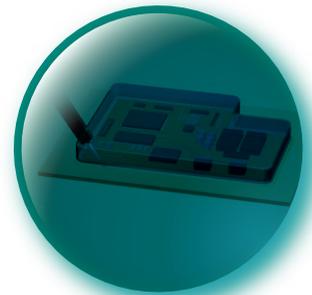
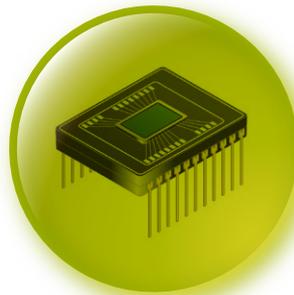
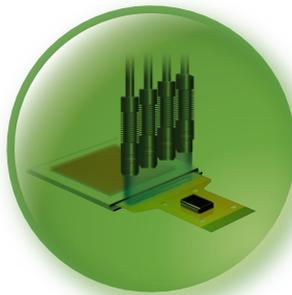


Aicure UJ series

Application Guide



Aicure UJ Series Features and Effects



Features	Effects	Cost	Operability	Functionality	Eco
High-power wide-range UV irradiation	Reducing the time required for curing (takt time)				
Stable UV intensity achieved by temperature feedback control	Stabilizing quality				
Irradiation intensity can be displayed and set on the controller with a UV sensor (option) connected.	Simplifying the UV intensity control operations and automating the intensity calibrations				
Low-temperature curing protects molded objects from thermal distortion.	Improving bonding accuracy				
Combinations of three types of heads and 12 types of lenses are available.	Providing irradiation conditions ideal for the desired purpose				
The lead time is shorter and the costs are lower than those using the light guide fiber type.	Enhancing productivity				
The programmed irradiation allows one LED head to irradiate objects at multiple UV intensities.	Cutting the initial cost The smaller unit requires less space.				
Power consumption: Lamp type: 280 VA → LED spot type: 70 VA or less (approx. 1/4)	Low power consumption, contributing to reduction of CO ₂ emissions				
The fan-less structure eliminates the need for measures against vibrations or dust.	Cutting the initial and running costs				
UV-sensitive resin can be detected by using Aicure as a light source for inspection.	Stabilizing inspection conditions and thereby improving quality Cutting the initial cost				
Estimated light source life: 20,000 hours	Significantly reducing the required labor and running costs for replacing lamps				



Contents

Aicure UJ Series Features and Effects 2

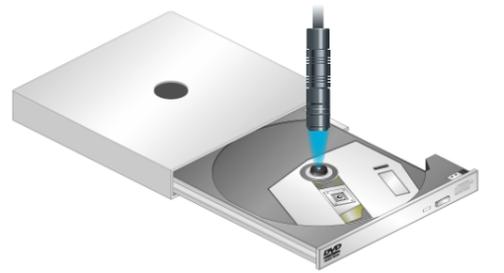
Digital home appliances	4	
LCD	5	
Motors	6	
Automotive parts	7	
Printing/Marking	8	
Electronic components	9	
Others	10	
Wide variety Product Lineup	11	

Digital home appliances

Application Guide

1 Bonding of lenses to optical pickup heads for personal computers

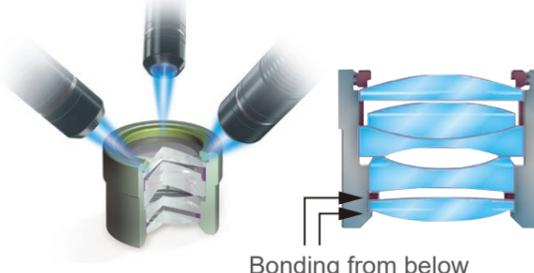
Optical pickup head
Bonding edges of pickup head lenses



