

Product Carbon Footprint: hnrnjpoirw

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Standard: GHG Protocol | System Boundary: Factory Gate (Cradle-to-Grave)

129.67 kg CO₂e

Total Product Footprint

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129.67 kg CO₂e

Per functional unit (1.0 unit)

Carbon Intensity

129.67 kg CO₂e/unit

Reflects emissions per product unit.

Top Material Hotspot

Circuit Board

Contributes 15.00 kg CO₂e.

Primary Emission Scope

Scope 3

Dominant in Use Phase & Raw Materials.

Emission Breakdown

Lifecycle Stage Impact

Use Phase	72.05% (100.00 kg CO ₂ e)
Raw Materials (A1)	24.64% (34.20 kg CO ₂ e)
Logistics (A2+A4+A5)	2.19% (3.04 kg CO ₂ e)
Manufacturing Energy (A3)	1.12% (1.55 kg CO ₂ e)
End-of-Life (Net Credit)	-9.12 kg CO ₂ e

Material Carbon Impact

Circuit Board	43.86% (15.00 kg CO ₂ e)
Steel	32.16% (11.00 kg CO ₂ e)
Plastic Casing	18.13% (6.20 kg CO ₂ e)
Copper Wire	5.85% (2.00 kg CO ₂ e)

Highlights & Hotspots

The **Use Phase** is the largest emission contributor, accounting for 100.00 kg CO₂e over the product's 5-year lifespan, driven by energy consumption.

Raw Material Acquisition is a significant upstream hotspot, with materials contributing 34.20 kg CO₂e, notably from Circuit Boards.

Manufacturing Energy (Scope 2) emissions are 1.55 kg CO₂e, despite 75% renewable energy usage, indicating room for further decarbonization.

Action Plan: How to Reduce Impact

- ✓ **Material Optimization:** Explore alternative, lower-carbon materials and increase recycled content for high-impact components like Circuit Boards and Steel.
- ✓ **Energy Efficiency & Renewables in Manufacturing:** Further invest in energy-efficient processes and increase the share of renewable electricity procurement in the China facility beyond 75%.
- ✓ **Design for Energy Efficiency in Use:** Innovate product design to minimize energy consumption during the use phase through improved efficiency ratings and smart power management.
- ✓ **Enhance Circularity:** Strengthen the existing "Product Take-back Program in EU" to maximize material recovery, reuse, and reduce reliance on virgin materials.
- ✓ **Supply Chain Engagement:** Collaborate with suppliers to identify and implement emission reduction strategies throughout the upstream supply chain.