



HIDEX 300 SL



INTRODUCING THE HIDEX 300 SL

With more than 30 years of experience in design and manufacture of liquid scintillation counters Hidex introduces the 300 SL. An Automatic TDCR Liquid Scintillation Counter.

Dimensions

The 300 SL is a revolutionary instrument with a small footprint and can easily be integrated into small laboratories due to its outstanding dimensions of 52 cm width, 63 cm depth and 68 cm height. Even with its 4-pl 60mm detector shield the gross weight is below 100 kg. The compact design and low weight of the instrument makes it a truly transportable system.



Optional features

The 300 SL boasts such optional features as alpha/beta separation, temperature control to stabilize measurement conditions, active guard for background reduction for external standard for traditional quench determination.

NEW TECHNOLOGICAL INNOVATIONS

Unlike any other counter the Hidex 300 SL utilizes three photomultiplier tubes aligned at 120 degrees from each other. These three PMT's enable triple to double coincidence ratio counting-TDCR.

Advantages

The greatest advantage of TDCR is the easy and straightforward method of obtaining counting efficiency of the samples without any external or internal standard source of radioactivity.

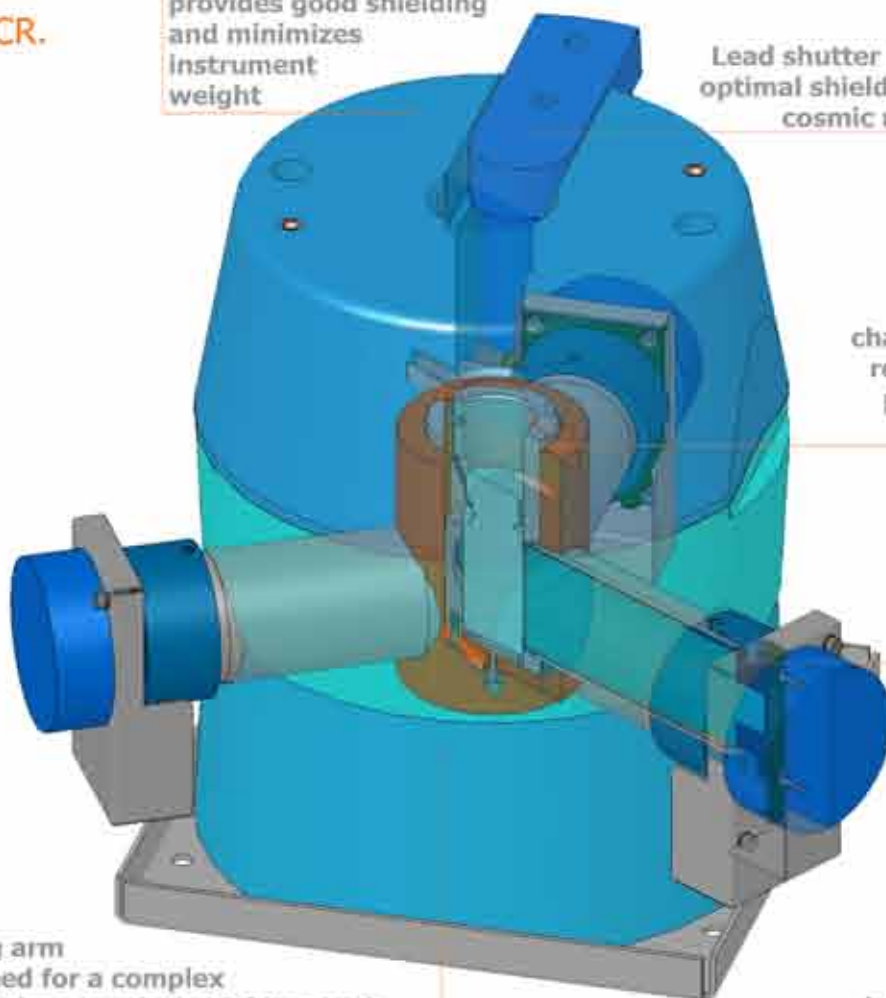
Optimal lead shield design with a minimum of 60mm shielding in all directions provides good shielding and minimizes instrument weight

