CARBON FOOTPRINT REPORT

Horizon T10500

Made with better materials

• 90% materials can be reused or recycled

• Post-Consumer Recycled Plastic in Chassis up to 35%

Energy Efficient

• Energy Star Standard qualified

• 80 PLUS® Gold PSU

• Compliant to the Canadian Electrical Code

Responsible packaging

• Recyclable packaging materials and made by recycled material

Our green company performance supports our sustainability initiatives and meets our customer needs

Applying life cycle assessment is essential to identify and quantify the environmental impact of our products. Therefore, we consider the environmental impacts of our products at every stage.

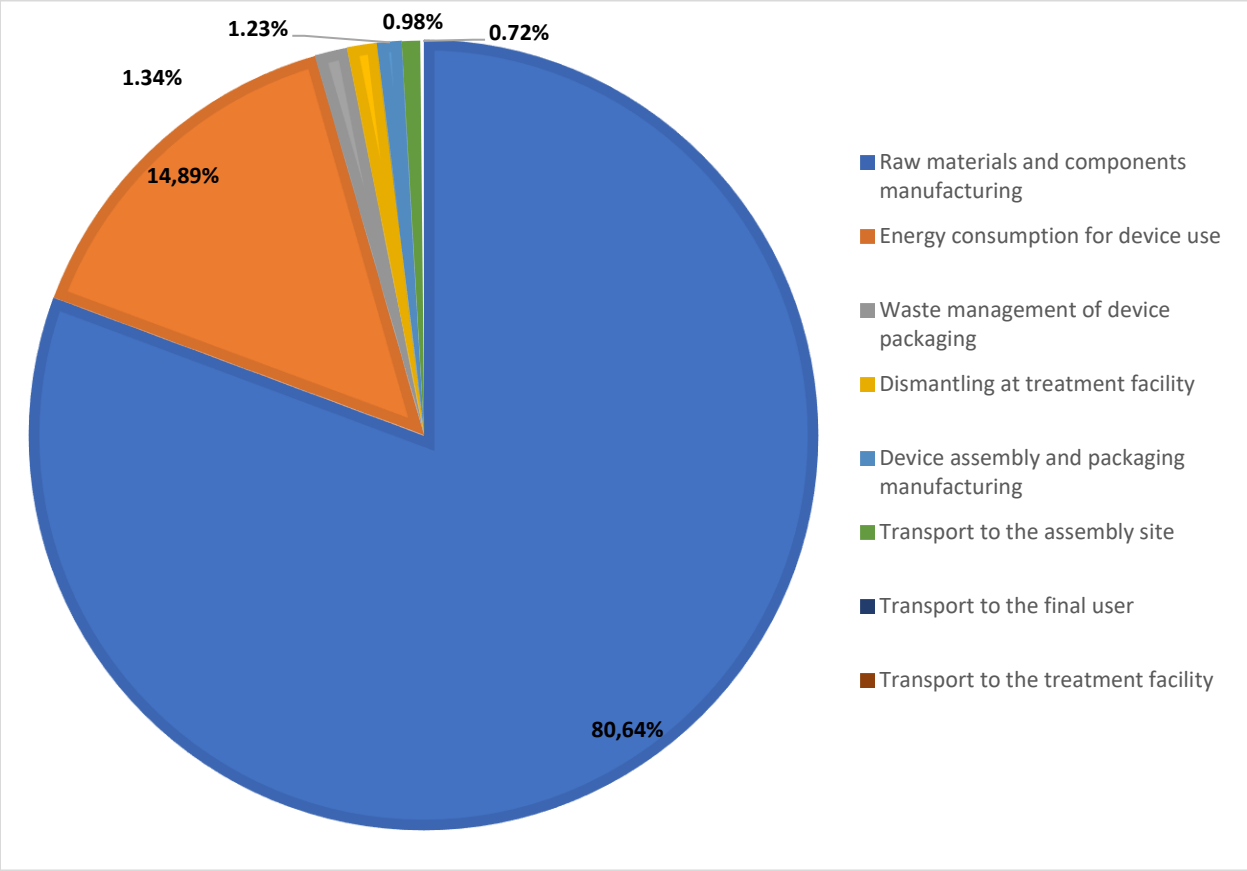
Lifetime (years)	Weight (kg)	Energy Demand (kWh) per year	Assembly Location
5	6.36	96.7	Canada

