

Manual GAMMA-SCOUT Standard



پتروفرهان گستر جنوب DIGINDT.IR FGJ-NDT.IR

| Display | Liquid-crystal display (LCD), 4-digit, numeric with description, quasi-analogue logarithmic bar chart Operating mode indicators | | |
|---|---|--|--|
| Radiation Detector | End-window counting tube to the Geiger-Müller principle Stainless steel housing Measuring length 38.1 mm, measuring diameter 9.1 mm Mica window 1.5 to 2 mg/cm ² Zero rate <10 pulses per minute with screening by 3mm Al and 50 mm Pb operating temperature -20 to +60°C, operating voltage approx. 450 V calibrated scale 0.01 µSv/h to 5,000.00 µSv/h (above and below this, we refer to as the "display area") | | |
| Radiation Types | a from 4 MeV | | |
| | ß from 0.2 MeV | | |
| | y from 30 keV | | |
| Selection shield | a + ß + y without shielding | | |
| (for point radiation) | ß + y Al foil approx. 0.1 mm, shields a completely | | |
| | y Al shield approx. 3 mm, shields a completely and ß to 2 MeV, weakens y by less than 7% based on Cs-137 | | |
| | | | |
| Recycling | Devices can be returned free-of-charge and we will pass them on for recycling | | |
| Recycling Power Consumption | Devices can be returned free-of-charge and we will pass them on for recycling Less than 10 microamperes under environmental radiation | | |
| | FARHAN GOSTAR JOONOB | | |
| Power Consumption | Less than 10 microamperes under environmental radiation | | |
| Power Consumption Memory | Less than 10 microamperes under environmental radiation 256,000 byte (100,000 data sets) | | |
| Power Consumption Memory Housing | Less than 10 microamperes under environmental radiation 256,000 byte (100,000 data sets) Impact-resistant plastic | | |
| Power Consumption Memory Housing Dimensions | Less than 10 microamperes under environmental radiation 256,000 byte (100,000 data sets) Impact-resistant plastic Length 163 mm x width 72 mm x height 30 mm European CE standard, US FCC-15 standard | | |
| Power Consumption Memory Housing Dimensions Interference Protection | Less than 10 microamperes under environmental radiation 256,000 byte (100,000 data sets) Impact-resistant plastic Length 163 mm x width 72 mm x height 30 mm European CE standard, US FCC-15 standard Data-reset is not a malfunction GAMMA-SCOUT GmbH & Co. KG Abtsweg 15, D-69198 Schriesheim, GERMANY Fax: +49 (0) 62 20 / 66 40 | | |

Scientific definitions see "www.hpa.org.uk/radiation/glossary"



| Physical Parameter | Si unit | Old unit | Relation |
|-------------------------------|---------------------------------|-------------|---|
| Activity | Becquerel (Bq) 1 Bq = 1/s | Curie (Ci) | 1 Ci = 3.7 * 10 ¹⁰ Bq 1 Bq = 2.7 * 10 ⁻¹¹ Ci = 27 pCi |
| lon dose l | Coulomb / kg | Röntgen (R) | 1 R = 2.58 * 10 ⁻⁴ C/kg 1 C/kg = 3876 R |
| Energy dose D | Gray (Gy) | Rad (rd) | 1 rd = 0.01 Gy 1 Gy = 100 rd |
| Equivalent dose H | sievert (Sv) | Rem (rem) | 1 rem = 0.01 Sv 1 Sv = 100 rem |
| Effective Dose H _E | sievert (Sv) 1 Sv = 1 J / kg | | Calculated value / radiation protection |

For relationship between Becquerel and sievert see pages 20-21.
For further information on Becquerel, see Gamma FAQ on www.gamma-scout.com



Calibration

Under environmental radiation, the counter tube is not subject to fatigue and, therefore, will not require re-calibration. However, if the user holds ISO certification, periodical calibration is mandatory. For this purpose, we offer the following service:

Testing is sub-contracted to an assembly operation, which tests it for 72 hours against a master. The master is calibrated against a gauged reference source (Cs-137). A data log is then generated. To the best of our knowledge, this record is accepted as compliant by ISO auditors without exception.

Currently, this costs 50 Euro before sales taxes.



