

OmniCure® V3 LED Head for LX500

Technical Specification Guide

Excelitas Canada Inc.

2260 Argentia Road
Mississauga (ON)
L5N 6H7 Canada
+1 905.821.2600
www.excelitas.com

User Guide

Excelitas Canada Inc. 2023
All rights reserved.

OmniCure, and StepCure, are trademarks or registered trademarks of Excelitas Canada Inc. All other product and company names are trademarks or registered trademarks of their respective holders. Any product or software photos shown are for reference only and are subject to change without notice.
Printed in Canada. Doc. No. 035-00730R

No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system or translated into any language in any form by any means without the prior written consent of Excelitas Canada Inc. Every effort has been made to ensure information in this manual is accurate; however, information in this manual is subject to change without notice and does not represent a commitment on the part of the authors.

Table of Contents

1. Safety	- 2 -
1.1 Glossary of Symbols	- 2 -
1.2 Safety Precautions	- 3 -
2. Part Numbers and Compatibility	- 4 -
3. Installation Procedures.....	- 5 -
4. Routine Care and Maintenance	- 5 -
5. Technical Specifications	- 6 -
5.1 Beam Profiles – 365nm	- 6 -
5.2. Beam Profiles – 385nm	- 8 -
5.3 Beam Profiles – 395nm	- 10 -
5.4 Beam Profiles – 405nm	- 12 -
5.5 Environmental Conditions	- 14 -
6. Regulatory Compliance	- 14 -
China RoHS	- 14 -
WEEE Directive.....	- 15 -
7. Warranty.....	- 15 -
8. Contact Information	- 17 -

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.

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/ 395/ 405 nm LED head assemblies)



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



- 2 -

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 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. Handheld 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.



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. Part Numbers and Compatibility

Table 1 LED Head Part Numbers

Part Number	Description
019-00398R	LX500 365nm x 55mm UV HEAD HDMI V3
019-00399R	LX500 365nm x 125mm UV HEAD HDMI V3
019-00400R	LX500 385nm x 55mm UV HEAD HDMI V3
019-00401R	LX500 385nm x 125mm UV HEAD HDMI V3
019-00402R	LX500 395nm x 55mm UV HEAD HDMI V3
019-00403R	LX500 395nm x 125mm UV HEAD HDMI V3
019-00404R	LX500 405nm x 55mm UV HEAD HDMI V3
019-00405R	LX500 405nm x 125mm UV HEAD HDMI V3

Table 2 Accessories Part Numbers

Part Number	Description
810-00053R	3mm Replaceable Lens
810-00054R	6mm Replaceable Lens
810-00060R	8mm Replaceable Lens
810-00061R	10mm Replaceable Lens
810-00066R	12mm Replaceable Lens
810-00078R	5mm Cylindrical Lens
810-00083R	90deg Adapter, 6mm spot
810-00084R	90deg Adapter, 8mm spot
810-00085R	90deg Adapter, 10mm spot

Part Number	Description
018-00642R	Extension Cable: 1m
018-00643R	Extension Cable: 3m
018-00644R	Extension Cable: 5m
018-00645R	Extension Cable: 10m
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 3 Compatible LX50x Controller Part Numbers

Part Number	Description	Firmware Version	Compatibility	Number of V3 Heads Supported
010-00520R	LX500-2 V2	1.0.7 (or Higher)		Up to 2
010-00521R	LX500-4 V2	1.0.7 (or Higher)		Up to 4
010-00522R	LX505-2 V2	1.0.7 (or Higher)		Up to 2
010-00523R	LX505-4 V2	1.0.7 (or Higher)		Up to 4
010-00369R	LX500-2	1.0.7 (or Higher)		Up to 2
010-00375R	LX500-4	1.0.7 (or Higher)		Up to 2
010-00376R	LX505-2	1.0.7 (or Higher)		Up to 2
010-00377R	LX505-4	1.0.7 (or Higher)		Up to 2
010-00369R	LX500-2	1.0.6		Not Supported
010-00375R	LX500-4	1.0.6		Not Supported
010-00376R	LX505-2	1.0.6		Not Supported
010-00377R	LX505-4	1.0.6		Not Supported

	Compatible
	Limited Compatibility
	Not Compatible

3. Installation Procedures

Refer to the LX500 User Guide 035-00628R for:

- Installation procedures
- LED Head Cap Assembly/Removal Procedures
- Clamp/Heat Sink Installation/Removal Procedures
- Lens Changing Procedures

4. 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.

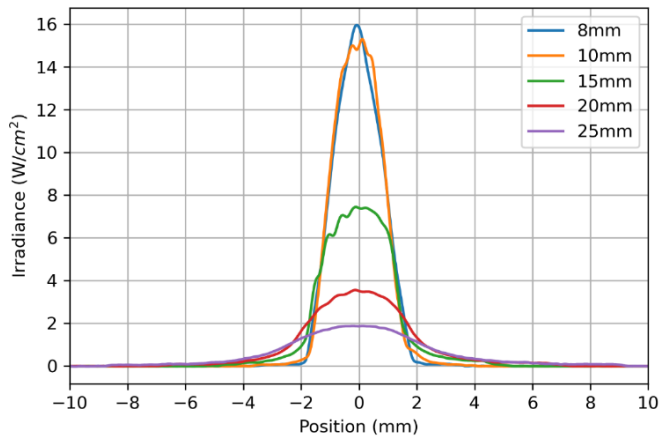
Refer to LX500 User Guide 035-00628R for Head and Lens Assembly Cleaning Procedure



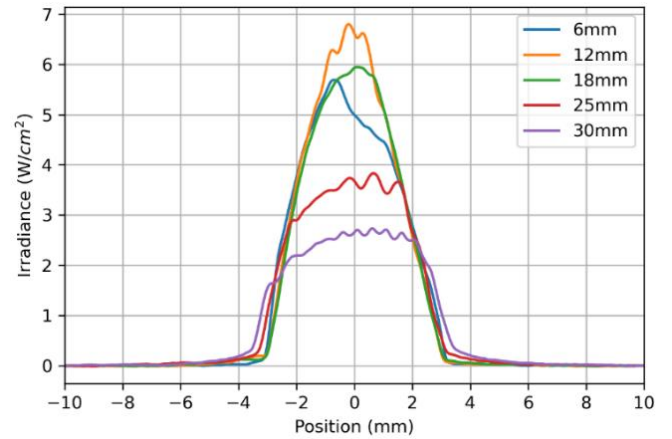
CAUTION: Before using any solvent, consult the manufacturer's Material Safety Data Sheet (MSDS) and your internal Health and Safety Advisor for proper handling and storage.

