REXON

COMPONENTS & SYSTEMS

www.rexon.com

FROM DARKNESS TO LIGHT

SCINTILLATION PRODUCTS

TLD PHOSPHORS & SYSTEMS

HOME HEALTHCARE SUPPLIES

REXON

COMPANY INFORMATION

COMPONENTS & SYSTEMS

www.rexon.com

- 1983-APRIL SPIN OFF Harshaw Crystal & Electronic Products
- 1983-BASED ON THE 4-**R** PRINCIPLE:

  (1) **R**EPAIR, (2) **R**EFURBISH, (3) **R**E-MANUFACTURE
  (4) CALL **R**EXON REGARDLESS OF AGE OR BRAND
- 1983-LOCATION GARAGE IN DOYLESTOWN, OHIO
- 1984-LEASED FACILITIES-ALL COMMERCIAL SCINTILLATORS NEW & REPAIR SERVICE OF ALL BRANDS OF MANUFACTURE PRODUCT LINES SIMILAR TO HARSHAW & BICRON-
- ALL (3) LOCATED IN GREATER CLEVELAND OHIO REGION
- 1993-COMPANY OWNED FACILITY IN PREMIUM CORPORATE LOCATION IN BEACHWOOD OHIO
- 1999/2000- ACQUISITION OF TLD PHOSPHOR/INSTRUMENT LINE OF VICTOREEN AND TELEDYNE BROWN (ISOTOPES)
- 2008- HOME HEALTHCARE PRODUCTS, LLC LAUNCHED

REXON

COMPONENTS, INC.

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SCINTILLATORS

INORGANIC SCINTILATORS

PLASTIC SCINTILLATORS

CUSTOMER DRIVEN DESIGNS

PROBES, SONDES & SYSTEMS

SCINTILLATORS

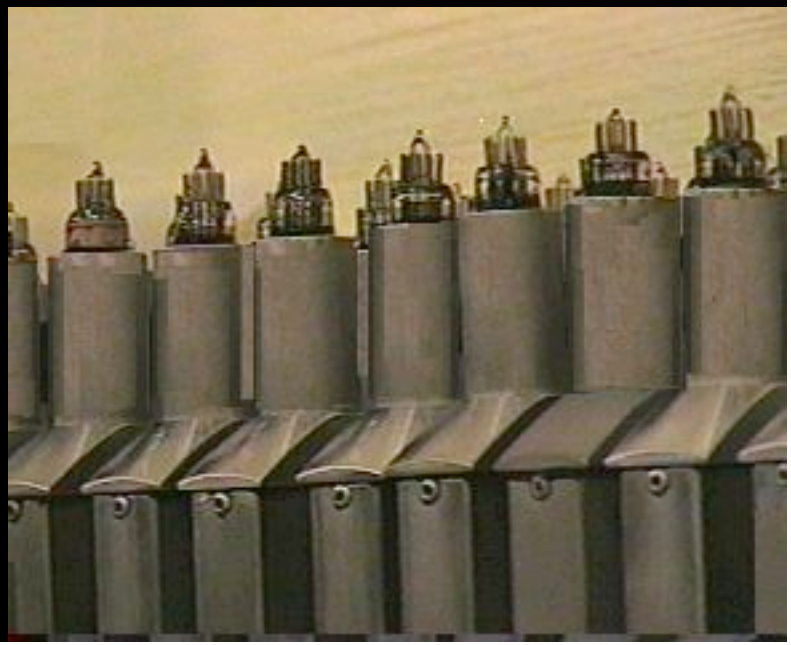
Inorganic Scintillators

- Halides-NaI(Tl),CsI(Tl),CsI(Na), CsI, LiI(Eu)
- Chalcogenides-CaF_2(Eu), BaF_2
- Oxides-BGO, CdWO4, YAP, YSO, GSO, LSO
- Research Scintillators- LuAP,PbWO,LaBr(Ce) and Others
- ZnS(Ag) and Other Neutron Sensitive Mixtures Such as
- ZnS mixed with ^{6}Li and / or ^{10}B
- Contact the Factory for still novel Scintillators

STANDARD SCINTILLATION PROBES

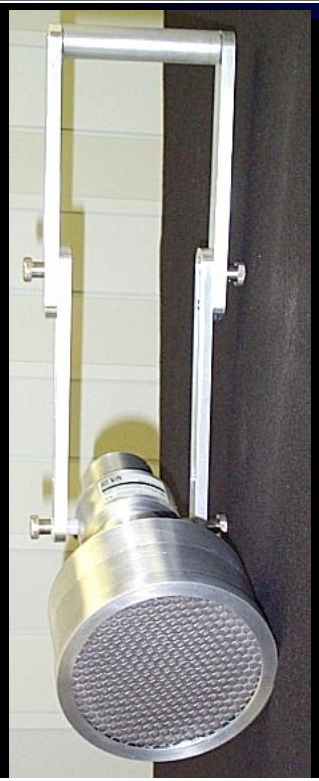
Specialized Custom
Probes / Sensors

Volume Production



FIDLER G-5

- ❖OPTIMIZED FOR 17.44 KEV X-RAYS
- ❖2 MM CRYSTAL THICKNESS
- ❖ALPHABETA/ GAMMA VERSIONS
- ❖CONTACT FACTORY FOR OPTIONS



Collapsible Carrying Handle Fits ALL FIDLER G5-Adjustable for Varying Personnel Height

