



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

Title: LED Tube

Doc. Ref: D04133

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01	N/A	I.Roper	18/02/18	M.Ramsden	18/02/18
02	EQMS573	I.Roper	11/10/18	M.Ramsden	11/10/18
03	EQMS2279	A.Palczynski	02/08/19	M.Ramsden	02/08/19
04	EQMS6761	R.Nadin	13/02/23	M.Ramsden	13/02/23
05	EQMS7007	R.Nadin	31/05/23	M.Ramsden	31/05/23
06	EQMS8518	R.Nadin	21/05/24	M.Ramsden	21/05/24
07	EQMS9032	R.Nadin	13/02/25	M.Ramsden	13/02/25

Approved for Manufacture

By:

Date:

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1026 Series LED Fluorescent Lamp Replacement



Product Overview

- ñ Rolling Stock Compliant.
- ñ Replaces T8, 374mm to 1800mm Fluorescent lamp sizes.
- ñ High reliability LED and driver technology.
- ñ Built in drive electronics for direct connection to power source.
- ñ Significant energy savings.
- ñ Rotating end-caps.
- ñ Zero maintenance costs.
- ñ Flicker free lighting with instant start.
- ñ No mercury content, environmentally friendly.



Safety Specification

The 1026 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.
- ñ Protected against power supply interruptions (EN50155 Class S2 and C2)

The 1026 series is EN45545 (HL1/2/3) compliant.

Product Codes

	Warm White	Natural White	3500K	Cool White
24VDC White 374mm T8	10261000	-	-	-
24VDC White 438/450mm T8	10261035	10261034	-	-
24VDC White 600mm T8	1026149	1026100	-	1026110
24VDC White 900mm T8	1026150	1026101	-	1026111
24VDC White 970mm T8	10261057	10261038	-	-
24VDC White 1200mm T8	1026151	1026102	-	1026112
24VDC White 1200mm T8	-	-	10261059	-
24VDC White 1500mm T8	1026152	1026103	-	1026113
24VDC White 1800mm T8	1026153	1026104	-	1026114

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Product Codes (continued)

	Warm White	Natural White	Cool White
36VDC White 374mm T8	-	-	-
36VDC White 438/450mm T8	-	-	-
36VDC White 600mm T8	1026188	1026178	1026183
36VDC White 900mm T8	1026188	1026181	1026186
36VDC White 970mm T8	-	-	-
36VDC White 1200mm T8	1026189	1026179	1026184
36VDC White 1500mm T8	1026190	1026180	1026185
36VDC White 1800mm T8	1026192	1026182	1026187
72VDC White 374mm T8	-	-	-
72VDC White 438/450mm T8	-	-	-
72VDC White 600mm T8	1026139	1026126	1026144
72VDC White 900mm T8	1026140	1026129	1026145
72VDC White 970mm T8	-	-	-
72VDC White 1200mm T8	1026141	1026127	1026146
72VDC White 1500mm T8	1026142	1026128	1026147
72VDC White 1800mm T8	1026143	1026125	1026148
110VDC White 374mm T8	-	-	-
110VDC White 438/450mm T8	10261001	10261004	-
110VDC White 600mm T8	1026130	1026105	1026138
110VDC White 900mm T8	1026131	1026108	1026122
110VDC White 970mm T8	10261003	-	-
110VDC White 1200mm T8	1026132	1026106	1026123
110VDC White 1500mm T8	1026133	1026107	1026137
110VDC White 1800mm T8	1026194	1026109	1026124

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1026 Series LED Fluorescent Lamp Replacement



Product Codes (continued)

	Warm White	Natural White	Cool White
230VAC White 374mm T8	-	-	-
230VAC White 438/450mm T8	-	10261035	-
230VAC White 600mm T8	1026164	1026154	1026159
230VAC White 900mm T8	1026165	1026155	1026160
230VAC White 970mm T8	-	-	-
230VAC White 1200mm T8	1026166	1026156	1026161
230VAC White 1500mm T8	1026167	1026157	1026162
230VAC White 1800mm T8	1026168	1026158	1026163



