iUV

EQUIPAMIENTO GRAFICO

# Advanced LED UV

## Curing System


**Energy-Efficient**
Savings in electrical energy can exceed 70%

**Production Efficiency**
Instant On/Off without any waiting time, higher curing speeds

**Lower Maintenance**
Longer lifespan and stable working, less consumable parts

**Eco-friendly**
Ozone-free operation makes eco-friendly and human health

## Specification

| | |
|---|---|
| UV Energy | 18w/cm², 25w/cm², 30w/cm² |
| Lighting Length | 10 - 200cm |
| Peak Wavelength | 365nm / 385nm / 395nm |
| Cooling Method | Water Cooling |
| Expected Lifetime | >30000 Hours |
| Working Temperature | Below 40℃ |

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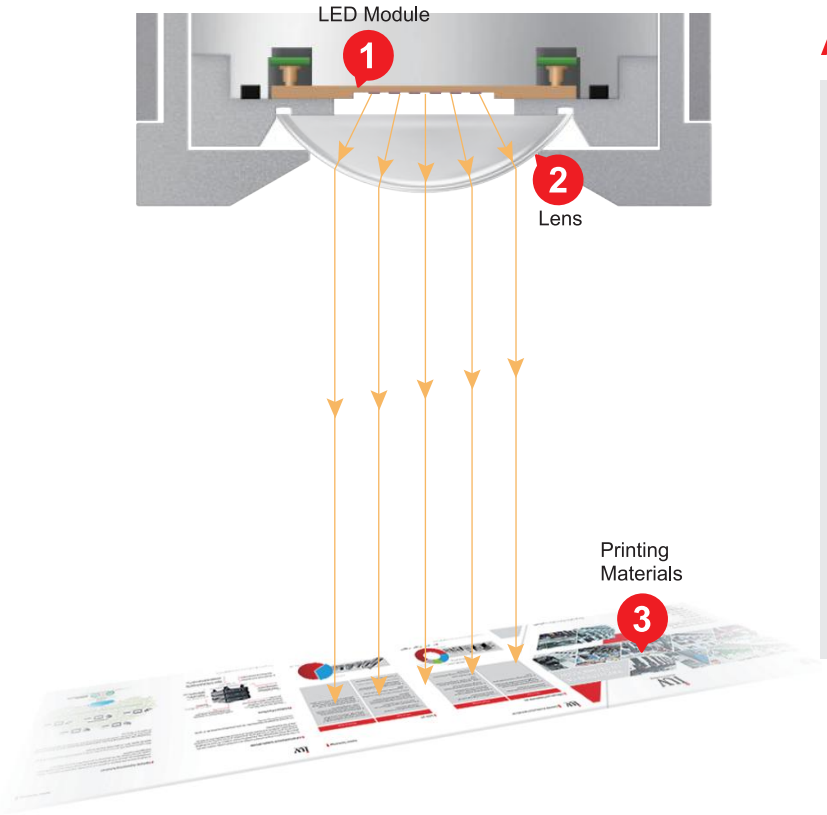
# About IUV's Innovation of LED

IUV LED UV light box utilizes design of a precision optically designed quartz lens and aluminum nitride ceramic layer both plays a critical role in achieving high quality, efficient and reliable curing performance at printing industry.
It is able to meet the stringent requirements for UV high energy curing performance. The optically designed quartz lens improves LED UV curing performance and speed by more than 20%.




## Applicable Applications:

- **Printing Industry**
  Digital, flexographic, screen and offset printing benefit from fast curing, resulting in increased production speeds, printing equipment effectiveness and higher quality finished prints on various types of materials.
- **Coating Industry**
  UV LED curing systems can be used for a wide range of functional and aesthetic coatings, guaranteeing both fast drying and reduced energy consumption to empower clients 'business demands.
- **Converting Industry**
  Laminating, adhesive applications and other processes utilize UV LED technology to improve curing efficiency and cost-effective quality.

