

SORAA LED OPTICAL LIGHT ENGINES



SLC-30



SLE-30



SLE-16



SLE-11

FEATURES

SORAA POINT SOURCE OPTICS™

Soraa Light engines feature exceptional beam control from a 9° narrow spot to a 36° flood with smooth, uniform light distributions

SORAA VIVID COLOR™

All Soraa Light Engines feature the right amount of spectral content from violet to deep red in every wavelength from 400nm to 700nm with 95 CRI, 95 R9.

SORAA SNAP SYSTEM™

Our narrow spot light engines are compatible with our proprietary snap system allowing for customizable beam and light color.

INTEGRATED TEMPERATURE SENSOR

Thermal management can be fully controlled with an integrated NTC thermistor inside Soraa Light Engines. Temperature readouts, monitoring and assessments can help to protect the device (or engine) and assure lifetime.

QUALIFICATIONS

UL8750 recognized, CE, RoHS

PROJECTED LIFETIME

Up to 50,000 hrs* to L70 and color stability based on CCT, at operating conditions, below the max. rated drive current and a Tc on LED never exceeding 80°C.

Projections based on LM-80 testing.

- 2700K – 0.007 du'v'
- 3000K – 0.007 du'v'
- 4000K – 0.009 du'v'
- Typical du'v' within field angle = 0.006
- Typical dCCT within the field angle (2700K and 3000K) = 150K
- Typical dCCT within the field angle (4000K) = 250K

*check warranty terms for more information

Note: Applications that exceed the driving current and/or temperature values shown on this document will void the Optical Light Engine (OLE) warranty. RMAs will be refused and no replacement OLE's or account credits will be made available. This specification sheet covers both SLE (with heatsink) and SLC (without heatsink) products.

PRODUCT PERFORMANCE PARAMETERS SLE30 AND SLC30



SLC-30



SLE-30

Reference Number	CCT (K)	CRI	Beam angle	Field angle	Max. Drive Current (mA)	Peak Intensity (Cd)	Nominal power consumption (W)	Luminous Flux (lm)	SNAP compatible
SLE30									
SLE30-08-009D-927-03-01	2700K	95	9	16	580	20900	16.1	950	YES
SLE30-08-025D-927-03-01	2700K	95	25	40	580	5510	16.1	950	
SLE30-08-036D-927-03-01	2700K	95	36	60	580	2660	16.1	950	
SLE30-08-009D-930-03-01	3000K	95	9	16	580	22000	16.1	1000	YES
SLE30-08-025D-930-03-01	3000K	95	25	40	580	5800	16.1	1000	
SLE30-08-036D-930-03-01	3000K	95	36	60	580	2800	16.1	1000	
SLE30-08-009D-940-03-01	4000K	95	9	16	580	23100	16.1	1050	YES
SLC30									
SLC30-08-009D-927-03-00	2700K	95	9	16	580	20900	16.1	950	YES
SLC30-08-009D-930-03-00	3000K	95	9	16	580	22000	16.1	1000	YES
SLC30-08-009D-940-03-00	4000K	95	9	16	580	23100	16.1	1050	YES

Notes:

1. The maximum rated drive currents are for reference only and may NEVER be exceeded. Light Engines MUST be thermally tested inside its application and environmental conditions. To ensure a desired lifetime, Tc point on the LED may NEVER exceed 80°C at any time in life. Performance, lifetime and warranty are subject to the engine's working and storage temperature, and driving current. Consult the Application Guide to design in the Light Engines in a correct way.
2. Beam angle defined at 50% of peak intensity
3. Field angle defined at 10% of peak intensity