IT-Support

In order of problems by installing the product drivers or TOOLBOX software, do not hesitate to contact us:

GAMMA-SCOUT GmbH & Co. KG Abtsweg 15 D-69198 Schriesheim Germany

Fax: +49 (0) 6220 / 6640

E-Mail: e.mirow@gamma-scout.com







Conversion of Becquerel (activity) into µSv/h (dose rate)

The relationship between Becquerel (activity, i.e. the measure of the decay in the atom) and microsievert per hour (dose rate, i.e. the measure of the radiation at the device):

→ The values apply to a point source at a distance of 1m from the device

| Cs-137 at a distance of 1m with shield open | | | | |
|---|------------|-----------|----------|--|
| 1 GBq | 86 μSv/h | 100 μSv/h | 1.17 GBq | |
| 100 MBq | 8.6 μSv/h | 10 μSv/h | 117 MBq | |
| 10 MBq | 0.86 μSv/h | 1 μSv/h | 11.7 MBq | |
| Cs-137 at a distance of 1m with shield closed | | | | |
| 1 GBq | 81 μSv/h | 100 μSv/h | 1.24 GBq | |
| 100 MBq | 8,1 μSv/h | 10 μSv/h | 124 MBq | |
| 10 MBq | 0.81 μSv/h | 1 μSv/h | 12.4 MBq | |

| Co-60 at a distance of 1m with shield open | | | | |
|--|------------|-----------|----------|--|
| 1 GBq | 372 μSv/h | 100 μSv/h | 0.27 GBq | |
| 100 MBq | 37.2 μSv/h | 10 μSv/h | 27 MBq | |
| 10 MBq | 3.72 μSv/h | 1 μSv/h | 2,7 MBq | |
| Co-60 at a distance of 1m with shield closed | | | | |
| 1 GBq | 339 μSv/h | 100 μSv/h | 0.30 GBq | |
| 100 MBq | 33.9 μSv/h | 10 μSv/h | 30 MBq | |
| 10 MBq | 3.39 µSv/h | 1 μSv/h | 3.0 MBq | |
| | | | | |

| Tc-99m at a distance of 1m with the shield open | | | |
|---|------------|-----------|----------|
| 1 GBq | 13 μSv/h | 100 μSv/h | 7.96 GBq |
| 100 MBq | 1.3 μSv/h | 10 μSv/h | 796 MBq |
| 10 MBq | 0.13 μSv/h | 1 μSv/h | 79.6 MBq |

Tc-99m at a distance of 1m with the shield closed

Measurement not possible, dose rate too low



0 0

Becquerel $<> \mu Sv/h$

GAMMA-SCOUT®

| f-18 at a distance of 1m with the shield open | | | | |
|---|------------|-----------|----------|--|
| 1 GBq | 154 μSv/h | 100 μSv/h | 0.65 GBq | |
| 100 MBq | 15.4 μSv/h | 10 μSv/h | 65 MBq | |
| 10 MBq | 1.54 μSv/h | 1 μSv/h | 6.5 MBq | |
| | | | | |
| f-18 at a distance of <mark>1</mark> m with the shield closed | | | | |
| 1 GBq | 147 μSv/h | 100 μSv/h | 0.68 GBq | |
| 100 MBq | 14.7 μSv/h | 10 μSv/h | 68 MBq | |
| 10 MBq | 1.47 μSv/h | 1 μSv/h | 6.8 MBq | |

FARHAN GOSTAR JOONOB



22

| A | | М | |
|-----------------------------|---------------|----------------------------|--------------|
| Alert level | 6, 12 | Measuring time setting | 8 |
| | , | Memory capacity | 14 |
| В | | Memory clearing | 14 |
| Bar chart | 6, 7, 16, 18 | Microsievert | 2, 6 |
| Battery change | 11 | | -, - |
| Becquerel | 9, 19, 20, 21 | 0 | |
| | | ONLINE Model | 2, 17 |
| С | | | • |
| Calibration | 19 | Р | |
| Current radiation | 6 | Power consumption | 11, 18 |
| | | Pulse counting | 8 |
| D | | Pulse rate measuring | 9 |
| Data download cable | 15 | | |
| Data reading | 15 | R | |
| Data storage GAMMA-SCOUT® | 2 | Radiation selection switch | 5 |
| Data transfer | 15 | Radiation types | 5, 8 |
| Date | 10 | Rechargeable battery | 7 |
| Delete data | 16 | Reset button | 11 |
| Dose (cumulative) | 2, 7, 13 | Rem | 2, 5, 9 |
| Dose equivalent | 4, 19 | | |
| Driver | 15 | S | |
| | | Service | 18 |
| | | Support | 19 |
| FCC-15 standard | 2, 3, 4, 18 | | |
| | | T | |
| G | | Technical data | 18, 19 |
| Geiger-Müller counting tube | 5, 18 | Ticker | 4, 11 |
| Name of the second | | Time | 10 |
| L | | Time setting | 10 |
| Log setting | 14 | TOOLBOX software | 3, 4, 15, 16 |
| Logging intervals | 14 | | |
| | | U | |
| | | USB port | 15, 17 |
| | | Σ | |
| | | | |
| | | Delete | 13 |
| | | $\overline{\wedge}$ | |
| | | 5 | |
| | | Delete | 12 |
| | | | |



+982144584619

+989034119385

🖁 Tehran, Tehransaı