



# Chip on Board LEDs

High performance solutions that optimize system design

*Light is the most important component when it comes to perceiving and evaluating goods in retail & hospitality, while in outdoor applications it is key to providing safety and visibility to citizens. In fact, lighting can play a critical role in branding, highlighting specific merchandise and creating an overall mood that makes people want to remain in a space longer. Energy efficiency is also a strong driver involved in selecting a new lighting scheme or upgrade, making LED technology an obvious choice for replacing legacy lighting. In retail lighting, spotlights must deliver high lumen output from a compact source at high beam angles. For outdoor, larger lumen packages are required with the right light profile to keep the roads clear and safe. LUXEON CoBs are very versatile in terms of their lumen packages, as well as spectra. They are able to render colors well and provide an energy efficient alternative to traditional lighting.*





# Lumileds LUXEON CoB Family

Extensive range to meet all lighting application needs

## LUXEON CoB Core Range ..... 1

For solutions requiring 1,000 to 15,000 lumens, such as downlights, spotlights, streetlights and high bay applications

## LUXEON CoB Core Range – High Density ..... 5

For achieving the highest Center Beam Candle Power (CBCP) in spotlights, lamps and downlights applications

## LUXEON CoB with CrispColor & CrispWhite Technology ..... 7

For solutions such as downlights and spotlights in fashion retail to make colors pop and bring out the whites in paints and fabrics

## LUXEON CoB with FreshFocus Technology.....10

For solutions such as downlights, indoor area lighting, lamps and spotlights for fresh food areas that accentuate the freshness and overall visual appeal of a variety of fresh foods

## LUXEON CX Plus CoB ..... 11

For drop-in replacement in industry standard footprint, achieving the highest system efficacy in spotlights and downlights



# LUXEON CoB Core Range

## Uniform, high-efficacy and easy-to-design

The LUXEON CoB Core Range focuses on a wide variety of lumen packages up to 15,000 lumens with the highest efficacies. Some of the main applications include high bay, downlights, spotlights and streetlights. Its widest CCT offering of 2200K to 6500K, as well as the robust MCPCB package makes it ideal for replacement of traditional technologies like CDM/CMH or HID. Its industry leading thermal resistance ( $R_{th}$ ) will lead to reliable systems with efficacies higher than 160 lm/W from the LED.

### FEATURES AND BENEFITS

Highest flux densities with industry's smallest LES

3-step MacAdam ellipse color definition: *Freedom from Binning* for color consistency from luminaire to luminaire

Up to 4x lower thermal resistance than competition, enabling smaller heatsinks and higher lumens

Supported by a comprehensive optical, mechanical and electrical ecosystem



### PRIMARY APPLICATIONS

Architectural

Downlights

High Bay & Low Bay

Lamps

Outdoor

Specialty Lighting

Spotlights

LUXEON CoB	TARGET APPLICATIONS	PERFORMANCE (3000K, 80CRI, 85°C)	PACKAGE
1202s	Spotlights up to 1,000 lm	930 lm @ 135 lm/W	15*12mm / 6.5mm LES
1202	PAR Lamps and spots up to 1,500 lm	973 lm @ 140 lm/W	16*19mm / 9.0mm LES
1203	PAR Lamps and spots up to 2,000 lm	1,432 lm @ 140 lm/W	16*19mm / 9.0mm LES
1204	Downlights and spotlights up to 2,500 lm	2,200 lm @ 140 lm/W	20*24mm / 13mm LES
1205	Downlights and spotlights up to 3,000 lm	2,905 lm @ 138 lm/W	20*24mm / 13mm LES
1208	Downlights and spotlights up to 5,000 lm	4,368 lm @ 140 lm/W	20*24mm / 15mm LES
1211	Downlights and spotlights up to 8,000 lm High Bay up to 100W Replacement	5,920 lm @ 140 lm/W	28*28mm / 19mm LES
1216	Downlights and spotlights up to 10Klm High Bay up to 150W Replacement	7,724 lm @ 140 lm/W	28*28mm / 23mm LES

# LUXEON CoB Core Range Product Performance

PRODUCT	NOMINAL CCT	MINIMUM CRI <sup>[1, 2, 3]</sup>	LUMINOUS FLUX <sup>[1]</sup> (lm)		TYPICAL LUMINOUS EFFICACY (lm/W)	TEST CURRENT (mA)	LES <sup>[4]</sup> (mm)	PART NUMBER
			MINIMUM	TYPICAL				
LUXEON CoB 1202s	2200K	80	675	750	109	200	6	L2C5-22801202E0600
	2700K	80	797	886	128	200	6	L2C5-27801202E0600
	3000K	80	837	930	135	200	6	L2C5-30801202E0600
	3500K	80	854	949	138	200	6	L2C5-35801202E0600
	4000K	80	863	959	139	200	6	L2C5-40801202E0600
	5000K	80	863	959	139	200	6	L2C5-50801202E0600
	2200K <sup>[5]</sup>	90	589	654	95	200	6	L2C5-22901202E0600
	2700K	90	662	736	107	200	6	L2C5-27901202E0600
	3000K	90	689	766	111	200	6	L2C5-30901202E0600
	3500K	90	725	805	117	200	6	L2C5-35901202E0600
	4000K	90	742	824	119	200	6	L2C5-40901202E0600
LUXEON CoB 1202	2200K	80	703	781	113	200	9	L2C5-22801202E0900
	2700K	80	830	922	134	200	9	L2C5-27801202E0900
	3000K	80	876	973	141	200	9	L2C5-30801202E0900
	3500K	80	893	992	144	200	9	L2C5-35801202E0900
	4000K	80	899	999	145	200	9	L2C5-40801202E0900
	5000K	80	899	999	145	200	9	L2C5-50801202E0900
	2200K <sup>[5]</sup>	90	625	694	101	200	9	L2C5-22901202E0900
	2700K	90	690	766	111	200	9	L2C5-27901202E0900
	3000K	90	729	810	117	200	9	L2C5-30901202E0900
	3500K	90	752	836	121	200	9	L2C5-35901202E0900
	4000K	90	772	858	124	200	9	L2C5-40901202E0900
LUXEON CoB 1203	3000K	70	1379	1532	148	300	9	L2C5-30701203E0900
	4000K	70	1466	1629	157	300	9	L2C5-40701203E0900
	5000K	70	1466	1629	157	300	9	L2C5-50701203E0900
	5700K	70	1428	1587	153	300	9	L2C5-57701203E0900
	6500K	70	1391	1546	149	300	9	L2C5-65701203E0900
	2200K	80	1066	1184	114	300	9	L2C5-22801203E0900
	2700K	80	1258	1398	135	300	9	L2C5-27801203E0900
	3000K	80	1289	1432	138	300	9	L2C5-30801203E0900
	3500K	80	1315	1461	141	300	9	L2C5-35801203E0900
	4000K	80	1363	1514	146	300	9	L2C5-40801203E0900
	5000K	80	1363	1514	146	300	9	L2C5-50801203E0900
	5700K	80	1359	1510	146	300	9	L2C5-57801203E0900
	2200K <sup>[5]</sup>	90	929	1032	100	300	9	L2C5-22901203E0900
	2700K	90	1045	1161	112	300	9	L2C5-27901203E0900
	3000K	90	1080	1200	116	300	9	L2C5-30901203E0900
	3500K	90	1140	1267	122	300	9	L2C5-35901203E0900
	4000K	90	1170	1301	126	300	9	L2C5-40901203E0900

