190 Meter with GM Pancake Probe on Telescoping Assembly

Victoreen® Model 190EX

Introduction

The Model 190EX combines the technology of the Model 190 Survey and Count Rate Meter and the Victoreen Model 489-110D GM Pancake Probe on a 10 foot telescoping assembly. A rugged webbed harness is provided with the 190EX in order to stabilize the probe during remote surveys.

The GM Pancake Probe (Model 489-110D) is easy to decontaminate and provides high detection efficiency for alpha, beta, and gammas as illustrated in the probe specification efficiency table. A digital/analog bar graph display on the Model 190 Meter provides realtime dose rate information to the end user. An immediate audio alarm also alerts the surveyor of unwanted radiation.

- **High detection efficiency**
- **Ergonomic design**
- **Lightweight**
- **Model 190 meter detaches for other applications**
- **Easy to decontaminate detector**
- **Digital/analog bar graph display**
- **Meter offers settable audio alarms and data logging**

Applications

The Model 190EX may be used for many applications where suspected radiation is in remote locations. It is ideal for surveying the tops of trucks, railroad cars, for surveying abandoned wells and in decommissioning surveys. The all purpose alpha, beta, gamma detector on the end of a telescoping assembly is also ideal where the user wishes to use the distance rule as protection against unwanted exposure.

190EX product package includes:

- Model 190 Survey and Count Rate Meter with Model 190060 Calibration Module
- GM Pancake Probe with cable mounted on 10 foot telescoping assembly (probe is not weatherproof)
- 0.064 µCi ^{238}U Check Source
- Carrying harness including webbed shoulder harness with weight bearing cup
- Lockable foam lined polypropylene carrying case (4.6 x 10.25 x 53.50 in) (12 x 26 x 136 cm)

Total package weight: approximately 13 lb (5.9 kg)

Model 190EX used for remote survey

Features

- GM Pancake Probe, Model 489-110D on 10 foot telescoping assembly provides remote alpha, beta, gamma, and x-ray detection
- Detector extends on telescoping assembly up to 10 feet as needed
- Model 190EX-KT is available to retrofit an existing Model 190 Meter with the probe, telescoping assembly, cable, calibration module, harness, check source, and carrying case

Specifications

Survey and Count Rate Meter (Model 190)

Operating ranges (dependent on selected probe)

Toggles and selects rate units:

µR/hr	mR/hr	R/hr
CPM	CPS	
µSv/hr	mSv/hr	
DPM	Bq/cm2	µCi/cm2

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 GM Pancake Probe (see probe specifications to follow)

Adapter module Contains calibration data and high voltage settings for a specified probe. The module is available with an MHV connector

***Note:** Additional adapter modules can be purchased for use with multiple probes: Specify Model 190060 for MHV adapter module*

By using multiple replaceable probe adaptor 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 Infrared Communicator, Model 190-1A). With the communicator, alphanumerics 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

Battery condition Automatically indicates when battery is low

Power requirements Four 9 V batteries, 200 hours operation

Warm up time 15 second diagnostic check

Check source Model 450UCS ^{238}U, 0.064 µCi check source, 2 x 2 yellow card

Environmental

Relative humidity 0 to 95%, non-condensing

Temperature range - 10° to + 60°C

Housing material Molded ABS plastic, splash-proof case

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

Weight (survey meter only) 1.56 lb (0.7 kg)

Optional accessories

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 190EX Survey and Count Rate Meter with pancake probe is calibrated to NIST standards. The 190 and probe are calibrated in mR/h or µSv/h units as a standard. The Model 190EX unit pancake probe is not weatherproof. The end user may calibrate in additional radiation units using the Infrared Communicator, Model 190-1A*

GM Pancake Probe (Model 489-110D)

Detector Halogen-quenched "Pancake" GM tube

Radiation detected Alpha above 3.5 MeV, beta above 35 keV and gamma above 6 keV

Operating voltage 900 V; compatible with all GM survey meters

Window 15 cm^2 (1.75 in Ø) mica, 1.4 to 2.0 mg/cm^2 thick

Typical background 30 CPM

Sensitivity 3500 CPM/mR/hr

Protective screen Stainless steel, hexagonal pattern providing 86% open area

Housing material ABS plastic

Cable Shielded cord; approximately 9.50 ft long MHV coaxial connector

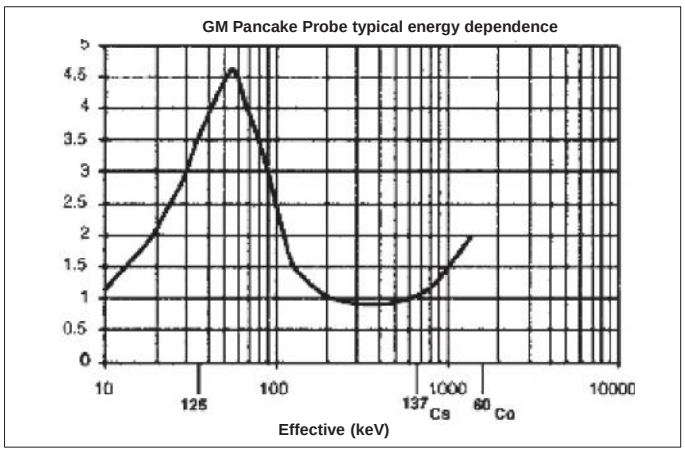
Dimensions

Detector housing 2.50 (w) x 0.875 (d) x 4.25 in (h) (6.36 x 2.2 x 10.8 cm)

Handle 1 in Ø x 6.25 in (d) (2.5 x 16.5 cm) (excluding connector)

Weight (pancake probe only) 0.625 lb (0.28 kg)

Typical energy dependence



Efficiency The GM Pancake Probe, Model 489-110D efficiency is shown below. In a recent performance check, the numbers shown represent typical results obtained:

Isotope	%Efficiency
^{14}C	5
^{99}Tc	12
^{137}Cs	24
^{90}Sr	59
^{36}Cl	26
^{241}Am	8
^{129}I	2
^{230}Th	15
^{239}Pu	12

***Note:** The efficiency formula used to calculate the % Efficiency is: Eff. % = (CPM x 100) / DPM*

Available model(s)

190EX 190 Meter with GM Pancake Probe on Telescoping Assembly

CE **Tested.** **Meets applicable standards.**

For more information, receive our full product catalog, or order online, contact **Radiation Management Services** business of **Fluke Biomedical**: 440.248.9300 or www.flukebiomedical.com/rms.

Specifications are subject to change without notice.

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