



Thermoluminescent Dosimetry (TLD) Service



PROTECT YOURSELF AND YOUR EMPLOYEES!

About Us

PL Medical Co., LLC, offers TLD dosimeters which are based on state-of-the-art technology. PL Medical Co., LLC supplies accredited dosimetry services to industries in which radiation monitoring is desired or mandated by state and/or federal regulatory standards.

PL Medical Co., LLC is accredited to provide dosimetry services by the National Voluntary Laboratory Accreditation Program (NVLAP), a division of National Institute of Standards and Technology (NIST).

Advantages

- Access to **myTLD** account
- No account maintenance or set-up fees
- One control badge provided free of charge
- Flexibility of the wear period
- Automatic dosimeter replacement every three months for one year
- A reply envelope to return badges
- Computer generated reports sent to the customer within 2-3 weeks of receiving the dosimeters (exposure history automatically updated)
- Advance notice not required for cancellation. Prompt credit for termination of service of an employee
- Each dose report is reviewed to check if it meets ALARA limits
- Customer care – you will always be in contact with a "live person"

Logistics of Service

- An order is placed at <http://manageTLD.plmedical.com> or by phoning, faxing or e-mailing an order form to PL Medical Co., LLC
 - Order is shipped to your clinic one week in advance of start date
 - Order contains the employee dosimeters, free control badge, assignment sheet and self-addressed envelope (2nd shipment onwards)
- This begins the automatic dosimeter replacement every 3 months, for 1 year
- Upon receiving and processing the dosimeter, the dose reports will be mailed directly to your clinic
- Notification of any staff changes can be made online via **myTLD** account or by fax or email. Service additions or deletions are adjusted on a pro-rated basis.



Applications

- Primary Care
- EMS
- Podiatry
- Occupational Health
- Corrections
- Orthopedics
- Homeland Security
- X-Ray Technicians
- Hospitals
- Universities and National Laboratories
- Dentists
- Chiropractors
- Veterinary

Product Description

- Possible wear period of up to twelve months
- Four independent measurements for each badge
- Highly accurate dose algorithm
- Full online account functionality using **myTLD** account (<http://myTLDaccount.plmedical.com>)

It's a Federal Requirement
 10 CFR Part 20 Guidelines of the US NRC
It's a State Requirement
It's an OSHA Requirement
 29 CFR 1910 OSHA (N-1-03ED)

Technical Specifications

Badge Name	TLD 802 Dosimeter	TLD 807 Dosimeter
Description	2 lithium borate and 2 calcium sulfate elements	1 lithium borate element
Manufacturer	Panasonic	Panasonic
Accreditations	NVLAP	
Holder Type	Whole Body	Ring
Minimum Reportable Dose	10 mrem (0.10 mSv)	10 mrem (0.10 mSv)
Lower Limit of Detection	6 mrem (0.06 mSv)	8 mrem (0.08 mSv)
Useful Dose Range	10 mrem – 1000 rad	10 mrem - 1000 rad

PL Medical Co., LLC
 321 Ellis Street
 New Britain, CT 06051

T: (800) 874-0120
 T: (860) 223-8882
 F: (860) 223-5941

info@plmedical.com
 orders@plmedical.com



NVLAP LAB CODE 200666-0

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Dosimeters Overview

Dosimeters are devices that store information about exposure to radiation. The dosimeter captures exposure levels from various angles. The dosimeter detects exposure with four independent detection elements and is capable of estimating doses at three tissue depths. The dosimeter provides a more accurate determination of exposure versus other monitoring devices.

Control Badge

A control badge is provided free of charge for each cycle and plays a very important part in the monitoring system. It is used to determine background exposure readings during transit and while the dosimeters are stored in a clinic. This control badge should be stored away from radiation sources and outside of the x-ray rooms. It should be placed in an area free from radiation, high temperature and humidity. Do not keep it inside a drawer or any other container.

It is of utmost importance that the control badge be returned with the appropriate shipment.

Clinic Instructions

Your clinic will receive its shipment directly from PL Medical Co., LLC every three months along with a reply envelope for returning the dosimeters. Once the dosimeters are received, you will distribute the dosimeters per an assignment sheet included in the shipment. At the end of the wear period your clinic will receive a new set of dosimeters and control badge for the next wear period. At this time you will return all the old dosimeters and the control badge to PL Medical Co., LLC for processing.

Dosimeters should be worn throughout the work day. Dosimeters should not be taken home or exposed to high temperatures or high humidity. Dosimeters should be worn only by the individual whose name appears on the label. When not worn dosimeters should be stored next to the control badge.

