

## **ABSTRACT**

*The resurgence of analog photography over the past three years has posed new challenges for photographers, particularly in determining proper exposure due to the absence of built-in metering systems in analog cameras. This study has aimed to design a light calibration tool based on the DFROBOT Calibrated Colored Temperature (CCT) & Ambient Light sensor (ALS), which has been capable of directly providing exposure setting recommendations through an LCD interface. Testing has been conducted by comparing sensor readings with the AS823 lux meter and the Sony A6400 digital camera as references. The results have shown that the sensor's accuracy in measuring light intensity (lux) has reached an average of 94.04%, with an error of 5.95%. Meanwhile, the accuracy in detecting color temperature has averaged 97.73%, with an error of 2.26%. In testing the levels of overexposure and underexposure, the analog camera showed very good results with an overexposure rate of 0.04% compared to the digital camera which had an overexposure rate of 29.19%. The exposure suggestions provided by the device have demonstrated an average deviation of approximately  $\pm 1$  stop compared to the digital camera. Based on the results of analog photographs taken with the Nikon FM10 using the tool's settings, exposure levels have closely approached those of the digital camera and even have appeared more balanced in uneven lighting conditions. Therefore, this tool has proven to be a practical and affordable alternative to digital light meters for analog photographers.*

**Keyword:** *Analog photography, Arduino, CCT & ALS sensor, Exposure, Light calibration*