

Master LED Tube T8

หลอด LED ชนิดตรงรุ่น Master T8



Master LED Tube T8

หลอดไฟแอลอีดี | LED Lamp

คุณสมบัติ

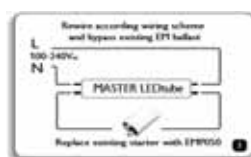
- ใช้ทดแทนหลอดฟลูออเรสเซนต์ชนิด G13 โดยไม่ต้องเปลี่ยนโคมเดิม
- สามารถใช้งานร่วมกับบัลลาสต์ชนิดลวดเดิม โดยใช้ร่วมกับ EMP050 เพื่อเพิ่มความปลอดภัย
- อุณหภูมิใช้งาน -20 ถึง +45 องศาเซลเซียส
- ลำแสงไม่มีความร้อน เพราะไม่มี UV ไม่มี IR
- สามารถทนแรงดันกระชากได้ถึง 1KV
- เป็นมิตรต่อสิ่งแวดล้อม (ไม่มีสารปรอท)
- ตัวประกอบกำลัง (PF >0.9)
- อายุการใช้งานยาวนาน 50,000 - 70,000 ชม.

การใช้งาน

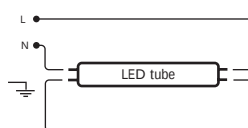
- ใช้งานทั่วไปเพื่อเปลี่ยนทดแทนหลอดฟลูออเรสเซนต์ชนิดตรง
- ควรใช้โคม หรือบริเวณที่มีการระบายความร้อนที่ดี

วิธีการใช้งาน

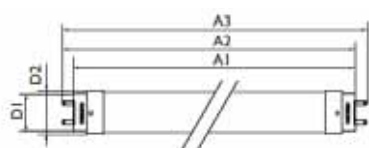
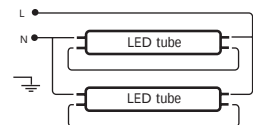
1. ไม่ต้องเปลี่ยนบัลลาสต์แกนหลักออก :
วิธีง่ายๆ เพียงแค่ปลดหลอดฟลูออเรสเซนต์
และสตาร์ทเตอร์เดิมออก และเปลี่ยนมาใช้
หลอดมาสเตอร์ แอลอีดี ทิวน์ และโปรเทคเตอร์
EMP050 แล้วต่อวงจรตาม Diagram



2. ปลดบัลลาสต์เดิมออก
2.1 สำหรับโคมหลอดเดี่ยว



- 2.2 สำหรับโคมหลอดคู่



EMP 050

Dimension (mm.)

Type	(A1) max.	(A2) max.	(A3) max.	(C1) max.	(D1) max.	(D2) max.
Overall length (mm)				Diameter (mm)		
LED Tube 600	589	596	603	-	25.68	28
LED Tube 1200	1198	1206	1213	-	25.68	28
EMP 050	-	-	-	34.5	3	21.5

ข้อมูลจำเพาะ: Master LED Tube T8

สินค้า	ขั้ว	กำลังไฟฟ้า (วัตต์)	แรงดันไฟฟ้า (โวลต์)	ฟลักซ์ (ลูเมน)	อุณหภูมิสี (เคลวิน)	CRI ไม่น้อยกว่า	ปรับหรี่แสง	อายุ (ชั่วโมง)	ราคาปลีก (บาท)
Master LEDTube 600 mm 10W 840 T8 Wide Voltage Range	G13	10	100-240	1050	4000	80	ไม่ได้	40000	900.00
Master LEDTube 600 mm 10W 865 T8 Wide Voltage Range	G13	10	100-240	1050	6500	80	ไม่ได้	40000	900.00
Master LEDTube 1200 mm 18W 840 T8 Wide Voltage Range	G13	18	100-240	2100	4000	80	ไม่ได้	40000	1,100.00
Master LEDTube 1200 mm 18W 865 T8 Wide Voltage Range	G13	18	100-240	2100	6500	80	ไม่ได้	40000	1,100.00
Master LEDtube 600mm HO 8W 830 T8	G13	8	200-240	1050	3000	80	ไม่ได้	50000	800.00
Master LEDtube 600mm HO 8W 840 T8	G13	8	200-240	1050	4000	80	ไม่ได้	50000	800.00
Master LEDtube 600mm HO 8W 865 T8	G13	8	200-240	1050	6500	80	ไม่ได้	50000	800.00
Master LEDtube 1200mm HO 12.5W 830 T8	G13	12.5	220-240	2000	3000	83	ไม่ได้	50000	1,200.00
Master LEDtube 1200mm HO 12.5W 840 T8	G13	12.5	220-240	2100	4000	83	ไม่ได้	50000	1,200.00
Master LEDtube 1200mm HO 12.5W 865 T8	G13	12.5	220-240	2100	6500	83	ไม่ได้	50000	1,200.00
Master LEDtube 1200mm HO 14W 830 T8	G13	14	200-240	2100	3000	80	ไม่ได้	50000	1,000.00
Master LEDtube 1200mm HO 14W 840 T8	G13	14	200-240	2100	4000	80	ไม่ได้	50000	1,000.00
Master LEDtube 1200mm HO 14W 865 T8	G13	14	200-240	2100	6500	80	ไม่ได้	50000	1,000.00
Master LEDtube 1500mm HO 18.2W 830 T8	G13	18.2	220-240	2900	3000	83	ไม่ได้	50000	1,350.00
Master LEDtube 1500mm HO 18.2W 840 T8	G13	18.2	220-240	3100	4000	83	ไม่ได้	50000	1,350.00
Master LEDtube 1500mm HO 18.2W 865 T8	G13	18.2	220-240	3100	6500	83	ไม่ได้	50000	1,350.00
Master LEDtube 1200mm UO 15.5W 830 T8	G13	15.5	220-240	2300	3000	83	ไม่ได้	60000	1,300.00
Master LEDtube 1200mm UO 15.5W 840 T8	G13	15.5	220-240	2500	4000	83	ไม่ได้	60000	1,300.00
Master LEDtube 1200mm UO 15.5W 865 T8	G13	15.5	220-240	2500	6500	83	ไม่ได้	60000	1,300.00
Master LEDtube 1500mm UO 23W 830 T8	G13	23	220-240	3400	3000	83	ไม่ได้	60,000	1,500.00
Master LEDtube 1500mm UO 23W 840 T8	G13	23	220-240	3700	4000	83	ไม่ได้	60000	1,500.00
Master LEDtube 1500mm UO 23W 865 T8	G13	23	220-240	3700	6500	83	ไม่ได้	60000	1,500.00
Master LEDtube 1200mm UE 14.5W 840 T8	G13	14.5	220-240	2500	4000	83	ไม่ได้	70000	1,350.00
Master LEDtube 1200mm UE 14.5W 865 T8	G13	14.5	220-240	2500	6500	83	ไม่ได้	70000	1,350.00
Master LEDtube 1500mm UE 21.5W 840 T8	G13	21.5	220-240	3700	4000	83	ไม่ได้	70000	1,600.00
Master LEDtube 1500mm UE 21.5W 865 T8	G13	21.5	220-240	3700	6500	83	ไม่ได้	70000	1,600.00
Master LEDtube 1200mm VN 24W 840 T8	G13	24	220-240	3700	4000	83	ไม่ได้	50000	1,800.00
Master LEDtube 1200mm VN 24W 865 T8	G13	24	220-240	3700	6500	83	ไม่ได้	50000	1,800.00

ราคาสินค้ารวมภาษีมูลค่าเพิ่ม
ขอลงบนสลิปฯ ในการปรับแก้ไขราคาข้างต้นโดยไม่ต้องแจ้งให้ทราบล่วงหน้า



Philips MASTER

LEDtube 600 mm High Output T8

PHILIPS



MASTER LEDtube is a reliable value-for-money LED lamp out of Philips lighting portfolio, incorporates frontier LED chips and other advanced technologies. The product helps customers achieve more than 55% energy saving and significant maintenance cost reduction by comparing to fluorescent lamps. It also helps generate natural and comfortable lighting effect, and to build up green and environment friendly image for our customers.

