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carboncalcpcf.com

Product Carbon Footprint: gjlmletrzn

Company: ekiljtwdkm | Standard: GHG Protocol

TOTAL PCF

40.99 kg CO₂e

TOTAL FOOTPRINT (1 UNIT)

40.99 kg CO₂e

CARBON INTENSITY

40.99 kg CO₂e/unit

TOP MATERIAL HOTSPOT

Main PCB Assembly

PRIMARY EMISSION SCOPE

Scope 3 (93.4%)

Detailed Carbon Impact Analysis

Lifecycle Stage Breakdown

Materials Acquisition (73.9%)

Use Phase (18.3%)

Production Energy (6.6%)

Transport & Distribution (0.7%)

End-of-Life (0.5%)

Material Carbon Hotspots (kg CO2e)

Main PCB Assembly	15.0 kg CO2e
Lithium-Ion Battery	10.0 kg CO2e
Aluminum Casing	4.0 kg CO2e
ABS Plastic Enclosure	0.9 kg CO2e
Copper Wiring	0.2 kg CO2e
Cardboard Packaging	0.2 kg CO2e

Key Carbon Hotspots & Highlights

- **Materials Acquisition Dominates:** The materials acquisition and pre-processing stage accounts for a significant 73.9% of the total carbon footprint, with Main PCB Assembly and Lithium-Ion Battery being primary drivers.
- **Use Phase is Second Largest:** The energy consumed during the product's 5-year lifespan contributes 18.3% to the total PCF, making it the second largest hotspot.
- **Renewable Energy Mitigation:** The production phase emissions are significantly mitigated by the 70% renewable energy usage at the manufacturing facility, limiting its contribution to 6.6%.

Recommendations for Footprint Reduction

- **Material Optimization:** Explore lower-carbon materials (e.g., recycled aluminum, bio-based plastics) and optimize design for lightweighting and reduced material usage.
- **Enhanced Energy Efficiency:** Invest in R&D to improve the energy efficiency of the product during its operational life, directly reducing use phase emissions.
- **Expand Renewable Energy:** Further increase renewable energy adoption at manufacturing sites and actively encourage suppliers to adopt similar practices.
- **Circular Economy Initiatives:** Leverage existing take-back programs to maximize product recycling, and explore opportunities for material reuse or refurbishment.
- **Supplier Engagement:** Collaborate closely with key material and component suppliers to foster emission reductions within their own value chain operations.