



Philips MASTER

LEDtube 600 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 50% 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 50%

Highly Environmental Friendly

- No mercury
- No breakage and pollution risk

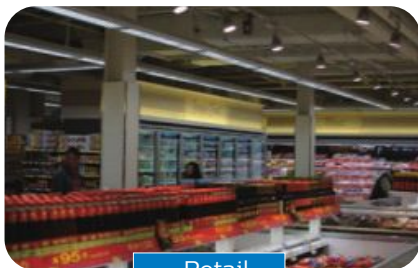
Highly Safe

- 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

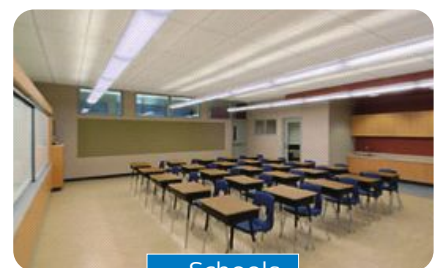
Application



Retail



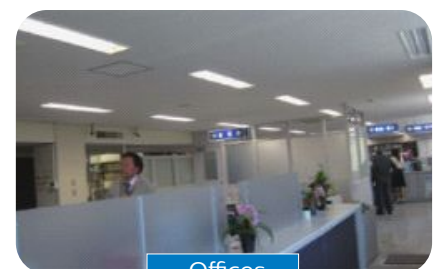
Industry



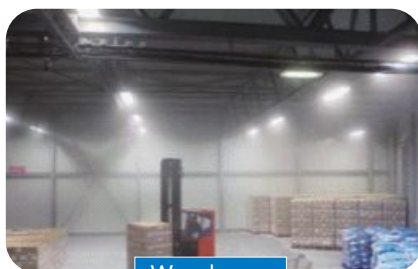
Schools



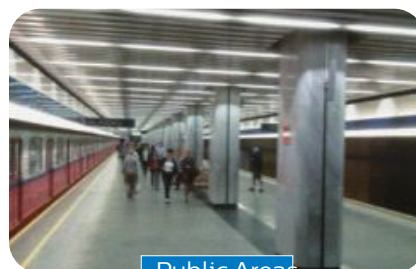
