The Harshaw 5500 TLD Reader provides cost-effective measurements of the radiation dose absorbed by individual TLD elements. The instrument includes an automatic sample changer and carrier disk for automatic processing of up to 50 TLD dosimeter elements in a single loading.

**Harshaw 5500**

**Automatic Dosimetry Reader**

Automatic background subtraction capability
Easy to operate, service and maintain
Compact and attractive
Linear contactless hot gas heating
Optional glow curve deconvolution software
Optional neutral density filters

The Harshaw 5500 has a linear, programmable heating system and a cooled photomultiplier tube with associated electronics to measure the TL light output. The WinREMS Software, which runs on a separate computer, provides the user interface, the reader control and the applications software.

**Harshaw 5500 Key Features**
- Thermoelectric PMT cooler for maximum gain stability
- Measurement quality assurance
- Unattended automatic background subtraction capability
- Easy to operate, service and maintain
- Compact and attractive
- Optional calibration software
- Unattended automatic operation for up to 50 dosimeters
- Multiple, programmable, linear time-temperature profiles
- Heating profile includes pre-heat, acquire and anneal cycles
- Heating by hot gas, temperature capability up to 600 °C (1112 °F)
- 7 decade dynamic acquisition ranges
**System Specifications**

**Capacity:** 50 dosimeters per loading
**Cycle time:** 30 s per chip with normal TTP

**Light detection system**
**Dynamic range:** 7 decades.
**Warmup time:** 30 min
**Linearity:** <1% deviation
**Stability:** <1.0 mGy STD DEV of 10 consecutive readings
**Dark Current:** <50 mGy 137 Cs equivalent
**Test light:** temperature-stabilized LED
**Stability:** <0.5% STD DEV of 10 consecutive readings
**Color:** blue (wavelength 470 nm)

**Dosimeter heating system**
**Method:** linear hot nitrogen gas
**Temp. reproducibility:** (±1 °C)

**Environmental requirements**
**Electrical:** 100/120/220/240 Vac, 50/60 Hz.
**Gas:** N2, pressure 2 bar (30 psi) ±20%, 5.6 l/min (12 scfh)
**Operating temperature range:** 0 to 40 °C (32 to 104 °F)
**Storage temperature range:** -10 to 60 °C (14 to 140 °F)
**Shock:** withstands 20 mm drop on to concrete surface
**Humidity:** functions within specifications after 24 hr exposure to 95% RH and subsequent 6 hr recovery
**Light intensity:** maintains specifications while exposed to light up to 1000 lux with cover in place.

**Applications**
- Radiotherapy planning verification
- Radiation hardness verification
- Total body irradiation dose verification
- Skin irradiation dose verification
- Stereotactic beam output factor measurement
- Critical organ dose verification
- Diagnostic dose studies
- CT dose measurement for quality assurance
- Environmental dosimetry
- Testing for irradiated food
- Radioactive dating

**Advantages of a separate computer**
- Minimum initial investment
- Extremely flexible parametric adjustments, implemented in software
- The computer can be used for other purposes when not required for TLD
- Use of commercial software for data manipulation, report generation and storage

**TL data acquisition parameter selections**
- Application of Reader Calibration Factor (RCF) and Element Correction Coefficient (ECC)
- Multipoint calibration
- Automatic background subtraction
- Raw data and glow curve printing during acquisition
- ASCII export file generation
- Periodic PMT testing of noise and response to test light
- Alarm and stop if TL data exceeds preset limit
- Re-read TLD if TL data exceeds preset limit

**TL data presentation and storage**
- Reading parameters
- Date and time of reading
- Dosimeter identification
- Graphically presented glow curve and TTP
- Integral of up to four regions of interest
- Applicable RCF and ECC
- Background value for subtraction
- Values of test light and PMT dark current readings

**Computer requirements (minimum)**
- Intel® Pentium® compatible PC 120 MHz
- 64MB RAM; 4GB hard drive
- VGA color monitor, 800 x 600 resolution minimum
- Mouse and keyboard; CD ROM drive
- One RS232 serial port for connection to Model 5500
- One parallel port for printer
- Windows™ operating system

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This product is available through:

**JRT Associates**
5 Nepperhan Avenue, Suite 2B
Elmsford, NY 10523
800-221-0111

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## 2011 Price List for the USA

All prices quoted herein are subject to change without prior notice.

