



Bridgelux® Gen 8 V18 Array Series

Product Data Sheet DS415



Introduction

V Series



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



Product Selection Guide

The following product configurations are available:

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

Part Number	Nominal CCT ¹ (K)	CRI ²	Nominal Drive Current ³ (mA)	Typical Pulsed Flux ^{4,5,6} $T_c = 25^\circ\text{C}$ (lm)	Minimum Pulsed Flux ^{6,7} $T_c = 25^\circ\text{C}$ (lm)	Typical V_f (V)	Typical Power (W)	Typical Efficacy (lm/W)
BXRE-22E4000-B-8X	2200	80	700	3383	3045	339	23.7	143
BXRE-22E4000-C-8X	2200	80	1050	5059	4553	339	35.6	142
BXRE-22G4000-B-8X	2200	90	700	2746	2472	339	23.7	116
BXRE-22G4000-C-8X	2200	90	1050	4106	3696	339	35.6	115
BXRE-27E4000-B-8x	2700	80	700	4028	3625	339	23.7	170
BXRE-27E4000-C-8x	2700	80	1050	6024	5421	339	35.6	169
BXRE-27G4000-B-8x	2700	90	700	3323	2991	339	23.7	140
BXRE-27G4000-C-8x	2700	90	1050	4969	4472	339	35.6	140
BXRE-27G40H0-B-8x	2700	90	700	3467	3120	339	23.7	146
BXRE-27G40H0-C-8x	2700	90	1050	5184	4666	339	35.6	146
BXRE-27H4000-B-8x	2700	97	700	2946	2651	339	23.7	124
BXRE-27H4000-C-8x	2700	97	1050	4405	3964	339	35.6	124
BXRE-30C4001-B-8x	3000	70	700	4481	4033	339	23.7	189
BXRE-30C4001-C-8x	3000	70	1050	6701	6031	339	35.6	188
BXRE-30E4000-B-8x	3000	80	700	4280	3852	339	23.7	180
BXRE-30E4000-C-8x	3000	80	1050	6400	5760	339	35.6	180
BXRE-30G4000-B-8x	3000	90	700	3474	3127	339	23.7	146
BXRE-30G4000-C-8x	3000	90	1050	5195	4676	339	35.6	146
BXRE-30G40H0-B-8x	3000	90	700	3638	3274	339	23.7	153
BXRE-30G40H0-C-8x	3000	90	1050	5440	4896	339	35.6	153
BXRE-30H4000-B-8x	3000	97	700	3147	2832	339	23.7	133
BXRE-30H4000-C-8x	3000	97	1050	4706	4235	339	35.6	132
BXRE-35E4000-B-8x	3500	80	700	4381	3943	339	23.7	185
BXRE-35E4000-C-8x	3500	80	1050	6551	5896	339	35.6	184
BXRE-35G4000-B-8x	3500	90	700	3600	3240	339	23.7	152
BXRE-35G4000-C-8x	3500	90	1050	5384	4845	339	35.6	151
BXRE-40C4001-B-8x	4000	70	700	4607	4147	339	23.7	194
BXRE-40C4001-C-8x	4000	70	1050	6889	6200	339	35.6	194
BXRE-40E4000-B-8x	4000	80	700	4406	3965	339	23.7	186
BXRE-40E4000-C-8x	4000	80	1050	6588	5929	339	35.6	185
BXRE-40G4000-B-8x	4000	90	700	3676	3308	339	23.7	155
BXRE-40G4000-C-8x	4000	90	1050	5496	4947	339	35.6	154

Notes for Table 1:

- Nominal CCT as defined by ANSI C78.377-2011. Products with a CCT of 5000K-6500K are hot targeted to $T_c = 85^\circ\text{C}$.
- All CRI values are measured at $T_j = T_c = 25^\circ\text{C}$. CRI values are typical for Decor Series Ultra, Décor Series Street and Landmark and Decor Series Class A products. CRI values are minimums for all other products. Minimum R_g value for 80 CRI products is 0. Minimum R_g value is 60 for 90 CRI products on 2700K/3000K/3500K and 4000K. It is 50 on 5000K/5700K and 6500K. But for the CRI90 H0 products (higher efficiency CRI90 version), minimum R_g value is 55 on 2700K/3000K/3500K and 4000K. Minimum R_g value for 97 CRI products is 93 on 2700K and 3000K and it is 85 on 3500K/4000K/5000K and 5700K. Bridgelux maintains a ± 3 tolerance on R_g values.
- Drive current is referred to as nominal drive current.
- Products tested under pulsed condition (10ms pulse width) at nominal drive current where T_j (junction temperature) = T_c (case temperature) = 25°C .
- Typical performance values are provided as a reference only and are not a guarantee of performance.
- Bridgelux maintains a $\pm 7\%$ tolerance on flux measurements.
- Minimum flux values at the nominal test current are guaranteed by 100% test.