### Maximum Savings On Printing

IUV LED UV systems can save you 70% on electricity costs and 80% on after-sales maintenance.
And the client won't have to deal with the high cost of replacement parts.

### High Productivity On Process

IUV LED UV systems offer instant On/Off capabilities, eliminating the need for warm-up and cooling periods. Moreover, the whole curing system is automated and software-controlled, dynamically adjusting energy output and operation based on the printing machine's status and speed in real time.

### Sustainability On Print Development

Embracing environmental health, LED lighting's low-energy consumption significantly reduces greenhouse gas emissions and is free from harmful substances like mercury and lead, minimizing environmental impact.

### Environmentally Friendly

UV LED do not contain mercury or other harmful substances and do not produce ozone, making them a safer and more sustainable choice.

### Less Input On Maintenance

LED UV lamps offer over 30 times the lifespan of traditional mercury lamps, with minimal light degradation and no loss in efficiency from frequent On/Off, ensuring low maintenance costs and reliable performance.

# Conventional Mercury UV

## Curing System


### Electric Shutter Control
High torque and soft action, low sound will be more stability work

### Mirror Aluminum Reflector
Effective light reflection up to 98%

### Air Duct Design of Cooling
Excellent heat dissipation improves the efficiency of curing

### Flat Quartz Glass
Lamp tubes protection.Transits UV, blocks IR (heat), lowers material temperature

## Specification

| | |
|---|---|
| Electrical power Density | 160 ~ 220w/cm |
| Lighting Length | 20 - 200cm |
| Optimum Curing Distance | 10 ~20mm |
| Cooling Method | Air Cooling |
| Expected Lifetime | >1000 Hours |

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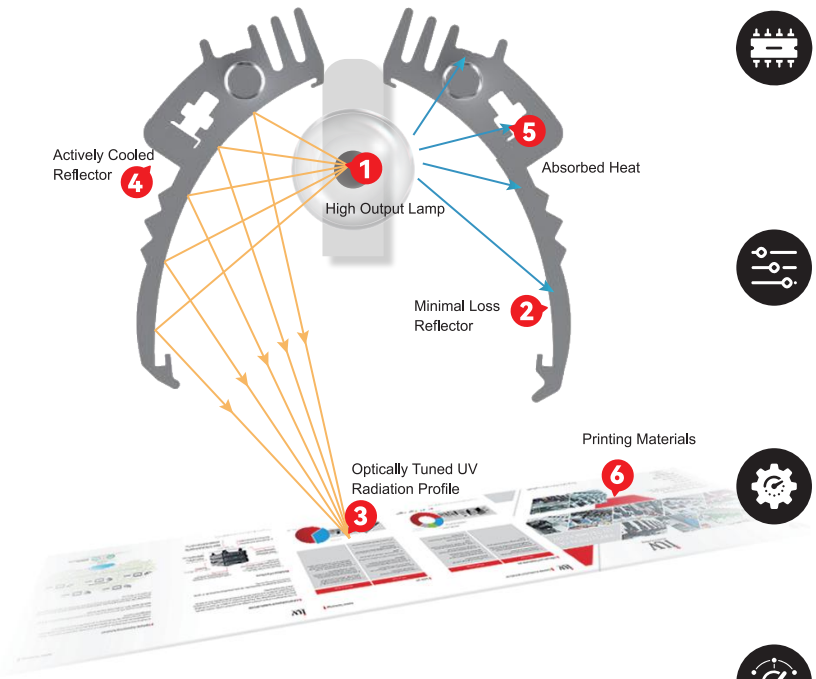
# About Mercury UV

Whether for printing, coating, adhesive bonding, or any other application, IUV's mercury lamp curing systems provide outstanding curing performance across a wide variety of substrates and materials.




## Quartz Glass Protection

IUV's mercury UV built with durable structures and reliable components. They deliver long-lasting performance and ensure consistent, dependable operation over time.

