VB192 & VB256 Standard LED Linear PCBAs

PRODUCT DESCRIPTION

VB192 and VB256 Standard LED Linear Printed Circuit Board Assemblies (PCBAs) are configured with J Series® 2835 N Class, J Class, or G Class LEDs. Other options are available as modified Standard configurations or custom designs.

The Standard PCBAs are available in five LED configurations on two board layouts, four CCTs (3000-5000 K) and two CRIs (80 and 90) to meet a range of standard requirements and applications. In addition, each board layout is cuttable to simplify inventory management.

J Series 2835 LEDs combine high efficacy and excellent value in a reliable package. The J Series 2835 LEDs are optimized for low-density lighting applications where high efficacy and smooth appearance are critical, such as downlights, troffers, and panel lights.

FEATURES

- Five different performance options
- 3000 - 5000 K ANSI CCTs
- 80 and 90 CRI options
- 3-step MacAdam ellipse
- Flux binned at 50 °C
- Chromaticity binned at 25 °C
- Two board layouts with 256 or 192 maximum LED count
- The L2-0355 PCBA is available in 3 LED counts (256, 128 or 64), cuttable into 2 560-mm or 4 280-mm sections
- The L2-0354 PCBA is available in 2 LED counts (192 or 96), cuttable into 2 560-mm sections
- FR4 board material
- Solder pads at each end and cut line provide maximum flexibility
- 1-pin poke-in connectors are pre-populated for series configurations at one end of each cut segment
- 2000-V, Class 2 ESD-rated LEDs
- REACH and RoHS compliant
- UL® recognized component (E520046)

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MAXIMUM RATINGS & TYPICAL CHARACTERISTICS

Characteristics	Unit	Minimum	Typical	Maximum
Viewing angle (FWHM) - Standard	degrees		120	
ESD classification (HBM per Mil-Std-883L)	-	Class 2 (<2kV)		
Isolation Breakdown voltage (V_{ac})	V	500		
LED junction temperature (T_j)	°C			125
PCBA Case temperature (T_c)	°C	-40		85
Ambient operating humidity, non-condensing	RH%			80
Storage temperature	°C	-40		85
Color consistency (MacAdam Ellipse)	-			3-step
Rated Lifetime, L70 @ T_c <85 °C Note 1	hours	>100,000		

1. The rated lifetime is based on TM-21 calculations at 85 °C.

ELECTRICAL CHARACTERISTICS & CIRCUIT DESIGNS

Product Code	LED Count	Operating Current (I_F, mA)			Operating Voltage, 50 °C (V_F, V) Note 1				Power Consumption, 50 °C (W)				Circuit Design		
		Min	Typ	Max	Min	Typ	Max	25 °C Typ	Min	Typ	Max	25 °C Typ	Series	Parallel	Shorthand
L2-0355	256	200	2000	3840	43.0	44.0	46.1	44.3	86.0	88.0	92.2	88.6	16	16	16s x 16p
	128	80	1000	1920					43.0	44.0	46.1	44.3	16	8	16s x 8p
	64	40	500	960					21.5	22.0	23.1	22.2	16	4	16s x 4p
L2-0354	192	120	1200	2880	42.5	43.4	45.5	43.8	51.0	52.0	54.6	52.6	16	12	16s x 12p
	96	60	600	1440					25.5	26.0	27.3	26.3	16	6	16s x 6p

1. Voltage and power calculations are based on the typical current condition.
2. Maximum current and power are based on the maximum number of LEDs. PCBA power must be managed by heat sink or duty cycle to remain below the stated maximum temperature.

ORDER CODE FORMAT

Order codes for Linear LED PCBAs are configured as follows:

Order Code Example: L2-0354000192–28350JH50GVB000A

Expanded: L2-0354 000 192 - 2835 0J H 50 G VB 0 00 A

Code Details: AA-AAAA BBB CCC - DDDD EE F GG H JJ K LL M

- AA-AAAA: PCB Design
- BBB: Customer Code
  - 000 = Standard
- CCC: LED Quantity
- DDDD: LED Type
  - 2835 = J Series 2835 LEDs
- EE: LED Class or Min Flux
  - 0N = N-Class
  - 0J = J-Class
  - 0G = G-Class
- F: CRI (Color Rendering Index)
  - H = 80 CRI
  - U = 90 CRI
- GG: Color Region (CCT)
  - 50 = 5000 K
  - 40 = 4000 K
  - 35 = 3500 K
  - 30 = 3000 K
- H: MacAdam Ellipse
  - G = 3-Step
- JJ: L x W Dimensions
  - VB = 1120 x 20 mm
- K: Pro9 Indicator
- LL: Internal Use
- M: Internal Use

FLUX CHARACTERISTICS - N CLASS, 80 CRI (T_C = 50 °C)

The following table lists Linear LED PCBAs order codes. For the complete order code nomenclature, please see the Bin and Order Code Formats section. For chromaticity bin definitions, please see the Cree LED's Standard Chromaticity section.

