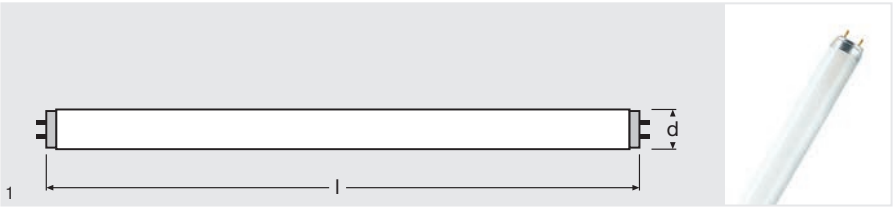
LUMILUX® T8
Tubular fluorescent lamps 26 mm, with G13 base



Product name	GTIN (EAN)	W	R_a	lm 25°C		l [mm]			No.
L 10 W/827	4050300446165	10	≥80	650	827	470	A	25	1
L 15 W/827	4050300446042	15	≥80	950	827	438	B	25	1
L 15 W/830	4050300446028	15	≥80	950	830	438	B	25	1
L 15 W/840	4050300446004	15	≥80	950	840	438	B	25	1
L 15 W/865	4050300446189	15	≥80	900	865	438	B	25	1
L 16 W/827	4050300446080	16	≥80	1250	827	720	A	25	1
L 16 W/830	4008321959065	16	≥80	1250	830	720	A	25	1
L 16 W/840	4050300446066	16	≥80	1250	840	720	A	25	1
L 18 W/827	4050300517834	18	≥80	1350	827	590	A	25	1
L 18 W/830	4050300517810	18	≥80	1350	830	590	A	25 [1)]	1
L 18 W/835	4050300447964	18	≥80	1350	835	590	A	25	1
L 18 W/840	4050300517797	18	≥80	1350	840	590	A	25 [1)]	1
L 18 W/865	4050300517773	18	≥80	1300	865	590	A	25	1
L 18 W/880	4008321027962	18	≥80	1300	880	590	A	25	1
L 23 W/830	4050300446264	23	≥80	1900	830	970	A	25	1
L 23 W/840	4050300446240	23	≥80	1900	840	970	A	25	1
L 30 W/827	4050300518077	30	≥80	2400	827	895	A	25	1
L 30 W/830	4050300518053	30	≥80	2400	830	895	A	25	1
L 30 W/840	4050300518039	30	≥80	2400	840	895	A	25	1
L 30 W/865	4050300518015	30	≥80	2350	865	895	A	25	1
L 30 W/880	4008321027986	30	≥80	2350	880	895	A	25	1
L 36 W/827	4050300517919	36	≥80	3350	827	1200	A+	25	1
L 36 W/830	4050300517896	36	≥80	3350	830	1200	A+	25 [1)]	1
L 36 W/835	4050300447988	36	≥80	3350	835	1200	A+	25	1
L 36 W/840	4050300517872	36	≥80	3350	840	1200	A+	25 [1)]	1
L 36 W/865	4050300517858	36	≥80	3250	865	1200	A	25	1
L 36 W/880	4008321002976	36	≥80	3010	880	1200	A	25	1
L 38 W/830	4050300518152	38	≥80	3300	830	1047	A	25	1
L 38 W/840	4050300518138	38	≥80	3300	840	1047	A	25	1
L 58 W/827	4050300603049	58	≥80	5200	827	1500	A	25	1
L 58 W/830	4050300517971	58	≥80	5200	830	1500	A	25 [1)]	1
L 58 W/835	4050300448008	58	≥80	5200	835	1500	A	25	1
L 58 W/840	4050300517957	58	≥80	5200	840	1500	A	25 [1)]	1
L 58 W/865	4050300517933	58	≥80	5000	865	1500	A	25	1
L 58 W/880	4008321002990	58	≥80	4900	880	1500	A	25	1
L 70 W/835	4008321003911	70	≥80	6200	835	1778	A	25	1
L 70 W/840	4008321003959	70	≥80	6200	840	1778	A	25	1

1) Also available in industrial packs (… IVP) for bulk orders. Contains 30 lamps.

