



LPA Lighting Systems
Ripley Drive, Normanton,
West Yorkshire. WF6 1QT

Title: 1083 Series PL-L and PL-S LED Tube

Doc. Ref: D04136

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Approved for Manufacture

By:

Date:

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1083 Series - PL-L & PL-S LED Tube



Product Overview

- ñ Rolling Stock Compliant.
- ñ Replaces PL-L 18W and PL-S 9W Lamps.
- ñ High reliability LED and driver technology.
- ñ Built in drive electronics for direct connection to power source.
- ñ Significant energy savings.
- ñ Zero maintenance costs.
- ñ Flicker free lighting with instant start.
- ñ No mercury content, environmentally friendly.



Safety Specification

The 1083 Series comes equipped with the following protection circuitry:

- ñ DC input voltage reversal (Non destructive).
 - ñ Input transient protection.
 - ñ Under voltage protection.
 - ñ Built in multiple LED circuit redundancy.
- Protected against power supply interruptions (EN50155 Class S2 and C2)

The 1083 series is EN45545 (HL1/2/3) compliant including the Lexan EX9332T polycarbonate diffuser.

Product Codes

	Warm White	Natural White	Cool White
150mm 110V DC PL-S LED Lamp 2G7 4 Pin	-	10831003	-
225mm 110V DC PL-L LED Lamp 2G11 4 Pin	10831001	10831000	-
150mm 24V DC PL-S LED Lamp 2G7 4 Pin	-	10831007	-
315mm 24V DC PL-L LED Lamp 2G11 4 Pin	-	10831008	-



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Technical Overview

Size		150mm	225mm	315mm	
Input Voltage Range		67 - 140VDC (110V Nominal) 16.8V—34V DC (24V Nominal)			
Input Current at Nominal Supply		45mA ±5%	108mA ±5%	527mA ±5%	
Input Power at Nominal Supply		5W	12W	12W	
Line Regulation (Percentage Illuminance change oversupply range 67 - 140VDC)		±5%			
Colour Temperature	Warm White	3000K ±5%			
	Natural White	4000K ±5%			
	Cool White	6000K ±5%			
CRI		>80			
Beam Angle		140°	200°	200°	
Operating Temperature Range		-25 to 55°C			
Storage Temperature Range		-40 to 55°C			
Operating Humidity Range		10%-80%			
Lumen Maintenance (time to 70% of the initial light output)		50,000 hours			
MTBF MIL-HDBK-217F (40°C) (hrs)		100,000 hours			
Designed Service Life		15 years			
Sealing Rating		IP40			
Switch Cycles		>100,000 (UIC555)			
Connector/Lamp holder		2G7 (150mm)	2G11 (225mm)	2G11 (315mm)	
Weight		65g	166g	196g	

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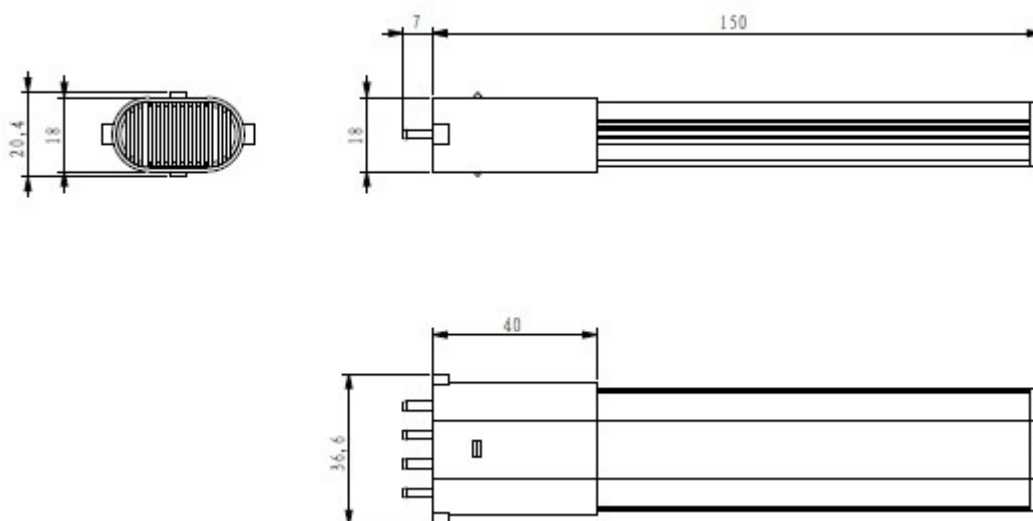


