

# LUXEON CS CoB

High efficacy, superior quality of light and ease for design footprints

LUXEON CS extends Lumileds CoB leadership for performance and reliability to an entirely new board footprint that enables easy design-in for new luminaire programs and as a cost-effective replacement for existing solutions where an upgrade is desired. State-of-the-art LUXEON CoB technology delivers unmatched performance, quality of light, and uncompromising product quality.



## FEATURES AND BENEFITS

Widely used square footprints for easy design-in

High performance with superior color stability

Low thermal resistance enables smaller heatsinks and extends the operating life span

Supported by a comprehensive optical, mechanical, and electrical ecosystem

## PRIMARY APPLICATIONS

Track Lights

Downlights

Spotlights

High Bay

Low Bay

[More...](#)

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# General Product Information

## Product Test Conditions

LUXEON CS CoB LEDs are tested and binned with a DC drive current specified below at a junction temperature,  $T_j$ , of 85°C:

180mA	-	L2C6-AABBCL02A0600	L2C6-AABBCL02F0600
180mA	-	L2C6-AABBCL02A0900	L2C6-AABBCL02F0900
270mA	-	L2C6-AABBCL03A0900	L2C6-AABBCL03F0900
360mA	-	L2C6-AABBCL04A0900	L2C6-AABBCL04F0900
450mA	-	L2C6-AABBCL05A1300	L2C6-AABBCL05F1300
540mA	-	L2C6-AABBCL06A1300	L2C6-AABBCL06F1300
720mA		L2C6-AABBCL08A1500	L2C6-AABBCL08F1500 L2C6-AABBCL08B1500
900mA	-	L2C6-AABBCL10A1500	L2C6-AABBCL10F1500 L2C6-AABBCL11B2200
990mA	-	L2C6-AABBCL11A2200	L2C6-AABBCL11F2200
1170mA	-	L2C6-AABBCL13A2200	
1440mA		L2C6-AABBCL16A2200	L2C6-AABBCL16F2200
1080mA	-	L2C6-AABBCL12A2200	
1620mA	-	L2C6-AABBCL18A2200	

## Part Number Nomenclature

Part numbers for LUXEON CS CoB follow the convention below:

**L 2 C 6 - A A B B C D D D E F F G G**

Where:

- A A** - designates nominal CCT (27=2700K, 30=3000K, 35=3500K, 40=4000K, 50=5000K, 57=5700K, 65=6500K)
- B B** - designates minimum CRI (80=80CRI, 90=90CRI)
- C** - designates SDCM (2=2-step MacAdam, 3=3-step MacAdam)
- D D D** - designates product configuration (example: L08=1208, R12=1812)
- E** - designates options for product specification
- F F** - designates light emitting surface (LES) size (06=6.3mm, 09=9.8mm, 13=13mm, 15=14.5mm, 22=22mm)
- G G** - designates options for product specification

Therefore, the following part number is used for a LUXEON CS CoB 1208, 3000K 80CRI, 3 SDCM with a 14.5mm LES:

**L 2 C 6 - 3 0 8 0 3 L 0 8 A 1 5 0 0**

## Lumen Maintenance

Please contact your local Sales Representative or Lumileds Technical Solutions Manager for more information about the long-term performance of this product.

## Environmental Compliance

Lumileds LLC is committed to providing environmentally friendly products to the solid-state lighting market. LUXEON CS CoB is compliant to the European Union directives on the restriction of hazardous substances in electronic equipment, namely the RoHS Directive 2011/65/EU and REACH Regulation (EC) 1907/2006. Lumileds LLC will not intentionally add the following restricted materials to its products: lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE).

# Performance Characteristics

## Product Selection Guide

Table 1a. Product performance of LUXEON CS CoB at specified test current,  $T_j = 85^\circ\text{C}$ , Continued.

LES <sup>[1]</sup> (mm)	NOMINAL CCT	MINIMUM CRI <sup>[2, 3, 4]</sup>	LUMINOUS FLUX <sup>[2]</sup> (lm)		TYPICAL LUMINOUS EFFICACY (lm/W)	TEST CURRENT (mA)	ENERGY EFFICIENCY CLASS <sup>[5]</sup>	PART NUMBER
			MINIMUM	TYPICAL				
6.3	2700K	80	801	890	146	180	D	L2C6-2780xL02A0600
6.3	3000K	80	834	927	152	180	D	L2C6-3080xL02A0600
6.3	3500K	80	855	950	156	180	D	L2C6-3580xL02A0600
6.3	4000K	80	876	973	160	180	D	L2C6-4080xL02A0600
6.3	5000K	80	876	973	160	180	D	L2C6-5080xL02A0600
6.3	5700K	80	868	964	158	180	D	L2C6-57803L02A0600
6.3	6500K	80	859	955	156	180	D	L2C6-65803L02A0600
6.3	2400K	90	684	760	125	180	E	L2C6-2490xL02F0600
6.3	2700K	90	759	843	138	180	E	L2C6-27902L02A0600
6.3	2700K	90	723	803	132	180	E	L2C6-2790xL02F0600
6.3	3000K	90	803	892	146	180	D	L2C6-30902L02A0600
6.3	3000K	90	752	835	137	180	E	L2C6-3090xL02F0600
6.3	3500K	90	839	932	153	180	D	L2C6-35902L02A0600
6.3	3500K	90	781	868	142	180	E	L2C6-3590xL02F0600
6.3	4000K	90	864	960	157	180	D	L2C6-40902L02A0600
6.3	4000K	90	807	897	147	180	D	L2C6-4090xL02F0600
6.3	5000K	90	867	963	158	180	D	L2C6-50902L02A0600
6.3	5000K	90	807	897	147	180	D	L2C6-5090xL02F0600
6.3	2400K	95	616	684	112	180	F	L2C6-2495xL02F0600
6.3	2700K	95	653	725	119	180	E	L2C6-2795xL02F0600
6.3	3000K	95	683	759	124	180	E	L2C6-3095xL02F0600
6.3	3500K	95	701	779	128	180	E	L2C6-3595xL02F0600
6.3	4000K	95	738	820	134	180	E	L2C6-4095xL02F0600
6.3	5000K	95	738	820	134	180	E	L2C6-5095xL02F0600
9.8	2700K	80	857	952	156	180	D	L2C6-2780xL02A0900
9.8	3000K	80	887	986	162	180	D	L2C6-3080xL02A0900
9.8	3500K	80	905	1006	165	180	D	L2C6-3580xL02A0900
9.8	4000K	80	950	1055	173	180	C	L2C6-4080xL02A0900
9.8	5000K	80	950	1055	173	180	C	L2C6-5080xL02A0900
9.8	5700K	80	930	1033	169	180	D	L2C6-57803L02A0900
9.8	6500K	80	921	1023	168	180	D	L2C6-65803L02A0900
9.8	2400K	90	717	797	131	180	E	L2C6-2490xL02F0900
9.8	2700K	90	804	893	146	180	D	L2C6-27902L02A0900
9.8	2700K	90	773	859	141	180	E	L2C6-2790xL02F0900
9.8	3000K	90	823	914	150	180	D	L2C6-30902L02A0900
9.8	3000K	90	797	885	145	180	E	L2C6-3090xL02F0900
9.8	3500K	90	856	951	156	180	D	L2C6-35902L02A0900
9.8	3500K	90	836	929	152	180	D	L2C6-3590xL02F0900
9.8	4000K	90	881	979	160	180	D	L2C6-40902L02A0900
9.8	4000K	90	856	951	156	180	D	L2C6-4090xL02F0900
9.8	5000K	90	884	982	161	180	D	L2C6-50902L02A0900
9.8	5000K	90	856	951	156	180	D	L2C6-5090xL02F0900

Table 1a continued on next page:

- Lumileds maintains a tolerance of  $\pm 2$  on CRI and  $\pm 6.5\%$  on luminous flux measurements.
- Typical CRI is approximately 2 points higher than the minimum CRI specified, but this is not guaranteed.
- R9 value of 90CRI products is  $>50$ .
- Light Emitting Surface (LES) is the inner diameter (phosphor area) inside the dam.
- Energy efficiency class as specified in Commission Delegated Regulation (EU) 2019/2015. The available range of energy efficiency classes is A-G.

**Table 1a. Product performance of LUXEON CS CoB at specified test current, T<sub>j</sub> = 85°C, Continued.**

LES <sup>[1]</sup> (mm)	NOMINAL CCT	MINIMUM CRI <sup>[2, 3, 4]</sup>	LUMINOUS FLUX <sup>[2]</sup> (lm)		TYPICAL LUMINOUS EFFICACY (lm/W)	TEST CURRENT (mA)	ENERGY EFFICIENCY CLASS <sup>[5]</sup>	PART NUMBER
			MINIMUM	TYPICAL				
9.8	2400K	95	646	718	118	180	F	L2C6-2495xL02F0900
9.8	2700K	95	685	761	125	180	E	L2C6-2795xL02F0900
9.8	3000K	95	717	797	131	180	E	L2C6-3095xL02F0900
9.8	3500K	95	736	818	134	180	E	L2C6-3595xL02F0900
9.8	4000K	95	775	861	141	180	E	L2C6-4095xL02F0900
9.8	5000K	95	775	861	141	180	E	L2C6-5095xL02F0900
9.8	2700K	80	1279	1421	155	270	D	L2C6-2780xL03A0900
9.8	3000K	80	1333	1481	162	270	D	L2C6-3080xL03A0900
9.8	3500K	80	1366	1518	166	270	D	L2C6-3580xL03A0900
9.8	4000K	80	1396	1551	169	270	D	L2C6-4080xL03A0900
9.8	5000K	80	1396	1551	169	270	D	L2C6-5080xL03A0900
9.8	5700K	80	1390	1544	169	270	D	L2C6-57803L03A0900
9.8	6500K	80	1380	1533	167	270	D	L2C6-65803L03A0900
9.8	2400K	90	1033	1148	125	270	E	L2C6-2490xL03F0900
9.8	2700K	90	1222	1358	148	270	D	L2C6-27902L03A0900
9.8	2700K	90	1152	1280	140	270	E	L2C6-2790xL03F0900
9.8	3000K	90	1262	1402	153	270	D	L2C6-30902L03A0900
9.8	3000K	90	1191	1323	145	270	E	L2C6-3090xL03F0900
9.8	3500K	90	1320	1467	160	270	D	L2C6-35902L03A0900
9.8	3500K	90	1246	1384	151	270	D	L2C6-3590xL03F0900
9.8	4000K	90	1353	1503	164	270	D	L2C6-40902L03A0900
9.8	4000K	90	1279	1421	155	270	D	L2C6-4090xL03F0900
9.8	5000K	90	1357	1508	165	270	D	L2C6-50902L03A0900
9.8	5000K	90	1279	1421	155	270	D	L2C6-5090xL03F0900
9.8	2400K	95	930	1033	113	270	F	L2C6-2495xL03F0900
9.8	2700K	95	986	1095	120	270	E	L2C6-2795xL03F0900
9.8	3000K	95	1031	1146	125	270	E	L2C6-3095xL03F0900
9.8	3500K	95	1059	1177	129	270	E	L2C6-3595xL03F0900
9.8	4000K	95	1115	1239	135	270	E	L2C6-4095xL03F0900
9.8	5000K	95	1115	1239	135	270	E	L2C6-5095xL03F0900
9.8	2700K	80	1693	1881	154	360	D	L2C6-2780xL04A0900
9.8	3000K	80	1767	1963	161	360	D	L2C6-3080xL04A0900
9.8	3500K	80	1793	1992	163	360	D	L2C6-3580xL04A0900
9.8	4000K	80	1852	2058	169	360	D	L2C6-4080xL04A0900
9.8	5000K	80	1852	2058	169	360	D	L2C6-5080xL04A0900
9.8	5700K	80	1833	2037	167	360	D	L2C6-57803L04A0900
9.8	6500K	80	1815	2017	165	360	D	L2C6-65803L04A0900
9.8	2400K	90	1386	1540	126	360	E	L2C6-2490xL04F0900
9.8	2700K	90	1652	1836	150	360	D	L2C6-27902L04A0900
9.8	2700K	90	1499	1665	136	360	E	L2C6-2790xL04F0900
9.8	3000K	90	1701	1890	155	360	D	L2C6-30902L04A0900
9.8	3000K	90	1557	1730	142	360	E	L2C6-3090xL04F0900
9.8	3500K	90	1771	1968	161	360	D	L2C6-35902L04A0900
9.8	3500K	90	1611	1790	147	360	D	L2C6-3590xL04F0900
9.8	4000K	90	1812	2013	165	360	D	L2C6-40902L04A0900
9.8	4000K	90	1672	1858	152	360	D	L2C6-4090xL04F0900
9.8	5000K	90	1817	2019	165	360	D	L2C6-50902L04A0900
9.8	5000K	90	1672	1858	152	360	D	L2C6-5090xL04F0900
9.8	2400K	95	1247	1386	114	360	F	L2C6-2495xL04F0900
9.8	2700K	95	1322	1469	120	360	E	L2C6-2795xL04F0900
9.8	3000K	95	1385	1539	126	360	E	L2C6-3095xL04F0900

Table 1a continued on next page:

1. Lumileds maintains a tolerance of ±2 on CRI and ±6.5% on luminous flux measurements.
2. Typical CRI is approximately 2 points higher than the minimum CRI specified, but this is not guaranteed.
3. R9 value of 90CRI products is >50.
4. Light Emitting Surface (LES) is the inner diameter (phosphor area) inside the dam.
5. Energy efficiency class as specified in Commission Delegated Regulation (EU) 2019/2015. The available range of energy efficiency classes is A-G.