Continued on next page.

LUXEON CoB Core Range product performance (continued)

PRODUCT	NOMINAL CCT	MINIMUM CRI <sup>[1, 2, 3]</sup>	LUMINOUS FLUX <sup>[1]</sup> (lm)		TYPICAL LUMINOUS EFFICACY (lm/W)	TEST CURRENT (mA)	LES <sup>[4]</sup> (mm)	PART NUMBER
			MINIMUM	TYPICAL				
LUXEON CoB 1204	3000K	70	2124	2360	151	450	13	L2C5-30701204E1300
	4000K	70	2258	2509	160	450	13	L2C5-40701204E1300
	5000K	70	2258	2509	160	450	13	L2C5-50701204E1300
	5700K	70	2199	2443	156	450	13	L2C5-57701204E1300
	6500K	70	2142	2380	152	450	13	L2C5-65701204E1300
	2200K	80	1641	1823	117	450	13	L2C5-22801204E1300
	2700K	80	1937	2152	138	450	13	L2C5-27801204E1300
	3000K	80	1980	2200	141	450	13	L2C5-30801204E1300
	3500K	80	2020	2244	144	450	13	L2C5-35801204E1300
	4000K	80	2098	2332	149	450	13	L2C5-40801204E1300
	5000K	80	2098	2332	149	450	13	L2C5-50801204E1300
	5700K	80	2093	2325	148	450	13	L2C5-57801204E1300
	2200K <sup>[5]</sup>	90	1430	1589	102	450	13	L2C5-22901204E1300
	2700K	90	1609	1788	115	450	13	L2C5-27901204E1300
	3000K	90	1656	1840	118	450	13	L2C5-30901204E1300
	3500K	90	1755	1950	125	450	13	L2C5-35901204E1300
	4000K	90	1802	2003	128	450	13	L2C5-40901204E1300
	LUXEON CoB 1205	3000K	70	2765	3072	146	600	13
4000K		70	2932	3258	155	600	13	L2C5-40701205E1300
5000K		70	2932	3258	155	600	13	L2C5-50701205E1300
5700K		70	2856	3173	151	600	13	L2C5-57701205E1300
6500K		70	2782	3091	147	600	13	L2C5-65701205E1300
2200K		80	2131	2368	113	600	13	L2C5-22801205E1300
2700K		80	2516	2795	133	600	13	L2C5-27801205E1300
3000K		80	2615	2905	138	600	13	L2C5-30801205E1300
3500K		80	2667	2963	141	600	13	L2C5-35801205E1300
4000K		80	2725	3028	144	600	13	L2C5-40801205E1300
5000K		80	2725	3028	144	600	13	L2C5-50801205E1300
5700K		80	2717	3019	144	600	13	L2C5-57801205E1300
2200K <sup>[5]</sup>		90	1857	2063	98	600	13	L2C5-22901205E1300
2700K		90	2090	2322	111	600	13	L2C5-27901205E1300
3000K		90	2176	2418	115	600	13	L2C5-30901205E1300
3500K		90	2280	2533	121	600	13	L2C5-35901205E1300
4000K		90	2341	2601	124	600	13	L2C5-40901205E1300
LUXEON CoB 1208		3000K	70	4149	4610	147	900	15
	4000K	70	4347	4900	156	900	15	L2C5-40701208E1500
	5000K	70	4347	4900	156	900	15	L2C5-50701208E1500
	5700K	70	4284	4760	152	900	15	L2C5-57701208E1500
	6500K	70	4173	4637	148	900	15	L2C5-65701208E1500
	2200K	80	3197	3552	114	900	15	L2C5-22801208E1500
	2700K	80	3774	4193	134	900	15	L2C5-27801208E1500
	3000K	80	3931	4368	140	900	15	L2C5-30801208E1500
	3500K	80	4010	4455	143	900	15	L2C5-35801208E1500
	4000K	80	4088	4542	145	900	15	L2C5-40801208E1500
	5000K	80	4088	4542	145	900	15	L2C5-50801208E1500
	5700K	80	4076	4529	145	900	15	L2C5-57801208E1500
	2200K <sup>[5]</sup>	90	2785	3095	99	900	15	L2C5-22901208E1500
	2700K	90	3135	3483	112	900	15	L2C5-27901208E1500
	3000K	90	3249	3610	116	900	15	L2C5-30901208E1500
	3500K	90	3420	3800	122	900	15	L2C5-35901208E1500
	4000K	90	3511	3902	125	900	15	L2C5-40901208E1500

Continued on next page.

