About Test Results

Test results of the TIDA-00325 reference design are performed using the DLP® LightCrafter Display 2010 EVM which is the TI's implementation of the TIDA-00325 reference design. This EVM incorporates the DLP 0.2" WVGA chipset comprising of the DLP2010 DMD, DLPC3435 controller and DLPA2005 PMIC/Led Driver. The EVM and reference design enable faster development cycles for applications requiring ultra-small form factor optical engine and ultra-low power projection display solution. The entire test data contained below was measured from one DLP LightCrafter Display 2010 EVM to provide an example from a typical unit. Please note, performance will vary across EVMs due to variations in manufacturing. The performance data is not guaranteed

If You Need Assistance

Refer to the DLP and MEMS TI E2E Community support forums: DLP LightCrafter Display 2010 Development Platform Forum

This test reports provides following test data:

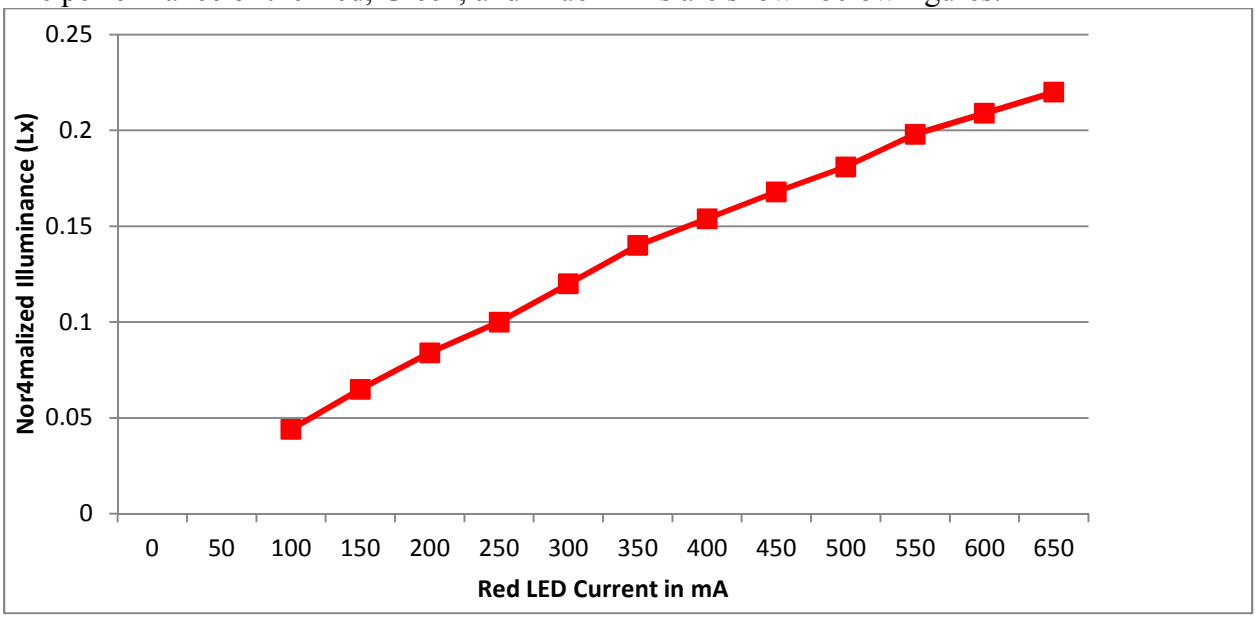
1. RGB LEDs Current vs Illuminance
2. Power Up and Power Down Sequence
3. Optical Engine Size
4. Optical Engine Throw Ratio

