



Philips Master LEDtube 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 70% 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 average life of 50,000 hours (tested to B50 L70 requirement)
- 200,000 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 70%\*

\* Based on comparison between 10.5W Master LEDtube standard and Philips TLD standard or super 80 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

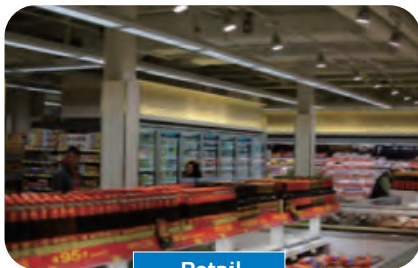
### Highly Fit

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

### Highly Environmental Friendly

- No mercury
- No breakage and pollution risk

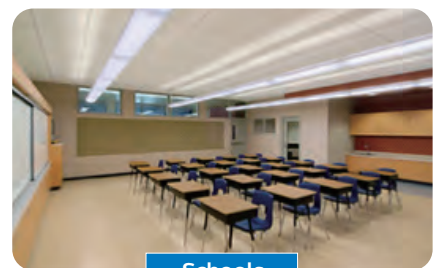
## Application



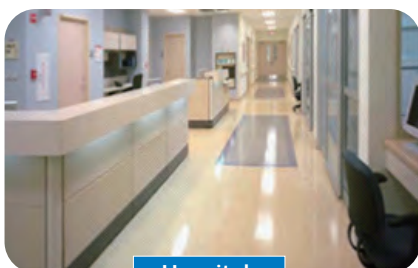
Retail



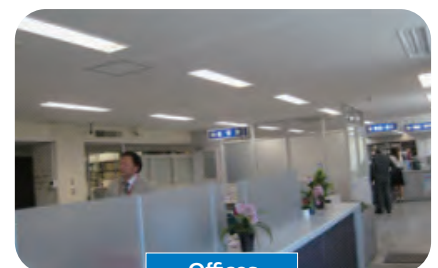
Industry



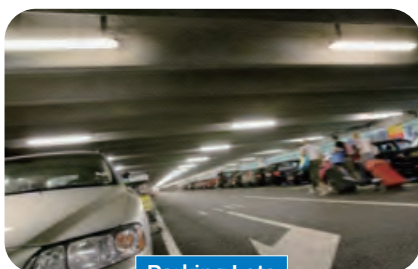
Schools



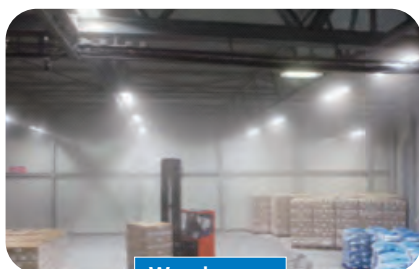
Hospitals



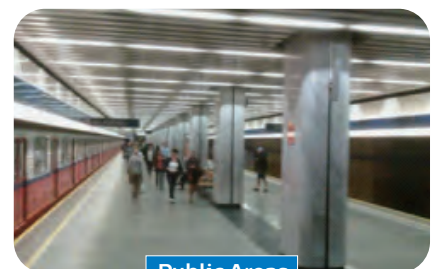
Offices



Parking Lots



Warehouses



Public Areas

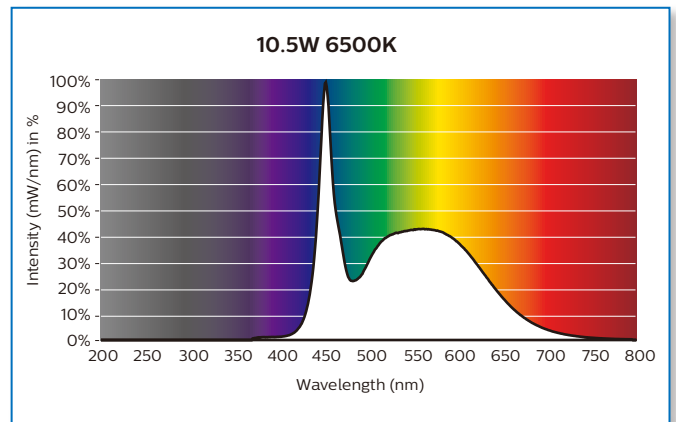
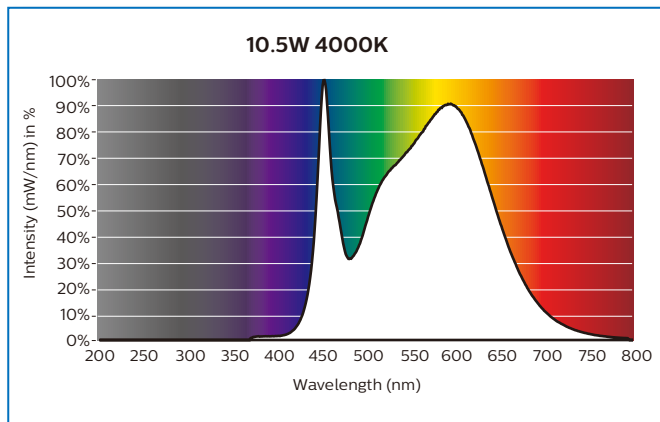
