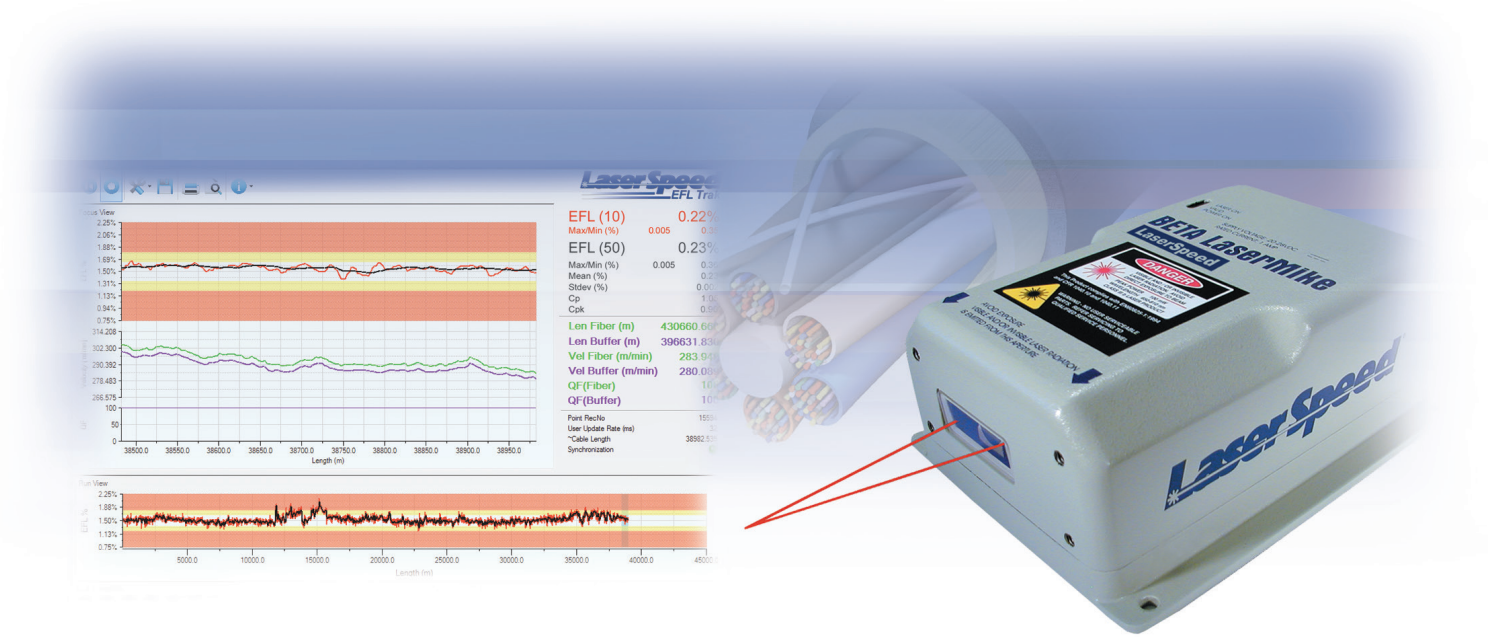

For Loose Tube Fiber and Fiber Ribbon Cabling Manufacturing

BETA LaserMike Excess Fiber Length Measurement System

- Monitor Excess Fiber Length ratio in real time
- Compare fiber bundle-to-jacket ratio with 0.01% (0.1 per mil) resolution
- Simplify line operation through easy-to-use interface
- Document product quality by logging the EFL ratio along the buffer tube or cable length
- Create and store an unlimited number of important product recipes for easy production run setup
- Easily integrate the system through flexible I/O options
- Use Modbus TCP protocol to control the EFL system remotely from a PLC or HMI
- Optional four (4) relay outputs for alarm indication
- Use LaserTrak software for performing diagnostics and monitoring the speed of LaserSpeed gauges

On-Line Measurement of Excess Fiber Length

The ability to precisely monitor excess fiber length is important in loose tube and fiber ribbon cable, and is essential to the cable's optical and mechanical performance. The Beta LaserMike Excess Fiber Length (EFL) Measurement System offers you an easy-to-use solution for applications requiring the on-line measurement of Excess Fiber Length in loose tube and fiber ribbon cable manufacturing. The heart of the system is the Beta LaserMike LaserSpeed® non-contact length and speed gauges and the proprietary EFLTrak™ software.

