

T8 Polylux XL_R™

Linear Fluorescent Lamps

15W, 18W, 30W, 36W, 58W and 70W

Product information

Polylux XL_R™ lamps should be the natural choice for all fluorescent lighting applications. The excellent colour reproduction flatters skin tones making people appear more natural, and makes merchandise appear more vibrant and colourful.

Features

GE Polylux XL_R™ lamps are high performance triphosphor lamps offering:

- Excellent colour rendering (CRI 80+)
- 90% lumen maintenance at 15,000 hours
- Longer life (up to 23,000 hours on electronic gear)

Application areas

GE Polylux XL_R™ lamps, with their comprehensive range of colours, are suited to the following application areas:

- Retail
- Domestic
- Office
- Schools
- Sports halls
- Industrial sites



Product range

T8 Polylux XL_R™ lamps are available in 6 wattages: 15, 18, 30, 36, 58 and 70W.

The available colour temperatures are:

- 2700K extra warm white
- 3000K warm white
- 3500K white
- 4000K cool white
- 6400K daylight

Compliance

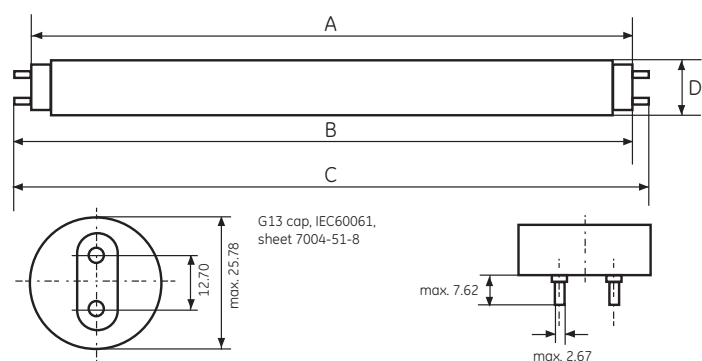
The T8 Polylux XL_R™ linear fluorescent lamps comply with IEC/EN 60061, IEC/EN 60081 and IEC/EN 61195.

Basic data

Lamp type	15W	18W	30W	36W	58W	70W
General						
Nominal Wattage [W]	15	18	30	36	58	70
Weighted Energy Consumption (kWh/1000h) for 827, 830, 835, 840	19	22	37	42	68	81
Weighted Energy Consumption (kWh/1000h) for 860	18	22	36	43	68	-
Cap	G13	G13	G13	G13	G13	G13
Operation	EM 50Hz	EM 50Hz	EM 50Hz	EM 50Hz	EM 50Hz	EM 50Hz
Cathode	preheated	preheated	preheated	preheated	preheated	preheated
Design Temperature [°C]	25	25	25	25	25	25
Recommended Burning Position	horizontal	horizontal	horizontal	horizontal	horizontal	horizontal
Energy Efficiency Class	B	A	A	A	A	A
Mercury Content [mg]	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5
Ordering Information (sleeved in boxes of 25)						
827 - CCT 2700K - Extra Warm White	-	62560	-	62554	62550	-
830 - CCT 3000K - Warm White	23248	62559	18141	62553	62549	-
835 - CCT 3500K - White	78133	62534	78132	62532	62531	62572
840 - CCT 4000K - Cool White	23249	62558	18142	62551	62548	62573
860 - CCT 6400K - Daylight	78131	62557	12607	62552	62547	-
Electrical and Photometric Characteristics at 25°C						
Rated Wattage [W]	15.0	18.0	30.0	36.0	58.0	69.5
Rated Lamp Voltage [V]	55	57	96	103	110	128
Rated Lamp Current [A]	0.310	0.370	0.370	0.430	0.670	0.670
Operating Frequency [Hz]	50	50	50	50	50	50
Rated Luminous Flux [lm]	1000	1350	2450	3350	5200	6300
Nominal Luminous Flux [lm]	1000	1350	2300	3350	5200	6000
Rated Luminous Flux for 860 [lm]	900	1300	-	3250	5000	-
Nominal Luminous Flux for 860 [lm]	900	1300	2300	3250	5000	5700
Rated Efficacy [lm/W]	67	75	77	93	90	86
Rated Efficacy for 860 [lm/W]	60	72	77	90	86	82
Colour Rendering Index [Ra]	80+	80+	80+	80+	80+	80+
Optical Radiation Safety Class	Exempt	Exempt	Exempt	Exempt	Exempt	Exempt
Lifetime performance						
Rated Median Life – HF, Preheat, 3 Hours Cycle [h]	20,000	20,000	20,000	20,000	20,000	20,000
Median Life – HF, Preheat, 12 Hours Cycle [h]	23,000	23,000	23,000	23,000	23,000	23,000
Operating Mode for LSF and LLMF Data	EL HF, 3h cycle	EL HF, 3h cycle	EL HF, 3h cycle	EL HF, 3h cycle	EL HF, 3h cycle	EL HF, 3h cycle
Lamp Survival Factor						
LSF 2,000 Hours	99%	99%	99%	99%	99%	99%
LSF 4,000 Hours	99%	99%	99%	99%	99%	99%
LSF 8,000 Hours	98%	98%	98%	98%	98%	98%
LSF 16,000 Hours	90%	90%	90%	90%	90%	90%
Lamp Lumen Maintenance						
LLMF 2,000 Hours	95%	95%	95%	95%	95%	95%
LLMF 4,000 Hours	92%	92%	92%	92%	92%	92%
LLMF 8,000 Hours	91%	91%	91%	91%	91%	91%
LLMF 16,000 Hours	90%	90%	90%	90%	90%	90%
Service Life – HF, Preheat, 3 Hours Cycle [h]	16,000	16,000	16,000	16,000	16,000	16,000
Service Life – HF, Preheat, 12 Hours Cycle [h]	18,000	18,000	18,000	18,000	18,000	18,000