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## Spectral Power Distribution

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

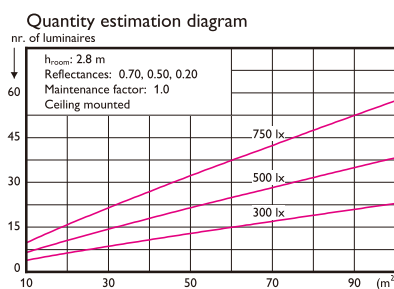
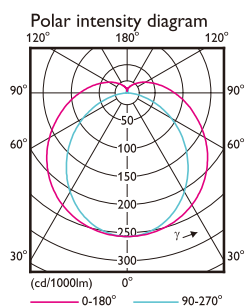


## Photometric Diagrams

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 10.5W 4000K 160D

1 x 1600 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
0.60	0.43	0.41	0.41	0.40	0.40	0.32	0.31	0.26	0.29	0.25	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	0.28
1.00	0.61	0.57	0.59	0.57	0.55	0.47	0.45	0.40	0.43	0.38	0.34	0.34
1.25	0.69	0.63	0.66	0.64	0.61	0.54	0.51	0.46	0.49	0.44	0.40	0.40
1.50	0.75	0.68	0.72	0.69	0.66	0.59	0.56	0.51	0.53	0.49	0.44	0.44
2.00	0.85	0.76	0.81	0.77	0.73	0.67	0.64	0.59	0.60	0.57	0.51	0.51
2.50	0.91	0.81	0.87	0.82	0.78	0.73	0.69	0.65	0.65	0.62	0.56	0.56
3.00	0.96	0.84	0.92	0.86	0.82	0.77	0.73	0.69	0.69	0.66	0.60	0.60
4.00	1.02	0.89	0.97	0.91	0.86	0.82	0.77	0.74	0.73	0.71	0.65	0.65
5.00	1.06	0.91	1.01	0.95	0.89	0.85	0.81	0.78	0.76	0.74	0.68	0.68

Ceiling mounted

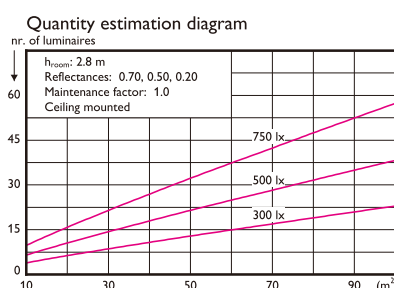
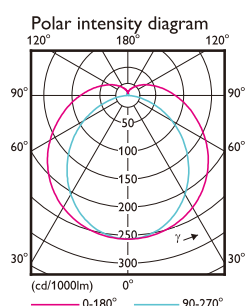
Luminance Table

