



# Bridgelux® E Series E6 CA LED Array

Product Data Sheet DS335

# Introduction

E Series



The Bridgelux E Series LED array products deliver high quality light in a compact and 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 E6 CA 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 E6 CA is available in a variety of electrical, CCT and CRI combinations providing substantial design flexibility and energy efficiencies.

Typical applications include replacement lamps, 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 secondary 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



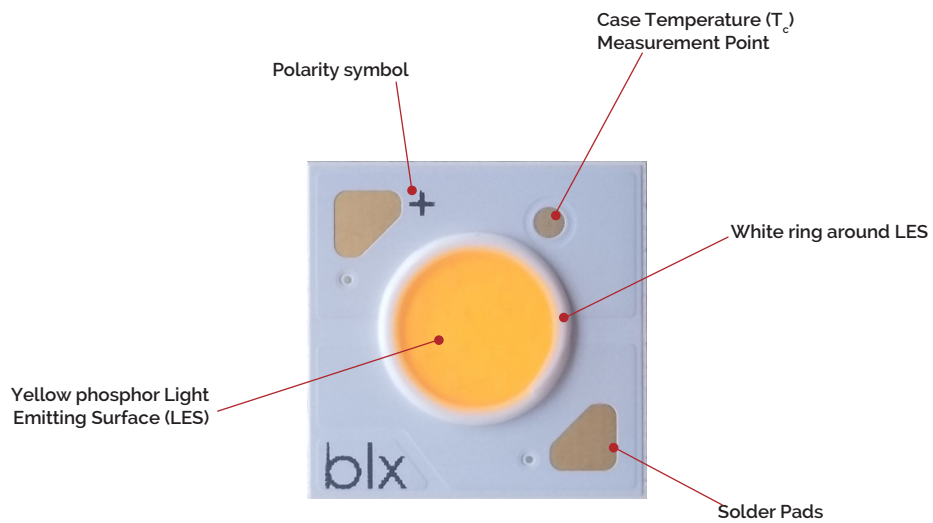
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# Product Feature Map

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

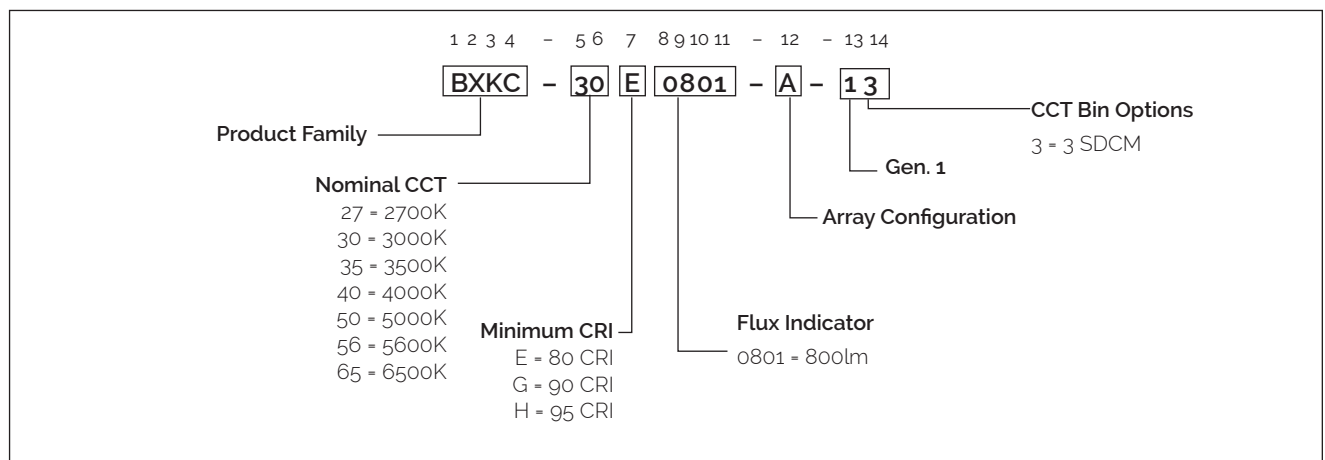
The arrays incorporate several features to simplify design integration and assembly.



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 <sup>1</sup> (K)	Typical CRI	Nominal Drive Current (mA)	Typical Pulsed Flux <sup>2,3,4</sup> Tc = 25°C (lm)	Minimum Pulsed Flux <sup>2,4,5</sup> Tc = 25°C (lm)	Typical Vf (V)	Typical Power (W)	Typical Efficacy (lm/W)
BXKC-27E0801-A-13	2700	82	100	502	437	35.5	3.6	141
BXKC-27G0801-A-13	2700	92	100	412	358	35.5	3.6	116
BXKC-27H0801-A-13	2700	96	100	400	348	35.5	3.6	113
BXKC-30E0801-A-13	3000	82	100	530	461	35.5	3.6	149
BXKC-30G0801-A-13	3000	92	100	432	376	35.5	3.6	122
BXKC-30H0801-A-13	3000	96	100	410	357	35.5	3.6	115
BXKC-35E0801-A-13	3500	82	100	542	472	35.5	3.6	153
BXKC-35G0801-A-13	3500	92	100	443	385	35.5	3.6	125
BXKC-35H0801-A-13	3500	96	100	435	378	35.5	3.6	123
BXKC-40E0801-A-13	4000	82	100	547	476	35.5	3.6	154
BXKC-40G0801-A-13	4000	92	100	459	399	35.5	3.6	129
BXKC-40H0801-A-13	4000	96	100	445	387	35.5	3.6	125
BXKC-50E0801-A-14	5000	81.5	100	563	490	35.5	3.6	159
BXKC-50G0801-A-14	5000	91	100	470	409	35.5	3.6	132
BXKC-56E0801-A-14	5600	81.5	100	563	490	35.5	3.6	159
BXKC-65E0801-A-14	6500	81.5	100	563	490	35.5	3.6	159
BXKC-27E0801-B-13	2700	82	200	502	437	17.8	3.6	141
BXKC-27G0801-B-13	2700	92	200	412	358	17.8	3.6	116
BXKC-27H0801-B-13	2700	96	200	400	348	17.8	3.6	112
BXKC-30E0801-B-13	3000	82	200	530	461	17.8	3.6	149
BXKC-30G0801-B-13	3000	92	200	432	376	17.8	3.6	122
BXKC-30H0801-B-13	3000	96	200	410	357	17.8	3.6	115
BXKC-35E0801-B-13	3500	82	200	542	472	17.8	3.6	153
BXKC-35G0801-B-13	3500	92	200	443	385	17.8	3.6	125
BXKC-35H0801-B-13	3500	96	200	435	378	17.8	3.6	122
BXKC-40E0801-B-13	4000	82	200	547	476	17.8	3.6	154
BXKC-40G0801-B-13	4000	92	200	459	399	17.8	3.6	129
BXKC-40H0801-B-13	4000	96	200	445	387	17.8	3.6	125
BXKC-50E0801-B-14	5000	81.5	200	563	490	17.8	3.6	159
BXKC-50G0801-B-14	5000	91	200	470	409	17.8	3.6	132
BXKC-56E0801-B-14	5600	81.5	200	563	490	17.8	3.6	159

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

Part Number	Nominal CCT <sup>1</sup> (K)	Typical CRI	Nominal Drive Current (mA)	Typical Pulsed Flux <sup>2,3,4</sup> Tc = 25°C (lm)	Minimum Pulsed Flux <sup>2,4,5</sup> Tc = 25°C (lm)	Typical Vf (V)	Typical Power (W)	Typical Efficacy (lm/W)
BXKC-65E0801-B-14	6500	81.5	200	563	490	17.8	3.6	159
BXKC-27E0801-D-13	2700	82	400	502	437	8.9	3.6	141
BXKC-27G0801-D-13	2700	92	400	412	358	8.9	3.6	116
BXKC-30E0801-D-13	3000	82	400	530	461	8.9	3.6	149
BXKC-30G0801-D-13	3000	92	400	432	376	8.9	3.6	122
BXKC-35E0801-D-13	3500	82	400	542	472	8.9	3.6	153
BXKC-35G0801-D-13	3500	92	400	443	385	8.9	3.6	125
BXKC-40E0801-D-13	4000	82	400	547	476	8.9	3.6	154
BXKC-40G0801-D-13	4000	92	400	459	399	8.9	3.6	129
BXKC-50E0801-D-14	5000	81.5	400	563	490	8.9	3.6	159
BXKC-50G0801-D-14	5000	91	400	470	409	8.9	3.6	132
BXKC-56E0801-D-14	5600	81.5	400	563	490	8.9	3.6	159
BXKC-65E0801-D-14	6500	81.5	400	563	490	8.9	3.6	159

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 <sup>1</sup> (K)	Minimum CRI	Typical CRI	Nominal Drive Current (mA)	Typical DC Flux <sup>2,3</sup> Tc = 85°C (lm)	Minimum DC Flux <sup>4</sup> Tc = 85°C (lm)	Typical Vf (V)	Typical Power (W)	Typical Efficacy (lm/W)
BXKC-27E0801-A-13	2700	80	82	100	445	387	34.9	3.5	128
BXKC-27G0801-A-13	2700	90	92	100	365	318	34.9	3.5	105
BXKC-27H0801-A-13	2700	95	96	100	355	309	34.9	3.5	102
BXKC-30E0801-A-13	3000	80	82	100	470	409	34.9	3.5	135
BXKC-30G0801-A-13	3000	90	92	100	383	333	34.9	3.5	110
BXKC-30H0801-A-13	3000	95	96	100	363	316	34.9	3.5	104
BXKC-35E0801-A-13	3500	80	82	100	481	418	34.9	3.5	138
BXKC-35G0801-A-13	3500	90	92	100	393	342	34.9	3.5	113
BXKC-35H0801-A-13	3500	95	96	100	386	336	34.9	3.5	111
BXKC-40E0801-A-13	4000	80	82	100	485	422	34.9	3.5	139
BXKC-40G0801-A-13	4000	90	92	100	407	354	34.9	3.5	117
BXKC-40H0801-A-13	4000	95	96	100	395	343	34.9	3.5	113
BXKC-50E0801-A-14	5000	80	81.5	100	499	434	34.9	3.5	143
BXKC-50G0801-A-14	5000	90	91	100	417	363	34.9	3.5	120
BXKC-56E0801-A-14	5600	80	81.5	100	499	434	34.9	3.5	143
BXKC-65E0801-A-14	6500	80	81.5	100	499	434	34.9	3.5	143
BXKC-27E0801-B-13	2700	80	82	200	445	387	17.4	3.5	128
BXKC-27G0801-B-13	2700	90	92	200	365	318	17.4	3.5	105
BXKC-27H0801-B-13	2700	95	96	200	355	309	17.5	3.5	101
BXKC-30E0801-B-13	3000	80	82	200	470	409	17.4	3.5	135
BXKC-30G0801-B-13	3000	90	92	200	383	333	17.4	3.5	110
BXKC-30H0801-B-13	3000	95	96	200	363	316	17.5	3.5	104
BXKC-35E0801-B-13	3500	80	82	200	481	418	17.4	3.5	138
BXKC-35G0801-B-13	3500	90	92	200	393	342	17.4	3.5	113
BXKC-35H0801-B-13	3500	95	96	200	386	336	17.5	3.5	110
BXKC-40E0801-B-13	4000	80	82	200	485	422	17.4	3.5	139
BXKC-40G0801-B-13	4000	90	92	200	407	354	17.4	3.5	117
BXKC-40H0801-B-13	4000	95	96	200	395	343	17.5	3.5	113
BXKC-50E0801-B-14	5000	80	81.5	200	499	434	17.4	3.5	143
BXKC-50G0801-B-14	5000	90	91	200	417	363	17.4	3.5	120
BXKC-56E0801-B-14	5600	80	81.5	200	499	434	17.4	3.5	143

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.

# Product Selection Guide

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

Part Number	Nominal CCT <sup>1</sup> (K)	Minimum CRI	Typical CRI	Nominal Drive Current (mA)	Typical DC Flux <sup>2,3</sup> Tc = 85°C (lm)	Minimum DC Flux <sup>4</sup> Tc = 85°C (lm)	Typical Vf (V)	Typical Power (W)	Typical Efficacy (lm/W)
BXKC-65E0801-B-14	6500	80	81.5	200	499	434	17.4	3.5	143
BXKC-27E0801-D-13	2700	80	82	400	445	387	8.7	3.5	128
BXKC-27G0801-D-13	2700	90	92	400	365	318	8.7	3.5	105
BXKC-30E0801-D-13	3000	80	82	400	470	409	8.7	3.5	135
BXKC-30G0801-D-13	3000	90	92	400	383	333	8.7	3.5	110
BXKC-35E0801-D-13	3500	80	82	400	481	418	8.7	3.5	138
BXKC-35G0801-D-13	3500	90	92	400	393	342	8.7	3.5	113
BXKC-40E0801-D-13	4000	80	82	400	485	422	8.7	3.5	139
BXKC-40G0801-D-13	4000	90	92	400	407	354	8.7	3.5	117
BXKC-50E0801-D-14	5000	80	81.5	400	499	434	8.7	3.5	143
BXKC-50G0801-D-14	5000	90	91	400	417	363	8.7	3.5	120
BXKC-56E0801-D-14	5600	80	81.5	400	499	434	8.7	3.5	143
BXKC-65E0801-D-14	6500	80	81.5	400	499	434	8.7	3.5	143

Notes for Table 2:

1. Nominal CCT as defined by ANSI C78.377-2011.
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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.



# 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, 2 and 3 and the flux vs. current characteristics shown in Figures 4, 5 and 6. The performance at commonly used drive currents is summarized in Table 3.

**Table 3:** Product Performance at Commonly Used Drive Currents

Part Number	Minimum CRI	Drive Current <sup>1</sup> (mA)	Typical Vf Tc = 25°C (V)	Typical Power <sup>2</sup> Tc = 25°C (W)	Typical Pulsed Flux <sup>2</sup> Tc = 25°C (lm)	Typical DC Flux <sup>2</sup> Tc = 85°C (lm)	Typical Efficacy <sup>2</sup> Tc = 25°C (lm/W)
BXKC-27E0801-A-13	80	25	31.6	0.8	137	127	173
		50	33.1	1.7	268	243	162
		<b>100</b>	<b>35.5</b>	<b>3.6</b>	<b>502</b>	<b>445</b>	<b>141</b>
		150	37.7	5.7	712	619	126
		200	39.8	8.0	892	767	112
		240	41.4	9.9	1026	866	103
BXKC-27G0801-A-13	90	25	31.6	0.8	112	104	142
		50	33.1	1.7	220	199	133
		<b>100</b>	<b>35.5</b>	<b>3.6</b>	<b>412</b>	<b>365</b>	<b>116</b>
		150	37.7	5.7	584	508	103
		200	39.8	8.0	732	630	92
		240	41.4	9.9	842	711	85
BXKC-27H0801-A-13	95	25	31.6	0.8	109	101	138
		50	33.1	1.7	213	193	129
		<b>100</b>	<b>35.5</b>	<b>3.6</b>	<b>400</b>	<b>355</b>	<b>113</b>
		150	37.7	5.7	567	493	100
		200	39.8	8.0	711	611	89
		240	41.4	9.9	817	690	82
BXKC-30E0801-A-13	80	25	31.6	0.8	144	134	183
		50	33.1	1.7	282	256	171
		<b>100</b>	<b>35.5</b>	<b>3.6</b>	<b>530</b>	<b>470</b>	<b>149</b>
		150	37.7	5.7	752	654	133
		200	39.8	8.0	941	810	118
		240	41.4	9.9	1083	915	109
BXKC-30G0801-A-13	90	25	31.6	0.8	118	109	149
		50	33.1	1.7	230	209	139
		<b>100</b>	<b>35.5</b>	<b>3.6</b>	<b>432</b>	<b>383</b>	<b>122</b>
		150	37.7	5.7	613	533	108
		200	39.8	8.0	767	660	96
		240	41.4	9.9	883	746	89

Notes for Table 3:

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 3:** Product Performance at Commonly Used Drive Currents

Part Number	Minimum CRI	Drive Current <sup>1</sup> (mA)	Typical Vf Tc = 25°C (V)	Typical Power <sup>2</sup> Tc = 25°C (W)	Typical Pulsed Flux <sup>2</sup> Tc = 25°C (lm)	Typical DC Flux <sup>2</sup> Tc = 85°C (lm)	Typical Efficacy <sup>2</sup> Tc = 25°C (lm/W)
BXKC-30H0801-A-13	95	25	31.6	0.8	112	103	141
		50	33.1	1.7	219	198	132
		<b>100</b>	<b>35.5</b>	<b>3.6</b>	<b>410</b>	<b>363</b>	<b>115</b>
		150	37.7	5.7	582	506	103
		200	39.8	8.0	728	627	91
		240	41.4	9.9	838	708	84
BXKC-35E0801-A-13	80	25	31.6	0.8	148	137	187
		50	33.1	1.7	289	262	175
		<b>100</b>	<b>35.5</b>	<b>3.6</b>	<b>542</b>	<b>481</b>	<b>153</b>
		150	37.7	5.7	769	669	136
		200	39.8	8.0	963	828	121
		240	41.4	9.9	1107	936	111
BXKC-35G0801-A-13	90	25	31.6	0.8	121	112	153
		50	33.1	1.7	236	214	143
		<b>100</b>	<b>35.5</b>	<b>3.6</b>	<b>443</b>	<b>393</b>	<b>125</b>
		150	37.7	5.7	628	546	111
		200	39.8	8.0	787	677	99
		240	41.4	9.9	905	765	91
BXKC-35H0801-A-13	95	25	31.6	0.8	119	110	150
		50	33.1	1.7	232	210	140
		<b>100</b>	<b>35.5</b>	<b>3.6</b>	<b>435</b>	<b>386</b>	<b>123</b>
		150	37.7	5.7	617	537	109
		200	39.8	8.0	773	665	97
		240	41.4	9.9	889	751	89
BXKC-40E0801-A-13	80	25	31.6	0.8	149	138	189
		50	33.1	1.7	292	265	176
		<b>100</b>	<b>35.5</b>	<b>3.6</b>	<b>547</b>	<b>485</b>	<b>154</b>
		150	37.7	5.7	776	675	137
		200	39.8	8.0	972	836	122
		240	41.4	9.9	1118	944	112
BXKC-40G0801-A-13	90	25	31.6	0.8	125	116	158
		50	33.1	1.7	245	222	148
		<b>100</b>	<b>35.5</b>	<b>3.6</b>	<b>459</b>	<b>407</b>	<b>129</b>
		150	37.7	5.7	651	566	115
		200	39.8	8.0	815	702	102
		240	41.4	9.9	938	792	94

Notes for Table 3:

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 3:** Product Performance at Commonly Used Drive Currents

Part Number	Minimum CRI	Drive Current <sup>1</sup> (mA)	Typical Vf Tc = 25°C (V)	Typical Power <sup>2</sup> Tc = 25°C (W)	Typical Pulsed Flux <sup>2</sup> Tc = 25°C (lm)	Typical DC Flux <sup>2</sup> Tc = 85°C (lm)	Typical Efficacy <sup>2</sup> Tc = 25°C (lm/W)
BXKC-40H0801-A-13	95	25	31.6	0.8	121	112	153
		50	33.1	1.7	237	215	144
		<b>100</b>	<b>35.5</b>	<b>3.6</b>	<b>445</b>	<b>395</b>	<b>125</b>
		150	37.7	5.7	631	549	111
		200	39.8	8.0	791	680	99
		240	41.4	9.9	909	768	91
BXKC-50E0801-A-14	80	25	31.6	0.8	153	142	194
		50	33.1	1.7	300	272	182
		<b>100</b>	<b>35.5</b>	<b>3.6</b>	<b>563</b>	<b>499</b>	<b>159</b>
		150	37.7	5.7	799	695	141
		200	39.8	8.0	1000	861	126
		240	41.4	9.9	1150	972	116
BXKC-50G0801-A-14	90	25	31.6	0.8	128	118	162
		50	33.1	1.7	250	227	152
		<b>100</b>	<b>35.5</b>	<b>3.6</b>	<b>470</b>	<b>417</b>	<b>132</b>
		150	37.7	5.7	667	580	118
		200	39.8	8.0	835	718	105
		240	41.4	9.9	960	811	97
BXKC-56E0801-A-14	80	25	31.6	0.8	153	142	194
		50	33.1	1.7	300	272	182
		<b>100</b>	<b>35.5</b>	<b>3.6</b>	<b>563</b>	<b>499</b>	<b>159</b>
		150	37.7	5.7	799	695	141
		200	39.8	8.0	1000	861	126
		240	41.4	9.9	1150	972	116
BXKC-65E0801-A-14	80	25	31.6	0.8	153	142	194
		50	33.1	1.7	300	272	182
		<b>100</b>	<b>35.5</b>	<b>3.6</b>	<b>563</b>	<b>499</b>	<b>159</b>
		150	37.7	5.7	799	695	141
		200	39.8	8.0	1000	861	126
		240	41.4	9.9	1150	972	116
BXKC-27E0801-B-13	80	50	15.8	0.8	137	127	173
		100	16.5	1.7	268	243	162
		<b>200</b>	<b>17.8</b>	<b>3.6</b>	<b>502</b>	<b>445</b>	<b>141</b>
		300	18.9	5.7	712	619	126
		400	19.9	8.0	892	767	112
		480	20.7	9.9	1026	866	103

Notes for Table 3:

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 3:** Product Performance at Commonly Used Drive Currents

Part Number	Minimum CRI	Drive Current <sup>1</sup> (mA)	Typical Vf Tc = 25°C (V)	Typical Power <sup>2</sup> Tc = 25°C (W)	Typical Pulsed Flux <sup>2</sup> Tc = 25°C (lm)	Typical DC Flux <sup>2</sup> Tc = 85°C (lm)	Typical Efficacy <sup>2</sup> Tc = 25°C (lm/W)
BXKC-27G0801-B-13	90	50	15.8	0.8	112	104	142
		100	16.5	1.7	220	199	133
		<b>200</b>	<b>17.8</b>	<b>3.6</b>	<b>412</b>	<b>365</b>	<b>116</b>
		300	18.9	5.7	584	508	103
		400	19.9	8.0	732	630	92
		480	20.7	9.9	842	711	85
BXKC-27H0801-B-13	95	50	15.8	0.8	109	101	138
		100	16.5	1.7	213	193	129
		<b>200</b>	<b>17.8</b>	<b>3.6</b>	<b>400</b>	<b>355</b>	<b>113</b>
		300	18.9	5.7	567	493	100
		400	19.9	8.0	711	611	89
		480	20.7	9.9	817	690	82
BXKC-30E0801-B-13	80	50	15.8	0.8	144	134	183
		100	16.5	1.7	282	256	171
		<b>200</b>	<b>17.8</b>	<b>3.6</b>	<b>530</b>	<b>470</b>	<b>149</b>
		300	18.9	5.7	752	654	133
		400	19.9	8.0	941	810	118
		480	20.7	9.9	1083	915	109
BXKC-30G0801-B-13	90	50	15.8	0.8	118	109	149
		100	16.5	1.7	230	209	139
		<b>200</b>	<b>17.8</b>	<b>3.6</b>	<b>432</b>	<b>383</b>	<b>122</b>
		300	18.9	5.7	613	533	108
		400	19.9	8.0	767	660	96
		480	20.7	9.9	883	746	89
BXKC-30H0801-B-13	95	50	15.8	0.8	112	103	141
		100	16.5	1.7	219	198	132
		<b>200</b>	<b>17.8</b>	<b>3.6</b>	<b>410</b>	<b>363</b>	<b>115</b>
		300	18.9	5.7	582	506	103
		400	19.9	8.0	728	627	91
		480	20.7	9.9	838	708	84
BXKC-35E0801-B-13	80	50	15.8	0.8	148	137	187
		100	16.5	1.7	289	262	175
		<b>200</b>	<b>17.8</b>	<b>3.6</b>	<b>542</b>	<b>481</b>	<b>153</b>
		300	18.9	5.7	769	669	136
		400	19.9	8.0	963	828	121
		480	20.7	9.9	1107	936	111

Notes for Table 3:

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 3:** Product Performance at Commonly Used Drive Currents

Part Number	Minimum CRI	Drive Current <sup>1</sup> (mA)	Typical Vf Tc = 25°C (V)	Typical Power <sup>2</sup> Tc = 25°C (W)	Typical Pulsed Flux <sup>2</sup> Tc = 25°C (lm)	Typical DC Flux <sup>2</sup> Tc = 85°C (lm)	Typical Efficacy <sup>2</sup> Tc = 25°C (lm/W)
BXKC-35G0801-B-13	90	50	15.8	0.8	121	112	153
		100	16.5	1.7	236	214	143
		<b>200</b>	<b>17.8</b>	<b>3.6</b>	<b>443</b>	<b>393</b>	<b>125</b>
		300	18.9	5.7	628	546	111
		400	19.9	8.0	787	677	99
		480	20.7	9.9	905	765	91
BXKC-35H0801-B-13	95	50	15.8	0.8	119	110	150
		100	16.5	1.7	232	210	140
		<b>200</b>	<b>17.8</b>	<b>3.6</b>	<b>435</b>	<b>386</b>	<b>123</b>
		300	18.9	5.7	617	537	109
		400	19.9	8.0	773	665	97
		480	20.7	9.9	889	751	89
BXKC-40E0801-B-13	80	50	15.8	0.8	149	138	189
		100	16.5	1.7	292	265	176
		<b>200</b>	<b>17.8</b>	<b>3.6</b>	<b>547</b>	<b>485</b>	<b>154</b>
		300	18.9	5.7	776	675	137
		400	19.9	8.0	972	836	122
		480	20.7	9.9	1118	944	112
BXKC-40G0801-B-13	90	50	15.8	0.8	125	116	158
		100	16.5	1.7	245	222	148
		<b>200</b>	<b>17.8</b>	<b>3.6</b>	<b>459</b>	<b>407</b>	<b>129</b>
		300	18.9	5.7	651	566	115
		400	19.9	8.0	815	702	102
		480	20.7	9.9	938	792	94
BXKC-40H0801-B-13	95	50	15.8	0.8	121	112	153
		100	16.5	1.7	237	215	144
		<b>200</b>	<b>17.8</b>	<b>3.6</b>	<b>445</b>	<b>395</b>	<b>125</b>
		300	18.9	5.7	631	549	111
		400	19.9	8.0	791	680	99
		480	20.7	9.9	909	768	91
BXKC-50E0801-B-14	80	50	15.8	0.8	153	142	194
		100	16.5	1.7	300	272	182
		<b>200</b>	<b>17.8</b>	<b>3.6</b>	<b>563</b>	<b>499</b>	<b>159</b>
		300	18.9	5.7	799	695	141
		400	19.9	8.0	1000	861	126
		480	20.7	9.9	1150	972	116

Notes for Table 3:

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 3:** Product Performance at Commonly Used Drive Currents

Part Number	Minimum CRI	Drive Current <sup>1</sup> (mA)	Typical Vf Tc = 25°C (V)	Typical Power <sup>2</sup> Tc = 25°C (W)	Typical Pulsed Flux <sup>2</sup> Tc = 25°C (lm)	Typical DC Flux <sup>2</sup> Tc = 85°C (lm)	Typical Efficacy <sup>2</sup> Tc = 25°C (lm/W)
BXKC-50G0801-B-14	90	50	15.8	0.8	128	118	162
		100	16.5	1.7	250	227	152
		<b>200</b>	<b>17.8</b>	<b>3.6</b>	<b>470</b>	<b>417</b>	<b>132</b>
		300	18.9	5.7	667	580	118
		400	19.9	8.0	835	718	105
		480	20.7	9.9	960	811	97
BXKC-56E0801-B-14	80	50	15.8	0.8	153	142	194
		100	16.5	1.7	300	272	182
		<b>200</b>	<b>17.8</b>	<b>3.6</b>	<b>563</b>	<b>499</b>	<b>159</b>
		300	18.9	5.7	799	695	141
		400	19.9	8.0	1000	861	126
		480	20.7	9.9	1150	972	116
BXKC-65E0801-B-14	80	50	15.8	0.8	153	142	194
		100	16.5	1.7	300	272	182
		<b>200</b>	<b>17.8</b>	<b>3.6</b>	<b>563</b>	<b>499</b>	<b>159</b>
		300	18.9	5.7	799	695	141
		400	19.9	8.0	1000	861	126
		480	20.7	9.9	1150	972	116
BXKC-27E0801-D-13	80	100	7.9	0.8	137	127	173
		200	8.3	1.7	268	243	162
		<b>400</b>	<b>8.9</b>	<b>3.6</b>	<b>502</b>	<b>445</b>	<b>141</b>
		600	9.4	5.7	712	619	126
		800	10.0	8.0	892	767	112
		960	10.4	9.9	1026	866	103
BXKC-27G0801-D-13	90	100	7.9	0.8	112	104	142
		200	8.3	1.7	220	199	133
		<b>400</b>	<b>8.9</b>	<b>3.6</b>	<b>412</b>	<b>365</b>	<b>116</b>
		600	9.4	5.7	584	508	103
		800	10.0	8.0	732	630	92
		960	10.4	9.9	842	711	85
BXKC-30E0801-D-13	80	100	7.9	0.8	144	134	183
		200	8.3	1.7	282	256	171
		<b>400</b>	<b>8.9</b>	<b>3.6</b>	<b>530</b>	<b>470</b>	<b>149</b>
		600	9.4	5.7	752	654	133
		800	10.0	8.0	941	810	118
		960	10.4	9.9	1083	915	109

Notes for Table 3:

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 3:** Product Performance at Commonly Used Drive Currents

Part Number	Minimum CRI	Drive Current <sup>1</sup> (mA)	Typical Vf Tc = 25°C (V)	Typical Power <sup>2</sup> Tc = 25°C (W)	Typical Pulsed Flux <sup>2</sup> Tc = 25°C (lm)	Typical DC Flux <sup>2</sup> Tc = 85°C (lm)	Typical Efficacy <sup>2</sup> Tc = 25°C (lm/W)
BXKC-30G0801-D-13	90	100	7.9	0.8	118	109	149
		200	8.3	1.7	230	209	139
		<b>400</b>	<b>8.9</b>	<b>3.6</b>	<b>432</b>	<b>383</b>	<b>122</b>
		600	9.4	5.7	613	533	108
		800	10.0	8.0	767	660	96
		960	10.4	9.9	883	746	89
BXKC-35E0801-D-13	80	100	7.9	0.8	148	137	187
		200	8.3	1.7	289	262	175
		<b>400</b>	<b>8.9</b>	<b>3.6</b>	<b>542</b>	<b>481</b>	<b>153</b>
		600	9.4	5.7	769	669	136
		800	10.0	8.0	963	828	121
		960	10.4	9.9	1107	936	111
BXKC-35G0801-D-13	90	100	7.9	0.8	121	112	153
		200	8.3	1.7	236	214	143
		<b>400</b>	<b>8.9</b>	<b>3.6</b>	<b>443</b>	<b>393</b>	<b>125</b>
		600	9.4	5.7	628	546	111
		800	10.0	8.0	787	677	99
		960	10.4	9.9	905	765	91
BXKC-40E0801-D-13	80	100	7.9	0.8	149	138	189
		200	8.3	1.7	292	265	176
		<b>400</b>	<b>8.9</b>	<b>3.6</b>	<b>547</b>	<b>485</b>	<b>154</b>
		600	9.4	5.7	776	675	137
		800	10.0	8.0	972	836	122
		960	10.4	9.9	1118	944	112
BXKC-40G0801-D-13	90	100	7.9	0.8	125	116	158
		200	8.3	1.7	245	222	148
		<b>400</b>	<b>8.9</b>	<b>3.6</b>	<b>459</b>	<b>407</b>	<b>129</b>
		600	9.4	5.7	651	566	115
		800	10.0	8.0	815	702	102
		960	10.4	9.9	938	792	94
BXKC-50E0801-D-14	80	100	7.9	0.8	153	142	194
		200	8.3	1.7	300	272	182
		<b>400</b>	<b>8.9</b>	<b>3.6</b>	<b>563</b>	<b>499</b>	<b>159</b>
		600	9.4	5.7	799	695	141
		800	10.0	8.0	1000	861	126
		960	10.4	9.9	1150	972	116

Notes for Table 3:

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 3:** Product Performance at Commonly Used Drive Currents

Part Number	Minimum CRI	Drive Current <sup>1</sup> (mA)	Typical Vf Tc = 25°C (V)	Typical Power <sup>2</sup> Tc = 25°C (W)	Typical Pulsed Flux <sup>2</sup> Tc = 25°C (lm)	Typical DC Flux <sup>2</sup> Tc = 85°C (lm)	Typical Efficacy <sup>2</sup> Tc = 25°C (lm/W)
BXKC-50Go801-D-14	90	100	7.9	0.8	128	118	162
		200	8.3	1.7	250	227	152
		<b>400</b>	<b>8.9</b>	<b>3.6</b>	<b>470</b>	<b>417</b>	<b>132</b>
		600	9.4	5.7	667	580	118
		800	10.0	8.0	835	718	105
		960	10.4	9.9	960	811	97
BXKC-56Eo801-D-14	80	100	7.9	0.8	153	142	194
		200	8.3	1.7	300	272	182
		<b>400</b>	<b>8.9</b>	<b>3.6</b>	<b>563</b>	<b>499</b>	<b>159</b>
		600	9.4	5.7	799	695	141
		800	10.0	8.0	1000	861	126
		960	10.4	9.9	1150	972	116
BXKC-65Eo801-D-14	80	100	7.9	0.8	153	142	194
		200	8.3	1.7	300	272	182
		<b>400</b>	<b>8.9</b>	<b>3.6</b>	<b>563</b>	<b>499</b>	<b>159</b>
		600	9.4	5.7	799	695	141
		800	10.0	8.0	1000	861	126
		960	10.4	9.9	1150	972	116

Notes for Table 3:

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 4: Electrical Characteristics**

Part Number	Drive Current (mA)	Forward Voltage Pulsed, Tc = 25°C (V) <sup>1,2,3</sup>			Typical Coefficient of Forward Voltage <sup>4</sup> Vf/Tc (mV/°C)	Typical Thermal Resistance Junction to Case <sup>5,6</sup> Rj-c (°C/W)	Driver Selection Voltages <sup>6</sup> (V)	
		Minimum	Typical	Maximum			Vf Min. Hot <sup>7</sup> Tc = 105°C (V)	Vf Max. Cold <sup>7</sup> Tc = -40°C (V)
BXKC-xxx080x-A-1x	100	32.0	35.5	38.7	12.7	2.0	30.9	39.6
BXKC-xxx080x-B-1x	200	16.0	17.8	19.3	6.4	2.0	15.5	19.8
BXKC-xxx080x-D-1x	400	8.0	8.9	9.7	3.2	2.0	7.7	9.9

Notes for Table 4:

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 5 :** Maximum Ratings

Parameter	Maximum Rating		
LED Junction Temperature ( $T_j$ )	125°C		
Storage Temperature	-40°C to +105°C		
Operating Case Temperature <sup>1</sup> ( $T_c$ )	105°C		
Soldering Temperature <sup>3</sup>	300°C or lower for a maximum of 6 seconds		
	BXKC-xxx080x-A-1x	BXKC-xxx080x-B-1x	BXKC-xxx080x-D-1x
Maximum Drive Current <sup>2,4</sup>	240 mA	480 mA	960 mA
Maximum Reverse Voltage <sup>5</sup>	-60 V	-30 V	-15 V

Notes for Table 5:

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: Forward Voltage vs. Forward Current

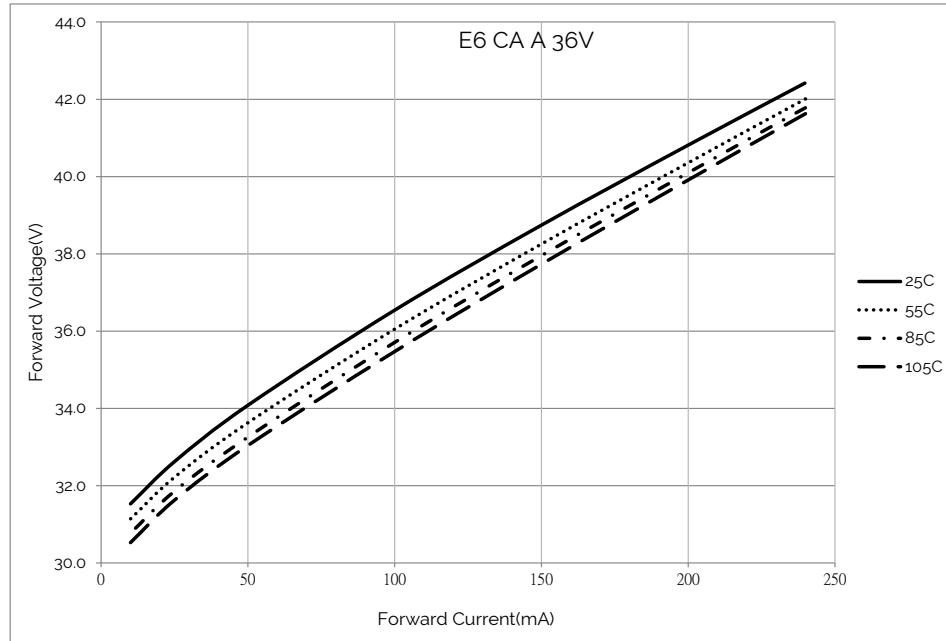
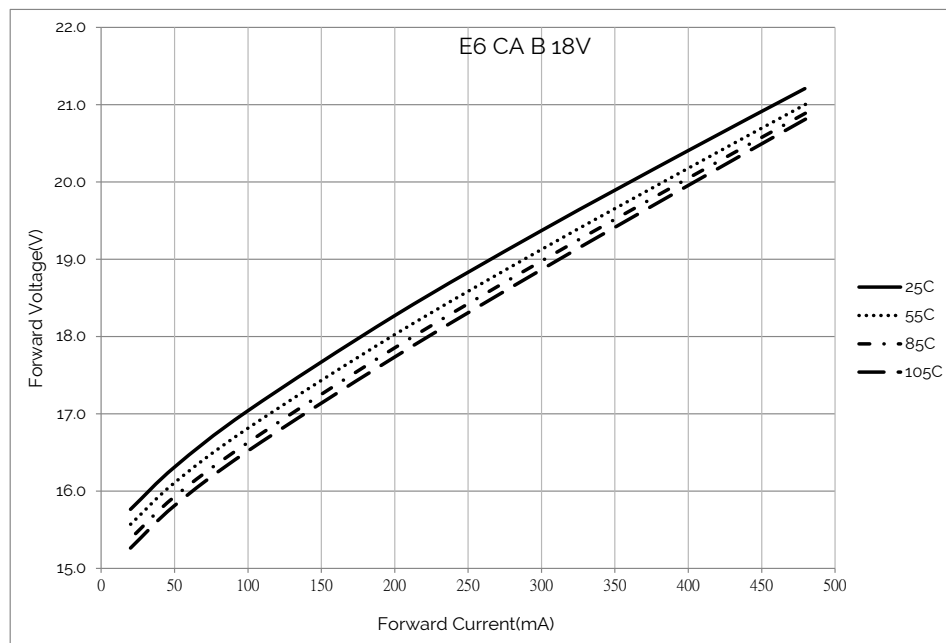


Figure 2: Forward Voltage vs. Forward Current



# Performance Curves

Figure 3: Forward Voltage vs. Forward Current

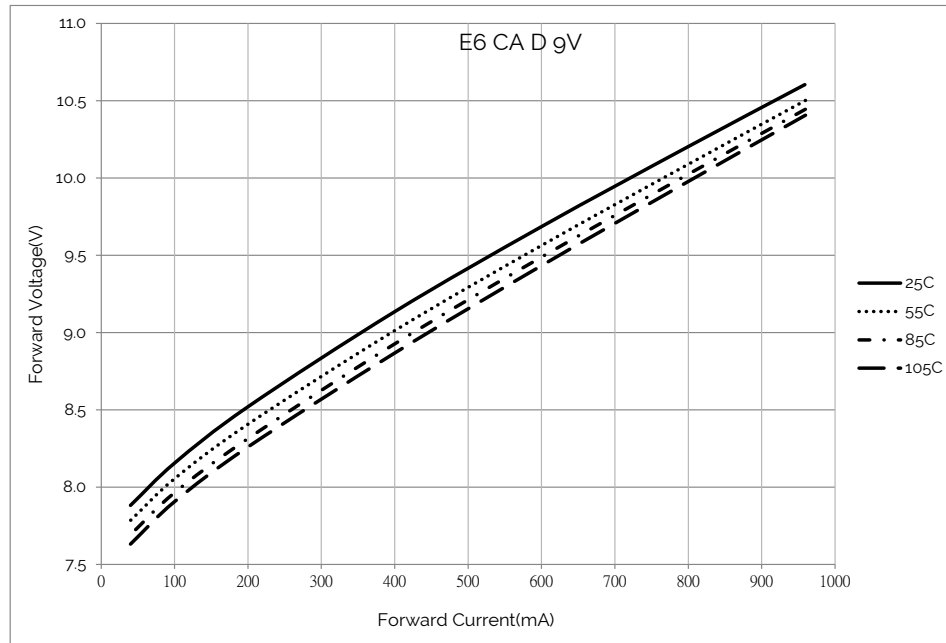
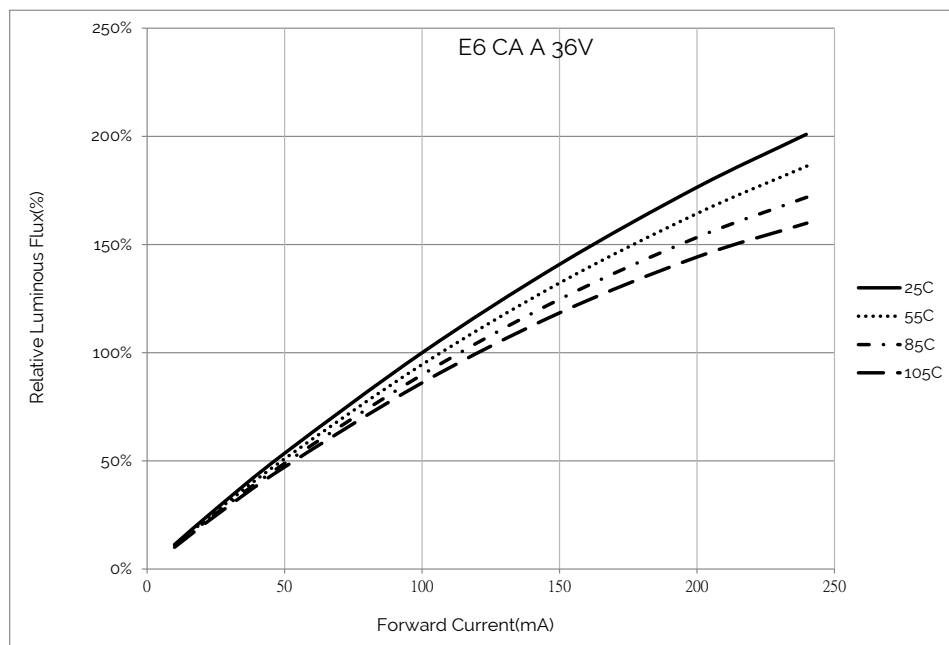
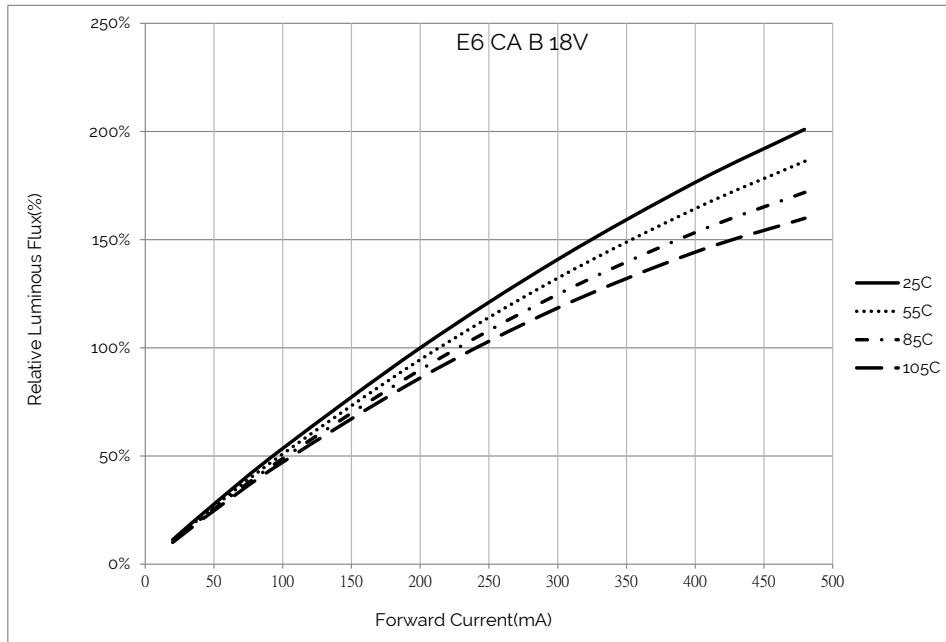


Figure 4: Relative Luminous Flux vs. Drive Current

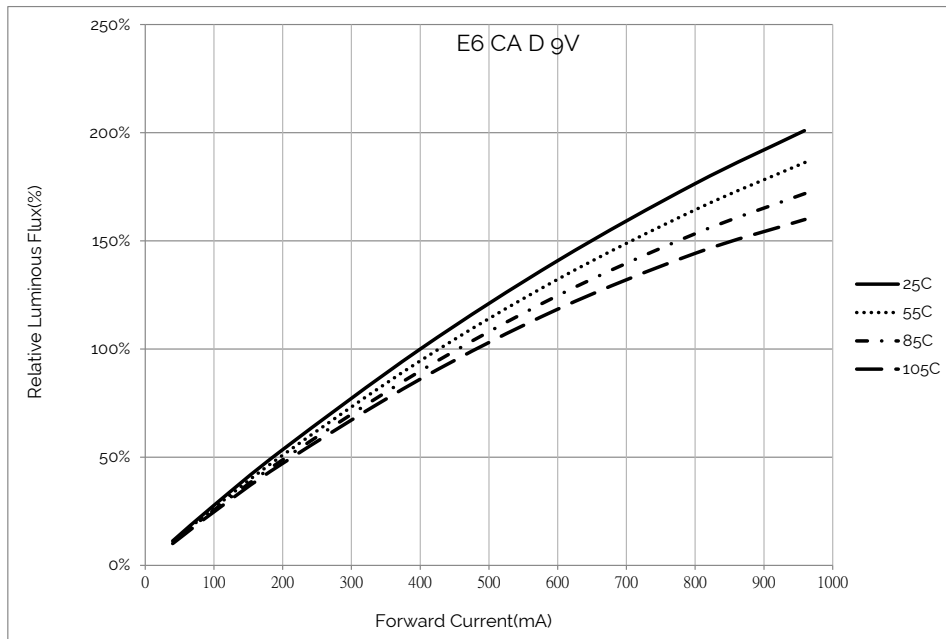


# Performance Curves

**Figure 5: Relative Luminous Flux vs. Drive Current**



**Figure 6: Relative Flux vs. Drive Current**

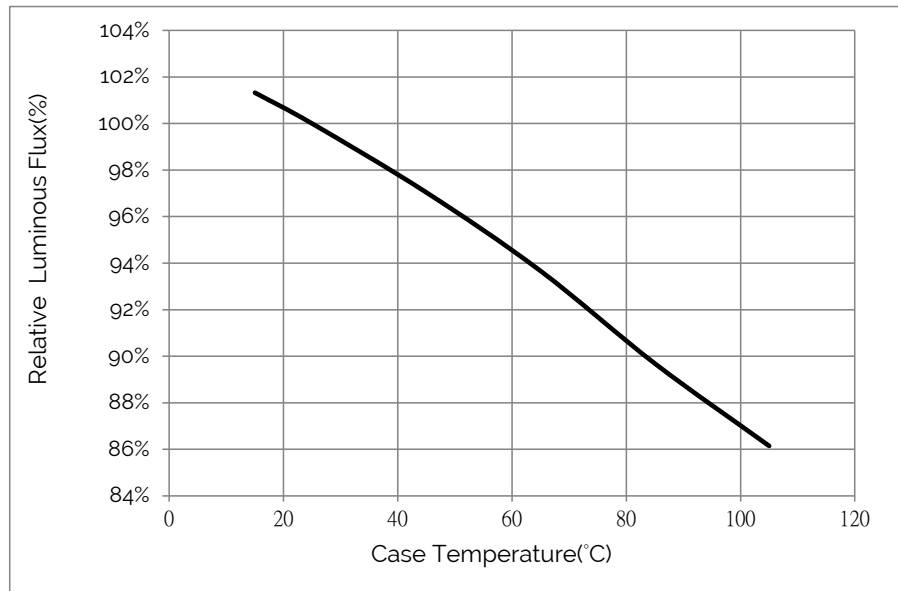


Notes for Figure Figure 6:

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

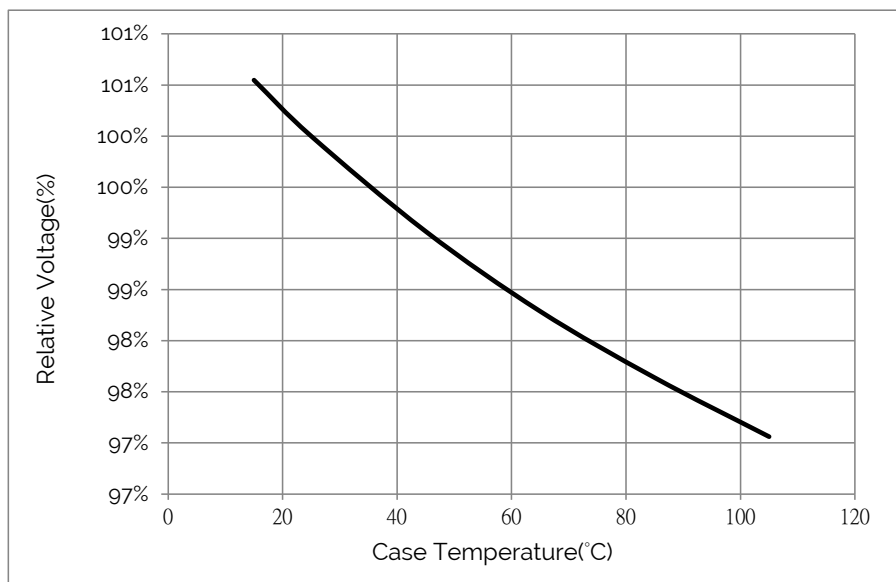
**Figure 7: Relative Flux vs. Case Temperature**



Notes for Figure 7:

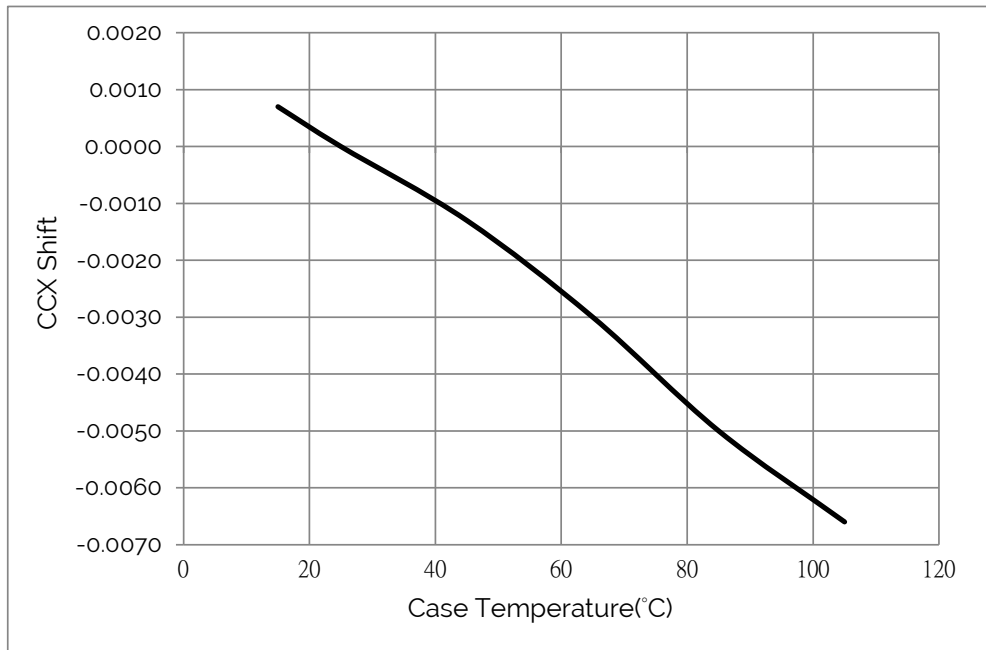
1. Characteristics shown based on 3000K and 80 CRI.
2. For other color SKUs, the relative luminous will vary. Please contact your Bridgelux sales representative for more information.

**Figure 8: Relative Voltage vs. Case Temperature**

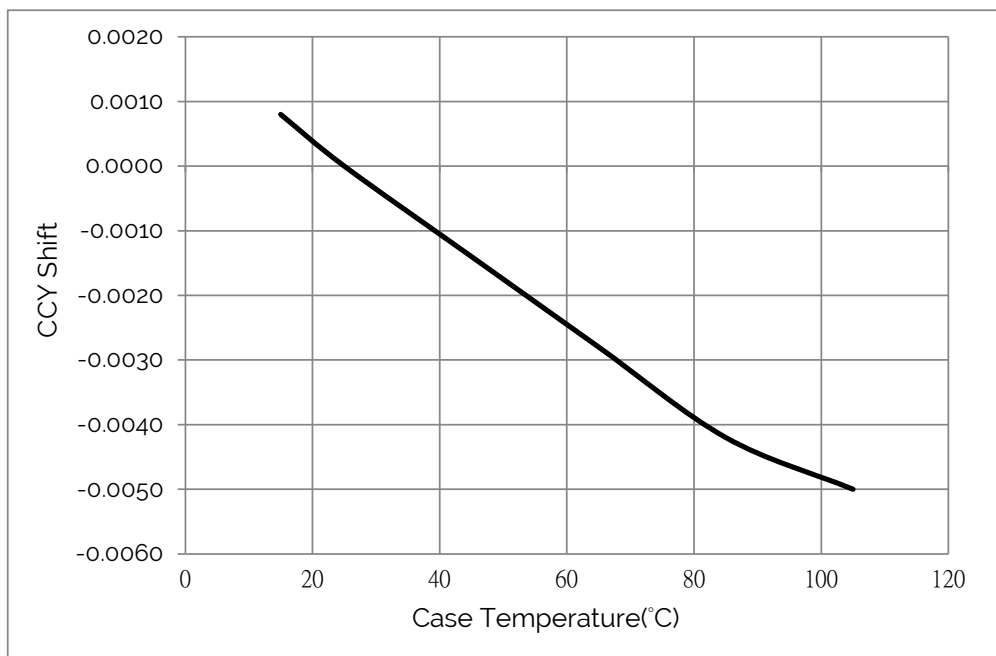


# Performance Curves

**Figure 9: Typical DC ccx Shift vs. Case Temperature**



**Figure 10: Typical DC ccy Shift vs. Case Temperature**

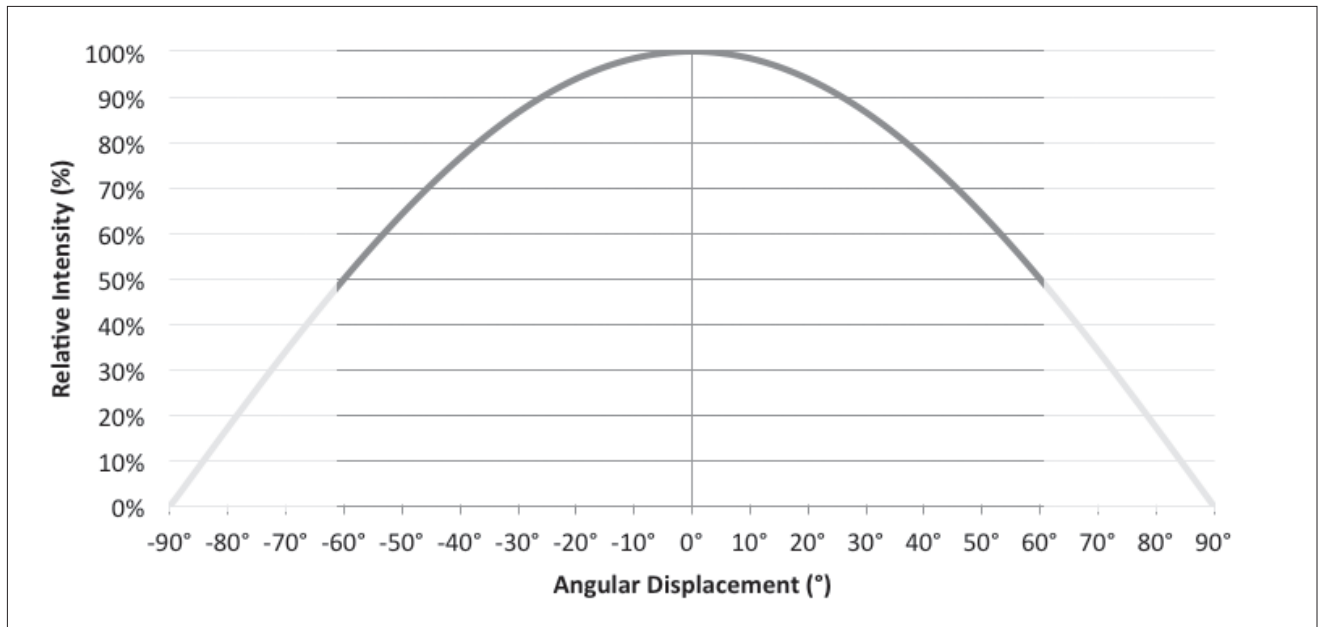


Notes for Figure 9 and Figure 10:

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

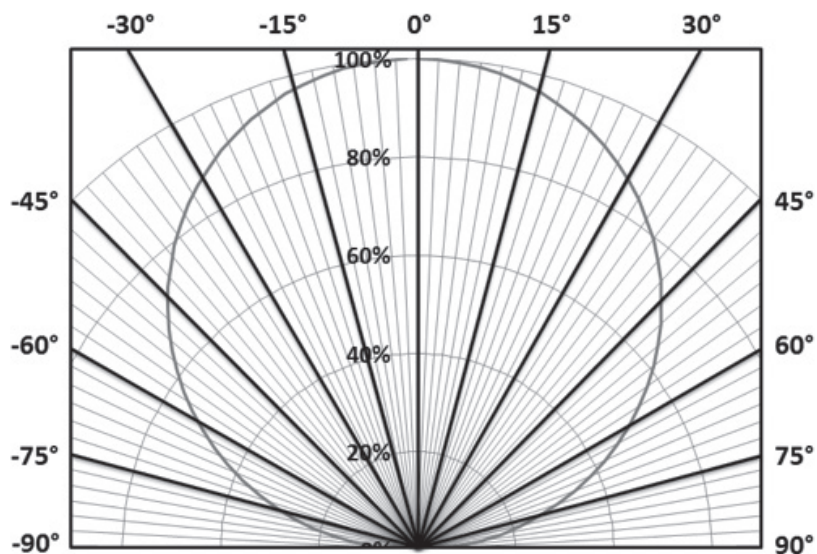
Figure 11: Typical Spatial Radiation Pattern



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.

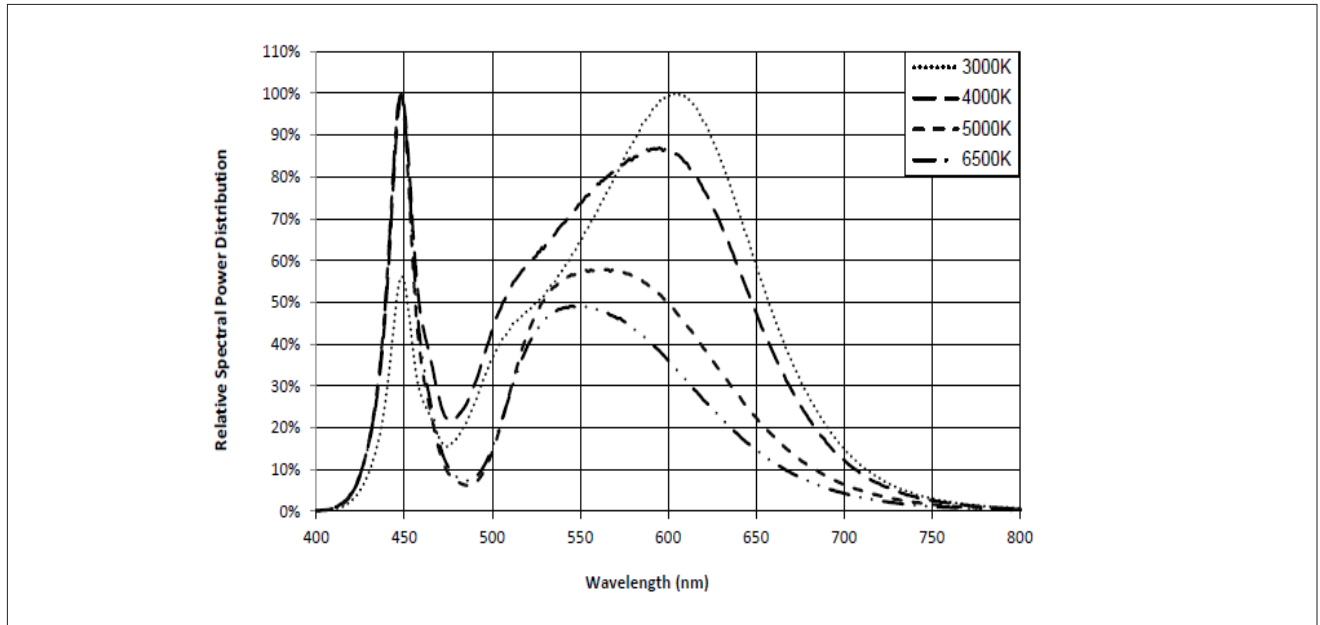
Figure 12: Typical Polar Radiation Pattern





# 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.

# Operating Limits

Figure 14: Operating Limits

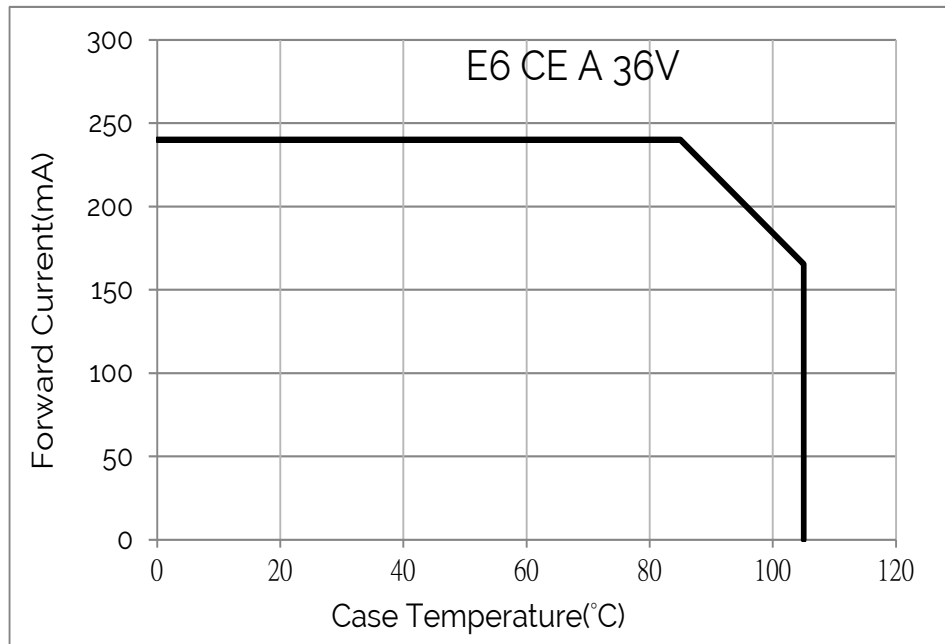
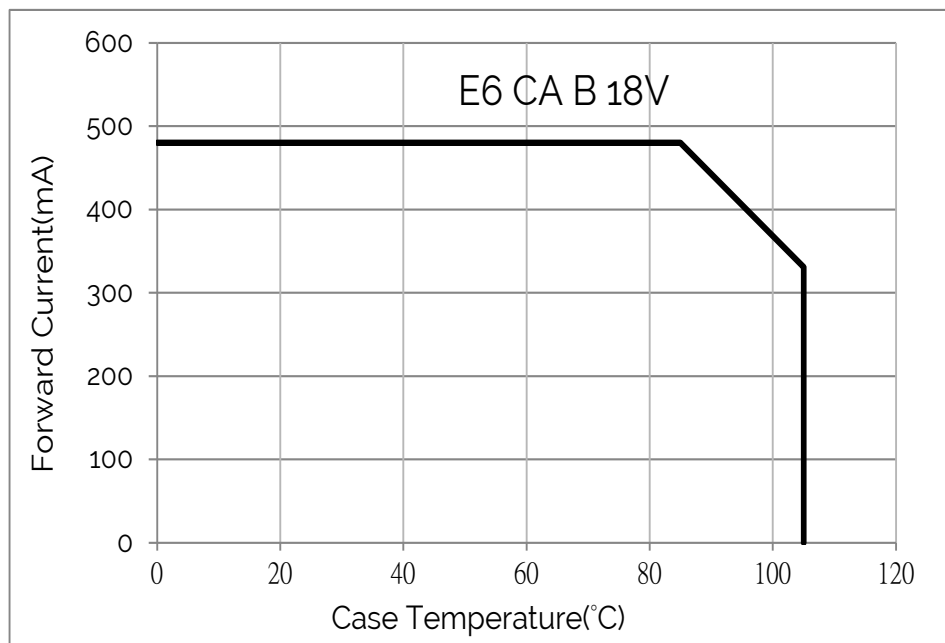
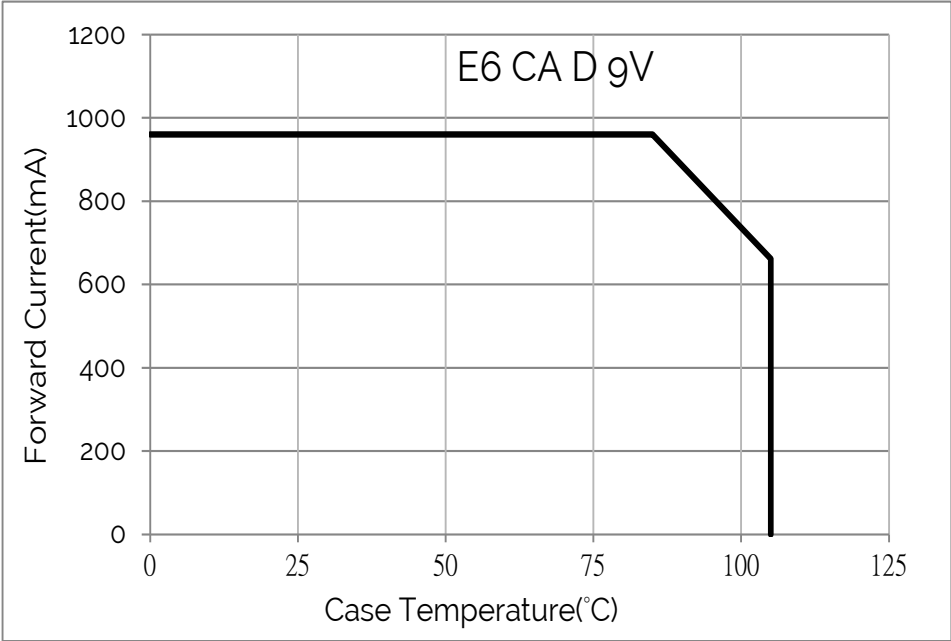


Figure 15: Operating Limits



# Operating Limits

Figure 16: Operating Limits



# Color Binning Information

**Table 6:** 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 6:

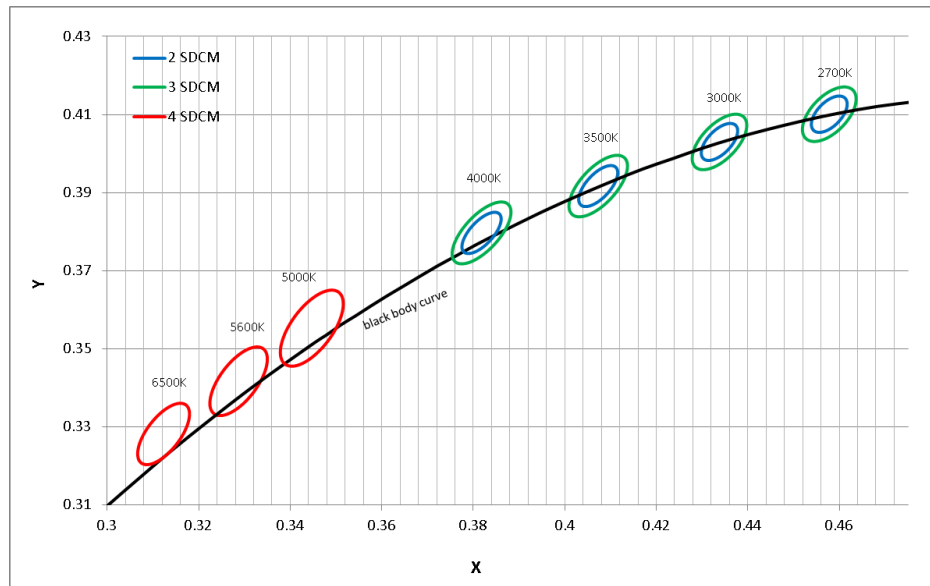
1. 2700K \3000K\3500K\4000K product is cold targeted to Tc = 25°C
2. 5000K \5600K\6500K product is hot targeted to Tc = 85°C

**Table 7:** Warm and Neutral White xy Bin Coordinates and Associated Typical CCT

Bin Code	2700K	3000K	3500K	4000K
13 (3 SDCM)	(2651K - 2794K)	(2968K - 3136K)	(3369K - 3586K)	(3851K - 4130K)
12 (2 SDCM)	(2674K - 2769K)	(2995K - 3107K)	(3404K - 3548K)	(3895K - 4081K)
Center Point (x,y)	(0.4578, 0.4101)	(0.4338, 0.4031)	(0.4073, 0.3917)	(0.3818, 0.3797)

# Color Binning Information

Figure 17: Graph of Test Bins in xy Color Space

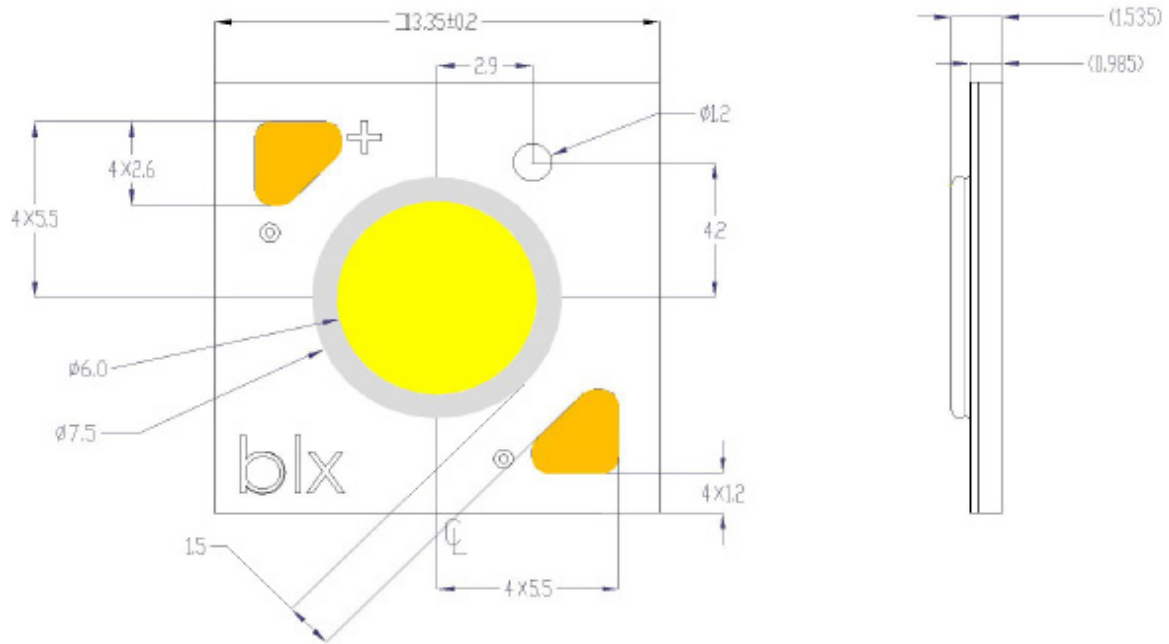


Notes for Figure 17:

1. DC Test Conditions at  $T_c = 85^\circ\text{C}$ .
2. Bridgelux maintains a tolerance of  $\pm 0.007$  on x and y color coordinates in the CIE 1931 color space.

# Mechanical Dimensions

**Figure 18: Drawing for E6 CA LED Array**

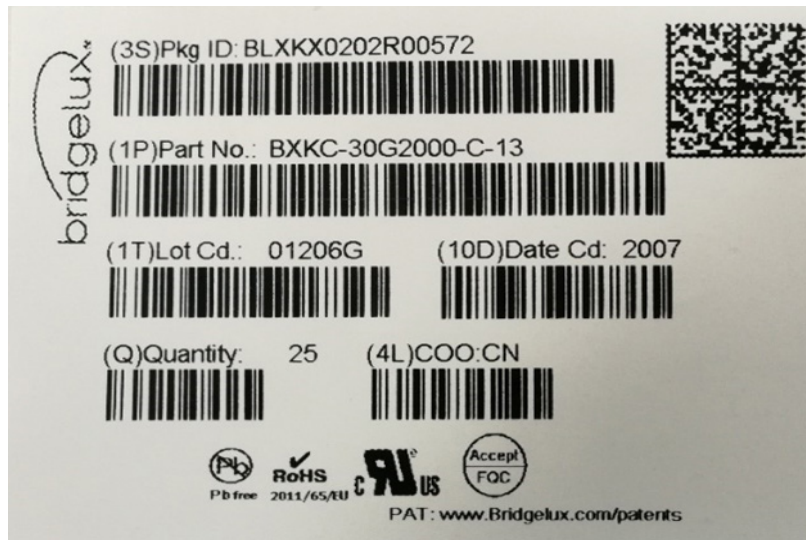


Notes for Figure 18:

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  $\pm 0.13$ 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  $\pm 0.2$ mm.

# Packaging and Labeling

Figure 19: Packaging and Labeling



# Packaging and Labeling

**Figure 20: 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.

30E0801B 13

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 E series 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 E series LED array during operation. Allow the array to cool for a sufficient period of time before handling. The Bridgelux E series 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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