

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 45%*

* Based on comparison between 24W Master VHO LEDtube and competition 46W (50-54W 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

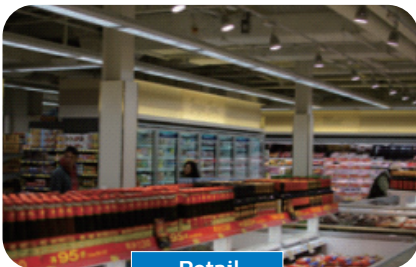
Highly Fit

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

Highly Environmental Friendly

- No mercury
- No breakage and pollution risk

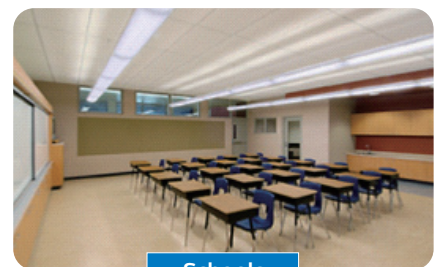
Application



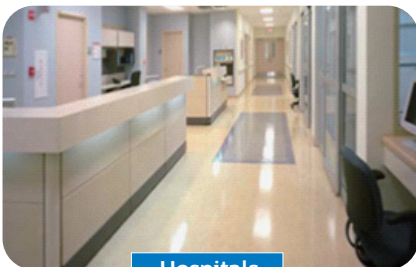
Retail



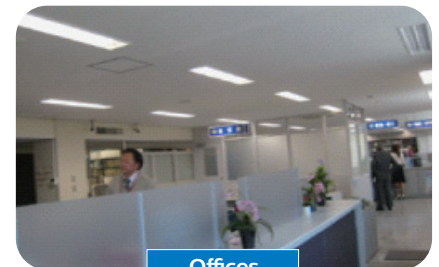
Industry



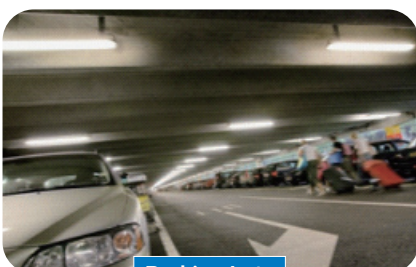
Schools



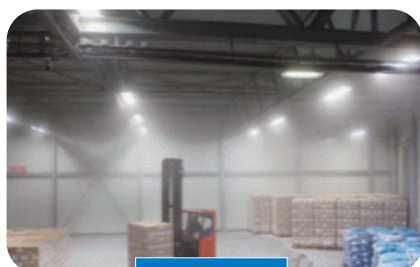
Hospitals



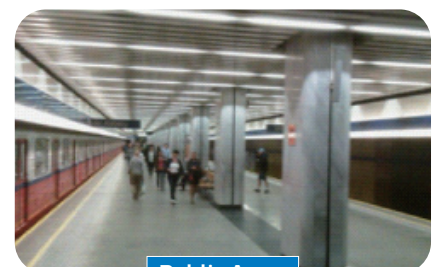
Offices



Parking Lots



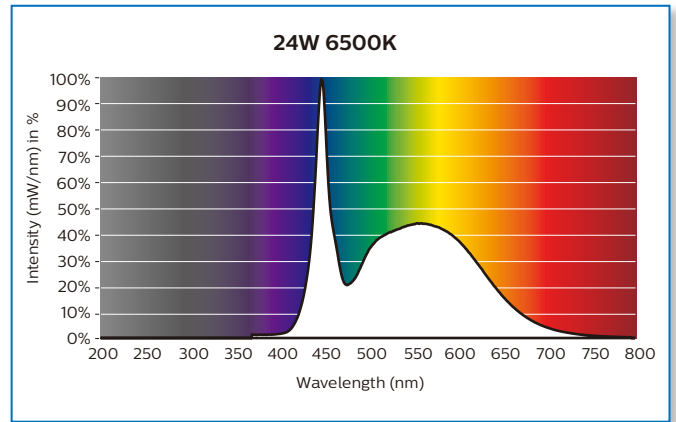
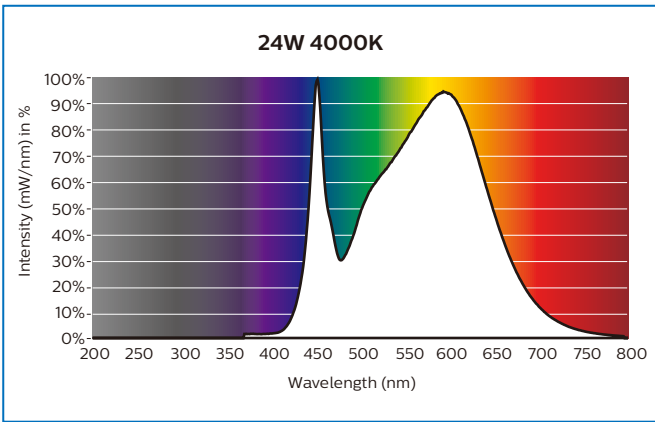
Warehouses



