

# Source Four<sup>®</sup>



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## CE User Manual

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# Declaration of conformity



We, Electronic Theatre Controls, Europe Ltd. declare under sole responsibility that the product:

Product name: Source Four CE  
 Product type/model: Source Four CE series (405, 410, 414, 419, 426, 436, 450, 470, 490)  
 Lot: n/a  
 Batch/Serial number: n/a  
 Item numbers: one of each model

to which this declaration relates in conformity with the following standards:

EN60598-1:2000 Luminaires, General requirements and tests  
 EN60598-2-17:1990 Specification for luminaires for stage lighting, television, film, and photographic studios (outside and indoor) - equiv. BS 4533-102.17:1990

following the provisions of EU LV Directive(s) 73/23/EEC

London, United Kingdom

(Place of issue)

22<sup>nd</sup> Jan 1997

(Date of issue)

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## Source Four CE guidelines

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The Source Four CE is intended for professional use only. **Read the entire User Guide before using equipment.**

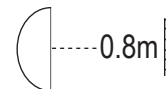
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**WARNING:** *Please note the following safety precautions.*

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- Do not mount the Source Four CE on or near a flammable surface.
- Use the Source Four CE in dry locations only, where humidity does not exceed 90 percent.
- The luminaire is for indoor use only and is not intended for outdoor use.
- For temporary installations, mount and support the Source Four CE only by the primary suspension yoke holes. Suspend the luminaire from a hook clamp or a stand mount, using a securely tightened steel bolt (up to Ø 12 mm), flat washer and locking washer.
- In addition to primary suspension, attach a safety cable (ETC part #7060A1022) or chain to the secondary suspension point on the Source Four CE.
- If the external cable is damaged, it shall be replaced by ETC or our service agents.
- Always hang the Source Four CE with the colour frame held securely behind the retaining clip.
- Always replace the lamp if it becomes damaged or thermally deformed.
- Disconnect the unit from power before all cleaning and maintenance.
- The Source Four CE is suitable for indoor use with a maximum ambient temperature:  $T_a=45^{\circ}\text{C}$
- Maximum exterior surface temperature:  $T_{\text{max}}=217^{\circ}\text{C}$
- A multilingual label sheet is included with this manual. Affix the label of the appropriate language over the existing warning label on the extension yoke. Do not cover ETC trademark or CE mark.
- The Source Four CE is equipped with a safety screen that covers the lens to prevent injury from broken glass due to lamp failure. Do not remove this safety screen.
- Keep the luminaire at least 0.8 meters away from any lit surface. Lighted objects at this distance or greater will not exceed  $90^{\circ}\text{C}$  temperature from projected light.