Product Features

Highly Reliable

- Reliable operation between -20°C to 45°C ambient temperature
- Rated 50,000 hours lifetime according to F50L70
- 200,000 switching cycles

Highly Comfortable

- CRI > 80
- Advanced optical design ensures a uniform light output and superior optical efficiency

Highly Energy Efficient

- Energy savings of more than 55%*

Highly Safe

- Protection circuit inside ensuring people's safety in case of mis-use, complying with IEC safety requirements
- Pass 4KV high-pot test, insulation & safety guaranteed
- Pass 1KV surge test (vs. IEC standard 500V), avoiding the damage caused by input voltage fluctuation and lightning strike

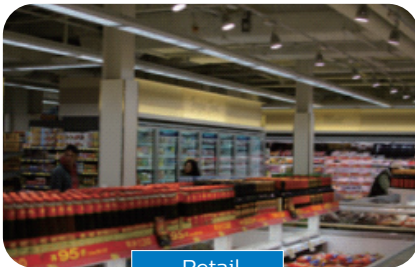
Perfect Fit

- 100% comply with IEC requirement on T8 dimension, fitting into fluorescent luminaire perfectly

Highly Environmental Friendly

- No mercury
- No breakage and pollution risk

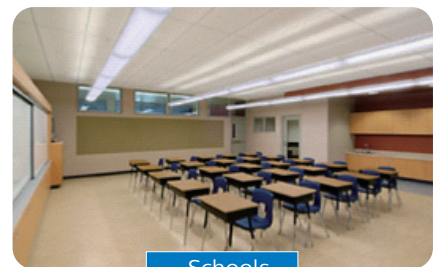
Application



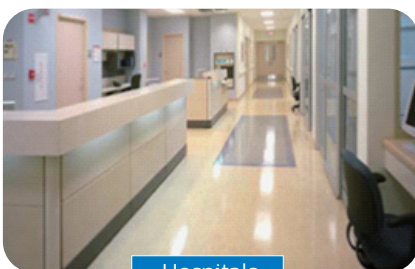
Retail



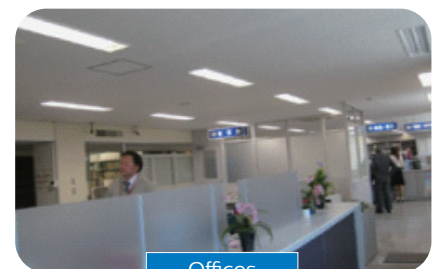
Industry



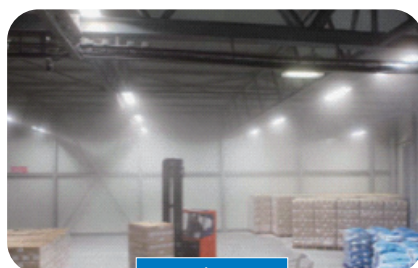
Schools



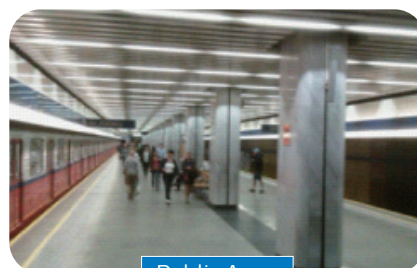
Hospitals



Offices



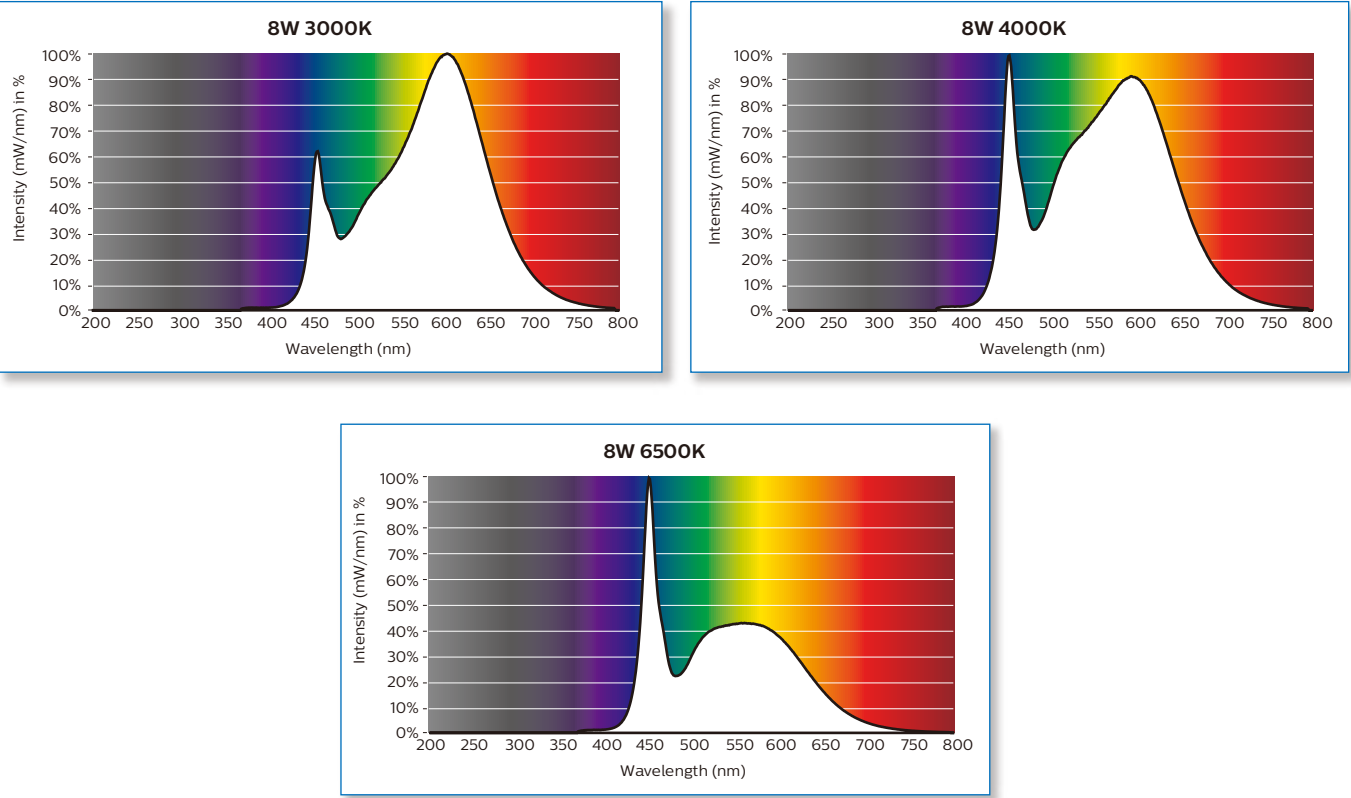
Warehouses



Public Areas

Spectral Power Distribution

Light may be precisely characterized by giving the power of the light at each wavelength in the visible spectrum. The resulting spectralpower distribution (SPD) shows that the MASTER LEDtube HO 600 mm T8 contains the visible light only. No harm from UV and IR.

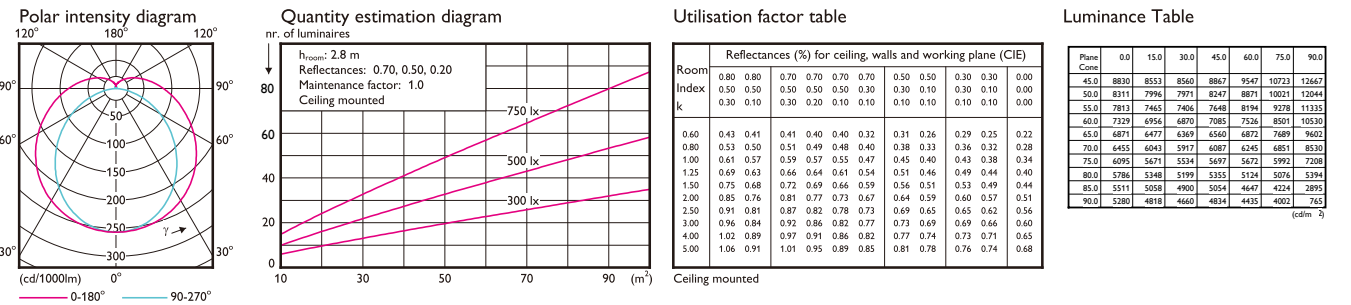


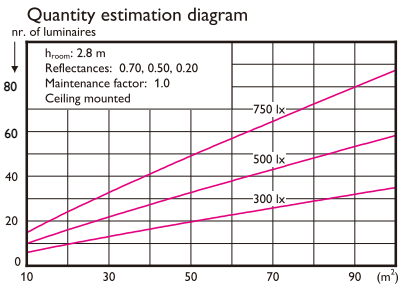
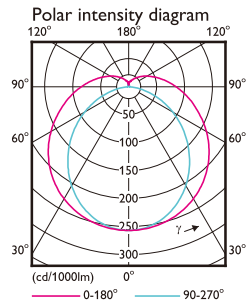
Photometric Diagrams

The Photometric diagram depicting the top down mounted lighting fixtures in a specific area and a numerical grid of the maintained lighting levels that the fixture will produce in that specific area. Pictures below show the photometric diagrams of a typical Philips MASTER LEDtube's application.

