Complete Guide to Xenon HID Lamps
What Are Xenon HID Lamps

HID systems (also known as Gas Discharge Bulbs) provide 200% more light on the road than a standard Halogen bulb.

An electric arc is generated between two tungsten elements which ignites a mixture of xenon gas and metallic salts to create an intense light.

HID headlamp burners produce between 2,800 and 3,500 lumens, from between 35 and 85 watts at 12.8 volts compared to between 700 and 2,100 lumens using 40 to 72 watts on a standard halogen.

HID bulbs have an average life of 2000 hours compared to the standard bulb, which is between 450 and 1000 hours.

HID bulbs require a very high voltage to ignite. A ballast is used to provide the correct operating voltage alongside a starter to generate the initial 26,000v needed to ignite the bulb. D1 and D3 bulbs integrate the starter into the base of the bulb.

HID headlamp have a whiter colour temperature of around 4100k compared to the yellowish 3200k of halogen bulbs.

HID bulbs are designated a “S” burner or “R” burner. An “S” burner has a plain glass shield and are used in projector type optics where as “R” burners are designed for reflective type optics and have an opaque mask to create the cut off boundary near the top of the low beam.
TECHNICAL BULLETIN: COMPLETE GUIDE TO XENON HID LAMPS

ID YOUR HID

D1S (EB0101)  
85v 35w  
PK32d-2  
Clear  
Reflector  
With Starter

D1R (EB0001)  
85v 35w  
PK32d-3  
Masked  
Projector  
With Starter

D2S (EB0102)  
85v 35w  
P32d-2  
Clear  
Reflector  
No Starter

D2R (EB0002)  
85v 35w  
P32d-3  
Masked  
Projector  
No Starter

D3S (EB0103)  
42v 35w  
PK32d-5  
Clear  
Reflector  
With Starter

D3R (EB0003)  
42v 35w  
PK32d-6  
Masked  
Projector  
With Starter

D4S (EB0104)  
42v 35w  
P32d-5  
Clear  
Reflector  
No Starter

D4R (EB0004)  
42v 35w  
P32d-6  
Masked  
Projector  
No Starter

85v 35w

42v 35w
Diagnosing HID Faults

Before replacing the Xenon HID Lamp, it is important to rule out other factors may causing the lighting issues.

Flickering or failed lights can be caused by several other components within the HID lighting system.

1. Check the Ballast First

This component is often the part at fault.

HID bulbs require a ballast and starter/igniter to generate the 18,000 to 30,000 volts required for ignition. D1 and D3 bulbs include the starter in the base but the ballast is always separate.

Therefore, the first component to check is the ballast. A clicking / switching noise when operating the lights indicates that the ballast is functioning. So, if there is no noise, the ballast may need replacing.

2. Check Wiring and Connections

If the ballast is functioning, the next component to check is the ‘ballast to starter’ cabling. Check for damage and loose connections.

3. Check Starter (D2 & D4)

If replacing a HID with separate starter (D2S, D2R, D4S or D4R), this should be checked next. It is the block which the HID base fits directly into.

4. Replace the HID

Once satisfied that all other components are OK, the D2S can be replaced. Using the following guide.

WARNING: HIGH VOLTAGE
30,000 Volts!
SEE FOLLOWING GUIDE FOR SAFETY ADVICE
TECHNICAL BULLETIN: COMPLETE GUIDE TO XENON HID LAMPS

Replacing HID - Easy as 1,2,3

1. SAFETY FIRST
Don’t be put off by fears over high voltage, just ensure you follow these three simple safety procedures before you start work.

   - Turn off ignition and remove key
   - Turn off the lights at the switch
   - Release clasp and replace bulb

2. (UN)PLUG AND PLAY
Access the bulb as per the manufacturers guidelines. Usually either from the back of the headlight, removing the headlight or via the front wheel arch.