## Smoothly Controlled Shutter

Equipped with an electrically controlled shutter that operates with high torque, delivering smooth, gentle movement with minimal noise.

In order to keep stable and reliable operation, reducing the frequency of part replacements and enhancing the system's longevity.

## Highly Efficient Reflector

Mirror aluminum reflectors effectively reflect up to 98% of the light source.

Lower replacement costs, offering a more cost-effective solution while maintaining high energy efficiency.

## Optimized Heat Dissipation

Feature an advanced airflow design that effectively expels heat from the lamp housing. To insure optimal operating conditions are maintained for good-balanced curing performance.

### WIDELY RECOGNIZED PERFORMANCE

IUV's mercury lamp UV curing system technology is well-established, having been validated by years of market experience and customer feedback.

### MATURE SUPPLY CHAIN SYSTEM

IUV's curing systems are highly adaptable to a wide range of inks and materials, demands of print goods.

### INTELLIGENT OPERATING SOFTWARE

IUV's software simplifies equipment upgrades, streamlines workflows, offering a user-friendly experience for operators.

### ROBUST CONSTRUCTION

IUV's mercury UV built with durable structures and reliable components. They deliver long-lasting performance and ensure consistent, dependable operation over time.

# Remote Monitoring Function

In order to ensure the stable operation of global IUV customer equipment, timely troubleshooting, remote OTA software upgrades and other future digital management needs. IUV has independently developed a complete remote-local data link management system.

This system allows IUV equipment around the world to connect to the cloud server through network cables, WIFI and other Internet access methods, and can easily realize remote real-time information collection, fault diagnosis, software updates and other functions through PC or mobile phone.

Printer quickly diagnose and solve system failures to ensure efficient production for customers. And IUV's software the other hand, it also provides real-time data for the digital management of customer print line.

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# Mercury & LED UV

## Hybrid System


### Free Replacement
Mercury, halogen, and LED lamp boxes can be freely inserted and removed

### Efficient And Environmentally Friendly
Maintain efficient, eco-friendly water cooling for LED lamp box

### Compatibility
Complementary adaptability to printing curing process requirements

### Cost Savings
Reduce operating cost, and improve the production efficiency

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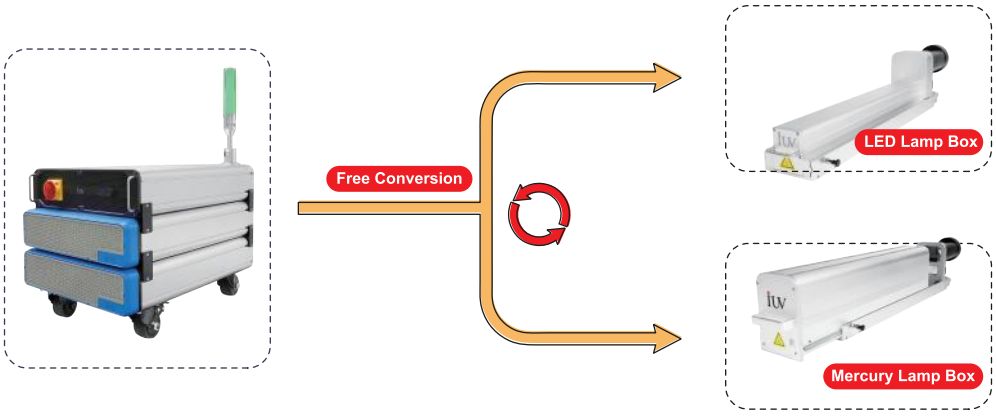
# LED Lamp Box And Mercury Lamp Box Can Interchange Freely

