

ABSTRACT

Distance detector is a device used to detect distance. The sensor used for making distance detector is sensor ultra-sonic and infrared. The expansion of current technology shifted towards visualization utilize digital image processing. The sensor used for digital image processing is the webcam. This issue brings up an idea to design the structure of distance detector by using the method of color detection. The method used is the method of detection of the color. This method only detects the red with an RGB value of 170 by a laser. The distance targeted to detect the red color reaches 2 meters. The output of this device is an alarm warning that had been recorded previous. The testing has been done as much as 10 times, to obtain maximum result. Testing is done by setting the changes in multiple barrier of 20cm-200cm. The device is tested by two conditions that is dark condition and bright conditions. The test result in dark conditions, distance 20cm have an error of 10% and distance 200cm have error 81, 5%. Test result in bright condition, distance 20cm have an error of 10% and distances 200cm have error of 53, 5%. The test results are influenced by factor relationship *pf* against Θ , the greater the distance then the smaller the angle and *pf* is produced. The webcam resolution used is another factor affecting the test results, the higher webcam resolution then the farther distance range detection.

Keywords: Distance Detector, Digital Image Processing, Laser, Color Detection Method.

