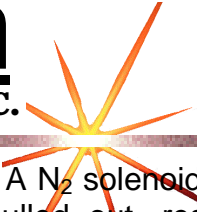


- **DIRECT CONTACT PLANCHET HEATING**
For Best Heat Transfer And Accuracy
- **Processes ALL TLD Dosimeters—**
POWDER, CHIPS, RIBBONS, PELLETS,
DISK, RODS AND MICRO CUBES
- **Superior Design-Lower Cost-User**
Friendly
- **Option For Weight Input From Electronic**
Balance for Powder Sample Correlation.
- **Bar Code SCANNER & Auto N₂ shut-off**
- **Displays Digitized Glow-Curve And**
Temperature File-10 NODES available.
- **Unlimited Configuration And Calibration**
For Any Unit Of Measurement

- **Verification For A Built-In Quality Control Check**
- **Reference Light Source For Real-Time PMT Drift Correction**
- **Dosimeter Correction Factor Storage And Automatic Call-Up**
- **Internal μ Processor---(C+)---RS 232 Connection to PC: Operates in Windows® 95, 98, 2000, XP, NT**

DESCRIPTION: The **UL-320** Instrumentation Series provides for the most versatile TLD Readers available for **ANY** Dosimetry applications including radiotherapy, extremity and environmental monitoring. All standard forms of TLD materials can be processed in an Automated Mode utilizing the **UL-320** for a Standard Loading of 200 Dosimeters of any shape or 100 Powder Planchets (Refer to separate Data Sheet). Or the Dosimeter can be read individually in the **UL-320-AD**, a Manual Reader with an Automated Drawer that is PC controlled or manually with a push-button switch. A low cost no frill Reader with a manual push-pull drawer similar to the Teledyne 7300 or the 310 Reader is also available as the **UL-320-M** for the budget conscious User.

The instrument includes the μ Processor Board, a sample heater, bar-code scanner, reference light source, PMT tube and associated electronics. Windows Application Software (Standard ON ALL REXON READERS AT NO EXTRA COST) provides the user, the interface for complete system control, file management and diagnostic capabilities. The SMARTS are in the Reader and there is no Board to INSERT IN ANY EXPANSION SLOT IN YOUR PC (**YOU CAN EVEN USE A LAPTOP**)—NO ISA, NO PCI. JUST A SERIAL RS-232 Port. USB and Firewire connections are under development and will be available on future unit upgrades. Calibration and verification routines provide a comprehensive quality control check for review and approval. Easy to use planchets for standard dosimeter shapes are provided in the starter kit. For custom shapes, contact the factory for specially designed planchets.



SPECIAL FEATURES: A N₂ solenoid is provided that AUTOMATICALLY SHUTS OFF THE N₂ when the drawer is pulled out, resulting in LOWER OPERATING COSTS over previous Readers. A Vibrator is provided for powder samples with User Programmable vibrate time. USER can program up to 10 different temperature and time settings. Optional software for incorporating the weight of powder samples in your TL Dose Data provides for another enhanced feature over previous Readers. A non-contact infrared sensor positioned beneath the planchet closely monitors the sample and the planchet temperature THAT IS IN INTIMATE PHYSICAL CONTACT—NO HOT GAS HERE. Upon completion of the TL cycle, the glow-curve and temperature files are displayed and stored to the permanent analysis record. The combined features and utilities offered in these Readers help in reducing operating costs while **minimizing operator errors.**

Model-AD: is the normal Manual Reader that comes with an **Automated Drawer. IT IS EASILY UPGRADEABLE TO A FULLY AUTOMATED READER THAT WILL READ 200 PLANCHETS PER LOADING WITH HIGH TEMPERATURE BAR-CODED PLANCHETS.** The planchet bar codes are capable of withstanding 400 °C and even higher, so that the planchet can be used for Dosimeter Identity and, both the planchet and the dosimeter can be oven annealed for Better Accuracy and Reproducibility. This feature is particularly attractive for the PTFE/Phosphor or the TEF-Phos dosimeters that do not chip or break in Handling or use. With the advanced Rexion technology, Phosphor content is routinely available at 50% without appreciable loss of flexibility. Combinations as high as 70% are available but these are somewhat rigid like the 100% sintered dosimeters. The unit has a Stepper Motor for automated drawer movement and all of the features of the UL-320 except for Sample Drive Motor, Loading and Eject magazines and mechanics. The automated drawer eases the wrist and finger fatigue for operators that have to make many measurements in a day---a clear and safer alternative to Carpo-Tunnel Syndrome problems that may arise in heavy use of the Reader.