### TLD Readers - Model 5500

<table>
<thead>
<tr>
<th>Line</th>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td><strong>MODEL 5500 TLD READER INSTRUMENT</strong></td>
</tr>
<tr>
<td>2.</td>
<td>5500READERMI</td>
<td>MODEL 5500 TLD READER INSTRUMENT - an automated hot gas TLD reader for use with all loose TLD materials except powder. Includes one carrier disk for 3.2 mm square chips. &quot;Macro&quot; version available for disk dosimeters 4.5 mm diameter and larger.</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td>For medical physics, radiodiagnosis, radiation protection, environmental dosimetry and general research applications. Processes up to 50 TLD elements on one carrier disk. A different carrier disk may be substituted upon request.</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td>Includes operational WinREMS software for reader, heating profile programming, as well as display, printing, and exporting of results including glow curves. The reader operates with a separate personal computer using Windows® NT, 2000 or XP.</td>
</tr>
<tr>
<td>5.</td>
<td>5500READERM</td>
<td>MODEL 5500 TLD READER INSTRUMENT (Macro pick version) - an automated hot gas TLD reader required for use with disk dosimeters 4.5 mm diameter and larger. Includes one carrier disk for 3.2 mm square chips unless otherwise requested.</td>
</tr>
<tr>
<td>6.</td>
<td>T25085</td>
<td>Carrier Disk - 3.2 mm x 3.2 mm (1/8&quot; x 1/8&quot;) chips</td>
</tr>
<tr>
<td>7.</td>
<td>T25086</td>
<td>Carrier Disk - 1 mm dia. x 6 mm rods and 1 mm x 1 mm x 6 mm rods.</td>
</tr>
<tr>
<td>8.</td>
<td>T25356</td>
<td>Carrier Disk - 1 mm dia. x 3 mm rods</td>
</tr>
<tr>
<td>9.</td>
<td>24854</td>
<td>Carrier Disk - Micro Cubes (1 mm x 1 mm x 1 mm)</td>
</tr>
<tr>
<td>10.</td>
<td>26155</td>
<td>Carrier Disk - 3.0 mm dia. disks</td>
</tr>
<tr>
<td>11.</td>
<td>26467</td>
<td>Carrier Disk - 3.6 mm dia. disks</td>
</tr>
<tr>
<td>12.</td>
<td>T25387</td>
<td>Carrier Disk - 4.5 mm dia. disks</td>
</tr>
<tr>
<td>13.</td>
<td>25647</td>
<td>Carrier Disk - 5.0 mm dia. disks</td>
</tr>
<tr>
<td>14.</td>
<td>25205-4</td>
<td>Neutral Density Filter Assembly (Clear, 1:1)</td>
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<tr>
<td>15.</td>
<td>25205-1</td>
<td>Neutral Density Filter Assembly (10:1)</td>
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<tr>
<td>16.</td>
<td>25205-2</td>
<td>Neutral Density Filter Assembly (100:1)</td>
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<td>17.</td>
<td>25205-5</td>
<td>Neutral Density Filter Assembly (316:1)</td>
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<tr>
<td>18.</td>
<td>25205-3</td>
<td>Neutral Density Filter Assembly (1000:1)</td>
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<tr>
<td>19.</td>
<td>T25160</td>
<td>Enhanced Spare Parts Kit for Model 5500</td>
</tr>
<tr>
<td>20.</td>
<td>500002</td>
<td>Nitrogen Gas Flow Meter/Regulator, English Male Threads</td>
</tr>
<tr>
<td>21.</td>
<td>500002-1</td>
<td>Nitrogen Gas Flow Meter/Regulator, Metric Female Threads</td>
</tr>
<tr>
<td>22.</td>
<td>500748</td>
<td>Nitrogen Generator with Integrated Compressor - 110 VAC/60 Hz. Capable of providing 12 liters/min (0.43 cfm) of 99.5% pure Nitrogen at a pressure of 3.4 barg (50 psig).</td>
</tr>
<tr>
<td>23.</td>
<td>500649</td>
<td>Nitrogen Generator with Integrated Compressor - 230 VAC/50 Hz. Capable of providing 12 liters/min (0.43 cfm) of 99.5% pure Nitrogen at a pressure of 3.4 barg (50 psig).</td>
</tr>
<tr>
<td>24.</td>
<td>500323</td>
<td>Uninterruptible Power Supply - 120 VAC/60 Hz (1.8 KVA/1.25 KW)</td>
</tr>
<tr>
<td>25.</td>
<td>500622</td>
<td>Intel Pentium Computer with Monitor</td>
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<td>500758</td>
<td>Nine-Pin Serial Port to USB Converter</td>
</tr>
<tr>
<td>27.</td>
<td>WinREMS35/55</td>
<td>WinREMS (Windows® NT/2000/XP Platform) *</td>
</tr>
<tr>
<td>28.</td>
<td>WinREMS35/55ADD</td>
<td>*WinREMS (Windows® NT/2000/XP Platform) - Additional Copy. For multiple licensed user facilities. Proof must be provided that customer currently has a copy of WinREMS.</td>
</tr>
<tr>
<td>29.</td>
<td>T25310</td>
<td>Windows-based Q.A. and Diagnostics Software (QADS) for the Model 5500 Reader</td>
</tr>
<tr>
<td>30.</td>
<td></td>
<td>Extended Service Plans</td>
</tr>
<tr>
<td>31.</td>
<td>5500TLD-DS3</td>
<td>3 Year Extended Depot Service Warranty for Model 5500 TLD Reader</td>
</tr>
</tbody>
</table>