

# Lightvision

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## j<sup>2</sup>waves Handheld Transceiver Tester Made A Big Splash at OFC/NFOEC '06

*It was that time of the year again. Around 13,000 attendees from more than 55 countries turned up to check out the latest fiber optic innovations in the highly charged OFC/NFOEC (Anaheim Convention Center, March 7 to 9, 2006). The much-anticipated j<sup>2</sup>waves instrumentation product family made its debut at the show and stirred up quite a wave of excitement. Here's an inside look at why all eyes were on this Handheld Transceiver Tester and how you may benefit from it.*



**Small but Powerful**  
The Handheld Transceiver Tester is, simply put, a full-featured fiber optic network tester that just comes in handy-- everything is handled right on-site and with maximum accuracy.

The multi-functional Handheld Transceiver Tester is designed to be a rugged, portable instrument that guarantees the performance and durability you need in a field tool for installing, maintaining and troubleshooting the various links in an optical network. This sophisticated Tester incorporates the advanced capabilities of a Variable Optical Attenuator (VOA), an Input Power Meter, and an Output Power Controller, ideal for a comprehensive series of on-site tests, such as transceiver optical performance testing, transmission characteristics, system accuracy testing, and auto leveling controlling.

Embedded with a pocket PC, the Tester provides a workspace for managing test data, composing email, browsing the Internet, and working with the standard office programs. Upgrades to the Tester's software are easily installed via the wireless connection or USB port using the ActiveSync utility, transferred from another pocket PC or memory media, or downloaded from the Internet. The Tester is Bluetooth-enabled and contains 64MB SDRAM and up to 256MB Flash ROM. It also includes expansion card slots that support CompactFlash Type II and Secure Digital/SDIO Now!/MMC.

The demonstration at OFC/NFOEC highlighted the Tester's functions, including:

- As an Attenuator, it attenuates optical signals at a user-defined value.
- As a Power Meter, it measures power levels of continuous or modulated input optical signals.
- When using Automatic Power Leveling, it adjusts the attenuation to ensure the output power level to be regulated to a defined value.
- When performing the Transceiver Sensitivity Sweep, it runs multiple attenuation control cycles in user-defined value. So it can be used to test the sensitivity of transceiver with BER.
- When performing the Power Profiling, It regulates the output power by using multiple power leveling cycles in user-defined value.
- In the Transceiver Sensitivity Sweep and the Power Profiling functions, the Tester can be synchronized with other test equipment through the trigger port.
- After tests are completed it displays the results in table or graph form. The results can then be transferred via the Internet, or can be stored locally or on a memory card for distribution and future analysis.

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# Get Ready for the Next Waves

Leveraging our extensive portfolio of optic solutions based on one of Lightwaves2020's core technologies, liquid crystal (LC), the projects in progress are targeted at optimizing the unique advantages of LC while minimizing power usage, size, and weight.

Conventional mechanically-driven polarization, for example, is subject to friction, deformation, vibration, and stiction due to its inherent limitations from using moving parts. In our famed polarization control (PC), LC functions as a variable waveplate and therefore eliminates mechanics-related reliability issues. This not only makes it possible to achieve the compact size, high accuracy, high power efficiency, low loss, and wide operating wavelength range in our high-performing PC, but also facilitates room for high level of sustainable ruggedization to accommodate extreme temperature, vibration, shock and altitude requirements, especially for use in military grade products.

The platforms that are currently under development, including two environmentally robust polarization management instruments, are slated to be released this summer. Along with the flexible architecture comes a suite of customizable options that substantially reduces the costs and time for custom product development and deployment. For detailed information or for having your special requirements fulfilled in the j<sup>2</sup>waves instrumentation platforms, please write to us at [sales@lightwaves2020.com](mailto:sales@lightwaves2020.com) or for defense customers at [defense@lightwaves2020.com](mailto:defense@lightwaves2020.com)



## Next-generation Instrumentations for Commercial and Defense Implementations

OFC/NFOEC '06 marked a significant milestone for Lightwaves2020. Following the launch of the brand-new j<sup>2</sup>waves Handheld Transceiver Tester, Lightwaves2020 spearhead opment of innovative instrumentation plat- comprehensive configuration of the proposed j<sup>2</sup>waves platforms will present a most compelling, economical product family that utilizes user-friendly interfaces to effortlessly access and execute a variety of key functions strategically integrated for a multitude of high-end fiber optic applications in the telecommunications, networking, and defense industries.

**"We're expanding, but our focus remains you—the customer."**

is poised to the devel- a series of instrumen- forms. The

### Latest Publication

#### Novel Passive Free Space Compact CWDM Technology for Outdoor Applications

At OFC/NFOEC '06, our Sales Director, Joy Jiang, delivered a well-received presentation. With more than 60 industry professionals in attendance, Joy explained how using the compact 8-Channel CWDM Multiplex Module in the one-mile free space optics systems, with its unique TFF technology and compact packaging, which has an extremely low insertion loss and maximum stability, provides an inexpensive, easy to install alternative for fiber expansions and upgrades in metro, access, FTTX, CATV, and wireless networks.

Abstracts for this and other papers can be found at:  
<http://www.lightwaves2020.com/news>.

