

**HIDEX**

## Product catalogue



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# Triathler Luminometer

The Triathler luminometer is a compact, portable, manual instrument for measuring samples in various vial sizes up to 20 mL in volume.



## Key characteristics:

- Large dynamic range, (200 CPS to 50,000,000 CPS)
- High sensitivity,  $0.6 \cdot 10^{-15}$  mol/ml ATP
- Portable or regular laboratory use
- 32 character alphanumeric display
- RS-232 port to send out results to a PC or a printer
- Software for MS Windows<sup>R</sup> to download the results to file or MS Excel worksheet is included
- 1.5 " head-on PM tube makes very high counting sensitivity possible

- Counting times from 0.1 seconds to 99999 minutes
- Power input: 12V DC, 1.5 A or 100 .. 240 V AC, 50/60Hz
- Mechanical data: H 190 mm, D 330 mm, W 250 mm, weight 8 kg

Delivered with:

- Owner's Handbook
- Adapter for 7 mL minivial (black)
- PC interface software
- RS-232- cable

## Ordering information:

**Description: Triathler**

**Luminometer**

**Model: 425-014**

**Available options**, see the appropriate pages

- Equipment and field cases
- Adapters for samples from microcentrifuge tubes to 20 mL LSC vials

# Triathler gamma counter

The Triathler gamma counter is a compact, portable, manual instrument for counting gamma labels in the 10 keV .. 500 keV energy range.



## **Key characteristics:**

- 32 x 32 mm NaI detector, through hole, well diameter 14 mm. Background shield 8 mm of lead
- 1000 channel Multi Channel Analyser
- Max sample diameter 13 mm.
- > 75 % counting efficiency for I-125
- Optimised to count e.g. radio-immunoassay and cytotoxicity
- Single or dual label counting with spillover correction.
- 32 character alphanumeric display
- RS-232 port to drive a PC or a printer

- Preset nuclides: I-125, I-129, Co-57, Cr-51, Cs-137, Co-58
- Software for MS Windows<sup>R</sup> to download the results to a file or MS Excel worksheet is included
- Remote control of the Triathler via the RS-232 port
- Power input: 12V DC, 1.5 A or 100 .. 240 V AC, 50/60Hz
- Mechanical data: H 190 mm, D 330 mm, W 250 mm, weight 9 kg

Delivered with:

- Owner's Handbook
- PC interface software
- RS-232- cable

<p><b>Ordering information:</b> <b>Description: Triathler Gamma Counter</b> <b>Model: 425-024</b></p>
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**Available options**, see the appropriate pages:

- Additional internal lead shield, thickness app. 6 mm, weight 6.5 kg
- Equipment and field cases

# Triathler LSC

The Triathler LSC is a compact, portable manual liquid scintillation counter and luminometer.



## Key characteristics:

- 1000 channel Multi Channel Analyser
- 2 keV 2000 keV energy range
- Up to 45 % counting efficiency for H-3
- Luminescence interference in beta counting typically < 0.1 %
- Cocktail free P-32 measurement
- Preset nuclides: H-3, C-14, P-32, S-35, P-33, I-125, Cr-51
- All Triathler luminometer features included (see Triathler Luminometer for details)
- Samples from microcentrifuge tubes to 20 mL LSC vials



- DPM calculation for variable quench beta samples
- Power input: 12V DC, 1.5 A or 100 .. 240 V AC, 50/60Hz
- Mechanical data: H 190 mm, D 330 mm, W 250 mm, weight 9 kg

## Delivered with:

- Owner's Handbook
- Adapter for 7 mL minivial
- Adapter for 20 mL standard vial
- Adapter for microtubes (Eppendorf)
- PC interface software
- RS-232- cable
- Plastic scintillator tube for direct P-32 counting

**Ordering information:**  
**Description: Triathler LSC**  
**Model: 425-034**

**Available options**, see the appropriate pages:

- Internal lead shield
- Alpha/beta separation electronics
- External gamma detector for high energy/low background work
- Equipment and field cases
- Black adapters for luminescence

# Triathler Multilabel Tester

The Triathler Multilabel Tester is three instruments in one, Triathler LSC and luminometer complemented with a NaI detector for counting gamma samples.



