Smart Curing System
ZUV Series

CSM_ZUV_series_DS_E_7_1

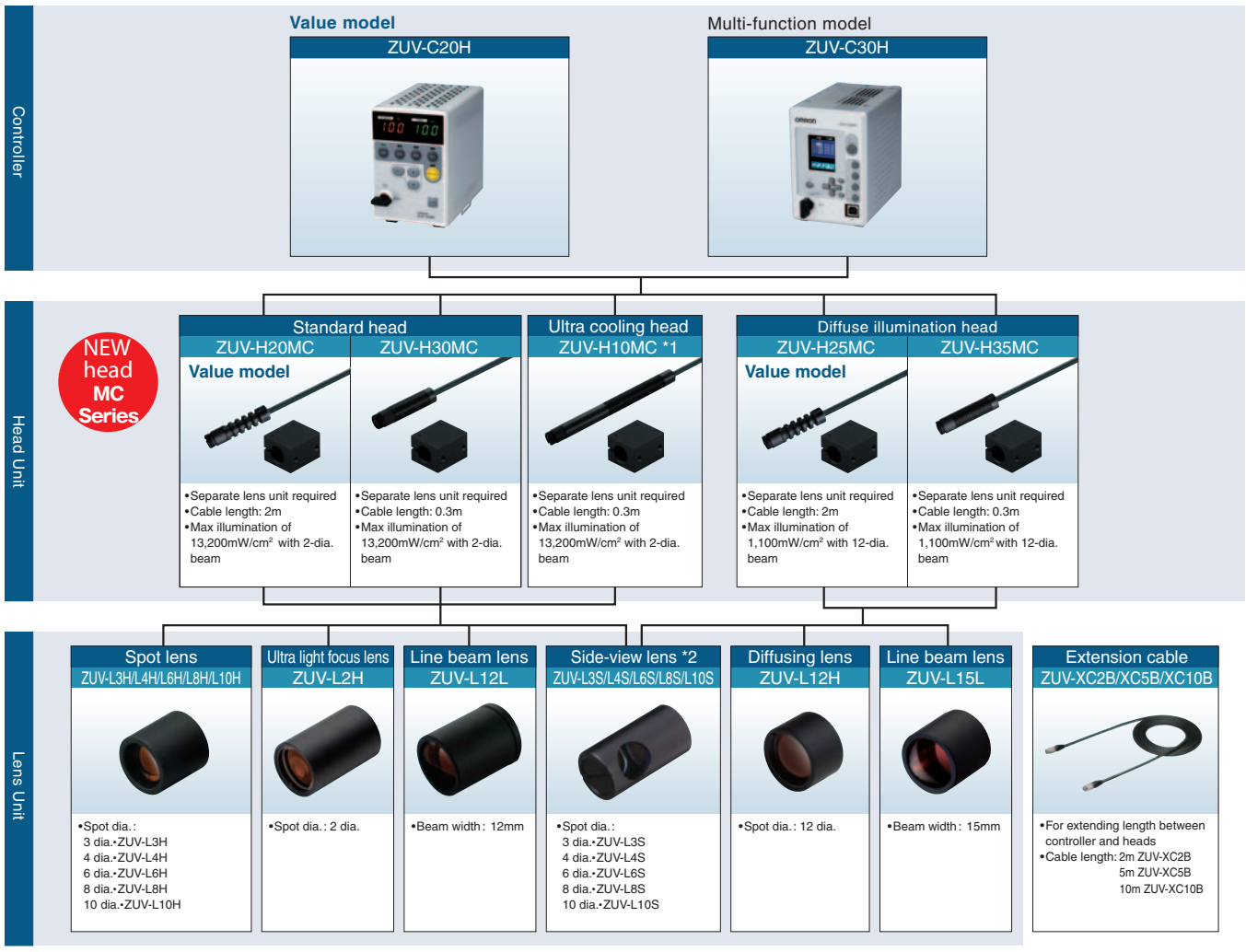
Cost Revolution Led by UV Curing System

- Minimal heat damage thanks to UV-LED irradiation.
- New UV LEDs with much higher brightness mounted in heads.
- Greater irradiation power to reduce bonding tact time.
- Usage of LEDs that have a long lifetime of 40,000 hours* drastically reduces running costs.
- Ultra compact body that is approximately 1/8th the size of a conventional lamp system.
- Equipped with a color LCD that makes settings simple and reliable.

* When using the ultra cooling head

Refer to *Safety Precautions* on page 7.

Product Configuration



*1 Model is also available with 2-m cable. (ZUV-H10MC 2M)

*2 When using ZUV-H25MC/H35MC diffuse illumination head with side-view lens, we recommend using ZUV-L3S/L4S.

