STANDARD IMAGING®

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ADVANCED **DOSIMETRY**

A next generation, two channel, reference grade electrometer with an advanced, intuitive touchscreen interface, built-in chamber library for real-time dose and dose rate display, and 1 fA resolution

SUPERMAX ELECTROMETER

The **Next Generation** Electrometer is Here

Built on the MAX 4000's legacy of highly accurate, reference grade measurements, combined with a revolutionary touchscreen interface and a host of advanced measurement features, the **SuperMAX** redefines what an electrometer should be. Each aspect of the design has been carefully considered to create an instrument that is not only remarkably intuitive and easy to use, but ready to handle a wide range of applications, ion chambers, and future upgrades.

Reference Grade Measurement Capabilities

The SuperMAX Electrometer has undergone rigorous testing to ensure it meets or exceeds the applicable requirements set by IEC 60731 for reference grade instruments. Along with exceptional repeatability and stability, the SuperMAX is ready for measurement after only 1 minute of warm-up time. Other features such as 2 independent channels and a threshold detecting trigger mode for automatic charge collections with storage of measurement data make the SuperMAX an exciting step forward for electrometers.

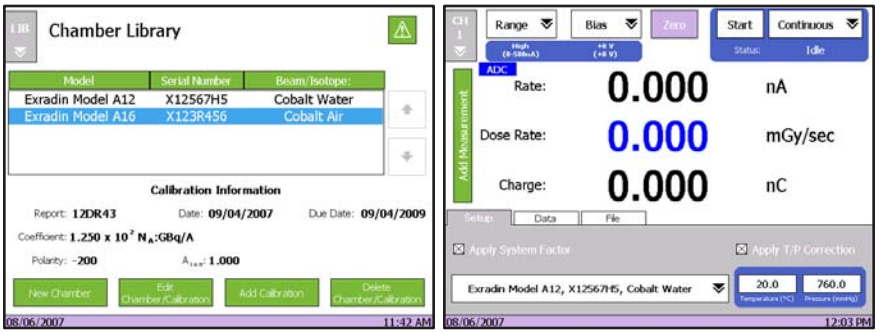
Maximize your measurements.

Intuitive Touchscreen Interface

The SuperMAX can be operated with the included stylus or simply a finger tip. The backlit color display allows wide viewing angles, and the chassis can be positioned for comfortable operation while sitting, standing, or viewing from across the room.

SuperMAX Electrometer shown with **Exradin A19 Classic Farmer-type Chamber** and **A10 Markus®-type Parallel Plate Chamber**

Comprehensive Chamber Library

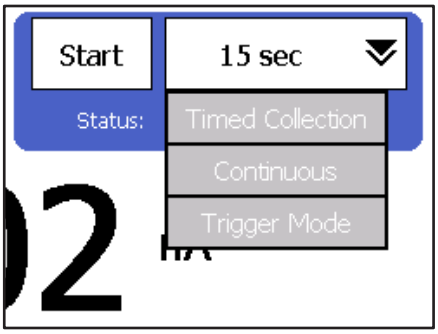


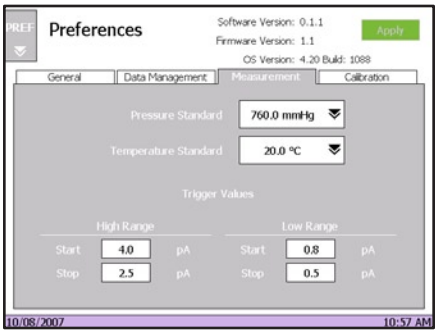
Integrated directly within the SuperMAX is a chamber library capable of storing over 100 different calibrations and/or system factors. With a few taps of the touchscreen, calibration information can be applied to measurements enabling real-time display of dose or dose rate values. Additionally, temperature and pressure correction can be applied to these values in real-time. To enter a chamber calibration or system factor into the SuperMAX, simply follow a step by step wizard to enter the information from a calibration report. Multiple calibrations can be added for each chamber and the calibration database can be quickly sorted for easy reference. No extra PC software or cables are needed to take advantage of this functionality.

