



Bridgelux[®] Gen 8 V18 Array Series

Product Data Sheet DS415



V Series



Introduction

The V 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 up to three times the nominal drive current, enabling design flexibility not previously possible. These high flux density light sources are designed to support a wide range of high quality, low cost directional luminaires and replacement lamps for both interior and exterior commercial and residential applications.

The V18 LED Array is available in a variety of electrical, CCT, and CRI combinations providing substantial design flexibility and energy efficiency advantages.

Lighting system designs incorporating these LED arrays deliver increased system level efficacy and a longer service life. Typical applications include replacement lamps and task, accent, spot, track, wide area, security, wall packs and down lights.

Features

- Efficacy of 180 lm/W typical, 3000K 80 CRI
- Reliable operation at up to 3x nominal current, 30% increase in maximum lumens per LES size
- Wide selection of CCT options (2700K-6500K) with minimum 70, 80 and 90 CRI options
- Uniform high-quality illumination
- 2 and 3 SDCM binning options (2700K 4000K)
- · Forward voltage bin codes and backside marking
- Instant light with unlimited dimming
- 5-Year warranty

Benefits

- Enables high efficiency lighting systems and lower operating costs
- Supports the trend toward luminaire miniaturization
 and delivers enhanced optical control
- Design flexibility for a broad range of lighting applications
- Clean white light without pixelation
- Uniform consistent white light
- Design flexibility for multi-source applications
- Easy to use with daylight and motion sensors to increase energy savings
- Design with confidence



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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 V Series arrays are the most compact chip-on-board devices across all of Bridgelux's LED Array products. The arrays incorporate several features to simplify design integration and assembly. Please visit www.bridgelux.com for more information on the V Series family of products.



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



The following product configurations are available:

Table 1: Selection Guid	de, Pulsed M	leasurem	ient Data (T _j =	$I_{c} = 25^{\circ}C$				
Part Number	Nominal CCT ¹ (K)	CRI²	Nominal Drive Current ³ (mA)	Typical Pulsed Flux ^{4.5.6} T _c = 25°C (lm)	Minimum Pulsed Flux ⁶⁷ T _c = 25°C (lm)	Typical V _f (V)	Typical Power (W)	Typical Efficacy (lm/W)
BXRE-27E4000-B-8x	2700	80	700	4028	3625	33.9	23.7	170
BXRE-27E4000-C-8x	2700	80	1050	6024	5421	33.9	35.6	169
BXRE-27G4000-B-8x	2700	90	700	3323	2991	33.9	23.7	140
BXRE-27G4000-C-8x	2700	90	1050	4969	4472	33.9	35.6	140
BXRE-27G40H0-B-8x	2700	90	700	3467	3120	33.9	23.7	146
BXRE-27G40H0-C-8x	2700	90	1050	5184	4666	33.9	35.6	146
BXRE-30C4001-B-8x	3000	70	700	4481	4033	33.9	23.7	189
BXRE-30C4001-C-8x	3000	70	1050	6701	6031	33.9	35.6	188
BXRE-30E4000-B-8x	3000	80	700	4280	3852	33.9	23.7	180
BXRE-30E4000-C-8x	3000	80	1050	6400	5760	33.9	35.6	180
BXRE-30G4000-B-8x	3000	90	700	3474	3127	33.9	23.7	146
BXRE-30G4000-C-8x	3000	90	1050	5195	4676	33.9	35.6	146
BXRE-30G40H0-B-8x	3000	90	700	3638	3274	33.9	23.7	153
BXRE-30G40H0-C-8x	3000	90	1050	5440	4896	33.9	35.6	153
BXRE-35E4000-B-8x	3500	80	700	4381	3943	33.9	23.7	185
BXRE-35E4000-C-8x	3500	80	1050	6551	5896	33.9	35.6	184
BXRE-35G4000-B-8x	3500	90	700	3600	3240	33.9	23.7	152
BXRE-35G4000-C-8x	3500	90	1050	5384	4845	33.9	35.6	151
BXRE-40C4001-B-8x	4000	70	700	4607	4147	33.9	23.7	194
BXRE-40C4001-C-8x	4000	70	1050	6889	6200	33.9	35.6	194
BXRE-40E4000-B-8x	4000	80	700	4406	3965	33.9	23.7	186
BXRE-40E4000-C-8x	4000	80	1050	6588	5929	33.9	35.6	185
BXRE-40G4000-B-8x	4000	90	700	3676	3308	33.9	23.7	155
BXRE-40G4000-C-8x	4000	90	1050	5496	4947	33.9	35.6	154
BXRE-50C4001-B-8x	5000	70	700	4632	4169	33.9	23.7	195
BXRE-50C4001-C-8x	5000	70	1050	6927	6234	33.9	35.6	195
BXRE-50E4001-B-8x	5000	80	700	4456	4011	33.9	23.7	188
BXRE-50E4001-C-8x	5000	80	1050	6664	5997	33.9	35.6	187
BXRE-50G4001-B-8x	5000	90	700	3852	3467	33.9	23.7	162
BXRE-50G4001-C-8x	5000	90	1050	5760	5184	33.9	35.6	162
BXRE-57C4001-B-8x	5700	70	700	4507	4056	33.9	23.7	190