Customer Removable Protective Cap- Stainless Steel Mesh-Screen 79% Transmission Std. For Choice of other Mesh Sizes and Patterns- Contact Factory—RUGGEDIZE ANY G5 FOR HARSH FIELD ENVIRONMENTS

Small LiI(Eu) Crystal Coupled to a 10 Meter Light Guide for Detection of Water Presence Underground to 10 Meter Depth
Crystal Size- 5 mm Dia. X 15 mm
Field Portable System

LMT-1000 CM

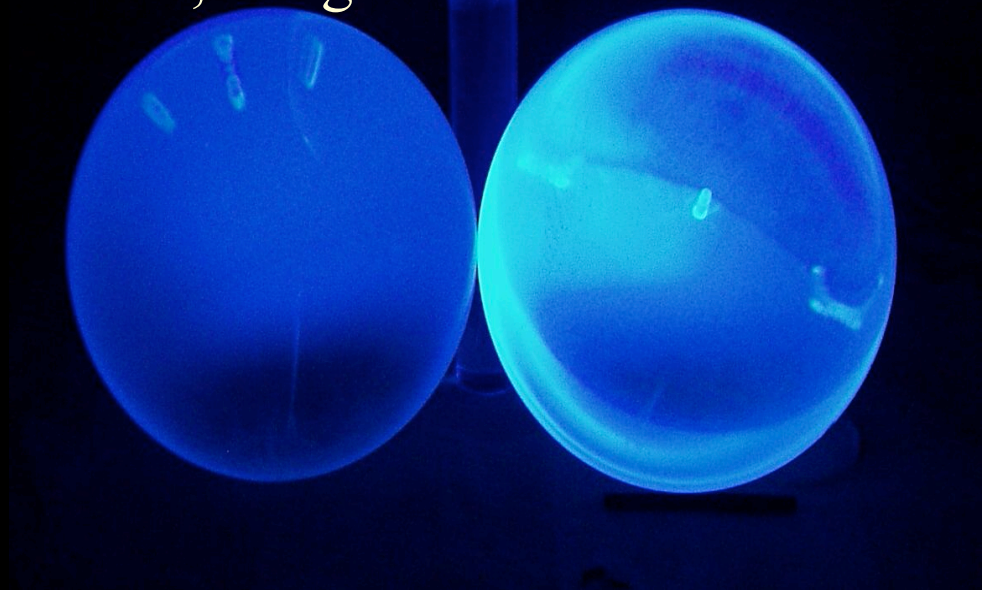
Carrying kit for field measurements
Victoreen® Survey Meter
Low profile probe for Small Bore Holes
10 meter Light Guide
Power Base- Battery Operated

Compton Shields Simple & Complex Shapes

From Standard to Partial Annulus

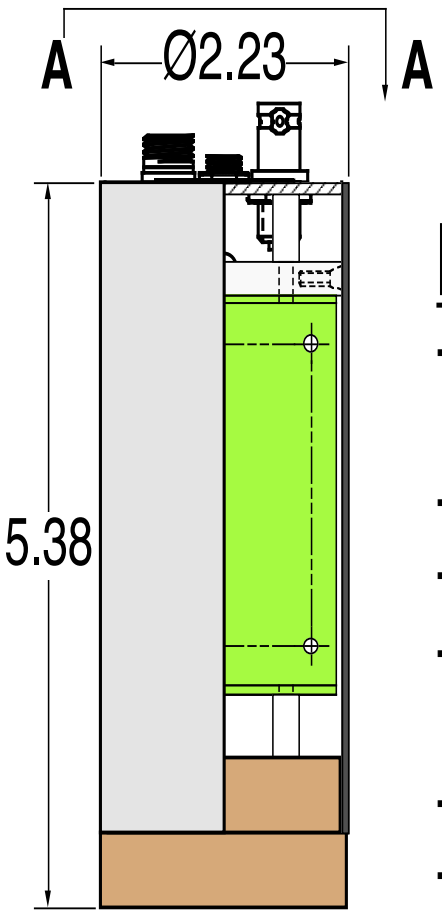
Plastic Scintillators

Complex Shapes
Spherical Detectors
Container Monitoring
For Nuclear Shine
Homeland Security
Most Economical Scintillator / cc
Sizes 0.1 mm to 100 mm Thick
Widths to I Meter, Length to 4500 mm



Power Base and Preamplifiers

MODEL RB-200 INTEGRATED PMT BASE

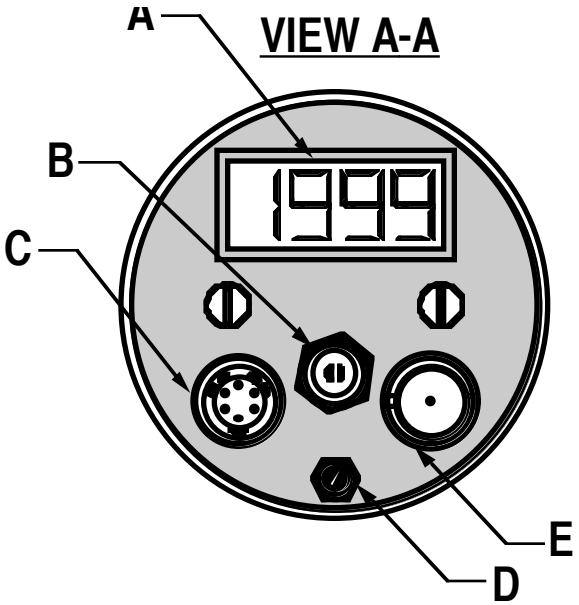


AVAILABLE IN SEVERAL VERSIONS:
8-STAGE DYNODE OR 10-STAGE DYNODE CONFIGURATION

A- LED READOUT
B- POWER JACK
C- MCA CARD CONNECTOR
D- POTENTIOMETER
E- SIGNAL CONNECTOR

FEATURES:

- COMPACT, EASY-TO-USE SOLUTION TO YOUR PMT INTERFACE REQUIREMENTS
- LOW RIPPLE, ADJUSTABLE PMT BIAS SUPPLY
- ADJUSTABLE TO 2000 VDC
- LOW-NOISE, CHARGE SENSITIVE, FET INPUT PREAMPLIFIER
- LCD DISPLAY
- MCA INTERFACE FOR REMOTE CONTROL AND MONITORING



NIM & OTHER ELECTRONIC PRODUCTS

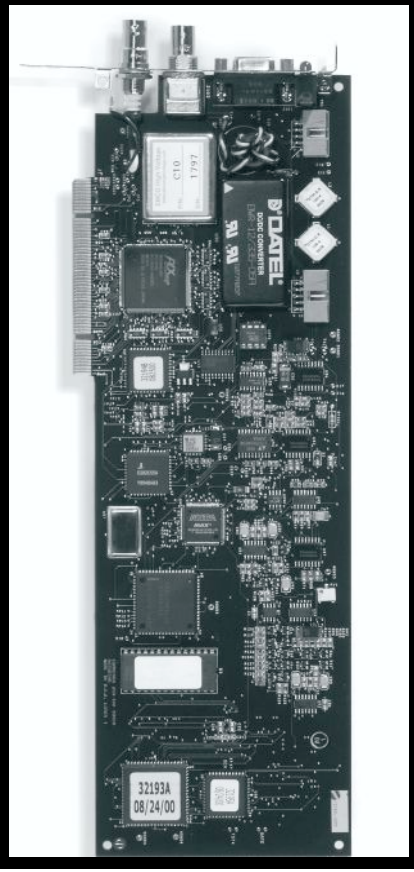
MODEL NH-85 NIM BIN AND POWER SUPPLY

Model NA-2022
Spectroscopy Amplifier

FRONT **BACK**

NB-25 SERIES
PREAMPLIFIER

MODEL MCA-ASA-100
PCI CARD



MODEL RAD7
CONTINUOUS
RADON DAUGHTER
ANALYZER

Power Supplies for PMTS and General Use

FEATURES

Compact, adjustable, Bench-Top High Voltage Supply Up to 2000VDC, STD-(+). Optional (-)

Very low ripple <0.005% P-P

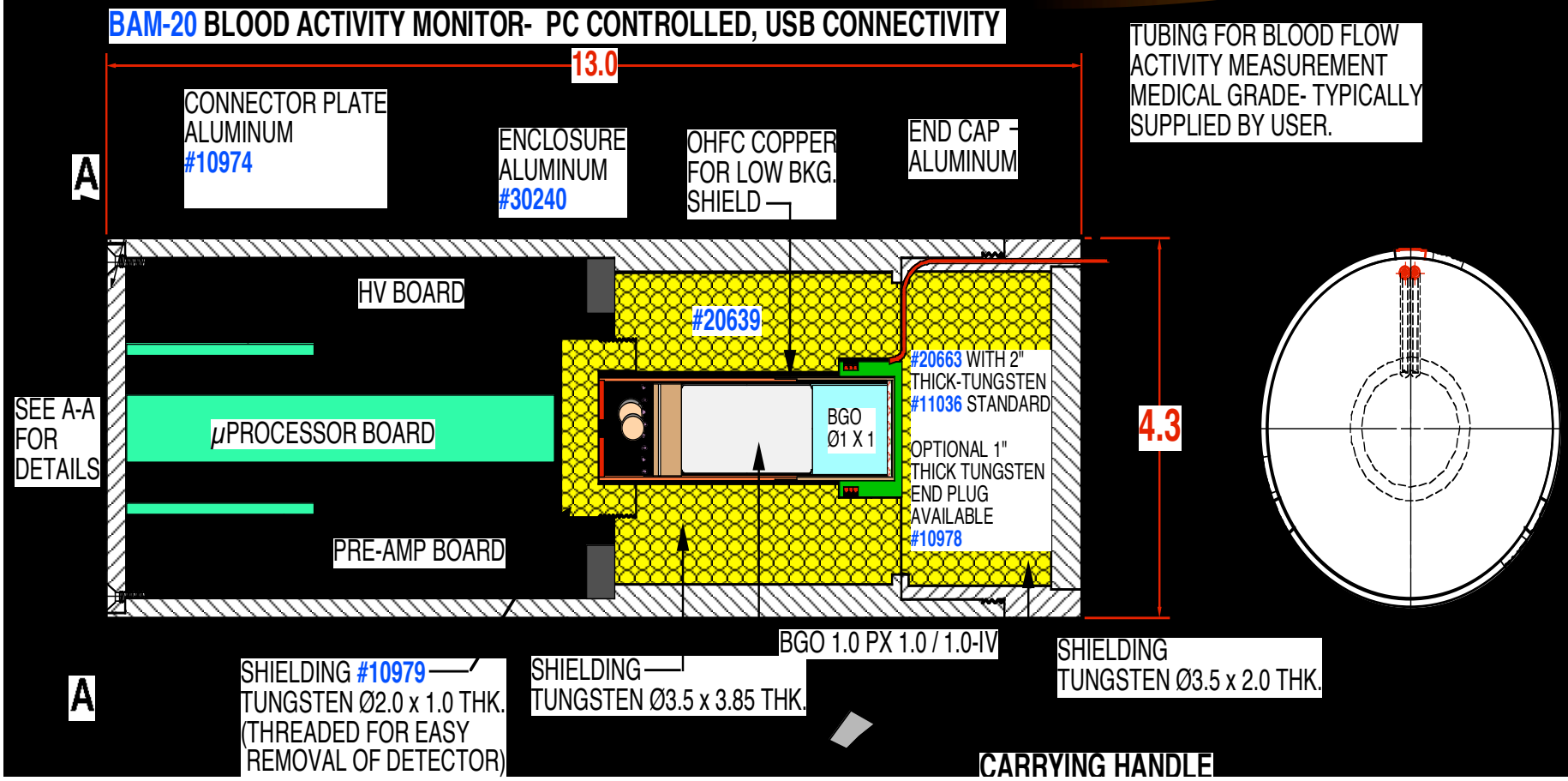
Perfect for photomultiplier applications