**Table 1a. Product performance of LUXEON CS CoB at specified test current, T<sub>j</sub> = 85°C, Continued.**

LES <sup>[1]</sup> (mm)	NOMINAL CCT	MINIMUM CRI <sup>[2, 3, 4]</sup>	LUMINOUS FLUX <sup>[2]</sup> (lm)		TYPICAL LUMINOUS EFFICACY (lm/W)	TEST CURRENT (mA)	ENERGY EFFICIENCY CLASS <sup>[5]</sup>	PART NUMBER
			MINIMUM	TYPICAL				
9.8	3500K	95	1422	1580	129	360	E	L2C6-3595xL04F0900
9.8	4000K	95	1474	1638	134	360	E	L2C6-4095xL04F0900
9.8	5000K	95	1474	1638	134	360	E	L2C6-5095xL04F0900
13	2700K	80	2145	2383	156	450	D	L2C6-2780xL05A1300
13	3000K	80	2243	2492	163	450	D	L2C6-3080xL05A1300
13	3500K	80	2314	2571	169	450	D	L2C6-3580xL05A1300
13	4000K	80	2366	2629	172	450	D	L2C6-4080xL05A1300
13	5000K	80	2366	2629	172	450	D	L2C6-5080xL05A1300
13	5700K	80	2320	2578	169	450	D	L2C6-57803L05A1300
13	6500K	80	2300	2556	168	450	D	L2C6-65803L05A1300
13	2400K	90	1728	1920	126	450	E	L2C6-2490xL05F1300
13	2700K	90	2026	2252	148	450	D	L2C6-27902L05A1300
13	2700K	90	1911	2123	139	450	E	L2C6-2790xL05F1300
13	3000K	90	2115	2350	154	450	D	L2C6-30902L05A1300
13	3000K	90	1976	2195	144	450	E	L2C6-3090xL05F1300
13	3500K	90	2176	2418	158	450	D	L2C6-35902L05A1300
13	3500K	90	2066	2295	150	450	D	L2C6-3590xL05F1300
13	4000K	90	2246	2495	164	450	D	L2C6-40902L05A1300
13	4000K	90	2115	2350	154	450	D	L2C6-4090xL05F1300
13	5000K	90	2253	2503	164	450	D	L2C6-50902L05A1300
13	5000K	90	2115	2350	154	450	D	L2C6-5090xL05F1300
13	2400K	95	1555	1728	113	450	F	L2C6-2495xL05F1300
13	2700K	95	1649	1832	120	450	E	L2C6-2795xL05F1300
13	3000K	95	1726	1918	126	450	E	L2C6-3095xL05F1300
13	3500K	95	1773	1970	129	450	E	L2C6-3595xL05F1300
13	4000K	95	1866	2073	136	450	E	L2C6-4095xL05F1300
13	5000K	95	1866	2073	136	450	E	L2C6-5095xL05F1300
13	2700K	80	2590	2878	157	540	D	L2C6-2780xL06A1300
13	3000K	80	2692	2991	163	540	D	L2C6-3080xL06A1300
13	3500K	80	2754	3060	167	540	D	L2C6-3580xL06A1300
13	4000K	80	2814	3127	171	540	D	L2C6-4080xL06A1300
13	5000K	80	2815	3128	171	540	D	L2C6-5080xL06A1300
13	5700K	80	2807	3119	170	540	D	L2C6-57803L06A1300
13	6500K	80	2778	3087	169	540	D	L2C6-65803L06A1300
13	2400K	90	2152	2391	131	540	E	L2C6-2490xL06F1300
13	2700K	90	2428	2698	147	540	D	L2C6-27902L06A1300
13	2700K	90	2290	2544	139	540	E	L2C6-2790xL06F1300
13	3000K	90	2528	2809	153	540	D	L2C6-30902L06A1300
13	3000K	90	2340	2600	142	540	E	L2C6-3090xL06F1300
13	3500K	90	2635	2928	160	540	D	L2C6-35902L06A1300
13	3500K	90	2475	2750	150	540	D	L2C6-3590xL06F1300
13	4000K	90	2717	3019	165	540	D	L2C6-40902L06A1300
13	4000K	90	2538	2820	154	540	D	L2C6-4090xL06F1300
13	5000K	90	2728	3031	166	540	D	L2C6-50902L06A1300
13	5000K	90	2538	2820	154	540	D	L2C6-5090xL06F1300
13	2400K	95	1937	2152	118	540	F	L2C6-2495xL06F1300
13	2700K	95	2053	2281	125	540	E	L2C6-2795xL06F1300
13	3000K	95	2150	2389	131	540	E	L2C6-3095xL06F1300
13	3500K	95	2209	2454	134	540	E	L2C6-3595xL06F1300
13	4000K	95	2325	2583	141	540	E	L2C6-4095xL06F1300
13	5000K	95	2325	2583	141	540	E	L2C6-5095xL06F1300

Table 1a continued on next page:

1. Lumileds maintains a tolerance of ±2 on CRI and ±6.5% on luminous flux measurements.
2. Typical CRI is approximately 2 points higher than the minimum CRI specified, but this is not guaranteed.
3. R9 value of 90CRI products is >50.
4. Light Emitting Surface (LES) is the inner diameter (phosphor area) inside the dam.
5. Energy efficiency class as specified in Commission Delegated Regulation (EU) 2019/2015. The available range of energy efficiency classes is A-G.

**Table 1a. Product performance of LUXEON CS CoB at specified test current, T<sub>j</sub> = 85°C, Continued.**

LES <sup>[1]</sup> (mm)	NOMINAL CCT	MINIMUM CRI <sup>[2, 3, 4]</sup>	LUMINOUS FLUX <sup>[2]</sup> (lm)		TYPICAL LUMINOUS EFFICACY (lm/W)	TEST CURRENT (mA)	ENERGY EFFICIENCY CLASS <sup>[5]</sup>	PART NUMBER
			MINIMUM	TYPICAL				
14.5	2700K	80	3416	3795	155	720	D	L2C6-2780xL08A1500
14.5	3000K	80	3595	3994	164	720	D	L2C6-3080xL08A1500
14.5	3500K	80	3675	4083	167	720	D	L2C6-3580xL08A1500
14.5	4000K	80	3747	4163	171	720	D	L2C6-4080xL08A1500
14.5	5000K	80	3747	4163	171	720	D	L2C6-5080xL08A1500
14.5	5700K	80	3737	4152	170	720	D	L2C6-57803L08A1500
14.5	6500K	80	3645	4050	166	720	D	L2C6-65803L08A1500
14.5	2400K	90	2870	3189	131	720	E	L2C6-2490xL08F1500
14.5	2700K	90	3221	3579	147	720	D	L2C6-27902L08A1500
14.5	2700K	90	2988	3320	136	720	E	L2C6-2790xL08F1500
14.5	3000K	90	3336	3707	152	720	D	L2C6-30902L08A1500
14.5	3000K	90	3105	3450	141	720	E	L2C6-3090xL08F1500
14.5	3500K	90	3475	3861	158	720	D	L2C6-35902L08A1500
14.5	3500K	90	3231	3590	147	720	D	L2C6-3590xL08F1500
14.5	4000K	90	3602	4002	164	720	D	L2C6-40902L08A1500
14.5	4000K	90	3308	3676	151	720	D	L2C6-4090xL08F1500
14.5	5000K	90	3613	4014	164	720	D	L2C6-50902L08A1500
14.5	5000K	90	3308	3676	151	720	D	L2C6-5090xL08F1500
14.5	2400K	95	2583	2870	118	720	F	L2C6-2495xL08F1500
14.5	2700K	95	2738	3042	125	720	E	L2C6-2795xL08F1500
14.5	3000K	95	2867	3186	131	720	E	L2C6-3095xL08F1500
14.5	3500K	95	2945	3272	134	720	E	L2C6-3595xL08F1500
14.5	4000K	95	3100	3444	141	720	E	L2C6-4095xL08F1500
14.5	5000K	95	3100	3444	141	720	E	L2C6-5095xL08F1500
14.5	2700K	80	4198	4664	153	900	D	L2C6-2780xL10A1500
14.5	3000K	80	4417	4908	161	900	D	L2C6-3080xL10A1500
14.5	3500K	80	4505	5006	164	900	D	L2C6-3580xL10A1500
14.5	4000K	80	4671	5190	170	900	D	L2C6-4080xL10A1500
14.5	5000K	80	4671	5190	170	900	D	L2C6-5080xL10A1500
14.5	5700K	80	4594	5104	167	900	D	L2C6-57803L10A1500
14.5	6500K	80	4550	5055	166	900	D	L2C6-65803L10A1500
14.5	2400K	90	3461	3846	126	900	E	L2C6-2490xL10F1500
14.5	2700K	90	4041	4490	147	900	D	L2C6-27902L10A1500
14.5	2700K	90	3681	4090	134	900	E	L2C6-2790xL10F1500
14.5	3000K	90	4168	4631	152	900	D	L2C6-30902L10A1500
14.5	3000K	90	3803	4225	138	900	E	L2C6-3090xL10F1500
14.5	3500K	90	4281	4757	156	900	D	L2C6-35902L10A1500
14.5	3500K	90	3974	4415	145	900	E	L2C6-3590xL10F1500
14.5	4000K	90	4450	4944	162	900	D	L2C6-40902L10A1500
14.5	4000K	90	4083	4537	149	900	D	L2C6-4090xL10F1500
14.5	5000K	90	4463	4959	163	900	D	L2C6-50902L10A1500
14.5	5000K	90	4083	4537	149	900	D	L2C6-5090xL10F1500
14.5	2400K	95	3116	3462	113	900	F	L2C6-2495xL10F1500
14.5	2700K	95	3302	3669	120	900	E	L2C6-2795xL10F1500
14.5	3000K	95	3458	3842	126	900	E	L2C6-3095xL10F1500
14.5	3500K	95	3551	3946	129	900	E	L2C6-3595xL10F1500
14.5	4000K	95	3739	4154	136	900	E	L2C6-4095xL10F1500
14.5	5000K	95	3739	4154	136	900	E	L2C6-5095xL10F1500
22	2700K	80	4867	5408	161	990	D	L2C6-2780xL11A2200
22	3000K	80	5055	5617	167	990	D	L2C6-3080xL11A2200
22	3500K	80	5140	5711	170	990	D	L2C6-3580xL11A2200

Table 1a continued on next page:

1. Lumileds maintains a tolerance of ±2 on CRI and ±6.5% on luminous flux measurements.
2. Typical CRI is approximately 2 points higher than the minimum CRI specified, but this is not guaranteed.
3. R9 value of 90CRI products is >50.
4. Light Emitting Surface (LES) is the inner diameter (phosphor area) inside the dam.
5. Energy efficiency class as specified in Commission Delegated Regulation (EU) 2019/2015. The available range of energy efficiency classes is A-G.

**Table 1a. Product performance of LUXEON CS CoB at specified test current, T<sub>j</sub> = 85°C, Continued.**

LES <sup>[1]</sup> (mm)	NOMINAL CCT	MINIMUM CRI <sup>[2, 3, 4]</sup>	LUMINOUS FLUX <sup>[2]</sup> (lm)		TYPICAL LUMINOUS EFFICACY (lm/W)	TEST CURRENT (mA)	ENERGY EFFICIENCY CLASS <sup>[5]</sup>	PART NUMBER
			MINIMUM	TYPICAL				
22	4000K	80	5278	5864	175	990	C	L2C6-4080xL11A2200
22	5000K	80	5278	5864	175	990	C	L2C6-5080xL11A2200
22	5700K	80	5245	5828	174	990	C	L2C6-5780xL11A2200
22	6500K	80	5215	5794	173	990	D	L2C6-6580xL11A2200
22	2400K	90	3881	4312	128	990	E	L2C6-2490xL11F2200
22	2700K	90	4511	5012	149	990	D	L2C6-27902L11A2200
22	2700K	90	4215	4683	140	990	E	L2C6-2790xL11F2200
22	3000K	90	4720	5244	156	990	D	L2C6-30902L11A2200
22	3000K	90	4352	4835	144	990	E	L2C6-3090xL11F2200
22	3500K	90	4928	5476	163	990	D	L2C6-35902L11A2200
22	3500K	90	4558	5064	151	990	D	L2C6-3590xL11F2200
22	4000K	90	5049	5610	167	990	D	L2C6-40902L11A2200
22	4000K	90	4667	5185	154	990	D	L2C6-4090xL11F2200
22	5000K	90	5061	5623	168	990	D	L2C6-50902L11A2200
22	5000K	90	4667	5185	154	990	D	L2C6-5090xL11F2200
22	2400K	95	3503	3892	116	990	F	L2C6-2495xL11F2200
22	2700K	95	3713	4125	123	990	E	L2C6-2795xL11F2200
22	3000K	95	3888	4320	129	990	E	L2C6-3095xL11F2200
22	3500K	95	3993	4437	132	990	E	L2C6-3595xL11F2200
22	4000K	95	4203	4670	139	990	E	L2C6-4095xL11F2200
22	5000K	95	4203	4670	139	990	E	L2C6-5095xL11F2200
22	2700K	80	5678	6309	159	1170	D	L2C6-2780xL13A2200
22	3000K	80	5914	6571	166	1170	D	L2C6-3080xL13A2200
22	3500K	80	5943	6603	166	1170	D	L2C6-3580xL13A2200
22	4000K	80	6214	6904	174	1170	C	L2C6-4080xL13A2200
22	5000K	80	6214	6904	174	1170	C	L2C6-5080xL13A2200
22	5700K	80	6091	6768	171	1170	D	L2C6-57803L13A2200
22	6500K	80	6030	6700	169	1170	D	L2C6-65803L13A2200
22	2700K	90	5309	5899	149	1170	D	L2C6-27902L13A2200
22	3000K	90	5578	6198	156	1170	D	L2C6-30902L13A2200
22	3500K	90	5801	6446	163	1170	D	L2C6-35902L13A2200
22	4000K	90	5940	6600	166	1170	D	L2C6-40902L13A2200
22	5000K	90	5957	6619	167	1170	D	L2C6-50902L13A2200
22	2700K	80	7010	7789	160	1440	D	L2C6-2780xL16A2200
22	3000K	80	7176	7973	163	1440	D	L2C6-3080xL16A2200
22	3500K	80	7183	7981	163	1440	D	L2C6-3580xL16A2200
22	4000K	80	7455	8283	170	1440	D	L2C6-4080xL16A2200
22	5000K	80	7455	8283	170	1440	D	L2C6-5080xL16A2200
22	5700K	80	7433	8259	169	1440	D	L2C6-57803L16A2200
22	6500K	80	7322	8135	167	1440	D	L2C6-65803L16A2200
22	2400K	90	5674	6304	129	1440	E	L2C6-2490xL16F2200
22	2700K	90	6440	7156	147	1440	D	L2C6-27902L16A2200
22	2700K	90	6087	6763	139	1440	E	L2C6-2790xL16F2200
22	3000K	90	6697	7441	152	1440	D	L2C6-30902L16A2200
22	3000K	90	6309	7010	144	1440	E	L2C6-3090xL16F2200
22	3500K	90	7033	7814	160	1440	D	L2C6-35902L16A2200
22	3500K	90	6582	7313	150	1440	D	L2C6-3590xL16F2200
22	4000K	90	7132	7924	162	1440	D	L2C6-40902L16A2200
22	4000K	90	6739	7488	153	1440	D	L2C6-4090xL16F2200
22	5000K	90	7151	7946	163	1440	D	L2C6-50902L16A2200
22	5000K	90	6739	7488	153	1440	D	L2C6-5090xL16F2200

Table 1a continued on next page:

1. Lumileds maintains a tolerance of ±2 on CRI and ±6.5% on luminous flux measurements.
2. Typical CRI is approximately 2 points higher than the minimum CRI specified, but this is not guaranteed.
3. R9 value of 90CRI products is >50.
4. Light Emitting Surface (LES) is the inner diameter (phosphor area) inside the dam.
5. Energy efficiency class as specified in Commission Delegated Regulation (EU) 2019/2015. The available range of energy efficiency classes is A-G.