LUXEON CoB Core Range product performance (continued)

PRODUCT	NOMINAL CCT	MINIMUM CRI <sup>[1, 2, 3]</sup>	LUMINOUS FLUX <sup>[1]</sup> (lm)		TYPICAL LUMINOUS EFFICACY (lm/W)	TEST CURRENT (mA)	LES <sup>[4]</sup> (mm)	PART NUMBER	
			MINIMUM	TYPICAL					
LUXEON CoB 1211	3000K	70	5695	6328	152	1200	19	L2C5-30701211E1900	
	4000K	70	6053	6726	162	1200	19	L2C5-40701211E1900	
	5000K	70	6053	6726	162	1200	19	L2C5-50701211E1900	
	5700K	70	5882	6536	157	1200	19	L2C5-57701211E1900	
	6500K	70	5731	6368	152	1200	19	L2C5-65701211E1900	
	2200K	80	4390	4878	117	1200	19	L2C5-22801211E1900	
	2700K	80	5183	5758	138	1200	19	L2C5-27801211E1900	
	3000K	80	5328	5920	142	1200	19	L2C5-30801211E1900	
	3500K	80	5435	6038	145	1200	19	L2C5-35801211E1900	
	4000K	80	5614	6238	150	1200	19	L2C5-40801211E1900	
	5000K	80	5614	6238	150	1200	19	L2C5-50801211E1900	
	5700K	80	5598	6220	149	1200	19	L2C5-57801211E1900	
	2200K <sup>[5]</sup>	90	3749	4165	100	1200	19	L2C5-22901211E1900	
	2700K	90	4305	4783	115	1200	19	L2C5-27901211E1900	
	3000K	90	4505	5005	120	1200	19	L2C5-30901211E1900	
	3500K	90	4696	5218	125	1200	19	L2C5-35901211E1900	
	4000K	90	4822	5358	129	1200	19	L2C5-40901211E1900	
	LUXEON CoB 1216	3000K	70	7465	8294	150	1600	23	L2C5-30701216E2300
		4000K	70	7876	8751	159	1600	23	L2C5-40701216E2300
		5000K	70	7876	8751	159	1600	23	L2C5-50701216E2300
5700K		70	7710	8567	155	1600	23	L2C5-57701216E2300	
6500K		70	7512	8347	151	1600	23	L2C5-65701216E2300	
2200K		80	5755	6394	116	1600	23	L2C5-22801216E2300	
2700K		80	6791	7546	137	1600	23	L2C5-27801216E2300	
3000K		80	6952	7724	140	1600	23	L2C5-30801216E2300	
3500K		80	7090	7878	143	1600	23	L2C5-35801216E2300	
4000K		80	7358	8176	148	1600	23	L2C5-40801216E2300	
5000K		80	7358	8176	148	1600	23	L2C5-50801216E2300	
5700K		80	7336	8151	148	1600	23	L2C5-57801216E2300	
2200K <sup>[5]</sup>		90	5013	5570	101	1600	23	L2C5-22901216E2300	
2700K		90	5642	6269	114	1600	23	L2C5-27901216E2300	
3000K		90	5866	6518	118	1600	23	L2C5-30901216E2300	
3500K		90	6155	6839	124	1600	23	L2C5-35901216E2300	
4000K		90	6321	7023	127	1600	23	L2C5-40901216E2300	

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. AtmoSphere Technology creates the ideal ambiance for restaurants and other hospitality venues.

CoB Core

Highest efficacy with lowest thermal resistance for  
Spotlights, Downlights, High Bay and Outdoor  
Robust MCPCB Substrate

6.5, 9, 13, 15, 19 and 23mm Light Emitting Surface (LES)

Lumen output



# LUXEON CoB Core Range – High Density

Double the flux in the same form factor

LUXEON CoB Core Range – High Density focuses on achieving the highest Center Beam Candle Power (CBCP). With a focus on 6, 9 and 11mm Light Emitting Surfaces, we can cover a flux range as high as 8,000 lumens. Using the mechanical dimensions of our LUXEON CoB Core Range, the High Density range will also benefit from the ability to utilize existing an ecosystem of holders, optics and drivers.

## FEATURES AND BENEFITS

Highest flux densities with industry's smallest LES

3-step MacAdam ellipse color definition: *Freedom from Binning* for color consistency from luminaire to luminaire

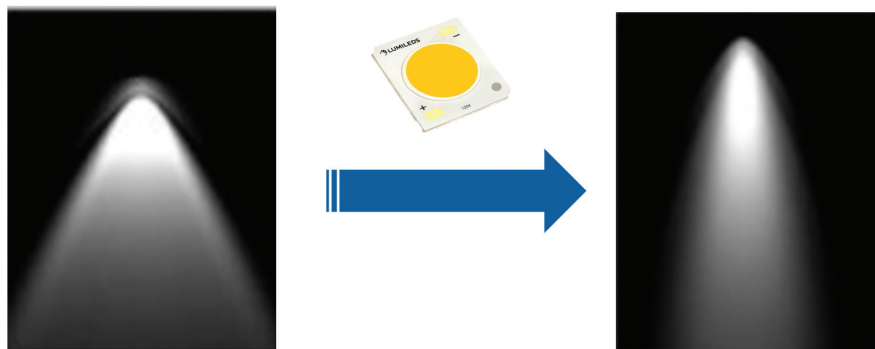
Up to 4x lower thermal resistance than competitors, enabling smaller heatsinks and higher lumens

Supported by a comprehensive optical, mechanical and electrical ecosystem

## PRIMARY APPLICATION

Outdoor

Spotlights



	6mm	9mm	11mm
Current Max Flux	1,700lm	2,600lm	3,500lm
New Max Flux (HD)	2,500lm	5,000lm	6,500lm
Dimensions	12*15	16*19	



# LUXEON CoB Core Range – High Density Product Performance

LUXEON CoB Core Range – High Density product performance at specified test current,  $T_j=85^{\circ}\text{C}$ .

