carboncalcpcf.com

Product Carbon Footprint for pyxvjkdjyh

63.28 kg CO2e

TOTAL PRODUCT FOOTPRINT (PER UNIT)

Report generated by gxwylshtsv for repfltkqvq, adhering to GHG Protocol.

63.28

TOTAL FOOTPRINT (KG CO2E)

63.28

CARBON INTENSITY (KG CO2E / UNIT)

Use Phase

PRIMARY EMISSION HOTSPOT

Steel Casing

TOP MATERIAL IMPACT

Lifecycle Stage Breakdown

Use Phase	54.75 kg CO2e (86.53%)
Materials Acquisition	7.19 kg CO2e (11.36%)
End-of-Life Treatment	1.00 kg CO2e (1.58%)
Production Energy	0.21 kg CO2e (0.33%)
Logistics	0.125 kg CO2e (0.20%)

Material Carbon Impact (Total: 7.19 kg CO2e)

Steel Casing	5.0 kg CO2e (69.54%)
Circuit Board (PCB)	1.2 kg CO2e (16.69%)
Plastic Enclosure	0.9 kg CO2e (12.52%)
Copper Wiring	0.09 kg CO2e (1.25%)

Key Highlights & Carbon Hotspots

Dominant Use Phase Impact: The product's operational life accounts for approximately 86.5% of its total carbon footprint, making energy efficiency a critical factor.

Material Sourcing Matters: Materials acquisition and pre-processing contribute about 11.4%, with the steel casing being the most carbon-intensive component within the Bill of Materials.

Circularity Opportunities: End-of-Life emissions, though smaller, still represent 1.6% of the total, suggesting potential for further enhancing recyclability and circular economy initiatives.

Recommendations for Reduction

Optimize Use Phase Energy Efficiency: Redesign for lower energy consumption during lifespan, explore integration with renewable energy.

Sustainable Material Sourcing: Investigate lower-carbon alternatives for high-impact components like steel casing and PCBs.

Enhance Circularity: Increase recyclability beyond 60% and expand product refurbishment/reuse programs.

Supply Chain Engagement: Collaborate with suppliers to reduce upstream transport and material processing emissions.