PRODUCT PERFORMANCE PARAMETERS SLE16



SLE-16

Reference Number	CCT (K)	CRI	Beam angle	Field angle	Max. Drive Current (mA)	Peak Intensity (Cd)	Nominal power consumption (W)	Luminous Flux (lm)	SNAP compatible	
SLE16										
SLE16-06-010D-927-03-01	2700K	95	10	20	290	6370	8.1	435	YES	
SLE16-08-015D-927-03-01	2700K	95	15	30	440	5940	12.2	680	YES	
SLE16-08-025D-927-03-01	2700K	95	25	40	440	3960	12.2	680		
SLE16-08-036D-927-03-01	2700K	95	36	60	440	1900	12.2	680		
SLE16-06-010D-930-03-01	3000K	95	10	20	290	6710	8.1	460	YES	
SLE16-08-015D-930-03-01	3000K	95	15	30	440	6260	12.2	720	YES	
SLE16-08-025D-930-03-01	3000K	95	25	40	440	4170	12.2	720		
SLE16-08-036D-930-03-01	3000K	95	36	60	440	2010	12.2	720		
SLE16-06-015D-940-03-01	4000K	95	15	30	440	6570	12.2	755	YES	

Notes:

1. The maximum rated drive currents are for reference only and may NEVER be exceeded. Light Engines MUST be thermally tested inside its application and environmental conditions. To ensure a desired lifetime, Tc point on the LED may NEVER exceed 80°C at any time in life. Performance, lifetime and warranty are subject to the engine's working and storage temperature, and driving current. Consult the Application Guide to design in the Light Engines in a correct way.
2. Beam angle defined at 50% of peak intensity
3. Field angle defined at 10% of peak intensity

PRODUCT PERFORMANCE PARAMETERS SLE11



SLE-11

Reference Number	CCT (K)	CRI	Beam angle	Field angle	Max. Drive Current (mA)	Peak Intensity (Cd)	Nominal power consumption (W)	Luminous Flux (lm)	SNAP compatible	
SLE11										
SLE11-06-025D-927-03-01	2700K	95	25	40	240	2360	6.7	405		
SLE11-06-036D-927-03-01	2700K	95	36	60	240	1140	6.7	405		
SLE11-06-025D-930-03-01	3000K	95	25	40	240	2490	6.7	430		
SLE11-06-036D-930-03-01	3000K	95	36	60	240	1200	6.7	430		

Notes:

1. The maximum rated drive currents are for reference only and may NEVER be exceeded. Light Engines MUST be thermally tested inside its application and environmental conditions. To ensure a desired lifetime, Tc point on the LED may NEVER exceed 80°C at any time in life. Performance, lifetime and warranty are subject to the engine's working and storage temperature, and driving current. Consult the Application Guide to design in the Light Engines in a correct way.
2. Beam angle defined at 50% of peak intensity
3. Field angle defined at 10% of peak intensity

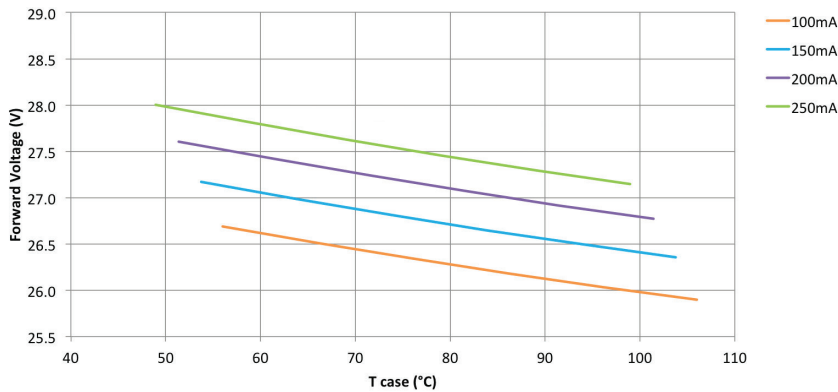
ELECTRICAL CHARACTERISTICS

Product part number	Maximum Current (mA)	Maximum Tcase (°C)
SLE30-08-XXXD-XXX-XX-XX	580 (mA)	80°C
SLE16-08-XXXD-XXX-XX-01	440 (mA)	80°C
SLE16-06-XXXD-XXX-XX-03	290 (mA)	80°C
SLE11-06-XXXD-XXX-XX-XX	240 (mA)	80°C

