

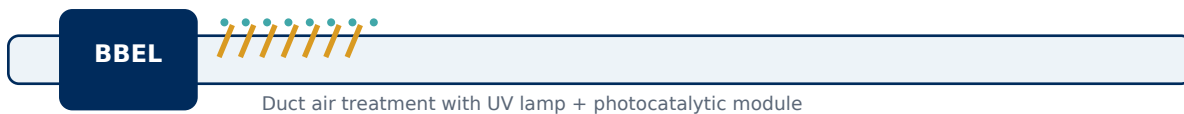


UV AIR TREATMENT SYSTEM

Model BBEL UV-AT36 Pro

Operation, Installation and Maintenance Manual

Before operating or servicing this system, read this manual thoroughly and retain it for future reference. Installation and maintenance must be carried out by qualified personnel only.



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Version 1.0 | Public technical manual | Specifications subject to final nameplate, compliance documentation and project engineering review.

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Important manual note

This manual is intended for BBEL® UV air treatment systems supplied under project-approved documentation. The installer must verify the final product nameplate, electrical rating, installation environment and project requirements before installation.

1. Consumer Limited Warranty

BBEL[®] branded UV air treatment systems are supplied with a limited product warranty against defects in materials and workmanship when installed, operated and maintained under normal conditions and in accordance with this manual.

Standard warranty coverage

- One (1) year limited warranty from the date of purchase or commissioning, subject to submitted proof of purchase and applicable project documents.
- Warranty remedy may include repair or replacement of defective parts at the discretion of the authorized support provider.
- UV lamps, filters, fuses and normal wear items are consumable parts unless proven defective at the time of supply.

Warranty exclusions

- Abuse, negligence, accident, improper installation, improper electrical supply, voltage fluctuation or use outside the stated operating environment.
- Modification, adjustment or repair by unauthorized personnel.
- Damage caused by external events, shipping damage after delivery unless otherwise agreed, or use of non-approved parts/accessories.
- Cases where product identity, purchase record or authorized supply documentation cannot be verified.

2. Safety Precautions

To reduce the risk of electric shock, fire, personal injury or UV exposure, read all safety instructions before installation, operation or maintenance.

Operating environment

- Use only a grounded electrical supply matching the final product nameplate. Typical supply requirement is 220-240V AC, 50Hz unless otherwise marked on the product.
- Do not operate where oxygen-deficient, flammable, explosive or toxic vapors are present.
- Do not install or operate outdoors, in wet environments, or where the equipment may be exposed to water ingress.
- Recommended operating environment: 0°C to 40°C, relative humidity below 75%, altitude up to 2,000m, unless the project-approved nameplate states otherwise.

UV and electrical safety

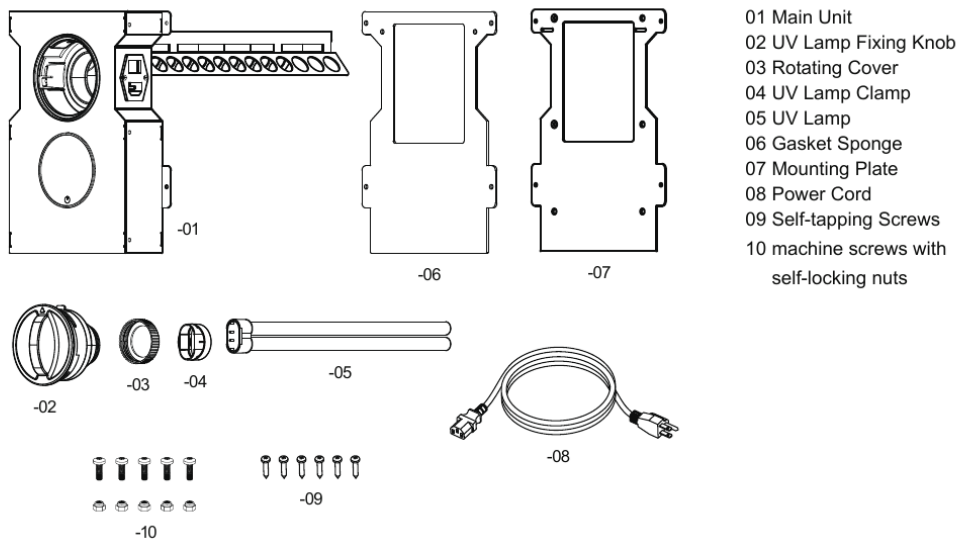
- Never look directly at an energized UV lamp. UV light is harmful to eyes and skin.
- Wear UV-protective glasses, gloves and skin covering when handling or inspecting UV lamp components.
- UV lamps are fragile and may become hot during operation. Allow the lamp to cool before handling.
- Switch off and disconnect power before opening the device or carrying out maintenance.
- Do not expose plastic components, wiring or filter media to direct UV radiation unless verified as UV-compatible.
- Do not disassemble or bypass safety interlocks. Service must be performed by qualified personnel.