   - D1 & D3
     Pull out power connector
     Release clasp and replace bulb
   - D2 & D4
     Twist connector 45° to remove
     Release clasp and replace bulb

3. FLIP & REVERSE
Always replace HID bulbs in pairs to ensure even colour temperature and brightness. Once both sides are replaced reverse the process to complete the procedure. Check the headlights for function, levelling and alignment.
Xenon HID Lamp Range and Specification

### D1R PK32d-3 Xenon HID

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Packaging Options</th>
<th>ECE</th>
<th>Volts</th>
<th>Watts</th>
<th>Base</th>
<th>Description / Information</th>
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### D1S PK32d-2 Xenon HID

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### D2R P32d-3 Xenon HID

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# Xenon HID Lamp Range and Specification

## D2S P32d-2 Xenon HID

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# Xenon HID Lamp Range and Specification

## D4R P32d-6 Xenon HID

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## D4S P32d-5 Xenon HID

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### Packaging Option Codes
- **SB**: Single Box
- **TB**: Trade Box (x10)
- **SC**: Single Clam
- **TC**: Twin Clam
- **SR**: Single Retail Box
- **TR**: Twin Retail Box

Add option code to the end of the part number for packaging specific number. Example: EB0477SB is EB0477 in a single box.
Xenon HID Lamp Range and Specification

**D5S PK32d-7 Xenon HID**

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**D8S PK32d-1 Xenon HID**

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**NEW D5S and D8S 25W HID LAMPS**

25w HID Lamps only output 2000 Lumen (rather than the traditional HID output of 3200 Lumen) so do not require automatic headlight range control or headlight washer systems under ECE Regulation 48.

This makes 25w HID lamps a less expensive option for vehicle manufacturers and driver alike.
TECHNICAL BULLETIN: COMPLETE GUIDE TO XENON HID LAMPS

HID Upgrades

The ELTA VisionPRO range now also boasts upgrades lamps offering a rise in Kelvin temperature up to 6000k or 7000k for a modern blue tint. ELTA VisionPRO Blue upgrade bulbs are E marked, offering a simple road legal replacement that increases colour temperature to 6000k. For an extreme 7000k boost, ELTA VisionPRO Sport upgrades deliver ultimate performance for off road applications such as rally and racing. Xenon HID upgrades not only delivery real benefits to the driver, they can also help business to boost sales for the business. Is it time you upgraded your sales?

VISION PRO BLUE 6000k Blue Tint | Direct Replacement | E-Marked

VISION PRO SPORT 7000k Blue Tint | Direct Replacement | Off-road
The Benefits of Stocking Xenon HID Lamps

ELTA Automotive are asking motor factors and garages to consider how much they are paying when purchasing HID/Gas Discharge bulbs on demand. Whilst O.E bulb prices remain high, ELTA product development teams have been successful in reducing costs without compromising quality and performance across their HID range. So is it now time to put HID into stock?

HID bulbs have an average life of 2000 hours compared to the standard bulb, which is between 450 and 1000 hours. This equates to around 90,000 miles for the average driver and so HID bulbs are generally considered a ‘lifetime’ bulb. Because of this, many motor factors decided against holding stock of expensive HID bulbs preferring to order on demand. Whilst this made good sense a few years ago, ELTA believe now is the time to consider stocking a small range.

HID bulbs first appeared in automotive applications in the early 1990’s as an option on the BMW 7 Series, but it was not until the end of the 1990’s however, that the first Bi-Xenon headlights as we know them today appeared on the Mercedes-Benz CL-Class. Since then HIDs have risen in popularity and an increasing number of vehicles fitted with them are entering the realm of the independent aftermarket. After all, 90,000 miles is by no means ‘end of life’ for a vehicle today, especially the high-end and prestige marques that commonly feature HID systems.

ELTA has seen a significant increase in demand for replacement HID bulbs in recent years and expect the trend in growth to continue. ELTA believe motor factors can capitalise on the growth within the aftermarket by choosing to stock a range of lower cost, high quality aftermarket HID bulbs in favour of ordering O.E on demand.

Just like O.E counterparts, ELTA VisionPRO HID bulbs provide 200% more light on the road than standard Halogen bulbs, producing between 2,800 and 3,500 lumens. They also boast the same average life of around 2000 hours and replace both projector (S) and reflective (R) type optics including D1R, DS, DR, D2S, D3R, D3S, D4R, D4S, D5S and D8S.

For more information please contact ELTA Automotive on +44(0)1675 466999 or email sales@elta.co.uk