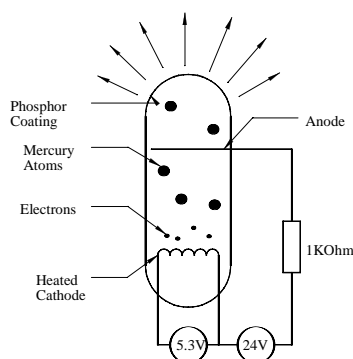
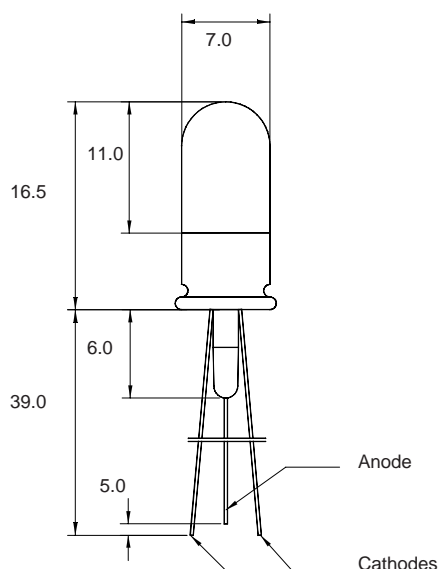


## MECHANICAL DATA

Dimensions in mm



## THE LL07 RANGE OF MINIATURE FLUORESCENT BULBS

### FEATURES:

- **SMALL SIZE**
- **WIDE RANGE OF SPECTRAL OUTPUTS:**  
UV, BLUE, WHITE, GREEN, AND RED
- **LOW VOLTAGE SUPPLY**
- **HIGH RADIANT INTENSITY**
- **HIGH MODULATION FREQUENCY**
- **LONG LIFE TIME**
- **LOW COST**

### APPLICATIONS:

- **MEDICAL INSTRUMENTS**
- **METROLOGY**
- **ILLUMINATION ENGINEERING**
- **FLUORESCENT / PHOSPHORESCENT MEASUREMENTS**
- **ENVIRONMENTAL MONITORING**

## DESCRIPTION

The LLO7 devices are a range of miniature fluorescent bulbs. The device structure has been designed to give maximum radiant intensity with low voltage operation.

The principal difference between the miniature and a conventional fluorescent lamp is the filament cathode. When powered up, electrons are emitted from the cathode by thermionic emission. These electrons are then accelerated towards the anode due to the potential difference between the anode and cathode. The electrons collide with mercury atoms and excite an orbital electron. The electron decays to a lower energy level and emits a photon of short wavelength ultra-violet light. This photon stimulates the phosphor coating on the inside of the glass bulb.

Depending on the type of phosphor used red, green, blue, white or long wavelength ultra-violet light is emitted from the device. The short wavelength ultra-violet light is absorbed by the glass bulb. See diagram.

The dimensions are subject to a typical tolerance of +0.5mm. Advice on suitable materials to encapsulate the bulbs is available from Semelab Plc.

