

## ABSTRACT

This research aims to determine the maximum mileage and travel time of an electric bicycle in a fully battery condition with speed parameters of 20 Km/hour, 30 Km/hour, 40 Km/hour and variations in rider weight of 50 kg, 55 kg, and 60 kg. As well as knowing the charging time of the electric bicycle battery from a voltage of 48V to 54.6V. The method used in this study is an experimental method by conducting a test on a horizontal road with 3 variations of the rider's load. The data obtained from the test results in the form of speed, distance traveled, time, voltage, current, battery charging duration. After that, an analysis of the data that has been obtained is carried out to answer the research objectives that have been made. The mileage obtained in the test load 50 kg at a speed of 20 km/h is 17.0 km; at a speed of 30 km/h is 17.08 km; and at a speed of 40 km/h is 15.91 km. The mileage obtained in the test load 55 kg at a speed of 20 km/h is 15.94 km; at a speed of 30 km/h is 14.99 km; and at a speed of 40 km/h is 13.47 km. The mileage obtained in the test load 60 kg at a speed of 20 km/h is 12.71 km; at a speed of 30 km/h is 11.25 km; and at a speed of 40 km / h is 10.96 km. The test results for the battery charging time from 48V to 54.6V were obtained, the first test it was 4.5 hours; on the second test is 4.3 hours; on the third test is 4.2 hours; and the average test is 4.33 hours.

**Keywords:** *electric bicycle, BLDC*, distance traveled, charging