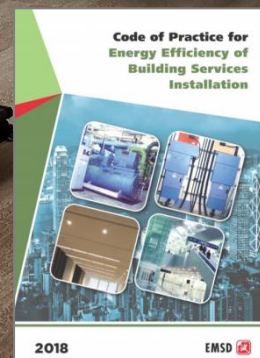


TE Direct-Indirect LED Troffer



Designed To Meet EMSD BEC
2015 and now 2018



Direct-Indirect LED Troffer

Developed to replace T8 or T5 fluorescent lamps with LED rendering over 40% energy saving and much reduced maintenance work.

The TE Lighting LED Troffer is extremely pleasing in appearance and yet energy efficient. The lights from the LED light engine are reflected mostly downwards from the nano-coated reflector surfaces with the rest directly diffused through a perforated curved profile. The result is a stylish, glare-free luminaire.

Direct-Indirect LED Troffer - Features

Up-to 200lumen/watt @ LED chip level, different brands of LED chips available.



Replaceable LED Light Engine

Stylish Outlook & Extremely Low Glare for Office Use (UGR < 19)

Nano-coating on reflectors increase efficacy; Safety wires attached for added safety during installation.

Air-Slot/Non Air-Slot versions available;



Intelligent LED Driver

Integral LED driver with Step-Dim & 0-10V Dimming as standard; DALI available upon request.

Constant Light Output (CLO) Option on LED Driver to compensate for depreciation of light output of LED Chips overtime (70% after 5 years)

Other Features:

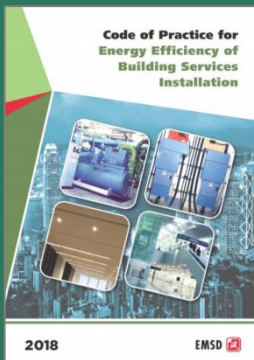
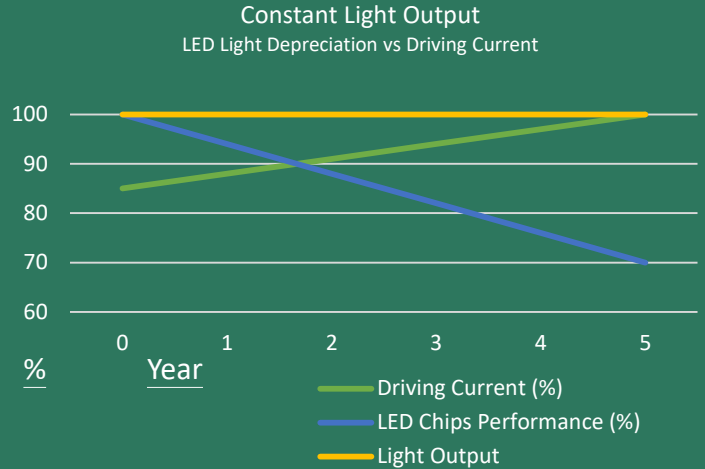
- Luminaire constructed with heavier gauge steel to resist bending during installation and service life of the troffer;
- Thick enamel paint for a long lasting finish, and to protect luminaire from paint chips and rusting;
- Robust LED Light Engine & Driver System with 5 years of warranty on parts;
- LED Light Engine with 3 lighting surfaces. 2 indirect and 1 direct lighting on specially designed extruded aluminum profile;
- Excellent heat dissipation for LED Chips;
- Custom-Made dimensions & color temperatures available upon request;
- Other brands of LED Chips available (CREE, Nichia, Lumileds, etc.)

Technical Information

Constant Light Output

Constant Light Output (CLO) Option is available on LED Driver to provide automatic upward adjustments of driving current along with time, such that the resultant light output remains constant throughout the life of the light engine.

*Please consult our sales engineers for details.



