

Refrigerator

Product Category: Appliance

Specifications:

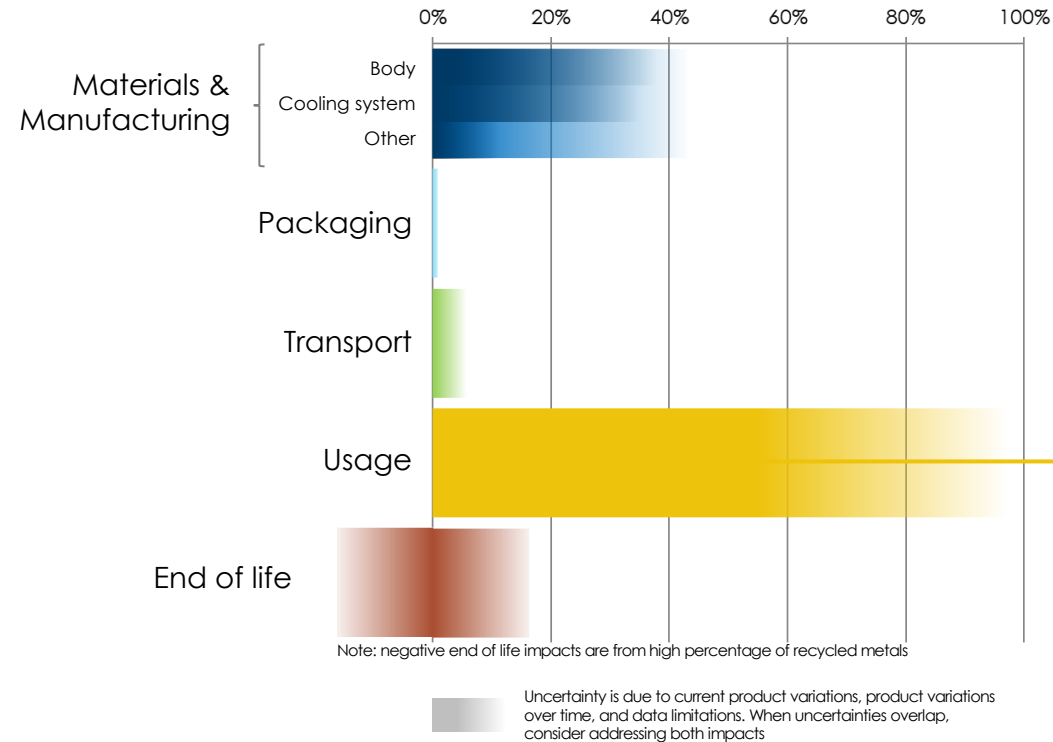
- Height: 68.5", Width: 32.88", Depth: 33.5"
- Capacity: 20.6 cu.ft.
- Electricity: 115V, 60Hz, AC

Lifetime: 14 – 18 years

Usage: 24 hours per day

Functional Unit: Impact per hour of usage

Lifetime impact by percent



Sustainable Design Strategies

**Design for energy efficiency:
heat leaks from insulation & opening**
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Data from:

- Xiao, R., Zhang, Y., Liu, X., & Yuan, Z. (2015). A life-cycle assessment of household refrigerators in China. *Journal of Cleaner Production*, 95, 301-310. <https://doi.org/10.1016/j.jclepro.2015.02.031>
- Gehin, A., Zwolinski, P., & Brissaud, D. (2009). Integrated design of product lifecycles—The fridge case study. *CIRP Journal of Manufacturing Science and Technology*, 1(4), 214-220. <https://doi.org/10.1016/j.cirpj.2009.05.002>
- Ma, J., Yin, F., Liu, Z., & Zhou, X. (2012). The eco-design and green manufacturing of a refrigerator. *Procedia Environmental Sciences*, 16, 522-529. <https://doi.org/10.1016/j.proenv.2012.10.072>
- Yang, Q., Yu, S., & Sekhari, A. (2011). A modular eco-design method for life cycle engineering based on redesign risk control. *The International Journal of Advanced Manufacturing Technology*, 56(9-12), 1215.
- Faludi, J. (2010). Autodesk Sustainability Workshop [Measuring Sustainability Life Cycle Assessment: Example 2]