Hospitals



Offices



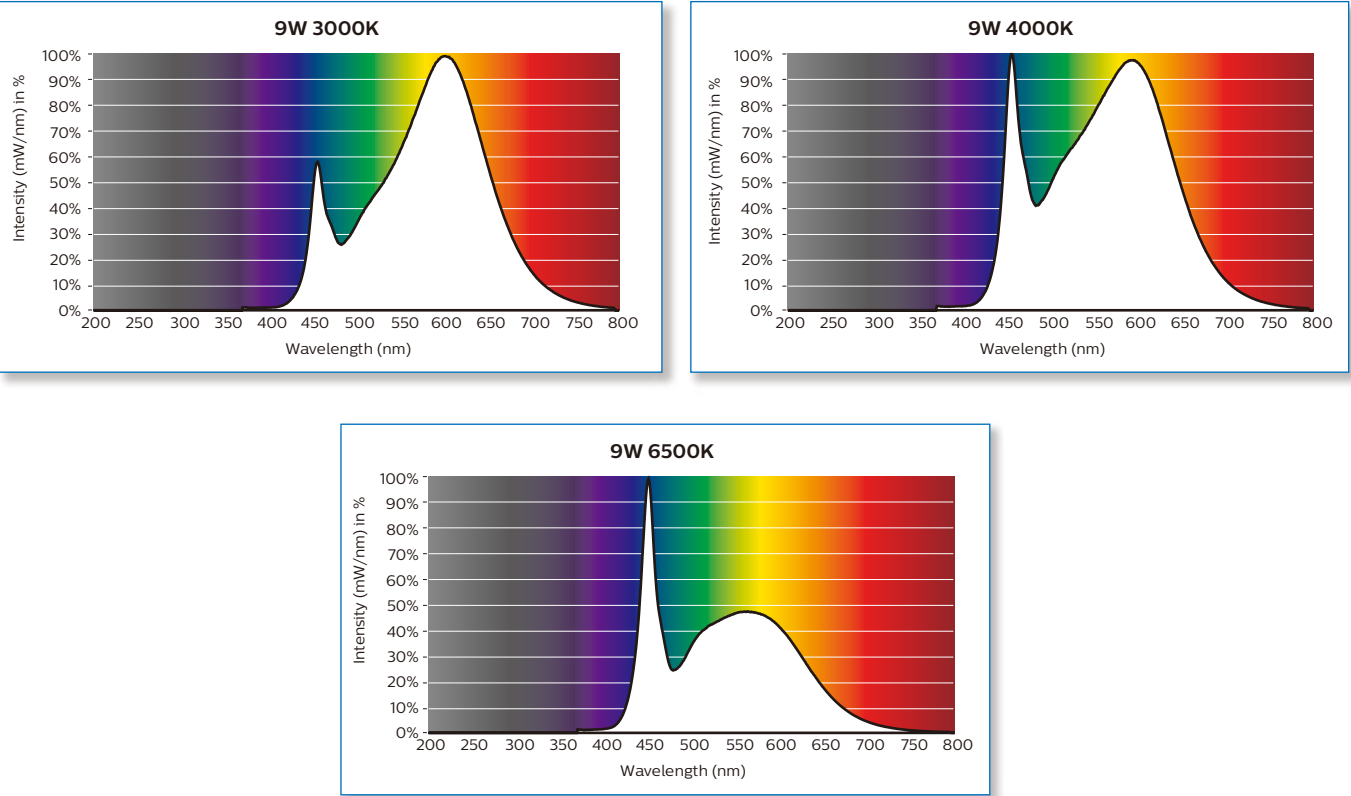
Warehouses



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 contains the visible light only. No harm from UV and IR.

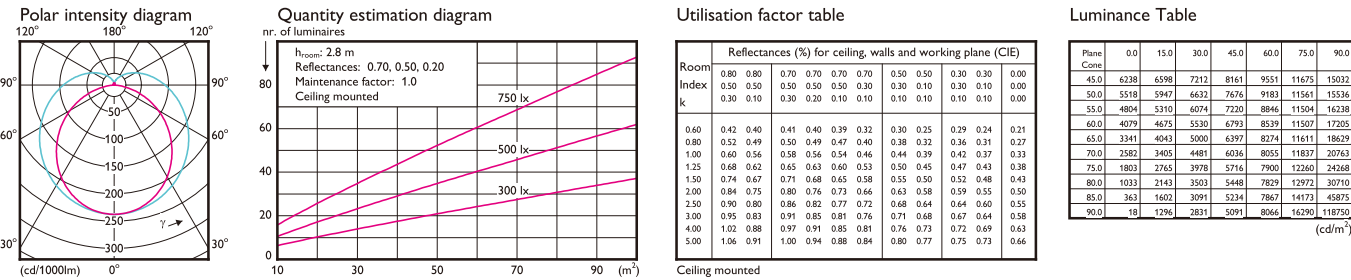


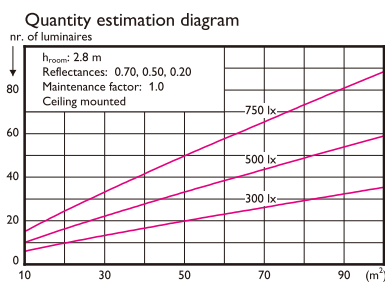
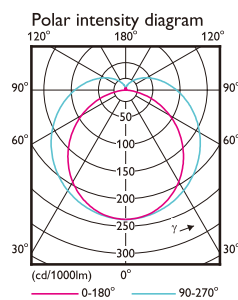
Photometric Diagrams

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 9W 3000K

1 x 1000 lm





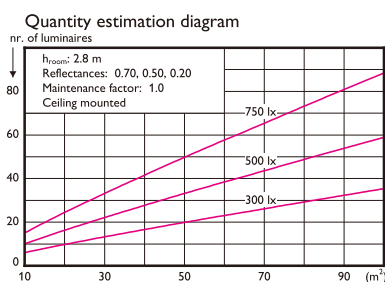
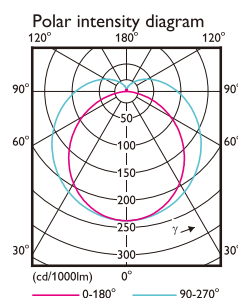
Utilisation factor table