1 x TLED 8W 3000K

1 x 1000 lm





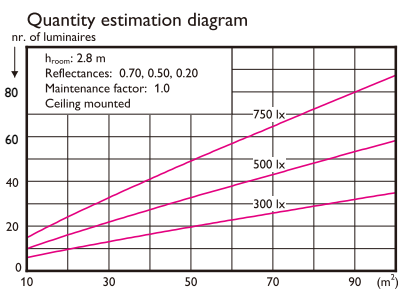
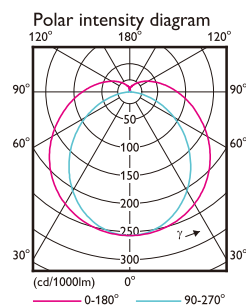
Utilisation factor table

Room Index k	Reflectances (%) for ceiling, walls and working plane (CIE)															
	0.80	0.80	0.70	0.70	0.70	0.70	0.50	0.50	0.30	0.30	0.00	0.50	0.50	0.50	0.30	0.00
0.60	0.43	0.41	0.41	0.40	0.40	0.32	0.31	0.26	0.29	0.25	0.22	0.30	0.26	0.26	0.22	0.20
0.80	0.53	0.50	0.51	0.49	0.48	0.40	0.38	0.33	0.36	0.32	0.28	0.40	0.36	0.36	0.32	0.28
1.00	0.61	0.57	0.59	0.57	0.55	0.47	0.45	0.40	0.43	0.38	0.34	0.50	0.46	0.46	0.42	0.38
1.25	0.69	0.63	0.66	0.64	0.61	0.54	0.51	0.46	0.49	0.44	0.40	0.60	0.56	0.56	0.52	0.48
1.50	0.75	0.68	0.72	0.69	0.66	0.59	0.56	0.51	0.53	0.49	0.44	0.70	0.66	0.66	0.62	0.58
2.00	0.85	0.76	0.81	0.77	0.73	0.67	0.64	0.59	0.60	0.57	0.51	0.80	0.76	0.76	0.72	0.68
2.50	0.91	0.81	0.87	0.82	0.78	0.73	0.69	0.65	0.65	0.62	0.56	0.90	0.86	0.86	0.82	0.78
3.00	0.96	0.84	0.92	0.86	0.82	0.77	0.73	0.69	0.69	0.66	0.60	1.00	0.96	0.96	0.92	0.88
4.00	1.02	0.89	0.97	0.91	0.86	0.82	0.77	0.74	0.73	0.71	0.65					
5.00	1.06	0.91	1.01	0.95	0.89	0.85	0.81	0.78	0.76	0.74	0.68					

Ceiling mounted

Luminance Table

Plane	0.0	15.0	30.0	45.0	60.0	75.0	90.0
Cone							
45.0	8830	8533	8560	8867	9547	10723	12667
50.0	8311	7996	7971	8247	8871	10021	12044
55.0	7813	7465	7406	7648	8194	9278	11335
60.0	7329	6956	6870	7085	7526	8501	10530
65.0	6871	6477	6369	6560	6872	7689	9602
70.0	6455	6043	5917	6087	6245	6851	8530
75.0	6095	5671	5534	5697	5872	6392	7928
80.0	5786	5348	5199	5355	5524	5976	7394
85.0	5511	5058	4900	5054	5224	5647	7005
90.0	5280	4818	4660	4834	5135	5502	6765

(cd/m²)

Utilisation factor table

Room Index k	Reflectances (%) for ceiling, walls and working plane (CIE)															
	0.80	0.80	0.70	0.70	0.70	0.70	0.50	0.50	0.30	0.30	0.00	0.50	0.50	0.50	0.30	0.00
0.60	0.43	0.41	0.41	0.40	0.40	0.32	0.31	0.26	0.29	0.25	0.22	0.30	0.26	0.26	0.22	0.20
0.80	0.53	0.50	0.51	0.49	0.48	0.40	0.38	0.33	0.36	0.32	0.28	0.40	0.36	0.36	0.32	0.28
1.00	0.61	0.57	0.59	0.57	0.55	0.47	0.45	0.40	0.43	0.38	0.34	0.50	0.46	0.46	0.42	0.38
1.25	0.69	0.63	0.66	0.64	0.61	0.54	0.51	0.46	0.49	0.44	0.40	0.60	0.56	0.56	0.52	0.48
1.50	0.75	0.68	0.72	0.69	0.66	0.59	0.56	0.51	0.53	0.49	0.44	0.70	0.66	0.66	0.62	0.58
2.00	0.85	0.76	0.81	0.77	0.73	0.67	0.64	0.59	0.60	0.57	0.51	0.80	0.76	0.76	0.72	0.68
2.50	0.91	0.81	0.87	0.82	0.78	0.73	0.69	0.65	0.65	0.62	0.56	0.90	0.86	0.86	0.82	0.78
3.00	0.96	0.84	0.92	0.86	0.82	0.77	0.73	0.69	0.69	0.66	0.60	1.00	0.96	0.96	0.92	0.88
4.00	1.02	0.89	0.97	0.91	0.86	0.82	0.77	0.74	0.73	0.71	0.65					
5.00	1.06	0.91	1.01	0.95	0.89	0.85	0.81	0.78	0.76	0.74	0.68					

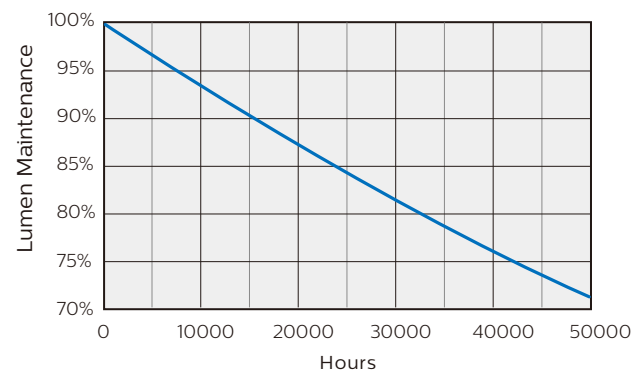
Ceiling mounted

Luminance Table

Plane	0.0	15.0	30.0	45.0	60.0	75.0	90.0
Cone							
45.0	8830	8533	8560	8867	9547	10723	12667
50.0	8311	7996	7971	8247	8871	10021	12044
55.0	7813	7465	7406	7648	8194	9278	11335
60.0	7329	6956	6870	7085	7526	8501	10530
65.0	6871	6477	6369	6560	6872	7689	9602
70.0	6455	6043	5917	6087	6245	6851	8530
75.0	6095	5671	5534	5697	5872	6392	7928
80.0	5786	5348	5199	5355	5524	5976	7394
85.0	5511	5058	4900	5054	5224	5647	7005
90.0	5280	4818	4660	4834	5135	5502	6765

(cd/m²)

