

Linear Line Voltage LED Engine Product Specification



Introduction

The TERRALUX Linear LED Engine is a fully integrated, self-contained, plug-and-play LED solution for lighting fixture manufacturers and retrofit installations. The Engine is AC-mains compatible, dimmable, and requires no additional drivers or special sockets. A compact form-factor, flexible mounting options, and complete integration of drive electronics and optics, combined with TERRALUX's patented LEDSense[®] thermal management circuitry means simple, low-cost integration, fast time to market, and reliable, long-term operation and lumen maintenance. The TERRALUX Linear LED Engine is an ideal solution for a wide variety of applications including wall sconces, ceiling fixtures, and recessed applications.

Features

- 120V or 100-277V AC input
- Dimmable with standard phase-dimmers (120V version) or 0-10V dimming systems (100-277V)
- Available in 3 sizes: 4", 6" and 8"
- Patented LEDSense[®] Thermal Management
- Available in 2700K, 3000K, 3500K, 4000K and 5000K
- Efficacy up to 96 lm/W
- CRI>80
- L70 = 60,000 hours
- IP-65 Rated
- UL Recognized Component
- UL 1598C Classified (LED Retrofit Kit)
- ENERGY STAR[®] CSD Certified
- 5-year warranty
- FCC Class B Compliant



Performance

Color Temperature	2700k			3000k			3500k			4000k			5000k		
CRI Minimum [Typical]	80 [82]			80 [82]			80 [82]			80 [85]			80 [85]		
Form & Size	4"	6"	8"	4"	6"	8"	4"	6"	8"	4"	6"	8"	4"	6"	8"
Light Output [lumens]															
120V model	478	699	885	499	729	940	539	789	986	567	796	1020	568	825	1069
100-277V model	402	560	756	407	575	808	450	607	879	478	623	886	478	656	886*
Power [Watts]															
120V model*	7.7	10.1	12.6	7.7	10.1	12.6	7.7	10.1	12.6	7.7	10.1	12.6	7.7	10.1	12.6
100-277V model @120V	5.0	6.9	10.2	5.0	6.9	10.2	5.0	6.9	10.2	5.0	6.9	10.2	5.0	6.9	10.2*
Efficacy [lm/W]															
120V model	62	69	70	65	72	75	70	78	79	73	79	81	73	82	85
100-277V model @120V	80	81	74	81	83	79	90	88	86	96	90	87	96	95	87*

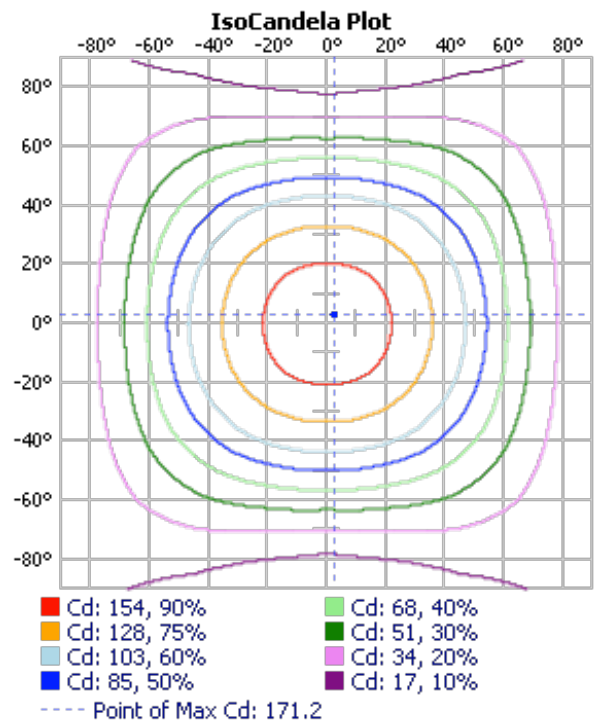
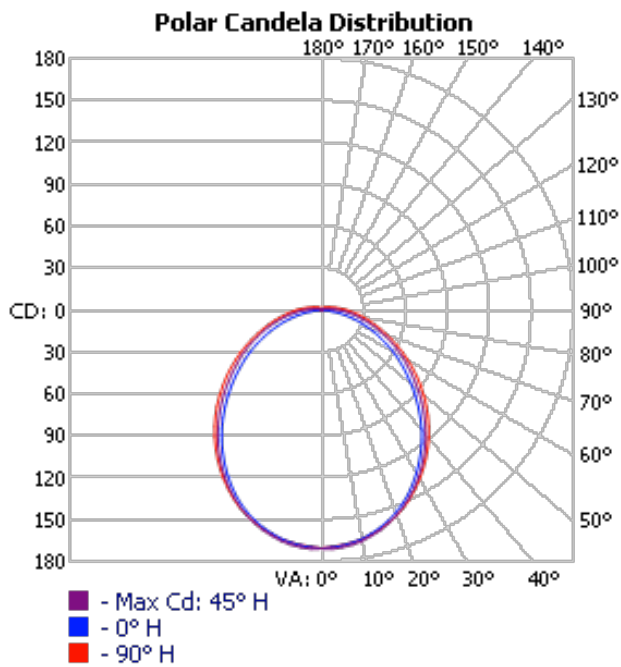
Notes:

- Typical Performance @ 25°C Heatsink temperature, T_c. See *Relative Light Output vs Temperature and LEDSense®* graphs, page 3, for temperature & Power de-rating.
- All specifications subject to tolerance of ± 10%
- Power draw may be affected by installation with a dimmer—120V version only

* 8" Linear 5000K: DLC Wall pack retrofit, only version with clear lens

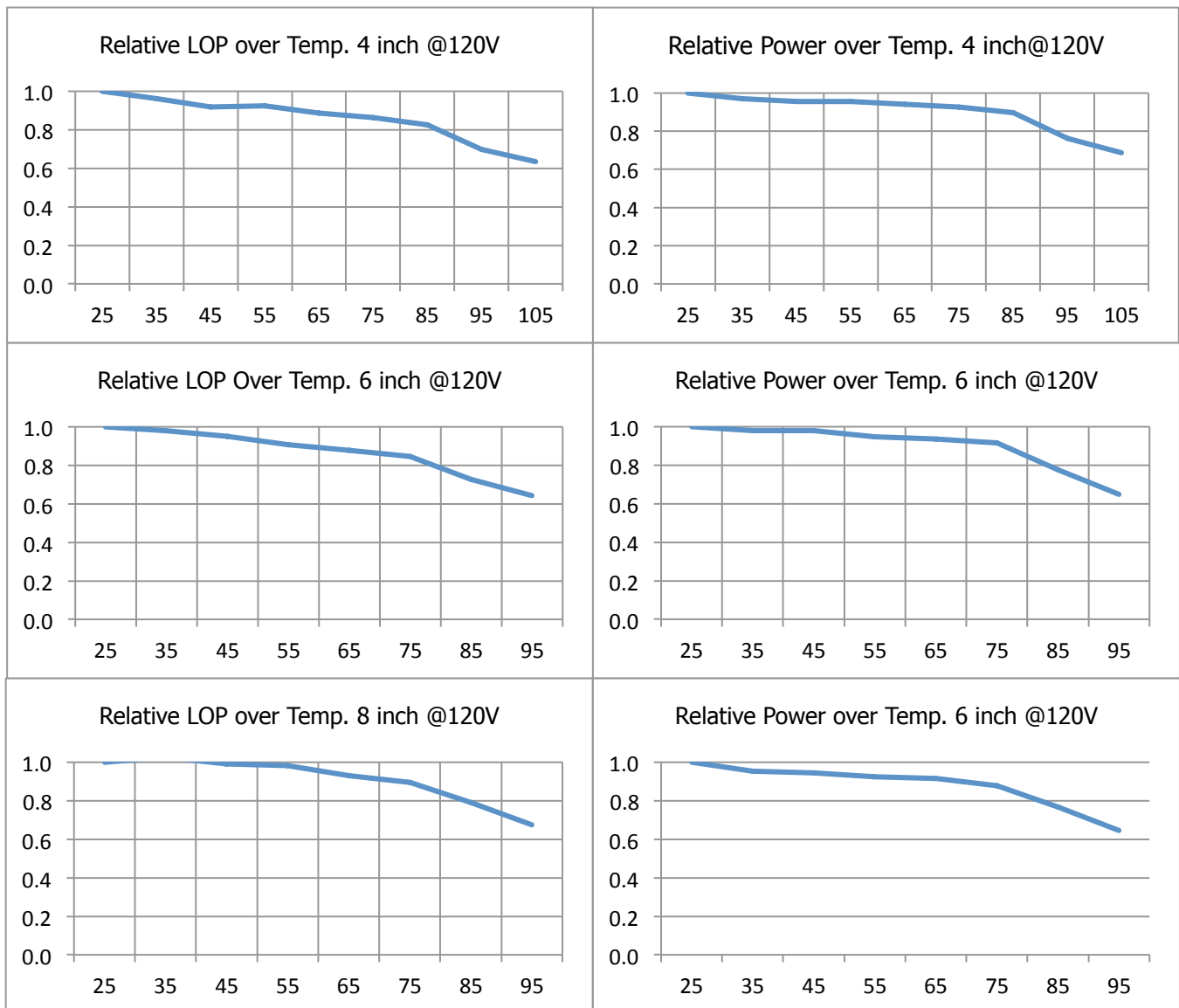
Photometry

2700K, 120-277V 4 inch



LEDSense® Operation, Thermal De-rating and Lumen

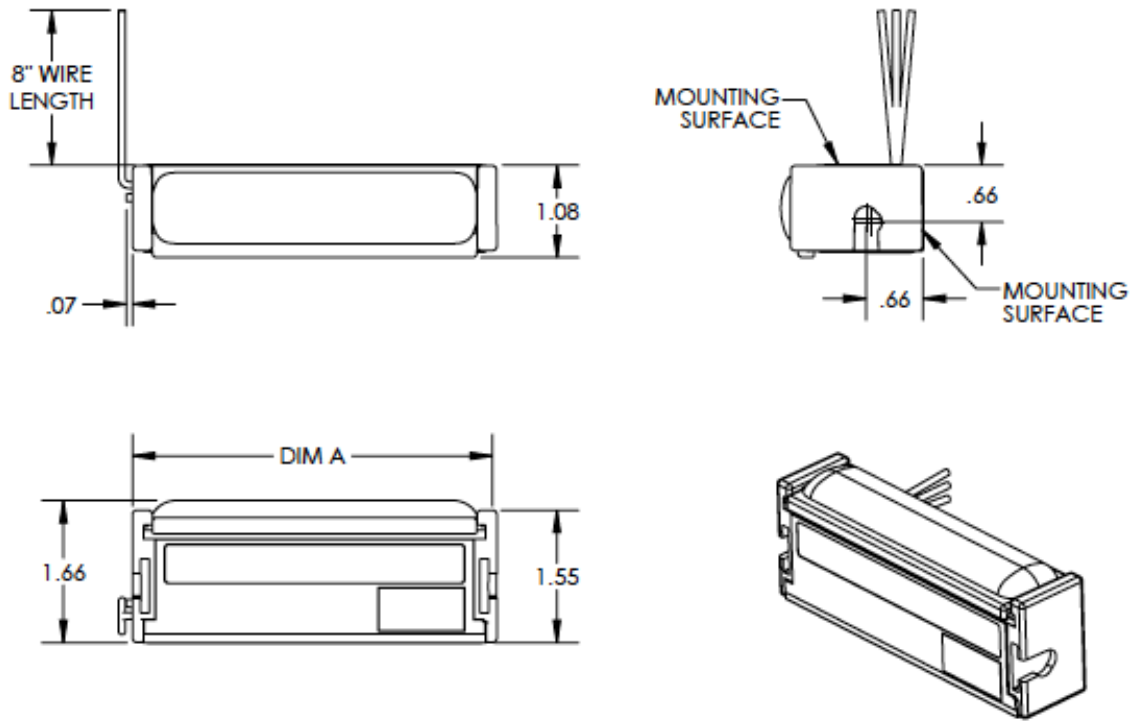
The Linear engine employs TERRALUX's patented LEDSense® Thermal Management Technology to automatically provide maximum light output in various fixtures and operating conditions while assuring long-term lumen maintenance. LED-Sense® regularly measures the operating temperature and ensures compliance with a pre-programmed temperature and drive-current profile. This profile is based on the LED manufacturer's LM-80 data report and minimum L70/60,000 hour lumen maintenance curves. LEDSense® is always active, and will compensate for variation in thermal conditions due to heatsinking, ambient air, Engine positioning, or any other variable that affects the operating temperature. The Thermal De-rating curve below identifies the relative light output that can be expected under various thermal conditions. The LEDSense® Power Curve identifies the reduction in input power over temperature.