PRODUCT	NOMINAL CCT	MINIMUM CRI <sup>[1, 2, 3]</sup>	LUMINOUS FLUX <sup>[1]</sup> (lm)		TYPICAL LUMINOUS EFFICACY (lm/W)	TEST CURRENT (mA)	LES <sup>[4]</sup> (mm)	PART NUMBER
			MINIMUM	TYPICAL				
LUXEON CoB 1202HD	3000K	70	1388	1542	119	350	6	L2C5-30701202EH600
	4000K	70	1462	1624	125	350	6	L2C5-40701202EH600
	5000K	70	1462	1624	125	350	6	L2C5-50701202EH600
	2700K	80	1240	1378	106	350	6	L2C5-27801202EH600
	3000K	80	1305	1450	112	350	6	L2C5-30801202EH600
	3500K	80	1331	1479	114	350	6	L2C5-35801202EH600
	4000K	80	1357	1508	116	350	6	L2C5-40801202EH600
	5000K	80	1357	1508	116	350	6	L2C5-50801202EH600
	5700K	80	1351	1501	116	350	6	L2C5-57801202EH600
	2700K	90	1044	1160	90	350	6	L2C5-27901202EH600
	3000K	90	1070	1189	92	350	6	L2C5-30901202EH600
	4000K	90	1148	1276	99	350	6	L2C5-40901202EH600
	LUXEON CoB 1204HD	3000K	70	2775	3084	119	700	9
4000K		70	2923	3248	125	700	9	L2C5-40701204E0900
5000K		70	2923	3248	125	700	9	L2C5-50701204E0900
2700K		80	2480	2755	106	700	9	L2C5-27801204E0900
3000K		80	2610	2900	112	700	9	L2C5-30801204E0900
3500K		80	2662	2958	114	700	9	L2C5-35801204E0900
4000K		80	2714	3016	116	700	9	L2C5-40801204E0900
5000K		80	2714	3016	116	700	9	L2C5-50801204E0900
5700K		80	2701	3002	116	700	9	L2C5-57801204E0900
2700K		90	2088	2320	90	700	9	L2C5-27901204E0900
3000K		90	2140	2378	92	700	9	L2C5-30901204E0900
3200K		90	2183	2426	94	700	9	L2C5-32901204E0900
4000K		90	2297	2552	99	700	9	L2C5-40901204E0900
LUXEON CoB 1205HD	3000K	70	3360	3950	119	900	11	L2C5-30701205E1100
	4000K	70	3780	4200	126	900	11	L2C5-40701205E1100
	5000K	70	3780	4200	126	900	11	L2C5-50701205E1100
	2700K	80	3206	3563	107	900	11	L2C5-27801205E1100
	3000K	80	3375	3750	113	900	11	L2C5-30801205E1100
	3500K	80	3443	3825	115	900	11	L2C5-35801205E1100
	4000K	80	3510	3900	117	900	11	L2C5-40801205E1100
	5000K	80	3510	3900	117	900	11	L2C5-50801205E1100
	5700K	80	3493	3881	117	900	11	L2C5-57801205E1100
	2700K	90	2700	3000	90	900	11	L2C5-27901205E1100
	3000K	90	2768	3075	92	900	11	L2C5-30901205E1100
	4000K	90	2970	3300	99	900	11	L2C5-40901205E1100

**Table notes:**

1. Lumileds maintains a tolerance of  $\pm 2$  on CRI and  $\pm 6.5\%$  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.

# LUXEON CoB with CrispColor & CrispWhite Technology

Fashion retail lighting that makes an impact, highlighting rich colors, revealing the whitest whites and increasing contrast

LUXEON CoB with CrispColor and CrispWhite Technology focus on achieving a higher gamut area to enable all the colors to pop. By focusing on the Gamut Area Index (GAI), we will make sure all colors come out as they are supposed to under a continuous spectrum such as incandescent lamps or halogens. Standard LED technologies have GAI values of about 50 to 60 in 90CRI solutions. LUXEON CoB with CrispColor Technology, with its higher R9 values (>90) and spectrum, will make sure that all colors and fabric tones will be more alive with higher gamut area index values enabling Class A type luminaires.

## FEATURES AND BENEFITS

Highest flux densities with industry's smallest LES

3-step MacAdam ellipse color definition: *Freedom from Binning* for color consistency from luminaire to luminaire

Up to 4x lower thermal resistance than competition, enabling smaller heatsinks and higher lumens