Plane	0.0	15.0	30.0	45.0	60.0	75.0	90.0
Cone							
45.0	6728	6537	6564	6823	7373	8317	9875
50.0	6331	6112	6112	6347	6859	7789	9429
55.0	5954	5709	5684	5895	6346	7230	8913
60.0	5584	5321	5277	5468	5842	6649	8336
65.0	5236	4956	4895	5067	5343	6035	7666
70.0	4918	4625	4551	4709	4868	5404	6894
75.0	4644	4343	4261	4416	4433	4751	5924
80.0	4409	4097	4006	4157	4019	4059	4586
85.0	4198	3875	3778	3930	3661	3421	2696
90.0	4024	3694	3597	3763	3507	3290	1148

(cd/m<sup>2</sup>)

1 x TLED 10.5W 6500K 160D

1 x 1600 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
0.60	0.43	0.41	0.41	0.40	0.40	0.32	0.31	0.26	0.29	0.25	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	0.28
1.00	0.61	0.57	0.59	0.57	0.55	0.47	0.45	0.40	0.43	0.38	0.34	0.34
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3.00	0.96	0.84	0.92	0.86	0.82	0.77	0.73	0.69	0.69	0.66	0.60	0.60
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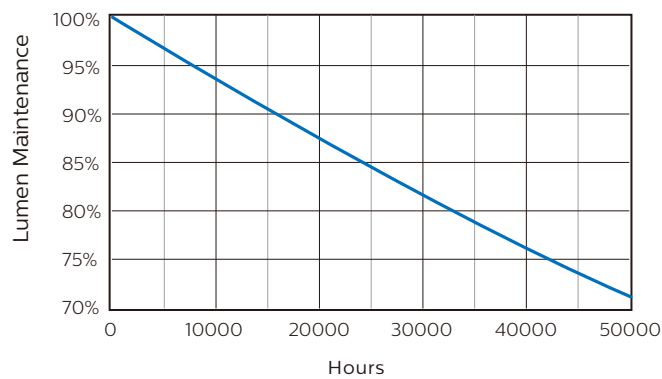
Ceiling mounted

Luminance Table

Plane	0.0	15.0	30.0	45.0	60.0	75.0	90.0
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45.0	6728	6537	6564	6823	7373	8317	9875
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75.0	4644	4343	4261	4416	4433	4751	5924
80.0	4409	4097	4006	4157	4019	4059	4586
85.0	4198	3875	3778	3930	3661	3421	2696
90.0	4024	3694	3597	3763	3507	3290	1148

(cd/m<sup>2</sup>)

## Lifetime and Lumen Maintenance

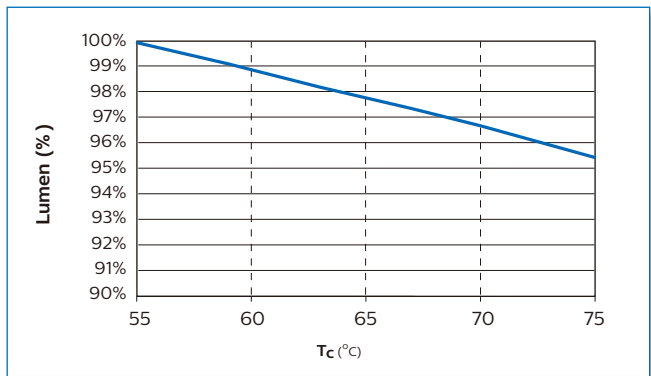


Philips Master LEDtube has a lifetime of 50,000 hours, defined as the number of hours when 50% of a large group of identical lamps below 70% of its initial lumens.

