

**Putting cinema action
in the best light for 30 years.**

WOTAN

WOTAN reliability: Long service life guaranteed Performance you can rely on

With over 30 years of solid service and continuous improvement behind them, our XBO-XENON projector lamps clearly outshine everything else on the market today.

1. **Long service life of 1500 to 2000 hours (depending on lamp type)**
In practice you can even use WOTAN XBO lamps up to 25% longer – if you treat them properly.
2. **Easy to handle thanks to simple, dependable design**
3. **Powerful, concentrated light**
4. **Full power right from the start**
5. **Constant brightness for film projection**
6. **Steady, flicker-free arc**
To delight viewers and keep projectionists happy.
7. **No ozone formation, little ventilation needed**
8. **Hot lamp can be immediately restarted**
No waiting for the lamp to cool down.
9. **Little maintenance required**
WOTAN XBO lamps need practically no servicing – just follow the usual maintenance instructions and the notes on insertion and removal of the lamp.

The technology behind WOTAN XBO-XENON lamps:

1. Tungsten electrodes and studs

Highly resistant to corrosion, tungsten is a very dense metal with an extremely high melting point. An XBO anode weighs up to 200 g. Extreme compaction thanks to multistage hammering process. We produce the tungsten from scratch and dope it for maximum arc stability and exact arc alignment.

2. Xenon

Inert gas of highest purity. Tested and certified litre for litre. Cold bulb pressure approx. 5 bar hot bulb pressure approx. 25 bar.

3. Lamp component temperatures

Bulb approx. 800°C, anode approx. 1600°C, cathode approx. 2800°C, arc approx. 6000°C, cathode spot approx. 12000°C. Maximum cap temperature permitted 230°C.

4. Graded seal

The tungsten studs are embedded and sealed in a series of glass layers with different coefficients of expansion. Depending on lamp type, up to four layers are used. Tried and tested millions of times.

5. Supports for tungsten studs

Sophisticated supports for the tungsten studs make the lamp shock-resistant and easy to transport. At the end of the discharge envelope, laminar gas flows form cold spots in the shadow of the electrodes; here the evaporated tungsten condenses, resulting in minimal loss of light. A new fusing technique and the design of the tungsten studs prevent damage to the stem during transport.

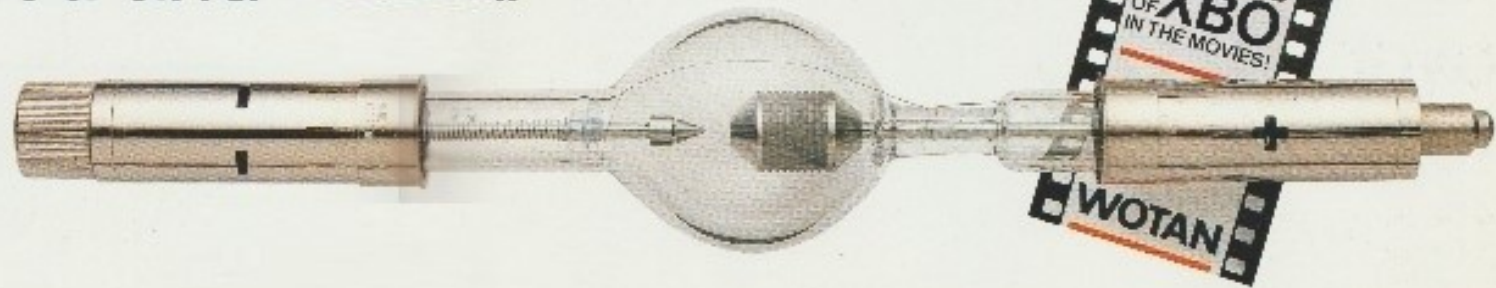
6. Anode and cathode design

The special design of the electrodes optimizes gas flow in the bulb and arc stability. A groove in the cathode prevents the heat from escaping towards the rear and keeps the tip at the right temperature, guaranteeing maximum arc stability and exact arc alignment. Grooves in the anode surface and the special paste coating enhance heat dissipation from the larger, blacker surface. This results in a longer electrode service life.

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WOTAN. 30 years of XBO-XENON short-arc lamps. **Bright as daylight!**

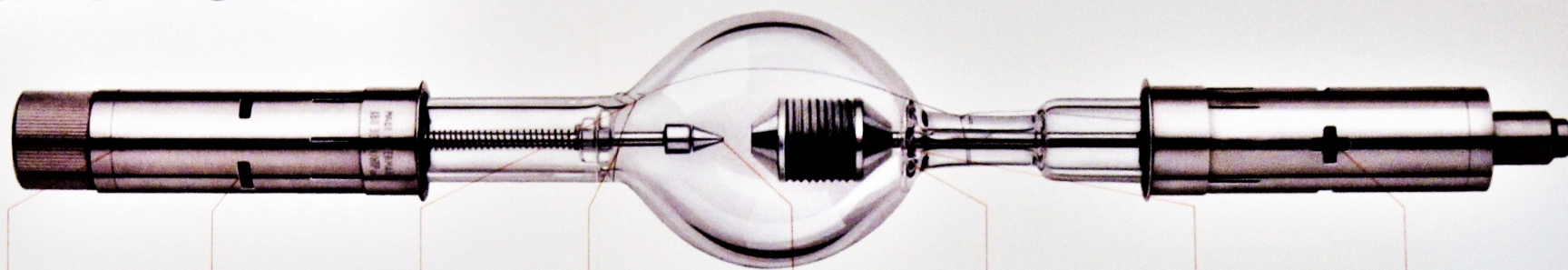
With over 30 years of solid service and continuous improvement behind them, the XBO-XENON projector lamps invented by OSRAM GmbH, Germany, clearly outshine everything else on the market today. Extremely long, guaranteed service life • Constant brightness and colour stability • Spectrum almost as wide as that of the sun • Steady, flicker-free arc • No ozone formation • Easy to handle • High reliability • Shockresistant • Tried and tested over 500,000 times throughout the world!



