

carboncalcpcf.com

# rfinzoroj Carbon Footprint

Product Carbon Footprint Report by uzxhoyylpr

Total PCF  
**28.42**  
kgCO2e/unit

Functional Unit

**1.0 unit**

System Boundary

**Factory Gate**

Top Hotspot

**Use Phase (~53%)**

Primary Scope  
**Scope 3 Downstream**

## Emission Breakdown by Lifecycle Stage



- Scope 1 (Direct)
- Scope 2 (Purchased Energy)
- Scope 3 Upstream (Materials, Inbound Transport)
- Scope 3 Downstream (Use, EoL, Outbound Transport)

## Material Carbon Impact (Upstream Scope 3)



- Silicon Microchip
- Aluminum Casing
- Li-ion Battery
- Polycarbonate Housing
- Copper Wiring
- Packaging

## Key Insights & Hotspots

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- **Use Phase Dominance:** The product's operational lifespan accounts for approximately 53% of its total carbon footprint.
- **Material Impact:** Raw material extraction and processing, especially for Silicon Microchips and Aluminum Casing, contribute significantly (around 41%) to upstream emissions.
- **Comprehensive Scope 3:** The analysis achieves ~95% coverage for Scope 3 emissions, aligning with the GHG Protocol's 2026 LSR Standard update.

## Recommendations for Reduction

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- **Energy Efficiency in Use:** Optimize product design for ultra-low energy consumption and educate users on energy-saving practices.
- **Sustainable Materials:** Prioritize lower-carbon alternatives and increased recycled content for high-impact components.
- **Strengthen Circularity:** Enhance existing take-back programs and explore new circular economy models for material recovery and reuse.
- **Renewable Energy Adoption:** Further increase renewable energy use in manufacturing facilities and encourage suppliers to do the same.

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