Room Index k	Reflectances (%) for ceiling, walls and working plane (CIE)															
	0.80				0.70				0.50				0.30			
	0.80	0.50	0.30	0.10	0.80	0.50	0.30	0.10	0.80	0.50	0.30	0.10	0.80	0.50	0.30	0.10
0.60	0.42	0.40	0.41	0.40	0.39	0.32	0.30	0.25	0.29	0.24	0.21	0.21	0.29	0.24	0.21	0.21
0.80	0.52	0.49	0.50	0.49	0.47	0.40	0.38	0.32	0.36	0.31	0.27	0.27	0.36	0.31	0.27	0.27
1.00	0.60	0.56	0.58	0.56	0.54	0.46	0.44	0.39	0.42	0.37	0.33	0.33	0.42	0.37	0.33	0.33
1.25	0.68	0.62	0.65	0.63	0.60	0.53	0.50	0.45	0.47	0.43	0.38	0.38	0.47	0.43	0.38	0.38
1.50	0.74	0.67	0.71	0.68	0.65	0.58	0.55	0.50	0.52	0.48	0.43	0.43	0.52	0.48	0.43	0.43
2.00	0.84	0.75	0.80	0.76	0.73	0.66	0.63	0.58	0.59	0.55	0.50	0.50	0.64	0.60	0.55	0.55
2.50	0.90	0.80	0.86	0.82	0.77	0.72	0.68	0.64	0.64	0.60	0.55	0.55	0.72	0.68	0.63	0.63
3.00	0.95	0.83	0.91	0.85	0.81	0.76	0.71	0.68	0.67	0.64	0.58	0.58	0.76	0.73	0.69	0.69
4.00	1.02	0.88	0.97	0.91	0.85	0.81	0.76	0.73	0.72	0.69	0.63	0.63	0.80	0.77	0.75	0.75
5.00	1.06	0.91	1.00	0.94	0.88	0.84	0.80	0.77	0.75	0.73	0.66	0.66	0.80	0.77	0.75	0.75

Ceiling mounted

Luminance Table

Plane	0.0	15.0	30.0	45.0	60.0	75.0	90.0
Cone							
45.0	6549	6927	7571	8567	10028	12260	15788
50.0	5797	6246	6965	8060	9641	12137	16308
55.0	5047	5578	6380	7583	9289	12078	17046
60.0	4283	4910	5806	7132	8965	12081	18064
65.0	3507	4243	5247	6712	8685	12191	19563
70.0	2708	3572	4702	6334	8456	12431	21812
75.0	1891	2902	4176	6003	8297	12874	25483
80.0	1084	2250	3677	5718	8219	13623	32255
85.0	379	1680	3244	5494	8260	14885	48191
90.0	18	1359	2969	5340	8466	17106	124745

(cd/m²)

Utilisation factor table

Room Index k	Reflectances (%) for ceiling, walls and working plane (CIE)															
	0.80				0.70				0.50				0.30			
	0.80	0.50	0.30	0.10	0.80	0.50	0.30	0.10	0.80	0.50	0.30	0.10	0.80	0.50	0.30	0.10
0.60	0.42	0.40	0.41	0.40	0.39	0.32	0.30	0.25	0.29	0.24	0.21	0.21	0.29	0.24	0.21	0.21
0.80	0.52	0.49	0.50	0.49	0.47	0.40	0.38	0.32	0.36	0.31	0.27	0.27	0.36	0.31	0.27	0.27
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2.50	0.90	0.80	0.86	0.82	0.77	0.72	0.68	0.64	0.64	0.60	0.55	0.55	0.72	0.68	0.63	0.63
3.00	0.95	0.83	0.91	0.85	0.81	0.76	0.71	0.68	0.67	0.64	0.58	0.58	0.76	0.73	0.69	0.69
4.00	1.02	0.88	0.97	0.91	0.85	0.81	0.76	0.73	0.72	0.69	0.63	0.63	0.80	0.77	0.75	0.75
5.00	1.06	0.91	1.00	0.94	0.88	0.84	0.80	0.77	0.75	0.73	0.66	0.66	0.80	0.77	0.75	0.75

