

**OVE Austrian Electrotechnical Association**  
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**OVE Certification**  
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ENEC Certification Body registered under ID # 11.

Validity of ENEC+ Licences can be checked at [www.enec.com](http://www.enec.com)

# LICENCE

to use the ENEC+ Mark



Licence No.: **80585-005**

Date of issue: Wien, 2023 08 04

OVE the Austrian Electrotechnical Association as signatory to the **"Agreement on the use of a commonly agreed Mark of Conformity for certain electrical equipment complying with European Standards"** hereby grants the right to label the products mentioned hereunder and listed in the Annex with the Mark(s) shown above to the following company

Licensee: **ZG Lighting France**  
Route de Paix  
27700 Les Andelys  
France

Product: **Luminaire for road and street lighting**

Trade Mark: **THORN**

Series/Type: **Series Plurio Indirect (PLI . 24L.. ... CL1 ...)**

Basis for this given right is the conformity of the products with the requirements of the relevant Standard(s) as listed in the Annex and the fulfilment of articles 8 and 9 of the ENEC-Agreement by the manufacturer. This licence refers to the tested specimen and to all products manufactured strictly identical to the submitted one.

This licence has been issued under the presumption and conditional on the fact that the licensee holds all necessary legal rights with regard to the product presented for testing and certification.

**Only valid in conjunction with ENEC-Licence No.: 80585-031**

**Österreichischer Verband für Elektrotechnik**  
Head of OVE Certification

Digitally signed by M. Neugebauer  
on behalf of T. Neumayer  
Email=m.neugebauer@ove.at

Dipl.-Ing. T. Neumayer



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<i>Hersteller Manufacturer</i>	<b>Thorn Lighting Ltd Durhamgate, Spennymoor, County Durham DL16 6HL United Kingdom</b>
<i>Fertigungsstätte(n) Factory location(s)</i>	<b>ZG Europhane Route de Paix 27700 Les Andelys France</b>
<i>Typenbezeichnung Type reference</i>	<b>PLI . 24L-.. see type code on page 6.</b>
<i>Prüfbericht Test Report</i>	<b>TR 80585-0037-01, TR 80585-0037-02, TR 80585-0037-03, TR 80585-0037-04, TR 80585-0037-05, TR 80585-0037-06.</b>
<i>ENEC+ Requirement Sheet Standard</i>	<b>PD EPRS 003:2018-05 (based on EN 62722-2-1:2016)</b>
<i>Ersatz für Zertifikat Superseded licence</i>	--
<i>Anmerkung(en) Remark(s)</i>	<b>This Licence is valid for all LED luminaires as listed on page 6. Rated photometric values according to EPRS 003 had been approved on selected samples, which where found to be representative for the certified family range (based on AD ENEC 331).  MPL-procedure.</b>

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<i>Nennspannung</i> <i>Rated voltage</i>	<b>230-240V, 50-60Hz</b>
<i>Nennleistung</i> <i>Rated power</i>	<b>see page 5</b>
<i>Lampentyp(en)</i> <i>Lamp identification</i>	<b>LED modules LEM R24 (24 LEDs) at max. 700 mA</b>
<i>Schutzklasse</i> <i>Class of protection</i>	<b>CI.I</b>
<i>Ähnlichste Farbtemperatur</i> <i>Correlated colour temperature CCT</i>	<b>2200 K, 2700 K, 3000 K, 4000 K</b>
<i>Bemessungswert des Farbwiedergabeindex</i> <i>Rated colour rendering index CRI</i>	<b>70, 80</b>
<i>Bemessungslichtstrom</i> <i>Rated luminous flux</i>	<b>see pages 7 to 10</b>
<i>Bemessungswert der Lichtausbeute</i> <i>Rated efficacy</i>	<b>see pages 7 to 10</b>
<i>Umgebungstemperatur <math>t_a</math></i> <i>Rated ambient temperature <math>t_a</math></i>	<b>25°C</b>
<i>Type von LED-Leuchte</i> <i>Type of LED luminaire</i>	<b>Type A</b>
<i>Zusatzinformation</i> <i>Additional information</i>	<b>Classified within limits of as risk group 1 (low risk) according to EN 62471:2008.</b>