CCT	LED Count	Luminous Flux (lm), T_c = 50 °C			Typ LF (lm) T_c = 25 °C (ref)	Efficacy, (lm/W) T_c = 50 °C	J Series 2835 N Class 80 CRI Order Codes	Typ Current (I_f, mA)
		Min	Typ	Max				
5000 K	256	14,928	16,051	17,175	**16,768**	180	L2-0355000256-28350NH50GVB000A	2000
	128	7,464	8,026	8,587	**8,384**		L2-0355000128-28350NH50GVB000A	1000
	64	3,732	4,013	4,294	**4,192**		L2-0355000064-28350NH50GVB000A	500
	192	9,089	9,773	10,457	**10,214**	185	L2-0354000192-28350NH50GVB000A	1200
	96	4,544	4,886	5,228	**5,107**		L2-0354000096-28350NH50GVB000A	600
4000 K	256	14,928	16,051	17,175	**16,768**	180	L2-0355000256-28350NH40GVB000A	2000
	128	7,464	8,026	8,587	**8,384**		L2-0355000128-28350NH40GVB000A	1000
	64	3,732	4,013	4,294	**4,192**		L2-0355000064-28350NH40GVB000A	500
	192	9,089	9,773	10,457	**10,214**	185	L2-0354000192-28350NH40GVB000A	1200
	96	4,544	4,886	5,228	**5,107**		L2-0354000096-28350NH40GVB000A	600
3500 K	256	14,499	15,590	16,682	**16,282**	175	L2-0355000256-28350NH35GVB000A	2000
	128	7,250	7,795	8,341	**8,141**		L2-0355000128-28350NH35GVB000A	1000
	64	3,625	3,898	4,170	**4,070**		L2-0355000064-28350NH35GVB000A	500
	192	8,821	9,485	10,149	**9,907**	180	L2-0354000192-28350NH35GVB000A	1200
	96	4,410	4,742	5,074	**4,954**		L2-0354000096-28350NH35GVB000A	600
3000 K	256	14,118	15,181	16,243	**15,846**	170	L2-0355000256-28350NH30GVB000A	2000
	128	7,059	7,590	8,122	**7,923**		L2-0355000128-28350NH30GVB000A	1000
	64	3,530	3,795	4,061	**3,962**		L2-0355000064-28350NH30GVB000A	500
	192	8,589	9,235	9,882	**9,658**	175	L2-0354000192-28350NH30GVB000A	1200
	96	4,294	4,618	4,941	**4,829**		L2-0354000096-28350NH30GVB000A	600

- Cree LED maintains measurement tolerances of ±7% on flux and power, ±0.005 on chromaticity (CCx, CCy) and ±2 on CRI.
- Order codes specify a typical flux bin and list minimum and maximum for reference only. Cree LED may ship higher flux than the typical specified without advance notice. Shipments will always adhere to the order code chromaticity bin restrictions.
- 25 °C Flux values are calculated and for reference only.

FLUX CHARACTERISTICS - N CLASS, 90 CRI (T_C = 50 °C)

The following table lists Linear LED PCBAs order codes. For the complete order code nomenclature, please see the Bin and Order Code Formats section. For chromaticity bin definitions, please see the Cree LED's Standard Chromaticity section.