Public Areas

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

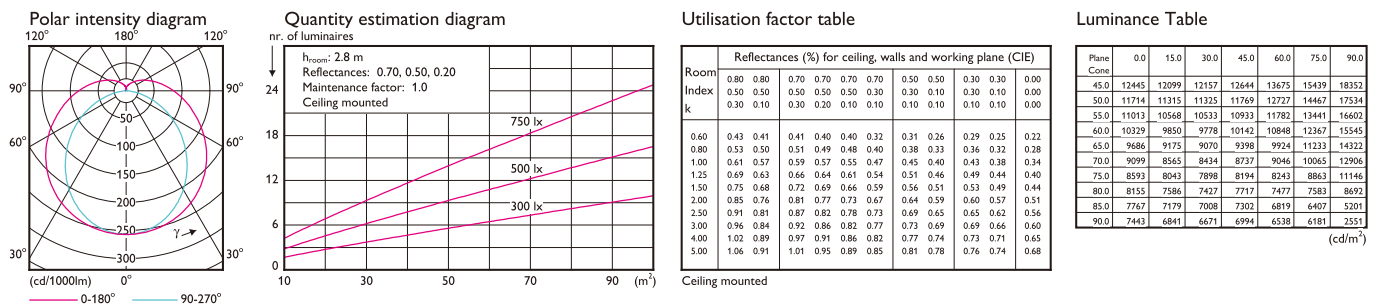


Photometric Diagrams

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 VHO LEDtube's application.

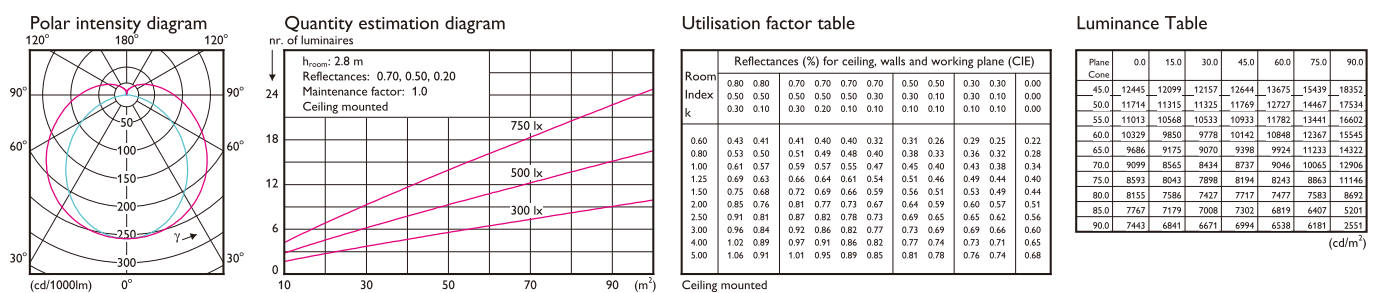
1 x MAS LEDtube 1200mm 3700lm 24W840 T8 VN

