Wintech®

A Texas Instruments Authorized DLP® Design House

# PRO6600

## Ultra-High Resolution 4K Production Ready Optical Engine

Staying ahead of the ever-increasing resolution needs of the 3D Printing and structured light industries, Wintech has released the first modular ultra-high definition (UHD) DLP® light engine for industrial applications, called the PRO6600. The PRO6600 is based on the very successful PRO6500 platform but incorporates a larger DLP array (3860x2160) in a more compact form factor. The PRO6600 utilizes Texas Instrument's DLP660TE 0.66" 4K DMD and the DLPC4422 dual ASIC chipset. This light engine is ideal for 3D Printing applications requiring maximum image quality and DLP® array resolution. The system can operate at 60Hz at 8-bit grayscale.

The PRO6600's modular architecture allows for quick, low cost modifications to the base light engine that minimize both expense and time to get to series production. The system is optimized for Luminus Devices CBM-120 UV LEDs.

The PRO6600 only supports high intensity monochrome projection. An all glass optical architecture (including the prism and flys eye lens) and all metal mechanical architecture were chosen to increase image quality and total system efficiency. Wintech's in-house wideband optical coatings are optimized for 381-650nm. Optics configurations are similar to the PRO4500 and PRO6500 and are 0% offset. The available projection lenses for the PRO6600 include a 71um pixel and 50um pixel lens optimized for 3D Printing. These lenses provide a filed of view of 192x108mm and 136x76mm respectfully. Custom lenses, if needed, can be fabricated in about three months. System light output for the PRO6600 is greater than 4000mW @ 405nm and 3000mW @ 385nm. This results in an energy density of at least 20mW/cm$^2$ @ 405nm. Uniformity is specified at a class leading at > 90% and the distortion specification is the industry benchmark at 0.1% or less, perfect for high quality 3D printing applications. Contrast ratio is over 500:1.

The PRO6600 incorporates individual DMD and LED driver PCBs. This maintains modularity for the system and ensures low cost modifications to the PCB. The DMD-driver PCB includes 24V locking power connection, HDMI port for image transfer, RS232 serial port and mini USB for system control. The unit also includes an LED irradiance sensor

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to aid in system calibration. Thermal management is provided by heat sinking via copper heat piping and active fans. The system also incorporates a LED junction temperature sensor for monitoring LED performance. The system size is 260x150x245mm including the projection lens and weighs less than 3.2kg.

The PRO6600 software allows for easy integration of the PRO6600 into new or existing 3D printing systems.

**System Highlights**

- UHD 4K modular all in one DLP®-based production ready industrial projector
- DLP660TE upscaled 4K (3860x2160) DMD and DLP4422 chipset
- All glass 0% offset optics, optimized for UV transmission
- High power Luminus LED (CBM120)
- Incorporates LED irradiance and temperature sensors
- Industry leading image quality
- 0.67” and 0.64” (WQXGA) DMD compatible

| | **PRO6600 LED Wavelengths (nm)** | |
|---|---|---|
| | **385** | **405** |
| **Application(s)** | 3D Printing | 3D Printing |
| **System Output Power (mW)** | >3000 | >4000 |
| **Available Pixel Sizes (um)** | 50 \| 71 | 50 \| 71 |
| **Available Lens Working Distances (mm)** | 212 \| 300 | 212 \| 300 |
| **Field of View (mm)** | 136x76 \| 192x108 | 136x76 \| 192x108 |
| **Contrast Ratio** | 500:1 | 500:1 |
| **Uniformity (%)** | >90 | > 90 |
| **Distortion (%)** | <0.1 | <0.1 |

Wintech Digital Systems Technology Corporation is a Texas Instrument’s DLP® Authorized Design House with locations in both China and the US. We are a full-service engineering company that can design and manufacture all aspects of DLP® systems including electronics, optics, thermal management, light sources, firmware, and software.