

Application Scenario 317.01: Design and analysis of grating array for reshaping of LED light into a cross pattern

Abstract

This application scenario demonstrates the design and analysis of an illumination system for the shaping of LED light into a cross light pattern. The shaping is done by a grating cells array.

Author:	Hagen Schweitzer, LightTrans GmbH
Keywords:	grating, arrays, LED, illumination
Requirements:	VirtualLab Advanced version 5.0.0 or higher – Lighting Toolbox
Version:	1.0
Files:	Corresponding files can be found here .
Related Tutorials:	Tutorial_g6.01

The application scenario is illustrated in the file `Scenario_317.01_LED_to_Cross_Light_Pattern_Shaping_Task.pdf`.

It explains the modeling of an LED light source via a set of laterally shifted modes and shows how this can be simulated by a *Far Field Source* in VirtualLab.

Further the design of a *Light Shaper* on the basis of a grating cells array, that shapes the LED light into a cross light pattern on the target plane, is demonstrated. This is done with the *Grating Cells Array Design* document, which is stored in the file `Scenario_317.01_LED_to_Cross-Light_Pattern_Shaping_03.gcd`.

Finally, the simulation of the resulting light path diagram, which is available in `Scenario_317.01_LED_to_Cross_Light_Pattern_Shaping_04.lpd`, via *Field* and *Ray Tracing* is discussed.

Technical Support

If you have any questions, remarks or problems concerning this application scenario, or in using VirtualLab in general, please do not hesitate to contact us by E-Mail support@lighttrans.com.

Please use the update service to install the current version of VirtualLab. Alternatively you can use the latest **Trial Version** of VirtualLab which is available at our [download site](#). If you have been registered already for an older trial version, just contact us by [E-Mail](#).

To ensure that this application scenario gives the same results as described,

set the global settings to the default values. In VirtualLab this can be done in the **Extras > Global Options** dialog with the *Reset All* button.