

## Luna Innovations

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# Fiber-optic sensing

This high-definition fiber-optic sensor system is now more robust to enable use in the harshest of test environments

Luna Innovations has launched an upgrade to its ODiSI (optical distributed sensor interrogator) strain- and temperature-sensing platform. The ODiSI-B 5.0 upgrade is the result of continued engineering development. The new system provides a number of valuable new capabilities including a high-speed continuous fiber grating (CFG) sensing option to support more dynamic testing environments. The new high-speed CFG option complements perfectly Luna's high-definition sensing, which uses one of the most economically priced strain sensors on the market, while still offering customers higher performance over conventional point-sensing solutions. The new ODiSI-B 5.0 also comes with new ruggedized cables and connectors, and a test data visualization and CAD integration option to provide engineers an immediate and intuitive understanding of test

RIGHT: The new ruggedized 50m stand-off cable and connectors are ideal for the rough and tumble of industrial test environments

results. Luna's strain sensors are manufactured and calibrated to a NIST-traceable standard and will now come with a certificate of conformance.

Luna's ODiSI platform provides a number of advantages over conventional strain gauges: ultra-high-definition measurements, drastically reduced cost of sensor installation, and the ability to embed the sensor in composite materials. The ODiSI-B's sensor comes in standard lengths from 1-20m. The sensor is bonded to a structure's surface in a similar fashion to conventional strain gauges and is flexible enough to be routed in a serpentine pattern. The fiber sensor comprises a series of densely



BELOW: The ODiSI-B 5.0 offers improved performance by providing more test data

BELOW (LEFT): An automotive body in white instrumented with high-definition fiber. The fiber location and test data are superimposed on the frame's CAD drawing

spaced virtual strain gauges, whose gauge length and location are defined by the software in the ODiSI interrogator. The sensor can be configured to provide strain measurements every millimeter along the fiber; both the high-definition and high-speed CFG options can provide as many as a thousand strain measurement points for every meter of fiber sensor.

Luna's ODiSI-B 5.0 can now address a broader application space in the automotive test market, while providing test engineers with greater insight into design performance and also saving time and money.

The 3D data visualization tool brings the test data to life by integrating test data with the test article's CAD model. The images and videos created are ideal for helping engineers quickly evaluate test results and for creating illustrative presentations for management design reviews. <



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