

carboncalcpcf.com

Product Carbon Footprint Dashboard

Product: nqlmzunxlh

Total Lifetime Footprint: 47.06 kgCO₂e/unit

TOTAL LIFETIME FOOTPRINT

47.06

kgCO₂e per unit

Estimated emissions across all lifecycle stages.

CRADLE-TO-GATE PCF

27.35

kgCO₂e per unit

Emissions up to the factory gate.

TOP EMISSION HOTSPOT

Use Phase

25.00 kgCO₂e

Product energy consumption during its lifespan.

PRIMARY EMISSION SCOPE

Scope 3

~94% of total

Indirect emissions from value chain activities dominate.

Emissions by Lifecycle Stage

Material Acquisition & Pre-processing	24.13 kgCO2e (46.1%)
Manufacturing (Scope 2)	2.85 kgCO2e (5.4%)
Upstream Transport	0.37 kgCO2e (0.7%)
Use Phase	25.00 kgCO2e (47.8%)
End-of-Life (Net Reduction)	-5.29 kgCO2e

- Material Acquisition & Pre-processing (24.13 kgCO₂e) and Use Phase (25.00 kgCO₂e) are the dominant emission hotspots, together accounting for the majority of the product's lifetime footprint.
- Manufacturing electricity, despite 50% renewable usage, contributes 2.85 kgCO₂e, indicating further potential for decarbonization through increased green energy sourcing.
- The established take-back program and high recyclability lead to a net reduction of -5.29 kgCO₂e in the End-of-Life stage, demonstrating positive circular economy impacts.

Recommendations for Decarbonization

- ****Enhance Primary Data Collection:**** Prioritize obtaining specific, primary data for all material inputs and actual energy consumption at the China manufacturing facility.
- ****Material Optimization:**** Explore lower-carbon material alternatives or increase recycled content for high-impact components like Aluminum Alloy and ABS Plastic.
- ****Energy Efficiency in Manufacturing:**** Invest in energy-efficient processes and expand renewable energy procurement at the production site to further reduce Scope 2 emissions.
- ****Use Phase Decarbonization:**** Design for even greater energy efficiency during the product's use phase and educate end-users on energy-saving practices.
- ****Strengthen Circularity:**** Continue investing in and promoting take-back and recycling programs to maximize material circularity and maintain EoL benefits.
- ****Supplier Engagement:**** Collaborate with supply chain partners to obtain their PCF data or primary activity data, enhancing the accuracy of upstream Scope 3 emissions.

Generated by carboncalcpcf.com on June 2, 2026. Data based on GHG Protocol Product Standard.