Technical Data Sheet
T8 LED Tube Lighting For Railway Stock Application

DS0003
Issue.13 – 20/02/2025

General Description

Craig & Derricott offer a range of LED tube lighting that incorporates a unique adjustable and lockable endcap, allowing for fast and repeatable installation to optimise the direction of light distribution. Our LED tubes offer a safe and easy installation. They are designed to connect directly to common voltage supplies available in passenger rolling stock and eliminating the need for costly inverters.

Where required, we can supply inverter bypass harnesses for retro fit installations, making the change from fluorescent lighting to LED lighting trouble free. If existing lamp holders have become brittle and worn over time, C&D can supply new fittings to ensure continued reliability.

Design Features

Our long life LED tubes have low energy power consumption resulting in reduced life cycle costs. Manufactured from recyclable materials, minimising the environmental impact allowing for easy and safe disposal unlike fluorescent tubes that contain hazardous substances that require costly removal.

Each tube switches on instantly with excellent consistent light output and tightly controlled colour temperature. Our LED tubes have a beam angle of 180°. To optimise the light distribution, our tubes are supplied with unique rotating lockable endcaps. These can be adjusted to a specific angle in order to meet the desired lighting requirement. Clear index marking is on each end of the tube to ensure an accurate and repeatable setting.

The LED tube range covers three standard supply voltages. Each tube has a clear colour coded indicator to represent the correct voltage.

Compliant to the following Railway Standards:

- EN50155 Rolling Stock Electronic Equipment
- EN50121-3-2 Railway Electro-Magnetic Compatibility
- EN61373 Railway Shock & Vibration
- EN45545 Fire protection (V0 & LSZH compliance)
- EN60081 Double capped tubes dimensional compliant
- EN60529 IP40 ingress protection
- EN62031 Photobiological safety of lamps
- Hazard level 3 in accordance with EN45545-2
- RoHS & Reach restriction of hazardous substances

Safety Specification:

- **DC Input voltage reversal (Non destructive).**
- **Input transient protection.**
- **Under voltage protection.**

230V LED Tube	Blue Endcap
110V LED Tube	Yellow Endcap
52V LED Tube	Grey Endcap
24V LED Tube	Violet Endcap

Catalogue No	Nom. Tube Length (mm)	Nominal Voltage (Un)	Colour Temperature	Beam Angle	Connector Rotation	Colour Render Index	Luminous Flux (Lumens)	Housing Material	Tube Weights	Power Consumption	LED Life (hrs)	Operating Temperature	IP Rating	MTBF MIL-HDBK- 217F (40°)	Switch Cycles
LED450/24/T8/**/2	450	24VDC (16.8V- 30V)	** WW - Warm White 3000K ±5% | **3500 – White 3500K±5% **NW - Natural White 4000K ±5% | ** PW - Pure White 5000K ±5% |	180°	± 90°	≥ 80	800	Aluminium body & polycarbonate 'Frosted' diffuser (LOI 46%)	150g	8W	100,000 (time to 70% of the initial light output)	-25°C to +55°C	IP 40	15 Years	150,000 (UIC555)
LED600/24/T8/**/2	600						1232		197g	9.5W					
LED900/24/T8/**/2	900						1787		297g	13.5W					
LED1200/24/T8/**/2	1200						1951		343g	14.5W					
LED1500/24/T8/**/2	1500						3257		429g	25W					
LED1800/24/T8/**/2	1800						3582		493g	30W					
LED450/52/T8/**/2	450	52VDC (36.4V – 65V)					800		150g	8W					
LED600/52/T8/**/2	600						1232		197g	9.5W					
LED900/52/T8/**/2	900						1787		297g	13.5W					
LED1200/52/T8/**/2	1200						1951		343g	14.5W					
LED1500/52/T8/**/2	1500						3257		429g	25W					
LED1800/52/T8/**/2	1800						3582		493g	30W					
LED450/110/T8/**/2	450	110VDC (67.2V- 137.5V)					800		150g	8W					
LED600/110/T8/**/2	600						1232		197g	9.5W					
LED900/110/T8/**/2	900						1787		297g	13.5W					
LED1200/110/T8/**/2	1200						1951		343g	14.5W					
LED1500/110/T8/**/2	1500						3257		429g	25W					
LED1800/110/T8/**/2	1800						3582		493g	30W					
LED450/230/T8/**/2	450	230VAC (161V-253V)					800		150g	8W					
LED600/230/T8/**/2	600						1232		197g	9.5W					
LED900/230/T8/**/2	900						1787		297g	13.5W					
LED1200/230/T8/**/2	1200						1951		343g	14.5W					
LED1500/230/T8/**/2	1500						3257		429g	25W					
LED1800/230/T8/**/2	1800						3582		493g	30W					

The estimated lifetime value of our LED tubes is based on a sample set installed on rolling stock and in real world service for over four years. To assess their longevity, these samples underwent testing to measure light output against new samples, with lifetime projections calculated based on the TM-21 standard.