Lifetime and Lumen Maintenance

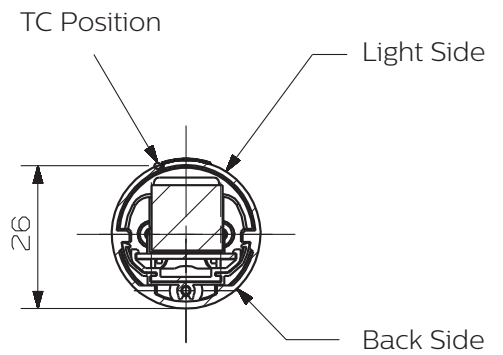
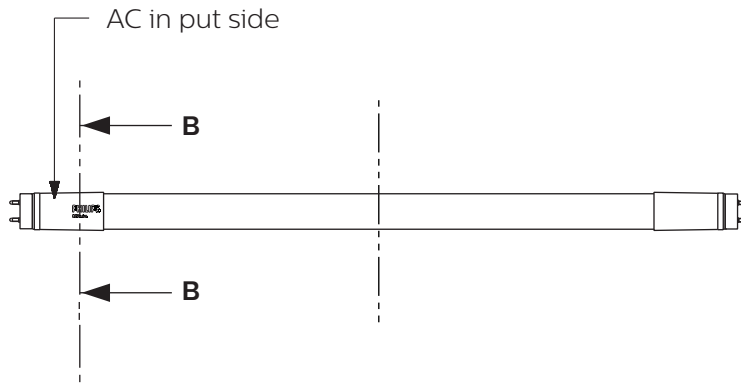
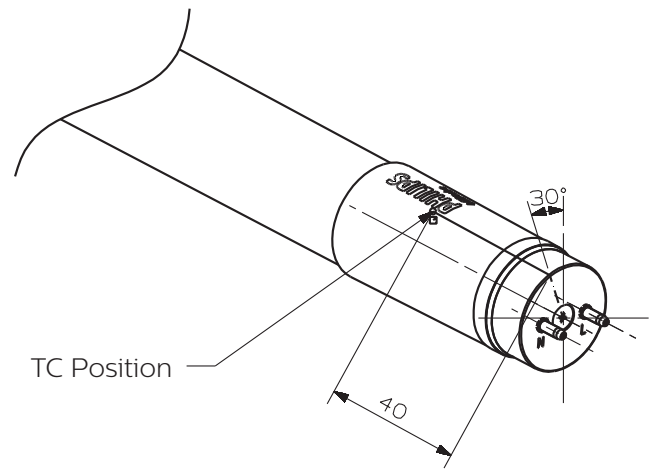
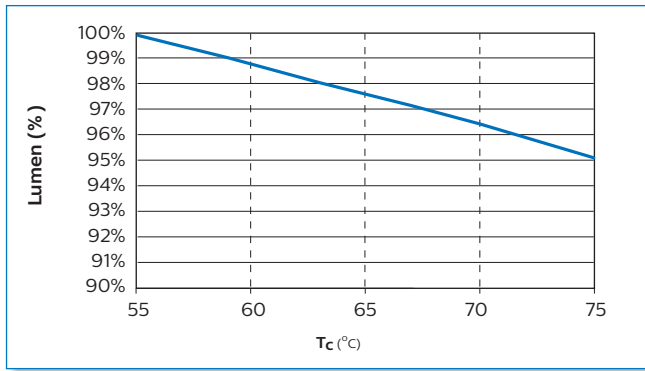


Philips MASTER LEDtube has a lifetime of 50,000 hours, defined as the number of hours when 50% of a large group of identical lamps below 70% of its initial lumen (F50L70).

Temperature

MASTER LEDtube's excellent thermal design ensures low temperature during operating, which brings reliable and stable product performance throughout life time.

Operating temperature	T operating	min -20°C	max +45°C
Storage temperature	T storage	min -40°C	max +65°C
Maximum case temperature of tube at Tamb.=25°C	T case		+60°C



SECTION B-B

Approbation & Certificates

Philips MASTER LEDtube is designed by strictly following applicable legislation and international standard. The product complies with **TUV, CE, KEMA, RoHS** and **REACH**.



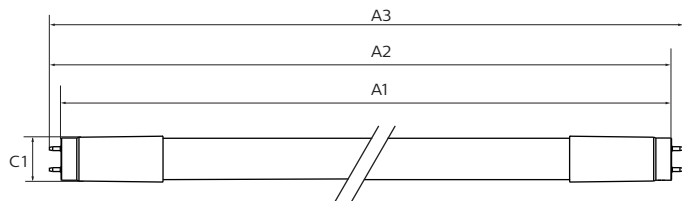
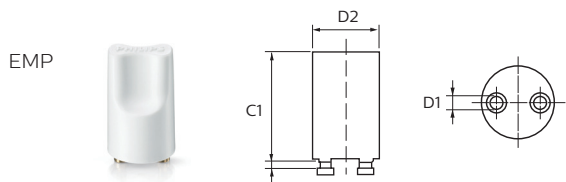
RoHS



Technical specification

10NC	Product Description	Wattage	Equivalent Fluorescent Wattage	Voltage	Cap	Length	Lifetime	Lumen output (Typical)	Color Temp	CRI
		(W)	(W)	(V)		(mm)	(Hrs)	(Lm)	(K)	(Typical*)
9290012995	MAS LEDtube 600mm HO 8W830 T8	8	18	220-240	G13	600	50000	1000	3000	83
9290012996	MAS LEDtube 600mm HO 8W840 T8	8	18	220-240	G13	600	50000	1050	4000	83
9290012997	MAS LEDtube 600mm HO 8W865 T8	8	18	220-240	G13	600	50000	1050	6500	83

* Minimum CRI is 80



Accessories

MASTER LEDtube

Protector EMP

871829172930300

Dimensions (mm)

Product	A1	A2	A3	C1	D1	D2
1200mm	1198	1205	1212	27.9	-	-
EMP	-	-	-	34.5	3	21.5

Quick Installation Guide

Please take the time to read this quick installation guide. Philips Lighting does not accept liability for any damages for installations not performed according to this guide or not performed by a professional electrician.

Installation Warning

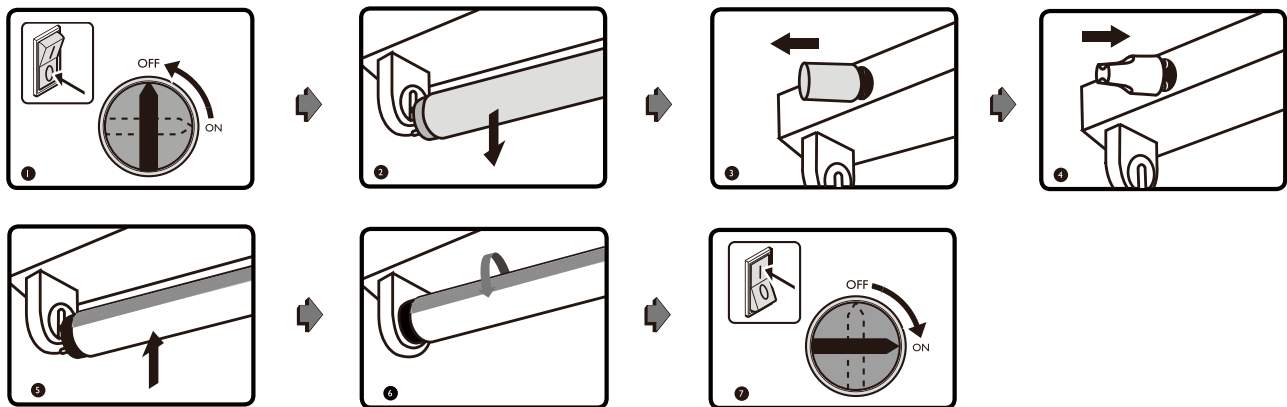
- Check whether the system is an EM (Electro Magnetic) ballast based system or an HF (High Frequency electronic) ballast based system, and follow the appropriate instructions accordingly. For new built luminaires follow section "New built luminaires".
- Product is not dimmable
- Always switch off the power supply before commencing work
- Do not change the structure or any components of the product

Application Notes

- Operation temperature range is between -20°C and +45°C ambience.
- Only to apply in dry indoor usage and environments.
- Not intended for use with emergency light fixtures or exit light.
- For use in fixtures which consist of IEC compliant G13 bi-pin lamp holders which can support 500 gram.

Installation Guide

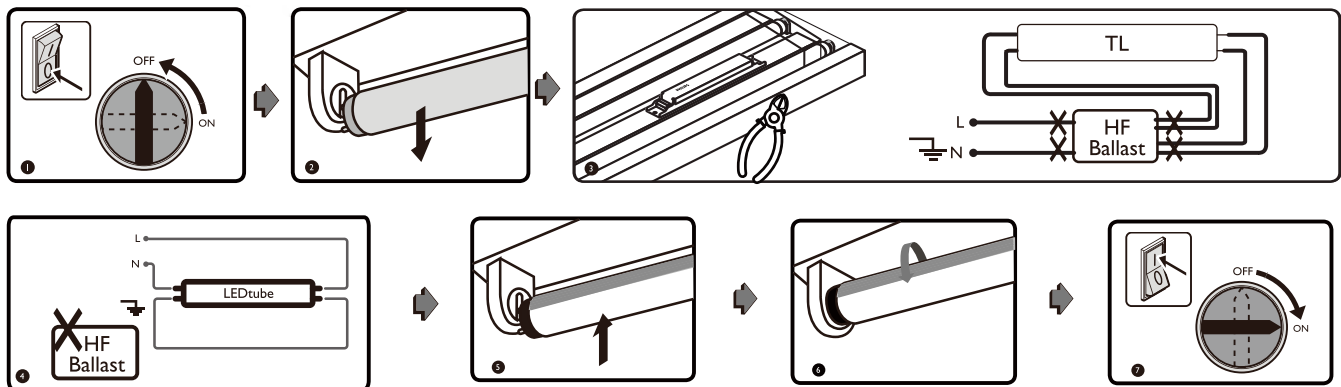
- EM ballast based system



For EM ballast installation please check if a power factor correcting capacitor is installed in the existing circuit. If yes, please follow the instruction below:

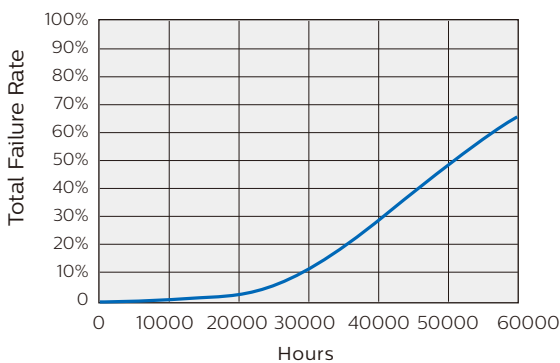
- Please simply remove the capacitor if it is parallel with the EM ballast

- HF ballast based system

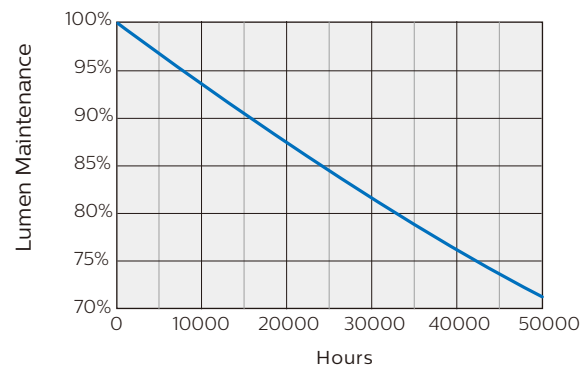


OEM Guideline

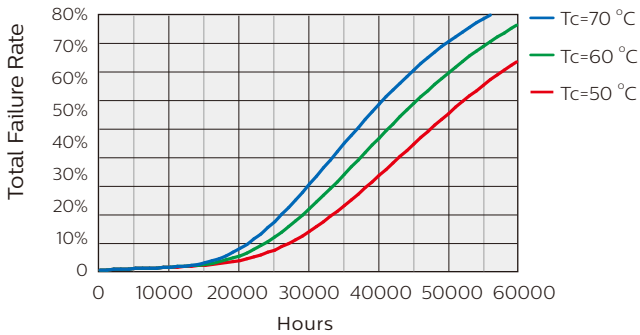
Lifetime vs. Failure Rate @ Ta 25 °C



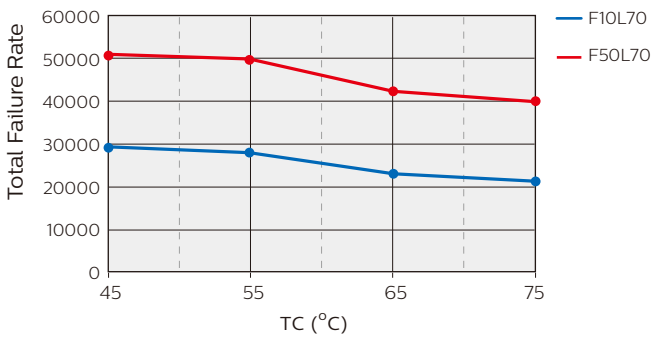
Lifetime and Lumen Maintenance



Failure Rate vs.
Lifetime vs. Tcase



Lifetime vs. Tcase



© 2017 Philips Lighting
All rights reserved. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice. No liability will be accepted by the publisher for any consequence of its use. Publication thereof does not convey nor imply any license under patent or other industrial or intellectual property rights.



Philips MASTER

LEDtube 1200 mm High Output T8



PHILIPS



MASTER LEDtube is a reliable value-for-money LED lamp out of Philips lighting portfolio, incorporates frontier LED chips and other advanced technologies. The product helps customers achieve more than 60% energy saving and significant maintenance cost reduction by comparing to fluorescent lamps. It also helps generate natural and comfortable lighting effect, and to build up green and environment friendly image for our customers.

Product Features

Highly Reliable

- Reliable operation between -20°C to 45°C ambient temperature
- Rated 50,000 hours lifetime according to F50L70
- 200,000 switching cycles

Highly Comfortable

- CRI > 80
- Advanced optical design ensures a uniform light output and superior optical efficiency

Highly Energy Efficient

- Energy savings of more than 60%*

Highly Safe

- Protection circuit inside ensuring people's safety in case of mis-use, complying with IEC safety requirements
- Pass 4KV high-pot test, insulation & safety guaranteed
- Pass 1KV surge test (vs. IEC standard 500V), avoiding the damage caused by input voltage fluctuation and lightning strike

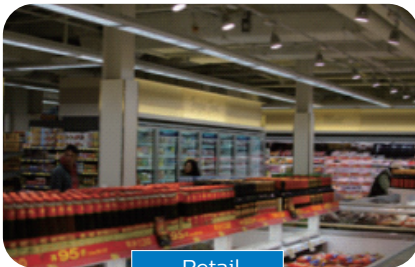
Perfect Fit

- 100% comply with IEC requirement on T8 dimension, fitting into fluorescent luminaire perfectly

