

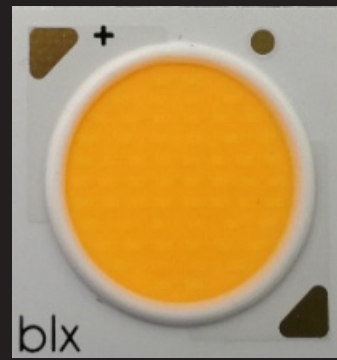


Bridgelux® E Series E13 CA HE LED Array

Product Data Sheet DS342

Introduction

E Series



The Bridgelux E Series E13 LED array products deliver high quality light in a compact and high cost-effective solid-state lighting package. These chip-on-board (COB) arrays can be efficiently driven at twice the nominal drive current, enabling design flexibility not previously possible. The E Series E13 CA HE is designed to support a wide range of luminaires and replacement lamps for both indoor and outdoor general lighting applications with highly competitive cost and good performance.

E Series E13 CA HE is available in a variety of electrical, CCT and CRI combinations providing substantial design flexibility and energy efficiencies.

Typical applications include, replacement lamps, and task, accent, spot, track, wide area, security, wall pack and down lights.

Features

- Compact, high flux density light source
- Uniform, high quality illumination
- Streamlined thermal path
- ENERGY STAR® / ANSI compliant color binning structure with 2, 3 and 4 SDCM options
- Higher energy efficiency than incandescent, halogen and CFL lamps
- Industry standard DC voltage operation
- Instant light with unlimited dimming
- RoHS and REACH compliant

Benefits

- Easy for second optics design
- Clean white light without pixilation
- Significantly reduced thermal resistance
- Easy for LED driver selection
- Easy to use with daylight and motion detectors to enable increased energy savings
- Reduced maintenance costs
- Environmentally friendly



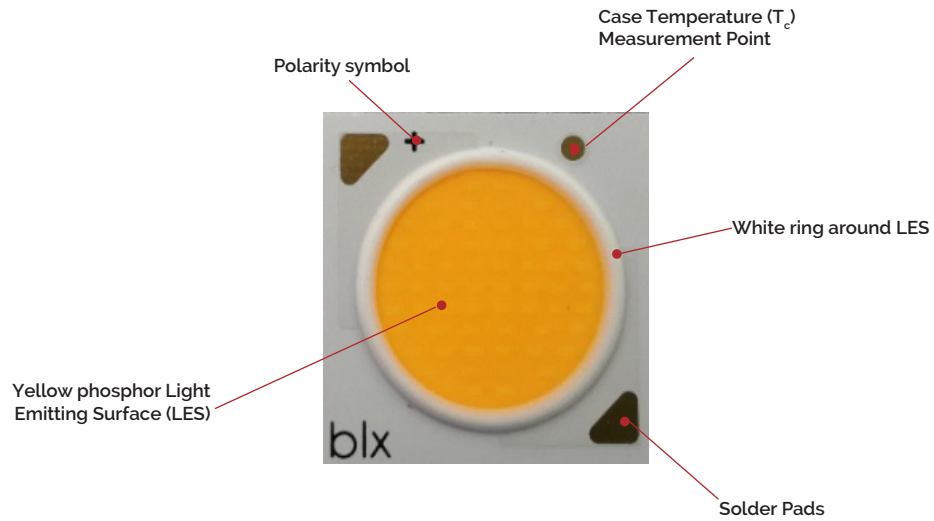
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Product Feature Map

Bridgelux arrays are fully engineered devices that provide consistent thermal and optical performance on an engineered mechanical platform.

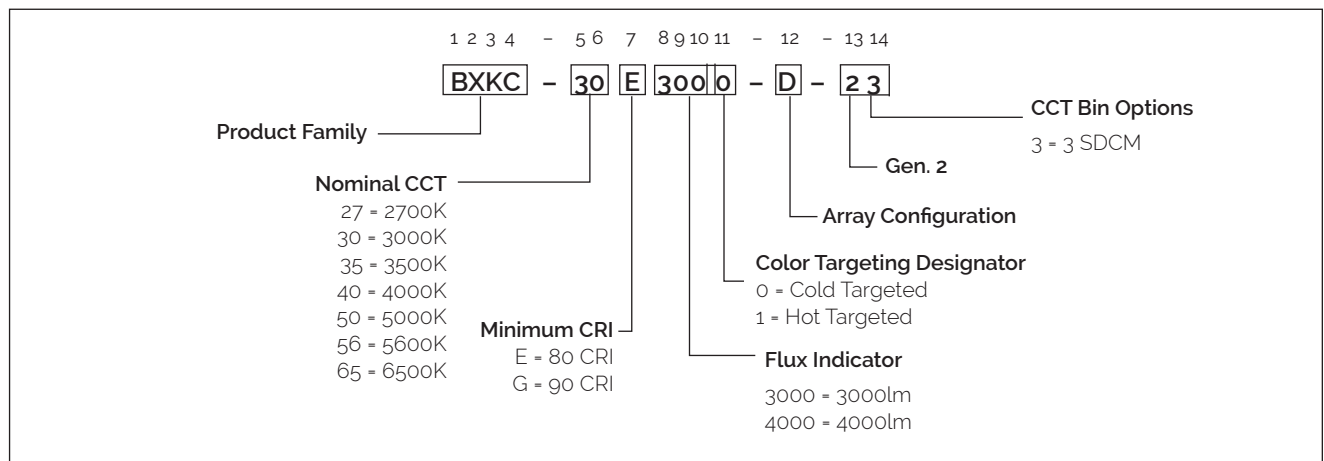
The arrays incorporate several features to simplify design integration and assembly.



Note: Part number and lot codes are scribed on back of array

Product Nomenclature

The part number designation for Bridgelux E Series LED arrays is explained as follows:



Product Selection Guide

Table 1: Selection Guide, Measurement Data (Tc=25°C)

Part Number	Nominal CCT ¹ (K)	Typical CRI	Nominal Drive Current (mA)	Typical Pulsed Flux ^{2,3,4} Tc = 25°C (lm)	Minimum Pulsed Flux ^{2,4,5} Tc = 25°C (lm)	Typical Vf (V)	Typical Power (W)	Typical Efficacy (lm/W)
BXKC-27E3000-D-23	2700	82	450	2369	2061	35.2	15.8	150
BXKC-27G3000-D-23	2700	92	450	1955	1701	35.2	15.8	123
BXKC-30E3000-D-23	3000	82	450	2494	2170	35.2	15.8	157
BXKC-30G3000-D-23	3000	92	450	2058	1790	35.2	15.8	130
BXKC-35E3000-D-23	3500	82	450	2581	2246	35.2	15.8	163
BXKC-35G3000-D-23	3500	92	450	2130	1853	35.2	15.8	134
BXKC-40E3000-D-23	4000	82	450	2644	2300	35.2	15.8	167
BXKC-40G3000-D-23	4000	92	450	2181	1897	35.2	15.8	138
BXKC-50E3001-D-24	5000	81.5	450	2669	2322	35.2	15.8	168
BXKC-50G3001-D-24	5000	91	450	2202	1915	35.2	15.8	139
BXKC-56E3001-D-24	5600	81.5	450	2661	2315	35.2	15.8	168
BXKC-65E3001-D-24	6500	81.5	450	2661	2315	35.2	15.8	168
BXKC-27E4000-E-23	2700	82	550	2874	2500	35.2	19.4	148
BXKC-27G4000-E-23	2700	92	550	2371	2063	35.2	19.4	122
BXKC-30E4000-E-23	3000	82	550	3025	2632	35.2	19.4	156
BXKC-30G4000-E-23	3000	92	550	2496	2171	35.2	19.4	129
BXKC-35E4000-E-23	3500	82	550	3131	2724	35.2	19.4	162
BXKC-35G4000-E-23	3500	92	550	2583	2247	35.2	19.4	133
BXKC-40E4000-E-23	4000	82	550	3207	2790	35.2	19.4	166
BXKC-40G4000-E-23	4000	92	550	2645	2301	35.2	19.4	137
BXKC-50E4001-E-24	5000	81.5	550	3237	2816	35.2	19.4	167
BXKC-50G4001-E-24	5000	91	550	2670	2323	35.2	19.4	138
BXKC-56E4001-E-24	5600	81.5	550	3228	2808	35.2	19.4	167
BXKC-65E4001-E-24	6500	81.5	550	3228	2808	35.2	19.4	167

Notes for Table 1:

1. Nominal CCT as defined by ANSI C78.377-2011.
2. Products tested under pulsed condition (10ms pulse width) at nominal test current where Tj (junction temperature) - Tc (case temperature) = 25°C.
3. Typical performance values are provided as a reference only and are not a guarantee of performance.
4. Bridgelux maintains a ±7% tolerance on flux measurements.
5. Minimum flux values at the nominal test current are guaranteed by 100% test.