Ordering Information

Controller

Type	Model
Value model	**ZUV-C20H**
Multi-function model	**ZUV-C30H**

Head Unit * NEW

Type		Cable length	Model
Standard head	Value model	2 m	**ZUV-H20MC 2M**
	–	0.3 m	**ZUV-H30MC 0.3M**
Ultra cooling head		0.3 m	**ZUV-H10MC 0.3M**
		2 m	**ZUV-H10MC 2M**
Diffuse illumination head	Value model	2 m	**ZUV-H25MC 2M**
	–	0.3 m	**ZUV-H35MC 0.3M**

* 365 - nm light source wavelength. Models are also available with a 385-nm light source wavelength.
(Standard head: ZUV-H21MC 2M/H11MC 2M, diffuse illumination head: ZUV-H26MC 2M)

Lens Unit

Type	Spot	Model
Spot lens	Spot dia.: 3 mm	**ZUV-L3H**
	Spot dia.: 4 mm	**ZUV-L4H**
	Spot dia.: 6 mm	**ZUV-L6H**
	Spot dia.: 8 mm	**ZUV-L8H**
	Spot dia.: 10 mm	**ZUV-L10H**
Ultra light focus lens	Spot dia.: 2 mm	**ZUV-L2H**
Line beam lens	Beam width: 12 mm	**ZUV-L12L**
	Beam width: 15 mm	**ZUV-L15L**
Side-view lens *	Spot dia.: 3 mm	**ZUV-L3S**
	Spot dia.: 4 mm	**ZUV-L4S**
	Spot dia.: 6 mm	**ZUV-L6S**
	Spot dia.: 8 mm	**ZUV-L8S**
	Spot dia.: 10 mm	**ZUV-L10S**
Diffusing lens (for diffuse illumination head)	Spot dia.: 12 mm	**ZUV-L12H**

* When using ZUV-H25MC/H35MC diffuse illumination head with side-view lens, we recommend using ZUV-L3S/L4S.

For Extending Length between Controller and Heads

Type	Cable length	Model
Extension cable	2 m	**ZUV-XC2B**
	5 m	**ZUV-XC5B**
	10 m	**ZUV-XC10B**

Ratings and Specifications

Controller

Model		ZUV-C20H (Value model)	ZUV-C30H (Multi-function model)
Irradiation method	Constant irradiation	Irradiation power (0% to100%), Irradiation time (max. 99.9s/unlimited)	Irradiation power (0% to 100%), Irradiation time (999.9 s max./unlimited)
	Pattern irradiation	Unavailable	Can be set to step or ramp (linear) (16 points specified per setting) Applicable Heads: ZUV-H Series
No. of settings		No bank feature	16 banks
Cumulative Irradiation		Time (unit: 100 hour display)	Energy (display unit - J)
Terminal block I/O	Input	Emergency stop, UV illumination start/stop (all channels/4 channels)	Emergency stop, start/stop UV irradiation (4 channels), select settings (banks)
	Output	Ready (all channels/4 channels), error, operating life	Ready (4 channels), UV irradiating, errors
RS-232C and USB I/O		None	Start/stop UV irradiation (4 channels), select settings (banks),get/change settings data, save/read data, power tuning
Cooling method		Natural air cooling (no fan)	Natural air cooling
Power supply voltage		AC power only 100V-240V AC ± 10%, 50/60 Hz (AC adapter attached) *	Select AC or DC power supply • AC power supply: 100 to 240 V AC±10%, 50/60 Hz (AC adapter included) • DC power supply: 24 V DC±10% (supplied from terminal block on back of unit)
Current consumption		1.4A (53W)	• With AC adapter: 1.5 A (36VA) • With DC power supply: 1.5 A (36VA)
Vibration resistance		10 to 150 Hz (acceleration 50 m/s^2) with a 0.35 mm single amplitude for 8 minutes each in X, Y, and Z directions, 10 times	
Shock resistance		150 m/s^2 in 6 directions (up/down, right/left, front/back) 3 times each	
Ambient temperature range		Operating: 5 to 35°C; Storage: -10 to 60°C (with no condensation or icing)	
Ambient humidity range		Operating/storage: 30% to 85% (with no condensation or icing)	
Degree of protection		IEC 60529 IP20	
Material		Polycarbonate, SECC	SUS, aluminum
Weight (package state)		Approx. 1,800g (Controller: approx. 1,200g)	Approx. 2,600g (Controller: approx. 1,800g)
Accessories		Instruction sheet, key, AC adapter	Instruction sheet, key, AC adapter, CD-ROM (USB driver, user's manual PDF, quick setting guide PDF)

* The power cord that is included as standard is designed for use with 100 VAC (Japanese specifications).