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## SPECIFICATIONS

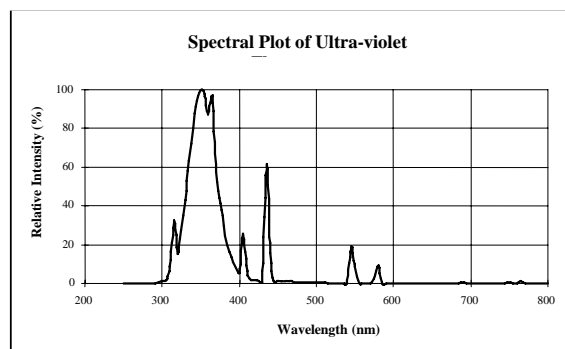
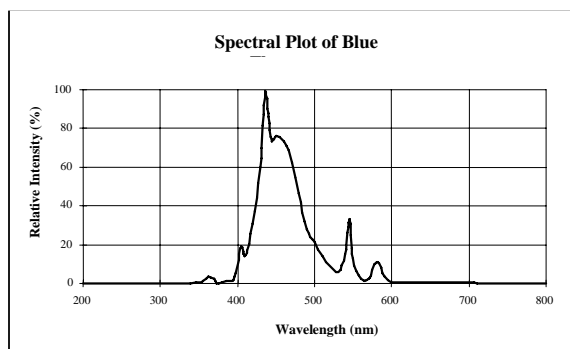
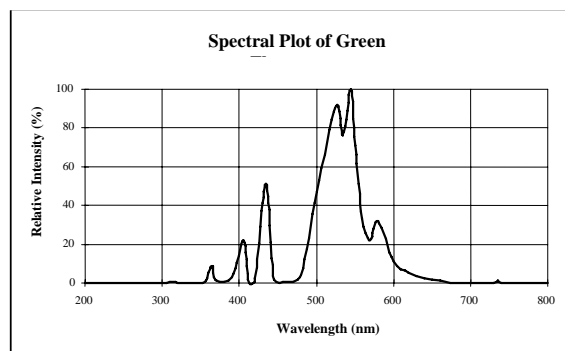
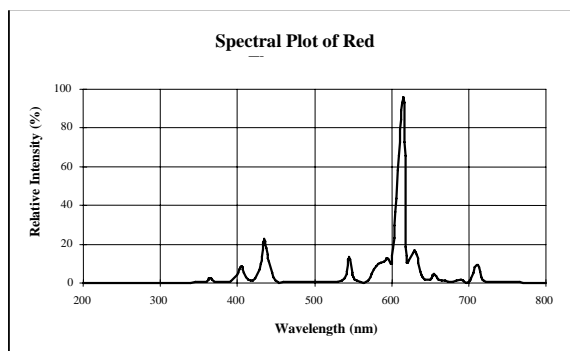
(At 25°C unless otherwise stated)

The electrical specifications tabulated below are a brief summary and are applicable to all the devices. For information concerning the tolerances of the stated drive voltages and the subsequent effect on the spectral properties of the device contact Semelab Plc..

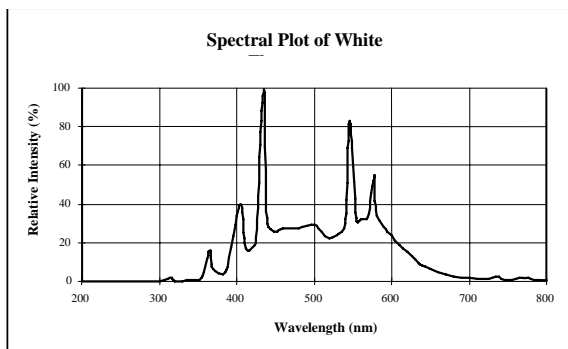
Parameter	Minimum	Typical	Maximum	Notes	Unit
Anode Voltage	23	24	25		V
Anode Current	11.5	13.0	14.5	1	mA
Anode Resistance	990	1000	1010		*
Cathode Voltage	5.2	5.3	5.4		V
Cathode Current	39	43	47	2	mA
Bulb Wall Temperature	40	60	70	3	*C

### Notes

1. Anode current measured for anode to cathode voltage of 24V, cathode voltage of 5.3V and an anode resistance of 1Kohm.
2. Cathode current measured for cathode voltage of 5.3V and anode to cathode voltage of 0V.



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Optical Characteristic		Ultra-violet	White	Blue	Green	Red	Unit
Part Number		LL07UV	LL07W	LL07B	LL07G	LL07R	
Luminance(peak value)			3900	1600	7000	2700	cd/m <sup>2</sup>
Radiant Intensity		2.7					mW/sr
Chromaticity	x		0.290	0.130	0.223	0.572	
	y		0.350	0.075	0.645	0.310	