Arc, overload and short circuit protected

RB-200 POWER BASE VOLTAGE DIVIDER, PREAMP AND HV SUPPLY—ALL-IN-ONE SAME AS PS-10

Ripple (full load, P-P):	<0.005%
Stability:	<0.005%/hr
Dimensions (L x W x H):	7.5" x 8" x 3"
	19cm x 20.3cm x 7.6cm

BAM-20 Blood Activity Monitor System for PET Applications



REXON

TLD SYSTEMS, INC.

www.rexon.com

TLD PRODUCT LINE

MISSION STATEMENT

Rexon is Committed to….

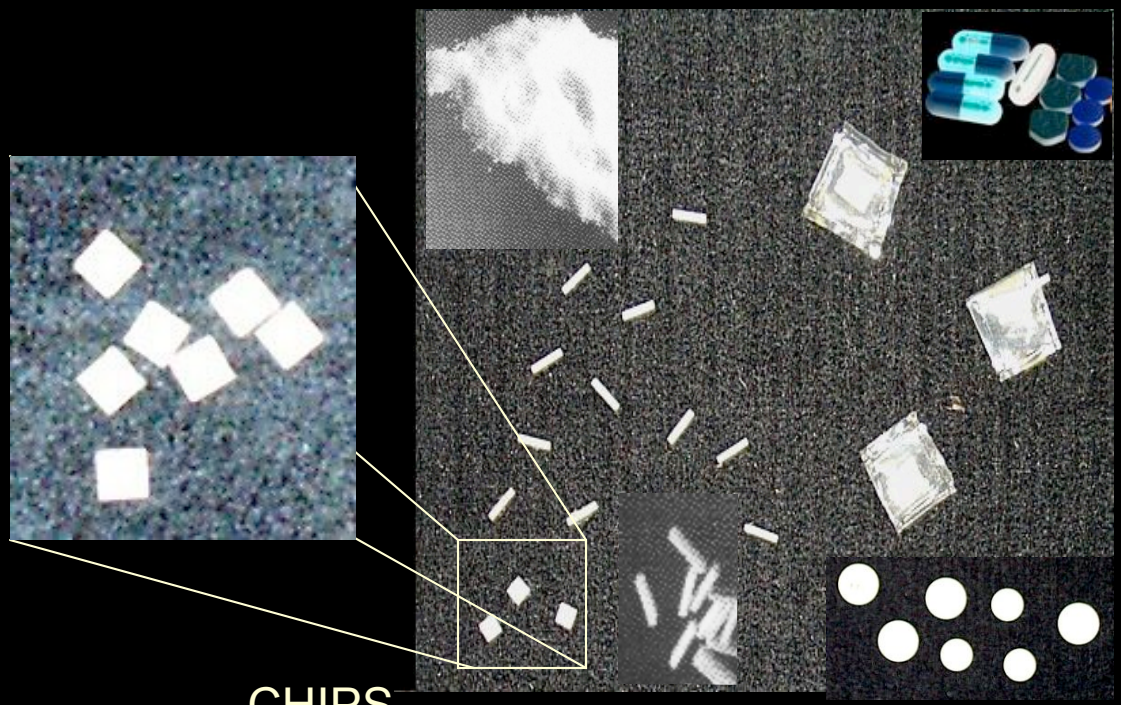
- Ongoing supply of TLD Products and Service Pioneered IN USA by Teledyne & Victoreen
- Repair and Service of Harshaw and other brands whenever possible
- Continuous improvements in TLD materials and processing
- Improvement of instrumentation and software applications --21st Century.
- Quality & Cost effective Customer Driven Solutions