CCT	LED Count	Luminous Flux (lm), T_c = 50 °C			Typ LF (lm) T_c = 25 °C (ref)	Efficacy, (lm/W) T_c = 50 °C	J Series 2835 N Class 90 CRI Order Codes	Typ Current (I_f, mA)
		Min	Typ	Max				
5000 K	256	12,618	13,568	14,518	**14,182**	152	L2-0355000256-28350NU50GVB000A	2000
	128	6,309	6,784	7,259	**7,091**		L2-0355000128-28350NU50GVB000A	1000
	64	3,155	3,392	3,629	**3,546**		L2-0355000064-28350NU50GVB000A	500
	192	7,696	8,275	8,854	**8,640**	157	L2-0354000192-28350NU50GVB000A	1200
	96	3,848	4,138	4,427	**4,320**		L2-0354000096-28350NU50GVB000A	600
4000 K	256	12,618	13,568	14,518	**14,182**	152	L2-0355000256-28350NU40GVB000A	2000
	128	6,309	6,784	7,259	**7,091**		L2-0355000128-28350NU40GVB000A	1000
	64	3,155	3,392	3,629	**3,546**		L2-0355000064-28350NU40GVB000A	500
	192	7,696	8,275	8,854	**8,640**	157	L2-0354000192-28350NU40GVB000A	1200
	96	3,848	4,138	4,427	**4,320**		L2-0354000096-28350NU40GVB000A	600
3500 K	256	12,285	13,210	14,134	**13,798**	148	L2-0355000256-28350NU35GVB000A	2000
	128	6,142	6,605	7,067	**6,899**		L2-0355000128-28350NU35GVB000A	1000
	64	3,071	3,302	3,534	**3,450**		L2-0355000064-28350NU35GVB000A	500
	192	7,482	8,045	8,608	**8,390**	152	L2-0354000192-28350NU35GVB000A	1200
	96	3,741	4,022	4,304	**4,195**		L2-0354000096-28350NU35GVB000A	600
3000 K	256	11,880	12,774	13,669	**13,338**	143	L2-0355000256-28350NU30GVB000A	2000
	128	5,940	6,387	6,834	**6,669**		L2-0355000128-28350NU30GVB000A	1000
	64	2,970	3,194	3,417	**3,334**		L2-0355000064-28350NU30GVB000A	500
	192	7,232	7,776	8,320	**8,122**	147	L2-0354000192-28350NU30GVB000A	1200
	96	3,616	3,888	4,160	**4,061**		L2-0354000096-28350NU30GVB000A	600

- Cree LED maintains measurement tolerances of ±7% on flux and power, ±0.005 on chromaticity (CCx, CCy) and ±2 on CRI.
- Order codes specify a typical flux bin and list minimum and maximum for reference only. Cree LED may ship higher flux than the typical specified without advance notice. Shipments will always adhere to the order code chromaticity bin restrictions.
- 25 °C Flux values are calculated and for reference only.

FLUX CHARACTERISTICS - J CLASS, 80 CRI (T_C = 50 °C)

The following table lists Linear LED PCBAs order codes. For the complete order code nomenclature, please see the Bin and Order Code Formats section. For chromaticity bin definitions, please see the Cree LED's Standard Chromaticity section.

CCT	LED Count	Luminous Flux (lm), T_c = 50 °C			Typ LF (lm) T_c = 25 °C (ref)	Efficacy, (lm/W) T_c = 50 °C	J Series 2835 J Class 80 CRI Order Codes	Typ Current (I_f, mA)
		Min	Typ	Max				
5000 K	256	15,904	17,101	18,298	**17,613**	192	L2-0355000256-28350JH50GVB000A	2000
	128	7,952	8,550	9,149	**8,806**		L2-0355000128-28350JH50GVB000A	1000
	64	3,976	4,275	4,574	**4,403**		L2-0355000064-28350JH50GVB000A	500
	192	9,624	10,349	11,073	**10,675**	197	L2-0354000192-28350JH50GVB000A	1200
	96	4,812	5,174	5,537	**5,338**		L2-0354000096-28350JH50GVB000A	600
4000 K	256	15,904	17,101	18,298	**17,613**	192	L2-0355000256-28350JH40GVB000A	2000
	128	7,952	8,550	9,149	**8,806**		L2-0355000128-28350JH40GVB000A	1000
	64	3,976	4,275	4,574	**4,403**		L2-0355000064-28350JH40GVB000A	500
	192	9,624	10,349	11,073	**10,675**	197	L2-0354000192-28350JH40GVB000A	1200
	96	4,812	5,174	5,537	**5,338**		L2-0354000096-28350JH40GVB000A	600
3500 K	256	15,428	16,589	17,750	**17,101**	186	L2-0355000256-28350JH35GVB000A	2000
	128	7,714	8,294	8,875	**8,550**		L2-0355000128-28350JH35GVB000A	1000
	64	3,857	4,147	4,438	**4,275**		L2-0355000064-28350JH35GVB000A	500
	192	9,339	10,042	10,745	**10,349**	191	L2-0354000192-28350JH35GVB000A	1200
	96	4,669	5,021	5,372	**5,174**		L2-0354000096-28350JH35GVB000A	600
3000 K	256	14,928	16,051	17,175	**16,538**	180	L2-0355000256-28350JH30GVB000A	2000
	128	7,464	8,026	8,587	**8,269**		L2-0355000128-28350JH30GVB000A	1000
	64	3,732	4,013	4,294	**4,134**		L2-0355000064-28350JH30GVB000A	500
	192	9,035	9,715	10,395	**10,022**	185	L2-0354000192-28350JH30GVB000A	1200
	96	4,518	4,858	5,198	**5,011**		L2-0354000096-28350JH30GVB000A	600

- Cree LED maintains measurement tolerances of ±7% on flux and power, ±0.005 on chromaticity (CCx, CCy) and ±2 on CRI.
- Order codes specify a typical flux bin and list minimum and maximum for reference only. Cree LED may ship higher flux than the typical specified without advance notice. Shipments will always adhere to the order code chromaticity bin restrictions.
- 25 °C Flux values are calculated and for reference only.

