



## BWT ECO

### Ultra Violet Water Disinfection System

ECO Range: LC 8 UV  
LC19 UV  
LC36 UV  
LC51 UV

BWT ECO Range /06-2016 © BWT UK Limited  
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**Important notice:** Always keep the fitting and operating instructions close at hand to avoid any mistakes and before carrying out any work on the device, you should read the fitting and operating instructions carefully and follow them. While our data sheets and brochures should provide advice to the best of our knowledge, the content thereof is not legally binding.

For You and Planet Blue.

 **BWT**  
BEST WATER TECHNOLOGY

## GENERAL DESCRIPTION:

The BWT ECO series ultra-violet (UV) disinfection units use a single high efficiency UV lamp mounted in a single water chamber. The lamp is sleeved by a high-purity quartz tube, resulting in a design that is cost effective, energy efficient, cool running and inherently safe.

The ECO units can be fitted anywhere in a water system provided the maximum pressure and peak flow requirements are less than the maximum ratings (see specifications). The slower the water flow, the more effective the unit will be. The unit must be protected from frost when not operating, and it is wise to fit stopcocks, a bypass pipe and a drain tap with the unit.

For applications where the water to be treated passes through the UV chamber only once, it is normally best to install the unit close to the point of use, without storing large volumes of treated water. If a storage tank is used it must be closely covered, and should be cleaned and sterilised when the UV unit is fitted. The tank should ideally store no more than a few hours supply, to ensure the water does not become re-contaminated.

### Water Quality

Dissolved organic matter and metallic salts (chiefly iron) will absorb UV light and reduce the unit's effectiveness. If any such parameters exceed the EEC maximum admissible concentrations, suitable pre-treatment should be used to ensure both water purity and effective UV treatment.

BWT UK recommend that a 20 micron sediment pre-filter be fitted as a routine to all installations.

For advice concerning water filtration, please contact: 01494 838100.

## SAFETY

1. UV light can harm eyes and skin. **Never operate the lamps outside of the chamber.** A blue glow can be seen at the ends of the unit, which has negligible UV content. (The units are totally safe when in normal use.)
2. Fit a residual current circuit breaker (R.C.C.B.) for maximum protection.
3. **The Stainless steel chamber must always be earthed.**
4. Water and electricity are a dangerous combination. It is essential that there are no water leaks in or around the unit that could result in the electrical system becoming wet.

If such a leak occurs:

(DO NOT TOUCH ANYTHING ELECTRICAL WHEN EITHER IT OR YOUR HANDS ARE WET)

1. Switch off the power at the mains supply point.
2. Switch off the water at the mains supply point.
3. Find and rectify the leak.
4. Completely dry the unit and control box inside and out before re-using

## **INSTALLATION:**

It is advisable, whilst installing the chamber, to add isolation stopcocks enabling water shutdown and so simplifying routine cleaning and maintenance.

All chambers should be flushed through thoroughly when fitted to eliminate any debris that may have collected in the chamber during fitting.

Access to the unit:

Always ensure that there is adequate space at one end of the unit equal to the length of the chamber, whether mounted vertically or horizontally, to enable replacement of the lamp. Always ensure that the unit is secured firmly to the wall; do not rely on inlet/outlet pipes only to secure the chamber.

Temperature:

Do not install the unit where it will be likely to freeze if the power is switched off. Under no circumstances lag or insulate the unit as it requires constant ventilation. Do not install units in hot water systems.

Mounting:

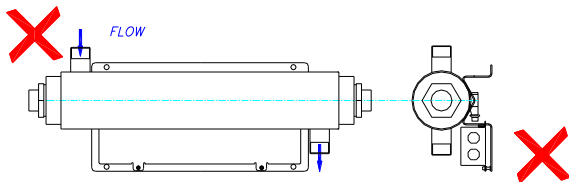
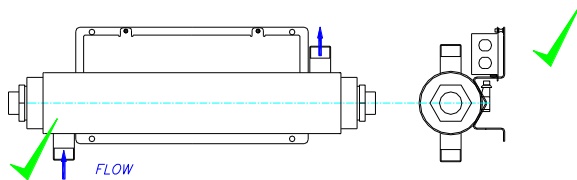
The unit is supplied with the chamber already fitted to the mounting bracket. If the orientation of the chamber is inconvenient, it can be changed by loosening the two worm drive clips (a large slotted screwdriver or M4 socket) and rotating the chamber to the desired orientation.

