

carboncalcpcf.com

Product Carbon Footprint Dashboard

Product: hdqhjuwku

Total	22.75
PCF:	kgCO₂e

Total Footprint

22.75 kgCO₂e

per 1.0 unit

Carbon Intensity

22.75

kgCO₂e / unit

Top Material Hotspot

Aluminium Casing

4.00 kgCO₂e

Primary Emission Scope

Scope 3

Value Chain Emissions

Lifecycle Stage Breakdown

Use Phase	13.500 kgCO2e (59.34%)
Raw Materials	6.835 kgCO2e (30.04%)
Last-Mile Delivery	2.500 kgCO2e (10.99%)
Production Energy	0.875 kgCO2e (3.85%)
Primary Transportation	0.240 kgCO2e (1.05%)
End-of-Life (Credit)	-1.200 kgCO2e (-5.27%)

Material Carbon Impact (from BOM)

Aluminium Casing	4.00 kgCO2e (58.52%)
Printed Circuit Board	1.50 kgCO2e (21.95%)
Plastic Enclosure	1.05 kgCO2e (15.36%)
Packaging (Cardboard)	0.16 kgCO2e (2.34%)
Copper Wiring	0.125 kgCO2e (1.82%)

Key Highlights

- The **Use Phase** is the dominant hotspot, contributing approximately 59% of the total PCF due to energy consumption over the product's lifespan.
- **Raw Materials** account for about 30% of emissions, with Aluminium Casing and Printed Circuit Board being the most impactful components.
- **Last-Mile Delivery** has a significant impact (approx. 11%) despite shorter distances, indicating a need for optimized logistics.

Recommendations for Decarbonization

- **Use Phase Optimization:** Investigate energy-efficient designs, implement energy-saving modes, and educate users to reduce consumption during the product's lifespan.
- **Material Decarbonization:** Explore lower-carbon material alternatives, especially for Aluminium Casing and Printed Circuit Boards, and engage suppliers for primary emission data.
- **Logistics Efficiency:** Optimize transportation routes and modes for both upstream and downstream logistics, focusing on low-carbon fleet partnerships for last-mile delivery.
- **Circular Economy Enhancement:** Strengthen existing take-back programs and strive to increase recyclability beyond the current 80% to maximize avoided emissions.