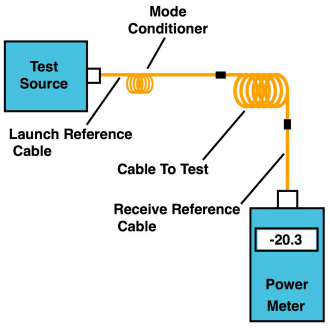
FOA Standard FOA-7

Mode Conditioning For Testing Multimode Fiber Optic Cables

This standard covers mode conditioning multimode fiber optic cables for insertion loss testing per most standards. This mode conditioning will result in more consistent test conditions which will provide more accurate test results. For 50/125 fibers it will allow meeting Encircled Flux (EF) standards for mode conditioning.

Test Diagram



Equipment Needed To Perform This Test

1. Test source appropriate for the fiber being tested: Multimode, 850 nm LED,
2. Optical power meter calibrated at the same wavelengths as the source output.
3. Launch and receive reference cables of regular MM fiber the same size as the cable plant and have connectors compatible to those on the cable plant. *Bend insensitive fibers will not work with a mandrel wrap.*
4. Mating adapters compatible to connectors
5. Mandrel of size specified below.
6. Cleaning supplies

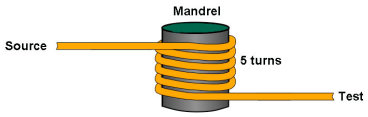
Specified Mandrel Size – Wrap 5 Turns

Fiber/Cable Type	3mm Jacket	2 or 2.4 mm Jacket	1.6 mm Jacket	900 micron buffered fiber
50/125 micron	22 mm	23 mm	24 mm	25 mm
62.5/125 micron	17 mm	18 mm	19 mm	20 mm

Procedure

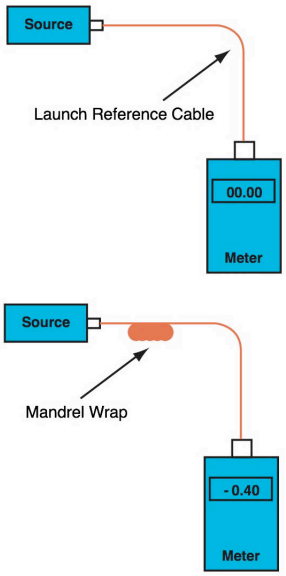
1. Wrap 5 turns of the launch cable around the mandrel at about 1/3 the distance from the test source to the meter.
2. Secure the cable with tape if necessary.

Procedure



HOML (Higher Order Mode Loss) Test For Mandrel Wrap.
Testing 50/125 Fiber Cable For Encircled Flux Compliance.

1. Before installing the mandrel wrap, measure the output power of the launch cable with the power meter and record or "zero" this power.
2. Install the mandrel wrap. Tape the cable to the mandrel if necessary to secure it.
3. Measure the power after installation of the mandrel wrap. Note the difference in power before and after the mandrel wrap has been done. This is the higher order mode loss (HOML)
4. If the HOML id 0.20 to 0.60 dB, the source is EF compliant and ready to use without the mandrel. Remove the mandrel and use the source for tests.
5. If the HOML is >0.60 dB, leave the mandrel on the reference launch cable and make measurements.
6. If the HOML is <0.20 dB, the source has too low a mode fill and should not be used.



Documentation
When testing, record the date of the test, operator, test equipment used, mandrel size, reference method, cable and fiber identification, test wavelength and measured loss.