5. Technical Specifications

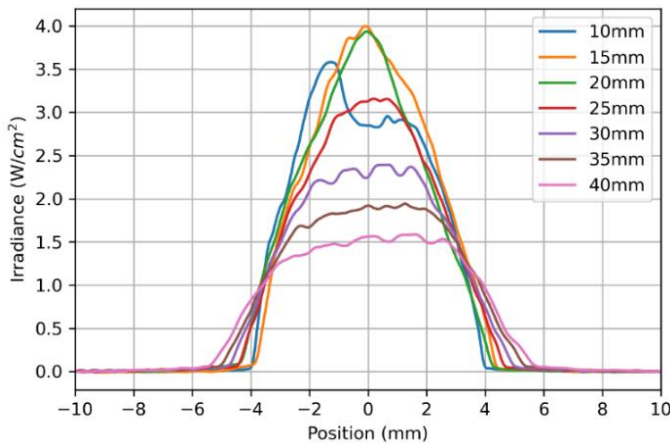
5.1 Beam Profiles – 365nm



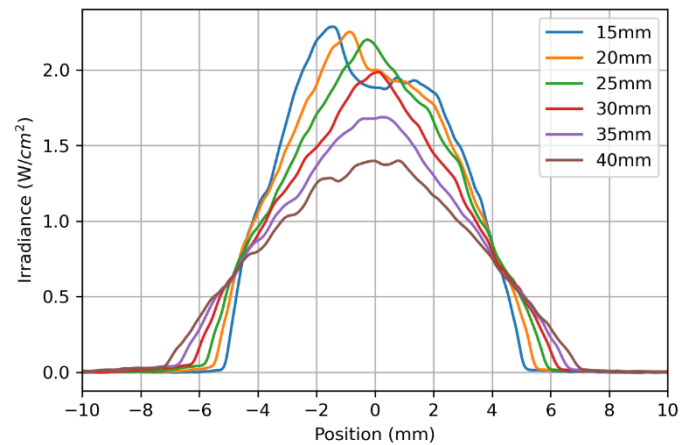
365nm V3 Head with 3mm Lens



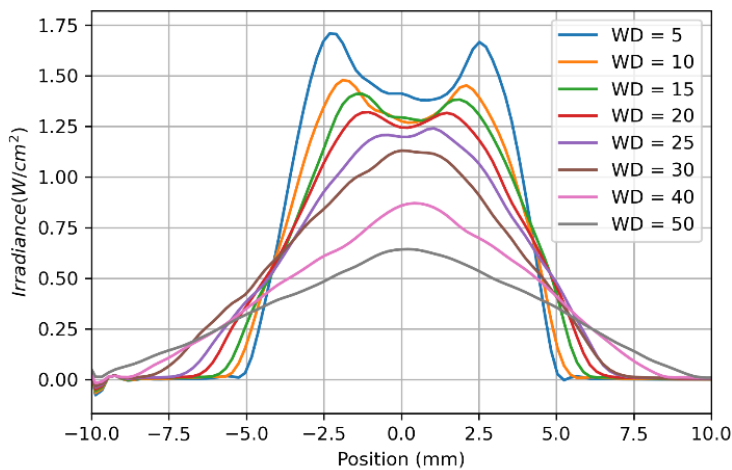
365nm V3 Head with 6mm Lens



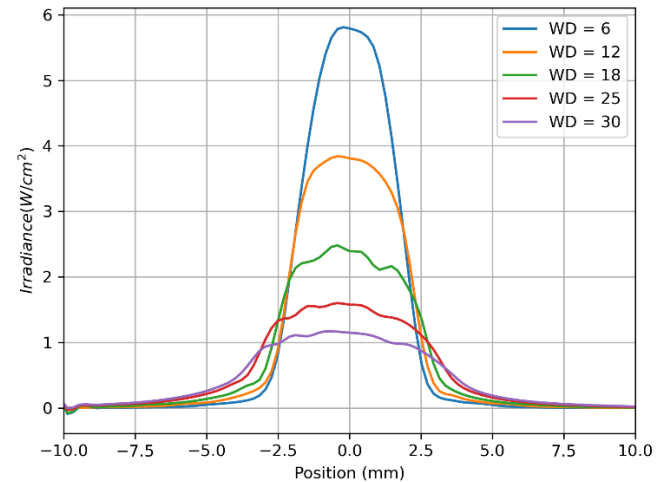
365nm V3 Head with 8mm Lens



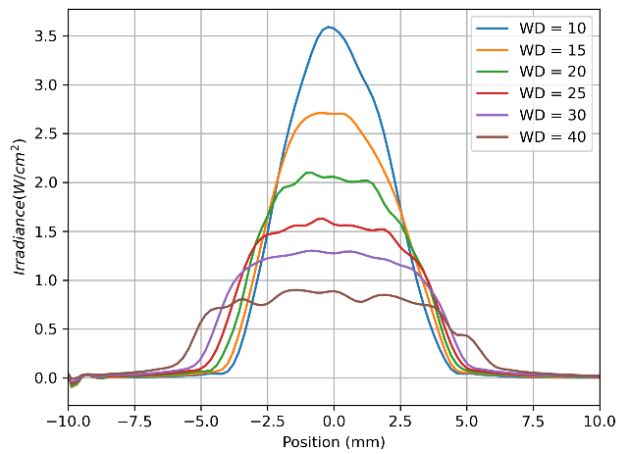
365nm V3 Head with 10mm Lens



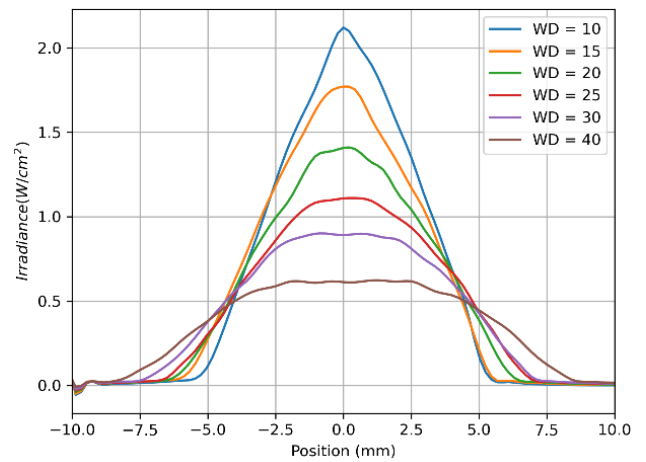
365nm V3 Head with 12mm Lens



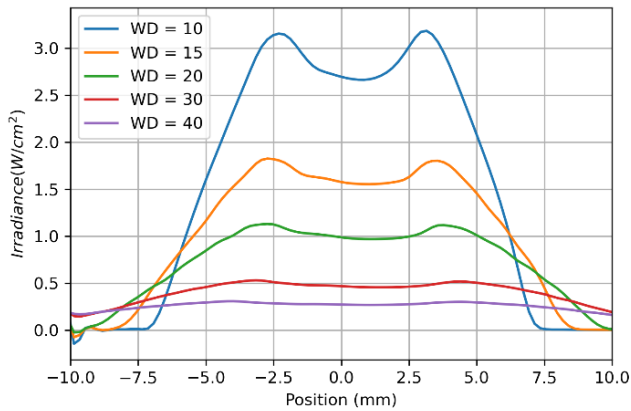
365nm V3 Head with 6mm – 90 Degree Lens



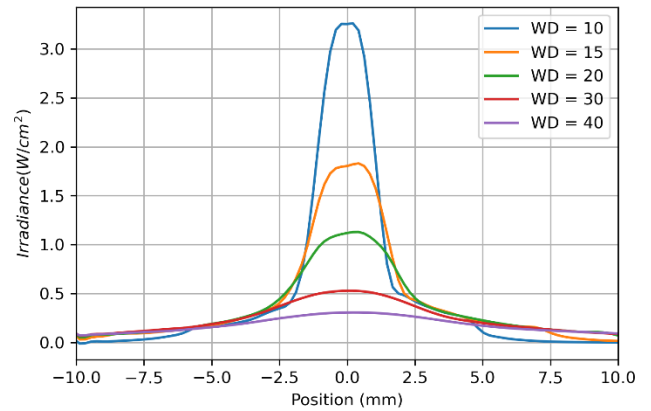
365nm V3 Head with 8mm – 90 Degree Lens



365nm V3 Head with 10mm – 90 Degree Lens



365nm V3 Head with Cylindrical Lens – H Profile

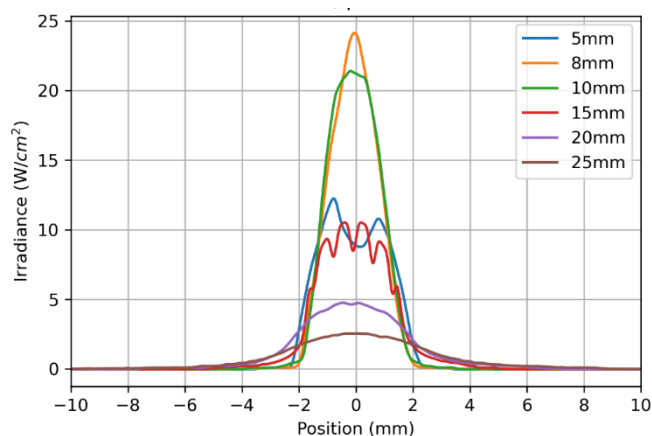


365nm V3 Head with Cylindrical Lens – V Profile

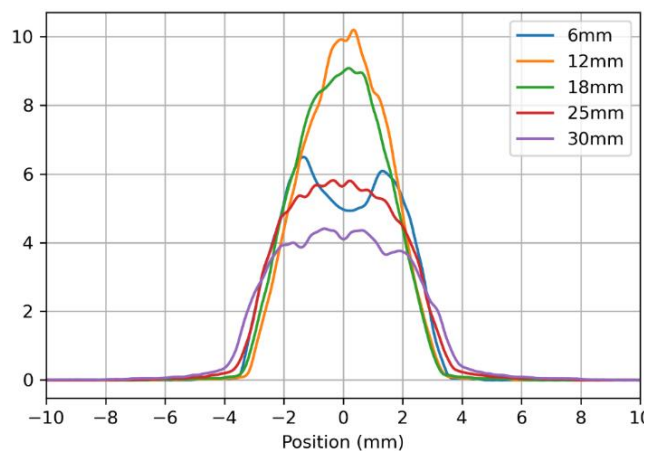
Wavelength	365±5nm V3 LED Head				
Power (typical) ¹	750 mW				
Peak Irradiance (typical) ²	16.8 W/cm ²	7.1 W/cm ²	4.6 W/cm ²	3.0 W/cm ²	1.6 W/cm ²
Optimized Working Distance	7.5±1mm	11.5±1mm	14±1mm	16.5±1mm	16.5±1mm
Spot Diameter	3mm	6mm	8mm	10mm	12mm

1. Typical optical power output is shown. Measured values between individual LED heads may vary up to +/- 20% due to inter-LED variability.
2. Typical maximum irradiance is shown. Measured values between individual LED heads may vary up to +/- 20% due to inter-LED variability. Field-measured maximum irradiance accuracy is dependent on calibration accuracy.
3. Beam profiles shown are based on a small sample size and are intended solely for reference purposes. Field-measured irradiance is subject to accuracy of the measurement setup and inter-LED variability.