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<i>Bauteil Component</i>	<i>Code Code</i>	<i>Hersteller Manufacturer</i>	<i>Typenbezeichnung Type Reference</i>	<i>Konformitätszeichen Mark(s) of conformity</i>
<i>LED control gear</i>	<b>B</b>	<b>Tridonic</b>	<b>LCO 60/200–1050/100</b>	<b>ENEC 11</b>
<i>LED Module</i>	<b>A*</b>	<b>THORN</b>	<b>LEM R24 max. 1050mA, tp=85°C</b>	<b><u>OVE</u> Reg. Nr.</b>
<i>Terminals</i>	<b>A</b>	<b>Electro Terminal</b>	<b>SLK 450V, 24A, T85</b>	<b>ENEC 10</b>
	<b>D</b>	<b>BJB</b>	<b>46.413 450V, 24A, T85</b>	<b>ENEC 10</b>
<i>Internal wiring</i>	<b>B</b>	<b>BLF</b>	<b>UG4G4 450/700V; 0,75mm<sup>2</sup>; 180°C</b>	<b>IMQ</b>
	<b>B</b>	<b>BLF</b>	<b>SIL/0100 300V; 0,75mm<sup>2</sup>; 180°C</b>	<b>VDE</b>
<i>Connector</i>	<b>A</b>	<b>Adels-Contact</b>	<b>160 / 163 2,5mm<sup>2</sup>; 400V; 16A; 70°C</b>	<b>VDE</b>
<i>External wiring</i>	<b>A</b>	<b>Nexans</b>	<b>H07RN-F 1,5mm<sup>2</sup></b>	<b>HAR</b>

A The component is replaceable with another one, also certified, with equivalent characteristics.  
A\* The component is replaceable with another one according to ETF5-OSM-LUM/DSH 2057  
B The component is replaceable if authorised by the test house.  
C Integrated component tested together with the appliance.  
D Alternative component.

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**Typelist, thermal and electrical specification:**

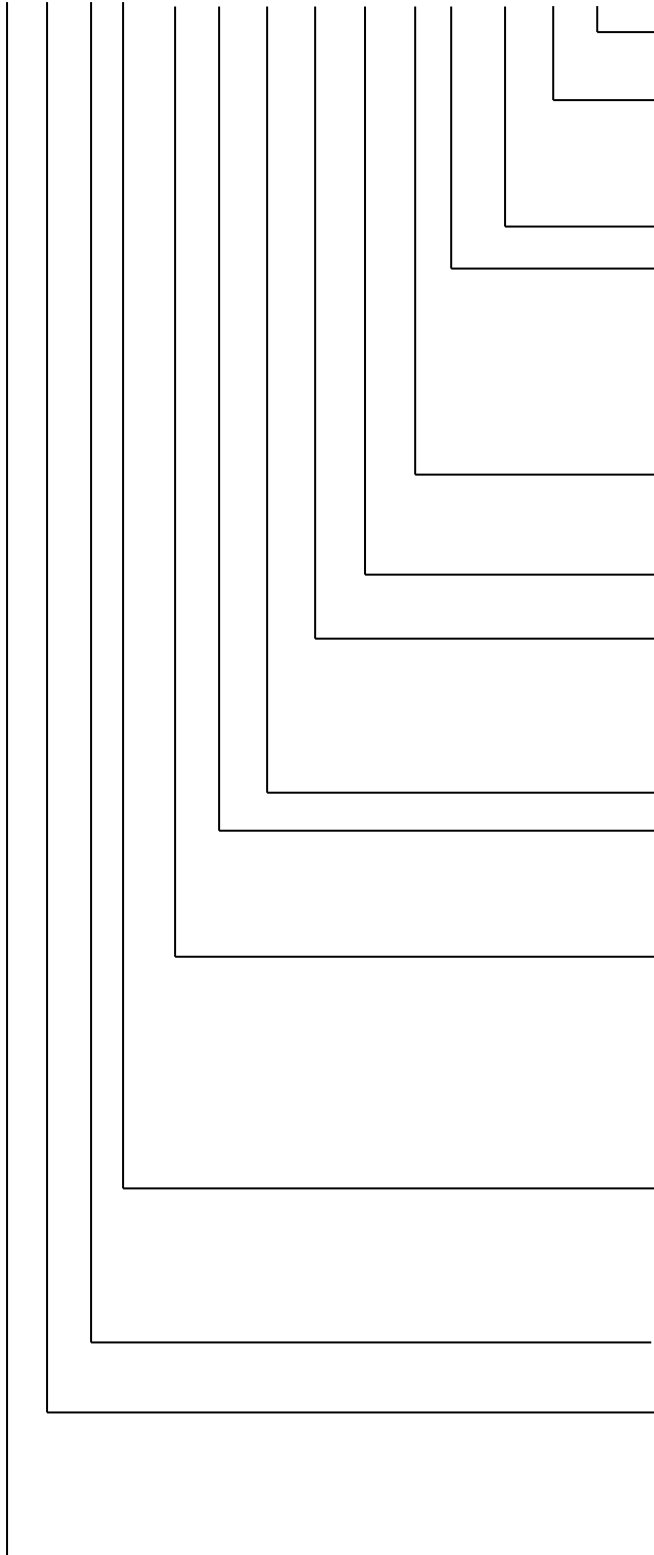
Model	Type	Built-in LED modules	No. of LEDs	Module current [mA]	Rated input power [W]	Rated ambient temp. (ta) [°C]
PLI	PLI . 24L25	1x LEM R24	24	250	19	25
	PLI . 24L35			350	26	
	PLI . 24L50			500	36	
	PLI . 24L70			700	51	