Tests and Certifications

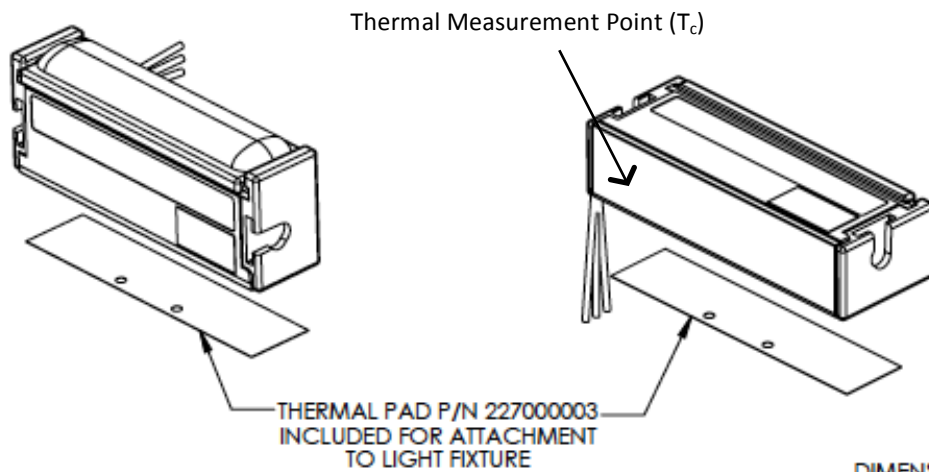
Product Safety Certifications	<p>120V</p> <ul style="list-style-type: none"> • UL Standards 8750 (Recognized Component), 1598C (LED Retrofit Kit) • CSA Standard C22.2 No. 250.0-08 <p>100-277V</p> <ul style="list-style-type: none"> • UL Standards 8750 (Recognized Component), 1598C (LED Retrofit Kit) • CSA Standard C22.2 No. 250.0-08 • ENEC License ENEC-00404 —tested according to EN 62031:2008 (Ta 55°C Tc 85°C)
Radio Frequency Emissions	<ul style="list-style-type: none"> • FCC Part 15, Unintentional Radiators Class A. (120V) • FCC Part 15, Unintentional Radiators Class B. (100-277V)
Reduction of Hazardous Substances (RoHS)	European Council Directive 2002/95/EC
Input Voltage Range/Frequency Range	<p>120V</p> <p>90-132 VAC / 47-63Hz</p> <p>100-277V</p> <p>90VAC—300VAC / 47Hz—63Hz</p>
Power Factor	>= 0.9
Electrical Fast Transients	IEC/EN 61000-4-5 ±1 kV
Surge	IEC/EN 61000-4-5 ±500V Differential mode / ±1 kV Common mode
Voltage Harmonics	IEC/EN 61000-3-2
Voltage Dips and Interrupts	Mains dips of 30% for 500ms, 95% for 10ms, and interruptions of 95% for 5s
Electrostatic Discharge	± 6 kV Contact mode, ± 10 kV Air Gap
Shock and Vibration	Operating – Non Operating
Impact	1 m product drop, 1.3 m steel ball impact
Operating Temperature	-40°C to +55°C, 0 to 95% R.H. / 153 hr
Storage Temperature	-40°C to +85°C / 60 hr. followed by 20°C to 85°C, 5 to 95% R.H. / 80 hr
Ingress Protection (Water, Dust)	IP65
Corrosive Environment	96 Hours Salt Fog Test (5% salt fog at 95°C) per Mil-Std 810F, Method 509.4
Dimmer Compatibility	See “Dimmer Compatibility Matrix”
Dimming Standard Conformance	NEMA SSL 6-2010 Relative light output vs. phase angle (120V)
Lumen Maintenance	L70 =60,000hr per IES TM-21-11 (Based on LED Manufacturer’s measurement per IES LM-80-08 @ 10,000hrs).
Reliability Demonstration	100 units running continuously for 6,700 Hrs each
Mean Time Between Failures (MTBF)	120V - 4”: >680,000 Hrs. ; 6”: > 275,000 Hrs. ; 8”: > 400,000 Hrs. 100-277V - 4”: >530,000 Hrs. ; 6”: > 312,000 Hrs. ; 8”: > 260,000 Hrs.

