



# Lumifont Manual

Models: Athene, Triplet (v.ext)

## Lumifont Features

- ❖ **Magical illuminated fountain**
- ❖ **Self-contained, portable water feature**
- ❖ **Brings life to garden after dark**
- ❖ **Runs all winter, with built-in frost protection**
- ❖ **Soothing and relaxing**
- ❖ **Hand-crafted, high quality product**
- ❖ **Easily installed and maintained**
- ❖ **Inherently safe low voltage**
- ❖ **One year guarantee, expected life of many years**
- ❖ **Low running costs, less than a 40 Watt bulb**

**Orrelwood Waterworks** is a new craft studio specialising in the design and manufacture of **illuminated water features** for gardens. We aim to be continually inventive, creating 'weird and wonderful' artefacts with light and water: artefacts that are magical, beautiful and not to be found anywhere else. We will achieve this with an alchemical blend of artistic design, modern technology and the use of natural materials.

The '**Lumifont**' is the first product in a growing range of self-contained, illuminated water features. An elegant fountain by day, it comes to life at dusk and during the evening, producing a flame-like display of magical colours. The Lumifont is designed to run throughout winter when the nights are long, thus adding a splash of light and colour to the garden and providing all-year-round enjoyment. At the first sign of frost, the Lumifont automatically turns itself off, saving you any worry.

The Lumifont is powered by low voltage electricity (24V AC) and all electrical components are isolated from the water. It is perfectly safe to touch the water plume, lead spout and pot. Just fill the Lumifont with water and switch on to initiate an ever-changing variety of fascinating and colourful effects.

## INSTALLATION AND OPERATING INSTRUCTIONS

**Please read these instructions carefully before installation and keep them safe for future reference.**

**Note:** These instructions are for models with a ceramic pot and also for 'potless' models, e.g. for a pebble pool. It should be clear by common sense which parts apply to which model and which parts should be ignored.

### Safety summary

When installed in accordance with these instructions, the Lumifont is electrically safe. As regards general safety, please note in particular the following three points.

For protection of persons:

- 1) **The Lumifont model is heavy and must be placed on a secure, solid and level platform.**
- 2) **The electrical cables must be positioned so as to ensure that persons will not trip over them.**

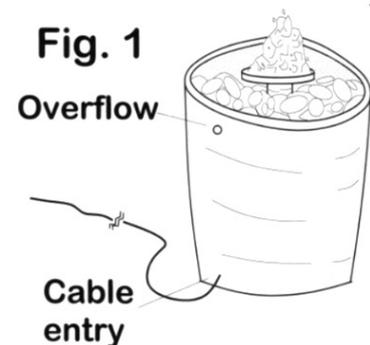
For protection of the Lumifont:

- 3) **The pump should not be allowed to run dry....so top up the water regularly, especially in hot weather.**

## LUMIFONT INSTALLATION

**Always unplug or otherwise disconnect the mains supply whilst installing, moving, repairing, or maintaining the Lumifont.**

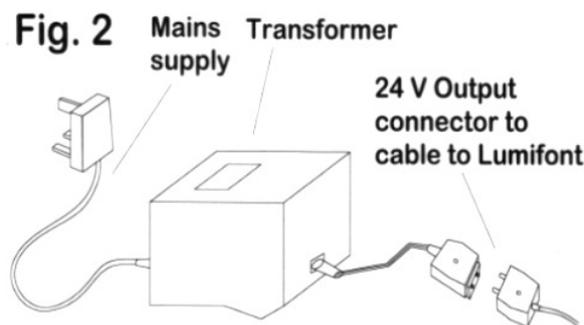
- 1) Having decided where best to display the Lumifont, it is **important to place it on a solid, level surface**. For instance, a 12 inch square paving slab makes a good base. Rotate the Lumifont so that the cable exits at the back with respect to the usual viewpoint. Double check that it is well supported and unlikely to topple over.
- 2) Position the low voltage electronics box somewhere out of sight, e.g. behind a shrub or under an upturned flowerpot. This box is completely rainproof (unlike the transformer, which must be in a dry location). NB On some early models the electronics box is located inside the pot, in which case disregard this point.
- 3) Place the pebbles provided onto the plastic support plate around the spout to create an attractive surface for the water to splash onto....start with the larger ones and use the small ones to fill in the gaps.
- 4) Fill the Lumifont reservoir with clean water until you see water coming out from the small overflow hole near the top of the pot, vertically above the cable entry. See Fig. 1. Filling will need three or four average-sized bucketfuls of water.



## TRANSFORMER INSTALLATION AND ELECTRICAL CONNECTIONS

Consult a qualified electrician if in any doubt about wiring to the mains supply.

