 520 provides an enhanced audit trail — volumetric flow, temperature, and pressure — without the need for additional instrumentation. The Defender 530 not only provides enhanced audit trail, but also standardizes calibration readings based on sensor data.

Exciting Defender Features:

- ➲ **Choose single, hands-free continuous, or user-specified "burst" measurements**

- ➲ **Large illuminated graphical display with zoom feature**

- ➲ **Sleek molded case design with rubber handgrips — slim enough to fit in a briefcase**

- ➲ **Integrated serial PC interface and software**

- ➲ **Rugged — interior shock absorbers for field use**

- ➲ **Time intervals between measurements for checking personal sampling stability over a typical sampling period**

- ➲ **3 wide flow ranges: 5 to 500 ml, 50 ml to 5 L, and 300 ml to 30 L**

DEFENDER

Performance Profile

Flow Ranges (based on model):
  Low: 5 to 500 ml
  Medium: 50 ml to 5 L
  High: 300 ml to 30 L

Volumetric Accuracy: ± 1% of reading (510, 520, and 530 models)

Standardized Accuracy: ± 1.2% of reading (530 models)

Flow Modes: Suction or pressure

Operating Pressure (absolute): 15 psi

Time per Measurement: 1 to 15 seconds (approximate)

Types of Measurement: Select single, continuous, or burst

Measurement Units:
  • Select cc/min, ml/min, L/min, or cf/min (510, 520, and 530 models)
  • Select scc/min, sml/min, sL/min, or scf/min (530 models)

Configuration: Integrated flow measuring cell, valve, and timing mechanism

Display: Backlit graphical LCD

Temperature & Pressure Sensor Accuracy (520 and 530 models):
  Pressure Sensor: ± 3.5 mm Hg (typical) to ± 7.0 mm Hg (max)
  Temperature Sensor: ± 0.8 degrees C (typical) to ± 1.3 degrees C (max)

Data Output: RS-232 (serial)

Power: Rechargeable sealed lead-acid battery, 6 V or AC adapter charger, 12 VDC, > 250 ma, 2.5 mm, center positive

Typical Battery Run Time: At 5 cycles/min, 3 hours (backlight on), 8 hours (backlight off)

Pressure/Suction Fittings: 1/4-inch barbed tube

Weight: 29 ounces (820 grams)

5.5 inches

6 inches   3 inches

DryCal Pro Software
Provides a link to your PC and automatically transfers readings to be saved as a text file. Download at no charge.

CalChek Automatic Calibration
Use CalChek for direct communication between a Defender primary flow standard and an SKC AirChek 2000 or Leland Legacy sample pump. It's fast, easy, accurate, and automatic. ***Contact SKC for more information on CalChek and CalChek pump kits.***

Model	Flow Ranges (ml/min)	Cat. No.
Defender 510 Model includes lead-acid battery, multi-plug charger (100-240 V), 39-inch (1-meter) serial cable, and leak test caps. *Software requires Windows XP, Vista, or Windows 7 and RS-232 port or USB to RS-232 adapter.*	5 to 500 50 to 5000 300 to 30,000	**717-510L** **717-510M** **717-510H**
Defender 520 Model includes lead-acid battery, multi-plug charger (100-240 V), 39-inch (1-meter) serial cable, and leak test caps. *Software requires Windows XP, Vista, or Windows 7 and RS-232 port or USB to RS-232 adapter.*	5 to 500 50 to 5000 300 to 30,000	**717-520L** **717-520M** **717-520H**
Defender 530 Model includes lead-acid battery, multi-plug charger (100-240 V), 39-inch (1-meter) serial cable, and leak test caps. *Software requires Windows XP, Vista, or Windows 7 and RS-232 port or USB to RS-232 adapter.*	5 to 500 50 to 5000 300 to 30,000	**717-530L** **717-530M** **717-530H**
Accessories		
CalChek Communication Cable, for automatic calibration with AirChek 2000 or Leland Legacy pump		**210-502**
RS-232 Serial Card, detachable cable, RoHS compliant. *The manufacturer supports use of this serial card only.*		**717-500**
Carry Cases		
Pelican, black, with customized foam, for single Defender		**717-501**
Nylon, black, with padded detachable shoulder strap, for single Defender		**717-502**

Contact SKC for information on CalChek automatic calibration.