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GD-5x series GAMMA DETECTORS

MAIN ADVANTAGES

- Scintillation probes
- High sensitivity to gamma radiation
- Water and dust resistance

PURPOSE

GD probes can typically be used as sensitive external detectors for dose rate monitors in environmental monitoring, as detectors in process liquid activity monitors in nuclear facilities, or in laboratories.

The detector uses a NaI(Tl), YAP(Ce), CeBr₃, or CLYC:Ce scintillation crystal. On request, detectors with other types of scintillators, such as LaBr₃, YAG(Ce), or CaF₂, can also be manufactured. A photomultiplier is used to process and amplify the signal. The signal can then be further analysed spectrometrically using a multichannel analyser.

NaI(Tl) crystals are a proven solution but can only be used under normal operating temperatures.

SPECIFICATION

| Model | GD-51 N1x1 | GD-51 Y1x1.5 HT | GD-51 C1x1 | GD-51 CLBC1x1 |
|--|----------------|--------------------|-------------------|------------------|
| Scintillation detector | NaI(Tl) | YAP(Ce) | CeBr ₃ | CLYC:Ce |
| Energy range | 60 keV – 3 MeV | 60 keV – 3 MeV | 60 keV – 3 MeV | 60 keV – 3 MeV |
| Energy resolution (¹³⁷ Cs, 662 keV) | <8 % | <6% | <5 % | <5 % |
| Crystal dimensions (ø × v) | 25,4 × 25,4 mm | 25,4 × 38,1 mm | 25,4 × 25,4 mm | 25,4 × 25,4 mm |
| Dimensions (ø × v) | 37 × 210 mm | 42 × 200 mm | 37 × 210 mm | 37 × 210 mm |
| Power supply | max. 1200 V DC | max. 1500 V DC | max. 1200 V DC | max. 1200 V DC |
| Temperature range | 5 to 45 °C | 5 to 120 °C | 5 to 45 °C | 5 to 45 °C |
| Option for version with LED check source | Yes | Yes | Yes | Yes |

YAP(Ce) crystals can operate at higher temperatures because their measurement parameters are less affected by temperature changes.

YAG(Ce) crystals have higher radiation resistance, allowing them to function even under high dose rates.

CeBr₃ and LaBr₃ crystals are suitable for applications requiring higher energy resolution. CeBr₃ crystals enable precise measurements even at low radiation levels.

CLYC:Ce crystals allow for the detection of both gamma rays and neutrons, making them a potential replacement for proportional detectors with the He-3 tubes.

All GD probes are waterproof and hermetically sealed.

GD probes can also be manufactured with a potassium chloride capsule for temperature stabilization of spectra.

RELATED PRODUCTS

DIM-09 BOX Multichannel Analyser (1024 channels)

DIM-15 BOX Multichannel Analyser (4096 channels)

SW RadSpec Spectroscopy Software

CHARAKTERISTICKÉ ÚDAJE

| Model | GD-52 N2x1 | GD-52 N2x2 | GD-52 N2.5x2.5 |
|--|----------------|----------------|-------------------|
| Scintillation detector | Nal(Tl) | Nal(Tl) | Nal(Tl) |
| Energy range | 60 keV – 3 MeV | 60 keV – 3 MeV | 60 keV – 3 MeV |
| Energy resolution (¹³⁷ Cs, 662 keV) | <8 % | <8 % | <8 % |
| Crystal dimensions (ø × v) | 50,8 × 25,4 mm | 51 × 51 mm | 63 × 63 mm |
| Dimensions (ø × v) | 65 × 206 mm | 65 × 232 mm | 90 × 250 mm |
| Power supply | max. 1200 V DC | max. 1200 V DC | max. 1200 V DC |
| Temperature range | 5 to 45 °C | 5 to 45 °C | 5 to 45 °C |
| Option for version with LED check source | Yes | Yes | Yes |

CHARAKTERISTICKÉ ÚDAJE

| Model | GD-53 N3x1 | GD-54 N4x4x16 |
|--|----------------|--------------------|
| Scintillation detector | Nal(Tl) | Nal(Tl) |
| Energy range | 60 keV – 3 MeV | 60 keV – 3 MeV |
| Energy resolution (¹³⁷ Cs, 662 keV) | <8 % | <8 % |
| Crystal dimensions (ø × v) | 76 × 25,4 mm | 100 × 100 × 400 mm |
| Dimensions (ø × v) | 95 × 220 mm | 110 × 622 mm |
| Power supply | max. 1200 V DC | max. 1200 V DC |
| Temperature range | 5 to 45 °C | 5 to 45 °C |
| Option for version with LED check source | No | Yes |



GD-53 N3x1 probe



DIM-09 BOX Multichannel Analyser



GD-52 N2x2 probe with handle