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| --- | --- | --- |
| Objective | Constraint | Criteria |
| -Cheap  -Relatively cheap  -Less than $100 USD | -Must be >75% accurate  -Must be >25% accurate  -Must be >85% accurate | -Higher sorting accuracy better |
| -Open Source | -Must meet Canadian safety standards  -No exposed hardware  -No sharp edges  -No exposed rotating parts | -Made of more recycled materials  -Sustainability |
| -Small unassembled form factor | -Composed of >= 70% recycled materials | -Meets multiple safety standards |
| -Long lifespan | -Parts must be available from within Canada | -Longest lifespan |
| -Easily usable by non-technical people | -Cost <$250 Cad  -Cost <$77.60 Cad  -Cost < 200USD | -Easier to use is better |
| -Scalable | -Volume of <0.05m3 unassembled | -Cheaper is better  -Inexpensivness |
| -Modular | -Accept packages of 30cm3 | -Faster sorting is better  -More item/min is better |
| -Identify waste in <10sec  -Identify >10items/min | -Must handle sorting paper, plastic, glass, metal, other |  |
| -Water resistant | -Must handle 5 item/min |  |
| -Less than 35Kg | -Non-elec parts must be 3d printable |  |
| -Handle multiple items at once | -Must fit on std sized garbage can |  |
| -Identify glass/plastic types | -Must not misidentify glass/Styrofoam into other types |  |
| -Low power |  |  |

Summarized Table:

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| --- | --- | --- | --- |
| **No.** | **Type** | **Specification** | **Unit** |
| 1 | Constraint | Must be >= X% accurate at identifying/sorting paper, plastic, metal, glass, and “other” | % |
| 2 | Constraint | Must identify/sort >= X items in a minute | Items/min |
| 3 | Constraint | Must cost <= $X | CAD |
| 4 | Constraint | Must not misidentify glass/Styrofoam into other types | Yes/No |
| 5 | Constraint | Must have unassembled size of <= Xm3 | m3 |
| 6 | Constraint | Must meet Canadian safety standards | Yes/No |
| 7 | Constraint | All parts must be available from within Canada | Yes/No |
| 9 | Constraint | Must accept items of size up to Xcm3 | cm3 |
| 10 | Constraint | Must fit standard size garbage can/ recycling bin | Yes/No |
| 11 | Objective | Cost <= $X | CAD |
| 12 | Objective | Open-Source | ??? |
| 13 | Objective | Scalable | ??? |
| 14 | Objective | Water Resistant | Yes/No |
| 15 | Objective | Low Power | Watts |
| 16 | Objective | Modular | ??? |
| 17 | Objective | Long Lifespan | Years |
| 18 | Objective | Ease-of-use | ??? |
| 19 | Objective | Lightweight | Kg |
| 20 | Objective | Be able to identify glass/plastic types | Yes/No |
| 20 | Objective | Made from recycled materials | % Composition |

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| --- | --- | --- | --- |
| **No.** | **Type** | **Specification** | **Unit** |
| 1 | Criteria | Sorting accuracy | Higher better |
| 2 | Criteria | Composition | Higher number of recycled parts better |
| 3 | Criteria | Safety Standards | More standards met better |
| 4 | Criteria | Lifespan | Longer better |
| 5 | Criteria | Cost | Cheaper better |
| 6 | Criteria | Sorting | More item/min better |
| 7 | Criteria | Power consumption | Lower better |