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WOTAN XBO-XENON short-arc lamps – A pleasure to use

Design, handling and troubleshooting



Cap

High-grade nickel coating. Rugged pins. Maximum temperature permitted 230 °C. Will not tarnish below this temperature.

Graded seal on cathode

The tungsten stud is embedded and sealed in a series of glass layers with different coefficients of expansion for maximum operational reliability – tried and tested millions of times.

Ignition wire

Ensures smooth starting even if the ignitor is weak.

Tungsten studs

Multistage hammering ensures extreme compaction of the tungsten material, which is processed to tolerances of thousandths of a millimetre.

Grooved cathode

The groove prevents heat from escaping towards the rear and maintains the right cathode tip temperature for minimal electrode erosion, maximum arc stability and exact arc alignment.

Fused quartz bulb

Hand-crafted discharge envelope. The glass is doped to restrain formation of ozone by ultra-violet radiation.

Anode

Grooves in the anode surface and a special paste coating ensure better heat dissipation and longer service life and reduce blackening of the bulb at the same time.







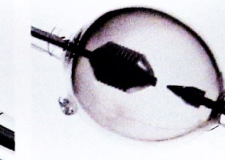
Graded seal on anode

The anode is sealed and embedded with the same technology and craftsmanship as the cathode.

How to make WOTAN XBO lamps last even longer:

- Do not twist or bend the fused quartz bulb when inserting the lamp. Follow the instructions carefully.
- Check all electrical connections regularly. Contacts must be renewed at the slightest sign of corrosion. Sanding or filing down corroded areas will only make the conducting surface between pin and lampholder smaller and cause the cap to overheat.
- If mounted horizontally, xenon lamps must be turned 180° half-way through their service life so that blackening of the bulb on one side does not cause one half of the screen image to be more brightly illuminated than the other. This also keeps the arc stable and prevents uneven heating of the bulb and bursting of the lamp.
- In horizontally-mounted xenon lamps with additional magnetic stabilization, check arc alignment regularly to see if the arc is being properly stabilized.
- Only operate the lamp within the current control range specified by WOTAN. For best results, operate the lamp at rated power. This will ensure high arc stability and long service life.
- The lamp must be properly cooled at all times. Clean the cooling equipment regularly. Lamphouse vents must not be obstructed.
- The cooling blower must remain in operation for at least five minutes after the xenon lamp has been switched off.
- Do not touch the bulb with bare hands. Should the bulb be inadvertently touched, clean it immediately with methylated spirit or distilled water and a soft cloth.
- The optical components of the lamphouse and the bulb should be regularly cleaned: this is particularly recommended if projection equipment is kept in a dusty environment.
- Have the power supply equipment (rectifier) inspected regularly. Current ripple must not exceed 10% in xenon lamps of 3000 W and above; ripple must not exceed 5% if anode deposits are to be avoided.
- Xenon lamps should be replaced at the latest when their rated service life has been exceeded by 25%, as the risk of bursting (due to aging of the fused quartz structure) increases after this period.

How to pinpoint faults – and remedy them quickly

Fault <ul style="list-style-type: none"> Cap overheated to above 230 °C 	Fault <ul style="list-style-type: none"> Bulb draws in air 	Fault <ul style="list-style-type: none"> Electrodes damaged Premature blackening 	Fault <ul style="list-style-type: none"> Wrong polarity 	Fault <ul style="list-style-type: none"> Arc unsteady 	Fault <ul style="list-style-type: none"> Glass erosion on bulb 	Fault <ul style="list-style-type: none"> Asymmetrical blackening of lamp (horizontal burning position) 
Cause <ul style="list-style-type: none"> Faulty contacts Cooling equipment defective 	Cause <ul style="list-style-type: none"> Crack in graded seal caused by overheated cap Maximum cap temperature of 230 °C exceeded 	Cause <ul style="list-style-type: none"> Current ripple too high 	Cause <ul style="list-style-type: none"> Lamp incorrectly fitted Faulty wiring 	Cause <ul style="list-style-type: none"> Lamp operated outside current control range Magnetic stabilization for horizontal operation defective 	Cause <ul style="list-style-type: none"> Lamp operated above current control range Lamp service life exceeded 	Cause <ul style="list-style-type: none"> Lamp operated too long in same position
Remedy <ul style="list-style-type: none"> Check terminals – tighten or renew Check cooling equipment 	Remedy <ul style="list-style-type: none"> Check terminals – tighten or renew 	Remedy <ul style="list-style-type: none"> Have power supply inspected 	Remedy <ul style="list-style-type: none"> Check polarity, transpose connections if necessary Anode must always be on top if lamp used in vertical burning position 	Remedy <ul style="list-style-type: none"> Correct current setting Check meter Check magnetic stabilization 	Remedy <ul style="list-style-type: none"> Correct current setting Check meter 	Remedy <ul style="list-style-type: none"> Turn lamp 180° after half service life