Table 1: Selection	Guide,	Pulsed	Measurement	Data (1	_ = T	= 25°C)
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Notes for Table 1:

BXRE-57C4001-C-8x

1. Nominal CCT as defined by ANSI C78.377-2011. Products with a CCT of 5000K-6500K are hot targeted to T_c = 85°C.

1050

2. CRI values are minimums for all other products. Minimum R9 value for 80 CRI products is 0, the minimum R9 values for 90 CRI products is 50, Bridgelux maintains a ± 3 tolerance on R9 values.

6739

6065

3. Drive current is referred to as nominal drive current.

4. Products tested under pulsed condition (10ms pulse width) at nominal test current where T₁ (junction temperature) = T_c (case temperature) = 25*C.

5. Typical performance values are provided as a reference only and are not a guarantee of performance.

70

6. Bridgelux maintains a ±7% tolerance on flux measurements.

7. Minimum flux values at the nominal test current are guaranteed by 100% test.

5700

189

35.6

33.9

Product Selection Guide

The following product configurations are available:

Part Number	Nominal CCT ¹ (K)	CRI²	Nominal Drive Current ³ (mA)	Typical Pulsed Flux ^{4.5.6} T _c = 25°C (lm)	Minimum Pulsed Flux ^{6.7} T _c = 25°C (lm)	Typical V _f (V)	Typical Power (W)	Typical Efficacy (lm/W)
BXRE-57E4001-B-8x	5700	80	700	4280	3852	33.9	23.7	180
BXRE-57E4001-C-8x	5700	80	1050	6400	5760	33.9	35.6	180
BXRE-65C4001-B-8x	6500	70	700	4507	4056	33.9	23.7	190
BXRE-65C4001-C-8x	6500	70	1050	6739	6065	33.9	35.6	189
BXRE-65E4001-B-8x	6500	80	700	4330	3897	33.9	23.7	182
BXRE-65E4001-C-8x	6500	80	1050	6475	5828	33.9	35.6	182

Table 1: Selection Guide, Pulsed Measurement Data ($T_i = T_c = 25^{\circ}C$) (continued)

Notes for Table 1:

1. Nominal CCT as defined by ANSI C78.377-2011. Products with a CCT of 5000K-6500K are hot targeted to T_c = 85°C.

2. CRI values are minimums for all products. Minimum Rg value for 80 CRI products is 0, the minimum Rg values for 90 CRI products is 50. Bridgelux maintains a ± 3 tolerance on Rg values.

3. Drive current is referred to as nominal drive current.

4. Products tested under pulsed condition (10ms pulse width) at nominal test current where T_i (junction temperature) = T_c (case temperature) = 25*C.