Highly Environmental Friendly

- No mercury
- No breakage and pollution risk

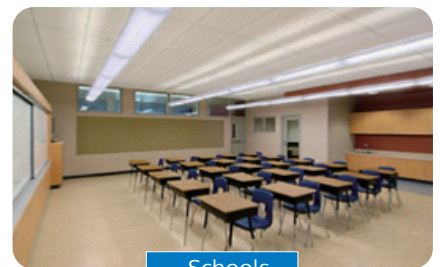
Application



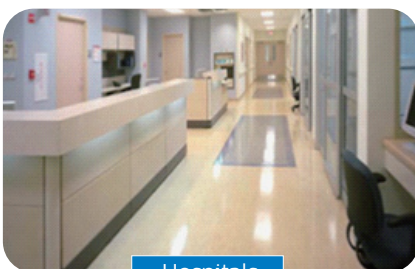
Retail



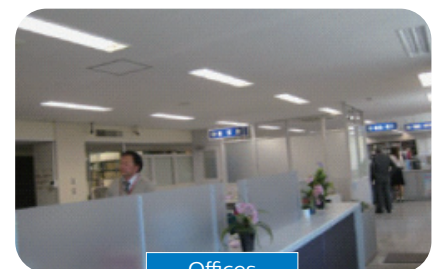
Industry



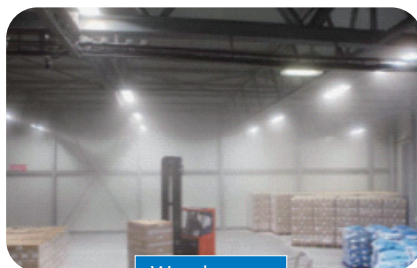
Schools



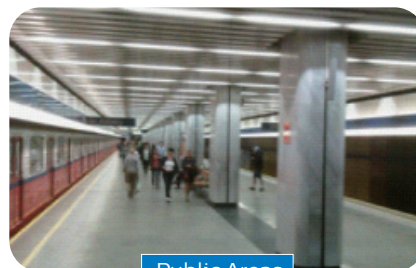
Hospitals



Offices



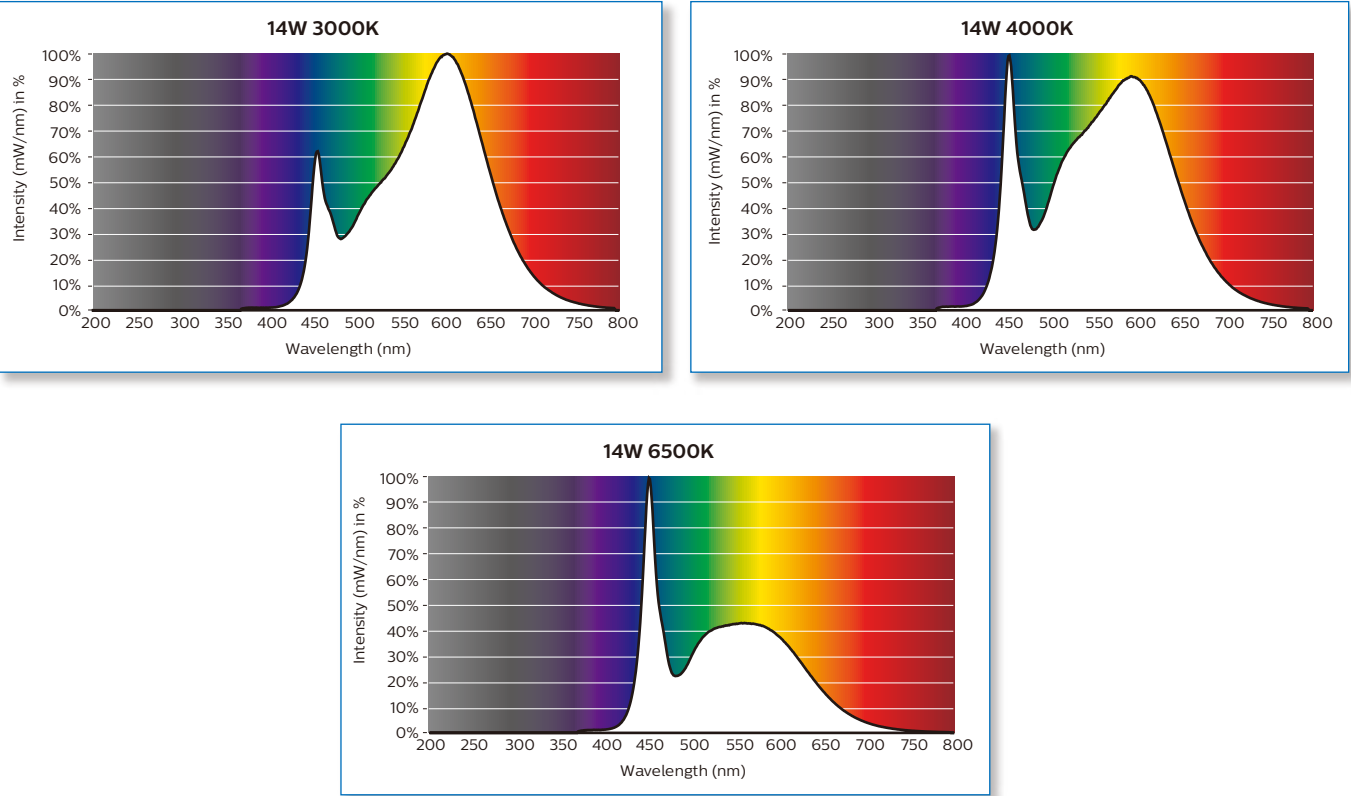
Warehouses



Public Areas

Spectral Power Distribution

Light may be precisely characterized by giving the power of the light at each wavelength in the visible spectrum. The resulting spectralpower distribution (SPD) shows that the MASTER LEDtube HO 1200 mm contains the visible light only. No harm from UV and IR.

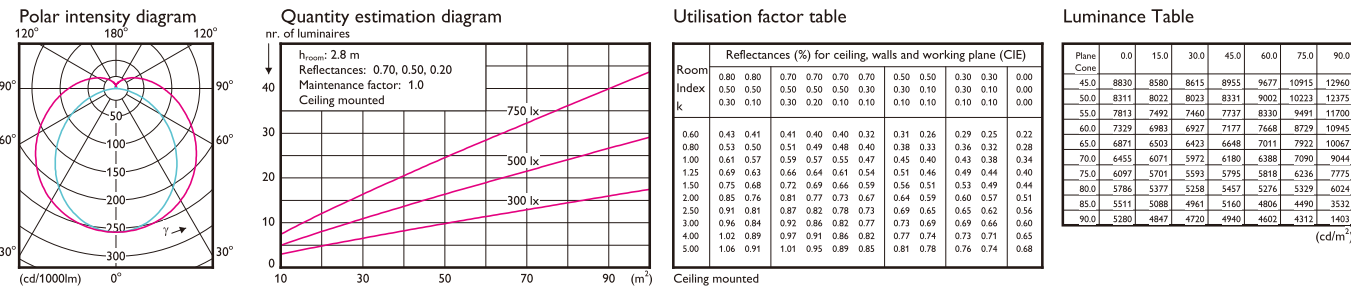


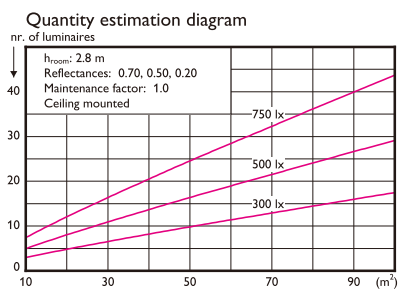
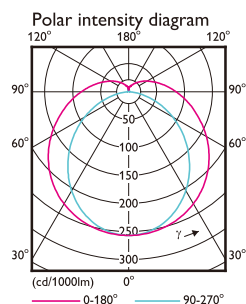
Photometric Diagrams

The Photometric diagram depicting the top down mounted lighting fixtures in a specific area and a numerical grid of the maintained lighting levels that the fixture will produce in that specific area. Pictures below show the photometric diagrams of a typical Philips MASTER LEDtube's application.

1 x TLED 14W 3000K

1 x 2000 lm





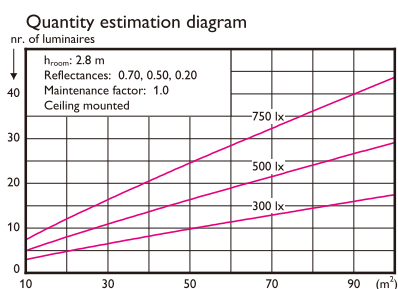
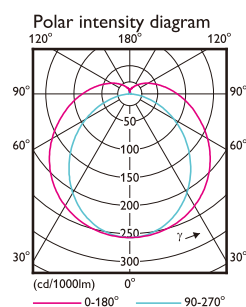
Utilisation factor table

Room Index k	Reflectances (%) for ceiling, walls and working plane (CIE)															
	0.80	0.80	0.70	0.70	0.70	0.70	0.50	0.50	0.30	0.30	0.00	0.50	0.50	0.50	0.30	0.00
0.60	0.43	0.41	0.41	0.40	0.40	0.32	0.31	0.26	0.29	0.25	0.22	0.30	0.26	0.26	0.22	0.22
0.80	0.53	0.50	0.51	0.49	0.48	0.40	0.38	0.33	0.36	0.32	0.28	0.40	0.36	0.36	0.32	0.28
1.00	0.61	0.57	0.59	0.57	0.55	0.47	0.45	0.40	0.43	0.38	0.34	0.45	0.41	0.41	0.38	0.34
1.25	0.69	0.63	0.66	0.64	0.61	0.54	0.51	0.46	0.49	0.44	0.40	0.50	0.46	0.46	0.44	0.40
1.50	0.75	0.68	0.72	0.69	0.66	0.59	0.56	0.51	0.53	0.49	0.44	0.55	0.51	0.51	0.49	0.44
2.00	0.85	0.76	0.81	0.77	0.73	0.67	0.64	0.59	0.60	0.57	0.51	0.65	0.60	0.60	0.57	0.51
2.50	0.91	0.81	0.87	0.82	0.78	0.73	0.69	0.65	0.65	0.62	0.56	0.70	0.65	0.65	0.62	0.56
3.00	0.96	0.84	0.92	0.86	0.82	0.77	0.73	0.69	0.69	0.66	0.60	0.75	0.69	0.69	0.66	0.60
4.00	1.02	0.89	0.97	0.91	0.86	0.82	0.77	0.74	0.73	0.71	0.65	0.80	0.74	0.74	0.71	0.65
5.00	1.06	0.91	1.01	0.95	0.89	0.85	0.81	0.78	0.76	0.74	0.68	0.84	0.78	0.78	0.74	0.68

Ceiling mounted

Luminance Table

Plane	0.0	15.0	30.0	45.0	60.0	75.0	90.0
Cone							
45.0	8830	8580	8615	8955	9677	10915	12960
50.0	8311	8022	8023	8331	9002	10223	12375
55.0	7813	7492	7460	7737	8330	9491	11700
60.0	7329	6983	6927	7177	7668	8729	10945
65.0	6871	6503	6423	6648	7011	7922	10067
70.0	6455	6071	5972	6180	6388	7090	9044
75.0	6097	5701	5593	5795	5818	6236	7775
80.0	5786	5377	5258	5457	5276	5329	6024
85.0	5511	5088	4961	5160	4806	4490	5332
90.0	5280	4847	4720	4940	4602	4312	5103

(cd/m²)