3. Structure and Main Parts

The BBEL® UV air treatment system consists of a duct-mounted main unit, UV lamp assembly, mounting plate, gasket/sealing components and fasteners. Confirm supplied parts before installation.

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| 01 - Main unit | 02 - UV lamp fixing knob |
| 03 - Rotating cover | 04 - UV lamp clamp |
| 05 - UV lamp | 06 - Gasket sponge |
| 07 - Mounting plate | 08 - Power cord |
| 09 - Self-tapping screws | 10 - Machine screws with self-locking nuts |

STRUCTURE AND MAIN PARTS



Illustrative main parts and hardware arrangement. Actual supplied components may vary according to approved model and project scope.

4. How the System Works

The BBEL® UV Air Treatment System is designed for integration into an HVAC air-handling system or ductwork. Air passing through the duct is exposed to UV treatment and photocatalytic activated carbon modules, helping reduce microbial activity and odor-causing compounds inside the air stream and duct environment.

Key functions

- High-output H-shaped UV lamp for duct air treatment.
- Photocatalytic activated carbon module for odor-control support.
- Airflow sensor to coordinate UV lamp operation with HVAC airflow.
- Smart control display showing lamp service life and lamp status.
- Mobile app remote-control capability where supplied/configured with the approved controller.
- Designed to support whole-house or zoned air-treatment strategies through HVAC duct integration.

Important: This product is intended as part of a broader HVAC air-quality strategy. Performance depends on airflow, duct layout, installation position, maintenance, lamp condition and project design.

5. Installation Requirements

Installation must be performed by qualified personnel in compliance with applicable electrical and mechanical codes. Before installation, switch off the main electrical supply and disconnect power.

Mounting location

- Select a duct mounting location with sufficient external access for the mounting plate and service clearance.
- Recommended mounting plate clearance: approximately 31.0 cm x 23.0 cm.
- Recommended internal clearance: approximately 41.0 cm lamp insertion depth and 11.0 cm internal duct depth. Confirm against the final supplied unit.
- Install where the UV lamp is not visible to occupants or service users during normal operation.
- Do not install outdoors or beneath a humidifier.
- If installed near air filters, confirm filter media compatibility with UV exposure before finalizing location.

