



Bridgelux® E Series E8 CA HE LED Array

Product Data Sheet DS338

Introduction

E Series



The Bridgelux E Series 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 E8 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 E8 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



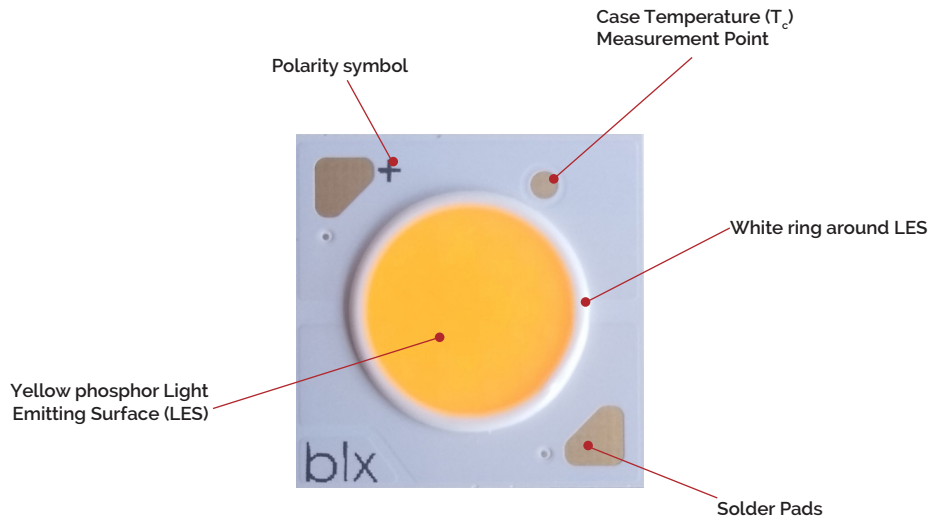
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Product Feature Map

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

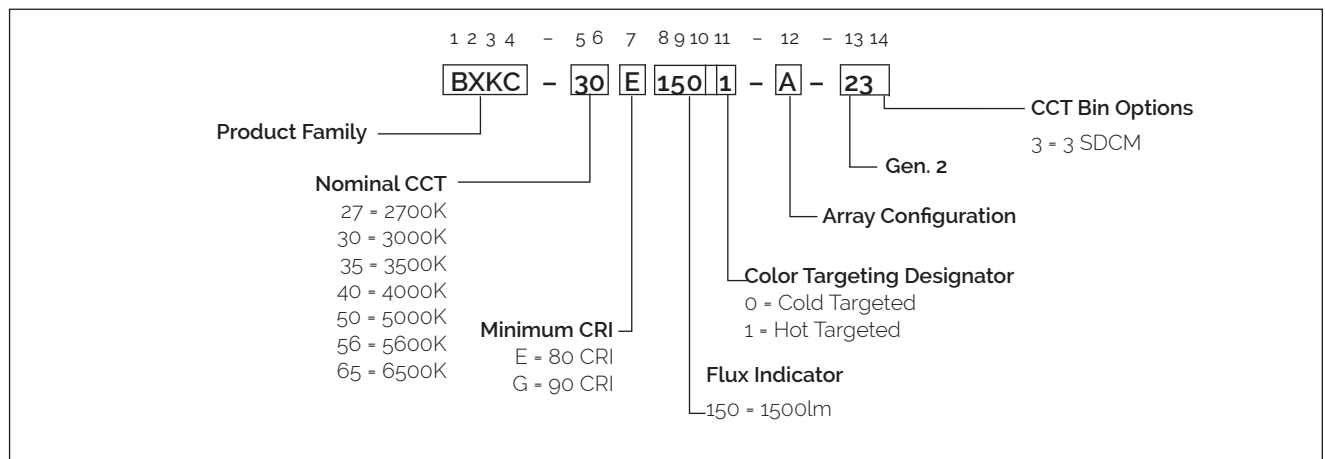
The arrays incorporate several features to simplify design integration and assembly.



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-27E1500-B-23	2700	82	200	1079	939	35.0	7.0	154
BXKC-27G1500-B-23	2700	92	200	888	773	35.0	7.0	127
BXKC-30E1500-B-23	3000	82	200	1140	992	35.0	7.0	163
BXKC-30G1500-B-23	3000	92	200	932	811	35.0	7.0	133
BXKC-35E1500-B-23	3500	82	200	1162	1011	35.0	7.0	166
BXKC-35G1500-B-23	3500	92	200	956	832	35.0	7.0	137
BXKC-40E1500-B-23	4000	82	200	1173	1020	35.0	7.0	168
BXKC-40G1500-B-23	4000	92	200	989	860	35.0	7.0	141
BXKC-50E1501-B-24	5000	81.5	200	1209	1052	35.0	7.0	173
BXKC-50G1501-B-24	5000	91	200	1013	882	35.0	7.0	145
BXKC-56E1501-B-24	5600	81.5	200	1209	1052	35.0	7.0	173
BXKC-65E1501-B-24	6500	81.5	200	1209	1052	35.0	7.0	173
BXKC-27E1500-D-23	2700	82	400	1079	939	17.5	7.0	154
BXKC-27G1500-D-23	2700	92	400	888	773	17.5	7.0	127
BXKC-30E1500-D-23	3000	82	400	1140	992	17.5	7.0	163
BXKC-30G1500-D-23	3000	92	400	932	811	17.5	7.0	133
BXKC-35E1500-D-23	3500	82	400	1162	1011	17.5	7.0	166
BXKC-35G1500-D-23	3500	92	400	956	832	17.5	7.0	137
BXKC-40E1500-D-23	4000	82	400	1173	1020	17.5	7.0	168
BXKC-40G1500-D-23	4000	92	400	989	860	17.5	7.0	141
BXKC-50E1501-D-24	5000	81.5	400	1209	1052	17.5	7.0	173
BXKC-50G1501-D-24	5000	91	400	1013	882	17.5	7.0	145
BXKC-56E1501-D-24	5600	81.5	400	1209	1052	17.5	7.0	173
BXKC-65E1501-D-24	6500	81.5	400	1209	1052	17.5	7.0	173
BXKC-27E2000-C-23	2700	82	350	1825	1588	35.3	12.4	148
BXKC-27G2000-C-23	2700	92	350	1506	1310	35.3	12.4	122
BXKC-30E2000-C-23	3000	82	350	1921	1671	35.3	12.4	156
BXKC-30G2000-C-23	3000	92	350	1585	1379	35.3	12.4	128
BXKC-35E2000-C-23	3500	82	350	1988	1730	35.3	12.4	161
BXKC-35G2000-C-23	3500	92	350	1640	1427	35.3	12.4	133
BXKC-40E2000-C-23	4000	82	350	2036	1772	35.3	12.4	165
BXKC-40G2000-C-23	4000	92	350	1680	1462	35.3	12.4	136
BXKC-50E2001-C-24	5000	81.5	350	2056	1788	35.3	12.4	166
BXKC-50G2001-C-24	5000	91	350	1696	1475	35.3	12.4	137
BXKC-56E2001-C-24	5600	81.5	350	2050	1783	35.3	12.4	166
BXKC-65E2001-C-24	6500	81.5	350	2050	1783	35.3	12.4	166

