

Product Carbon Footprint for dejotfsdsj

A detailed analysis based on GHG Protocol standards.

Total PCF: 9.53 kgCO₂e per 1.0 unit

Total Footprint

9.53 kgCO₂e

For 1.0 unit, factory_gate boundary.

Carbon Intensity

8.29 kgCO₂e/kg

Per kilogram of product.

Top Material Hotspot

ABS Plastic Housing

Contributing 1.05 kgCO₂e.

Primary Emission Scope

Scope 3

(6.43 kgCO₂e)

Emission Breakdown by Lifecycle Stage

Net emissions across the product's lifecycle:

Materials	33.58%
Production	32.53%
Logistics	4.92%
Use Phase	39.35%
End-of-Life	-10.38%

Top Material Carbon Hotspots

Materials with the highest carbon impact in pre-processing:

ABS Plastic Housing	32.81%
Steel Casing	31.25%
Electronic Circuit Board	15.63%

Key Highlights

Use Phase Dominance: The product's operational lifespan contributes the most to its overall footprint, accounting for 3.75 kgCO₂e.

Material Hotspots: Material acquisition, particularly for ABS Plastic Housing and Steel Casing, represents a significant upstream impact.

Circular Economy Impact: End-of-Life treatment provides a net carbon saving of -0.99 kgCO₂e due to recycling and take-back programs.

Recommendations for Emission Reduction

1. **Optimize Use Phase Efficiency:** Focus on design improvements to reduce energy consumption during the product's 3-year lifespan.
2. **Enhance Sustainable Sourcing:** Explore lower-carbon materials or increased recycled content for components like plastics and metals.
3. **Increase Renewable Energy Adoption:** Further increase renewable energy usage at the China manufacturing facility to reduce Scope 2 emissions beyond the current 40%.
4. **Strengthen Circular Economy:** Expand the existing take-back program to recover more materials for reuse and high-value recycling.
5. **Optimize Logistics:** Implement more efficient transportation routes, modes, and loading strategies for both upstream and downstream journeys.