Utilisation factor table

Room Index k	Reflectances (%) for ceiling, walls and working plane (CIE)															
	0.80	0.80	0.70	0.70	0.70	0.70	0.50	0.50	0.30	0.30	0.00	0.50	0.50	0.50	0.30	0.00
0.60	0.43	0.41	0.41	0.40	0.40	0.32	0.31	0.26	0.29	0.25	0.22	0.30	0.26	0.26	0.22	0.22
0.80	0.53	0.50	0.51	0.49	0.48	0.40	0.38	0.33	0.36	0.32	0.28	0.40	0.36	0.36	0.32	0.28
1.00	0.61	0.57	0.59	0.57	0.55	0.47	0.45	0.40	0.43	0.38	0.34	0.45	0.41	0.41	0.38	0.34
1.25	0.69	0.63	0.66	0.64	0.61	0.54	0.51	0.46	0.49	0.44	0.40	0.50	0.46	0.46	0.44	0.40
1.50	0.75	0.68	0.72	0.69	0.66	0.59	0.56	0.51	0.53	0.49	0.44	0.55	0.51	0.51	0.49	0.44
2.00	0.85	0.76	0.81	0.77	0.73	0.67	0.64	0.59	0.60	0.57	0.51	0.65	0.60	0.60	0.57	0.51
2.50	0.91	0.81	0.87	0.82	0.78	0.73	0.69	0.65	0.65	0.62	0.56	0.70	0.65	0.65	0.62	0.56
3.00	0.96	0.84	0.92	0.86	0.82	0.77	0.73	0.69	0.69	0.66	0.60	0.75	0.69	0.69	0.66	0.60
4.00	1.02	0.89	0.97	0.91	0.86	0.82	0.77	0.74	0.73	0.71	0.65	0.80	0.74	0.74	0.71	0.65
5.00	1.06	0.91	1.01	0.95	0.89	0.85	0.81	0.78	0.76	0.74	0.68	0.84	0.78	0.78	0.74	0.68

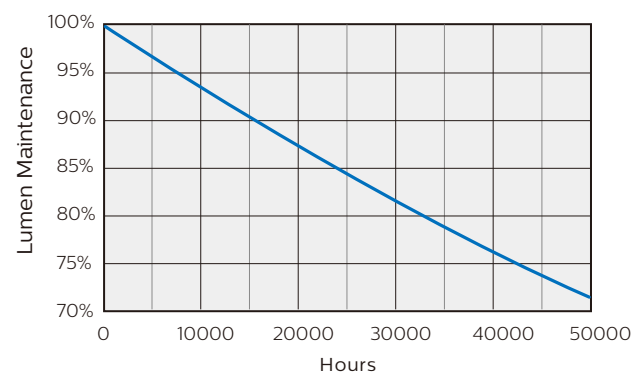
Ceiling mounted

Luminance Table

Plane	0.0	15.0	30.0	45.0	60.0	75.0	90.0
Cone							
45.0	8830	8580	8615	8955	9677	10915	12960
50.0	8311	8022	8023	8331	9002	10223	12375
55.0	7813	7492	7460	7737	8330	9491	11700
60.0	7329	6983	6927	7177	7668	8729	10945
65.0	6871	6503	6423	6648	7011	7922	10067
70.0	6455	6071	5972	6180	6388	7090	9044
75.0	6097	5701	5593	5795	5818	6236	7775
80.0	5786	5377	5258	5457	5276	5329	6024
85.0	5511	5088	4961	5160	4806	4490	5332
90.0	5280	4847	4720	4940	4602	4312	5103

(cd/m²)

Lifetime and Lumen Maintenance

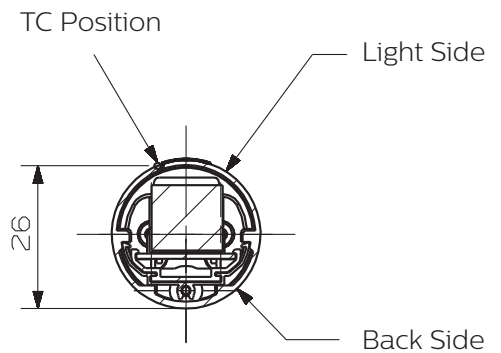
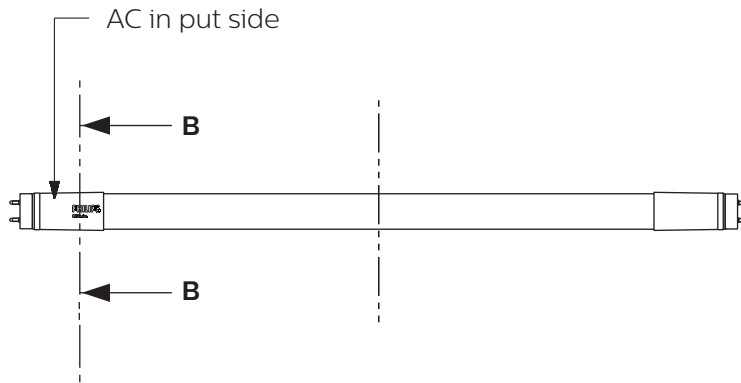
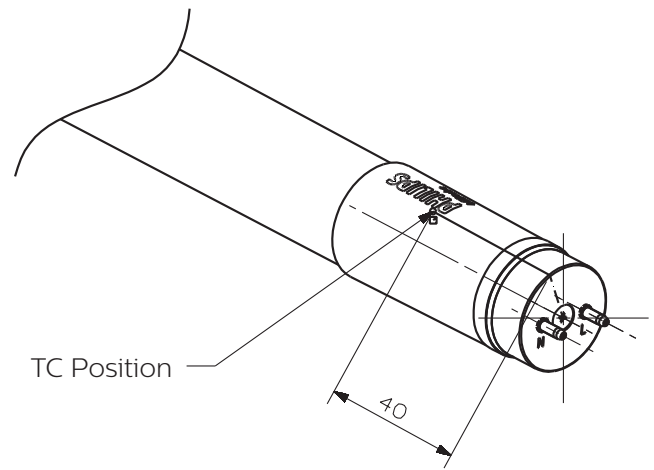
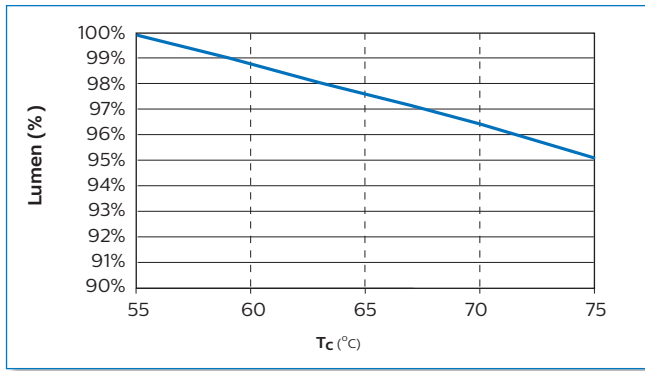


Philips MASTER LEDtube has a lifetime of 50,000 hours, defined as the number of hours when 50% of a large group of identical lamps below 70% of its initial lumen (F50L70).

Temperature

MASTER LEDtube's excellent thermal design ensures low temperature during operating, which brings reliable and stable product performance throughout life time.

Operating temperature	T operating	min -20°C	max +45°C
Storage temperature	T storage	min -40°C	max +65°C
Maximum case temperature of tube at Tamb.=25°C	T case		+60°C



SECTION B-B

Approbation & Certificates

Philips MASTER LEDtube is designed by strictly following applicable legislation and international standard. The product complies with **TUV, CE, KEMA, RoHS** and **REACH**.



