

Reasons why optical cables are longer than optical fibers tested by OTDR

Overview

The fiber length in fiber optic cables is always longer than the cable length primarily because the optical fibers inside the cable are not laid straight, they are helically twisted or loosely spaced with some slack inside the protective loose tubes. While many of these cables are still being made and the excess length of fiber over jacket length is a function of the diameter of the core (larger core/bigger). Also, since the tube was following a helix around a central anti-buckling member, the overall fiber path was longer than the cable length. In the past, the usual procedure was to twist together a loose fiber optic cable with a small amount of excess length in the tube. As the components like fiber, connectors, splices, LED or laser sources, detectors and receivers are being developed, testing confirms their performance specifications and helps. The Optical Time Domain Reflectometer (OTDR) is useful for testing the integrity of fiber optic cables. It can verify splice loss, measure length and find faults. Later, comparisons can be made.



Article Content

Oct 28, 2025

The FOA Reference For Fiber Optics

Since fiber optic cable has about 1% excess fiber, the actual cable length is less than the fiber by that amount. The OTDR makes its

Jan 07, 2026

The FOA Reference For Fiber Optics

When is OTDR Testing Appropriate? The answer to this question has several aspects. Let's start with "What are we trying to test?"

Oct 18, 2025

FOA Fiber U Quickstart Guide: Fiber Optic Testing With OTDRs

Fiber Optic Testing With Optical Time Domain Reflectometers - OTDRs This is your "QuickStart" guide to testing fiber optic cable

Jun 21, 2026

OTDR: Your Ultimate Troubleshooter

You're ready to use an optical loss test set (OLTS) for Tier 1 fiber certification. If some

Nov 03, 2025

OTDR Meaning: What It Is & Why It Matters

An Optical Time Domain Reflectometer (OTDR) is specialized equipment for testing and

Jul 11, 2026

OTDR Testing Guide for Fiber Optic Cable Inspection

Fiber optics provide the most powerful and reliable networking options in the modern world, but they come with certain costs. Aside

Apr 16, 2026

The FOA Reference For Fiber Optics

From a more technical standpoint, the first and most important consideration for OTDR use is the length of the fibers to be tested.

Jan 27, 2026

How to Use an OTDR: Complete Guide for Fiber Optic Testing

Equipment Checklist OTDR main unit with charged battery Launch and receive cables (1-2 km longer than tested fiber)

May 20, 2026

OLTS & OTDR: A Complete Testing Strategy

It's important to understand the differences between OLTS and OTDR testing and the benefits both provide, and it's also important to

May 11, 2026

Demystifying Fiber Test Methods – Back to Basics

Fiber optic testing ensures the performance and reliability of fiber optic networks. These test procedures assess the physical and

Aug 17, 2025

How to Test Fiber Optic Cable with OTDR – AMPCOM

OTDR testing isn't just Auto Test. Master launch cable setup, dead zone management, and trace interpretation to avoid

Sep 03, 2025

OTDR and jacket length markings are inconsistent

So the answer to the question of how long the distance between the fiber and the jacket should be is: it depends on the

Jun 18, 2026

OTDR – Optical Time Domain Reflectometer

Ensure the integrity of your fiber optic network with an Optical Time Domain Reflectometer (OTDR). OTDR

Dec 16, 2025

Why fiber length is always more than cable length in Fiber optic cables ...

Excess fiber length inside a cable affects OTDR distance readings because the OTDR measures the length of the fiber itself, not just

Sep 24, 2025

OTDR Testing Explained: Fiber Optic Cable Troubleshooting

Learn about OTDR testing, how Optical Time Domain Reflectometers work, troubleshoot fiber optic cable failures, and understand

Aug 18, 2025

Basics of OTDR (Optical Time-Domain Reflectometer) Testing

Reliable and accessible fiber links are the very foundation of a sound optical network. So in order to assess the

Oct 14, 2025

Optical cable measurements: Why don't OTDR and jacket ...

While many of these cables are still being made and the excess length of fiber over jacket length is a function of the

Apr 18, 2026

Why OTDR and Optical Cable Jacket Length Markings Don't Agree

One of the questions I get asked about regarding optical cable measurements is: "Why don't my OTDR and jacket

Nov 30, 2025

Guidelines On What Loss To Expect When Testing Fiber Optic Cables

Guidelines On What Loss To Expect When Testing Fiber Optic Cables To be able to judge whether a fiber optic cable plant is good,

Nov 23, 2025

OTDRs Explained: Uses, Features and How to Choose

OTDRs explained simply. Learn how they work, where to use them, and which OTDR suits your fibre testing needs.

Jun 18, 2026

Making OTDR Measurements

Setting up the OTDR parameters properly makes measurements easier to interpret. The Optical Time Domain Reflectometer, or

Mar 31, 2026

Measurement uncertainty while measuring Optical Fiber Length using

If we have a long length of cable with distances marked on it, we can measure it with the OTDR and use the index of

Apr 21, 2026

OTDRs: Finding the Weak Spots in Fiber Links | Fiber Optics ...

A live-fiber-testing OTDR uses a laser generating at 1625 or 1650 nm and a filter, which prevents transmission wavelengths from

Jan 21, 2026

How best to interpret OTDR traces?

How Do OTDRs Work? Think of an OTDR as radar that sends a pulse of light down the cable, looking for a return signal. When it

Apr 09, 2026

Optical Time-domain Reflectometers – OTDR, operation principle ...

What are Optical Time-domain Reflectometers? Optical time domain reflectometers are instruments which measure the spatially

Oct 15, 2025

The FOA Reference For Fiber Optics

Optical Return Loss (ORL) The OTDR generally tests ORL by calculating the total all the light reflected

Jul 26, 2025

The FOA Reference For Fiber Optics

First always use a long launch cable, which allows the OTDR to settle down after the initial pulse and provides a reference cable for

Jun 23, 2026

Estimating Cable Length with OTDR

This Applications Engineering Note (AE Note) addresses estimating cable length or event distance using an optical time domain

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://iiss.co.za>

Email: sales@iiss.co.za

Phone: +27 63 174 2895

Address: Unit 8, Innovation Park, 15 Rivonia Road, Sandton, Johannesburg,
2196, South Africa

This document is for informational purposes only. Specifications subject to
change without notice.

