



## **RPC Photonics, Inc.**

# **BSDF Data Files for LightTools**

The enclosed BSDF data files contain scatter data for various angles of incidence. The archive contains the master files and the data files. The data files are named with the diffuser type, incident polar angle and incident azimuth angle. For example, the file *EDC20\_5\_0.txt* contains data for the EDC20 diffuser with an incident angle of 5 degrees polar and 0 degrees azimuth. These files are formatted according the LightTools requirements, and have been tested with version 8.4.0 64-bit.

The BSDF data provided are from measurements of representative diffuser samples. Actual scatter distributions may vary from diffuser to diffuser.

The diffuser surface is applied to the input surface of a cube component in LightTools. The cube can have any lateral dimension, but should be about 1mm thick. The cube should be made of air so that the index is 1 at every interface.

Follow the steps in LightTools to create a new Model Property. Within the properties window of the new property select the Optical Properties tab and select "Measured BSDF." Select the BSDF Data tab and Load the master file for the desired diffuser. Once the master file is loaded, each line of the table in the BSDF Data tab will show the details for each measurement file. Selecting any one row will display the measurement within the tab.

Select the BSDF Settings tab and choose "Shift with Stretch." The "Anisotropic" box is checked for the square or rectangular diffusers. It is left unchecked for the circular diffusers (EDC models).

Right click on the input surface of the cube component and apply the new property created above for the diffuser. The component is now ready to scatter rays.

An example of the results for an EDC50 at normal incidence is shown:

