



THERMO LONG LIFE Light for Cold Environments

Guaranteed up to 70,000 Hours

LIGHTING IN LOW TEMPERATURE APPLICATION AREAS.

Aura Thermo fluorescent lamps are designed specifically for environments where the ambient temperature is low. The unique construction contains a 26mm Long Life fluorescent lamp cased in an outer glass tube.

The outer glass tube provides a thermal insulation which results in excellent high light output at low temperatures. At - 20°C Thermo lamps produce up to five times more light than standard lamps under the same temperature.

The Long Life fluorescent lamps are based on two special patents. One for our unique cathode construction and the other for the inside protection layer.

All Aura Thermo Long Life lamps have high quality tri-phosphor colours with excellent colour rendering of Ra 85.

Available versions are:-

- T8 (26mm Dia) with an outer glass tube of 38mm
- T8 (26mm Dia) with an outer glass tube of 32mm
- T5 (16mm Dia) with an outer glass tube of 26mm

The starting characteristics of Thermo lamps are excellent at low temperature.

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.



The Greenstock Lamp Company



Unit H Hillcroft Business Park, Whisby Road, Lincoln LN6 3QT

Tel: 0845 25 70 444 Fax: 0845 025 70 545 E Mail: sales@greenstock.co.uk Web Site:

Thermo Long Life

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Applications

Thermo LL is developed for use in cold environments where the lamp replacement and maintenance costs are high.

Application areas are outdoor lighting, sign boards, tunnel lighting, street lighting, car parks and cold stores.

Lifetime

The service life of Thermo Long Life lamps is based on the integrated Long Life lamp. Service life is reached when the amount of light in an installation falls to 80% of the initial 100-hour value. 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.

The service life data is listed for conventional or low loss ballast with starter and electronic ballast operation in the programme data overview on the final page.



Thermo Long Life gives light to car parks at Helsinki airport.



Thermo Long Life gives Esso petrol stations extra light during the cold season.

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.

With group replacement Aura guarantees the following service life:

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



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Product range T8 (26mm)

The Thermo lamps with a basic 26mm Dia fluorescent lamp in the outer tube are available with *ULTIMATE* and *UNIVERSAL*. Operation of these lamps is possible with conventional or low-loss ballast and starter or electronic ballast. They are available in two different sizes.

Outer Diameter 38mm

Most popular is the 38mm outer tube which is the former standard diameter of fluorescent lamps. These lamps with the so-called T12 diameter are very well utilised in luminaire developed for low temperature areas. Thermo lamps with 38mm outer tube have the best light efficacy at low temperature.

Outer Diameter 32mm

An alternative for applications where the 38mm does not fit in the luminaries is the Thermo lamp with 32mm outer tube. These Thermo lamps produce up to three times more light compared to standard 26mm lamps.

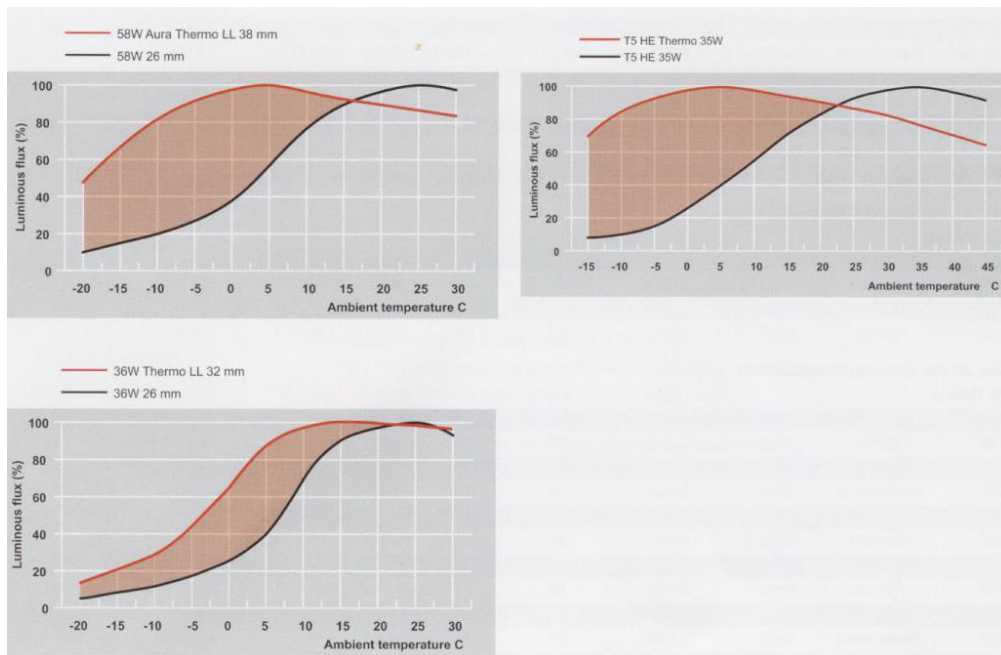
Product range T5 HE (16mm)

New creative developments and construction for low temperature and outdoor areas are now possible with Thermo lamps based on the latest lamp technology of T5 LL High Efficient lamps.