Due care should be taken to avoid contamination of the dosimeters. If any contamination occurs contact PL Medical Co., LLC at (800) 874-0120 immediately for next actions.

NVLAP

The National Voluntary Laboratory Accreditation Program (NVLAP) provides an unbiased third-party evaluation and recognition of performance, as well as expert technical guidance to upgrade laboratory performance. NVLAP accreditation signifies that a laboratory has demonstrated that it operates in accordance with NVLAP management and technical requirements pertaining to quality systems; personnel; accommodations and environment; test and calibration methods; equipment; measurement traceability; sampling; handling of test and calibration items; and test and calibration reports.

PL Medical Co., LLC is NVLAP accredited.
NVLAP Lab Code 200666-0.

Need for Monitoring

Your x-ray staff knows that overexposure to ionized radiation can present potentially serious health problems. In addition, over-exposure may impact an employee's ability to continue working in the current environment. Without accurate monitoring, employees have no continuing way of managing their radiation exposure.

Types of Dosimeters (Whole Body – TLD 802)



- TLD dosimeters are one of the most advanced applications of dosimetry
- Extremely reliable dosimeter designed for superior accuracy
- Small and lightweight
- Easy to handle – clips to clothing with supplied hanger
- Resistant to mechanical impact
- Automated processing
- Permanently bar-coded for user identification and tracking

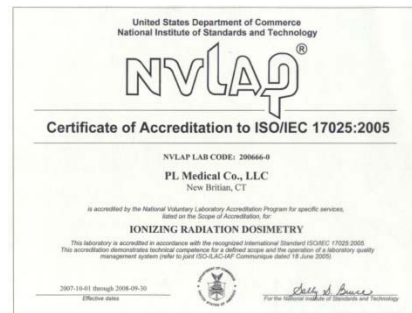
Types of Dosimeters (Extremity – TLD 807)



- Ideal choice for extremity monitoring in a laboratory
- Perfect for monitoring an employee's extremities during a surgical procedure or handling radio-isotopes
- Will not tear surgical gloves

How to Transfer from Another Service

After you receive our dosimeters, simply return the old ones to your former provider. Then, once the former provider sends you a final report, you will make a copy of it and send it to PL Medical Co., LLC via mail, fax at (860) 223-5941 or e-mail at orders@plmedical.com so that we can include the data in our records for total lifetime exposure for each dosimeter wearer.



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[myTLDaccount – http://myTLDaccount.plmedical.com](http://myTLDaccount.plmedical.com)

Account Access at Your Fingertips myTLDaccount

<http://myTLDaccount.plmedical.com>

As part of your dosimetry service from PL Medical Co., LLC you have the ability to view dosage reports online and make changes to your account via our online account application, **myTLDaccount**. You can access this user-friendly, secure (SSL-encrypted) website at: <http://myTLDaccount.plmedical.com>.

Key Features

- Quick Access to *past and present* Dosage Reports
- Ability to **View Technical Information** regarding your Dosage Report
- Capability to **View Badge Reports***
 - Determine which badges are in your possession and which badges have been returned for processing
(* Based on user permissions, some Report features may not be available to all users)
- **Audit Trail Functionality***
 - Determine when employees were added to or cancelled from your account
(* Based on user permissions, some Audit Trail features may not be available to all users)
- Capability to **Manage Account Online***
 - Add Badge Request*, Remove Badge Request*, Change Details Request, Reassign Badge Request*, Fetal Badge Request*
(* Based on user permissions, some Manage Account features may not be available all users)

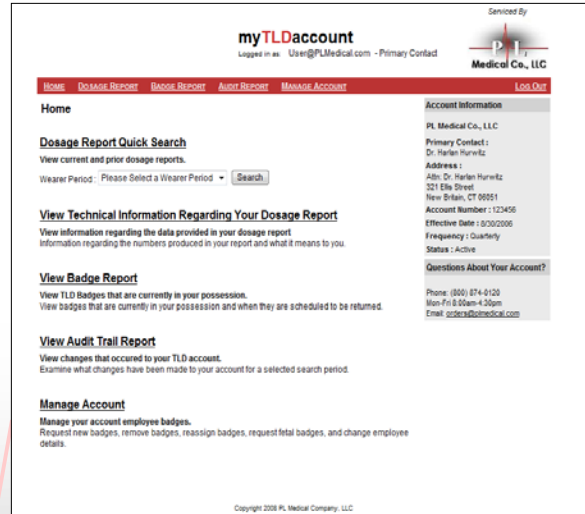
Safe and Secure

Our user-friendly, secure (SSL-encrypted) website can be accessed at <http://myTLDaccount.plmedical.com>. There are two different account types available to new users: Radiation Officer (primary contact) or General User.

