

OBSERVASI PERFORMA DARI BEBERAPA MEREK LAMPU LED

TUGAS AKHIR

Karya Ilmiah sebagai salah satu syarat untuk menyelesaikan jenjang strata satu (S-1)
di Jurusan Teknik Elektro, Fakultas Teknik, Universitas Andalas

Oleh

Gema Wahyu Putra

1410952044

UNIVERSITAS ANDALAS

Pembimbing I

Andi Pawawoi M.T.

NIP. 197010171998021002

Pembimbing II

Syafii Ph.D.

NIP. 197405051998021001



Program Studi Sarjana Teknik Elektro

Fakultas Teknik

Universitas Andalas

Padang

2019

Judul	Observasi Performa Dari Beberapa Merek Lampu LED	Gema Wahyu Putra
Program Studi	Teknik Elektro	1410952044
Fakultas Teknik Universitas Andalas		
ABSTRAK		
<p>Dipasaran saat ini banyak beredar berbagai merek lampu LED, namun belum ada data review tentang performa bohlam LED yang mana memiliki efisiensi paling baik, THD (<i>Total Harmonic Distortion</i>) yang paling rendah, lumen, faktor daya yang masih belum diketahui, CCT (<i>correlated color temperatur</i>) yang terang, dan CRI (<i>color rendering index</i>) yang baik serta harga dan masa pemakaian bohlam LED. Dengan penelitian ini tersedia data review performa dan diharapkan masyarakat dapat memilih bohlam LED yang bagus dan tepat sehingga bisa meringankan tagihan listrik. Pengambilan data pada penelitian ini menggunakan alat Spectrophotometer & Integrating sphere system. Data yang diukur adalah daya, tegangan, arus, lumen, faktor daya, THD (<i>total harmonic distortion</i>), CRI (<i>color redenring index</i>), dan CCT (<i>correlated color temperature</i>). Untuk analisa performa dikelompokkan menjadi 7 yaitu harga, umur, lumen, efisiensi, faktor daya, daya semu, THD, CCT, CRI, dan ketidaksesuaian daya dan lumen. Masing-masing performa di bagi menjadi 4 kategori yaitu sangat baik, baik, cukup dan buruk. Bohlam LED dengan bobot point tertinggi adalah In-lite dengan total point 35. Bohlam dengan kualitas paling buruk yaitu Stark dengan 22 point.</p>		
<p>Kata kunci : Bohlam <i>LED</i>, Performa, Spectrophotometer & Integrating Sphere System</p>		

Title	Performance Comparasion of Several Brands of LED Lights	Gema Wahyu Putra
Major	Electrical Engineering	1410952044
Faculty of Engineering University of Andalas		

ABSTRACT

Nowadays there are various brands of LED lights circulating in the market, but some brands have not obtain supporting data about LED bulb performance which has the best efficiency, such as the lowest THD (Total Harmonic Distortion), the light intensity (lumen), the unknown power factor, Bright CCT (correlated color temperature), and good CRI (color rendering index) and price also duration use of LED bulbs. With this research, it is expected that the community can choose a good and appropriate LED bulb to illuminate everyday life and help ease electricity bills. Data collection in this study uses the Spectrophotometer & Integrating sphere system tool. Data measured are power, voltage, current, lumens, power factor, THD (total harmonic distortion), CRI (color rendering index), and CCT (correlated color temperature). To analyze the performance of bulb, they are grouped into 7, namely price, age, lumens, efficiency, power factor, apparent power, THD, CCT, CRI, power and lumen incompatibility. Each performance is divided into 4 parameters based on the criteria. LED bulbs with the highest point weights are In-lite and Amasco. In-lite with 35 and Amasco total points with 33 points. The worst quality bulb is Shinyoku and Stark.

Keywords : LED Bulb, Performace, Spectrophotometer & Integrating Sphere System.