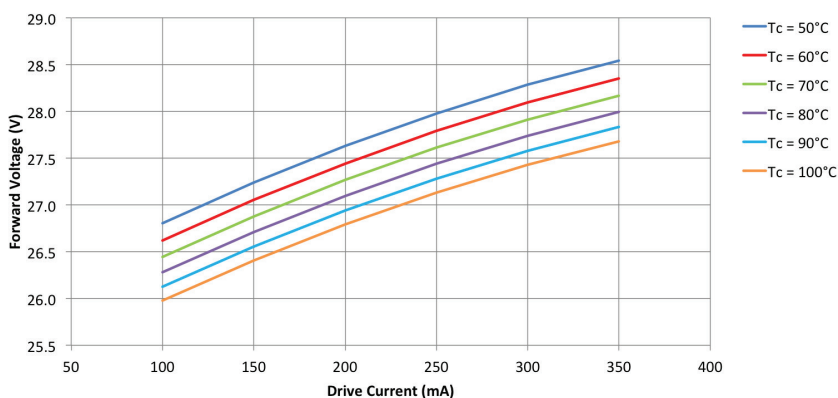
Notes:

- Forward voltage depends on drive current and temperature. For driver selection a supportable range of 20V to 35V is recommended.
- Dimming can be achieved with Pulse Width Modulation and Current Amplitude Modulation or a combination of both.

Typical Forward Voltage vs. Case Temperature for SLExx/SLCxx-06



Typical Forward Voltage vs. Drive Current for SLExx/SLCxx-06



Notes:

- These charts can be applied to SLExx/SLCxx-08 by multiplying current by 2; and by dividing current by 2.

REFERENCE TEMPERATURE READOUT

Note: Tc of LED may never exceed 80°C

TC	-20 °C	-10 °C	0 °C	10 °C	20 °C	30 °C	40 °C	50 °C	60 °C	70 °C	80 °C	90 °C	100 °C	110 °C	120 °C
RESISTANCE (KOHM)	480	271	158	95	59	38	25	16	11	7.8	5.6	4.0	2.9	2.2	1.7

Notes:

1. Tolerance: +/- 5°C
2. Temperature can be assessed with an NTC next to the LED on the mounting board inside the Light Engine. See figure 1.1 for example.

Temperature readout location

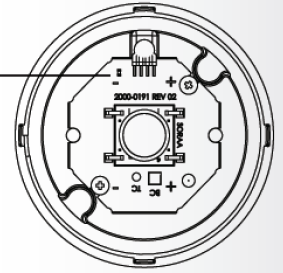


Figure 1.1

The temperature readout is crucial for the light output and life-time of a LED product. For Soraa Optical Light Engines a maximum Tc temperature of 80°C has to be complied in order to achieve an optimum between light output and life-time. Compliance with the maximum permissible reference temperature at the Tc point must be checked under operating conditions in a thermally stable state. The maximum value must be determined under worst-case conditions for the relevant application.

The rated life of LED products depends to a large extent on the temperature. If the permissible temperature limits are exceeded, the life of the SLE/C will be greatly reduced or the SLE/C may be destroyed.

Keeping a record of the Tc compliance testing must be kept for future reference. Please consult our Design-in Guide for more information.

INDIVIDUAL COLOR RENDERING INDEX

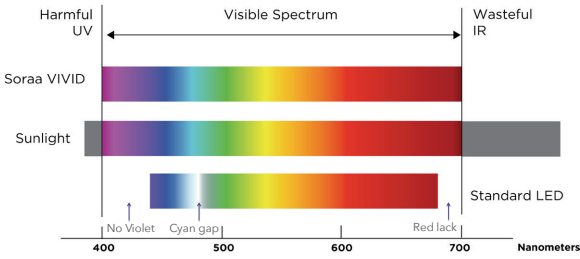
		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
2700K	95CRI	96	97	98	93	94	93	98	97	95	95	89	76	96	98
3000K	95CRI	96	97	97	94	94	92	98	97	96	93	90	75	96	97
4000K	95CRI	98	98	97	97	97	94	98	97	94	95	95	84	98	99

Notes:

1. At 70°C reference point temperature, 300mA for SLE16-06-xxx and SLE11-06-xxx and 600mA for SLE30-08-xxx and SLE16-08-xxx.