Standard Sintered TLD Phosphors

TLD 100 LiF(Mg,Ti)
TLD 600 ^{6}LiF(Mg.Ti)
TLD 700 ^{7}LiF(Mg,Ti)

TLD 1000 LiF(Mg,Cu,P)
TLD 6000 ^{6}LiF(Mg,Cu,P)
TLD 7000 ^{7}LiF(Mg,Cu,P)

TLD 200 CaF_2(Dy)
TLD 300 CaF_2(Tm)
TLD 500 Al_2O_3(C)
TLD 800 $Li_2B_4O_7$(Mn)
TLD 900 $CaSO_4$(Dy)
TLD 2000 BeO

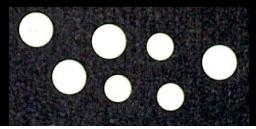


TEF Line of TLD Phosphors
PTFE/TLD Powder Blend

TEF 100 LiF(Mg,Ti)
TEF 600 ^{6}LiF(Mg.Ti)
TEF 700 ^{7}LiF(Mg,Ti)

TEF 1000 LiF(Mg,Cu,P)
TEF 6000 ^{6}LiF(Mg,Cu,P)
TEF 7000 ^{7}LiF(Mg,Cu,P)

TEF 200 CaF_2(Dy)
TEF 300 CaF_2(Tm)
TEF 500 Al_2O_3(C)
TEF 800 $Li_2B_4O_7$(Mn)
TEF 900 $CaSO_4$(Dy)
TEF 2000 BeO



Teflon TLD Phosphors

- Standard Disks, Pellets, Chips
- Ultra thin 50 µm, low energy Disks
- Rods: long, mini and micro
- Multi-Geometry section
- <2000 limited to 25%-30% Phosphor content
- Rexon improvement to 50%. Possible to mix 70% but loss of Teflon flexibility

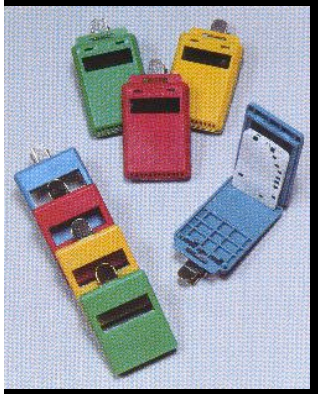
TEF & TLD Cards, Dosimeters & Accessories

PB-6
PB-300-AS
PB-300-DS

PB-4
WITH 8-ELEMENT
& 4 ELEMENT “H” TYPE
CARDS

KAPTON SANDWICH
EXTREMITY BARCODED
DOSIMETERS

ALL CARDS OR
DOSIMETER CARRIERS
ARE OVEN ANNEABLE



PB-3 & 5
BADGE CASE

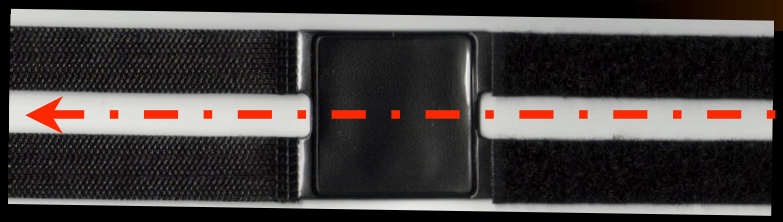
NECK PENDENT BADGE

X-RAY FILTERS
ALUMINUM & COPPER
SHOWN HERE. OTHERS
ARE Cd, Pb, Sn, PTFE

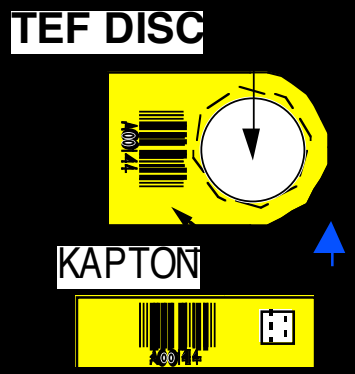
TEF & TLD Cards, Dosimeters & Accessories

CONTINUED

VELCRO EXTREMITY BADGES WITH 2-POUCH 7 mg/cm^2 PLASTIC ENTRANCE WINDOW



SOLD AS HERMETICALLY SEALED DOUBLETS CUT IN TWO JUST BEFORE USE



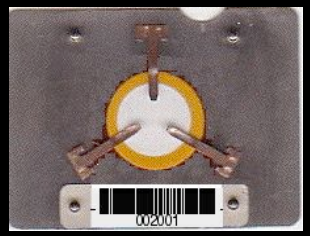
XLV STYLE FOR EXTRA LENGTH VELCRO FOR WRIST OR CUT TO SIZE FOR FINGER

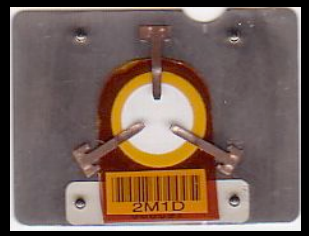
UNIVERSAL AND SUPERIOR EXTREMITY DOSIMETER BADGE CASE FOR ALL COMMERCIALLY USED PAST AND PRESENT DOSIMETERS IF IT DOES NOT FIT YOUR DOSIMETER, CONTACT FACTORY FOR CUSTOM MODIFICATION

