

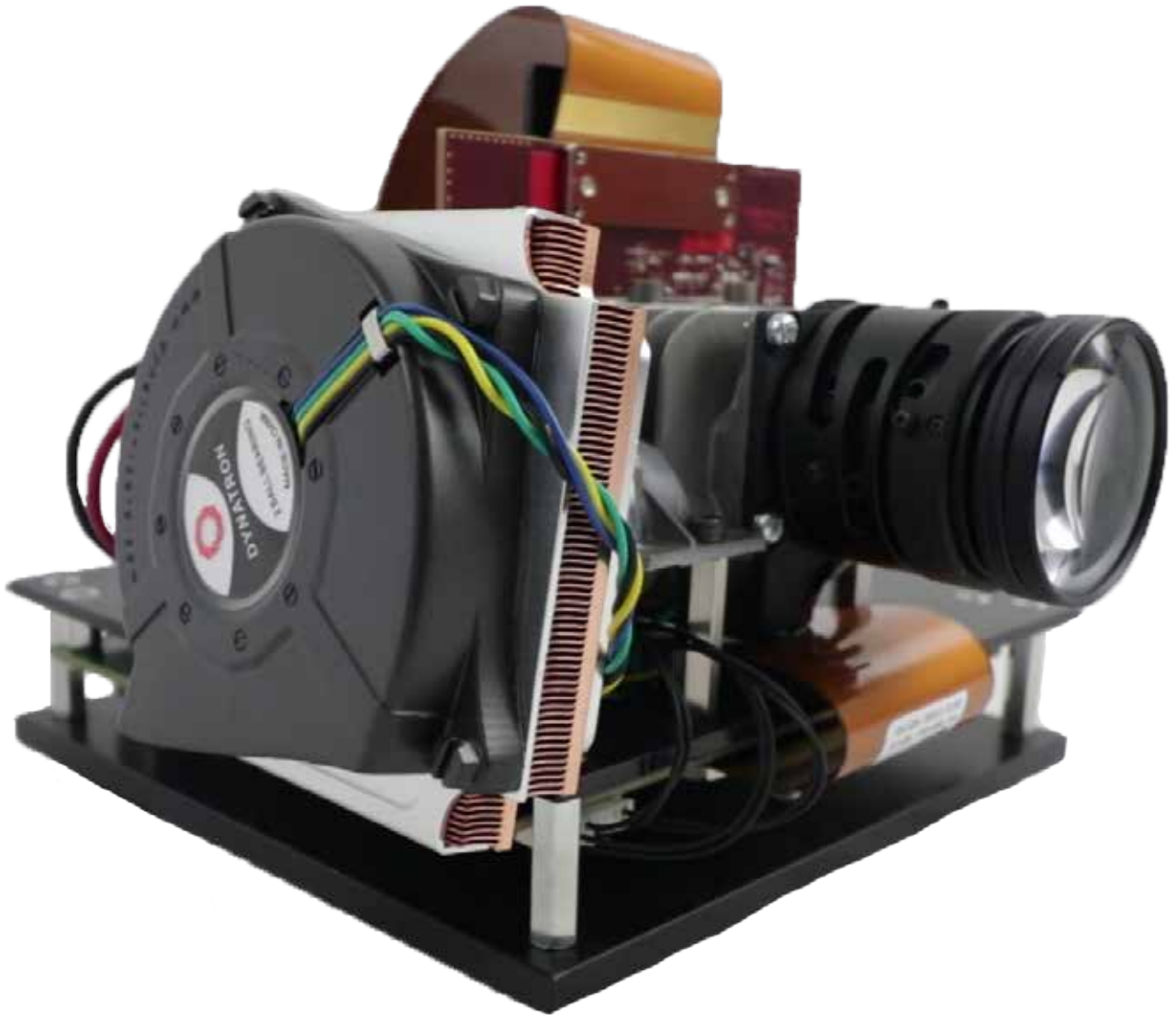
DLi DIGITAL LIGHT[®]
innovations

A TyRex Technology Family Company

DLi6500 .65" 1080p Optics Bundle **PRODUCT GUIDE**

World Leader in DLP[®] Light Exploration

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DLi6500 .65" 1080p Optics Bundle

The **DLi6500 .65" 1080p RAY Optics Bundle** is a high-performance, flexible DLP® development kit solution that includes illumination and optics in a small, robust light engine package for a wide array of light steering applications. It provides an easy path for solutions maximizing resolution, optical throughput and brightness which helps enable real-time 3D Machine Vision measurements and more accurate digital light exposures.

