Product Description
The MBR5 Multi-Channel Backreflection Meter is an instrument developed with extremely stable optics for precise measurement of backreflection, insertion loss, and power. Available with 4, 12, 16, 24, 32, 48 or 72 output channels, the MBR5 is a practical choice for both single fiber and multifiber testing.

The MBR5 features up to four built-in laser sources at wavelengths of 450, 650, 780, 850, 1060, 1300, 1310, 1490, 1550, 1625 or 1650 nm (depending on fiber type). Custom configurations available per request.

The MBR5 achieves ultra-stable backreflection measurements at very low values with accuracy typically at ±0.4 dB and measurement sensitivity is to –80 dB. In addition, the cavity option is particularly useful for multi-fiber connectors with large fiber counts. The MBR5 can be used with our GMS software to help automate short and long term testing. All our MBR5 meters come standard with our GMS Software at no additional cost. The multimode option of the MBR5 meets IEC 61280-4-1 Encircled Flux standard.

KEY FEATURES
- Stable BR measurements at low values
- Up to 72 output channels
- IL and BR measurements
- Up to 4 internal lasers

APPLICATIONS
- Component testing
- Ribbon fiber testing
- Simultaneous testing with multiple connector types
- In-situ testing
- QA testing

COMPLIANCE
- MM meets IEC 61280-4-1 Encircled Flux standard
- UL/CSA 61010
- IEC 61010
- IEC 60825-1 (Class 1)
- FCC Part 15 (Class A)
- EN 61326 (Class A)

IN THE BOX
- MBR5
- AC power cord
- Calibration certificate
- Calibrated jumper
- Hybrid test jumper
- Detector cap
- FC detector adapter
- MW3 mandrel wrap

Switching Technology
JGR uses opto-mechanical switches because of their superior stability in all environments. This is a key factor for an insertion loss and backreflection measurement system such as the MBR5, especially for high-volume manufacturing. JGR’s switches are repeatable to within +/- 0.005 dB so their influence is negligible. This makes the MBR5 a great multi-channel tester for many applications.

Cassette Testing
Testing short devices can be difficult and time consuming. By using the MBR5 testing of IL/BR can be completed faster than any other solution while maintaining measurement accuracy. Results can be saved and test sequences can be automated by using the GMS Software.

Production Friendly Software
The meter may be controlled through remote interface (GPIB, RS232, or USB) or locally via the user-friendly front panel keypad and display.

The free GMS Software allows the user to configure test profiles, manage test sequences, and export results to preconfigured templates.
Ordering Scheme

1 - Configure Multi-Channel Backreflection meter

**Single-mode version**

**MBR5-**  
  
**OUTPUT CHANNELS**  
 01 1-channel  
04 4-channel  
12 12-channel  
24 24-channel  
48 48-channel  
72 72-channel  

**LASER 1**  
 0 No Laser  
1110 nm  

**LASER 2**  
 0 No Laser  
1350 nm  

**LASER 3**  
 0 No Laser  
220 nm InGaAs  

**LASER 4**  
 0 No Laser  
5 9 mm Ge  

**DETECTOR TYPE**  
 2 Front Panel Leave Blank  
3 3 million  

**DETECTOR**  
 4 Remote Head  

- Up to four lasers may be selected the single-mode version

**Multimode version**

**MBR5-**  
  
**OUTPUT CHANNELS**  
01 1-channel  
04 4-channel  
12 12-channel  
24 24-channel  
48 48-channel  
72 72-channel  

**LASER 1**  
 0 No Laser  
1450 nm  

**LASER 2**  
 0 No Laser  
1625 nm  

**LASER 3**  
 0 No Laser  
1650 nm  

**DETECTOR TYPE**  
 2 Front Panel Leave Blank  
3 3 million  

**DETECTOR**  
 4 Remote Head  

- The standard multimode version contains two lasers at 850 and 1300 nm. Other wavelengths are available upon request

**Short wavelength single-mode version**

**MBR5-01-**  
  
**LASER 1**  
 6 450 nm 3/125 µm  
7 780 nm 3/125 µm  

**LASER 2**  
 5 520 nm 3/125 µm  
6 840 nm 3/125 µm  

- Up to 3 wavelengths may be selected of the same core size.  
- Other wavelengths and core sizes available upon request.