Data Quality Assessment and Uncertainty Explanation for the LCA of CIARA's Devices

Criterion	Evaluation
Geographical representativeness	The primary data represents the life cycle stages of the device in East-Asia and Canada. The secondary data was selected in such a way that their geographical context is as representative as possible. Regarding the processes related to resource consumption for device assembly in Quebec (Canada), data representative of the Quebec context was used. As for the processes related to electricity consumption during device use, data representing the context of each Canadian province was used. The processes associated with packaging manufacturing; the best available data was used following this order of priority: Quebec (Canada)/World. In the case of processes for component and material manufacturing taking place in Est-Asia, data representative of the global market was used. The data is considered to have a good geographical representativeness.
Temporal representativeness	Life cycle inventory data is taken from the ecoinvent version 3.7 (2020) database. This version is based on version 3.0 which has been released annually since 2013. It should be noted that some version 3.0 data comes from earlier versions (1991-2012). The device components are based on secondary data dating from 2002 which the most recent available data in ecoinvent 3.7 (more than 10 years). Thus, the data is considered average in terms of temporal representativeness.

Technological representativeness	The primary data is representative of the technologies used during the device's life cycle. The secondary data was selected to represent these technologies as accurately as possible. This included the energy mix, the device's components and transport. The secondary data used to model the components are based on those of the "computer production, desktop", this process dates from 2002 and is the most recent data on computer components available in ecoinvent 3.7 (more than 10 years). Because of this, the secondary data is deemed to have an average technological representativeness.
Completeness	All processes whose mass and energy flow are above the cut-off threshold (1%) were included in the LCA.

Product Carbon Footprint Information



Contribution of each life cycle stage to GWP impacts- Astro Horizon T10500

Contribution of each life cycle stage and process to the GWP impacts of T10500

Process	Contribution	Amount	Unit
T10500	**100.00%**	**230.19**	**kg CO2 eq**
Raw materials and components manufacturing	**80.64%**	**185.62**	**kg CO2 eq**
printed wiring board production, mounted mainboard, desktop computer, Pb containing	51.69%	118.98	kg CO2 eq
power supply unit, for desktop computer	14.21%	32.72	kg CO2 eq
integrated circuit, memory type	09.56%	22.01	kg CO2 eq
steel, unalloyed	03.09%	7.10	kg CO2 eq
acrylonitrile-butadiene-styrene copolymer production	00.71%	1.64	kg CO2 eq
corrugated board box production	00.31%	0.70	kg CO2 eq
polyethylene production, linear low density, granulate	00.24%	0.54	kg CO2 eq
aluminium production, primary, cast alloy slab from continuous casting	00.20%	0.45	kg CO2 eq
hot rolling, steel	00.17%	0.38	kg CO2 eq
injection moulding	00.15%	0.35	kg CO2 eq
polymer foaming	00.11%	0.24	kg CO2 eq
hard disk drive production, for desktop computer	00.09%	0.19	kg CO2 eq
EUR-flat pallet production	00.06%	0.15	kg CO2 eq
metal working, average for aluminium product manufacturing	00.04%	0.08	kg CO2 eq
polyethylene production, high density, granulate	00.01%	0.02	kg CO2 eq
market for polypropylene, granulate	00.01%	0.016	kg CO2 eq
treatment of non-Fe-Co-metals, from used Li-ion battery, pyrometallurgical processing	00.00%	0.00000	kg CO2 eq
Energy Consumption for device use	**14.89%**	**34.28**	**kg CO2 eq**
electricity, low voltage	14.89%	34.28	kg CO2 eq
Waste management of device packaging	**01.34%**	**3.07**	**kg CO2 eq**
waste paperboard | waste paperboard	01.23%	2.83	kg CO2 eq
waste plastic, mixture	00.09%	0.19	kg CO2 eq
transport, freight, lorry 16-32 metric ton, EURO4	00.02%	0.03	kg CO2 eq
market for waste wood, untreated	00.01%	0.01	kg CO2 eq
Dismantling at manual treatment facility	**01.23%**	**2.82**	**kg CO2 eq**
used desktop computer	01.23%	2.82	kg CO2 eq
Device assembly and packaging manufacturing	**00.98%**	**2.24**	**kg CO2 eq**
corrugated board box production	00.31%	0.71	kg CO2 eq
polyethylene production, linear low density, granulate	00.24%	0.54	kg CO2 eq
electricity, low voltage	00.17%	0.40	kg CO2 eq
polymer foaming	00.10%	0.22	kg CO2 eq
EUR-flat pallet production	00.06%	0.15	kg CO2 eq

