

Survey and Count Rate Meter

Victoreen® Model 190

RS

Radiation Safety



Model 190 shown with optional Pancake Probe (Model 489-110D)

- Backlit analog/digital display
- Interchangeable probe adapter module
- Error-free visual indication
- Auto-ranging
- Multiple probe use
- Available in SI units

Introduction

The Victoreen Model 190 is compatible with Geiger-Mueller (GM) detectors, neutron probes, proportional counters, and scintillation probes operating from 300 to 1300 volts. Depending on probe selection, the Model 190 detects alpha, beta, gamma, neutron, or x-ray radiation within an operating range of 1 μ R/h to 1 R/h or 1 CPM to 1,000,000 CPM. The unit is available with either an MHV or a BNC connector to provide the user with versatility in probe selection.

Visual indication of selected parameters, as well as measured values, are displayed on the analog/digital display.

The Model 190 Survey and Count Rate Meter, with purchased probe, is shipped calibrated and ready-to-use.

Applications

The Model 190 Survey and Count Rate Meter is an easy-to-use instrument designed to meet the high technology requirements of Health Physics, Medical Physics, and Non-Destructive Testing applications.

Features

LCD display readout

- 2.6 inches (6.6 cm) x 2.0 inches (5.1 cm)
- Analog scale has fifty-one elements arranged in a radius arc. Each element represents 2% of full scale. Scale markings are 0, 2, 4, 6, 8, and 10. Scale length is 2.2 inches (5.6 cm)
- Scale multiplier is 0.0001 to 1 million, depending on the probe selected and the units activated
- 16-character alphanumeric display shows digitized average of the bar graph value. Displays operational units such as radiation unit changes, response time changes, data, and labels

Features *(continued)*

Pushbutton controls

- **Light** Activates a background light for a preset or indefinite amount of time
- **Mode** Rolls through and displays the available units for the selected mode of operation
- **Log** Enters and sequentially labels the displayed data into a data log
- **Rate/Integ** Allows the user to select the mode of display
- **Resp Time** Rolls through and displays available response times (3, 6, 12, and 24 seconds) for user selection
- **Audio** Allows the user to turn on/off the audio indicator

Specifications

Radiation detected Gamma and x-ray above 20 keV

Energy range $\pm 20\%$ from 45 to 1000 keV

Operating ranges (dependent on selected probe)

Toggles and selects rate units:

$\mu\text{R/hr}$	mR/hr	R/hr
CPM	CPS	
$\mu\text{Sv/hr}$	mSv/hr	
DPM	Bq/cm ²	$\mu\text{Ci/cm}^2$

and the complementary units in the integrate mode:

μR	mR	R
CTS	D	
μSv	mSv	
Bq	μCi	

with the integrated time value in seconds

Accuracy Within 10% of reading between 10% to 100% of full scale indication on any range, exclusive of typical energy dependence. Accuracy is probe dependent

Detector Accepts GM detectors, neutron probes, scintillation probes, and proportional counters operating at high voltages between 300 and 1300 volts

Adapter module Contains calibration data and high voltage settings for a specified probe. The module is available with an MHV or a BNC connector. Specify the type of connector with order

Note: Additional adapter modules can be purchased for use with multiple probes:

Specify Model 190060 for MHV adapter module

Specify Model 190070 for BNC adapter module

By using multiple replaceable probe adapter modules, each module can be assigned to a specific probe. The module's EEPROM stores the calibration factors for a specific probe. When plugged into a Model 190 Survey and Count Rate Meter, it automatically sets the high voltage and activates the calibration data set for the specific probe. By using modules married to specific probes, the user has the convenience of using only one Model 190 with multiple probes for survey work

Log Logs 211 data points and sequentially labels data points. (Data retrieval requires the Model 190-1A Infrared Communicator). With the communicator, alphanumeric up to 16 characters can be programmed into the Model 190 to name the locations of individual data points to be collected. The location name is displayed when the Log button is pressed. Press the Log button again, and the data point is stored

Power requirements Four 9 V batteries, 200 hours operation, automatically indicates when battery is low

Warm up time 15 second diagnostic check

Check source Natural uranium, mounted on the case

Environmental

Temperature range 14° to 140°F (- 10° to + 60°C)

Relative humidity 0 to 95%, non-condensing

Construction Molded ABS plastic, splash-proof case

Probe fits into side-mounted ABS plastic probe holder with Velcro® straps

Dimensions 3.75 (w) x 9.2 (d) x 2.1 in (h) (9.2 x 23.4 x 5 cm)

Weight (without probe) 1.56 lb (0.70 kg)

Optional accessories

Single Unit Carrying Case (Model 190HPS)

Multiple Unit Carrying Case (Model 190HPC)

Infrared Communicator (Model 190-1A), additional features can be activated, such as log mode, alarm setpoint, energy specific calibrations, and default setting changes. Features and pushbuttons can also be locked-out to set up the Model 190 in a user defined mode of operation

Note: The Model 190 Survey and Count Rate Meter, with the customer selected probe is calibrated to NIST standards. The 190 and probe is calibrated in mR/h or $\mu\text{Sv/h}$ units as a standard. The end user may calibrate in additional radiation units using the 190-1A Infrared Communicator

Available model(s)

190 Survey and Count Rate Meter

For additional information, please contact Cardinal Health, Radiation Management Services customer service at 440.248.9300, 800.850.4608, or fax: 440.349.2307; located at 6045 Cochran Road, Cleveland, Ohio 44139-3303, USA.

CE Tested. Meets applicable standards.

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