Product Selection Guide

Table 2: Selection Guide, Stabilized DC Performance ($T_c = 85^\circ\text{C}$)^{4,5}

Part Number	Nominal CCT ¹ (K)	CRI ²	Nominal Drive Current ³ (mA)	Typical DC Flux ^{4,5} $T_c = 85^\circ\text{C}$ (lm)	Minimum DC Flux ⁶ $T_c = 85^\circ\text{C}$ (lm)	Typical V_f (V)	Typical Power (W)	Typical Efficacy (lm/W)
BXRE-22E4000-B-8X	2200	80	700	3045	2741	33.1	23.2	131
BXRE-22E4000-C-8X	2200	80	1050	4553	4098	33.1	34.8	131
BXRE-22G4000-B-8X	2200	90	700	2472	2224	33.1	23.2	107
BXRE-22G4000-C-8X	2200	90	1050	3696	3326	33.1	34.8	106
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-27H4000-B-8x	2700	97	700	2651	2386	33.1	23.2	114
BXRE-27H4000-C-8x	2700	97	1050	3964	3568	33.1	34.8	114
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-30H4000-B-8x	3000	97	700	2832	2549	33.1	23.2	122
BXRE-30H4000-C-8x	3000	97	1050	4235	3812	33.1	34.8	122
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

Notes for Table 2:

- Nominal CCT as defined by ANSI C78.377-2011. Products with a CCT of 5000K-6500K are hot targeted to $T_c = 85^\circ\text{C}$.
- All CRI values are measured at $T_j - T_c = 25^\circ\text{C}$. CRI values are typical for Decor Series Ultra, Décor Series Street and Landmark and Decor Series Class A products. CRI values are minimums for all other products. Minimum Rg value for 80 CRI products is 0. Minimum Rg value is 60 for 90 CRI products on 2700K/3000K/3500K and 4000K. it is 50 on 5000K/5700K and 6500K. But for the CRI90 H0 products (higher efficiency CRI90 version), minimum Rg value is 55 on 2700K/3000K/3500K and 4000K. Minimum Rg value for 97 CRI products is 93 on 2700K and 3000K and it is 85 on 3500K /4000K/5000K and 5700K. Bridgelux maintains a ± 3 tolerance on Rg values.
- Drive current is referred to as nominal drive current.
- Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.
- 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.
- 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