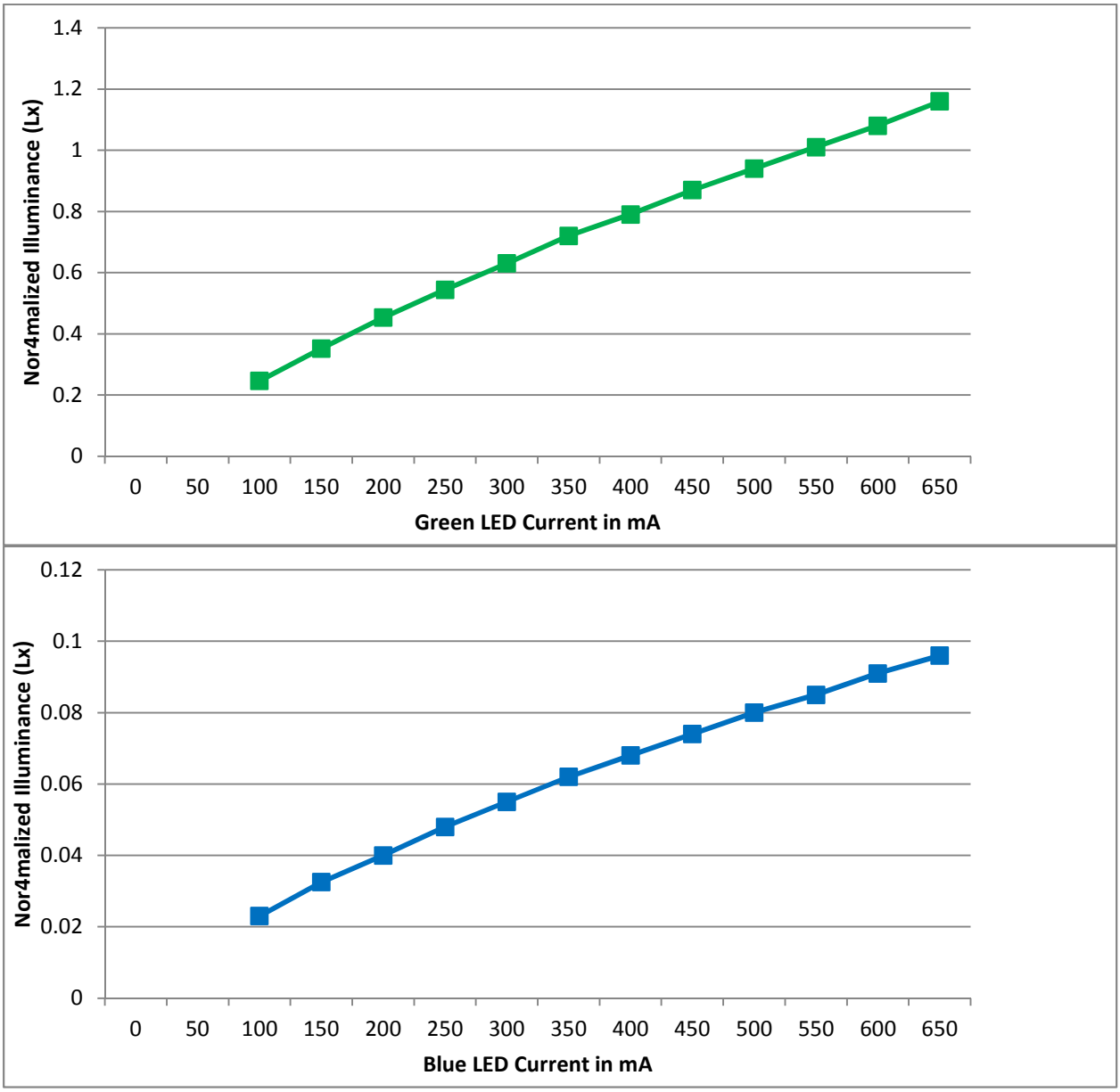
1 LED Current Test Data

This section provides the Red, Green and Blue LED performance levels with respect to the LED driver current levels. References are made to the DLP LightCrafter Display Graphical User Interface (GUI) that is available for download from TI's website.

As shown in figure the LED current was increased from 100mA to 650mA in steps of 50mA and the light output at the end of the optical engine was measured using a light measuring sphere.

The performance of the Red, Green, and Blue LEDs are shown below figures.





For a typical application current applied to the RGB LEDs is in a specified proportion to achieve a desired white point.

