

carboncalcpcf.com

Product Carbon Footprint Dashboard

Product: **xmnxwrpexj** Standard: **GHG Protocol** Production Country: **China**

TOTAL FOOTPRINT

328.54

kg CO2e / unit

CARBON INTENSITY

328.54

kg CO2e / unit

TOP MATERIAL HOTSPOT

Aluminum Casing

3.50 kg CO2e of 6.15 kg CO2e total materials

PRIMARY EMISSION SCOPE

Scope 3

325.91 kg CO2e (99.2% of total)

Lifecycle Stage Breakdown

Use Phase	97.21%
Purchased Goods & Services (Materials)	1.87%
Purchased Electricity (Production)	0.80%
End-of-Life Treatment	0.09%
Upstream Transportation & Distribution	0.02%

Material Composition Impact

The Bill of Materials for 'nrxnqhilw' identifies Aluminum Casing as the highest impact material. Here's a breakdown of the top contributors to material emissions (total material emissions: 6.15 kg CO2e):

Aluminum Casing	3.50 kg CO2e (~57%)
Circuit Board (PCB)	1.50 kg CO2e (~24%)
ABS Plastic Components	0.60 kg CO2e (~10%)

Key Highlights

- The **Use Phase (Category 11)** is the most significant contributor, accounting for approximately 97% of the total PCF, driven by the product's 7-year lifespan and continuous energy consumption.
- **Purchased Goods and Services (Category 1 - Materials)** represent the second-highest share of emissions, underscoring the importance of sustainable material sourcing and design choices.
- Despite a commendable **75% renewable electricity purchase**, the remaining non-renewable energy in production still contributes a notable portion to the product's carbon footprint.

Recommendations for Carbon Reduction

- **Optimize Use Phase Efficiency:** Prioritize R&D to significantly reduce the product's energy consumption during its 7-year lifespan through more efficient components, smart energy management, or alternative power sources.
- **Enhance Material Circularity:** Investigate and implement high-recycled content materials, explore closed-loop recycling systems, and design for easy disassembly and repair to minimize virgin material usage and end-of-life impacts.
- **Increase Renewable Energy Procurement:** Strive for 100% renewable energy in all production facilities to eliminate the remaining Scope 2 emissions associated with purchased electricity.