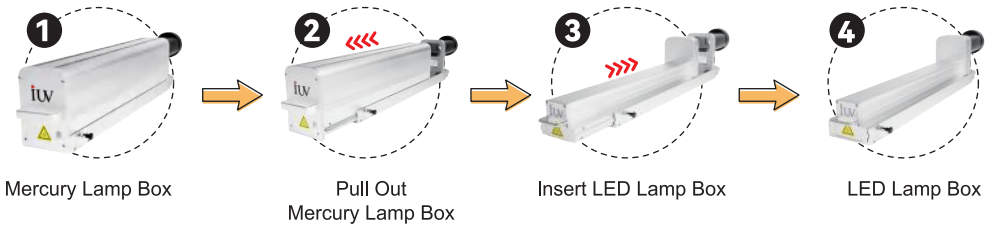
Press operators in the two kinds of light boxes can be freely plugged and unplugged, the system automatically recognizes without manual intervention.

In the same cassing can realize the use of the same power supply input, supporting both air-cooled and water-cooled options.

Not only can it meet the various needs of customers for curing, improve production efficiency, but also minimize energy consumption and thus reduce production costs.

Moreover, the installation of Hybrid UV curing system on the printing machine can enable the printing machine to realize diversified printing order production requirements.




Mercury Lamp Box | Pull Out Mercury Lamp Box | Insert LED Lamp Box | LED Lamp Box

## How Is The UV Hybrid System Working

One module of the IUV power supply contains two software algorithms that automatically switch power modes depending on the load.

It can power both mercury and LED lamps.

This flexibility allows for compatibility with a wide range of inks and materials, as well as complex production process requirements.

A key feature of IUV technology is the high degree of precision power adjustability, ranging from 1% to 100%.

The purpose of this technology is to allow the system to automatically adjust the power output according to the printing speed, ensuring that the performance of the UV curing system can meet the needs of an ever-evolving printing production.

## Why You Need Mercury And LED Exchanging System

### Flexibility

Mercury and LED curing system offers fexibility in switching between UV lamps.

This adapts to diverse curing needs, materials, and ink types, optimizing efectiveness with suitable technology.

### Compatibility

Varing ink types among printing groups demand specific curing systems.

The hybrid UV system facilitates easy switching, adapting to diverse printing and ink requirements.

### Cost Savings

Flexibility of hybrid UV curing system saves costs by optimizing the process and using the most efficient tech. LED UV lamps offer a longer lifespan, reducing maintenance and replacement costs.

### Seamless Production Switching

Effcient lamp replacement without compromising work efficient ensures smooth transitions in production.

The system automatically identified lamp type, eliminating manual settings and minimizing downtime.

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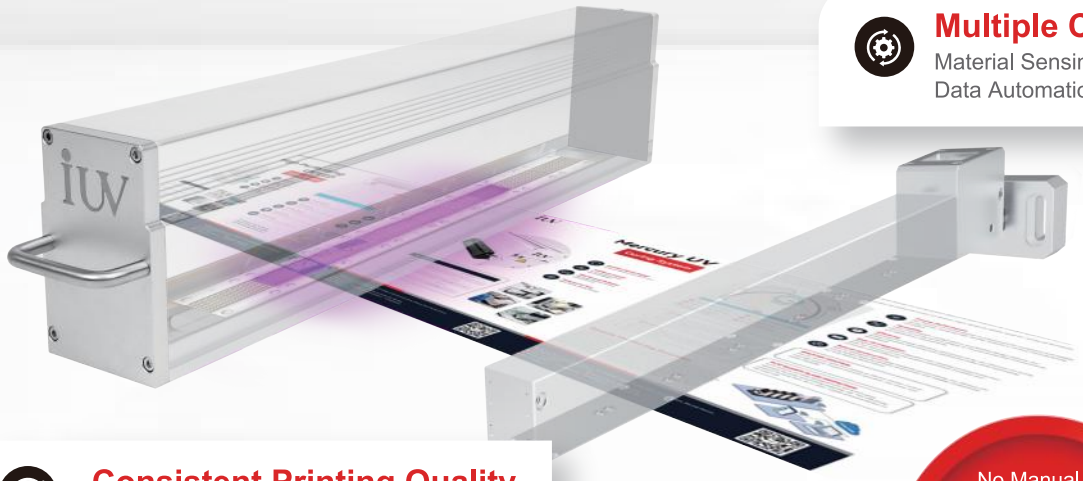
# Automatic Sensing System