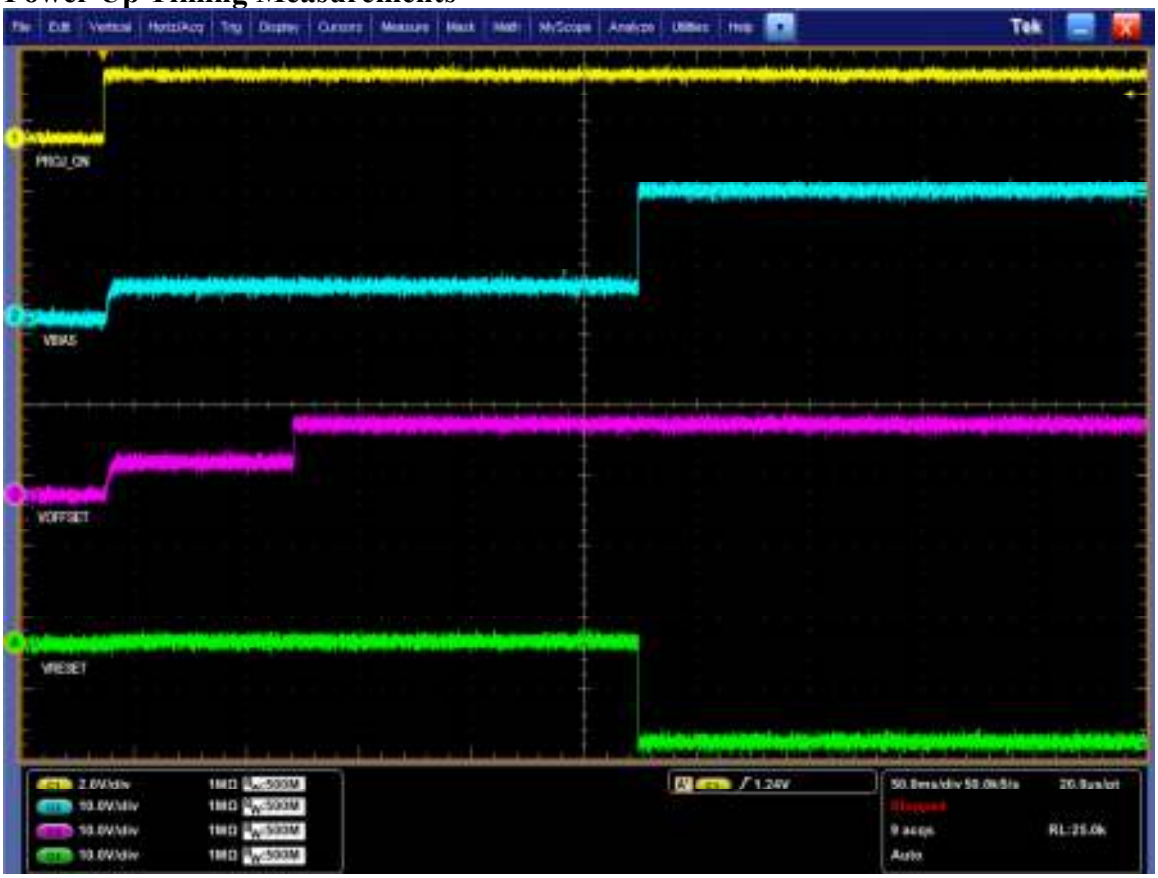
Measured brightness for 6040K white point is as below:

Red image 4.46 Lumen
Green image 19.44 Lumen
Blue 0.95 Lumen
White image 26 Lumen

