UXL SERIES

USHIO XENON SHORT ARC LAMPS

FOR CINEMA PROJECTION, FOLLOW SPOT, SCIENCE AND TECHNOLOGY APPLICATIONS
USHIO XENON SHORT ARC LAMPS

UXL SERIES

UXL series are high pressure xenon discharge lamps. Xenon gas is rarely found in the atmosphere as is krypton gas, and thus it is called a rare gas. The most important feature of the UXL series is their close resemblance to daylight in terms of their spectral distribution.

UXL series are made of quartz glass with metal bases and are filled with xenon gas at above atmospheric pressure to provide high luminance and high luminous efficiency. These lamps are widely used in cine-projectors worldwide. The lighting circuit for UXL series is composed of an ignition device and a DC power supply. DC power is required to maintain the stability of the arc.

Features
- The luminance of the arc of USHIO xenon short arc lamps is very high while the size is very small. Thus, USHIO xenon short arc lamps are used in applications such as searchlights and projectors.
- USHIO xenon short arc lamps display a near continuous spectral output in the visible region of light making the color rendering quality very close to natural daylight, a feature that has many advantages when using the lamps in applications as a standard light source. USHIO xenon short arc lamps also have a relatively strong distribution in the infrared region of the spectrum and are used as infrared radiation sources as well.
- USHIO xenon short arc lamps ignite and stabilize in moments compared with mercury arc lamps which require several minutes to reach stable operation. Also, the color does not vary as a result of input power variations.

Applications
- Cine-projectors
- Profile Projectors
- Standard Daylight
- Stage and Screen Lighting
- Searchlights
- Plaza Lighting
- Floodlighting of park, stadium, work site lighting
- Microscopes
- Medical Equipment
- Spectral Luminosity Measurement Apparatus
- Infrared Communications
- High Luminosity Optical Measurements and Experiments
- Signal Lights
- Arc Image Furnaces
- Photographic Printing
- Plant Growth Experiments

Data

<table>
<thead>
<tr>
<th>Typical Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wattage</td>
</tr>
<tr>
<td>35mm and 70mm film projection</td>
</tr>
<tr>
<td>8mm and 76mm film projection</td>
</tr>
<tr>
<td>Slide projection</td>
</tr>
<tr>
<td>Follow spot light</td>
</tr>
<tr>
<td>Search light</td>
</tr>
<tr>
<td>Portable search light</td>
</tr>
<tr>
<td>Spectrophotometer</td>
</tr>
<tr>
<td>Spectrophotometer</td>
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<td>Monochrometer</td>
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<td>Clinical scanner</td>
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<td>UV recorder</td>
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<tr>
<td>Surgical light</td>
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<tr>
<td>Color inspection</td>
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### Technical Data

<table>
<thead>
<tr>
<th>Type (W)</th>
<th>Model</th>
<th>Rated input power (W)</th>
<th>Rated current (A)</th>
<th>Rated voltage (V)</th>
<th>Operating position</th>
<th>Average file</th>
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</table>

**Operating position**
- Vertical (degree)
- Horizontal (degree)

**Dimensions**
- L1 (mm)
- L2 (mm)
- L3 (mm)
- D1 (mm)
- D2 (mm)
- D3 (mm)
- D4 (mm)

**Notes**
- Substituting the protective cover
- With a protective cover
- With a protective cover and a lens
- With a protective cover and a box
- With a protective cover and a box

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**Diagram:**
- Fig. 1
- Fig. 2
- Fig. 3
- Fig. 4
- Fig. 5
- Fig. 6
- Fig. 7
- Fig. 8
- Fig. 9
- Fig. 10
- Fig. 11

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**Legend:**
- Vertical (degree)
- Horizontal (degree)
- L1 (mm)
- L2 (mm)
- L3 (mm)
- D1 (mm)
- D2 (mm)
- D3 (mm)
- D4 (mm)
- Angle side (degree)

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**Table Notes:**
- Suffix "A" with a protective cover
- Suffix "B" with a protective cover
- Suffix "C" with a protective cover

