

The Multi-Wiper™

Nuclear Medicine *Multi-Well Counter*



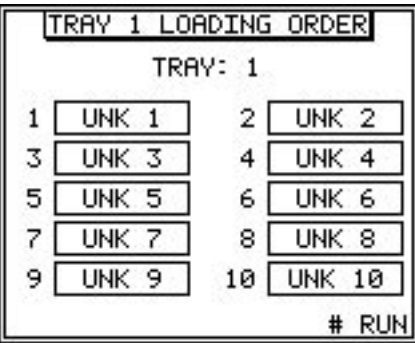
The first multi-well counters designed specifically for Nuclear Medicine!

- * Comprehensive wipe testing with concise report in DPM
- * Available with 1,2,3,4,5,6,8 or 10 wells; choose a model to fit your budget.
- * Automatically identifies isotope window where high counts fall
- * Pass/Fail based on user-programmable trigger levels
- * Heavy shielding for low background readings
- * Automatically calculates and reports MDA on each wipe test report
- * 4096 channel (12 bit) analyzer for precise isotope identification
- * Automatic linearity correction
- * Automatic DPM calculation with AutoSpect™ (No sources needed)
- * Programmed for Schilling, Plasma Volume, GFR, Red Cell Mass, etc.
- * Exceeds all NRC and Agreement State Regulations for patient access areas
- * Tremendous labor savings
- * Very compact (occupies less than 20 inches of benchspace)
- * Very economical

LTI LABORATORY TECHNOLOGIES, INC.

Wipe Test Library

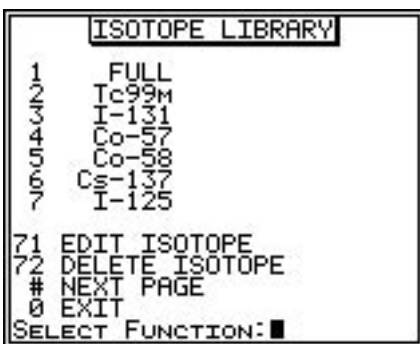
The Multi-Wiper™ is designed to allow you to customize the software to suit your individual needs. Up to 16 wipe sets may be named, each with up to 10 locations per wipe set. Furthermore, you can even select which isotopes from the Isotope Library to look for in a particular location. Individual trigger levels may be set, depending on whether it is a patient access area or not. All in all, an incredible amount of customization is possible, all designed to make day to day wipe testing fast, simple and effective.



Keep it simple. Can you just walk up to the instrument and run a generic wipe? Absolutely! That is why we pre-programmed GENERAL into the Library. Choose General, and run a wipe test. The counter reads in a wide window and identifies any isotope windows which exceed the preset trigger. The results are recorded as wipe#1, wipe#2, etc. Nothing to pre-program-just count and report.

Isotope Library

Up to 30 different isotopes may be programmed into the Multi-Wiper™. The counter comes pre-programmed with 17, which may be modified or deleted by the operator. Customize the window settings as you wish. Once the efficiency is either calculated from a known source, or entered manually for a given isotope, wipe test results will always be reported in DPM.



The detectors used in the Multi-Wiper™ are elongated. This design adds additional crystal mass below the well. This extra mass improves the “stopping power” for higher energy isotopes, and makes it easier to count higher energies (such as PET) effectively.

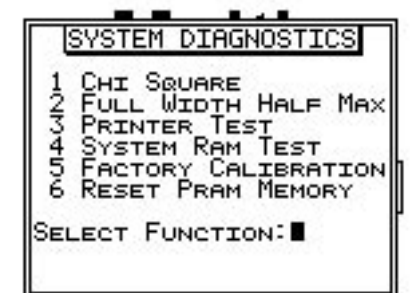
What about crosstalk at higher energies? The Multi-Wiper™ has a very unique feature called E-Lead™. E-Lead™ eliminates crosstalk between wells when high energy isotopes are counted. By using E-Lead™, counting even PET isotopes is not a problem.

System Diagnostics

The Multi-Wiper™ has the ability to test many of its parameters. This feature can be quite helpful in identifying potential hardware problems.

Chi Square and FWHM tests check the system’s detectors and counting circuitry. System RAM test checks the memory to make certain that it is operating properly.

Auto Calibration performs a detailed re adjustment of the entire system, this includes a Detector Gain Adjustment, High Voltage Setting and Lower Level Detector setting. By using the Auto Calibration detector aging and gain shifting can be compensated for Giving your counter a long mantanence free life.



