

ABSTRAK

Gedung Plaza Sentral merupakan sebuah bangunan tua yang umurnya berkisar \pm 32 Tahun. Yang didalamnya terdiri dari area parkir, toilet, gudang barang, ruang ganti seragam, koridor, tangga, ruang tenant, ruang Genset, ruang Pompa hydrant, ruang HVAC, ruang Pipa Hydrant , kantor management, ruang Panel , ruang Pompa CT, ruang pertemuan. dimana sumber penerangan harus memenuhi standar berdasarkan Peraturan Menteri No. 907/Menkes/SK/VII/2002 tentang persyaratan Kesehatan Lingkungan Kerja Perkantoran dan Industri, yaitu mengenai pencahayaan yang memenuhi persyaratan kesehatan yang perlu dilakukan agar tidak menimbulkan kesilauan dan memiliki intensitas sesuai peruntukannya berdasarkan pada masing-masing bidang kerja.

Perhitungan analisa dari pemakaian daya nyata, pemakaian daya semu, dan penghematan energi pada masing-masing lampu tersebut. Bila dibandingkan persentasi lampu TL 36 W menjadi LED 36 W mempunyai penghematan energi selama setahun sebesar 46,76%

Pengujian pada lampu TL menunjukkan nominal lebih besar dari standar terhadap grafik THD_i (18,6%) dan memenuhi standar terhadap THD_v (2,5%). Sedangkan pengujian lampu LED semakin aktif bebannya maka standar terhadap THD_i (10,2%) dan terhadap THD_v di bawah standar (1,6%)

.Kata kunci : perhitungan jumlah lampu, Efisiensi Energi, dan Total Harmonik

Distorsion

ABSTRACT

Plaza Sentral Building is an old building that aged \pm 32 years. The inside consists of parking area, toilet, warehouse, changing room uniform, corridor, staircase, tenant room, generator room, hydrant pump room, HVAC room, Hydrant Pipe room, management office, Panel room, CT Pump room, meeting room. where the source of lighting must meet the standards based on Ministerial Regulation no. 907 / Menkes / SK / VII / 2002 concerning the Occupation of Occupational Health of Office and Industry Environment, concerning lighting that fulfill the health requirement that need to be done so as not to cause glare and have the intensity according to the allocation based on each work field.

Therefore, in calculating the power requirements of TL lamps, CFLs and LEDs, calculated based on the power difference of each lamp, the value of lux in a room, the area of the room, the lumens value in each lamp, the value of lighting efficiency and depreciation factor or the reduction value fouling on a lamp, cos cos value or cos value of load on each lamp.

Calculation of analysis of real power usage, apparent power usage, and energy savings for each of these lamps. When compared to the percentage of TL 36W lamp into 36W LED has a year-long energy saving of 46.76%.

3. Tests on TL lamps show a nominal greater than the standard for the THDI chart (18.6%) and meet the standards for THDV (2.5%). While the LED lamp testing is more active, the standard for THDi (10.2%) and THDv is below standard (1.6%).

Keywords: calculation of the number of lights, Energy Efficiency, and Total Harmonics