Note for lamp power and lamp luminous efficacy values; power dissipated by auxiliary equipment (such as reference or commercial ballast) is not included.
Lumen maintenance may vary for lamps with colour temperature $\geq 5000\text{K}$

Dimensions



Lamp type	A		B		C	D
	Max.	Min.	Max.	Max.		
15W	437.4	442.1	444.5	451.6	28	
18W	589.8	594.5	596.9	604.0	28	
30W	894.6	899.3	901.7	908.8	28	
36W (1200 mm)	1199.4	1204.1	1206.5	1213.6	28	
58W	1500.0	1504.7	1507.1	1514.2	28	
70W	1763.8	1768.4	1770.9	1778.0	28	

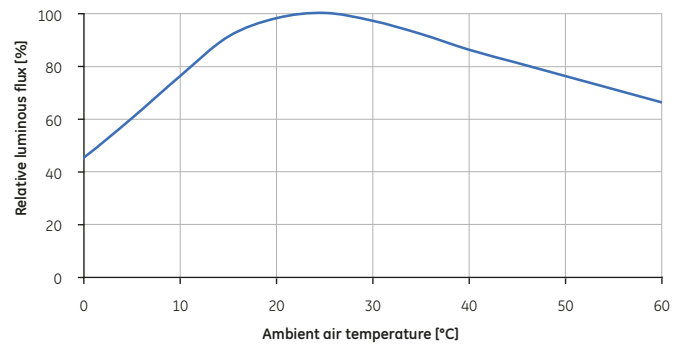
Influence of ambient air temperature on light output

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 ($\pm 1^\circ\text{C}$). 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 $\pm 2^\circ\text{C}$ 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

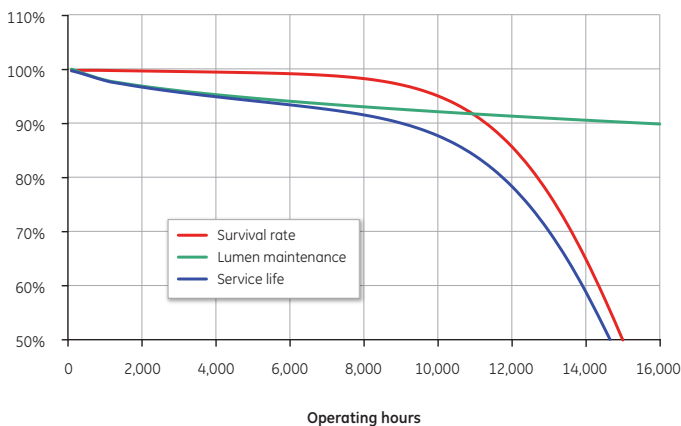


Lamp life and lumen maintenance

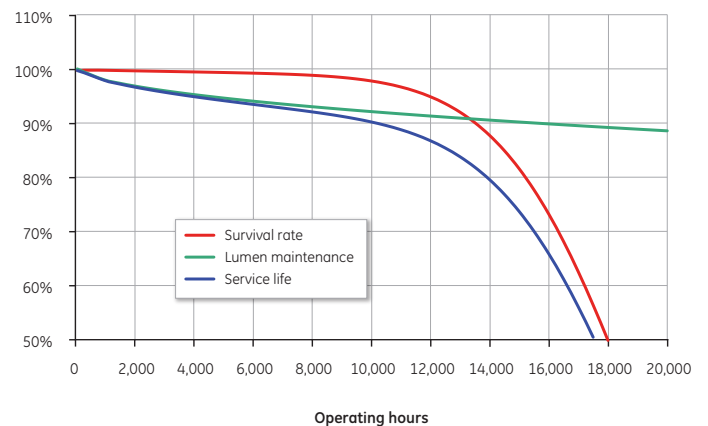
The quoted lamp life is the “average rated lamp life” which is the average value obtained on a three hour switching cycle (15 minute OFF period following 2 hours 45 minutes running time) using control gear meeting IEC specification. This will be the point in time at which 50% of the lamps originally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