FLUX CHARACTERISTICS - J CLASS, 90 CRI (T_C = 50 °C)

The following table lists Linear LED PCBAs order codes. For the complete order code nomenclature, please see the Bin and Order Code Formats section. For chromaticity bin definitions, please see the Cree LED's Standard Chromaticity section.

CCT	LED Count	Luminous Flux (lm), T_c = 50 °C			Typ LF (lm) T_c = 25 °C (ref)	Efficacy, (lm/W) T_c = 50 °C	J Series 2835 J Class 90 CRI Order Codes	Typ Current (I_f, mA)
		Min	Typ	Max				
5000 K	256	13,594	14,618	15,641	**15,053**	164	L2-0355000256-28350JU50GVB000A	2000
	128	6,797	7,309	7,820	**7,526**		L2-0355000128-28350JU50GVB000A	1000
	64	3,399	3,654	3,910	**3,763**		L2-0355000064-28350JU50GVB000A	500
	192	8,232	8,851	9,471	**9,120**	168	L2-0354000192-28350JU50GVB000A	1200
	96	4,116	4,426	4,735	**4,560**		L2-0354000096-28350JU50GVB000A	600
4000 K	256	13,594	14,618	15,641	**15,053**	164	L2-0355000256-28350JU40GVB000A	2000
	128	6,797	7,309	7,820	**7,526**		L2-0355000128-28350JU40GVB000A	1000
	64	3,399	3,654	3,910	**3,763**		L2-0355000064-28350JU40GVB000A	500
	192	8,232	8,851	9,471	**9,120**	168	L2-0354000192-28350JU40GVB000A	1200
	96	4,116	4,426	4,735	**4,560**		L2-0354000096-28350JU40GVB000A	600
3500 K	256	13,118	14,106	15,093	**14,541**	159	L2-0355000256-28350JU35GVB000A	2000
	128	6,559	7,053	7,546	**7,270**		L2-0355000128-28350JU35GVB000A	1000
	64	3,280	3,526	3,773	**3,635**		L2-0355000064-28350JU35GVB000A	500
	192	7,946	8,544	9,142	**8,813**	162	L2-0354000192-28350JU35GVB000A	1200
	96	3,973	4,272	4,571	**4,406**		L2-0354000096-28350JU35GVB000A	600
3000 K	256	12,713	13,670	14,627	**14,106**	154	L2-0355000256-28350JU30GVB000A	2000
	128	6,357	6,835	7,314	**7,053**		L2-0355000128-28350JU30GVB000A	1000
	64	3,178	3,418	3,657	**3,526**		L2-0355000064-28350JU30GVB000A	500
	192	7,696	8,275	8,854	**8,525**	157	L2-0354000192-28350JU30GVB000A	1200
	96	3,848	4,138	4,427	**4,262**		L2-0354000096-28350JU30GVB000A	600

- Cree LED maintains measurement tolerances of ±7% on flux and power, ±0.005 on chromaticity (CCx, CCy) and ±2 on CRI.
- Order codes specify a typical flux bin and list minimum and maximum for reference only. Cree LED may ship higher flux than the typical specified without advance notice. Shipments will always adhere to the order code chromaticity bin restrictions.
- 25 °C Flux values are calculated and for reference only.

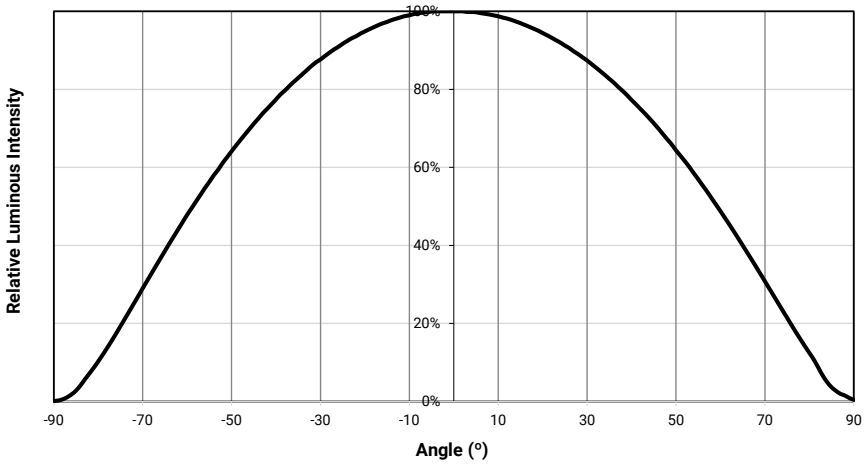
FLUX CHARACTERISTICS - G-CLASS PRO9™, 90 CRI (T_C = 50 °C)