# Basic luminaire

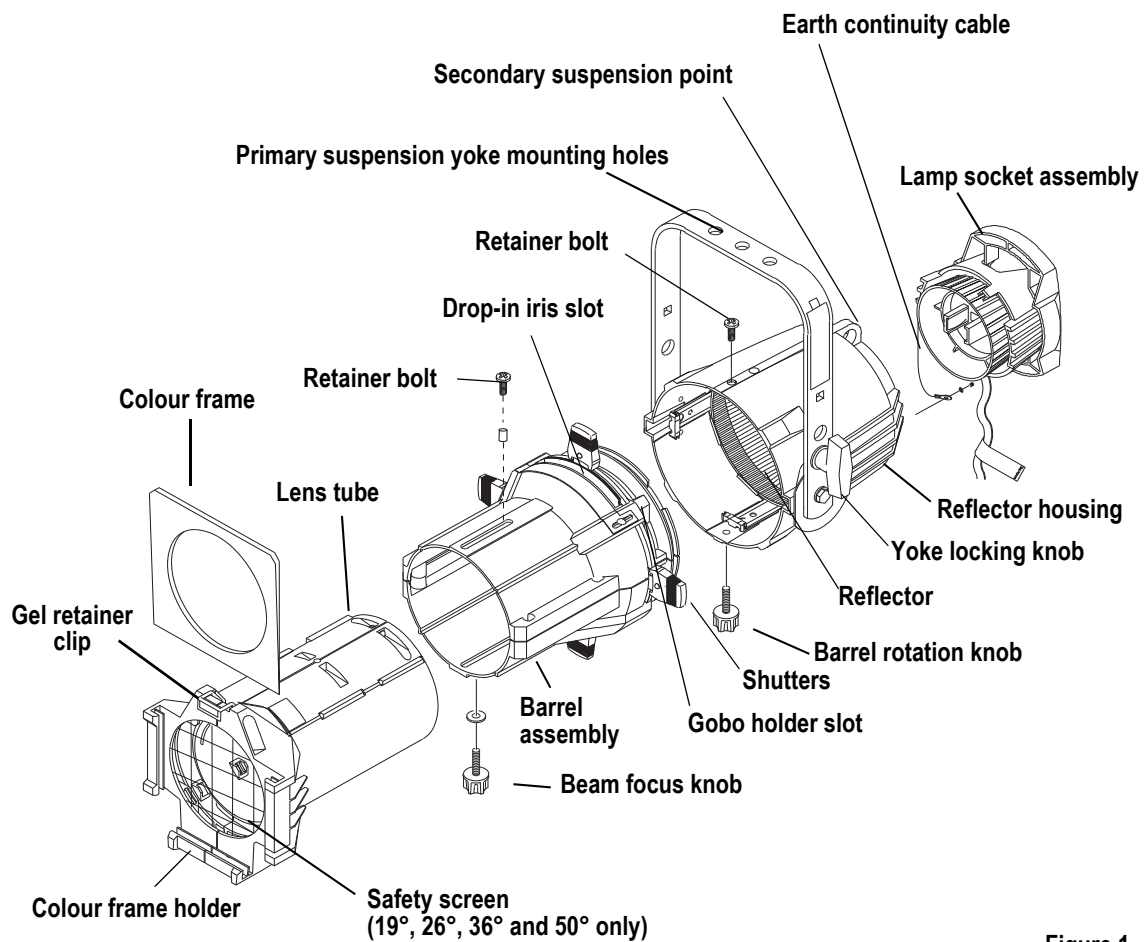


Figure 1



## **WARNING:**

*Please note the following safety warnings before use:*

*Do not mount the luminaire on or near combustible surfaces.*

*Do not operate the luminaire without a lens installed.*

*Always hang the luminaire with the colour frame retaining clip in the locked position.*

## Luminaire information

### Wiring and power information

A plug of at least 2.5 amp (220/240V) rating should be attached to the luminaire's mains lead. The wires in the mains lead are 1.55mm<sup>2</sup> each and coloured in accordance with the following code:

Green and Yellow: Earth

Blue: Neutral

Brown: Live



**WARNING:** *This luminaire must be earthed.*

Current rating: 120V/5 amp maximum  
240V/2.5 amp maximum

Operating frequency: 50/60 Hz

### HPL lamp table



**CAUTION:** Do not use lamps other than the HPL in Source Four fixtures. *Use of lamps other than HPL will void your warranty.*

Lamp code	Watts	Volts	Initial Lumen	Colour temp.	Average rated life
HPL 750/230	750	230	19,750	3,200°K	300 hours
HPL 750/230X	750	230	15,600	3,050°K	1500 hours
HPL 575/230	575	230	14,900	3,200°K	400 hours
HPL 575/230X	575	230	11,780	3,050°K	1500 hours
HPL 375/230	375	230	7,250	3,000°K	1000 hours
HPL 750/2240	750	240	19,750	3,200°K	300 hours
HPL 750/240X	750	240	15,600	3,050°K	1500 hours
HPL 575/240	575	240	14,900	3,050°K	400 hours
HPL 575/240X	575	240	11,780	3,050°K	1500 hours
HPL 375/240X	375	240	19,750	3,000°K	1000 hours

## Colour frame holder

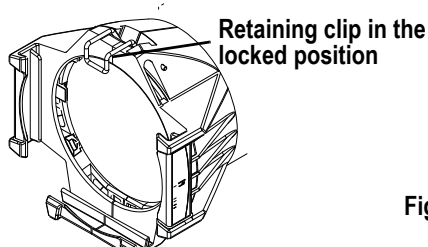


Figure 2

The colour frame holder is equipped with a spring-loaded retaining clip that prevents colour frames and accessories from falling out. See [Figure 2](#).



