

Environmental product data sheet

Zebra ZEC500 Enterprise Computer



Sustainability highlights

The ZEC500 Enterprise Computer from Zebra Technologies (Zebra) is EPEAT Silver certified, designed with 35% post-consumer recycled plastic, packaged in 90% biodegradable materials, and annually consumes 38% less energy than the ENERGY STAR Maximum Allowable Typical Energy Consumption (TEC).

Life Cycle Assessment (LCA) methodology

Zebra performed an LCA in accordance with International Organization for Standardization 14040 and 14044 guidance. The functional unit of this study is one (1) ZEC500 Enterprise Computer¹ used over an assumed five (5) year lifespan, and the system boundary extends from cradle to grave. Unless otherwise specified, environmental characterization factors are taken from the ecoinvent version 3.11 database accessed via SimaPro. The Global Warming Potential (GWP) 100 2021 v1.03 methodology from the Intergovernmental Panel on Climate Change is used to calculate the carbon footprint of the ZEC500.

Data

Data was collected through various Zebra and supplier channels. Detailed assembly data consisting of over 3,600 lines of materials was obtained from the final assembly supplier, as well as facility energy consumption and waste, which was normalized per one ZEC500 device. Use phase electricity consumption data was obtained by testing the product against the ENERGY STAR TEC, a power consumption test at the system level. Open-source grid emissions data for 2025 from Carbon Database Initiative was used for country-specific electricity grid carbon intensity.

Results

The GWP from a single ZEC500 device, over its 5-year cradle-to-grave lifecycle, was estimated to be 179 kg CO₂e. See the pie chart to the right for a breakdown of impacts within the system boundary.

Assumptions and limitations

- Transportation of raw materials are modeled using "market for" datasets in ecoinvent.
- Packaging and transportation of subcomponent materials are not included due to lack of data availability.
- Impacts from cloud computing and associated data storage during product use are not included in this study.
- Impacts from use phase electricity consumption are modeled based on aggregated, country-specific characterization factors, weighted according to percentage of product sales within each country.
- The disposal scenario for this study was assumed to be 100% landfill, representing a conservative estimate of environmental impacts, despite the existence of Zebra's refurbishment and recycling programs.

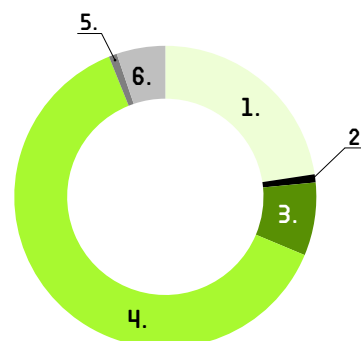
Disclaimers

- This study represents an attributional LCA and does not evaluate consequential impacts.
- These LCA results are specific to Zebra's products and assumptions. LCAs vary widely by scope, data, and methodology; direct comparisons with other companies' LCAs may be misleading. Zebra does not endorse such comparisons and accepts no responsibility for interpretations beyond this context.
- This LCA is non-comparative and therefore does not trigger the requirements for a critical review as defined in ISO 14040, 14044, and 14071. However, a critical review has been performed by a third party LCACP verifier.
- Zebra is not responsible for the quality assurance and quality control of supplier-provided data.
- No normalization, grouping, or weighting of results were conducted.
- While GWP has been modeled in this LCA study, the results herein cannot be utilized to estimate or project impacts relating to other LCA impact metrics.
- Results described in this document are relative expressions and do not predict endpoint impacts, the exceeding of thresholds, safety margins, or risks.



Product carbon footprint

1. Use (26%)
2. Disposal (<1%)
3. Raw materials (9%)
4. Manufacturing (57%)
5. Packaging (<1%)
6. Downstream transportation (6%)



1. This LCA study is based on the ZEC500 Enterprise Computer Premium version with Extended Temperature Range.