Supported by a comprehensive optical, mechanical and electrical ecosystem

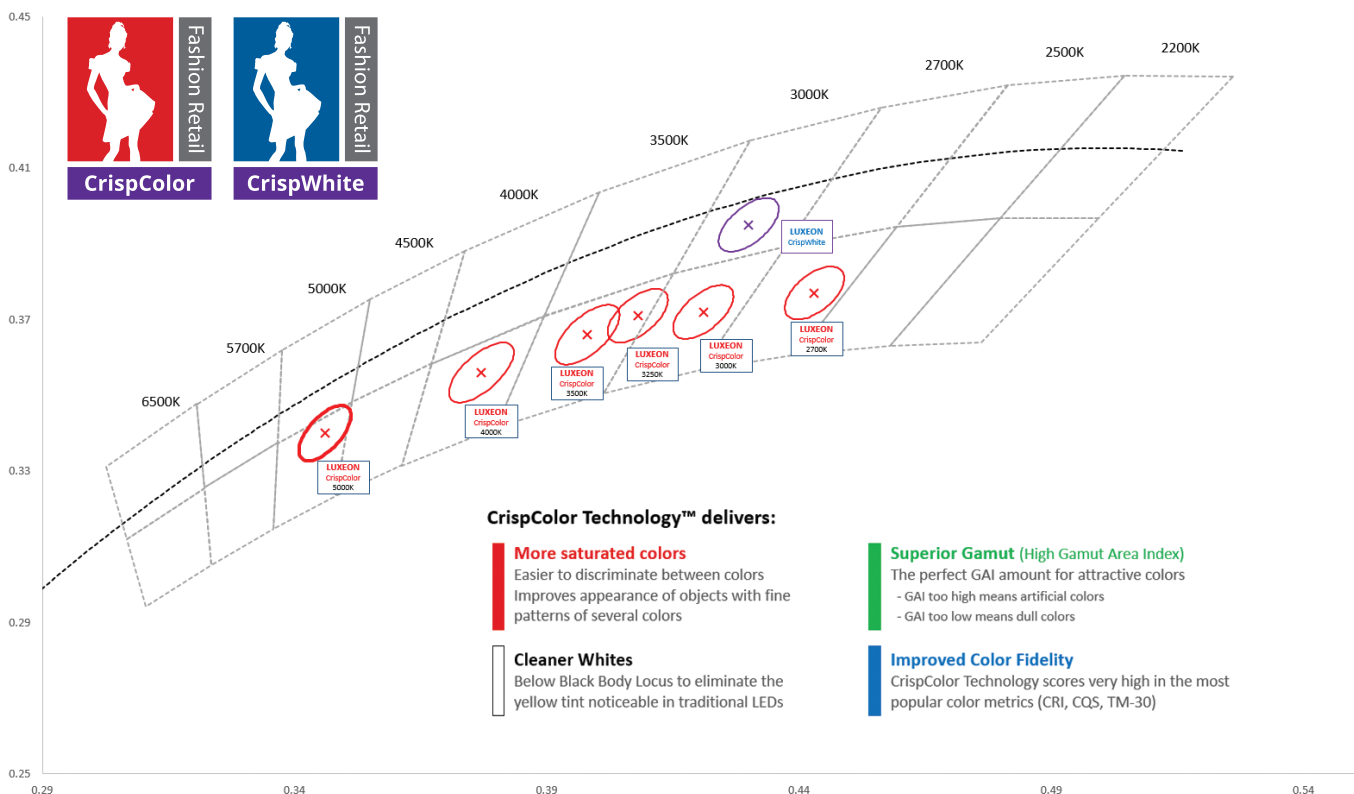
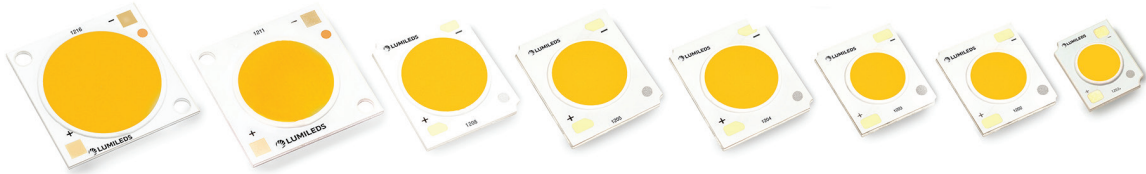
## PRIMARY APPLICATIONS

Downlights

Indoor Area Lighting

Lamps

Spotlights



# LUXEON CoB with CrispColor Technology Product Performance

PRODUCT	NOMINAL CCT	MINIMUM CRI <sup>[1, 2, 3]</sup>	LUMINOUS FLUX <sup>[1]</sup> (lm)		TYPICAL LUMINOUS EFFICACY (lm/W)	TEST CURRENT (mA)	LES <sup>[4]</sup> (mm)	PART NUMBER
			MINIMUM	TYPICAL				
LUXEON CoB 1202s	2700K	90	588	653	95	200	6	L2C5-27HG1202E0600
	3000K	90	648	700	101	200	6	L2C5-30HG1202E0600
	3250K	90	675	720	104	200	6	L2C5-33HG1202E0600
	3500K	90	656	729	106	200	6	L2C5-35HG1202E0600
	4000K	90	690	767	111	200	6	L2C5-40HG1202E0600
	5000K	90	716	796	115	200	6	L2C5-50HG1202E0600
LUXEON CoB 1202	2700K	90	613	681	99	200	9	L2C5-27HG1202E0900
	3000K	90	648	720	104	200	9	L2C5-30HG1202E0900
	3250K	90	675	750	109	200	9	L2C5-33HG1202E0900
	3500K	90	683	759	110	200	9	L2C5-35HG1202E0900
	4000K	90	720	800	116	200	9	L2C5-40HG1202E0900
	5000K	90	748	831	120	200	9	L2C5-50HG1202E0900
LUXEON CoB 1203	2700K	90	907	1008	97	300	9	L2C5-27HG1203E0900
	3000K	90	972	1080	104	300	9	L2C5-30HG1203E0900
	3250K	90	1017	1130	109	300	9	L2C5-33HG1203E0900
	3500K	90	1035	1150	111	300	9	L2C5-35HG1203E0900
	4000K	90	1066	1184	114	300	9	L2C5-40HG1203E0900
	5000K	90	1106	1229	119	300	9	L2C5-50HG1203E0900
LUXEON CoB 1204	2700K	90	1424	1582	101	450	13	L2C5-27HG1204E1300
	3000K	90	1494	1660	106	450	13	L2C5-30HG1204E1300
	3250K	90	1575	1750	112	450	13	L2C5-33HG1204E1300
	3500K	90	1594	1771	113	450	13	L2C5-35HG1204E1300
	4000K	90	1656	1840	117	450	13	L2C5-40HG1204E1300
	5000K	90	1737	1930	123	450	13	L2C5-50HG1204E1300
LUXEON CoB 1205	2700K	90	1850	2055	98	600	13	L2C5-27HG1205E1300
	3000K	90	1953	2170	103	600	13	L2C5-30HG1205E1300
	3250K	90	2034	2260	108	600	13	L2C5-33HG1205E1300
	3500K	90	2070	2300	110	600	13	L2C5-35HG1205E1300
	4000K	90	2172	2413	115	600	13	L2C5-40HG1205E1300
	5000K	90	2255	2506	119	600	13	L2C5-50HG1205E1300
LUXEON CoB 1208	2700K	90	2775	3083	98	900	15	L2C5-27HG1208E1500
	3000K	90	2970	3300	105	900	15	L2C5-30HG1208E1500
	3250K	90	3105	3450	110	900	15	L2C5-33HG1208E1500
	3500K	90	3105	3450	110	900	15	L2C5-35HG1208E1500
	4000K	90	3263	3626	116	900	15	L2C5-40HG1208E1500
	5000K	90	3389	3766	120	900	15	L2C5-50HG1208E1500