Lead shutter provides optimal shielding from cosmic radiation

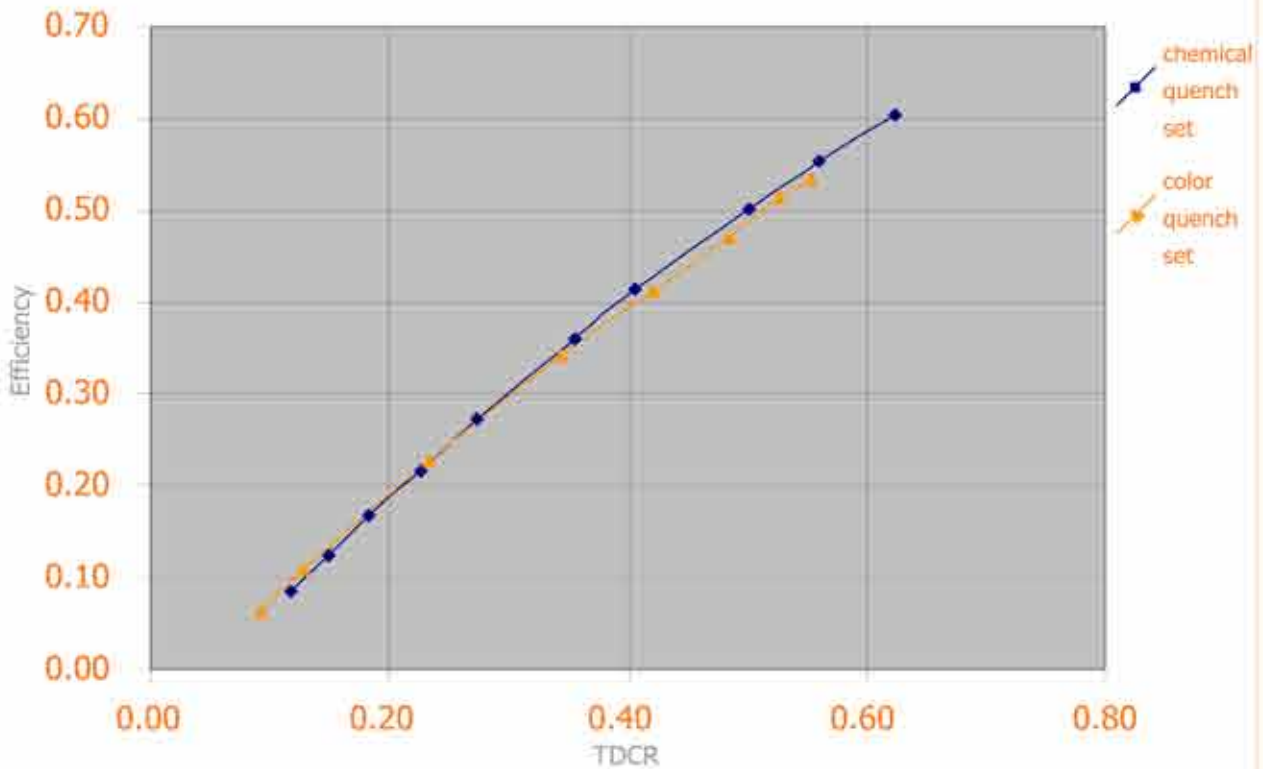
Measurement chamber with high reflective opaque paint maximizes light collection

Robotic loading arm removes the need for a complex elevator mechanism. Vertical shielding both on top and bottom of detector chamber provide biggest reduction of background effects

