

Calibration Study of Lutron DT - 2234B Optical Takometer Using Standard Digital Stroboscope Lutron DT - 2269 with Range 50 Rpm Up to 12000 Rpm

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ABSTRACT

Experiments have been carried out on the calibration of measuring devices of speed that is optical tachometers. This study aims to determine the accuracy, deviation, and uncertainty of a measurement. Tools used in this calibration are thermometer, hygrometer. This is done to minimize errors by environmental factors. Providing data sheets and tools used as standards must be calibrated and verified by national standards of KAN (National Committee of Accreditation) and or International, and have a higher level of accuracy than UUT (Unit Under Test). Make sure the tools work properly. Next coding environmental factors before the calibration process with temperature $(23 \pm 3) ^\circ\text{C}$ and moisture $(55 \pm 10)\%$ rh. In addition, make sure the tools used are still feasible to use and have been calibrated by national or international standards. The method used is variation of vulnerable measuring at range 50 rpm to 12000 rpm. The standard used is a digital stroboscope and analysis using statistical equations. Calibration is done by placing a calibrated UUT at a light bulb point (digital stroboscope) of not more than 20° and the distance of the lamp with an optical tachometer of about 5 cm in order to occur the detection consistency by optical tachometers. So we can know the optometer tachometer at safe level or danger for the user.

Keywords: Calibration, Factor Environment, UUT, Digital Sroboscope.