The following table lists Linear LED PCBAs order codes. For the complete order code nomenclature, please see the Bin and Order Code Formats section. For chromaticity bin definitions, please see the Cree LED's Standard Chromaticity section.

CCT	LED Count	Luminous Flux (lm), T_c = 50 °C			Typ LF (lm) T_c = 25 °C (ref)	Efficacy, (lm/W) T_c = 50 °C	J Series 2835 J\G Class Pro9 90 CRI Order Codes	Typ Current (I_f, mA)
		Min	Typ	Max				
5000 K	256	15,594	16,768	17,942	**17,331**	191	L2-0355000256-28350GU50GVBP00A	2000
	128	7,797	8,384	8,971	**8,666**		L2-0355000128-28350GU50GVBP00A	1000
	64	3,899	4,192	4,485	**4,333**		L2-0355000064-28350GU50GVBP00A	500
	192	9,446	10,157	10,868	**10,483**	195	L2-0354000192-28350GU50GVBP00A	1200
	96	4,723	5,078	5,434	**5,242**		L2-0354000096-28350GU50GVBP00A	600
4000 K	256	15,594	16,768	17,942	**17,331**	191	L2-0355000256-28350GU40GVBP00A	2000
	128	7,797	8,384	8,971	**8,666**		L2-0355000128-28350GU40GVBP00A	1000
	64	3,899	4,192	4,485	**4,333**		L2-0355000064-28350GU40GVBP00A	500
	192	9,446	10,157	10,868	**10,483**	195	L2-0354000192-28350GU40GVBP00A	1200
	96	4,723	5,078	5,434	**5,242**		L2-0354000096-28350GU40GVBP00A	600
3500 K	256	15,332	16,486	17,640	**17,024**	187	L2-0355000256-28350GU35GVBP00A	2000
	128	7,666	8,243	8,820	**8,512**		L2-0355000128-28350GU35GVBP00A	1000
	64	3,833	4,122	4,410	**4,256**		L2-0355000064-28350GU35GVBP00A	500
	192	9,285	9,984	10,683	**10,310**	192	L2-0354000192-28350GU35GVBP00A	1200
	96	4,643	4,992	5,341	**5,155**		L2-0354000096-28350GU35GVBP00A	600
3000 K	256	15,023	16,154	17,284	**16,691**	184	L2-0355000256-28350GU30GVBP00A	2000
	128	7,511	8,077	8,642	**8,346**		L2-0355000128-28350GU30GVBP00A	1000
	64	3,756	4,038	4,321	**4,173**		L2-0355000064-28350GU30GVBP00A	500
	192	9,107	9,792	10,477	**10,099**	188	L2-0354000192-28350GU30GVBP00A	1200
	96	4,553	4,896	5,239	**5,050**		L2-0354000096-28350GU30GVBP00A	600

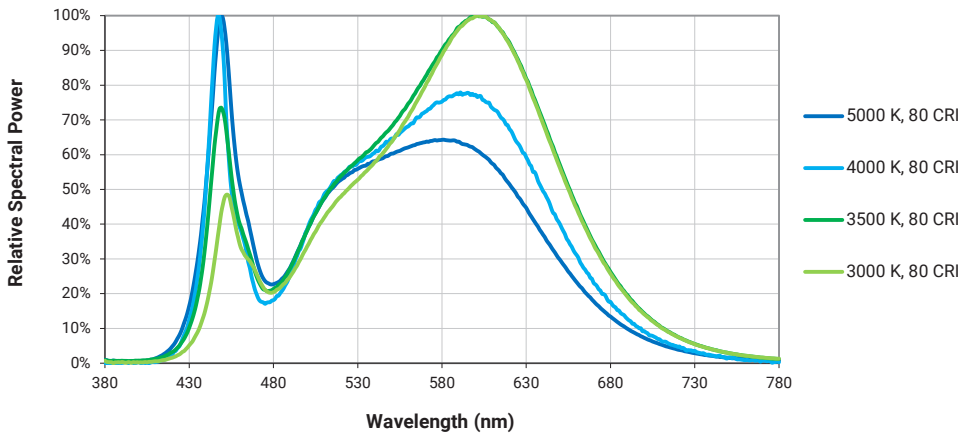
- Cree LED maintains measurement tolerances of ±7% on flux and power, ±0.005 on chromaticity (CCx, CCy) and ±2 on CRI.
- Order codes specify a typical flux bin and list minimum and maximum for reference only. Cree LED may ship higher flux than the typical specified without advance notice. Shipments will always adhere to the order code chromaticity bin restrictions.
- 25 °C Flux values are calculated and for reference only.