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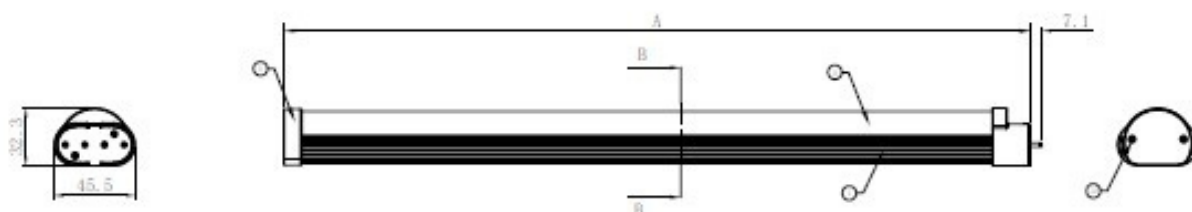
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Mechanical Details

PL-S Lamp (2G7)



PL-L Lamp (2G11)



Unit Dimensions		
Size	A	B
225mm	225mm	32.3mm
315mm	315mm	32.3mm

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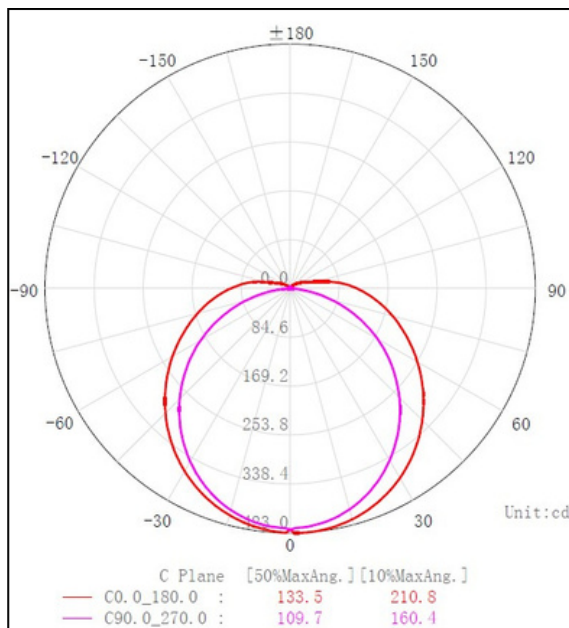
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Size	Output (Lumens)
PL-S 150mm	600lm
PL-L 225mm	1450lm
PL-L 315mm	1450lm

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Installation Guide

Connects using existing 2G11 or 2G7 lamp holders.