Two Independent Measurement Channels

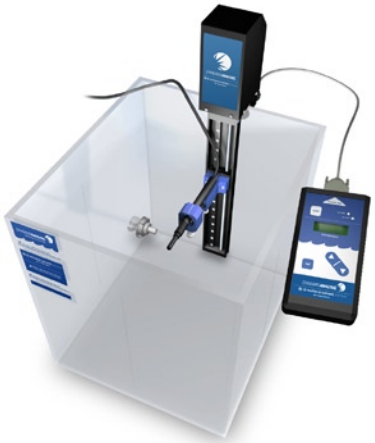
With two independent measurement channels, the SuperMAX is essentially two electrometers in one instrument. Bias, range, and system factor application can be unique to each channel, allowing for many measurement scenarios. Channel 1 or 2 can be viewed individually in full screen with large, bold characters, or together in a split-screen environment. Even in 2-channel simultaneous mode, measurement values are easy to read, with full control over electrometer settings on a single screen.

Extensive Charge Collection Modes





Building on the capabilities of the popular MAX 4000 electrometer, the SuperMAX electrometer features three individual charge collection modes. Timed Charge Collection Mode allows measurements between 1-600 seconds in 1 second increments. Continuous Charge Collection Mode provides manual start/stop measurement for unlimited duration. Triggered Charge Collection Mode automatically starts, stops and saves measurement at user defined thresholds set for both high and low ranges. This threshold detection capability is ideal for external beam measurements.



1D Water Scanning System

Applications

- External Beam IMRT
- LDR or HDR Brachytherapy
- Two channel operations such as cross calibration between two chambers, isocenter versus off-axis, and in-air versus in-water comparisons
- Stereotactic Radiosurgery
- Any task where a high quality reference grade electrometer is required

SuperMAX
shown with the
HDR 1000 Plus Well Chamber

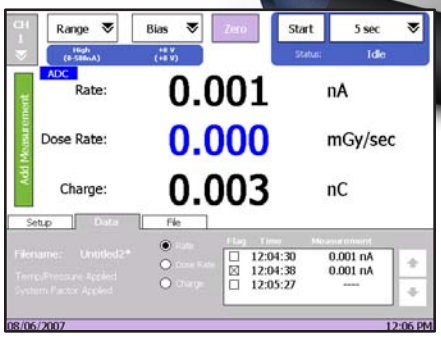
Model A4 Shonka-Wyckoff Spherical Chamber

Model A16 Exradin Microchamber

Each channel allows ± 100 V up to ± 1000 V bias for large volume chambers, selectable in 1 volt increments.

