

task_bln2sqhr55mlxrj3_with_calculation

Student Group

First Name	Surname	Matrikel Nr.

Table of Contents

Exercise E8 Conversion: Vacuum Cleaner 2

[conversion](#), [power](#), [energy](#), [chapter1](#) 1

Exercise E8 Conversion: Vacuum Cleaner

Your $18\text{~}\{\text{r m V}\}$ vacuum cleaner is equipped with a $4.0\text{~}\{\text{r m Ah}\}$ battery, it runs $15\text{~}\{\text{r m min}\}$.

How much electrical power is consumed by the motor during this time on average?

Solution: $288\text{~}\{\text{r m W}\}$

$$\begin{aligned} W &= 18\text{~}\{\text{r m V}\} \cdot 4.0\text{~}\{\text{r m Ah}\} = 72\text{~}\{\text{r m Wh}\} \\ t &= 15\text{~}\{\text{r m min}\} = 0.25\text{~}\{\text{r m h}\} \\ P &= \frac{W}{t} = \frac{72\text{~}\{\text{r m Wh}\}}{0.25\text{~}\{\text{r m h}\}} = 288\text{~}\{\text{r m W}\} \end{aligned}$$

From:
<https://wiki.mexle.org/> - MEXLE Wiki

Permanent link:
https://wiki.mexle.org/electrical_engineering_and_electronics/task_bln2sqhr55mlxjr3_with_calculation

Last update: 2023/04/03 12:25

