

MiniScope MS 5000

Alanine Dosimetry System

Industry standard for evaluating irradiation doses on alanine pellets or blisters.

MS 5000 is a complete alanine-EPR dosimetry system for routine dosimetry in industrial irradiation facilities, or for use as an in-house alanine reference dosimetry system.



Benefits of MS 5000 – Alanine Dosimetry System

Highest quality measurements: the MS 5000 EPR instrument provides a stronger measurement response signal than any other bench-top EPR spectrometer on the market today, with higher measurement sensitivity.

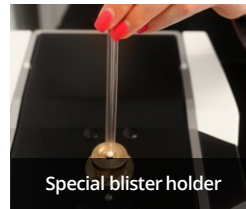
Cuts measurement time in half: the MS 5000 EPR system reduces measurement times in half, from 40 seconds down to 10 seconds or less.

Reliability: the new EPR spectrometer uses a solid-state technology, to provide a more rugged industrial instrument for higher reliability and uptime > 99 %.

Flexibility: Accommodates a wide variety of commercially available alanine dosimeters with specialized holders.

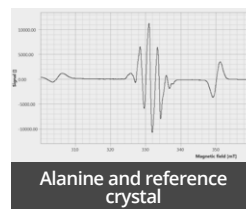
Remote accessibility: IP based system allows remote operation and technical support from anywhere in the world.

Straightforward and quick measurement



1. Insert the dosimeter. Barcode scan (automatic) or Enter sample name (manual).
2. Click start to begin measurement.

< 10 seconds



Measurement	Cal. value [G]	Mass [mg]
100kGy_DauerTest_001	99560.745	0.000
100kGy_DauerTest_002	99598.817	0.000
100kGy_DauerTest_003	99652.814	0.000
100kGy_DauerTest_004	99653.730	0.000
100kGy_DauerTest_005	99638.754	0.000
100kGy_DauerTest_006	99684.147	0.000
100kGy_DauerTest_007	99691.236	0.000
100kGy_DauerTest_008	99703.316	0.000
100kGy_DauerTest_009	99703.316	0.000
100kGy_DauerTest_010	99703.316	0.000
100kGy_DauerTest_011	99703.316	0.000

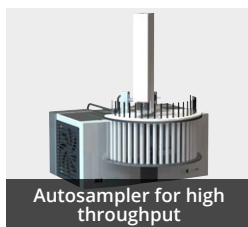
Secured database

3. Dosimeter is measured and the dose is calculated automatically. The calculated dose is displayed and stored automatically in the secured database.

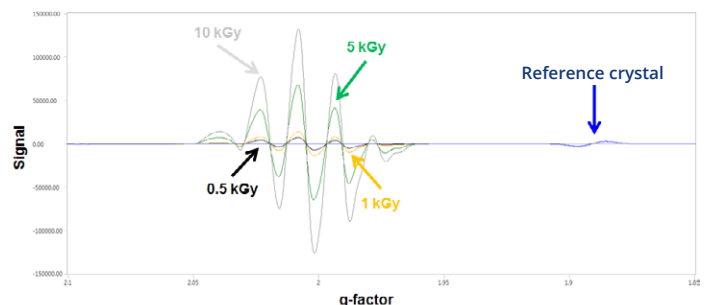
Optional: Enter the mass of the sample for mass reference.

Glassware and optional add ons

Packages for special sample positioning and automation are available together with a software package for spectrum treatment and precision enhancement.



Routine Alanine Dosimetry (Range from 1 Gy up to > 200 kGy)



The measurement time of the MS 5000 is very short and depends on the dose.

High dose	0.5 up to > 200 kGy	10 s, approx. 8000 readouts a day
Low dose	<1 up to 20 Gy	120 s

Alanine dosimeters

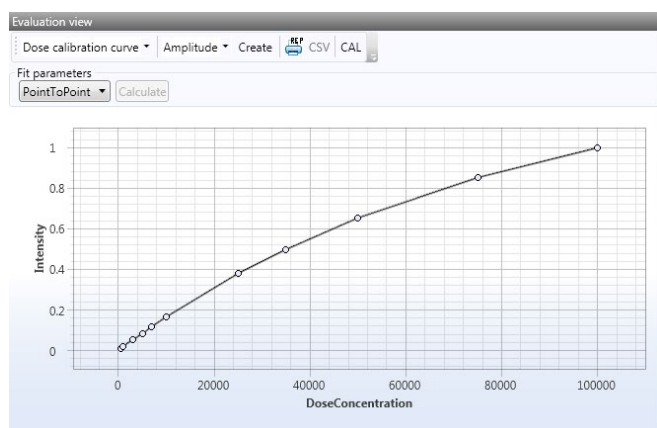
Alanine is an amino acid forming a very stable free radical when subjected to ionizing radiation. The alanine free radical yields an EPR signal that is dose dependent. The MS 5000 EPR system is a simple, fast and accurate measurement equipment for alanine dosimetry for either pellets or blisters.



Alanine Pellets



Alanine blisters with barcode



Dose calibration curve

Technical specifications

Dose range	1 Gy to 200 kGy
Dose type	alanine pellets or blisters
Dosimeter holder	blisters holder (standard) and pellet holder
Barcode reader	optional
Measurement time	between 10 and 120 s (depending on dose)
Internal standard	reference crystal
Measurement repeatability	± 0.1 % (25 kGy dosimeter)
Measurement reproducibility	± 0.5 % (25 kGy dosimeter)
Software	ESRStudio
Laptop or PC requirements	Windows 7 or latest, .NET Framework update, 2 Ethernet ports
Power requirements	100-250 V AC
Dimensions	391 x 262 x 192 mm
Weight	45 kg
Certification	manufactured under ISO 9001 guidelines, CE conform



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