ELSE NUCLEAR

BSS

Bonner sphere spectrometer for neutron spectra

Bonner sphere spectrometer with ^{3}He proportional counters for thermal neutrons, each housed in a spherical HDPE moderator of a different diameter. It comes with a single detector moved between the spheres or with up to 16 detectors measuring at the same time, and the RUFUS software unfolds the neutron spectrum.



Detector type

^{3}He proportional counters for thermal neutrons, e ach in a spherical HDPE moderator [1]

Energy range

1 meV to <100 MeV (standard set); up to 10 GeV with extension set [1]

Specifications

Detector type	^{3}He proportional counters for thermal neutrons, each in a spherical HDPE moderator	[1]
Energy range	1 meV to <100 MeV (standard set); up to 10 GeV with extension set	[1]
Moderators	HDPE spheres Ø3, 3.5, 4, 4.5, 5, 6, 7, 8, 10, 12, 15 and 18 in (standard set)	[1]
Configurations	Single detector (one ^{3}He counter moved between spheres; Counter Module and “Single counter” software) or multiple detectors (up to 16 counters and 16 spheres at the same time; datalogger and “DLOG” software)	[1]
Gas filling pressure	2 atm, or 8 atm for higher sensitivity (option)	[2]
Electronics	Compact module per counter (Ø2.5 × 7.6 cm): charge-sensitive preamplifier and amplifier, discriminator, high voltage 0–2200 V, adjustable gain and threshold, analogue test points	[1]
Software	RUFUS unfolding software for the neutron spectrum; acquisition software to start and stop, set parameters and view data	[1]
ptions	8 atm gas filling, special electronics with no dead time for pulsed fields, flight case; sphere set for 10 GeV and warranty extension (24 months) on request	[2]

Sources

[1] **BSS Bonner Sphere Spectrometer**
ELSE NUCLEAR · product-page · Product page · checked 2026-10-16
https://www.elsenuclear.com/portfolio/bss/

[2] **BSS Bonner Sphere Spectrometer (datasheet)**
ELSE NUCLEAR · datasheet · p. 2, Technical Specifications · checked 2026-10-16
https://www.elsenuclear.com/wp-content/uploads/2025/05/DAT_BSS_EN_1.10.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.