1 2 3

2 Bonding camera lenses to optical tubes for digital cameras, mobile phones, etc.

Camera lens
Bonding camera lenses to optical tubes

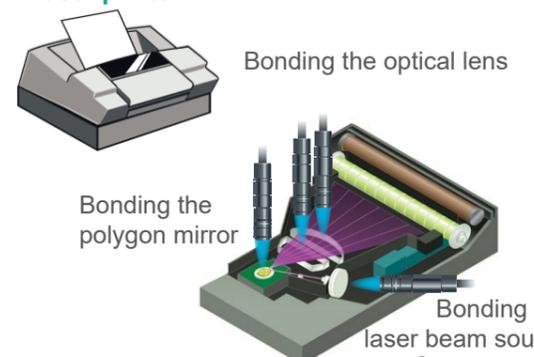


Bonding from below

2 3 4

3 Assembling optical parts of printers/copying machines

Laser printer
Bonding the optical lens



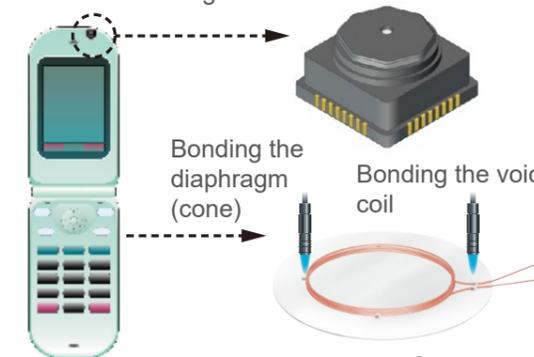
Bonding the polygon mirror

Bonding the laser beam source

1 3 4

4 Fixing/bonding precision parts of mobile phones

Bonding the lens unit



Bonding the diaphragm (cone)

Bonding the voice coil

3 4 5



Advantages of adopting UJ Series

- 1 The high-power irradiation reduces the curing time (takt time).
- 2 The temperature feedback control keeps the UV intensity constant, stabilizing the finish quality.
- 3 The simple UV measuring function automates the irradiation intensity calibrations.*
- 4 Low-temperature curing protects molded objects from thermal distortion, improving the bonding accuracy.
- 5 A variety of combinations of the LED head and lens provide irradiation conditions ideal for the desired purpose.

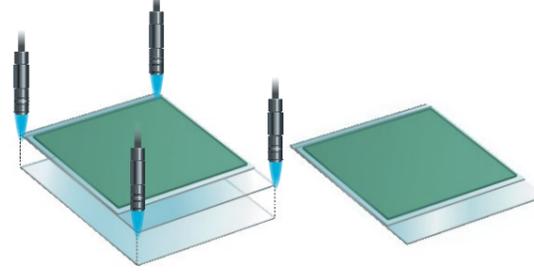
* Only when a UV sensor (option) is connected

LCD

Application Guide

1 Temporarily bonding film display boards

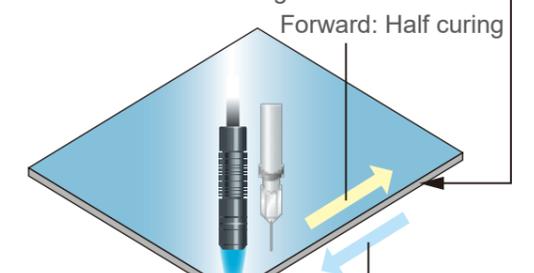
Film display
Temporarily bonding the film board



1 2

2 Bonding and sealing glass substrates for LCD

Glass substrates for LCD
Injecting UV resin along the seam between glass substrates



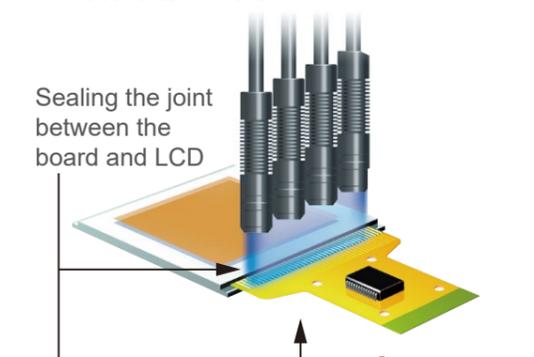
Forward: Half curing

Backward: Complete curing

3 4

3 Moisture-proof coating on LCD board terminals

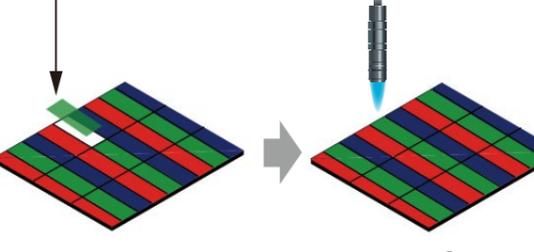
LCD board terminals
Sealing the joint between the board and LCD



