EXCELITAS TECHNOLOGIES OmniCure LX500 LED Spot UV Curing System Controller User Guide

Contents

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OmniCure LED Head Assembly

The OmniCure LED Head Assembly is a UV LED head designed to be used with the OmniCure LX500/LX505. It is manufactured by Excelitas Canada Inc. and is located at 2260 Argentia Road Mississauga (ON) L5N 6H7 Canada. The product is classified as RISK GROUP 3 as per IEC/EN 62471-2 and emits UV radiation and possibly hazardous optical radiation.

Specification Guide

The product comes with a specification guide that contains the following information:

- Components Number Table
- Installation Procedures
- Intensity and Irradiance Data
- Routine Care and Maintenance
- Technical Specifications
- Warranty
- Contact Information

Product Usage Instructions

Follow these instructions to correctly use the OmniCure LED Head Assembly:

1. Refer to the LX500 User Guide, 035-00628R for installation guidelines.
2. Always use protective eyewear with this device. Additionally, protect any exposed skin with appropriate clothing or shielding as required.
3. Ensure that the LED heads are properly secured in a mounting fixture as described in the LX500 User Guide 035-00628R.
4. Use of the on/off key switch on the LX500 is recommended. It is recommended to unplug the power from the LX500.
5. 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.
6. 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.

Safety

Glossary of Symbols

- Caution risk of danger – consult accompanying documents
- Hazardous optical radiation/ UV emitted from this product. Use appropriate shielding.

RISK GROUP 3 Caution Label: IEC 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)

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 andskin exposure to unshielded product. CAUTION: Possibly hazardous optical radiation emitted from this product. Do not stare into operating lamp.

- 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 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 LX500.

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.

Components Number Table

Part Number	Description
019-00286R	365nm X 55mm LED Head Includes clamp sub-assy (p/n 019-00087R)
019-00287R	365nm X 125mm LED MAX Head Clamp sub-assy not included
019-00288R	385nm X 55mm LED MAX Head Includes clamp sub-assy (p/n 019-00087R)
019-00289R	385nm X 125mm LED MAX Head Clamp sub-assy not included
019-00293R	400nm X 55mm LED Head Includes clamp sub-assy (p/n 019-00087R)

Table 2 Focus Lens Part Numbers

Part Number	Description
810-00053R	3mm replaceable lens used with 365nm/385nm LED Head
810-00054R	6mm replaceable lens used with 365nm/385nm LED Head
810-00060R	8mm replaceable lens used with 365nm/385nm LED Head
810-00061R	10mm replaceable lens used with 365nm / 385nm LED Head
810-00066R	12mm replaceable lens used with 365nm / 385nm LED Head
810-00062R	3mm replaceable lens used with 400nm LED Head.
810-00063R	6mm replaceable lens used with 400nm LED Head.
810-00065R	8mm replaceable lens used with 400nm LED Head.
810-00064R	10mm replaceable lens used with 400 nm LED Head.
810-00078R	5mm Cylindrical Lens for 365nm and 385nm LED Heads
810-00083R	90deg Adapter, 6mm spot 365/385nm LED Heads
810-00084R	90deg Adapter, 8mm spot, 365/385nm LED heads
810-00085R	90deg Adapter, 10mm spot, 365/385nm LED heads

Table 3 Other Accessories Part Numbers

Part Number	Description
018-00642R	Extension Cable: 1m
018-00643R	Extension Cable: 3m
018-00644R	Extension Cable: 5m
018-00645R	Extension Cable: 10m

Part Number	Description
035-00628R	LX500 UV LED Spot Curing System User Guide.
019-00087R	Mounting clamp/heat sink. Includes an allen key
014-00070R	Foot Pedal
020-00916	External AC Power Supply
854-00001R	UV Eyewear Protection

Table 4 Compatible Controller Part Numbers

Part Number	Description
010-00376R	LX505-2 Controller – 2 Channel
010-00377R	LX505-4 Controller – 4 Channel
010-00369R	LX500-2 Controller – 2 Channel
010-00375R	LX500-4 Controller – 4 Channel