2 - Add accessories

**Slide detector adapters**

- More detector adapters available upon request.  
See more details on pg 84.

**USB to RS232 converter**

**Mandrel wrap 3 diameters**

**Index matching block**

**NTT-Block**
## Optical/Electrical Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fiber Type (μm)</strong></td>
<td></td>
</tr>
<tr>
<td>Single-mode</td>
<td>9/125</td>
</tr>
<tr>
<td>Short Wavelength Single-mode</td>
<td>3/125</td>
</tr>
<tr>
<td>Multimode</td>
<td>5/125</td>
</tr>
<tr>
<td></td>
<td>50/125</td>
</tr>
<tr>
<td></td>
<td>62.5/125</td>
</tr>
<tr>
<td><strong>Encircled Flux Standard</strong></td>
<td></td>
</tr>
<tr>
<td>N/A</td>
<td>IEC-61280-4-1</td>
</tr>
<tr>
<td><strong>Operating Wavelengths (nm)</strong></td>
<td></td>
</tr>
<tr>
<td>1310 / 1490 / 1550 / 1625 / 1650</td>
<td>450 / 520 / 650</td>
</tr>
<tr>
<td></td>
<td>780 / 940 / 1060</td>
</tr>
<tr>
<td></td>
<td>850 / 1300</td>
</tr>
<tr>
<td><strong>Backreflection Range (dB)</strong></td>
<td>0 to -80</td>
</tr>
<tr>
<td></td>
<td>0 to -60</td>
</tr>
<tr>
<td></td>
<td>0 to -60</td>
</tr>
<tr>
<td><strong>Backreflection Accuracy (dB)</strong></td>
<td>± 0.4</td>
</tr>
<tr>
<td><strong>Detector Type</strong></td>
<td>2 mm InGaAs / 3 mm Si / 5 mm Ge / Cavity</td>
</tr>
<tr>
<td><strong>Power Range (dBm)</strong></td>
<td>0 to -80 / 0 to -60 / 0 to -60 / 0 to -40</td>
</tr>
<tr>
<td><strong>Absolute Power Accuracy (dB)</strong></td>
<td>± 0.25</td>
</tr>
<tr>
<td><strong>Relative Power Accuracy (dB)</strong></td>
<td>± 0.05 (&lt; 5 dB loss)</td>
</tr>
<tr>
<td></td>
<td>± 0.15 (&gt; 5 dB loss)</td>
</tr>
<tr>
<td><strong>Remote Interface</strong></td>
<td>GPIB / RS232 / USB*</td>
</tr>
<tr>
<td><strong>Input Voltage</strong></td>
<td>100 - 240 V AC, 50 - 60 Hz</td>
</tr>
<tr>
<td><strong>Power Consumption (VA)</strong></td>
<td>80 maximum</td>
</tr>
<tr>
<td><strong>Display</strong></td>
<td>4 lines, 16 character per line, LCD</td>
</tr>
</tbody>
</table>

Notes:
1. Add 0.1 dB to the spec for every 1 dB below −60 dB (single-mode).
2. Add 0.1 dB to the spec for every 1 dB below −45 dB (multimode).
3. Measured at −20 dBm.
4. USB interface via USB-DB9 adapter.

## Mechanical/Environmental Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unit Dimensions W x H x D (cm)</strong></td>
<td>36 x 15 x 34</td>
</tr>
<tr>
<td><strong>Shipping Box Dimensions W x H x D (cm)</strong></td>
<td>43 x 27 x 47</td>
</tr>
<tr>
<td><strong>Unit Weight (kg)</strong></td>
<td>7</td>
</tr>
<tr>
<td><strong>Total Shipment Weight (kg)</strong></td>
<td>8</td>
</tr>
<tr>
<td><strong>Operating Temperature (°C)</strong></td>
<td>0 to 40</td>
</tr>
<tr>
<td><strong>Storage Temperature (°C)</strong></td>
<td>−40 to 60</td>
</tr>
<tr>
<td><strong>Humidity (Non-condensing)</strong></td>
<td>Maximum 95% RH from 0 to 40°C</td>
</tr>
</tbody>
</table>