OmniCure LED Head Assembly

Specification Guide
UV LED Head for OmniCure LX5

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035-00638R Rev1
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1. Safety

1.1 Glossary of Symbols

Caution risk of danger – consult accompanying documents

Hazardous optical radiation/ UV emitted from this product. Use appropriate shielding.

GROUPE DE RISQUE 3

AVERTISSEMENT : Ce produit émet des UV. Eviter d’exposer vos yeux et peau à un produit non blindé.

ATTENTION : Radiations optiques nuisibles peuvent être émises de ce produit. Ne pas fixer une lampe en cours d’utilisation.

RISK GROUP 3

WARNING: UV emitted from this product. Avoid eye and skin exposure to unshielded product.

CAUTION: Possibly hazardous optical radiation emitted from this product. Do not stare at operating lamp.

IEC/TR 62471-2:2009

Caution, Hot Surface

Notice: UV radiation emitted from this product/ Hot Surface (Located on 365/385 nm LED head assemblies)

Caution: Possibly hazardous optical radiation emitted from this product/Hot Surface (Located on 400 nm LED head assembly)
1.2 Safety Precautions

**CAUTION**
The LED’s Heads provide optical output power classified as RISK GROUP 3 as per IEC/EN 62471-2. The user related risk of this system is dependant on the final installation and use of this product as detailed within this manual. Always follow the installation guidelines as detailed in the LX500 User Guide, 035-00628R. Use of this system in any manner not specified by Excelitas Canada Inc. may expose the user to potentially hazardous optical radiation and UV.

**RISK GROUP 3**

**WARNING:** UV emitted from this product. Avoid eye and skin exposure to unshielded product. **CAUTION:** Possibly hazardous optical radiation emitted from this product. Do not stare into operating lamp.

**WARNING**
Do not stare directly at the LED aperture(s). This may be harmful, resulting in eye injury. Always use protective eyewear with this device. Additionally, protect any exposed skin with appropriate clothing or shielding as required.

**WARNING**
Warning UV protective eyewear must meet the following recommended optical specifications:
- Spectral range; 350-440nm
- Optical Density ≥ 6

**WARNING**
To prevent accidental exposure to hazardous optical/UV radiation, always ensure that the LED heads are properly secured in a mounting fixture as described in the LX500 User Guide 035-00628R. Hand held use of the LED heads is not recommended and may expose the user to dangerous optical radiation. Additionally, to prevent unintentional exposure, use of the on/off key switch on the LX500 is recommended. It is recommended to unplug the power from the LX5.

**Caution, Hot Surface**
Due to elevated operating temperatures; avoid contact of the LED head(s) when energized. The LED heads are designed to be mounted in a suitable fixture prior to use. User clamp type heat sink assemblies are available for each LED head to provide user safety and optimum thermal management. Prior to handling and cleaning of the UV LED head(s), allow a cool down for a period of approximately 5 minutes after system power has been removed.

**Cleaning**
Prior to attempting to clean the lens assembly, always disconnect the external power supply cord from the controller chassis. Use only a cloth slightly dampened with an appropriate optical cleaning solution to clean the lens cover assembly of the UV LED head. Applying a cleaning solution to the hot lens assembly may result in contamination or undesirable residue, resulting in decreased optical performance.

The UV LED head’s operation can be affected if handled incorrectly. Never touch the protective lens cover assembly of the UV LED head. The presence of skin oils may result in a decrease in system performance.

**Always ensure the system controller power is turned off, prior to disconnecting or re-connecting any of the UV LED heads.**
2. Components Number Table

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>365nm LED MAX Head</td>
<td>365nm X 55mm LED MAX Head Includes clamp sub-assy (p/n 019-00087R)</td>
<td>019-00286R</td>
</tr>
<tr>
<td>365nm LED MAX Head</td>
<td>365nm X 125mm? LED MAX Head Clamp sub-assy not included</td>
<td>019-00287R</td>
</tr>
<tr>
<td>385nm LED MAX Head</td>
<td>385nm X 55mm LED MAX Head Includes clamp sub-assy (p/n 019-00087R)</td>
<td>019-00288R</td>
</tr>
<tr>
<td>385nm LED MAX Head</td>
<td>385nm X 125mm LED MAX Head Includes clamp sub-assy (p/n 019-00087R)</td>
<td>019-00289R</td>
</tr>
<tr>
<td>400nm LED Head</td>
<td>400nm X 55mm LED Head Includes clamp sub-assy (p/n 019-00087R)</td>
<td>019-00293R</td>
</tr>
<tr>
<td>Clamp sub assy. with Extension Rod</td>
<td>Mounting clamp/heat sink. Imperial and metric threaded mounting options. Includes allen key.</td>
<td>019-00087R</td>
</tr>
</tbody>
</table>

