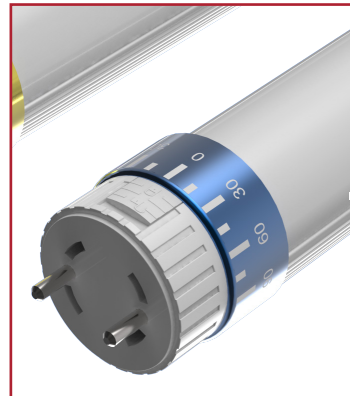
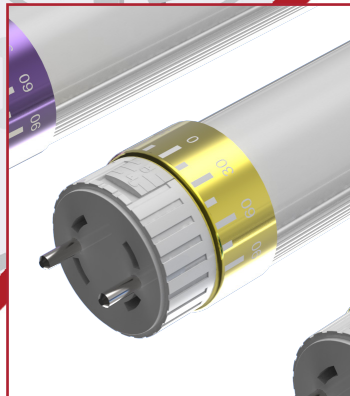
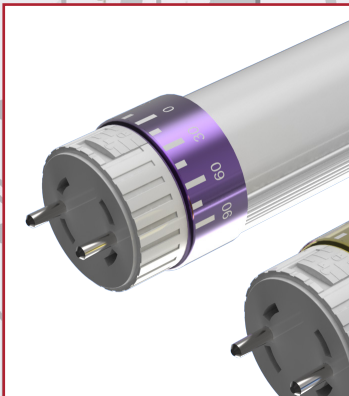


# LED LIGHTING FOR THE RAIL INDUSTRY

BROCHURE 2



Craig & Derricott's range of LED lighting products are designed to cover a wide variety of Railway applications that have been developed and approved to meet railway rolling stock standards.

Our LED products are easy and safe to fit into new and existing light fittings. They offer all the benefits of LED technology, long life and low power consumption, therefore reducing life cycle costs and your environmental impact.



- Three Year Warranty
- Lifetime Maintenance Free
- Compliant with the Low Voltage Directive
- High Reliability LED Technology
- Energy Saving - Low Power Consumption
- Quality Technical Support
- Buy with Confidence

#### INNOVATIVE DESIGN WITH PROVEN LED PERFORMANCE

Craig & Derricott LED Lights have all been designed & tested to meet Railway Rolling Stock stringent standards

- |               |   |
|---------------|---|
| • EN50155     | Rolling Stock Electronic Equipment        |
| • EN50121-3-2 | Railway Electro-Magnetic Compatibility    |
| • EN61373     | Railway application Shock & Vibration     |
| • EN45545     | Fire protection (V0 & LSZH compliance)    |
| • EN60081     | Double capped tubes dimensional compliant |
| • EN60529     | IP40 ingress protection                   |



## T8 LED TUBE LIGHTS

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.

### INSTALLATION

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.

### FEATURES AND BENEFITS

Our long life LED tubes have low energy power consumption resulting in reduced life cycle costs.

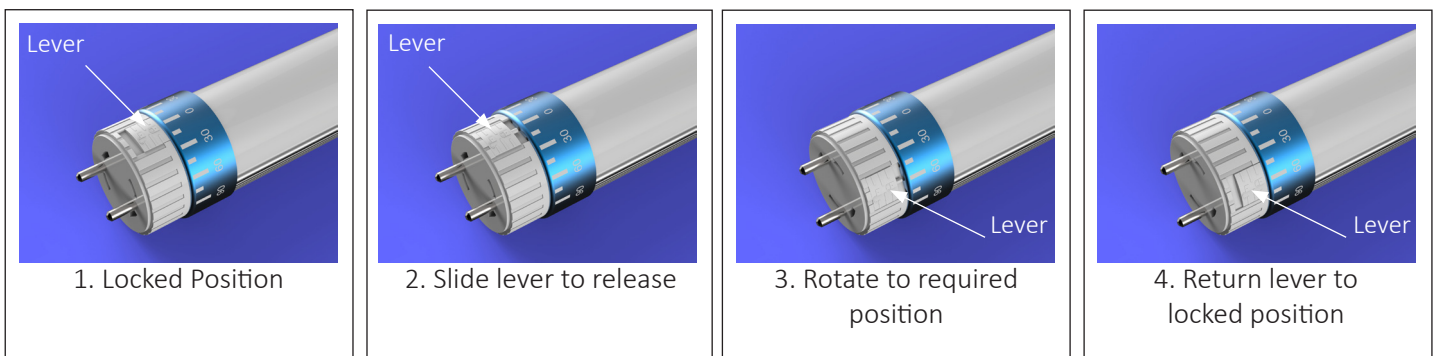
Manufactured from recyclable materials, minimising the environmental impact allowing for easy and safe disposal unlike fluorescent tubes that contain hazardous substances that require costly removal.

