BA15D SBC Lamps

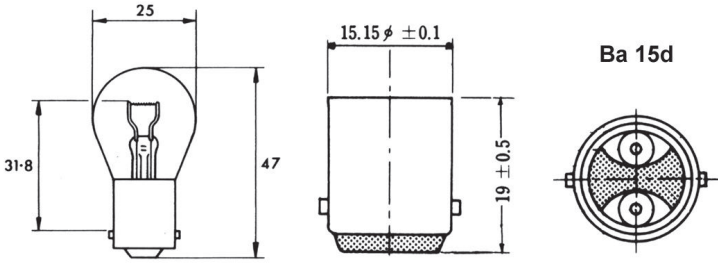
Description:

12V filament lamps in a BA15D fitting.

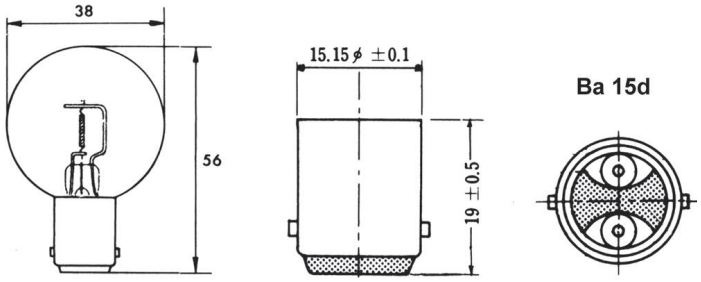
Technical specification:

Part number	Voltage	Wattage	Filament style
41-0454	12	21	Radial (horizontal
41-0455	12	24	Axial (vertical)
41-0456	12	36	Axial (vertical)

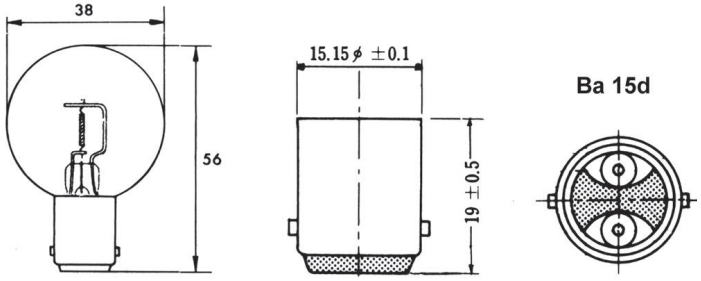
Order Code	**41-0454**	Dimensions
Type:	Auto	
Lamp Ref. No:	A335	
Voltage:	12 V	
Current:	1.75 A	
Wattage:	21 W	
Filament Form:	CC6	
Av. Life Hours:	N/A	
Cap Style:	Ba15d (SBC)	
Finish:	Clear	
Diameter:	25mm	
Total Height:	47mm	



Order Code	**41-0455**	Dimensions
Type:	38mm Headlamp	
Lamp Ref. No:	A4	
Voltage:	12 V	
Current:	N/A	
Wattage:	24 W	
Filament Form:	Axial	
Av. Life Hours:	N/A	
Cap Style:	Ba15d (SBC)	
Finish:	Clear	
Diameter:	38mm	
Total Height:	56mm	



Order Code	**41-0456**	Dimensions
Type:	38mm Headlamp	
Lamp Ref. No:	A5	
Voltage:	12 V	
Current:	N/A	
Wattage:	36 W	
Filament Form:	Axial	
Av. Life Hours:	N/A	
Cap Style:	Ba15d (SBC)	
Finish:	Clear	
Diameter:	38mm	
Total Height:	56mm	



BA15D SBC Lamps

General Technical Information

Efficiency

Usually measured in Mean Spherical Candlepower (MSCP) per watt or Lumens per watt.

Total Life

The expected number of hours of effective operation.

Performance

How the lamp's characteristics change over the service life.

Durability

The capacity to withstand shocks, current fluctuations, temperature variation, and other adverse conditions. These characteristics are most strongly affected by variations in applied voltage. If the applied voltage is increased by 5%, for example, the total life of the lamp will be half that obtained when the design voltage is applied. These relationships can be expressed by the following equations.

