

ABSTRACT

DESIGN LIGHT EMITTING DIODE (LED) LAMP AS ROOM LIGHTING BASED ON IEC-61000-3-2 STANDARD

In everyday life humans need adequate lighting sources in activities, especially in the room. At present, in Indonesia there is a rapid increase in the use of Light Emitting Diode (LED) lamps as lighting systems for both indoor and outdoor. This is because LED lights are considered to have higher efficiency compared to other lights. However, the LED lights themselves are a non-linear load that can produce harmonics. At present, many LED lighting products produce harmonic values that are high enough to cause the quality of electricity to decline. The use of LED drivers is the most important thing in the design of LED systems because it can control the efficiency of power, voltage, and current on the LED.

In this study, an LED lamp will be designed that will be adjusted to the harmonic standard, namely IEC-61000-3-2 and IEEE-519-1992. In designing the LED driver it will use the voltage regulator diode zener 1N4742A. The room used as a research standard is a standard room measuring 3m x 3m. For this reason, in designing this LED the lumen, lux, and candela values will be adjusted to the SNI-03-6197-2000 standard. From this research, it is expected to be able to meet human lighting needs in indoor activities and produce a standardized LED lighting product so that it can improve the power quality of LEDs

Keywords: LED, harmonics, IEC-61000-3-2, IEEE-519-1992, transformerless.