



Philips MASTER LEDtube 1200 mm High Output

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
- 50,000 switching cycles

Highly Comfortable

- CRI = 83
- Advanced optical design ensures a uniform light output and superior optical efficiency

Highly Energy Efficient

- Energy savings of more than 55%*

* Based on comparison between 16W LEDtube and Philips TLD standard 36W(40~44W system power when working with Electro Magnetic Ballasts)

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

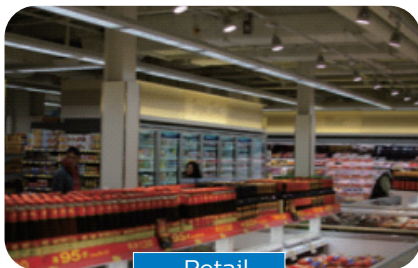
Perfect Fit

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

Highly Environmental Friendly

- No mercury
- No breakage and pollution risk

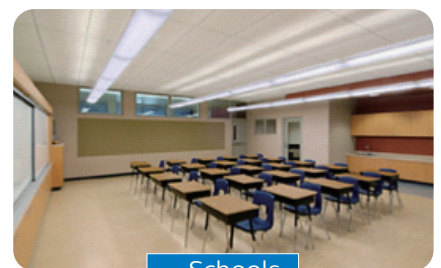
Application



Retail



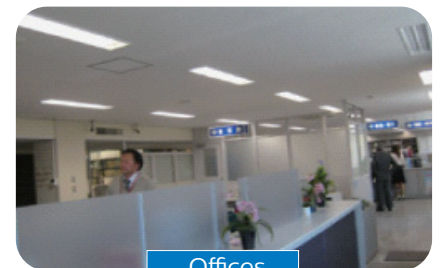
Industry



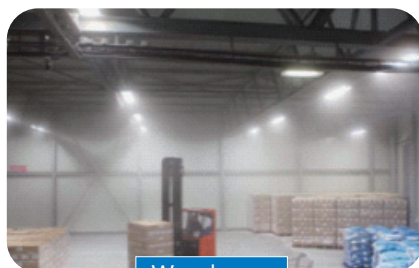
Schools



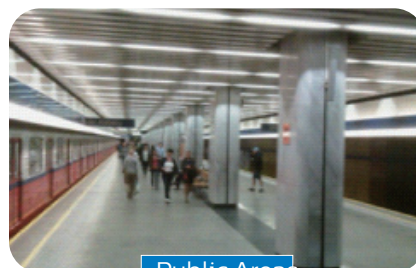
Hospitals



Offices



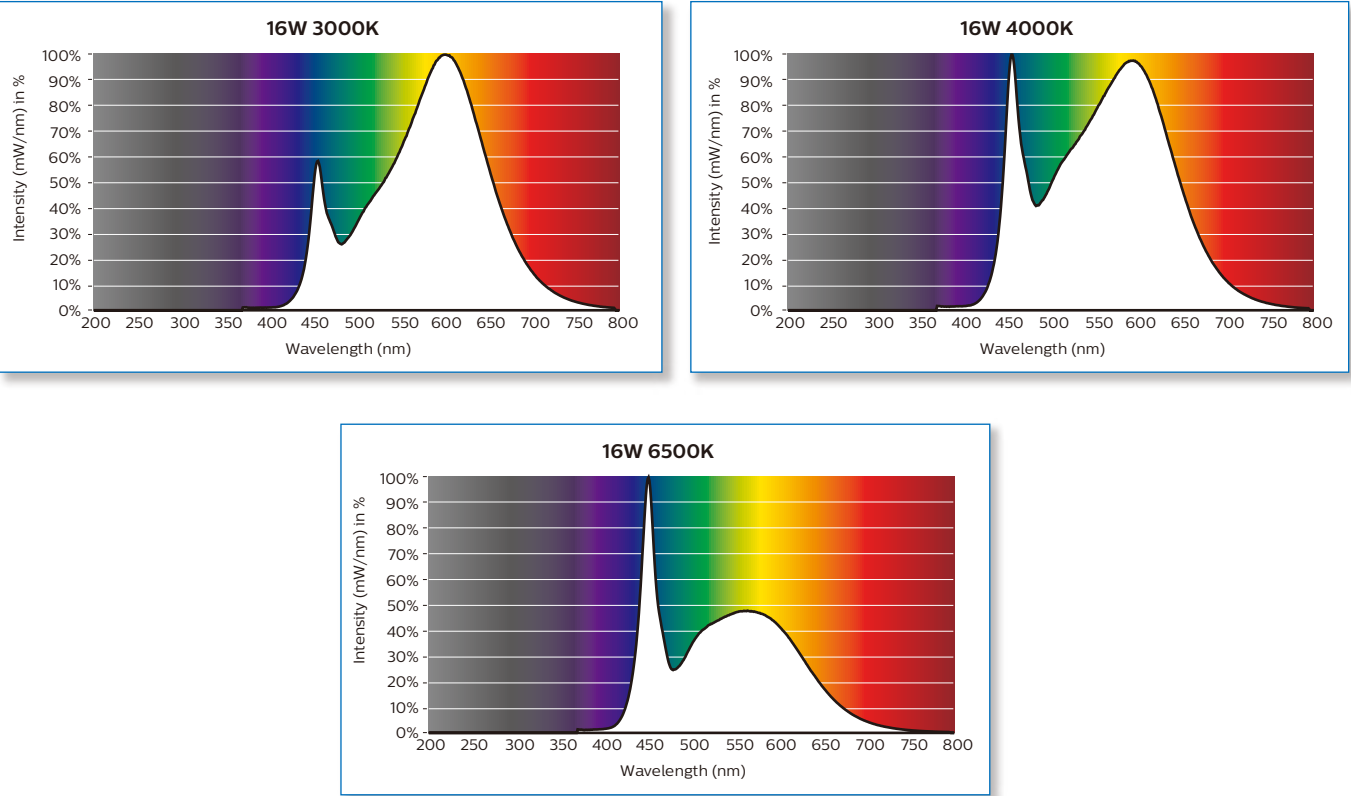
Warehouses



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.

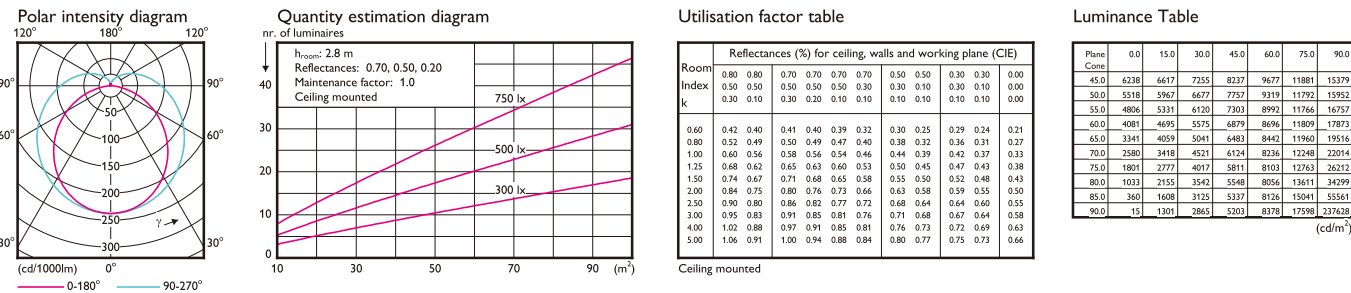


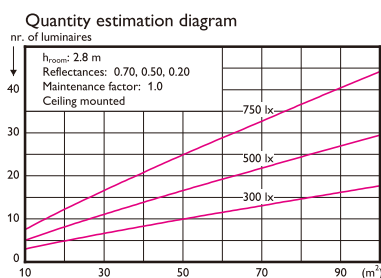
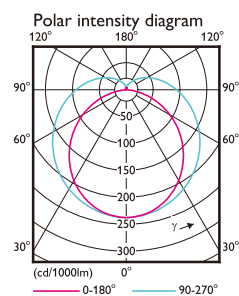
Photometric Diagrams