Table 1 Focus Lens Part Numbers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>810-00053R</td>
<td>3mm replaceable lens used with 365nm/385nm LED MAX Head</td>
</tr>
<tr>
<td>810-00054R</td>
<td>6mm replaceable lens used with 365nm/385nm LED MAX Head</td>
</tr>
<tr>
<td>810-00060R</td>
<td>8mm replaceable lens used with 365nm/385nm LED MAX Head</td>
</tr>
<tr>
<td>810-00061R</td>
<td>10mm replaceable lens used with 365nm / 385nm LED MAX Head</td>
</tr>
<tr>
<td>810-00066R</td>
<td>12mm replaceable lens used with 365nm / 385nm LED MAX Head</td>
</tr>
<tr>
<td>810-00062R</td>
<td>3mm, replaceable lens used with 400 nm LED Head.</td>
</tr>
<tr>
<td>810-00063R</td>
<td>6mm replaceable lens used with 400 nm LED Head.</td>
</tr>
<tr>
<td>810-00065R</td>
<td>8mm replaceable lens used with 400 nm LED Head.</td>
</tr>
<tr>
<td>810-00064R</td>
<td>10mm replaceable lens used with 400 nm LED Head.</td>
</tr>
<tr>
<td>035-00638R</td>
<td>UV LED Head Assembly Specification Guide.</td>
</tr>
<tr>
<td>035-00628R</td>
<td>LX500 UV LED Spot Curing System User Guide.</td>
</tr>
</tbody>
</table>

3. Installation Procedures

Refer to LX500 User Guide 035-00628R of for:
- Installation procedures
- LED Head Cap Assembly/Removal Procedures
- Clamp/Heat Sink Installation/Removal Procedures
- Lens Changing Procedures
4. Intensity and Irradiance Data

**Figure 1** - Beam Profile for 365nm MAX head w/3 mm Lens

**Figure 2** - Beam Profile for 365nm MAX head w/6 mm Lens
Figure 3 - Beam Profile for 365nm MAX head w/8 mm Lens

Figure 4 - Beam Profile for 365nm MAX head w/10 mm Lens
Figure 5 - Beam Profile for 365nm Max head w/12mm Lens

Figure 6 - Beam Profile for 385nm MAX head w/3 mm Lens
Figure 7 - Beam Profile for 385nm Max head w/6mm Lens

Figure 8 - Beam Profile for 385nm MAX head w/8 mm Lens
Figure 9 - Beam Profile for 385nm MAX head w/10 mm Lens

Figure 10 - Beam Profile for 385nm MAX head w/12 mm Lens
5. Routine Care and Maintenance

**Caution:** Routine maintenance should only be completed by qualified personnel to avoid risk of injury to the end user.

**RISK GROUP 3**

**WARNING:** UV emitted from this product. Avoid eye and skin exposure to unshielded product. **CAUTION:** Possibly hazardous optical radiation emitted from this product. Do not stare into operating lamp.

Refer to LX500 User Guide 035-00628R for:
- Head and Lens Assembly Cleaning Procedure

**CAUTION:** Before using any solvent, consult the manufacturer's Materials Safety Data Sheets (MSDS) and your internal Health and Safety Advisor for proper handling and storage.