heat and power co-generation, natural gas, conventional power plant, 100MW electrical	00.04%	0.09	kg CO2 eq
transport, passenger car, large size, petrol, EURO 4	00.03%	0.06	kg CO2 eq
machine operation, diesel, >= 74.57 kW, generators	00.01%	0.03	kg CO2 eq
tap water	00.01%	0.02	kg CO2 eq
transport, freight, lorry 16-32 metric ton, EURO4	00.00%	0.007	kg CO2 eq
Transport to the assembly site	**00.72%**	**1.64**	**kg CO2 eq**
transport, freight, sea, container ship	00.56%	1.28	kg CO2 eq
transport, freight, lorry 16-32 metric ton, EURO4	00.16%	0.36	kg CO2 eq
Transport to the final user	**00.17%**	**0.38**	**kg CO2 eq**
transport, freight, lorry 16-32 metric ton, EURO4	00.17%	0.38	kg CO2 eq
Transport to manual treatment facility	**00.05%**	**0.10**	**kg CO2 eq**
transport, freight, lorry 16-32 metric ton, EURO4	00.05%	0.10	kg CO2 eq

Greenhouse Gas Equivalencies

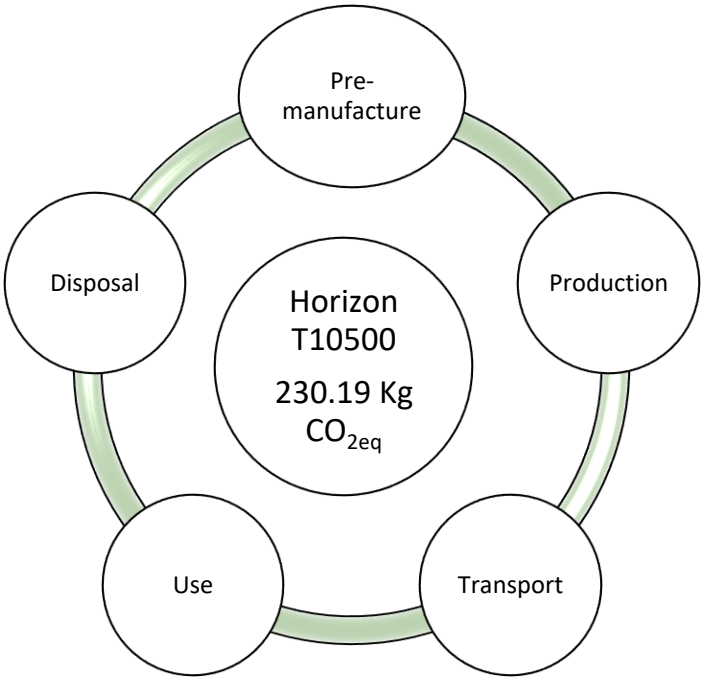
577 Miles driven by an average passenger vehicle

3.79 tree seedlings grown for 10 years
0.283 acres of U.S. forests in one year

8.7 Incandescent lamps switched to LEDs

At CIARA, we commit to improve our environmental footprint and help contribute to a more sustainable world.