Given this definition, in an installation using PolyLux XLR™ lamps and glow starters, 50% of the lamps will still be burning after 15,000 hours; for an installation using suitable pre-heat electronic ballasts the life will increase to 20,000-23,000 hours depending on the switching cycle. Service life curve is defined as the product of the survival rate and the lumen maintenance. The rated value is at 80%.

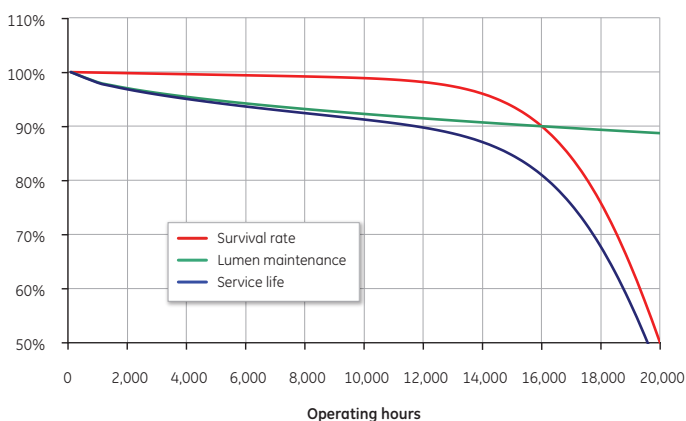
3 hours switching cycle, standard ballast



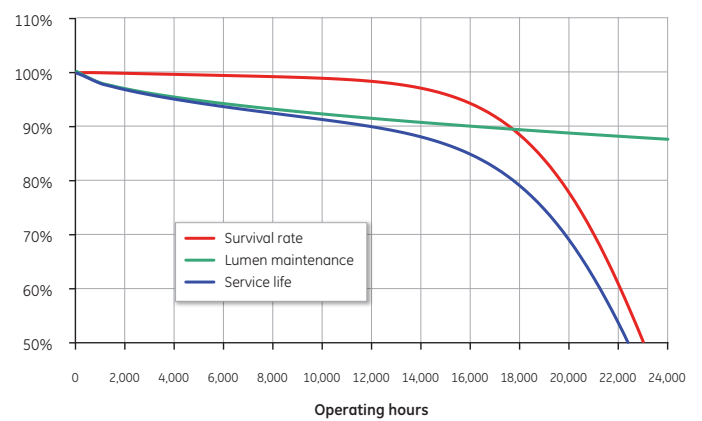
12 hours switching cycle, standard ballast



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 15W-70W lamp range.

18W	Lumens	Lamp Voltage	Lamp Current	Lamp Wattage
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%
70W				
90% Supply	82%	114%	71%	80%
100% Supply	100%	100%	100%	100%
110% Supply	109%	91%	126%	115%

Advantages of high frequency lamp operation

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

- **Improved 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 light quality**

Attributable to the elimination of both flicker and the stroboscopic effects associated with mains frequency operation.