COLOR AND WHITENESS RENDERING

Soraa has engineered the perfect balance between color rendering and white rendering. Soraa’s core technology uses a violet LED emitter as the basis for full spectrum light. This allows both Vivid™ color rendering and Natural White™ white rendering, which creates whiteness by exciting fluorescing agents with violet radiation, without the harmful effect of UV.



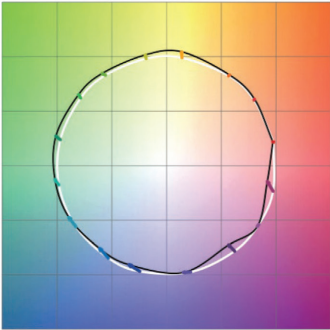
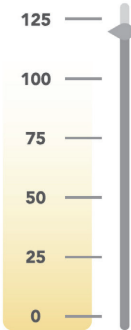
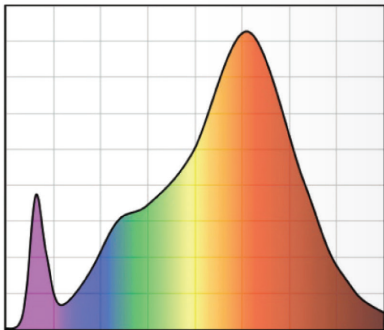
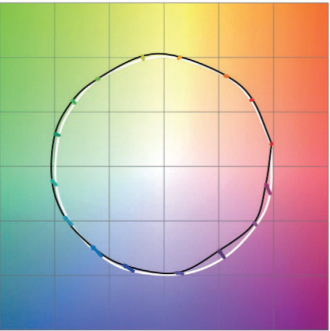
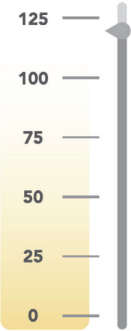
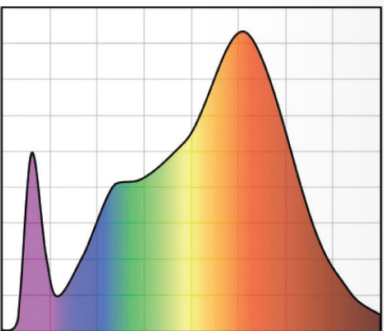
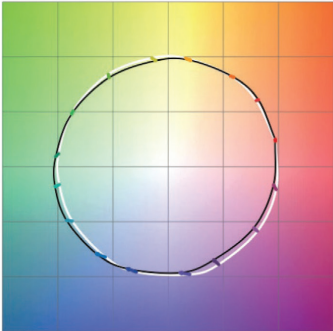
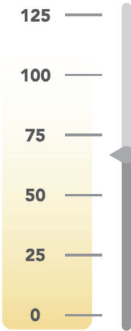
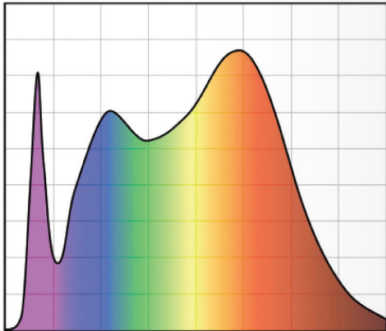
CCT	CRI	R9	Rf	Rg	Rfh1	Rw	McA
2700	95	95	90	100	95	120	3
3000	95	95	90	100	95	120	3
4000	95	95	90	100	95	70	4

Rf: The TM-30 metric for color fidelity (similarity to colors under natural light), a more accurate version of the CRI Ra. Rf is 100 for natural light.

Rg: The TM-30 metric for color gamut (whether colors are more saturated than under natural light). Rg is 100 for natural light.

Rfh1: The TM-30 metric for color fidelity for red tones. Rfh1 is a more accurate version of the CRI R9. Rfh1 is 100 for natural light.

Rw: The Soraa-developed metric for white fidelity. Rw measures the magnitude of excitation of whitening agents within white materials. Rw is 100 for natural light.