Fit the chamber/mounting bracket assembly in the desired position using the four mounting holes in the corners of the mounting bracket.

## Horizontal:

Water flow should enter at the bottom and exit at the top – this will prevent air pockets which reduce the effectiveness of the unit.

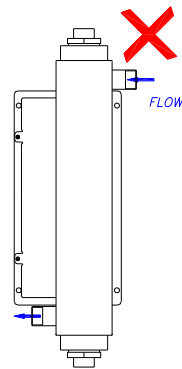
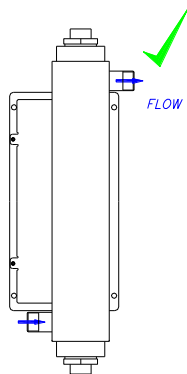
The unit should always be fitted with the electrical control box above the chamber (see the General Arrangement Drawing) – this will prevent any condensation that forms on the chamber dripping over the electrics.



## Vertical:

Again, water should enter at the bottom and exit at the top of the chamber. The electrical box can be positioned on either side of the chamber.

Beware of the lamp or quartz sleeve falling out of the chamber during maintenance.



## Electrical:

The unit is supplied with a 2m long cable fitted with a standard UK mains plug, fused at 3A and should be connected to a convenient, standard switched socket outlet.

Fit the electrical box to the chamber/ bracket assembly. Slip the tabs on one side of the box into the two slots in the mounting bracket, and clip the two pillars on the bracket into the holes in the tabs on the other side of the box. The orientation of the box can be decided for convenience.

Fit the lamp into the quartz sleeve – take care when sliding it in to keep it precisely parallel to the length of the chamber, or damage may occur to the lamp or quartz sleeve. Clip the lampholders to the ends of the lamp – make sure they are pushed fully on - and locate the spring retaining clips over the lips of the black sealing nut at the same time to retain the lamp.

Plug the unit in to the mains and turn on - there is no other on/off switch. Isolation from the mains is provided by unplugging the unit.

## MAINTENANCE:

Lamps gradually deteriorate with use and must be changed at regular intervals. It is not possible to tell the amount of UV being produced by the lamps merely by visual inspection, so a regular routine of lamp replacement is the only simple way to ensure effective performance. Lamps should be replaced after 12 months of continuous use. This may become more frequent if the lamp is switched on and off more regularly.

To replace the lamp:

1. Turn off electrical supply to the unit and unplug from the mains.
2. Remove lamp-retaining clips.
3. Carefully pull off lamp-holders from ends - ensure lamp does not fall out if vertical.
4. GENTLY SLIDE THE LAMP STRAIGHT OUT OF THE QUARTZ SLEEVE WITHOUT APPLYING ANY SIDE-PRESSURE.  
WARNING - LEVERING THE LAMP AGAINST THE QUARTZ WILL RESULT IN DAMAGE TO THE SLEEVE.
5. Reverse the above to fit new lamp.