5. Typical performance values are provided as a reference only and are not a guarantee of performance.

6. Bridgelux maintains a ±7% tolerance on flux measurements.

7. Minimum flux values at the nominal test current are guaranteed by 100% test.

Product Selection Guide

Table 2: Selection Guide, Stabilized DC Performance ($T_c = 85^{\circ}C$) ^{4.5}

Part Number	Nominal CCT¹ (K)	CRI ²	Nominal Drive Current³ (mA)	Typical DC Flux⁴⁵ T _c = 85°C (lm)	Minimum DC Flux ⁶ T _c = 85°C (lm)	Typical V _f (V)	Typical Power (W)	Typical Efficacy (lm/W)
BXRE-27E4000-B-8x	2700	80	700	3625	3263	33.1	23.2	156
BXRE-27E4000-C-8x	2700	80	1050	5421	4879	33.1	34.8	156
BXRE-27G4000-B-8x	2700	90	700	2991	2692	33.1	23.2	129
BXRE-27G4000-C-8x	2700	90	1050	4472	4025	33.1	34.8	129
BXRE-27G40H0-B-8x	2700	90	700	3120	2808	33.1	23.2	135
BXRE-27G40H0-C-8x	2700	90	1050	4666	4199	33.1	34.8	134
BXRE-30C4001-B-8x	3000	70	700	4033	3630	33.1	23.2	174
BXRE-30C4001-C-8x	3000	70	1050	6031	5428	33.1	34.8	173
BXRE-30E4000-B-8x	3000	80	700	3852	3467	33.1	23.2	166
BXRE-30E4000-C-8x	3000	80	1050	5760	5184	33.1	34.8	166
BXRE-30G4000-B-8x	3000	90	700	3127	2814	33.1	23.2	135
BXRE-30G4000-C-8x	3000	90	1050	4676	4208	33.1	34.8	134
BXRE-30G40H0-B-8x	3000	90	700	3274	2947	33.1	23.2	141
BXRE-30G40H0-C-8x	3000	90	1050	4896	4406	33.1	34.8	141
BXRE-35E4000-B-8x	3500	80	700	3943	3548	33.1	23.2	170
BXRE-35E4000-C-8x	3500	80	1050	5896	5306	33.1	34.8	170
BXRE-35G4000-B-8x	3500	90	700	3240	2916	33.1	23.2	140
BXRE-35G4000-C-8x	3500	90	1050	4845	4361	33.1	34.8	139
BXRE-40C4001-B-8x	4000	70	700	4147	3732	33.1	23.2	179
BXRE-40C4001-C-8x	4000	70	1050	6200	5580	33.1	34.8	178
BXRE-40E4000-B-8x	4000	80	700	3965	3569	33.1	23.2	171
BXRE-40E4000-C-8x	4000	80	1050	5929	5336	33.1	34.8	171
BXRE-40G4000-B-8x	4000	90	700	3308	2977	33.1	23.2	143
BXRE-40G4000-C-8x	4000	90	1050	4947	4452	33.1	34.8	142
BXRE-50C4001-B-8x	5000	70	700	4169	3752	33.1	23.2	180
BXRE-50C4001-C-8x	5000	70	1050	6234	5611	33.1	34.8	179
BXRE-50E4001-B-8x	5000	80	700	4011	3610	33.1	23.2	173
BXRE-50E4001-C-8x	5000	80	1050	5997	5397	33.1	34.8	172
BXRE-50G4001-B-8x	5000	90	700	3467	3120	33.1	23.2	150
BXRE-50G4001-C-8x	5000	90	1050	5184	4666	33.1	34.8	149
BXRE-57C4001-B-8x	5700	70	700	4056	3650	33.1	23.2	175
BXRE-57C4001-C-8x	5700	70	1050	6065	5458	33.1	34.8	174

Notes for Table 2:

1. Nominal CCT as defined by ANSI C78.377-2011. Products with a CCT of 5000K-6500K are hot targeted to T_c = 85°C.

2. CRI values are minimums for all products. Minimum Rg value for 80 CRI products is 0, the minimum Rg values for 90 CRI products is 50. Bridgelux maintains a ± 3 tolerance on Rg values.

3. Drive current is referred to as nominal drive current.

4. Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.

5. 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.

6. 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, Stabilized DC Performance ($T_c = 85^{\circ}C$) ^{4.5} (continued)

Part Number	Nominal CCTº (K)	CRI²	Nominal Drive Current ³ (mA)	Typical DC Flux⁴⁵ T _c = 85°C (lm)	Minimum DC Flux ⁶ T _c = 85°C (lm)	Typical V _f (V)	Typical Power (W)	Typical Efficacy (lm/W)
BXRE-57E4001-B-8x	5700	80	700	3852	3467	33.1	23.2	166
BXRE-57E4001-C-8x	5700	80	1050	5760	5184	33.1	34.8	166
BXRE-65C4001-B-8x	6500	70	700	4056	3650	33.1	23.2	175
BXRE-65C4001-C-8x	6500	70	1050	6065	5458	33.1	34.8	174
BXRE-65E4001-B-8x	6500	80	700	3897	3508	33.1	23.2	168
BXRE-65E4001-C-8x	6500	80	1050	5828	5245	33.1	34.8	168

Notes for Table 2:

1. Nominal CCT as defined by ANSI C78.377-2011. Products with a CCT of 5000K-6500K are hot targeted to T_c = 85°C.

2. CRI values are minimums for all products. Minimum Rg value for 80 CRI products is 0, the minimum Rg values for 90 CRI products is 50. Bridgelux maintains a ± 3 tolerance on Rg values.

3. Drive current is referred to as nominal drive current.

4. Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.

5. 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.

6. 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.

V Series LED arrays are tested to the specifications shown using the nominal drive currents in Table 1. V 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 the flux vs. current characteristics shown in Figures 3 & 4. The performance at commonly used drive currents is summarized in Table 3.

