

light bar analysis

• Battery (Melita - lithium ion)

18 volts

2.0 Ah

• light (300 LM) 6 inch

12 v

1 Amp

"30 Watts" (12 watts true)

Time of use per battery

$$\text{Time} = \frac{2.0 \text{ Ah}}{1 \text{ A}} = (2 \text{ hours}) \times (0.8) = 1.6 \text{ hours}$$

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Safety efficiency to prolong battery life

$$\text{Time} = 1.6 \text{ hours} = 96 \text{ minutes}$$

Average drive time (trip)

distance

- 4 miles (8 miles round trip)

speed

- Average speed for new riders \approx 12 mph for an hour ride

$$\frac{8 \text{ miles}}{12 \text{ mph}} = \frac{2}{3} \text{ hour}$$

$$\text{drive Time} = \frac{2}{3} \text{ hour} = 40 \text{ minutes}$$

How long will this last?

Battery (x2)

(300-500 cycles)(x2)

Work

\approx 4 days a week

$$\frac{2 \text{ trips}}{\text{cycle}} \cdot \frac{1 \text{ day}}{1 \text{ trip}} \cdot \frac{600 \text{ cycles}}{1} \cdot \frac{1 \text{ week}}{4 \text{ days}} \cdot \frac{1 \text{ year}}{52 \text{ weeks}} = 5.77 \text{ years}$$

$$\text{Time} = 5.77 \text{ years} = 1200 \text{ days} = 300 \text{ weeks}$$