## Cleaning:

The quartz sleeves may occasionally need cleaning if sediments build up on their surfaces. This will depend on the nature of the water supply and its pre-treatment, so no firm guidelines can be given. Less sediment may deposit if the unit is vertical. The unit should be inspected after a few months use to give a guide to the necessity of quartz cleaning. It may be possible to look into the unit with a torch through the sleeve after removing the lamp, but if not the quartz sleeve must be removed as follows:

1. Turn off the power and remove the lamp as above.
2. Turn off the water supply, isolate the input and output and drain the unit.
3. Unscrew the black quartz clamp nuts and remove shim washers and o-rings. Note: Care must be taken when removing quartz tube, as it is not supported inside the chamber. To avoid breakage, it must be kept parallel with the axis of the unit when being changed.  
For extra safety, thread a pole such as a bamboo cane or piece of dowel through the quartz and draw it off the pole. This will prevent it falling down inside the chamber.
3. The quartz may have a build up of scale which will be firmly adhered; clean it with domestic scotchbrite or wire wool. A vigorous scrubbing will remove the scale but will not scratch the quartz – it will feel slippery when the scale is removed. For extra cleanliness, clean the outside of the quartz sleeve with an alcohol cleaner. Make sure the inside is completely dry.  
**DO NOT USE ANY CLEANERS OTHER THAN AN ALCOHOL BASED – THEY CAN LEAVE RESIDUES THAT ABSORB UV AND REDUCE THE UNIT'S EFFECTIVENESS.**
5. Replace the quartz centrally in the chamber, fit the O-rings and the shim washers, and tighten the black clamping nuts with firm hand pressure and about another quarter turn.
6. Dry the unit, turn on the water and check for leaks.
7. Replace the lamps and switch on.

NOTE - The quartz sleeves are expensive items. Take care when handling them.

For replacement lamps and spare parts please call 01494 838100 for details of your local stockist.



#### SPECIFICATIONS:

Chamber Construction	316L Stainless Steel			
Control Box Construction	304 Stainless Steel			
Pressure Rating	10 bar			
Lamp Life	8760 hours (1 year's continuous use)			
Power supply	220 - 240VAC, 50/60 Hz Single Phase.			
Model	LC8 UV	LC19 UV	LC36 UV	LC51 UV
Typical Application	Up to 2 taps (small dwelling)	Whole house (Family home)	Multiple User (Guest House)	Multiple User (Hotel)
Domestic Flow Rate (litre per minute)	8	19	36	51
Lamp Type	RL15	RL30	RL55	RL55
Connection (BSPT male)	3/4"	3/4"	3/4"	1"
Power Consumption (VA)	18	33	50	50
Recommended Filter Housing*	HF76	HF97	HF97	HF97
Recommended Filter*	HSB10_20	HSB20_20	HSB20_20	HSB20_20

\* Or similar. Filter and filter housing not included please order separately



## Contact

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# BWT ECO UV System

Models: LC8 UV, LC19 UV, LC36 UV, and LC51 UV

The BWT ECO system combines an impressive design and solid build quality, manufactured from stainless steel for longevity and at the end of its useful life, all components can be easily recycled.

As well as the low carbon footprint of the product itself, the BWT ECO system is also designed to be energy efficient.

### Standard Features

- UK manufactured
- Low carbon footprint
- Robust design
- Low running cost
- Long life/High reliability UV lamp
- Maximum 10 bar working pressure
- Simple to install and service
- Polished chambers



	LC8 UV	LC19 UV	LC36 UV	LC51 UV
Chamber construction	316L Stainless Steel			
Control panel construction	304 Stainless Steel			
Typical application (approx.)	Up to 2 taps (small dwelling)	Whole house (family home)	Multiple user (guest house)	Multiple user (hotel)
Flow rate* (litres / minute)	8	19	36	51
Max Pressure (Bar)	10			
Lamp life	8760 hours (1 year continuous use)			
UV Lamp	RL15	RL30	RL55	RL55
Connections	3/4" BSP male thread			1" BSP male thread
Dimensions (mm)	500 x 280 x 120	1000 x 280 x 120	1200 x 280 x 120	
Power consumption	18 Watts	33 Watts	50 Watts	50 Watts
Power supply	240v 50Hz single phase			

\* flow based on 98% UV transmission per 1cm at end of lamp life giving a UV dose of 40mJ/cm<sup>2</sup>

Please contact us for full warranty terms and conditions

**BWT UK Limited**  
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