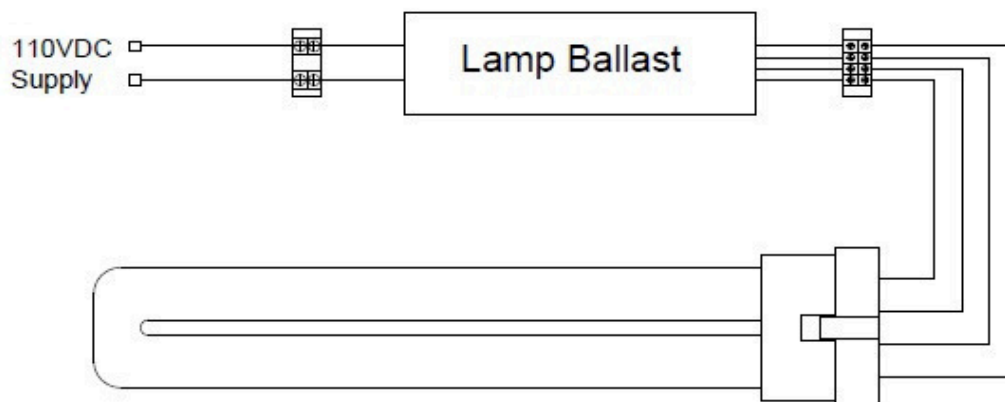
Remove original fitment lighting ballast and replace it with either 110VDC or 24VDC LED LAMP.
(NOTE: Diagram below shows the 110V DC variant).

Place spring metal retainer clip.

Connect 24V or 110V DC LED PL-L 225mm or 315mm or PL-S 150mm Tube.

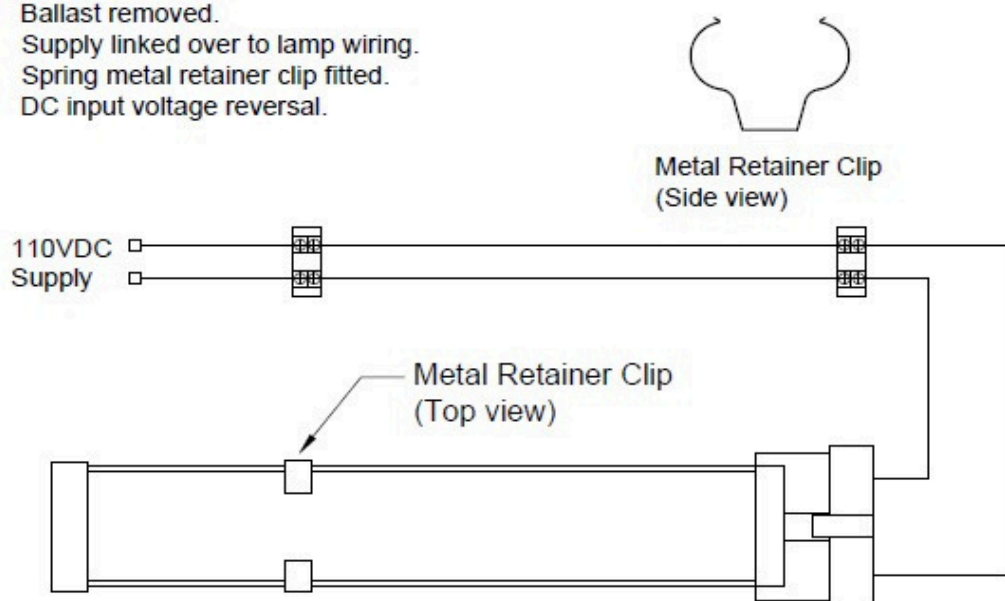
Unit will operate correctly on either polarity.

ORIGINAL LAMP CONNECTION DETAILS



LED REPLACEMENT LAMP CONNECTION DETAILS

Ballast removed.
Supply linked over to lamp wiring.
Spring metal retainer clip fitted.
DC input voltage reversal.



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Compliance

The 1083 Series product complies with the following standards and directives:

ñ	EN61373:2010	Rolling stock equipment. Shock and vibration.
ñ	EN50121-3-2:2016	
	+A1:2019	Rolling stock equipment. Electromagnetic compatibility.
ñ	EN50155:2017	Electronic equipment used on rolling stock.
ñ	EN45545 (HL1/2/ & 3)	Fire protection on railway vehicles.
ñ	EN61347-2-13	
	with EN61347-1	LED Control Gear
ñ	EN62031	
	with EN62471:	Photobiological Safety of Lamps
ñ	ROHS	Restriction of Hazardous Substances

This is a draft specification, figures may change due to further testing.

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