

# Revealing Optical Components

**L**una Technologies, Inc., of Blacksburg, Virginia, has commercialized an instrument that significantly reduces the time and cost of testing sophisticated optical components. The technology grew from the research Dr. Mark Froggatt, Luna Technologies' chief technical officer, conducted on optical fiber strain measurement while working at NASA's Langley Research Center. Dr. Froggatt originally developed the technology for non-destructive evaluation testing at Langley. The challenge was to put enough sensors in optical fibers on a launch vehicle to provide comprehensive strain measurements without adding weight to the structure. The result was a technique that could provide 10,000 independent strain measurements while adding less than 10 grams to the weight of the vehicle.

After licensing this new technique, Luna Technologies developed the Optical Vector Analyzer (OVA) 1550, the first instrument on the market capable of complete linear characterization of single-mode optical components used in high-bit-rate applications. According to Doug Juanarena, President and Chief Executive Officer of Luna Technologies, "Other test instruments provide very basic performance data, or what could be considered the equivalent of the device's blood type, but the OVA 1550 provides complete characterization. In essence,

it's like giving users the optical DNA of the component." The device can test most components over their full range in less than 30 seconds, compared to the more than 20 minutes required by other testing methods. The dramatically shortened measurement time results in increased efficiency in final acceptance tests of optical devices, and the comprehensive data produced by the instrument adds considerable value for component consumers. The device eliminates manufacturing bottlenecks, while reducing labor costs and wasted materials during production. The OVA 1550 is a single unit, removing the need for multiple instruments to provide the same degree of analysis. It can be easily integrated into a manufacturing production line. The device is also fully automated, requiring no special skills for operation. The control software's graphical user interface provides all key data and graphs in an easily accessible and understandable format.

The first OVA system was delivered to Lucent Technologies, Inc., in June 2001, for use in fiber measurements. Luna Technologies' goal is to become a premier supplier of test instrumentation for optical component developers and producers worldwide, eventually broadening its product line for additional applications and markets. ❖



*The Optical Vector Analyzer 1550 gives a complete characterization of optical components.*