Part Number	CRI	Drive Current¹ (mA)	Typical V _f T _c = 25°C (V)	Typical Power T _c = 25°C (W)	Typical Flux² T _c = 25°C (lm)	Typical DC Flux ³ T _c = 85°C (lm)	Typical Efficacy T e 25°C (lm/W)
		350	32.7	11.4	2115	1903	185
		525	33.3	17.5	3065	2759	175
		700	33.9	23.7	4028	3625	170
DARE-2724000-D-0X	00	900	34.5	31.0	5053	4548	163
		1400	36.0	50.4	7600	6840	151
		2000	37.5	75.1	10500	9450	140
		525	32.7	17.2	3162	2846	184
		785	33.3	26.1	4570	4113	175
BXRE-27E4000-C-8x	80	1050	33.9	35.6	6024	5421	169
DAILE 2724000 0 0X		1170	34.1	39.9	6616	5954	166
		2100	36.0	75.5	11365	10228	150
		3000	37.5	112.6	15700	14130	139
		350	32.7	11.4	1745	1570	153
BXRE-27G4000-B-8x		525	33.3	17.5	2529	2276	145
	00	700	33.9	23.7	3323	2991	140
	90	900	34.5	31.0	4169	3752	134
		1400	36.0	50.4	6270	5643	125
		2000	37.5	75.1	8662	7796	115
		525	32.7	17.2	2609	2348	152
		785	33.3	26.1	3770	3393	144
BYDE-27G4000-C-8y		1050	33.9	35.6	4969	4472	140
DARE-2704000-C-0X	90	1170	34.1	39.9	5458	4912	137
		2100	36.0	75.5	9376	8438	124
		3000	37.5	112.6	12953	11658	115
		350	32.7	11.4	1820	1638	159
		525	33.3	17.5	2638	2374	151
BXRE-27G40H0-B-8y	00	700	33.9	23.7	3467	3120	146
DARE-27040110-D-0A	90	900	34.5	31.0	4349	3914	140
		1400	36.0	50.4	6541	5887	130
		2000	37.5	75.1	9036	8133	120
		525	32.7	17.2	2721	2449	159
		785	33.3	26.1	3933	3540	151
BXRE-27G40H0-C-8V	00	1050	33.9	35.6	5184	4666	146
DARE-2/04010-0-0X	90	1170	34.1	39.9	5694	5125	143
		2100	36.0	75.5	9781	8803	129
		3000	37.5	112.6	13512	12161	120

Table 3: Product Performance at Commonly Used Drive Currents

Notes for Table 3:

1. Alternate drive currents in Table 3 are provided for reference only and are not a guarantee of performance.

2. Bridgelux maintains a ± 7% tolerance on flux measurements.

Typical Typical Typical Typical Power Typical V, Drive Efficacy Flux² DC Flux³ T_c = 25°C CRI T_c = 25°C Part Number Current¹ T_c = 85°C T_c = 25°C T_ = 25°C (W) (V) (mA) (ľm/W) (lm) (lm) 206 350 32.7 11.4 2353 2117 525 17.5 3410 3069 195 33.3 4481 700 189 33.9 23.7 4033 BXRE-30C4001-B-8x 70 900 34.5 31.0 5622 5060 181 1400 36.0 50.4 8455 7610 168 2000 11681 37.5 75.1 10513 156 3166 525 32.7 17.2 3518 205 4576 785 26.1 5084 33.3 195 1050 33.9 35.6 6701 6031 188 BXRE-30C4001-C-8x 70 1170 34.1 39.9 7360 6624 184 36.0 12643 167 2100 75.5 11379 3000 37.5 112.6 17467 15720 155 350 11.4 2247 2022 196 32.7 186 525 33.3 17.5 3257 2931 700 33.9 23.7 4280 3852 181 BXRE-30E4000-B-8x 80 900 31.0 5369 4832 173 34.5 7268 1400 36.0 50.4 8075 160 2000 10040 37.5 75.1 11156 149 3360 196 525 32.7 17.2 3024 785 33.3 26.1 4856 4370 186 5760 1050 35.6 6400 180 33.9 BXRE-30E4000-C-8x 80 7030 6327 176 1170 34.1 39.9 2100 36.0 10868 160 75.5 12075 3000 112.6 16682 15013 148 37.5 350 32.7 11.4 1824 1641 159 525 17.5 2644 2379 151 33.3 700 23.7 3474 3127 147 33.9 BXRE-30G4000-B-8x 90 900 31.0 4359 3923 140 34.5 1400 36.0 50.4 6555 5900 130 2000 8150 37.5 75.1 9056 121 525 17.2 2727 32.7 2455 159 785 26.1 3548 33.3 3942 151 1050 33.9 35.6 5195 4676 146 BXRE-30G4000-C-8x 90 1170 34.1 39.9 5706 5136 143 9802 2100 36.0 75.5 8822 130 3000 37.5 112.6 13542 12187 120 350 32.7 11.4 1910 1719 167 525 17.5 2768 2492 158 33.3 700 23.7 3638 3274 153 33.9 BXRE-30G40H0-B-8x 90 900 4564 4108 31.0 147 34.5 6864 36.0 6178 136 1400 50.4 2000 37.5 75.1 9482 8534 126

Table 3: Product Performance at Commonly Used Drive Currents (Continued)

Notes for Table 3:

1. Alternate drive currents in Table 3 are provided for reference only and are not a guarantee of performance.

2. Bridgelux maintains a ± 7% tolerance on flux measurements.

Typical Typical Typical Typical V, Typical Power Drive Efficacy Flux² DC Flux³ T_c = 25°C CRI T_c = 25°C Part Number Current¹ T_c = 85°C T_c = 25°C T_ = 25°C (W) (V) (mA) (ľm/W) (lm) (lm) 166 525 32.7 17.2 2856 2570 3715 785 26.1 4127 158 33.3 4896 1050 33.9 35.6 5440 153 BXRE-30G40H0-C-8x 90 1170 34.1 39.9 5975 5378 150 2100 36.0 75.5 10264 9238 136 1126 12761 3000 37.5 14179 126 2070 201 350 32.7 11.4 2300 17.5 3000 525 33.3 3334 101 700 33.9 23.7 4381 3943 185 BXRE-35E4000-B-8x 80 900 34.5 31.0 5496 4946 177 36.0 8265 164 1400 50.4 7439 2000 37.5 75.1 11418 10276 152 525 17.2 3439 3095 200 32.7 785 33.3 26.1 4970 4473 190 1050 33.9 35.6 6551 5896 184 BXRE-35E4000-C-8x 80 1170 34.1 39.9 7195 6476 180 164 2100 36.0 75.5 12359 11123 112.6 3000 37.5 17074 15367 152 1890 165 350 32.7 11.4 1701 525 33.3 17.5 2740 2466 157 3600 700 23.7 3240 152 33.9 BXRE-35G4000-B-8x 90 900 34.5 31.0 4517 4065 145 36.0 1400 50.4 6793 6113 135 2000 8446 37.5 75.1 9384 125 525 32.7 17.2 2826 2544 165 785 26.1 4085 3676 156 33.3 1050 35.6 5384 4845 151 33.9 BXRE-35G4000-C-8x 90 1170 5913 5322 148 34.1 39.9 2100 36.0 10157 9142 134 75.5 112.6 12629 3000 37.5 14032 125 11.4 2177 211 350 32.7 2419 3506 201 525 33.3 17.5 3155 700 33.9 23.7 4607 4147 194 BXRE-40C4001-B-8x 70 900 34.5 31.0 5780 5202 186 7824 1400 36.0 50.4 8693 173 2000 37.5 75.1 12009 10808 160 525 32.7 17.2 3617 3255 211 785 26.1 5227 4704 200 33.3 1050 35.6 6889 6200 194 33.9 BXRE-40C4001-C-8x 70 1170 7567 6810 190 34.1 39.9 2100 36.0 11699 75.5 12999 172 3000 37.5 112.6 17957 16162 159

Table 3: Product Performance at Commonly Used Drive Currents (Continued)

Notes for Table 3:

1. Alternate drive currents in Table 3 are provided for reference only and are not a guarantee of performance.

2. Bridgelux maintains a ± 7% tolerance on flux measurements.

Typical Typical Typical Drive Typical V, Typical Power Efficacy Flux² DC Flux³ T_c = 25°C T_c = 25°C CRI Part Number Current¹ T_c = 85°C T_c = 25°C T_ = 25°C (W) (V) (mA) (ľm/W) (lm) (lm) 2082 350 32.7 11.4 2313 202 525 17.5 3017 192 3353 33.3 700 4406 186 33.9 23.7 3965 BXRE-40E4000-B-8x 80 900 34.5 31.0 5527 4974 178 1400 36.0 50.4 8313 7482 165 2000 10336 37.5 75.1 11484 153 525 202 32.7 17.2 3459 3113 785 26.1 4999 33.3 4499 101 1050 33.9 35.6 6588 5929 185 BXRE-40E4000-C-8x 80 1170 34.1 39.9 7236 6513 181 36.0 11187 165 2100 75.5 12430 3000 37.5 112.6 17172 15455 152 350 11.4 1930 169 32.7 1737 525 33.3 17.5 2797 2517 160 700 33.9 23.7 3676 3308 155 BXRE-40G4000-B-8x 90 900 31.0 4611 4150 149 34.5 6242 1400 36.0 50.4 6935 138 2000 8623 37.5 75.1 9581 128 168 2885 525 32.7 17.2 2597 785 33.3 26.1 4170 3753 160 1050 35.6 5496 4947 155 33.9 BXRE-40G4000-C-8x 90 1170 34.1 39.9 6037 5433 151 2100 36.0 75.5 10370 137 9333 3000 112.6 12894 37.5 14327 127 350 32.7 11.4 2432 2189 213 525 17.5 3525 3173 202 33.3 700 23.7 4632 4169 195 33.9 BXRE-50C4001-B-8x 70 900 31.0 5811 5230 187 34.5 1400 36.0 50.4 8740 7866 174 2000 12075 10867 161 37.5 75.1 525 17.2 3636 212 32.7 3273 785 26.1 5256 201 33.3 4730 1050 33.9 35.6 6927 6234 195 BXRE-50C4001-C-8x 70 1170 34.1 39.9 7609 6848 191 2100 36.0 75.5 13070 11763 173 3000 37.5 112.6 18055 16250 160 350 32.7 11.4 2339 2105 205 525 17.5 194 33.3 3391 3052 700 23.7 4456 4011 188 33.9 BXRE-50E4001-B-8x 80 180 900 31.0 5590 5031 34.5 36.0 8408 7567 167 1400 50.4 2000 37.5 75.1 11615 10454 155

