HIDEX

Hidex 300 SL and 600 SL Super Low Level Liquid Scintillation Counters

Based on the tremendous success of the Hidex 300 SL Automatic TDCR liquid scintillation counter Hidex has developed new instruments for challenging low radioactivity applications. The Hidex 300 SL and 600 SL super low-level scintillation counters are equipped with additional lead shielding, low level PMT detectors, and active guard detectors for further background reduction. Hidex Super Low Level instruments are ideal for ^{3}H in water measurements as well as other low-level environmental monitoring, radiocarbon dating and biofuel verification applications.

New Active Guard

The Active Guard is a separate scintillator detector which detects and subtracts real-time background radiation. The guard can be turned off for high energy samples and does not interfere with alpha/beta separation.

Digital Pb shield
Is a proprietary Hidex spectral fi tting algorithm that improves counting performance by utilizing spectrum information for active sample tritium counts and background counts.

Applications
Low level environmental measurements:
- ^{3}H & ^{14}C in natural waters
- ground water dating (^{3}H)
- $^{90}Y/^{90}Sr$
- gross alpha/beta
- biobased ^{14}C
- low level alphas
- ^{55}Fe, ^{66}Ni
- ^{3}H & ^{90}Sr radiobioassays

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Models and technical data

	Hidex 300 SL #425-201	Hidex 300 SL Super Low Level #425-020	Hidex 600 SL #425-206	Hidex 600 SL Super Low Level #425-220
Sample capacity, 20mL/7mL	40/96	40/96	210/500	210/500
Counting efficiency $^{3}H/^{14}C$ (%)	70/96	70/96	70/96	70/96
Background ^{3}H in water (CPM)	12	3	12	3
Dimensions, W/H/D (cm)	52/68/63	52/68/63	125/69/64	125/69/64
Weight (kg)	125	180	200	255

Optional features

425-019 External Eu-152 std source
425-018 LL PM tubes
525-003 Alpha/beta separation (300 SL)
425-2001 Cooling (300 SL)
525-006 Alpha/beta separation (600 SL)
425-2002 Cooling (600 SL)

Performance Specifications

All the measurements are performed at temperature of 22°C ± 2°C and at normal humidity conditions of Hidex laboratory, Turku, Finland (relative humidity not measured). Background may vary locally depending on natural environmental radiation.

Counting efficiency

- Counting efficiency typical > 70 % for ^{3}H and typical > 96 % for ^{14}C with unquenched samples.
- > 35 % for ^{3}H quenched (8 mL water sample + 12 mL AquaLight cocktail)
- α's (^{210}Po, $^{234}U/^{238}U$, ^{241}Am, ^{222}Rn, ^{226}Ra) > 95 %

Typical background

- < 3 CPM with 8 mL water + 12 mL AquaLight Low Level cocktail.

*Background value measured using window with 25 % counting efficiency.

- < 0.3 CPM for alphas (with a/b separation option)

FOM (E2/B)

- ^{3}H in water, optimized window > 220
- ^{3}H in water, with Digital Pb shield > 300
- ^{3}H unquenched Low Level standards, optimized window > 350
- ^{14}C unquenched Low Level standards, optimized window > 1150
- ^{14}C Benzene 3.5 ml in a mini glass vial > 2000

(71 % window / 2.5 CPM background)

About Hidex



Hidex is a family owned high technology company which develops and manufactures high performance analysis equipment for life science research, nuclear measurements and nuclear medicine. Our products utilize modern technology and excellent tradition of workmanship. With strong links to the scientific community we continue to innovate and develop to improve scientific research and safety of everyday life.