Product features
- Very good lumen maintenance: 90 % throughout the service lifetime of the lamp
- Good color rendering group: 1B (R_a: 80…89)
- Dimmable
- Top-quality three-band phosphor: LUMILUX®

Product benefits
- Proven lamp technology
- Good economy thanks to high efficiency
- Available in many different light colors (2,700…8,000 K) for various applications

Areas of application
- Public buildings
- Office lighting
- Industry
- Shops
- Supermarkets and department stores
- Street lighting
- Outdoor applications only in suitable luminaires

References / Links
For more information on QUICKTRONIC® electronic control gears, go to www.ledvance.com/quicktronic

Safety advice
In case of lamp breakage:
www.ledvance.com/sustainability

Fluorescent lamps – which light color for which application?

Application	SKY-WHITE® 880 8,000 K	Cool Daylight 865 6,500 K	Cool Daylight 965 6,500 K	Daylight 954 5,400 K	Cool White 840 4,000 K	Cool White 940 4,000 K	White 835 3,500 K	Warm White 830 3,000 K	Warm White 930 3,000 K	INTERNA® 827 2,700 K	Special light colors
Offices and administrative buildings											
Offices, corridors	•				•		•	•			
Meeting rooms	•						•	•		•	
Industry, trade and commerce											
Electrical industry		•			•						
Textile industry		•	•	•							
Woodworking industry		•	◉	◉	•						
Graphics industry, laboratories		◉	•	•	◉						COLOR proof
Color matching				•							COLOR proof
Warehouses, transport depots					•						
Schools and lecture rooms											
Auditoriums, classrooms, kindergartens	•		◉		•		•	•		•	
Libraries, reading rooms					◉		•	•		•	
Retail outlets											
Food, general		◉			•		•	•		•	NATURA®
Bread and cakes										•	NATURA®
Refrigerated counters and deep freezers	•										NATURA®
Cheese, fruit, vegetables										•	NATURA®
Fish										•	NATURA®
Meat, sausages			◉								NATURA®
Textiles, leather goods		•	•	•	◉	•	◉	•	•	•	
Furniture, carpets							•	•	•	•	
Sporting goods, toys, stationery					•	◉	•	•	◉		
Photo, watches, jewellery		◉	◉	◉	•	◉	•	•	◉		
Cosmetics, hairdressers					◉	•	◉	◉	•	◉	
Flowers, greenhouse		◉	◉	◉	•	•			•	◉	FLUORA®
Department stores, supermarkets	•	◉	•		◉	•		◉	•	•	
Public buildings											
Restaurants, bars, hotels					•		•	•		•	
Theaters, concert halls, foyers										•	
Event rooms											
Exhibition halls and trade fairs	•				•			•			
Sports halls and multi-purpose halls	•				•		•	•			
Art galleries, museums		◉		•	◉	•			•		
Hospitals and surgeries											
Consulting and treatment rooms	•	◉	•	•		•					
Hospital wards, waiting rooms	•		•			•			•		
Homes											
Living rooms										•	
Kitchens, bathrooms, hobby rooms, cellars	•			•				•	•		
Outdoor lighting, streets, paths, pedestrian zones					•			•			

• Recommended ◉ Optional as required

Light colors and color rendering properties of fluorescent lamps according to EN 12464-1

Kelvin	Name	R_a 60…69	R_a 70…79	R_a 80…89	R_a 90…99
2,700 K	INTERNA®			827	
3,000 K	Warm White			830	930
3,500 K	White			835	
4,000 K	Cool White	640		840	940
5,400 K	Daylight				954/950
6,500 K	Cool Daylight		765	865	965
8,000 K	SKYWHITE®			880	

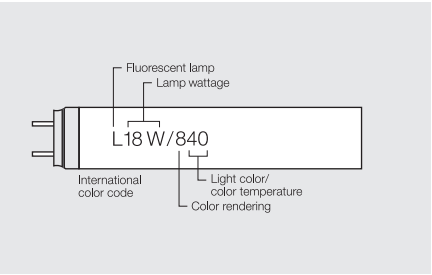
Type designation

International color code:
The first digit stands for color rendering
9 = color rendering R_a 90 to 100
8 = color rendering R_a 80 to 89
7 = color rendering R_a 70 to 79
6 = color rendering R_a 60 to 69

The next digits stand for the light color/ color temperature, e.g. for LUMILUX®
27 = LUMILUX INTERNA® (2,700 K)
30 = LUMILUX® Warm White (3,000 K)
35 = LUMILUX® White (3,500 K)
40 = LUMILUX® Cool White (4,000 K)
54 = LUMILUX® Daylight (5,400 K)
65 = LUMILUX® Cool Daylight (6,500 K)
80 = LUMILUX SKYWHITE® (8,000 K)