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
BXRE-35E4000-B-8x	3500	80	2000	36.8	10277	73.5	140	E	869942	https://eprelec.europa.eu/qr/869942
BXRE-35E4000-C-8x	3500	80	3000	36.8	15367	110.3	139	E	869947	https://eprelec.europa.eu/qr/869947
BXRE-35G4000-B-8x	3500	90	2000	36.8	8446	73.5	115	F	870036	https://eprelec.europa.eu/qr/870036
BXRE-35G4000-C-8x	3500	90	3000	36.8	12629	110.3	114	F	870041	https://eprelec.europa.eu/qr/870041
BXRE-40C4001-B-8x	4000	70	2000	36.8	10809	73.5	147	D	870146	https://eprelec.europa.eu/qr/870146
BXRE-40C4001-C-8x	4000	70	3000	36.8	16162	110.3	146	D	870152	https://eprelec.europa.eu/qr/870152
BXRE-40E4000-B-8x	4000	80	2000	36.8	10336	73.5	141	E	870251	https://eprelec.europa.eu/qr/870251
BXRE-40E4000-C-8x	4000	80	3000	36.8	15456	110.3	140	E	870256	https://eprelec.europa.eu/qr/870256
BXRE-40G4000-B-8x	4000	90	2000	36.8	8623	73.5	117	F	870358	https://eprelec.europa.eu/qr/870358
BXRE-40G4000-C-8x	4000	90	3000	36.8	12894	110.3	117	F	870363	https://eprelec.europa.eu/qr/870363
BXRE-50C4001-B-8x	5000	70	2000	36.8	10868	73.5	148	D	870467	https://eprelec.europa.eu/qr/870467
BXRE-50C4001-C-8x	5000	70	3000	36.8	16250	110.3	147	D	870471	https://eprelec.europa.eu/qr/870471
BXRE-50E4001-B-8x	5000	80	2000	36.8	10454	73.5	142	E	870542	https://eprelec.europa.eu/qr/870542
BXRE-50E4001-C-8x	5000	80	3000	36.8	15632	110.3	142	E	870546	https://eprelec.europa.eu/qr/870546
BXRE-50G4001-B-8x	5000	90	2000	36.8	9037	73.5	123	E	870612	https://eprelec.europa.eu/qr/870612
BXRE-50G4001-C-8x	5000	90	3000	36.8	13513	110.3	122	E	870616	https://eprelec.europa.eu/qr/870616
BXRE-57C4001-B-8x	5700	70	2000	36.8	10573	73.5	144	E	870723	https://eprelec.europa.eu/qr/870723
BXRE-57C4001-C-8x	5700	70	3000	36.8	15809	110.3	143	E	870727	https://eprelec.europa.eu/qr/870727
BXRE-57E4001-B-8x	5700	80	2000	36.8	10041	73.5	137	E	870777	https://eprelec.europa.eu/qr/870777
BXRE-57E4001-C-8x	5700	80	3000	36.8	15014	110.3	136	E	870781	https://eprelec.europa.eu/qr/870781
BXRE-65C4001-B-8x	6500	70	2000	36.8	10573	73.5	144	E	870851	https://eprelec.europa.eu/qr/870851
BXRE-65C4001-C-8x	6500	70	3000	36.8	15809	110.3	143	E	870855	https://eprelec.europa.eu/qr/870855
BXRE-65E4001-B-8x	6500	80	2000	36.8	10159	73.5	138	E	870906	https://eprelec.europa.eu/qr/870906
BXRE-65E4001-C-8x	6500	80	3000	36.8	15191	110.3	138	E	870910	https://eprelec.europa.eu/qr/870910

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

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

Part Number	CRI	Drive Current ¹ (mA)	Typical V _f 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 _c = 25°C (lm/W)
BXRE-30H4000-B-8x	97	350	32.7	11.4	1652	1487	144
		525	33.3	17.5	2395	2155	137
		700	33.9	23.7	3147	2832	133
		900	34.5	31.0	3948	3553	127
		1400	36.0	50.4	5938	5344	118
		2000	37.5	75.1	8203	7383	109
BXRE-30H4000-C-8x	97	525	32.7	17.2	2470	2223	144
		785	33.3	26.1	3570	3213	137
		1050	33.9	35.6	4706	4235	132
		1170	34.1	39.9	5169	4652	129
		2100	36.0	75.5	8879	7991	118
		3000	37.5	112.6	12266	11039	109
BXRE-35E4000-B-8x	80	350	32.7	11.4	2300	2070	201
		525	33.3	17.5	3334	3000	191
		700	33.9	23.7	4381	3943	185
		900	34.5	31.0	5496	4946	177
		1400	36.0	50.4	8265	7439	164
		2000	37.5	75.1	11418	10276	152
BXRE-35E4000-C-8x	80	525	32.7	17.2	3439	3095	200
		785	33.3	26.1	4970	4473	190
		1050	33.9	35.6	6551	5896	184
		1170	34.1	39.9	7195	6476	180
		2100	36.0	75.5	12359	11123	164
		3000	37.5	112.6	17074	15367	152
BXRE-35G4000-B-8x	90	350	32.7	11.4	1890	1701	165
		525	33.3	17.5	2740	2466	157
		700	33.9	23.7	3600	3240	152
		900	34.5	31.0	4517	4065	145
		1400	36.0	50.4	6793	6113	135
		2000	37.5	75.1	9384	8446	125
BXRE-35G4000-C-8x	90	525	32.7	17.2	2826	2544	165
		785	33.3	26.1	4085	3676	156
		1050	33.9	35.6	5384	4845	151
		1170	34.1	39.9	5913	5322	148
		2100	36.0	75.5	10157	9142	134
		3000	37.5	112.6	14032	12629	125
BXRE-40C4001-B-8x	70	350	32.7	11.4	2419	2177	211
		525	33.3	17.5	3506	3155	201
		700	33.9	23.7	4607	4147	194
		900	34.5	31.0	5780	5202	186
		1400	36.0	50.4	8693	7824	173
		2000	37.5	75.1	12009	10808	160

Notes for Table 4:

1. Alternate drive currents in Table 4 are provided for reference only and are not a guarantee of performance.
2. Bridgelux maintains a ± 7% tolerance on flux measurements.
3. Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.