Dimensions



MODULE	DIM A
4"	4.26
6"	6.26
8"	8.26

LINEAR MODULE DIMENSIONS



DIMENSIONS ARE IN INCHES

Optional Undermount Bracket Kit

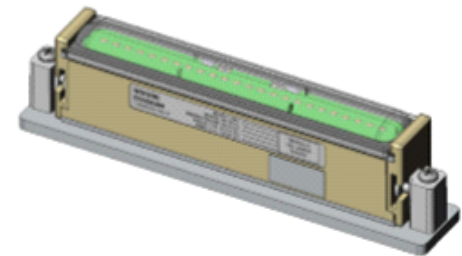
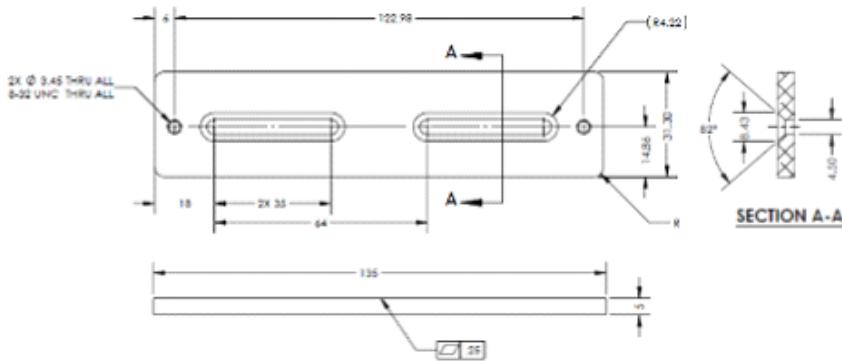
All dimensions in mm

Kit Content:

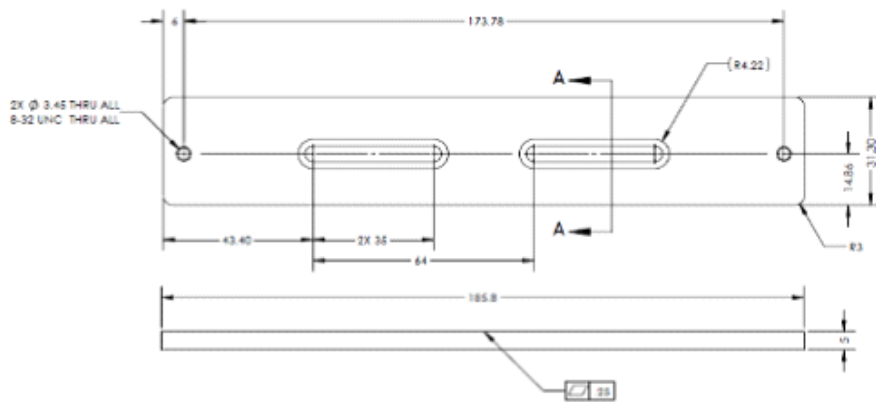
- Undermount plate
- 2 x self drilling flat head screws (mounting to fixture)
- 2 x Phillips pan head (mounting light engine to plate via straight brackets provided with Retrofit Kit)



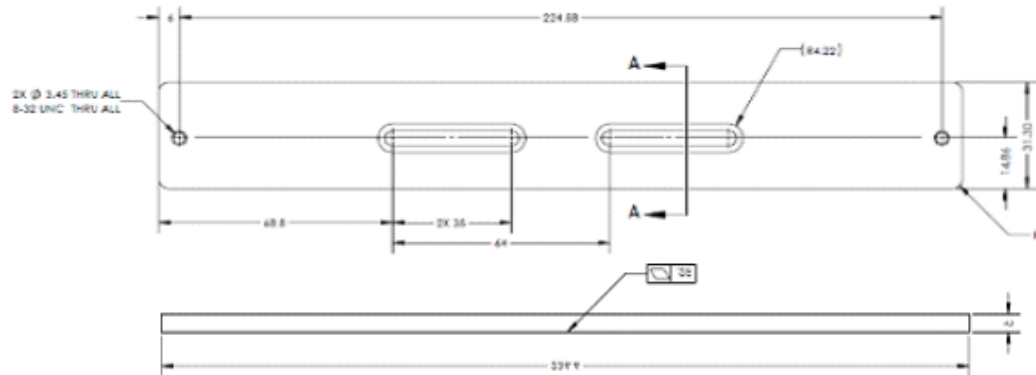
4 inch (TLMA-937000008)



