

The Genesys™ Series



Multi-Well and Single Well Gamma Counters
something for everyone

The Genesys™ Pedigree

1972 - Searle Analytic develops model 1285, the first multi-well gamma counter ([lead design chief later founds Iso-Data and LTI](#))

1983 - Laboratory Technologies, Inc. ([Founded by original Iso-Data founder and chief engineer](#))

1959 - Yalow and Berson develop radioimmunoassay

1980 - Iso-Data, Inc. releases the 20/20 series

1990 - LTI releases **Genesys™ 6000 series** specially designed for high volume clinical labs

1985 - LTI releases the **Genesys™ 5000 series.**

1966 - Nuclear Chicago develops the first transistor-based gamma counter model 1185 ([lead design chief later founds Iso-Data and LTI](#))

1977 - Iso-Data, Inc. founded and releases model RDR, the first data reduction computer ([Founded by lead design engineer Searle/Nuclear Chicago](#))

1995 - LTI releases **the Wiper™** single well nuclear medicine well counter

1997 - LTI releases **Genesys™ Gamma-1**, a single well counter for smaller clinical and research labs.

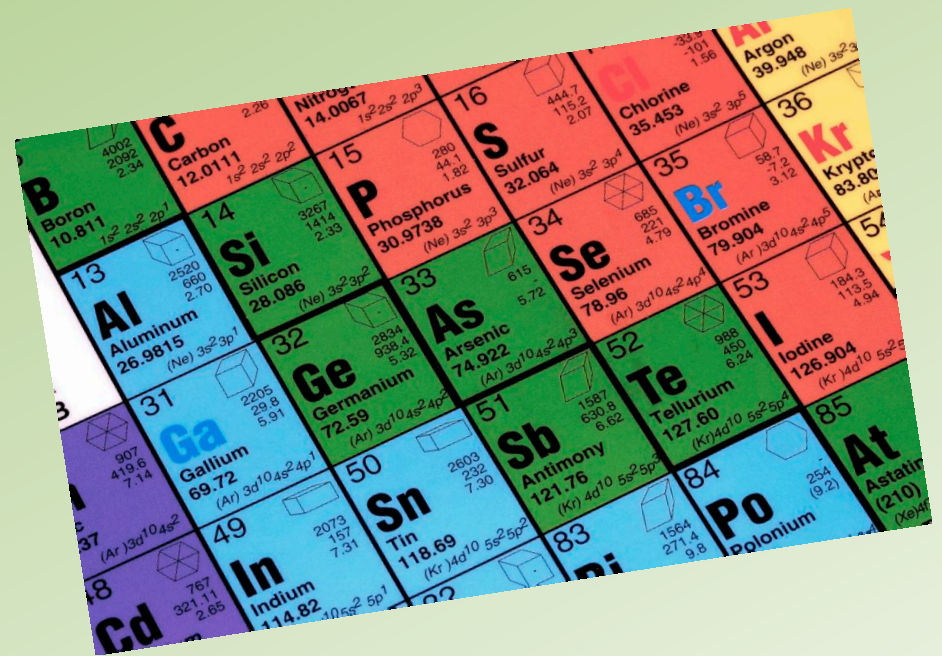
In 2005, we introduced the Genesys™ Genii series, incorporating over 39 years of experience.



Beyond the Routine

While the vast majority of clinical work is done by RIA using I125, research, special studies and other circumstances can mean the need to count other isotopes.

The Genesys™ Genii and Gamma-1 are designed with specially developed, asymmetrical crystals that can reliably count energies up to 1000 KEV. Heavy shielding, crosstalk correction and 4096 channels work together to ensure flawless performance.



The **Self-Efficiency Check** on Genesys gamma counters use the main and summation (coincidence) peaks of I-125 to derive a DPM. The routine uses a ratio of the main peaks and the summation (coincidence) peak to calculate the absolute DPM of the sample.

Need to count high activity samples? The Genesys™ can easily handle samples with count rates up to 16 million CPM (for I125). Try that with any other gamma counter!

Rock Solid

Being completely solid state and built with great care and precision, the Genesys™ Series gamma counters have a reputation for being extremely reliable and requiring very minimal servicing.

The Genesys™ Series incorporates software containing complete programs for monitoring and documentation of all instrument parameters. The routines include: Background Check, Detector Efficiency Check, Chi-Square interpretation, Automatic Detector Gain Adjustment, Normalization of Detectors, FWHM Detector Resolution test and RAM Tests.