2700K	 <p>Rf: 90, Rg: 100, Rfh1: 95</p>	 <p>Rw: 120</p>	 <p>CRI: 95, R9: 95</p>
3000K	 <p>Rf: 90, Rg: 100, Rfh1: 95</p>	 <p>Rw: 120</p>	 <p>CRI: 95, R9: 95</p>
4000K	 <p>Rf: 90, Rg: 100, Rfh1: 95</p>	 <p>Rw: 70</p>	 <p>CRI: 95, R9: 95</p>

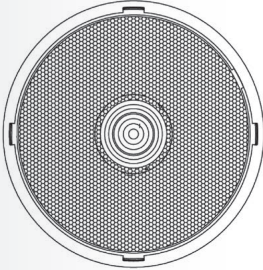
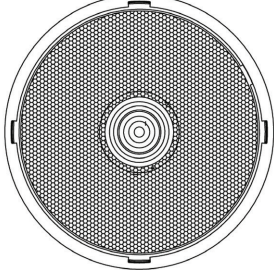
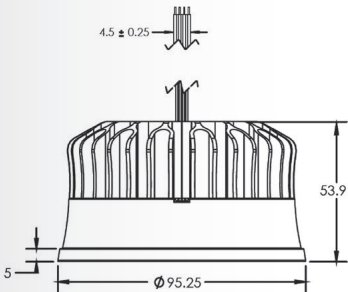
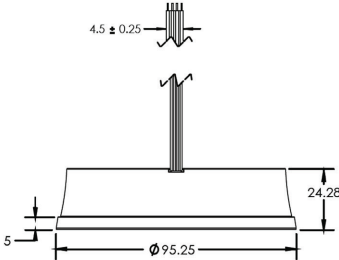
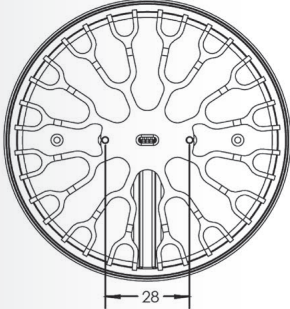
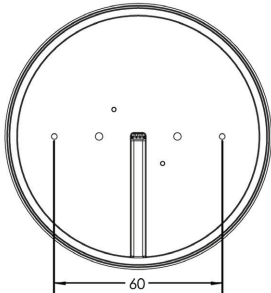
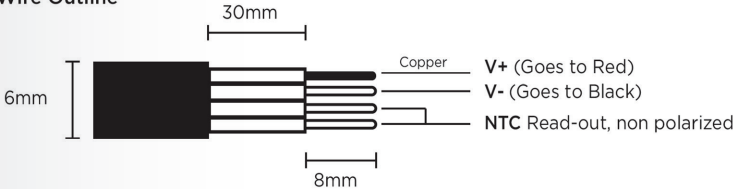
BEAM DIAGRAMS

	SLX30	SLX16	SLX11
NARROW SPOT 9 & 10 DEGREE			
SPOT 15 DEGREE			
NARROW FLOOD 25 DEGREE			
FLOOD 36 DEGREE			

Notes:

1. Beam plots for 3000K 95CRI
2. At 70°C reference point temperature, 300mA for SLE16-06-xxx and SLE11-06-xxx and 600mA for SLE30-08-xxx and SLE16-08-xxx.