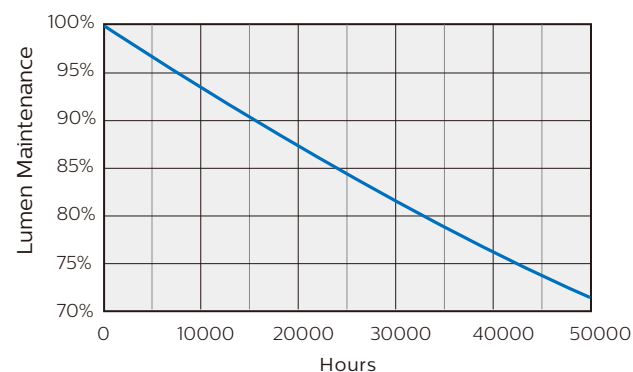
Ceiling mounted

Luminance Table

Plane	0.0	15.0	30.0	45.0	60.0	75.0	90.0
Cone							
45.0	6549	6927	7571	8567	10028	12260	15788
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65.0	3507	4243	5247	6712	8685	12191	19563
70.0	2708	3572	4702	6334	8456	12431	21812
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80.0	1084	2250	3677	5718	8219	13623	32255
85.0	379	1680	3244	5494	8260	14885	48191
90.0	18	1359	2969	5340	8466	17106	124745

(cd/m²)

Lifetime and Lumen Maintenance

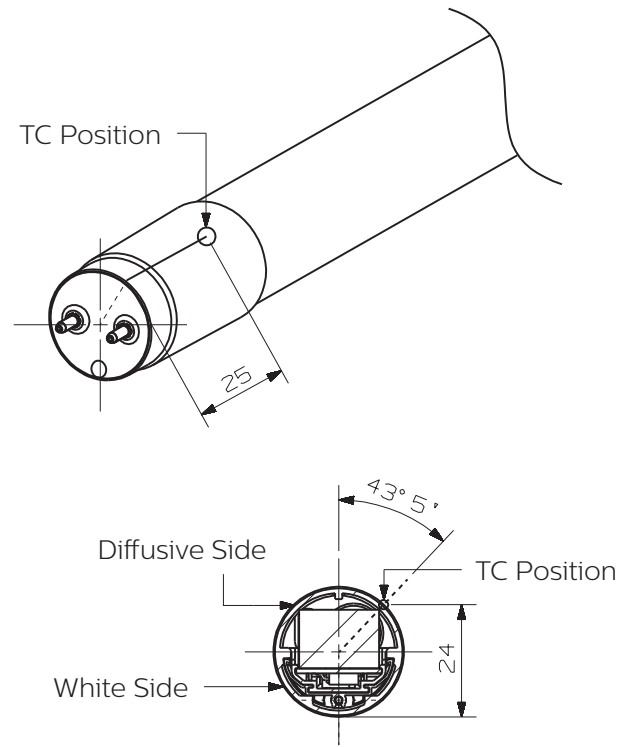
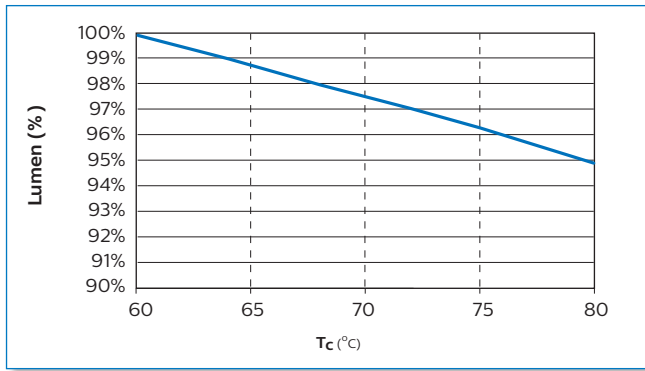


PHILIPS MASTER LEDtube has a lifetime of 50,000 hours, defined as the number of hours when 50% of a large group of identical lamps below 70% of its initial lumen (F50L70).