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**Typecode:**

**PLI . 24L.. - ... .. CL1 ... ..**



**Variant (optional)**

U0 ..... ULOR 0 variant

**Colour**

ANT ..... Texturized anthracit

GY ..... Texturized light grey

BK ..... Texturized black

**CL1** ..... Protection class I

**Wiring**

D5 ..... Pre-wired 5m, 1,5mm<sup>2</sup>

D6 ..... Pre-wired 6m, 1,5mm<sup>2</sup>

D8 ..... Pre-wired 8m, 1,5mm<sup>2</sup>

W5 ..... Pre-wired 5m, 1,5mm<sup>2</sup>

W6 ..... Pre-wired 6m, 1,5mm<sup>2</sup>

W8 ..... Pre-wired 8m, 1,5mm<sup>2</sup>

**Spigot**

T60 ..... 60mm spigot

T76 ..... 76mm spigot

**DALI (optional)**

HFX ..... DALI dimmable

**Bi-Power light reduction**

LRT ..... Light reduction twin-phase

BPS ..... Bi power switchable

BP ..... Bi power

MLD1 ..... Multi-layers dimming scenario

**CLO** ..... **Constant Light Output** (optional)

**Optics**

R/S ..... Rotational Symmetrical

EWC ..... Extra-Wide Comfort Asymmetrical

EWC-B ..... Extra-Wide Comfort Asymmetrical with backlight

**Photometric code**

722 ..... 2200K, CRI 70

727 ..... 2700K, CRI 70

730 ..... 3000K, CRI 70

740 ..... 4000K, CRI 70

827 ..... 2700K, CRI 80

830 ..... 3000K, CRI 80

840 ..... 4000K, CRI 80

**Current of LED module**

25 ..... 250mA

35 ..... 350mA

50 ..... 500mA

70 ..... 700mA

**Number of LEDs**

24L ..... 24 LEDs

**Canopy**

O ..... Original Canopy

R ..... Round Canopy

F ..... Flat Canopy

D ..... Disc Canopy

**Series Plurio LED Indirect**

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**Rated luminous flux and efficacy:**