"Old" light color codes in our range

Old		New	R_a	K
10	Cool Daylight	765	70…79	6500
11	Cool Daylight	865	80…89	6500
12	Daylight	954	90…99	5400
20	Cool White	640	60…69	4000
21	Cool White	840	80…89	4000
22	Cool White	940	90…99	4000
26	White	835	80…89	3500
31	Warm White	830	80…89	3000
32	Warm White	930	90…99	3000
41	INTERNA®	827	80…89	2700



Light colors

The LUMILUX® lamps

In combination with OSRAM ECGs, LUMILUX® fluorescent lamps offer very high efficiency and long reliable life. They are also perfect for combining with daylight dimmer systems and motion sensors. This leads to even greater energy savings.

LUMILUX®

Color 880 LUMILUX SKYWHITE®
Color 865 LUMILUX® Cool Daylight
Color 840 LUMILUX® Cool White
Color 835 LUMILUX® White
Color 830 LUMILUX® Warm White
Color 827 LUMILUX INTERNA®

LUMILUX® colors combine good color rendering and high luminous efficacy in a single lamp.
Major benefits:
— Luminous efficacy of up to 116 lm/W (T5 HE ES)
— Good color rendering according to EN 12464 (R_a: 80…89)
For LUMILUX® light colors, it is best to use electronic control gears as this is the best way to make economic use of the minimal drop in luminous flux. This also applies to LUMILUX® DE LUXE.

LUMILUX® T5 HO, HE (including ES, XT, SPS, CHIP control® and NATURA®) and FC® lamps can only be operated on ECGs.
Color 880 SKYWHITE® contains an increased blue component which is particularly energizing. Ideal for offices and public buildings.

LUMILUX® DE LUXE

Color 965 LUMILUX® DE LUXE Cool Daylight
Color 954 LUMILUX® DE LUXE Daylight
Color 940 LUMILUX® DE LUXE Cool White
Color 930 LUMILUX® DE LUXE Warm White

The LUMILUX® DE LUXE light colors meet the highest demands with regard to very good color rendering (R_a: 90…99) and offer good luminous efficacy at the same time. The daylight color 954 is ideal for print shops, dental surgeries, dental laboratories, slide presentations and clothing stores.

Special light colors

The red component of 76 OSRAM NATURA® is closely matched to other color components. This results in natural color rendering and makes items such as meat, sausages, delicatessen products, vegetables and flowers appear fresh and natural, without being unduly “beautified”.

77 FLUORA® has been specially designed for plants and aquariums. Its light has an emphasis at the blue and red ends of the spectrum. It is therefore particularly good at promoting photobiological processes. The result is healthier plants.

965 BIOLUX®
Because of its spectral distribution, the light from OSRAM BIOLUX® lamps is also excellent for raising small animals (birds, fish, reptiles etc.).

Colors 60 Red, 66 Green and 67 Blue are ideal for creating decorative effects and special moods.
62 Yellow contains only a very small proportion of UV-A radiation. This light color is therefore suitable for clean-room production facilities, chip fabrication and lighting with minimal UV.

For spectral power distributions, see pages 9.50 and 9.51.

COLOR proof
For museums and art galleries, dental laboratories, graphic workshops, photographic laboratories, and industrial testing and color matching facilities, light color 950 offers optimum color characteristics. It has a color rendering index of $R_a = 98$ at a color temperature of 5,300 K.

Technical data

How fluorescent lamps work

Fluorescent lamps are low-pressure gas discharge lamps. The glass tube is filled with an inert gas at low pressure and a small quantity of mercury. The glass wall is coated with a phosphor. At the ends of the glass tube are pasted electrodes. When an electrical charge is passed between them, the mercury vapor emits UV radiation. When the UV radiation hits the phosphor, the phosphor emits visible light. The color can be varied for different applications by selecting different phosphor mixes.

Luminous flux and power consumption according to IEC 60081 and EN 50285

The minimum luminous flux of a single lamp is 92 % of the rated luminous flux at 25 °C; the average is 95 % of the rated luminous flux.

B10: B10 is defined as the time when 10 % of the lamps have failed (in standardized operation).

B50: Average life (B50) is defined as the time when 50 % of the lamps have failed (in standardized operation).

