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Product Carbon Footprint Dashboard

Product: hnkxooiqmf by qrtnjuoqvu
Standard: GHG Protocol | **Boundary:** Cradle-to-Grave

26.27 kg CO2e

TOTAL FOOTPRINT

26.27

kg CO2e per unit

PRIMARY HOTSPOT

Use Phase

(57.5% of total)

PRIMARY GHG SCOPE

Scope 3

(20.62 kg CO2e)

EOL BENEFIT

-1.40

kg CO2e (due to recycling)

Lifecycle Stage Breakdown

Material Acquisition & Pre-processing	24.7% (6.50 kg CO2e)
Manufacturing	22.3% (5.85 kg CO2e)
Distribution & Transport	0.8% (0.20 kg CO2e)
Use Phase	57.6% (15.12 kg CO2e)
End-of-Life (Net Benefit)	-5.3% (-1.40 kg CO2e)

> Percentages represent contribution to the total *net* footprint of 26.27 kg CO2e.

Material Carbon Impact

Aluminum Casing (0.5 kg)	57.7% (3.75 kg CO2e)
Circuit Board (1.0 unit)	30.8% (2.00 kg CO2e)
Plastic Housing (0.2 kg)	9.2% (0.60 kg CO2e)
Packaging Cardboard (0.1 kg)	2.3% (0.15 kg CO2e)

> Percentages represent contribution to the total material carbon impact of 6.50 kg CO2e.

Key Insights & Highlights

- The **Use Phase** accounts for the largest share of emissions (57.6%), totaling 15.12 kg CO2e, making product energy efficiency a critical focus.
- **Material Acquisition** is the second-largest contributor at 24.7% (6.50 kg CO2e), with aluminum casing being a significant hotspot within materials.
- **Manufacturing emissions** (22.3%, 5.85 kg CO2e) indicate a strong opportunity for decarbonization by increasing renewable energy usage at the production facility.
- The product achieves a **net carbon benefit at End-of-Life** (-1.40 kg CO2e) due to 60% recyclability and robust take-back programs, demonstrating effective circularity.

Action Plan: How to Reduce Impact

- **Enhance Product Energy Efficiency:** Focus on low-power modes, extend product lifespan through modular design for repairability, and educate users on sustainable usage patterns.
- **Source Low-Carbon Materials:** Investigate alternative materials with lower embodied carbon (e.g., recycled aluminum, bio-based plastics) and engage suppliers on greener production.
- **Decarbonize Manufacturing Operations:** Increase the proportion of renewable energy used in production facilities (beyond 40%) and optimize processes to reduce overall energy intensity.
- **Strengthen Circularity:** Continuously improve recyclability towards 100%, expand and promote take-back programs, and explore design for disassembly for component reuse.
- **Optimize Logistics:** Review and optimize transport routes, explore lower-emission transport modes, and consolidate shipments to reduce distribution impacts.