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**Additional Information:**
- The horizontal lighting type may require magnetic correction.
- When correcting the arc position to ensure that it is centered on the arc and vertically on the flattest part of the arm, turn the lamp to the position indicated by the angle described in the arc range.
- The arc file indicates the average file for each lamp type in an arc range of 1.5. The arc file is continuous at the rated current.
- Lamps with wattage above 50W inclusive are usually solid line type even though they do not have Suffix "O" or "O".
<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Rated input power (W)</th>
<th>Rated current (A)</th>
<th>Rated voltage (V)</th>
<th>Optical characteristics</th>
<th>Cold arc gap (mm)</th>
<th>Average life (hrs)</th>
<th>Operating position (Vertical/Horizontal)</th>
<th>Density of the lamp (for lamp opening (inches))</th>
<th>L1 (mm)</th>
<th>L2 (mm)</th>
<th>L3 (mm)</th>
<th>D1 (mm)</th>
<th>D2 (mm)</th>
<th>D3 (Cathode side)</th>
<th>D4 (Anode side)</th>
<th>Notes</th>
<th>Safety precautions</th>
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<tbody>
<tr>
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<td>65.0</td>
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<td>±15° ±15°</td>
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<td>4 - 6</td>
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Suffix Note: B: With cylindrical protective cover
C: With cable on bases
O: Ozone-free lamps
T: Lamps with voltage above 500W inclusive are usually ozone-free type even though they do not have Suffix "O" or "O".

- The horizontal lighting type may require magnet connection.
- When connecting the arc position with a magnet, be sure to adjust the arc to be radiated evenly both horizontally and vertically on the flat part of the anode tip.
- Average life indicates the average life when the lamp is in continual use at the rated current.
- A lamp at the end of its life has either of the following characteristics: 1. The luminous flux becomes 70% or less of the initial value.
- The lamp does not light.
- (US) (O) also manufactures highly visible lamps for spectrophotometers. For details, please contact UHO.
A: Xenon Lamps (Foil Seal Xenon Lamps)

- Do not operate the lamp in close proximity to paper, cloth or other combustible material, nor cover it with such materials, even immediately after it is turned off. Otherwise, it could cause a fire.
- As the lamp could burst while in use or not, it is kept in the provided protective case. Exchanging the lamp is very dangerous because the lamp is taken out of the provided case. These instructions must be followed when exchanging the lamp. Otherwise, it could cause injury if it bursts.
- Lamps that have been used for the rated service life are more likely to break and burst because of the deteriorated glass condition. Therefore, follow the instructions in this leaflet for replacement and disposal of used lamps. Otherwise, they could cause injury if they burst.
- The lamp must be operated in a splinter-scatter-proof lamp house. Do not open the lamp house while the lamp is operating or immediately after it is turned off. Otherwise, it could cause injury if it bursts.
- The lamp is under high internal pressure. Do not hit the lamp against anything, apply excessive stress or scratch the lamp. Otherwise, it could burst.
- Wear a protective mask, leather gloves and a thick long-sleeved shirt when handling the lamp. Otherwise, it could cause injury if it bursts.
- Turn off the electrical power before installing, removing or cleaning the lamp house (equipment). Otherwise, it could cause electrical shock.
- Operate the lamp in the position indicated. Otherwise, it could cause the lamp house to overheat, breakage or short lamp life.
- During operation, the lamp emits intense UV radiation which is harmful to the eyes and skin. Do not look directly or indirectly at the operating lamp. Otherwise, it could cause eye aches or eyesight problems.
- Do not directly or indirectly expose your skin to the lamp light. Otherwise, it could cause inflammation of the skin.
- Thoroughly ventilate the area or the room when operating the lamp in an Oxygen atmosphere (in the air), except in the case of ozone-free lamps. If ozone is inhaled, it could cause headaches, nausea, dizziness, etc.

(B) Xenon Lamps (Graded Seal Xenon Lamps)

- Do not operate the lamp in close proximity to paper, cloth or other combustible materials, nor cover it with such materials, even immediately after it is turned off. Otherwise, it could cause a fire.
- As the lamp could burst while in use or not, it is kept in the provided protective case. Exchanging the lamp is very dangerous because the lamp is taken out of the provided case. These instructions must be followed when exchanging the lamp. Otherwise, it could cause injury if it bursts.
- The lamp must be operated in a splinter-scatter-proof lamp house. Do not open the lamp house while the lamp is operating or immediately after it is turned off. Otherwise, it could cause injury if it bursts.
- The lamp is filled with high pressure Xenon gas. Do not open the lamp house while the lamp is operating or immediately after it is turned off. Otherwise, it could cause injury if it bursts.
- Lamps that have been used for the rated service life are more likely to break and burst because of the deteriorated glass condition. Therefore, follow the instructions in this leaflet for replacement and disposal of used lamps. Otherwise, they could cause injury if they burst.
- The lamp must be operated in a splinter-scatter-proof lamp house. Do not open the lamp house while the lamp is operating or immediately after it is turned off. Otherwise, it could cause injury if it bursts.
- The lamp is under high internal pressure. Do not hit the lamp against anything, apply excessive stress or scratch the lamp. Otherwise, it could burst.
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- Do not directly or indirectly expose your skin to the lamp light. Otherwise, it could cause inflammation of the skin.
- Thoroughly ventilate the area or the room when operating the lamp in an Oxygen atmosphere (in the air), except in the case of ozone-free lamps. If ozone is inhaled, it could cause headaches, nausea, dizziness, etc.
USHIO INC. is a company which is constantly challenging new frontiers in quest of its goal of providing a new and better light-age for tomorrow's society. We are a young, energetic and greatly ambitious group developing many kinds of lighting methods, both in the visible and invisible wavelength regions, with multi-faceted applications in many fields of endeavor such as office equipment, automobile equipment, motion pictures, electronics and space communications. We are the only specialized manufacturing company in Japan providing a wide range selection of halogen lamps, xenon lamps and many other different kinds of discharge lamps. Our products are marketed and serviced throughout the world through our coordinated marketing/marketing concepts, and all of these fine products are ready available wherever and whenever needed.