1 x 3700 lm

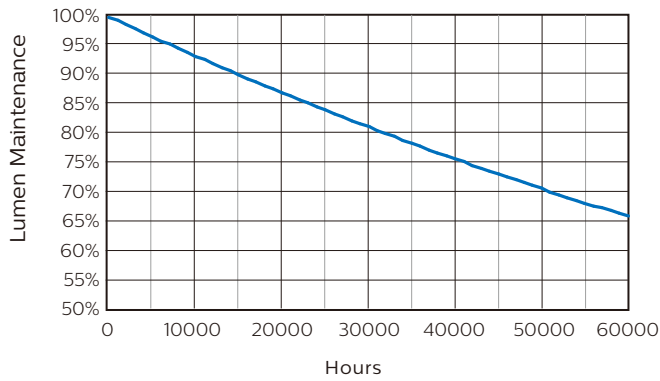


1 x MAS LEDtube 1200mm 3700lm 24W865 T8 VN

1 x 3700 lm



Lifetime and Lumen Maintenance

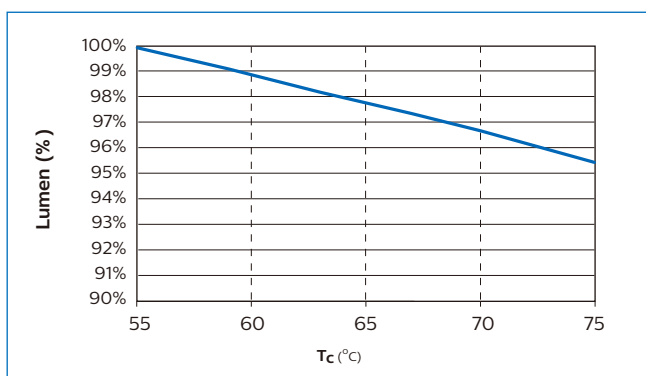


Philips Master LEDtube has a lifetime of 50,000 hours, defined as the number of hours when 50% of a large group of identical lamps below 70% of its initial lumens.

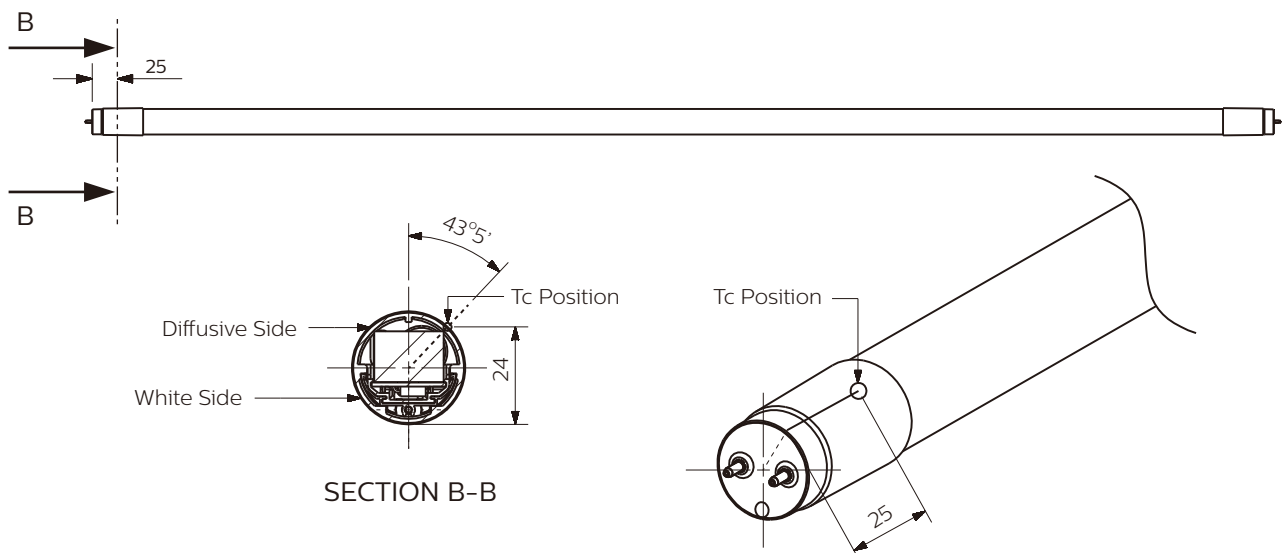
Temperature

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_14W (Dimension: mm)



Approbation & Certificates

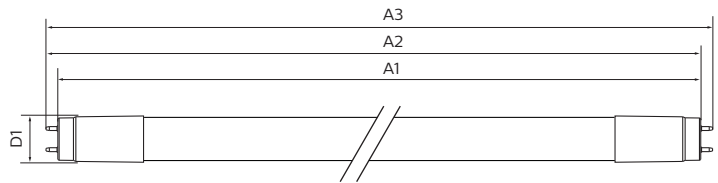
Philips Master LEDtube is designed by strictly following applicable legislation and international standard. The product complies with **CE, KEMA, TISI, RoHS and REACH**.



Technical specification

10NC	Product Description	Wattage (W)	Equivalent Fluorescent Wattage (W)	Voltage (V)	Cap	Length (mm)	Beam angle (°)	Lifetime (hrs)	Lumen output (Typical) (lm)	Color Temp (K)	CRI (Typical*)
9290018282	MAS LEDtube 1200mm 3700lm 24W840 T8 VN	24	46	220-240	G13	1200	160	50000	3700	4000	83
9290018283	MAS LEDtube 1200mm 3700lm 24W865 T8 VN	24	46	220-240	G13	1200	160	50000	3700	6500	83

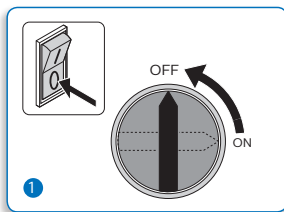
* Minimum CRI is 80



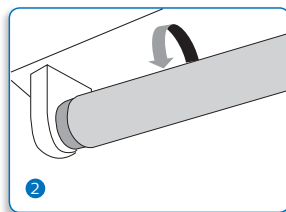
Dimensions (mm)

