

carboncalcpcf.com

Product Carbon Footprint Dashboard

For Product: ixdvyqyukz (1.0 unit, Cradle-to-Gate, GHG Protocol)

TOTAL CARBON FOOTPRINT

35.85

kg CO2e

Functional Unit

1.0 Unit

Top Emission Hotspot

Transport (35.25%)

Material Recyclability

70%

Prod. Renewable Energy

40%

Lifecycle Stage Breakdown

Material Acquisition & Processing (Scope 3 Upstream)	8.87 kg CO2e (24.76%)
Production (Scope 2)	1.83 kg CO2e (5.10%)
Transport (Scope 3 Upstream & Downstream)	12.64 kg CO2e (35.25%)
Use Phase (Scope 3 Downstream)	12.50 kg CO2e (34.87%)
End-of-Life (Scope 3 Downstream)	0.01 kg CO2e (0.03%)

Top Material Carbon Impact

Printed Circuit Board (PCB)	5.00 kg CO2e
Aluminium Casing	2.95 kg CO2e
ABS Plastic Enclosure	0.47 kg CO2e
Electronic Chips	0.25 kg CO2e
Copper Wiring	0.21 kg CO2e

Key Insights & Hotspots

The **Use Phase** accounts for a substantial **34.87%** of the total footprint, indicating significant energy consumption during the product's lifespan.

Transport is another major contributor at **35.25%**, heavily influenced by last-mile delivery logistics, impacting downstream emissions.

Material Acquisition contributes **24.76%**, with Printed Circuit Boards and Aluminium Casing being the primary material hotspots.

Production emissions from purchased electricity (Scope 2) are relatively lower at **5.10%**, partly due to **40% renewable energy** usage.

Recommendations for Emission Reduction

1. **Optimize Use Phase Energy Efficiency:** Redesign ixdvyqyukz for lower energy consumption and encourage power-saving user behaviors.
2. **Enhance Last-Mile Logistics:** Explore electric vehicles, optimized routing, and consolidated deliveries with low-carbon logistics partners.
3. **Source Low-Carbon Materials:** Prioritize recycled aluminium and plastics; engage suppliers to reduce embodied carbon in PCBs and electronic components.
4. **Increase Renewable Energy in Production:** Further increase the percentage of renewable energy used at manufacturing facilities.
5. **Strengthen Circularity:** Expand take-back and recycling programs, focusing on design for disassembly and material recovery.