2 3 5 6

4 Correcting defects in color filters of LCD panels

Color filter
Placing and bonding color ink onto defective portions



2 5



Advantages of adopting UJ Series

- 1 Low-temperature curing protects molded objects from thermal distortion, improving the bonding accuracy.
- 2 The simple UV measuring function automates the irradiation intensity calibrations.*
- 3 The high-power irradiation reduces the curing time (takt time).
- 4 The programmed irradiation enables individual UV irradiation by each LED head.
- 5 The temperature feedback control keeps the UV intensity constant, stabilizing the finish quality.
- 6 The lower power consumption contributes to a reduction of CO2 emissions.

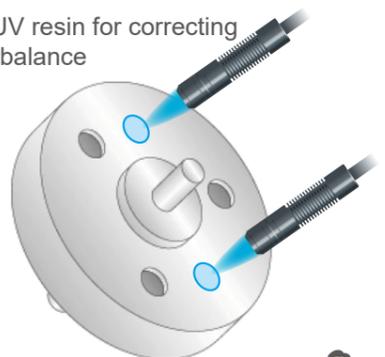
* Only when a UV sensor (option) is connected

Motors

Application Guide

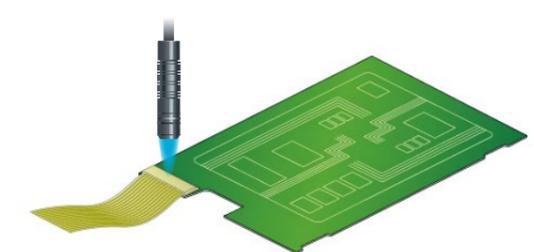
1 Correcting/adjusting motor stator rotation balance

Motor
Curing UV resin for correcting rotation balance




2 Moisture-proof coating and migration prevention of soldered joints between motor boards and lead wires

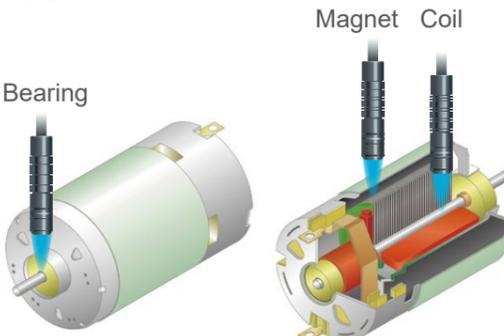
Motor board
Moisture-proof coating on the joint between the board and lead wire




3 Bonding motor parts

Motor

Bearing Magnet Coil

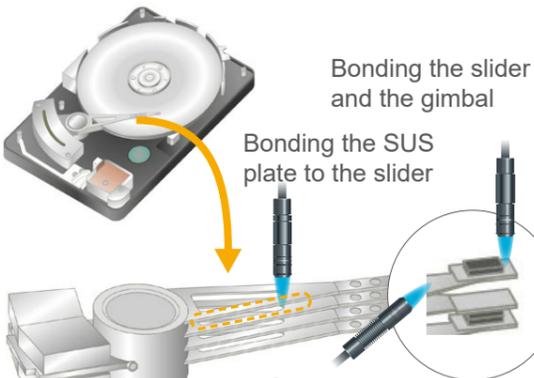



4 Fixing HDD actuator parts

Bonding the slider and the gimbal

Bonding the SUS plate to the slider

Slider





Advantages of adopting UJ Series

- 1 The high-power irradiation reduces the curing time (takt time).
- 2 The simple UV measuring function automates the irradiation intensity calibrations.*
- 3 The temperature feedback control keeps the UV intensity constant, stabilizing the finish quality.
- 4 The lower power consumption contributes to a reduction of CO₂ emissions.