**WARNING:** *Make sure all colour frame accessories are locked in position with the retaining clip before hanging the Source Four luminaire.*

Step 1: Release the retaining clip by pushing it sideways while gently pulling backwards.

Step 2: Insert the colour frame.

Step 3: Lock the retaining clip by pushing sideways while gently pushing forward.



**Note:** *The performance of saturated colours may be less than desirable in any theatrical lighting luminaire, especially when equipped with a 750w lamp. For best results, always use high-quality colour media rated for high-temperature use.*

*ETC's optional Conical Gel Extender, part # 7060A1048, will provide maximum colour media life. For 14° lens tubes, use part # PSF1029. Gel Extenders are not recommended for 70° and 90° lens tubes due to the extremely wide-angle beam.*

*A variety of heat shield products is also available from many colour media manufacturers. Follow the manufacturer's instructions for the use of these products.*

For maximum gel life with specific lens tubes, refer to the tables below.

Lens Tube	Soft Focus Back (Lamp "flat")	Sharp Focus (Lamp "cosine")	Soft Focus Forward (Lamp "peak")	Soft Focus Forward (Lamp "cosine")
14°	worse	good	best	good
70°	best	good	worse	good
90°	best	good	good	worse
19°	worse	better	better	not applicable
26°	worse	better	better	not applicable
36°	better	better	worse	not applicable
50°	worse	better	better	not applicable

ED Lens Tube	Soft Focus Back (Lamp "flat")	Sharp Focus (Lamp "cosine")	Soft Focus Forward (Lamp "peak")	Soft Focus Forward (Lamp "cosine")
19°	worse	better	better	not applicable
26°	better	better	worse	not applicable
36°	better	better	worse	not applicable
50°	better	better	worse	not applicable

## Replacing the HPL lamp

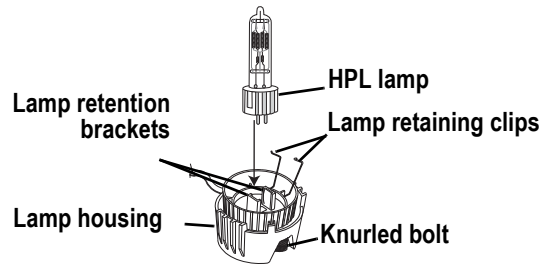


Figure 3

A lamp must be installed before you use the luminaire.



**Note:**

Verify that the HPL lamp you intend to install is suitable for your facility's voltage; 115-, 120-, 230-, and 240-volt HPL lamps are available. See [HPL lamp table, page 4](#). Operating HPL lamps above their rated voltage reduces lamp life and can cause premature lamp failure.



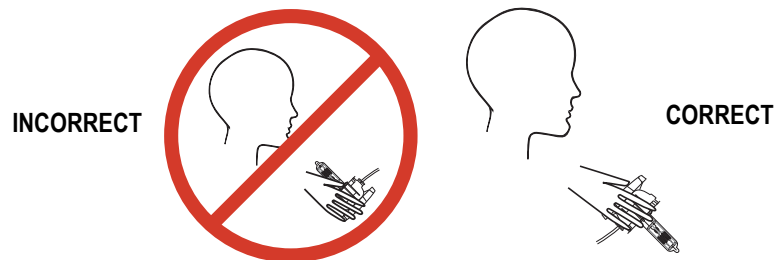
**WARNING:** *Let the lamp cool before replacing.*

- Step 1: Disconnect power to the Source Four luminaire before installing the lamp.
- Step 2: Loosen the knurled bolt on the back of the lamp housing and pull the housing out.
- Step 3: Holding by the base, remove the HPL lamp from its box.