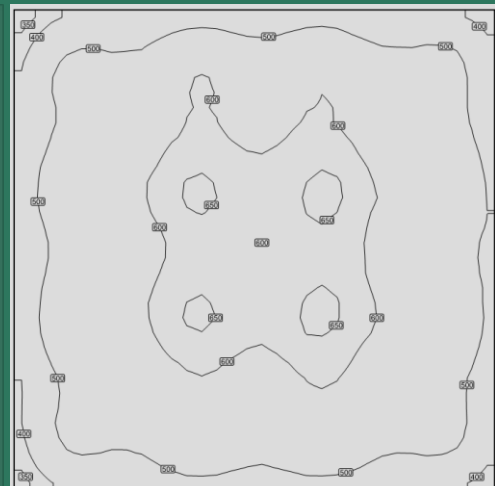
EMSD Building Energy Code 2018

This Code of Practice titled “Code of Practice for Energy Efficiency of Building Services Installation”, hereinafter referred as the “Building Energy Code” or “BEC”, is issued under Part 9 of the Buildings Energy Efficiency Ordinance, Chapter 610 (hereinafter referred as “the Ordinance”).

BEC sets out the technical guidance and details in respect of the minimum energy efficiency requirements governing the building services installations defined in the Ordinance.

Table 5.4 : Lighting Power Density and Automatic Lighting Control for Various Types of Space

Type of Space	Max. LPD (W/m ²)	Type of Space	Max. LPD (W/m ²)
Plant / Machine / Switch Room	10	Server Room / Hub Room	10
Public Circulation Area	13	Staircase	7
Loading & Unloading Area	8	Toilet / Washroom / Shower Room	11
Retail	16	Car Park	5
Classroom / Training Room	12	Office, Internal floor area above 200m ²	9
Lift Lobby	10	Corridor	8



Specifications

Electrical

- Input Voltage: AC 220V – 240V
- Output Power: Up to 45W
- Frequency: 50 / 60 Hz
- Power Factor: 0.95

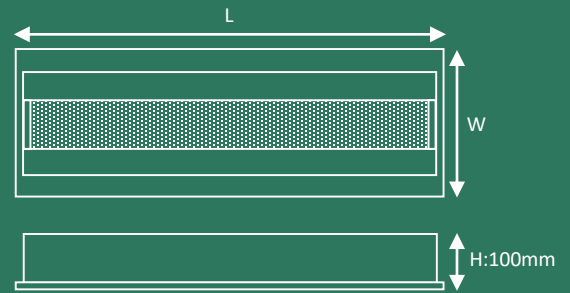
Optical & LED Driver

- Color Temperature: 3000K/3500K/4000K/5000K
- Lumen Output at LED Chip Level: > 200 lm/W
- Delivered Lumen: ~ 100 lm/W*
- High Efficiency LED Chips Available¹
- Total Harmonic Distortion: < 20%
- Anti-Flickering Device Built-In
- Step dimming (Standard) - Dimmed to 30% upon receipt of an ON-OFF signal
- 0-10V dimming (Standard) - External dimming signal is required
- DALI dimming (Optional) - External dimming signal is required

Mechanical

- Mounting: Recessed Ceiling or Surface Mounted
- Quick Release Connectors on LED Engine
- Air Handling Version Available for Connections to Air-Boots and/or Return Air²
- Warranty: “5 Years Guarantee” We Standby our product for both the Light Engine & LED Driver

Dimensions Drawing



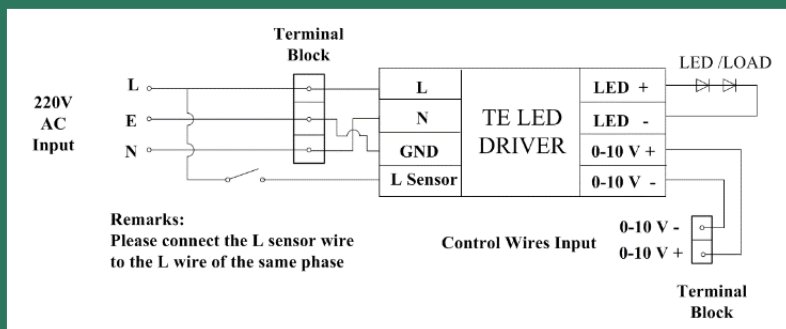
*Delivered lumens depends on color temperature and the use of options

Ordering Information

Example: TETRF-03-12-AH-HE-45W-30K

Product	Width	Length	Air Handling ⁽²⁾	High Efficiency ⁽¹⁾	Wattage (Lumen Output)	Color Temperature
TETRF	03 (300mm)	06 (600mm)	No Code	No Code	16W (1600 lumens)	3000K
	06 (600mm)	12 (1200mm)	AH	HE	22.5W (2250 lumens)	3500K
					32W (3200 lumens)	4000K
					45W (4500 lumens)	5000K
					Others - Please Specify	Others - Please Specify