Service lifetime: Service lifetime is the mathematical lifetime (maintenance multiplied with the % of failed lamps, e.g. B10) for lamps in an installation after which the installation luminous flux (100 h value) for indoor lighting decreased with 20 % (decrease in luminous flux and failed lamps).

Lamp life. The average life and service life of LUMILUX® fluorescent lamps are listed in the table below. Operating the lamps above or below their rated power will reduce their service life.

Burning position. Universal for 26 and 38 mm diameters. When T5 HE and T5 HO lamps are installed in the vertical burning positions, the stamp must be at the bottom; when T5 FC® lamps are installed in the vertical position, the 2GX13 base must be at the bottom. In multi-lamp luminaires, T5 HE or T5 HO lamps must be positioned with the stamps next to one another. The recommended minimum spacing between two T5 lamps is 32 mm for optimum operation (maintenance of the luminous flux/temperature curve).

Lamp life in accordance with IEC 60081

(IEC switching cycle 165 min on, 15 min off)	T8 LUMILUX® special length	T8 LUMILUX® standard length*	T8 LLX DE LUXE	T5 HE	T5 HO	T5 FC LUMILUX®	T5 LLX DE LUXE
Service life on preheat ECG	16,000	18,000	16,000	19,000	19,000	8,000	19,000
Average life on preheat ECG	20,000	20,000	20,000	24,000	24,000	12,000	24,000

* (18 W, 36 W, 58 W and ES 16 W, 32 W and 51 W) Service life is defined as the time when 80 % of the system luminous flux (relative to the 100 h value) is available.

Technical data

Luminous fluxes of T5 fluorescent lamps (16 mm), HE and HO fluorescent lamps

	880	865	840	830	827
HE 14W	1150	1300	1350	1350	1350
HE 21W	1850	2000	2100	2100	2100
HE 28W	2690	2750	2900	2900	2900
HE 35W	3450	3500	3650	3650	3650
HE 13W ES	-	1300	1350	1350	1350
HE 19W ES	-	2000	2100	2100	2100
HE 25W ES	-	2750	2900	2900	2900
HE 32W ES	-	3500	3650	3650	3650
HO 24W	1750	1900	2000	2000	2000
HO 39W	3150	3325	3500	3500	3500
HO 49W	4610	4600	4900	4900	4900
HO 54W	4500	4750	5000	5000	5000
HO 80W	6400	6650	7000	7000	7000
HO 20W ES	-	1900	2000	2000	2000
HO 34W ES	-	3325	3500	3500	3500
HO 45W ES	-	4600	4900	4900	4900
HO 50W ES	-	4750	5000	5000	5000
HO 73W ES	-	6650	7000	7000	7000

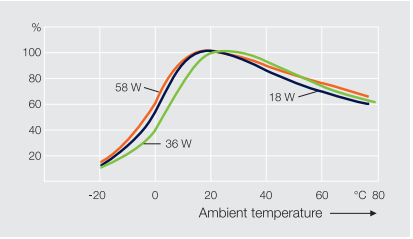
All values for HE and HO at 35 °C

As with all fluorescent lamps, the luminaire efficiency of T5 (16 mm) lamps is calculated at an ambient temperature of 25 °C. In other words, the luminous flux of the lamp measured at 25 °C and the luminous flux of the luminaire measured at 25 °C are used as the basis for calculating the luminaire efficiency. Note that if measurements are taken with gonio-photometers with moving lamps, the high-speed air currents may cause the cool spot to shift from the stamp end of the lamp. Before the illuminance levels from T5 HE, T5 HO and especially FC® lamps are measured in lighting systems, these lamps must be allowed to stabilize for at least 100 hours. If two lamps are to be operated next to one another, make sure that the stamped ends are on the same side so that the cold spot is not heated.

Technical data

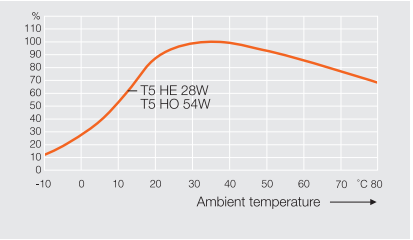
Temperature dependence

As with fluorescent lamps in general, the rated luminous flux for T5 HE and TE HO fluorescent lamps is specified at 25 °C, and T5 HE and T5 HO achieve their maximum luminous flux at temperatures between 34 and 38 °C. One of the advantages of T5 lamps is therefore an increased luminaire efficiency. T5 FC® circular fluorescent lamps achieve their maximum luminous flux between 25 and 30 °C.



