

TUNGSTEN HALOGEN & INCANDESCENT LAMPS

- **DANGER!** Halogen lamps operate at extremely high temperatures that can cause serious physical injuries and property damage.
- Only use Halogen lamps in Halogen-approved fixtures. Fixtures should fully contain any parts of the Halogen lamp upon the event of a lamp burst.
- Do not use Halogen lamps in close proximity of paper, cloth or other combustible materials that can cause a fire hazard.
- Lamps are very fragile. Do not drop, crush, bend or shake them. Vibration or impact will cause filament breakage and short lamp life.
- Do not touch the Halogen bulb surface or inside reflectors with your bare hands. Oils from skin can lead to breakage or shorten the life of the lamp. Use clean gloves or lint-free cloth for installation and removal.
- Clean any dirt, oil, or lint away from the lamp with alcohol and a lint-free cloth or tissue. Any foreign particles or materials on the bulb surface can cause hot spots on the bulb and result in lamp failure.
- Never touch the lamp when it is on, or soon after it has been turned off, as it is hot and may cause serious burns.
- Do not look directly at the operating lamp for any period of time; this may cause serious eye injury.
- Always turn off the electrical power before inserting, removing, or cleaning the lamp.
- Affix the lamp securely in the socket. Improper installations will cause electrical arcing, overheating and short life to lamp and socket. Replace lamp holders and sockets when necessary.
- Keep the temperature of the Halogen lamp seal below 350° C.
- Keep the temperature of the Halogen bulb wall above 250° C.
- Keep the temperature of the Halogen lamp bulb wall below 800° C.
- Make sure lamps of specified wattage and voltage are only used in appropriately rated fixtures. Unspecified use will lead to short lamp life, breakage and overheating of fixture.
- Lamps should not be operated beyond the total rated voltage. Avoid the use of dimmers that may drive your lamp over its rated voltage.
- Operate the lamp only in the indicated burn position. Failure to do so will lead to overheating and shortened lamp life.
- Use an external fuse when required.
- Do not allow one lamp to directly expose another. This may lead to overheating and shortened lamp life.

FLUORESCENT LAMPS

- Fluorescent lamps operate at high surface temperatures that can cause serious physical injuries. Turn power off and allow adequate time (approximately 10 minutes) for the lamp to cool before attempting replacement.
- In order to avoid the risk of electrical shock, make sure the power to the fixture is turned off when replacing a lamp. Hold compact fluorescent lamps by the lamp base.
- Lamps are very fragile. Do not drop, crush, bend or shake them. Fluorescent tubes may shatter with considerable force when broken.
- To ensure that the lamps remain in the sockets for the duration of the operation, make sure that the fixture's sockets are not worn prior to installation of the lamps. If the lamps are installed in worn sockets, the lamps could fall out of the fixture during operation.
- Never operate a lamp above or below its rated current voltage.
- Electrical connections should be clean and in good condition. Replace lamp holders and sockets when needed. Affix the lamp securely in the socket. Improper installations will cause electrical arcing, overheating and short life to the lamp and socket.
- Do not look directly at the operating lamp for any period of time; this may cause serious eye injury.
- Fluorescent lamp use is not recommended in extreme weather conditions. Excessive cold/warm temperatures dramatically affect starting, lamp life and lumen maintenance.
- There is a NEMA recognized industry issue where T2, T4 and T5 fluorescent and compact fluorescent lamps when operated on high frequency electronic ballasts may experience abnormal end-of-life phenomenon. This end-of-life failure can result in the bulb wall cracking near the base of the lamp, or the lamp overheating in the base location and possibly melting the base and/or the socket. NEMA recommends that if high frequency electronic ballasts are used that the ballast has an internal end-of-life protection circuit that will safely and reliably shut down the system in the rare event of an end-of-life failure as described above. For additional information please refer to NEMA papers on their website www.nema.org.
- Ushio's Coilight lamps are suitable for indoor and outdoor use in non-severe temperature climates. Outdoor use of these lamps does require a weather-protected fixture.
- Ushio's Coilight lamps comply with part 18 of the FCC rules. These lamps may cause interference with AM radios, cordless phones and remote control devices. Interference may be caused after a brief 90-second lamp warm-up period. If interference continues, relocate the lamp away from the device or plug into a different outlet.