Head Unit

Model		ZUV-H20MC/H30MC/H10MC/H25MC/H35MC
Light source	Wavelength	365nm *
	Class	Class 3B (JIS C 6802: 2005) Class 3B (EN60825-1: 1994 +A1: 2002 +A2: 2001)
Vibration resistance		10 to 150 Hz (acceleration 50 m/s^2) with a 0.35 mm single amplitude for 8 minutes each in X, Y, and Z directions, 10 times
Shock resistance		150 m/s^2 in 6 directions (up/down, right/left, front/back), 3 times each
Ambient temperature range		Operating: 5 to 35°C; Storage: –10 to 60°C (with no condensation or icing)
Ambient humidity range		Operating/storage: 30% to 85% (with no condensation or icing)
Degree of Protection		IEC60529 IP40
Material		ZUV-H20MC/25MC:Zinc, aluminum, glass ZUV-H30MC/H10MC/H35MC:Zinc, copper, aluminum, glass
Weight (packed state)		ZUV-H20MC/H25MC:Approx. 185g (Head unit: approx. 100g), ZUV-H30MC/H35MC:Approx. 150g (Head unit: approx. 55g), ZUV-H10MC 0.3M :Approx. 180g (Head unit:approx. 105g), ZUV-H10MC 2M :Approx. 235g (Head unit:approx. 160g)
Accessories		Instruction sheet, mounting brackets (with M3 screws), warning labels (in English)	

* Models are also available with a 385-nm light source wavelength. (Standard head:ZUV-H21MC 2M/H11MC 2M, diffuse illmination head:ZUV-H26MC 2M)

Lens Unit

Model	ZUV-L2H/L3H/L4H/L6H/L8H/L10H/L12L/L15L/L3S/L4S/L6S/L8S/L10S/L12H
Vibration resistance	10 to 150 Hz (acceleration 50 m/s^2) with a 0.35 mm single amplitude for 8 minutes each in X, Y, and Z directions, 10 times
Shock resistance	150 m/s^2, in 6 directions (up/down, right/left, front/back) , 3 times each
Ambient temperature range	Operating: 5 to 35°C; Storage: -10 to 60°C (with no condensation or icing)
Ambient humidity range	Operating/storage: 30% to 85% (with no condensation or icing)
Degree of Protection	IEC60529 IP40
Material	Aluminum, glass
Weight (package)	ZUV-L2H/L3H/L4H/L6H/L8H/L10H: Approx. 10g (Lens unit: approx. 5g), ZUV-L12L/L15L : Approx. 30g (Lens unit: approx. 5g), ZUV-L3S/L4S/L6S/L8S/L10S : Approx. 35g (Lens unit: approx. 5g), ZUV-L12H : Approx. 30g (Lens unit: approx. 5g)
Accessories	Instruction sheet

When using the standard head

Ultra light focus lens/Spot lens/Line beam lens

Head unit model	ZUV-H20MC/H30MC/H10MC						
Lens unit model	ZUV-L2H	ZUV-L3H	ZUV-L4H	ZUV-L6H	ZUV-L8H	ZUV-L10H	ZUV-L12L
Spot diameter/Beam shape	2 dia.	3 dia.	4 dia.	6 dia.	8 dia.	10 dia.	12 × 2mm
Recommended working distance	10mm	10mm	15mm	20mm	20mm	30mm	15mm
Peak illumination *1	13,200mW/cm^2	8,600mW/cm^2	7,200mW/cm^2	4,500mW/cm^2	2,200mW/cm^2	760mW/cm^2	1,500mW/cm^2

Side-view lens

Head unit model	ZUV-H20MC/H30MC/H10MC				
Lens unit model	ZUV-L3S	ZUV-L4S	ZUV-L6S	ZUV-L8S	ZUV-L10S
Spot diameter	3 dia.	4 dia.	6 dia.	8 dia.	10 dia.
Recommended working distance	4mm	5mm	8mm	13mm	5mm
Peak illumination *1	8,300mW/cm^2	6,400mW/cm^2	4,200mW/cm^2	2,100mW/cm^2	660mW/cm^2

When using the diffuse Illmination head

Diffusing lens/Side-view lens/Line Beam lens

Head unit model	ZUV-H25MC/H35MC			
Lens unit model	ZUV-L12H	ZUV-L3S	ZUV-L4S	ZUV-L15L
Spot diameter/Beam shape	12 dia.	3 dia.	4 dia.	15 × 3mm
Recommended working distance	30mm	8mm	13mm	15mm
Peak illumination *1	1,100mW/cm^2	5,400mW/cm^2	3,000mW/cm^2	770mW/cm^2

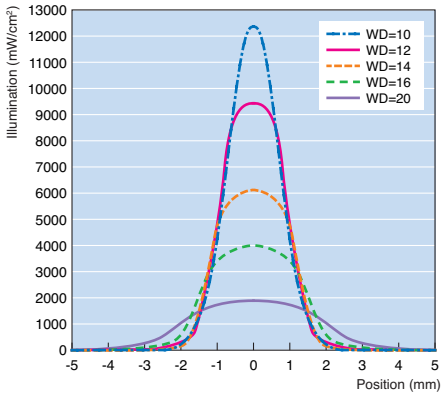
*1. Under the following conditions: 100% irradiation power, 25°C room temperature, and with heat sink. Values for reference only.
The illumination varies depending on factors such as the amiant environment, installation conditions, the service life of part, and differences between parts.
Continually check the curing status to ensure that there is room for error in the illumination.
Refer to Beam Spot Profiles (Typical Examples) on page 5 for design information.

