**Introduction**

The Ultra High Power LED provides almost x10 increase of power in comparison with similar High Power LED devices. The Ultra High Power LED (22Watt) is an effective replacement of lasers and lamps in many power demanding applications, such as fluorescence microscopy, machine vision, chemical reaction activation and numerous others. This new member of the modular OptiBlocks family provides >0.8 Watt of collimated Red LED power on its output. The LED driver supports CW or pulsed operation.

**Key Features**

- Compatible with Prizmatix modular Microscope-LED Light Source products family – see below for details
- Single chip Ultra High Brightness red LED
- Optically isolated TTL input for external triggering (no shutter needed)
- LED spectrum can be narrowed by optional band pass filter or a filter wheel.
- Analog Input for external power control by A/D module (Optional feature)
- Computer control via USB and LabView software (Optional feature)
- Excellent for fluorescence excitation
- Stable precisely adjustable power
- Long life (no lamp or laser tube replacement required)
- Rapid warm up time

**Applications**

- Fluorescence microscopy Cy5, Alexa Fluor 633
- Whole body imaging of small animals in-vivo
- Photo activation (PA)
- Fluorescence recovery after photo bleach (FRAP)
- Fluorescence in situ hybridization (FISH)
- Bio analysis
- Machine Vision
### Optical Specifications

<table>
<thead>
<tr>
<th></th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wavelength</td>
<td>nm</td>
<td>630</td>
</tr>
<tr>
<td>Wavelength range</td>
<td>nm</td>
<td>±7</td>
</tr>
<tr>
<td>Spectrum half width</td>
<td>nm</td>
<td>17</td>
</tr>
<tr>
<td>Collimated optical power</td>
<td>mW</td>
<td>&gt;800</td>
</tr>
</tbody>
</table>

### Benchtop LED Current Controller Specifications

**Features**
- Constant current or chopping modes
- TTL external trigger input
- Precise LED current setting by 10 turn dial
- Power settings by Analog input (0-5V) – optional
- Computer USB interface - optional
- Compact and robust enclosure

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital modulation input</td>
<td>Optically isolated TTL</td>
</tr>
<tr>
<td>Connector for TTL input</td>
<td>BNC</td>
</tr>
<tr>
<td>Digital modulation frequency</td>
<td>Hz</td>
</tr>
<tr>
<td>Rise / Fall time (10% - 90%)</td>
<td>µs</td>
</tr>
<tr>
<td>Input Voltage</td>
<td>V</td>
</tr>
<tr>
<td>Max Input current</td>
<td>A</td>
</tr>
<tr>
<td>Power Adaptor Input</td>
<td>100-240 VAC, 50-60Hz, 1.5A</td>
</tr>
</tbody>
</table>

### General Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation temperature range</td>
<td>°C</td>
</tr>
<tr>
<td>Storage temperature range</td>
<td>°C</td>
</tr>
<tr>
<td>Operating relative humidity (Non condensing)</td>
<td>%</td>
</tr>
<tr>
<td>Head dimensions</td>
<td></td>
</tr>
<tr>
<td>Head weight</td>
<td>g</td>
</tr>
<tr>
<td>Controller dimensions (LxWxH)</td>
<td></td>
</tr>
<tr>
<td>Controller weight</td>
<td>g</td>
</tr>
<tr>
<td>Power adaptor dimensions (LxWxH)</td>
<td>mm</td>
</tr>
<tr>
<td>Power adaptor weight</td>
<td>g</td>
</tr>
<tr>
<td>Power Adaptor Safety</td>
<td></td>
</tr>
<tr>
<td>Fan noise</td>
<td>dBA</td>
</tr>
</tbody>
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Performance

- UHP-Mic-LED-630 spectrum
- UHP-Mic-LED-630 Stability

Mechanical Drawings
Optional Accessories

For full details on optional accessories please see:

Beam Combiner [2]:
Multiple LED beams can be combined into one output beam. For example UV LED can be combined with White LED to create Mercury lamp like configuration. For more details please see: http://www.youtube.com/watch?v=iv7dlwLHaUE

Filter Wheel [7]:
The UHP-Mic-LED can equipped with a 6 positions filter wheel at the beam output. This accessory is especially useful for UHP-Mic-LED-White light source.
Please see http://www.prizmatix.com/Optics/filter-wheel.htm for more details.

Fiber Coupler Adaptor [3]:
The UHP-Mic-LED can be easily changed from direct microscope coupling to fiber coupled LED configuration by means of Fiber Coupler Adaptor (SMA, CF or ST connector). Please see video clip http://www.youtube.com/watch?v=iv7dlwLHaUE for more details.

Liquid Light Guide Adaptor [9]:
The Microscope-LED can be easily changed from direct microscope coupling to Liquid Light Guide coupled LED configuration by means of LLGA adaptor. Please see video clip http://www.youtube.com/watch?v=iv7dlwLHaUE for more details.

Fiber Optics Collimator [13]:
The output from optical fiber is divergent according to fiber NA. In order to reduce the divergence angle a collimator module can be used. Prizmatix collimator was especially designed to fit thick core high NA Polymer Optical Fibers. See more details at:
http://www.prizmatix.com/Optics/collimator.htm

Fiber Bundles [4]:
To combine outputs of multiple LEDs a Y-shaped fiber bundle with two or more input branches can be used. Prizmatix can help to configure and build custom fiber bundles for specific applications. See more details at: http://www.prizmatix.com/dev/Custom-Fiber-Optic-Assemblies.htm