We include a one year limited warranty with each GENESYS gamma counter. This warranty includes prompt and courteous response by our factory service engineers*.



Best Value

The Genesys Series offers better long term value and affordability than any other gamma counter

- ★ Our design philosophy is such that we feel that more than one service call per 10 years of ownership is too much. The Genesys delivers on that philosophy.
- ★ User performed automatic system calibration using an I125, Co57 or Cs137 source.
- ★ Efficiency calculation with I125 tracer. Save \$ No standards needed.
- ★ No preventative maintenance necessary
- ★ Minimal electrical usage, less than 30 watts
- ★ Very small footprint



Owning a Genesys is an investment. A long term investment, because you will be getting decades of dependable performance without costly maintenance.

Compact size



It seems no matter where in the world you go, bench space in the lab is a precious thing. There is far too little available for comfort. Every bit has to be used wisely.

With as many years in this business as we have, we understand that very well. This is why we designed the Genesys™ Genii and Gamma-1 to be as compact as possible. The Genesys™ Genii occupies a mere 20 inches, and only 13 inches front to back.

Small doesn't mean weak. Genesys™ gamma-1 counters are known worldwide as the most durable, reliable and capable instruments you can own. You don't have to be a bench-hog to have a big impact.

Data Reduction

```
ADD/DEL/MODIFY TUBES
1 TC      [REPLICATES: 0]
2 NS      [REPLICATES: 0]
3 B0      [REPLICATES: 0]
4 REF     [QUANTITY: 0]
5 STD     [QUANTITY: 0]
6 QC      [QUANTITY: 0]
7 UNK     [REPLICATES: 1]

# EXIT

SELECT FUNCTION: █
```

The GENESYS Genii Series gamma counters contain advanced data reduction features suitable for calculating all versions of RIA, IRMA, Ratio and Screening assays.

With the flexibility to independently choose curve fit, response variable (transformation) and graph paper, the GENESYS Genii gives you the power to adequately handle the wide range of radioimmunoassays available for clinical and research applications; from the routine through the esoteric.

The range of popular curve fits include: point to point, cubic spline, straight line, weighted straight line and four parameter logistic (4PL).

Response variables include: %B/TC, %B/B0, CPM, TC/B, B0/B, 1/CPM, CPM/(standard #), %CPM/ (High Standard), CPM/(TC-CPM) and (TC-CPM)/CPM.

Standard curve axes choices are: Linear-Linear, Semi-Log, Log-Log, Logit-Log, Linear-Log and Log-Linear.

```
EDITED: 00/00/00 00:00:00
1 ASSAY NAME:      SAMPLE
2 COUNT TIME(MIN): 1.00
3 ISOTOPE:         I-125
4 PRINT-DISPLAY:  OFF: ON
5 DATA SOURCE:    COUNT TUBE
6 TUBES            U
7 DOSE
8 QC VALUES      ( 0 )
9 RESPONSE:       CPM
10 XAXIS:         NONE
11 YAXIS:         NONE
12 CURVE:         NONE
# NEXT PAGE
SELECT FUNCTION:
```

Quality Control Software



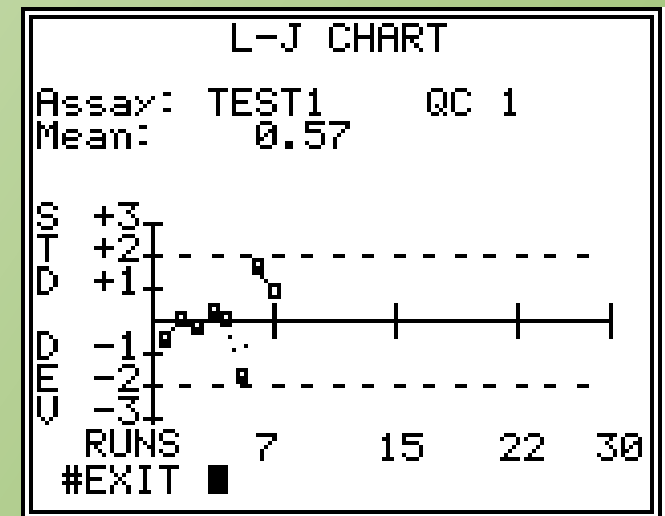
The GENESYS Genii Series multi-well gamma counter comes equipped with software to allow quality control evaluation and storage.

