GE
Lighting

WORLDWIDE PARTNER

LongLast™

DATA SHEET

T8 LongLast™

Linear Fluorescent Lamps

18W, 36W, 58W

Product information

In today's business environment there is an increased need for lighting products that are helping to minimize operation costs and also providing environmentally responsible design. GE's new T8 LongLast™ range was designed to further improve reliability and drastically increase life performance without compromising on other key features of the product, such as initial lumen and lumen maintenance.

These lamps provide a way to achieve even greater savings by providing extra long life, this premium product lowers maintenance costs.

Features

- Very long and reliable product life up to 46,000 hours (on HF electronic gear)
- Best of class light output – same as for original T8 Polylux™ XLR™
- Excellent (90%) lumen maintenance at 20,000 hours
- Outstanding colour rendering through the advanced coating technology (Ra value higher than 80)
- Environmentally friendly product – RoHS compliant and contains recyclable components
- Can be used on existing control gears and fixtures

Application areas

- Retail
- Domestic
- Office
- Warehouses
- Industrial sites
- Other commercial environments

Product range

T8 LongLast™ lamps are available in 3 wattages: 18, 36 and 58W. The available colour temperatures are:

- 3000K warm white
- 4000K cool white

Compliance

The T8 LongLast™ linear fluorescent lamps comply with IEC/EN 60061, IEC/EN 60081 and IEC/EN 61195.

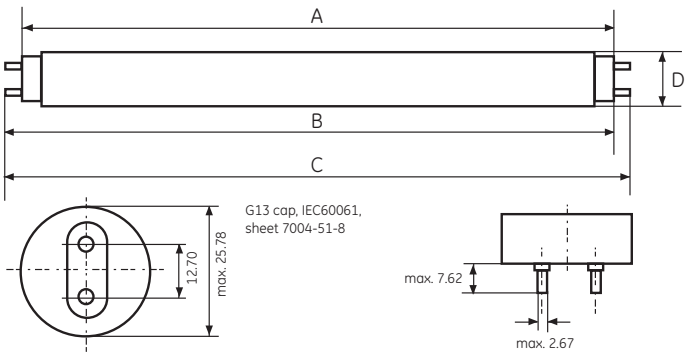
GE imagination at work

Basic data

Lamp type	18W	36W	58W
General			
Nominal Wattage [W]	18	36	58
Cap	G13	G13	G13
Operation	EM 50Hz	EM 50Hz	EM 50Hz
Cathode	preheated	preheated	preheated
Design Temperature [°C]	25	25	25
Recommended Burning Position	horizontal	horizontal	horizontal
Energy Efficiency Class	A	A	A
Energy consumption (kWh/1000h)	22	42	67
Average Mercury Content [mg]	2.9	2.9	2.9
Ordering Information (sleeved in boxes of 25)			
830 – CCT 3000K – Warm White	70980	43508	43510
840 – CCT 4000K – Cool White	70981	43509	43511
Electrical and Photometric Characteristics at 25°C			
Rated Wattage [W]	18.0	36.0	58.0
Rated Lamp Voltage [V]	57	103	110
Rated Lamp Current [A]	0.370	0.430	0.670
Operating Frequency [Hz]	50	50	50
Rated Luminous Flux [lm]	1350	3350	5200
Nominal Luminous Flux [lm]	1350	3350	5200
Rated Efficacy [lm/W]	75	93	90
Colour Rendering Index [Ra]	80+	80+	80+
Optical Radiation Safety Class	Exempt	Exempt	Exempt
Lifetime performance			
Rated Median Life – HF, Preheat, 3 Hours Cycle [h]	28,000	28,000	28,000
Median Life – HF, Preheat, 12 Hours Cycle [h]	36,000	36,000	36,000
Operating Mode for LSF and LLMF Data	EL HF, 3h cycle	EL HF, 3h cycle	EL HF, 3h cycle
Lamp Survival Factor			
LSF 2,000 Hours	99%	99%	99%
LSF 4,000 Hours	99%	99%	99%
LSF 8,000 Hours	99%	99%	99%
LSF 16,000 Hours	95%	95%	95%
LSF 24,000 Hours	96%	96%	96%
LSF 32,000 Hours	87%	87%	87%
LSF 42,000 Hours	50%	50%	50%
Lamp Lumen Maintenance			
LLMF 2,000 Hours	96%	96%	96%
LLMF 4,000 Hours	93%	93%	93%
LLMF 8,000 Hours	92%	92%	92%
LLMF 16,000 Hours	91%	91%	91%
LLMF 24,000 Hours	88%	88%	88%
LLMF 32,000 Hours	87%	87%	87%
Service Life – HF, Preheat, 3 Hours Cycle [h]	30,000	30,000	30,000
Service Life – HF, Preheat, 12 Hours Cycle [h]	35,000	35,000	35,000

Note for lamp power and lamp luminous efficacy values: power dissipated by auxiliary equipment (such as reference or commercial ballast) is not included.
Lumen maintanence may vary for lamps with colour temperature ≥ 5000K