By adding the EFL Measurement System to your application, you can quickly ensure that the fiber-to-jacket ratio of your product is within desired specifications. For example, you can:

- Quickly and easily measure fiber length and calculate EFL ratio without the time-consuming and costly tasks of cutting cable and exposing, cleaning cable fibers to measure product
- Accurately measure and log the on-line EFL ratio for the entire production run
- Precisely obtain the final buffer tube or cable length
- Print an EFL Log for the entire buffer tube/cable length

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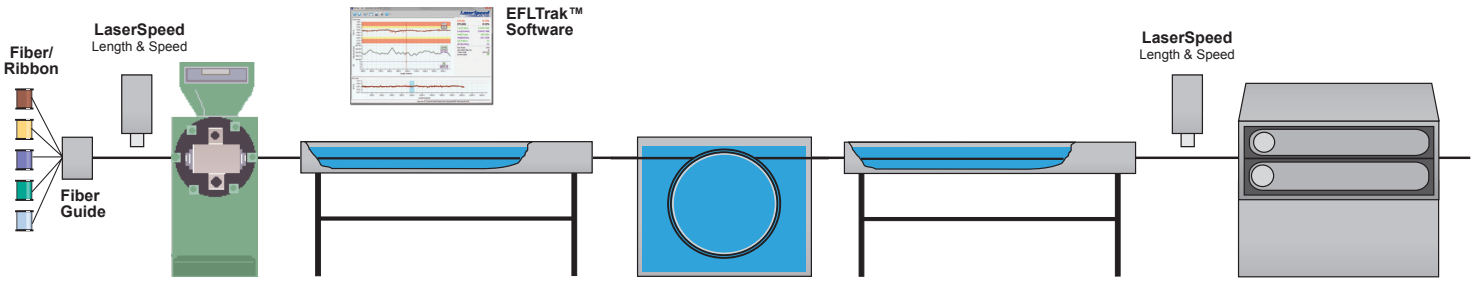
Complete Measurement Solution for EFL Cable Production

The Beta LaserMike EFL Measurement System includes two LaserSpeed 8000/9000-3 gauges and the EFLTrak software. One LaserSpeed gauge is installed upstream in the process in-between the fiber guide and the jacket extruder, while the other unit is installed downstream in-between the final cooling trough and the capstan. This setup enables you to compare the fiber bundle-to-jacket ratio during the jacketing phase with an EFL ratio resolution of 0.01% (0.1 per mil). The EFL Measurement System can be interfaced with a PLC to monitor the differential speed and ultimate EFL ratio, and can be connected to a light stack or alarm to notify operators when the EFL ratio exceeds tolerances. EFL ratio data can be imported into an SPC analysis package to document product quality. The EFL Measurement System can also be used on fiber optic ribbon lines.