- 1) The Lumifont must only be connected to the safety isolating transformer supplied. This transformer has a mains 240V input. The **output** of the transformer, however, is a safe low voltage, 24 Volts AC.
- 2) The transformer is supplied ready to plug in to a standard UK mains wall socket. Alternatively it can be permanently connected to a double-pole switched fused spur. In either case the plug or fuse unit should be fitted with a 3 Amp fuse as supplied in the plug.
- 3) The transformer is not waterproof and must be positioned in a permanently dry location, e.g. indoors in a house, cellar or garage where a supply of mains electricity is available. Alternatively it may be housed outside within a waterproof IP 56 enclosure with mains electricity supplied by armoured cable or cable in a protective conduit. **NB** In such cases the external mains supply **must** be protected by a 30 mA RCD (residual current device).
- 4) The transformer contains a re-settable thermal cut-out to protect against overheating. Hence avoid positioning the transformer where the cut-out might get too hot and inadvertently trip off, such as above a radiator.
- 5) Make sure that the low voltage cable from the transformer to the Lumifont is **routed in such a way that persons will not trip over it**. This cable should be adequately protected against damage from garden tools etc. The cable may be buried under the soil, or run in sand beneath loose paving slabs etc. Do not bury the cable directly in new cement or concrete, as this prevents future maintenance and may damage the cable.
- 6) The low voltage cable must pass through a wall, sometimes entailing the making of a suitable hole. To keep this hole as small as possible, the connector on the end of the long cable from the Lumifont may be temporarily removed. We have used a variety of connectors and usually the method of removal and replacement is obvious. However the chunky black two-pin plug/sockets (as illustrated in Fig. 2) are removed as follows:



Unscrew the screw in the centre of the two-pin plug connector case. Be careful not to lose the small hexagonal nut on the opposite side. Remove the screw completely. Grip the pins of the connector with fingers or pliers and pull the pins outwards from the casing. The pin block slides out (sometimes after persuasion!) to reveal the two terminals for the brown and blue wires. Disconnect the wires, loosen the cable grip and slide the casing off the cable. Drill a 6 - 7 mm diameter hole through a suitable point in the building. Feed the bare cable from the outside through the hole and reconnect the two-pin plug in reverse order to above. Remember to first slide the casing over the cable! When reconnecting the blue and brown wires it doesn't matter which colour goes to which pin. Make sure the bare ends are properly inserted into their terminals before tightening.

## NORMAL OPERATION

### Water level

The Lumifont is designed to give safe, low-maintenance, all-year-round enjoyment, and normally requires little attention. The most important point is that the water level should be topped up about once a week. Water is lost very slowly through splashing of small drops over the edge of the pot and, in warm weather, by evaporation.

The pump is designed for submersible use only, which means that its motor is cooled by the surrounding water. Therefore the pump should not be allowed to run 'dry' with no water for long periods (i.e. more than a few minutes), as this will eventually cause pump damage and shorten pump life. As the water level drops over several days the hum from the pump becomes more audible. If the level has dropped too low, the water flow will appear irregular and pump 'gulping' noises may be heard...fill her up! If the water level becomes seriously low, a pump safety cut-out will trip the pump off. However relying on this safety feature should be avoided as it cannot be guaranteed to protect the pump repeatedly. To restart from such a trip event, first turn off the power, then fill with water to the normal level. After waiting one minute for the trip device to cool, turn on the power again. The Lumifont should restart.

In the unlikely event of debris getting into the water, passing through the pump strainer cage and jamming the pump, the cut-out will operate in a few seconds. The stuck object must be then be removed; see **annual maintenance**.

### Switching on and off

The Lumifont can be run for 24 hours a day, 365 days of the year. An option worth considering is the use of a 24 hour (or 7 day) plug-in timer switch fitted where the transformer is plugged into the mains. These are available from any DIY store and allow the Lumifont to come on each day for only those hours programmed by the user.

### Special effects

The unique Lumifont lighting effects consist of a series of several **slowly** changing, soothing effects which are punctuated roughly every half hour by short five minute 'shows' in which the effects and colours change much more **rapidly**. The Lumifont always starts with one of these five minute shows when switched on, so one way of quickly 'showing off' the variety of effects is to turn it off and then on again. But don't expect it to always do the same thing! The effects are programmed with a deliberate degree of randomness to keep producing new colour combinations and occasional surprises....

We have found that the Lumifont looks particularly attractive when placed underneath foliage or in a grotto, so that some of the upwards-spreading light is caught and reflected.

### Frost protection

The Lumifont has been designed to add colour and light to the garden all year round, and in particular, to entertain during winter when the nights are long. For conventional water features, frost is normally a problem as it can cause pumps to seize up, pots to crack and pipes to burst. The Lumifont guards against this with several frost protection measures including flexible parts to take up the expansion of the ice, and a frost sensor which turns off the pump whenever the temperature drops too low (below 1° Centigrade).