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

Intensity and Irradiance Data

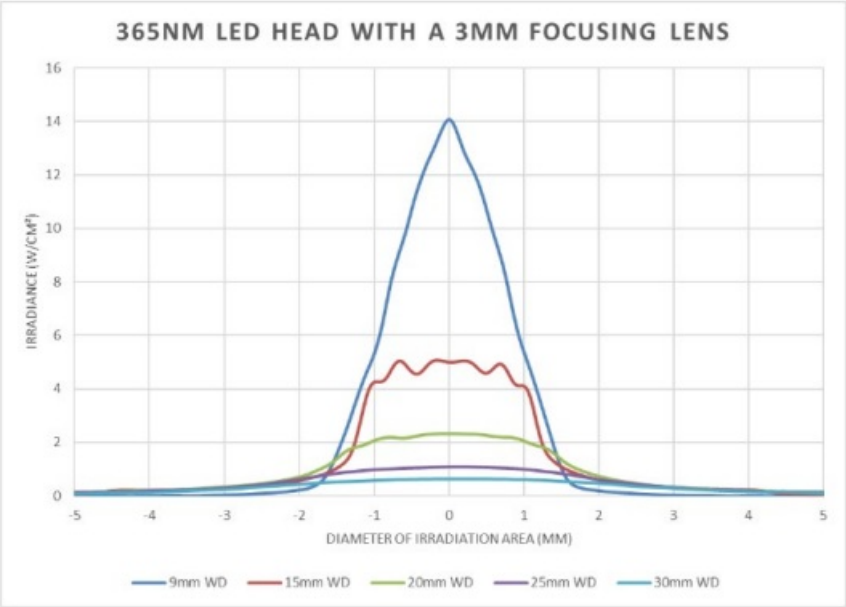
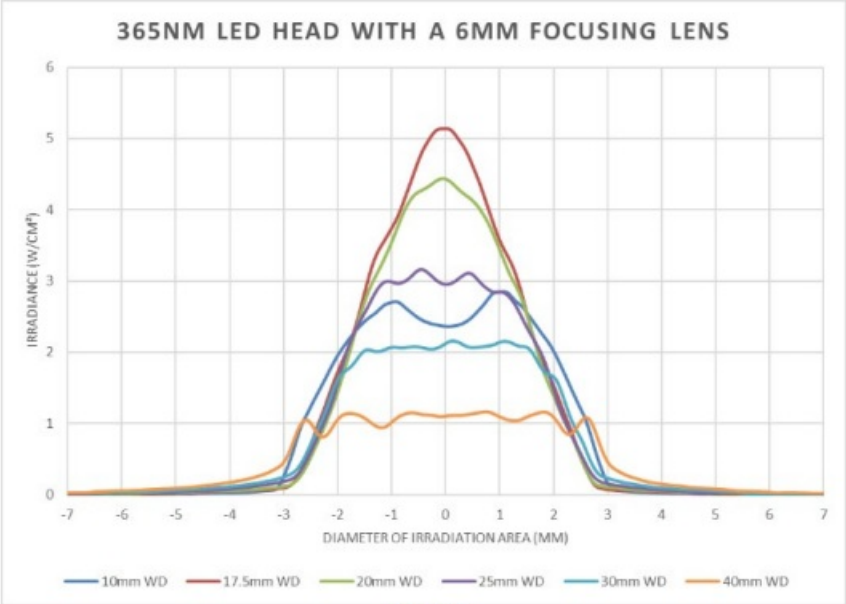