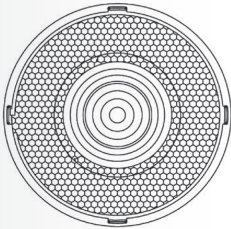
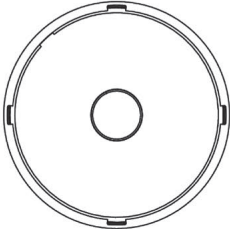
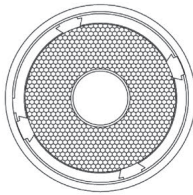
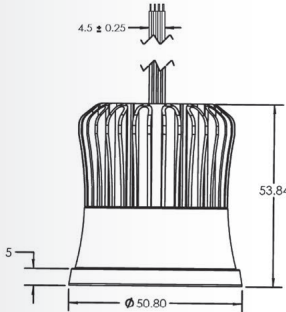
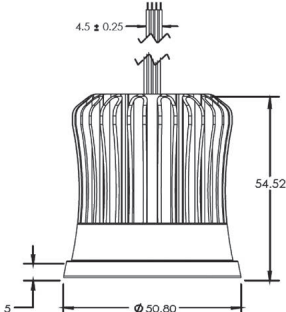
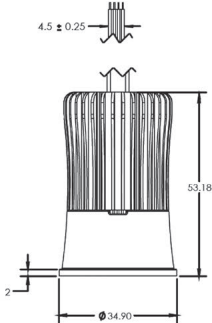
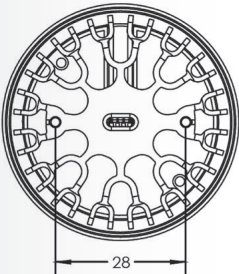
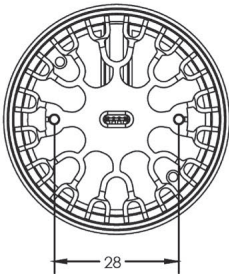
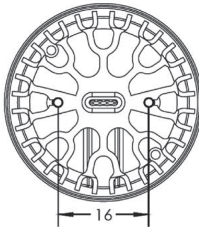
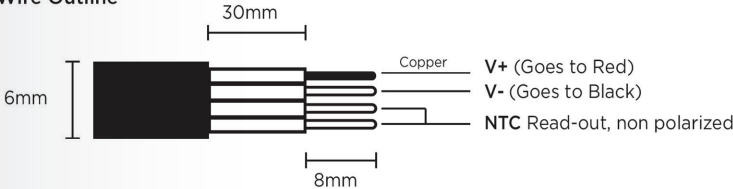
MECHANICAL OUTLINE: SLE AND SLC

SLE30		SLC30
<div>Top View</div> <div></div> <div>87.0 Lens Diameter</div>		<div>Top View</div> <div></div> <div>87.0 Lens Diameter</div>
<div></div>		<div></div>
<div>Bottom View</div> <div></div>		<div>Bottom View</div> <div></div>
<div>Wire Outline</div> <div></div> <div><div>* Wire Tickness: 2mm</div><div>* Total Wire Length: 430mm</div></div>		

Notes:

1. Drawings not to scale, different scales used
2. Dimensions in mm

MECHANICAL OUTLINE: SLE

SLE16-08-XX	SLE16-06-10D-XX	SLE11
<div>Top View</div> <div></div> <div>47.0 Lens Diameter</div>	<div>Top View</div> <div></div> <div>46.7 Lens Diameter</div>	<div>Top View</div> <div></div> <div>27.6 Lens Diameter</div>
<div></div> <div>53.84</div> <div>50.80</div>	<div></div> <div>54.52</div> <div>50.80</div>	<div></div> <div>53.18</div> <div>34.90</div>
<div>Bottom View</div> <div></div> <div>28</div>	<div>Bottom View</div> <div></div> <div>28</div>	<div>Bottom View</div> <div></div> <div>16</div>
<div>Wire Outline</div> <div></div> <div>* Wire Thickness: 2mm</div> <div>* Total Wire Length: 430mm</div>		

Notes:

1. Drawings not to scale, different scales used
2. Dimensions in mm

SORAA LED OPTICAL LIGHT ENGINES



SORAA CORPORATE HEADQUARTERS
6500 Kaiser Drive, Suite 110
Fremont, CA 94555
855 GO-SORAA (855) 467-6722
www.soraa.com

SORAA INTERNATIONAL
Unit 38, Ambition Broxbourne
Business Centre, Pindar Road,
Hoddesdon, EN11 0FJ, United Kingdom
+44 (0)1992 535053

Soraa is a registered trademark of
Soraa, Inc., Soraa HEALTHY and Soraa
ZEROBLUE are trademarks of Soraa, Inc.
Information and specifications subject
to change. 10.1.19