Stadia Controller
Product environmental report

Model H2B,
introduced November 19, 2019
Environmental sustainability at Google

At Google, operating in an environmentally sustainable way has been a core value from the beginning. As our business has evolved to include the manufacturing of electronic products, we’ve continually expanded our efforts to improve each product’s environmental performance and minimize Google’s impact on the world around us.

This report details the environmental performance of Stadia Controller over its full life cycle, from design and manufacturing through usage and recycling.

Product highlights

Stadia Controller is designed with the following key features to help reduce its environmental impact:

- PVC-free¹
- Brominated flame retardant-free¹
- External enclosure for Clearly White and Wasabi contains 48% post-consumer recycled plastic²
- External enclosure for Just Black and Midnight Blue contains 8% post-consumer recycled plastic²
- 97% paper and fiber-based packaging
- Power adapter with Level VI efficiency rating
Greenhouse Gas (GHG) emissions

The production, transportation, use, and recycling of electronic products generate GHG emissions that can contribute to rising global temperatures. Google conducts a life cycle assessment on products to identify materials and processes that contribute to GHG emissions, with the goal of minimizing these emissions.

Estimated GHG Emissions for Stadia Controller

Total GHG emissions assuming four years of use:
20 kg CO₂ e

Energy efficiency

Stadia Controller uses an energy efficient DOE Level VI power adapter and incorporates power-management software to maximize battery-charging efficiency and extend battery life during use.

Energy efficiency of Stadia Controller

<table>
<thead>
<tr>
<th>Mode</th>
<th>115 V, 60 Hz</th>
<th>230 V, 50 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power adapter average efficiency</td>
<td>80.7%</td>
<td>80.2%</td>
</tr>
<tr>
<td>Power adapter no-load power</td>
<td>0.03 W</td>
<td>0.03 W</td>
</tr>
<tr>
<td>Standby (battery maintenance mode) power</td>
<td>0.05 W</td>
<td>0.05 W</td>
</tr>
<tr>
<td>Annual energy use estimate</td>
<td>1 kWh</td>
<td>1 kWh</td>
</tr>
<tr>
<td>Annual cost of energy estimate</td>
<td>US$0.13</td>
<td>€0.22</td>
</tr>
</tbody>
</table>
Materials used in Stadia Controller

Total materials: 268 g

Recycled materials
- External enclosure for Clearly White and Wasabi contains 48% post-consumer recycled plastic
- External enclosure for Just Black and Midnight Blue contains 8% post-consumer recycled plastic

Battery
- Lithium-ion polymer
- Free of cadmium, lead, and mercury

Restricted substances
Historically, many electronic devices contained materials such as lead, mercury, cadmium, and brominated flame retardants that pose environmental and health risks. We designed Stadia Controller to meet global regulations that restrict harmful substances, including the following:

- European RoHS Directive restrictions on lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB), polybrominated diphenyl ethers (PBDE), and four different phthalates (DEHP, BBP, DBP, DIBP)
- European Battery Directive restrictions on lead, mercury, and cadmium batteries
- European Packaging Directive restrictions on lead, mercury, cadmium, and hexavalent chromium in packaging
**Voluntary substance restrictions**

Stadia Controller also meets the following voluntary substance restrictions:

- PVC-free
- Brominated flame retardant-free

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**Packaging**

Packaging for Stadia Controller uses 97% paper and fiber-based materials. We have designed Stadia Controller packaging to minimize its weight and volume, which helps conserve natural resources and allows more devices to be transported in a single shipping container.

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**Packaging materials for Stadia Controller (U.S. configuration retail packaging)**

<table>
<thead>
<tr>
<th>Material</th>
<th>Mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper / fiber-based</td>
<td>300 g</td>
</tr>
<tr>
<td>Plastic</td>
<td>3 g</td>
</tr>
<tr>
<td>Total packaging</td>
<td>303 g</td>
</tr>
</tbody>
</table>

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**Ethical sourcing**

Google and its subsidiaries are committed to ensuring that working conditions in our operations and in our supply chains are safe, that all workers are treated with respect and dignity, and that business operations are environmentally responsible and ethically conducted. Learn more about our expectations for manufacturing partners in the Google Supplier Code of Conduct, our 2019 Responsible Supply Chain Report, and our Conflict Minerals Policy.
Learn More

For more information about our environmental sustainability initiatives—including case studies, white papers, and blogs—please see our Sustainability website and our 2019 Environmental Report.

Learn how to recycle your used device in the Google Store Help section of our website.

Endnotes

1. Google defines its restrictions on harmful substances, including definitions for what Google considers to be “free of,” in the Google Restricted Substances Specification.

2. External enclosure consists of front and rear housings, thumbsticks, trigger, and buttons.

3. GHG emissions estimates are calculated in accordance with ISO 14040 and ISO 14044 requirements and guidelines for conducting life cycle assessments, and include the production, transportation, use, and recycling of the product, accessories, and packaging.

4. Level VI is the highest available efficiency rating for power adapters as defined in the International Efficiency Marking Protocol for External Power Supplies Version 3.0.

5. Average efficiency of power adapter when input and output power is measured at 25%, 50%, 75%, and 100% of rated output current and averaged. Tested in accordance with the U.S. Department of Energy Uniform Test Method for Measuring the Energy Consumption of External Power Supplies.

6. Power measured when the power adapter is plugged into an AC power source without being connected to the product. Tested in accordance with the U.S. Department of Energy Uniform Test Method for Measuring the Energy Consumption of External Power Supplies.

7. Power measured with controller in standby mode with fully charged battery and attached to the power adapter. Tested in accordance with the U.S. DOE Uniform Test Method for Measuring the Energy Consumption of Battery Chargers. Maintenance mode calculated as average power over last four hours of 24-hour test.

8. Estimated energy use is based on one full battery charge per week with the controller attached to the power adapter for 12 hours (e.g. overnight) and the power adapter plugged into AC power without the device attached (i.e. no-load) for the remainder of the week. Tested in accordance with the U.S. DOE Uniform Test Method for Measuring the Energy Consumption of Battery Chargers.


10. The average household cost of energy for consumers in the EU-28 was €0.22 per kWh in the first half of 2019 (source: Eurostat Statistics Explained).

11. Product material masses are for Stadia Controller only. For the U.S. configuration, an additional 32 g of electronic accessories can be included in-box.