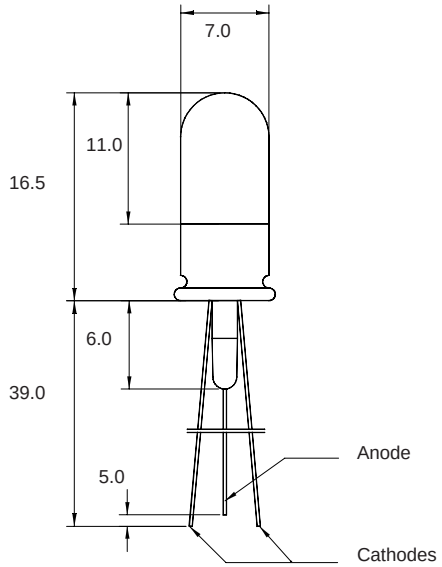
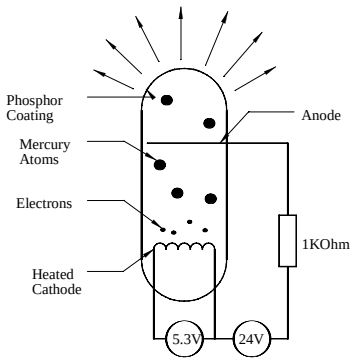
# SYSTEMS DIVISION

# LL07 RANGE

## MINIATURE FLUORESCENT BULBS

**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.

Semelab Plc. reserve the right to change the products shown on this datasheet in the interest of improved specification. No responsibility is assumed for the use of information contained herein, nor for any infringement of patent or rights of others that may result from such use. No license is granted by implication or otherwise under any patent or patent right of Semelab Plc.

**Semelab plc** Telephone (01455) 556565 Fax (01455) 552612.
E-mail: sales@semelab.co.uk Web site: http://www.semelab.co.uk

# SYSTEMS DIVISION

# LL07 RANGE

# MINIATURE FLUORESCENT BULBS

## SPECIFICATIONS

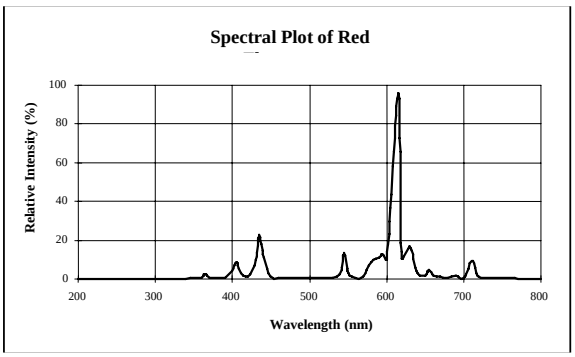
(At 25°C unless otherwise stated)

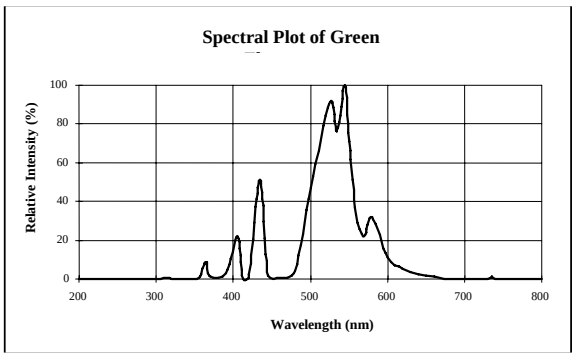
The electrical specifications tabulated below are a brief summary and are applicable to all the devices. For information concerning the tolerances of the stated drive voltages and the subsequent effect on the spectral properties of the device contact Semelab Plc..

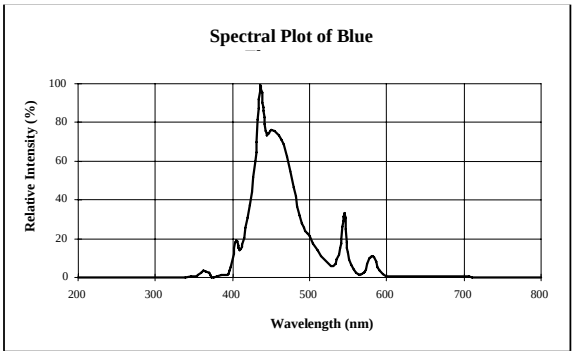
| Parameter | Minimum | Typical | Maximum | Notes | Unit |
|---|---|---|---|---|---|
| Anode Voltage | 23 | 24 | 25 | | V |
| Anode Current | 11.5 | 13.0 | 14.5 | 1 | mA |
| Anode Resistance | 990 | 1000 | 1010 | | * |
| Cathode Voltage | 5.2 | 5.3 | 5.4 | | V |
| Cathode Current | 39 | 43 | 47 | 2 |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

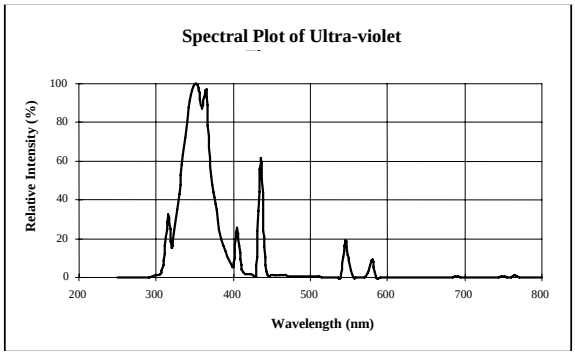
**Notes**

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.



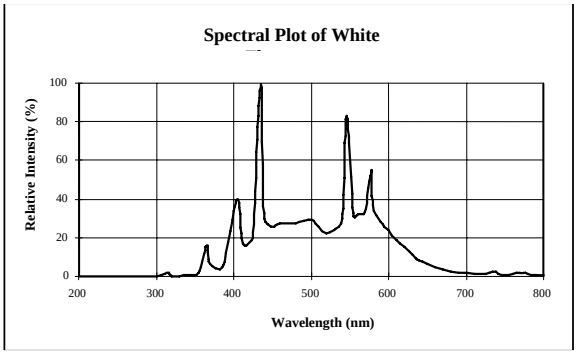

Semelab Plc. reserve the right to change the products shown on this datasheet in the interest of improved specification. No responsibility is assumed for the use of information contained herein, nor for any infringement of patent or rights of others that may result from such use. No license is granted by implication or otherwise under any patent or patent right of Semelab Plc.

**Semelab plc** Telephone (01455) 556565 Fax (01455) 552612.
E-mail: sales@semelab.co.uk Web site: http://www.semelab.co.uk.

# SYSTEMS DIVISION

# LL07 RANGE

## MINIATURE FLUORESCENT BULBS




| Optical Characteristic | | Ultra-violet | White | Blue | Green | Red | Unit |
|---|---|---|---|---|---|---|---|
| Part Number | | LL07UV | LL07W | LL07B | LL07G | LL07R | |
| Luminance(peak value) | | | 3900 | 1600 | 7000 | 2700 | cd/m2 |
| 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 | |

Semelab Plc. reserve the right to change the products shown on this datasheet in the interest of improved specification. No responsibility is assumed for the use of information contained herein, nor for any infringement of patent or rights of others that may result from such use. No license is granted by implication or otherwise under any patent or patent right of Semelab Plc.

**Semelab plc** Telephone (01455) 556565 Fax (01455) 552612.
E-mail: sales@semelab.co.uk Web site: http://www.semelab.co.uk.