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Technical Overview

Output Specification

Size		374mm	438/450mm	600mm	900mm	970mm	1200mm	1500mm	1800mm
Output (Luminous Flux)		910lm	1040lm	1300lm	1950lm	2145lm	2600lm	3250lm	3900lm
Colour Temperature	Warm White	3000K $\pm$ 5%							
	Natural White	4000K $\pm$ 5%							
	Cool White	6000K $\pm$ 5%							
CRI		>80							
Beam Angle		180°							
Flicker (PstLM)		<0.05							
Strobe Effect (SVM)		0							
Lumen Maintenance (time to 70% of the initial light output)		100,000 hours							
MTBF MIL-HDBK-217F (40°C (hrs)		109923 hours							

Mechanical Specification

Size	374mm	438/450mm	600mm	900mm	970mm	1200mm	1500mm	1800mm
Weight	150g	170g	203g	270g	300g	343g	413g	483g
Line Regulation (Percentage Illuminance change over full supply range)	$\pm$ 2%							
Operating Temperature Range	-25 to 70°C							
Storage Temperature Range	-40 to 50°C							
Operating humidity range	10%-80%							
Connector	2 x G13 end cap. Compliant with EN60081							
Connector Rotation	$\pm$ 90°							
Designed Service Life	15 years							
Sealing Rating	IP40							
Switch Cycles	>100,000 (UIC555)							

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Technical Overview

Electrical Specification

Voltage Size	24VDC							
Acceptable Input Supply	374mm	438/ 450 mm	600mm	900mm	970mm	1200mm	1500mm	1800mm
Voltage Range	16.8-34VDC							
Input Current @ 24VDC	292mA	333mA	417mA	625mA	688mA	833mA	1042mA	1250mA
Input Power @ 24VDC	7W	8W	9.5W	14W	15.5W	19W	24W	28W
Input Power @ 16.8VDC	7W	8W	10W	15W	16.5W	20W	25W	30W
Input Power @ 34VDC	7W	8W	10W	15W	16.5W	20W	25W	30W
Voltage Size	36VDC							
Acceptable Input Supply	374mm	438/ 450 mm	600mm	900mm	970mm	1200mm	1500mm	1800mm
Voltage Range	29-42VDC							
Input Current @ 36VDC	194mA	222mA	278mA	417mA	458mA	556mA	694mA	833mA
Input Power @ 36VDC	7W	8W	9.5W	14W	15.5W	19W	24W	28W
Input Power @ 29VDC	7W	8W	10W	15W	16.5W	20W	25W	30W
Input Power @ 42VDC	7W	8W	10W	15W	16.5W	20W	25W	30W
Voltage	72VDC							
Size Acceptable Input Supply	374mm	438/ 450 mm	600mm	900mm	970mm	1200mm	1500mm	1800mm
Voltage Range	50-90VDC							
Input Current @ 72VDC	97mA	111mA	139mA	208mA	229mA	278mA	347mA	417mA
Input Power @ 72VDC	7W	8W	9.5W	14W	15.5W	19W	24W	28W
Input Power @ 50VDC	7W	8W	10W	15W	16.5W	20W	25W	30W
Input Power @ 90VDC	7W	8W	10W	15W	16.5W	20W	25W	30W