Product Selection Guide

Table 2: Selection Guide, Measurement Data (Tc=85°C)

Part Number	Nominal CCT ¹ (K)	Typical CRI	Nominal Drive Current (mA)	Typical DC Flux ^{2,3} Tc = 85°C (lm)	Minimum DC Flux ⁴ Tc = 85°C (lm)	Typical Vf (V)	Typical Power (W)	Typical Efficacy (lm/W)
BXKC-27E3000-D-23	2700	82	450	2132	1855	34.5	15.5	137
BXKC-27G3000-D-23	2700	92	450	1759	1531	34.5	15.5	113
BXKC-30E3000-D-23	3000	82	450	2245	1953	34.5	15.5	144
BXKC-30G3000-D-23	3000	92	450	1852	1611	34.5	15.5	119
BXKC-35E3000-D-23	3500	82	450	2323	2021	34.5	15.5	150
BXKC-35G3000-D-23	3500	92	450	1917	1667	34.5	15.5	123
BXKC-40E3000-D-23	4000	82	450	2379	2070	34.5	15.5	153
BXKC-40G3000-D-23	4000	92	450	1963	1708	34.5	15.5	126
BXKC-50E3001-D-24	5000	81.5	450	2402	2089	34.5	15.5	155
BXKC-50G3001-D-24	5000	91	450	1981	1724	34.5	15.5	128
BXKC-56E3001-D-24	5600	81.5	450	2395	2084	34.5	15.5	154
BXKC-65E3001-D-24	6500	81.5	450	2395	2084	34.5	15.5	154
BXKC-27E4000-E-23	2700	82	550	2586	2250	34.5	19.0	136
BXKC-27G4000-E-23	2700	92	550	2134	1856	34.5	19.0	112
BXKC-30E4000-E-23	3000	82	550	2723	2369	34.5	19.0	143
BXKC-30G4000-E-23	3000	92	550	2246	1954	34.5	19.0	118
BXKC-35E4000-E-23	3500	82	550	2818	2451	34.5	19.0	148
BXKC-35G4000-E-23	3500	92	550	2325	2022	34.5	19.0	122
BXKC-40E4000-E-23	4000	82	550	2886	2511	34.5	19.0	152
BXKC-40G4000-E-23	4000	92	550	2381	2071	34.5	19.0	125
BXKC-50E4001-E-24	5000	81.5	550	2913	2534	34.5	19.0	153
BXKC-50G4001-E-24	5000	91	550	2403	2091	34.5	19.0	127
BXKC-56E4001-E-24	5600	81.5	550	2905	2527	34.5	19.0	153
BXKC-65E4001-E-24	6500	81.5	550	2905	2527	34.5	19.0	153

Notes for Table 2:

1. Nominal CCT as defined by ANSI C78.377-2011.
2. Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.
3. Typical performance is estimated based on operation under DC (direct current) with LED array mounted onto a heat sink with thermal interface material and the case temperature maintained at 85°C. Based on Bridgelux test setup, values may vary depending on the thermal design of the luminaire and/or the exposed environment to which the product is subjected.
4. Minimum flux values at elevated temperatures are provided for reference only and are not guaranteed by 100% production testing. Based on Bridgelux test setup, values may vary depending on the thermal design of the luminaire and/or the exposed environment to which the product is subjected.

European Product Registry for Energy Labeling

The European Product Registry for Energy Labeling (EPREL) is defined in the EU Regulation 2017/1369 to provide important energy efficiency information to consumers. Together with Energy Labeling Regulation ELR (EU) 2019/2015 which was amended by regulation (EU) 2021/340 for energy labelling of light sources, manufacturers are required to declare an energy class based on key technical specifications from each of their product and register it in an open data base managed by EPREL. It is now a legal requirement for a vendor of light sources to upload information about their products into the EPREL database before placing these products on the market in the EU.

Table 3 below provides a list of part numbers that are in compliance with ELR and are currently listed in the EPREL database.

At Bridgelux, we are fully committed to supplying products that are compliant with pertinent laws, rules, and obligation imposed by relevant government bodies including the European Energy Labeling regulation. Customers can use these products with full confidence for any projects that fall under the ELR.

Table 3: Part numbers registered in European Product Registry for Energy Labeling

PART NUMBER ¹	CCT (K)	CRI	Current ² (mA)	Vf (V)	Useful flux ³ (Φ_{use}) at 85C (lm)	Power (W)	Efficacy (lm/W)	Energy efficiency class ⁴	Registration No	URL to Product Information Sheet in EPREL Database
BXKC-27E3000-D-23	2700	80	960	37.4	4180	35.9	117	F	1116601	https://eprelec.europa.eu/qr/1116601
BXKC-27G3000-D-23	2700	90	520	34.9	2008	18.2	111	F	1116658	https://eprelec.europa.eu/qr/1116658
BXKC-30E3000-D-23	3000	80	960	37.4	4400	35.9	123	E	1116729	https://eprelec.europa.eu/qr/1116729
BXKC-30G3000-D-23	3000	90	630	35.5	2514	22.4	112	F	1116786	https://eprelec.europa.eu/qr/1116786
BXKC-35E3000-D-23	3500	80	960	37.4	4554	35.9	127	E	1116857	https://eprelec.europa.eu/qr/1116857
BXKC-35G3000-D-23	3500	90	710	36.0	2893	25.5	113	F	1116914	https://eprelec.europa.eu/qr/1116914
BXKC-40E3000-D-23	4000	80	960	37.4	4665	35.9	130	E	1116985	https://eprelec.europa.eu/qr/1116985
BXKC-40G3000-D-23	4000	90	770	36.3	3182	28.0	114	F	1117042	https://eprelec.europa.eu/qr/1117042
BXKC-50E3001-D-24	5000	80	960	37.4	4709	35.9	131	E	1117082	https://eprelec.europa.eu/qr/1117082
BXKC-56E3001-D-24	5600	80	960	37.4	4695	35.9	131	E	1118891	https://eprelec.europa.eu/qr/1118891
BXKC-65E3001-D-24	6500	80	960	37.4	4695	35.9	131	E	1117125	https://eprelec.europa.eu/qr/1117125
BXKC-27E4000-E-23	2700	80	1140	37.0	4892	42.2	116	F	1116606	https://eprelec.europa.eu/qr/1116606
BXKC-27G4000-E-23	2700	90	590	34.7	2275	20.5	111	F	1116663	https://eprelec.europa.eu/qr/1116663
BXKC-30E4000-E-23	3000	80	1200	37.3	5365	44.7	120	E	1116734	https://eprelec.europa.eu/qr/1116734
BXKC-30G4000-E-23	3000	90	710	35.2	2831	25.0	113	F	1116791	https://eprelec.europa.eu/qr/1116791
BXKC-35E4000-E-23	3500	80	1200	37.3	5553	44.7	124	E	1116862	https://eprelec.europa.eu/qr/1116862
BXKC-35G4000-E-23	3500	90	810	35.6	3292	28.9	114	F	1116919	https://eprelec.europa.eu/qr/1116919
BXKC-40E4000-E-23	4000	80	1200	37.3	5687	44.7	127	E	1116990	https://eprelec.europa.eu/qr/1116990

Notes for Table 3:

- All device listed here must be disposed as e-waste upon its end of life according to local country guideline in each country.
- For information on performance values at alternative drive conditions, please refer to the Product Selection Guide, Absolute Maximum Rating Table and Performance Curves in this data sheet.
- For a definition of useful luminous flux (Φ_{use}), please see the ELR regulations at <https://tinyurl.com/4b6zvt4m>.
- EPREL requires an arrow symbol containing the letter of the energy efficiency class to be displayed, on technical promotional material. Refer to this energy efficiency class column for specific energy efficiency class on each part number.

