

# VIAVI

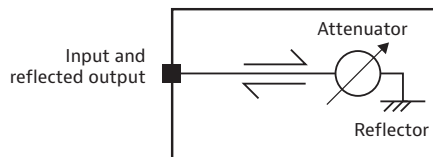
## Variable Back Reflector (mVBR-C1)

### MAP Series Metrology Grade Optical Back Reflector

The MAP Series Variable Back Reflector (mVBR-C1) cassette provides precise levels of return loss to transmitters, enabling measurement of system sensitivity and system degradation as a function of back reflection.



Together with a transmitter/receiver pair and characterization equipment, the MAP back reflector can be used to establish the magnitude of reflections that significantly degrade transmission system performance, and to characterize the problems they cause.



The MAP backreflector uses the VIAVI linear attenuator prism and high reflectivity mirror to precisely control the level of RL.

The cassette is available in single-mode (SM) or multimode (MM) fibers and with an optional coupler for monitoring.

### Benefits

- Single-mode and multimode variants
- Can be automated when used with a MAP series mainframe LXI-compliant interfaces and IVI drivers
- Can be combined with other MAP-Series modules to perform IEEE standard testing
- 0.005 dB resolution
- Operation at 850/1310 or 1310/1550 nm

### Applications

- Transmitter/receiver development and testing
- Reflection testing for connectors
- Quality assurance acceptance testing
- Laser development and production
- Validation instrument for verifying RL equipment
- R&D compliance testing
- OTDR testing

### Safety Information

Complies with CE, CSA/UL/IEC61010-1, plus LXI class C requirements when installed in a MAP chassis

## Functional Description

In transmission systems, power fluctuations due to back reflection distort the signal and translate to an increased bit error rate, which can be measured as a function of back reflection.

MAP Series mVBR cassettes are used to study the effects of varied back reflected signals on transmitter or laser performance. Figure 1 shows a typical test configuration using the mVBR cassette and an external coupler. With this configuration, the coupler splits the light injected from the source, sending a portion of it to the mVBR and the rest to the test system.

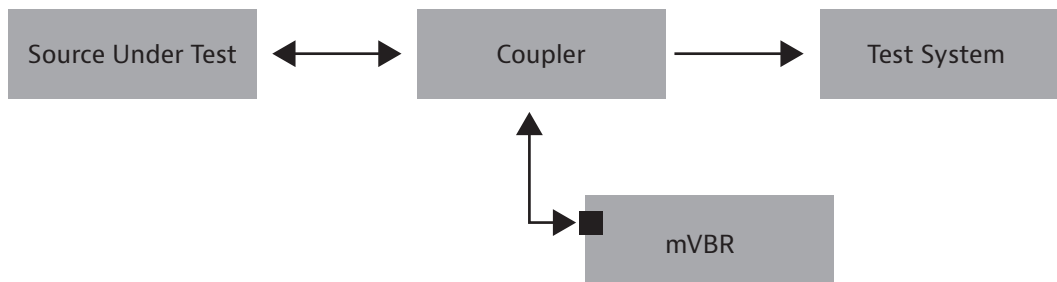


Figure 1 - Test configuration - mVBR cassette and external coupler

An offset setting can be configured on the mVBR to compensate for losses occurring at connectors and through any additional components between the source and the mVBR.

An intuitive graphic user interface (GUI) is optimized for use in either a laboratory or a manufacturing environment.

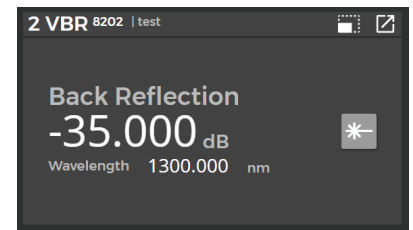


Figure 2 – mVBR MAP-300 summary view GUI

## Chassis and Modular Family

The VIAVI Multiple Application Platform (MAP) is a modular, rack mountable or benchtop, optical test and measurement platform with chassis' that can host 2, 3 or 8 application modules. The LightDirect family of modules are characterized by their simple control and single function nature. Individually or together they form the foundation of a diverse array of optical test applications. The web enabled multiuser interface is simple and intuitive. LXI compliant with a full suite of SCPI based automation drivers and PC based management tools, the VIAVI MAP is optimized for both the lab to manufacturing environments.

The mVBR is part of the LightDirect module family. Alongside the many other modules, such as light sources, polarization scramblers, power meters, and spectrum analyzers, the MAP series is the ideal, modular platform for photonic system and module testing.

The mVBR is compatible with all current MAP-300 and MAP-200 chassis through SCPI commands. A GUI is also offered in MAP-300.