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Technical Overview

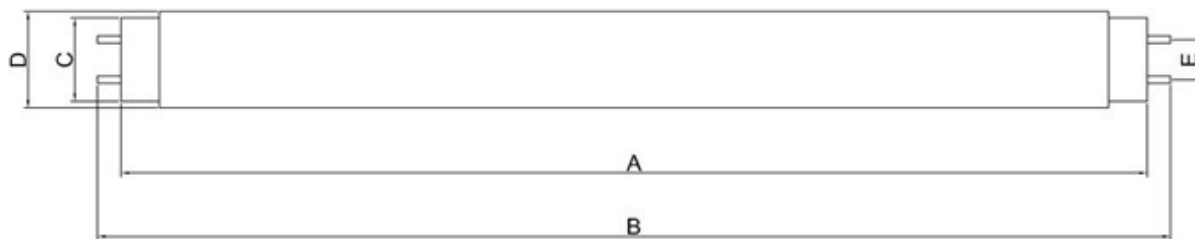
Electrical Specification (Continued)

Voltage Size	110VDC							
Acceptable Input Supply	374mm	438/ 450 mm	600mm	900mm	970mm	1200mm	1500mm	1800mm
Voltage Range	67-140VDC							
Input Current @ 110VDC								
Input Power @ 110VDC	64mA	73mA	91mA	136mA	150mA	182mA	227mA	273mA
	7W	8W	9.5W	14W	15.5W	19W	24W	28W
Input Power @ 67VDC	7W	8W	10W	15W	16.5W	20W	25W	30W
Input Power @ 140VDC	7W	8W	10W	15W	16.5W	20W	25W	30W
Voltage Size	230VAC							
Acceptable Input Supply	374mm	438/ 450 mm	600mm	900mm	970mm	1200mm	1500mm	1800mm
Voltage Range	160-265VAC							
Input Current @ 230VAC	30mA							
		35mA	43mA	65mA	72mA	87mA	109mA	130mA
Input Power @ 230VAC	7W	8W	9.5W	14W	15.5W	19W	24W	28W
Input Power @ 160VAC	7W	8W	10W	15W	16.5W	20W	25W	30W
Input Power @ 265VAC	7W	8W	10W	15W	16.5W	20W	25W	30W
Power Factor	0.92							
Total Harmonic Distortion	10.5%							



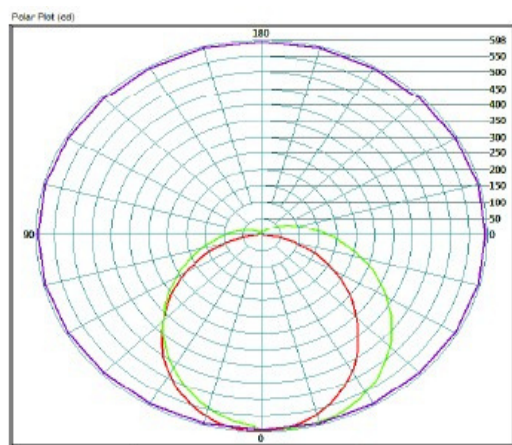
Technical Overview

Mechanical Details



Unit Dimensions				
Size	A	B	C	E
374mm	359.8mm	374.0mm	25.4mm	12.5mm
438/450mm	436.0mm	450.2mm	25.4mm	12.5mm
600mm	588.4mm	602.6mm	25.4mm	12.5mm
900mm	893.6mm	907.8mm	25.4mm	12.5mm
970mm	968.8mm	983.0mm	25.4mm	12.5mm
1200mm	1198.2mm	1212.4mm	25.4mm	12.5mm
1500mm	1498.8mm	1513.0mm	25.4mm	12.5mm
1800mm	1762.6mm	1776.4mm	25.4mm	12.5mm

Photometric Data



Size	Output (Lumens)
374mm	910lm
438/450mm	1040lm
600mm	1300lm
900mm	1950lm
970mm	2145lm
1200mm	2600lm
1500mm	3250lm
1800mm	3900lm

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Installation Guide

Fit existing G13 lamp holders.

Remove original fitment lighting ballast.

Link supply connections over to lamp holder connections.