European Product Registry for Energy Labeling

Table 3: Part numbers registered in European Product Registry for Energy Labeling (Continued)

PART NUMBER ¹	CCT (K)	CRI	Current ² (mA)	Vf (V)	Useful flux ³ (Φ_{use}) at 85°C (lm)	Power (W)	Efficacy (lm/W)	Energy efficiency class ⁴ 	Registration No	URL to Product Information Sheet in EPREL Database
BXKC-40G4000-E-23	4000	90	880	35.9	3623	31.6	115	F	1117047	https://eprelec.europa.eu/qr/1117047
BXKC-50E4001-E-24	5000	80	1200	37.3	5741	44.7	128	E	1117084	https://eprelec.europa.eu/qr/1117084
BXKC-56E4001-E-24	5600	80	1200	37.3	5725	44.7	128	E	1118893	https://eprelec.europa.eu/qr/1118893
BXKC-65E4001-E-24	6500	80	1200	37.3	5725	44.7	128	E	1117127	https://eprelec.europa.eu/qr/1117127

Notes for Table 3:

1. All device listed here must be disposed as e-waste upon its end of life according to local country guideline in each country.
2. For information on performance values at alternative drive conditions, please refer to the Product Selection Guide, Absolute Maximum Rating Table and Performance Curves in this data sheet.
3. For a definition of useful luminous flux (Φ_{use}), please see the ELR regulations at <https://tinyurl.com/4b6zvt4m>.
4. EPREL requires an arrow symbol containing the letter of the energy efficiency class to be displayed, on technical promotional material. Refer to this energy efficiency class column for specific energy efficiency class on each part number.

Performance at Commonly Used Drive Currents

E Series LED arrays are tested to the specifications shown using the nominal drive currents in Table 1. E Series may also be driven at other drive currents dependent on specific application design requirements. The performance at any drive current can be derived from the current vs. voltage characteristics shown in Figures 1 and 2 and the flux vs. current characteristics shown in Figures 3 and 4. The performance at commonly used drive currents is summarized in Table 4.

Table 4: Product Performance at Commonly Used Drive Currents (Continued)

Part Number	Minimum CRI	Drive Current ¹ (mA)	Typical Vf Tc = 25°C (V)	Typical Power ² Tc = 25°C (W)	Typical Pulsed Flux ² Tc = 25°C (lm)	Typical DC Flux ² Tc = 85°C (lm)	Typical Efficacy ² Tc = 25°C (lm/W)
BXKC-27E3000-D-23	80	120	31.9	3.8	683	624	179
		240	33.2	8.0	1332	1212	167
		450	35.2	15.8	2369	2132	150
		480	35.4	17.0	2509	2254	147
		720	37.1	26.7	3561	3159	133
		1200	40.0	48.0	5469	4735	114
BXKC-27G3000-D-23	91	120	31.9	3.8	563	515	147
		240	33.2	8.0	1099	999	138
		450	35.2	15.8	1955	1759	123
		480	35.4	17.0	2070	1860	122
		720	37.1	26.7	2938	2606	110
		1200	40.0	48.0	4512	3906	94
BXKC-30E3000-D-23	80	120	31.9	3.8	719	657	188
		240	33.2	8.0	1402	1275	176
		450	35.2	15.8	2494	2245	157
		480	35.4	17.0	2641	2373	155
		720	37.1	26.7	3748	3325	140
		1200	40.0	48.0	5757	4984	120
BXKC-30G3000-D-23	91	120	31.9	3.8	593	542	155
		240	33.2	8.0	1157	1052	145
		450	35.2	15.8	2058	1852	130
		480	35.4	17.0	2179	1958	128
		720	37.1	26.7	3092	2743	116
		1200	40.0	48.0	4750	4112	99
BXKC-35E3000-D-23	80	120	31.9	3.8	744	680	195
		240	33.2	8.0	1451	1320	182
		450	35.2	15.8	2581	2323	163
		480	35.4	17.0	2733	2456	161
		720	37.1	26.7	3879	3442	145
		1200	40.0	48.0	5958	5158	124

Notes for Table 4:

1. Alternate drive currents are provided for reference only and are not a guarantee of performance.
2. Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.

Performance at Commonly Used Drive Currents

Table 4: Product Performance at Commonly Used Drive Currents (Continued)

Part Number	Minimum CRI	Drive Current ¹ (mA)	Typical Vf Tc = 25°C (V)	Typical Power ² Tc = 25°C (W)	Typical Pulsed Flux ² Tc = 25°C (lm)	Typical DC Flux ² Tc = 85°C (lm)	Typical Efficacy ² Tc = 25°C (lm/W)
BXKC-35G3000-D-23	90	120	31.9	3.8	614	561	160
		240	33.2	8.0	1197	1089	150
		450	35.2	15.8	2130	1917	134
		480	35.4	17.0	2255	2026	133
		720	37.1	26.7	3201	2839	120
		1200	40.0	48.0	4916	4256	102
BXKC-40E3000-D-23	80	120	31.9	3.8	762	697	199
		240	33.2	8.0	1486	1352	186
		450	35.2	15.8	2644	2379	167
		480	35.4	17.0	2799	2515	165
		720	37.1	26.7	3973	3525	149
		1200	40.0	48.0	6102	5283	127
BXKC-40G3000-D-23	90	120	31.9	3.8	629	575	164
		240	33.2	8.0	1226	1115	154
		450	35.2	15.8	2181	1963	138
		480	35.4	17.0	2309	2075	136
		720	37.1	26.7	3278	2908	123
		1200	40.0	48.0	5034	4358	105
BXKC-50E3001-D-24	80	120	31.9	3.8	769	703	201
		240	33.2	8.0	1500	1365	188
		450	35.2	15.8	2669	2402	168
		480	35.4	17.0	2826	2539	166
		720	37.1	26.7	4011	3558	150
		1200	40.0	48.0	6160	5333	128
BXKC-50G3001-D-24	90	120	31.9	3.8	635	580	166
		240	33.2	8.0	1238	1126	155
		450	35.2	15.8	2202	1981	139
		480	35.4	17.0	2331	2095	137
		720	37.1	26.7	3309	2935	124
		1200	40.0	48.0	5082	4399	106
BXKC-56E3001-D-24	80	120	31.9	3.8	767	701	201
		240	33.2	8.0	1496	1361	188
		450	35.2	15.8	2661	2395	168
		480	35.4	17.0	2818	2532	166
		720	37.1	26.7	3999	3548	150
		1200	40.0	48.0	6143	5318	128

Notes for Table 4:

1. Alternate drive currents are provided for reference only and are not a guarantee of performance.
2. Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.

Performance at Commonly Used Drive Currents

Table 4: Product Performance at Commonly Used Drive Currents (Continued)

Part Number	Minimum CRI	Drive Current ¹ (mA)	Typical Vf Tc = 25°C (V)	Typical Power ² Tc = 25°C (W)	Typical Pulsed Flux ² Tc = 25°C (lm)	Typical DC Flux ² Tc = 85°C (lm)	Typical Efficacy ² Tc = 25°C (lm/W)
BXKC-65E3001-D-24	80	120	31.9	3.8	767	701	201
		240	33.2	8.0	1496	1361	188
		450	35.2	15.8	2661	2395	168
		480	35.4	17.0	2818	2532	166
		720	37.1	26.7	3999	3548	150
		1200	40.0	48.0	6143	5318	128
BXKC-27E4000-E-23	80	150	32.0	4.8	845	772	176
		300	33.3	10.0	1648	1498	165
		550	35.2	19.4	2874	2586	148
		800	36.7	29.4	3986	3549	136
		1000	37.7	37.7	4815	4252	128
		1500	40.0	60.0	6768	5856	113
BXKC-27G4000-E-23	91	150	32.0	4.8	697	637	145
		300	33.3	10.0	1360	1236	136
		550	35.2	19.4	2371	2134	122
		600	36.7	22.0	3288	2928	149
		900	37.7	33.9	3973	3508	117
		1200	40.0	48.0	5583	4831	116
BXKC-30E4000-E-23	80	150	32.0	4.8	890	813	186
		300	33.3	10.0	1735	1577	174
		550	35.2	19.4	3025	2723	156
		600	36.7	22.0	4196	3736	190
		900	37.7	33.9	5069	4475	149
		1200	40.0	48.0	7124	6164	148
BXKC-30G4000-E-23	91	150	32.0	4.8	734	671	153
		300	33.3	10.0	1431	1301	143
		550	35.2	19.4	2496	2246	129
		600	36.7	22.0	3461	3082	157
		900	37.7	33.9	4182	3692	123
		1200	40.0	48.0	5877	5085	122
BXKC-35E4000-E-23	80	150	32.0	4.8	921	841	192
		300	33.3	10.0	1796	1632	180
		550	35.2	19.4	3131	2818	162
		600	36.7	22.0	4343	3867	197
		900	37.7	33.9	5246	4632	155
		1200	40.0	48.0	7373	6380	154

Notes for Table 4:

1. Alternate drive currents are provided for reference only and are not a guarantee of performance.
2. Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.