**CAUTION:**

Use caution when installing or replacing any lamp. When installing/replacing lamp, be sure to point the lamp away from your face and away from others before inserting it firmly into the assembly. This may prevent injuries if the lamp should break.



**Note:**

To avoid premature lamp failure, do not touch the lamp glass. If you do, clean it carefully with isopropyl alcohol and a clean lint-free cloth. Allow to dry before operation.

- Step 4: Align the flat sides of the lamp base with the retention brackets on either side of the socket as shown in [Figure 3](#).
- Step 5: Push down on the lamp base until the lamp seats firmly. When properly installed, the top of the lamp's base will be even with the top edges of the retention brackets.



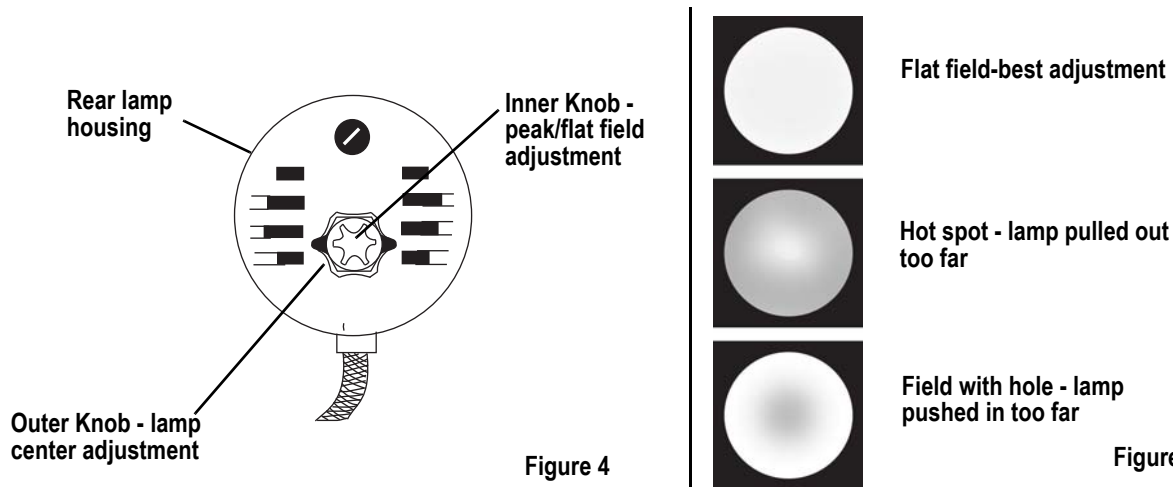
**CAUTION:**

Improperly installed lamps cause premature lamp failure and socket problems.

- Step 6: Press lamp retaining clip across lamp base to secure.
- Step 7: Reinstall the lamp housing by aligning the bolt hole and tightening the knurled bolt.



## Centering lamp and adjusting the field



The two concentric knobs located on the lamp housing allow you to align the lamp and adjust its field. See [Figure 4](#). The outer knob centers the lamp within the reflector. The inner knob adjusts the lamp's field.

- Step 1: Turn on the Source Four CE and aim it at a flat surface. Adjust the barrel to create a hard edge.
- Step 2: Unlock and loosen the outer knob by turning it counterclockwise.
- Step 3: Gently move the outer knob from side to side and up and down until the lamp is centered within the reflector.
- Step 4: Once the lamp is centered, turn the outer knob clockwise to lock it in place.
- Step 5: Finally, turn the inner knob either clockwise or counterclockwise to achieve an optimum flat field. See [Figure 5](#).

## Focusing the beam

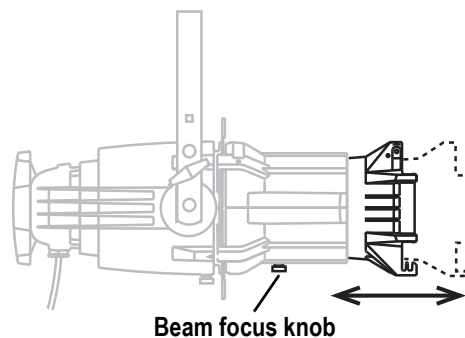


Figure 6

- Step 1: Loosen the beam focus knob located under the barrel as shown in [Figure 6](#).
- Step 2: Slide the lens tube forward or backward to achieve the desired beam edge.
- Step 3: Once the luminaire is focused, tighten the beam focus knob.