**Table 1a. Product performance of LUXEON CS CoB at specified test current, T<sub>j</sub> = 85°C**

LES <sup>[1]</sup> (mm)	NOMINAL CCT	MINIMUM CRI <sup>[2, 3, 4]</sup>	LUMINOUS FLUX <sup>[2]</sup> (lm)		TYPICAL LUMINOUS EFFICACY (lm/W)	TEST CURRENT (mA)	ENERGY EFFICIENCY CLASS <sup>[5]</sup>	PART NUMBER
			MINIMUM	TYPICAL				
22	2400K	95	5106	5673	116	1440	F	L2C6-2495xL16F2200
22	2700K	95	5413	6014	123	1440	E	L2C6-2795xL16F2200
22	3000K	95	5668	6298	129	1440	E	L2C6-3095xL16F2200
22	3500K	95	5821	6468	132	1440	E	L2C6-3595xL16F2200
22	4000K	95	6127	6808	139	1440	E	L2C6-4095xL16F2200
22	5000K	95	6127	6808	139	1440	E	L2C6-5095xL16F2200
22	2700K	80	7538	8376	152	1080	D	L2C6-2780xR12A2200
22	3000K	80	7853	8725	158	1080	D	L2C6-3080xR12A2200
22	3500K	80	8050	8944	162	1080	D	L2C6-3580xR12A2200
22	4000K	80	8599	9554	173	1080	C	L2C6-4080xR12A2200
22	5000K	80	8599	9554	173	1080	C	L2C6-5080xR12A2200
22	5700K	80	8167	9074	165	1080	D	L2C6-57803R12A2200
22	6500K	80	8088	8987	163	1080	D	L2C6-65803R12A2200
22	2700K	80	11093	12325	149	1620	D	L2C6-2780xR18A2200
22	3000K	80	11554	12838	155	1620	D	L2C6-3080xR18A2200
22	3500K	80	11843	13159	159	1620	D	L2C6-3580xR18A2200
22	4000K	80	12132	13480	163	1620	D	L2C6-4080xR18A2200
22	5000K	80	12132	13480	163	1620	D	L2C6-5080xR18A2200
22	5700K	80	12017	13352	162	1620	D	L2C6-57803R18A2200
22	6500K	80	11902	13224	160	1620	D	L2C6-65803R18A2200

**Notes for Table 1a:**

1. Lumileds maintains a tolerance of ±2 on CRI and ±6.5% on luminous flux measurements.
2. Typical CRI is approximately 2 points higher than the minimum CRI specified, but this is not guaranteed.
3. R9 value of 90CRI products is >50.
4. Light Emitting Surface (LES) is the inner diameter (phosphor area) inside the dam.
5. Energy efficiency class as specified in Commission Delegated Regulation (EU) 2019/2015. The available range of energy efficiency classes is A-G.

**Table 1b. Product performance of LUXEON CS CoB PW at specified test current, T<sub>j</sub> = 85°C**

LES <sup>[1]</sup> (mm)	NOMINAL CCT	MINIMUM CRI <sup>[2, 3, 4]</sup>	LUMINOUS FLUX <sup>[2]</sup> (lm)		TYPICAL LUMINOUS EFFICACY (lm/W)	TEST CURRENT (mA)	ENERGY EFFICIENCY CLASS <sup>[5]</sup>	PART NUMBER
			MINIMUM	TYPICAL				
13	3000K	80	2318	2576	169	450	D	L2C6-3080xL05A13P0
13	3000K	90	1966	2184	143	450	E	L2C6-3090xL05F13P0
13	3500K	90	2056	2284	150	450	D	L2C6-3590xL05F13P0
13	4000K	90	2104	2338	153	450	D	L2C6-4090xL05F13P0
13	3000K	80	2686	2984	163	540	D	L2C6-3080xL06A13P0
13	3000K	90	2329	2588	141	540	E	L2C6-3090xL06F13P0
13	3500K	90	2462	2736	149	540	D	L2C6-3590xL06F13P0
13	4000K	90	2525	2806	153	540	D	L2C6-4090xL06F13P0
14.5	3000K	80	3588	3987	163	720	D	L2C6-3080xL08A15P0
14.5	3000K	90	3096	3440	141	720	E	L2C6-3090xL08F15P0
14.5	3500K	90	3218	3575	146	720	D	L2C6-3590xL08F15P0
14.5	4000K	90	3292	3658	150	720	D	L2C6-4090xL08F15P0
14.5	3000K	80	4418	4909	161	900	D	L2C6-3080xL10A15P0
14.5	3000K	90	3794	4215	138	900	E	L2C6-3090xL10F15P0
14.5	3500K	90	3958	4398	144	900	E	L2C6-3590xL10F15P0
14.5	4000K	90	4062	4513	148	900	D	L2C6-4090xL10F15P0
22	3000K	80	5085	5650	168	990	D	L2C6-3080xL11A22P0
22	3000K	90	4330	4811	143	990	E	L2C6-3090xL11F22P0
22	3500K	90	4535	5039	150	990	D	L2C6-3590xL11F22P0
22	4000K	90	4643	5159	154	990	D	L2C6-4090xL11F22P0
22	3000K	80	7333	8148	167	1440	D	L2C6-3080xL16A22P0
22	3000K	90	6278	6975	143	1440	E	L2C6-3090xL16F22P0
22	3500K	90	6549	7277	149	1440	D	L2C6-3590xL16F22P0
22	4000K	90	6711	7457	153	1440	D	L2C6-4090xL16F22P0

**Notes for Table 1b:**

1. Lumileds maintains a tolerance of ±2 on CRI and ±6.5% on luminous flux measurements.
2. Typical CRI is approximately 2 points higher than the minimum CRI specified, but this is not guaranteed.
3. R9 value of 90CRI products is >50.
4. Light Emitting Surface (LES) is the inner diameter (phosphor area) inside the dam.
5. Energy efficiency class as specified in Commission Delegated Regulation (EU) 2019/2015. The available range of energy efficiency classes is A-G.

**Table 1c. Product performance of LUXEON CS CoB HE at specified test current, T<sub>j</sub>=85°C**

LES <sup>[1]</sup> (mm)	NOMINAL CCT	MINIMUM CRI <sup>[2, 3, 4]</sup>	LUMINOUS FLUX <sup>[2]</sup> (lm)		TYPICAL LUMINOUS EFFICACY (lm/W)	TEST CURRENT (mA)	ENERGY EFFICIENCY CLASS <sup>[5]</sup>	PART NUMBER
			MINIMUM	TYPICAL				
15	2700K	80	3382	3758	159	720	D	L2C6-2780xL08B1500
15	3000K	80	3541	3935	166	720	D	L2C6-3080xL08B1500
15	3500K	80	3603	4003	169	720	D	L2C6-3580xL08B1500
15	4000K	80	3710	4122	174	720	C	L2C6-4080xL08B1500
15	5000K	80	3710	4122	174	720	C	L2C6-5080xL08B1500
15	5700K	80	3664	4071	172	720	D	L2C6-5780xL08B1500
22	2700K	80	4711	5234	161	990	D	L2C6-2780xL11B2200
22	3000K	80	4956	5507	169	990	D	L2C6-3080xL11B2200
22	3500K	80	5023	5581	171	990	D	L2C6-3580xL11B2200
22	4000K	80	5189	5766	177	990	C	L2C6-4080xL11B2200

**Notes for Table 1c:**

1. Lumileds maintains a tolerance of ±2 on CRI and ±6.5% on luminous flux measurements.
2. Typical CRI is approximately 2 points higher than the minimum CRI specified, but this is not guaranteed.
3. R9 value of 90CRI products is >50.
4. Light Emitting Surface (LES) is the inner diameter (phosphor area) inside the dam.
5. Energy efficiency class as specified in Commission Delegated Regulation (EU) 2019/2015. The available range of energy efficiency classes is A-G.

# Optical Characteristics

**Table 2. Optical characteristics for LUXEON CS CoB at specified test current,  $T_j = 85^\circ\text{C}$**

PART NUMBER	TYPICAL TOTAL INCLUDED ANGLE <sup>[1]</sup>	TYPICAL VIEWING ANGLE <sup>[2]</sup>
L2C6-xxxxxxxAxx00	135°	115°
L2C6-xxxxxxxBxx00	135°	115°
L2C6-xxxxxxxFxx00	135°	115°

**Notes for Table 2:**

- Total angle at which 90% of total luminous flux is captured.
- Viewing angle is the off axis angle from the LED centerline where the luminous intensity is ½ of the peak value.

# Electrical and Thermal Characteristics

**Table 3. Electrical and thermal characteristics for LUXEON CS CoB at specified test current,  $T_j = 85^\circ\text{C}$**

PART NUMBER	FORWARD VOLTAGE <sup>[1]</sup> ( $V_f$ )			TYPICAL TEMPERATURE COEFFICIENT OF FORWARD VOLTAGE <sup>[2]</sup> (mV/°C)	TYPICAL THERMAL RESISTANCE—JUNCTION TO CASE <sup>[3]</sup> (°C/W)
	MINIMUM	TYPICAL	MAXIMUM		
L2C6-xxxxxL02x0600	32.5	33.9	35.5	10	0.78
L2C6-xxxxxL02x0900	32.5	33.9	35.5	10	0.78
L2C6-xxxxxL03x0900	32.5	33.9	35.5	10	0.60
L2C6-xxxxxL04x0900	32.5	33.9	35.5	10	0.43
L2C6-xxxxxL05x1300	32.5	33.9	35.5	10	0.26
L2C6-xxxxxL06x1300	32.5	33.9	35.5	10	0.24
L2C6-xxxxxL08x1500	32.5	33.9	35.5	10	0.20
L2C6-xxxxxL10x1500	32.5	33.9	35.5	10	0.18
L2C6-xxxxxL11x2200	32.5	33.9	35.5	10	0.16
L2C6-xxxxxL13x2200	32.5	33.9	35.5	10	0.15
L2C6-xxxxxL16x2200	32.5	33.9	35.5	10	0.12
L2C6-xxxxxR12x2200	48.5	51.0	53.5	15	0.11
L2C6-xxxxxR18x2200	48.5	51.0	53.5	15	0.07

**Notes for Table 3:**

- Lumileds maintains a tolerance of  $\pm 0.06V$  on forward voltage measurements.
- Measured between 25°C and 85°C.
- Thermal resistance is measured between junction and the bottom of the LUXEON CoB substrate.

# Absolute Maximum Ratings

**Table 4. Absolute maximum ratings for LUXEON CS CoB**

PARAMETER	MAXIMUM PERFORMANCE
DC Forward Current <sup>[1, 2, 3]</sup>	2.5x test current
LED Junction Temperature <sup>[1]</sup> (DC & Pulse)	125°C
ESD Sensitivity (ANSI/ESDA/JEDEC JS-001-2012)	Class 3B
Operating Case Temperature <sup>[1]</sup>	-40°C to 105°C
LED Storage Temperature	-40°C to 120°C
Reverse Voltage ( $V_{reverse}$ )	LUXEON LEDs are not designed to be driven in reverse bias

**Notes for Table 4:**

- Proper current derating must be observed to maintain the junction temperature below the maximum allowable junction temperature.
- Residual periodic variations due to power conversion from alternating current (AC) to direct current (DC), also called "ripple," are acceptable if the following conditions are met:
  - The frequency of the ripple current is 100Hz or higher
  - The average current for each cycle does not exceed the maximum allowable DC forward current
  - The maximum amplitude of the ripple does not exceed the maximum peak pulsed forward current
- Exception: LUXEON CS CoB 1812 and 1818 have maximum DC forward current of 2.2x of test current.

# Characteristic Curves

## Spectral Power Distribution Characteristics

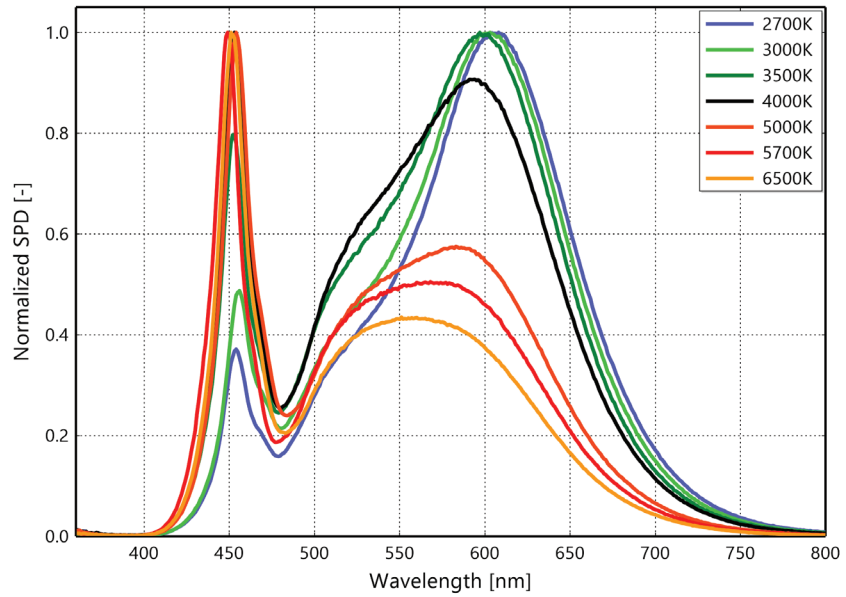


Figure 1a. Typical normalized power vs. wavelength for L2C6-xx80xxxxAxx00, L2C6-xx80xxxxBxx00 at specified test current,  $T_j=85^\circ\text{C}$

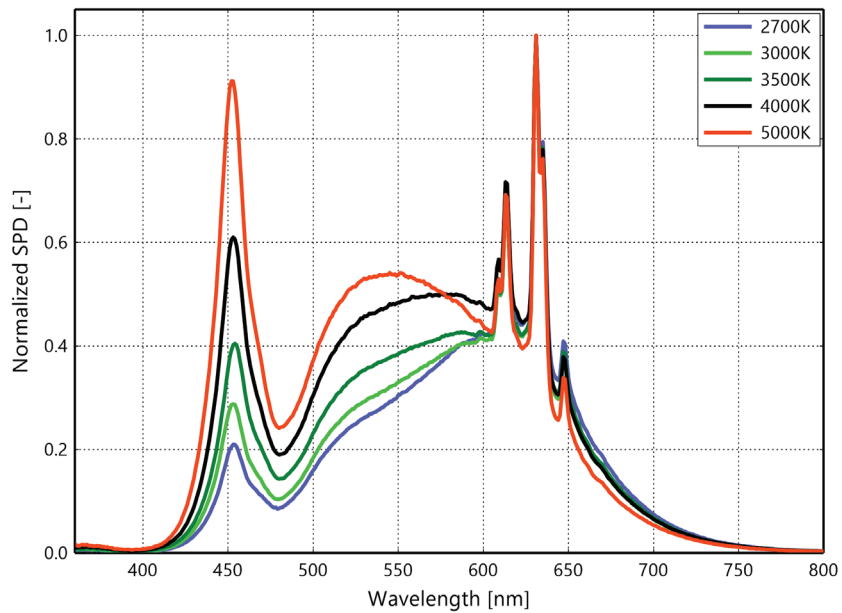


Figure 1b. Typical normalized power vs. wavelength for L2C6-xx90xxxxAxx00 at specified test current,  $T_j=85^\circ\text{C}$