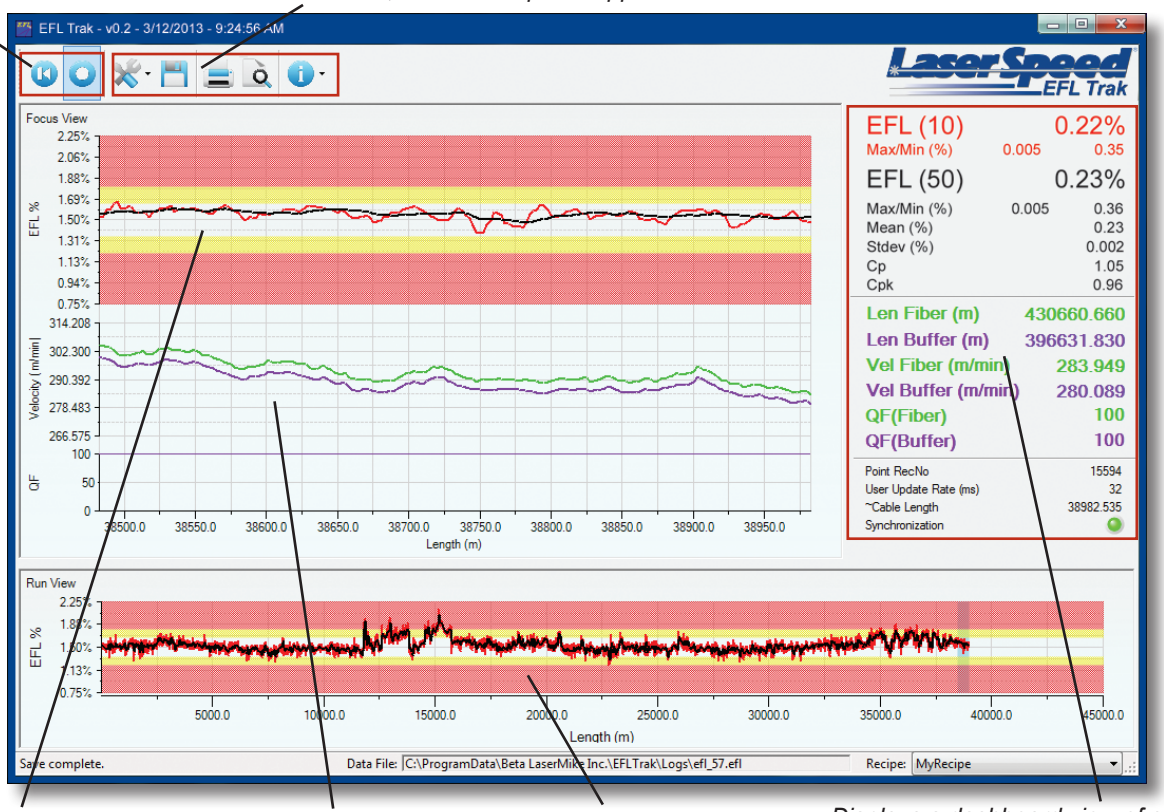
EFLTrak Software Features

Using the EFLTrak software, you can easily monitor, record, save, configure, print, and perform queries on critical EFL data.

Monitor EFL Production Process in Real Time

Reset EFL fiber length and buffer. Record EFL data.

Menu functions to configure, save, and print EFL data, as well as update application.



Displays the short and long EFL ratio lengths.

Displays the fiber and buffer tube/cable speeds.

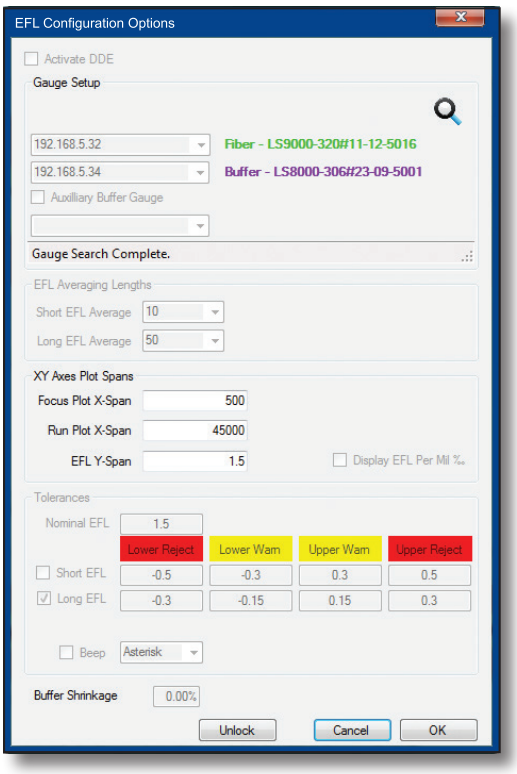
Displays the EFL ratio for the complete production run.

Displays a dashboard view of critical EFL production data to monitor EFL ratio; process statistics; fiber and buffer length, velocity, and quality factor; number of points recorded in the plot; output rate of LaserSpeed gauges; approximate cable length; and gauge synchronization status.

Easily Configure, Monitor & Report Critical EFL Data

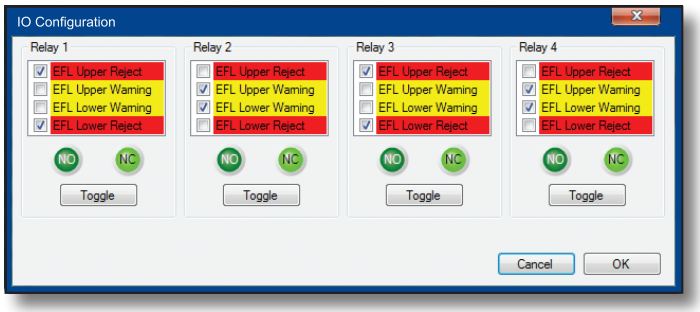
Configure EFL Parameters

Quickly and easily setup LaserSpeed gauges, short and long EFL average lengths, X and Y plotting criteria, and tolerances with alarms to accurately monitor production processes. You also have supervisory control to lock and unlock critical process settings, as needed.



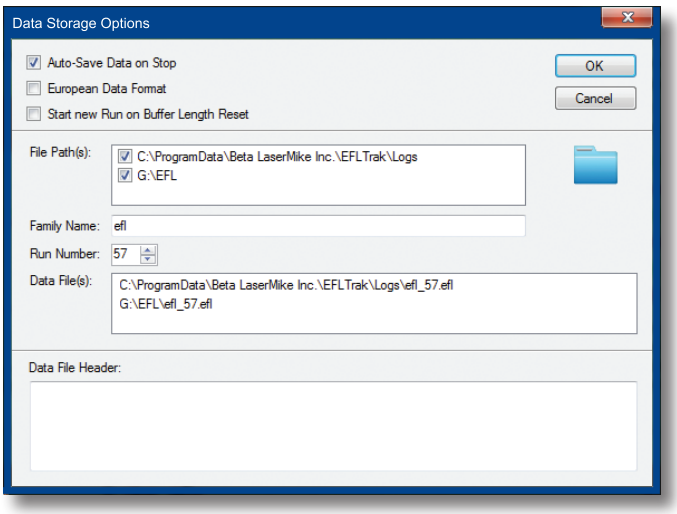
Setup Relay Inputs and Outputs

Conveniently configure the input and output (I/O) ports to the devices you monitor through the relay module. Easily toggle between open and closed circuits for relays.