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**.

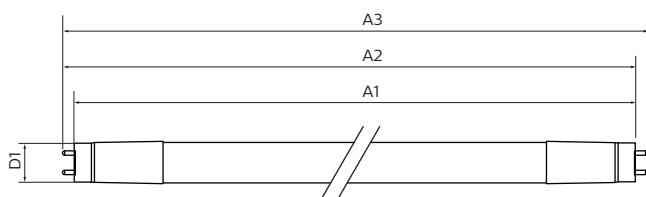


RoHS

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*)
9290012678	MAS LEDtube 600mm 9W830 T8 I	9	18	220-240	G13	600	50000	1000	3000	83
9290012679	MAS LEDtube 600mm 9W840 T8 I	9	18	220-240	G13	600	50000	1050	4000	83
9290012680	MAS LEDtube 600mm 9W865 T8 I	9	18	220-240	G13	600	50000	1050	6500	83

* Minimum CRI is 80



Dimensions (mm)

Product	A1	A2	A3	D1
600mm	588.6	595.7	602.8	27.8

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

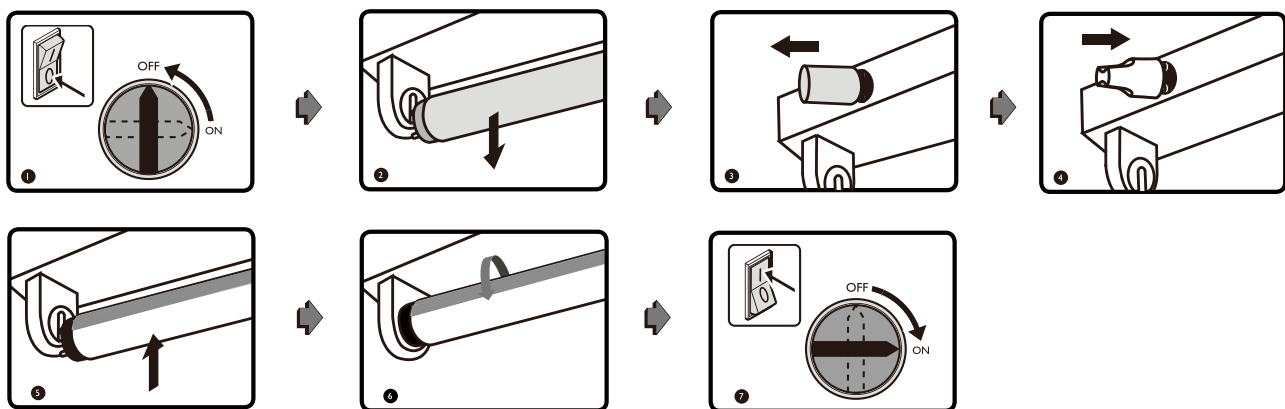
- Check whether the system is an EM (Electro Magnetic) ballast based system or an HF (High Frequency electronic) ballast based system, and follow the appropriate instructions accordingly. For new built luminaries follow section "New built luminaries".
- Product is not dimmable
- Always switch off the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