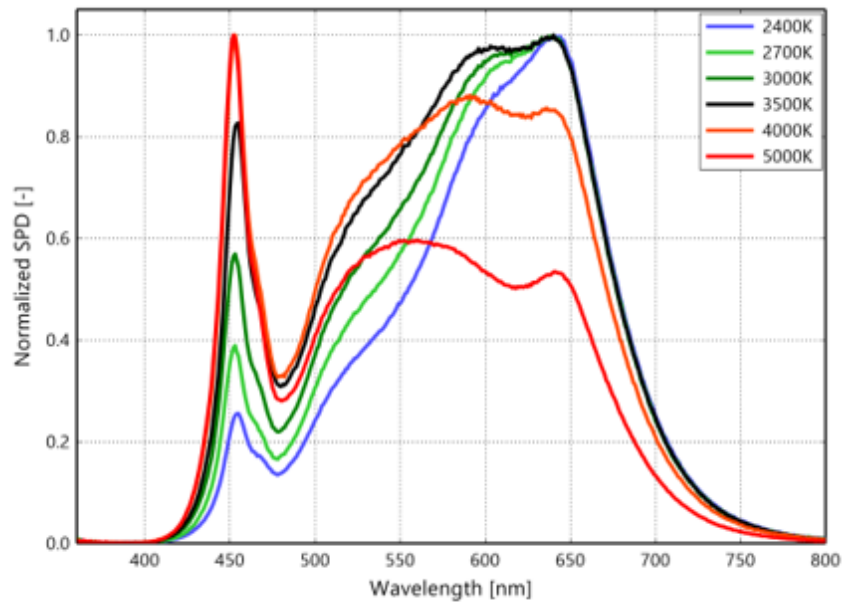


Figure 1c. Typical normalized power vs. wavelength for L2C6-xx90xxxxFxx00 at specified test current,  $T_j=85^\circ\text{C}$

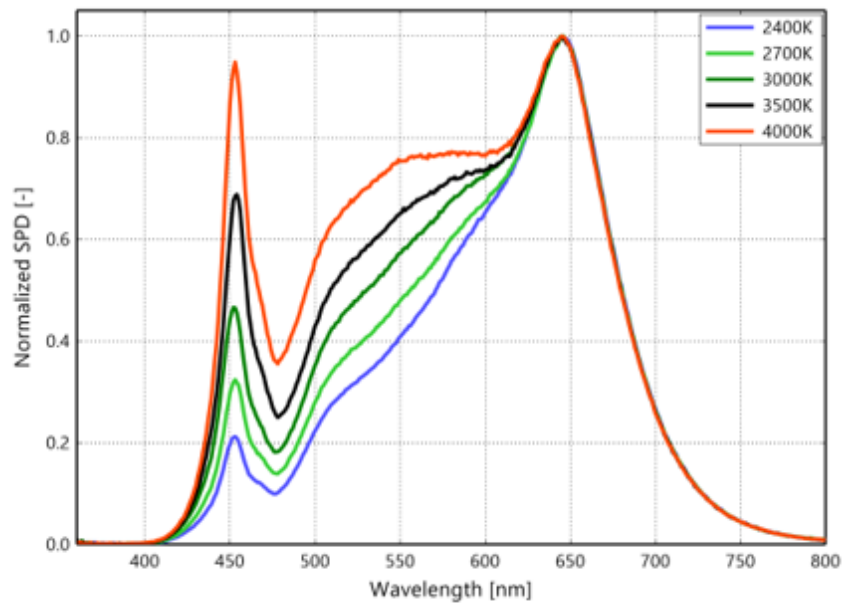


Figure 1d. Typical normalized power vs. wavelength for L2C6-xx95xxxxFxx00 at specified test current,  $T_j=85^\circ\text{C}$

# Light Output Characteristics

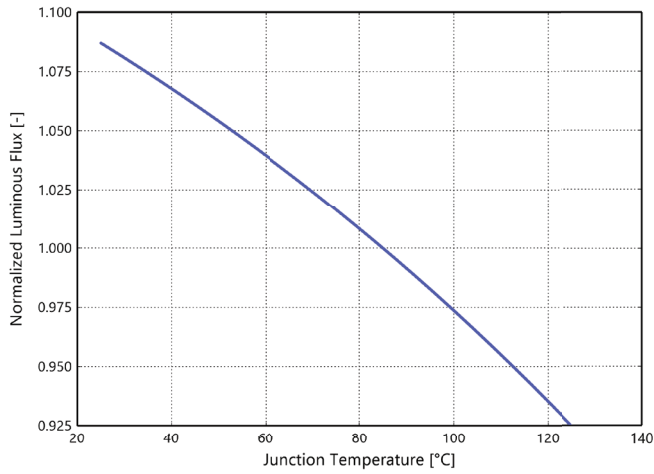


Figure 2a. Typical normalized light output vs. junction temperature for L2C6-xxxxLxxAxx00 at specified test current

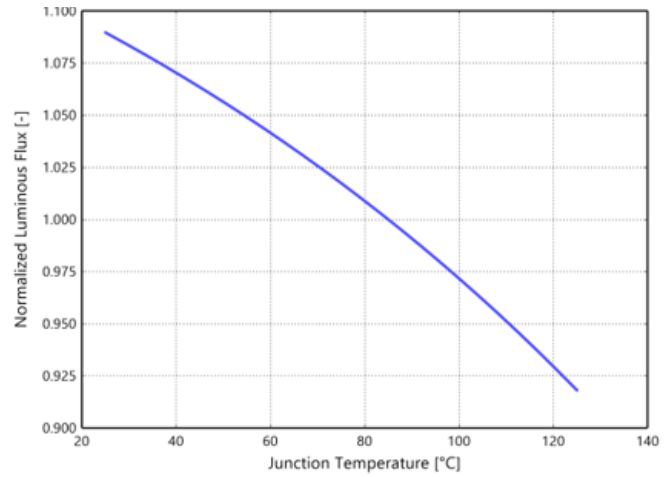


Figure 2b. Typical normalized light output vs. junction temperature for L2C6-xxxxLxxFxx00 at specified test current

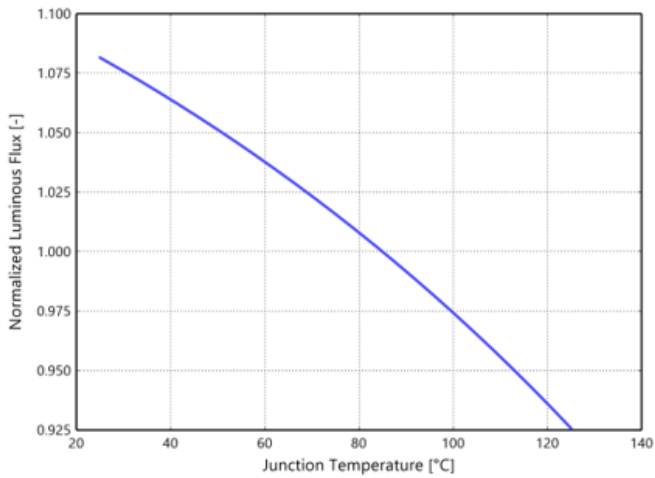


Figure 2c. Typical normalized light output vs. junction temperature for L2C6-xxxxLxxBxx00 at specified test current

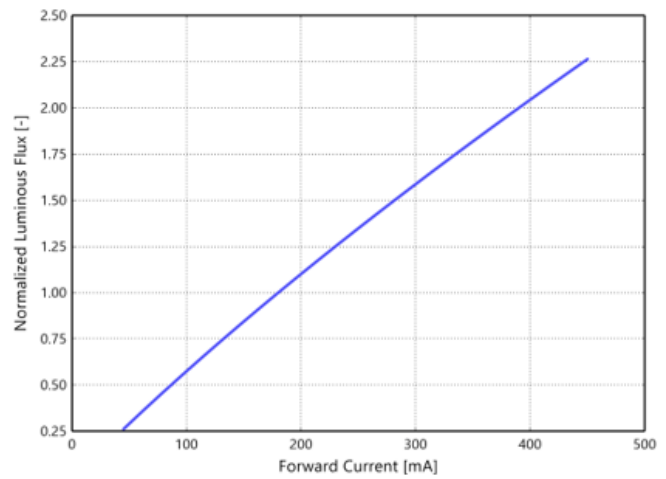


Figure 2d. Typical normalized light output vs. forward current for L2C6-xxxxL02x0600 at  $T_j=85^\circ\text{C}$

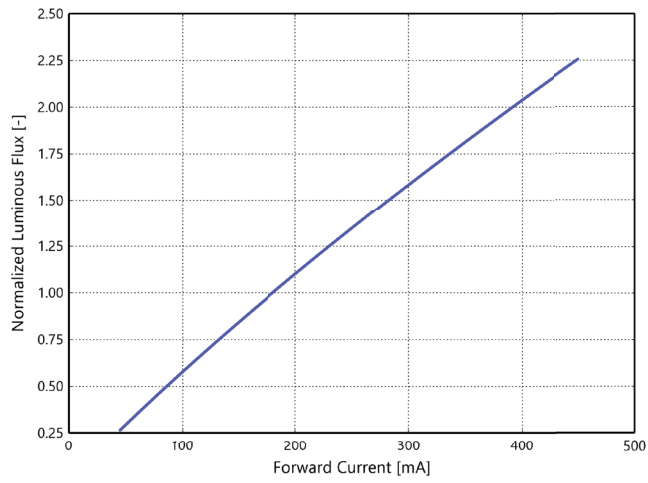


Figure 2e. Typical normalized light output vs. forward current for L2C6-xxxxxL02x0900 at  $T_j=85^\circ\text{C}$

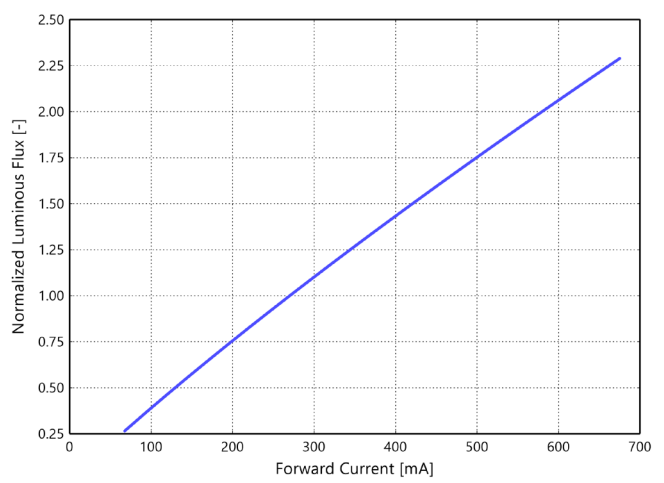


Figure 2f. Typical normalized light output vs. forward current for L2C6-xxxxxL03x0900 at  $T_j=85^\circ\text{C}$

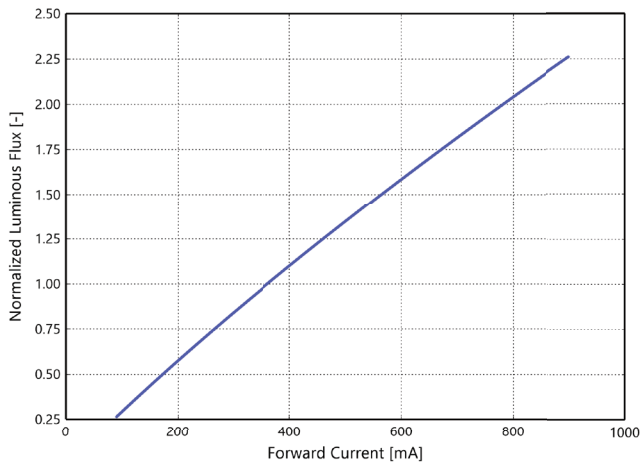


Figure 2g. Typical normalized light output vs. forward current for L2C6-xxxxxL04x0900 at  $T_j=85^\circ\text{C}$

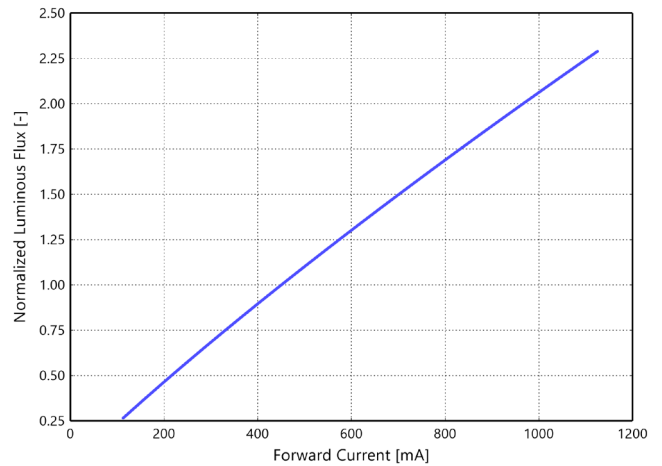


Figure 2h. Typical normalized light output vs. forward current for L2C6-xxxxxL05x1300 at  $T_j=85^\circ\text{C}$

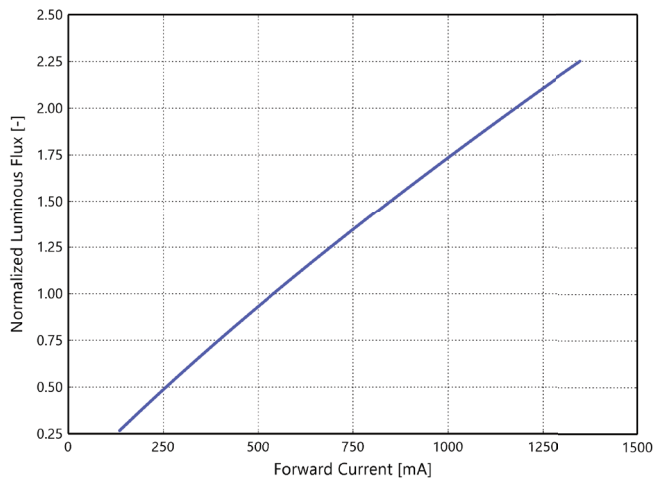


Figure 2i. Typical normalized light output vs. forward current for L2C6-xxxxxL06x1300 at  $T_j=85^\circ\text{C}$

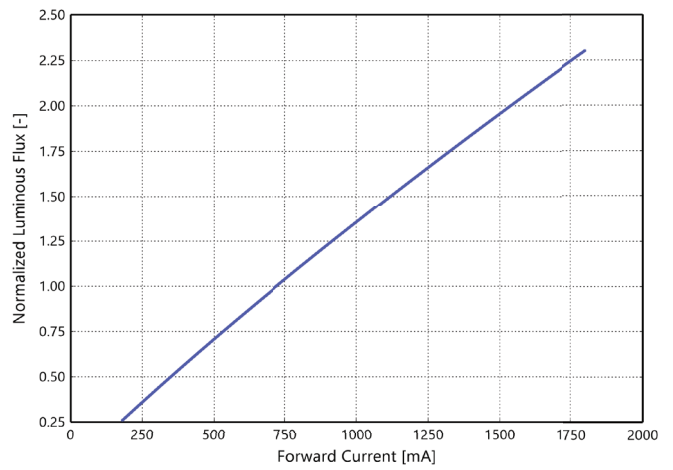


Figure 2j. Typical normalized light output vs. forward current for L2C6-xxxxxL08x1500 at  $T_j=85^\circ\text{C}$

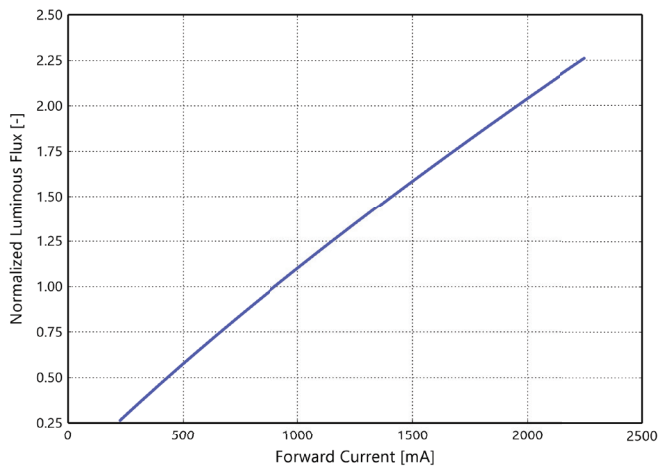


Figure 2k. Typical normalized light output vs. forward current for L2C6-xxxxxL10x1500 at  $T_j=85^\circ\text{C}$