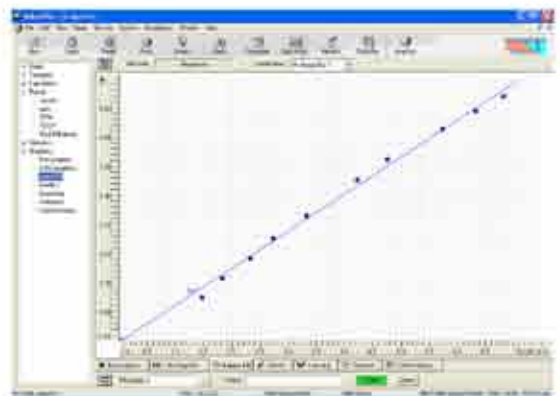
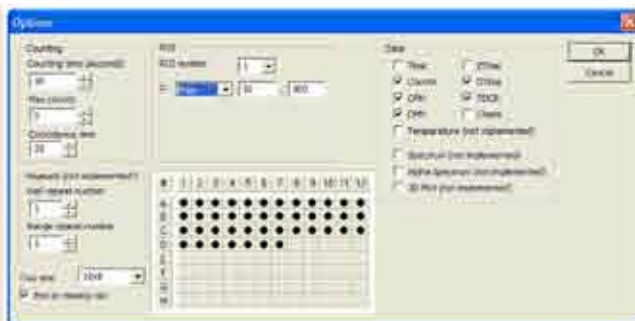
Three low background PMTs provide optimal measurement geometry and facilitate TDCR counting



TDCR vs. EFFICIENCY



Graph 1. shows Triple to double coincidence ratios measured from both chemical and color quench series with H-3. Measured TDCR ratio corresponds excellently with efficiency of the sample.



Extensive data analysis features, with predefined protocol libraries for different applications.

AUTOMATIC TDCR LIQUID SCINTILLATION COUNTER

Ease of use

The instrument is operated using a PC and MikroWin 2000 software. It has an easy to use interface, unlimited number of pre-stored isotopes and protocols and easy data export to Excel or other programs. MikroWin 2000 has options for 21 CFR part 11 compliance and extensive data reduction features such as quench curve analysis, IC/EC 50 value calculations etc.



Features

One of the unique features of the Hidex 300 SL is that the vials are placed on a plate rack. With matrix format of 8 by 12 totals 96 7ml vials in one plate rack. Alternatively 5 by 8 matrix totaling 40 20ml vials can be used. The trays can be used in sample preparation instruments such as liquid handling stations or cell harvesters.



300 SL AUTOMATIC TDCR LIQUID SCINTILLATION COUNTER

Technical data:

Width:	520mm
Height:	680mm
Depth:	630mm
Weight:	95kg
Electrical connections:	100-240V 50-60 Hz
Ports:	RS-232C, USB optional



Radiological Data (preliminary):

Energy Range β 's:	0 – 2.000 keV
Energy Range α 's:	0 – 10.000 keV

Efficiency:	H-3 unquenched > 65 % H-3 (8 ml water sample, 12 ml Aqualight) > 26 % C-14 unquenched > 95% α 's (Po-210, U-234/U238, Am-241,Rn-222, Ra-226)>95%
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Background:	H-3: 8 cpm (8 ml water sample, 12 ml Aqualight) α 's (Po-210, U-234/U238, Am-241,Rn-222, Ra-226) <0.5CPM, in plastic vials
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LLoD ¹ :	H-3: 10 Bq/l (8ml water sample, 12ml Aqualight)
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E ² /B	H-3: 84.5 (8ml water sample, 12ml Aqualight)
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LLoD = $V^{-1} * K (k_{1\alpha} + k_{1\beta}) \text{SQRT}(R_{90}(1/t_{\alpha} + 1/t_{\beta}))$; $k_{1\alpha} + k_{1\beta} = 4.6$; $t_{\alpha} = 2 \times 24 \text{h}$; Measuring time $t_m = 4 \text{h}$;
(LLoD according to German DIN 25482, Teil 1, ISO 11929 part 1)

Ordering information

Code No	Item
425-201	Automatic TDCR Liquid Scintillation Counter

Code No	Options
	External standard
	Low level option
	Alpha/Beta separation option

Code No	Other Options
425-2000	Temperature Control

Code No	Software
426-100	MikroWin 2000 Lite PC control sw (Included in new deliveries)
426-110	MikroWin 2000 Full Data reduction/instrument control 21CFR part 11 software
426-110U	Upgrade from MikroWin Lite to MikroWin 2000 Full version
426-110N	MikroWin 2000 net user license



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