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 16W 3000K

1 x 2000 lm





Utilisation factor table

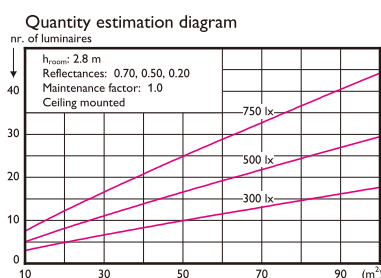
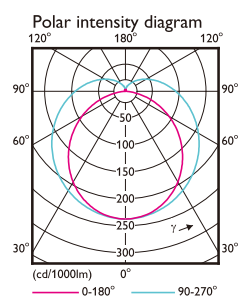
Room Index k	Reflectances (%) for ceiling, walls and working plane (CIE)																	
	0.80	0.80	0.70	0.70	0.70	0.70	0.50	0.50	0.30	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.60	0.42	0.40	0.41	0.40	0.39	0.32	0.30	0.25	0.29	0.24	0.21	0.18	0.15	0.12	0.10	0.08	0.06	0.04
0.80	0.52	0.49	0.50	0.49	0.47	0.40	0.38	0.32	0.36	0.31	0.27	0.23	0.19	0.16	0.13	0.10	0.08	0.05
1.00	0.60	0.56	0.58	0.56	0.54	0.46	0.44	0.39	0.42	0.37	0.33	0.28	0.24	0.20	0.17	0.14	0.11	0.07
1.25	0.68	0.62	0.65	0.63	0.60	0.53	0.50	0.45	0.47	0.43	0.38	0.33	0.29	0.25	0.21	0.18	0.14	0.09
1.50	0.74	0.67	0.71	0.68	0.65	0.58	0.55	0.50	0.52	0.48	0.43	0.37	0.33	0.29	0.25	0.21	0.17	0.12
2.00	0.84	0.75	0.80	0.76	0.73	0.66	0.63	0.58	0.59	0.55	0.50	0.44	0.40	0.36	0.32	0.28	0.23	0.17
2.50	0.90	0.80	0.86	0.82	0.77	0.72	0.68	0.64	0.64	0.60	0.55	0.48	0.44	0.40	0.36	0.32	0.27	0.20
3.00	0.95	0.83	0.91	0.85	0.81	0.76	0.71	0.68	0.67	0.64	0.58	0.51	0.47	0.43	0.39	0.35	0.30	0.23
4.00	1.02	0.88	0.97	0.91	0.85	0.81	0.76	0.73	0.72	0.69	0.63	0.55	0.51	0.47	0.43	0.39	0.34	0.26
5.00	1.06	0.91	1.00	0.94	0.88	0.84	0.80	0.77	0.75	0.73	0.66	0.57	0.53	0.49	0.45	0.41	0.36	0.28

Ceiling mounted

Luminance Table

Plane	0.0	15.0	30.0	45.0	60.0	75.0	90.0
Cone	45.0	6549	6948	7618	8649	10161	12476
45.0	6549	6948	7618	8649	10161	12476	16148
50.0	5795	6265	7012	8145	9784	12381	16749
55.0	5045	5596	6425	7668	9441	12354	17595
60.0	4283	4929	5853	7222	9130	12398	18765
65.0	3507	4261	5294	6808	8864	12557	20489
70.0	2710	3589	4747	6430	8648	12862	23118
75.0	1891	2916	4219	6103	8509	13402	27524
80.0	1084	2262	3718	5823	8456	14289	36009
85.0	379	1690	3283	5606	8535	15795	58337
90.0	18	1368	3009	5462	8795	18476	249490

