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Product Carbon Footprint: mxzmgdvnwl

24.48 kg CO₂e

Total PCF per unit

Product: **mxzmgdvnwl** Quantity: **1.0 unit** System Boundary: **Cradle-to-grave** Production Country: **China**

Standard: **GHG Protocol**

Total Footprint

24.48 kg CO₂e

Carbon Intensity

24.48 kg CO₂e/unit

Top Material Hotspot

Display Screen

(7.50 kg CO₂e)

Primary Emission Scope

Scope 3

(82.35% of total)

Lifecycle Stage Breakdown

Material Acquisition	65.56%
Manufacturing	17.65%
Use Phase	15.32%
Transportation	1.43%
End-of-Life	0.04%

Top Material Carbon Impact

Display Screen (LCD)	30.64%
ABS Plastic Casing	14.70%
Printed Circuit Board (PCB)	9.80%
Lithium-ion Battery Pack	7.35%

Key Highlights & Hotspots

- Material Acquisition (Scope 3, Category 1) is the largest contributor, accounting for **65.56%** of the total PCF, driven significantly by components like the display screen, ABS plastic, and lithium-ion battery.
- Manufacturing energy (Scope 1 & 2) contributes **17.65%** to the total footprint. The carbon intensity of the Chinese national grid remains a key factor despite 30% renewable energy usage.
- The product's Use Phase (Scope 3, Category 11) adds a substantial **15.32%** to the total PCF, primarily due to electricity consumption over its 3-year lifespan.

Recommendations for Emission Reduction

- 1. Material Optimization:** Explore alternative, lower-carbon, and recycled content materials for high-impact components, and engage suppliers for primary data and decarbonization.
- 2. Renewable Energy Sourcing:** Increase the share of renewable energy at the manufacturing facility in China beyond the current 30% through direct sourcing or PPAs.
- 3. Energy Efficiency:** Implement measures to reduce overall energy intensity in manufacturing and design the product for greater energy efficiency during its operational life.
- 4. Enhanced Circularity:** Develop and promote take-back and recycling programs to increase the effective recyclability beyond 70%, and explore design-for-disassembly.
- 5. Supply Chain Engagement:** Collaborate with logistics providers for optimized routes and lower-emission modes, and work with suppliers on their carbon reduction initiatives.