Table 3: Product Performance at Commonly Used Drive Currents (Continued)

Notes for Table 3:

1. Alternate drive currents in Table 3 are provided for reference only and are not a guarantee of performance.

2. Bridgelux maintains a ± 7% tolerance on flux measurements.

Table 3: Product Performance at Common	lv Used Drive Currents	(Continued)
		(00110110000)

Part Number	CRI	Drive Current¹ (mA)	Typical V _r T _c = 25°C (V)	Typical Power T _c = 25°C (W)	Typical Flux ² T _c = 25°C (lm)	Typical DC Flux ³ T _c = 85°C (lm)	Typical Efficacy T = 25°C (lm/W)
		525	32.7	17.2	3498	3148	204
		785	33.3	26.1	5056	4550	194
BXPE-50E4001-C-8v	80	1050	33.9	35.6	6664	5997	187
BARE 5024001 C 0A	00	1170	34.1	39.9	7319	6587	183
		2100	36.0	75.5	12572	11315	166
		3000	37.5	112.6	17369	15632	154
		350	32.7	11.4	2022	1820	177
		525	33.3	17.5	2931	2638	168
BXRE-50G4001-B-8x	00	700	33.9	23.7	3852	3467	163
BARE 5004001 B 0A	90	900	34.5	31.0	4832	4349	156
		1400	36.0	50.4	7268	6541	144
		2000	37.5	75.1	10040	9036	134
		525	32.7	17.2	3024	2721	176
	90	785	33.3	26.1	4370	3933	167
BXPE-50G4001-C-8v		1050	33.9	35.6	5760	5184	162
DARE-5004001-C-0X		1170	34.1	39.9	6327	5694	159
		2100	36.0	75.5	10868	9781	144
		3000	37.5	112.6	15013	13512	133
PVDE FTC 4001 P 8V		350	32.7	11.4	2366	2129	207
		525	33.3	17.5	3429	3086	196
	70	700	33.9	23.7	4507	4056	190
DARE-5704001-D-0A	,0	900	34.5	31.0	5654	5088	182
		1400	36.0	50.4	8503	7653	169
		2000	37.5	75.1	11746	10572	156
		525	32.7	17.2	3538	3184	206
		785	33.3	26.1	5113	4602	196
BYDE-5704001-0-8v	70	1050	33.9	35.6	6739	6065	190
DARE-5704001-0-0A	/0	1170	34.1	39.9	7402	6662	185
		2100	36.0	75.5	12714	11443	168
		3000	37.5	112.6	17565	15808	156
		350	32.7	11.4	2247	2022	196
		525	33.3	17.5	3257	2931	186
BYDE-E7E4001-B-8V	80	700	33.9	23.7	4280	3852	181
DARE-57 E4001-D-0A	00	900	34.5	31.0	5369	4832	173
		1400	36.0	50.4	8075	7268	160
		2000	37.5	75.1	11156	10040	149
		525	32.7	17.2	3360	3024	196
		785	33.3	26.1	4856	4370	186
BXPE-57E4001-C-8V	80	1050	33.9	35.6	6400	5760	180
DARE-3/ L4001-0-0X		1170	34.1	39.9	7030	6327	176
		2100	36.0	75.5	12075	10868	160
		3000	37.5	112.6	16682	15013	148

Notes for Table 3:

1. Alternate drive currents in Table 3 are provided for reference only and are not a guarantee of performance.

2. Bridgelux maintains a ± 7% tolerance on flux measurements.

Part Number	CRI	Drive Current¹ (mA)	Typical V _r T _c = 25°C (V)	Typical Power T _c = 25°C (W)	Typical Flux² T _c = 25°C (lm)	Typical DC Flux ³ T _c = 85°C (lm)	Typical Efficacy T = 25°C (lm/W)
		350	32.7	11.4	2366	2129	207
		525	33.3	17.5	3429	3086	196
RVDE 6FC 4001 P 8V	70	700	33.9	23.7	4507	4056	190
DARE-0504001-D-0X	/0	900	34.5	31.0	5654	5088	182
		1400	36.0	50.4	8503	7653	169
		2000	37.5	75.1	11746	10572	156
BXRE-65C4001-C-8x	1	525	32.7	17.2	3538	3184	206
		785	33.3	26.1	5113	4602	196
	70	1050	33.9	35.6	6739	6065	190
	/0	1170	34.1	39.9	7402	6662	185
		2100	36.0	75.5	12714	11443	168
		3000	37.5	112.6	17565	15808	156
		350	32.7	11.4	2273	2046	199
		525	33.3	17.5	3295	2966	189
DVDE 6FE 1001 D 9V	00	700	33.9	23.7	4330	3897	183
DARE-05E4001-D-0X	00	900	34.5	31.0	5432	4889	175
		1400	36.0	50.4	8170	7353	162
		2000	37.5	75.1	11287	10158	150
		525	32.7	17.2	3399	3059	198
		785	33.3	26.1	4913	4422	188
	00	1050	33.9	35.6	6475	5828	182
DAKE-05E4001-C-0X	00	1170	34.1	39.9	7112	6401	178
		2100	36.0	75.5	12217	10996	162
		3000	37.5	112.6	16878	15190	150