	Type description	Rated input power	Photometric code	Rated luminous flux	Rated efficacy
		[W]	[K]	[lm]	[lm/W]
	2200K LED 250mA - EWC Optic - ULR<1	19	722	1784	94
	2700K LED 250mA - EWC Optic - ULR<1	19	727	1921	101
	3000K LED 250mA - EWC Optic - ULR<1	19	730	2127	112
	4000K LED 250mA - EWC Optic - ULR<1	19	740	2332	123
	2700K LED 250mA - EWC Optic - ULR<1	19	827	1715	90
	3000K LED 250mA - EWC Optic - ULR<1	19	830	1989	105
	4000K LED 250mA - EWC Optic - ULR<1	19	840	2058	108
	2200K LED 250mA - EWC-B Optic	19	722	1809	95
	2700K LED 250mA - EWC-B Optic	19	727	1948	103
	3000K LED 250mA - EWC-B Optic	19	730	2157	114
	4000K LED 250mA - EWC-B Optic	19	740	2366	125
	2700K LED 250mA - EWC-B Optic	19	827	1739	92
	3000K LED 250mA - EWC-B Optic	19	830	2018	106
	4000K LED 250mA - EWC-B Optic	19	840	2087	110
*	2200K LED 250mA - R/S Optic - ULR<1	19	722	1847	97
	2700K LED 250mA - R/S Optic - ULR<1	19	727	1989	105
	3000K LED 250mA - R/S Optic - ULR<1	19	730	2202	116
	4000K LED 250mA - R/S Optic - ULR<1	19	740	2416	127
	2700K LED 250mA - R/S Optic - ULR<1	19	827	1776	93
	3000K LED 250mA - R/S Optic - ULR<1	19	830	2060	108
	4000K LED 250mA - R/S Optic - ULR<1	19	840	2131	112
	2200K LED 350mA - EWC Optic - ULR<1	26	722	2408	93
	2700K LED 350mA - EWC Optic - ULR<1	26	727	2593	100
	3000K LED 350mA - EWC Optic - ULR<1	26	730	2871	110
	4000K LED 350mA - EWC Optic - ULR<1	26	740	3149	121
	2700K LED 350mA - EWC Optic - ULR<1	26	827	2315	89
	3000K LED 350mA - EWC Optic - ULR<1	26	830	2686	103
	4000K LED 350mA - EWC Optic - ULR<1	26	840	2778	107
	2200K LED 350mA - EWC-B Optic	26	722	2442	94
	2700K LED 350mA - EWC-B Optic	26	727	2630	101
	3000K LED 350mA - EWC-B Optic	26	730	2912	112
	4000K LED 350mA - EWC-B Optic	26	740	3194	123
	2700K LED 350mA - EWC-B Optic	26	827	2348	90
	3000K LED 350mA - EWC-B Optic	26	830	2724	105
	4000K LED 350mA - EWC-B Optic	26	840	2818	108
	2200K LED 350mA - R/S Optic - ULR<1	26	722	2494	96
	2700K LED 350mA - R/S Optic - ULR<1	26	727	2686	103
	3000K LED 350mA - R/S Optic - ULR<1	26	730	2973	114
	4000K LED 350mA - R/S Optic - ULR<1	26	740	3261	125
	2700K LED 350mA - R/S Optic - ULR<1	26	827	2398	92
	3000K LED 350mA - R/S Optic - ULR<1	26	830	2782	107
	4000K LED 350mA - R/S Optic - ULR<1	26	840	2877	111
	2200K LED 500mA - EWC Optic - ULR<1	36	722	3290	91
	2700K LED 500mA - EWC Optic - ULR<1	36	727	3543	98
	3000K LED 500mA - EWC Optic - ULR<1	36	730	3923	109
	4000K LED 500mA - EWC Optic - ULR<1	36	740	4302	120
	2700K LED 500mA - EWC Optic - ULR<1	36	827	3163	88
	3000K LED 500mA - EWC Optic - ULR<1	36	830	3670	102