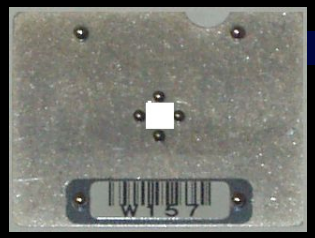
TLD Instrument Line- Designed in the 21st Century

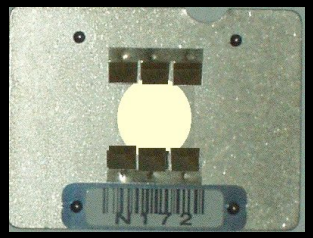
Model 320 Features

- Utilizes proven technology from 7300, 310 and 300 Teledyne Readers
- Provides fully automated processing capabilities
- User friendly Windows software INCLUDED
- Barcode reader, Vibrator, Balance Software
- Comprehensive operator controls via software
- Embedded Microprocessor, Just connect to PC
- 600^0C Capability INCLUDED-Not an Option









Planchet configurations

- Unique planchets for holding various TLD materials
- Four stacking balls allow uniform stacking in magazines
- High temp 400^0C+ Ceramic barcode simplifies dosimeter tracking

Model UL-320 Feeder System TLD Reader For Individual Dosimeter Elements

Planchet Feeder Mechanics

- Processor controlled sequencing
- Stepper motor controls all feeder positioning
- Optical sensor detects planchet positioned in drawer.
- Load magazine holds up to 200 planchets
- Eject magazine contains processed planchets

Model 330 Highest Volume AutomatedTLD Reader For 8- Element Cards

Model 330 TLD Reader

Model 330 System

- High reliability, fully automated card reader
- High throughput, processes 1700 cards without operator intervention
- Low maintenance cost
- User defined tolerances
- Automatic system verification

Application Software

- Easy-to-use Windows® interface *Compatible with 95, 98, 98SE, ME, 2000, NT, XP and VISTA*
- Provides complete process control
- Color code Load and Eject magazines
- Improved magazine keying to prevent mixing Load and Eject magazines
- Programmable temperature profile window
  - allows control of temperature and time
  - provides control of integration start and stop