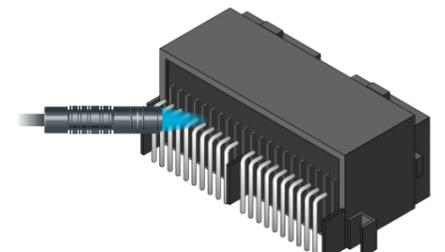
* Only when a UV sensor (option) is connected

Automotive parts

Application Guide

1 Bonding and protective coating of automotive connector pins

Connector
Preventing the pins from being removed




2 Bonding LCD boards to FPCs

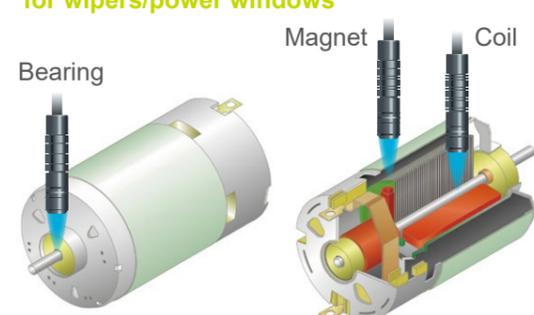
LCD for a monitor in an instrument panel
Bonding the LCD board for a monitor in an instrument panel to the FPC




3 Bonding motor parts for wipers/power windows

Bonding motor parts for wipers/power windows

Bearing Magnet Coil




4 Lighting for inspections by machine vision

Instrument panel
Lighting for detection of UV-sensitive resin





Advantages of adopting UJ Series

- 1 The high-power irradiation reduces the curing time (takt time).
- 2 The fan-less structure eliminates the need for measures against vibrations or dust, reducing the costs.
- 3 The simple UV measuring function automates the irradiation intensity calibrations.*
- 4 The temperature feedback control keeps the UV intensity constant, stabilizing the finish quality.
- 5 The use of Aicure as a light source for inspection allows the reliable detection of UV-sensitive resin.
- 6 The long life of the LED reduces the required labor and running costs for replacing lamps.

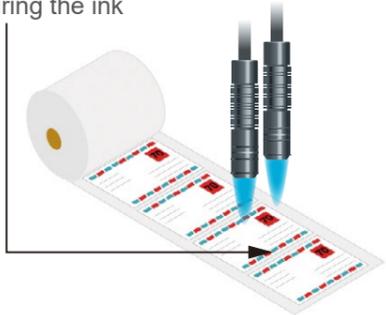
* Only when a UV sensor (option) is connected

Printing/Marking

Application Guide

1 Curing ink on labels/stickers

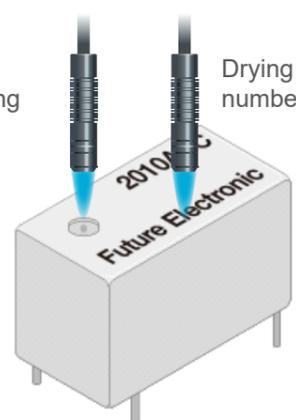
Label/sticker printer
Curing the ink



1 2 3

2 Curing printing ink on electronic components

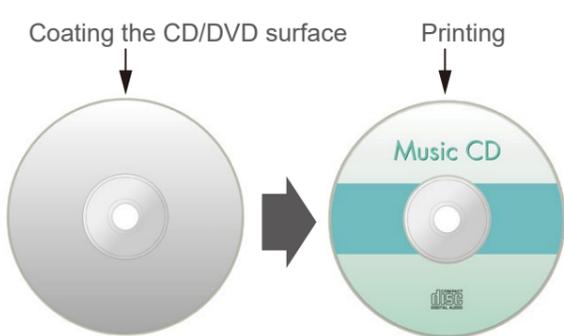
Relay
Sealing degassing holes
Drying the part/lot number printing ink



