

In recent years, the illumination in Turkey has increased significantly with the spread of LED technology. The main difficulty in illuminating historical artifacts is to accurately reveal their identities by animating visual details, content, and emotions with efficient lighting installation, thus preserving their integrity, and carrying them into the future. The study aims to make historical artifacts more attractive with 3D simulation, prevent visual discomfort, and reduce energy loss. This report is the first attempt to address the illumination of the Aphrodisias open-air museum found in the west of Turkey. The 3D simulation is implemented and analysed for the selected zones. The desired results are successfully achieved through the simulation and experimental studies by finding the light sources with performance parameters, such as CCT, CRI, and luminous efficacy according to the location and texture. The results promote modern technologies for the openair museums in Turkey and offer solutions for safe night visits, energy efficient illumination, and enhancing visual aesthetics.