The DLi6500 RAY Optics Bundle is based on the LightCrafter™ 6500 .65" 1080p Type-S and Type-A DMDs. The optics and illumination are based on the RAY Optics Module series.

At the heart of the DLi6500 Development Kit is the DLPC900 Digital Controller, which allows for high-speed binary pattern rates up to 9,500Hz and 8-bit grayscale 250Hz, and real-time video at 60Hz.

DLP® LightCrafter™ 6500 Development Kit

The **DLP® LightCrafter™ 6500 development kit** is available in two DMD types: DLP6500FYE Type-S and DLP6500FLQ Type-A. The Type-S DMD is a ceramic package that is socketed to the DMD board. These dedicated chipsets provide full HD resolution (1920 x 1080, or over 2 million programmable micromirrors) at high speeds and can be easily integrated into a variety of end equipment solutions. The Type-A DMD is a hermetically sealed package designed to handle high brightness level and wider wavelength range. The Type-A development kit comes with a DMD hardware mounting assembly that allows users to modify the cooling plates and other components specific to their requirements.

DLi6500 .65 1080p Type-S Development Kit



DLi6500 .65 1080p Type-A Development Kit



The **DLi6500 development kit** has two (2) user-configurable I/O triggers for convenient synchronization with cameras, imagers, or other external devices. This feature can be especially useful for 3D Scanning, 3D Metrology and other structured light applications in the industrial space.

The DLP® LightCrafter™ 6500/9000 Firmware & Software Bundle includes a Graphical User Interface (GUI) which gives users full control over the DLi6500 development kit right out of the box. The GUI allows designers maximum flexibility to create and sequence light patterns, control pattern rate, bit depth, LED strobing & brightness, pattern mode, and syncs/triggers. This high-performance programmable light-steering solution is ideal for customizing industrial, medical and scientific applications.



RAY-65 Optics Module

Along with the DLi6500 development kit, the addition of the **RAY-65 Optics Module** completes the DLi6500 RAY Optics Bundle. The bundle is available in LED or Fiber configurations. The LED options are Red, Green, Blue and UV (405nm).



RAY-65 Optics Module

SPECIFICATIONS

Aspect Ratio	16:9
Projection Width	130mm - 2000mm
Throw Distance	210mm - 3800mm
Throw Ratio	1.6 - 1.9
Projection Offset	110%
Brightness*	200 Lumens
Uniformity*	60%
ANSI Contrast*	450
FOFO Contrast	1000
Wavelength	420nm - 700nm (Type-S) 400nm - 700nm (Type-A)

* 4x4 Measurement Grid
 ** Green LED
 *** Operating outside the wavelength range may result in lower performance and lifetime. No warranty is provided when DMD is used outside TI specified wavelength range.

The DLi6500 RAY-LED Optics Bundle uses the DLiDriver 1000 to both power and control the LED on the RAY Optics Module. The DLiDriver 1000 communicates seamlessly with the LED controls on DLi6500 Development Kit and supports pattern rates of up to 1000 frames per second. The capability of DLiDriver 1000 was recognized by TI, where it was used for qualification testing on the LightCrafter Firmware / Software package. The DLiDriver 1000 operates up to 20A from a 12V DC power supply. Auxiliary connectors for external fans and for LED current measurement are also provided.

