

## Design and Evaluation of C-Band Non-Polarizing Beam Splitter Plate using ZEMAX

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**Abstract:** With the aid ZEMAX-EE software, a strategy for designing C-band non-polarizing neutral plate beam splitter is presented. The design construction was based on a certain optical properties of homogeneous, isotropic three dielectric materials  $TiO_2$ ,  $Al_2O_3$  and  $SiO_2$  chosen as "High", "Medium" and "Low" index material, respectively depositing on the BK-7 glass substrate. Result shows that the optimum design consists of 17- layers and can be applied to a wide range of angles and reflectance values.

**Keywords:** Optical Design, ZEMAX , thin layers, non-polarizing plate beam splitter.

### 1. Introduction

Beam splitters are an optical devices separate the input light into two different directions can be classified according to form of design into cube, plate and pellicle. Beam splitter (BS) and non-polarizing beam splitter (NBPs) are important in optical and photonic systems, and can be used in many optical systems, including optical