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-27E1500-B-23	2700	82	200	982	854	34.3	6.9	143
BXKC-27G1500-B-23	2700	92	200	809	704	34.3	6.9	118
BXKC-30E1500-B-23	3000	82	200	1038	903	34.3	6.9	151
BXKC-30G1500-B-23	3000	92	200	848	738	34.3	6.9	124
BXKC-35E1500-B-23	3500	82	200	1058	921	34.3	6.9	154
BXKC-35G1500-B-23	3500	92	200	870	757	34.3	6.9	127
BXKC-40E1500-B-23	4000	82	200	1068	929	34.3	6.9	156
BXKC-40G1500-B-23	4000	92	200	900	783	34.3	6.9	131
BXKC-50E1501-B-24	5000	81.5	200	1101	958	34.3	6.9	161
BXKC-50G1501-B-24	5000	91	200	922	803	34.3	6.9	135
BXKC-56E1501-B-24	5600	81.5	200	1101	958	34.3	6.9	161
BXKC-65E1501-B-24	6500	81.5	200	1101	958	34.3	6.9	161
BXKC-27E1500-D-23	2700	82	400	982	854	17.1	6.9	143
BXKC-27G1500-D-23	2700	92	400	809	704	17.1	6.9	118
BXKC-30E1500-D-23	3000	82	400	1038	903	17.1	6.9	151
BXKC-30G1500-D-23	3000	92	400	848	738	17.1	6.9	124
BXKC-35E1500-D-23	3500	82	400	1058	921	17.1	6.9	154
BXKC-35G1500-D-23	3500	92	400	870	757	17.1	6.9	127
BXKC-40E1500-D-23	4000	82	400	1068	929	17.1	6.9	156
BXKC-40G1500-D-23	4000	92	400	900	783	17.1	6.9	131
BXKC-50E1501-D-24	5000	81.5	400	1101	958	17.1	6.9	161
BXKC-50G1501-D-24	5000	91	400	922	803	17.1	6.9	135
BXKC-56E1501-D-24	5600	81.5	400	1101	958	17.1	6.9	161
BXKC-65E1501-D-24	6500	81.5	400	1101	958	17.1	6.9	161
BXKC-27E2000-C-23	2700	82	350	1643	1429	34.5	12.1	136
BXKC-27G2000-C-23	2700	92	350	1355	1179	34.5	12.1	112
BXKC-30E2000-C-23	3000	82	350	1729	1504	34.5	12.1	143
BXKC-30G2000-C-23	3000	92	350	1427	1241	34.5	12.1	118
BXKC-35E2000-C-23	3500	82	350	1790	1557	34.5	12.1	148
BXKC-35G2000-C-23	3500	92	350	1476	1284	34.5	12.1	122
BXKC-40E2000-C-23	4000	82	350	1833	1595	34.5	12.1	152
BXKC-40G2000-C-23	4000	92	350	1512	1316	34.5	12.1	125
BXKC-50E2001-C-24	5000	81.5	350	1850	1610	34.5	12.1	153
BXKC-50G2001-C-24	5000	91	350	1526	1328	34.5	12.1	126
BXKC-56E2001-C-24	5600	81.5	350	1845	1605	34.5	12.1	153
BXKC-65E2001-C-24	6500	81.5	350	1845	1605	34.5	12.1	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-27E1500-B-23	2700	80	480	38.2	2070	18.4	113	F	1116577	https://eprelec.europa.eu/qr/1116577
BXKC-27G1500-B-23	2700	90	320	36.0	1215	11.5	105	F	1116633	https://eprelec.europa.eu/qr/1116633
BXKC-30E1500-B-23	3000	80	480	38.2	2187	18.4	119	E	1116705	https://eprelec.europa.eu/qr/1116705
BXKC-30G1500-B-23	3000	90	360	36.6	1409	13.2	107	F	1116761	https://eprelec.europa.eu/qr/1116761
BXKC-35E1500-B-23	3500	80	480	38.2	2230	18.4	121	E	1116833	https://eprelec.europa.eu/qr/1116833
BXKC-35G1500-B-23	3500	90	380	36.8	1513	14.0	108	F	1116889	https://eprelec.europa.eu/qr/1116889
BXKC-40E1500-B-23	4000	80	480	38.2	2251	18.4	123	E	1116961	https://eprelec.europa.eu/qr/1116961
BXKC-40G1500-B-23	4000	90	410	37.2	1668	15.3	109	F	1117017	https://eprelec.europa.eu/qr/1117017
BXKC-50E1501-B-24	5000	80	480	38.2	2320	18.4	126	E	1117076	https://eprelec.europa.eu/qr/1117076
BXKC-50G1501-B-24	5000	90	440	37.7	1811	16.6	109	F	1117097	https://eprelec.europa.eu/qr/1117097
BXKC-56E1501-B-24	5600	80	480	38.2	2320	18.4	126	E	1118885	https://eprelec.europa.eu/qr/1118885
BXKC-65E1501-B-24	6500	80	480	38.2	2320	18.4	126	E	1117119	https://eprelec.europa.eu/qr/1117119
BXKC-27E1500-D-23	2700	80	960	19.1	2070	18.4	113	F	1116579	https://eprelec.europa.eu/qr/1116579
BXKC-27G1500-D-23	2700	90	650	18.0	1231	11.7	105	F	1116635	https://eprelec.europa.eu/qr/1116635
BXKC-30E1500-D-23	3000	80	960	19.1	2187	18.4	119	E	1116707	https://eprelec.europa.eu/qr/1116707
BXKC-30G1500-D-23	3000	90	730	18.3	1426	13.4	107	F	1116763	https://eprelec.europa.eu/qr/1116763
BXKC-35E1500-D-23	3500	80	960	19.1	2230	18.4	121	E	1116835	https://eprelec.europa.eu/qr/1116835
BXKC-35G1500-D-23	3500	90	770	18.5	1530	14.2	108	F	1116891	https://eprelec.europa.eu/qr/1116891

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/4b6zv4m>.
- 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-40E1500-D-23	4000	80	960	19.1	2251	18.4	123	E	1116963	https://eprelec.europa.eu/qr/1116963
BXKC-40G1500-D-23	4000	90	830	18.7	1684	15.5	109	F	1117019	https://eprelec.europa.eu/qr/1117019
BXKC-50E1501-D-24	5000	80	960	19.1	2320	18.4	126	E	1117078	https://eprelec.europa.eu/qr/1117078
BXKC-50G1501-D-24	5000	90	880	18.8	1811	16.6	109	F	1117099	https://eprelec.europa.eu/qr/1117099
BXKC-56E1501-D-24	5600	80	960	19.1	2320	18.4	126	E	1118887	https://eprelec.europa.eu/qr/1118887
BXKC-65E1501-D-24	6500	80	960	19.1	2320	18.4	126	E	1117121	https://eprelec.europa.eu/qr/1117121
BXKC-27E2000-C-23	2700	80	680	37.6	2901	25.6	113	F	1116596	https://eprelec.europa.eu/qr/1116596
BXKC-27G2000-C-23	2700	90	410	35.2	1559	14.4	108	F	1116652	https://eprelec.europa.eu/qr/1116652
BXKC-30E2000-C-23	3000	80	720	38.0	3198	27.4	117	F	1116724	https://eprelec.europa.eu/qr/1116724
BXKC-30G2000-C-23	3000	90	470	35.7	1848	16.8	110	F	1116780	https://eprelec.europa.eu/qr/1116780
BXKC-35E2000-C-23	3500	80	720	38.0	3310	27.4	121	E	1116852	https://eprelec.europa.eu/qr/1116852
BXKC-35G2000-C-23	3500	90	520	36.2	2084	18.8	111	F	1116908	https://eprelec.europa.eu/qr/1116908
BXKC-40E2000-C-23	4000	80	720	38.0	3390	27.4	124	E	1116980	https://eprelec.europa.eu/qr/1116980
BXKC-40G2000-C-23	4000	90	550	36.4	2239	20.0	112	F	1117036	https://eprelec.europa.eu/qr/1117036
BXKC-50E2001-C-24	5000	80	720	38.0	3423	27.4	125	E	1117080	https://eprelec.europa.eu/qr/1117080
BXKC-56E2001-C-24	5600	80	720	38.0	3413	27.4	125	E	1118889	https://eprelec.europa.eu/qr/1118889
BXKC-65E2001-C-24	6500	80	720	38.0	3413	27.4	125	E	1117123	https://eprelec.europa.eu/qr/1117123

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-27E1500-B-23	80	50	31.8	1.6	289	268	182
		100	33.0	3.3	566	521	171
		200	35.0	7.0	1079	984	154
		300	36.5	11.0	1544	1394	141
		400	37.9	15.2	1968	1758	130
		600	40.0	24.0	2768	2423	115
BXKC-27G1500-B-23	90	50	31.8	1.6	238	220	150
		100	33.0	3.3	466	429	141
		200	35.0	7.0	888	811	127
		300	36.5	11.0	1271	1148	116
		400	37.9	15.2	1621	1448	107
		600	40.0	24.0	2279	1995	95
BXKC-30E1500-B-23	80	50	31.8	1.6	306	283	192
		100	33.0	3.3	598	551	181
		200	35.0	7.0	1140	1040	163
		300	36.5	11.0	1631	1473	149
		400	37.9	15.2	2080	1857	137
		600	40.0	24.0	2925	2560	122
BXKC-30G1500-B-23	90	50	31.8	1.6	250	231	157
		100	33.0	3.3	489	450	148
		200	35.0	7.0	932	850	133
		300	36.5	11.0	1333	1204	122
		400	37.9	15.2	1700	1518	112
		600	40.0	24.0	2391	2092	100
BXKC-35E1500-B-23	80	50	31.8	1.6	312	288	196
		100	33.0	3.3	610	562	185
		200	35.0	7.0	1162	1060	166
		300	36.5	11.0	1663	1502	152
		400	37.9	15.2	2121	1894	140
		600	40.0	24.0	2982	2610	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-35G1500-B-23	90	50	31.8	1.6	256	237	161
		100	33.0	3.3	502	462	152
		200	35.0	7.0	956	872	137
		300	36.5	11.0	1368	1235	125
		400	37.9	15.2	1744	1558	115
		600	40.0	24.0	2453	2147	102
BXKC-40E1500-B-23	80	50	31.8	1.6	315	291	198
		100	33.0	3.3	615	567	186
		200	35.0	7.0	1173	1070	168
		300	36.5	11.0	1678	1515	153
		400	37.9	15.2	2140	1911	141
		600	40.0	24.0	3009	2634	125
BXKC-40G1500-B-23	90	50	31.8	1.6	265	245	167
		100	33.0	3.3	519	478	157
		200	35.0	7.0	989	902	141
		300	36.5	11.0	1415	1278	129
		400	37.9	15.2	1804	1611	119
		600	40.0	24.0	2537	2221	106
BXKC-50E1501-B-24	80	50	31.8	1.6	324	300	204
		100	33.0	3.3	634	584	192
		200	35.0	7.0	1209	1103	173
		300	36.5	11.0	1730	1562	158
		400	37.9	15.2	2206	1970	146
		600	40.0	24.0	3101	2715	129
BXKC-50G1501-B-24	90	50	31.8	1.6	272	251	171
		100	33.0	3.3	532	490	161
		200	35.0	7.0	1013	924	145
		300	36.5	11.0	1450	1309	132
		400	37.9	15.2	1849	1651	122
		600	40.0	24.0	2599	2275	108
BXKC-56E1501-B-24	80	50	31.8	1.6	324	300	204
		100	33.0	3.3	634	584	192
		200	35.0	7.0	1209	1103	173
		300	36.5	11.0	1730	1562	158
		400	37.9	15.2	2206	1970	146
		600	40.0	24.0	3101	2715	129

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-65E1501-B-24	80	50	31.8	1.6	324	300	204
		100	33.0	3.3	634	584	192
		200	35.0	7.0	1209	1103	173
		300	36.5	11.0	1730	1562	158
		400	37.9	15.2	2206	1970	146
		600	40.0	24.0	3101	2715	129
BXKC-27E1500-D-23	80	100	15.9	1.6	289	268	182
		200	16.5	3.3	566	521	171
		400	17.5	7.0	1079	984	154
		600	18.3	11.0	1544	1394	141
		800	18.9	15.2	1968	1758	130
		1200	20.0	24.0	2768	2423	115
BXKC-27G1500-D-23	90	100	15.9	1.6	238	220	150
		200	16.5	3.3	466	429	141
		400	17.5	7.0	888	811	127
		600	18.3	11.0	1271	1148	116
		800	18.9	15.2	1621	1448	107
		1200	20.0	24.0	2279	1995	95
BXKC-30E1500-D-23	80	100	15.9	1.6	306	283	192
		200	16.5	3.3	598	551	181
		400	17.5	7.0	1140	1040	163
		600	18.3	11.0	1631	1473	149
		800	18.9	15.2	2080	1857	137
		1200	20.0	24.0	2925	2560	122
BXKC-30G1500-D-23	90	100	15.9	1.6	250	231	157
		200	16.5	3.3	489	450	148
		400	17.5	7.0	932	850	133
		600	18.3	11.0	1333	1204	122
		800	18.9	15.2	1700	1518	112
		1200	20.0	24.0	2391	2092	100
BXKC-35E1500-D-23	80	100	15.9	1.6	312	288	196
		200	16.5	3.3	610	562	185
		400	17.5	7.0	1162	1060	166
		600	18.3	11.0	1663	1502	152
		800	18.9	15.2	2121	1894	140
		1200	20.0	24.0	2982	2610	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-35G1500-D-23	90	100	15.9	1.6	256	237	161
		200	16.5	3.3	502	462	152
		400	17.5	7.0	956	872	137
		600	18.3	11.0	1368	1235	125
		800	18.9	15.2	1744	1558	115
		1200	20.0	24.0	2453	2147	102
BXKC-40E1500-D-23	80	100	15.9	1.6	315	291	198
		200	16.5	3.3	615	567	186
		400	17.5	7.0	1173	1070	168
		600	18.3	11.0	1678	1515	153
		800	18.9	15.2	2140	1911	141
		1200	20.0	24.0	3009	2634	125
BXKC-40G1500-D-23	90	100	15.9	1.6	265	245	167
		200	16.5	3.3	519	478	157
		400	17.5	7.0	989	902	141
		600	18.3	11.0	1415	1278	129
		800	18.9	15.2	1804	1611	119
		1200	20.0	24.0	2537	2221	106
BXKC-50E1501-D-24	80	100	15.9	1.6	324	300	204
		200	16.5	3.3	634	584	192
		400	17.5	7.0	1209	1103	173
		600	18.3	11.0	1730	1562	158
		800	18.9	15.2	2206	1970	146
		1200	20.0	24.0	3101	2715	129
BXKC-50G1501-D-24	90	100	15.9	1.6	272	251	171
		200	16.5	3.3	532	490	161
		400	17.5	7.0	1013	924	145
		600	18.3	11.0	1450	1309	132
		800	18.9	15.2	1849	1651	122
		1200	20.0	24.0	2599	2275	108
BXKC-56E1501-D-24	80	100	15.9	1.6	324	300	204
		200	16.5	3.3	634	584	192
		400	17.5	7.0	1209	1103	173
		600	18.3	11.0	1730	1562	158
		800	18.9	15.2	2206	1970	146
		1200	20.0	24.0	3101	2715	129

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-65E1501-D-24	80	100	15.9	1.6	324	300	204
		200	16.5	3.3	634	584	192
		400	17.5	7.0	1209	1103	173
		600	18.3	11.0	1730	1562	158
		800	18.9	15.2	2206	1970	146
		1200	20.0	24.0	3101	2715	129
BXKC-27E2000-C-23	80	90	31.8	2.9	509	466	178
		180	33.2	6.0	993	904	166
		350	35.3	12.4	1825	1643	148
		450	36.3	16.3	2273	2031	139
		700	38.3	26.8	3302	2899	123
		900	39.7	35.7	4079	3535	114
BXKC-27G2000-C-23	91	90	31.8	2.9	420	385	147
		180	33.2	6.0	820	746	137
		350	35.3	12.4	1506	1355	122
		450	36.3	16.3	1875	1676	115
		700	38.3	26.8	2724	2392	102
		900	39.7	35.7	3365	2916	94
BXKC-30E2000-C-23	80	90	31.8	2.9	536	491	187
		180	33.2	6.0	1046	952	175
		350	35.3	12.4	1921	1729	156
		450	36.3	16.3	2393	2138	146
		700	38.3	26.8	3476	3052	130
		900	39.7	35.7	4294	3721	120
BXKC-30G2000-C-23	91	90	31.8	2.9	442	405	154
		180	33.2	6.0	863	785	144
		350	35.3	12.4	1585	1427	128
		450	36.3	16.3	1974	1764	121
		700	38.3	26.8	2868	2518	107
		900	39.7	35.7	3543	3070	99
BXKC-35E2000-C-23	80	90	31.8	2.9	555	508	194
		180	33.2	6.0	1082	985	181
		350	35.3	12.4	1988	1790	161
		450	36.3	16.3	2476	2213	152
		700	38.3	26.8	3598	3159	134
		900	39.7	35.7	4444	3851	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-35G2000-C-23	90	90	31.8	2.9	458	419	160
		180	33.2	6.0	893	813	149
		350	35.3	12.4	1640	1476	133
		450	36.3	16.3	2043	1826	125
		700	38.3	26.8	2968	2606	111
		900	39.7	35.7	3667	3177	103
BXKC-40E2000-C-23	80	90	31.8	2.9	568	520	198
		180	33.2	6.0	1109	1009	186
		350	35.3	12.4	2036	1833	165
		450	36.3	16.3	2536	2267	155
		700	38.3	26.8	3685	3235	137
		900	39.7	35.7	4552	3944	127
BXKC-40G2000-C-23	90	90	31.8	2.9	469	429	164
		180	33.2	6.0	915	833	153
		350	35.3	12.4	1680	1512	136
		450	36.3	16.3	2092	1870	128
		700	38.3	26.8	3040	2669	113
		900	39.7	35.7	3755	3254	105
BXKC-50E2001-C-24	80	90	31.8	2.9	574	525	200
		180	33.2	6.0	1119	1019	187
		350	35.3	12.4	2056	1850	166
		450	36.3	16.3	2560	2288	157
		700	38.3	26.8	3719	3266	139
		900	39.7	35.7	4595	3981	129
BXKC-50G2001-C-24	90	90	31.8	2.9	473	433	165
		180	33.2	6.0	923	840	154
		350	35.3	12.4	1696	1526	137
		450	36.3	16.3	2112	1888	129
		700	38.3	26.8	3069	2694	114
		900	39.7	35.7	3791	3284	106
BXKC-56E2001-C-24	80	90	31.8	2.9	572	523	200
		180	33.2	6.0	1116	1016	187
		350	35.3	12.4	2050	1845	166
		450	36.3	16.3	2553	2282	156
		700	38.3	26.8	3709	3256	138
		900	39.7	35.7	4582	3970	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-65E2001-C-24	80	90	31.8	2.9	572	523	200
		180	33.2	6.0	1116	1016	187
		350	35.3	12.4	2050	1845	166
		450	36.3	16.3	2553	2282	156
		700	38.3	26.8	3709	3256	138
		900	39.7	35.7	4582	3970	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.

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-xxx150x-B-2x	200	31.5	35.0	38.2	-13.5	0.66	30.7	39.1
BXKC-xxx150x-D-2x	400	15.75	17.5	19.1	-6.75	0.66	15.4	19.5
BXKC-xxx200x-C-2x	350	31.77	35.3	38.5	-14.2	0.48	30.9	39.4

Notes for Table 5:

- Parts are tested in pulsed conditions, Tc = 25°C. Pulse width is 10ms.
- Voltage minimum and maximum are provided for reference only and are not a guarantee of performance.
- Bridgelux maintains a tester tolerance of ± 0.10V on forward voltage measurements.
- Typical coefficient of forward voltage tolerance is ± 0.1mV for nominal current.
- Thermal resistance values are based from test data of a 3000K 80 CRI product.
- 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.
- 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 (Tj)	125°C		
Storage Temperature	-40°C to +105°C		
Operating Case Temperature ¹ (Tc)	105°C		
Soldering Temperature ²	300°C ≤3.5sec		
	BXKC-xxx150x-B-2x	BXKC-xxx150x-D-2x	BXKC-xxx200x-C-2x
Maximum Drive Current ³	600 mA	1200 mA	900 mA
Maximum Reverse Voltage	-60 V	-30 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: E8B Forward Voltage vs. Forward Current

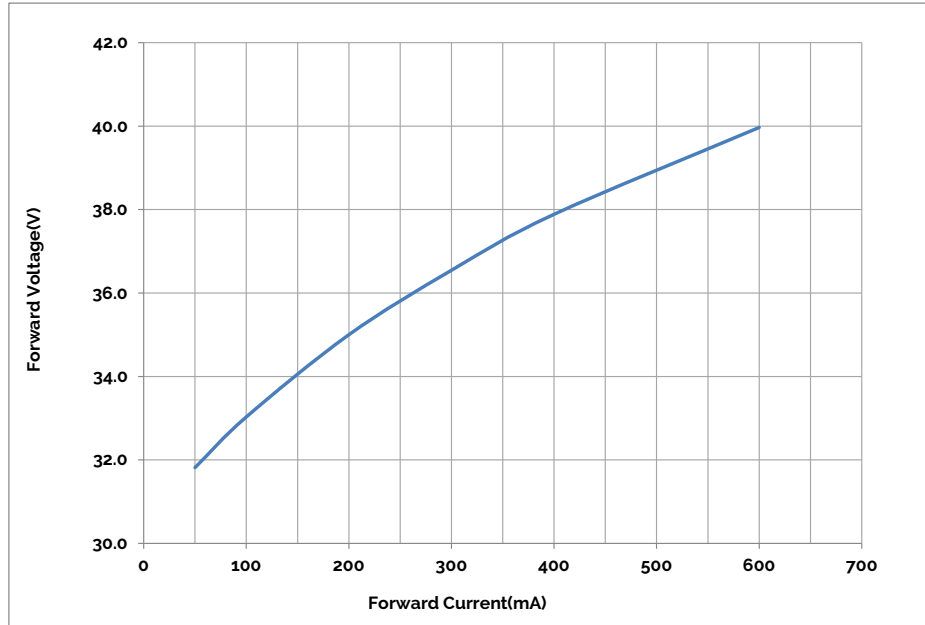
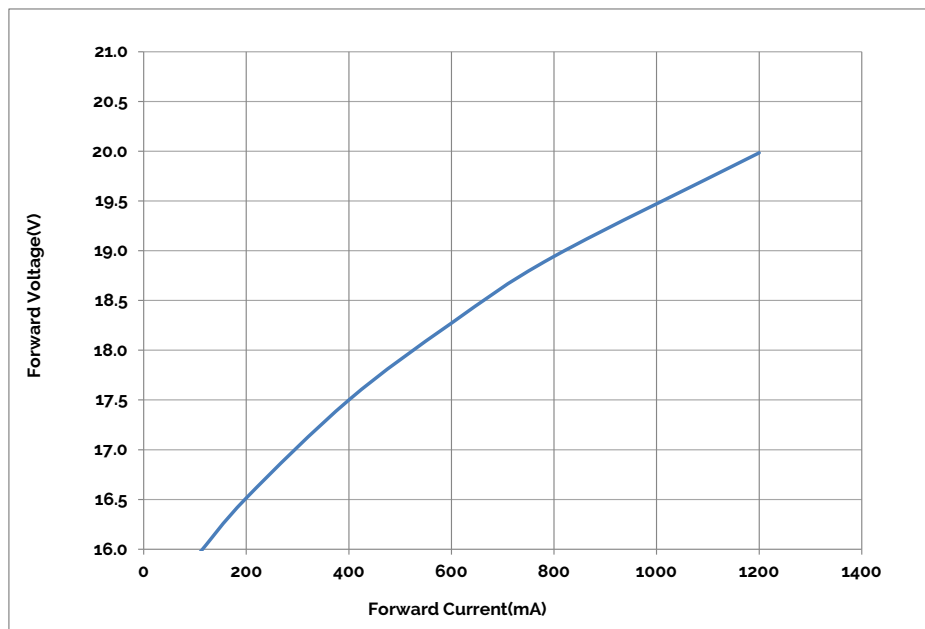


Figure 2: E8D Forward Voltage vs. Forward Current



Notes for Figure1 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: E8C Forward Voltage vs. Forward Current

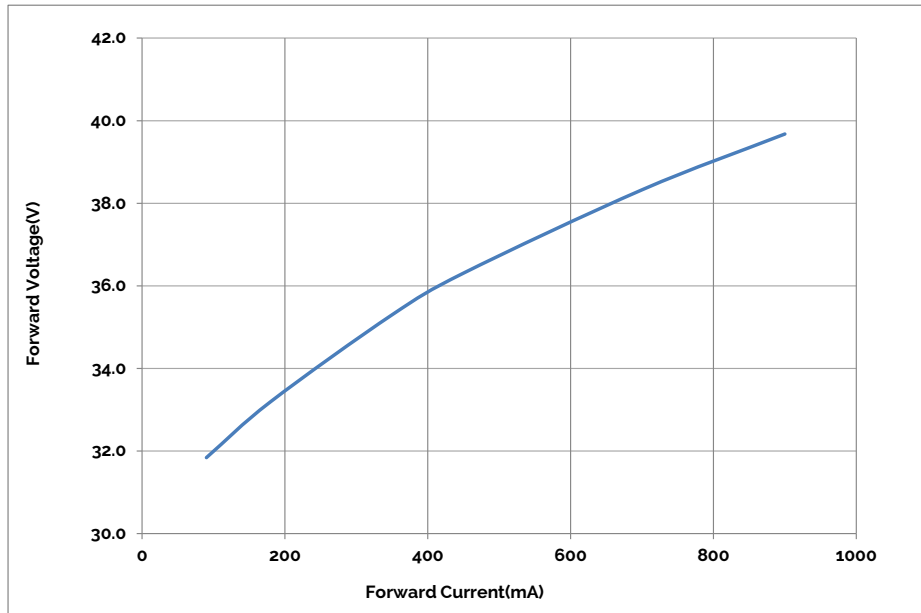
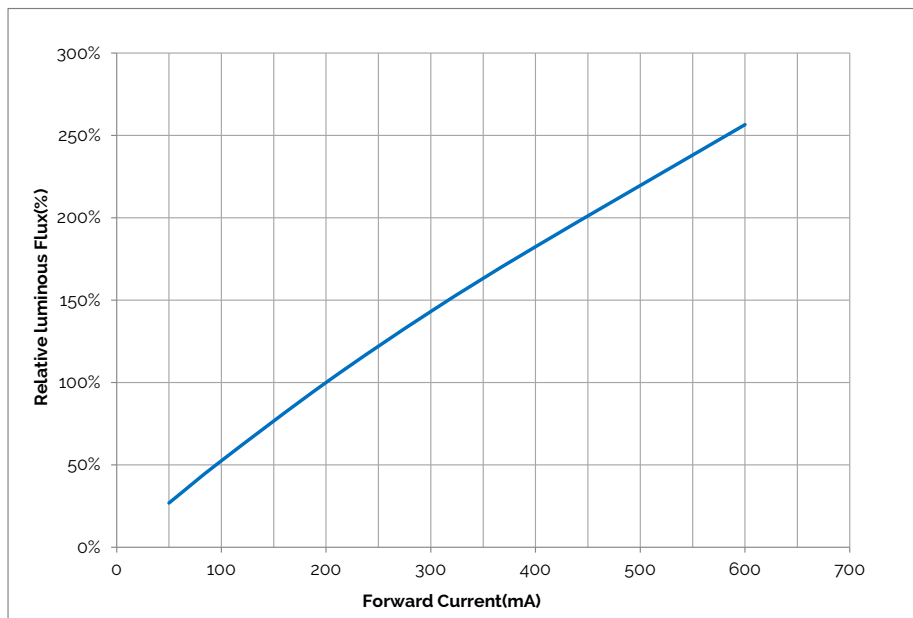


Figure 4: E8B Relative Luminous Flux vs. Drive Current



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: E8D Relative Luminous Flux vs. Drive Current

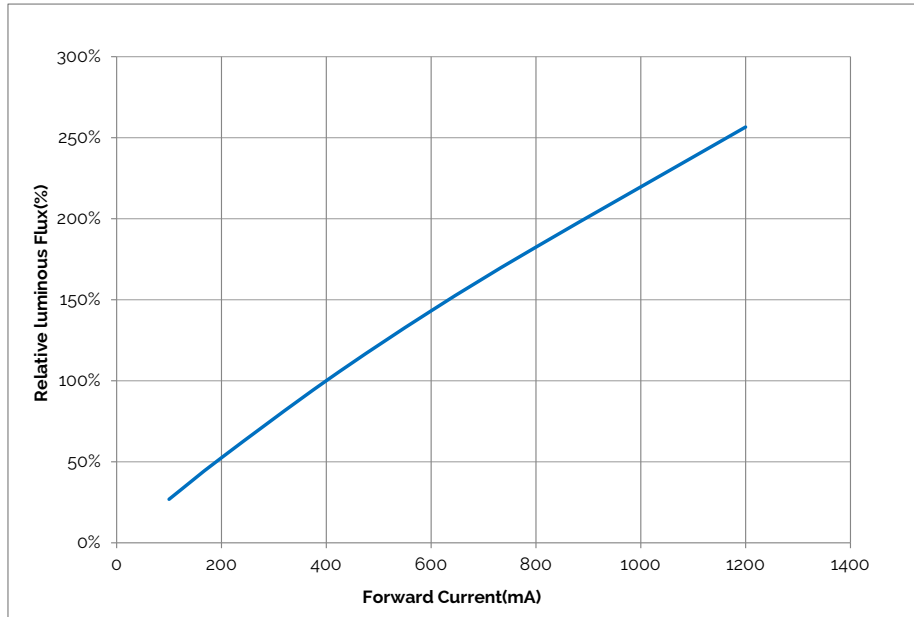
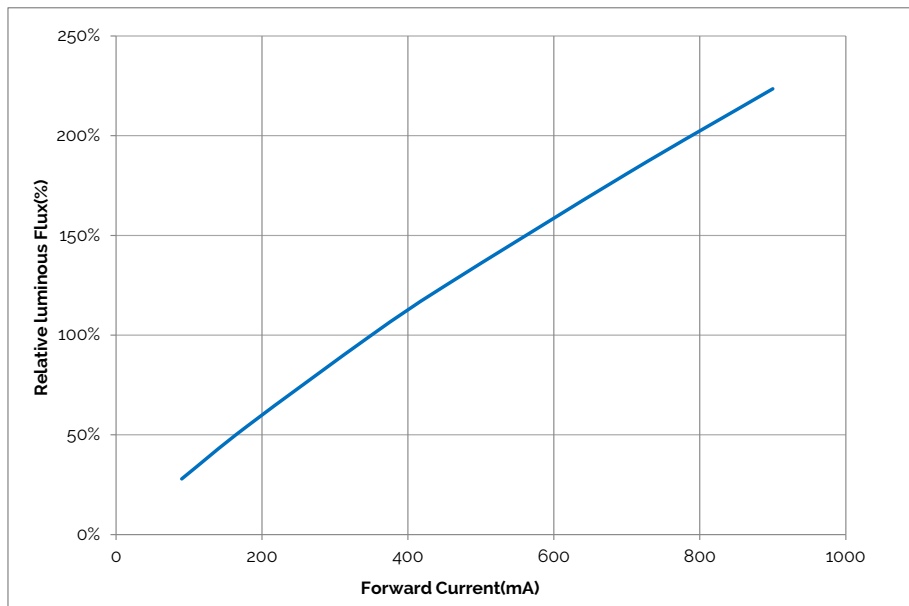


Figure 6: E8C Relative Luminous Flux vs. Drive Current



Notes for Figure 5 and Figure 6:

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 7: Relative Luminous Flux vs. Case Temperature

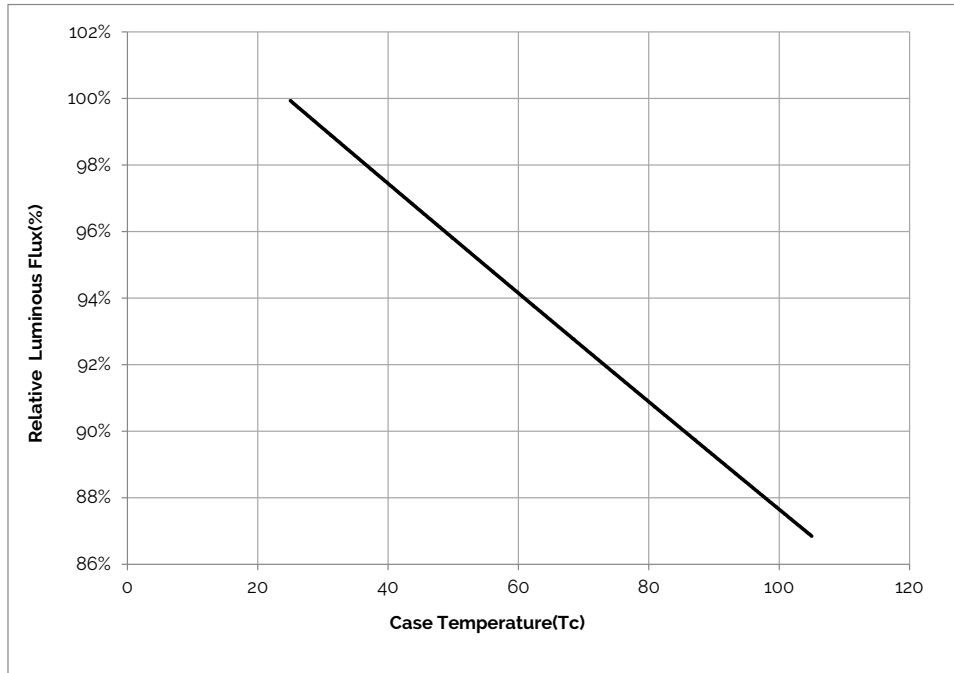
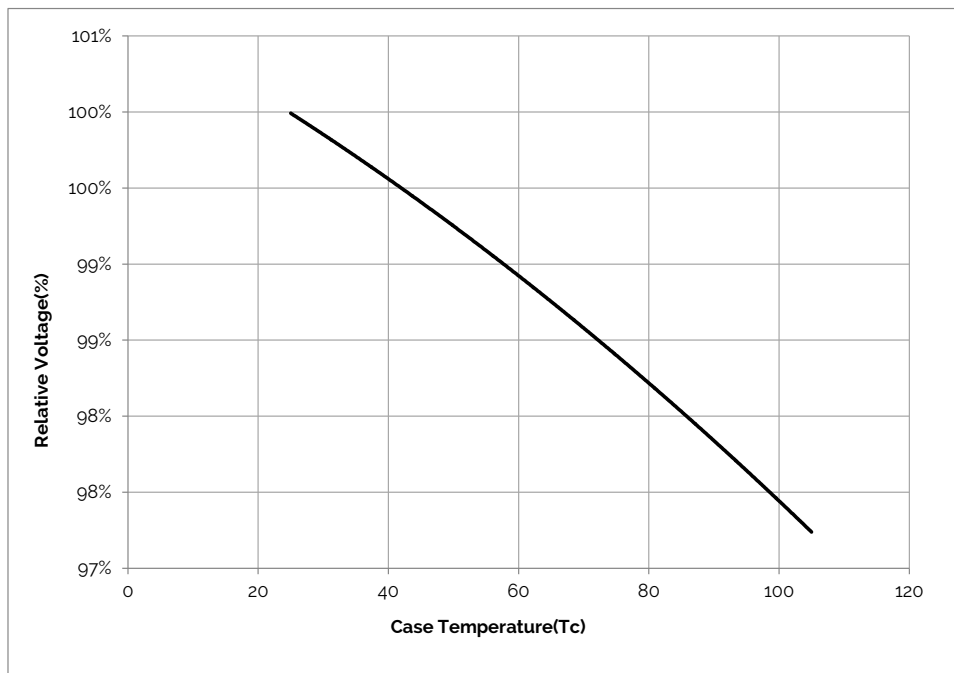


Figure 8: Relative Voltage vs. Case Temperature



Notes for Figure 7 and Figure8:

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 9: Typical DC ccx Shift vs. Case Temperature

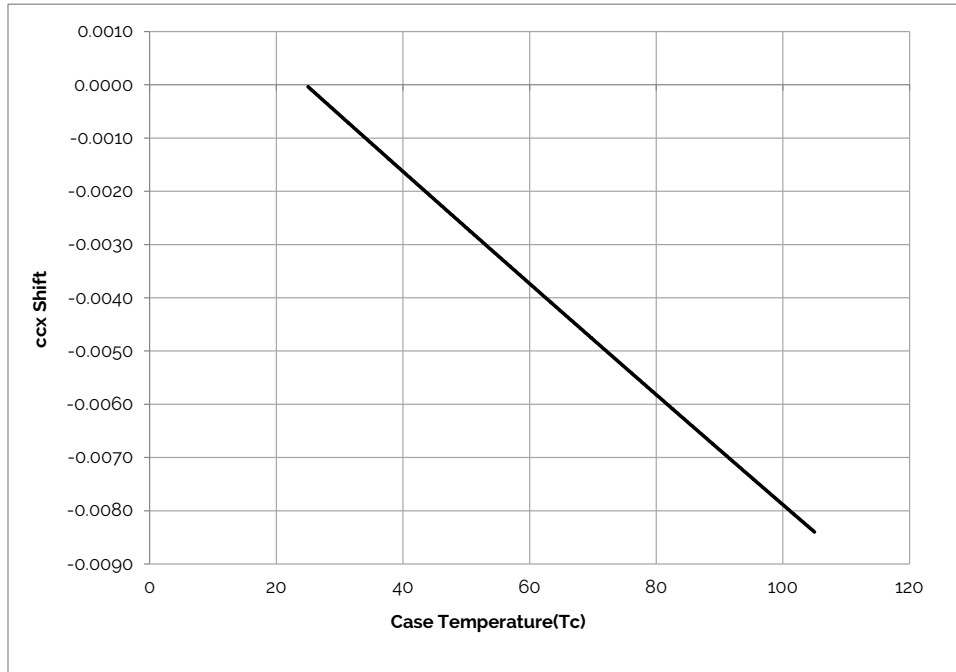
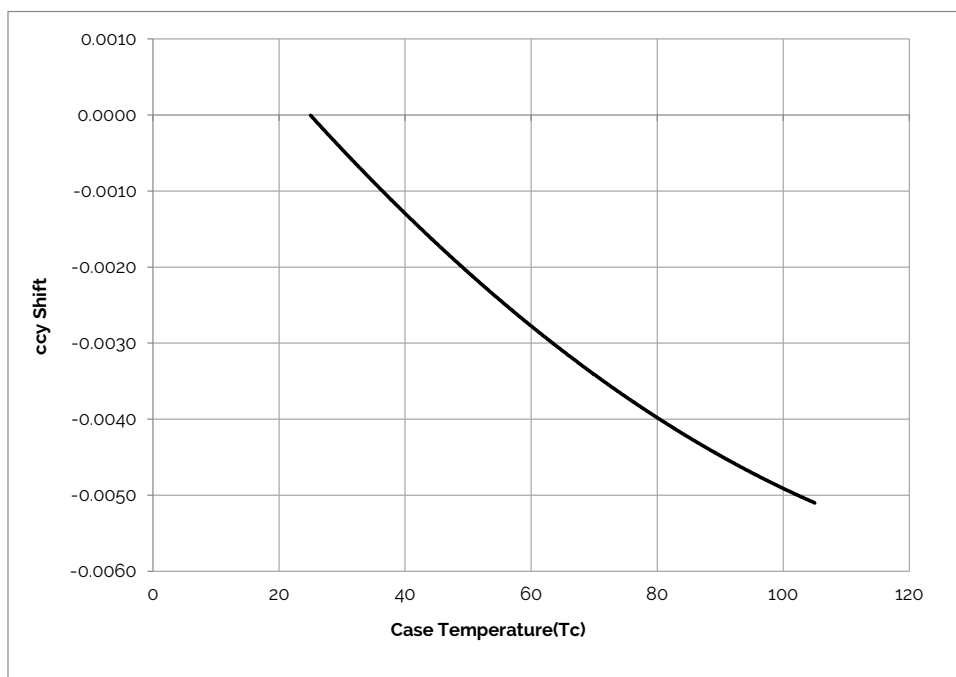


Figure 10: Typical DC ccy Shift vs. Case Temperature

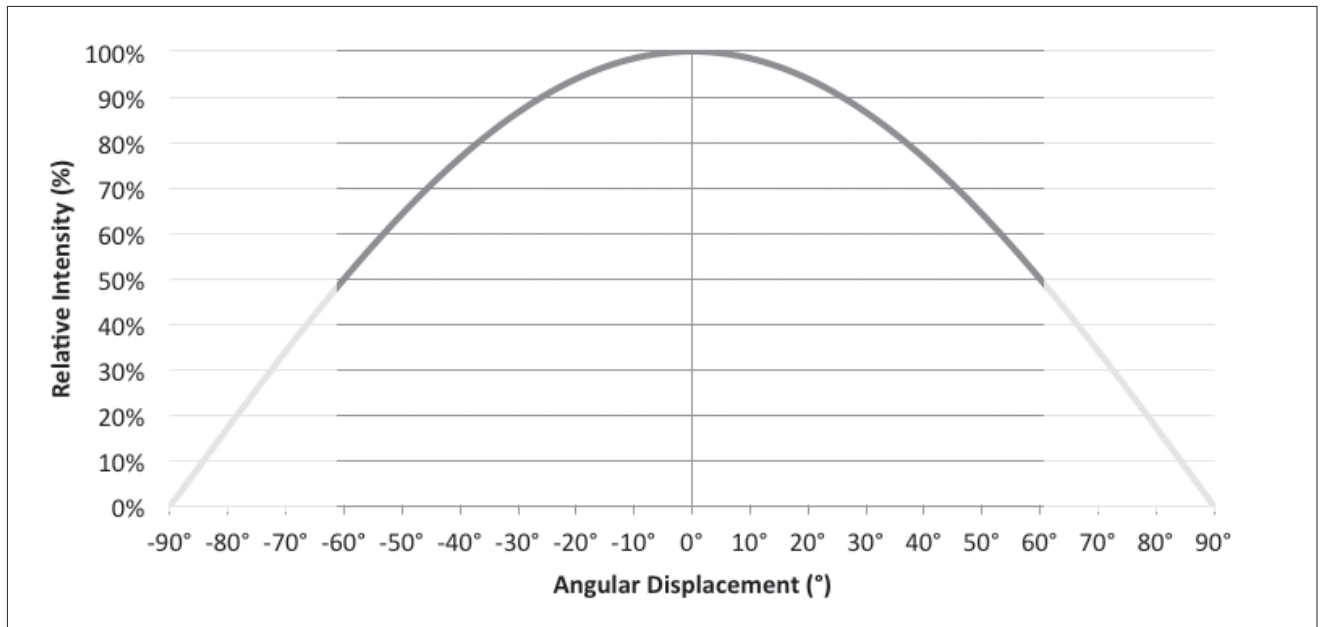


Notes for Figure 9 and Figure 10:

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

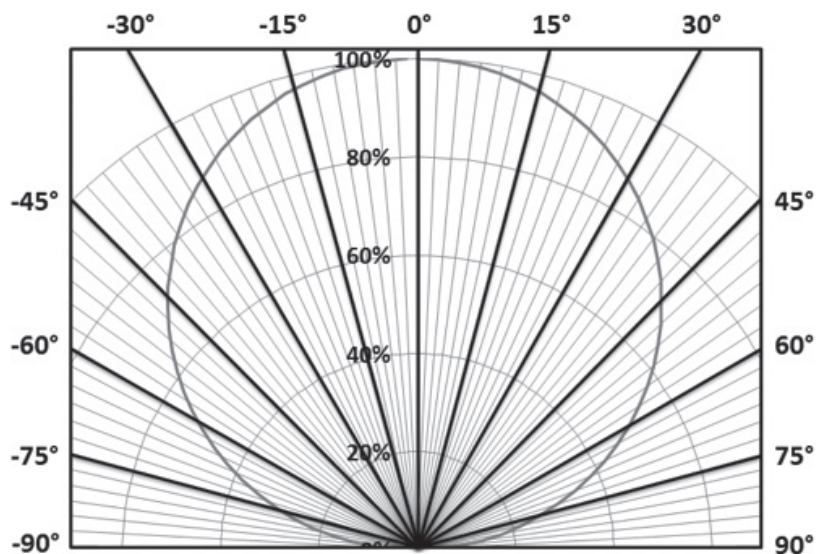
Figure 11: Typical Spatial Radiation Pattern



Notes for Figure 11:

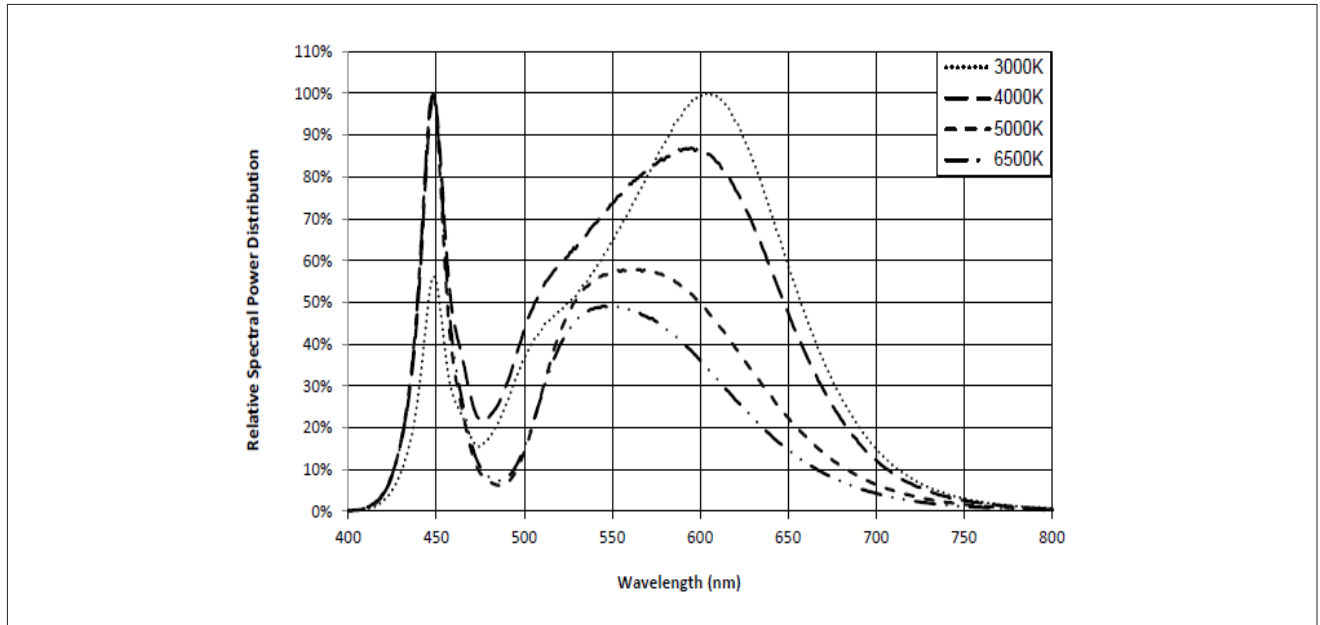
1. Typical viewing angle is 120°.
2. The viewing angle is defined as the off axis angle from the centerline where intensity is ½ of the peak value.

Figure 12: Typical Polar Radiation Pattern



Typical Color Spectrum

Figure 13: Typical Color Spectrum



Notes for Figure 13:

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 14: E8B Drive Current Derating Curve

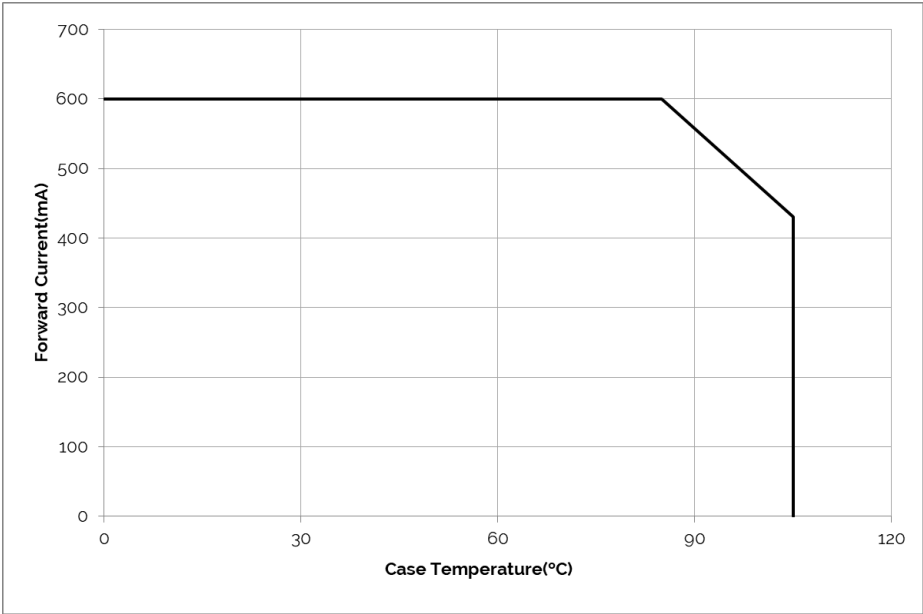
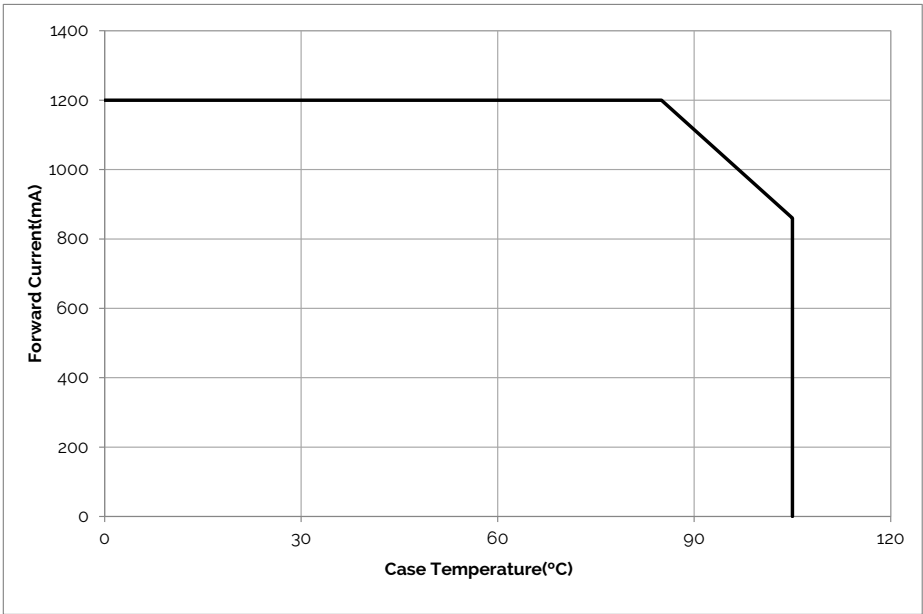
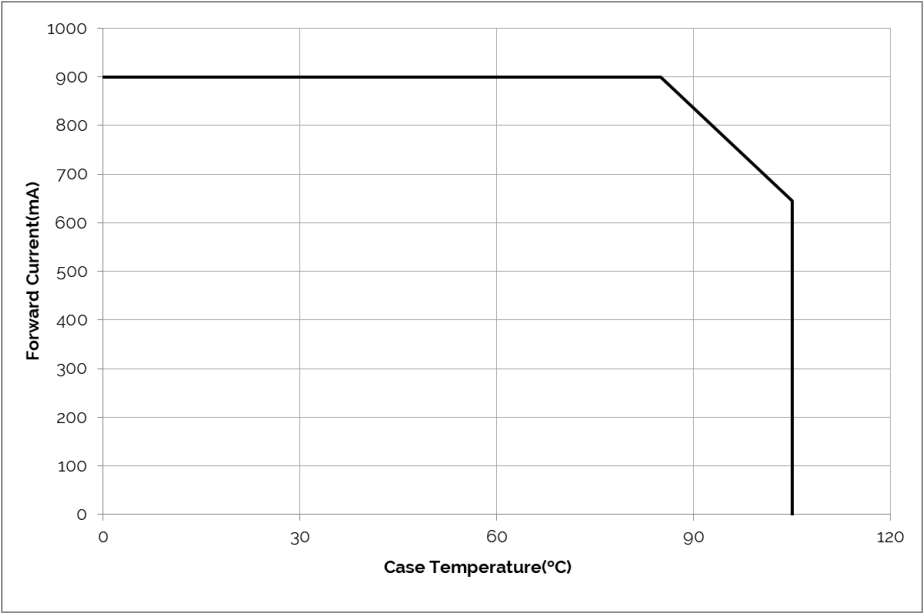


Figure 15: E8D Drive Current Derating Curve



Drive Current Derating Curve

Figure 16: E8C Drive Current Derating Curve



Color Binning Information

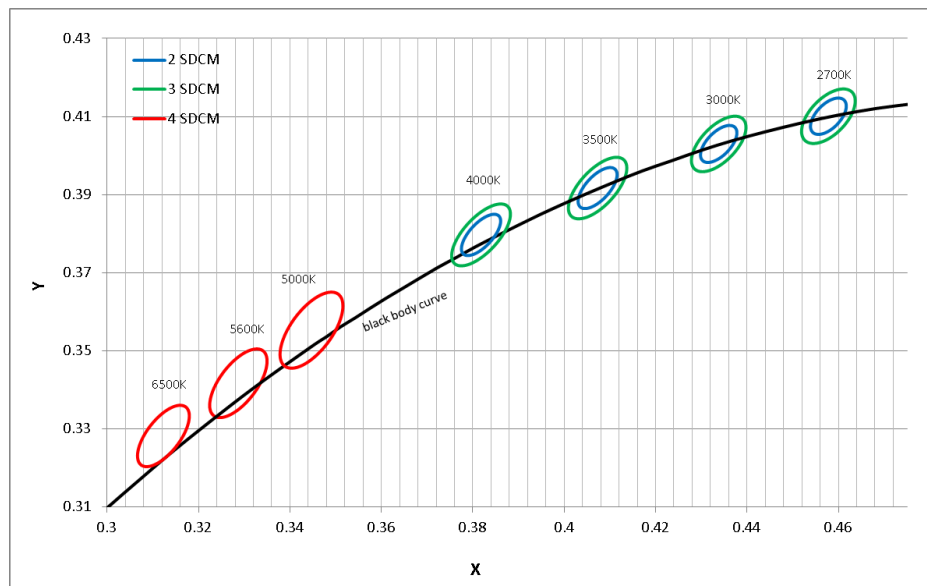
Table 7: xy Bin Coordinates and Associated Typical CCT

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:

1. 2700K \3000K\3500K\4000K product is cold targeted to $T_c = 25^{\circ}\text{C}$
2. 5000K \5600K\6500K product is hot targeted to $T_c = 85^{\circ}\text{C}$

Figure 14: Graph of Test Bins in xy Color Space

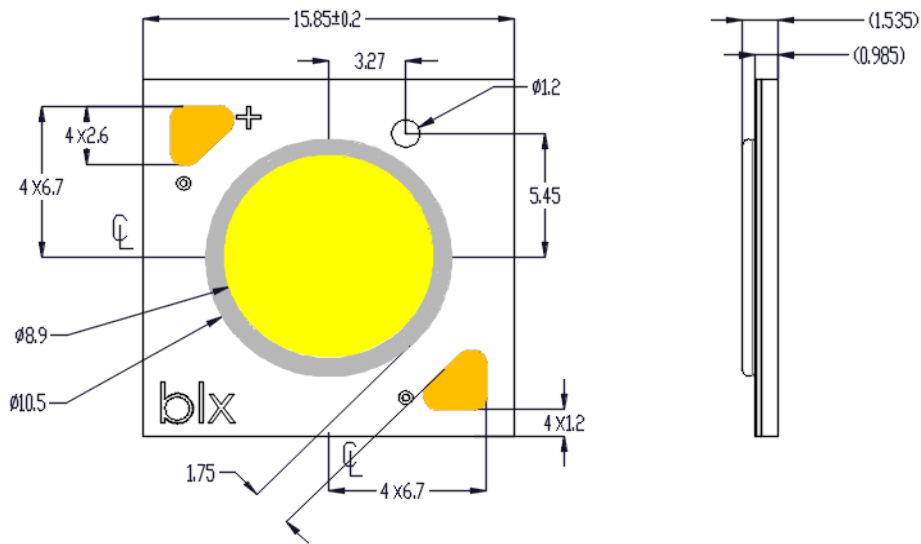


Notes for Figure 14:

1. 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 E8 CA LED Array

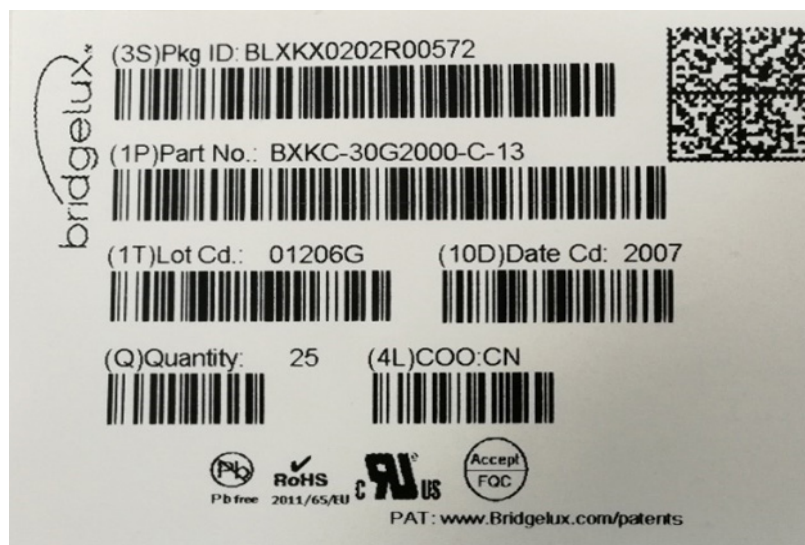


Notes for Figure 15:

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.

30E1501B 23 — Customer Use- Product part number

Design Resources

LM80

LM80 testing has been completed and the LM80 report is now available. 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.

For more information about the company, please visit
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