With a special design inside the 16mm T6 LL HE lamp integrated in the 26mm outer glass tube it is possible to reach the same extremely high level of light as the Thermo lamp with 38mm Diameter. Standard T5 HE lamps are based on a different concept for indoor lighting applications in small sized closed luminaries where the ambient temperature is high.

The shape of the end caps is G13 to fix the lamp and out tube in best position but the connection pins are G5.

Operating is only possible with electronic ballast designed for T5 HE lamps.



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PRODUCT INFORMATION

Type	Colour	Colour Temp (K)	Luminous Flux (lm/100h)*	Luminous Efficacy (lm/W)	Diameter (mm)	Length without Pins (mm)	Service Life (hrs using Conv. ballast)	Service Life (hrs using HF ballast)	Packing Unit (pcs)	Art No
Outer tube 38mm diameter, (Cap G13)										
ULTIMATE Thermo										
18W/830	W White	3000	1250	69	38	590	46,000	60,000	25	432313
18W/835	Mid White	3500	1250	69	38	590	46,000	60,000	25	432318
18W/840	White	4000	1250	69	38	590	46,000	60,000	25	432314
18W/865	Daylight	6500	1200	66	38	590	46,000	60,000	25	432316
30W/840	White	4000	2300	77	38	895	36,000	46,000	25	432324
30W/860	Daylight	6500	2250	75	38	895	36,000	46,000	25	432326
36W/830	W White	3000	3200	89	38	1200	46,000	60,000	25	432333
36W/835	Mid White	3500	3200	89	38	1200	46,000	60,000	25	432338
36W/840	White	4000	3200	89	38	1200	46,000	60,000	25	432334
36W/865	Daylight	6500	3150	87	38	1200	46,000	60,000	25	432336
36W 1m/830	W White	3000	3000	83	38	970	46,000	60,000	25	432343
36W 1m/840	White	4000	3000	83	38	970	46,000	60,000	25	432344
58W/830	W White	3000	5000	86	38	1500	46,000	60,000	25	432353
58W/835	Mid White	3500	5000	86	38	1500	46,000	60,000	25	432358
58W/840	White	4000	5000	86	38	1500	46,000	60,000	25	432354
58W/865	Daylight	6500	4800	82	38	1500	46,000	60,000	25	432356
UNIVERSAL Thermo										
18W/830	W White	3000	1250	69	38	590	33,000	44,000	25	437313
18W/840	White	4000	1250	69	38	590	33,000	44,000	25	437314
30W/840	White	4000	2300	77	38	895	24,000	32,000	25	437324
36W/830	W White	3000	3200	89	38	1200	33,000	44,000	25	437333
36W/840	White	4000	3200	89	38	1200	33,000	44,000	25	437334
36W 1m/830	W White	3000	3000	83	38	970	33,000	44,000	25	437343
36W 1m/840	White	4000	3000	83	38	970	33,000	44,000	25	437344
58W/830	W White	3000	5000	86	38	1500	33,000	44,000	25	437353
58W/840	White	4000	5000	86	38	1500	33,000	44,000	25	437354
Outer tube 32mm diameter (Cap G13)										
ULTIMATE Thermo										
18W/830	W White	3000	1250	69	32	590	46,000	60,000	25	432413
18W/840	White	4000	1250	69	32	590	46,000	60,000	25	432414
36W/840	White	4000	3200	89	32	1200	46,000	60,000	25	432434
58W/840	White	4000	5000	86	32	1500	46,000	60,000	25	432454
Outer tube 26mm diameter (Cap G13/G5)										
T5 LL HE Thermo										
14W/830	W White	3000	1250	89	26	549	-	48,000	25	454113
14W/840	White	4000	1250	89	26	549	-	48,000	25	454114
14W/865	Daylight	6500	1250	86	26	549	-	48,000	25	454116
21W/830	W White	3000	1950	93	26	849	-	48,000	25	454123
21W/840	White	4000	1950	93	26	849	-	48,000	25	454124
21W/865	Daylight	6500	1850	88	26	849	-	48,000	25	454126
28W/830	W White	3000	2750	98	26	1149	-	48,000	25	454133
28W/840	White	4000	2750	98	26	1149	-	48,000	25	454134
28W/865	Daylight	6500	2650	95	26	1149	-	48,000	25	454136
35W/830	W White	3000	3400	97	26	1449	-	48,000	25	454153
35W/840	White	4000	3400	97	26	1449	-	48,000	25	454154
35W/865	Daylight	6500	3250	93	26	1449	-	48,000	25	454156

*At ambient temperature (Ta)

Lamps with Outer tube 38mm diameter: Lamps with outer tube 32mm diameter: Lamps with outer tube 26mm diameter
 18W +15°C 18W +20°C 14W + 15°C
 36W +10°C 36W +15°C 21W + 10°C
 58W +5°C 58W +10°C 28W + 10°C
 35W + 5°C



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