LUXEON CoB with CrispColor Technology product performance (continued)

PRODUCT	NOMINAL CCT	MINIMUM CRI <sup>[1, 2, 3]</sup>	LUMINOUS FLUX <sup>[1]</sup> (lm)		TYPICAL LUMINOUS EFFICACY (lm/W)	TEST CURRENT (mA)	LES <sup>[4]</sup> (mm)	PART NUMBER
			MINIMUM	TYPICAL				
LUXEON CoB 1211	2700K	90	3803	4226	101	1200	19	L2C5-27HG1211E1900
	3000K	90	4023	4470	107	1200	19	L2C5-30HG1211E1900
	3250K	90	4190	4656	111	1200	19	L2C5-33HG1211E1900
	3500K	90	4264	4738	113	1200	19	L2C5-35HG1211E1900
	4000K	90	4466	4962	119	1200	19	L2C5-40HG1211E1900
	5000K	90	4638	5153	123	1200	19	L2C5-50HG1211E1900
LUXEON CoB 1216	2700K	90	4994	5549	101	1600	23	L2C5-27HG1216E2300
	3000K	90	5273	5859	106	1600	23	L2C5-30HG1216E2300
	3250K	90	5492	6102	111	1600	23	L2C5-33HG1216E2300
	3500K	90	5589	6210	113	1600	23	L2C5-35HG1216E2300
	4000K	90	5864	6515	118	1600	23	L2C5-40HG1216E2300
	5000K	90	6089	6766	123	1600	23	L2C5-50HG1216E2300

1. Lumileds maintains a tolerance of  $\pm 2$  on CRI and  $\pm 6.5\%$  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.

## LUXEON CoB with CrispWhite Technology Product Performance

PRODUCT	NOMINAL CCT	MINIMUM CRI <sup>[1, 2]</sup>	LUMINOUS FLUX <sup>[1, 3]</sup> (lm)		TYPICAL LUMINOUS EFFICACY (lm/W)	TEST CURRENT (mA)	LES <sup>[4]</sup> (mm)	PART NUMBER
			MINIMUM	TYPICAL				
LUXEON CoB 1202s	3000K	90	586	651	93	200	6	L2C5-30901202E06C0
LUXEON CoB 1202	3000K	90	611	679	97	200	9	L2C5-30901202E09C0
LUXEON CoB 1203	3000K	90	905	1006	96	300	9	L2C5-30901203E09C0
LUXEON CoB 1204	3000K	90	1421	1579	99	450	13	L2C5-30901204E13C0
LUXEON CoB 1205	3000K	90	1845	2050	97	600	13	L2C5-30901205E13C0
LUXEON CoB 1208	3000K	90	2750	3056	97	900	15	L2C5-30901208E15C0
LUXEON CoB 1211	3000K	90	3794	4215	100	1200	19	L2C5-30901211E19C0

1. Lumileds maintains a tolerance of  $\pm 2$  on CRI and  $\pm 6.5\%$  on luminous flux measurements.
2. Typical CRI is approximately 2 points higher than the minimum CRI specified, but this is not guaranteed.
3. Maximum luminous flux is 10% above typical luminous flux.
4. Light Emitting Surface (LES) is the inner diameter (phosphor area) inside the dam.



# LUXEON CoB with FreshFocus Technology™

Accentuating freshness and overall visual appeal, making food irresistible

LUXEON CoB with FreshFocus Technology LEDs create the most impactful lighting available for the fresh food areas in supermarkets, hypermarkets, delis, butcher shops and bakeries. LUXEON CoB with FreshFocus Technology LEDs accentuate the freshness and overall visual appeal of a variety of fresh foods. These LEDs bring out reds for greater visual appeal to meat; increases the appetite appeal of bread and pastries; exhibits the most natural and attractive fish; emphasizes the “just picked” appearance for produce (fruits and vegetables).

## FEATURES AND BENEFITS

Spectrum engineered products with focused color points to enable the right lighting for specific merchandise and application

IR free and UV free, which keeps the merchandise fresher longer and prevents meat discoloration

Up to 4x lower thermal resistance than competitors, enabling smaller heatsinks and higher lumens

