

Lighting replacement analysis at Classrooms of Engineering Center Faculty of Engineering Universitas Indonesia = Analisis penggantian penerangan di Ruang Kelas Lighting Engineering Center, Fakultas Teknik, Universitas Indonesia

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Abstrak

The energy crisis in the future will be a threat for human life. Many advancement of technology currently focus on creating something that perform better than its predecessor but consuming less power. LED lighting technology has been introduced as a breakthrough of technology which possesses big advantages over the other lighting technology. LED lighting technology is able to produce a high luminous flux with very low power consumption, and also lasts longer than others. By consuming lower power, hence the amount of energy being consumed in order to generate the same amount of light will be reduced, and hence, energy saving will happen.

This undergraduate thesis discusses replacement analysis of lighting at classrooms at Engineering Center of Faculty of Engineering Universitas Indonesia. The analysis is in terms of illuminance aspect, power quality performance and cost, and it is done by replacing the existing CFL with three different options of LED lamp exist in the market with competitive price. The study suggests that using LED lamp as a replacement for CFL at classrooms at Engineering Center of Faculty of Engineering Universitas Indonesia is more efficient consuming less energy by 42.86 , and moreover saving the electricity cost as well, from IDR 864,360 annually to IDR 493,920. A comparative analysis between the three different LED lamp options is also performed.