**Light Direct**

## Specifications

| Parameters   | Single-Mode                                  | Multimode      |
|--|--|----------------|
| Wavelength Range   | 1260 to 1650 nm                              | 750 to 1350 nm |
| Maximum Back Reflection Level                              | - 5.0 dB                                     |                |
| Minimum Back Reflection Level                              | - 60 dB                                      | - 35 dB        |
| Back Reflection Resolution                                 | 0.005  |                |
| Repeatability <sup>2, 3, 4</sup>                           | ± 0.02 dB                                    |                |
| Absolute Back Reflection Accuracy <sup>1,2,3</sup>         | ±0.3 dB                                      | ±0.6 dB        |
| Relative Back Reflection Setting Accuracy <sup>1,2,3</sup> | ±0.05 dB                                     | ±0.35 dB       |
| Polarization Dependent Back Reflection <sup>1</sup>        | < 0.15 dB                                    | N/A            |
| Maximum Optical Input Power                                | 200 mW                                       |                |
| Fiber Type   | 9/125 μm                                     | 50/125 μm      |
| Connector Type   | FC/APC                                       | FC/PC          |
| Warm-up time   | 30 minutes                                   |                |
| Calibration Period   | 1 year                                       |                |
| Operating Humidity   | 15 to 80% RH, 0 to 40°C noncondensing        |                |
| Operating Temperature                                      | 0 to 50°C                                    |                |
| Storage Temperature  | -30 to 60°C                                  |                |
| Dimensions (W x H x D)                                     | 4.1 x 13.3 x 37.0 cm (1.6 x 5.22 x 14.58 in) |                |
| Weight   | 1.1 kg (2.42 lbs)                            |                |
| Warranty   | 3 Years                                      |                |
| Calibration period   | 1 Year                                       |                |

1. At 1310 nm ±15 nm and 1550 nm ±15 nm for SM variant; 850 nm ±15 nm and 1300 ±15 nm for MM variant

2. At 23 ±5°C

3. Source line width > 500 MHz

4. Maximum measured difference between consecutive 25 dB back reflection settings, separated by a random setting. Observed for 100 measurements

## Ordering Information

For more information on this or other products and their availability, please contact your local VIAVI account manager or VIAVI directly at 1-844-GO-VIAVI (1-844-468-4284) or to reach the VIAVI office nearest you, visit [viavisolutions.com/contacts](http://viavisolutions.com/contacts).

## Available Configurations

| Order Code          | Description  |
|---------------------|--|
| MVBR-C1SS0-M100-MFA | Single VBR Single Mode Fiber FC/APC no tap option    |
| MVBR-C1SS0-M101-MFP | Single VBR Multi-Mode Fiber 50μm FC/PC no tap option |

## Accessories

| Accessories (Optional)              |                            | Product and description   |
|-------------------------------------|----------------------------|---|
| <b>Inspection and cleaning tool</b> | CleanBlastPRO              | The patented VIAVI Solutions® CleanBlast fiber end-face cleaning system provides a fast, effective, and cost-efficient solution for removing dirt and debris from connectors in most common applications. |
|                                     | FiberChek probe microscope | One-button FiberChek Probe delivers a reliable, fully autonomous, handheld inspection solution for every fiber technician.  |
|                                     | P5000i fiber microscope    | Automated Fiber Inspection & Analysis Probe provides PASS/FAIL capability to PC, laptops, mobile devices and VIAVI test solutions.  |
| <b>Replacement Parts</b>            | Mating sleeves             | AC500;FC/PC-FC/PC Universal Connector Adapter   |
|                                     |                            | AC501;FC/PC-SC/PC Universal Connector Adapter   |
|                                     |                            | AC502;FC/APC-FC/APC Universal Connector Adapter   |
|                                     |                            | AC503;FC/APC-SC/APC Universal Connector Adapter   |

A wider range of inspection tools are available at VIAVI. More information about the products and accessories can be accessed through our website at [www.viavisolutions.com](http://www.viavisolutions.com). For further assistance please contact your local VIAVI account manager or VIAVI directly at 1-844-GO-VIAVI (1-844-468-4284) or to reach the VIAVI office nearest you, visit [viavisolutions.com/contacts](http://viavisolutions.com/contacts).

## VIAMI Care Support Plans

Increase your productivity! Add a VIAMI Care Support Plan with your purchase for up to 5 years:

- Maintain your equipment for peak performance at a low, predictable cost
- Ensure accurate and repeatable measurements through VIAMI calibration
- Support Plans offer customers priority service and scheduling advantages to accelerate service
- Silver care always includes return-to-VIAMI calibration, but you can upgrade your support plan to include onsite calibration where available

Contact your local representative for more information on VIAMI Care Support Plan options or visit: [viavisolutions.com/viavicareplan](https://viavisolutions.com/viavicareplan)

### Features

| Plan  | Objective                            | Technical Assistance | Factory Repair | Priority Service | Calibration |
|---|--------------------------------------|----------------------|----------------|------------------|-------------|
| Manufacturer Warranty   | Repair Manufacturer Defects          | Standard Plus        | ✓              |                  |             |
| <br>BronzeCare | Technician Efficiency                | Premium              | ✓              | ✓                |             |
| <br>SilverCare | Maintenance and Measurement Accuracy | Premium              | ✓              | ✓                | ✓           |



Contact Us **+1 844 GO VIAMI**  
(+1 844 468 4284)

To reach the VIAMI office nearest you,  
visit [viavisolutions.com/contact](https://viavisolutions.com/contact)

© 2021 VIAMI Solutions Inc.  
Product specifications and descriptions in this document are subject to change without notice.  
Patented as described at  
[viavisolutions.com/patents](https://viavisolutions.com/patents)  
mvbr-c1-ds-lab-nse-ae  
30192802 901 1021