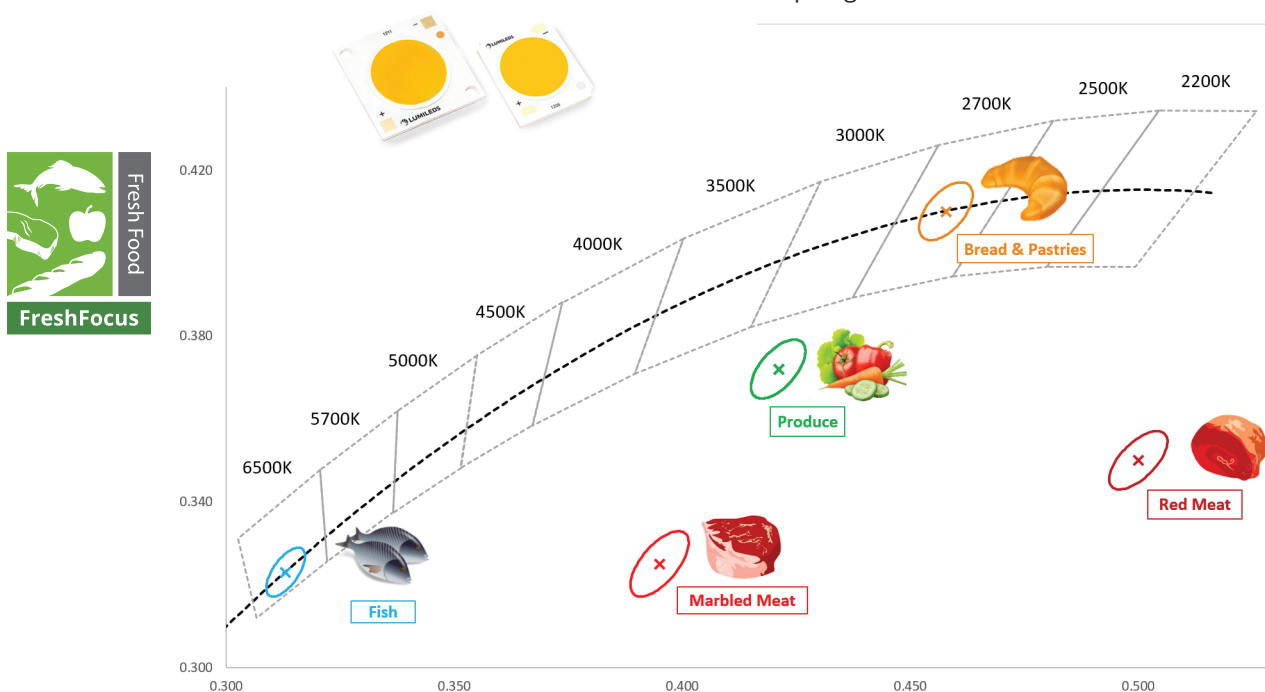
## PRIMARY APPLICATIONS

Downlights

Indoor Area Lighting

Lamps

Spotlights



SPECTRUM	PRODUCT	LUMINOUS FLUX <sup>[1, 2]</sup> (lm)		TYPICAL LUMINOUS EFFICACY (lm/W)	TEST CURRENT (mA)	LES <sup>[3]</sup> (mm)	PART NUMBER
		MINIMUM	TYPICAL				
Produce	LUXEON CoB 1208	2970	3300	105	900	15	L2C5-PR001208E1500
	LUXEON CoB 1211	4023	4470	107	1200	19	L2C5-PR001211E1900
Red Meat	LUXEON CoB 1208	1854	2059	65	900	15	L2C5-RM001208E1500
	LUXEON CoB 1211	2538	2820	67	1200	19	L2C5-RM001211E1900
Marbled Meat	LUXEON CoB 1208	1945	2161	69	900	15	L2C5-MM001208E1500
	LUXEON CoB 1211	2664	2960	70	1200	19	L2C5-MM001211E1900
Fish	LUXEON CoB 1208	3049	3387	108	900	15	L2C5-FS001208E1500
	LUXEON CoB 1211	4176	4640	110	1200	19	L2C5-FS001211E1900
Bread & Pastries	LUXEON CoB 1208	2871	3190	101	900	15	L2C5-BD001208E1500
	LUXEON CoB 1211	3933	4370	104	1200	19	L2C5-BD001211E1900

1. Lumileds maintains a tolerance of ±6.5% on luminous flux measurements.  
 2. Maximum luminous flux is 10% above typical luminous flux.  
 3. Light Emitting Surface (LES) is the inner diameter (phosphor area) inside the dam.

# LUXEON CX Plus CoB

## Lowest thermal resistance with industry standard footprint

LUXEON CX Plus CoB has six products covering lumen packages between 500 and 7,000 lumens in a standard footprint. Due to its industry leading thermal resistance and robust substrate material, LUXEON CX Plus CoB enables cooler, more efficient fixtures. LUXEON CX Plus CoB benefits from an existing ecosystem for fast and immediate design-in while retaining existing optics, clamps and documentation.

### FEATURES AND BENEFITS

Lowest thermal resistance, allowing more reliable systems and higher lm/W

An immediate, effortless upgrade to existing designs currently using legacy CoBs with a square footprint

MCPCB substrate that enables more robust systems versus ceramic

3-step MacAdam ellipse color definition for 80CRI and *Freedom from Binning*

Available in 80CRI and 90CRI

### PRIMARY APPLICATIONS

Downlights

Spotlights



## LUXEON CX Plus CoB Product Performance

LUXEON CX Plus CoB product performance at specified test current,  $T_j=85^\circ\text{C}$ .

PRODUCT	NOMINAL CCT	MINIMUM CRI <sup>[1, 2, 3]</sup>	LUMINOUS FLUX <sup>[1, 4]</sup> (lm)		TYPICAL LUMINOUS EFFICACY (lm/W)	TEST CURRENT (mA)	LES <sup>[5]</sup> (mm)	PART NUMBER
			MINIMUM	TYPICAL				
LUXEON CoB S01	2700K	80	376	418	121	100	6	L2C4-2780-S01E0600
	3000K	80	396	440	128	100	6	L2C4-3080-S01E0600
	3500K	80	404	449	130	100	6	L2C4-3580-S01E0600
	4000K	80	412	458	133	100	6	L2C4-4080-S01E0600
	5000K	80	412	458	133	100	6	L2C4-5080-S01E0600
	2700K	90	320	356	103	100	6	L2C4-2790-S01E0600
	3000K	90	337	374	103	100	6	L2C4-3090-S01E0600
	3500K	90	356	396	115	100	6	L2C4-3590-S01E0600
	4000K	90	356	396	115	100	6	L2C4-4090-S01E0600

#### Notes:

- 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  $>50$ .
- Maximum luminous flux is 10% above typical luminous flux.
- Light Emitting Surface (LES) is the inner diameter (phosphor area) inside the dam.

LUXEON CX Plus CoB product performance at specified test current,  $T_j=85^{\circ}\text{C}$  (continued).