DLi6500 RAY Optics Bundle Breakdown

DLi6500 RAY Optics Bundle

SPECIFICATIONS

- DLP® Digital Micromirror Device (DMD) Options
 - DLP6500FYE .65" 1080p Type-S DMD
 - DLP6500FLQ .65" 1080p Type-A DMD
- DLP® Support Chip
 - DLPC900 Digital Controller
- Resolution
 - 1920 x 1080 (1080p)
 - > 2 Million Micromirrors
- Pattern rates:
 - 1-bit - 9,500Hz
 - 8-bit - 250Hz
 - 8-bit Grayscale Video - 60Hz
- 2 Configurable I/O triggers for synchronization with cameras and other external devices
- USB 1.1 / HDMI / DisplayPort
- Compatible with all Windows platforms
- LED Illumination
 - Red, Green, Blue or UV (405nm)
- Fiber Illumination
 - 5mm or 7mm diameter
- Projection Width 130mm - 2000mm
- Throw Distance 210mm - 3800mm
- Throw Ratio 1.6 - 1.9
- Projection Offset 110%
- Brightness* 200 Lumens
- Uniformity* 60%
- ANSI Contrast* 450
- FOFO Contrast 1000
- Wavelength
 - 420nm - 700nm (Type-S)
 - 400nm - 700nm (Type-A)
- Size / Weight
 - 3.9lb
 - 7.9in x 7.9in x 6.7in

*4x4 Measurement Grid / Green LED / Operating outside the wavelength range may result in lower performance and lifetime. No warranty is provided when DMD is used outside TI specified wavelength range.