Circuit Diagram



Regulatory Qualifications

TE LED Troffer Certifications – Safety

EN 60598-2-2:2012
EN 60598-1:2015



TE LED Troffer Certifications – EMC

EN 55015:2013+A1:2015
EN 61000-3-2:2014, EN 61000-3-3:2013
EN 61547:2009
EN61000-4-2:2009, EN 61000-4-3:2006+A1:2008+A2:2010
EN 61000-4-4:2012, EN 61000-4-5:2014
EN 61000-4-6:2014, EN 61000-4-8:2010, EN 61000-4-11:2004



TE LED Troffer Certifications – LED Driver

EN 55015:2013+A1:2015
EN 61000-3-2:2014
EN 61000-3-3:2013
EN 61547:2009

EN 61347-1:2015, EN 61347-2-13:2014
EN 62493:2015

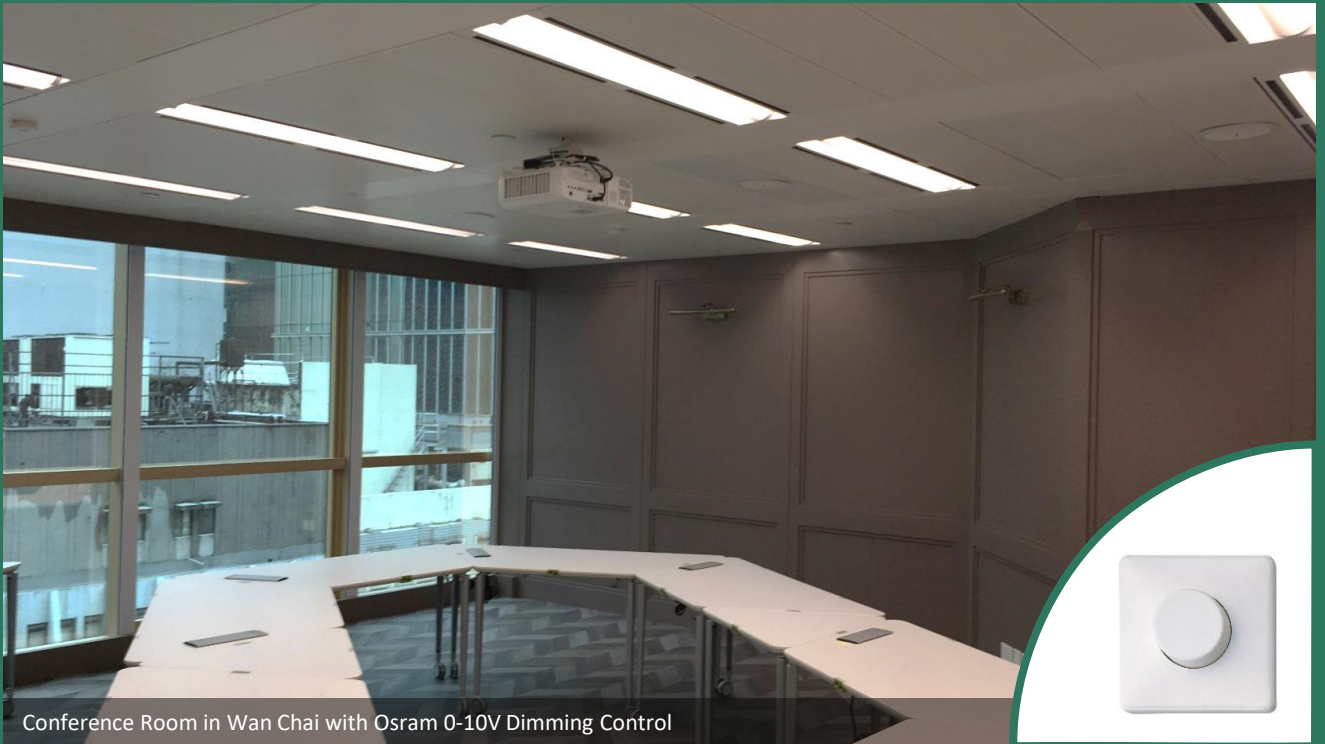


TE LED Troffer Certifications – Fire

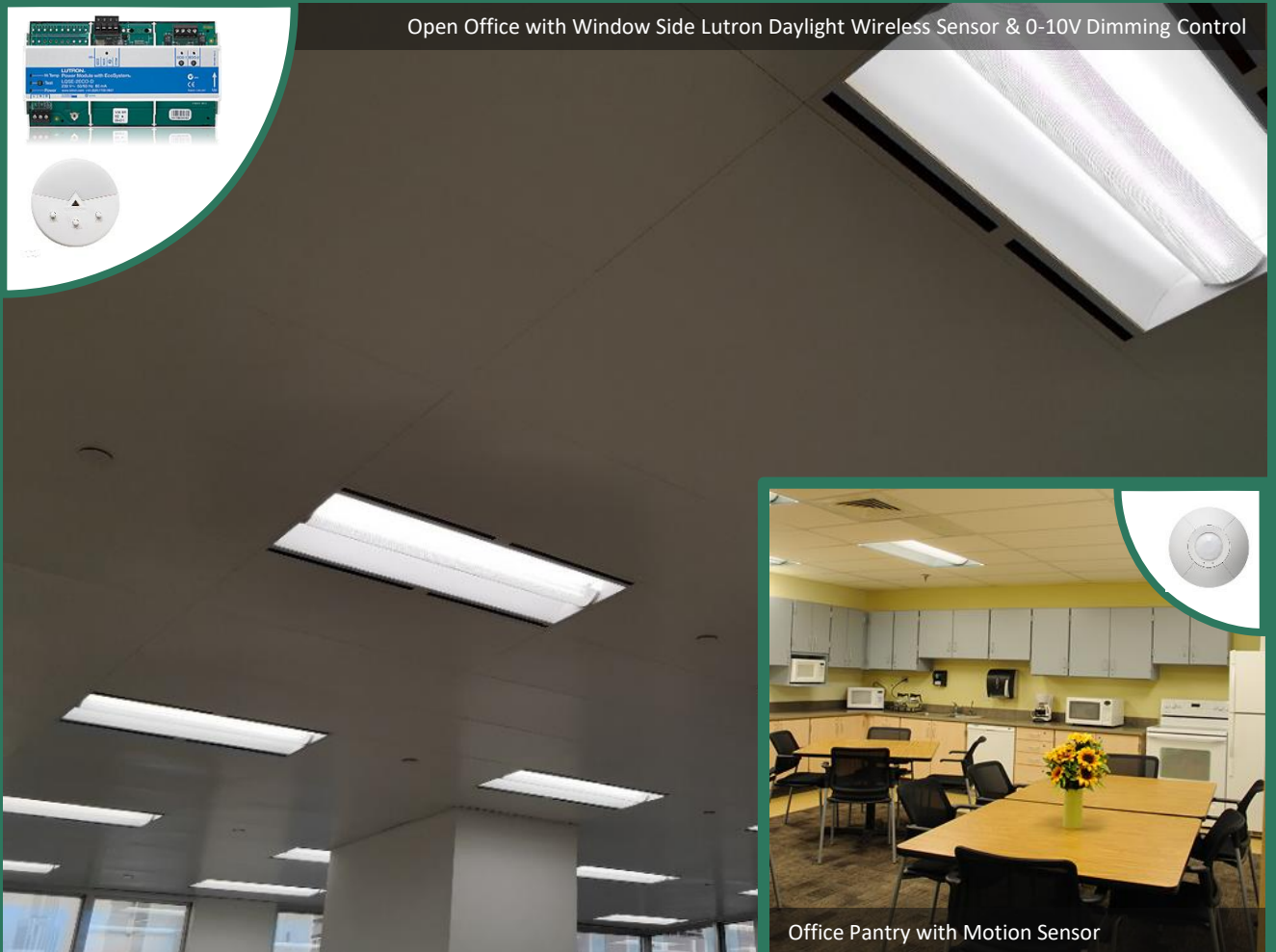
BS 5266 Part 1:2011
BS EN 60598-2-22:2014
Regulation PPA / 104(A) of Fire Service Department



Applications with Dimming Controls



Conference Room in Wan Chai with Osram 0-10V Dimming Control



Open Office with Window Side Lutron Daylight Wireless Sensor & 0-10V Dimming Control



Office Pantry with Motion Sensor