(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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.60	0.42	0.40	0.41	0.40	0.39	0.32	0.30	0.25	0.29	0.24	0.21	0.18	0.15	0.12	0.10	0.08	0.06	0.04
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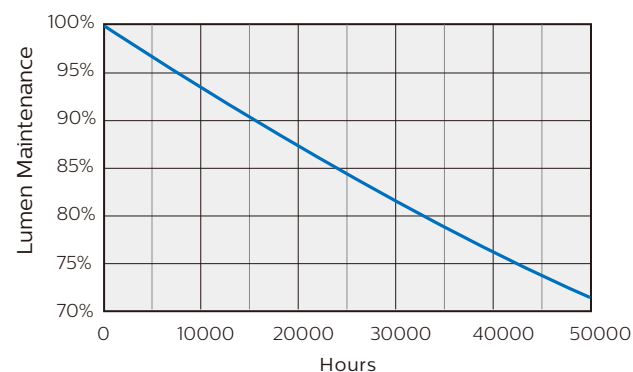
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Luminance Table

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(cd/m²)

Lifetime and Lumen Maintenance

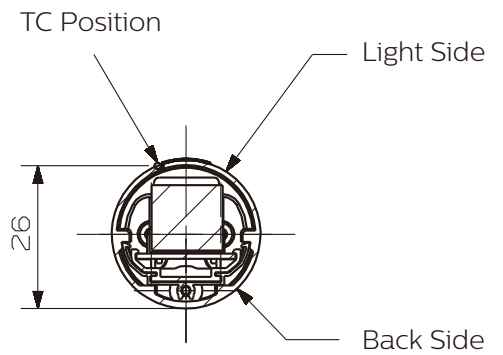
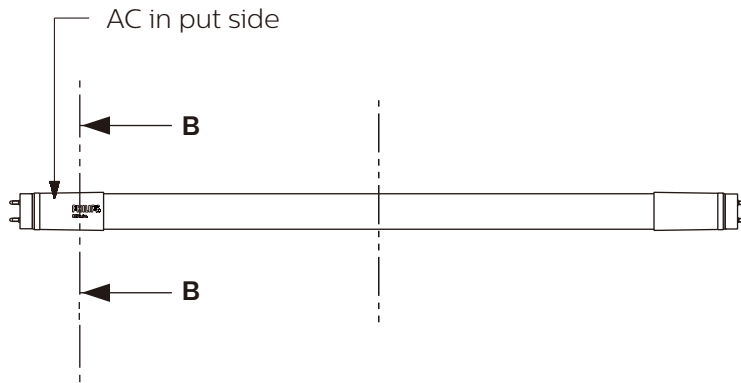
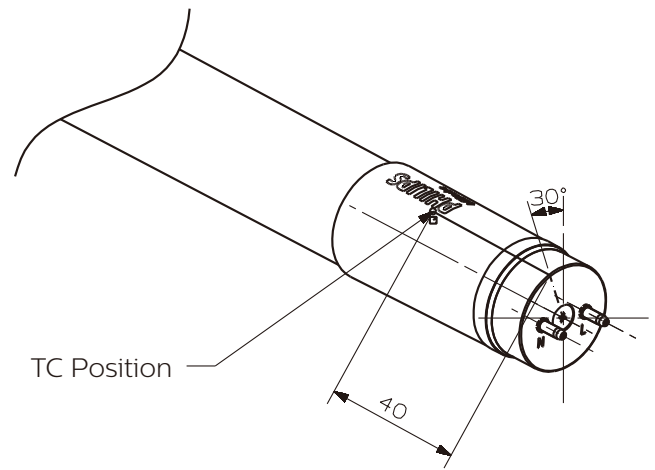
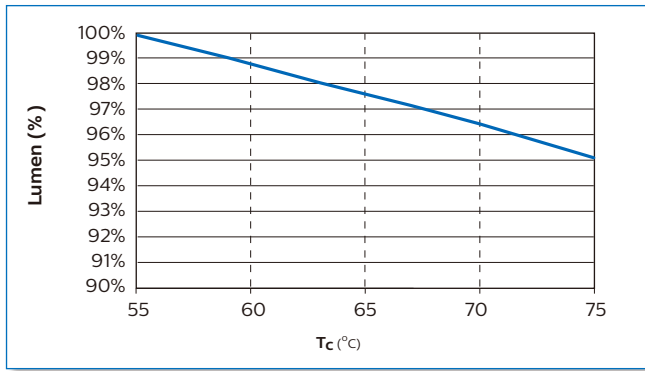


PHILIPS MASTER LEDtube has a lifetime of 50,000 hours, defined as the number of hours when 50% of a large group of identical lamps below 70% of its initial lumen (F50L70).