TYPICAL SPATIAL DISTRIBUTION

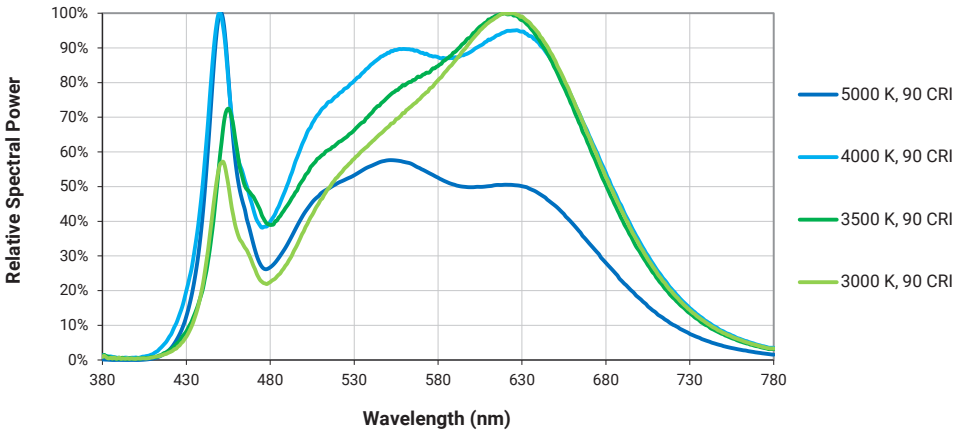


RELATIVE SPECTRAL POWER DISTRIBUTION

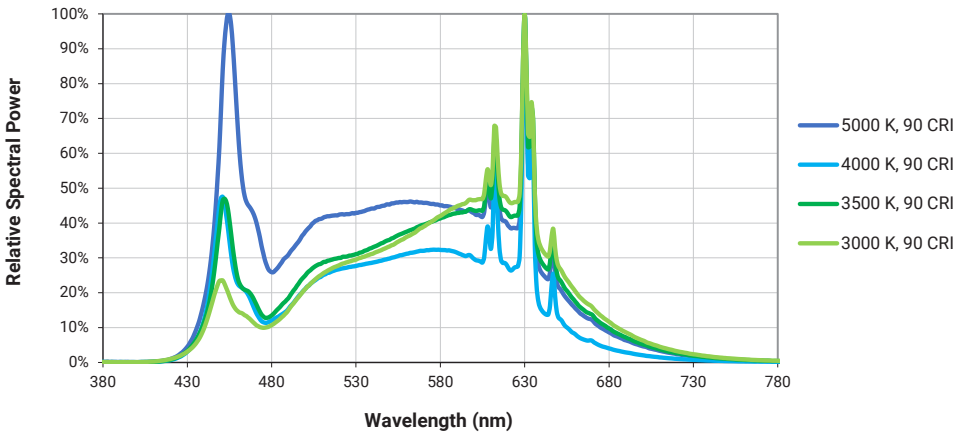
N, J Class



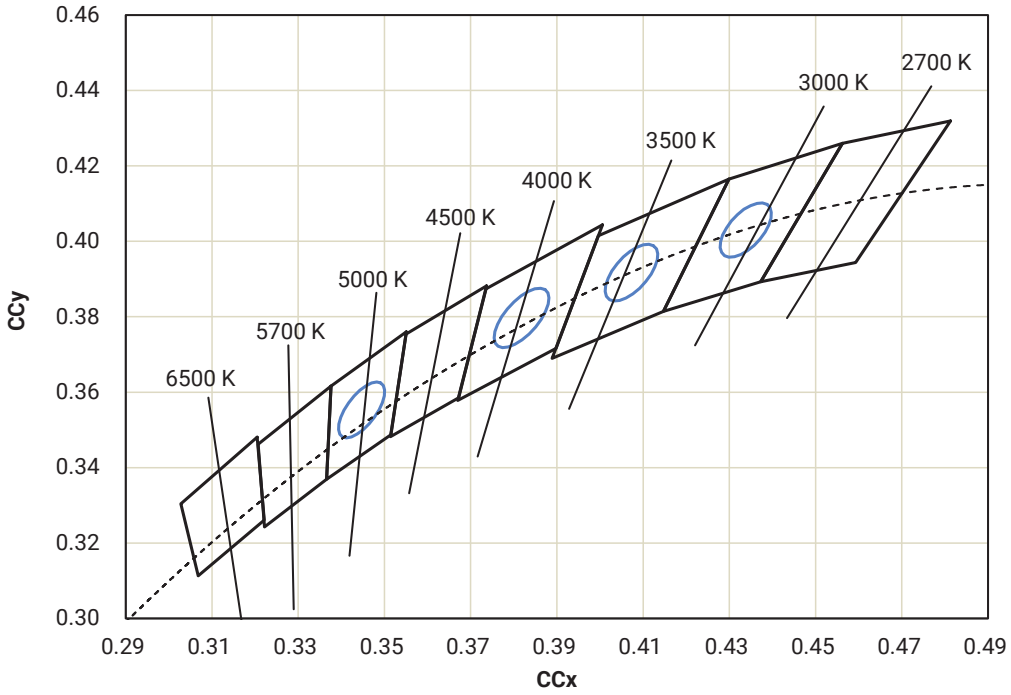
N, J Class



G Class



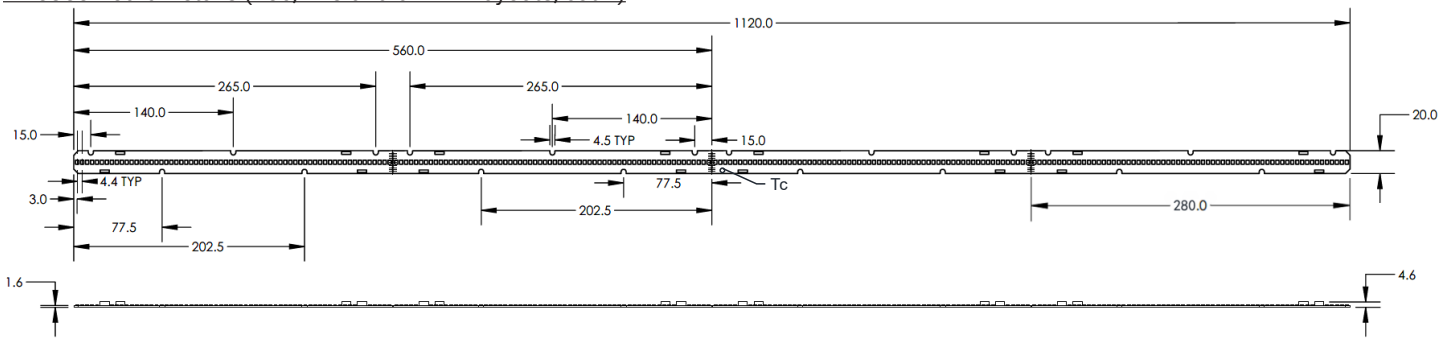
CHROMATICITY (T_C = 85 °C)