PRODUCT	NOMINAL CCT	MINIMUM CRI <sup>[1, 2, 3]</sup>	LUMINOUS FLUX <sup>[1, 4]</sup> (lm)		TYPICAL LUMINOUS EFFICACY (lm/W)	TEST CURRENT (mA)	LES <sup>[5]</sup> (mm)	PART NUMBER
			MINIMUM	TYPICAL				
LUXEON CoB M02	2700K	80	770	855	124	200	9	L2C4-2780-M02E0900
	3000K	80	810	900	130	200	9	L2C4-3080-M02E0900
	3500K	80	826	918	133	200	9	L2C4-3580-M02E0900
	4000K	80	842	936	136	200	9	L2C4-4080-M02E0900
	5000K	80	842	936	136	200	9	L2C4-5080-M02E0900
	2700K	90	656	729	106	200	9	L2C4-2790-M02E0900
	3000K	90	689	765	111	200	9	L2C4-3090-M02E0900
	3500K	90	729	810	117	200	9	L2C4-3590-M02E0900
	4000K	90	729	810	117	200	9	L2C4-4090-M02E0900
LUXEON CoB M03	2700K	80	1317	1463	120	350	9	L2C4-2780-M03E0900
	3000K	80	1386	1540	126	350	9	L2C4-3080-M03E0900
	3500K	80	1414	1571	129	350	9	L2C4-3580-M03E0900
	4000K	80	1442	1602	132	350	9	L2C4-4080-M03E0900
	5000K	80	1442	1602	132	350	9	L2C4-5080-M03E0900
	2700K	90	1122	1247	102	350	9	L2C4-2790-M03E0900
	3000K	90	1178	1309	107	350	9	L2C4-3090-M03E0900
	3500K	90	1247	1386	114	350	9	L2C4-3590-M03E0900
	4000K	90	1247	1386	114	350	9	L2C4-4090-M03E0900
LUXEON CoB L04	3000K	80	1845	2050	130	450	12	L2C4-3080-L04E1200
	3500K	80	1882	2091	133	450	12	L2C4-3580-L04E1200
	4000K	80	1919	2132	135	450	12	L2C4-4080-L04E1200
	5000K	80	1919	2132	135	450	12	L2C4-5080-L04E1200
	3000K	90	1569	1743	111	450	12	L2C4-3090-L04E1200
	3500K	90	1661	1845	117	450	12	L2C4-3590-L04E1200
	4000K	90	1661	1845	117	450	12	L2C4-4090-L04E1200
LUXEON CoB L05	3000K	80	2268	2520	132	550	12	L2C4-3080-L05E1200
	3500K	80	2313	2570	134	550	12	L2C4-3580-L05E1200
	4000K	80	2359	2621	137	550	12	L2C4-4080-L05E1200
	5000K	80	2359	2621	137	550	12	L2C4-5080-L05E1200
	3000K	90	1928	2142	112	550	12	L2C4-3090-L05E1200
	3500K	90	2041	2268	118	550	12	L2C4-3590-L05E1200
	4000K	90	2041	2268	118	550	12	L2C4-4090-L05E1200
LUXEON CoB L08	2700K	80	3207	3563	128	800	14	L2C4-2780-L08E1400
	3000K	80	3375	3750	135	800	14	L2C4-3080-L08E1400
	3500K	80	3443	3825	137	800	14	L2C4-3580-L08E1400
	4000K	80	3510	3900	140	800	14	L2C4-4080-L08E1400
	5000K	80	3510	3900	140	800	14	L2C4-5080-L08E1400
	2700K	90	2734	3038	109	800	14	L2C4-2790-L08E1400
	3000K	90	2869	3188	115	800	14	L2C4-3090-L08E1400
	3500K	90	3038	3375	121	800	14	L2C4-3590-L08E1400
	4000K	90	3038	3375	121	800	14	L2C4-4090-L08E1400

Notes (continued):

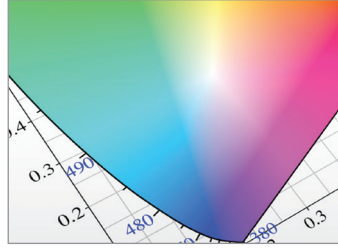
1. Lumileds maintains a tolerance of  $\pm 2$  on CRI and  $\pm 6.5\%$  on luminous flux measurements.
2. Typical CRI is approximately 2 points higher than the minimum CRI specified, but this is not guaranteed.
3. R9 value of 90CRI products is  $>50$ .
4. Maximum luminous flux is 10% above typical luminous flux.
5. Light Emitting Surface (LES) is the inner diameter (phosphor area) inside the dam.

#### ECOSYSTEM



Select pre-qualified, off-the-shelf components to aid in complete system design.

#### LED SPECTRUM MIXER



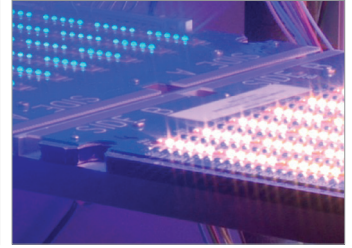
Calculate the color (white or color) that will be achieved by combining different LEDs into one application

#### SYSTEM CALCULATOR



Calculate the overall system performance based on design inputs.

#### LM-80 REPORTS



Generate LM-80 reports for specific Lumileds LEDs.

Please check out our ecosystem support at [lumileds.com/designtools](http://lumileds.com/designtools).

## About Lumileds

Lumileds is the global leader in light engine technology. The company develops, manufactures and distributes groundbreaking LEDs and automotive lighting products that shatter the status quo and help customers gain and maintain a competitive edge.

With a rich history of industry “firsts,” Lumileds is uniquely positioned to deliver lighting advancements well into the future by maintaining an unwavering focus on quality, innovation and reliability.

To learn more about our portfolio of light engines visit [lumileds.com](http://lumileds.com).



©2017 Lumileds Holding B.V. All rights reserved.  
LUXEON is a registered trademark of the Lumileds Holding B.V.  
in the United States and other countries.

[lumileds.com](http://lumileds.com)

Neither Lumileds Holding B.V. nor its affiliates shall be liable for any kind of loss of data or any other damages, direct, indirect or consequential, resulting from the use of the provided information and data. Although Lumileds Holding B.V. and/or its affiliates have attempted to provide the most accurate information and data, the materials and services information and data are provided “as is,” and neither Lumileds Holding B.V. nor its affiliates warrants or guarantees the contents and correctness of the provided information and data. Lumileds Holding B.V. and its affiliates reserve the right to make changes without notice. You as user agree to this disclaimer and user agreement with the download or use of the provided materials, information and data.