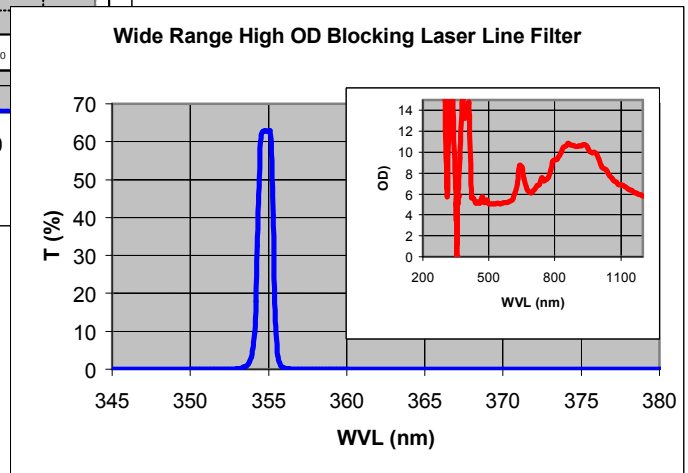
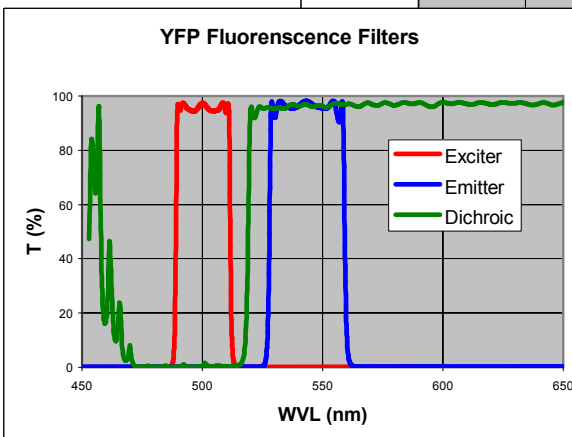
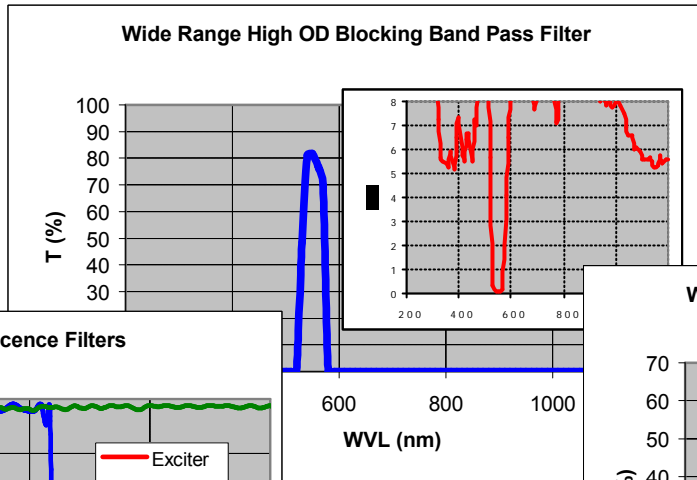
# Shedding Light on Biomedical Advancement

In the area of biomedical optics where performance and reliability count, Lightwaves2020's Coating Division is fully equipped to provide optimized coating solutions tailored to meet each customer's requirements in a timely and cost-effective manner. Utilizing our state-of-the-art facility located right at the heart of Silicon Valley, our dedicated team of experts uses proprietary tools and technologies to help customers achieve rapid, seamless implementation, whether it's for enhancing existing products or for developing new ones.

We produce optical thin film filters built with hard dielectric coating, with precise layer thickness control to atomic level. The end products are highly dependable filters that are immune to damages from water, scratch, heat, or laser while enabling optimal image quality with extraordinary transmission, blockage, and contrast. Lightwaves2020's thin film filters support a wide array of cutting-edge biomedical applications, including confocal microscopes, confocal scanners, confocal imagers, microarray scanner, microplate (chip) readers, and biomedical lasers.



Our main biomedical filter products include fluorescent filters and filter sets for confocal microscopy, band pass filters for biomedical spectroscopy, and laser line filters. When special needs arise that cannot be met with our standard offerings, Lightwaves2020 is committed to working closely with our customers every step of the way to deliver custom designs that not only perfectly match the specifications, but are also guaranteed to be completed on time and on budget. To find out more about our coating solutions, please send your inquiry to [coating@lightwaves2020.com](mailto:coating@lightwaves2020.com).



## Break New Ground With Lightwaves2020



There have been many exciting new developments at Lightwaves2020 during the past few months. Our team has grown rapidly. To continue our track record of engineering excellence, we now have 60 employees with expertise in liquid crystals, thin films, opto-electronics, opto-mechanics, and software/firmware development based at the corporate headquarters in Milpitas ready to serve you. Our website underwent a major overhaul with a redesigned user interface for improved navigability and user-friendliness. Even the Lightvision newsletter had a facelift. Moving forward, as the fiber optic market continues to gain momentum, we invite you to take full advantage of the exciting enhancements in our products and services.

As always, Lightwaves2020 looks forward to hearing from you.  
Please don't hesitate to contact us any time on the web at  
[www.lightwaves2020.com](http://www.lightwaves2020.com) or email [sales@lightwaves2020.com](mailto:sales@lightwaves2020.com).

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#### About Lightwaves2020, Inc.

Leveraging many patented fiber-optic technologies, Lightwaves2020, Inc. focuses on serving the telecommunications, defense, and biomedical industries worldwide by offering high-performance, cost-effective optical components, instrumentations, and thin film coatings. Drawing on the experience and expertise of a highly talented team of engineers and scientists, Lightwaves2020 is developing and manufacturing a full range of integrated optical solutions.

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