S.E. International
Digtial Radiation Detector Ranger

The Ranger® offers maximum performance in a lightweight, rugged nuclear radiation detector for surveying at the facility or in the field. Though designed with industrial environments in mind, it still has all of the features you've come to love in the lab. The Ranger® is a small, handheld, digital survey meter that offers excellent sensitivity to low levels of alpha, beta, gamma, and x-rays. This model has built in efficiencies for common isotopes to calculate activity in Bq and DPM. The Ranger also has a backlit digital display, a red count light, and a beeper that sounds with each count detected. Other features include selectable alert levels, an adjustable timer, and an optional wipe test plate for swipes. Internal memory and the free Observer USB Software allow you to download your data, and set computer alarms.With the Free Radiation Alert® Observer BLE app from the Google App Store, you can display the readings from your detector on your android device, label sample readings and descriptions, take timed counts, append GPS data and send your saved survey file. Alarms set on the instrument will also activate on your android device. The Free Observer USB software (Windows® only) reads in Total Counts, CPM, µR/hr, mR/hr, CPS, µSv/hr, and has the ability to collect and log data, set alarms, set timed counts, set the calibration date and settings, and generate reports.

Applications & Uses
• Surveying for NORM (Naturally Occurring Radioactive Material) contamination
• Gross wipe counting
• Contamination surveys of packages, equipment, people, etc.
• Regulatory inspections
• Scrap Metal Screening
• Low energy radionuclide detection

Detector
Internal Halogen-quenched, uncompensated GM tube with thin mica window, 1.4-2.0 mg/cm2 areal density. Effective diameter of window is 45 mm (1.77 in.).

Energy Sensitivity
Detects Alpha down to 2 MeV. Detects Beta down to .16 MeV; typical detection efficiency at 1 MeV is approx. 25%. Detects Gamma down to 10 KeV through the detector window. 3340 CPM/mR/hr (137Cs). Smallest detectable level for 125I is .02 µCi at contact.

Built-in Efficiencies
Sulfur (35S), Strontium (90Sr/y), Cesium (137Cs), Phosphorus (32P), Carbon (14C), Iodine (131I), Cobalt (60Co), and Alpha

Averaging Periods
Display updates every 3 seconds. At low background levels, the update is the average for the past 30-second time period. The timed period for the average decreases as the radiation level increases.

Operating Range
mR/hr – .001 (1µR) to 100
CPM – 0 to 350,000
µSv/hr – .01 to 1000
CPS – 0 to 5000
Total Counts- 1 to 9,999,000 counts

Accuracy
Reference to Cs137
Typically ±15% from factory, ±10% with NIST Source Calibration NIST Calibration Additional

Anti-Saturation
Meter will hold at OVER RANGE in fields as high as 100 times the maximum reading.

Selectable Alert Set Range
mR/hr .001 – 100 and CPM 1 – 350,000. Pulsating beeper sounds the alert. Adjustable alert levels are used for mR/hr / CPM, and µSv/hr / CPS. 70db @ 1m. Alarm will sound when in Timer Mode when set alarm threshold is reached.

Display
Graphic LCD with Backlight.

Outputs
USB for use with Free Observer USB Software for PCs
Bluetooth for use with the Free Observer BLE App for Android.

Audio Indicator
Internally mounted beeper (can be switched off for silent operation)

Count Light
Red LED flashes with each radiation event

Power Requirements
USB Power or Two (2) AA alkaline batteries (included). Approx. 800 hrs @ background.

Temperature Range
-10° to +50°C (14° to 122°F)

Humidity
10% to 70% Non-Condensing

Size
140 X 68 X 33 mm (5.5 X 2.7 X 1.3 in.)

Weight
291g (0.64 lbs.)

Includes
Carrying Case, Xtreme Boot, Lanyard, Stand, Batteries, Mini-USB Cable, Observer USB Software, Observer BLE Software, Certificate of Conformance

Options
Wipe Test Plate, Swipes, Water Resistance Case, NIST Calibration

Limited Warranty
1 year limited warranty