

# Field Testing of Multimode Fiber

## Application Note

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Network managers and installers will often ask Corning whether bandwidth testing can be done on an installed base of multimode fiber, or whether a new cable installation can be field tested and “certified” for multi-Gb/s performance. Corning is not aware of a field bandwidth tester that would reliably predict the capacity of an installed MMF system. The only reliable field test that can be made on OM3 fiber is an attenuation measurement.

Short lengths of Corning® InfiniCor® fibers have such high bandwidth that the frequency is difficult to measure, even in a laboratory environment. At Corning’s Center for Fiber-Optic Testing, in-house testing on short lengths is accomplished via bit-error-rate and eye diagram analysis using a variety of commercially available transceivers. Unfortunately, the equipment needed for such testing costs over \$1million and is not able to be transported. Therefore, field testing is not possible. An alternative approach would be to calculate EMB from a high-resolution DMD bench using a short-wave-length laser with a femtosecond pulse width. However, again this is not a feasible option for field measurements as this type of laser is hazardous (Class IV), very expensive, and immobile.

The best prediction of field performance is a quality bandwidth measurement made at the time of fiber manufacturing. For this reason, Corning measures laser bandwidth on every fiber, and specifically uses minEMBc for the InfiniCor® SX family of high-performance laser-optimized™ fibers. Customers can rely on Corning’s legacy of leadership in optical fiber measurement and product development to maintain exceptional product quality and comply with the highest performance standards. End users may wish to refer to guidelines described in Corning White Paper 1160 (“Fiber Selection Guide for Premises Networks,” which is currently available at [www.corning.com/opticalfiber](http://www.corning.com/opticalfiber)) to aid them in specifying appropriate laser bandwidth metrics to ensure optimal field performance. Upon request, Corning is able to retrieve and provide the laser bandwidth metrics for individual fibers, which may be used for documentation of fiber performance. Please contact Corning Optical Fiber at [www.corning.com/opticalfiber/contactus](http://www.corning.com/opticalfiber/contactus) for further information related to your purchase requirements.

The Corning logo consists of the word "CORNING" in a white, serif, all-caps font, centered within a solid blue square.

CORNING

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