Performance at Commonly Used Drive Currents

Table 4: Product Performance at Commonly Used Drive Currents (Continued)

Part Number	Minimum CRI	Drive Current ¹ (mA)	Typical Vf Tc = 25°C (V)	Typical Power ² Tc = 25°C (W)	Typical Pulsed Flux ² Tc = 25°C (lm)	Typical DC Flux ² Tc = 85°C (lm)	Typical Efficacy ² Tc = 25°C (lm/W)
BXKC-35G4000-E-23	90	150	32.0	4.8	760	694	159
		300	33.3	10.0	1481	1347	148
		550	35.2	19.4	2583	2325	133
		600	36.7	22.0	3583	3190	163
		900	37.7	33.9	4328	3821	128
		1200	40.0	48.0	6083	5263	127
BXKC-40E4000-E-23	80	150	32.0	4.8	943	862	197
		300	33.3	10.0	1839	1672	184
		550	35.2	19.4	3207	2886	166
		600	36.7	22.0	4447	3960	202
		900	37.7	33.9	5373	4744	158
		1200	40.0	48.0	7551	6534	157
BXKC-40G4000-E-23	90	150	32.0	4.8	778	711	162
		300	33.3	10.0	1517	1379	152
		550	35.2	19.4	2645	2381	137
		600	36.7	22.0	3669	3267	167
		900	37.7	33.9	4433	3914	131
		1200	40.0	48.0	6230	5390	130
BXKC-50E4001-E-24	80	150	32.0	4.8	952	870	199
		300	33.3	10.0	1856	1688	186
		550	35.2	19.4	3237	2913	167
		600	36.7	22.0	4489	3998	204
		900	37.7	33.9	5424	4789	160
		1200	40.0	48.0	7622	6595	159
BXKC-50G4001-E-24	90	150	32.0	4.8	785	717	164
		300	33.3	10.0	1531	1392	153
		550	35.2	19.4	2670	2403	138
		600	36.7	22.0	3704	3298	168
		900	37.7	33.9	4475	3951	132
		1200	40.0	48.0	6288	5441	131
BXKC-56E4001-E-24	80	150	32.0	4.8	949	867	198
		300	33.3	10.0	1851	1683	185
		550	35.2	19.4	3228	2905	167
		600	36.7	22.0	4477	3987	203
		900	37.7	33.9	5409	4775	159
		1200	40.0	48.0	7601	6577	158

Notes for Table 4:

1. Alternate drive currents are provided for reference only and are not a guarantee of performance.
2. Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.

Performance at Commonly Used Drive Currents

Table 4: Product Performance at Commonly Used Drive Currents (Continued)

Part Number	Minimum CRI	Drive Current ¹ (mA)	Typical Vf Tc = 25°C (V)	Typical Power ² Tc = 25°C (W)	Typical Pulsed Flux ² Tc = 25°C (lm)	Typical DC Flux ² Tc = 85°C (lm)	Typical Efficacy ² Tc = 25°C (lm/W)
BXKC-65E4001-E-24	80	150	32.0	4.8	949	867	198
		300	33.3	10.0	1851	1683	185
		550	35.2	19.4	3228	2905	167
		600	36.7	22.0	4477	3987	203
		900	37.7	33.9	5409	4775	159
		1200	40.0	48.0	7601	6577	158

Notes for Table 4:

1. Alternate drive currents are provided for reference only and are not a guarantee of performance.
2. Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.

Electrical Characteristics

Table 5: Electrical Characteristics

Part Number	Drive Current (mA)	Forward Voltage Pulsed, Tc = 25°C (V) ^{1,2,3}			Typical Coefficient of Forward Voltage ⁴ Vf/Tc (mV/°C)	Typical Thermal Resistance Junction to Case ^{5,6} Rj-c (°C/W)	Driver Selection Voltages ⁶ (V)	
		Minimum	Typical	Maximum			Vf Min. Hot ⁷ Tc = 105°C (V)	Vf Max. Cold ⁷ Tc = -40°C (V)
BXKC-xxx3000-D-2x	450	31.7	35.2	38.4	14.3	0.32	30.8	39.3
BXKC-xxx4000-E-2x	550	31.7	35.2	38.4	14.8	0.27	30.8	39.3

Notes for Table 5:

1. Parts are tested in pulsed conditions. Tc = 25°C. Pulse width is 10ms.
2. Voltage minimum and maximum are provided for reference only and are not a guarantee of performance.
3. Bridgelux maintains a tester tolerance of ± 0.10V on forward voltage measurements.
4. Typical coefficient of forward voltage tolerance is ± 0.1mV for nominal current.
5. Thermal resistance values are based from test data of a 3000K 80 CRI product.
6. Thermal resistance value was calculated using total electrical input power; optical power was not subtracted from input power. The thermal interface material used during testing is not included in the thermal resistance value.
7. Vf min hot and max cold values are provided as reference only and are not guaranteed by test. These values are provided to aid in driver design and selection over the operating range of the product.

Absolute Maximum Ratings

Table 6 : Maximum Ratings

Parameter	Maximum Rating	
LED Junction Temperature (T_j)	125°C	
Storage Temperature	-40°C to +105°C	
Operating Case Temperature ¹ (T_c)	105°C	
Soldering Temperature ³	300°C or lower for a maximum of 6 seconds	
	BXKC-xxx3000-D-2x	BXKC-xxx4000-E-2x
Maximum Drive Current ^{2,4}	1200mA	1500 mA
Maximum Reverse Voltage ⁵	-60 V	-60 V

Notes for Table 6:

1. For IEC 62717 requirement, please consult your Bridgelux sales representative.
2. Arrays may be driven at higher currents however lumen maintenance may be reduced.
3. See Bridgelux Application Notes for more information.
4. Bridgelux recommends a maximum duty cycle of 10% and pulse width of 20 ms when operating LED Arrays at maximum peak pulsed current specified. Maximum peak pulsed currents indicate values where LED Arrays can be driven without catastrophic failures.
5. Light emitting diodes are not designed to be driven in reverse voltage and will not produce light under this condition. Maximum rating provided for reference only.

Performance Curves

Figure 1: E13D Forward Voltage vs. Forward Current

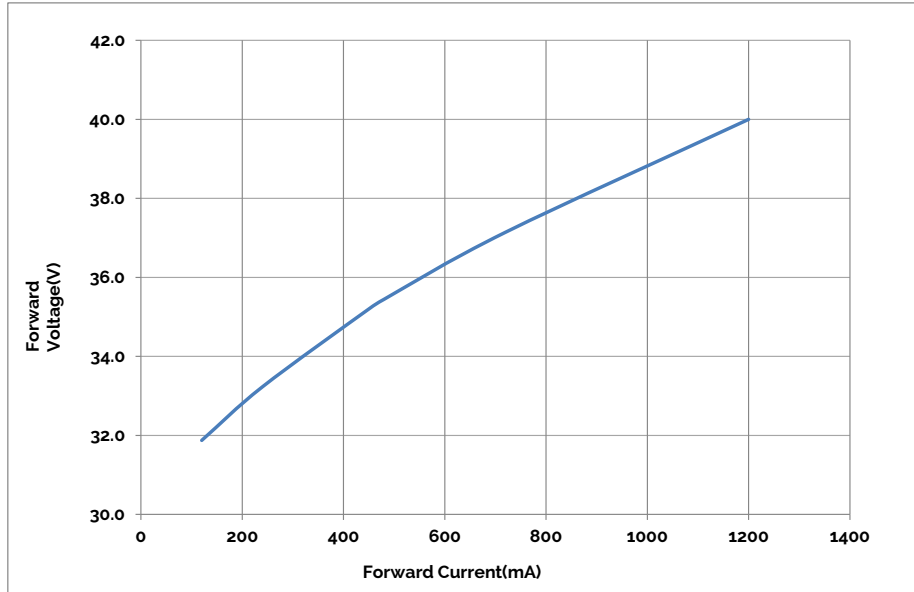
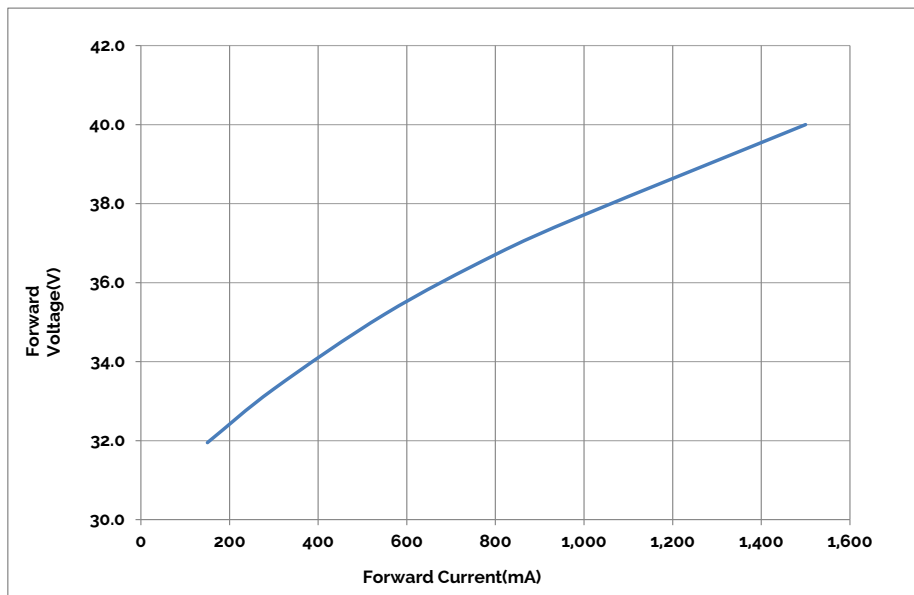


Figure 2: E13E Forward Voltage vs. Forward Current



Notes for Figure 1 and Figure 2:

1. Characteristics shown based on 3000K and 80 CRI.
2. For other color SKUs, the relative luminous will vary. Please contact your Bridgelux sales representative for more information.

