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Product Carbon Footprint:

hnkrlnyxms

Company: dzemlifieg | **Standard:** GHG Protocol | **Boundary:** Factory Gate

Total Footprint (1 unit)

22.03 kgCO₂e

Overall Product Lifetime

Carbon Intensity

22.03

kgCO₂e per unit

Top Material Hotspot

Aluminum Frame

1.60 kgCO₂e from BOM

Primary Emission Scope

Scope 3

13.51 kgCO₂e (Value Chain)

Emission Hotspots & Highlights

- **Use Phase Dominance:** The product's energy consumption over its 3-year lifespan accounts for the largest portion of emissions (9.00 kgCO₂e).
- **Manufacturing Impact:** Despite 30% renewable energy, production in China contributes significantly (8.52 kgCO₂e) due to grid intensity.
- **Material Footprint:** Raw material acquisition and processing contribute substantially (4.89 kgCO₂e), with Aluminum Frame and PCB being key contributors.

Recommendations for Emission Reduction

1. Decarbonize the Use Phase:

- Reduce the product's energy consumption during its use.
- Encourage users to power the product with renewable energy.

2. Enhance Manufacturing Efficiency & Renewable Energy Adoption:

- Invest in on-site renewable energy or certified renewable energy credits (RECs) for the manufacturing facility.
- Implement energy efficiency measures in production processes.

3. Optimize Material Selection:

- Investigate alternative materials with lower carbon footprints for components (e.g., plastic casing, aluminum frame, PCB).
- Increase the use of recycled content in materials.

4. Strengthen Circular Economy Initiatives:

- Expand the existing take-back program and increase its return rate beyond 15%.
- Explore opportunities for product repair, refurbishment, or remanufacturing.
- Improve design for disassemblability and material sorting to maximize recyclability.