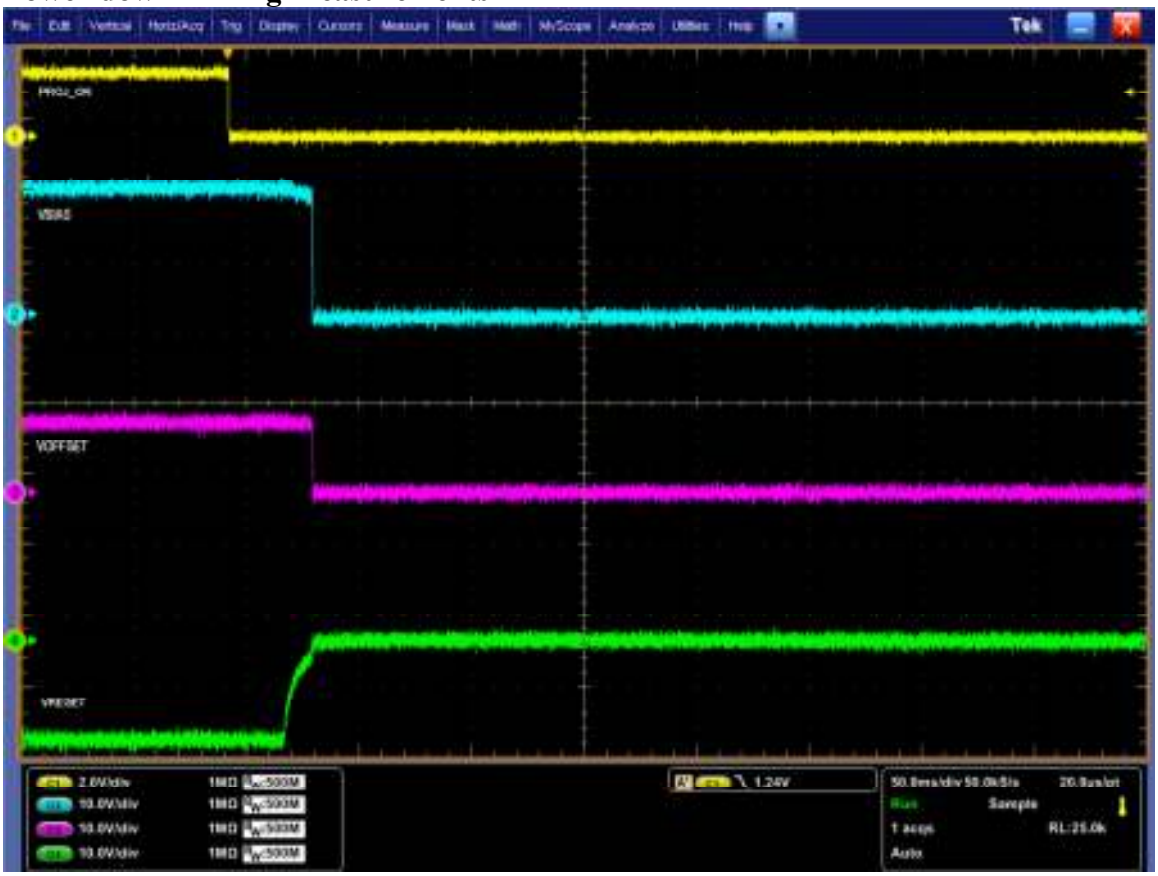
2. Power Up and Power Down Timing Measurements

Power Up and Power Down timing requirements are described in detail in the DLP2010 datasheet. Key signals measured are PROJ_ON and the power supplies to the DMD- VBIAS, VOFFSET and VRESET. For more details on the timing requirements please refer the DLP2010 device datasheet.

Power Up Timing Measurements



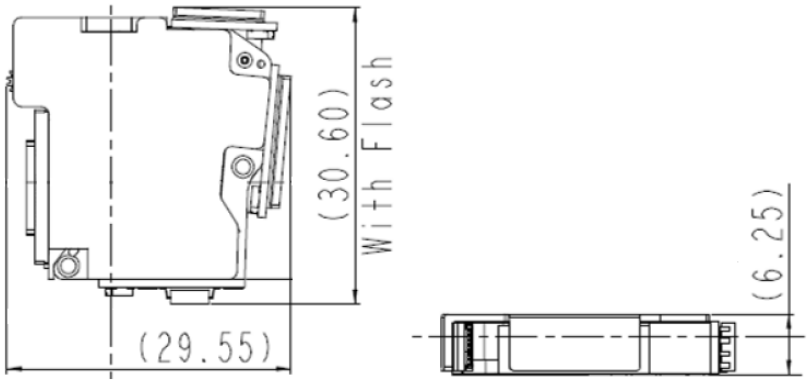
Power down Timing Measurements



3. Optical engine size

DLP2010 is a key component of the 0.2" WVGA chipset and is designed to enable ultra small factor optical platforms. Size of the optical engine used in this design is:

Length	30.60	mm
Width	29.55	mm
Height	6.25	mm



Total volume of the optical engine is: 4-6 cc
Weight of the optical engine: 15 gram.

4. Throw Ratio

An optical engine's throw ratio is defined as the ratio of the distance measured from lens to screen and the width of the projected image.

Throw Ratio = Distance/Width

Throw ratio for the optical engine used in this ref design is 1.65

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