

Is a higher negative value for the optical module always better



Overview

Reflectance is measured in decibels (dB) and is always a negative value. A higher absolute value is better! For example, a reflectance of -55 dB is much better than -30 dB because it indicates less light is being reflected. The closer the number is to zero, the higher the reflectance (meaning a poor connection). Optical return loss is given in units of dB and always a negative value for passive optics, with values closer to 0 representing larger reflections. Receiver sensitivity is the lowest optical power level at which an optical receiver can successfully decode data with acceptable bit error rates (BER). It's a core parameter in optical transceiver specifications, indicating the module's capability to detect weak incoming signals. Lower receiver. By MARK MULLINS, Fluke Networks -- The confusion between positive return loss and negative reflectance means that you may see manufacturers specify a negative value for return loss when they really meant reflectance. It is also called. The Telecommunications Industry Association (TIA) standard sets a maximum loss of 0.75 dB per mated pair, but high-quality connectors often achieve much better performance, typically between 0.



Article Content

Dec 02, 2025

Insertion loss: Are you positive it's negative?

To remember that a higher return loss value is better, consider that if none of the light injected from the source signal was reflected back, there would be an infinite return loss.

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Understand connector Loss and Reflectance Characteristics

The Telecommunications Industry Association (TIA) standard sets a maximum loss of 0.75 dB per mated pair, but high-quality connectors often achieve much better performance, typically between 0.2 ...

May 09, 2026

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There are instances where the total of all reflectances and backscatter is called "optical return loss" (ORL) and is measured as a indicator of the effect of the cable plant on laser transmitters.

Nov 25, 2025

Reflectance and Optical Return Loss (ORL) Measurement and Testing ...

Optical return loss is given in units of dB and always a negative value for passive optics, with values closer to 0 representing larger reflections (poorer connections).

Oct 09, 2025

Basic Principles of Fiber Optics Series: Optical Return ...

The higher the negative number, the better the reflectance. So when it comes to low reflectance, the APC connector has the best performance of all connector types.

Jul 11, 2026

Receiver Sensitivity vs Minimum Receiver Power: A Deep Dive into ...

Lower receiver sensitivity (i.e., more negative dBm values) means the module can handle weaker signals, making it suitable for longer distance or higher loss fiber links.

Jun 17, 2026

What is Return Loss in Optical Transceivers? (RL / Back-reflection)

Optical return loss (ORL) measures how much light reflects back in fiber optic systems. Higher ORL values indicate better transmission quality. Regular testing of return loss is essential for ...

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Are You Positive It's Negative?

To remember that a higher return loss value is better, consider that if none of the light injected from the source signal was reflected back, there would be an infinite return loss.

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Understanding ORL and IOR in OTDR Reports: Key ...

Measured in decibels (dB), higher ORL values indicate a cleaner, higher-quality fiber with minimal reflections, which is ideal for performance.

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As you move to the left, to lower optical power, as would be loss, the dBm value gets more negative. From 1mw to 100microwatts (that's 1/10mw), we go from 0dBm to -10dBm, or -10dB; that negative ...

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