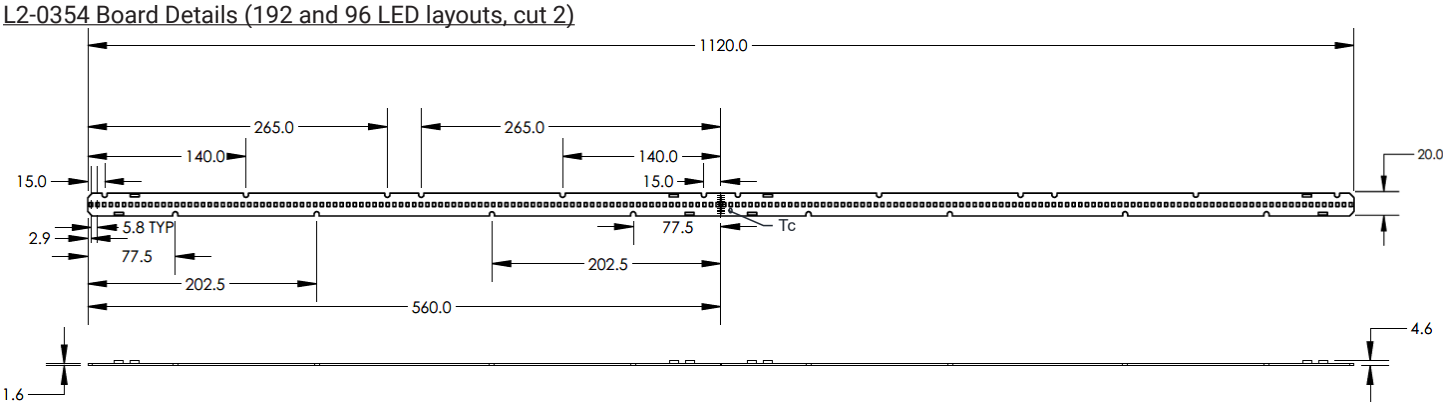
CCT	MacAdam Ellipse	Center Point		Major Axis	Minor Axis	Rotation Angle (°)
		x	y	a	b	
5000 K	3-step	0.3447	0.3553	0.00822	0.00354	59.62
4000 K	3-step	0.3818	0.3797	0.00939	0.00402	53.72
3500 K	3-step	0.4073	0.3917	0.00927	0.00414	54.00
3000 K	3-step	0.4338	0.4030	0.00834	0.00408	53.22