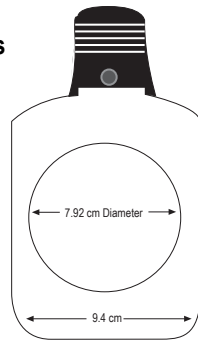
## Shaping the beam

The beam can be shaped using the shutters (see [Figure 8](#)), a gobo, an optional drop-in iris, or by rotating the barrel.

### Gobo Projection

The gobo holder slot is on the top side of the barrel and in front of the shutters. It accommodates **A-size**, **B-size** and glass gobo holders (see [Figure 7](#)).

**A-Size Gobo holder:** holds 7.62 cm diameter gobos



**B-Size Gobo holder:** holds 6.35 cm and 6.98 cm diameter gobos

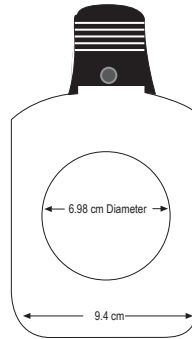


Figure 7



**Note:**

*Because the Source Four luminaire aperture is 7.62 cm wide, ETC recommends using A-size gobos for maximum effectiveness.*



**Note:**

*Enhanced Definition Lens Tubes (EDLT) provide for a crisper gobo projection.*

Use an optional donut in the accessory holder to enhance gobo projection. Donut diameter range should be 6.35 cm to 6.98 cm.

### Drop-In Iris Slot

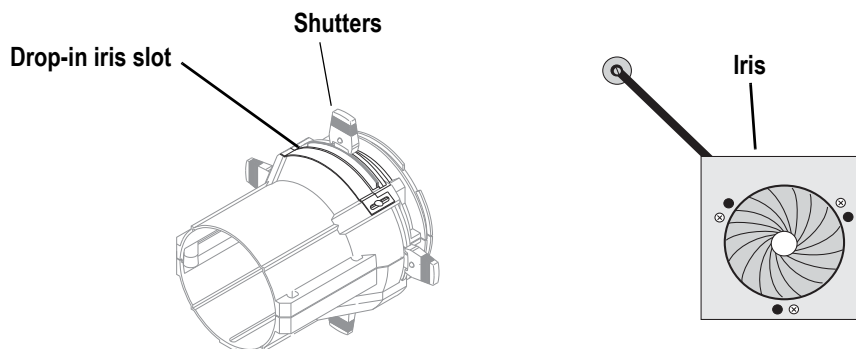


Figure 8

The drop-in iris slot is located on the top of the barrel and in front of the gobo holder slot. It accommodates either a drop-in iris or a motorized gobo device. When the slot is not in use, a small sheet metal cover secured with two Phillips screws prevents light leakage (see [Figure 8](#)).

Step 1: Use a Phillips screwdriver to loosen the screws on the drop-in iris slot cover. Do not remove screws.

Step 2: Slide the cover completely forward to expose the slot.

- Step 3: Insert the iris or motorized gobo device. For an iris, install the flat side toward the shutters and make sure the iris handle extends from the slot.
- Step 4: Slide the slot cover back toward the shutters until it meets the iris handle. Leave enough space to move the iris handle.
- Step 5: Secure the drop-in iris slot cover by tightening the screws.