1 3

3 Printing and curing CD/DVD

CD/DVD
Coating the CD/DVD surface
Printing



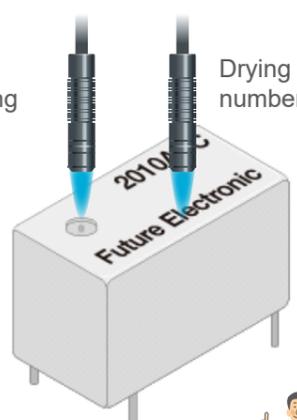
1 3

Electronic components

Application Guide

1 Curing printing ink on electronic components

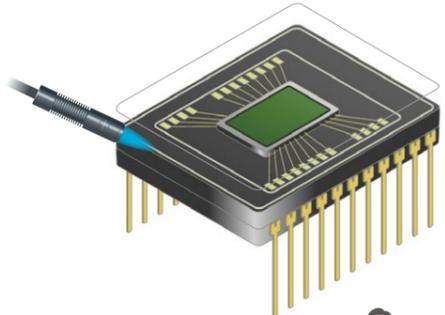
Relay
Sealing degassing holes
Drying the part/lot number printing ink



1 2 3

2 Bonding CCD protective glass plates

CCD
Bonding the protective glass plate



1 2 3 5

3 Moisture-proof coating on coil wires

Coil wire terminals
Protective coating on coil wire terminals



4 5

4 Bonding protective films

Pressure sensor/timer/counter
Bonding a protective film to the body



3 4

Advantages of adopting UJ Series

- 1 The long life of the LED reduces the required labor and running costs for replacing lamps.
- 2 The simple UV measuring function automates the irradiation intensity calibrations.*
- 3 Low-temperature curing protects molded objects from thermal distortion, improving the bonding accuracy.

* Only when a UV sensor (option) is connected

Advantages of adopting UJ Series

- 1 The high-power irradiation reduces the curing time (takt time).
- 2 The temperature feedback control keeps the UV intensity constant, stabilizing the finish quality.
- 3 The simple UV measuring function automates the irradiation intensity calibrations.*
- 4 Low-temperature curing protects molded objects from thermal distortion, improving the bonding accuracy.
- 5 A variety of combinations of the LED head and lens provide irradiation conditions ideal for the desired purpose.

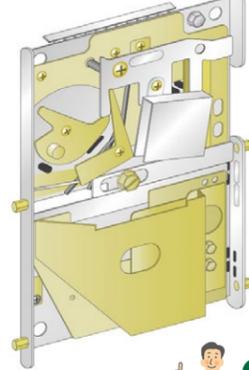
* Only when a UV sensor (option) is connected

Others

1 Bonding mechanical parts

Mechanical unit of a coin discriminator

Bonding the metal parts

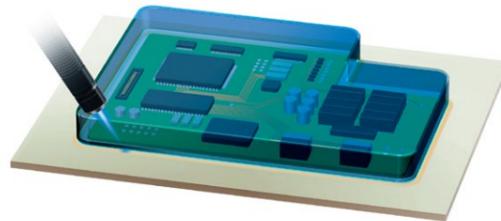


1 2 3 4

2 Bonding protective covers

Electronic circuit board

Bonding the protective cover to the board



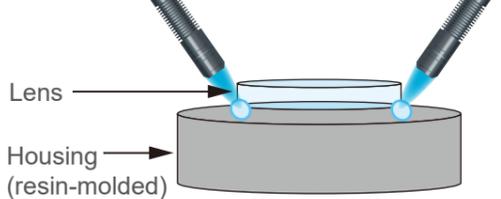
1 2 3

3 Bonding security camera lenses

Security camera unit



Bonding the lens to the housing (resin-molded)



1 2 3 4



Advantages of adopting UJ Series

- Low-temperature curing protects molded objects from thermal distortion, improving the bonding accuracy.
- The long life of the LED reduces the required labor and running costs for replacing lamps.
- The simple UV measuring function automates the irradiation intensity calibrations.*
- The fan-less structure eliminates the need for measures against vibrations or dust, reducing the costs.