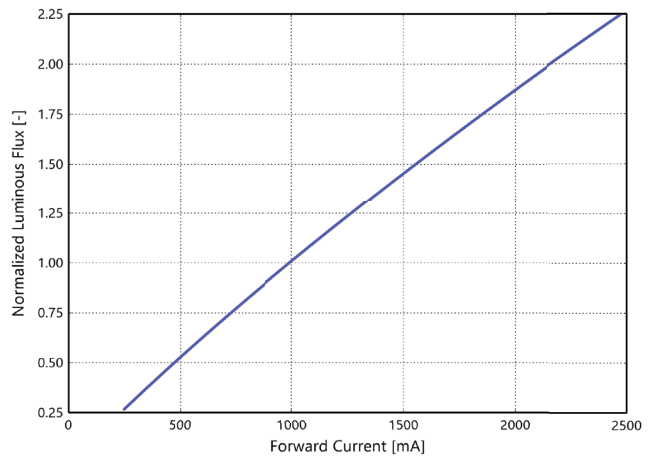


Figure 2l. Typical normalized light output vs. forward current for L2C6-xxxxxL11x2200 at  $T_j=85^\circ\text{C}$

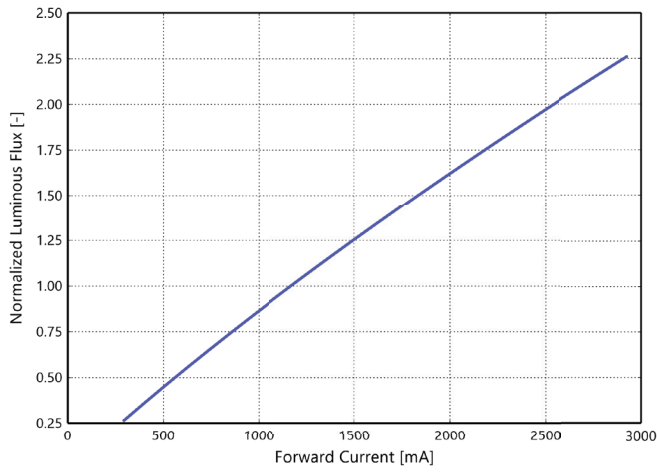


Figure 2m. Typical normalized light output vs. forward current for L2C6-xxxxxL13A2200 at  $T_j=85^\circ\text{C}$

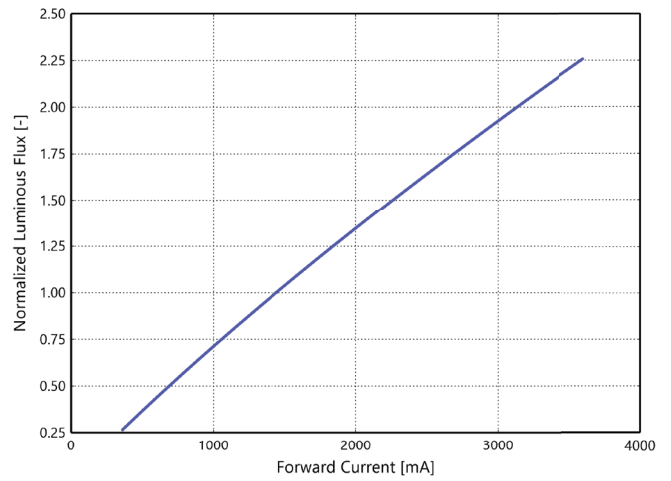


Figure 2n. Typical normalized light output vs. forward current for L2C6-xxxxxL16x2200 at  $T_j=85^\circ\text{C}$

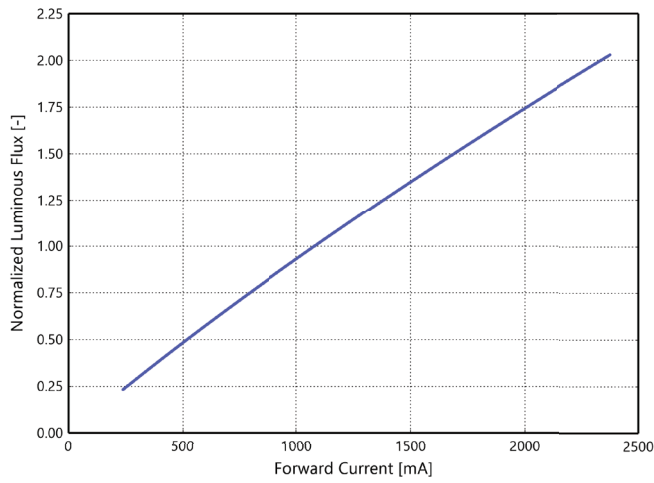


Figure 2o. Typical normalized light output vs. forward current for L2C6-xxxxxR12A2200 at  $T_j=85^\circ\text{C}$

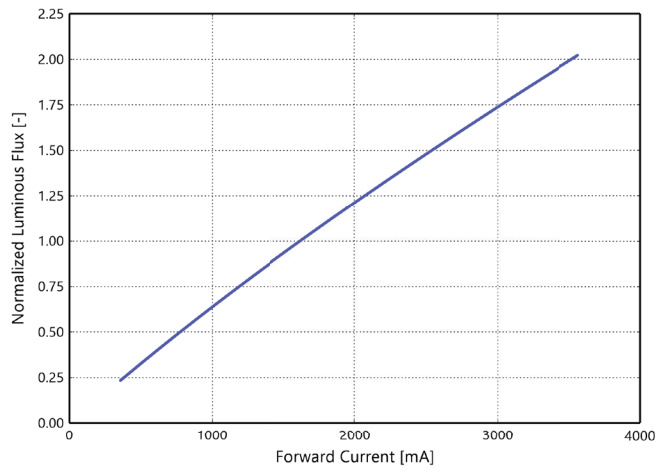


Figure 2p. Typical normalized light output vs. forward current for L2C6-xxxxxR18A2200 at  $T_j=85^\circ\text{C}$

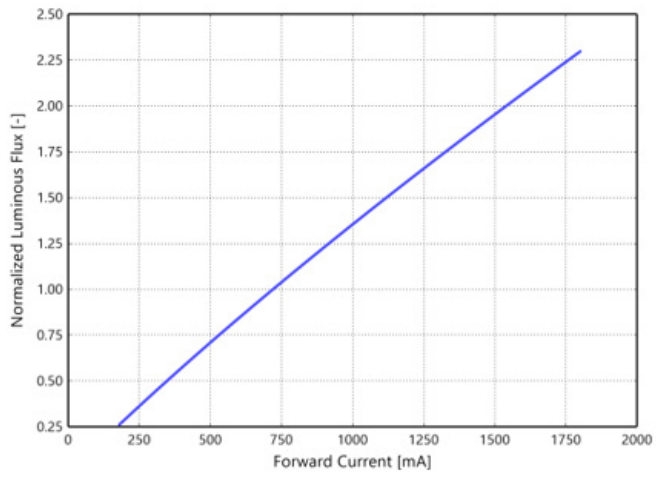


Figure 2q. Typical normalized light output vs. forward current for L2C6-xxxxxL08B1500 at  $T_j=85^\circ\text{C}$

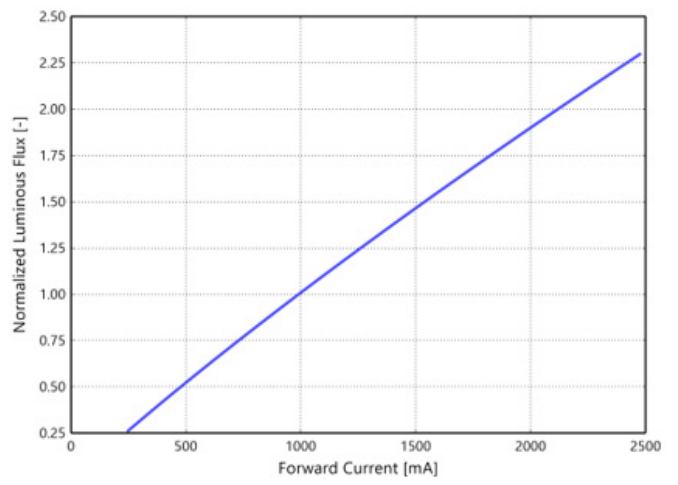


Figure 2r. Typical normalized light output vs. forward current for L2C6-xxxxxL11B2200 at  $T_j=85^\circ\text{C}$

# Forward Current Characteristics

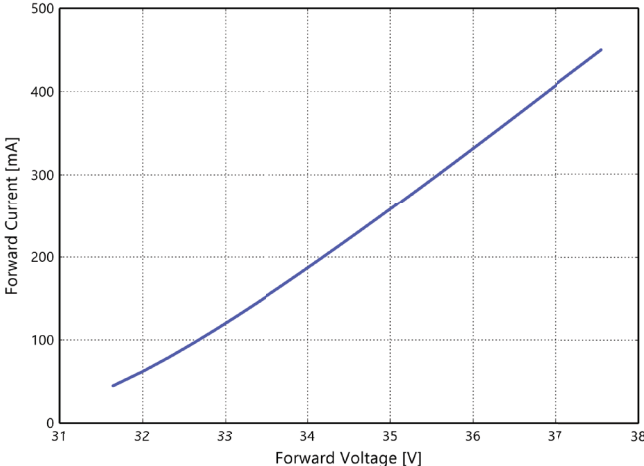


Figure 3a. Typical forward current vs. forward voltage for L2C6-xxxxxL02x0600 at  $T_j=85^\circ\text{C}$

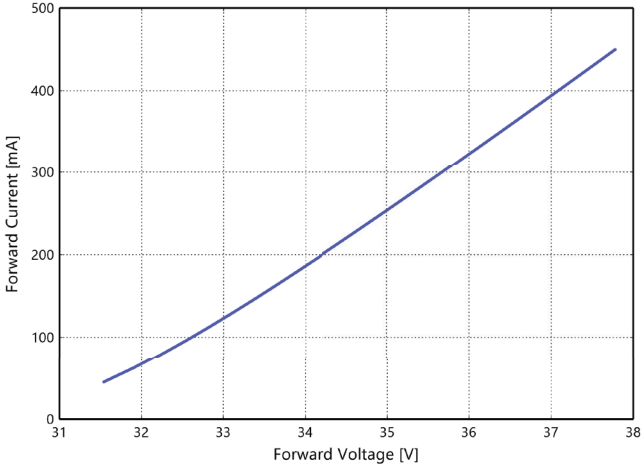


Figure 3b. Typical forward current vs. forward voltage for L2C6-xxxxxL02x0900 at  $T_j=85^\circ\text{C}$

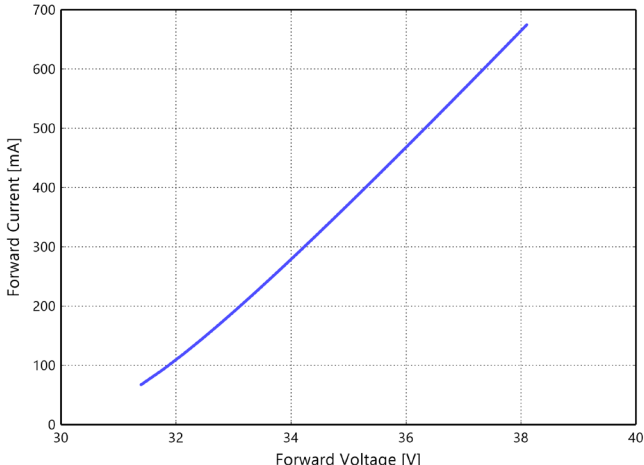


Figure 3c. Typical forward current vs. forward voltage for L2C6-xxxxxL03x0900 at  $T_j=85^\circ\text{C}$

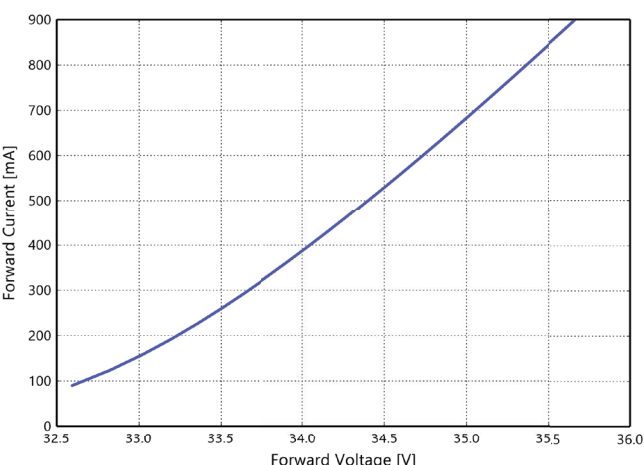


Figure 3d. Typical forward current vs. forward voltage for L2C6-xxxxxL04x0900 at  $T_j=85^\circ\text{C}$

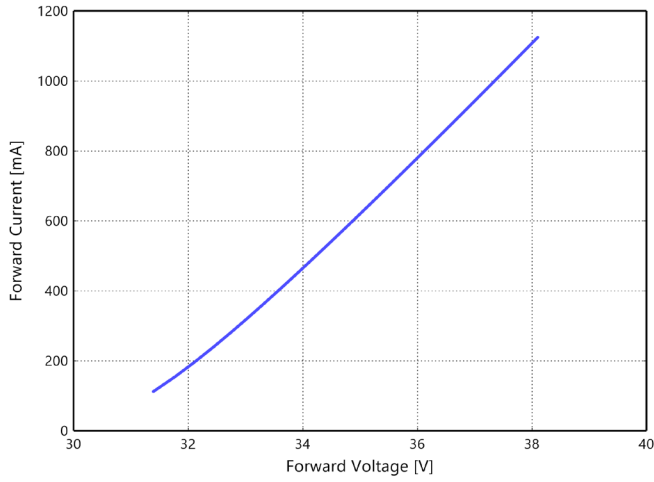


Figure 3e. Typical forward current vs. forward voltage for L2C6-xxxxxL05x1300 at  $T_j=85^\circ\text{C}$

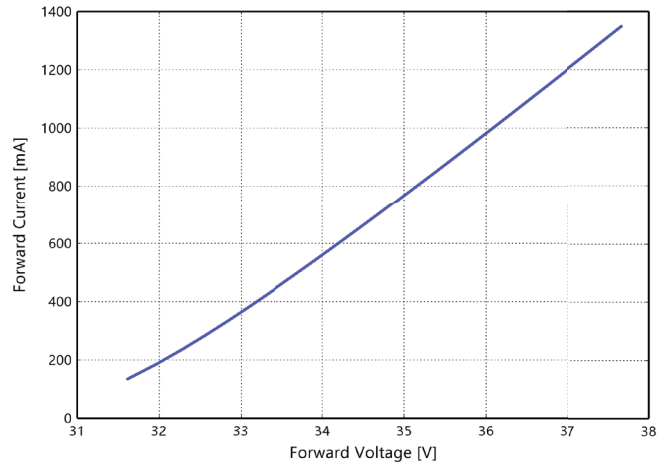


Figure 3f. Typical forward current vs. forward voltage for L2C6-xxxxxL06x1300 at  $T_j=85^\circ\text{C}$