Control gear. In order to operate, each lamp needs a control gear appropriate to its wattage. The control gear not only starts the lamp but also limits the current in the discharge phase. Please note: Fluorescent lamps are guaranteed only if they are operated with approved control gears or with control gears declared to be suitable. Control gears must comply with EN standards. Modern control gears, such as QUICKTRONIC®, enable energy-saving fluorescent lamps to be operated with optimum economy and lighting comfort, see Section 16. Control gears for sale in the European Union must carry the ENEC mark (tested according to IEC 60081). This safeguards the warranty for the lamps under normal conditions.

Circuits. See circuit diagrams on page 9.49 and Section 16.



Power supply. Generally 230 V AC. The permissible voltage fluctuations for AC voltage is ±10 %, i.e. 207 V to 253 V. Electronic control gears are considerably less affected by fluctuations in the supply voltage than conventional control gears.
DC operation for emergency lighting systems in accordance with DIN EN 50172 is indicated in the specifications for the electronic control gears.

Accessories. Control gears and holders are available from electrical suppliers. OSRAM compact fluorescent lamps and fluorescent lamps are cadmium-free.

Technical data

Fluorescent lamp	∅	Rated lamp current (CCG operation) uncompensated	Lamp voltage UL after ignition (±10 %)	Resistance/ impedance Z (on CCG)	Preheating current IEC 60081	Luminance LF 840, 830, 827	Compensation capacitor [1] Power factor ≈1 for CCG operation	Series capacitor for CCG Lead-lag circuit [2]
(Wattage)	(mm)	(A)	(V)	(Ω)	(mA) [4]	(cd/cm²)	(µF)	(µF/Vc)
4	16	0.17	29	700	205	0.85	2.0	–
6	16	0.16	42	700	205	0.95	2.0	–
8	16	0.145	56	700	205	0.9	2.0	–
10	26	0.17	64	375	220	–	2.0	–
13	16	0.165	95	1070	225	0.8	2.0	–
15	26	0.33	55	165	440	1.0	4.5	–
16	26	0.20	90	450	260	0.8	2.5	–
18	26	0.37	57	155	550	1.0	4.5	2.7/480
18/… U	26	0.37	60	165	550	–	–	–
20/… SA	38	0.37	57	270	550	–	–	–
20/… XL	38	0.38	58	270	–	–	4.5	–
22 C	29	0.37	62	165	600	–	5.0	3.0/480
30	26	0.365	96	265	550	1.2	4.5	2.9/450
32 C	29	0.425	81	190	675	0.9	5.0	3.4/450
36	26	0.43	103	240	650	1.2	4.5	3.4/450
36/… U	26	0.43	108	250	650	–	–	–
36-1	26	0.556	81	145	730	1.3	6.0	4.3/480
38 [3]	26	0.43	104	240	650	–	4.5	3.4/450
40 C	29	0.415	108	260	630	–	–	–
40/… SA	38	0.43	103	390	650	–	–	–
40/… XL	38	0.425	109	390	–	–	4.5	–
40/… K	38	0.88	52					
58	26	0.67	110	165	1000	1.5	7.0	5.3/450
58/… U	26	0.67	115	170	1000	–	–	–
65/… SA	38	0.67	110	240	1000	–	–	–
65/… XL	38	0.67	110	240	–	–	–	–

For information on ECGs, see Section 16 (ECGs)

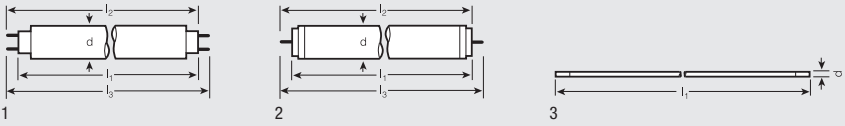
1) For parallel compensation in circuits 1 and 2 see page 9.49
2) Lead-lag circuit as per circuit diagram 3 on page 9.49
3) With 40 W control gear
4) Preheating currents are maximum values for a preheat time of 2 s