Performance Curves

Figure 3: E13D Relative Luminous Flux vs. Drive Current

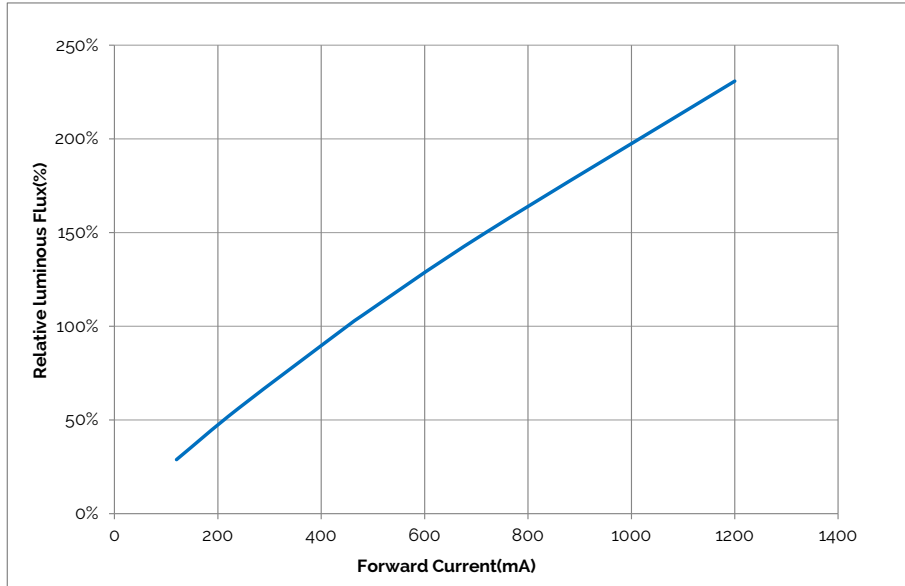
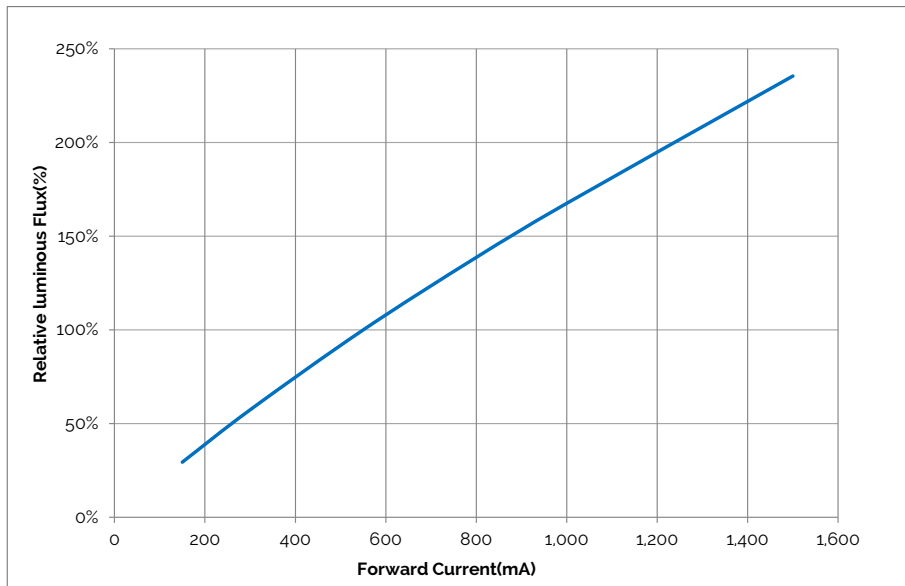


Figure 4: E13E Relative Luminous Flux vs. Drive Current



Notes for Figure3 and Figure 4:

1. Characteristics shown based on 3000K and 80 CRI.
2. For other color SKUs, the relative luminous will vary. Please contact your Bridgelux sales representative for more information.

Performance Curves

Figure 5: Relative Luminous Flux vs. Case Temperature

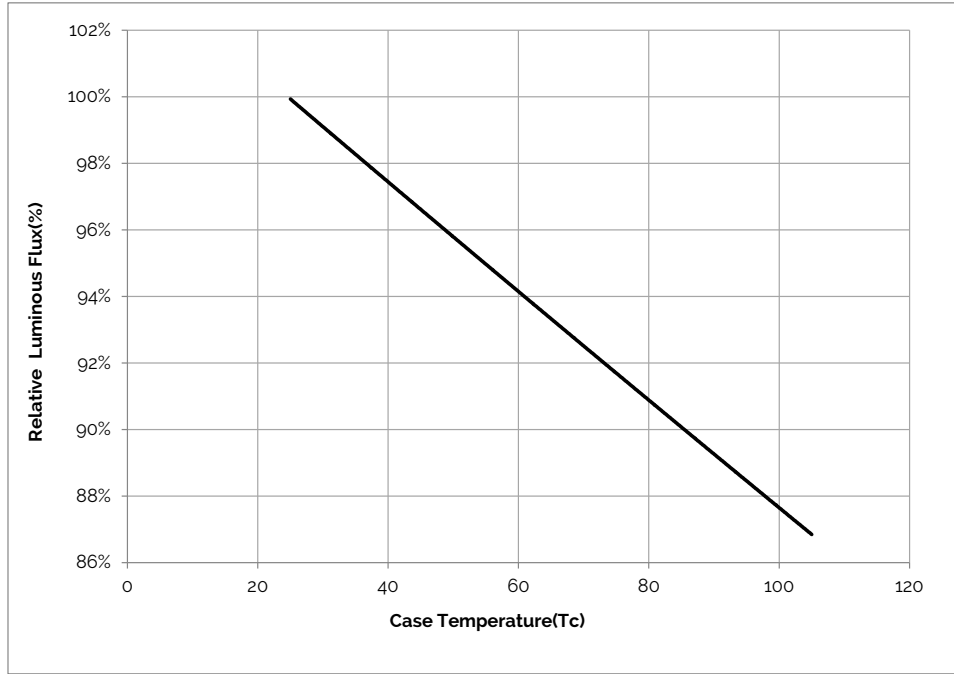
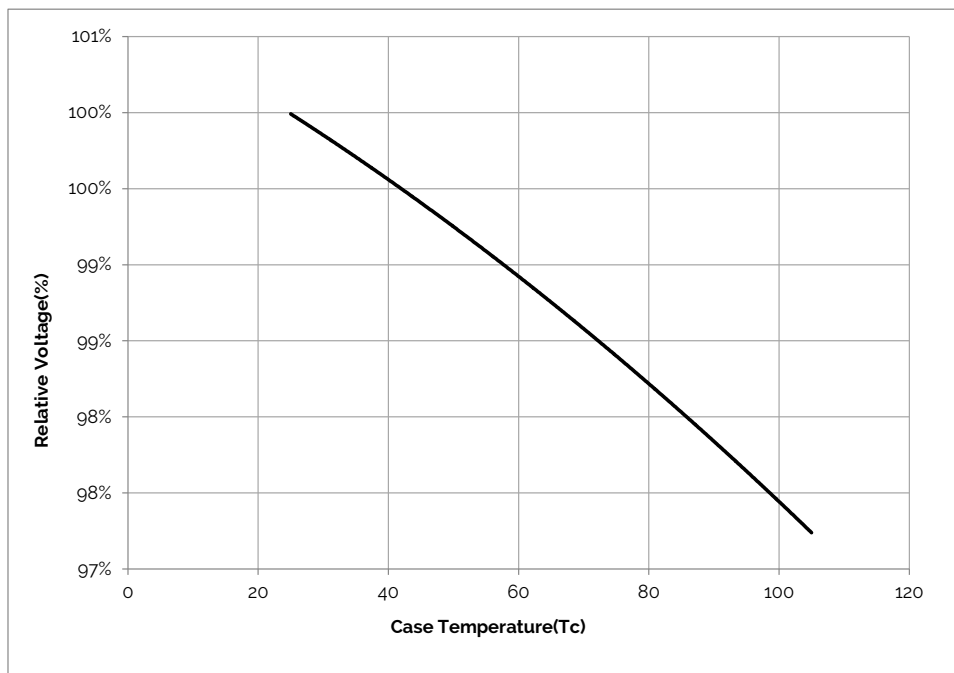


Figure 6: Relative Voltage vs. Case Temperature



Notes for Figure 5 and Figure6:

1. Characteristics based on 3000K and 80 CRI.
2. For other color SKUs, the relative luminous will vary. Please contact your Bridgelux sales representative for more information.

