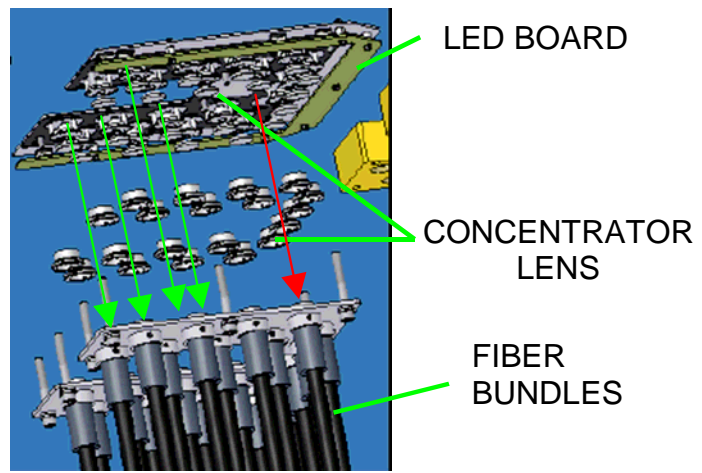




SHINE - GLIDE SLOPE INDICATOR (GSI)

Improved lighting power for the SHINE - GSI. The Calzoni patented technology (EP 1547922 B1, US7535380), for a LED based GSI is constituted by combination of a LED board coupled with fiber optics bundles to guide the light to the projection lens. A new concentrator lens system has been developed to collect the light from the individual LED to the fiber bundles. This optical system is based on the combination of two lenses: the first, close to LED, collect the light from the same LED to be focused on the fiber optic bundle by means of a second, cascaded, lens. This solution is optimised to guide the light from new most recent high brightness LED which are characterised by a large lighting surface. The lens system operate with high efficiency and compact dimension for multichip LED such as Osram OSTAR.



A view of the solution is shown in the figure where the upper LED board is complemented by the two sets of the double stage lens. The fiber optics bundles are shown in the lower part.