Technical data

Fluorescent lamp	∅	Rated lamp current (ECG operation) [1]	Lamp voltage UL after ignition [1]	System wattage with control gear	Pre-heating current IEC 60081	Luminance
	(mm)	(mA)	(V)	(W)	(mA)	(cd/cm^2)
14 (HE)	16	165	86	16.0 [4]	210	1.7
21 (HE)	16	165	126	24.0 [4]	210	1.7
28 (HE), SPS, CHIP control®	16	170	166	32.0 [4]	210	1.7
35 (HE)	16	175	205	39.0 [4]	210	1.7
13 (HE) ES	16	185	69	15.0 [4]	210	1.7
19 (HE) ES	16	185	104	22.0 [4]	210	1.7
25 (HE) ES	16	180	143	29.0 [4]	210	1.7
32 (HE) ES	16	175	184	36.0 [4]	210	1.7
24 (HO)	16	295	77	26.0 [4]	440	2.5
39 (HO)	16	325	118	41.0 [4]	440	2.8
49 (HO) and 49 (HO) XT	16	255	195	53.0 [4]	330	2.3
54 (HO), 54 (HO) XT, SPS, CHIP control®	16	455	120	58.0 [4]	720	2.9
80 (HO) and 80 (HO) XT	16	530	152	85.0 [4]	765	3.2
20 (HO) ES	16	300	64	23.0 [4]	440	2.5
34 (HO) ES	16	340	99	37.0 [4]	440	2.8
45 (HO) ES	16	265	169	45.0 [4]	330	2.3
50 (HO) ES	16	485	101	54.0 [4]	720	3.0
73 /HO) ES	16	555	133	79.0 [4]	765	3.3
24 (HO CONSTANT)	16	295	77	26.0 [4]	440	2.7
39 (HO CONSTANT)	16	325	118	41.0 [4]	440	3.1
49 (HO CONSTANT)	16	255	195	53.0 [4]	330	2.4
54 (HO CONSTANT)	16	455	120	58.0 [4]	720	3.3
80 (HO CONSTANT)	16	530	152	88.5 [4]	765	3.6
22 (FC)	16	0.30	70	25.0 [5]	440	1.7
40 (FC)	16	0.32	126	43.0 [5]	440	2.1
55 (FC)	16	0.55	101	59.0 [5]	765	2.6
6 (FM)	7	0.10	51	7.5 [2]	120 [4]	2.5
8 (FM)	7	0.10	79	11.0 [2]	120 [4]	2.5
11 (FM)	7	0.10	110	13.0 [3]	120 [4]	2.5
13 (FM)	7	0.10	136	16.0 [3]	120 [4]	2.5

1) Values at 25 °C on the reference control gear
2) For system wattage with QT-ECO FM 1x6-8/220-240, see Section 16
3) For system wattage with QT-ECO FM 1x11-13/220-240, see Section 16
4) System wattage on QTi GII
5) System wattage on QTP-M or QTP-FC

Dimensions for tubular fluorescent lamps with tolerances



W		l1 [mm]	l2 [mm]	l3 [mm]	IEC d [mm]	No.