Engineering Data (Reference Value)

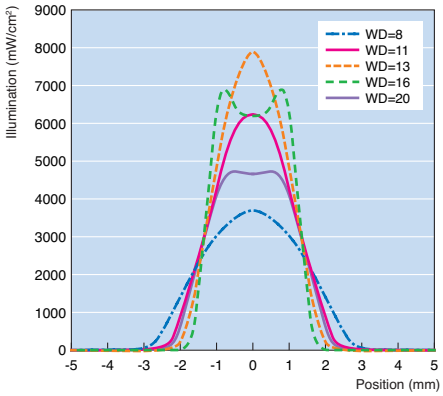
Beam Spot Profiles (Typical Examples)

Standard head /ultra cooling head (Controller ZUV-C20H/C30H, at 100% irradiation power)

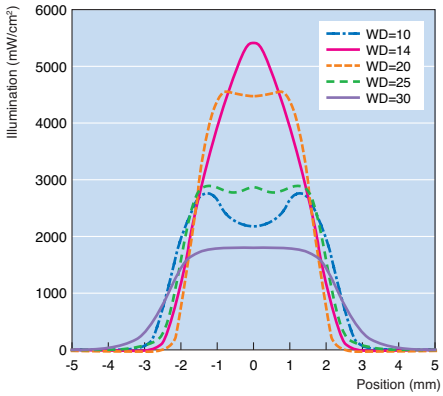
Ultra light focus lens ZUV-L2H Illumination profile