Figure 1



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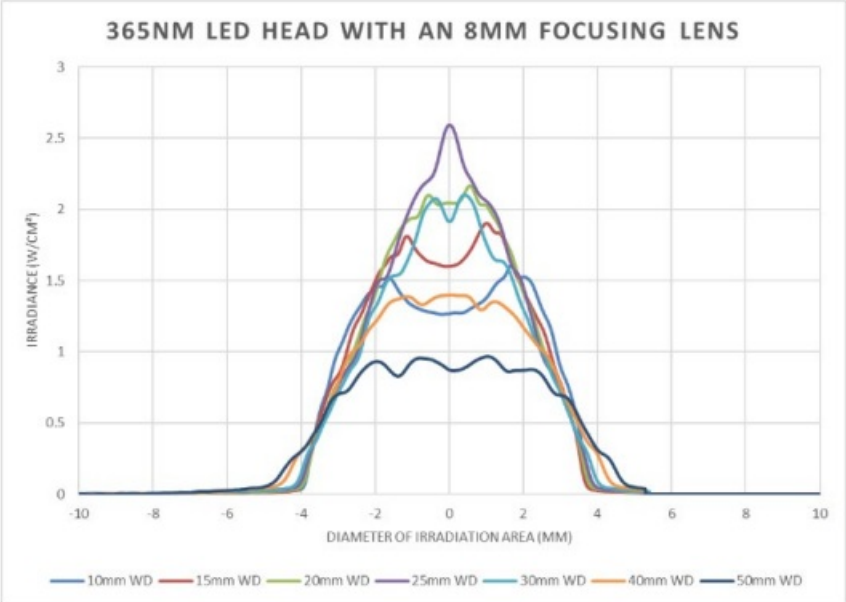

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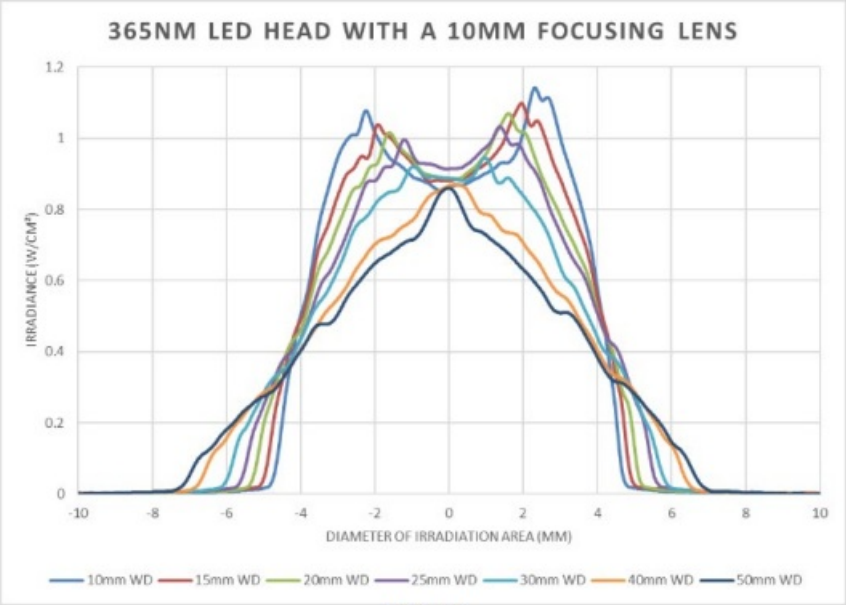

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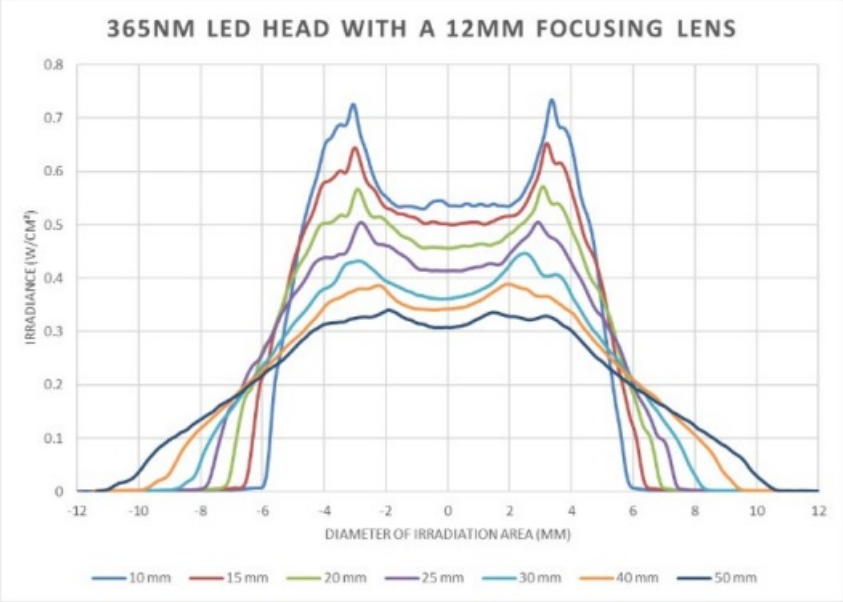

