

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.

Aura *PROTECTOR*

LONG LIFE

light for protective
requirements

Aura *PROTECTOR* is a Long Life fluorescent lamp with a multiple lifetime compared to a standard lamp. The protector function is reached with a high quality durable plastic protection film. The plastic film protects critical areas from glass splinters and fluorescent powder in case of lamp breakage.

Aura *PROTECTOR* is available with two different protection films:

- FEP - a transparent plastic film without affecting the luminous flux. The plastic film offers an optimal protection in the wide temperature range where the lamp can be used from -40°C up to + 150°C with a lifetime at least equal to the lamp.
- PET - an upgraded plastic film with the extra advantage of UV radiation absorption of 97% of UV-A and 99% of UV-B. This leads to a limited lifetime of 30.000 hours and limited working temperatures from -30°C up to + 120°C.

Aura *PROTECTOR* Long Life is developed based on our patented cathode shield construction. This design provides a unique fluorescent lamp with an exceptional long service life combined with an improved end-of-life protection against overheating. It is available with T8 (26 mm) and T5 (16 mm) diameter and in the high colour rendering tri-phosphor range (Ra 85, colour 865 > Ra 80).



**Food processing
industry**

**Other industrial
production plants
(e.g. chemical, paper
manufacturing)**

Laboratories

Sport facilities

Museums

Applications

PROTECTOR lamps are developed for areas that are subject to specific safety requirements for protection of production of sensitive products. In these areas a breakage of a fluorescent lamp would cause a production stop and this interruption proves to be very costly.

Product range

ULTIMATE and UNIVERSAL

PROTECTOR Long Life lamps with 26 mm are available based on the high quality tri-phosphor Long Life lamps *ULTIMATE* and *UNIVERSAL*. Operation of these lamps is possible with electronic ballast (preferably warm start) or magnetic ballast with starter.

- The *ULTIMATE* lamps are covered with the transparent high quality FEP material. This combination grants the protection function and the long service life of the *ULTIMATE* range.
- The *UNIVERSAL* lamps are covered with the PET film which offers the UV radiation absorption but leads to a limited lifetime of 30.000 hours.

SUPREME HO and SUPREME HE

PROTECTOR Long Life lamps with 16 mm are using the latest lamp technology of T5 Long Life. These lamps are available with the transparent high quality FEP plastic material. This *PROTECTOR* range opens for opportunities to increase energy saving operations in areas where luminaires for standard T5 lamps are installed. It is possible to operate them in the existing equipment.

Operation is only possible with specified electronic ballast designed for *T5 HE* or *T5 HO* fluorescent lamps.



The high-quality transparent FEP plastic film prevents excellent against glass splinters and fluorescent powder when a lamp is broken accidentally.



Findus produces delicacies in Aura shatter-resistant quality light.



To protect co-workers, products and machines Tulip Food Company choose Aura *PROTECTOR* Long Life for sensitive departments.

Lifetime

Service life is reached when the amount of light in an installation falls to 80% of the initial 100-hour value. The service life of the lamp failure rate and the lumen depreciation is calculated based on a 3-hour operation switching cycle according to IEC/EN 60081.

In installations where lamp replacement is difficult and cost intensive, the long running time of Aura Long Life lamps gives more cost effective lighting maintenance and improved long term planning for group replacement. Group replacement of fluorescent lamps provides an optimal control of the operational costs and a uniform level of light.

For economical and environmental reasons Aura recommends group replacement of the Long Life fluorescent lamps.

Long Life Guarantee

The Aura Long Life fluorescent lamps are developed and manufactured in accordance with the IEC/EN 60081 standard. Continuous strict quality control processes secure fluorescent lamps of top quality.

Aura guarantees the published service life of the Long Life fluorescent lamps for installations that comply with the relevant standards.

L I F E T I M E		SWITCHING CYCLE	MAGNETIC BALLAST + STARTER	ELECTRONIC BALLAST (WARM START)
	ULTIMATE Protector (FEP)	3 h (Service Life) 18W, 36W, 36W-1m, 58W 80% light available	48.000 h	70.000 h
	UNIVERSAL Protector (PET)	3 h (Service Life) 80% light available 12 h 10% mortality rate	30.000 h* 30.000 h*	30.000 h* 30.000 h*
	SUPREME Protector (FEP)	3 h (Service Life) 80% light available 12 h 10% mortality rate	Operation only possible with electronic ballast (HF) Operation only possible with electronic ballast (HF)	48.000 h 58.000 h

* Lifetime limited due to the characteristics of the PET plastic material!