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.

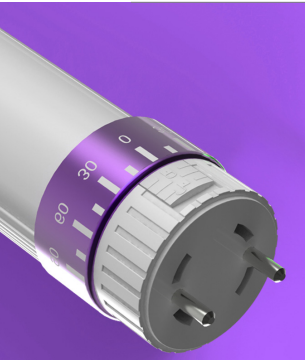
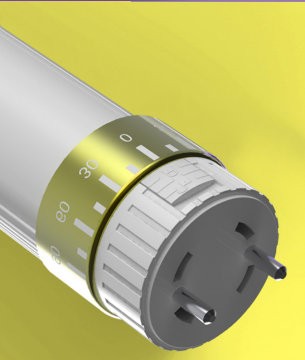
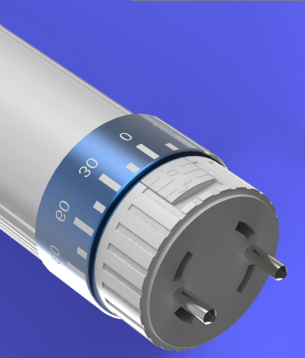
The LED tube range covers three standard supply voltages. Each tube has a clear colour coded indicator to represent the correct voltage.

### ROTATING ENDCAP OPERATION






# T8 LED TUBE LIGHTS

	Cat. No.	Nom. Tube Length	Weight	Endcap Colour	Nominal Voltage
	LED450/24/T8/**/2	450mm	150g	Violet	24VDC (16.8V- 30V)
	LED600/24/T8/**/2	600mm	182g		
	LED900/24/T8/**/2	900mm	255g		
	LED1200/24/T8/**/2	1200mm	328g		
	LED1500/24/T8/**/2	1500mm	399g		
	LED1800/24/T8/**/2	1800mm	462g		
	LED450/110/T8/**/2	450mm	150g	Yellow	110VDC (67.2V- 137.5V)
	LED600/110/T8/**/2	600mm	196g		
	LED900/110/T8/**/2	900mm	269g		
	LED1200/110/T8/**/2	1200mm	342g		
	LED1500/110/T8/**/2	1500mm	413g		
	LED1800/110/T8/**/2	1800mm	476g		
	LED450/230/T8/**/2	450mm	150g	Blue	230VAC (161V-253V)
	LED600/230/T8/**/2	600mm	197g		
	LED900/230/T8/**/2	900mm	297g		
	LED1200/230/T8/**/2	1200mm	343g		
	LED1500/230/T8/**/2	1500mm	429g		
	LED1800/230/T8/**/2	1800mm	493g		

## Colour Temperature Range

** WW Warm White 3000K (±5%)	**NW Natural White 4000K (±5%)	** PW Pure White 5000K (±5%)	**CW Cool White 6000K (±5%)
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## Accessories

	Cat. No.	Description	Screw Terminals
	101791	G13 replacement surface mount lamp holder	0.5 - 2.5mm <sup>2</sup>
	101793	G13 replacement surface mount spring adjustable lamp holder	0.5 - 2.5mm <sup>2</sup>
	81100	Centre support clip for tubes 1200mm+	

## T5 LED TUBE LIGHTS

Craig & Derricott offer a range of T5 LED tube, a direct replacement for T5 fluorescent tubes. With high reliability LED and driver technology and built in drive electronics, these tubes offer significant energy savings and zero maintenance costs. Each tube has flicker free lighting with an instant start.