* Only when a UV sensor (option) is connected

Wide variation Product Lineup

Controllers

UJ30 controller
ANUJ3000

- Up to four heads can be connected.
- With an AC adapter (**ANUJ6802**)

UJ35 controller
ANUJ3500

- Up to four heads can be connected.
- With an AC adapter (**ANUJ6802**)
- Compatible with a UV sensor (**ANUJ3800**)

UV sensor
ANUJ3800

UV sensor for **UJ35 / UP50** (includes 2 m **ANUJ38102** cable)

UV sensor extension cable
ANUJ38110 (10 m **32.808 ft**)
ANUJ38102 (2 m **6.562 ft**)

UV sensor connection cable (**ANUJ38102** is the same cable that ships with the UV sensor)

Connection cable

ANUJ62**

Cable length 1.7 m **5.906 ft** (Cable diameter: ϕ 5.5 mm ϕ 0.217 in); **ANUJ6220**
Cable length 3 m **9.843 ft** (Cable diameter: ϕ 5.5 mm ϕ 0.217 in); **ANUJ6230**
Cable length 5 m **16.404 ft** (Cable diameter: ϕ 7.6 mm ϕ 0.299 in); **ANUJ6250**
Cable length 7 m **22.966 ft** (Cable diameter: ϕ 7.6 mm ϕ 0.299 in); **ANUJ6270**
Cable length 10 m **32.808 ft** (Cable diameter: ϕ 7.6 mm ϕ 0.299 in); **ANUJ6200**

(Note 1)
Heads & Cables

High-output head 365 nm
ANUJ6186

- ϕ 12 x 50 mm ϕ 0.472 x 1.969 in
- Cable length 0.2 m 0.656 ft

Standard type 365 nm
ANUJ6180

- ϕ 12 x 50 mm ϕ 0.472 x 1.969 in
- Cable length 0.2 m 0.656 ft

High-output head 385 nm
ANUJ6188

- ϕ 12 x 50 mm ϕ 0.472 x 1.969 in
- Cable length 0.2 m 0.656 ft

Standard type 385 nm
ANUJ6184

- ϕ 12 x 50 mm ϕ 0.472 x 1.969 in
- Cable length 0.2 m 0.656 ft

High-output head 405 nm
ANUJ6189

- ϕ 12 x 50 mm ϕ 0.472 x 1.969 in
- Cable length 0.2 m 0.656 ft

Standard type 405 nm
ANUJ6187

- ϕ 12 x 50 mm ϕ 0.472 x 1.969 in
- Cable length 0.2 m 0.656 ft

Lenses

Standard lens
ANUJ642*

- Circular irradiation
- ϕ 3 mm **0.118 in**: **ANUJ6423**
- ϕ 4 mm **0.157 in**: **ANUJ6424**
- ϕ 6 mm **0.236 in**: **ANUJ6426**
- ϕ 8 mm **0.315 in**: **ANUJ6428**
- ϕ 10 mm **0.394 in**: **ANUJ6420**

Side view lens
ANUJ642*SV

- Circular irradiation Angled at 90°
- ϕ 6 mm **0.236 in**: **ANUJ6426SV**
- ϕ 8 mm **0.315 in**: **ANUJ6428SV**
- ϕ 10 mm **0.394 in**: **ANUJ6420SV**

Cylindrical lens
ANUJ64S**

- Elliptical irradiation
- R5 : **ANUJ6450S**
- R7.5: **ANUJ6475S**

Rod lens
ANUJ64*7L (For standard head)

- Small diameter circular irradiation
- ϕ 4 mm **0.157 in**: **ANUJ6447L**
- ϕ 6 mm **0.236 in**: **ANUJ6467L**

*Rod lens combined with **ANUJ6186**, **ANUJ6188** and **ANUJ6189** are treated as custom-made products. Please consult us.