## Rotating the barrel assembly

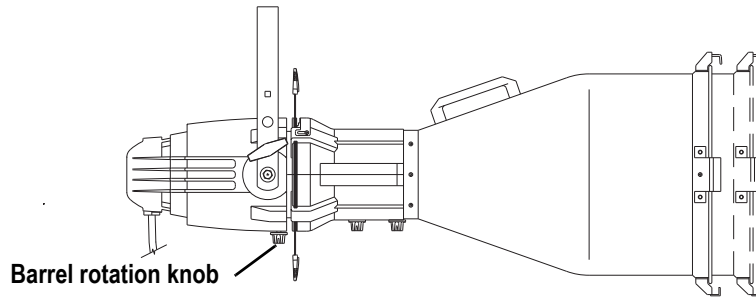


Figure 9

- Step 1: Loosen the barrel rotation knob directly behind the shutters on the underside of the reflector housing (see [Figure 9](#)). **Do not** remove the barrel rotation knob.
- Step 2: Rotate the barrel to the desired position (up to 25° in either direction from the centered position).
- Step 3: Once the barrel is positioned, tighten the barrel's rotation knob to lock it in place.

## Adjusting the yoke position

The Source Four CE provides multi-positioning capabilities within its yoke for overall luminaire height and angle.

### Setting the luminaire height within the yoke

The Source Four CE has a two-position yoke for modifying the overall height in which the luminaire is mounted (see [Figure 10](#)). To change the height position, perform the following steps.

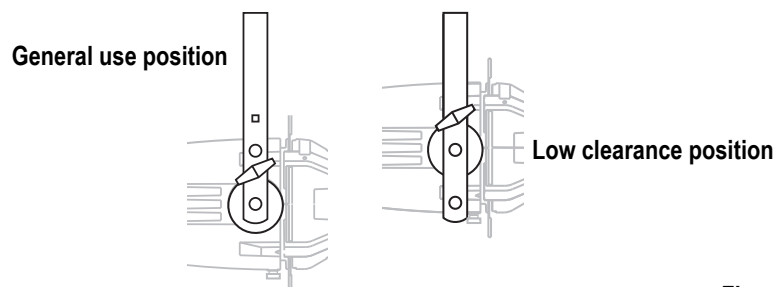


Figure 10

- Step 1: Remove the yoke locking knobs, washers, and hex bolts from either side of the luminaire.
- Step 2: Raise or lower the luminaire to the desired position within the yoke.
- Step 3: Reinstall the yoke's hex bolts, washers, and locking knobs.
- Step 4: Tighten the yoke knobs to secure in position.

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## Setting the angle within the yoke

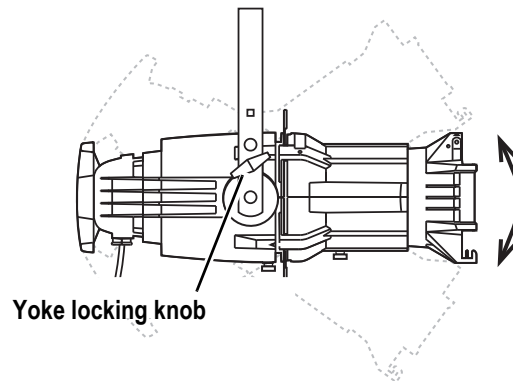


Figure 11

- Step 1: Loosen the yoke locking knobs (see [Figure 11](#)). **Do not** remove them.
- Step 2: Tilt the luminaire to the desired position.
- Step 3: Tighten the yoke locking knobs to secure in position.

## Cleaning lens and reflector



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**WARNING:** *Do not use ammonia-based or other harsh commercial cleaners. Clean lenses and reflector only as directed.*

*Commercially available glass cleaning agents should be avoided as they may contain ammonia, other harsh chemical detergents or abrasive agents. These cleaners may damage the glass surface and the Anti-Reflective coatings. Do not immerse or soak the glass in any cleaning solution.*

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Replace lenses if they contain visible damage (cracks or deep scratches) that may impair their effectiveness.

### Cleaning 14°, 19°, 26°, 36°, 50°, 70°, 90° and all EDLT glass lenses

- Step 1: Remove the beam focus knob along with retainer bolt and collar from the barrel (see [Figure 1](#)). Remove the lens tube from the barrel.



