

Construction of a monochromatic LED replacement lamp

Kodagoda A.N., Jayatilleke K.P.S.* and Abewickrama S.S.

Department of Physics, University of Ruhuna, Matara, Sri Lanka

A lamp was designed and constructed arranging number of coloured LEDs to produce a monochromatic light beam comparable to low pressure Na-lamps with light intensity that are used in physical optics experiments. It comprises compact closed casing with the power wire. The casing comprises square opening (1.5cm x 1cm) in front side to get light beam from the lamp. The power wire is extending 1.2 m with a two pin plug at the end. The power is supplied to the lamp from AC 230V main power. The lamp is compact and smaller in dimensions, 8cm x 6.5 cm x 4cm and is equipped with a hanger to hang it to a required height. Also, it can be kept horizontally on a flat surface. The weight of the lamp is about 300 grams and it produces monochromatic light beam. The intensity of the beam varies with distance away from the source point. The maximum of 140 Lux can be achieved at the source point. The lamp can be used effectively as a substitute for high cost monochromatic Na lamps currently used in optics experiments. In addition to that it is low in cost, consumes less power and is smaller in physical size with compared to conventional Na-lamp.

Keywords: monochromatic led lamp, led lamp

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*Corresponding Author: sunil@phy.ruh.ac.lk