

task_bln2sqhr55mlxrj3_with_calculation

Student Group

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conversion, power, energy, chapter1 1

Exercise E1 Conversion: Vacuum Cleaner

You are in a class vacuum cleaner is equipped with a 24.0~Ah battery, it runs 15~min . How much electrical power is consumed by the motor during this time on average?

Solution: 288~W

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

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