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**Note:** *To clean the inside of lenses, it is necessary to remove the lenses from the lens tube for cleaning. Instruction for removing the lens can be found in the Source Four Assembly Guide available for download at our website: [www.etconnect.com](http://www.etconnect.com).*

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- Step 2: Remove dust with a blast of oil-free air or wipe with a clean, lint-free cloth. Isopropyl alcohol, distilled water or a 50%-50% mixture of each can be used to clean the glass surface.

- Step 3: Slide the lens tube back into the barrel with the color frame retaining clip on top. Reinstall the beam focus knob, retainer bolt and collar.

### Cleaning 5° and 10° polymer lenses

To quickly clean the lenses, remove dust with a blast of oil-free air. If this is not sufficient, follow these steps.



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**CAUTION:** *Handle polymer lenses by their edges only. Never rub anything dry on a polymer lens.*

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- 
- Step 1: Remove the beam focus knob at the bottom of the barrel (see [Figure 1](#)). Remove the lens tube from the barrel.
  - Step 2: Use a Phillips screwdriver to remove the brackets that hold the lens in place. Remove the lens from the tube.
  - Step 3: Dip the lens in a clean isopropyl alcohol/water mixture (9 parts water to 1 part isopropyl alcohol).
  - Step 4: Use a soft moistened nylon bristle brush to wash the lens' smooth side in a linear (non-circular) motion.
  - Step 5: Use the same brush to lightly wash the lens' ridged side by following its ridges.
  - Step 6: Dip the lens in a clean isopropyl alcohol/water mixture (9 parts water to 1 part isopropyl alcohol).
  - Step 7: Dry the smooth and ridged surfaces with an air gun. Make sure the air flow moves liquid away from you.
  - Step 8: Inspect the lens for dirt. Repeat steps 3-7 if necessary.
  - Step 9: Set the lens back in the lens tube with the ridged side facing the front of the tube. Reinstall the lens brackets.
  - Step 10: Slide the lens tube back into the barrel with gel frame retainer on top. Reinstall beam focus knob.

### Cleaning the reflector



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**WARNING:** *Unplug the fixture before attempting to clean the reflector.*

---

To quickly clean the reflector, remove the lens tube and clean the dust from the reflector with a blast of oil-free air. You may also wipe the reflector with a clean lint-free cloth. If either method is not sufficient, follow these steps.

- Step 1: To protect the lamp housing during cleaning, remove the lamp housing by loosening the knurled bolt and pulling the housing straight out. See [Figure 3](#).
- Step 2: Remove the barrel rotation knob located at the bottom of the barrel (see [Figure 1](#)). Use a Phillips screwdriver to remove the retainer bolt located on top of the reflector housing.
- Step 3: Rotate the barrel 45° in either direction. Carefully remove the barrel from the reflector housing.
- Step 4: Remove dust with a blast of oil-free air or wipe with a clean, lint-free cloth. Isopropyl alcohol, distilled water or a 50%-50% mixture of each can be used to clean the glass surface.
- Step 5: Insert the barrel into the reflector housing with the iris/gobo slot on top. Align the triangles on both parts.
- Step 6: While gently pressing in, rotate the barrel 45° clockwise until it sets into position, then rotate the barrel counterclockwise 45°. The barrel should be firmly attached and the triangles should be aligned.
- Step 7: Reinstall the barrel rotation knob and tighten the retainer bolt.
- Step 8: Reinstall the lamp housing and tighten the knurled bolt.

## Portable appliance test (PAT) guidelines

The Portable Appliance Test is a set of tests that must be administered to electrical equipment in the UK and some locations in Europe to ensure safety. The tests are typically carried out using a small PAT device. The PAT device connects to a power source and then attaches to the product via an electrical outlet and test probes. The PAT provides a simple pass or fail result, allowing rapid testing of large inventories.

Source Four CE luminaires include a specific PAT point where the test clip is attached, as shown in [Figure 12](#). PAT tests should be performed by a qualified technician. Your local regulatory authority has guidelines on the testing frequency.

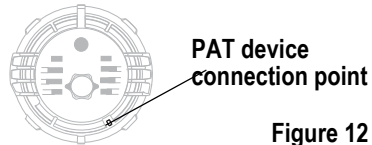


Figure 12





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