

SVG2 System

NATO approved complying with all relevant MIL STDs

Benefits

- Residual gamma radiation
- Initial gamma and neutron radiation
- Alpha and beta contamination with discrimination between alphas, betas and gammas
- Modular system, covering all aspects of nuclear detection
- Radiation reconnaissance with NBR technology

Features

- Large LC display
- Microprocessor controlled
- Analog and digital reading
- Adjustable alarm thresholds
- Audible and visual alarm, earphone
- Complying to all relevant MIL STDs concerning TREE, NEMP, EMV and others
- Manual and automatic data storage

The SVG2 is a robust and widely adopted system featuring hardened microprocessor controlled dose rate measurement. The initial gamma and neutron doses and the residual gamma dose rate and dose are detected by approved semiconductors. Energy compensated Si-based diodes are used to measure the residual gamma radiation. Additionally over the whole life time of the SVG2 a MOSFET element and a special PIN-diode are continuously sensitive for the initial gamma and neutron radiation even if the SVG2 is shut off.

The **SVG2 System** consists of 3 groups:

- **SVG2 Kit** (NSN 6665 12 358 1874)
- **SVG2 Supplementary Kit** (NSN 6665 12 358 1875)
- **SVG2 Radiation Protection Kit** (NSN 6665 12 358 1876)

The SVG2 Kit consists of the SVG2 itself, the external ABG-probe for contamination measurement, an earphone, one short and one long telescopic handle, a connection cable set and two carrying bags.

The SVG2 Supplementary kit is used for the measurement of radioactivity in water, soil and food. The components are a sample changer, an Am-241/Sr-90 (1850 Bq each) test source and different accessories in a special case. The Supplementary Kit will be used with SVG2 and the ABG-probe.

The SVG2 Radiation Protection Kit is used for high sensitivity detection of hidden and remote gamma sources and for high sensitivity measurement of alpha- and beta contamination. The kit consists of a NBR-probe (Natural Background Rejection), an alpha-/ beta probe, a spiral cable and an Am-241/Sr-90 (1850 Bq each) test source, which are used with the base SVG2 instrument. The probes will be used with the SVG2.



SVG2 Base Unit



SVG2 Kit



SVG2 Supplementary Kit (top left)
and Protection Kit (top right)

The SVG2 System is easy to handle and particularly distinguished by its low weight and power consumption. Not only the current gamma dose rate but also the integrated gamma dose over a certain time can be displayed. Both modes of total and differential dose display are available.

Alarm thresholds for all the modes are adjustable. The alarm is given by a red flashing LED and by a built-in speaker or by a plugged-in earphone.

The measured dose and dose rate can be internally stored in a memory. By means of the function keys the stored values can be recalled, displayed and transmitted over an interface to a computer for further investigation.

When mounted in military vehicles or aircrafts the SVG2 System can be connected to board power supply, any computer and navigation system via its optical and therefore potential-free serial interface.

Due to the unique design, the SVG2 System is capable of performing any possible measuring and detection task in a nuclear contaminated terrain.

Radiological features of the SVG2 Kit

Gamma radiation, residual

Measuring range, gamma	0.01 cGy/h – 2,000 cGy/h (Sv/h H*10, R/h also selectable)
	0.01 cGy – 2,000 cGy (Sv H*10, R also selectable)
Energy range, gamma	70 keV – 3 MeV

Dose Range for Initial Radiation

Gamma radiation	1 cGy – 2,000 cGy
Neutron radiation	1 cGy – 2,000 cGy

Alpha-Beta-Gamma probe (ABG)

Measuring range, gamma	0.01 cGy/h – 50 cGy/h (R, Bq, Bq/cm ² , and Bq/L also selectable)
Measuring range, alpha	0 – 300,000 cps
Measuring range, beta	0 – 300,000 cps
Efficiency	C-14 0.047; Cs-137 0.40; Tl-204 0.39; Sr-90/Y-90 0.57 (pulse × cm ² /beta particle)

Technical features

Weight	1,35kg (3.0 lbs) base unit including batteries 3.5kg (7.6 lbs) complete kit
Dimensions	SVG2: 160 x 90 x 78mm SVG2 kit with bag: 250 x 120 x 170mm
Battery life time	up to 150 h
Temperature range	-30°C up to +55°C
TREE	10 ¹¹ cGy/ε neutron
NEMP	75 kV/m, norm pulse slope 5 ns
EMV acc. to VG95373	SA 02 G, SA 03 G, SA Q4 G
Heat flash	2 s with 59 J/cm ²
Salt fogs	48 h acc. to MIL STD 810 D
Protection class	IP 67 acc. to VG 95332, page 12, level 6
IR-interface	PC, GPS
Available ext. probes	ABG, contamination, neutron, NaI and 2 ea. ASG2-detectors for NBC tank, FOX, FENNEK and other vehicles

 Learn more at thermofisher.com/radiationmeasurement

thermoscientific