Performance Curves

Figure 7: Typical DC ccx Shift vs. Case Temperature

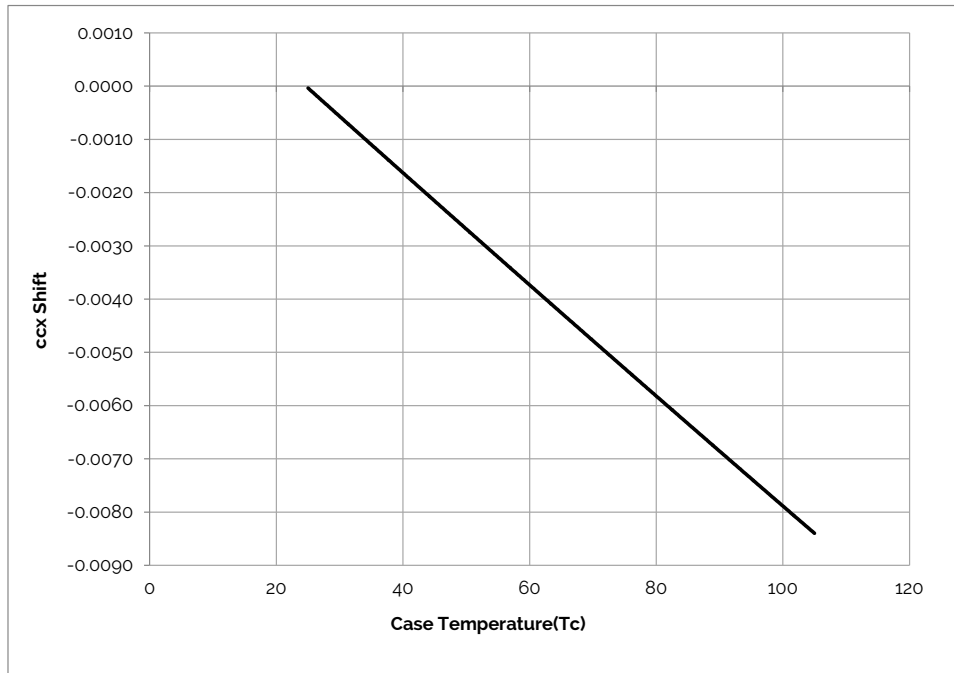
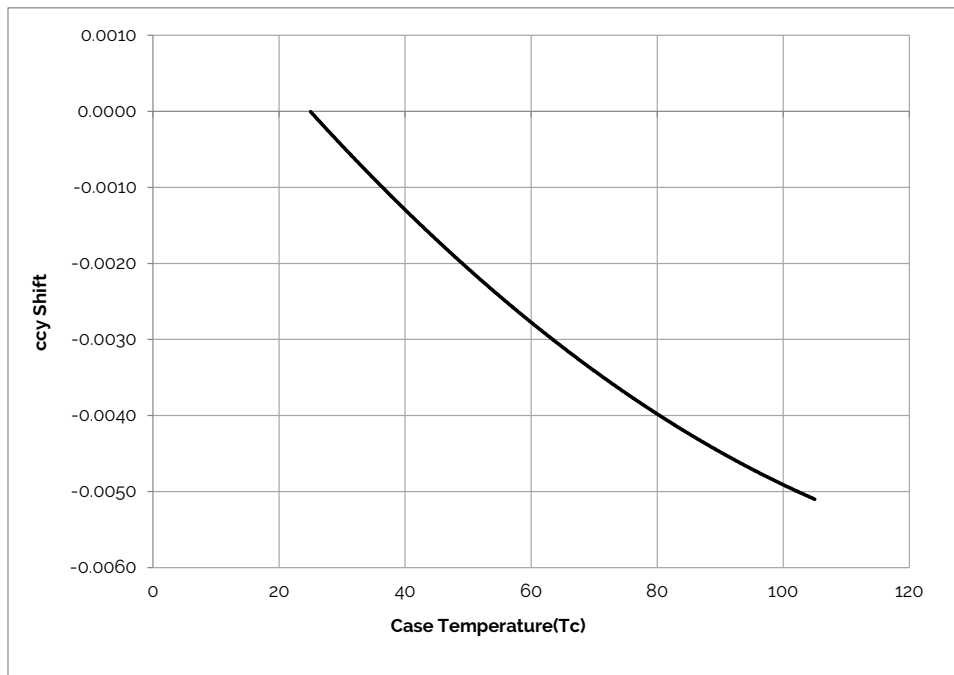


Figure 8: Typical DC ccy Shift vs. Case Temperature

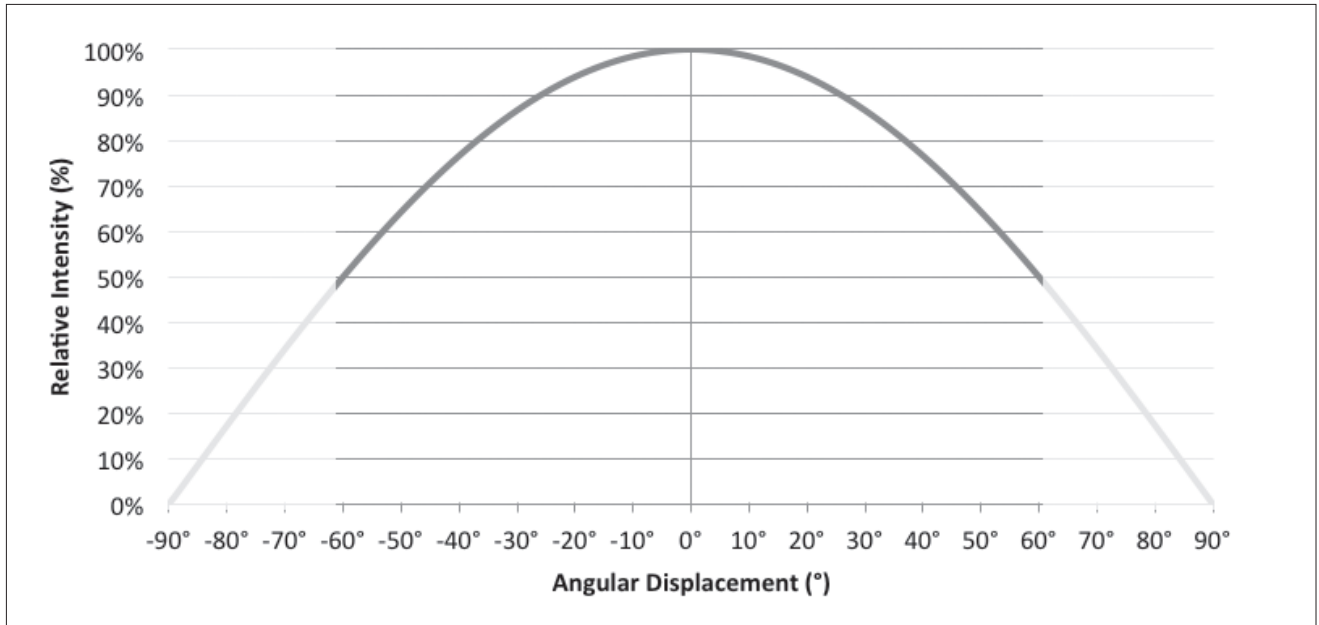


Notes for Figure 7 and Figure 8:

1. Characteristics shown based on 3000K and 80 CRI.
2. For other color SKUs, the shift in color will vary. Please contact your Bridgelux sales representative for more information.