6. Technical Specifications

6.1 LED Head Specification

<table>
<thead>
<tr>
<th>Wavelength</th>
<th>365±5nm x 130mm LED MAX Head</th>
<th>365±5nm x 130mm LED MAX Head</th>
<th>365±5nm x 130mm LED MAX Head</th>
<th>365±5nm x 130mm LED MAX Head</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wavelength FWHM (typical)</td>
<td>10 nm</td>
<td>10 nm</td>
<td>10 nm</td>
<td>10 nm</td>
</tr>
<tr>
<td>Power</td>
<td>425 mW</td>
<td>425 mW</td>
<td>425 mW</td>
<td>425 mW</td>
</tr>
<tr>
<td>Peak Irradiance</td>
<td>14. W/cm²</td>
<td>5.1 W/cm²</td>
<td>2.6 W/cm²</td>
<td>1.1 W/cm²</td>
</tr>
<tr>
<td>Optimized Working Distance</td>
<td>10±1mm</td>
<td>18±1mm</td>
<td>25±1mm</td>
<td>9±1mm</td>
</tr>
<tr>
<td>Spot Diameter</td>
<td>3mm</td>
<td>6mm</td>
<td>8mm</td>
<td>10mm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wavelength</th>
<th>385±5nm x 130mm LED Head</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wavelength FWHM (typical)</td>
<td>10 nm</td>
</tr>
<tr>
<td>Power</td>
<td>525 mW</td>
</tr>
<tr>
<td>Peak Irradiance</td>
<td>16. W/cm²</td>
</tr>
<tr>
<td>Optimized Working Distance</td>
<td>10±1mm</td>
</tr>
<tr>
<td>Spot Diameter</td>
<td>3mm</td>
</tr>
</tbody>
</table>

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6.2 Environmental Conditions

Operating Conditions
- Ambient Temperature: 15ºC to 35ºC
- Altitude: 2000m max.
- Atmospheric Pressure: 700 to 1060 hPa
- Relative Humidity: 15% to 85% (non-condensing)
- Installation Category: II
- Pollution Degree: 2

Transport and Storage Conditions
- Temperature: -10 to +60ºC
- Relative Humidity: 10% to 100%
- Atmospheric Pressure: 500 to 1060 hPa

6.3 Regulatory Compliance

|-------------------------------|------------------------|

62471:2006 Photobiological safety of lamps and lamp systems.

6.4 China RoHS

The symbol above indicates a product does not contain any restricted substances.
6.5 WEEE Directive (2002/96/EU)

The symbol above indicates that this product should not be disposed of along with municipal waste, that the product should be collected separately, and that a separate collection system exists for all products that contain this symbol within member states of the European Union.

- The equipment that you bought has required the extraction and use of natural resources for its production. It may contain hazardous substances that could impact health and the environment.
- In order to avoid the dissemination of those substances in our environment and to diminish the pressure on the natural resources, we encourage you to use the appropriate take-back systems. Those systems will reuse or recycle most of the materials of your end life equipment in a sound way.
- The crossed-out wheeled bin symbol indicated above invites you to use those systems.
- If you need more information on the collection, reuse and recycling systems, please contact your local or regional waste administration.

7. Warranty

Excelitas Canada warrants the original purchaser a guarantee of 10,000 hours or a period of three (3) full years, whichever comes first, the time period is calculated from the date of purchase and guarantees that the equipment sold is free from defects in material and workmanship. All repairs are warranted for 90 days.

In the event of a claim under this warranty, the equipment is to be sent postage and carriage paid to the Lumen Dynamics Service Centre. Returned equipment will not be received without a Return Authorization (RA) Number, issued by the appropriate Service Centre.

In order for us to serve you better, include a written description of the fault and the name and telephone number of a contact person who may be contacted for additional service related questions.

Any claims for units received with defects in material or workmanship must be reported to an authorized Excelitas Canada Service Centre within 30 days from the original date of receipt and returned within 30 days of reporting to an authorized Lumen Dynamics Service Centre. Lumen Dynamics will repair or replace these reported defects free of charge. The equipment must be sent postage and carriage paid.

Package the equipment in its original shipping case or as appropriate to prevent damage during transport.

In the case of damage caused by wear and tear, careless handling, neglect, by the use of force or in the case of interventions and repairs not carried out by an Lumen Dynamics Authorized Service Center, the warranty ceases to be valid. This warranty may not form the basis for any claims for damages, in particular not for compensation of consequential damages. This warranty is not transferable.

No warranty is extended to perishable items (if purchased separately or included in systems). These may include, but are not limited to, fuses, air filters, optical filters, cables, light guides, light lines, LED heads and light guide adapters.

Warning: Apart from optical lenses there are no field serviceable parts within the equipment. Opening the equipment main enclosure will void the warranty.
8. Contact Information

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Technical Assistance
Techsupport.lsi@ldgi.com

For a complete listing of Authorized OmniCure Distributors and Service Centers please go to the main web site: www.ldgi-omnicure.com