6 inch (TLMA-937000009)



8 inch (TLMA-937000010)



Product Selection & Part Number Guide

TLM - **F** **SS** **1** **2** **3** **4** **5**
 Example: TLM - L 04 B - A 04 27 12 N - RXXX

F		
Form		
<input type="checkbox"/>	L	Linear

SS		
Size		
<input type="checkbox"/>	04	4 inch
<input type="checkbox"/>	06	6 inch
<input type="checkbox"/>	08	8 inch

1		
Voltage		
<input type="checkbox"/>	A	120 VAC Phase Dimming
<input type="checkbox"/>	B	100-277VAC 1-10V Dimming
<input type="checkbox"/>	C	100-240VAC (ENEC) Phase Dimming
<input type="checkbox"/>	D	100-277VAC (UL) No Dimming

2		
Light Level		
<input type="checkbox"/>	04	400 lm range (4")
<input type="checkbox"/>	06	600 lm range (6")
<input type="checkbox"/>	08	800 lm range (8")

3		
Color Temp		
<input type="checkbox"/>	27	2700K
<input type="checkbox"/>	30	3000K
<input type="checkbox"/>	35	3500K
<input type="checkbox"/>	40	4000K
<input type="checkbox"/>	50	5000K

4		
Light distribution		
<input type="checkbox"/>	12	Diffuse Distribution

5		
Options		
<input type="checkbox"/>	N	None (1)
<input type="checkbox"/>	R	Retrofit kit (2)

- (1) Light engine delivered with Thermal Pad (UL registered Component)
 (2) Retrofit Kit Content (UL 1598C Classified):
 LED Light Engine + Thermal Pad
 2 x straight mount brackets
 2 x Offset Brackets
 3 x wire nuts
 2x sets of self-tapping screws (short and long)
 Retrofit Instructions

Optional Accessories:

Description	Quantity	Part Number
Straight Brackets	100 (50 sets)	TLMA-228000031
Offset Brackets	50 Left + 50 Right	TLMA-228000028
Multi-Mount Brackets	100	TLMA-208000030
Diffuse lens (180°) - 4"	1	TLMA-202000038
Diffuse lens (180°) - 6"	1	TLMA-202000039
Diffuse lens (180°) - 8"	1	TLMA-202000040
Undermount bracket kit - 4"	1	TLMA-937000008
Undermount bracket kit - 6"	1	TLMA-937000009
Undermount bracket kit - 8"	1	TLMA-937000010

Please contact your STANDARD sales representative for pricing and delivery.