PROGRAMME	TYPE	COLOUR	COLOUR TEMP.	LUMINOUS FLUX	LUMINOUS EFFICACY	OUTER TUBE DIAMETER Ø	LENGTH WITHOUT PINS	ART. NO.		
	Cap: G13		(K)	(lm/100 h)*	(lm/W)	(mm)	(mm)			
	ULTIMATE Protector - with FEP plastic film									
	18 W/827	Interior	2700	1300	72	26	590	431012		
	18 W/830	Warm white	3000	1300	72	26	590	431013		
	18 W/835	Middle white	3500	1300	72	26	590	431018		
	18 W/840	White	4000	1300	72	26	590	431014		
	18 W/865	Daylight	6500	1250	69	26	590	431016		
	30 W/827	Interior	2700	2450	82	26	895	431022		
	30 W/840	White	4000	2450	82	26	895	431024		
	36 W/827	Interior	2700	3350	93	26	1200	431032		
	36 W/830	Warm white	3000	3350	93	26	1200	431033		
	36 W/835	Middle white	3500	3350	93	26	1200	431038		
	36 W/840	White	4000	3350	93	26	1200	431034		
	36 W/865	Daylight	6500	3250	90	26	1200	431036		
	58 W/827	Interior	2700	5200	90	26	1500	431052		
	58 W/830	Warm white	3000	5200	90	26	1500	431053		
	58 W/835	Middle white	3500	5200	90	26	1500	431058		
	58 W/840	White	4000	5200	90	26	1500	431054		
	58 W/865	Daylight	6500	6500	86	26	1500	431056		
	UNIVERSAL Protector - with PET plastic film									
	18 W/827	Interior	2700	1250	69	26	590	436112		
	18 W/830	Warm white	3000	1250	69	26	590	436113		
	18 W/835	Middle white	3500	1250	69	26	590	436118		
	18 W/840	White	4000	1250	69	26	590	436114		
	30 W/840	White	4000	2350	78	26	895	436124		
	36 W/827	Interior	2700	3250	90	26	1200	436132		
	36 W/830	Warm white	3000	3250	90	26	1200	436133		
	36 W/835	Middle white	3500	3250	90	26	1200	436138		
	36 W/840	White	4000	3250	90	26	1200	436134		
	58 W/827	Interior	2700	5000	86	26	1500	436152		
	58 W/830	Warm white	3000	5000	86	26	1500	436153		
	58 W/835	Middle white	3500	5000	86	26	1500	436158		
	58 W/840	White	4000	5000	86	26	1500	436154		
	TYPE	COLOUR	COLOUR TEMP.	LUMINOUS FLUX AT 35°C	LUMINOUS EFFICACY	LUMINOUS FLUX AT 25°C	LUMINOUS EFFICACY	OUTER TUBE DIAMETER Ø	LENGTH WITHOUT PINS	ART. NO.
	Cap: G13		(K)	(lm/100 h)*	(lm/W)	(lm/100 h)*	(lm/W)	(mm)	(mm)	
	ULTIMATE Protector - with FEP plastic film									
	14 W/830	Warm white	3000	1350	96	1200	86	16	549	454313
	14 W/840	White	4000	1350	96	1200	86	16	549	454314
	21 W/830	Warm white	3000	2100	100	1900	90	16	849	454323
	21 W/840	White	4000	2100	100	1900	90	16	849	454324
	28 W/830	Warm white	3000	2900	104	2600	93	16	1149	454333
	28 W/840	White	4000	2900	104	2600	93	16	1149	454334
	28 W/865	Daylight	6500	2800	100	2400	86	16	1149	454336
	35 W/830	Warm white	3000	3650	104	3300	94	16	1449	454353
	35 W/840	White	4000	3650	104	3300	94	16	1449	454354
	UNIVERSAL Protector - with FEP plastic film									
	24 W/830	Warm white	3000	2000	83	1750	73	16	549	457313
	24 W/840	White	4000	2000	83	1750	73	16	549	457314
	39 W/830	Warm white	3000	3500	90	3100	79	16	849	457323
	39 W/840	White	4000	3500	90	3100	79	16	849	457324
	54 W/830	Warm white	3000	5000	93	4450	82	16	1149	457333
	54 W/840	White	4000	5000	93	4450	82	16	1149	457334
	49 W/830	Warm white	3000	4900	100	4300	88	16	1449	454343
	49 W/835	Middle white	3500	4900	100	4300	88	16	1449	457348
	49 W/840	White	4000	4900	100	4300	88	16	1449	457344
	80 W/830	Warm white	3000	7000	88	6150	77	16	1449	457353
	80 W/840	White	4000	7000	88	6150	77	16	1449	457354

