# LM248/810 Series Microindentation Hardness Testers

## Specification Sheet

### Models

<table>
<thead>
<tr>
<th>Model</th>
<th>LM248AT</th>
<th>LM810</th>
<th>LM810AT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>863-783-160 (K &amp; V)</td>
<td>863-790-237 (K)</td>
<td>863-790-239 (K)</td>
</tr>
<tr>
<td></td>
<td>Dual Indenter (4 Obj.*)</td>
<td>LM810L</td>
<td>LM810L</td>
</tr>
<tr>
<td></td>
<td>863-783-165 (K &amp; V)</td>
<td>863-790-241 (K)</td>
<td>863-790-243 (K)</td>
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<tr>
<td></td>
<td>Dual Indenter (4 Obj.*)</td>
<td>863-790-240 (V)</td>
<td>863-790-242 (V)</td>
</tr>
</tbody>
</table>

### Turret Mechanism
- Automatic
- Manual

### Loading Mechanism
- Automatic loading and unloading

### Load Application Speed
- 50 μm/sec.

### Dwell Time
- 5 to 99 sec.

### Objectives*
- Four lens positions total: 10X and 50X are included; two positions are available for optional objectives
- Three lens positions total: 10X and 50X are included; one position is available for an optional objective

### Indenters
- Knoop and Vickers are included
- Knoop or Vickers is included

### Total Magnification
- For measurement: 500X (Objective 50X; Eyepiece 10X)
- For observation: 100X (Objective 10X, Eyepiece 10X)
- All objectives are calibrated for measuring

### Measuring Microscope
- Digital
- Max. Measuring Length: 200 μm (at 500X)
- Min. Resolution: 0.01 μm

### Color LCD Type Display and Touch Control Panel
- Pictured on back

### Max. Height of Specimen
- (3.6 in.) 91 mm

### Max. Depth of Specimen
- (4.3 in.) 110 mm

### Available Tests
- HV, HK, HBW**, and Kc (Fracture Toughness Value)

### Case Depth Measurement Mode
- Manually assign distances to calculate case depth

### Brinell Hardness (optional)**
- Light load Brinell (HBW); Requires optional carbide ball indenter

### Fracture Toughness Value (Kc)
- Conform to JIS R1607/IF method

### Manual X-Y Stage
- Dimensions: 3.9 in. x 3.9 in. (100 x 100 mm) * Max. Movement: 1.0 in. x 1.0 in. (25 x 25 mm)
- Minimum micrometer handle graduation: 0.001 in.

### Hardness Conversion
- In compliance with ASTM (E-140) & SEA (J-417b)

### OK/NG Criteria
- Upper and lower limits setting and HI/OK/LO display

### Self Diagnosis
- Displays motor and switch areas requiring attention

### Data Output
- USB and RS232C

### Light Source
- LED: Automatic brightness reduction during loading sequence

### Conforms To
- ASTM E-384, JIS B-7734, ISO 4545 (Knoop), and ISO 6507 (Vickers)

### Video Port
- Standard

### Dimensions
- 19.8 in. H x 17.7 in. D x 7.3 in. W (504 mm x 450 mm x 186 mm)

### Weight
- Approximately 88 lb.(40 kg)—including standard accessories

### Power Supply
- 100 to 220V switchable 50/60 Hz

### Test Loads

<table>
<thead>
<tr>
<th>Std. Models:</th>
<th>mN</th>
<th>49.03</th>
<th>98.07</th>
<th>245.2</th>
<th>490.3</th>
<th>980.7</th>
<th>1961</th>
<th>2942</th>
<th>4903</th>
<th>9807</th>
<th>19,613</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>gf</td>
<td>5</td>
<td>10</td>
<td>25</td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>300</td>
<td>500</td>
<td>1000</td>
<td>2000</td>
</tr>
</tbody>
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| "L" Models:  | mN | 9.807 | 49.03 | 98.07 | 245.2 | 490.3 | 980.7 | 1961 | 2942 | 4903 | 9807 | 19,613 |
|--------------|----|-------|-------|-------|-------|-------|------|------|------|------|--------|
|              | gf | 1     | 5     | 10    | 25    | 50    | 100  | 300  | 500  | 1000 | 2000   |

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**Test Loads:
- Std. Models:
  - mN: 49.03, 98.07, 245.2, 490.3, 980.7, 1961, 2942, 4903, 9807, 19,613
  - gf: 5, 10, 25, 50, 100, 200, 300, 500, 1000, 2000
- "L" Models:
  - mN: 9.807, 49.03, 98.07, 245.2, 490.3, 980.7, 1961, 2942, 4903, 9807, 19,613
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Delivering the Right Results
**LM810 Series**
- Hardness conversions
- LED illumination
- Automatic light dimming during test
- OK/NG criteria
- Advanced touch-screen display
- Case depth measurement mode
- Data editing capabilities
- Optional auto turret

**LM248AT**
- Hardness conversions
- LED illumination
- Automatic light dimming during test
- OK/NG criteria
- Case depth measurement mode
- Data editing capabilities
- Auto turret standard
- Both Knoop and Vickers Indenters are standard
- Up to 4 objective lenses (50X and 10X standard, plus optional 5X, 20X, and 100X)
- Advanced touch-screen display