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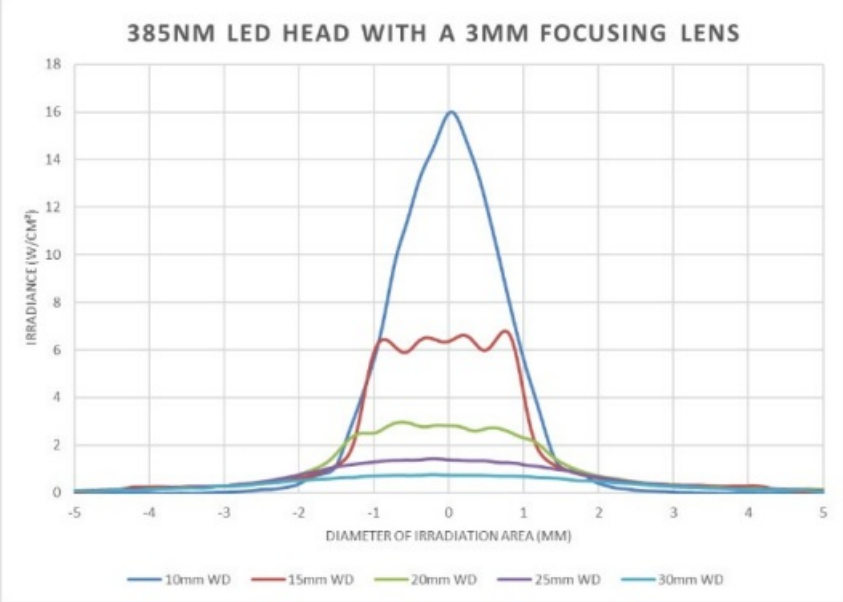

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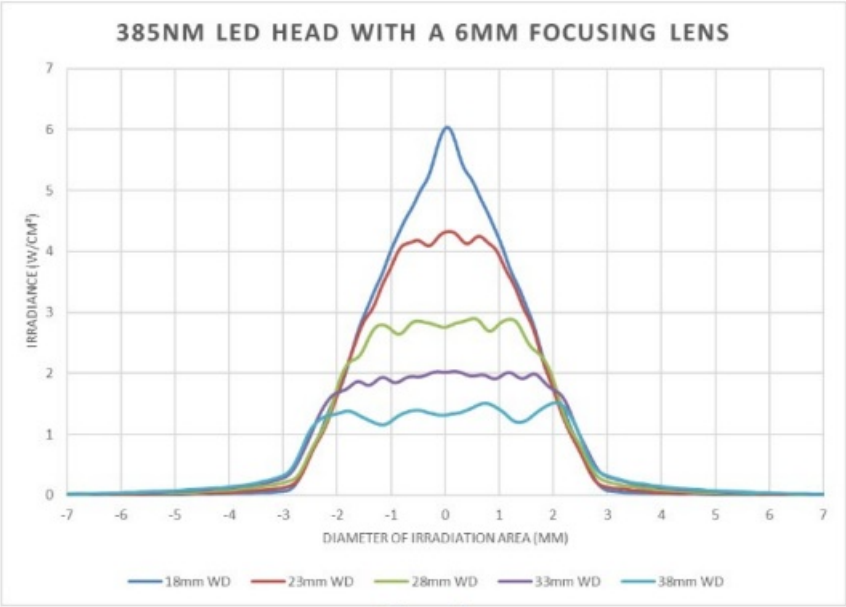

