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Life Cycle Assessment: Western Digital WD GreenTM SATA Solid State Drive (SSD)

Product Description:

Model	WDS240G2G0A-00JH30
Product Type	Client SSD
Product Weight	35.8 gm
Packaging Weight	76.4 gm
Storage Capacity	240 Gigabyte[i]
Technology	BiCS4
From Factor	2.5"/7mm cased
Application	Client (Laptop)

LCA Calculation Basis:

Standard	ISO 14040:2006 and 14044:2006
LCA Software	GaBi ts [Version 10.0.0.71]
Impact Assessment Method	Life cycle impact assessment classification and characterization factors according to the Intergovernmental Panel on Climate Change (IPCC) 5th Assessment Report for Global Warming Potential (GWP), with 100 years of time horizon for kg CO_2 equivalent (carbon footprint)
Databases	GaBi 2020 LCI and ecoinvent 3.6
System Boundary	The system boundaries include: • Manufacturing (extraction of raw materials, upstream material preparation, component manufacturing, subassembly manufacturing and final assembly of product) • Distribution to customer located in USA • Five years of product use • End-of-life treatment according to waste management statistics in the customer country
Validation of Study	Validated through 3rd party critical review (EarthShift Global, LLC)

i One gigabyte (GB) is equal to one billion bytes. Actual user capacity may be less due to operating environment.
ii *Absolute climate change impact values & contribution details for each phase will be available upon request

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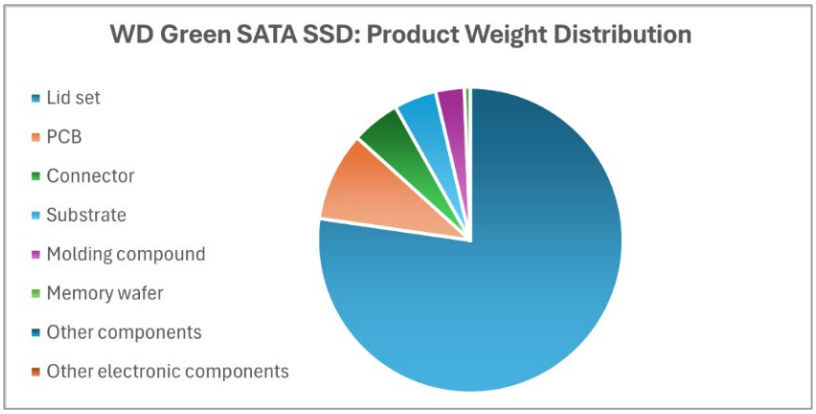
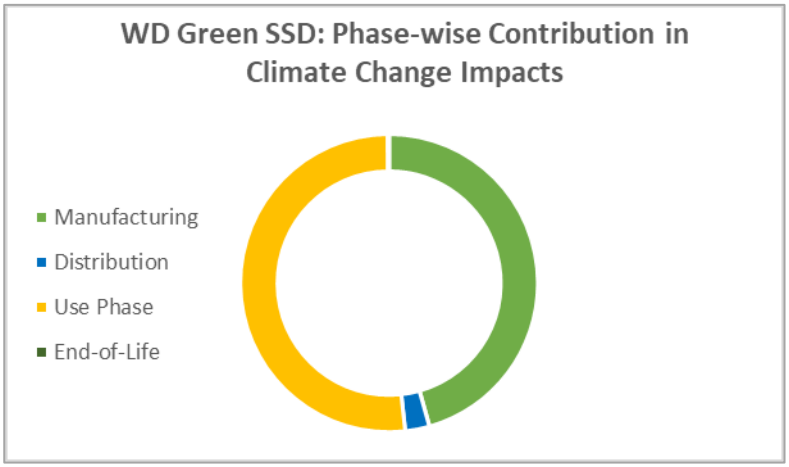
Components Used:

The pie chart shows weight contribution of various components of the WD Green SATA SSD. Lid set contributes 77% of the weight, followed by Printed Circuit Board (PCB) [9%], Connector [5%], Substrate [5%], Molding compound [3%] and Memory wafer [1%]. Other electronic and non-electronic components weight is less than 1%.



Breakdown of Carbon Footprint by Life Cycle Stages[ii]:

Climate change impacts are dominated by the device use phase [51%], followed by manufacturing [46%], distribution [3%] and end-of-life [<1%]. Use phase impacts are primarily attributable to energy consumed by the product during its useful life. Manufacturing impacts are driven largely by resource consumption during wafer fabrication processes, which distribution phase impacts are focused on transportation of the product from the manufacturing location to the customer location.



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