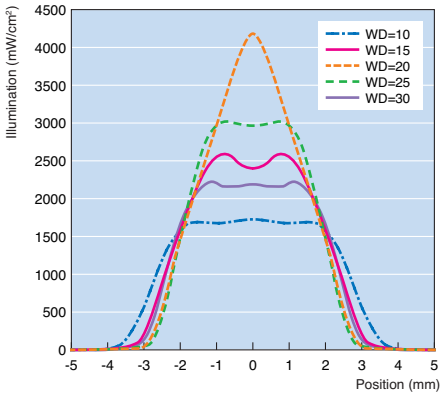
Spot lens ZUV-L3H Illumination profile



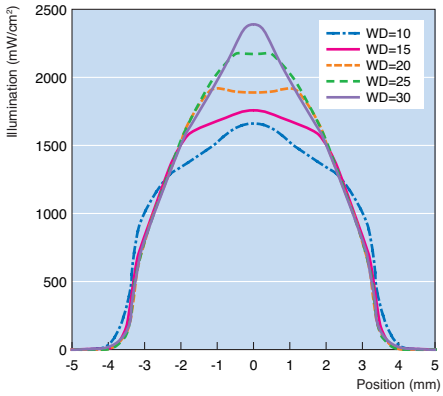
Spot lens ZUV-L4H Illumination profile



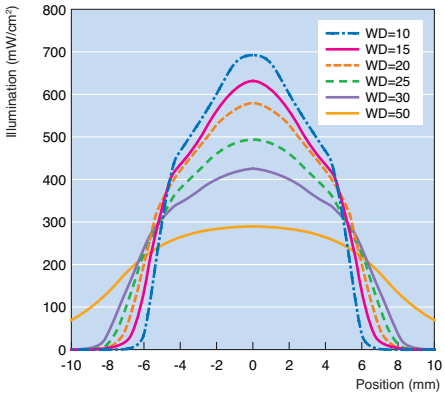
Spot lens ZUV-L6H Illumination profile



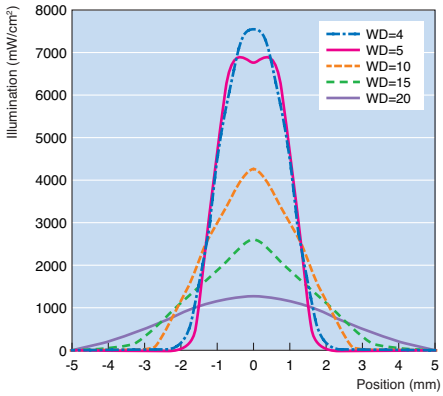
Spot lens ZUV-L8H Illumination profile



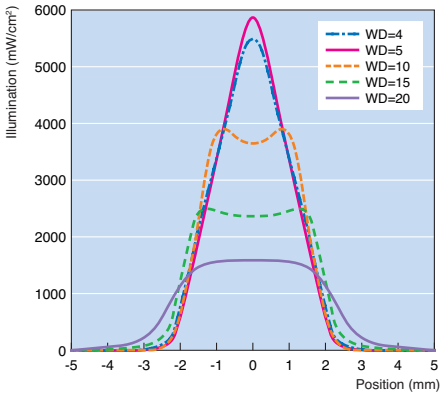
Spot lens ZUV-L10H Illumination profile



Side-view lens ZUV-L3S Illumination profile

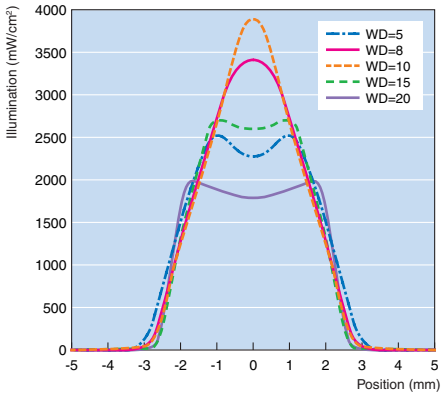


Side-view lensZUV-L4S Illumination profile

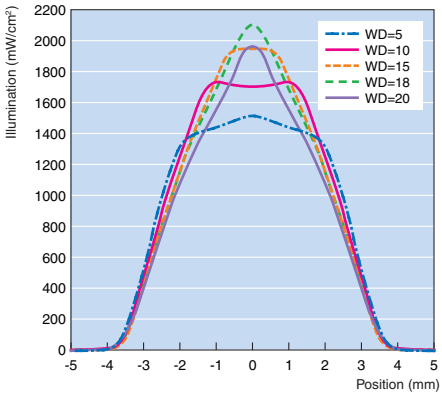


Note: 1. WD is setting distance to a workpiece from a lens unit end face.
Note: 2. The illumination profile varies depending on factors such as the ambient environment, installation conditions, the service life of part, and differences between parts. Continually check the curing status of the resin to ensure that there is room for error in the illumination profile.

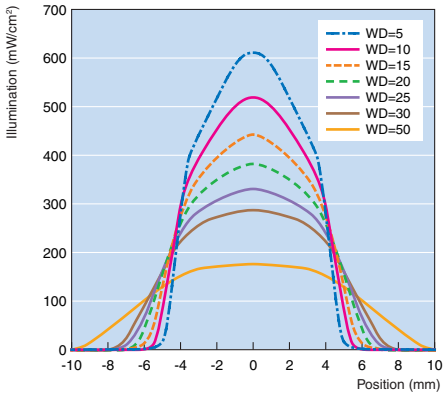
Side-view lens ZUV-L6S Illumination profile



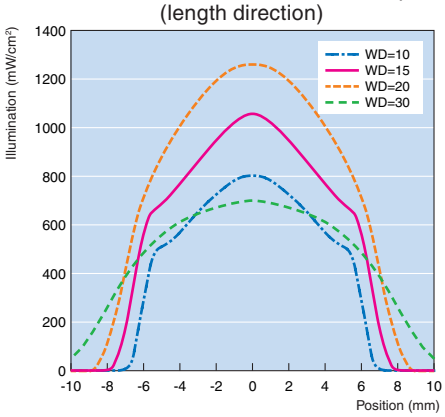
Side-view lens ZUV-L8S Illumination profile



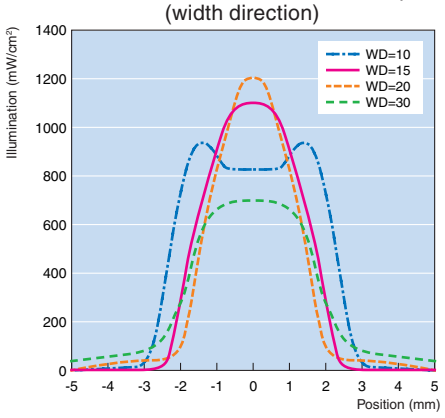
Side-view lens ZUV-L10S Illumination profile



Line beam lens ZUV-L12L Illumination profile (length direction)

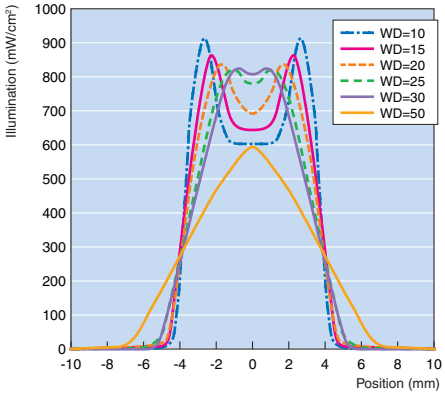


Line beam lens ZUV-L12L Illumination profile (width direction)