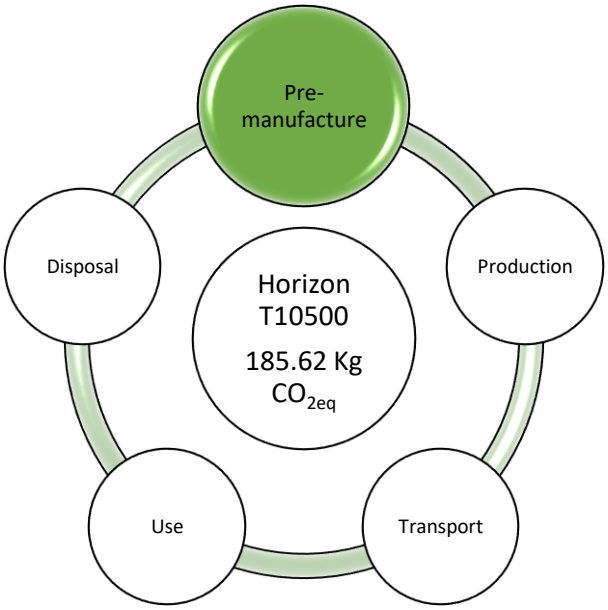
We commit to continually reduce the environmental impact of our products at every stage.



Horizon T10500 life cycle

Pre manufacture

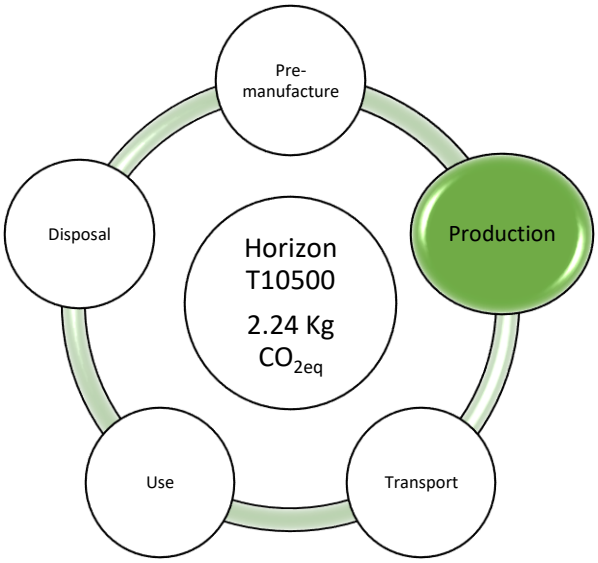
CIARA is committed to the responsible sourcing of minerals, suppliers must conduct their business in accordance with the CIARA RBA Supplier Code of Conduct and be compliant with applicable laws and regulations regarding conflict minerals.



Since some of our suppliers use minerals from multiple sources worldwide, we seek to ensure that they conform with our ethics and Code of Conduct.

The use of natural resources, including water, fossil fuels, minerals and virgin forest products has to be maintained by practices such as modifying production, maintenance and facility processes, materials substitution, re-use, conservation, recycling or other means.

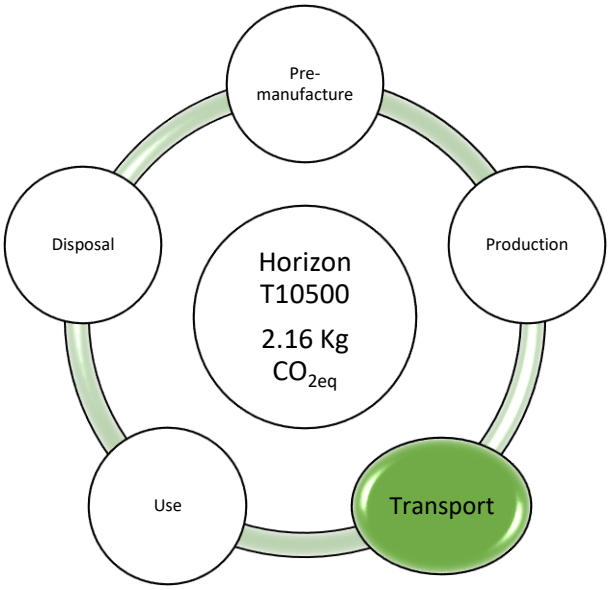
Production



We manufacture eco-friendly products and use clean renewable energy and power efficient facilities. CIARA is a member of Hydro-Québec Energy Saver's Circle. Through this membership we aspire to monitor and share our energy efficiency initiatives. At CIARA, we recycle more than 90% of all the used materials during the manufacturing process. In addition, we replace most of the foam inserts with pulp and paper products and reused packaging materials. Memory, CPU, HDD, and SSD are transformed into the plastic pellets to support our recycling initiatives. We now use a fleet of Automated Guided Vehicle Systems to manage IT components in production. These vehicles contribute to our sustainable growth since they resist to contamination and operate emission and noise free.