In-Vitro tests

The Multi-Wiper™ is programmed to run a variety of common in-vitro tests. From Schillings to GFR, the software does the calculations automatically, so all you need to do is count and report. Put away the calculator and let the Multi-Wiper™ do the work!

```
DATA FOR CALCULATIONS
-> 1 TOTAL VOL: 0.000 ML
-> 2 SAMPLE VOL: 0.000 ML
-> 3 CAPSULE PCT: 0.0%
-> 4 RBC NR: 0.00-0.00%
-> 5 IFN:
  6 No ID SET

-> NEEDS TO BE SET
  0 ABORT TEST

ENTER SELECTION: █
```

The Multi-Wiper™ generates comprehensive easy to read test reports. These test reports may be customized with the patient's data, by automatically accessing the patient library

```
INVITRO TESTS
1 CPM
2 SCHILLING
3 DUAL SCHILLING
4 PLASMA VOLUME
5 RED CELL MASS
6 GFR

SELECT FUNCTION:
```

```
SCHILLING TEST
1 COUNT TIME(SEC): 60
2 DATA SOURCE: COUNT TUBE
3 NSA REPLICATES: 0
4 STD REPLICATES: 1
5 PAT REPLICATES: 1
6 ACTIVITY UNITS: MBq
7 RUN

SELECT FUNCTION:
```

Patient Library

```
PATIENT #1
1 (LAST NAME)
2 (FIRST NAME)
3 (MIDDLE NAME)
4 (ID)
5 (CODE)
6 (REFERRING MD)
7 (ADMIN D/T)

# NEXT PAGE
0 EXIT PATIENT DATA
DWN NEXT PATIENT

SELECT FUNCTION: █
```

```
PATIENT #1
8 (HEIGHT)
9 (WEIGHT)
10 (GENDER)
11 (TECHNOLOGIST)

13 DELETE PATIENT #1

# PREVIOUS PAGE
0 EXIT PATIENT DATA
DWN NEXT PATIENT

SELECT FUNCTION:
```

The Patient Library is designed to store up to 32 patients. Once these patients and their related information have been keyed in, this data works in harmony with the In-Vitro Test section of the software.

When you begin to run a test, such as schillings, the counter software will ask if you wish to use a patient from the Library. You may then select which patient to use, or by-pass the Library. If you choose a patient from the Library, their data will be automatically entered into the test report.

If you choose to by-pass the Library, the report will print out blank lines next to the various information fields, such as patient name. The blank lines are designed to allow you to hand write the information onto the report.

Since 1983, LTI has been a leader in the gamma counter market. More leading laboratories worldwide have come to rely on the Genesys™ series due to its superior quality, accuracy and day to day reliability. NOW with the Multi-Wiper™ series, we bring our experience and track record to Nuclear Medicine. Compact, economical and custom-tailored for the needs of the nuclear medicine department, the Multi-Wiper™ series is the obvious choice for any size department.

Sample Report

Wipe Test Report

WIPE TEST REPORT - 10/03/07 15:10:41 (COUNT TUBE)

WIPE SET: AREA1
Count Time: 1.0 MIN

MDA (Minimum Detectable Activity) = (2.71/Ts) + (3.29) + sqrt(Rb/Ts + Rb/Ts)

Location:	BENCH					
ISOTOPE	BKGD	MDA	TRIGGER	NET ACTIVITY	UNITS	RESULT
FULL	222	20.7	2000	5549	CPM	FAIL
Tc-99m	57	17.4	2000	5105	CPM	FAIL
I-131	76	16.5	2000	0	CPM	PASS
Co-57	70	17.0	2000	5326	CPM	FAIL
Co-58	43	121.9	2000	133	CPM	PASS
Cs-137	24	15.3	2000	154	CPM	PASS
I-125	27	13.3	2000	178	CPM	PASS
I-125	50	15.1	2000	3133	CPM	FAIL
F-18	25	13.1	2000	5	CPM	PASS
Ba-133	78	16.5	2000	2	CPM	PASS
Ba-67	76	16.5	2000	4006	CPM	FAIL
Cr-51	78	27.6	2000	0	CPM	PASS
In-111	43	14.6	2000	1003	CPM	PASS
Tl-201	75	16.4	2000	4403	CPM	FAIL
Xe-135	78	16.5	2000	4411	CPM	FAIL
Se-153	63	15.8	2000	4767	CPM	FAIL
Na-22	25	13.1	2000	5	CPM	PASS

Location:	SINK					
ISOTOPE	BKGD	MDA	TRIGGER	NET ACTIVITY	UNITS	RESULT
FULL	174	19.6	2000	142	CPM	PASS
Tc-99m	26	14.9	2000	39	CPM	PASS
I-131	56	15.4	2000	144	CPM	PASS
Co-57	69	134.3	1000	0	CPM	PASS
I-125	7	10.3	1500	0	CPM	PASS
Cr-51	55	25.6	2000	258	CPM	PASS
In-111	28	13.4	1500	84	CPM	PASS
Xe-135	28	13.4	2000	0	CPM	PASS
Na-22	34	14.0	2000	0	CPM	PASS

