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TIR Prism Supports Telecentric Architecture for TI DLP[®] Technology and UV-LED Illuminators

Woburn, MA, October 5, 2017 \hat{o} Innovations in Optics, Inc. introduces the 3300P-100 TIR Prism Assembly that enables on-axis illumination and compact optical system designs. The 3300P mounts to the LumiBright 3300B series of UV-LED Illuminators for high power UV DLP applications such as 3D printing, computer-to-screen, computer-to-plate printing, direct image writing and digital maskless lithography. DLP chips are digital micromirror devices (DMD) made by Texas Instruments Incorporated (TI).

DLP chips are reflective; the illumination and projection paths to the device share the same space in front of the device. Illumination light enters the 3300P-100 TIR Prism Assembly and reflects within the prism through Total Internal Reflection (TIR) to illuminate the DLP chip. The reflected image passes through the prism without reflection for projection to the image plane. The paths separated in glass rather than air space leads to compressed overall path length, improved image quality and reduced back working distance of the projection lens.

The 3300P-100 TIR Prism Assembly supports a telecentric optical system for the illumination path to provide uniform angles of incidence across the entire DLP chip creating uniform black levels for the dark field. The projection axis is perpendicular to the DLP chip so that the telecentric condition also prevents spatial non-uniformities in projected brightness. Ultimate optical efficiency and performance in the 3300P-100 TIR Prism Assembly is achieved by employing state of the art antireflection (AR) coated prism surfaces, superior quality blackening on metal housing surfaces, and a tightly controlled air gap between the prism sections.

About the Texas Instruments Design Network

Innovations in Optics, Inc. is a member of the TI Design Network, a premier group of independent, well-established companies that offer products and system-level design and manufacturing services complementing TI & semiconductors to a worldwide customer base to accelerate product innovation and

time-to-market. Network members provide product design, hardware and software system integration, turnkey product design, RF and processor system modules, reference platforms, software development, proof-of-concept design, feasibility studies, research, certification compliance, prototyping, manufacturing, and product life cycle management. For more information about the TI Design Network, please visit http://www.ti.com/designnetwork.

About Innovations in Optics, Inc.

Founded in 1993 and located near Boston, Innovations in Optics, Inc. offers high power LED light sources for science and industry that provide maximum photon delivery, illumination uniformity, and stable optical power. Products offer system-level advantages over lasers and arc lamps in OEM equipment for many applications. Available LED wavelengths range from UV 365 nm through the near-infrared, including broadband white and multiband options. System accessories include thermal management devices, wire harnesses and driver/controllers. UV LED products support maskless lithography, 3D printing and photocuring.

 DLP^{B} and the DLP logo are trademarks of Texas Instruments. LumiBright \hat{I} is a trademark of Innovations in Optics, Inc.