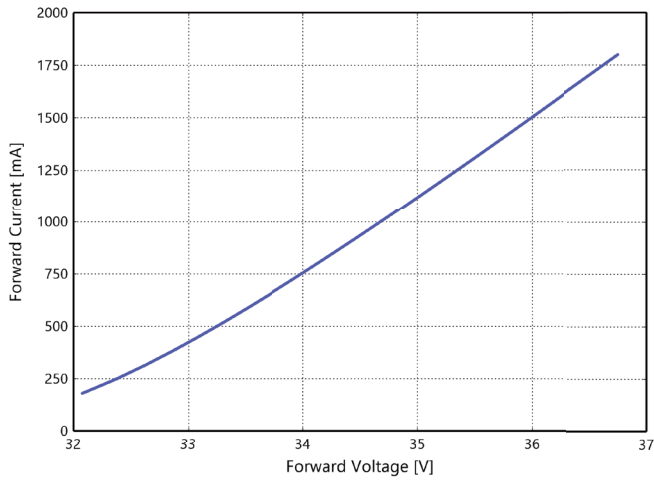


Figure 3g. Typical forward current vs. forward voltage for L2C6-xxxxxL08x1500 at  $T_j=85^\circ\text{C}$

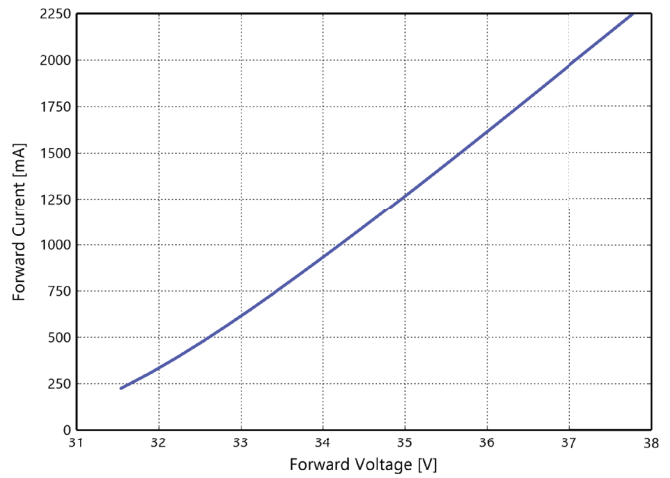


Figure 3h. Typical forward current vs. forward voltage for L2C6-xxxxxL10x1500 at  $T_j=85^\circ\text{C}$

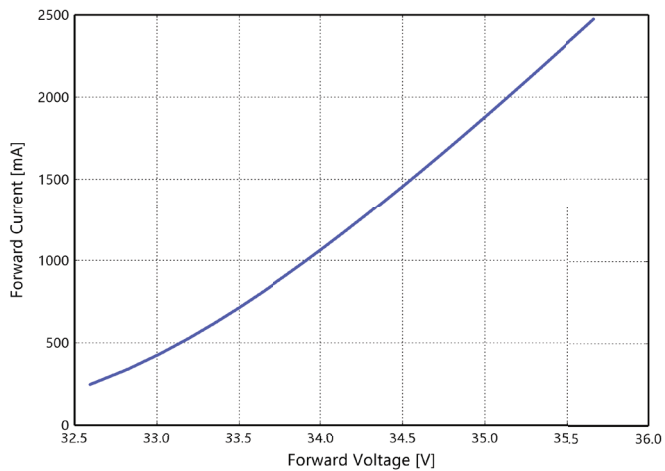


Figure 3i. Typical forward current vs. forward voltage for L2C6-xxxxxL11x2200 at  $T_j=85^\circ$

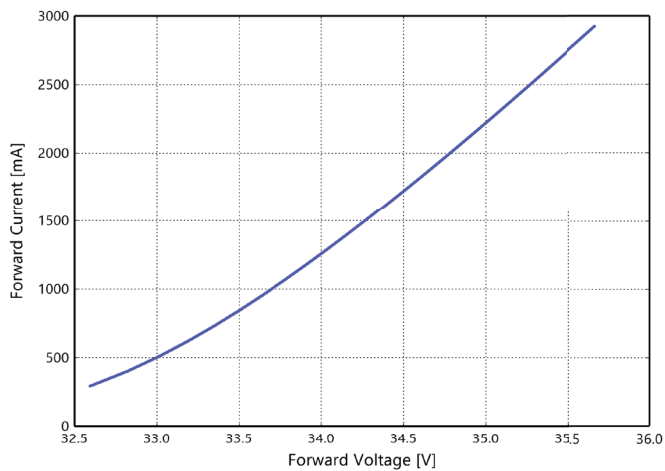


Figure 3j. Typical forward current vs. forward voltage for L2C6-xxxxxL13A2200 at  $T_j=85^\circ$

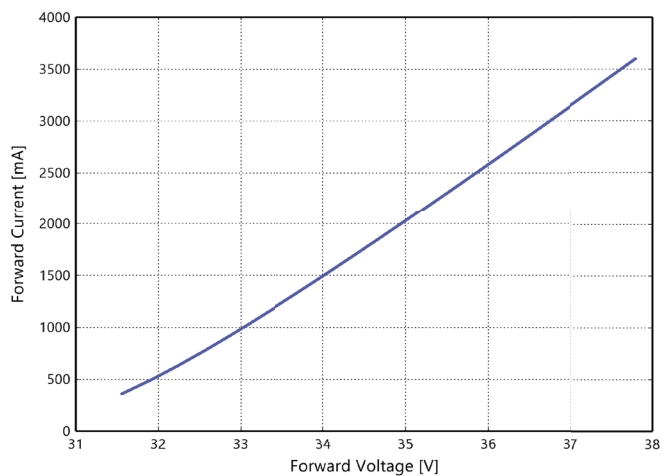


Figure 3k. Typical forward current vs. forward voltage for L2C6-xxxxxL16x2200 at  $T_j=85^\circ\text{C}$

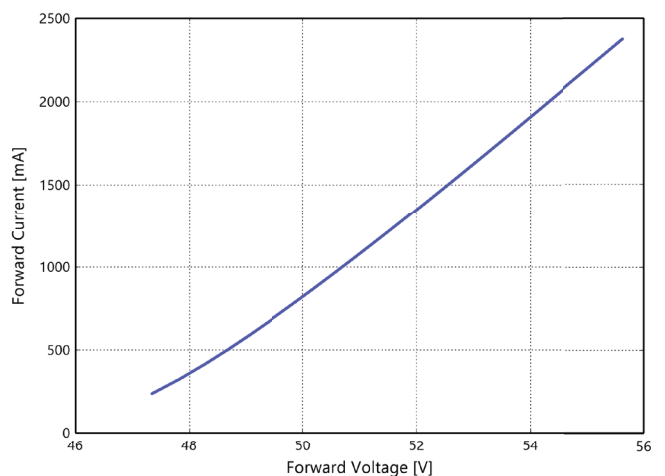


Figure 3l. Typical forward current vs. forward voltage for L2C6-xxxxxR12A2200 at  $T_j=85^\circ\text{C}$

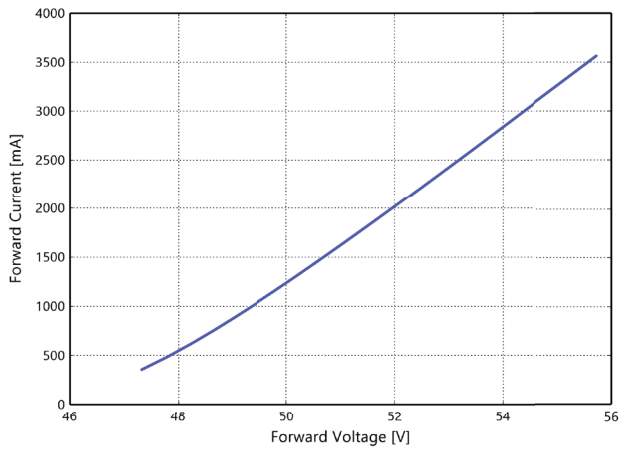


Figure 3m. Typical forward current vs. forward voltage for L2C6-xxxxxR18A2200 at  $T_j=85^\circ\text{C}$

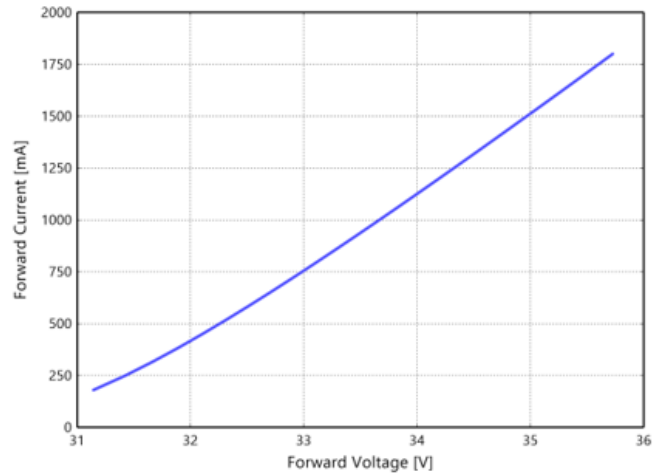


Figure 3n. Typical forward current vs. forward voltage for L2C6-xxxxxL08B1500 at  $T_j=85^\circ\text{C}$

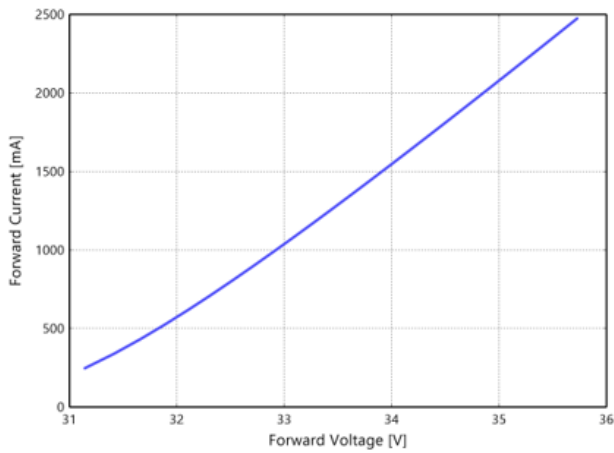


Figure 3o. Typical forward current vs. forward voltage for L2C6-xxxxxL11B1500 at  $T_j=85^\circ\text{C}$

# Radiation Pattern Characteristics

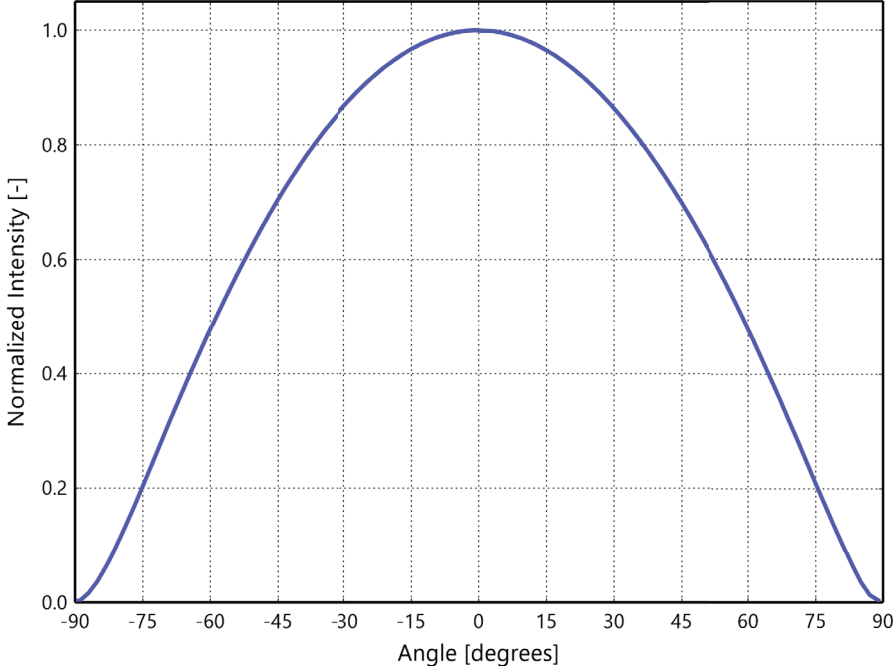


Figure 4. Typical radiation pattern for LUXEON CS CoB at specified test current,  $T_j=85^{\circ}\text{C}$

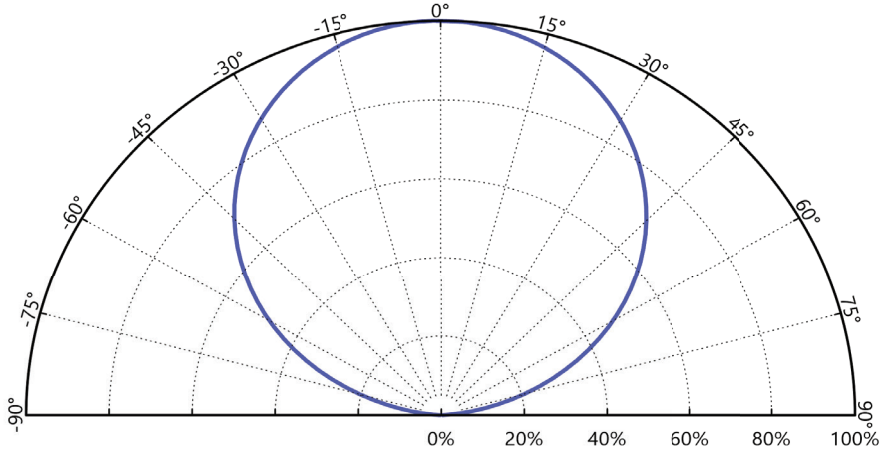


Figure 5. Typical polar radiation pattern for LUXEON CS CoB at specified test current,  $T_j=85^{\circ}\text{C}$