Transport

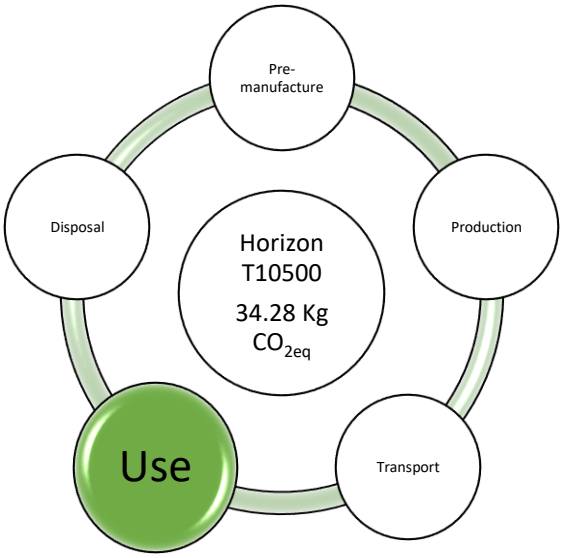
Transportation footprint is highly considered in production phase as well as in the delivery of finished products to our clients.



To decrease our transportation footprint, we reduced the number of our transportation vehicles by 70% between 2018 and 2021.

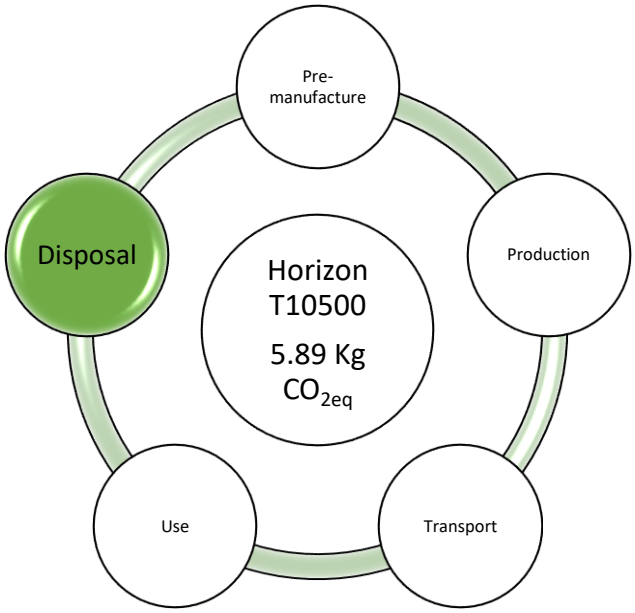
At Ciara, we ensure that our vehicles and other transportation means conform to applicable laws and regulations. Therefore, we always look for the alternatives such as using renewable energies, less vehicles and encouraging the share of the renewable energy.

Use



At this stage, the impact is calculated for devices that are used for an average of 6 hours a day. The energy-saving design of our product meets the requirements of the latest Energy Star Standard (ESS) 8.0 since the average energy consumption is lower than the ESS. At Ciara, we design our products to be long lasting, safe and compliant with Canadian Electrical Code and all other applicable regulation.

Disposal



We consider that the devices are dismantled and recycled but the environmental benefits of recycling were not considered in the system boundary. Landfilling is considered for the packaging.

Carbon footprint Targets

At CIARA, we continue making progress to reduce our product's contribution to climate change by enhancing our use of recycled materials and renewable energy. CIARA is committed to use carbon life cycle analysis to detect opportunities in order to reduce our product greenhouse gas emissions. We work with recyclers to define adequate disposal treatment methods and recycling. To improve our packaging, we aim to eliminate plastics and increase the use of recycled materials. Our products are designed to be energy efficient and more durable.