

html

carboncalcpcf.com

Product Carbon Footprint Dashboard

Product: tdpqjsrfy

Total PCF: **109.04 kg CO₂e**

per unit

TOTAL FOOTPRINT

109.04 kg CO₂e

CARBON INTENSITY

25.36 kg CO₂e/kg

based on 4.3 kg raw material mass

PRIMARY EMISSION HOTSPOT

Use Phase

59.9% of total PCF

PRIMARY EMISSION SCOPE

Scope 3

94.6% of total PCF

Emissions by Lifecycle Stage

Use Phase	59.9% (65.15 kg CO2e)
Transportation	23.7% (25.79 kg CO2e)
Materials Acquisition & Production	10.3% (11.20 kg CO2e)
Manufacturing	5.7% (6.21 kg CO2e)
End-of-Life	0.6% (0.69 kg CO2e)

Material Carbon Impact

Steel Frame	5.0 kg CO2e
Plastic Casing	4.2 kg CO2e
Electronic Board	1.5 kg CO2e
Packaging (Cardboard)	0.5 kg CO2e

Key Insights & Hotspots

- The **Use Phase** is the dominant emission hotspot, accounting for nearly 60% of the total product carbon footprint due to ongoing energy consumption over the product's 7-year lifespan.
- **Downstream Transportation**, particularly last-mile delivery by courier van, contributes significantly at 22.9%, highlighting logistics as a critical area for optimization.
- While less dominant, **Materials Acquisition & Production** still represents 10.3% of emissions, with the Steel Frame being the single largest material contributor.

Recommendations for Decarbonization

1. **Enhance Use Phase Efficiency:** Innovate product design to drastically reduce energy consumption during operation and explore providing renewable energy solutions for consumers.
2. **Optimize Logistics & Last-Mile Delivery:** Investigate and switch to lower-emission transport modes (e.g., electric vehicles, rail) and optimize routes for inbound and outbound shipments.
3. **Sustainable Material Sourcing:** Prioritize increasing the use of recycled content for components like the Steel Frame and Plastic Casing, and engage with suppliers for lower-carbon alternatives.
4. **Strengthen Circular Economy Initiatives:** Expand and promote existing take-back programs and continuously improve product recyclability through design for disassembly.