Technology Licensing
UV LED Light Tube
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2. UV LED Light Tube System
3. Commercialization Package
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Content

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Optics and Opto-Mechatronics Technology Centre

- Provides support and consultancy services to industries in optics design and manufacturing
- One-stop solutions tailored for our client
- Service spans from design and development, prototype and precision mould fabrication to optics inspection
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Technology Background

Existing UV Lamp for Water Disinfection

Traditional UV Light Pipe:
- High power consumption (~6W/T3 UV Lamp)
- Environmental unfriendly (Mercury)
- Broad spectrum (Intensity not enough @ required wavelength)
- Short life time (<1,000 Hours)
Advantages of UV LEDs

- Compact
- Low power consumption (~1.45W/4-chip UV LED)
- Minimal heat dissipation
- Environmental friendly (No mercury)
- Small FWHM (Full width at half maximum) @ required wavelength
- Long life time (~50,000 Hours)

UV-C Radiation used for disinfection is most effective at a wavelength of 264 nm.

Spectrum of UV LED and traditional UV lamp V.S.

Germicidal absorption spectrum
UV LED Light Tube

Features:

- Replacement of conventional T3 UV lamps;
- Disinfection applications, i.e. aquariums, grey water purification, air purification;
- Specialized UVC light (200-280nm);
- Freeform optical plastic tubes which distributes the UV light uniformly over its length;
- Waterproof designs;
- Half energy consumption compared to conventional UV lamps;
- UV stabilized plastic material;
## UV LED Light Tube

### Specifications of UV LED Light Tube

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
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<tbody>
<tr>
<td>Wavelength of LED</td>
<td>280 nm ± 5nm (UV-C)</td>
</tr>
<tr>
<td>Length of Light Tube</td>
<td>100 mm and 150 mm</td>
</tr>
<tr>
<td>Light Distribution</td>
<td>$360^\circ$ uniform intensity distribution</td>
</tr>
<tr>
<td>Material of Light Tube</td>
<td>PC (UV stable)</td>
</tr>
<tr>
<td>Est. product life</td>
<td>5-8 years</td>
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Commercialization Package

✔ Part A. Optics Design Data
  • CAE optical design data of light guide
  • UV LED reference specification
  • UV stabilization PC material specification

✔ Part B. System Design Reference
  • Mechanical design layout and drawings of the UV LED light tube
  • Electronic system setup specifications

✔ Part C. Technical Support
  • Two-month telephone hotline technical support
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