ELSE NUCLEAR

SP2

Single-sphere neutron spectrometer instead of a full Bonner sphere set

Active neutron spectrometer in which 32 silicon detectors in six layers inside one moderating sphere reproduce the spectrometric performance of a six-sphere Bonner set. It measures the neutron spectrum from thermal up to 10 GeV (20 MeV in the LITE version), has built-in electronics and can show the spectrum and H*(10) in real time. It tolerates a high gamma background.



Detector type	Energy range	Weight
32 active ^{6}LiF-covered silicon detectors in six concentric layers inside the moderator [1]	**.025 eV–10 GeV (standard); .025 eV–20 MeV (LITE)** [2]	**25 kg; 23 kg (LITE)** [2]

Specifications

DETECTOR

Detector type	32 active ^{6}LiF-covered silicon detectors in six concentric layers inside the moderator	[1]

MEASURING RANGE

Energy range	0.025 eV–10 GeV (standard); 0.025 eV–20 MeV (LITE)	[2]
Typical neutron sensitivity	Approx. 0.3 cps/(µSv/h)	[2]
Gamma sensitivity	Completely insensitive up to 50 mSv/h continuous gamma background	[2]
Angular dependence	Max. ±2% for a ^{241}Am-Be source	[2]

ELECTRONICS & SIGNAL

Maximum H*(10) per burst in pulsed fields	1–5 µSv depending on the neutron spectrum	[2]

SOFTWARE & DATA

Software	Built-in unfolding algorithm for spectrum and H*(10) on-line; raw data can be saved for off-line analysis	[1]

POWER & BATTERY

Power supply	230 V ±10%, 50 Hz	[2]

MECHANICAL

Moderator diameter	30 cm	[2]
Weight	25 kg; 23 kg (LITE)	[2]

ENVIRONMENT & RATINGS

perating temperature	0–40 °C	[2]

Humidity	0–95%, non-condensing	[2]

ORDERING & ACCESSORIES

ptions	LITE version; traceable calibration (1 dose-rate point, Am-Be) and warranty extension (24 months) on request	[2]

GENERAL

Maximum counting rate	10^5 cps per acquisition channel	[2]

Sources

[1] **SP2 Single-Sphere Neutron Spectrometer**
ELSE NUCLEAR · product-page · Product page · checked 2026-10-16
https://www.elsenuclear.com/portfolio/sp2/

[2] **SP2 Single-Sphere Neutron Spectrometer (datasheet)**
ELSE NUCLEAR · datasheet · p. 2, Technical Specifications · checked 2026-10-16
https://www.elsenuclear.com/wp-content/uploads/2026/05/DAT_SP2_EN_1.08.pdf

Every value is taken from the manufacturer's own document; the number after the value refers to the source list. Always check against the latest datasheet before ordering.

The data comes from the manufacturer's published documents. Manufacturers may change specifications; the current configuration and performance are confirmed in the quotation.