



AirSPEC & WaterSPEC

Dose rate meter and gamma radionuclide identification

Application

AirSPEC & WaterSPEC are monoblock units, comprising scintillation detector, photoelectronic multiplier, HV converter, amplifier, multichannel pulses analyzer and processor unit.

AirSPEC & WaterSPEC measurement systems is autonomous, automated and provide calculation of the ambient equivalent dose rate $H^*(10)$ in real time, as well as identification of the most common natural and artificial gamma radionuclides. The results of the identification and dose rate are then transmitted to the upper-level computer via exchange protocol.

AirSPEC & WaterSPEC have automatic stabilization of the spectrometry channels by means of tracking the position of the K-40 1460.8 keV full energy peak provided by the potassium salt located in the cartridge near scintillation crystal.

AirSPEC provides an additional feature of thermostabilizing housing to provide a wider range of operating temperatures. The housing provides both high degree of thermal insulation and automatic control and active adjustment of the temperature inside the device. The IP67 degree of protection allows to use AirSpec in severe weather conditions.

WaterSPEC is designed for indoor or outdoor use in aquatic environments. The waterproof housing has IP68 degree of protection: dust-tight (full protection against dust and other particulates) and protected against extended immersion in water to a maximum depth of 2 meters.

Specification

AirSPEC & WaterSPEC

| Parameter | Value |
|--|--|
| Detector type | Nal(Tl) Ø51 × 51 mm (LaBr ₃ , CeBr ₃ , Srl ₂ – optional) |
| Measured energies range | 80 – 3000 keV |
| Gamma dose rate measuring range | from 0.01 to 100 mkSv/h |
| Relative energy resolution on the line 661,7 keV | < 8% for Nal(Tl) < 3.5% for Srl ₂ |
| MCA channels | 1024 |
| Power supply voltage | 4.5 – 18 V |
| Data transfer interface | RS-485 |
| Shell protection level | Ip67 |
| List of identified radionuclides | Ce-144, Te-132, I-131, Ba-140, Cs-134, Cs-137, Zr-95, Mn-54, Co-60, La-140 |

AirSPEC

| Parameter | Value |
|-------------------------|-----------------|
| Power consumption: | |
| - Thermostabilizing OFF | 1.5 W |
| - Thermostabilizing ON | 25 W |
| Operation temperature | -25 °C ÷ +60 °C |
| Dimensions | 155 × 370 mm |
| Weight | 6.4 kg |

WaterSPEC

| Parameter | Value |
|-----------------------|---------------|
| Operation temperature | 0 °C ÷ +30 °C |
| Dimensions | 76 × 420 mm |
| Weight: | |
| - without a cable | 2.8 kg |
| - with a cable 20 m | 3.7 kg |