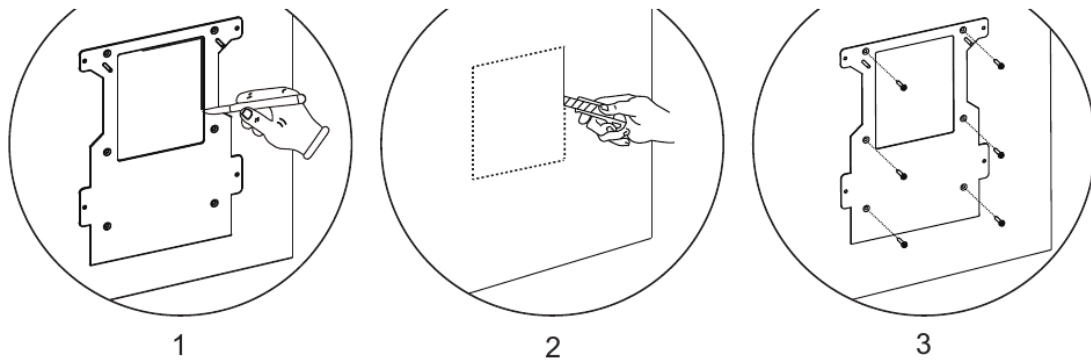
Electrical supply

- Provide a grounded supply matching the final product label/nameplate.
- The plug or local disconnecting means must remain identifiable and accessible after installation.
- Do not modify plugs, grounding arrangements or safety interlocks.

6. Duct Mounting and Unit Installation

Duct mounting

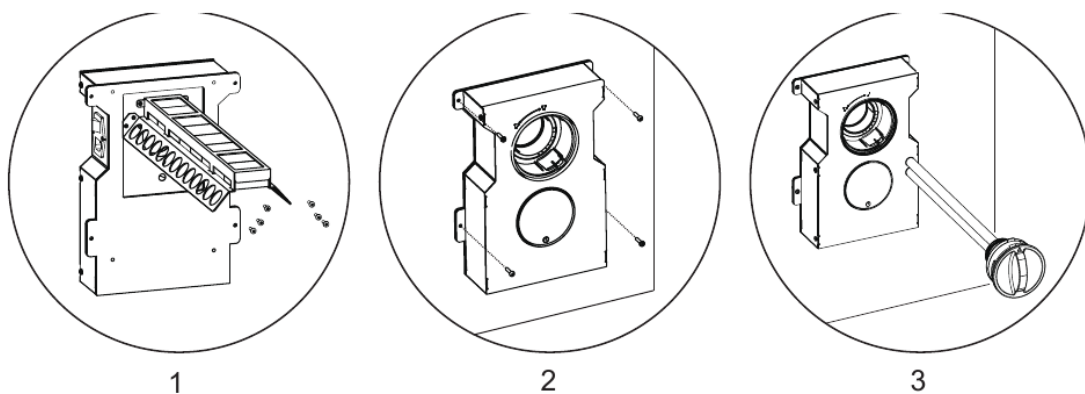
- 1 Use the mounting plate to trace the cut-out position on the selected duct surface.
- 2 Cut the duct opening carefully along the marked line using a suitable tool and observe safe working practices.
- 3 Secure the mounting plate to the duct with the supplied screws, ensuring gasket/seal contact to reduce air leakage.



Duct mounting sequence illustration.

Install the unit

- 1 Secure the photocatalytic / carbon module bracket to the rear of the device as supplied.
- 2 Attach the device to the mounting plate and secure it to the duct using the approved fasteners.
- 3 Insert the UV lamp into the lamp fixing knob, tighten the rotating cover, then insert the assembly into the device and rotate clockwise until fully seated.
- 4 Verify that the lamp fixing knob and cover are fully engaged so that the safety interlock is not open.

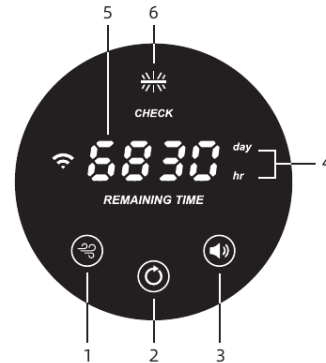


Unit installation sequence illustration.

7. Operation and Control Display

The control display provides access to automatic airflow-based UV operation, lamp service life reset, alarm silencing, timer display format and lamp status indication.

1. Auto button: In automatic mode, the UV lamp operates according to airflow in the duct. The lamp switches on when airflow is detected and switches off when airflow stops. Pressing Auto disables automatic mode and allows continuous lamp operation.
2. Reset button: After replacing the UV lamp, press and hold Reset for approximately three seconds to reset the lamp operating-life counter.
3. Alarm button: Silences the audible alarm when the lamp reaches end of service life or a lamp fault is detected.
4. Timer button: Switches the display format of remaining lamp operating time between day and hour indication where supported.
5. Remaining service life: Displays the remaining operating time of the UV lamp.
6. UV lamp indicator: Indicates off, operating and fault status. A flashing fault indication requires inspection.