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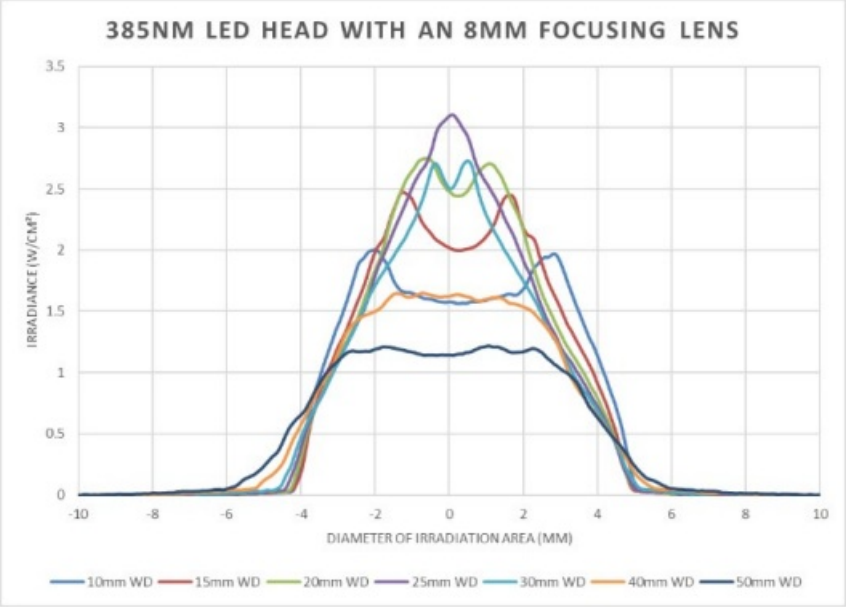

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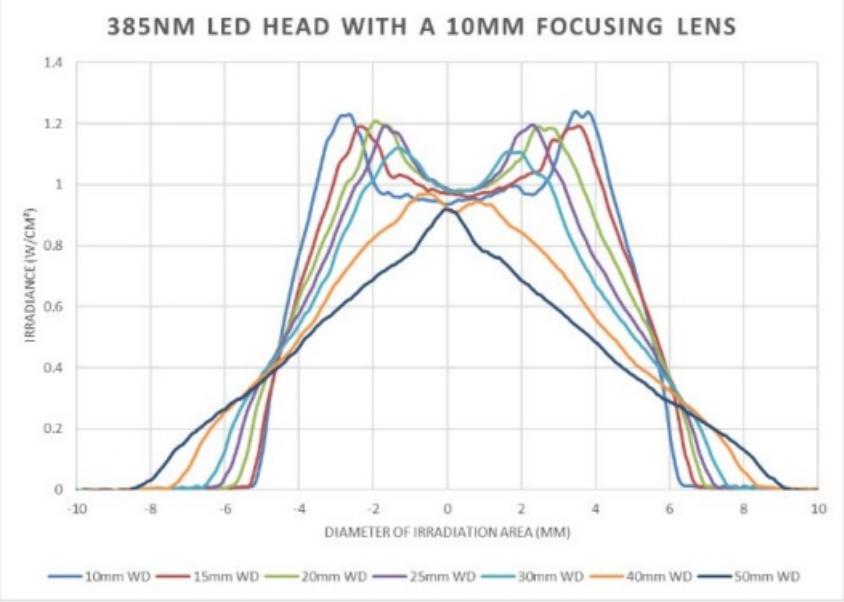