## Automatic LED UV Curing Area Control

**Maximize Saving**
Reduce Unnecessary Energy Consumption

**Multiple Controls**
Material Sensing + Printing Data Automation




**Consistent Printing Quality**
Precise Control , Even Curing

**Efficient Printing**
Hands-free Production Boost

No Manual Adjustment
**30%**
More Energy Saving

## Specification

| | |
|---|---|
| Installation Location | After correction, before the first print unit. |
| Light Segment Control Precision | 10mm, 36mm, 53mm |
| Sensor and Material Distance | 1-3mm |
| Expected Extra Energy Savings | 30% up |
| Working Environment | -10~35℃ |

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# Why Automatic Sensing Technology ?

### Lowest Electricity Consumption

Automatically sensing material changes, curing only the areas covered by the material, reducing unnecessary energy consumption.

### Ensure Consistent Printing Quality

Precise curing area control, ensures consistent print quality and reduces quality issues caused by uneven curing.

### Improving Production Efficiency

Adjust the curing area in real time, eliminating the need for manual intervention and adjustments, boosts production efficiency.

### Reduce Material Temperature

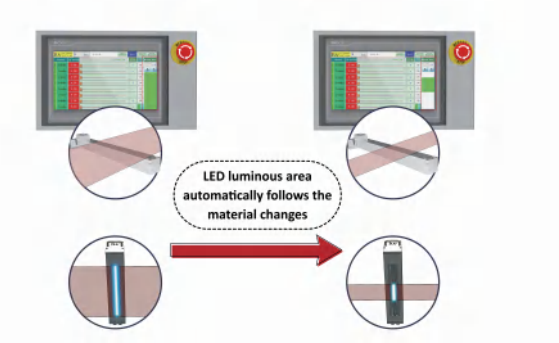
Minimize unnecessary UV energy, reduce material temperature, maintain consistent printing quality and minimize material loss or non-conforming products.

## Save More Electricity With Automatic Sensing

Integrate auto-sensing tech into printing equipment for significant energysavings.Example:For a 360mm width,six-color setup,running 10 hours/day,22 days/month:

- **Mercury Lamps:** High energy use due to constant operation and heat.
- **LED UV :** Significant Electricity savings by about 55%.
- **LED UV with Auto-Sensing:** Lower energy consumption by matching curing area tomaterial width. Achieve over 70% electricity savings

* **You can even link digital ink reel's color group coordinates to IUV LED system for on-demand curing, matching and curing printed pattern in real time.**




| Machine(360mm) | Mercury | LED | |
|---|---|---|---|
| Number of mounted lamp | Conventional Mercury 6 units | UV-LED 6 units (no automatic sensor) | UV-LED 6 units (with automatic sensor) |
| Paper width (mm) | 360 | 360 | 360 |
| Ultraviolet energy density(W/cm2) | 1 | 20 | 20 |
| Power efficiency | 0.96 | 0.96 | 0.96 |
| Power consumption of lamp(operating)(KW/units) | 6 | 3 | 1.8 |
| Total power consumption(operating)(Kw) | 6/0.96*6=37.5 | 3/0.96*6=18.75 | 1.8/0.96*6=11.25 |
| Power consumption of lamp(standby) (KW) | 1.5(Rated power 25%) | 0 | 0 |
| Total power consumption(stabdby) (KW) | 1.5/0.96*6=9.38 | 0 | 0 |
| Operating hours in factory (H/day) | | 10 | |
| Operation ratio (%) | | 70% | |
| Number of operating days/year(22days/months) | | 264 | |
| Operating time(H) | | 2640*70%=1848 | |
| Standby time (H) | | 2640*30%=792 | |
| Total time of operating and standby (H) | | 264*10=2640 | |
| During operation (KWH) | 37.5*1848=69300 | 18.75*1848-34650 | 11.25*1848=20790 |
| During standby(KwH) | 9.38*792=7429 | 0 | 0 |
| Operation+standby(kwH) | 76729 | 34650 | 20790 |
| Electric charge (CNY/Yuan) Basic on CN electricity price for business | ¥1.08 | ¥1.08 | ¥1.08 |
| Annual electricy expense (CNY,Yuan) | ¥82.867.32 | ¥37,422 | ¥22453.2 |
| Annual cost reduction | | ¥45.445.32 | ¥60.414.12 |
| Reduction ratio | | 55% | 73% |