Dimensions



Lamp type	A	B		C	D
	Max.	Min.	Max.	Max.	Max.
18W	589.8	594.5	596.9	604.0	28
36W	1199.4	1204.1	1206.5	1213.6	28
58W	1500.0	1504.7	1507.1	1514.2	28

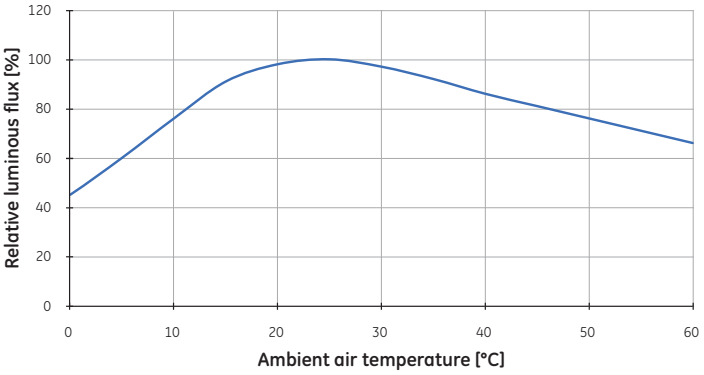
Influence of ambient air temperature on light output

The lumen output figures quoted relate to measurements made according to IEC requirements i.e. using a reference ballast with the lamp operated in still air conditions at 25°C (±1°C). Please note, burning position, air flow, radiating heat sources, characteristics of the control gear, etc also affect the thermal conditions.

Test conditions:

- thermal chamber with ±2°C accuracy
- draught-free air
- constant lamp current
- horizontal burning position

Ambient air temperature [°C]	Relative luminous flux [%]
-10	22
-5	32
0	45
5	60
10	76
15	91
20	98
25	100
30	97
35	92
40	86
45	81
50	76
55	71
60	66

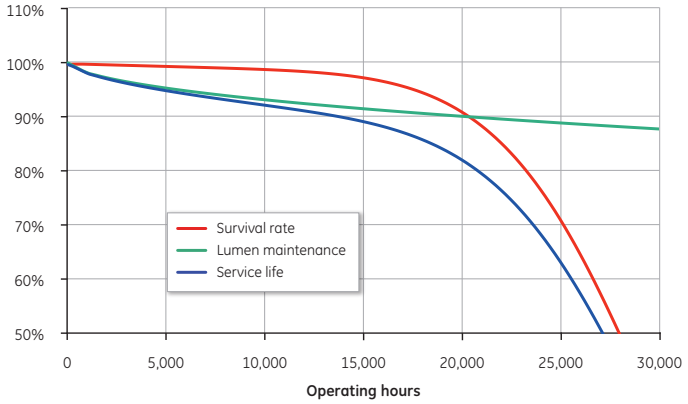


Lamp life and lumen maintenance

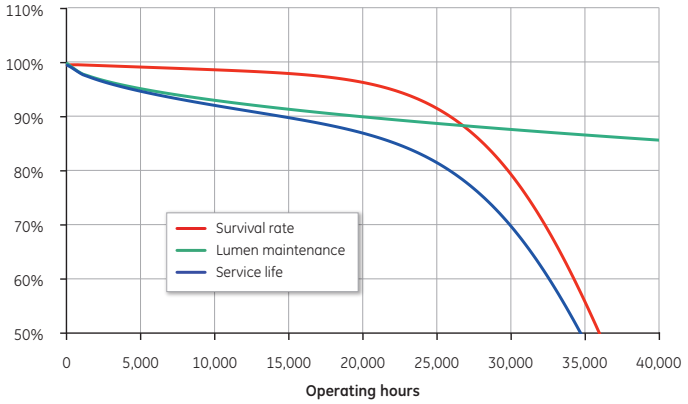
The quoted lamp life is the "average rated lamp life" which is the average value obtained on a three hour switching cycle (15 minute OFF period following 2 hours 45 minutes running time) or on a twelve-hour switching cycle (15 minute OFF period following 11 hours 45 minutes running time) using control gear meeting IEC specification. This will be the point in time at which 50% of the lamps originally installed are still operating.

Given this definition, in an installation using LongLast™ lamps and glow starters, 50% of the lamps will still be burning after 28,000 hours, for an installation using suitable pre-heat electronic ballast the life will increase to 42,000-46,000 hours depending on the switching cycle.