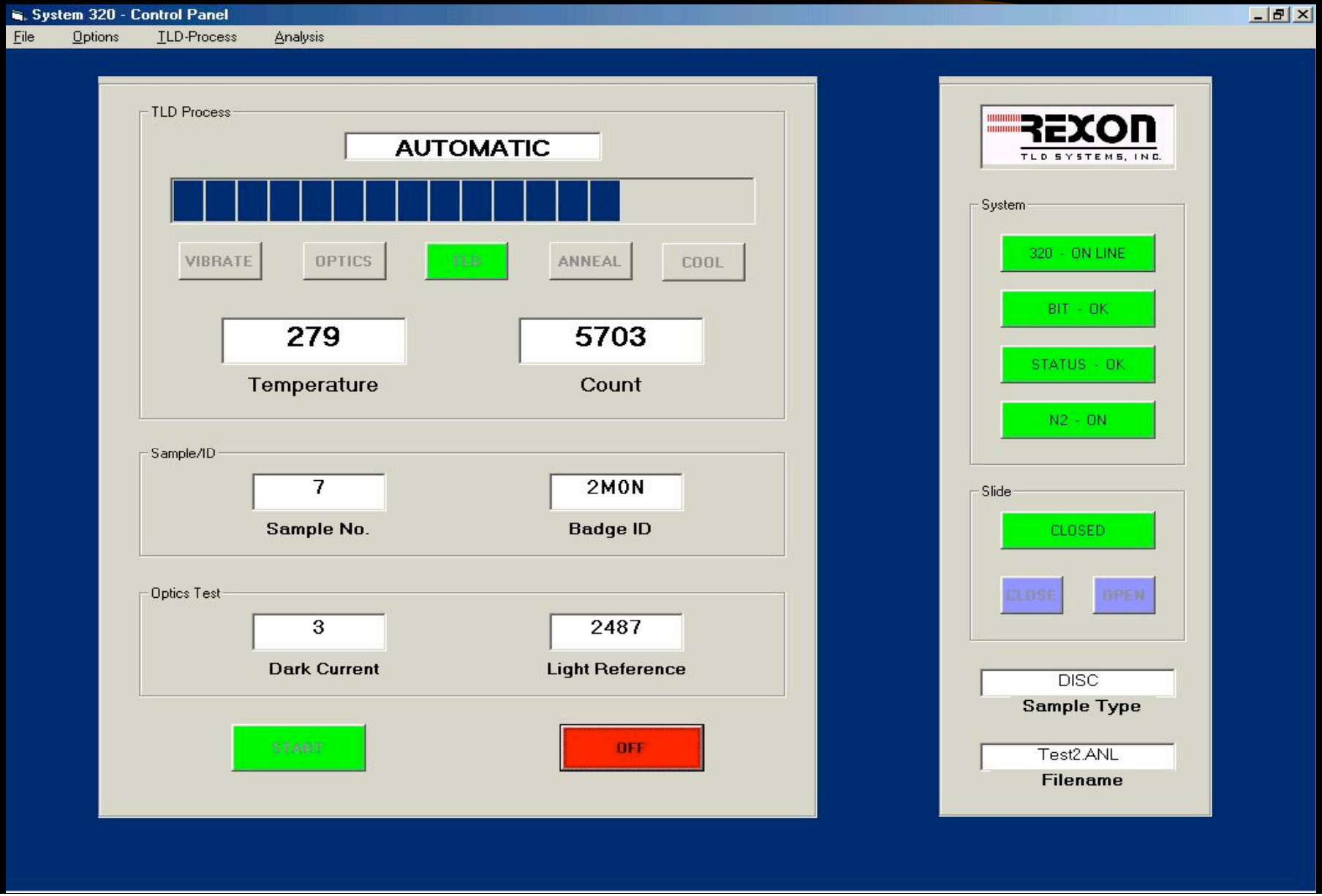
Features

- High performance embedded microcontroller
- Programmable HV supply for a wide range of gain control
- IR temperature sensor
- Light reference source for real-time PMT drift correction
- Processor control, closed loop heater system
- High performance, low dark current PMT
- Low noise integrating amplifier
- High reliability barcode scanner
- N2 sensor and flow rate indicator. Auto shut-off
- System reset switch
- Power up diagnostics

Diagnostic Software

- Easy-to-use Windows interface
- Provides low-level troubleshooting capabilities
- Allows activation of individual functions outside of the automatic sequence, such as initiating a barcode scan