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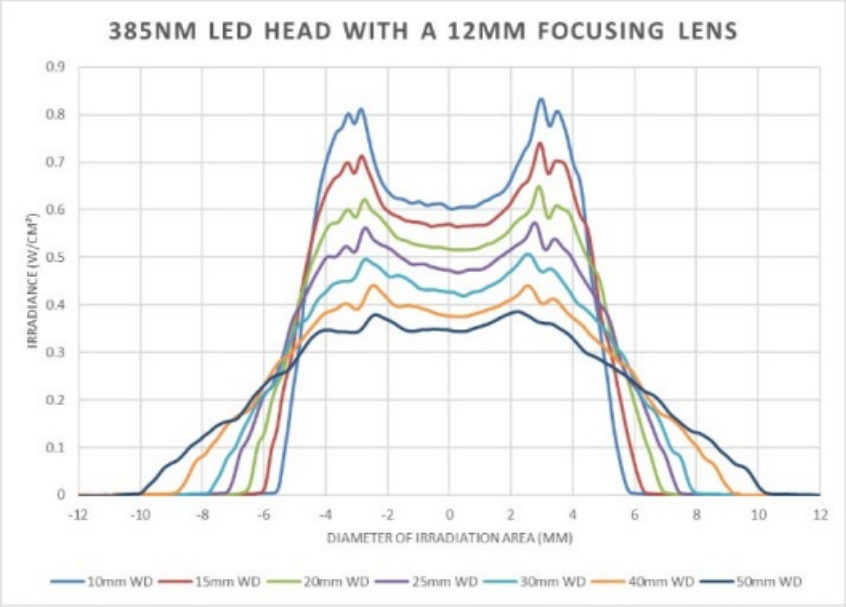

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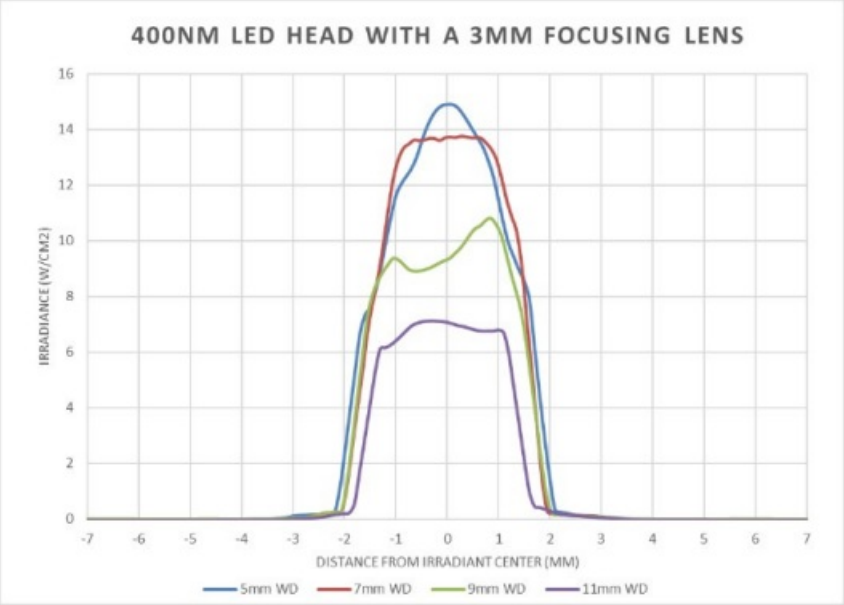

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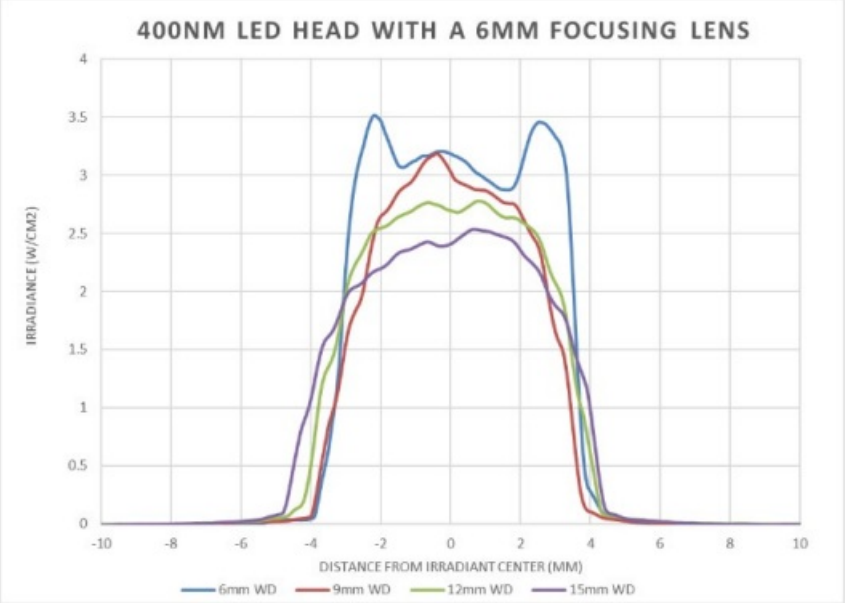

Figure 12

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 andskin 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.