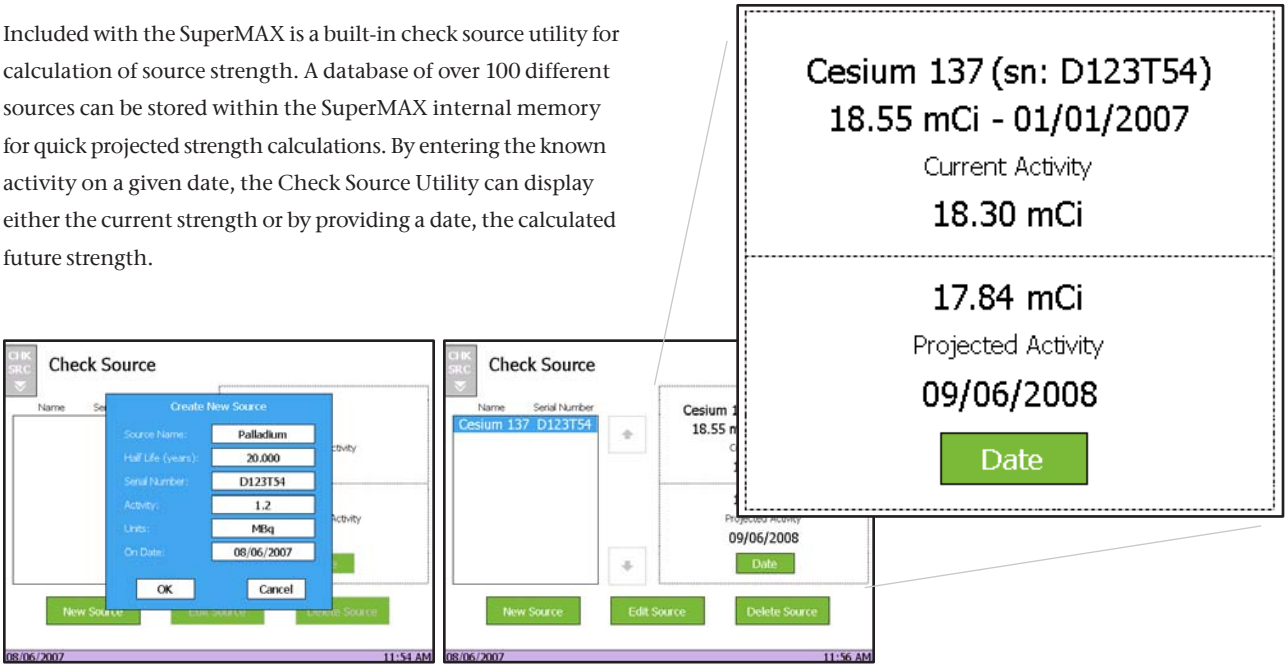
Save and Export Data Capability

Included with the SuperMAX is a USB flash memory drive that can be used to export measurement data from the SuperMAX. As charge collections are completed, measurement values are automatically stored in a date and time stamped list of values acquired during a measurement session. Rate or dose rate measurement can also be added manually by tapping the Add Measurement button. At any time, this list can be exported to the USB flash memory in the form of a .csv (comma separated values) file which can be transferred to a PC and opened in Microsoft® Excel or other spreadsheet application for additional analysis or calculation.



Check Source Utility

Included with the SuperMAX is a built-in check source utility for calculation of source strength. A database of over 100 different sources can be stored within the SuperMAX internal memory for quick projected strength calculations. By entering the known activity on a given date, the Check Source Utility can display either the current strength or by providing a date, the calculated future strength.



The capabilities of the SuperMAX are integral to the instrument; no PC is required.

Future Expandability

When available, enhancements made to the SuperMAX software can be easily installed via the USB flash memory drive included with each instrument. The SuperMAX Electrometer was designed with expansion in mind, and its flexible architecture can enable many creative uses, especially those invented by members of the medical physics community.

Standard Imaging encourages feedback for future uses of its equipment, and looks forward to incorporating great ideas into the SuperMAX for both current and future users. Please visit our website forums to discuss your ideas today!
http://www.standardimaging.com/forums

SUPERMAX (REF 90018) SPECIFICATIONS

DISPLAY RANGE

RATE:	*Low Range* 0.001 pA – 500.0 pA, 1 fA resolution *High Range* 0.001 nA – 500.0 nA, 1 pA resolution
CHARGE:	*Low Range* 0.001 pC – 999.9 μC, 1 fC resolution *High Range* 0.001 nC – 999.9 μC, 1 pC resolution

CHARGE COLLECTIONS

TRIGGER:	Automatic start, stop, reset and save data based on user defined thresholds (*Start:* 0.2 – 9.9 pA; *Stop:* 0.1 – 9.8 pA)
TIMED:	User set duration (*Range:* 1 – 600 seconds; *Increment:* 1 second)
CONTINUOUS:	Unlimited duration with manual stop

REAL TIME CLOCK	Date and time stamp for all measurements for easy identification
INTERNAL MEMORY	Store preferences, >100 sources, >100 chamber/system factors
RANGE SWITCHING	User selectable — High or Low
REPEATABILITY	± 0.1% (IEC 60731 requirement: ± 0.5%)
LONG-TERM STABILITY	± 0.5% (over one year)
STABILIZATION TIME	± 0.1% (IEC 60731 requirement: ± 0.5% of value at 1 hr for measurements taken at 15 min and 6 hrs)
RESPONSE TIME	< 2 s on high range (IEC 60731 requirement: < 3 s)
NON-LINEARITY	± 0.25% (IEC 60731 requirement: ± 1.0%)

CONFORMITY	CE 93/42/EEC Reference class according to IEC 60731
ZERO DRIFT	± 0.25% (IEC 60731 requirement: ± 0.5%)
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DISPLAY	6.4" color TFT, touchscreen
INPUT	(2) BNC two lug, triaxial connector
BIAS VOLTAGE	Nominal ± 1000 volt bias
USER SETTINGS:	– 1000 to – 100, 0; 100 to 1000 (set in 1 volt increments)
ACCURACY:	± 0.3 volt
POWER	100-240 VAC, 0.5 A max, 50/60 Hz input to external power supply, 9 VDC, 1.7 A power supply output to electrometer input, UL/TUL listed power supply
ZEROING	Automatic zero function, user activated
OUTPUT	(2) USB ports
DIMENSIONS	*Height:* 8.1 cm, 3.2 in *Width:* 26.7 cm, 10.5 in *Length:* 21.1 cm, 8.3 in *Weight:* 2.4 kg, 5.3 lbs

OPTIONS

SuperMAX Accessory Kit (REF 72245)
Includes extra stylus, extra USB flash drive, and set of 5 extra screen protectors

SuperMAX Electrometer with TNC connector (REF 90018-C)

Specifications subject to change without notice.