Options

AC adapter (Note 2)
ANUJ6802

100 to 240 V AC adapter supplied with the controller unit
With a 100 V AC power cable

200 V AC power cable
ANUJ6803

200 V AC power cable for **ANUJ6802** (Note 3)

Mounting bracket
ANUJ6804

Head mounting bracket
Material: Aluminum

Protective glass
ANUJ6430

For head protection if lenses are not used.

Notes: 1) The head does not come with a lens.
2) The **ANUJ6802** AC adapter is supplied with the controller unit. The **ANUJ6802** AC adapter is compatible with 100 to 240 V AC; however, the primary-side power cable is compatible with 100 V AC only. For use in a 200 V AC region, purchase the **ANUJ6803** primary-side power cable (for 200 V AC) separately.
3) For China only. Primary-side A-type plug. (Since this product is not PSE Mark compliant, it cannot be connected directly to a lamp line in Japan.)

Specifications

Controllers		UJ30 (Standard model)	UJ35 (High performance model)
Controller Product type		ANUJ3000	ANUJ3500
Controller Part No.		ANUJ3000	ANUJ3500
Connectable heads		1 to 4 heads	
Connectable UV sensor		Not compatible	Compatible
UV irradiation		One pattern irradiation in simple mode The heads are either collectively or individually controlled.	One pattern in simple mode and programmed pattern irradiation (up to 7 patterns with up to 10 steps) The heads are either collectively or individually controlled.
Pattern switching		None (1 type)	Switchable (8 types)
Intensity / irradiation control		Digital intensity and irradiation control manual or timer control (0.1 to 99.9, 100 to 999 sec.) Auto-tuning function using the UV sensor (for UJ35 only) Specifications of UV sensor: [Temperature characteristic: \pm 5 % F.S. (+5 to +35 °C 41 to 95 °F) / Repeat accuracy: \pm 1 % (25 °C 77 °F)]	
Setting/Operation		Setting by the operation switches and power-on/off by a key switch	Setting by the operation switches, power-on/off by a key switch and RS232C (UJ35 setup tool)
Display		7-segment display	
Cooling system		Natural cooling (without a fan)	
External control	Method	Parallel I/O	RS232C, Parallel I/O
	External input	Individual irradiation input, irradiation stop input, interlock, full-irradiation input, pattern switching (for UJ35 only)	
	External output	READY signal, error signal, alarm output, BUSY output (each head separately), +5 V output (for indicator)	
Operating voltage		With AC adapter: 100 - 240 V AC (\pm 10 %) 50 / 60 Hz 60 VA (at 100 V AC)	
Ambient temperature / humidity range		0 to +35 °C 32 to 95 °F / 30 to 85 % RH (no condensation)	
Storage temperature / humidity range		-10 to +60 °C 14 to 140 °F / 30 to 85 % RH (no condensation)	
Accessories		AC adapter and Key	
Weight		1,180 g approx. (Controller: 940 g approx., AC adapter: 240 g approx.)	1,200 g approx. (Controller: 960 g approx., AC adapter: 240 g approx.)

