Ultra

A communal, universal, quick UV sanitation device
From Sketch Model...
Backed by Literature Review...

- From *A Study of Bacterial Sensitivity to Ultraviolet Radiation* by Alexander Bachem and M.A. Dushkin

![Graph showing the lethal effects of ultraviolet radiation on B. prodigiosus.](image)
We casted a wide net to find customer needs...
And there is one problem...

“Everytime we see an infant suck on the toy, or drop it on the ground, we have to take it out of service until the end of the day”
- MIT Nursery
UI/UX Question Dimensions

1. Opening Mechanism
2. Visibility
3. Automation
Results

- Pivot bin mechanism
- Visible
- Automatic
Our Vision For the Future
## PRELIMINARY CONTRACT

<table>
<thead>
<tr>
<th>Customer Need</th>
<th>Product Attributes</th>
<th>Engineering Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparable with sanitation wipes</td>
<td>Sanitation Power</td>
<td>Bacteria Removal &gt; 99.9%</td>
</tr>
<tr>
<td>Safely observe what is being sanitized</td>
<td>Safe Visibility</td>
<td>A translucent UV-proof interlocking window</td>
</tr>
<tr>
<td>Fast Cleaning</td>
<td>Efficiency</td>
<td>Cleaning cycle &lt;1 min</td>
</tr>
<tr>
<td>Does not damage object</td>
<td>Safety</td>
<td>Leave no residual or degrade surfaces/functionalities</td>
</tr>
<tr>
<td>Space Saving</td>
<td>Compactness</td>
<td>Operational dimensions &lt; 12” x 12” x 12”</td>
</tr>
<tr>
<td>Can be afforded by most communities</td>
<td>Affordability</td>
<td>Cost &lt;$100</td>
</tr>
<tr>
<td>Ability to manually override</td>
<td>Mechanism Reliability</td>
<td>Backup Manual fail-safe Mechanism</td>
</tr>
</tbody>
</table>
Next Step

- Further study on **specific intensity** of UV light to reducing **sterilizing time**
- Alternative look into **safer** light source
- Design and manufacture alpha prototype specific for toys
Ultra
THE END
THANK YOU