Introduction
The Ultra High Power LED (>32Watt) provides excellent homogenous illumination over whole field of view. The Ultra High Power LED is an effective replacement of lasers and lamps in many power demanding applications, such as fluorescence microscopy, photostimulation (e.g. uncaging) and numerous others. This new member of the modular OptiBlocks family provides >2.0 Watt of collimated UV LED power on its output. The LED driver supports CW or TTL triggered operation.

Key Features
- Compatible with Prizmatix modular Microscope-LED Light Source products family – see below for details
- Single chip Ultra High Power LED
- Optically isolated TTL input for external triggering or strobe operation
- LED spectrum can be narrowed by optional band pass filter
- Power control by external analog input (0-5V) (Optional)
- Excellent for fluorescence excitation
- Stable precisely adjustable power by 10 turn potentiometer
- Long life (no lamp or laser tube replacement required)
- Speckle free
- Rapid warm up time

Applications
- Fluorescence microscopy: Alexa 405, DyLight 405
- Whole body imaging of small animals in-vivo
- Photo activation (PA) and uncaging
- Fluorescence recovery after photo bleach (FRAP)
- Coupling UV LED to digital micromirror device (DMD)
- Inspection
- Bio analysis
- Machine Vision

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UHP-Mic-LED-405
Ultra High Power LED Light Source for Fluorescence Microscopy

Ver. 02

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Optical Specifications

<table>
<thead>
<tr>
<th>Wavelength</th>
<th>nm</th>
<th>405</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wavelength range</td>
<td>nm</td>
<td>±5</td>
</tr>
<tr>
<td>Spectrum half width</td>
<td>nm</td>
<td>15</td>
</tr>
<tr>
<td>Collimated optical</td>
<td>Watt</td>
<td>&gt;2.0</td>
</tr>
<tr>
<td>power output</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Benchtop LED Current Controller Specifications

- Constant current or chopping modes
- Precise LED current setting by 10 turn dial
- TTL external trigger input
- Compact and robust enclosure
- Analog Input (0-5V) (Optional)
- USB interface to computer control (Optional)

<table>
<thead>
<tr>
<th>Digital modulation input</th>
<th>Optically isolated TTL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital modulation input</td>
<td></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

| Operation temperature range | °C | 10-35 |
| Storage temperature range   | °C | -10-55|
| Operating relative humidity (Non condensing) | % | <90 |
| Head dimensions             |    | See drawing below |
| Head weight                 | g  | 500    |
| Controller dimensions (LxWxH) |    | 220mm x 165mm x 51.5mm |
| Controller weight           | g  | 700    |
| Power adaptor dimensions (LxWxH) |    | 146mm x 76mm x 44mm |
| Power adaptor weight        | g  | 600    |
| Fan noise                   | dBA| 38     |
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Performance

- UHP-Microscope-LED-405 spectrum
- UHP-Microscope-LED-405 stability

Mechanical Drawings

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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 Adapto. 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