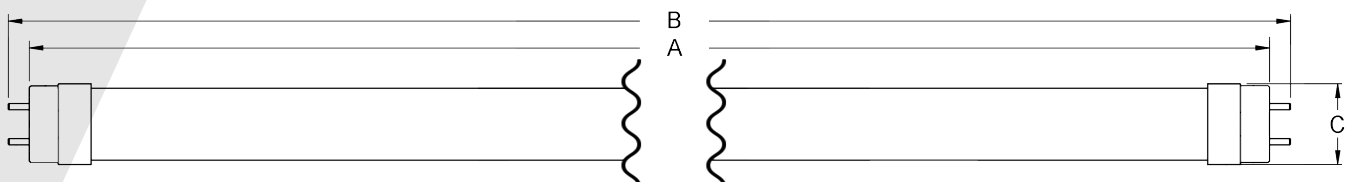


Cat. No.	Nom. Tube Length	Weight	Colour Temp	Nominal Voltage
LED531/24/T5/**	563mm	210g		24VDC (16.8V- 32V)
LED863/24/T5/**	863mm	315g		
LED1163/24/T5/**	1163mm	420g		
LED1465/24/T5/**	1463mm	520g		
LED531/110/T5/**	563mm	210g	**	110VDC 67V- 140V
LED863/110/T5/**	863mm	315g		
LED1163/110/T5/**	1163mm	420g		
LED1465/110/T5/**	1463mm	520g		
LED531/230/T5/**	563mm	210g		230VAC (161V-253V)
LED863/230/T5/**	863mm	315g		
LED1163/230/T5/**	1163mm	420g		
LED1465/230/T5/**	1463mm	520g		

### TECHNICAL SPECIFICATION





		T8 LED TUBES						T5 LED TUBES			
Nom. Tube Length (mm)		450	600	900	1200	1500	1800	563	863	1163	1463
Dimensions (mm)	A	437.4	589.8	894.6	1199.4	1500	1763.8	549	849	1149	1449
	B	451.6	604.0	908.8	1213.6	1514.2	1778.0	563	863	1163	1463
	C	26						16 (end cap)   23 (body)			
Power Consumption		8W	10W	14W	16W	25W	30W	10W	15W	20W	25W
Light intensity (Lumens)		800	1100	1400	1700	2500	3000	1250	1875	2500	3215
Weight		150g	182g	255g	328g	399g	462g	210g	315g	420g	520g
Connector		2 PIN G13						2 PIN G5.3			
Connector Rotation		± 90°						± 90°			
Colour Render Index		≥ 80						≥ 80			
Beam angle		180°						180°			
LED Life (time to 70% of the initial light output) (hrs)		65,000						65,000			
IP Rating		IP 40						IP 40			
Operating Temperature Range		-25°C to +55°C						-25°C to +55°C			
MTBF MIL-HDBK-217F (40°) (hrs)		100,000 hrs						100,000 hrs			
Switch Cycles		100,000 (UIC555)						100,000 (UIC555)			

### LED TUBE LIGHTS DIMENSIONS



# LED STICK LIGHTS

To compliment our LED tube range, Craig & Derricott offer a series of 2G7 & 2G11 LED stick lights for the rail market.

	Cat. No.	Nom. Tube Length	Tube Fitting	Weight	Nominal Voltage
	LED152/24/2G7/**/2	152mm	2G7	49g	24VDC
	LED152/110/2G7/**/2			54.3g	110VDC
	LED152/24/2G11/**/2	152mm	2G11	83.5g	24VDC
	LED152/110/2G11/**/2			90g	110VDC
	LED220/24/2G11/**	220mm	2G11	145g	24VDC
	LED220/110/2G11/**	220mm		145g	110VDC
	LED322/24/2G11/**	322mm	2G11	200g	24VDC
	LED416/24/2G11/**	416mm		260g	

