



OPTRA Inc. Awarded Phase II.5 U.S. Navy SBIR Contract for Two-Color IR Scene Projector with Improved Dynamic Range

Topsfield, MA (April 11, 2011) - OPTRA Inc. was awarded a \$750,000 Small Business Innovation Research (SBIR) Phase II.5 research grant by the U.S. Navy to develop a two-color IR scene projector with improved dynamic range in the form of greater bit depth and improved contrast. This technology is needed for testing advanced IR threat detection systems.

Under Phase I and Phase II SBIR programs OPTRA developed a two-color IR scene projector based on digital micromirror device (DMD) technology. This system employs two miniature thermal sources and a series of IR imaging optics and spectral filters to illuminate two DMDs, one for each spectral band, fuse the reflected images, and project the two-color image onto a unit under test. The spectral bands are approximately 3-4 and 4-5 μm , and the maximum apparent temperature is 785 K. The Phase II prototype performance requirements were for 10-bits of grayscale resolution at a 40 Hz frame rate with a contrast of 250:1. Evolving IR threat detection technologies require enhanced bit depth at a greater frame rate with commensurate contrast. OPTRA's next generation device will support 12-bits of grayscale resolution at a 100 Hz frame rate with a contrast of 4000:1. The Phase II.5 effort will consist of a series of builds which will address the largest sources of background light which have the effect of diminishing contrast. These sources include scattered and diffracted light and the self-emission of the flat state. The Phase II.5 effort will conclude with the design, build, and test of a complete, high dynamic range two-color IR scene projector prototype.

OPTRA has a long history of IR instrument development and is the sole supplier of IR spectrometer modules to the JSLSCAD program, a field rated chemical agent detection system. OPTRA provides laser detection and exposure sensors and laser beamsteering for optical communication, industrial processing, and collision avoidance. OPTRA is a supplier of ultra precision measurement solutions using state-of-the-art electro-optical technology. OPTRA markets the NanoGrid®, NanoScale®, and NanoGage® nanometer resolution grid and linear encoder products to the semiconductor, disk drive, and general research industries.

CONTACT:

Sales Department

OPTRA, Inc.

461 Boston Street

Topsfield, MA 01983-1290

Phone: (978) 887-6600

Email: Sales@optra.com

Fax: (978) 887-0022

Web: www.optra.com