Do not operate the UV lamp if airflow, lamp seating, wiring, ballast condition or safety interlock status is uncertain. Contact authorized service support.

8. Smart / Mobile App Functions

Where supplied and configured, the BBEL[®] UV Air Treatment System may support mobile application remote control and smart monitoring functions. App functions may vary based on the final controller version and project configuration.

- Remote observation of UV lamp operating status where app connectivity is enabled.
- Lamp service-life monitoring and notification support.
- Lamp malfunction notification support.
- Auto mode operation based on airflow sensor input.
- Project-specific commissioning may be required before mobile functions are active.

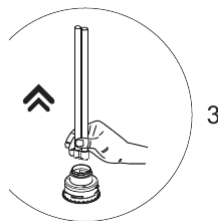
For app pairing and network configuration, follow the instructions supplied with the final controller/app package. If connectivity is not provided on a specific project, the system may still be operated through the local control panel.

9. Care and Maintenance

To maintain performance and safety, inspect the unit periodically as part of the HVAC maintenance schedule. Do not clean, open or service the unit while energized.

UV lamp replacement

- 1 Disconnect the unit from the power source and allow the lamp to cool.
- 2 Rotate the UV lamp fixing knob counterclockwise to remove the lamp assembly.
- 3 Rotate the cover counterclockwise to remove the existing lamp.
- 4 Install the replacement lamp in the same orientation and ensure it is seated correctly.
- 5 After replacement, press and hold Reset for approximately three seconds to reset lamp operating time.
- 6 Avoid direct skin contact with the new lamp. Wear gloves and safety glasses during handling.



Lamp replacement handling illustration.

Fuse replacement, if required, must use a fuse matching the original specification: 250 VAC, 2 A, phi 5.2 x 20 mm. Use only approved replacement parts.

10. Troubleshooting

Some service issues can be resolved by basic checks. If the issue persists, disconnect power and contact authorized service support.

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| Device does not power on | Verify power supply, plug/disconnect, grounding, wiring and circuit status. Confirm the lamp fixing knob is fully seated; an open interlock can prevent operation. |
| UV lamp does not operate | Check whether Auto mode is enabled and whether there is sufficient airflow through the duct. Inspect lamp seating, lamp condition and ballast condition. |
| Alarm is active | The lamp may have reached end of service life or a fault may be present. Replace the lamp if due, then reset the lamp timer. |
| Lamp indicator flashes red | Fault or malfunction indication. Switch off the unit and arrange inspection by authorized service personnel. |
| Odor control performance reduced | Check lamp service life, airflow, duct leakage, installation location and photocatalytic module cleanliness/condition. |

11. Technical Specifications

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| Product Name | UV Air Treatment System |
| Model No. | BBEL UV-AT36 Pro |
| Power Requirement | 220V, 50Hz / 220-240V AC as per final nameplate |
| Rated Power | 40W |
| UV Lamp | 36W H-shaped UV lamp |
| Dimensions | Approx. 23 cm x 31.1 cm x 49.8 cm |
| Lamp / Module Length | Approx. 41 cm |
| Weight | Approx. 3.0 kg |
| Power Cord | Approx. 2.5 m |
| Operation | Touch Button / Mobile App where supplied |
| Smart Control | UV lamp service life and malfunction notification |
| Display | Yes |
| Airflow Sensor | Yes - UV lamp automatically ON/OFF by airflow |
| Installation Type | Duct mounted, HVAC air-handling system integration |

Specifications are based on supplier technical data and are subject to final product nameplate, compliance documentation, approved submittal and project engineering review.



Indicative dimensional reference. Verify against final unit supplied.

12. Service and Contact Information

For product enquiries, documentation, warranty registration or service coordination, contact BBEL[®] International Desk.

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Document control

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