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		[W]	[K]	[lm]	[lm/W]
	4000K LED 500mA - EWC Optic - ULR<1	36	840	3796	105
	2200K LED 500mA - EWC-B Optic	36	722	3337	93
	2700K LED 500mA - EWC-B Optic	36	727	3594	100
	3000K LED 500mA - EWC-B Optic	36	730	3979	111
	4000K LED 500mA - EWC-B Optic	36	740	4364	121
	2700K LED 500mA - EWC-B Optic	36	827	3209	89
*	3000K LED 500mA - EWC-B Optic	36	830	3722	103
	4000K LED 500mA - EWC-B Optic	36	840	3850	107
	2200K LED 500mA - R/S Optic - ULR<1	36	722	3407	95
	2700K LED 500mA - R/S Optic - ULR<1	36	727	3670	102
	3000K LED 500mA - R/S Optic - ULR<1	36	730	4063	113
	4000K LED 500mA - R/S Optic - ULR<1	36	740	4456	124
	2700K LED 500mA - R/S Optic - ULR<1	36	827	3276	91
	3000K LED 500mA - R/S Optic - ULR<1	36	830	3801	106
	4000K LED 500mA - R/S Optic - ULR<1	36	840	3932	109
	2200K LED 700mA - EWC Optic - ULR<1	51	722	4361	86
	2700K LED 700mA - EWC Optic - ULR<1	51	727	4697	92
	3000K LED 700mA - EWC Optic - ULR<1	51	730	5200	102
*	4000K LED 700mA - EWC Optic - ULR<1	51	740	5703	112
	2700K LED 700mA - EWC Optic - ULR<1	51	827	4193	82
	3000K LED 700mA - EWC Optic - ULR<1	51	830	4864	95
	4000K LED 700mA - EWC Optic - ULR<1	51	840	5032	99
	2200K LED 700mA - EWC-B Optic	51	722	4423	87
	2700K LED 700mA - EWC-B Optic	51	727	4764	93
	3000K LED 700mA - EWC-B Optic	51	730	5274	103
	4000K LED 700mA - EWC-B Optic	51	740	5784	113
	2700K LED 700mA - EWC-B Optic	51	827	4253	83
	3000K LED 700mA - EWC-B Optic	51	830	4934	97
	4000K LED 700mA - EWC-B Optic	51	840	5104	100
	2200K LED 700mA - R/S Optic - ULR<1	51	722	4517	89
	2700K LED 700mA - R/S Optic - ULR<1	51	727	4864	95
	3000K LED 700mA - R/S Optic - ULR<1	51	730	5386	106
	4000K LED 700mA - R/S Optic - ULR<1	51	740	5907	116
	2700K LED 700mA - R/S Optic - ULR<1	51	827	4343	85
	3000K LED 700mA - R/S Optic - ULR<1	51	830	5038	99
	4000K LED 700mA - R/S Optic - ULR<1	51	840	5212	102
	2200K LED 250mA - EWC Optic - ULR0	19	722	1656	87
	2700K LED 250mA - EWC Optic - ULR0	19	727	1784	94
	3000K LED 250mA - EWC Optic - ULR0	19	730	1975	104
	4000K LED 250mA - EWC Optic - ULR0	19	740	2166	114
	2700K LED 250mA - EWC Optic - ULR0	19	827	1592	84
	3000K LED 250mA - EWC Optic - ULR0	19	830	1847	97
	4000K LED 250mA - EWC Optic - ULR0	19	840	1911	101
	2200K LED 250mA - RS Optic - ULR0	19	722	1707	90
	2700K LED 250mA - RS Optic - ULR0	19	727	1838	97
	3000K LED 250mA - RS Optic - ULR0	19	730	2035	107
	4000K LED 250mA - RS Optic - ULR0	19	740	2232	117
	2700K LED 250mA - RS Optic - ULR0	19	827	1641	86
	3000K LED 250mA - RS Optic - ULR0	19	830	1904	100