Probably the most useful feature of all within the QC software, is its ability to update the QC limits – either for a marked range or for the entire table. There are no manual calculations involved, GENESYS does all the work when you select UPDATE LIMITS.

With complete QC reports, including Levey-Jennings charts, no more manual plotting is required.

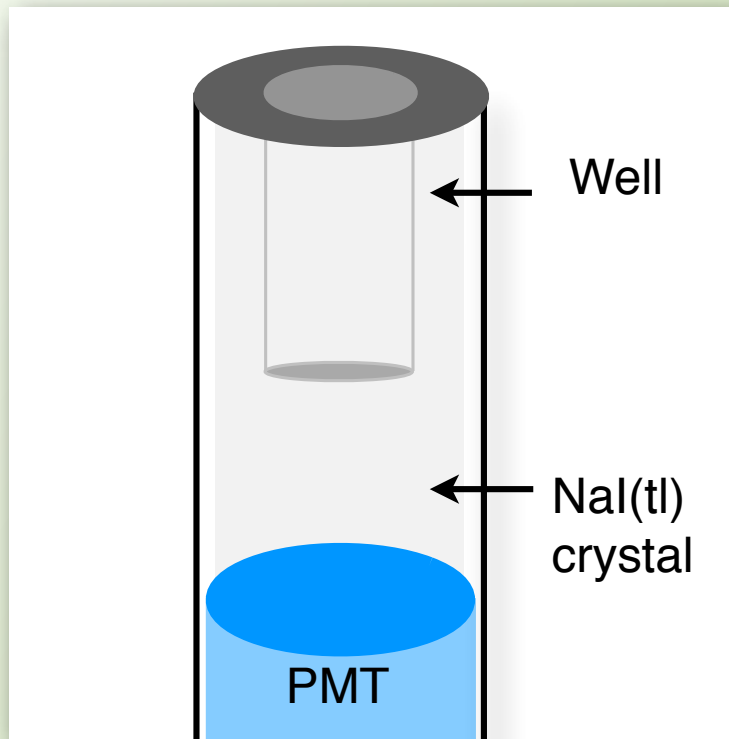
After run number 31 is reached, the oldest run is removed and all other runs moved up one. In this way GENESYS always keeps the most current 30 QC runs available.

The GENESYS QC software is extremely versatile and comprehensive.



The Detector

Radiation is emitted 360 degrees, yet some manufacturers don't seem to understand that. Minimizing crystal mass below the well has a detrimental effect on counting efficiency - especially at higher energies.



We designed it better

By increasing the crystal mass and thickness below the well (up to 400%), the Genesys™ captures more counts, making it ideal for higher energy isotopes.

Our design results in 40% more crystal mass than some other well counters.

With .85 inches of lead shielding (50% more than other gamma counters), lower background readings are achieved without adding external lead.

More shielding + greater crystal mass = Lower MDA's, 80% Co57 efficiency and better results with isotopes like F18.

The Genesys™ crystal design: more crystal mass where it counts - below the sample

Tech Specs Genii

Detectors:

Each well is an independent NaI(Tl) drilled well crystal coupled to a high gain, linearity-selected photomultiplier tube. Assembly is hermetically sealed in aluminum housing with an internal mu-metal magnetic shield. Asymmetrical crystal shape provides additional crystal mass below the well for greater efficiency with higher energy isotopes. Crystal dimensions 2.125 (54mm) x 1.125 (28.5mm)

Well Dimensions:

1.25 inches (3.175cm) deep x .669 inches (1.7cm) diameter.

Shielding:

0.85 inches (2.16cm) of virgin lead surrounds the detector array. Proprietary E-Lead™ technology eliminates well-to-well crosstalk even when counting higher energy isotopes .

High Voltage:

Automatic adjustment via calibration routine. Utilizing high resolution DAC circuitry, excellent stability and energy linearity is achieved.

Electronics:

Embedded CPU hosting all software. For system reliability, CPU, memory, I/O, analyzer and high voltage are all contained on a single PCB incorporating advanced surface mount CPLD technology.

Printer:

Included.

Output:

Connect to computer via RS232 or USB (with optional cable)

Power:

100-240 VAC (universal, automatically adjusting power supply), 50-60 Hz, less than 30 watt consumption.

Dimensions:

20 inches (51cm) width x 13.5 inches (34cm) depth x 10.5 inches (27cm) height.

