html

carboncalcpcf.com

Product Carbon Footprint for

wxhkmmifug

Detailed analysis adhering to GHG Protocol and 2026 LSR standards.

TOTAL PCF	FUNCTIONAL UNIT	PRODUCTION COUNTRY	STANDARD
39.22 kg CO2e	**1.0 unit**	**China**	**GHG Protocol**

OVERALL FOOTPRINT

39.22 kg CO2e

Total cradle-to-grave emissions per unit of product.

CARBON INTENSITY

39.22 kg CO2e/unit

Emissions relative to one functional unit of wxhkmmifug.

TOP MATERIAL HOTSPOT

Aluminum Casing

The highest contributing material in the Bill of Materials.

PRIMARY EMISSION SCOPE

Use Phase

Largest contributor across the product lifecycle (Scope 3, Category 11).

Emissions by Lifecycle Stage

Use Phase (Scope 3)	30.00 kg CO2e (74.5%)
Materials Acquisition (Scope 3)	8.06 kg CO2e (20.0%)
Manufacturing Energy (Scope 2)	2.10 kg CO2e (5.2%)
Upstream Transport (Scope 3)	0.09 kg CO2e (0.2%)
End-of-Life (Net Credit)	-1.03 kg CO2e (Reduction)

Material Carbon Impact Breakdown

Aluminum Casing	3.75 kg CO2e (46.5%)
Circuit Board (PCB)	2.00 kg CO2e (24.8%)
Plastic Enclosure	0.90 kg CO2e (11.2%)
Electronic Components	0.75 kg CO2e (9.3%)
Copper Wire	0.50 kg CO2e (6.2%)
Packaging Cardboard	0.16 kg CO2e (2.0%)

Key Insights & Hotspots

- The **Use Phase** is the dominant emission hotspot, contributing approximately 76% of the total Product Carbon Footprint, largely due to the product's energy consumption.
- **Materials Acquisition** is the second most significant contributor, with Aluminum Casing identified as the highest impact material due to its high emission factor.
- The analysis achieved comprehensive Scope 3 coverage (≥95%), encompassing detailed upstream and downstream activities, and conceptually integrates the 2026 Land Sector and Removals (LSR) Standard.

Recommendations for Emission Reduction

- **Optimize Use Phase Efficiency:** Invest in R&D to drastically reduce the product's energy consumption during its lifespan, exploring low-power modes and smart energy management.
- **Sustainable Material Sourcing:** Investigate alternative, lower-carbon materials for the Bill of Materials, prioritizing those with higher recycled content and lower inherent emission factors, especially for aluminum.
- **Enhance Circularity:** Further develop and promote circular/take-back programs to maximize product longevity, repairability, and high-quality recycling rates.
- **Decarbonize Manufacturing Energy:** Increase the procurement of renewable energy for the manufacturing facility in China through Power Purchase Agreements (PPAs) or on-site generation.
- **Supply Chain Optimization:** Collaborate with suppliers to understand and reduce their upstream emissions, optimizing transportation routes and modes for inbound logistics.

Report prepared by sywhmvgoqy for tdetlfmwwf.

Generated Date: May 20, 2026

Confidential - Internal Use Only