# Color Bin Definitions

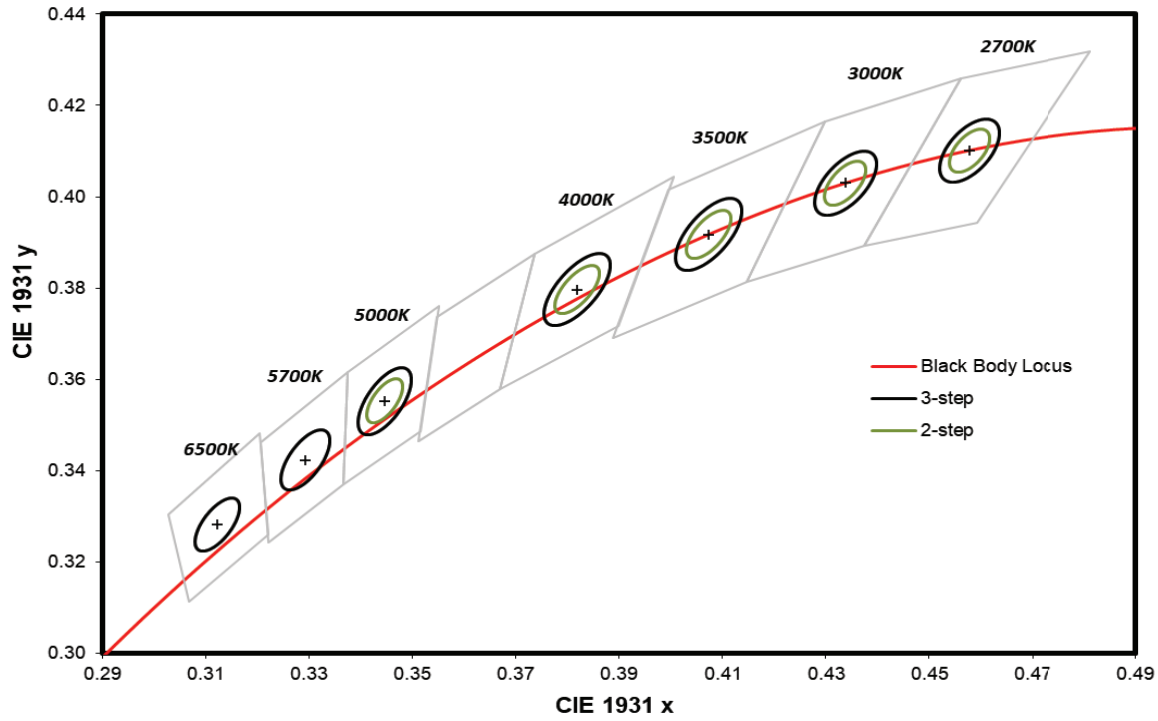


Figure 6a. 2-step and 3-step MacAdam ellipse illustration for Table 6a

Table 6a. 2-step and 3-step MacAdam ellipse color bin definitions for LUXEON CS CoB

NOMINAL CCT	COLOR SPACE	CENTER POINT <sup>[1]</sup> (cx, cy)	MAJOR AXIS, a		MINOR AXIS, b		ELLIPSE ROTATION ANGLE, $\theta$
			2-step	3-step	2-step	3-step	
2700K	2-step, 3-step MacAdam ellipse	(0.4578, 0.4101)	0.00540	0.00810	0.00280	0.00420	53.70°
3000K	2-step, 3-step MacAdam ellipse	(0.4338, 0.4030)	0.00556	0.00834	0.00272	0.00408	53.22°
3500K	2-step, 3-step MacAdam ellipse	(0.4073, 0.3917)	0.00618	0.00927	0.00276	0.00414	54.00°
4000K	2-step, 3-step MacAdam ellipse	(0.3818, 0.3797)	0.00626	0.00939	0.00268	0.00402	53.72°
5000K	2-step, 3-step MacAdam ellipse	(0.3447, 0.3553)	0.00548	0.00822	0.00236	0.00354	59.62°
5700K	2-step, 3-step MacAdam ellipse	(0.3287, 0.3417)	-	0.00745	-	0.00320	59.09°
6500K	2-step, 3-step MacAdam ellipse	(0.3123, 0.3282)	-	0.00669	-	0.00285	58.57°

Notes for Table 6a:

1. Lumileds maintains a tolerance of  $\pm 0.005$  on x and y coordinates in the CIE 1931 color space.

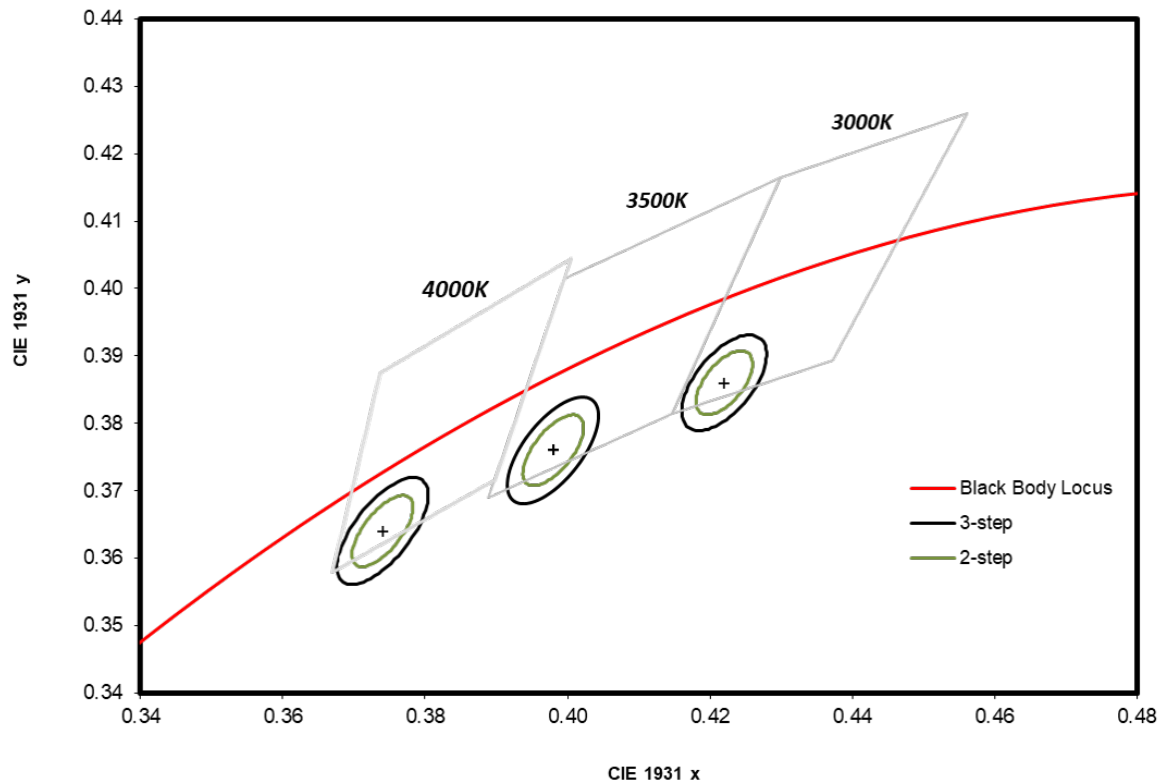


Figure 6b. 2-step and 3-step MacAdam ellipse illustration for Table 6b

Table 6b. 2-step and 3-step MacAdam ellipse color bin definitions for LUXEON CS CoB PW

NOMINAL CCT	COLOR SPACE	CENTER POINT <sup>[1]</sup> (cx, cy)	MAJOR AXIS, a		MINOR AXIS, b		ELLIPSE ROTATION ANGLE, $\theta$
			2-step	3-step	2-step	3-step	
3000K	2-step, 3-step MacAdam ellipse	(0.422, 0.386)	0.00556	0.00834	0.00272	0.00408	53.20°
3500K	2-step, 3-step MacAdam ellipse	(0.398, 0.376)	0.00618	0.00927	0.00276	0.00414	54.00°
4000K	2-step, 3-step MacAdam ellipse	(0.374, 0.364)	0.00626	0.00939	0.00268	0.00402	53.70°

Notes for Table 6b:

1. Lumileds maintains a tolerance of  $\pm 0.005$  on x and y coordinates in the CIE 1931 color space.

# Mechanical Dimensions

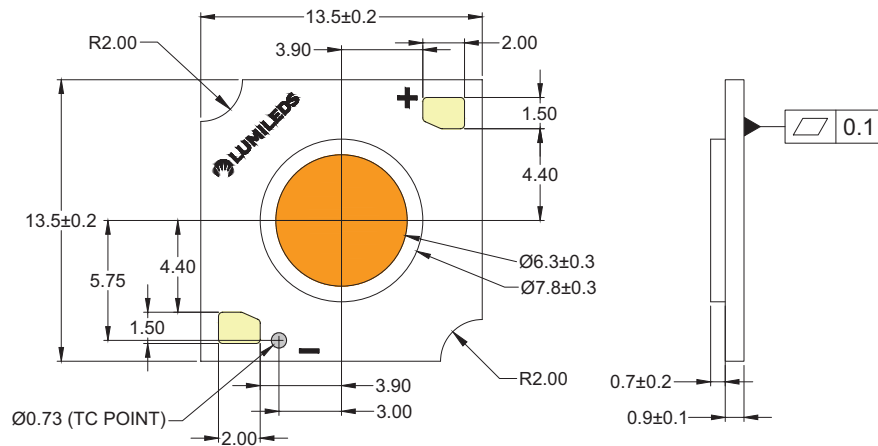


Figure 7a. Mechanical dimensions for L2C6-xxxxxL02x0600

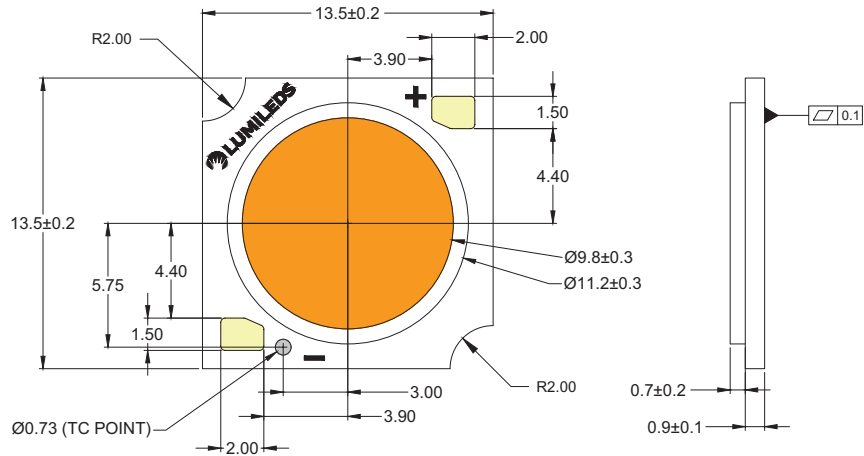


Figure 7b. Mechanical dimensions for L2C6-xxxxxL02x0900, L2C6-xxxxxL03x0900 and L2C6-xxxxxL04x0900

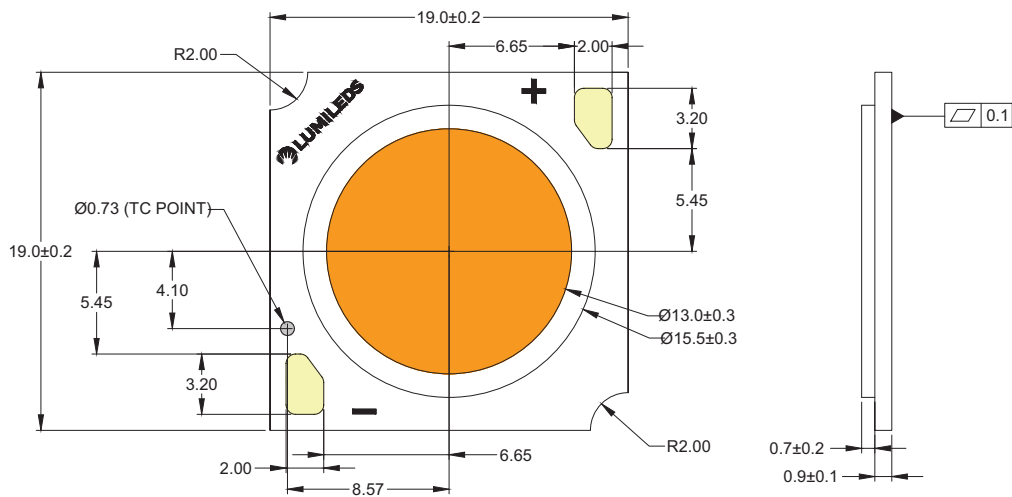


Figure 7c. Mechanical dimensions for L2C6-xxxxxL05x1300 and L2C6-xxxxxL06x1300

- Notes for Figures 7a, 7b and 7c:
1. Drawings are not to scale.
  2. All dimensions are in millimeters.

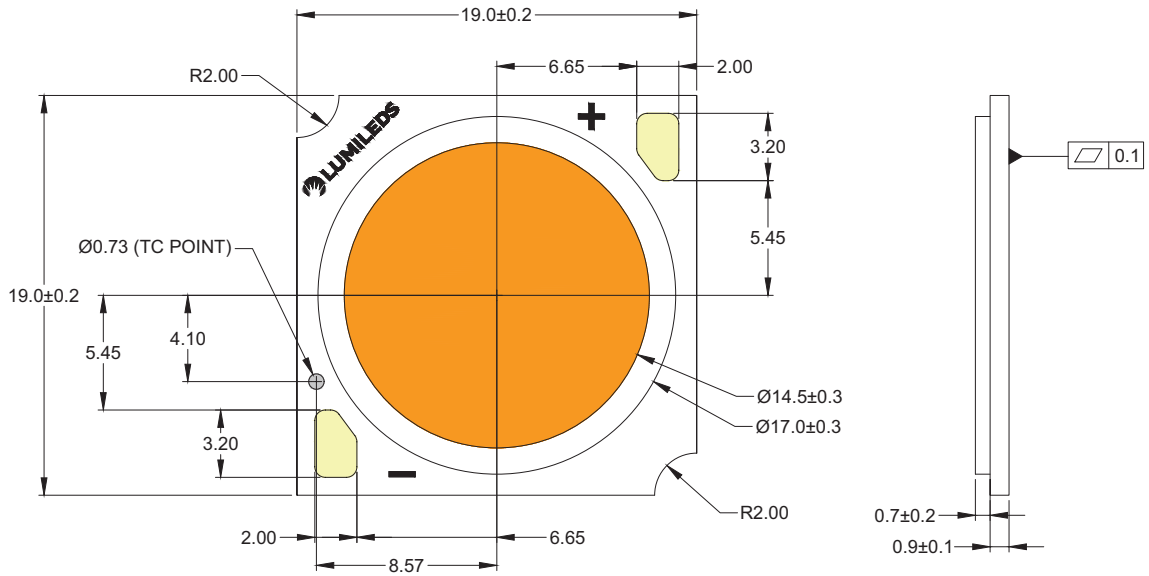


Figure 7d. Mechanical dimensions for L2C6-xxxxxL08x1500 and L2C6-xxxxxL10x1500

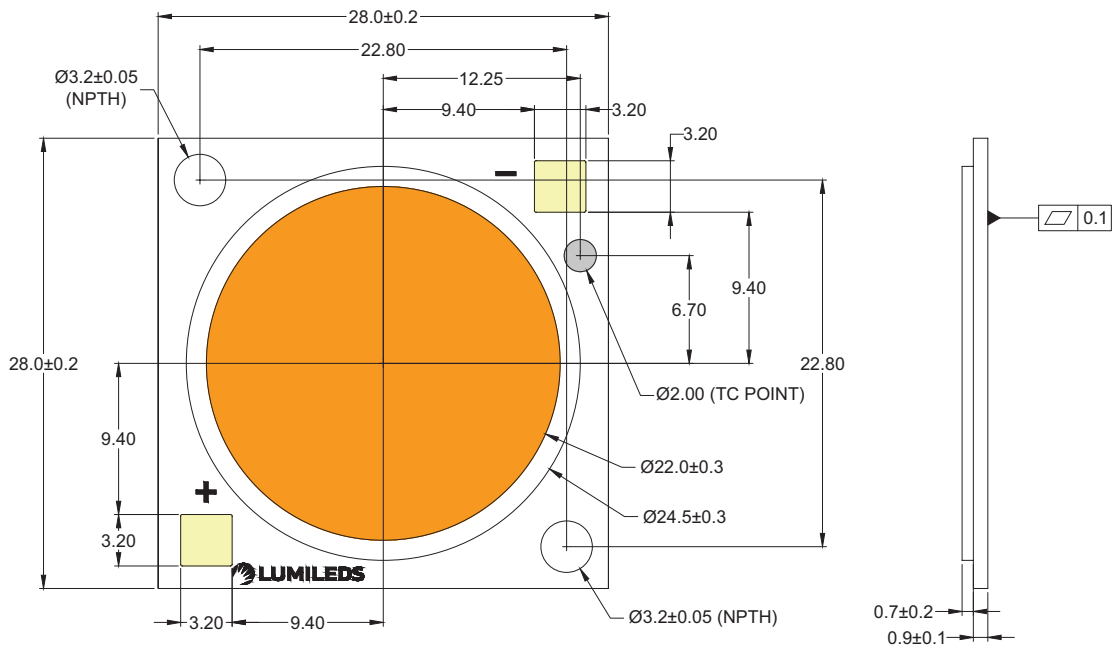


Figure 7e. Mechanical dimensions for L2C6-xxxxxL11x2200, L2C6-xxxxxL13x2200, L2C6-xxxxxL16x2200, L2C6-xxxxxR12x2200 and L2C6-xxxxxR18x2200

Notes for Figures 7d and 7e:

1. Drawings are not to scale.
2. All dimensions are in millimeters.
3. Dam heights: 0.7mm is applicable to L2C6-xx90xxxxxxx, 0.5mm to L2C6-xx80xxxxxxx.