Location:	TABLE					
ISOTOPE	BKGD	MDA	TRIGGER	NET ACTIVITY	UNITS	RESULT
FULL	238	21.0	2000	20	CPM	PASS
Tc-99m	27	15.0	2000	34	CPM	PASS
I-131	96	17.3	2000	110	CPM	PASS
Co-57	27	14.0	2000	25	CPM	PASS
Co-58	88	141.3	2000	0	CPM	PASS
Cs-137	47	17.5	2000	0	CPM	PASS
I-125	20	12.6	2000	1	CPM	PASS
I-125	34	14.0	2000	30	CPM	PASS
F-18	46	14.8	2000	0	CPM	PASS
Ba-133	101	17.5	2000	42	CPM	PASS
Ba-67	15	11.9	2000	13	CPM	PASS
Cr-51	98	28.9	2000	180	CPM	PASS
In-111	45	14.8	2000	87	CPM	PASS
Tl-201	50	15.1	2000	84	CPM	PASS
Xe-135	25	13.1	2000	8	CPM	PASS
Se-153	14	11.7	2000	14	CPM	PASS
Na-22	46	14.8	2000	0	CPM	PASS

Technologist: _____
 Comments: _____
 Supervisor: _____ Date: _____

SPECIFICATIONS:

Detectors

Well-type NaI(tl) crystals coupled to a high gain PMT

Analyzer

4096 channels MCA, 0Kev - 1Mev range, automatic dead time correction.

Well Liner

Removable plastic well liners prevents detector contamination

Display

LED backlight 4.5" LCD (11.25cm)

Shielding

0.85" (22mm) virgin lead shielding with E-lead to eliminate crosstalk with high energy isotopes.

Software

Designed specifically for the NUCLEAR MEDICINE laboratory: Schilling, Plasma Volume, Red Cell Mass, GFR, CPM Counter, Comprehensive Wipe Testing.

Physical Specifications

1-5 well: 18"(46cm) x 10.5"(27cm) x 13.5"(34cm)

67-75 lbs. (30-34 kg)

Power: 110/120 50/60 hz or 220/240 50/60 hz

6-10 well: 20"(51cm) x 10.5"(27cm) x 13.5"(34cm)

84-90 lbs. (38-41 kg)



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MADE IN THE USA

AutoSpect™

Efficiency Correction

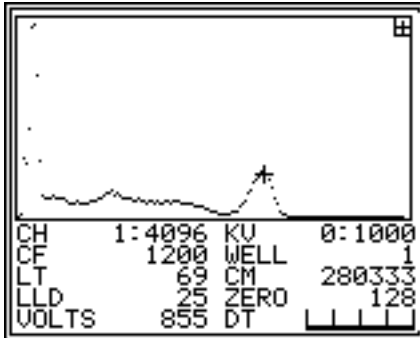
Until now, there have been two basic ways to determine DPM for wipe test samples:

- I. Calculate the efficiency of the counter by using a known, calibrated source of the isotope you are looking for (or use a “mock” standard).
- II. Enter an efficiency value based on a “best guess”.

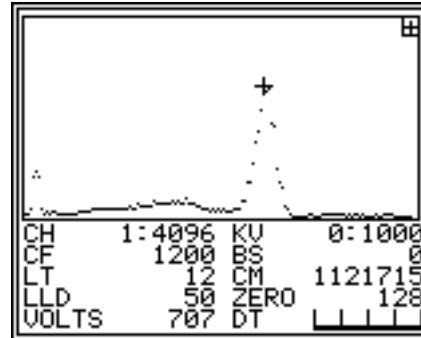
While either of these methods will produce results, keeping calibrated sources for every isotope you use in the department is expensive, and checking them regularly is time consuming. The second method of estimating the efficiency is questionable, and not accepted by all regulatory agencies.

Laboratory Technologies, Inc. now offers you a third option; AutoSpect™. Built into every Wiper™, Multi-Wiper™ and Multi-Wiper HE™, AutoSpect™ provides an accurate method for reporting wipe test results in DPM, without needing calibration sources.

AutoSpect™ uses known detector efficiency values at various levels across the energy spectrum. These values account for crystal thickness and well geometry among other factors in order to maximize accuracy. Armed with this data, the Wiper™ and Multi-Wiper™ automatically determine the detector’s efficiency at any point on the energy spectrum. At the same time, it allows the instrument to count and display spectra as they truly should appear, unaffected by lower detector efficiency at higher energy.



Cs137 spectrum shown “raw”



Cs137 spectrum shown with AutoSpect™ correction

If you choose to use AutoSpect™, the photon abundance can be entered for each isotope in the library. Each isotope is unique, so it is important to enter the proper number. The instrument comes pre-programmed with abundance factors for the most common nuclear medicine isotopes. You can add or adjust any values you wish.

AutoSpect™ applies the crystal efficiency, determined by your isotope window, as well as the photon abundance. Your Wiper™ or Multi-Wiper™ automatically converts CPM into DPM for all wipe test samples run with an AutoSpect™ enabled isotope.

AutoSpect™ makes for truly simple, accurate and automatic wipe test reports sure to please your regulatory inspector or RSO. Best of all, it is already set up in the system; the user needs to do nothing more than count their wipes.