Technical Specifications

LED Head Specification

Wavelength	**365±5nm LED MAX Head**				
Wavelength FWHM (typical)	10 nm				
[2]Power (typical)	425 mW				
[1]Peak Irradiance (maximum)	14.0 W/cm²	5.1 W/cm²	2.6 W/cm²	1.1 W/cm²	0.7 W/cm²
Optimized Working Distance	10±1mm	18±1mm	25±1mm	9±1mm	10±1mm
Spot Diameter	3mm	6mm	8mm	10mm	12mm

Wavelength	**385±5nm LED MAX Head**				
Wavelength FWHM (typical)	10 nm				
[2]Power (typical)	525 mW				
[1]Peak Irradiance (maximum)	16.0 W/cm²	6.0 W/cm²	3.0 W/cm²	1.2 W/cm²	0.8 W/cm²
Optimized Working Distance	10±1mm	18±1mm	25±1mm	9±1mm	10±1mm
Spot Diameter	3mm	6mm	8mm	10mm	12mm

Wavelength	**400±5nm LED MAX Head**			
Wavelength FWHM (typical)	14 nm			
[2]Power (typical)	450 mW			
[1]Peak Irradiance (maximum)	9.0 W/cm²	3.0 W/cm²	2.5 W/cm²	1.5 W/cm²
Optimized Working Distance	5±1mm	9±1mm	12±1mm	14±1mm
Spot Diameter	3mm	6mm	8mm	10mm

1. Maximum Peak Irradiance shown. A difference of up to 20% between different LED heads may be possible. Maximum measured irradiance is directly proportional to the setup accuracy during the calibration process.
2. Typical Optical Power shown. A difference of up to 20% between different LED heads may be possible.

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

Regulatory Compliance

Council Directive 2014/35/EU	**Low Voltage Directive**	
Council Directive 2014/30/EU	**EMC Directive**	
Council Directive 2012/19/EU	**WEEE Directive**	
Council Directive 2011/65/EU **as amended by (EU) 2015/863**	**RoHS**	

The symbol above indicates a product does not contain any restricted substances.

WEEE Directive

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.

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 a 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 a 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.

Contact Information

- **ADDRESS:** Excelitas Canada Inc. 2260 Argentia Road Mississauga, Ontario
- L5N 6H7 CANADA
- **Tel.:** +1 905 821-2600
- **Toll:** +1 800 668-8752 (USA and Canada)
- **Fax:** +1 905 821-2055
- **https://www.excelitas.com/product-category/uv-curing-systems**
- **https://www.excelitas.com/ox_service_request_form**
- **https://www.excelitas.com/omnicure-x-cite-inquiries**

Technical Assistance:

- **techsupport@excelitas.com**
- **https://www.excelitas.com/ox_service_request_form**
- For a complete listing of Authorized OmniCure Distributors and Service Centres, please go to https://www.excelitas.com/dealer-search

035-00638R Rev. 2

Documents / Resources

	**EXCELITAS TECHNOLOGIES OmniCure LX500 LED Spot UV Curing System Controller** [pdf] User Guide LX500, LX505, OmniCure LX500 LED Spot UV Curing System Controller, OmniCure LX500, LED Spot UV Curing System Controller, UV Curing System Controller, Curing System Controller, Controller

References

- Homepage | Excelitas
- Distributor Search | Excelitas
- OmniCure & X-Cite Inquiries | Excelitas
- Support Request Form for OmniCure® and X-Cite® Products | Excelitas
- UV Curing Systems | Excelitas