# Packaging Information

LUXEON CS CoB LEDs are packaged in trays then in a carton box. Each tray contains a specified number of LEDs. The LEDs in each tray come from a single category code, ensuring they are all well-matched for light output, color, and forward voltage. Each tray contains a rubber stopper at one end. The tray label has both alphanumeric and bar code information. The carton boxes have printed information providing part numbers with CAT codes that indicate luminous flux, color and forward voltage bins.

**Table 6. Number of LEDs per tray for LUXEON CS CoB**

PART NUMBER	TOTAL UNITS PER TRAY	TOTAL TRAYS PER INNER BOX	TOTAL UNITS PER INNER BOX
L2C6-xxxxxL02x0600	80	2	160
L2C6-xxxxxL02x0900	80	2	160
L2C6-xxxxxL03x0900	80	2	160
L2C6-xxxxxL04x0900	80	2	160
L2C6-xxxxxL05x1300	36	2	72
L2C6-xxxxxL06x1300	36	2	72
L2C6-xxxxxL08x1500	36	2	72
L2C6-xxxxxL10x1500	36	2	72
L2C6-xxxxxL11x2200	30	2	60
L2C6-xxxxxL13x2200	30	2	60
L2C6-xxxxxL16x2200	30	2	60
L2C6-xxxxxR12x2200	30	2	60
L2C6-xxxxxR18x2200	30	2	60

## Tray Dimensions

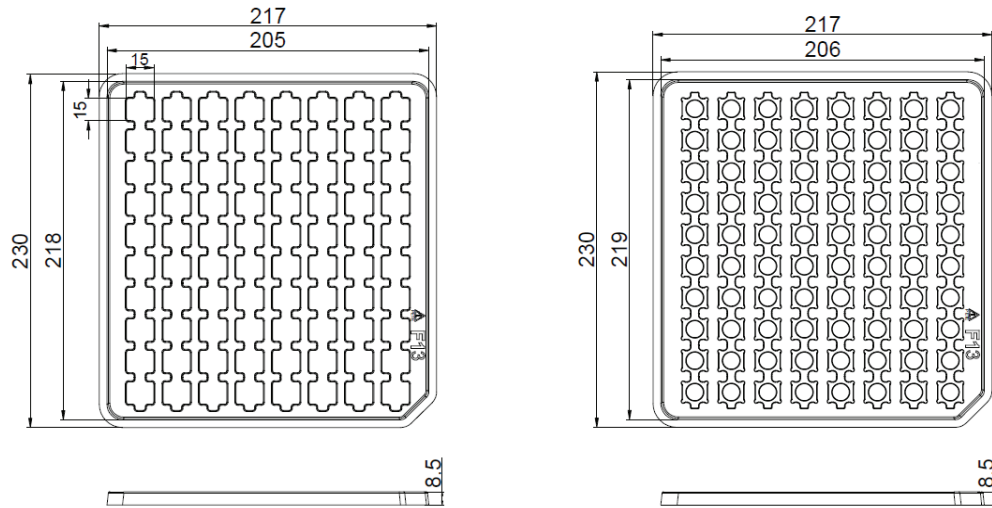


Figure 8a. Tray dimensions for L2C6-xxxxxL02x0600, L2C6-xxxxxL02x0900, L2C6-xxxxxL04x0900

**Notes for Figure 8a:**

1. Drawings not to scale.
2. All dimensions are in millimeters.

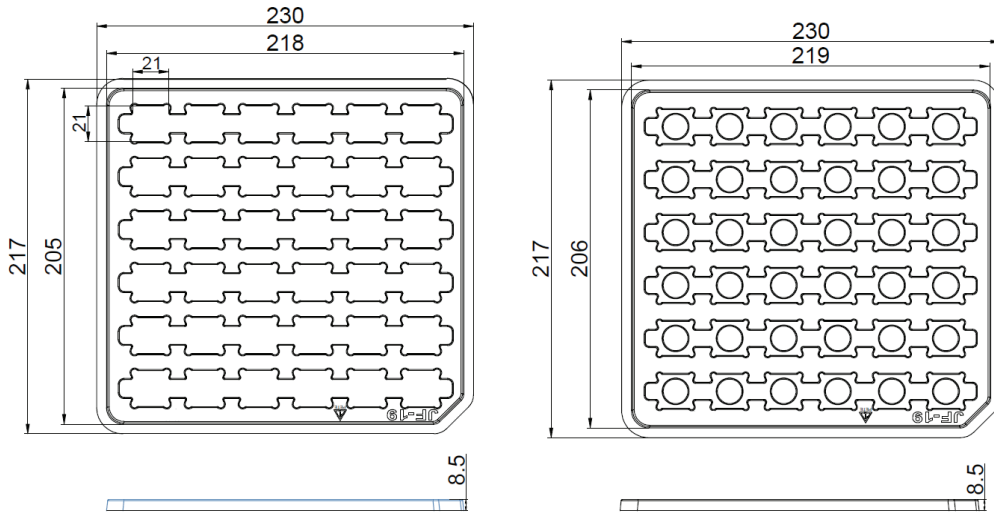


Figure 8b. Tray dimensions for L2C6-xxxxxL06x1300, L2C6-xxxxxL08x1500 and L2C6-xxxxxL10x1500

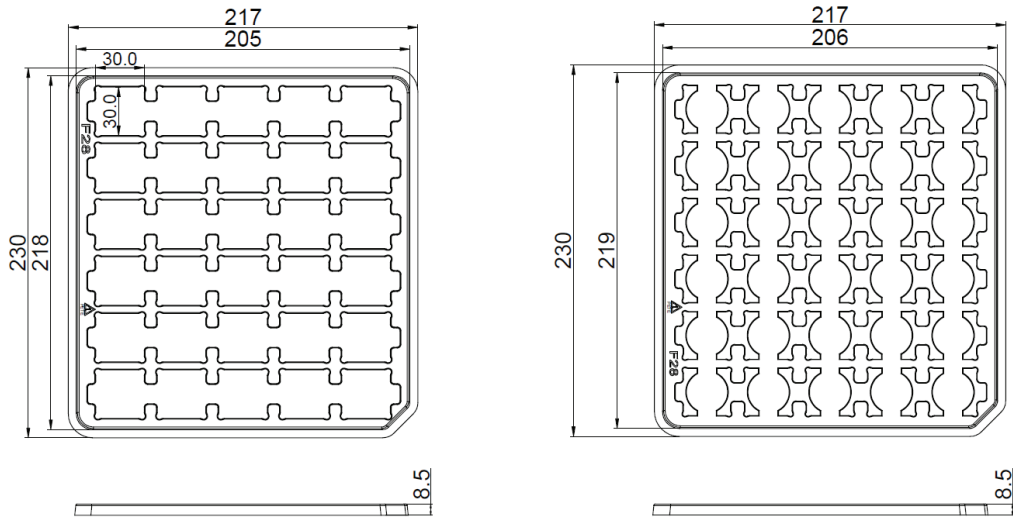


Figure 8c. Tray dimensions for L2C6-xxxxxL11x2200, L2C6-xxxxxL13x2200, L2C6-xxxxxL16x2200, L2C6-xxxxxR12x2200 and L2C6-xxxxxR18x2200

- Notes for Figures 8b and 8c:
1. Drawings not to scale.
  2. All dimensions are in millimeters.

# Inner Box

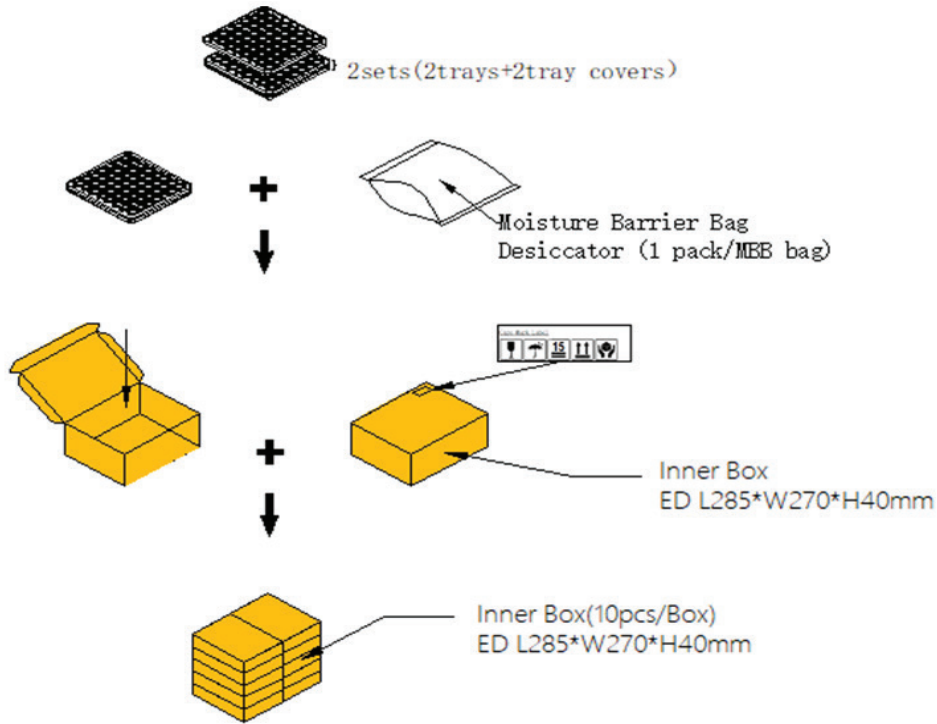


Figure 9. Dimensions for inner box and outer box packaging for LUXEON CS CoB

Table 7. Inner box information for LUXEON CS CoB

BOX TYPE	DIMENSIONS (mm)			AVERAGE WEIGHT (160pcs/box)
	H	L	W	
Inner Box	40	285	270	0.376Kg

Notes for Figure 10 – Inner Box Label descriptions for customer use:



Figure 10. Example of inner box label and tray label for LUXEON CS CoB

Field labels not described are for Lumileds internal use only.

1. Lumileds part number.
2. Number of LED emitters in a box.
3. LED test date in YYWW format.
4. Customer part number for custom requests only.
5. Unique production lot identification number. This number is required for traceability purpose.
6. Product category code.
7. EU regulatory address.

## Outer Box

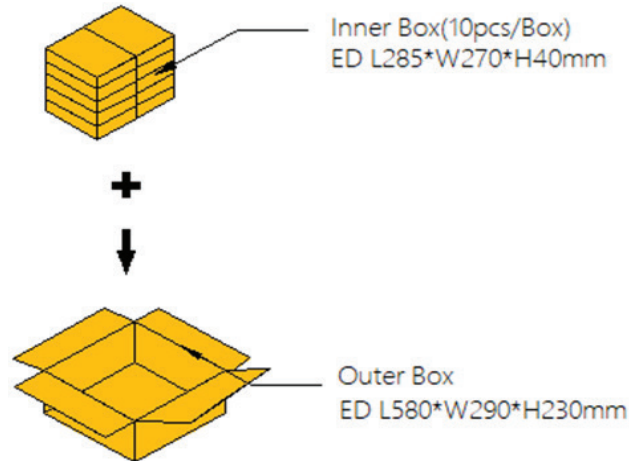


Figure 11. Dimensions for outer box packaging for LUXEON CS CoB

Table 8. Outer box information for LUXEON CS CoB

BOX TYPE	DIMENSIONS (mm)			MAXIMUM INNER BOXES PER OUTER BOX	MAXIMUM QUANTITY PER OUTER BOX	AVERAGE WEIGHT (1600pcs/box)
	H	L	W			
Outer Box	230	580	290	10	1600	4.412Kg

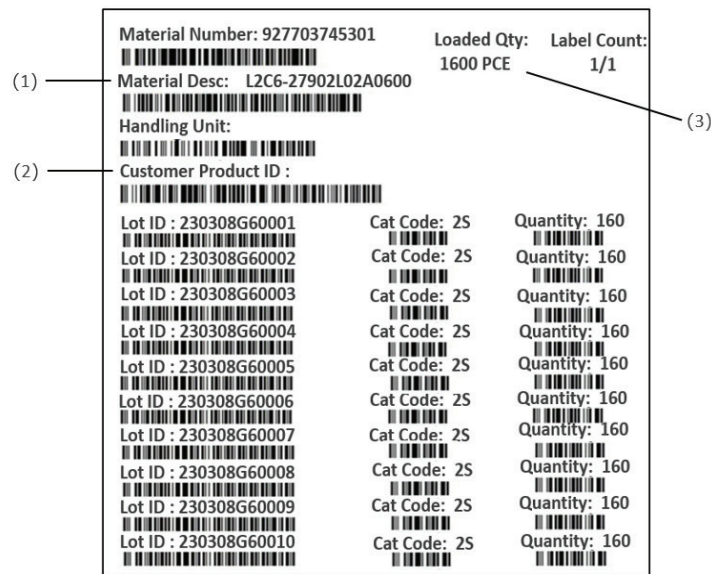


Figure 12. Example of outer box label for LUXEON CS CoB

Notes for Figure 12 – Outer Box Label descriptions for customer use:  
 Field labels not described are for Lumileds internal use only.

1. Lumileds part number.
2. Customer part number for custom requests only.
3. Total number of LED emitters in a shipment box.

## About Lumileds

Lumileds is a global leader in LED and microLED technology, innovation, and solutions for the automotive, display, illumination, mobile, and other markets where light sources are essential. Our approximately 3,500 employees operate in over 15 countries and partner with our customers to deliver never before possible solutions for lighting, safety, and well-being.

To learn more about our lighting solutions, visit [lumileds.com](https://lumileds.com).



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