# Innovative Modular Power

## Supply System

### Real-time Monitoring
Real-time monitoring, data upload, superior control

### Prolong Lifespan
Constant current control, doubled life

### Long-term Stability
Unique constant current and voltage technology, long-term stable power control

### Management Improve
Intelligent all-in-one control, make printing management easier than ever

| Specification | |
|---|---|
| Rated Voltage | 360 ~ 410VAC, 3-phase, 50 / 60Hz |
| Maximum Power | 84KW (Max Power Acceptable Customized) |
| Maximum Current | 128A (Max Current Acceptable Customized) |
| Power Efficiency | 94% |
| Power Factor | 98% |
| Dimensions of Main Power | 725mm (L) x 485mm (W) x 235mm (H) |
| Dimensions of Lamp Box Modular | 725mm (L) x 485mm (W) x 135mm (H) |

# Key Highlights of the IUV Modular Power Supply System

IUV impressively discovered that the stability and intelligence of UV curing systems are critical for enhancing production efficiency in the printing industry.

Our solutions ensure that UV curing systems not only meet the demands of today's high-speed production environments but also contribute to the long-term success and sustainability of the printing process.

These include constant voltage and constant current control, automatic adjustment of the light-emitting area based on material detection, integrated intelligent independent control, automatic monitoring and diagnostics, and cloud-based remote upgrade systems.

All of these innovations are focused on improving the stability, intelligence, and overall performance of curing systems.


## Easy To Expand

One of the core design principles behind this system is to ensure that it can be quickly and efficiently maintained or upgraded, without the need for specialized knowledge, minimizing downtime and reducing operational stress for customers.

This is a truly empowering action and product for our customers.

• 02

**Remove the working layer**

— this layer is located above the faulty layer.


• 03

**Disconnect the faulty layer and replace it with a new working layer.**

• 01

**Remove the installation screws**

— a total of 8 screws need to be undone.

- **Modular Design**
  Various types of power supply modules, mercury power modules, LED power modules, pre-curing LED modules.
  This flexibility makes it easy to expand and reconfigure the system to accommodate changing production requirements, ensuring that your system evolves with your business growth.

- **Intelligent Connectivity for Effortless Expansion**
  The system utilizes a CAN connection for all key components, including the HMI, mercury power modules, LED power modules, pre-curing LED modules, water chillers, and lamp box.
  This intelligent connectivity simplifies expansion and maintenance, allowing new modules or components to be seamlessly integrated into the system with minimal effort.

- **Real-Time Monitoring and Diagnostics**
  The IUV modular power system provides real-time remote monitoring and diagnostic capabilities, enabling the early detection of potential issues and offering proactive maintenance alerts.
  This ensures continuous operation while reducing the risk of unexpected downtime through timely interventions.

- **Integrated Independent Control**
  Each kind of power module is equipped with its own central processing unit (CPU), making each unit an independent control unit.
  These modules can be easily interchanged — by simply updating the communication address, one module can be quickly replaced with another.

- **Attractive and High-tech Design**
  With a high-tech appearance and user-friendly features, the system not only looks impressive but is also space-efficient.
  This compact design allows customers to make better use of the available factory floor area, ultimately contributing to higher operational productivity.