

carboncalcpcf.com

Product Carbon Footprint Report

for Product: **zsootntudz**

Total Footprint: 32.43 kg CO2e

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32.43 kg CO2e

Carbon Intensity




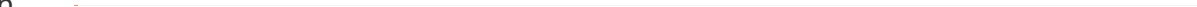

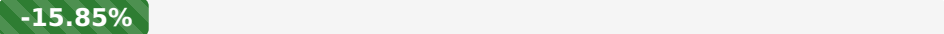
32.43 kg CO2e/unit

Top Material Hotspot


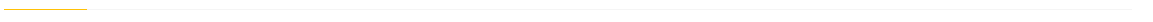
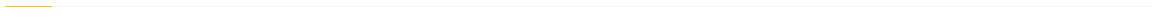


**Main Circuit Board
(15.0 kg CO2e)**

**Primary Emission Scope
Scope 3 (Use Phase)**

Lifecycle Stage Breakdown

Materials Production		52.82%
Manufacturing Energy		2.50%
Upstream Transportation		0.12%
Downstream Transportation		0.28%
Use Phase		60.13%
End-of-Life Treatment (Net Credit)		-5.14 kg CO2e

Material Carbon Impact (Top Contributors)

Main Circuit Board		15.0 kgCO2e
Lithium-ion Battery		1.25 kgCO2e
Plastic Casing (ABS)		0.7 kgCO2e
Packaging (Cardboard)		0.1 kgCO2e
Copper Wire (Internal)		0.08 kgCO2e

Highlights & Key Insights

- ✓ **Use Phase Dominance:** The product's operational energy consumption during its 3-year lifespan is the largest contributor, accounting for 60.13% of the total carbon footprint.
- ✓ **Material Hotspots:** Raw material production, particularly for the Main Circuit Board and Lithium-ion Battery, represents a significant upstream impact, making up 52.82% of emissions.
- ✓ **End-of-Life Benefits:** High recyclability (60%) and circular programs lead to a net carbon credit (-15.85%) during the end-of-life phase, demonstrating effective waste management.

Recommendations for Emissions Reduction

Enhance Energy Efficiency: Prioritize R&D to significantly reduce the product's energy consumption during the use phase.

Promote Renewable Energy: Encourage consumer use of renewable energy and integrate green energy sources into manufacturing operations.

Source Sustainable Materials: Actively seek and integrate lower-carbon alternatives for high-impact components like circuit boards and batteries.

Strengthen Circularity: Expand and optimize take-back and refurbishment programs to maximize product lifespan and material reuse.

Optimize Logistics: Continuously review and improve transportation modes and routes for both upstream and downstream supply chains to reduce emissions.

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