Typical Radiation Pattern

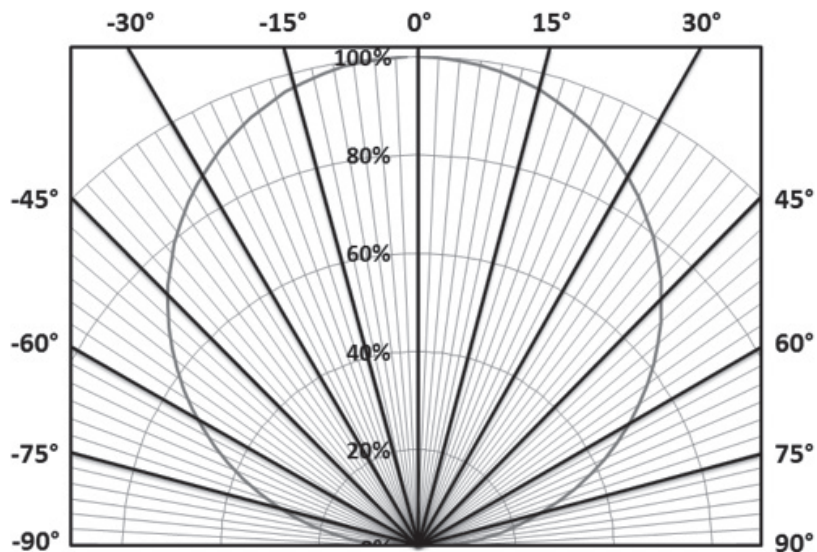
Figure 9: Typical Spatial Radiation Pattern



Notes for Figure 9:

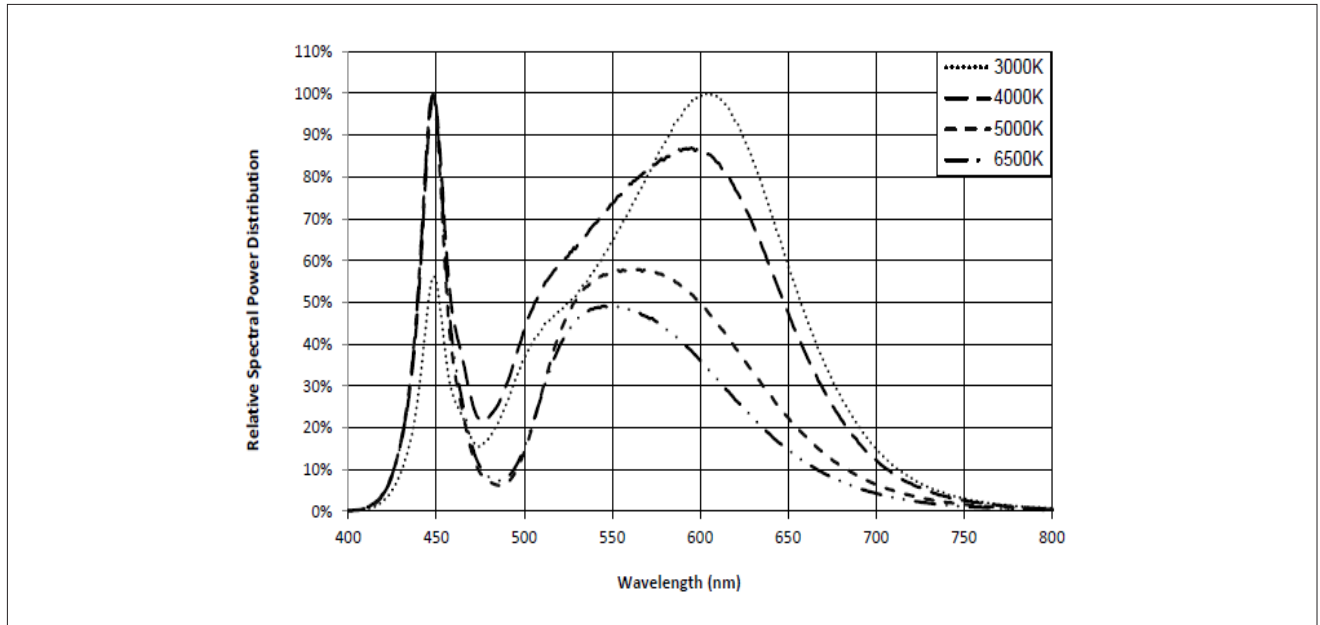
1. Typical viewing angle is 120°.
2. The viewing angle is defined as the off axis angle from the centerline where intensity is ½ of the peak value.

Figure 10: Typical Polar Radiation Pattern



Typical Color Spectrum

Figure 11: Typical Color Spectrum



Notes for Figure 11:

1. Color spectra measured at nominal current for $T_J - T_C = 25^\circ\text{C}$.
2. Color spectra shown is 3000K and 80 CRI.
3. Color spectra shown is 4000K and 80 CRI.
4. Color spectra shown is 5000K and 70 CRI.
4. Color spectra shown is 6500K and 70 CRI.

Drive Current Derating Curve

Figure 12: E13D Drive Current Derating Curve

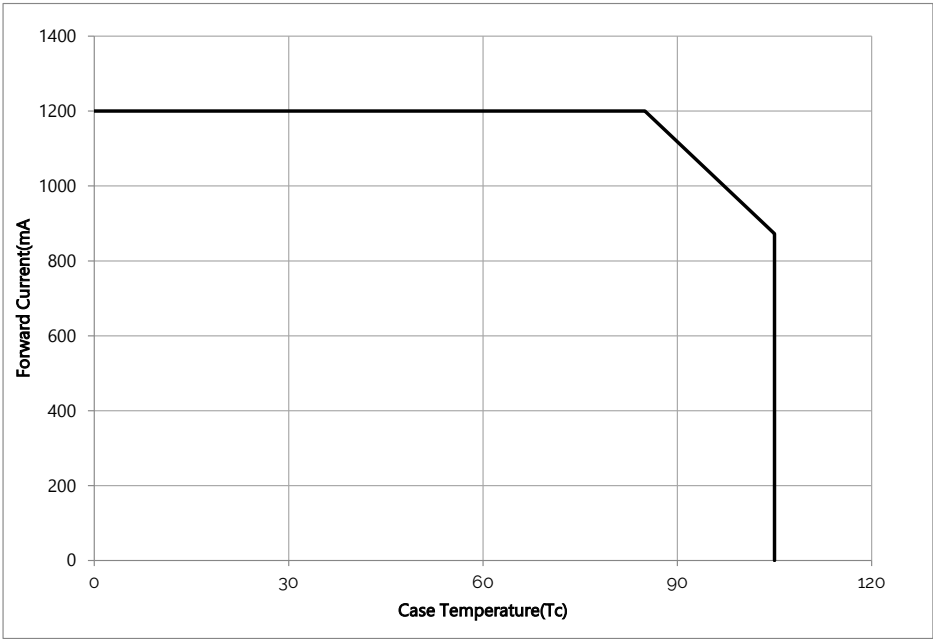
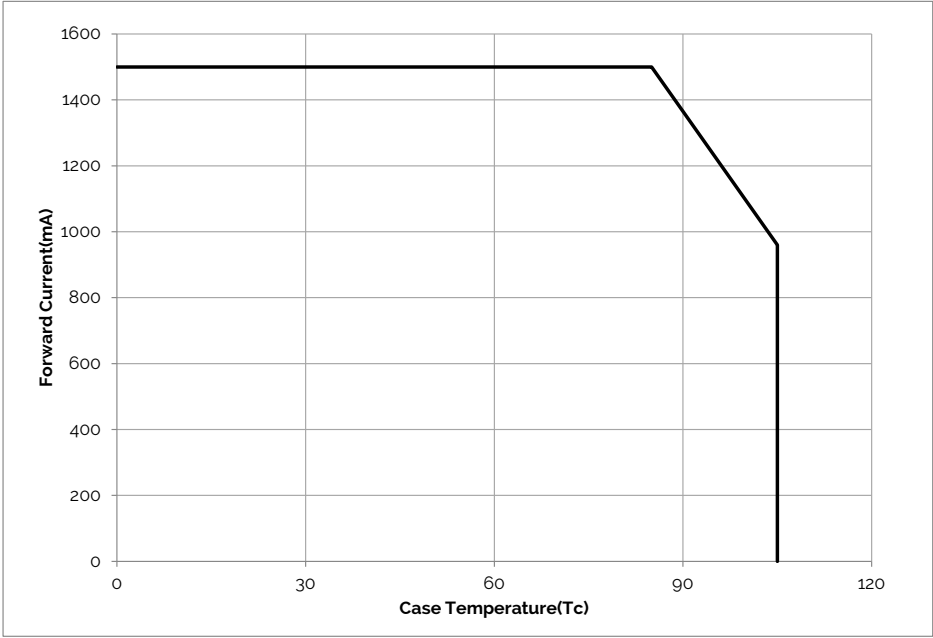


