carboncalcpcf.com

Product Carbon Footprint Dashboard

Product: fzydujvpmf (1.0 unit) for vkdiftpvvh

Total PCF: 29.07 kgCO2e

Total Carbon Footprint

29.07 kgCO2e

Primary Emission Hotspot

Use Phase (65.4%)

Top Material Hotspot

Aluminum Casing (7.50 kgCO2e)

Primary GHG Scope

Scope 3 (97.3%)

Lifecycle Stage Breakdown

Use Phase	**19.00 kgCO2e**
Materials Acquisition & Pre-processing	**9.44 kgCO2e**
Manufacturing/Production	**0.78 kgCO2e**
Transport	**0.19 kgCO2e**
End-of-Life (Credit)	**-0.33 kgCO2e**

Material Carbon Impact

Aluminum Casing	**7.50 kgCO2e**
PC Plastic Components	**1.05 kgCO2e**
Electronic Board	**0.50 kgCO2e**
Copper Wiring	**0.20 kgCO2e**
Packaging (Cardboard)	**0.19 kgCO2e**

Key Highlights

- The **Use Phase** is the dominant contributor, accounting for ~65.4% of the total carbon footprint, driven by electrical energy consumption over its 5-year lifespan.
- **Material Acquisition**, particularly for high-impact materials like Aluminum, is the second largest contributor (~32.5%), highlighting the importance of sustainable sourcing.
- A strong **End-of-Life recycling rate (70%)** and take-back programs provide a notable carbon credit, effectively reducing the overall footprint by 1.15%.

Recommendations for Emission Reduction

Optimize Use Phase Efficiency:

- Invest in R&D to significantly reduce the product's energy consumption during operation.
- Explore design for lower-carbon energy sources or integrated energy harvesting.

Enhance Material Circularity and Sourcing:

- Incorporate higher percentages of recycled content, especially for Aluminum and PC Plastic.
- Collaborate with suppliers for lower embodied carbon materials (e.g., renewable energy-produced aluminum).

Strengthen Circular Economy Initiatives:

- Expand the existing Product Take-back Program to maximize material recovery.
- Investigate opportunities for product refurbishment, repair, and remanufacturing.

Further Decarbonize Production:

- Increase renewable energy usage at the manufacturing facility beyond the current 50%.
- Implement energy efficiency measures within the factory to reduce energy intensity.