NDC's laser gauges are designed for continuous on-line thickness measurement of web products. The thickness measurement technique is based on distance triangulation computation of a laser beam. The gauges compensate for any changes in the measurement gap or the distance to a roll with an integrated precision inductive radio frequency proximity sensor.

**Laser Thickness Gauge Model 170**
This gauge utilizes a single laser that measures off a reference roll. The laser source emits a coherent laser beam which is reflected off the top surface of the product and focused onto a linear optical receiver that precisely measures the beam position. The laser is located in the center of an inductive radio frequency proximity sensor that measures the distance between the single-sided laser and a reference roll. The product thickness is calculated as the difference between the laser distance (D1) and the proximity sensor (D2).

**Dual Laser Thickness Gauge Model 172**
Two laser sensors measure the product on opposite sides. Each laser source emits a coherent laser beam which is reflected off the top and bottom surfaces of the web and focused onto linear optical receivers that precisely measure each beam position. A single inductive radio frequency proximity sensor continuously measures the distance between the top and bottom lasers. The product thickness is calculated as the difference between the sum of the laser distances and the proximity sensor.

**Applications:**
- Calendered rubber sheet
- Calendered vinyl sheet

**Features:**
- High precision measurement
- Insensitive to changes in color or texture
- Dynamic compensation for gap changes or roll runout
- Compact, rugged and easily maintainable
Technical Specifications

Specifications

**Response Time:** Laser Measurement Rate: 16 kHz.

**Acquisition Rate:** 50 Hz.

**Measurement Spot:** 0.25 mm (0.010 in).

**Passline Difference:** None.

**Head Dimensions:** 157 x 165 x 216 mm (6.2 x 6.5 x 8.5 in) Two heads (top/bottom) for 172 and 172W sensor.

**Operating Temperature:** 0 - 50° C (32 - 122° F).

**Sensor Cooling:** Water cooling required.

**Construction:** 5 mm (.200 in) thick aluminum housing with stainless steel alien head fasteners; exposed surfaces are polyester powder coated; sealed quick connect electrical connector; IP64 (DIN 40050) rating.

<table>
<thead>
<tr>
<th>Model</th>
<th>170</th>
<th>170W</th>
<th>172</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>1-Sided</td>
<td>1-Sided</td>
<td>2-Sided</td>
</tr>
<tr>
<td>Range</td>
<td>1mm-15mm (0.59in)</td>
<td>0-50mm (1.57in)</td>
<td>0-15mm (0.59in)</td>
</tr>
<tr>
<td>Air Gap</td>
<td>23mm (0.91in)</td>
<td>50mm (1.97in)</td>
<td>25mm (0.98in)</td>
</tr>
<tr>
<td>Resolution</td>
<td>0.5 micron</td>
<td>1.2 microns</td>
<td>0.5 micron</td>
</tr>
<tr>
<td>Repeatability</td>
<td>±10 microns (0.4mils)*</td>
<td>Better than ±20 microns (0.79mils)*</td>
<td>Better than ±10 microns (0.79mils)*</td>
</tr>
</tbody>
</table>

* Static repeatability is measured with a static gauge using stationary samples. Dynamic accuracy and repeatability is a function of product presentation, scanner condition, backing roll metallurgy and other factors. Please contact NDC for a repeatability estimate for your product.

NDC is represented in over 60 countries worldwide. ISO9001:2008  www.ndc.com

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