Heads	Head model No.		ANUJ6186							
	Compatible lens	Spot diameter	ϕ 3 mm ϕ 0.118 in	ϕ 4 mm ϕ 0.157 in	ϕ 6 mm ϕ 0.236 in	ϕ 8 mm ϕ 0.315 in	ϕ 10 mm ϕ 0.394 in	Protective glass	ANUJ6430	
365 nm wavelength high-output head	UV intensity (mW/cm ²)		17,200	14,940	7,560	4,450	1,360	530		
	Irradiation distance		8 mm 0.315 in	10 mm 0.394 in	15 mm 0.591 in	20 mm 0.787 in	30 mm 1.181 in	10 mm 0.394 in		
365 nm wavelength standard type	UV intensity (mW/cm ²)		12,500	10,600	4,720	2,500	580	300		
	Irradiation distance		10 mm 0.394 in	12 mm 0.472 in	20 mm 0.787 in	25 mm 0.984 in	30 mm 1.181 in	10 mm 0.394 in		
385 nm wavelength high-output head	UV intensity (mW/cm ²)		19,500	16,920	8,680	4,750	1,400	580		
	Irradiation distance		8 mm 0.315 in	10 mm 0.394 in	15 mm 0.591 in	20 mm 0.787 in	30 mm 1.181 in	10 mm 0.394 in		
385 nm wavelength standard type	UV intensity (mW/cm ²)		14,700	11,700	5,800	2,790	590	330		
	Irradiation distance		10 mm 0.394 in	12 mm 0.472 in	15 mm 0.591 in	20 mm 0.787 in	30 mm 1.181 in	10 mm 0.394 in		
405 nm wavelength high-output head	UV intensity (mW/cm ²)		20,900	17,800	9,190	5,450	1,790	810		
	Irradiation distance		8 mm 0.315 in	10 mm 0.394 in	15 mm 0.591 in	20 mm 0.787 in	30 mm 1.181 in	10 mm 0.394 in		
Common item	Light source		Class 3B LED product (JIS C6802:2005) Risk group 3 (ANUJ6189 / ANUJ6187 ; Risk group 2) (IEC 62471)							
	Estimated light source life		20,000 hours (when the LED temperature inside the head is 60 °C 140 °F)							
	Cable length		0.2 m 0.656 ft A connection cable is required to connect the high-output head to a UJ series controller.							
	Operating temperature and humidity		+5 to +35 °C +41 to +95 °F / 30 to 85 % RH (No condensation)							
	Storage temperature and humidity		-10 to +60 °C +14 to +140 °F / 30 to 85 % RH (No condensation)							

Notes: 1) The values were measured using a **UJ30 / UJ35** illuminometer with ϕ 1 mm ϕ 0.039 in sensor hole when the high-output heads were fixed to the attachment, the ambient temperature was maintained at 25 °C 77 °F by the **UJ30 / UJ35**, and they were turned on with 100% output (initial value; based on Panasonic's reference measurement method).
2) It is recommended that protective glass (**ANUJ6430**) be used to protect the head-side lens from contamination when the high-output head is used without a lens. For further information about protective glass, contact our sales office.
3) The value is not a guaranteed value.

Glossary



UV curing	A technology for bonding, fixing, painting, printing, coating, etc. using a "UV-curable resin", which instantly hardens from a liquid to a solid in response to ultraviolet rays (UV)
UV sensor	An ultraviolet ray sensor, which is designed to be connected to the Aicure controller to measure the UV irradiation intensity and allow the intensity to be displayed and set on the controller.
Temperature feedback	Our unique system to convert (give feedback of) the light source output into the input based on the LED temperature measured by temperature sensors embedded in the LED heads
Cylindrical lens	A lens having a cylindrical shape ideal for applications that require UV irradiation of ellipse areas.
Auto-tuning	Automatically adjusting a set value to a target value
Fiber	An optical fiber cable to transmit optical information A light guide for UV irradiation
Thermal distortion	Deformation of plastic materials due to a temperature rise caused by an infrared ray, included in the light emitted by UV curing systems, in particular of the lamp type
Curing distortion	Distortion of UV-curable resin caused when it hardens
Takt time	Time required for finishing operations for manufacturing a product expressed in hours/product, which is set to implement operations in a uniform pace in production lines
Workpiece	A product or part in process, such as an UV irradiation object

Tacking	Adherence of the bonding surface of a material Adhesiveness
Quartz fiber	An optical fiber with a quartz glass core, which has higher optical transparency than general glass fibers, allowing the accurate transmission of optical information over a long distance
Module (Lens module)	A part having a group of functions. Lens module: A lens unit part for a mobile phone or a digital camera
OLB (OLB reinforcement)	Stands for outer lead bonding, which is a method of bonding/connection of a package with its lead wires exposed. UV resin is used for reinforcement purposes to improve OLB reliability.
CE	A mark that can only be indicated on products that conform to the safety requirements specified by the applicable directives of the Council of the European Union (EC Directives) and that meet the standards of all EU member nations
RoHS	RoHS Directive, which is the EU restriction of the use of certain hazardous substances in electrical and electronic equipment



Please contact

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industrial.panasonic.com/ac/e/



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