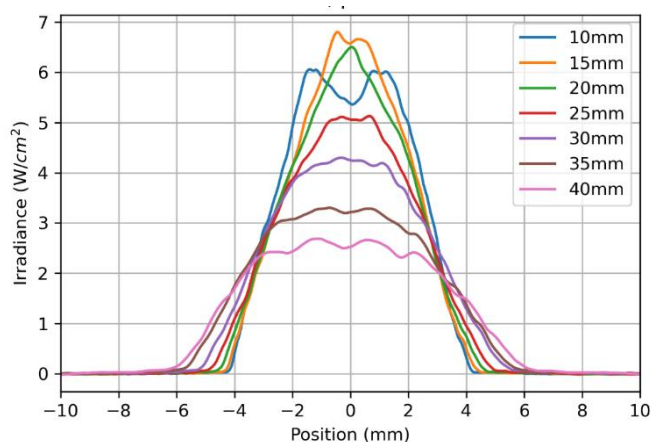
5.2. Beam Profiles – 385nm



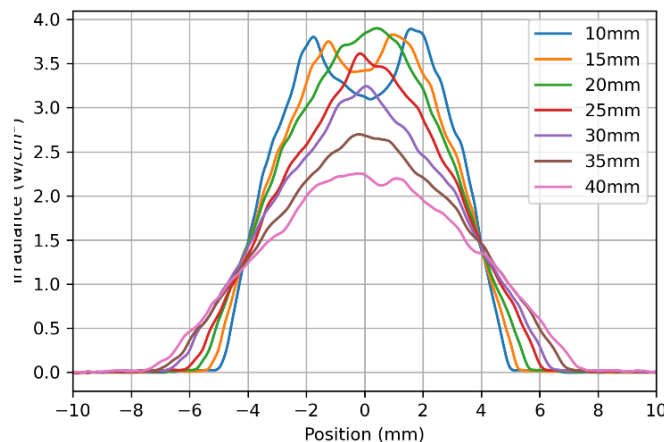
385nm V3 Head with 3mm Lens



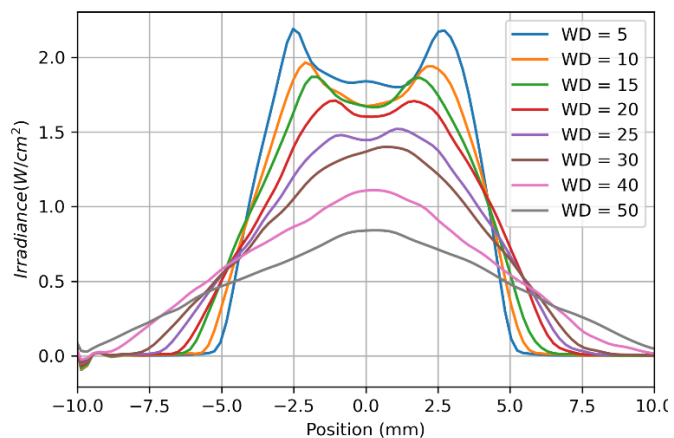
385nm V3 Head with 6mm Lens



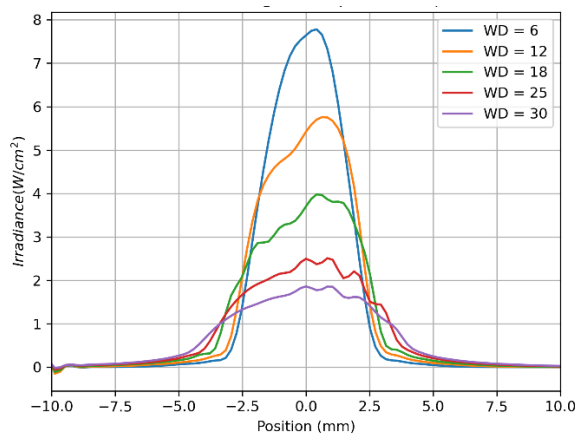
385nm V3 Head with 8mm Lens



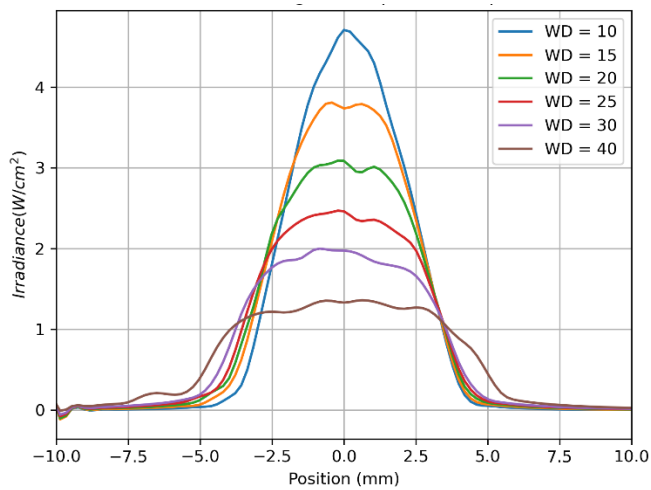
385nm V3 Head with 10mm Lens



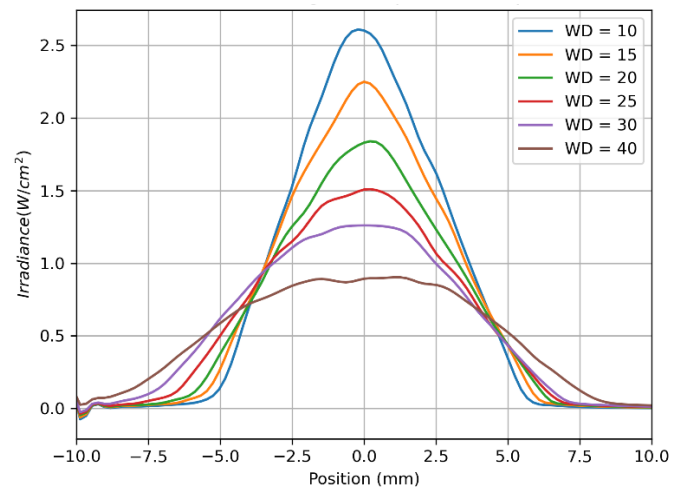
385nm V3 Head with 12mm Lens



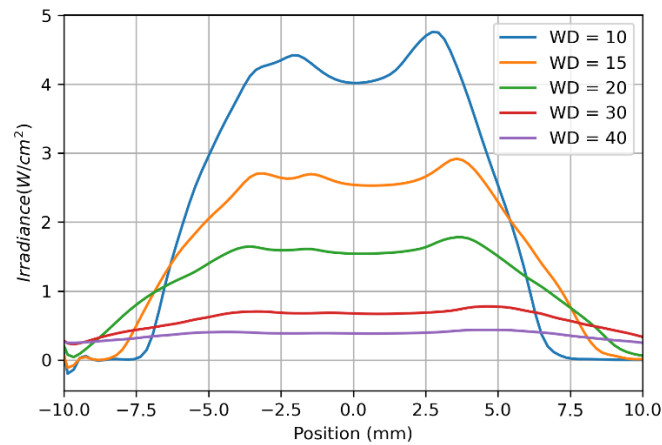
385nm V3 Head with 6mm – 90 Degree Lens



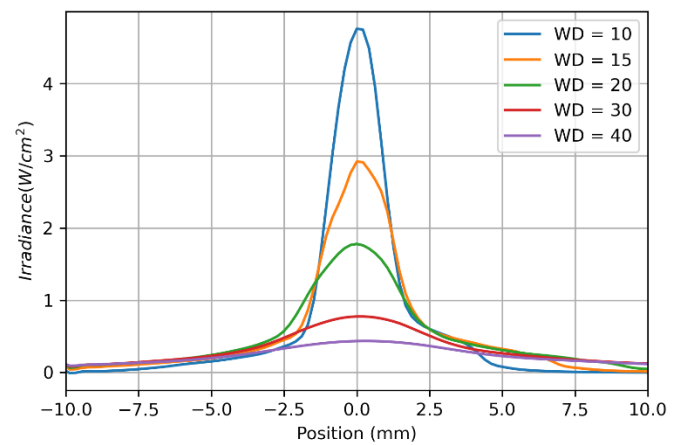
385nm V3 Head with 8mm – 90 Degree Lens



385nm V3 Head with 10mm – 90 Degree Lens



385nm V3 Head with Cyclindrical Lens – H Profile

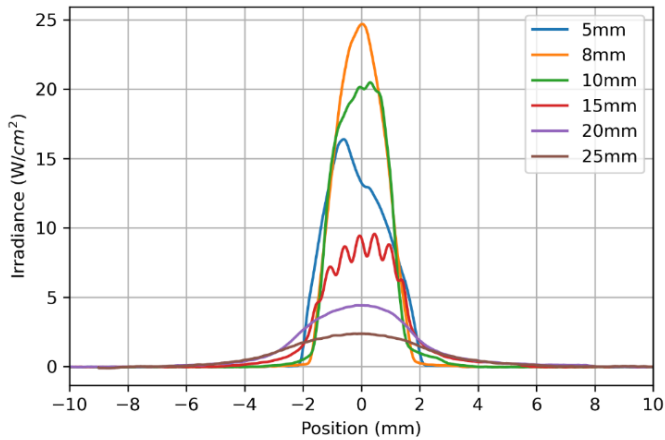


385nm V3 Head with Cyclindrical Lens – V Profile

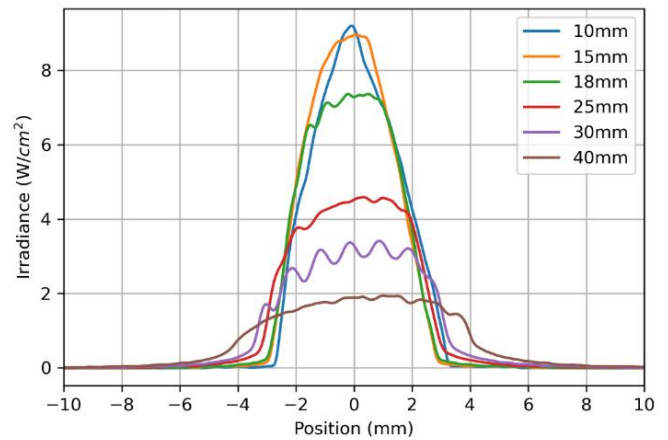
Wavelength	385±5nm V3 LED Head				
Power (typical) ¹	1100 mW				
Peak Irradiance (maximum) ²	27.3 W/cm ²	11.4 W/cm ²	7.1 W/cm ²	4.1 W/cm ²	2.1 W/cm ²
Optimized Working Distance	7.5±1mm	11.5±1mm	14±1mm	16.5±1mm	16.5±1mm
Spot Diameter	3mm	6mm	8mm	10mm	12mm

1. Typical optical power output is shown. Measured values between individual LED heads may vary up to +/- 20% due to inter-LED variability.
2. Typical maximum irradiance is shown. Measured values between individual LED heads may vary up to +/- 20% due to inter-LED variability. Field-measured maximum irradiance accuracy is dependent on calibration accuracy.
3. Beam profiles shown are based on a small sample size and are intended solely for reference purposes. Field-measured irradiance is subject to accuracy of the measurement setup and inter-LED variability.