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		[W]	[K]	[lm]	[lm/W]
	4000K LED 250mA - RS Optic - ULR0	19	840	1970	104
	2200K LED 350mA - EWC Optic - ULR0	26	722	2236	86
	2700K LED 350mA - EWC Optic - ULR0	26	727	2408	93
*	3000K LED 350mA - EWC Optic - ULR0	26	730	2666	103
	4000K LED 350mA - EWC Optic - ULR0	26	740	2924	112
	2700K LED 350mA - EWC Optic - ULR0	26	827	2150	83
	3000K LED 350mA - EWC Optic - ULR0	26	830	2494	96
	4000K LED 350mA - EWC Optic - ULR0	26	840	2580	99
	2200K LED 350mA - RS Optic - ULR0	26	722	2305	89
	2700K LED 350mA - RS Optic - ULR0	26	727	2482	95
	3000K LED 350mA - RS Optic - ULR0	26	730	2748	106
	4000K LED 350mA - RS Optic - ULR0	26	740	3014	116
	2700K LED 350mA - RS Optic - ULR0	26	827	2216	85
	3000K LED 350mA - RS Optic - ULR0	26	830	2571	99
	4000K LED 350mA - RS Optic - ULR0	26	840	2659	102
	2200K LED 500mA - EWC Optic - ULR0	36	722	3055	85
	2700K LED 500mA - EWC Optic - ULR0	36	727	3290	91
	3000K LED 500mA - EWC Optic - ULR0	36	730	3642	101
	4000K LED 500mA - EWC Optic - ULR0	36	740	3995	111
	2700K LED 500mA - EWC Optic - ULR0	36	827	2937	82
	3000K LED 500mA - EWC Optic - ULR0	36	830	3407	95
	4000K LED 500mA - EWC Optic - ULR0	36	840	3525	98
	2200K LED 500mA - RS Optic - ULR0	36	722	3149	87
	2700K LED 500mA - RS Optic - ULR0	36	727	3391	94
	3000K LED 500mA - RS Optic - ULR0	36	730	3755	104
	4000K LED 500mA - RS Optic - ULR0	36	740	4118	114
	2700K LED 500mA - RS Optic - ULR0	36	827	3028	84
	3000K LED 500mA - RS Optic - ULR0	36	830	3512	98
	4000K LED 500mA - RS Optic - ULR0	36	840	3633	101
	2200K LED 700mA - EWC Optic - ULR0	51	722	4050	79
	2700K LED 700mA - EWC Optic - ULR0	51	727	4361	86
	3000K LED 700mA - EWC Optic - ULR0	51	730	4828	95
	4000K LED 700mA - EWC Optic - ULR0	51	740	5296	104
	2700K LED 700mA - EWC Optic - ULR0	51	827	3894	76
	3000K LED 700mA - EWC Optic - ULR0	51	830	4517	89
	4000K LED 700mA - EWC Optic - ULR0	51	840	4673	92
	2200K LED 700mA - RS Optic - ULR0	51	722	4174	82
	2700K LED 700mA - RS Optic - ULR0	51	727	4495	88
	3000K LED 700mA - RS Optic - ULR0	51	730	4977	98
	4000K LED 700mA - RS Optic - ULR0	51	740	5459	107
	2700K LED 700mA - RS Optic - ULR0	51	827	4014	79
	3000K LED 700mA - RS Optic - ULR0	51	830	4656	91
*	4000K LED 700mA - RS Optic - ULR0	51	840	4816	94
	2200K LED 250mA - EWC-B Optic - ULR0	19	722	1664	88
	2700K LED 250mA - EWC-B Optic - ULR0	19	727	1792	94
	3000K LED 250mA - EWC-B Optic - ULR0	19	730	1984	104
	4000K LED 250mA - EWC-B Optic - ULR0	19	740	2176	115
	2700K LED 250mA - EWC-B Optic - ULR0	19	827	1600	84
	3000K LED 250mA - EWC-B Optic - ULR0	19	830	1856	98

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		[W]	[K]	[lm]	[lm/W]
	4000K LED 250mA - EWC-B Optic - ULR0	19	840	1920	101
	2200K LED 350mA - EWC-B Optic - ULR0	26	722	2246	86
	2700K LED 350mA - EWC-B Optic - ULR0	26	727	2419	93
	3000K LED 350mA - EWC-B Optic - ULR0	26	730	2678	103
	4000K LED 350mA - EWC-B Optic - ULR0	26	740	2937	113
	2700K LED 350mA - EWC-B Optic - ULR0	26	827	2160	83
	3000K LED 350mA - EWC-B Optic - ULR0	26	830	2505	96
	4000K LED 350mA - EWC-B Optic - ULR0	26	840	2592	100
	2200K LED 500mA - EWC-B Optic - ULR0	36	722	3069	85
	2700K LED 500mA - EWC-B Optic - ULR0	36	727	3305	92
	3000K LED 500mA - EWC-B Optic - ULR0	36	730	3659	102
*	4000K LED 500mA - EWC-B Optic - ULR0	36	740	4013	111
	2700K LED 500mA - EWC-B Optic - ULR0	36	827	2951	82
	3000K LED 500mA - EWC-B Optic - ULR0	36	830	3423	95
	4000K LED 500mA - EWC-B Optic - ULR0	36	840	3541	98
	2200K LED 700mA - EWC-B Optic - ULR0	51	722	4068	80
	2700K LED 700mA - EWC-B Optic - ULR0	51	727	4381	86
	3000K LED 700mA - EWC-B Optic - ULR0	51	730	4851	95
	4000K LED 700mA - EWC-B Optic - ULR0	51	740	5320	104
	2700K LED 700mA - EWC-B Optic - ULR0	51	827	3912	77
	3000K LED 700mA - EWC-B Optic - ULR0	51	830	4538	89
	4000K LED 700mA - EWC-B Optic - ULR0	51	840	4694	92

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