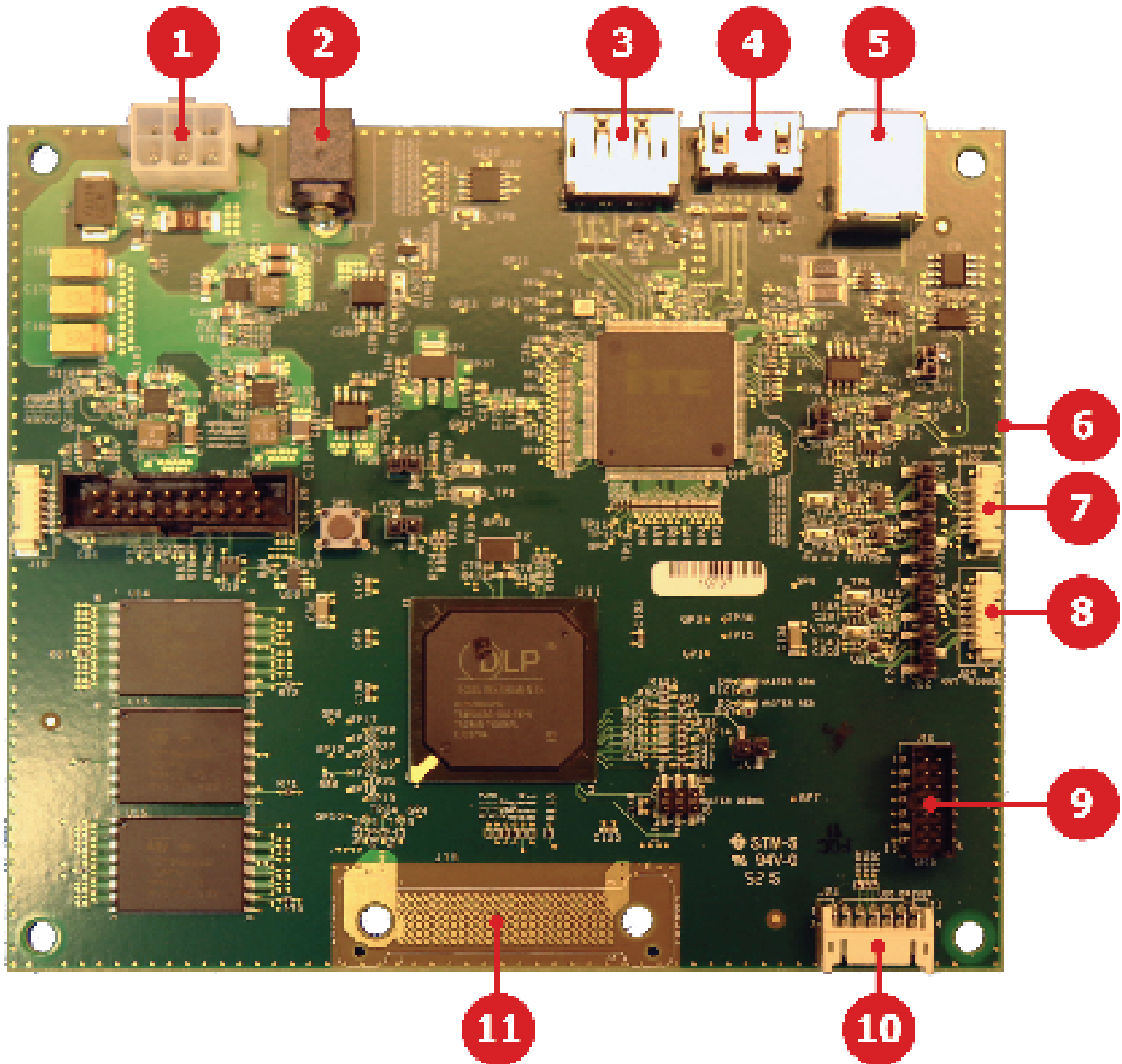


DLi6500 RAY Optics Bundle

CONTENTS

- DLP® LightCrafter™ 6500 Controller Board
- DLP DMD & Support Chip
 - DLP6500 .65" 1080p DMD (Type-S or Type-A)
 - DLPC900
- DMD Board & DMD Hardware (Type-A only)
- DMD Board & Socket (Type-S only)
- LED Driver Board (LED Configuration)
- Flex Cable
- DLP® LightCrafter™ 6500 Firmware & Software Bundle
- RAY-65 Optics Module (LED or Fiber)
- Power Supply & Cable / USB Cable / HDMI Cable / DisplayPort Cable / GPIO Cable / Trigger Cable / Driver Cable

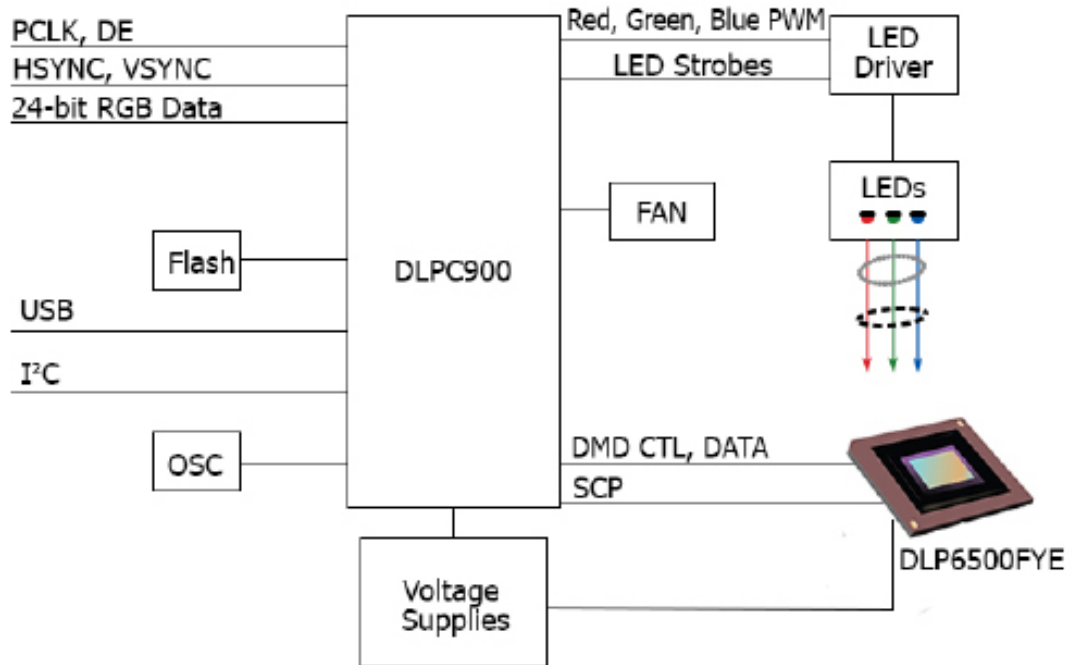
DLP® LightCrafter™ 6500 Main Board



- 1. Power Connector**
- 2. Power Socket**
- 3. DisplayPort**
- 4. HDMI**
- 5. USB**
- 6. I²C (bottom side)**

- 7. External Trigger Input**
- 8. External Trigger Output**
- 9. GPIO Input / Output**
- 10. LED Enable / PWM Output**
- 11. DMD Flex Cable Connector**

DLP6500FYE .65" 1080p Type-S - Block Diagram



DLP6500FLQ .65" 1080p Type-A - Block Diagram