Product Selection & Part Number Guide

Order code	Description	Watts (W)	Volts (VAC)	Colour temp. (K)	CRI	Average life ² (hrs)	Initial lumens (lm)	IP rating	Dimmable ³ (Y/N)	Case qty
Engines - Phase Dimming										
63169	TLM-L04B-A042712R	7.7	120	2 700	82	60 000	478	65	Y	20
63178	TLM-L04B-A043012R	7.7	120	3 000	82	60 000	499	65	Y	20
63187	TLM-L04B-A043512R	7.7	120	3 500	82	60 000	539	65	Y	20
63196	TLM-L04B-A044012R	7.7	120	4 000	85	60 000	567	65	Y	20
63205	TLM-L04B-A045012R	7.7	120	5 000	85	60 000	568	65	Y	20
63170	TLM-L06B-A062712R	10.1	120	2 700	82	60 000	699	65	Y	20
63179	TLM-L06B-A063012R	10.1	120	3 000	82	60 000	729	65	Y	20
63188	TLM-L06B-A063512R	10.1	120	3 500	82	60 000	789	65	Y	20
63197	TLM-L06B-A064012R	10.1	120	4 000	85	60 000	796	65	Y	20
63206	TLM-L06B-A065012R	10.1	120	5 000	85	60 000	825	65	Y	20
63171	TLM-L08B-A082712R	12.6	120	2 700	82	60 000	885	65	Y	20
63180	TLM-L08B-A083012R	12.6	120	3 000	82	60 000	940	65	Y	20
63189	TLM-L08B-A083512R	12.6	120	3 500	82	60 000	986	65	Y	20
63198	TLM-L08B-A084012R	12.6	120	4 000	85	60 000	1 020	65	Y	20
63207	TLM-L08B-A085012R	12.6	120	5 000	85	60 000	1 069	65	Y	20
Engines - 0-10 V Dimming										
63172	TLM-L04B-B042712R	5	100-277	2 700	82	60 000	402	65	Y - 0-10 V	20
63181	TLM-L04B-B043012R	5	100-277	3 000	82	60 000	407	65	Y - 0-10 V	20
63190	TLM-L04B-B043512R	5	100-277	3 500	82	60 000	450	65	Y - 0-10 V	20
63199	TLM-L04B-B044012R	5	100-277	4 000	85	60 000	478	65	Y - 0-10 V	20
63208	TLM-L04B-B045012R	5	100-277	5 000	85	60 000	478	65	Y - 0-10 V	20
63173	TLM-L06B-B062712R	6.9	100-277	2 700	82	60 000	560	65	Y - 0-10 V	20
63182	TLM-L06B-B063012R	6.9	100-277	3 000	82	60 000	575	65	Y - 0-10 V	20
63191	TLM-L06B-B063512R	6.9	100-277	3 500	82	60 000	607	65	Y - 0-10 V	20
63200	TLM-L06B-B064012R	6.9	100-277	4 000	85	60 000	623	65	Y - 0-10 V	20
63209	TLM-L06B-B065012R	6.9	100-277	5 000	85	60 000	656	65	Y - 0-10 V	20
63174	TLM-L08B-B082712R	10.2	100-277	2 700	82	60 000	756	65	Y - 0-10 V	20
63183	TLM-L08B-B083012R	10.2	100-277	3 000	82	60 000	808	65	Y - 0-10 V	20
63192	TLM-L08B-B083512R	10.2	100-277	3 500	82	60 000	879	65	Y - 0-10 V	20
63201	TLM-L08B-B084012R	10.2	100-277	4 000	85	60 000	886	65	Y - 0-10 V	20
63210	TLM-L08B-B085012R	10.2	100-277	5 000	85	60 000	886	65	Y - 0-10 V	20
Engines - No Dimming										
63175	TLM-L04B-D042712R	5	100-277	2 700	82	60 000	402	65	N	20
63184	TLM-L04B-D043012R	5	100-277	3 000	82	60 000	407	65	N	20
63193	TLM-L04B-D043512R	5	100-277	3 500	82	60 000	450	65	N	20
63202	TLM-L04B-D044012R	5	100-277	4 000	85	60 000	478	65	N	20
63211	TLM-L04B-D045012R	5	100-277	5 000	85	60 000	478	65	N	20
63176	TLM-L06B-D062712R	6.9	100-277	2 700	82	60 000	560	65	N	20
63185	TLM-L06B-D063012R	6.9	100-277	3 000	82	60 000	575	65	N	20
63194	TLM-L06B-D063512R	6.9	100-277	3 500	82	60 000	607	65	N	20
63203	TLM-L06B-D064012R	6.9	100-277	4 000	85	60 000	623	65	N	20
63212	TLM-L06B-D065012R	6.9	100-277	5 000	85	60 000	656	65	N	20
63177	TLM-L08B-D082712R	10.2	100-277	2 700	82	60 000	756	65	N	20
63186	TLM-L08B-D083012R	10.2	100-277	3 000	82	60 000	808	65	N	20
63195	TLM-L08B-D083512R	10.2	100-277	3 500	82	60 000	879	65	N	20
63204	TLM-L08B-D084012R	10.2	100-277	4 000	85	60 000	886	65	N	20
63213	TLM-L08B-D085012R	10.2	100-277	5 000	85	60 000	886	65	N	20

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