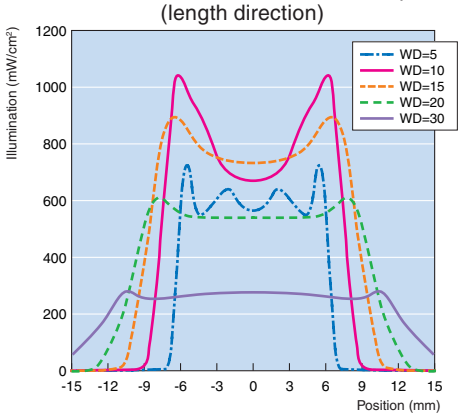


Diffuse illumination head ZUV-H25MC/H35MC
(Controller ZUV-C20H/C30H, at 100% irradiation)

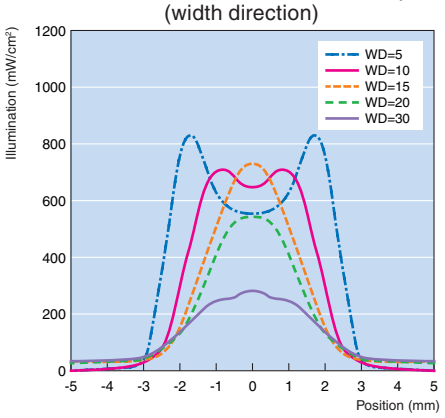
Diffusing lens ZUV-L12H Illumination profile



Line beam lens ZUV-L15L Illumination profile (length direction)



Line beam lens ZUV-L15L Illumination profile (width direction)



Note: 1. WD is setting distance to a workpiece from a lens unit end face.
Note: 2. The illumination profile varies depending on factors such as the ambient environment, installation conditions, the service life of part, and differences between parts. Continually check the curing status of the resin to ensure that there is room for error in the illumination profile.

Safety Precautions

Refer to Warranty and Limitatious of Liability.

Controller

⚠ WARNING

Damage or fire may occur.
Do not exceed the rated voltage.

PRECAUTIONS FOR SAFE USE

Observe the following precautions to ensure safe operation.

1. **Do not use the product in atmospheres containing flammable or explosive gases.**
2. **Do not install the product close to high-voltage devices and/or power devices in order to secure the safety of operations and maintenance.**
3. **If you use an AC power supply, use the enclosed AC adapter (100 to 240 VAC ± 10%).**
4. **If you use a DC power supply, do not use a power supply that exceeds the rated voltage (24 VDC ± 10%). Also, do not reverse the polarity when you connect the power supply. Recommended power supply: OMRON S8VS-18024 (24 VDC, 7.5 A)**
5. **Do not short-circuit the load of an open-collector output.**
6. **Do not exceed the rated load.**
7. **Lay the product cable away from any high-voltage cable or power line. If laid in the same conduit or duct, induction noise from them may caused malfunction or breakdown of the product.**
8. **In the event of smoke, excessive heat of the cover or strange smell out of the product, immediately stop operation of the product, turn OFF the power supply, and disconnect the plug from the outlet. As repair by the customer is dangerous, contact an OMRON's local office or sales office.**
9. **Do not try to disassemble, repair, or modify the product. Doing so may result in malfunctions, causing fire or electric shock.**
10. **Dispose this product as industrial waste.**
11. **Do not drop this product. In the event of dropping or breaking the product, turn OFF the power supply, disconnect the power plug from the outlet, and then contact an OMRON's local office or sales office. Doing so may result in fire.**
12. **Do not put foreign material into a vent hole. Doing so may result in fire or electric shock.**
13. **Do not closely contact or pile up controllers. Doing so may result in fire or faults.**

PRECAUTIONS FOR CORRECT USE

1. Avoid installing the product in the following places:
- **Places exceeding the rated ambient temperature**
- **Places exposed to extreme temperature changes (prevent condensation)**
- **Places where RH levels are outside the range 35% to 85%**
- **Places subject to corrosive or flammable gases**
- **Places subject to dust (including iron dust), or salts**
- **Places subject to direct shock or vibration**
- **Places subject to disturbance light such as ultraviolet (UV), laser beam, welding arc**
- **Places subject to direct sunlight or places close to heaters**
- **Places subject to exposure to water, oil, or chemicals, or subject to mist**
- **Places subject to strong magnetic field or electric field**

2. Power supply and wiring
- **When using the product, make sure FG (frame ground terminal) is connected.**
- **If you use a DC power supply, ground the power supply.**
- **If you use a DC power supply, observe the following precautions.**
  - **If you use a commercially available switching regulator, ground the FG terminal.**
  - **If there is surge on the power line, connect a surge absorber that is suitable for the application environment.**
  - **Before you turn ON the power supply after wiring, confirm that the power supply is wired correctly, make sure that the load is not short-circuited, and make sure that the load current is suitable.**
- **If you use the AC adapter, connect the power plug to the Controller first and then plug the power cord into the outlet.**
- **When you disconnect the AC adapter, disconnect the power cord from the outlet first and then disconnect it from the Controller.**
- **When you connect or disconnect the Head Unit, make sure that you do so with the power supply turned OFF.**
- **Use only the combinations of the Head Unit and Controller that are given in this datasheet.**
- **You can use one of the special Extension Cables to extend the cable length between a Head Unit and Controller, but you cannot connect more than one Extension Cable together.**

3. Cleaning
- **Avoid the use of thinner, benzine, acetone, and kerosene. Use of these solvents will melt the surface of the device.**
- **Use commercially available alcohol.**
- **Wipe out small dirt or dust carefully not to damage the lens using a soft cloth (such as a lens cleaner) containing a small quantity of alcohol.**

4. Resin cure

State of resin cure changes depending on various factors. Continuously check the state of resin cure to set at the best condition.