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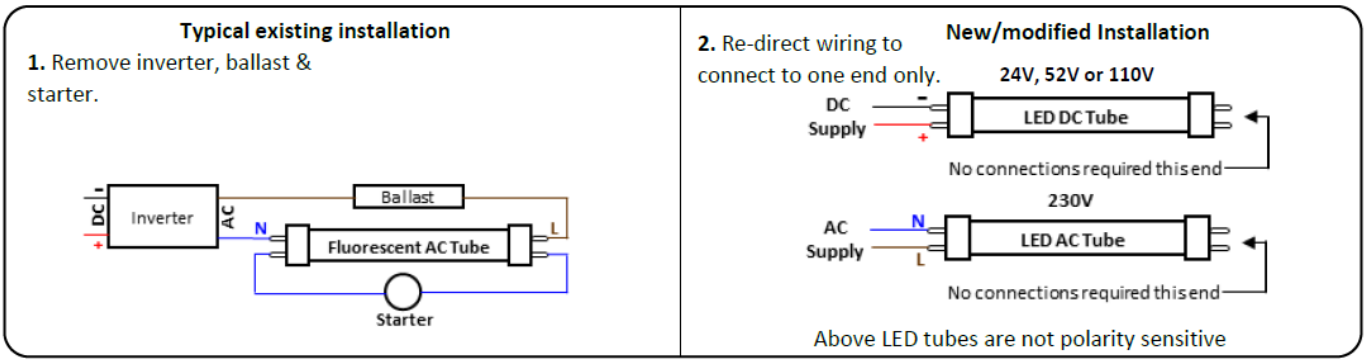
Accessories

Catalogue No	101791	101793	81100
Image			
Description	G13 replacement surface mount lamp holder	G13 replacement surface mount spring adjustable lamp holder	Centre support clip for tubes 1500mm+
Screw Terminals	0.5 - 2.5mm²	0.5 - 2.5mm²	-

Materials

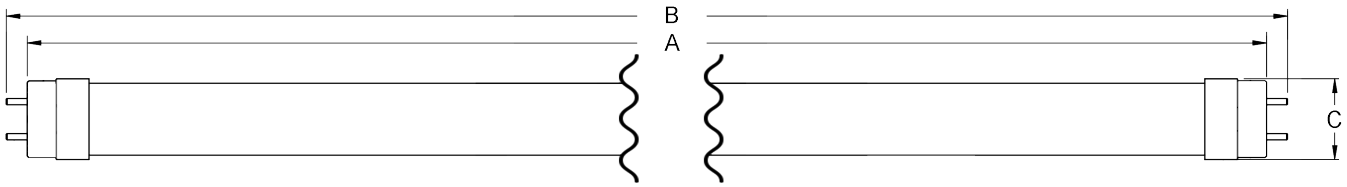
Resistance to heat	External parts are of insulating material providing protection against electric shock, and parts of insulating material retaining live parts in position, ball pressure tested.
Resistance to flame and ignition	Parts of insulating material retaining live parts in position and external parts of insulating material providing protection against electric shock, glow wire tested to 650°C.
Component materials	Metal enclosure — Aluminium (Thickness 1mm min.) Lamp end caps — Polycarbonate (V-0) 'Frosted' diffuser — Polycarbonate (V-0) LOI 46%
Construction support structure	The use of aluminium backs and substrate for the pcb ensures excellent and even heat dissipation within the tube and also prevents the tube from sagging in a fitting or being damaged when handled.
PCB	A perforated PCB substrate ensures an improved air flow around the LED's enhancing the overall life of the product.

Connection Diagrams



Dimensions

Nom. Tube Length (mm)		450	600	900	1200	1500	1800
Dims (max) (mm)	A	437.4	589.8	894.6	1199.4	1500	1763.8
	B	451.6	604.0	908.8	1213.6	1514.2	1778.0
	C	26					



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