Product	A1	A2	A3	D1
1200mm	1198	1205	1212	27.9

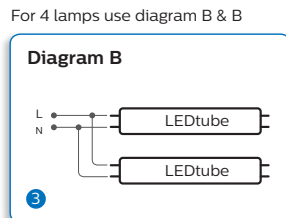
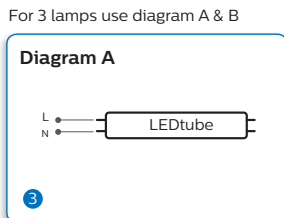
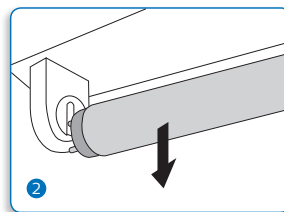
Installation Guide



Mains Off



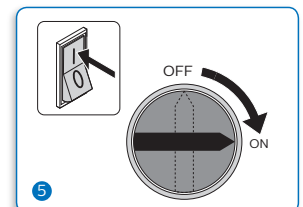
Remove all existing FLUORESCENT TUBES from luminaire



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.



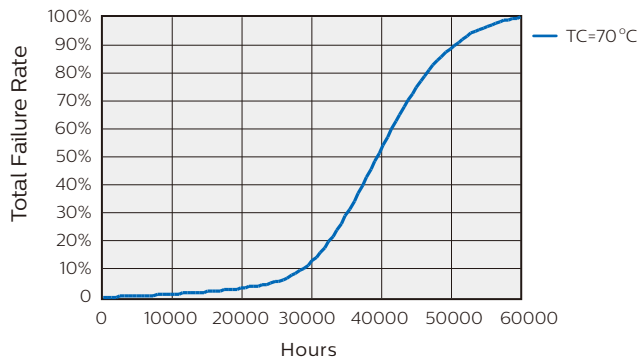
The supplied warning sticker must be placed on the luminaire and must be visible during lamp replacement



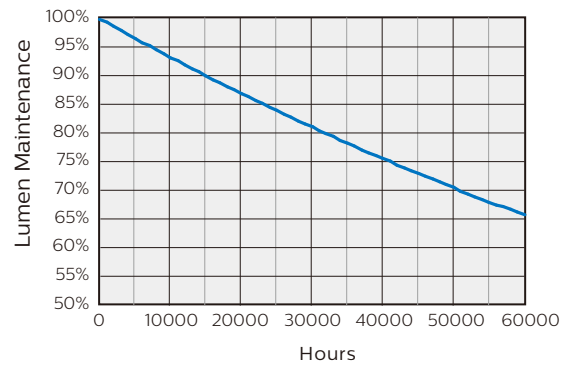
Turn on mains

OEM Guideline

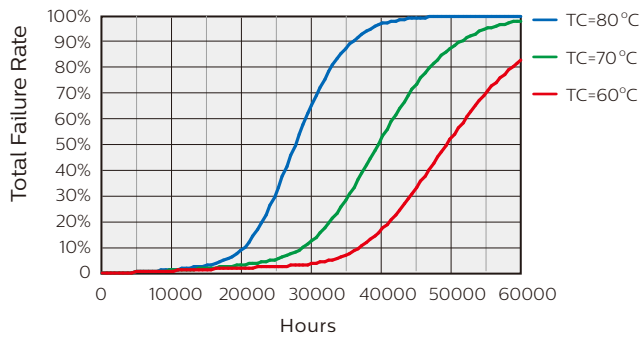
Lifetime vs. Failure Rate @ Ta 25 °C



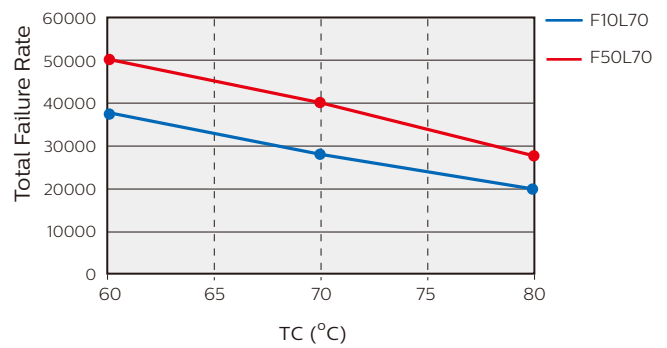
Lifetime and Lumen Maintenance



Failure Rate vs. Lifetime vs. Tcase



Lifetime vs. Tcase



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