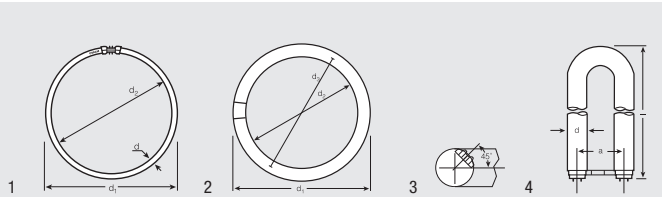
Tubular fluorescent lamps

7, 16, 26 and 38 mm ∅, G5 base, G13 base, W4.3x8.5d base						
6 (FM)	W4.3x8.5d	218.3 ±1.0	–	–	max. 7	3
8 (FM)	W4.3x8.5d	319.9 ±1.0	–	–	max. 7	3
11 (FM)	W4.3x8.5d	421.5 ±1.0	–	–	max. 7	3
13 (FM)	W4.3x8.5d	523.1 ±1.0	–	–	max. 7	3
4	G5	135.9	141.8 ±1.2	150.1	max. 16	1
6	G5	212.1	218 ±1.2	226.3	max. 16	1
8	G5	288.3	294.2 ±1.2	302.5	max. 16	1
13	G5	516.9	522.8 ±1.2	531.1	max. 16	1
14 (HE)	G5	549	554.9 ±1.2	563.2	max. 17	1
21 (HE)	G5	849	854.9 ±1.2	863.2	max. 17	1
24 (HO)	G5	549	554.9 ±1.2	563.2	max. 17	1
28 (HE), 25 (ES)	G5	1149	1154.9 ±1.2	1163.2	max. 17	1
35 (HE), 32 (ES)	G5	1449	1454.9 ±1.2	1463.2	max. 17	1
39 (HO)	G5	849	854.9 ±1.2	863.2	max. 17	1
49 (HO), 49 (HO) XT and 45 (HO) ES	G5	1449	1454.9 ±1.2	1463.2	max. 17	1
54 (HO), 54 (HO) XT and 50 (HO) ES	G5	1149	1154.9 ±1.2	1163.2	max. 17	1
80 (HO), 80 (HO) XT and 73 (HO) ES	G5	1449	1454.9 ±1.2	1463.2	max. 17	1
10	G13	470	475.9 ±1.2	484.2	max. 28	1
15	G13	437.4	443.3 ±1.2	451.6	max. 28	1
16	G13	720	725.9 ±1.2	734.2	max. 28	1
18, 16 (ES)	G13	589.8	595.7 ±1.2	604	max. 28	1
23	G13	970	975.9 ±1.2	984.2	max. 28	1
30	G13	894.6	900.5 ±1.2	908.8	max. 28	1
36, 32 (ES)	G13	1199.4	1205.3 ±1.2	1213.6	max. 28	1
36-1	G13	970	975.9 ±1.2	984.2	max. 28	1
38	G13	1047	1052.8 ±1.2	1061.2	max. 28	1
58, 51 (ES)	G13	1500	1505.9 ±1.2	1514.2	max. 28	1
70	G13	1763.8	1769.7 ±1.2	1778	max. 28	1
20/… SA	G13	589.8	595.7 ±1.2	604	max. 40.5	1
40/… SA	G13	1199.4	1205.3 ±1.2	1213.6	max. 40.5	1
40 K	G13	589.8	595.7 ±1.2	604	max. 40.5	1
65/… SA	G13	1500	1505.9 ±1.2	1514.2	max. 40.5	1
80	G13	1500	1505.9 ±1.2	1514.2	max. 40.5	1
100	G13	1763.8	1769.7 ±1.2	1778	max. 40.5	1

Fluorescent lamps for starterless operation, 38 mm tube diameter
X lamps, Fa6 base

20/… XL	Fa6	574	590.75 ±1.75	611	max. 40.5	2
40/… XL	Fa6	1183.5	1200.25 ±1.75	1220.5	max. 40.5	2
65/… XL	Fa6	1484	1500.85 ±1.75	1521.1	max. 40.5	2

Dimensions for circular and U-shaped fluorescent lamps with tolerances



Circular T5 FC® fluorescent lamps with 16 mm tube diameter

W		d1 max. [mm]	d2 max. [mm]	TUBE d [mm]	No.
2GX13 base					
22	2GX13	225 ±5	192 ±5	16.0	1
40	2GX13	299 ±6	266 ±6	16.0	1
55	2GX13	299 ±6	266 ±6	16.0	1

Ring-shaped fluorescent lamps

W		d1 max. [mm]	d2 max. [mm]	d3 max. [mm]	TUBE d [mm]	No.
G10q base						
22	G10q	215.9	155.6	157.2	29 ±2	2, 3
32	G10q	304.8	246.1	246.1	29 ±2	2, 3
40	G10q	406.4	347.7	347.7	29 ±2	2, 3

U-shaped fluorescent lamps

W		l [mm]	a [mm]	d [mm]	No.
2G13-92 base					
18 U	2G13-92	310	92.0 ±2	26 ±1	4
36 U	2G13-92	607	92.0 ±2	26 ±1	4
58 U	2G13-92	765	92.0 ±2	26 ±1	4
36 UK	2G13-92	570	92.0 ±2	26 ±1	4

CIRCUIT DIAGRAMS, STARTER OPERATION

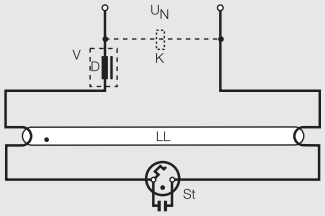


Fig. 1
Single lamp

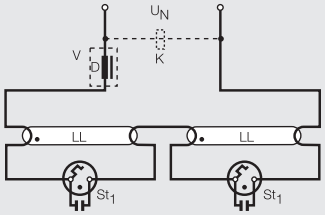


Fig. 2
Series circuit for two lamps
4 W, 6 W, 8 W, 15 W, 18 W, 20 W
and 22 W on 220 V_{AC} only with starters
ST 151 + ST 172 (see page 9.38)