Table 3: Product Performance at Commonly Used Drive Currents (Continued)

Notes for Table 3:

1. Alternate drive currents in Table 3 are provided for reference only and are not a guarantee of performance.

2. Bridgelux maintains a \pm 7% tolerance on flux measurements.

Table 4: Electrical Characteristics

Part Number		F Pulse	orward Voltag ed, T _c = 25°C (V	e) 1, 2, 3, 8	Typical Coefficient	Typical Thermal	Driver Selection Voltages ⁷ (V)	
	Drive Current (mA)	Minimum	Typical	Maximum	of Forward Voltage⁴ ΔV _f ∕ΔT _c (mV∕°C)	Resistance Junction to Case ^{5.6} R _{j-c} (°C/W)	V _F Min. Hot T _c = 105°C (V)	V _f Max. Cold T _c = -40°C (V)
BXRE-xxx400x-B-8x	700	31.4	33.9	36.4	-10.93	0.14	30.5	37.2
	2000	34.7	37.5	40.3	-12.10	0.23	33.7	41.1
BXRE-xxx400x-C-8x	1050	31.4	33.9	36.4	-10.93	0.12	30.5	37.2
	3000	34.7	37.5	40.3	-12.10	0.20	33.7	41.1

Notes for Table 4:

- 1. Parts are tested in pulsed conditions, T $_{\rm c}$ = 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. V, 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.
- 8. This product has been designed and manufactured per IEC 62031:2014. This product has passed dielectric withstand voltage testing at 1140 V. The working voltage designated for the insulation is 70V d.c. The maximum allowable voltage across the array must be determined in the end product application.

Eye Safety

Table 5: Eye Safety Risk Group (RG) Classifications

Part Number	Drive Current (mA)	сст							
	,	2700K/3000K	4000K ²	5000K3	6500K⁴				
BXRE-xxx400x-B-8x	1440	RG1	RG1	RG1	RG1				
	2000	RG1	RG1	RG1	RG2				
	1440	RG1	RG1	RG1	RG1				
	1995	RG1	RG1	RG1	RG2				
BXRE-xxx400x-C-8x	2650	RG1	RG1	RG2	RG2				
	3000	RG1	RG2	RG2	RG2				

Notes for Table 5:

1. Eye safety classification for the use of Bridgelux V Series LED arrays is in accordance with specification IEC/TR 62778: Application of IEC 62471 for the assessment of blue light hazard to light sources and luminaires.

2. For products classified as RG2 at 4000K, Ethr= 1980 lx.

3. For products classified as RG2 at 5000K Ethr= 1530 lx.

4. For products classified as RG2 at 6500K, Ethr= 1170 lx.

5. Please contact your Bridgelux sales representative for Ethr values at specific drive currents and CCTs not listed.

Absolute Maximum Ratings

Table 6: Maximum Ratings

Parameter	Maximum Rating		
LED Junction Temperature (Tj)	150°C		
Storage Temperature	-40°C to +105°C		
Operating Case Temperature ¹ (T _c)	105°C		
Soldering Temperature ²	300°C or lower for a maximum of 6 seconds		
	BXRE-xxx400x-B-8x	BXRE-xxx400x-C-8x	
Maximum Drive Current ³	2000 mA	3000 mA	
Maximum Peak Pulsed Drive Current ⁴	2240 mA	3360 mA	
Maximum Reverse Voltage ⁵	-60V	-60V	

Notes for Table 6:

1. For IEC 62717 requirement, please consult your Bridgelux sales representative.

2. Refer to Bridgelux Application Note AN101: Handling and Assembly of Bridgelux V Series LED Arrays

3. Arrays may be driven at higher currents however lumen maintenance may be reduced and warranty will not apply.

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: V18B Drive Current vs. Voltage





Figure 2: V18C Drive Current vs. Voltage



Figure 4: V18C Typical Relative Flux vs. Current



Notes for Figures 1-4:

1. Bridgelux does not recommend driving high power LEDs at low currents. Doing so may produce unpredictable results. Pulse width modulation (PWM) is recommended for dimming effects.

2. Products tested under pulsed condition (10ms pulse width) at nominal test current where T₁ (junction temperature) = T_c (case temperature) = 25°C.