## Key characteristics:

- All Triathler luminometer features
- All Triathler LSC features
- All Triathler gamma counter features
- Preset nuclides for LSC: H-3, C-14, P-32, S-35, P-33
- Preset nuclides for NaI detector: I-125, Cr-51, Co-57, Co-58
- Change from LSC/luminescence samples to count gamma samples takes only few seconds
- Power input: 12V DC, 1.5 A or 100 .. 240 V AC, 50/60Hz

- Mechanical data: H 190 mm, D 330 mm, W 250 mm, weight 9 kg

## Delivered with:

- Owner's Handbook
- Adapter for 7 mL minivial
- Adapter for 20 mL standard vial
- Adapter for microtubes (Eppendorf)
- PC interface software
- RS-232- cable
- Plastic scintillator tube for direct P-32 counting

## Ordering information:

**Description: Triathler Multilabel Tester**

**Model: 425-004**

## Available options, see the appropriate pages:

- Internal lead shield
- Alpha/beta separation electronics
- External gamma detector for high energy/low background work
- Equipment and field cases
- Black adapter for luminescence

# Triathler option: A/B separation

Digital electronics option for Triathler LSC and MLT models to perform alpha beta separation.

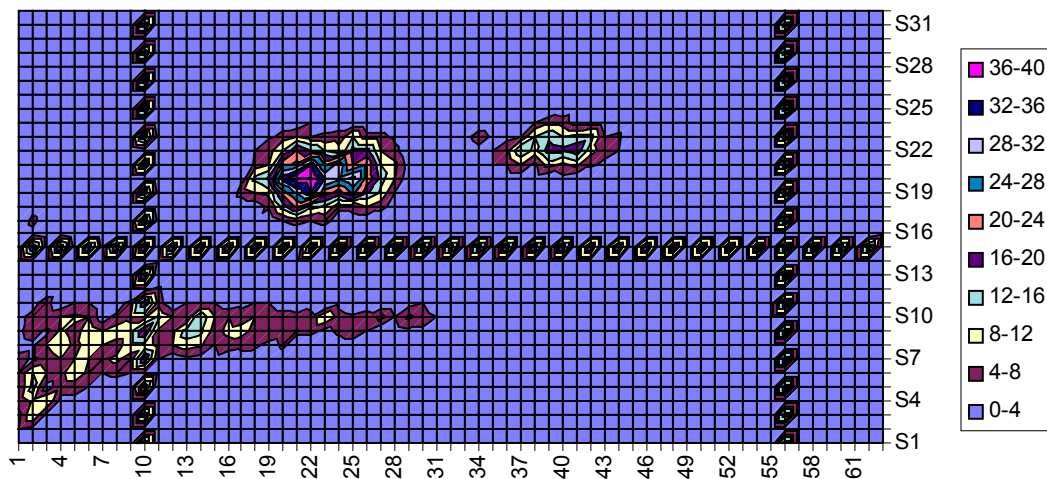
Alpha beta separation is based on pulse shape (length) analysis utilizing a multiparameter, multichannel analyser.

## Key characteristics:

- sensitivity up to 1 Bq/litre for Rn-222 in water determination

- Software to download the 2D results to the file or MS Excel worksheet is included (see the MS Excel graph below)

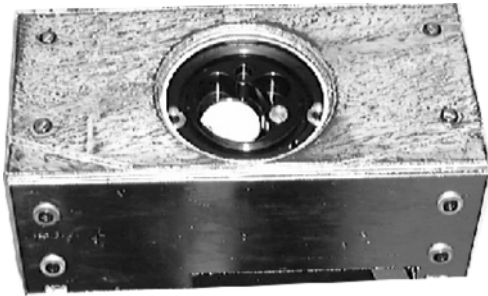
**Ordering information:**  
**Description: A/B separation option for the Triathler**  
**Model: 525-001**



*Two-dimensional plot of pulse-height versus pulse shape discrimination parameter for a sample of Rn-222 in equilibrium with its daughters, taken with Triathler. Radon was extracted into water immiscible di-isopropyl-naphthalene (DIN) based cocktail. Measurement volume was 3 ml cocktail in minivial.*

# Triathler option: Internal lead shield

Internal lead shield for Triathler gamma, LSC and MLT models.