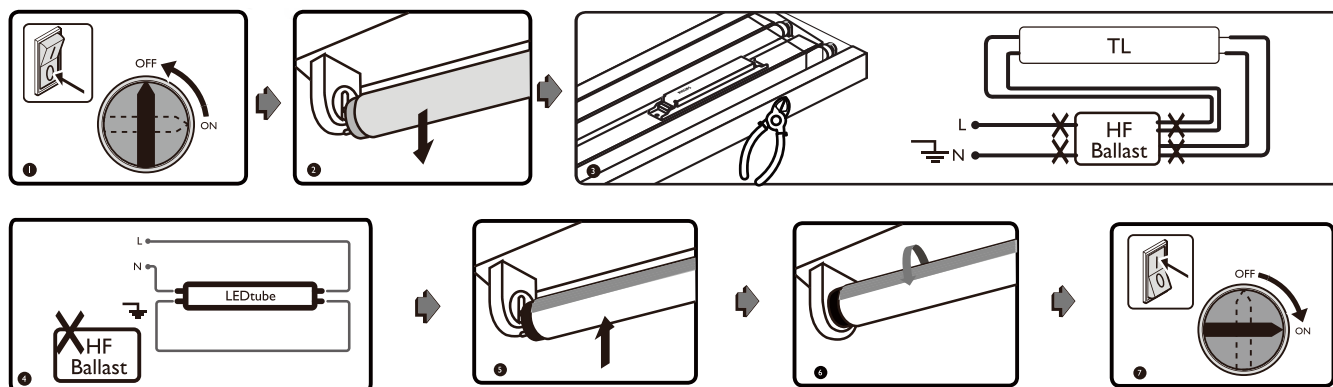
- EM ballast based system



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:

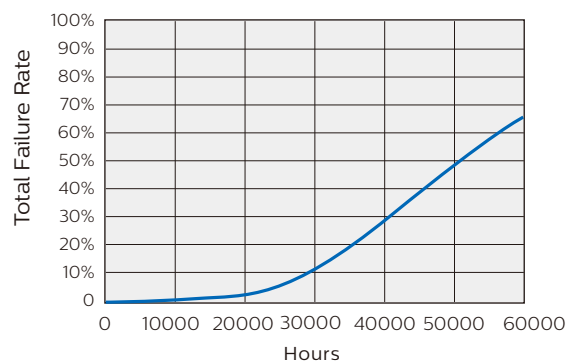
- Please simply remove the capacitor if it is parallel with the EM ballast

• HF ballast based system

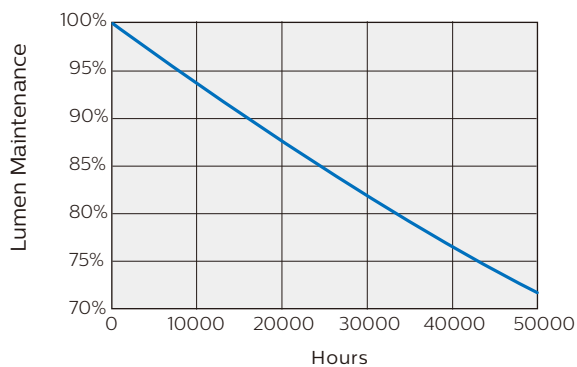


OEM Guideline

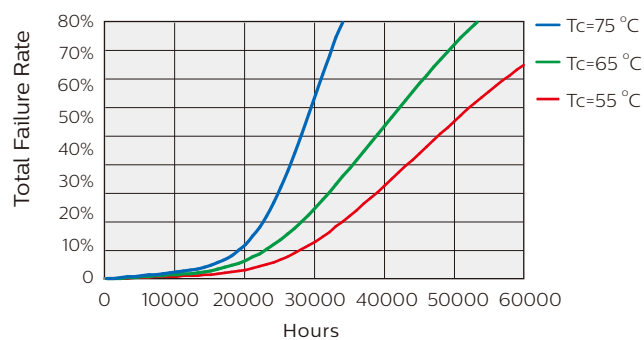
Lifetime vs. Failure Rate @ Ta 25 °C



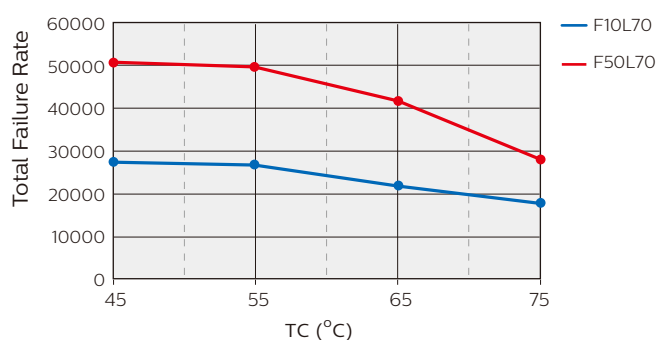
Lifetime and Lumen Maintenance



Failure Rate vs.
Lifetime vs. Tcase



Lifetime vs. Tcase



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08/2016
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