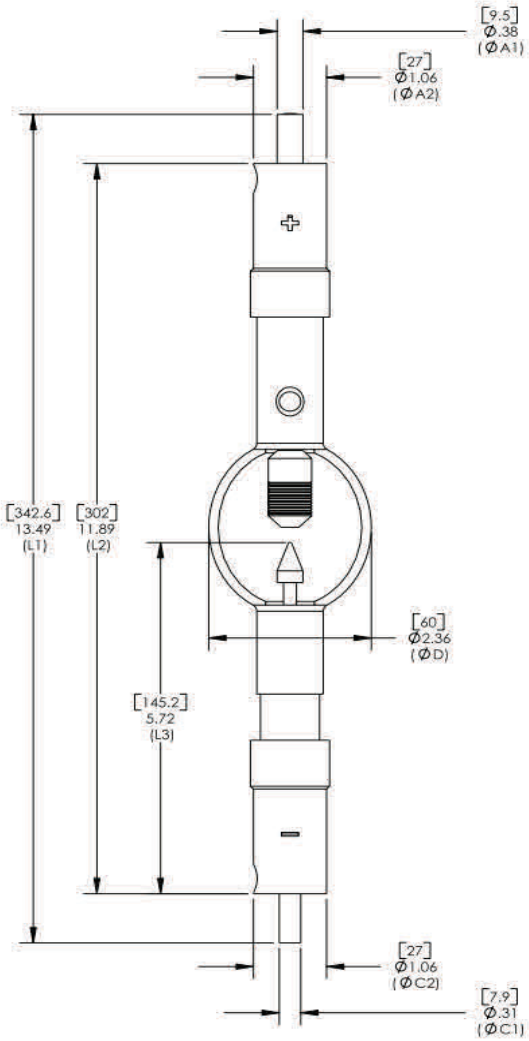
Xenon Short Arc Lamps

Light Source

(650-0054)

3000W



Lamp Specifications

Quartz Type	Ozone Free
Wattage	3000
Voltage	30
Amperage	100
Current Range	60-110
Open Circuit Voltage	110
Luminous Flux	130000
Luminous Intensity	12000
Average Luminance	90000

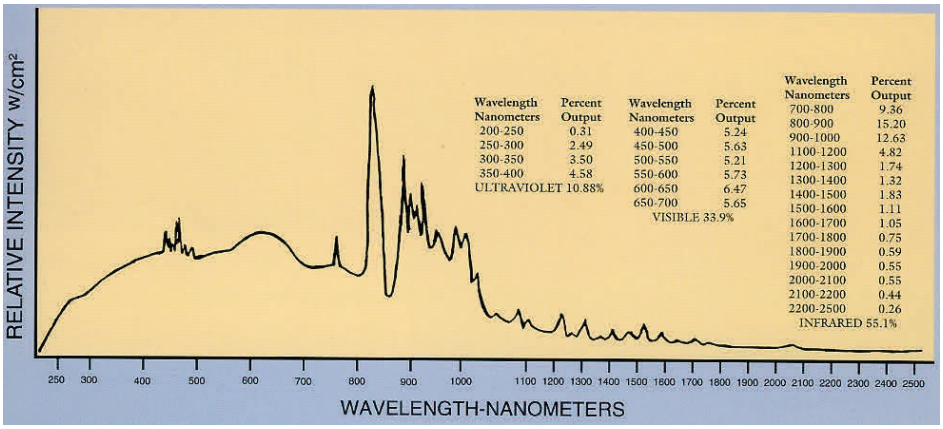
Lamp Dimensions

Overall Length (L1)	13.49
Lamp Length (L2)	11.89
Tip to Shoulder Length (L3)	5.72
Bulb Diameter (D)	2.36
Cathode Pin (C1)	0.31
Cathode Base (C2)	1.06
Anode Pin (A1)	0.38
Anode Base (A2)	1.06
Arc Length	0.23
Lead Wire	Y

SCIENCETECH

1450 Global Drive
London, Ontario
Canada, N6N 1R3
Www.sciencetech-inc.com

Phone: 519-644-0135
Fax: 519-644-0136
E-mail: Sales@Sciencetech-inc.com



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Lamp Safety

Ultraviolet Safety
The air-cooled xenon and mercury/xenon short arc quartz lamps range from 150 to 10,000 watts while the liquid-cooled short arc lamps range from 7000 to 32,000 watts. Both the air-cooled and liquid-cooled short arc lamps produce a highly stable arc in the ultraviolet, visible and infrared spectral ranges. Shielding is absolutely mandatory. The ultraviolet radiation will cause serious burns to the eyes and skin if not properly shielded. Even brief exposure to the short arc lamp's radiation, especially the mercury/xenon lamps, can cause severe burning of the skin and eyes. Even a minor ultraviolet radiation burn affecting the cornea can cause permanent eye damage. The burn which feels like sand in the eyes that cannot be washed out, will take days to heal. Extended exposure to the high power ultraviolet radiation may cause blindness.