Radiation officers at the location are able to view the information of *all* general users (employees) at a location and will be able to add, remove, reassign, and order fetal badges. To avoid any privacy concerns, general users have the ability to view only their own information and will be able to change/fix only their own information.

Easy to Use

Once logged into the system you will find all of the most commonly used features on the website at your fingertips.



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Occupational Radiation Exposure Report (Dose Report)

Once the dosimeters have been returned to PL Medical Co., LLC, an **Occupational Radiation Exposure Report** (Dose Report) will be issued. A printed report will be sent directly to your clinic for your records. The Dose Report shows the type and amount of exposure to each employee. The report includes the monitoring period, the dose equivalent for the current monitoring period, year-to-date and lifetime dose for each monitored employee. It also lists the annual exposure limits. If any reading should ever exceed the safety standards, you will be contacted by phone by an authorized representative. Any further copies of the dose report can be obtained by contacting the laboratory at (800) 874-0120 or e-mailing us at orders@plmedical.com.

Sample Occupational Radiation Exposure Report (Dose Report)

Account Number: 0000976 Report Date: 10/03/2007 Wear Period: 06/08/2007 to 07/07/2007				OCCUPATIONAL RADIATION DOSE RECORD Whole body, limited extremity areas: 5,000 mrem/yr Extremities (hand, foot, etc.): 5,000 mrem/yr Lens of eye: 1,000 mrem/yr Fetus (if any): 500 mrem/yr Pregnancy: 500 mrem/yr Pregnancy: 500 mrem/yr Pregnancy: 500 mrem/yr Pregnancy: 500 mrem/yr			Dose Limits: Annual: 5000 mrem Quarterly: 1250 mrem Monthly: 417 mrem Weekly: 125 mrem Daily: 37 mrem	
PL MEDICAL, LLC 321 ELLIS STREET NEW BRITAIN, CT 06051 Phone: 860-223-8882 Fax: 860-223-5941		ATTN: TO WHOM IT MAY CONCERN						
OCCUPATIONAL RADIATION DOSE RECORD							Page 1 of 1	
Name	Employee ID / DOB	Type	Badge #	Dose Equivalents (in millirem)			Comments	
				Deep	Eye	Shallow		
1. Control	---	T		curr ytd life				
2. Doe, John	001	T	0032836	curr ytd life	MR MR 247	MR MR 247	MR MR 240	
3. Smith, Jane	002	T	0053996	curr ytd life	MR MR 275	MR MR 275	MR MR 265	
4.								
5.								
6.								
7.								
8.								
9.								
10.								

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

Definitions

- ALARA:** Acronym for As Low As Reasonably Achievable. Making every reasonable effort to maintain exposures to radiation as far below the dose limits as is practical and consistent with the purpose for which the licensed activity is undertaken.
- Deep Dose Equivalent (DDE):** Deep Dose Equivalent. Measurement in rem for dose equivalent at a tissue depth of 1 cm; applies to external whole body exposure.
- Dose Equivalent:** The product of the absorbed dose in tissue, quality factor, and all other necessary modifying factors at the location of interest.
- Effective Dose Equivalent:** Risk-weighted sum of products of dose equivalents to major body organs or tissues that are irradiated.
- External Dose:** That portion of the dose equivalent received from radiation sources outside the body.
- Extremity:** Hand, elbow, arm below the elbow, foot, knee, leg below the knee.
- Eye Dose Equivalent (EDE)** - incremental measurement in rem for dose equivalent at a tissue depth of 0.3 cm. Applies to external exposure of the lens of the eye.
- MR:** Minimal reportable
- MREM:** One-thousandth of a rem.
- Occupational Dose:** Dose received by an individual in a restricted area or in the course of employment in which the individual's assigned duties involve exposure to radiation and/or to radioactive material from licensed and unlicensed sources of radiation, whether in the possession of the licensee or other person. Occupational dose does not include dose received from background radiation, as a patient from medical practices, from voluntary participation in medical research programs, or as a member of the general public.
- Rem:** Roentgen equivalent man. The product of the absorbed dose in tissue, quality factor, and all other necessary modifying factors at the location of interest. "Unit of dose equivalent" (1 rem=0.01 Sievert)
- Shallow Dose Equivalent (SDE)** - incremental measurement in rem for dose equivalent at a tissue depth of 0.007 cm. Applies to external exposure of the skin or an extremity.
- Whole Body:** That part of the body comprising the head, the trunk of the body, arms above the elbow and legs above the knee.

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