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

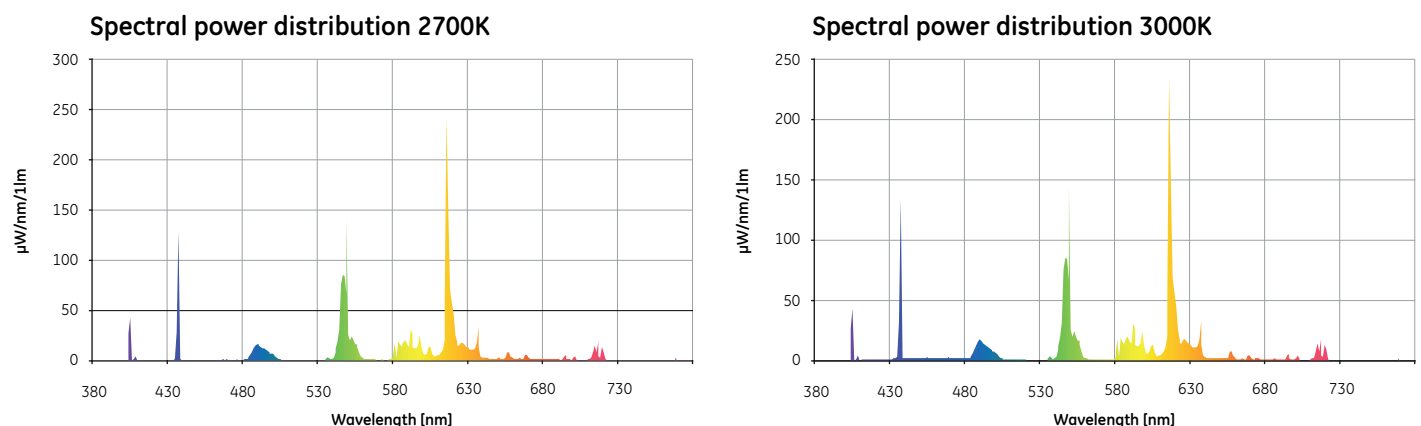
PolyLux XLR™ lamp life will increase from 15,000 hours using switch-start circuits to 20,000 hours using high frequency circuits.

Ballast compatibility

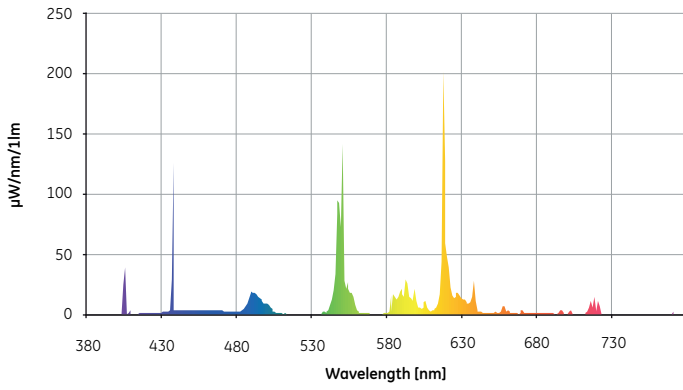
Ballasts produced by reputable control gear manufacturers meeting the relevant IEC standards would be considered as suitable. List of recommended ballasts available on request.

Spectral power distribution

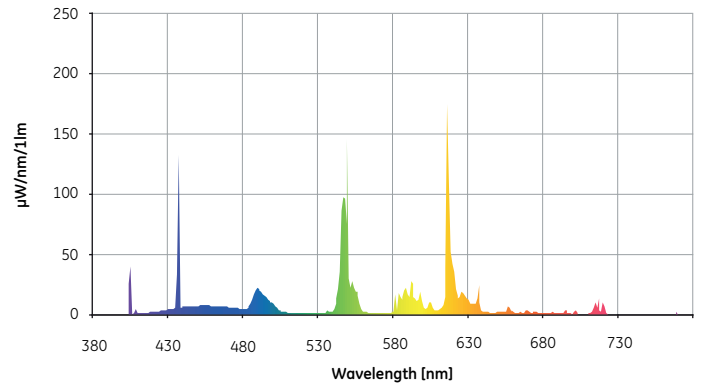
Spectral power distribution curves provide the user with a visual profile of the colour characteristics of a light source. Fluorescent lamps combine a continuous spectra from their phosphor with the line spectra of the mercury discharge.



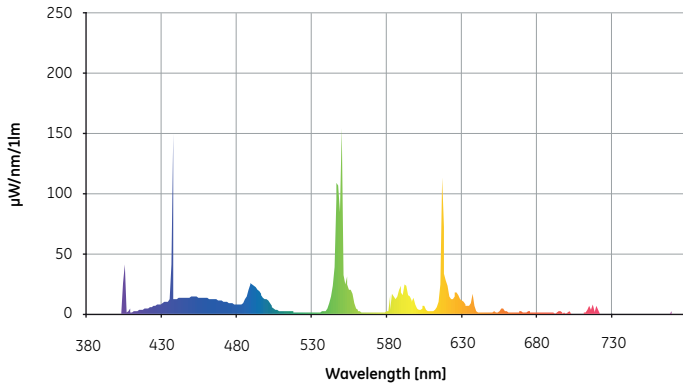
Spectral power distribution 3500K



Spectral power distribution 4000K



Spectral power distribution 6500K



Colour specification according to CIE 1931

CCT [K]		X	Y	CRI [Ra]
Nominal	Rated			
2700	2720	0.463	0.420	80+
3000	2940	0.440	0.402	80+
3500	3450	0.415	0.402	80+
4000	4040	0.380	0.377	80+
6400	6400	0.316	0.336	80+