METAL HALIDE & HIGH PRESSURE SODIUM DISCHARGE LAMPS

- **ANSI Type E = Enclosed Fixture Required**
Lamps that are enclosed fixture rated should only be operated in an enclosed fixture that safely contains all lamp parts in the event of a lamp burst or rupture. These lamps operate at a high internal pressure and at high temperatures which can emit harmful ultraviolet light if the outer glass bulb is broken. A lamp may burst causing physical injury and property damage unless protective safety glass is used with the fixture. Use fixture that meets requirements per UL standard #1572.
- **ANSI Type O = Open Fixture Rated**
Lamps that are open fixture rated are suitable for operation in open fixture designs. These types of lamps typically feature UV protective quartz and a secondary shroud surrounding the arc tube to prevent the scatter of glass in the event of a burst.

METAL HALIDE & HIGH PRESSURE SODIUM DISCHARGE LAMPS (Continue)

- Metal Halide discharge lamps can emit ultraviolet radiation that may be harmful to eyes and skin. Metal Halide discharge lamps that are not open fixture rated, should only be used in enclosed fixtures with ultraviolet absorbing filter glass. Do not operate these lamps if the ultraviolet absorbing filter glass is broken or not installed.
- Metal Halide and High Pressure Sodium discharge lamps should only be operated with the compatible ballast, rated fixture (open/closed, wattage), and socket. (See lamp specification page for ballast information.) PulseStrike™ pulse start Metal Halide lamps require a 4000 volt pulse rated socket. High Pressure Sodium lamps require a 4000 volt pulse rated socket.
- Only operate the lamp in its designated operating position. (See lamp specification page for lamp operation position)
- Metal Halide lamps should be turned off for a minimum of 15 minutes per week.
- Lamps should never be operated beyond their rated useful life. The risk of a lamp burst increases with lamp age, temperature, improper operation and improper handling. Replace the lamp at or before the end of its rated life. Group relamping is always recommended.
- Never bump, drop, apply excessive stress, or scratch the lamp. This could cause the lamp to burst! Do not operate any lamps with any traces of scratches, cracks, or physical damage.
- Never operate a lamp above or below its rated current or voltage. This may cause the lamp to leak or burst.
- Always turn off the electrical power before inserting, removing, or cleaning the lamp.
- Clean any dirt, oil, or lint away from the lamp with alcohol and a lint-free cloth or tissue. Dirt or other contaminants will affect light output and may cause the lamp to overheat and decrease lamp life.
- Electrical connections should be clean and in good condition. Replace lamp holders and sockets when needed. Affix the lamp securely in the socket. Improper installations will cause electrical arcing, overheating and short life to lamp and socket.
- Never touch the lamp when it is on, or soon after it has been turned off, as it is hot and will cause serious burns. Lamps should be allowed to cool for a minimum of ten (10) minutes after the lamp is turned off.
- Do not use lamp in close proximity of paper, cloth or other combustible material that can cause a fire hazard.
- Do not look directly at the operating lamp for any period of time; this may cause serious eye injury.

(Hg) - CONTAINS MERCURY. Manage in Accord with Disposal Laws

Metal Halide, Fluorescent and High Pressure Sodium discharge lamps contain Mercury. USHIO realizes the importance of lamp recycling and we encourage all lamps to be properly disposed of in order to help preserve the environment and our Earth's precious natural resources. Please refer to your local environmental laws regarding disposal and recycling of Mercury containing lamps. To learn more about lamp recycling requirements in your area, you can contact your state environmental authorities or visit www.lamprecycle.org.

R - NON SELF-EXTINGUISHING LAMP

WARNING: This lamp can cause serious skin burn and eye inflammation from shortwave ultraviolet radiation if outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available. Complies with the USA Federal Standard 21 CFR 1040.30 and Canada Standard SOR/80-381.

REFERS TO AQUALITE™ METAL HALIDE LAMPS ONLY

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SOLID-STATE LIGHTING / LED LAMPS

- In order to avoid the risk of electrical shock, disconnect or turn off power to the fixture prior to lamp installation or servicing.
- Allow lamp to cool before handling.
- Lamp may not be compatible with all dimmers and transformers. Check www.ushio.com to find up to date dimmer and transformer compatibility options.
- Ensure that lamps of specified wattage and voltage are only used in appropriately rated fixtures. Unspecified use will lead to short lamp life, breakage and overheating of fixture.
- Do not open lamp. No user serviceable parts inside.
- Fully enclosed or recessed fixtures must contain proper ventilation for those lamps that are not approved for fully enclosed fixtures.
- Ensure that LED is approved for wet, damp or dry locations before using the lamp outdoors in a fixture that is not rated a weather-protected fixture.
- Reliable Operating temperature is -4° F to 113° F.
- USHIO LED devices comply with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.
- Not all USHIO LEDs are designed for use in emergency or exit lighting.
- Any modifications to the product will void the warranty.