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carboncalcpcf.com

Product Carbon Footprint for mekvrypzqk

A detailed cradle-to-grave analysis for 1.0 unit.

164.24 kg CO2e

Total Footprint

164.24 kg CO2e

Carbon Intensity

164.24 kg CO2e/unit

Top Material Hotspot

Aluminum Casing (3.50 kg CO2e)

Primary Emission Scope

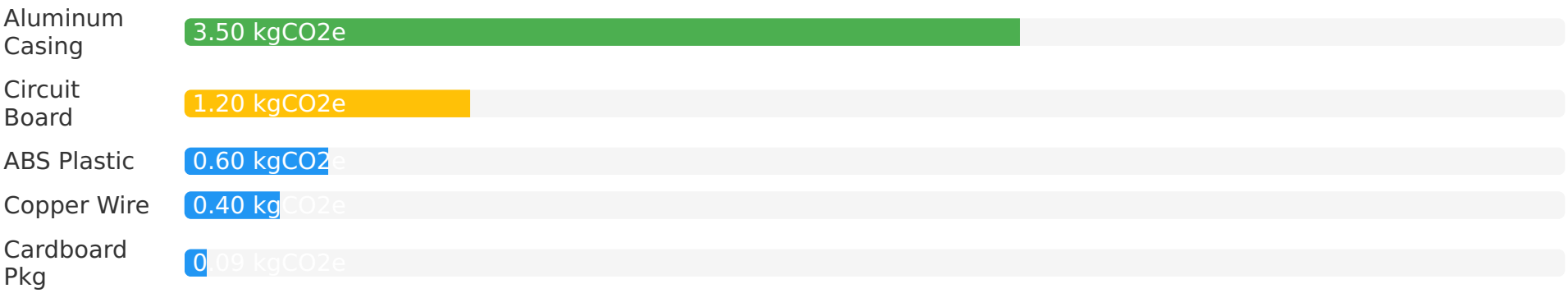
Scope 3 (Use Phase)

Lifecycle Stage Breakdown

Key Insights & Highlights

- **Use Phase Dominance:** The product's operational use accounts for over 95% of its total footprint (165.16 kg CO2e), marking it as the primary hotspot.
- **Material Impact:** Raw materials (5.79 kg CO2e), particularly Aluminum Casing, represent the second largest emission source.
- **Circular Economy Benefits:** Strong recyclability (80%) and a company take-back scheme lead to significant avoided emissions at end-of-life (-3.17 kg CO2e).
- **Renewable Energy Mitigation:** 50% renewable energy use in manufacturing significantly reduces production emissions, but further opportunities exist.

Material Carbon Impact



Action Plan: How to Reduce Emissions

- **Optimize Use Phase:** Focus R&D on reducing energy consumption during the product's 5-year lifespan (e.g., more efficient components, smart energy features).
- **Source Lower-Carbon Materials:** Explore alternatives or increase recycled content for high-impact materials like aluminum and electronics.
- **Increase Renewable Energy:** Aim for 100% renewable energy for manufacturing operations in China through on-site generation or PPAs.
- **Expand Circularity:** Strengthen take-back programs; explore refurbishment and remanufacturing to extend product life and reduce virgin material demand.
- **Logistics Optimization:** Refine transport routes, consolidate shipments, and consider lower-emission freight options for both inbound and outbound logistics.