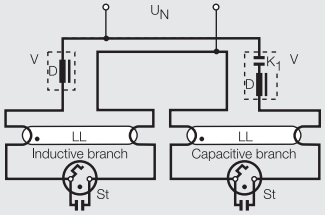


Fig. 3
Lead-lag circuit

STARTERLESS OPERATION

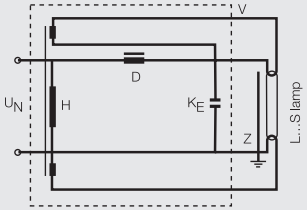


Fig. 4
Quick-start circuit, inductive

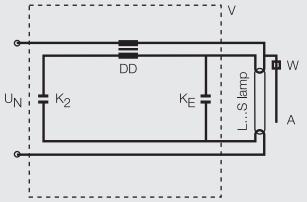


Fig. 5
Semi-resonant circuit

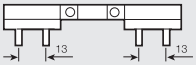
A = External starting strip
D = Choke
DD = Double choke
H = Heating transformer
K = Compensation capacitor (if required)
K_1 = Series capacitor
K_2 = Capacitor
K_E = Radio interference capacitor 10 nF
LL = Fluorescent lamp
St = Starter
St_1 = Starter [1)]
U_N = Line voltage
V = Control gear
W = High ohmic resistor (built into lamp base)
Z = Capacitor starting aid

1) Prolonged ignition times, especially at low voltage, can be shortened by rotating one of the starters through 180°

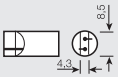
BASES IEC/EN 60061-1

Fa6
Sheet 7004-55

G13
Sheet 7004-51

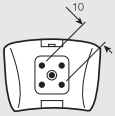


2G13
Sheet 7004-33



W4.3x8.5d
Sheet 7004-115

G5
Sheet 7004-52



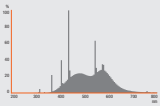
G10q
Sheet 7004-54

2GX13
Sheet 7004-125

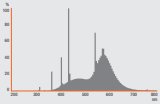
Spectral power distribution of fluorescent lamps (white light)

Visible range from 380 to 780 nm, relative spectral emission per 5 nm.

Basic

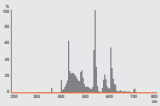


Light color 765
Basic Cool Daylight

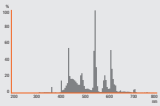


Light color 640
Basic Cool White

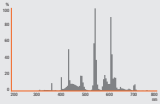
LUMILUX®



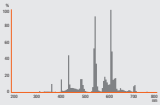
Light color 880
LUMILUX SKYWHITE®



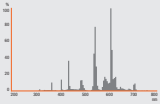
Light color 865
LUMILUX® Cool Daylight



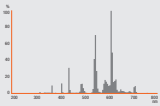
Light color 840
LUMILUX® Cool White



Light color 835
LUMILUX® White

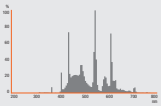


Light color 830
LUMILUX® Warm White

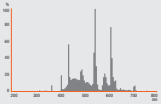


Light color 827
LUMILUX INTERNA®

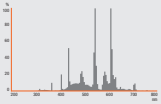
LUMILUX® DE LUXE



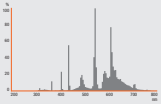
Light color 965
LUMILUX® DE LUXE
Cool Daylight



Light color 954
LUMILUX® DE LUXE
Daylight

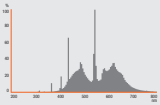


Light color 940
LUMILUX® DE LUXE
Cool White



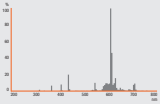
Light color 930
LUMILUX® DE LUXE
Warm White

Spectral power distribution of fluorescent lamps (COLOR proof)

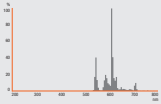


Light color 950 COLOR proof

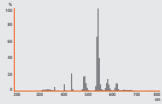
Spectral power distribution of fluorescent lamps (other colors)



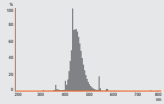
Light color 60
Red



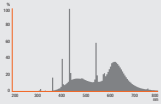
Light color 62
Yellow



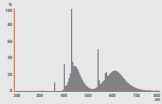
Light color 66
Green



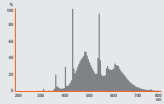
Light color 67
Blue



Light color 76 NATURA®



Light color 77 FLUORA®



Light color BIOLUX®