320-TLD READER-GUI



TIME TEMPERATURE PROFILE

Vibration Cycle

0

Planchet Process Cycle

NODE	1	2	3	4	5	6	7	8	9	10
TIME	10	20	30	40						
TEMP	100	100	200	200						

Anneal Cycle

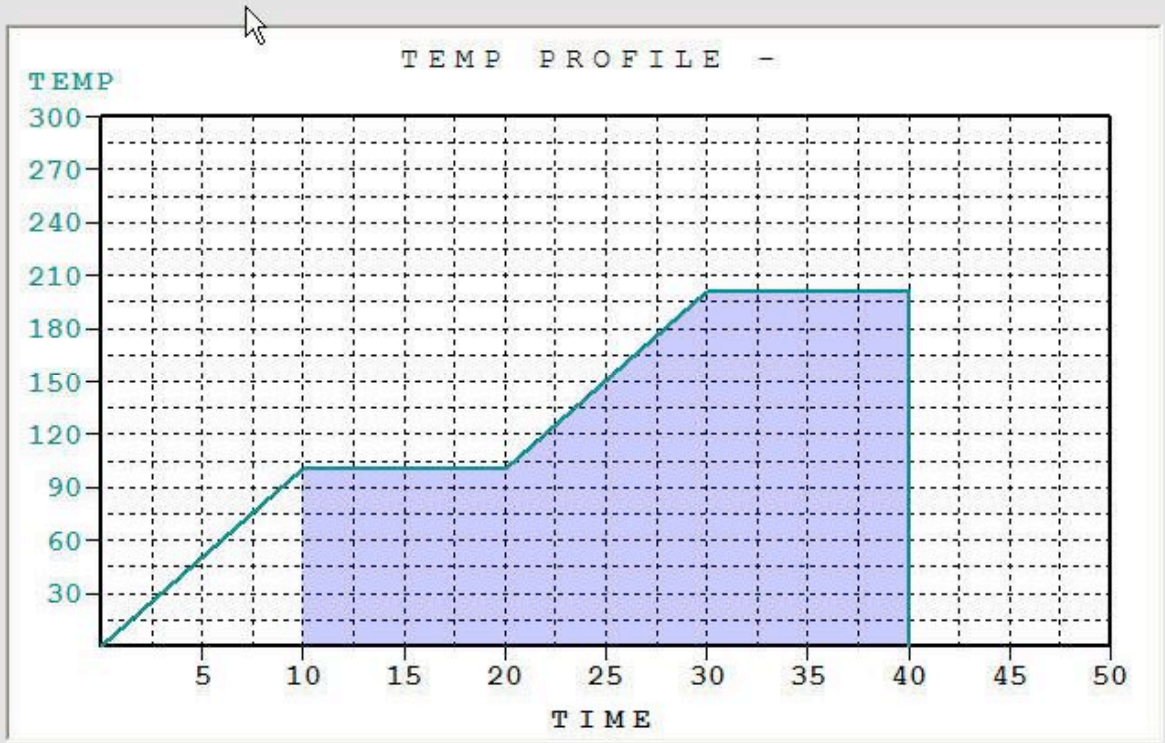
0

0

Cooling Cycle

10

Temperature / Time



☑ Nitrogen Required

☐ Use SCFs

Limits

HIGH DOSE (FLAG)	0
HIGH DOSE (ABORT)	0
EXPOSED STANDARD	0
+ / -	0
ANNEALED STD (MAX)	0

PMT Optics

PMT HI VOLTAGE	675
MAX DARK CURRENT	10
MIN LIGHT REF	500
MAX LIGHT REF	10000

CHECK OPTICS

Key Board

CLOSE CANCEL SAVE

Integration

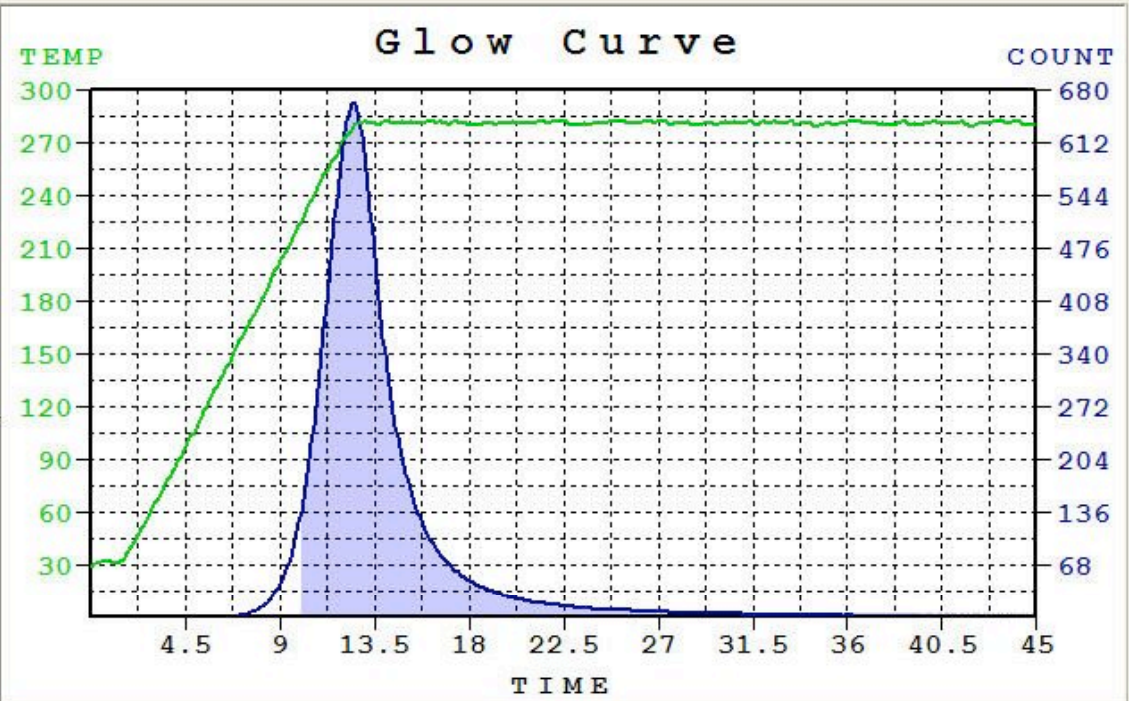
START TIME	10
END TIME	40

GLOW CURVE

RUN SAMPLE

File | Glow Curve | Options

001	S	N090	1082
002	S	N090	0
003	S	N031	908
004	S	N031	0
005	S	F030	898
006	S	F030	0
007	S	W598	941
008	S	W598	0
009	S	W557	1033
010	S	W557	0
011	S	N041	955
012	S	N041	0
013	S	N041	873
014	S	N041	0
015	S	W557	986
016	S	W557	0
017	S	W598	892
018	S	W598	0
019	X	EXP	918
020	X	EXP	0
021	A	ANN	1
022	A	ANN	0
023	S	W557	905
024	S	W557	0
025	S	N031	983
026	S	N031	0
027	S	W598	1106
028	S	W598	0
029	S	F030	934
030	S	F030	0



EXPOSED

Seq No.	19
Sampl ID	EXP
Dark I	2
Light S.	30358
Int Start	10
Int End	45
Count	25527
mR	918.00
Wt	0

Close | Run Sample | Run Exposed | Run Annealed | STOP

Sample Type	20209
Cal Exposure	1000 mR

Average Weighted Raw Counts

Exposed	0.9136
Annealed	0.0096
Sample CF	1.000

Optics Test Limits

Dark I Max	100
Light S.Min	5
Light S.Max	100000

Wearer

Last Name	1R SAMP
First Name	
Badge No.	

Real Time Run Control

Run File Process

20209_CALAFTER.ANL

Run File Analysis

Glow Curve Smoothing ☑

197 — Reader S/N

PASS — Status

Run Date: 07/05/06 09:34:49

Cal Date: 07/05/06 08:25:00

DIAGNOSTIC SCREEN

Diagnostic Commands

Double Click On each Option to Select Diagnostic Test

HVDATA: This command changes the photo-multiplier high voltage. Increasing High Voltage increases the system optical gain.

Lamp Test	Set High Voltage	Set N2 Gas requirement	Slide Home Sequence	Start Bar Code Scan
Control Heater Temperature	Set High Light Ref. Limit	Reader Input Port Check	N2 Valve: OFF	Read High Voltage
Measure Heater Temperature	Set Low Light Ref. Limit	Feeder Home Sequence	N2 Valve: ON	Set Feeder Ext. Position
Measure Dark Current	Set Dark Current Noise Limit	Start Vibrator	Light Ref: Off	Set Feeder Home Position
Measure Light Reference	Set Slide Position	Reader Serial Number	Light Ref: On	Set Feeder Position
Start Optical Check	Set/Read Feeder Alignment	Read A/D Channels	Automatic Test (AD)	

Communication Monitor

Bytes Received

0

Close

Erase Display

CTS (uP)

REXON

TLD SYSTEMS, INC.

www.rexon.com

Objectives of Customer Evaluation

- Suggestions for improvements on any system elements
- Evaluation of batch processing features
- Software ease-of-use
- Requirements for additional functionality

- *We firmly believe that customer input is key to successful product development and greatly appreciate the opportunity to participate in this evaluation and to receive your valuable feedback*