ABSTRACT

Application of Arduino-based BH1750 Light Sensor to Investigate the Effect of Distance from an Incandescent Lamp on the Intensity of the Light Received

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Human activity requires the help of lighting from a light. Therefore, light is one of the supporting factors for the success of a human work. Along with this, this study was carried out which aims to make a light intensity measuring device using the BH1750 sensor and Arduino. Incandescent lamps with a power of 10 W, 15 W, 25 W, 40 W, and 60 W are needed, the BH1750 light sensor module, Arduino Uno R3, and arranged on PVC (*PolyVinyl Chloride*) pipe caps with a diameter of 9.5 cm which are then calibrated using an illuminance meter in the Universitas Gadjah Mada, Basic Physics Laboratory. The data from the test results are displayed on the Arduino IDE series monitor in the form of lux unified light intensity and processed using the curve fitting method. From the research that has been carried out, it can be concluded that the light intensity measuring device system with the BH1750 sensor and Arduino that has been made can be used to test the relationship between the intensity received and the lamp power and the distance of the light reception point to the source and the relationship between the intensity and distance of the light acceptance point can prove the validity of the squared reverse law for the light beam of an incandescent lamp.

Key words : Intensitas Cahaya, Sensor Cahaya BH1750, Arduino Uno R3, Curve Fitting, Lampu Pija