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CADD-43

Cost Analysis

1. What part did you get quotes for?

We dealt with the largest items, the metal outer shell of the product, the insulating foam, ,the metal cooking pot, and the heating element. We then listed various small items like buttons, a temperature control chip and little addons without including the wires or cost of assembly.

1. What is the final cost you arrived at?

All of our total estimated costs added up to $251.33. See Spreadsheet on Next Page

1. Is it more or less than you expected?

We thought that it was gonna be less than we expected. We learned how some items were gonna cost more than usual like the inner hotpot for example. Just a few parts were expensive while most of the other parts were pretty cheap.

1. What did you learn from this experience?

We learned that machining metal in America is very expensive. We also learned how to use Xometry and how to upload files and get instant quotes. We also found that we could manually hit the point of diminishing returns by increasing the size of bulk orders. Finally, while we originally wanted stainless steel for the outer shell, aluminum’s price and similar finish was a better offer.

| **Line Item** | **Material** | **Mass (lbmass)** | **Method of Production** | **Estimated Cost** | **Notes** | **Link** |
| --- | --- | --- | --- | --- | --- | --- |
| Hexagonal Shell | Steel | 10.06 | Sheet Metal | $71.07 | Assuming 5000 units | <https://www.xometry.com/quoting/quote/Q22-6451-3402> |
| Inner Insulation | Fiberglass Foam | 1 inch thick, inner radius is 7.25 | Cut and Rolled | $28.21 | 310.3 in^2 surface area | <https://www.rockwestcomposites.com/glass-skin-foam-core-sandwich-panels> |
| Inner Hotpot | Aluminum | 2.56 | CNC Machining | $143.00 | Assuming 5000 units | <https://www.xometry.com/quoting/quote/Q22-6451-3402> |
| Heating Element | Steel | 1.1 | Purchased | $3.00 | Asumming 500 Units | <https://jayeheater.en.made-in-china.com/product/IOiArxTDOSkY/China-Custom-Electric-Stove-Heating-Coil.html> |
| Temperature Control Chipset | Various | 0.001 | Purchased | $0.70 | Assumming 1000 units | <https://www.globalsources.com/Humidity-sensor/DHT11-Temperature-Sensor-Module-1178096818p.htm> |
| Buttons | Steel | 0.06 | Purchased | $0.35 | Assuming 500 units | <https://www.globalsources.com/Automotive-switch/Car-switch-1193115697p.htm> |
| Lights x2 | Gallium Phosphide (GaP). | 0 | Purchased | $0.03 | Assuming 1000 Units | <https://www.amazon.com/1000pcs-Super-Bright-light-wholesale/dp/B00V5LXVS6> |
| Temperature Dial | Aluminum | 0.006 | CNC Machining | $4.97 | Assuming 5000 units | <https://www.xometry.com/quoting/quote/Q22-6451-3402> |
|  |  |  |  |  |  |  |
| **Material Costs Per Unit:** |  |  |  |  |  |  |
| $251.33 |  |  |  |  |  |  |