Technical Data Sheet
T5 LED Tube Lighting For Railway Stock Application

DS0001
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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.

230V LED Tube — Blue Endcap
110V LED Tube — Yellow Endcap
24V LED — Tube Violet Endcap

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.

Catalouge No.	Nom. Tube Length (mm)	Nominal Voltage (Un)	Colour Temperature	Beam Angle	Connector Rotation	Colour Render Index	Luminous Flux (Lumens)	Housing Material	Tube Weights (g)	Power Consumption	LED Life (hrs)	Operating Temperature	IP Rating	MTBF MIL- HDBK 217F (40°)	Switch Cycles
LED563/24/T5/##	563	24VDC (16.8V - 30V)	## - WW - Warm White 3000K (±5%) ## - 3500 – White 3500K±5% ## - NW - Natural White 4000K (±5%) ## - PW - Pure White 5000K (±5%) ## - CW - Cool White 6000K (±5%)	180°	± 90°	≥ 80	1200	Aluminium Body & Polycarbonate 'Frosted' Diffuser (LOI 46%)	139	10W	100,000 (Time to 70% of the initial light output)	- 25°C to + 55°C	IP40	15 Years	100,000 (UIC555)
LED863/24/T5/##	863						1870		195	15W					
LED1163/24/T5/##	1163						2500		233	20W					
LED1463/24/T5/##	1463						3120		293	25W					
LED563/110/T5/##	563	110VDC (67.2V - 137.5V)					1200		155	10W					
LED863/110/T5/##	863						1870		209	15W					
LED1163/110/T5/##	1163						2500		250	20W					
LED1463/110/T5/##	1463						3120		312	25W					
LED563/230/T5/##	563	230VAC (161V - 253V)					1200		153	10W					
LED863/230/T5/##	863						1870		207	15W					
LED1163/230/T5/##	1163						2500		248	20W					
LED1463/230/T5/##	1463						3120		310	25W					

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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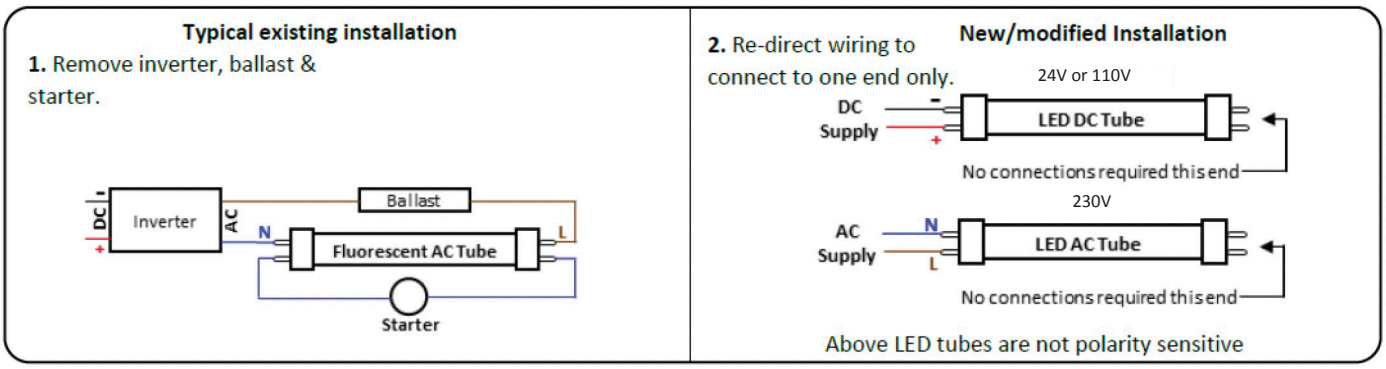
Accesories

Catalogue No	100305	81062
Image		
Description	G5 replacement surface mount lamp holder	Centre support clip for tubes 1463mm
Push Terminals	0.5-2.5mm	

Materials

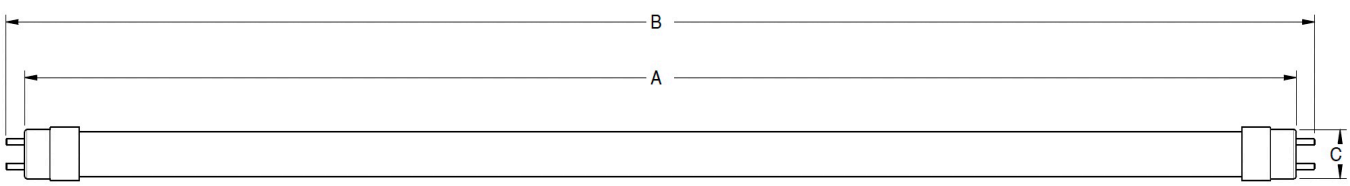
Resistance to heat	G External parts are of insulating material providing protection against electric shock, and parts of insulating material retaining live parts in position, ball pressure tested.
Resistance to flame and ignition	Parts of insulating material retaining live parts in position and external parts of insulating material providing protection against electric shock, glow wire tested 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 damages 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)		563	863	1163	1463
Dims (max)(mm)	A	549	849	1149	1449+
	B	563	863	1163	1463
	C	16			



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