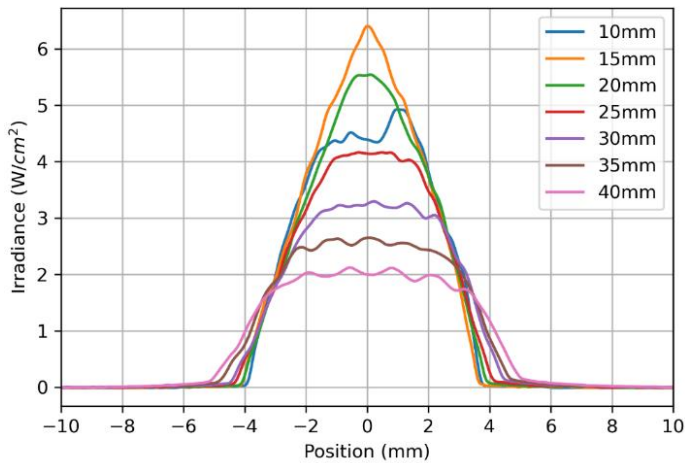
5.3 Beam Profiles – 395nm



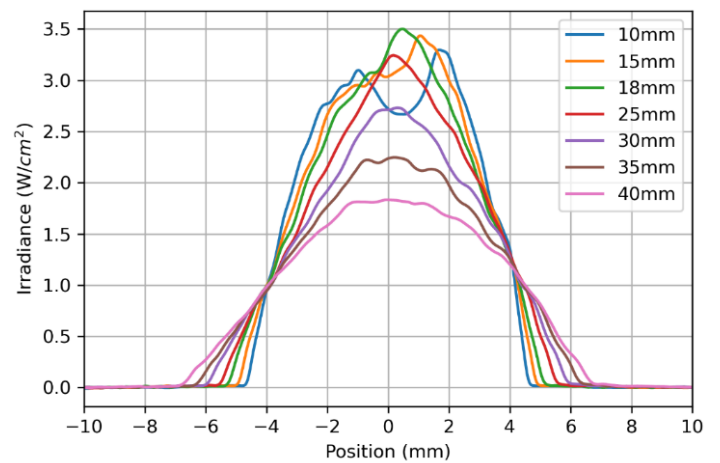
395nm V3 Head with 3mm Lens



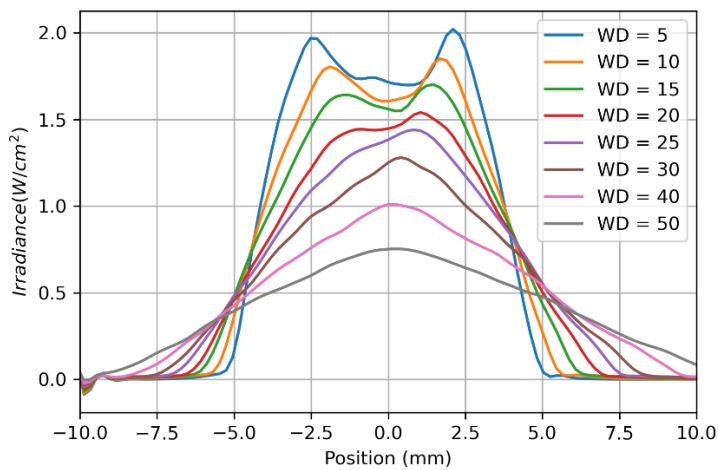
395nm V3 Head with 6mm Lens



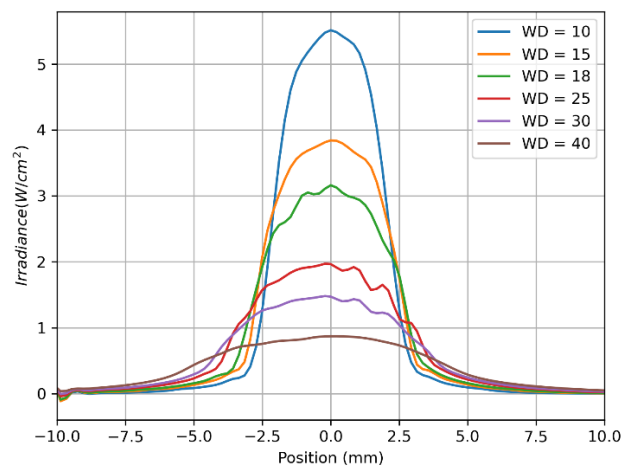
395nm V3 Head with 8mm Lens



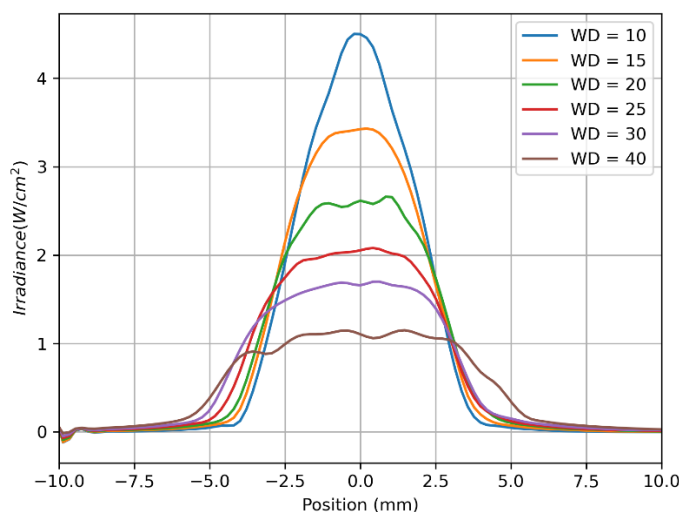
395nm V3 Head with 10mm Lens



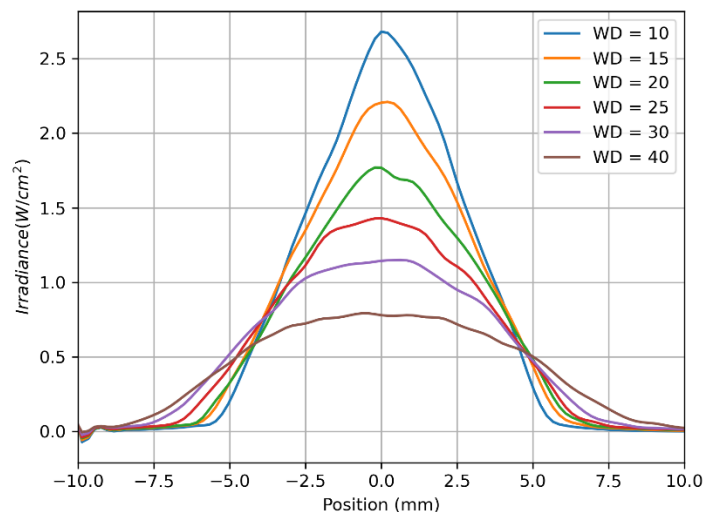
395nm V3 Head with 12mm Lens



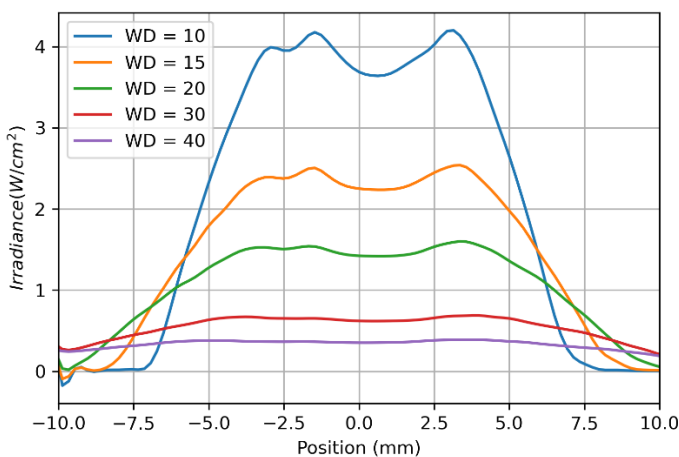
395nm V3 Head with 6mm – 90 Degree Lens



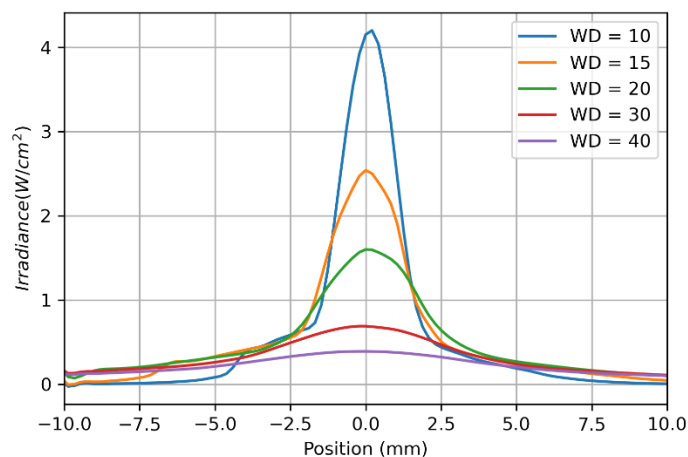
395nm V3 Head with 8mm – 90 Degree Lens



395nm V3 Head with 10mm – 90 Degree Lens



395nm V3 Head with Cylindrical Lens – H Profile

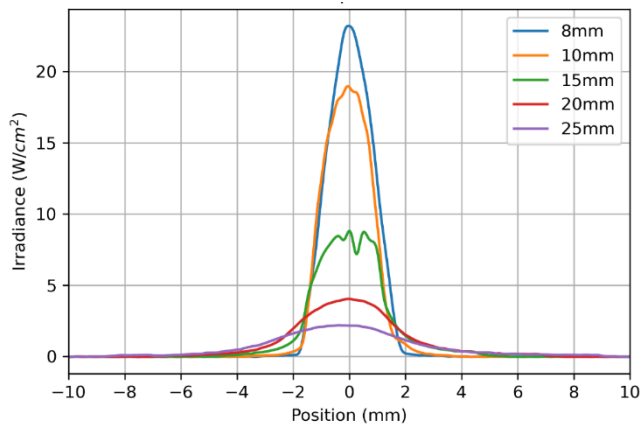


395nm V3 Head with Cylindrical Lens – V Profile

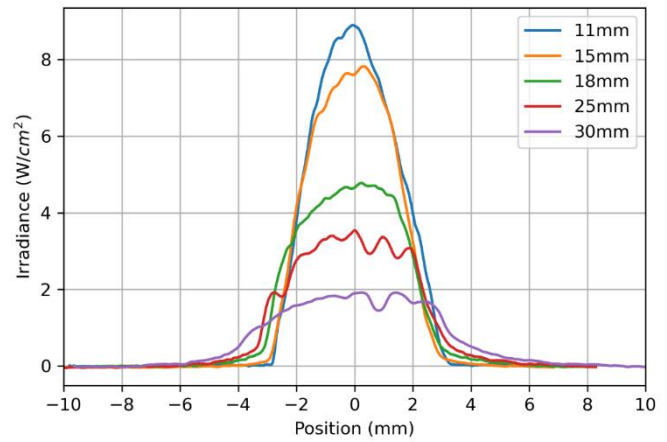
Wavelength	395±5nm V3 LED Head				
Power (typical) ¹	1100 mW				
Peak Irradiance (maximum) ²	27.0 W/cm ²	10.7 W/cm ²	6.9 W/cm ²	4.0 W/cm ²	2.1 W/cm ²
Optimized Working Distance	7.5±1mm	11.5±1mm	14±1mm	16.5±1mm	16.5±1mm
Spot Diameter	3mm	6mm	8mm	10mm	12mm

1. Typical optical power output is shown. Measured values between individual LED heads may vary up to +/- 20% due to inter-LED variability.
2. Typical maximum irradiance is shown. Measured values between individual LED heads may vary up to +/- 20% due to inter-LED variability. Field-measured maximum irradiance accuracy is dependent on calibration accuracy.
3. Beam profiles shown are based on a small sample size and are intended solely for reference purposes. Field-measured irradiance is subject to accuracy of the measurement setup and inter-LED variability.