Performance Curves



Figure 5: Typical DC Flux vs. Case Temperature

Figure 7: Typical DC ccx Shift vs. Case Temperature



Notes for Figures 5-7:

- 1. Characteristics shown for warm white based on 3000K and 80 CRI.
- 2. Characteristics shown for neutral white based on 4000K and 80 CRI.
- 3. Characteristics shown for cool white based on 5000K and 70 CRI.
- 4. For other color SKUs, the shift in color will vary. Please contact your Bridgelux Sales Representative for more information.



Figure 6: Typical DC ccy Shift vs. Case Temperature

Figure 8: Derating Curve



Typical Radiation Pattern

Figure 9: Typical Spatial Radiation Pattern



Note 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



Note for Figure 11:

- 1. Color spectra measured at nominal current for $T_i = T_c = 25^{\circ}C$.
- 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.

Mechanical Dimensions



Figure 12: Drawing for V18 LED Array

Notes for Figure 12;

- 1. Drawings are not to scale.
- 2. Drawing dimensions are in millimeters.
- 3. Unless otherwise specified, tolerances are ±0.1mm.
- 4. Solder pad labeled "+" denotes positive contact.
- 5. Refer to Application Notes AN101 for product handling, mounting and heat sink recommendations.
- 6. The optical center of the LED Array is nominally defined by the mechanical center of the array to a tolerance of ± 0.2mm.
- 7. Bridgelux maintains a flatness of 0.10mm across the mounting surface of the array.

Color Binning Information



Figure 13: Warm and Neutral White Test Bins in xy Color Space

Note: Pulsed Test Conditions, $T_c = 25^{\circ}C$

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

Bin Code	2700K	3000K	3500K	4000K
ANSI Bin (for reference only)	(2580K - 2870K)	(2870K - 3220K)	(3220K - 3710K)	(3710K - 4260K)
83 (3 SDCM)	(2651K - 2794K)	(2968K - 3136K)	(3369K - 3586K)	(3851K - 4130K)
82 (2 SDCM)	(2674K - 2769K)	(2995K - 3107K)	(3404K - 3548K)	(3895K - 4081K)
Center Point (x,y)	(0.4578, 0.4101)	(0.4338, 0.403)	(0.4073, 0.3917)	(0.3818, 0.3797)

Figure 14: Graph of Cool White Test Bins in xy Color Space



Note: Pulsed Test Conditions, T_c = 25°C

Table 8: Cool White xy Bin Coordinates and Associated Typical CCT (product is hot targeted to T_c = 85°C)

Bin Code	5000K	5700K	6500K
ANSI Bin (for reference only)	(4745K - 5311K)	(5312K - 6022K)	(6022K - 7042K)
84 (4 SDCM)	(4801K - 5282K)	(5829K - 5481K)	(6270K - 6765K)
83 (3 SDCM)	(4835K - 5215K)	(5490K - 5820K)	(6250K - 6745K)
Center Point (x,y)	(0.3447, 0.3553)	(0.3287, 0.3417)	(0.3123, 0.3282)

Packaging and Labeling

Figure 15: Drawing for V18 Packaging Tube



Notes for Figure 15

- 1. Each tube holds 20 V18 COB arrays.
- 2. One tube is sealed in an anti-static bag. Four bags are placed in a shipping box. Depending on quantities ordered, a bigger shipping box, containing four boxes may be used to ship products.
- 3. Each bag and box is to be labeled as shown above.
- 4. Dimensions for each tube are 26.3 (W) x 9.5(H) x 510 (L). Dimensions for the anti-static bag are 75 (W) x 615 (L) x 3.1 (T) mm. Dimensions for the shipping box are 58.7 x 13.3 x 7.9 cm

Packaging and Labeling

Figure 16: Gen. 8 Product Labeling

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.



Design Resources

Application Notes

Bridgelux has developed a comprehensive set of application notes and design resources to assist customers in successfully designing with the V Series product family of LED array products. For all available application notes visit www.bridgelux.com.

Optical Source Models

Optical source models and ray set files are available for all Bridgelux products. For a list of available formats, visit www.bridgelux.com.

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 AN101 for additional information.

CAUTION: RISK OF BURN

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

3D CAD Models

Three dimensional CAD models depicting the product outline of all Bridgelux V Series LED arrays are available in both IGS and STEP formats. Please contact your Bridgelux sales representative for assistance.

LM80

LM80 testing has been completed and the LM80 report is now available. Please contact your Bridgelux sales representative for LM-80 report.

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).

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 bridgelux.com twitter.com/Bridgelux facebook.com/Bridgelux youtube.com/user/Bridgelux linkedin.com/company/bridgelux-inc-_2 WeChat ID: BridgeluxInChina



46430 Fremont Boulevard Fremont, CA 94538 U.S.A. Tel (925) 583-8400 www.bridgelux.com

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