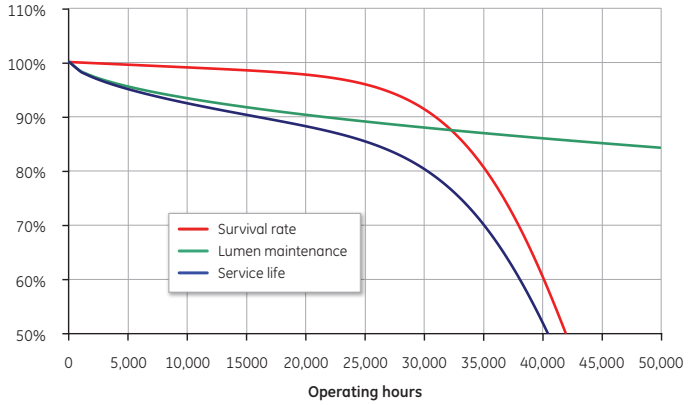
3 hours switching cycle, standard ballast



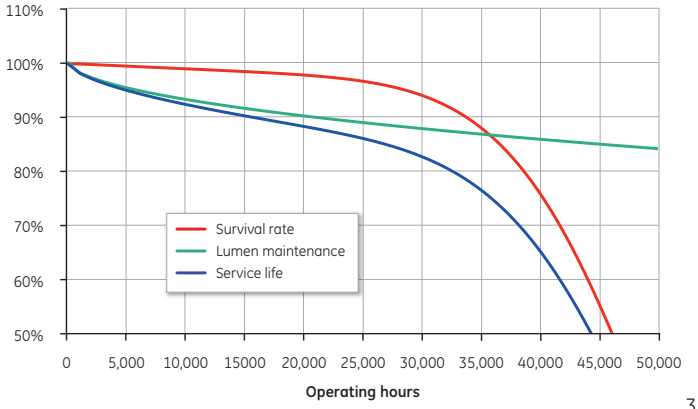
12 hours switching cycle, standard ballast



3 hours switching cycle, electronic ballast



12 hours switching cycle, electronic ballast



Effect of supply voltage variation on 50Hz lamp characteristics

The following values are generalisations and should be treated only as an indication of the trend in the characteristic across the 18W-58W lamp range.

	Lumens	Lamp Voltage	Lamp Current	Lamp Wattage
18W				
90% Supply	85%	106%	80%	85%
100% Supply	100%	100%	100%	100%
110% Supply	112%	96%	118%	113%
36W				
90% Supply	86%	107%	81%	87%
100% Supply	100%	100%	100%	100%
110% Supply	110%	96%	117%	112%
58W				
90% Supply	85%	110%	76%	83%
100% Supply	100%	100%	100%	100%
110% Supply	109%	92%	121%	113%

Advantages of high frequency lamp operation

The operation of fluorescent lamps at high frequency offers a number of benefits:

- **Improved light and energy efficiency**

This occurs because there is a reduction in the losses in the lamp (lower end losses because of the reduction in cathode fall voltage) and normally the control circuit has much lower power losses than the equivalent mains frequency circuit.

- **Improved life (compared with glow starter equivalent circuit)**

LongLast™ lamp life will increase from 28,000 hours using switch-start circuits up to 46,000 hours using high frequency circuits. The controlled preheating that is provided by a warm start electronic ballast ensures that emitter loss during starting is minimised so that the effect of switching on life is minimal.

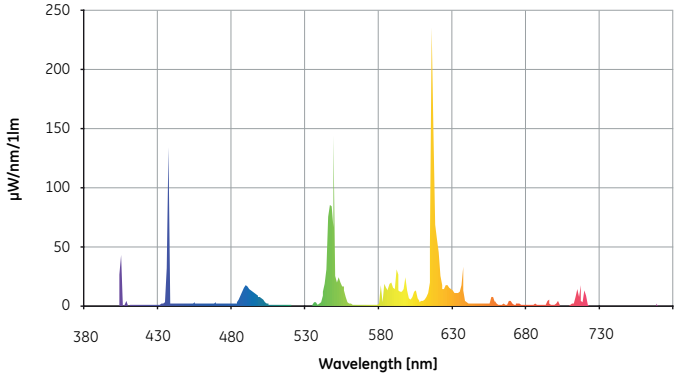
Ballast compatibility

Ballasts produced by reputable control gear manufacturers meeting the relevant IEC standards would be considered as suitable. List of recommended ballasts available on request.

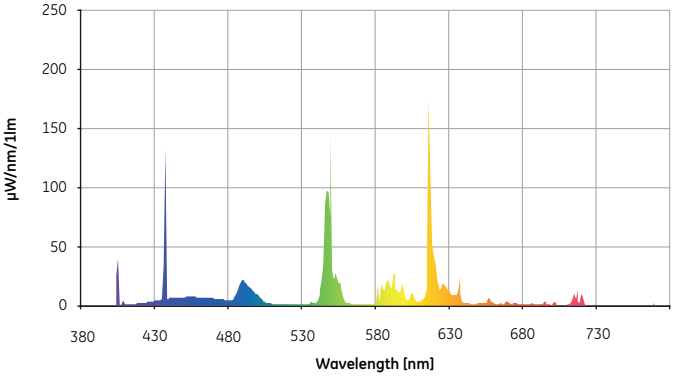
Spectral power distribution

Spectral power distribution curves provide the user with a visual profile of the colour characteristics of a light source. Fluorescent lamps combine a continuous spectra from their phosphor with the line spectra of the mercury discharge.

Spectral power distribution 3000K



Spectral power distribution 4000K



Colour specification according to CIE 1931

CCT [K]		X	Y	CRI [Ra]
Nominal	Rated			
3000	2940	0.440	0.402	80+
4000	4040	0.380	0.377	80+