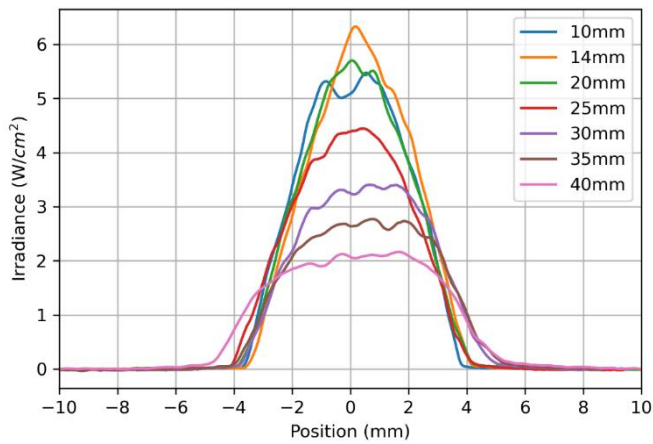
5.4 Beam Profiles – 405nm



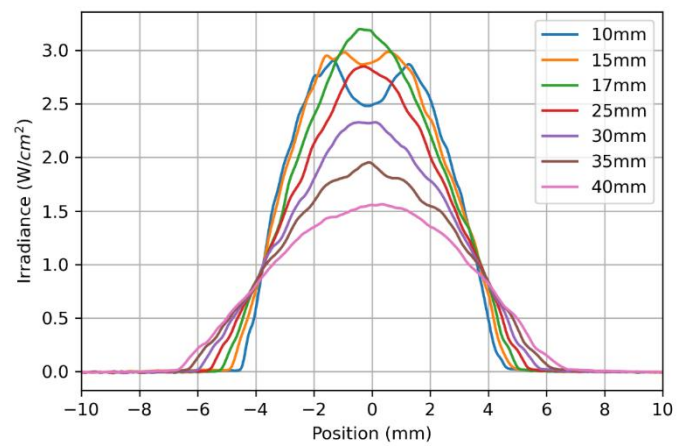
405nm V3 Head with 3mm Lens



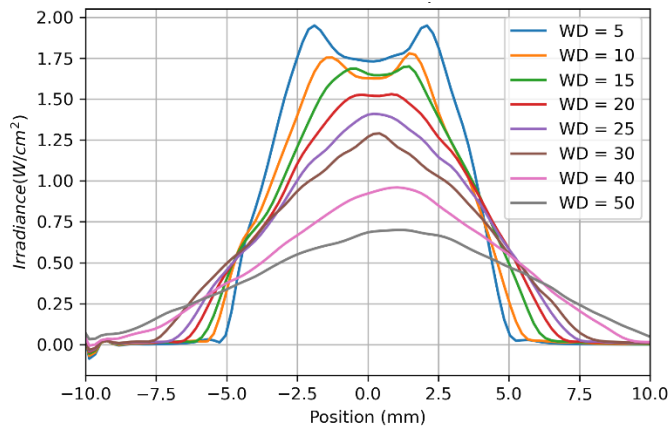
405nm V3 Head with 6mm Lens



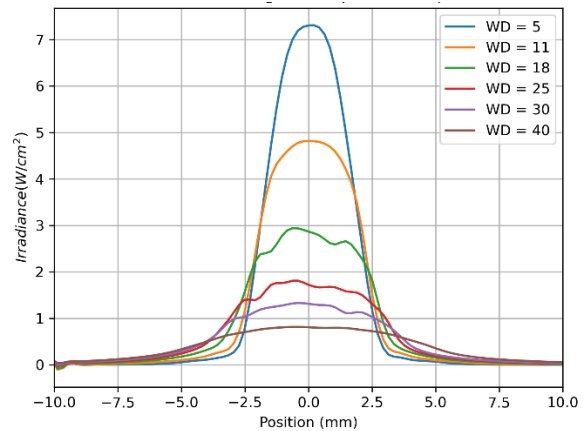
405nm V3 Head with 8mm Lens



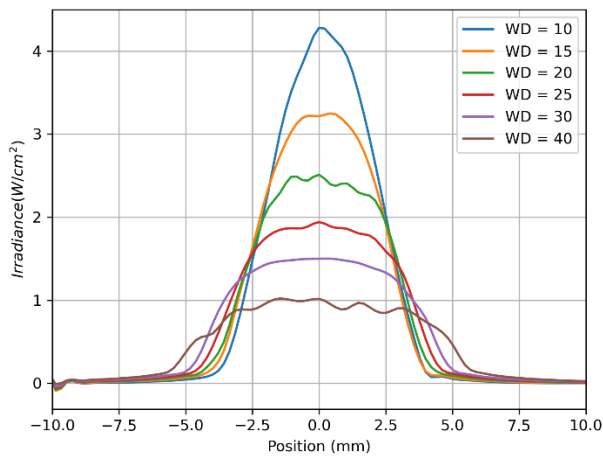
405nm V3 Head with 10mm Lens



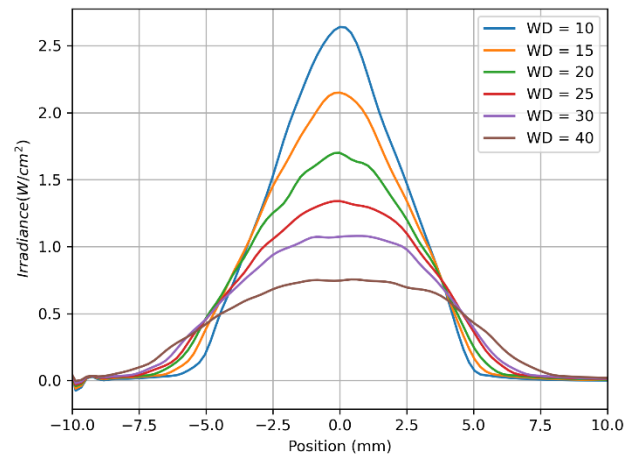
405nm V3 Head with 12mm Lens



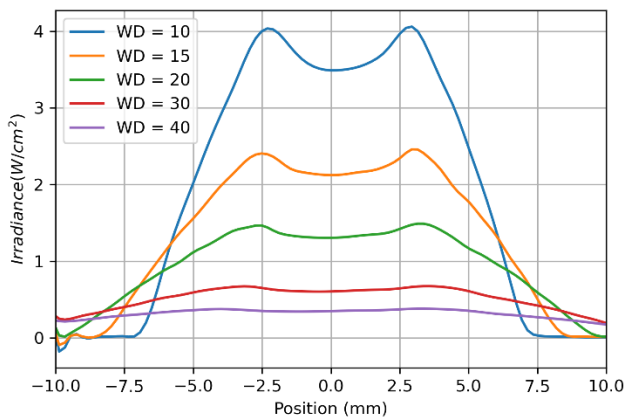
405nm V3 Head with 6mm – 90 Degree Lens



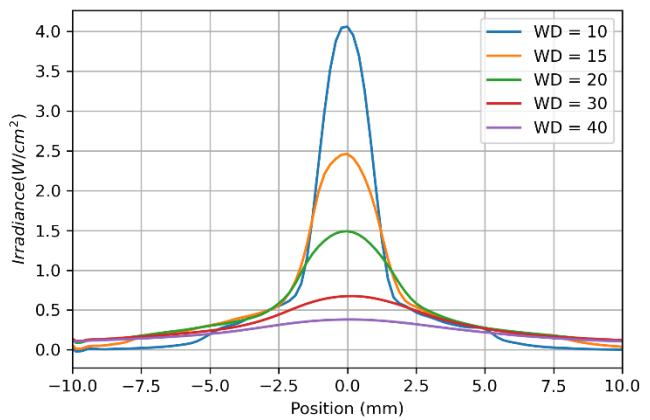
405nm V3 Head with 8mm – 90 Degree Lens



405nm V3 Head with 10mm – 90 Degree Lens



405nm V3 Head with Cylindrical Lens – H Profile



405nm V3 Head with Cylindrical Lens – V Profile

Wavelength	405±5nm V3 LED Head				
Power (typical) ²	1000 mW				
Peak Irradiance (maximum) ¹	23.8 W/cm ²	9.8 W/cm ²	6.4 W/cm ²	3.5 W/cm ²	1.9 W/cm ²
Optimized Working Distance	7.5±1mm	11.5±1mm	14±1mm	16.5±1mm	16.5±1mm
Spot Diameter	3mm	6mm	8mm	10mm	12mm

1. Typical optical power output is shown. Measured values between individual LED heads may vary up to +/- 20% due to inter-LED variability.
2. Typical maximum irradiance is shown. Measured values between individual LED heads may vary up to +/- 20% due to inter-LED variability. Field-measured maximum irradiance accuracy is dependent on calibration accuracy.
3. Beam profiles shown are based on a small sample size and are intended solely for reference purposes. Field-measured irradiance is subject to accuracy of the measurement setup and inter-LED variability.

5.5 Environmental Conditions

Operating Conditions

- Ambient Temperature: 15°C to 35°C
- 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 +60°C
- Relative Humidity: 10% to 100%
- Atmospheric Pressure: 500 to 1060 hPa

6. 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	

China RoHS



The symbol above indicates that this product is in compliance with China RoHS requirements.

Part Name	Hazardous Substances					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr (VI))	Polybrominated biphenyls (PBB)	Polybrominated diphenyl ethers (PBDE)
Printed circuit board assemblies	X	O	O	O	O	O

This table is compiled according to SJ/T 11364.

O: Indicates that the content of the hazardous substance in all homogeneous materials of the part is below the limit requirement of GB/T 26572.

X: Indicates that the content of the hazardous substance in at least one of the homogeneous materials of the part exceeds the limit requirement specified by GB/T 26572.

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 requires 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 Excelitas Technologies 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 Excelitas Technologies Service Centre. Excelitas Technologies 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 Excelitas Technologies 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

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>