**Key characteristics:**

- All around shield, thickness approx. 6 mm, weight 6.5 kg
- Reduces background 40 .. 60 %, (the exact value depends on local conditions and sample volume) in gamma and beta counting

**Ordering information:**  
**Description: Lead shield**  
**Model:525-100**

**Description: Lead shield**  
**Model:525-100 Upgrade**



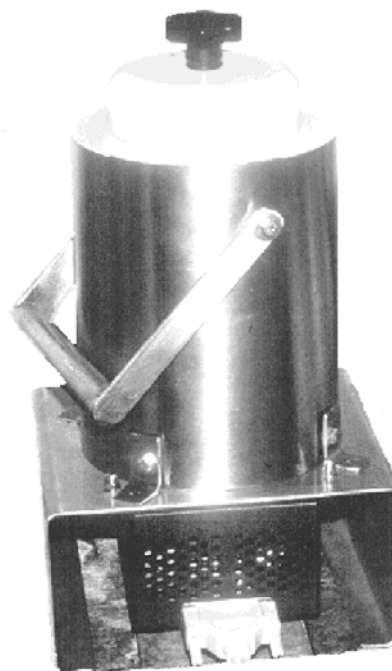
# Triathler option: External NaI detector

The option comprises an external NaI interface, a connection cable, an NaI detector and appropriate software. It connects to the Triathler LSC or Triathler MLT directly. All Triathler standard features are retained. Lead shield is not included.

## **Key characteristics:**

- 50 x 50 mm NaI detector, end well, well diam. 25 mm, well depth 33 mm
- Simple operation, the user selects the nuclide by name and presses the “Start” key, the instrument does the rest
- 15 keV .. 2000 keV energy range
- Single or dual label counting with spillover correction
- Preset nuclides: I-125, I-129, Co-57, Cr-51, Cs-137, Co-58

**Ordering information:**  
**Description: NaI detector**  
**Model: 431-040**



## **Lead shield for the detector 431-040**

- All around shield, 30 mm of lead. 1 mm thick stainless steel surface
- Mechanical data, H 350 mm, D 200 mm

**Ordering information:**  
**Description: Lead shield**  
**Model: 431-041**

# Triathler options: Equipment cases

The cases are designed specifically for the protection and transportation of the Triathler and accessories. Manufactured from aluminium sheet with a robust aluminium frame. Includes a high density foam contoured to hold the Triathler and a printer.

## **Equipment Case**

### **Key characteristics:**

Designed for the Triathler and a printer.

- Mechanical data: H 490 mm, D 230 mm, L. 250 mm, weight 5 kg

**Ordering information:**  
**Description: Equipment Case**  
**Model: 431-302**



## **Field Case**

### **Key characteristics:**

As the equipment case but including a power supply.

- Built in 7 Ah lead battery and a charging unit
- Two hours continuous counting time
- Mechanical data: H 490 mm, D 230 mm, L. 250 mm, weight 6.5 kg

**Ordering information:**  
**Description: Field Case**  
**Model: 525-203**

# Triathler NaI system

This turnkey NaI system comprises a multichannel analyser with the external NaI detector, model 431-040, and the lead shield, model 431-041.



- Simple operation, the user selects the nuclide by name and presses the “start” key, the instrument does the rest
- 15 keV .. 2000 keV energy range, 1000 channel MCA
- Stand alone or PC configuration, no external PC is needed (but can be connected)
- 50 x 50 mm NaI detector, end well, well diam. 25 mm, well depth 33 mm
- Background shield 30 mm of lead
- Single or dual label counting with spillover correction
- 32 character alphanumeric display

- An RS-232 port to drive a PC or a printer
- Preset nuclides: I-125, I-129, Co-57, Cr-51, Cs-137, Co-58
- Software for MS Windows<sup>R</sup> to download the results to a file or MS Excel worksheet is included
- Power input: 12V DC, 1.5 A or 100 .. 240 V AC, 50/60Hz
- Mechanical data, control unit: H 190 mm, D 330 mm, W 250 mm, weight 6 kg
- Mechanical data, lead shield: H 350 mm, D 200 mm

**Ordering information:**  
**Description: NaI system**  
**Model: 425-010**

The system is also available without the lead shield.

The system is also available with 2 detectors, model 431-040.

# Triathler accessories

The following items, while may form part of the Triathler delivery, can also be delivered separately.

410-001	Instrument manual
431-002	Adapter for 20 mL LSC vial
431-004	Adapter for 7 mL LSC vial
431-003	Adapter for microtubes (Eppendorf)
431-005	Adapter for 7 mL LSC vial, <u>black</u>
431-006	Adapter for 20 mL LSC vial, <u>black</u>
431-007	Adapter for microtubes (Eppendorf) , <u>black</u>
431-010	Plastic Scintillator for P32 counting
431-202	Power supply 100 .. 230 V 50/60 Hz
450-001	PC interface software
431-501	EMI shielded RS-232 interface cable
426-001	Printer for the Triathler (RS-232 interface)
426-002	RS-232 to Centronics converter
431-502	Car adapter cable (cigarette lighter connector)