Short time exposure to the skin will evoke erythema on normal skin. Even though only a small amount of radiation penetrates the Malpighian layer, exposure can cause severe burns to the skin. Direct light from the short arc bulbs should not be visible to the operator nor other personnel. Proper eye, face and skin protection must be used while handling or servicing short arc lamps.

Short Arc Lamp Handling
Both the air-cooled and liquid-cooled short arc lamps contain high pressure xenon gas. Special care must be taken in the handling of these highly pressurized lamps. Whether cold at idle or while at high temperature during operation, the highly pressurized short arc lamps may unexpectedly shatter or explode. The possibility of an injury or fire exists if the fragments of quartz are not contained. Proper handling of the lamp is critical. The quartz body must be protected from scratches and abrasions. Even the smallest size scratch that may not be detectable to the naked eye can lead to the build up of strain leading to an explosive failure.

The lamp must be used only in the equipment and power supply in which it was designed. The lamp must always be mounted in the correct physical and electrical orientation for which it was designed. The cooling system, whether air or liquid, and the lamp socket connectors should be checked periodically. To avoid injuries such as an electrical shock, a burn or a lamp explosion never replace a lamp if hot. Proper eye, face and skin protection must be used while handling or servicing short arc lamps. Lamp maintenance and replacement should be accomplished by qualified personnel only. Upon receipt of lamp package, the carton should be examined for damage incurred in shipping. Delivering carrier employee should sign off any apparent damages at time of receipt.

The carton should be opened fully so lamp and its plastic protective wrap can be lifted out of package with no twisting or pulling. Due to the high internal pressure of the short arc lamps, unpacking should take place in an area protected from fellow personnel. The lamp must be wiped with alcohol before placing to service. Bare skin contact with the quartz envelope must be avoided. Compounds from the skin when heated on the lamp will form permanent etching (devitrification) on the quartz surface allowing overheating in that area. Strain will build eventually causing premature catastrophic failure.

Ozone Safety
Triatomic oxygen or ozone is a by-product of the ozone producing short arc lamps. It is formed when oxygen is exposed to wavelengths lower then 210 nanometers of radiation. Ozone formation can be eliminated by using ozone-free quartz lamps. Certain dioxides are added to the quartz bodies of these short arc lamps, which absorb the ozone producing wavelengths.

If used indoors, the ozone produced by the ozone producing lamps can be effectively eliminated by exhausting the air from the cooling system to outside of the building. Such exhausting has no danger, as the hot gas is unstable breaking down to oxygen rapidly in the ducting.

Power Supplies
All short arc lamps should be operated on regulated power supplies designed specifically for the particular lamp being used to provide proper performance. The AC lamps use either resistive or inductive ballasts while the DC lamps use specifically designed high efficiency power supplies with high voltage igniters. Both power supply designs must be capable of supplying a high current low voltage arc to maintain stable uniform lamp operation. Lamp life, stability, uniformity and lamp ignition are all directly dependent on a properly designed power supply.

Short Arc Lamp Disposal
All air-cooled and liquid-cooled short arc lamps must be disposed of with extreme care. If stress is applied to the bulbs, they will explode with great force. Disposal must be in accordance with local, state and federal regulations. Contact our factory's short arc division for further information.

The air-cooled mercury/xenon lamps containing mercury are considered hazardous waste. Do not discard these lamps in the trash at the end of their useful life. Disposal must be in accordance with local, state and federal regulations. Contact your local hazardous waste management authority for proper recycling / disposal information.

CAUTION
Short arc lamps operate at high temperature and pressures while emitting radiation which is harmful to eyes and skin. Great care should be taken in both the handling of the lamps and the shielding of the equipment to insure that personnel are not exposed to the direct radiation. Protective facemask and gloves must be worn when handling or installing short arc lamps. Never operate lamp outside of an approved enclosure.