Weight:

Less than 100 pounds (45kg), model dependent.

Tech Specs

Gamma 1

Detector:

NaI(Tl) drilled well crystal coupled to a high gain, linearity-selected photomultiplier tube. Assembly is hermetically sealed in aluminum housing with an internal mu-metal magnetic shield. Asymmetrical crystal shape provides additional crystal mass below the well for greater efficiency with higher energy isotopes.

Well Dimension:

1.25 inches deep x .669 inches diameter.

Shielding:

0.75 inches of virgin lead, extending more than 3.5 inches beyond the bottom of the crystal.

High Voltage:

Custom engineered Croft-Walton style circuitry with multi-stage gain adjust for ultra-precise software control of calibration.

Analyzer:

High speed 4096 channel analyzer (12 bit) with automatic dead time correction, pole zero correction and baseline restoration. Integral linearity better than 0.5%. Count rate capability 300,000 CPS.

Printer:

Optional

Output:

Connect to computer via RS232 or USB (with optional cable)

Power:

100-240 VAC (Universal, automatically adjusting power supply), 50-60Hz, less than 50 watt consumption.

Dimensions/weight:

10.5"W(27cm) x 12"D(30.5cm) x 10"H"(25cm) 22 pounds (10kg).

Model Information

SKU	Description
LTI1001US	Genesys™ Genii 1 Well Counter <i>One NaI(tl) detectors counting simultaneously. Full page printer. Self contained gamma counter complete with curve fitting, QC reporting software and many more features.</i>
LTI1002US	Genesys™ Genii 2 Well Counter <i>Two NaI(tl) detectors counting simultaneously. Full page printer. Self contained gamma counter complete with curve fitting, QC reporting software and many more features.</i>
LTI1003US	Genesys™ Genii 3 Well Counter <i>Three NaI(tl) detectors counting simultaneously. Full page printer. Self contained gamma counter complete with curve fitting, QC reporting software and many more features.</i>
LTI1004US	Genesys™ Genii 4 Well Counter <i>Four NaI(tl) detectors counting simultaneously. Full page printer. Self contained gamma counter complete with curve fitting, QC reporting software and many more features.</i>
LTI1005US	Genesys™ Genii 5 Well Counter <i>Five NaI(tl) detectors counting simultaneously. Full page printer. Self contained gamma counter complete with curve fitting, QC reporting software and many more features.</i>
LTI1006US	Genesys™ Genii 6 Well Counter <i>Six NaI(tl) detectors counting simultaneously. Full page printer. Self contained gamma counter complete with curve fitting, QC reporting software and many more features.</i>
LTI1008US	Genesys™ Genii 8 Well Counter <i>Eight NaI(tl) detectors counting simultaneously. Full page printer. Self contained gamma counter complete with curve fitting, QC reporting software and many more features.</i>
LTI1010US	Genesys™ Genii 10 Well Counter <i>Ten NaI(tl) detectors counting simultaneously. Full page printer. Self contained gamma counter complete with curve fitting, QC reporting software and many more features.</i>
LTIGG1US	Genesys™ Gamma 1 <i>Genesys Gamma 1™ models now include Stored Curve and Auto Efficiency Correction.</i>

About LTI

Laboratory Technologies Inc. was established in 1983 as a manufacturer of multi-well gamma counters. We are an American company. All of our products are designed and manufactured in the USA. Over the years, we have worked closely with many leading diagnostic companies and have become widely regarded as a leading worldwide supplier.

Our experience in designing nuclear instrumentation comes from the many diverse backgrounds of our engineering staff. They have worked collectively in the fields of: clinical, research and industrial analysis of gamma, beta and alpha radioactivity, as well as luminescence and others. They have been responsible for designing a multitude of gamma and beta counters, nuclear medicine cameras, dose calibrators, multichannel analyzers, luminescence readers and many others. This diverse background gives us the ability to design a wide range of instrumentation for a variety of disciplines.

At Laboratory Technologies Inc, our focus is on the design and manufacture of what we know best, nuclear instrumentation. No other manufacturer has our knowledge, experience and expertise. Ensure you are buying only the best, ensure you are buying instrumentation and supplies designed and manufactured by Laboratory Technologies, Inc.



Elburn, IL 60119
800.542.1123 630.365.1000 630.365.9687 fax
www.labtechinc.com sales@labtechinc.com