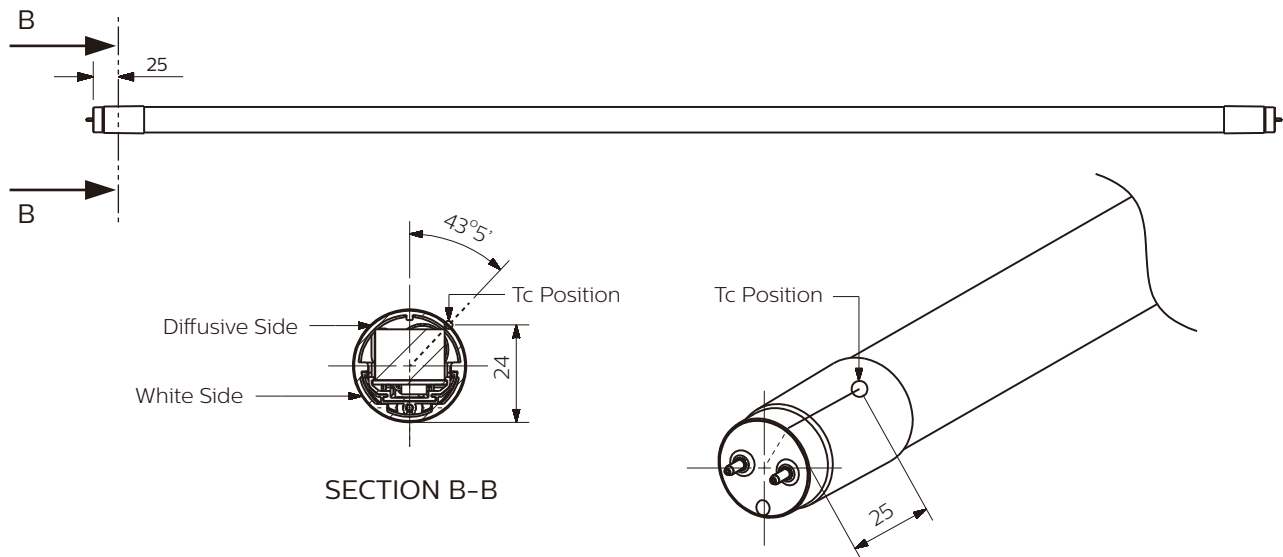
## Temperature

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	+55°C	



1200mm\_10.5W (Dimension: mm)



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## Approbation & Certificates

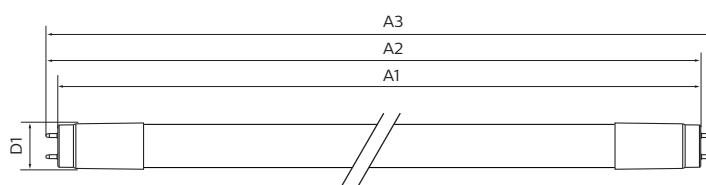
Philips Master LEDtube is designed by strictly following applicable legislation and international standard. The product complies with **CE, KEMA, TISI, RoHS** and **REACH**.



## Technical specification

10NC	Product Description	Wattage	Equivalent Fluorescent Wattage	Voltage	Cap	Length	Beam angle	Lifetime	Lumen output (Typical)	Color Temp	CRI
		(W)	(W)	(V)		(mm)	(°)	(hrs)	(lm)	(K)	(Typical*)
9290012976	MAS LEDtube STD 1200mm 10.5W840 T8 I	10.5	36	220-240	G13	1200	160	50000	1600	4000	83
9290012977	MAS LEDtube STD 1200mm 10.5W865 T8 I	10.5	36	220-240	G13	1200	160	50000	1600	6500	83

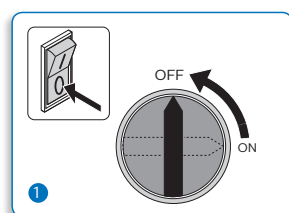
\* Minimum CRI is 80



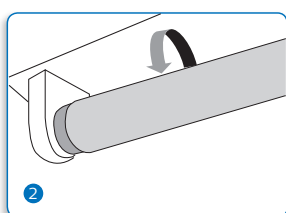
Dimensions (mm)

Product	A1	A2	A3	D1
1200mm	1198	1205	1212	27.9

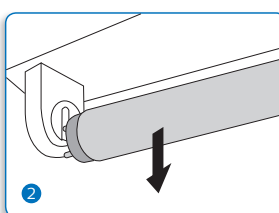
## Installation Guide - for light fittings without starters



Mains Off

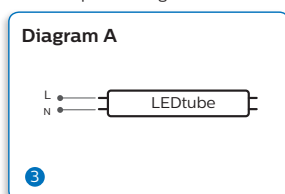


Remove all existing FLUORESCENT TUBES from luminaire

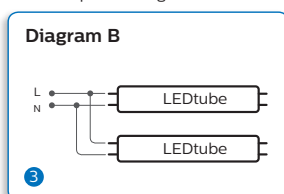


**Please Note:** If a starter is present, re-wiring is not required. Simply replace the tube and starter.

For 3 lamps use diagram A & B



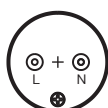
For 4 lamps use diagram B & B



Bypass existing BALLAST and rewire according to the following diagrams.