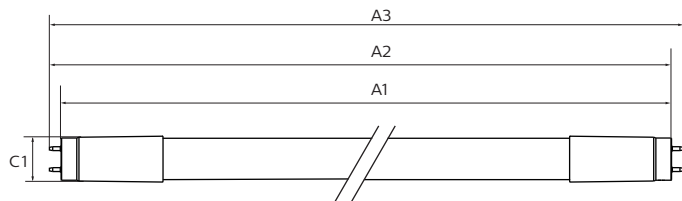
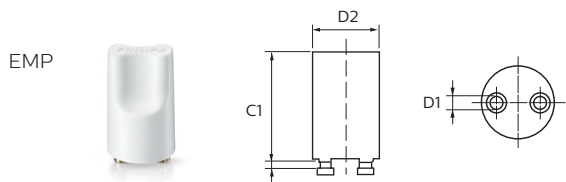
RoHS



Technical specification

10NC	Product Description	Wattage	Equivalent Fluorescent Wattage	Voltage	Cap	Length	Lifetime	Lumen output (Typical)	Color Temp	CRI
		(W)	(W)	(V)		(mm)	(Hrs)	(Lm)	(K)	(Typical*)
9290012992	MAS LEDtube 1200mm HO 14W830 T8	14	36	220-240	G13	1200	50000	2000	3000	83
9290012993	MAS LEDtube 1200mm HO 14W840 T8	14	36	220-240	G13	1200	50000	2100	4000	83
9290012994	MAS LEDtube 1200mm HO 14W865 T8	14	36	220-240	G13	1200	50000	2100	6500	83

* Minimum CRI is 80



Accessories

MASTER LEDtube

Protector EMP

871829172930300

Dimensions (mm)

Product	A1	A2	A3	C1	D1	D2
1200mm	1198	1205	1212	27.9	-	-
EMP	-	-	-	34.5	3	21.5

Quick Installation Guide

Please take the time to read this quick installation guide. Philips Lighting does not accept liability for any damages for installations not performed according to this guide or not performed by a professional electrician.

Installation Warning

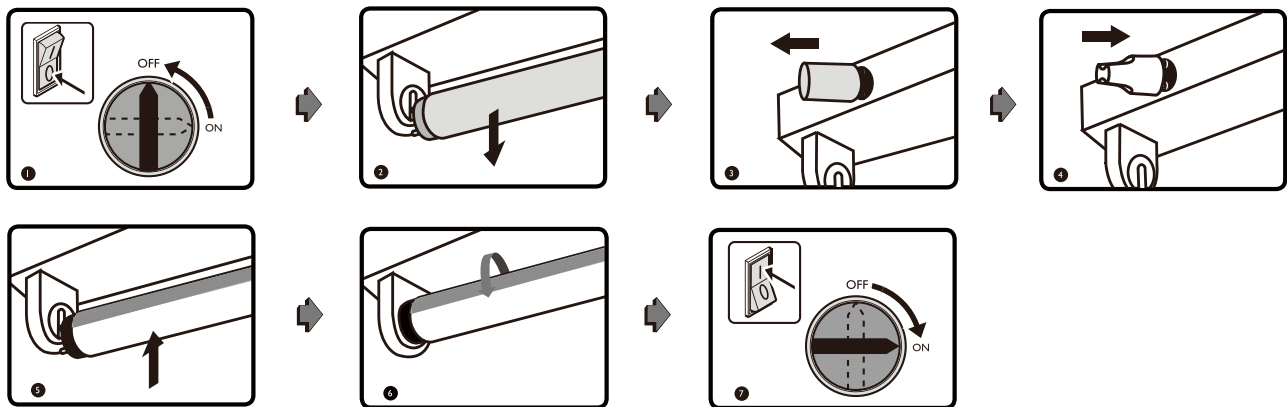
- Check whether the system is an EM (Electro Magnetic) ballast based system or an HF (High Frequency electronic) ballast based system, and follow the appropriate instructions accordingly. For new built luminaires follow section "New built luminaires".
- Product is not dimmable
- Always switch off the power supply before commencing work
- Do not change the structure or any components of the product

Application Notes

- Operation temperature range is between -20°C and +45°C ambience.
- Only to apply in dry indoor usage and environments.
- Not intended for use with emergency light fixtures or exit light.
- For use in fixtures which consist of IEC compliant G13 bi-pin lamp holders which can support 500 gram.

Installation Guide

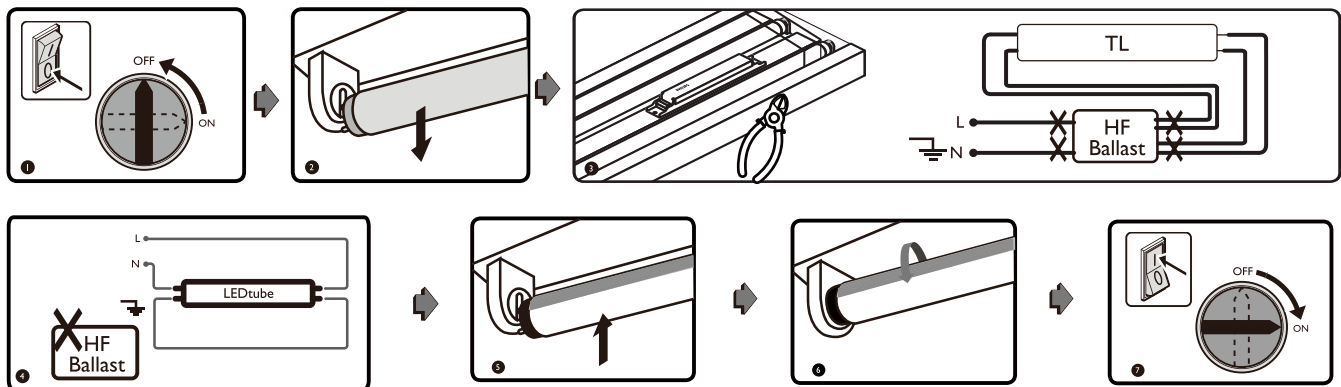
- EM ballast based system



For EM ballast installation please check if a power factor correcting capacitor is installed in the existing circuit. If yes, please follow the instruction below:

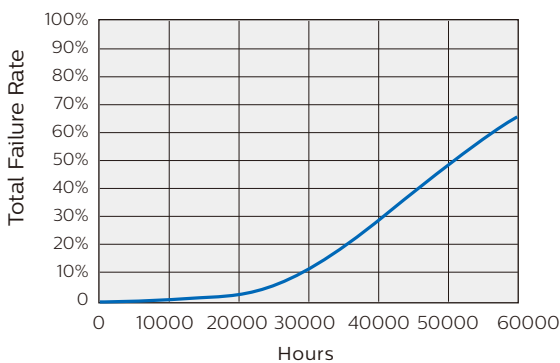
- Please simply remove the capacitor if it is parallel with the EM ballast

- HF ballast based system

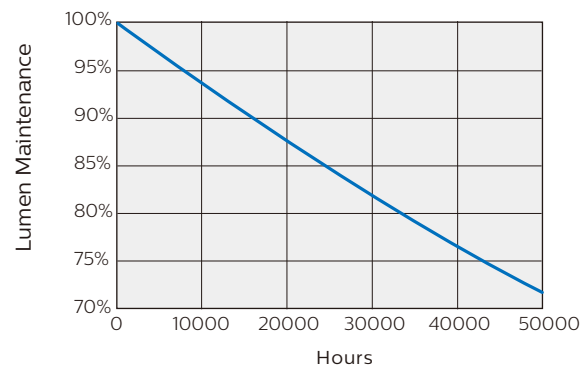


OEM Guideline

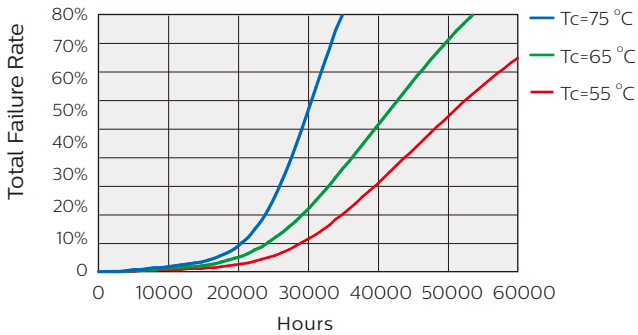
Lifetime vs. Failure Rate @ Ta 25 °C



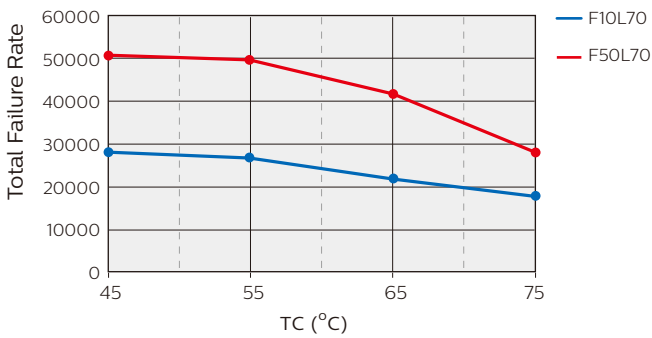
Lifetime and Lumen Maintenance



Failure Rate vs.
Lifetime vs. Tcase



Lifetime vs. Tcase



© 2017 Philips Lighting
All rights reserved. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice. No liability will be accepted by the publisher for any consequence of its use. Publication thereof does not convey nor imply any license under patent or other industrial or intellectual property rights.