| **Types of Batteries** | **Connections** | **Material, Top** | **Materials, Pole** | **Types of Solar Cells** | **Umbrella Size Diameter (in)** | **People Seated** | **Shape of Umbrella** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Alkaline | USB A | Metal | Metal | Crystalline | 16-21 | 0 | Octagonal |
| Nickel metal | USB B | Silk | Wood | Multijunction | 21-23 | 1-2 | Rectangular |
| Lithium ion | USB C | Rayon | Plastic | Thin Flim | 27-37.5 | 1-4 | Square |
|  | GFCI | Nylon | Cement | Quantum Dot | 72-96 | 1-6 | Circular |
|  | Lighting | Acetate |  | Organic | 96-156 |  |  |
|  | Fan | Plastic |  |  |  |  |  |

Medium Fidelity Concepts:

| **Concept Number** | **Types of Batteries** | **Connections** | **Material, Top** | **Material, Pole** | **Types of Solar Cells** | **Umbrella Size Diameter (in)** | **People Seated** | **Shape of Umbrella** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Alkaline | USB C, Fan | Metal | Metal | Crystalline | 72-96 | 1-4 | Octagonal |
| 2 | Nickel metal | USB C, GFCI | Nylon | Metal | Multijunction | 96 -156 | 1-6 | Circular |
| 3 | Lithium ion | USB B, GFCI | Plastic | Cement | Thin Flim | 27-37.5 | 1-2 | Square |
| 4 | Lithium ion | USB B, Lighting | Rayon | Metal | Crystalline | 72-96 | 1-4 | Rectangular |
| 5 | Alkaline | GFCI, USB A | Nylon | Plastic | Thin Film | 96-156 | 1-6 | Octagonal |

High Fidelity Concepts:

| **Concept Number** | **Types of Batteries** | **Connections** | **Material, top** | **Material, Pole** | **Types of Solar Cells** | **Umbrella Size Diameter (in)** | **People Seated** | **Shape of Umbrella** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Lithium ion | USB C,  GFCI | Metal | Metal | Crystalline | 72-96 | 1-4 | Rectangular |
| 2 | Lithium ion | USB B,  GFCI | Silk | Metal | Thin Flim | 72-96 | 1-4 | Rectangular |
| 3 | Alkaline | GFCI, USB A | Metal | Metal | Multijunction | 27-37.5 | 1-4 | Octagonal |