Relative current = (Va/Vd)0.55 x current at Vd

Relative MSCP = (Va/Vd)3.5 x MSCP at Vd

Relative life = (Vd/Va)12 x life at Vd

Where Va = applied voltage, and Vd = design voltage

Another factor which influences the life of lamps is filament temperature. Miniature and Subminature lamps are designed for filament temperatures of 1,800° to 2,500°K for vacuum types, and 2,600° to 3,200°K for gas filled types. The relationship between filament temperature and efficiency is shown in Chart 3.

Note: In measuring brightness, the MSCP scale is used in the U.S.A., while the Lumen is used in Europe and Japan. To convert from MSCP to Lumens, the following equation is used MSCP x 4p = LM, where MSCP = Mean Spherical Candlepower, Lm = Lumens, and 4p = 12.57.

Total Life

The rated average life for lamps is determined by testing them under laboratory conditions on either 50 or 60 Hz AC at their design voltage. Adverse environmental conditions may shorten bulb life, as will current fluctuations. In recent years, a phenomenon known as "filament notching" has been identified as a contributing factor to reduce lamp life. This notching has the appearance of step-like irregularities on all or part of the tungsten filament surface after nominal use. Increased spot evaporation at these points is now known to be the most important factor in lamp failure. Subminature lamps, with less than 50mA current and more than 5,000 hours of rated life, have been the most susceptible to notching. Therefore, it is recommended that they be designed for easy replacement.

Inrush Current

Inrush current, the initial current through a filament, can be approximately eight to twelve times as great as the normal rated current. It usually continues for 10 to 100 milliseconds, depending on the size of the lamp. Inrush current can be reduced by initially applying about 20% of the design voltage. Chart 4 shows the general range of inrush current over time.

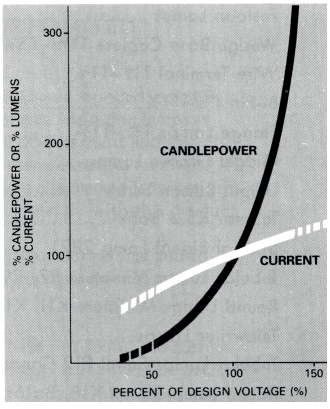


Chart 1:
Lamp Brightness & Current In Relation To Applied Voltage

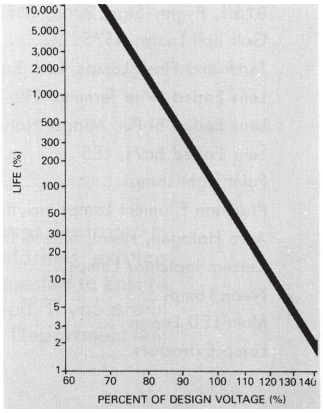


Chart 2:
Lamp Life In Relation To Applied Voltage

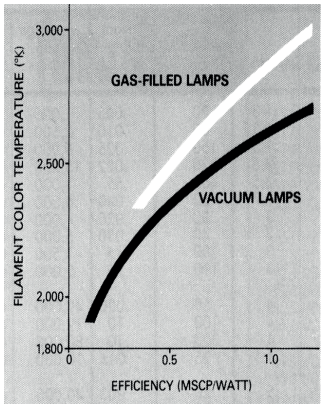


Chart 3:
Filament Temperature In Relation To Efficiency

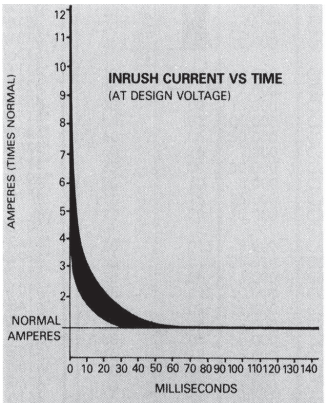


Chart 4:
Inrush Current In Relation To Time

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