Thus there is no need to worry about switching off the Lumifont or draining it down whenever it gets nippy. The Lumifont will start working again just as soon as the weather improves to above 3° C.

### Adjustments

There are few adjustments to make to the Lumifont. But the following minor points are worth considering:

- The water plume should be directly vertical for the best effect. There is some flexibility in the fixing of the nozzle. It can be gently levered to one side or the other with an inserted stick until the plume is vertical.
- The pebbles can be arranged to minimise the amount of water splashing out of the pot. This requires a bit of careful observation of water drops, but means that the Lumifont will require filling with water less often.
- The 'petals' around the nozzle are made of lead and can be bent a little into a suitably symmetric shape.
- For triple outlet models, the height of each jet is an important adjustment that can be made with three adjuster taps (not illustrated) found where the flow divides above the pump. The height of each triplet jet should be 3–4 cm. First set all three taps fully open, then carefully reduce the two largest flows until all three flows are equal.

### Annual Maintenance

During normal use, dust and leaves may fall into the pot or pond, eventually leading to a sludge that can dirty the water and partially block the pump. Annual maintenance consists of cleaning and is only required when there is evidence of poor performance, such as a murky water plume or one of reduced height owing to a clogged pump. If green algae makes the pebbles unsightly, water treatment chemicals are available from garden centres. Cleaning is carried out as follows:

- Turn off the mains power to the Lumifont.
- Remove the lead flower and shaft. They should pull off reasonably easily. Remove all the pebbles and foam ring to a clean container. They should be scrubbed clean if necessary before reassembly.
- See Fig 3. Lift out the plastic pebble support plate by flexing it to reveal the scaffolding that supports the pump and light/water pipe. On some models it is necessary to pull the light pipe off the flow adjuster before the plate can be removed.
- Remove the lengths of foam pipe that are wrapped round the upper rubber ring of the scaffolding and the scaffolding legs. To aid later reassembly, note where each foam piece came from (although this is not critical, just match the pieces to scaffolding sections of similar length!). The scaffolding can now be lifted (wiggled) out of the pot. It will remain attached by a short length of cable, but can be removed far enough to allow easy access for cleaning. Support the assembly so as not to strain the cables. Note that most versions have yet another piece of foam jammed between the legs at the bottom of the scaffolding. The (essential) purpose of all the foam is to give the water and ice a volume to 'crush' in freezing conditions. Otherwise the ice would crack the pot.
- If the water in the Lumifont or pond is dirty or there is sludge in the bottom, clean it out now with a cloth etc.
- Next, clean the pump and pump cage as follows. See Figs. 3 and 4. Remove the light pipe assembly and flow adjuster by pulling them off the pump outlet. Press the release button on top of the strainer cage and open the cage. Slide the pump out of its location in the cage. To aid later reassembly, note how the two grooves on the bottom of the pump slide into matching raised sections on the inside of the cage. Note that for 'triplet' models the flow adjuster is a larger three-way device, not illustrated here. Wash off any deposits that may be blocking flow of water through the strainer cage.
- Only if the pump seems very dirty, check and clean inside the pump chamber as follows. See Fig. 5. Release the pump chamber by rotating it a small amount anticlockwise until the two retaining tongues are clear of the lugs on the motor body; this requires strong wrists. Again, to aid later reassembly, note carefully how the pump chamber is orientated with respect to the pump motor body. Then gently pull the pump chamber away from the motor body. Check that the small white recoil flap inside the pump chamber is free to move.
- Pull the rotor assembly out of the motor body (it feels strange as it is held in by magnetism) and wash it with clean water.

Fig. 3

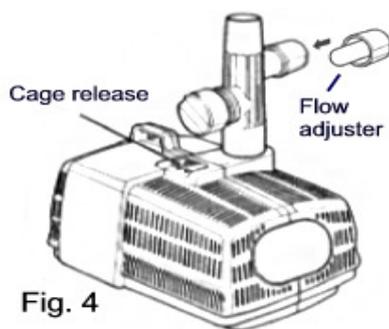
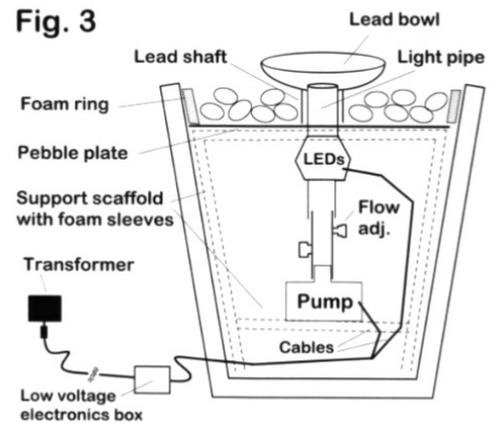