5. Replacing the head

When you replace the Head Unit, always initialize the applicable channel in the Controller. If you do not initialize the channel, the previous Head Unit information (e.g., cumulative irradiation energy and power tuning data) will remain and the new Head Unit will not function correctly.

6. Connecting the head

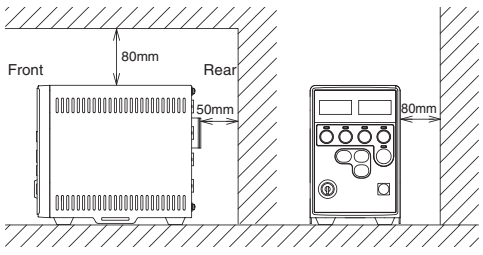
If you disconnect a Head Unit and then reconnect it, always connect it to the same channel. If you connect a Head Unit to a different channel, the specific Head Unit information (e.g., cumulative irradiation energy and power tuning data) will not be inherited and the Head Unit will not function correctly.

7. LED safety measures

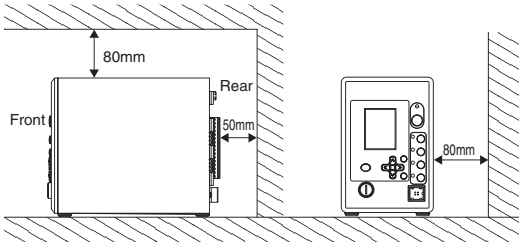
As connected with the head, the unit generates UV that is classified as Class 3B, so, this controller provides functions such as safety key lock function. Use these functions according to requirements specified in JIS C 6802.

■ Installing the controller

ZUV-C20H



ZUV-C30H



Safety Precautions

Head Unit

⚠ WARNING

Direct exposure of eye or skin to ultraviolet light will damage eyesight or the skin. Never look into or expose the body to the ultraviolet light.
Work wearing protection glasses and protection equipment if exposure to the reflected ultraviolet light is considered.

Electric shock or leaked light may cause injury or damage to the product.
Never disassemble the product.

⚠ CAUTION

Touching the product may result in burns.
Do not touch the product while energized or immediately after turning OFF the power supply.

PRECAUTIONS FOR SAFE USE

Observe the following precautions to ensure safe operation.

1. **Do not use the product in atmospheres containing flammable or explosive gases.**
2. **Do not try to disassemble, repair, or modify this product.**
3. **Dispose of this product as industrial waste.**
4. **Do not touch the head lens for a long time during ultraviolet light irradiation. Doing so may result in burns.**
5. **Do a special medical check-up, based on "Notice No.308" of Ministry of Health, Labour and Welfare, for workers handling this product.**
6. **Be sure to use the attached mounting bracket to fix the head part. Use the bracket within the specified mounting range. Misuse of the mounting bracket may raise the head temperature, causing burns.**

PRECAUTIONS FOR CORRECT USE

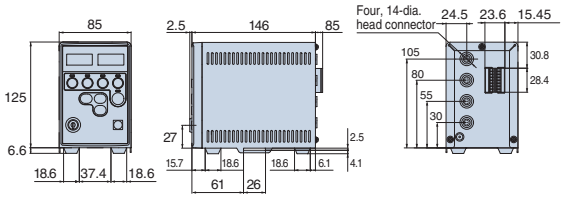
1. **Avoid installing the product in the following places:**
   - **Places exposed to strong electromagnetic fields**
   - **Places where the lens in front of the head may be exposed to dust, oil, or dew condensation.**
   - **Places subject to corrosive gases**
   - **Places where the product is exposed to direct shock or vibration.**
2. **Wiring**
   - **Keep the cable between the head and the controller away from high-voltage cables or power lines. If laid in the same duct, induction noise from them may cause malfunction or breakdown of the product.**
   - **Be sure to turn OFF the power supply when mounting or demounting the head part.**
   - **An extension cable can be used between head and the controller. Do not use extended multiple cables.**
3. **Cleaning**
   - **Avoid the use of thinner, benzine, acetone, and kerosene. Use of these solvents will melt the surface of the product.**
   - **Use commercially available alcohol.**
   - **Wipe out small dirt or dust carefully not to damage the lens using a soft cloth (such as a lens cleaner) containing a small quantity of alcohol.**
4. **Resin cure**
   State of resin cure changes depending on various factors. Continuously check the state of resin cure to set at the best condition.
5. **Mounting of the head**
   Make sure to use attached mounting bracket for the head part. Use the bracket within the specified mounting range. Misuse of the mounting bracket may raise the temperature rise of the head and shorten the usage life of LED.