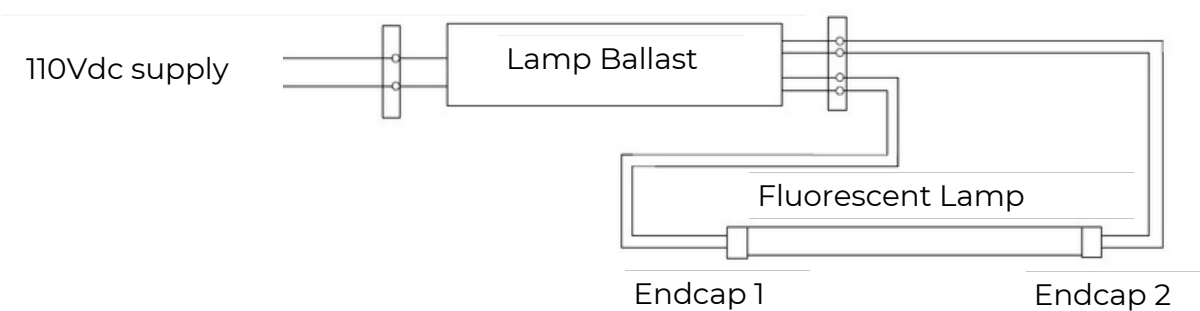
Positive (24/36/72/110VDC) and Negative (0V) to endcap 2

Endcap 1 = No Connection

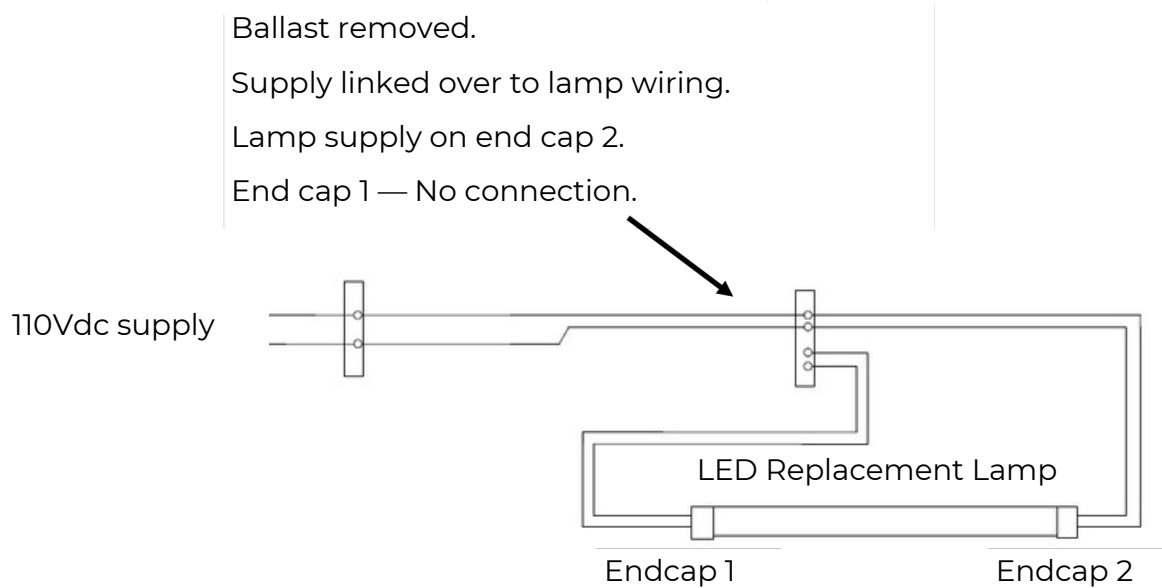
Unit will operate correctly on either polarity.

End cap is marked with 'POWER END'

ORIGINAL LAMP CONNECTION DETAILS



LED REPLACEMENT LAMP CONNECTION DETAILS



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Mounting Clip

Optional for longer lengths

Part Number: A-LMPH-034

Compliance

The 1026 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	EN50155:2021	Electronic equipment used on rolling stock.
ñ	BRB/LUL RIA12	Surge and transient requirements.
ñ	EN45545:2013+A1:2015	
	(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.

