ELSE NUCLEAR

W-PIE

Very high-efficiency neutron spectrometer, from thermal to 10 GeV

All-in-one active neutron spectrometer with very high counting efficiency, for on-line spectrometry and absolute flux measurements. A ^{4}He gas scintillator with LiF converter is read out by SiPMs and surrounded by moderators forming four sub-volumes; the built-in electronics unfold the spectrum directly. HERMES W-PIE is a lighter standalone version for up to about 100 MeV with battery, 4G and GPS.



Detector type
^{4}He gas scintillator (12 L cylinder) with LiF converter and 24 low-voltage SiPMs; four moderator sub-volumes; ^{3}He-free [1]

Energy range
Thermal to 10 GeV (W-PIE); to about 100 MeV (HERMES W-PIE) [1]

Weight
Approx. 120 kg (W-PIE); a pprox. 40 kg (HERMES W-PIE) [1]

Specifications

DETECTOR

Detector type	^{4}He gas scintillator (12 L cylinder) with LiF converter and 24 low-voltage SiPMs; four moderator sub-volumes; ^{3}He-free	[1]

MEASURING RANGE

Energy range	Thermal to 10 GeV (W-PIE); to about 100 MeV (HERMES W-PIE)	[1]
Typical neutron sensitivity	Approx. 4,000 counts per hour in typical ground-level cosmic neutron background	[1]
Gamma sensitivity	Completely insensitive up to >10 mSv/h (^{137}Cs)	[1]

SOFTWARE & DATA

Software	Built-in unfolding algorithm for on-line spectrum analysis; raw data can be saved for off-line analysis	[1]

CONNECTIVITY & INTERFACE

Communication	W-PIE: Power over Ethernet and Ethernet to a PC; HERMES W-PIE: battery, single-board computer, 4G router, GPS and dual SIM for remote control	[1]

POWER & BATTERY

Power supply	W-PIE: Power over Ethernet; HERMES W-PIE: battery powered	[1]

MECHANICAL

Dimensions	Ø50 × 100 cm (W-PIE); Ø40 × 100 cm (HERMES W-PIE)	[1]
Weight	Approx. 120 kg (W-PIE); approx. 40 kg (HERMES W-PIE)	[1]

ORDERING & ACCESSORIES

ptions	HERMES W-PIE low-energy version; traceable calibration (1 dose-rate point, Am-Be), outdoor long-term mounting kit, photovoltaic power supply and warranty extension (24 months) on request	[1]

GENERAL

Use	Homeland security, cargo inspection, calibration laboratories, background suppression in high-energy physics, cosmic-ray neutron sensing (CRNS) in agriculture and snow water equivalent (SWE) in hydrology	[2]

Sources

[1] **W-PIE Wide Energy Active Neutron Spectrometer (datasheet)**
ELSE NUCLEAR · datasheet · p. 1; p. 2, Technical Specifications; p. 2, Technical Specifications; p. 2 · checked 2026-10-16
https://www.elsenuclear.com/wp-content/uploads/2025/05/DAT_WPIE_EN_1.01.pdf

[2] **W-PIE Wide Energy Active Neutron Spectrometer**
ELSE NUCLEAR · product-page · Product page · checked 2026-10-16
https://www.elsenuclear.com/portfolio/w-pie/

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.