



PROTECTOR LONG LIFE SHATTERPROOF

Guaranteed up to 60,000 Hours

The Aura Protector LL is a T8 26mm diameter long life fluorescent lamp with three times longer service life than standard lamps and is also covered with a high quality transparent FEP film. The FEP film protects endangered areas from glass splinters and fluorescent powder if the lamp is broken accidentally.

The long service life of the basic lamps is achieved through the use of high quality transparent film (FEP based) without affecting the luminous flux. The FEP film fulfils the protection in the wide temperature range where the lamps can be used from -40°C up to +150°C.

Protector LL is available in high colour rendering triphosphor range (Ra 85) based on Ultimate LL, and also in standard colours (\geq Ra 70) based on Universal LL. The basic long life fluorescent lamps Ultimate and Universal have our two patents for unique cathode construction and inside protection layer.

The design, together with the strict quality controls during the high precision manufacturing process, provides a fluorescent lamp to support special requirements, eg in food industry.

Operation is possible in all luminaries by conventional or low loss ballast and starter or electronic HF ballast.



Long Life Lights

The Long Life Lights concept comprises light sources with extra long service life. The concept is the result of innovative product development and rigorous quality control. For our customers, the unique service life means that light sources do not need to be changed so often, which reduces their maintenance costs. The products in the concept are therefore an investment for our customers and for the environment. Products such as fluorescent tubes and light bulbs are developed, manufactured and sold within the framework of the Long Life Lights concept.



Newport Business Park Cardinal Close Bishops Road Lincoln LN2 4SY

Tel: 01522 522522 Fax: 01522 523522 E Mail: sales@greenstock.co.uk Web Site: www.greenstock.co.uk

The Greenstock Lamp Company

PROTECTOR LONG LIFE

Applications

Protector LL is developed for areas where broken fluorescent lamps would cause production to be stopped. These interruptions could prove to be very costly in terms of loss of production.

Typical applications are for the food processing industry, other industrial production plants (eg chemical, paper manufacturing), laboratories and sport facilities.

Lifetime

The service life of Protector LL high colour rendering triphosphor range Ra 85 is 60,000 hours for 18W, 36W and 58W for the most used light colours. For the standard colours \geq Ra 70 the service life is 44,000 hours. The service life is reached when the amount of light in an installation falls to 70% of the initial 100 hour value.

The service life of the lamp failure rate and the lumen depreciation are calculated according to IEC/EN 60081, which is based on a three hour operation switching cycle. When operated by electronic ballast (warm start) the service life for the triphosphor lamps is extended to 60,000 hours and for standard colours to 44,000 hours.

Long Life Guarantee

The Aura long life fluorescent lamps are manufactured in accordance with IEC/EN 60081. For economical reasons Greenstock recommends group replacement of fluorescent lamps.

PRODUCT INFORMATION

| Cap: G13 Type | Colour | Colour Temp (K) | Luminous Flux (lm/100h) | Luminous Efficacy (lm/W) | Diameter (mm) | Length without Pins (mm) | Packing Unit (pcs) | Lifetime (hrs) | Art No | Colour Rendering Ra |
|-------------------------------|-----------|-----------------|-------------------------|--------------------------|---------------|--------------------------|--------------------|----------------|--------|---------------------|
| Protector LL- Ultimate | | | | | | | | | | |
| 18W/830 | W White | 3000 | 1300 | 72 | 26 | 590 | 25 | 60,000 | 431013 | 85 |
| 18W/835 | Mid White | 3500 | 1300 | 72 | 26 | 590 | 25 | 60,000 | 431018 | 85 |
| 18W/840 | White | 4000 | 1300 | 72 | 26 | 590 | 25 | 60,000 | 431014 | 85 |
| 18W/865 | Daylight | 6500 | 1250 | 69 | 26 | 590 | 25 | 60,000 | 431016 | 80 |
| 30W/840 | White | 4000 | 2450 | 82 | 26 | 895 | 25 | 46,000 | 431024 | 85 |
| 36W/830 | W White | 3000 | 3350 | 93 | 26 | 1200 | 25 | 60,000 | 431033 | 85 |
| 36W/835 | Mid White | 3500 | 3350 | 93 | 26 | 1200 | 25 | 60,000 | 431038 | 85 |
| 36W/840 | White | 4000 | 3350 | 93 | 26 | 1200 | 25 | 60,000 | 431034 | 85 |
| 36W/865 | Daylight | 6500 | 3250 | 90 | 26 | 1200 | 25 | 60,000 | 431036 | 80 |
| 58W/830 | W White | 3000 | 5200 | 90 | 26 | 1500 | 25 | 60,000 | 431053 | 85 |
| 58W/835 | Mid White | 3500 | 5200 | 90 | 26 | 1500 | 25 | 60,000 | 431058 | 85 |
| 58W/840 | White | 4000 | 5200 | 90 | 26 | 1500 | 25 | 60,000 | 431054 | 85 |
| 58W/865 | Daylight | 6500 | 5000 | 86 | 26 | 1500 | 25 | 60,000 | 431056 | 80 |

Protector LL- Universal

| | | | | | | | | | | |
|---------|-----------|------|------|----|----|------|----|--------|--------|----|
| 18W/830 | W White | 3000 | 1150 | 64 | 26 | 590 | 25 | 46,000 | 436113 | 70 |
| 18W/835 | Mid White | 3500 | 1150 | 64 | 26 | 590 | 25 | 46,000 | 436118 | 70 |
| 18W/840 | White | 4000 | 1150 | 64 | 26 | 590 | 25 | 46,000 | 436114 | 70 |
| 36W/830 | W White | 3000 | 3000 | 83 | 26 | 1200 | 25 | 46,000 | 436133 | 70 |
| 36W/835 | Mid White | 3500 | 3000 | 83 | 26 | 1200 | 25 | 46,000 | 436138 | 70 |
| 36W/840 | White | 4000 | 3000 | 83 | 26 | 1200 | 25 | 46,000 | 436134 | 70 |
| 58W/830 | W White | 3000 | 4800 | 83 | 26 | 1500 | 25 | 46,000 | 436153 | 70 |
| 58W/835 | Mid White | 3500 | 4800 | 83 | 26 | 1500 | 25 | 46,000 | 436158 | 70 |
| 58W/840 | White | 4000 | 4800 | 83 | 26 | 1500 | 25 | 46,000 | 436154 | 70 |



Newport Business Park Cardinal Close Bishops Road Lincoln LN2 4SY

Tel: 01522 522522 Fax: 01522 523522 E Mail: sales@greenstock.co.uk Web Site: www.greenstock.co.uk

The Greenstock Lamp Company