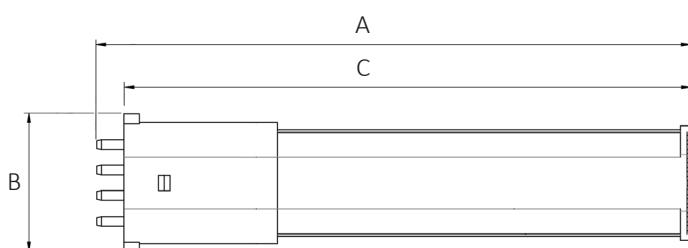
## Colour Temperature Range

** WW	**NW	** PW	**CW
Warm White 3000K (±5%)	Natural White 4000K (±5%)	Pure White 5000K (±5%)	Cool White 6000K (±5%)

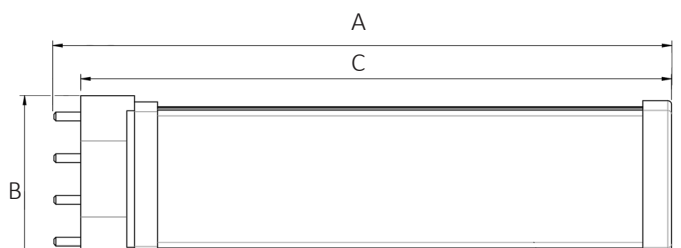
## TECHNICAL SPECIFICATION

TECHNICAL SPECIFICATION				LED152**				LED220**		LED322**		LED416**	
Dimensions	A	152.67		163.51		227		329		423			
	B	36		43		43		43		43			
	C	145.87		156.71		220		322		416			
Nominal Voltage		24VDC	110VDC	24VDC	110VDC	24VDC	110VDC	24VDC					
Light Intensity (Lumens)		400		430		1200		1320		1760			
Power Consumption		6W		10W		10W		16W		18W			
Connector		2G7 4 Pins		2G11 4 Pins		2G11 4 Pins							
Beam Angle		180°				180°							
Colour Render Index				≥ 80				≥ 80					
Weight		49g	54.3g	83.5g	90g	145g		200g		260g			
Operating Temperature				-25°C to + 55°C				-25°C to + 55°C					
IP Rating				IP 40				IP 40					
LED Life (time to 70% of the initial light output) hrs				65,000				65,000					
MTBF MIL-HDBK-217F (40°C) (hrs)				100,000 hours				100,000 hours					
Switch Cycles				100,000 (UIC555)				100,000 (UIC555)					

## 2G7 STICK LIGHT DIMENSIONS



## 2G11 STICK LIGHT DIMENSIONS



## LED LAMPS

This high intensity encapsulated LED lamp is compact in size and are designed to fit BA9 lampholders. These instant start LED lamps offer a bright and consistence light, while available in a variety of colour temperatures. With reliable LED technology and reduced heat dissipation, these energy efficient lamps are the perfect drop in replacement for existing luminaires.



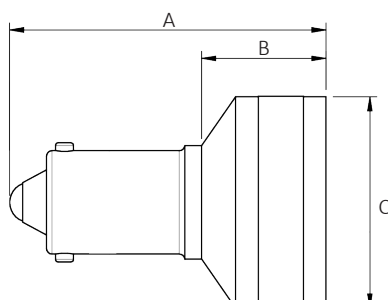
Cat. No.	Fitting	Colour Temperature Range	Nominal Voltage
LEDBA9SC/24/WW/2	BA9	3000K	24V DC
LEDBA9SC/24/NW/2		4000K	
LEDBA9SC/24/PW/2		5000K	
LEDBA9SC/24/CW/2		6000K	

### TECHNICAL SPECIFICATION

LEDBA9SC/24/\*\*

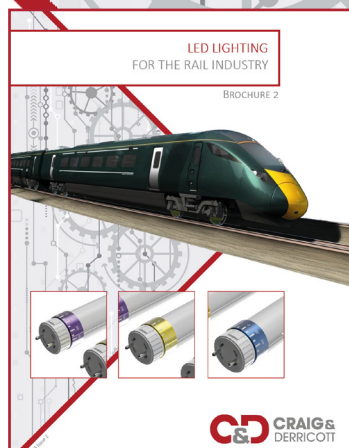
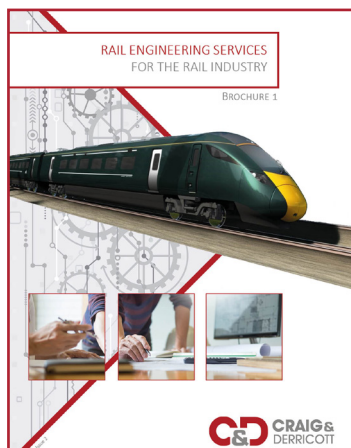
Dimensions	A	28
	B	12.5
	C	18.6
Nominal Voltage		24VDC
Weight		7g
Power Consumption		1W
Light intensity (Lumens)		300
Colour Render Index		≥ 80
Beam angle		45°
LED Life		65,000 hrs (time to 70% of the initial light output)
IP Rating		IP 40
Operating temp		-25°C to +55°C

### BA9 LAMP DIMENSIONS



# CRAIG & DERRICOTT

## SUPPLYING THE RAIL INDUSTRY



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