

task_bln2sqhr55mlxrj3_with_calculation

Student Group

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Exercise E1 Conversion: Vacuum Cleaner

You buy a cordless vacuum cleaner is equipped with a 4.0 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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