Figure 13: E13E Drive Current Derating Curve



Color Binning Information

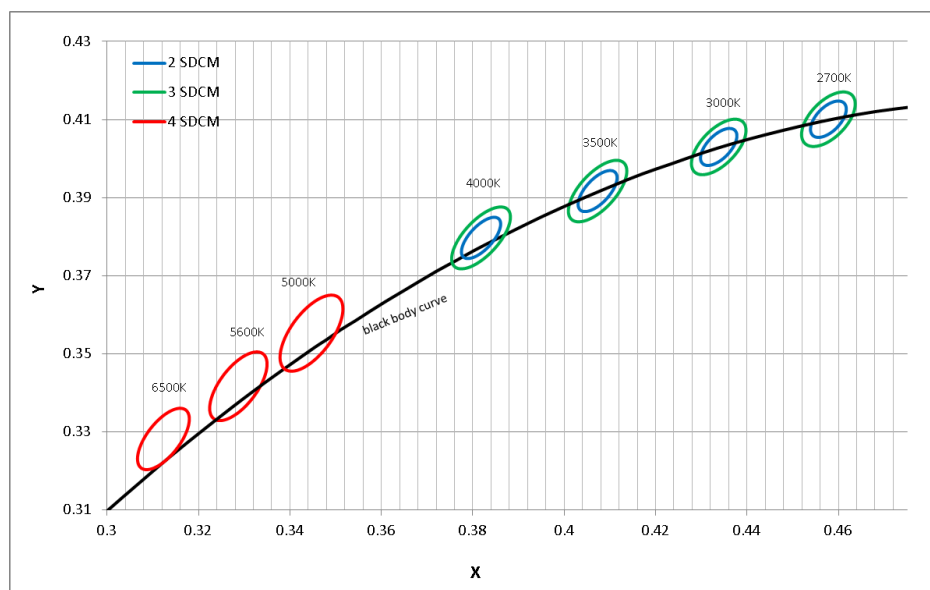
Table 7: xy Bin Coordinates and Associated Typical CCT

CCT	Center Point		Degree	3 step		4 step	
	x	y	(°)	a	b	a	b
2700K	0.4578	0.4101	53.700	0.0081	0.0042	N/A	N/A
3000K	0.4338	0.403	53.217	0.0083	0.0041	N/A	N/A
3500K	0.4073	0.3917	54.000	0.0093	0.0041	N/A	N/A
4000K	0.3818	0.3797	53.717	0.0094	0.0040	N/A	N/A
5000K	0.3447	0.3553	59.617	N/A	N/A	0.0110	0.0047
5600K	0.3287	0.3417	59.060	N/A	N/A	0.0099	0.0042
6500K	0.3123	0.3282	58.567	N/A	N/A	0.0089	0.0038

Notes for Table 7:

- 2700K \3000K\3500K\4000K product is cold targeted to Tc = 25°C
- 5000K \5600K\6500K product is hot targeted to Tc = 85°C

Figure 14: Graph of Test Bins in xy Color Space

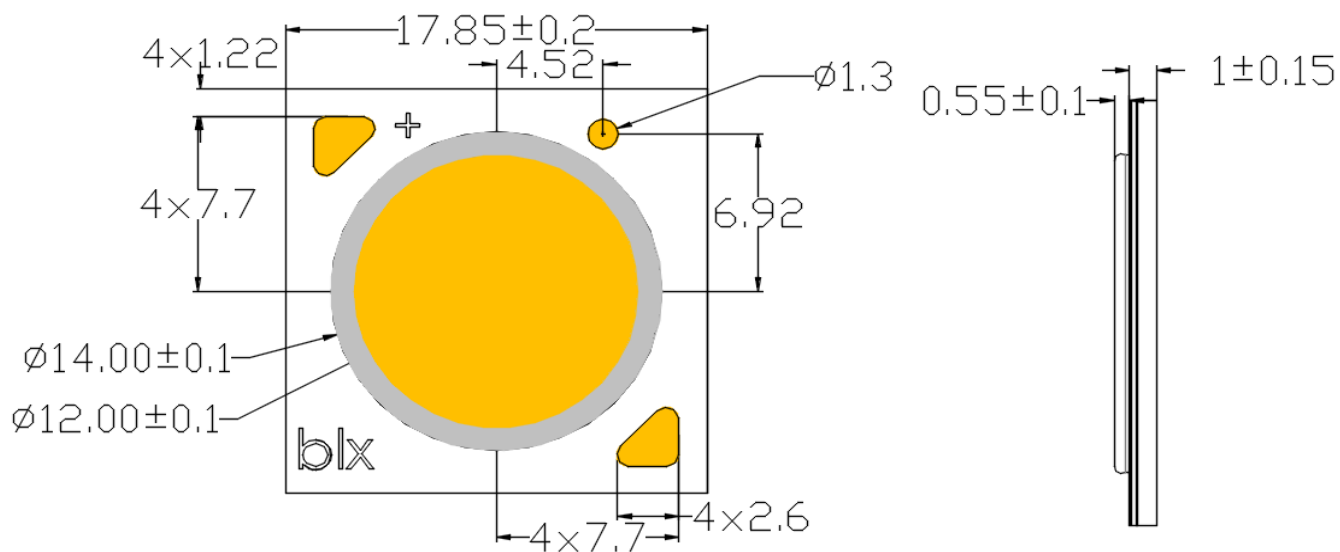


Notes for Figure 14:

- Bridgelux maintains a tolerance of ± 0.007 on x and y color coordinates in the CIE 1931 color space.

Mechanical Dimensions

Figure 15: Drawing for E Series E13 CA LED Array



Notes for Figure 15:

1. Bridgelux maintains a flatness of 0.10mm across the mounting surface of the array
2. Drawings are not to scale.
3. Drawing dimensions are in millimeters.
4. Unless otherwise specified, tolerances are ± 0.13 mm.
5. Solder pad labeled "+" denotes positive contact.
6. The optical center of the LED Array is nominally defined by the mechanical center of the array to a tolerance of ± 0.2 mm.

Packaging and Labeling

Figure 16: Packaging and Labeling



Packaging and Labeling

Figure 17: Laser Marking

Bridgelux COB arrays have laser markings on the back side of the substrate to help with product identification. In addition to the product identification markings, Bridgelux COB arrays also contain markings for internal Bridgelux manufacturing use only. The image below shows which markings are for customer use and which ones are for Bridgelux internal use only. The Bridgelux internal manufacturing markings are subject to change without notice, however these will not impact the form, function or performance of the COB array.



Customer Use- 2D Barcode Scannable barcode provides product part number and other Bridgelux internal production information.

30E3000D 23

Customer Use- Product part number

Design Resources

LM80

Please contact your Bridgelux sales representative for more information.

Precautions

CAUTION: CHEMICAL EXPOSURE HAZARD

Exposure to some chemicals commonly used in luminaire manufacturing and assembly can cause damage to the LED array. Please consult Bridgelux Application Note AN31 for additional information.

CAUTION: EYE SAFETY

The Bridgelux Dual Color LED Array emits visible light, that, under certain circumstances, could be harmful to the eye. Proper safeguards must be used.

CAUTION: RISK OF BURN

Do not touch the Bridgelux Dual Color LED array during operation. Allow the array to cool for a sufficient period of time before handling. The Bridgelux Dual Color LED array may reach elevated temperatures such that could burn skin when touched

CAUTION

CONTACT WITH LIGHT EMITTING SURFACE (LES)

Avoid any contact with the LES. Do not touch the LES of the LED array or apply stress to the LES (yellow phosphor resin area). Contact may cause damage to the LED array.

Optics and reflectors must not be mounted in contact with the LES (yellow phosphor resin area). Use the mechanical features of the LED array housing, edges and/or mounting holes to locate and secure optical devices as needed.

Disclaimers

MINOR PRODUCT CHANGE POLICY

The rigorous qualification testing on products offered by Bridgelux provides performance assurance. Slight cosmetic changes that do not affect form, fit, or function may occur as Bridgelux continues product optimization.

STANDARD TEST CONDITIONS

Unless otherwise stated, array testing is performed at the nominal drive current.

About Bridgelux: Bridging Light and Life™

At Bridgelux, we help companies, industries and people experience the power and possibility of light. Since 2002, we've designed LED solutions that are high performing, energy efficient, cost effective and easy to integrate. Our focus is on light's impact on human behavior, delivering products that create better environments, experiences and returns—both experiential and financial. And our patented technology drives new platforms for commercial and industrial luminaires.

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