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**.

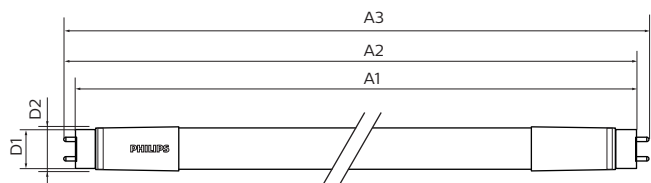
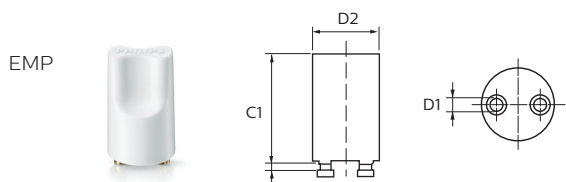


RoHS

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*)
929001249008	MAS LEDtube 1200mm 16W830 T8 I	16	36	220-240	G13	1200	50000	2000	3000	83
929001249108	MAS LEDtube 1200mm 16W840 T8 I	16	36	220-240	G13	1200	50000	2100	4000	83
929001249208	MAS LEDtube 1200mm 16W865 T8 I	16	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	1206	1213	-	25.68	28
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

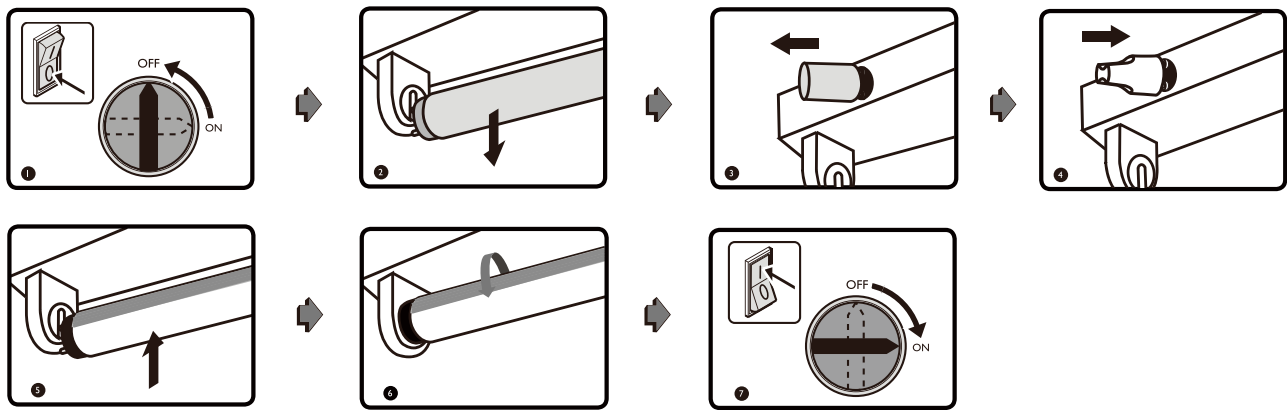
- Check whether the system is an EM (Electro Magnetic) ballast based system or an HF (High Frequency electronic) ballast based system, and follow the appropriate instructions accordingly. For new built luminaires follow section "New built luminaires".
- Product is not dimmable
- Always switch off the 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