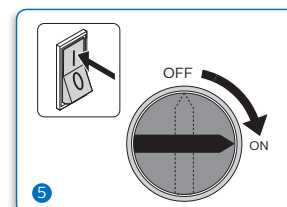
Please check the L/N markings on the lamp end and insert the lamp with AC mains supplied to the corresponding end.

To install the lamp in the wrong direction will lead to malfunction.



**Warning sticker**

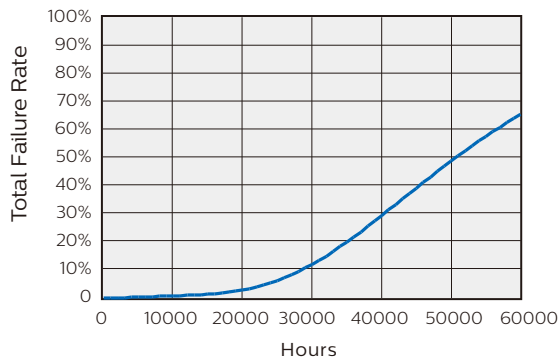
The supplied warning sticker must be placed on the luminaire and must be visible during lamp replacement



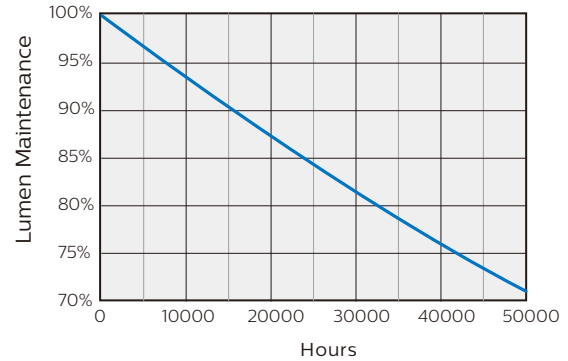
Turn on mains

## OEM Guideline

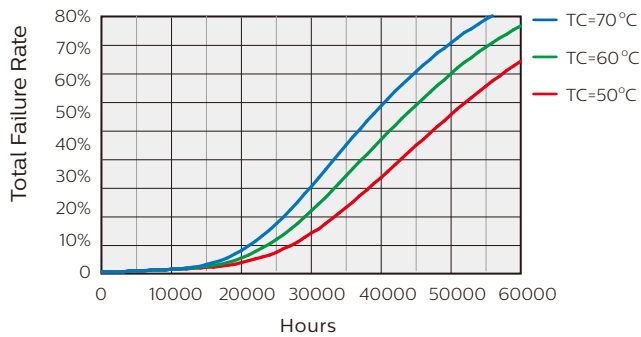
Lifetime vs. Failure Rate @ Ta 25 °C



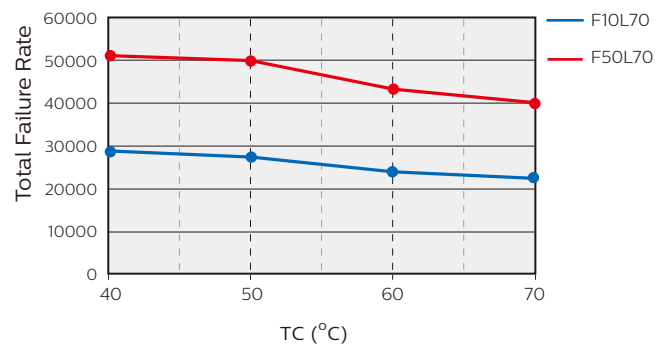
Lifetime and Lumen Maintenance



Failure Rate vs.  
Lifetime vs. Tcase



Lifetime vs. Tcase



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