Dimensions

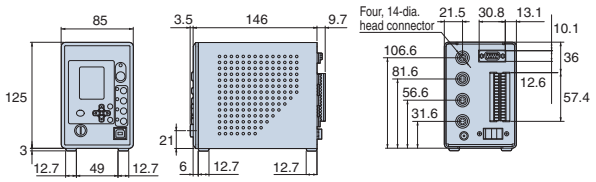
(Unit: mm)

Controller

Value model ZUV-C20H



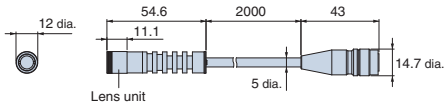
Multi-function model ZUV-C30H



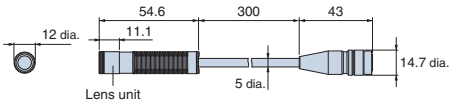
Head Unit

Standard head (When attached to spot lens)

Value model ZUV-H20MC

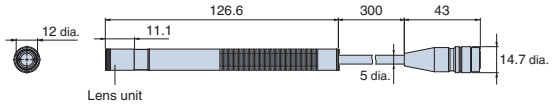


ZUV-H30MC



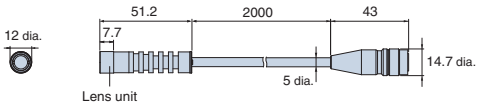
Ultra cooling head

ZUV-H10MC

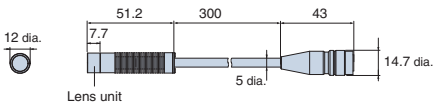


Diffuse illumination head (When attached to ZUV-L12H)

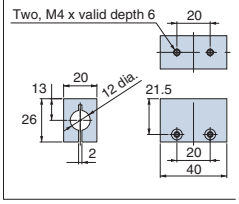
Value model ZUV-H25MC



ZUV-H35MC



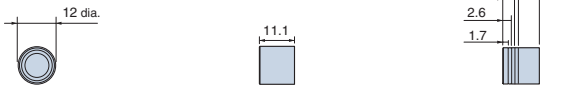
Mounting Bracket



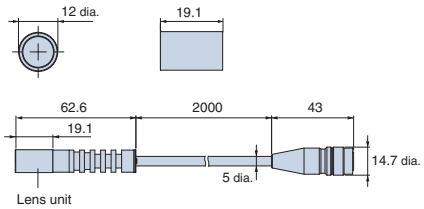
Lens Unit

Spot lens ZUV-L3H/L4H/L6H/L8H/L10H

Note: The model number is printed on the side of the Lens unit.

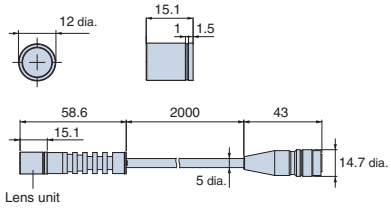


Ultra light focus lens ZUV-L2H



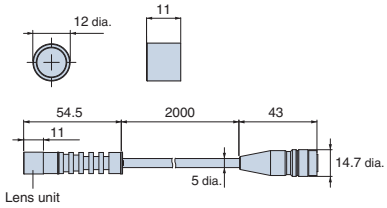
Note: When attached to ZUV-H20MC (Standard head value model)

Line beam lens ZUV-L12L



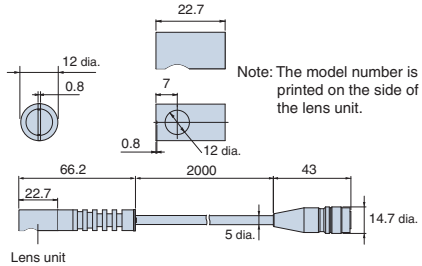
Note: When attached to ZUV-H20MC (Standard head value model)

ZUV-L15L



Note: When attached to ZUV-H25MC (Diffuse illumination head value model)

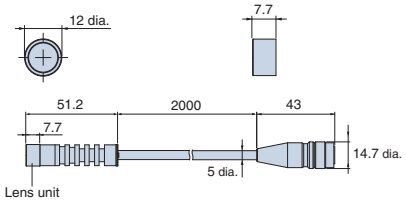
Side-view lens ZUV-L_S



Note: The model number is printed on the side of the lens unit.

Note: When attached to ZUV-H20MC (Standard head value model)

Diffusing lens ZUV-L12H



Note: When attached to ZUV-H25MC (Diffuse illumination head value model)

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