NUVIATECH INSTRUMENTS

SPECIFICATION SHEET

EDUCATION KIT

Basic Detectors and Analysers for Training and Education

The EDUCATION KIT is a versatile set of detectors designed for secondary school and university students. Its purpose is to introduce students to the detection of different types of radiation. The kit concept allows a deeper understanding of the physical processes of radiation detection, but also the technical aspects of dosimetry. The EDUCATION KIT consists of NUVIATech Instruments' standard products for the nuclear industry and research. It gives students a unique opportunity to get familiar with detectors used in real applications.

Benefits

- All-in-one case solution
- Cost affordable kit
- Laboratory exercises included as well as an introduction to the detection of ionising radiation
- Lightweight case
- Simple and fast set-up
- Modular system enabling multiple uses
- Tasks for beginners, advanced users, and experts
- Licence for the NuSOFT GAMWIN spectrometric software included

Key figures

7 different detectors
In full configuration

14 experiments
In full configuration

7 kg
Weight

V202512

EDUCATION KIT

Basic Detectors and Analysers
for Training and Education

Product description

In the FULL configuration, the EDUCATION KIT includes the following parts:

- Alpha detector
- Beta detector
- Combined alpha/beta detector
- Neutron detector
- NaI(Tl) scintillation detector
- Plastic scintillation detector
- Geiger-Müller (GM) tube
- Multichannel analyser
- Cables and power supply
- NuSOFT GAMWIN licence
- Photomultiplier tube (PMT) compatible with all detectors
- User manual and documentation
- Robust transport box
- Detector holder and shielding
- Shielding sets made of different materials (copper, lead, iron, aluminum)
- Set of thin aluminum foils with a thickness of 50 µm

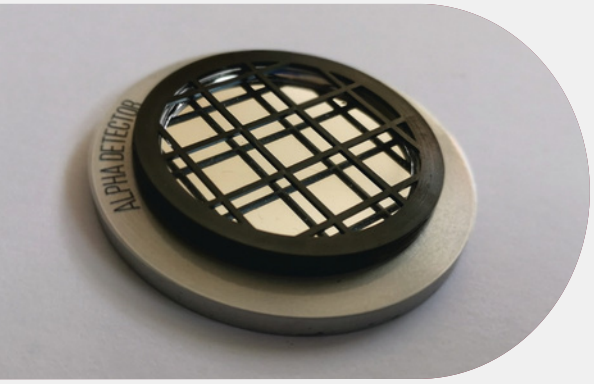
Additional equipment

- Polyethylene moderator, plates (thickness 10 a 30 mm) or spherical moderator

Software

The ADVANCED and FULL education kit comes with a license for NuSOFT GAMWIN SCINT software, which provides:

- Spectrum acquisition
- Evaluation of measured data
- Nuclide identification



Technical Specifications

Alpha Detector (NuDET A)	ZnS(Ag) layer on PMMA light guide, active area diameter 40 mm, coated with 2.5 µm thick polyester foil and 1.1 µm aluminum layers on both sides
Beta detector (NuDET B)	Plastic scintillator 0.5 mm thick in an aluminum housing, active area diameter 40 mm
Alpha/beta detector (NuDET AB)	ZnS(Ag) layer on a plastic scintillator with a thickness of 0.3 mm in an aluminum housing, active area diameter 40 mm
Neutron detector (NuDET NEUTRON)	^{6}LiF/ZnS(Ag) mixture deposited on PMMA light guide in aluminum housing, active area diameter 40 mm, thermal neutron sensitivity 4.5 cps/nv, polyethylene moderator
NaI(Tl) scintillation detector (NuDET NaI)	NaI(Tl) scintillator with dimensions: diameter 40 mm, height 35 mm
Plastic scintillation detector (NuDET PLASTIC)	Plastic scintillator with dimensions: diameter 40 mm, height 35 mm
GM tube (NuDET EGM-01.G2)	Measuring range 50 nSv/h – 20 mSv/h
Multichannel Analyser (NuNA MCB)	With universal 14-pin PMT base
Photomultiplier	2" ET Enterprises* type 9266KB* in aluminum housing

Usage options

- Technical schools and universities
- Education and training in the basics of ionizing radiation detection

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Examples of experiments

BASIC	ADVANCED	FULL	DETECTORS
Properties of gamma spectra Statistics in measurement Calculation of sample activity and detection efficiency Compton and backscattering of gamma radiation Angular dependence of scintillation detectors Basics of measurement with a four-channel analyzer	Properties of gamma spectra Alpha radiation measurement Beta radiation measurement Measurement using a four-channel counter Alpha/beta pulse discrimination Measurement statistics Calculation of sample activity and detection efficiency Compton and backscattering of gamma radiation Angular dependence of the scintillation detector	Properties of gamma spectra Measurement of dose and dose rate Alpha radiation measurement Beta radiation measurement Measurement of neutrons Measurement with a four-channel counter Distinguishing between alpha and beta pulses Absorption of gamma radiation in various materials Determination of the operating voltage of a GM tube Measurement of beta radiation attenuation in aluminum	Properties of gamma spectra Dose and dose rate measurements Alpha radiation measurement Beta radiation measurement Neutron measurements Alpha/Beta pulse discrimination

If you require it, we are able to put together a set according to your needs and possibilities.

Product options

	BASIC	ADVANCED	FULL	DETECTORS
Alpha detector		x	x	x
Beta detector		x	x	x
Alpha/Beta detector		x	x	x
Neutron detector and moderator			x	x
NaI(Tl) scintillation detector	x	x	x	x
Plastic scintillation detector	x	x	x	x
GM probe			x	x
Multichannel analyzer	x	x	x	
Photomultiplier	x	x	x	x
Detector holder and shielding		x	x	
Shielding set			x	
Accessories (case, documentation, optical contact)	x	x	x	x
GAMWIN SW SCINT		x	x