**LIGHT SOURCE**

Halogen lamps  Metal-halide lamps  Flash UV lamps
Xenon lamps  Krystal arc lamps  Lasers
Ultraviolet lamps  Xenon flash lamps
Deep-UV lamps  Dielectric barrier discharge excimer lamps

**OPTICAL UNITS**

Exposure unit for data processing equipment
Exposure unit for semiconductor manufacturing equipment

**OPTICAL DEVICES AND SYSTEMS**

Solar simulator (for space development, solar batteries, and growing plants)
UV ink curing system, Photoengraving light source system
UV sterilizer equipment (for sterilizing air, water, powders, and surfaces)
UV resist hardening system for semiconductor manufacturing
TAE exposure system Laser marking system
Peripheral exposure system for silicon wafers
Optical furnace for semiconductor manufacturing
Large Area Projection Exposure System
Lighting devices (for shops, theaters, and TV/photo studios)
Marine lighting, Automobile lighting

**OPTICAL MEASURING INSTRUMENTS**

UV illuminance meter
Spectrophotometer

**AUTOMATION PARTS**

Solenoids

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**CAUTION**

(Handling)
- If the lamp is filled with high pressure Xenon gas, it must be kept in the provided protective case when transporting. Otherwise it could cause injury, if it bursts.
- When the lamp is solid with fingerprints or dust, clean it with an alcohol-soaked cloth. Otherwise it could cause bursting or shorten the lamp life.
- Do not operate the lamp in an atmosphere containing an inflammable substance, such as a thinner. Otherwise it could cause a fire or explosion.
- Avoid any vibration or shock to the lamp since it is a glass product. Otherwise it could cause breakage or short lamp life.

(Installation)
- Affix the lamp in the correct polarity. Otherwise it could cause bursting, overheating of the lamp house or shorten lamp life.
- Do not apply excessive stress when installing the lamp. Otherwise it could cause breakage and injury.
- Do not use any tools to tighten nuts when fixing the lamp, use only hands. Otherwise it could burst.
- Fix the lamp and its lead wire firmly to the terminals. Otherwise it could cause overheating by poor connection or fusing.

(Operation)
- Do not touch the lamp while it is operating or immediately after it is turned off because it is extremely hot. Otherwise it could cause a burn.
- Do not open the lamp house for at least ten (10) minutes after the lamp is turned off. Otherwise it could cause injury if it bursts.
- Use a suitable lamp house and a lamp of the wattage designated by the power supply. Otherwise it could cause overheating.

(Disposal)
- The used lamp must be kept in the provided protective case until disposal by breaking the glass part. Otherwise it could cause injury.
- The lamp is filled with high pressure Xenon gas. Disposal without breaking the glass part may result in lamp burst. Follow the instructions below to prevent harmful repercussions. Wear a protective mask, leather gloves and a long-sleeved shirt when handling the lamp.
1. The used lamp must be kept in the provided protective case; the case must be securely locked by the metallic stopper.
2. Place the used lamp in the protective case into the provided paper case. Firmly attach the tape of the paper case to make certain the case will not open when the lamp is dropped onto a hard floor.
3. From about one (1) meter in height, drop the provided paper case, with the lamp and protective case inside, onto a hard floor.
4. Shake the paper case to determine if the lamp is broken.
5. Dispose of as industrial waste. Dispose separately where metal and glass must be disposed of separately.

**Important Operation Notes**

- The lamp must be operated under the specified use conditions such as lamp anamperage, lamp voltage and cooling condition.
- Keep the lamp base temperature below 200°C or follow the maximum temperature of the metal base section if specified.
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All information data and specifications shown are subject to change without notice.