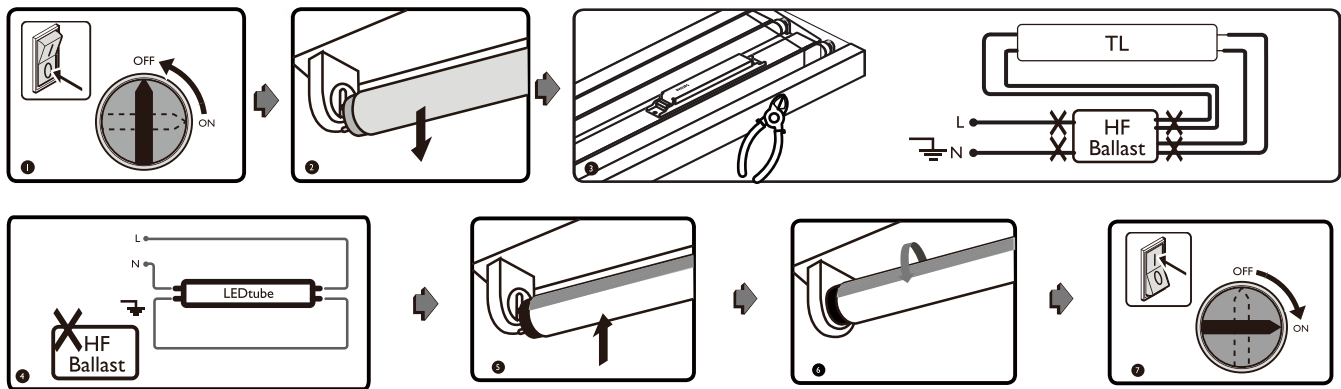
• EM ballast based system



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:

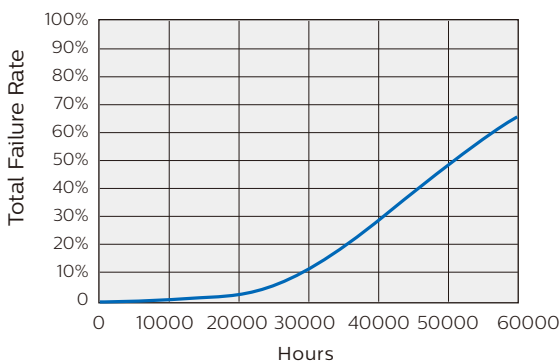
- Please simply remove the capacitor if it is parallel with the EM ballast

• HF ballast based system

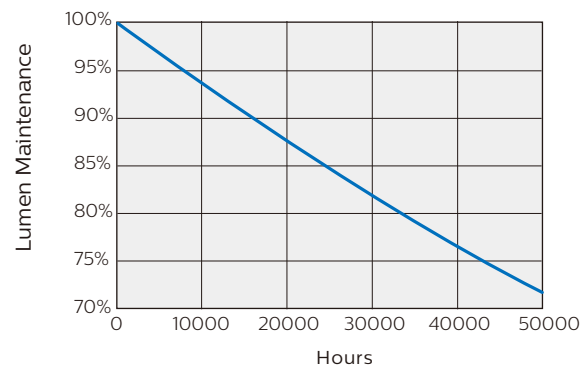


OEM Guideline

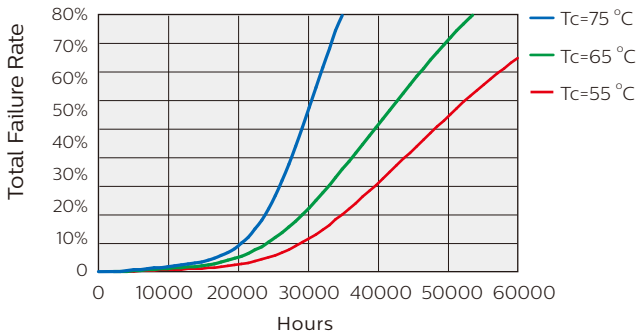
Lifetime vs. Failure Rate @ Ta 25 °C



Lifetime and Lumen Maintenance



Failure Rate vs.
Lifetime vs. Tcase



Lifetime vs. Tcase