Model-M: is a lower cost non-motorized Reader with fewer features than the **Model-AD.** The Operator has to physically pull the Sample Drawer out for insertion of the Dosimeter and then push it back. Frequent operations per day may result in Operators succumbing to the Carpo-Tunnel Syndrome. Additional features may be added on depending upon the budget requirements. The unit operates in a similar manner to the Teledyne 7300 and 310 Readers but with 21st Century electronics, USER-FRIENDLY software that is compatible with all Microsoft Windows®™ 95, 98, 2000, XP and NT, and better reliability. There is NO BOARDS TO INSERT IN YOUR PC and hence you are not limited with the age of the PC or communication problems when you upgrade your PC.

Option-METT-BAL: Is an option to add to the software the ability to input the weight reading of a powder sample or any sample from a Mettler Balance into the Glow Curve parameters for data control. This gives an additional measure of convenience and confidence when numerous powder readings are made in a day in beam calibration for radiation therapy.

TLD material compatibility:

Chips, rods, discs, pellets, powder.
Teflon-Phosphor chips, rods, discs

Capacity: Upgradeable to 200 dosimeters

Cycle time: Variable: 0 to 3 min.
Adjustable in 1 second intervals

Test light: Stable LED reference light for real-time PMT drift compensation
Environmentally safer than ¹⁴CO types

Dosimeter heating system:

Direct contact heating with linear Time/Temperature profile (TTP)
Temperature set-point resolution: 1°C
Range: RT to 450°C
Temperature control: ten (10) points
Accuracy: ± 4°C

Reported TLD Data:

TL digitization (digital glow-curve) period resolution: 100 ms
TL signal data: integrated TL signal
Temperature reporting resolution, 1°C

High voltage: 0 to 2000 VDC

Programmable Heating Cycle:

User controlled, up to 10-node programmable temperature cycle

Indicators and controls:

Internal regulator eliminates external N₂ flow control requirement,
N₂ solenoid valve
Flow indicator (SCFH)
Low-flow detection sensor
On-off switch
User programmable anneal temperature and duration

Power: 115 VAC/230 VAC @ 50/60Hz

Dimensions: 50 cm (h) x 28 cm (w) x 37 cm (d)
19.5 in (h) x 11 in (w) x 14.6 in (d)

Weight: 20 Kg, 44 Lb

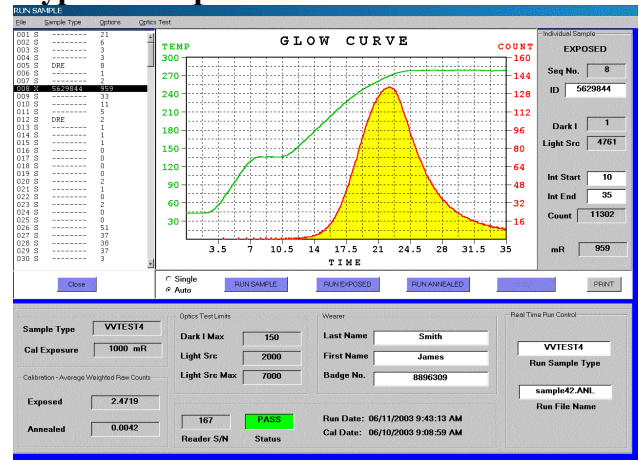
Computer requirements:

PC compatible
Windows 98, XP, NT, 2000
RS-232 serial interface
VGA display
8MB RAM (min. req.)

Accessories:

Bar-coded planchet
Computer system
Load magazine
Eject magazine

Typical Temperature Profile and Glow Curve



DOSIMETER Disk with High Temperature Bar Code used in extremity monitoring. A TLD CHIP on a Kapton tape with Bar Code can also be used. Different holding mechanisms are provided to hold ALL TL Dosimeter Shapes



PLANCHET with High Temperature Bar Code. Available for ALL TLD Dosimeter SHAPES and ALL Phosphors Sintered or Teflon combinations. ASK FOR THE NEW 50%Phosphor/50%PTFE

CE Made In USA-2003