Fig. 4

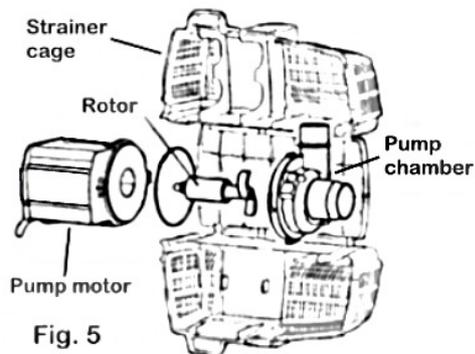


Fig. 5

**Reassembly is in reverse order to the above. Please read the following important points before reassembly:**

- **Do not operate the product without the strainer cage attached. (It may invalidate your warranty).**
- When closing the strainer cage, make sure the pump cable passes correctly through the cable hole in the cage.
- Take care that the cables will not be strained, twisted or tangled when the scaffolding is put back into the pot.

- To reinsert the pebble support plate, first make sure the scaffolding is pushed firmly down into the pot, and that all the foam pieces have been refitted. Then, gripping opposite sides of the plate with each hand, flex the sides downwards and push the plate through the top of the Lumifont. Make sure the plate rests firmly on its outer support ring and that the central hole is snugly fitted over the black rubber outer on the light pipe.
- The scaffolding will tend to float upwards without the weight of the pebbles to hold it down, so replace the pebbles before filling with water.

## TROUBLESHOOTING

**Warning: Always disconnect appliances from the electricity supply before carrying out repair or maintenance.**

### Low Flow From Pump

The correct height of the water jet, as set when new, is between 6 - 8 cm measured from where water emerges from the pipe up to the top of the water plume. (3 – 4 cm for triplet models).

- 1) Ensure Lumifont is filled with water.
- 2) Check if outlet pipe blocked by foreign object. Unsupervised children have been known to stuff pebbles down the outflow pipe! If such an object has become irretrievably jammed in the pipe, disassemble the device as explained in the 'annual maintenance' section. Then any object can be pushed out of the pipe with a long screwdriver or similar.
- 3) Ensure strainer cage is clean and recoil flap inside pump chamber moves freely (See annual maintenance)

### No Flow From Pump

- 1) Check power supply is on. Check main 3 Amp fuse and wiring.
- 2) Frost protection may be operating. Is the temperature above 3° Centigrade? This may be checked by filling a bucket with hot water (bath temperature only, NOT boiling) and pouring it gently down the central spout whilst the power is on. After taking a couple of minutes to pour most of the bucket in, the temperature of the internal Lumifont sensor should have risen sufficiently to automatically start the pump and lights. (You can use this trick to demonstrate the Lumifont to friends who visit on a really cold winter's day!)
- 3) The pump safety cut-out may have tripped due to insufficient water in Lumifont or to the pump being jammed by a solid object. Turn off the power, fill with water, wait two minutes, and turn on again. If tripping occurs repeatedly there is a fault. Contact Orrelwood Waterworks.
- 4) The transformer thermal cut-out, which is a separate device from the pump safety cut-out, may have tripped. This might be because the transformer is in too hot a location, in which case relocate it somewhere cooler. Otherwise, transformer tripping indicates an electrical fault, e.g. wiring short circuit, in which case, contact Orrelwood Waterworks.

## Orrelwood Waterworks 2 year guarantee

If this Lumifont becomes unserviceable within two years of the date of purchase it will be repaired or replaced at our option free of charge, unless in our opinion it has been damaged through misuse.

Liability is not accepted for damage due to accident, improper installation or misuse. Liability is limited to replacement or repair of a faulty Lumifont. This guarantee does not affect your statutory rights.

**NB** Damage caused by running the pump dry invalidates the guarantee.

## MISCELLANEOUS

### Spare parts and friendly advice

Is always available by email or phone from Orrelwood Waterworks. We want you to enjoy your Lumifont for many years, so please don't hesitate to contact us with any installation or operating problems encountered.

### Accessories, cleaning and repairs

Waterproof cable extensions, timer switches etc can be supplied. We also offer a cleaning and repair service. Phone for details.

### Related products and custom work

See our website at [www.lumifont.co.uk](http://www.lumifont.co.uk) for sister products to the Lumifont Athene I. For instance, coming soon, the Athene II has all the features of the Athene I, plus a simple control that allows the viewer to 'freeze' the coloured illumination effect when the Lumifont does something particularly pleasing. And to 'unfreeze' when a change of effect is desired.

We are gradually building a varied range of illuminated water features, many inspired by customer's ideas. Hence we are always happy to discuss any custom work involving water features and lighting.



**Orrelwood Waterworks**

Whalley Range  
MANCHESTER

[steve@orrelwood.co.uk](mailto:steve@orrelwood.co.uk)  
[www.lumifont.co.uk](http://www.lumifont.co.uk)



**Orrelwood Waterworks: liquid fireworks that never fizzle out!**