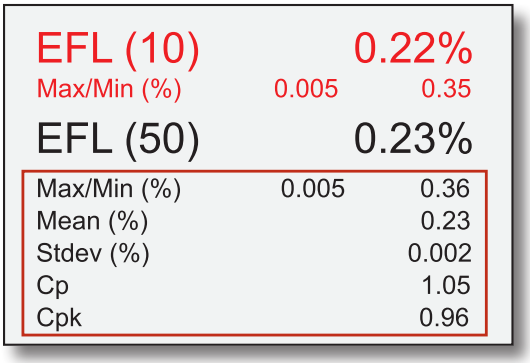
Specify Storage Requirements

Save and label files to meet your unique data storage requirements.



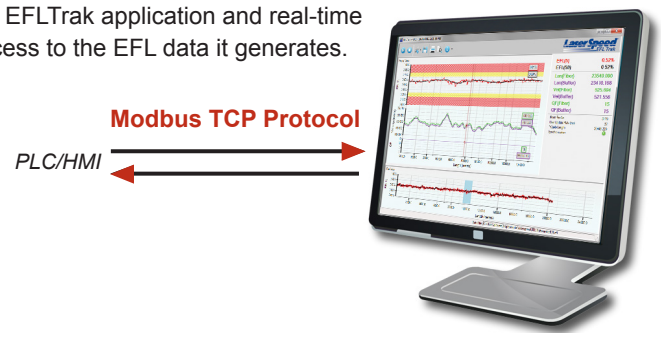
View Real-Time Process Statistics

Real-time statistical process control delivers immediate, actionable information, allowing you to detect, correct, and minimize process variation. SPC parameters such as Max/Min, Mean, and Standard Deviation help you improve product and process quality, and reduce unwanted variation, resulting in less waste, scrap, and rework.



Control EFL System Remotely

Use the Modbus TCP communications protocol to effectively control the EFL system remotely from a PLC or operator panel (HMI). Modbus TCP connectivity gives you reliable control over the EFLTrak application and real-time access to the EFL data it generates.



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EFL Measurement System Specifications

LaserSpeed 8000-303 and 9000-303 Gauges

Measurement range	50,000/100,000/s
Capabilities	- Non-contact length and speed measurement - No marking or slippage - Not affected by material surface, color, or speed - Factory calibrated
Gauge Size	203 X 159 X 95.2 mm (8.0 X 6.3 X 3.75 in.)
Measurement Depth of Field	35 mm (1.4 in.)

Speed Range	
LS8000-303	0.4 to 4000 m/min (1.3 to 13,100 ft/min)
LS9000-303	0 to ±4000 m/min (0 to ±13,100 ft/min)
Standoff Distance	300 mm (12 in.)
Gauge Weight	3.4 kg (7.5 lbs)
Temperature Range	5 to 45ºC (41 to 113ºF)
Relative Humidity	Non-condensing
Degree of Protection	IP67

Other specifications are subject to gauge selection.

Computer System and Hardware Requirements

Hardware	Intel Core i3 or equivalent dual/ quad core processor, 2.3 GHz (minimum)
Memory	RAM 4 GB (2 GB minimum)
Disk Space	128 GB or more
Screen Resolution	Display capable of supporting resolution 1280 x 800 or higher
Operating System	Microsoft Windows XP SP3, Windows 7 32/64 bit, or Windows 8 32/64 bit (.NET Framework 3.5 or higher)
Communications	4 USB Ports

Installation, Training and Technical Support

We offer on-site installation, training, and commissioning of all EFL Measurement Systems. Every system is backed by NDC Technologies' world-class service and support organization. With offices around the globe, we're committed to serving your unique application needs.

Accessories

Relay Module
Send data to another application, connect to a light stack or marking system, or control other operations via a PLC.

Airwipe and Quick-Change Window
Ensures minimal downtime for cleaning.

Guide Rollers
Allows easy guiding of products.
- Cable Guide Rollers – p/n 240040
- Fiber Guide Rollers – p/n 240048

Adjustable Stand
Adjust your LaserSpeed gauge horizontally or vertically to meet desired measurement position requirements.

Contact us today to discuss your EFL loose tube and ribbon fiber cable measurement needs.

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