Abstract

Illumination systems and methods of designing and construction of the same are disclosed. The resulting illumination systems comprising both Front and Back light modules, provides selectable and programmable illumination according to the requirements of the invention for optimal performance of enhancing defects on a multidimensional object. The light guides are suitably aligned to the Backlight module and mechanically integrated with spring loaded mechanisms to enable them to move freely and subsequently re-postion them to a reference home position as determined at the time of setup of the illumination assembly. The Front light module is utilised to highlight surface defects and mechanically integrated to the illumination system. The illumination modules, may include multiple discrete light emitting components of different spatial intensity distribution and color spectrum mounted in specific layout such that the application oriented combined illuminating effect is created.

Figure 1