MECHANICAL DETAILS

L2-0355 Board Details (256, 128 and 64 LED layouts, cut 4)



L2-0354 Board Details (192 and 96 LED layouts, cut 2)



Note: Tolerances for critical dimensions are shown in the PCBA Dimensions section. All other dimensions are nominal and for reference only.

PCB PROPERTIES & CONFIGURATIONS

	L2-0355	L2-0354
PCB Material	FR4, cuttable to two 560 mm or four 280 mm	FR4, cuttable to two 560 mm
Solder Mask Material	White	
Silkscreen Color	Black	
LED Count	256, 128 or 64	192 or 96
Electrical Connector	1-pin poke-in for 0.2-0.75 mm dia (18-24 AWG)	
Connector Solder Pad Quantity	16 total (2 left end, 4 at each cut line, 2 right end)	8 total (2 left end, 4 at cut line, 2 right end)
Pre-populated Connector Quantity and Locations	8 total (2 left end, 4 at center cut line, 2 right end)	4 total (2 left end, 2 right end)
Conductor Entry Angle	0°	

PCBA DIMENSIONS

PCBA Dimension	Typical	Tolerance	Units
PCB Length	1120.0	±0.3	mm
PCB Width	20.0	±0.1	mm
PCBA Height - reference only	(4.6)	-	mm
PCB Thickness	1.6	±0.16	mm
PCBA Weight - reference only	(104)	-	g

See the Mechanical Details section for more information.

PACKAGING BOX DIMENSIONS

Length (mm)	Width (mm)	Height (mm)	PCBAs / Box	Box Weight (kg)	Boxes per Pallet
1230	400	200	180	18	12

PRODUCT LABEL

The PCB designation code is clearly marked on each section along with the PCB PN. The CCT, CRI and special features are marked by zero-ohm resistors in two locations. All PCBAs will be marked with a 2D datamatrix for full traceability.

INNER BOX LABEL

Inner box label example for illustration purposes only: details will vary by product and specifications. A 2D Barcode includes all label fields.

NOTES

Measurements

The luminous flux, radiant power, chromaticity, forward voltage and CRI measurements in this document are binning specifications only and solely represent product measurements as of the date of shipment. These measurements will change over time based on a number of factors that are not within Cree LED's control and are not intended or provided as operational specifications for the products. Calculated values are provided for reference and informational purposes only and are not intended or provided as specifications.

ESD

The Linear LED PCBAs carry a Class 2 (2 kV) rating for electrostatic discharge (ESD) based on the ESDS Component Sensitivity Classification - Human Body Model (per ESD STM5.1-2007).

LED PCBAs must be handled with proper ESD handling protocols. Cree LED recommends removing LED PCBAs from packaging at an ESD-safe workstation and using appropriate handling protocols and precautions when handling the LED PCBAs.

Storage Conditions

Store LED PCBAs in their original packaging to minimize potential for unintended contact and contamination. LED PCBAs must be maintained between 0 - 40 °C within 0% to 80% humidity non-condensing.

RoHS Compliance

The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU Directive 2011/65/EC (RoHS2), as implemented January 2, 2013. RoHS Declarations for this product can be obtained from your Cree LED representative or from the Product Ecology section of the Cree LED website.

REACH Compliance

REACH substances of very high concern (SVHCs) information is available for this product. The European Chemical Agency (ECHA) frequently revises the SVHC listing, please contact a Cree LED representative to receive the most up-to-date REACH SVHC Declaration. REACH banned substance information (REACH Article 67) is also available upon request.

UL® Recognized Component

This product meets the requirements to be considered a UL Recognized Component with Level 4 enclosure consideration. The LED package or a portion thereof has been investigated as a fire and electrical enclosure per ANSI/UL 8750.

Vision Advisory

Users should be cautioned not to stare at the light of this LED product. The bright light can damage the eye. For more information about LEDs and eye safety, please refer to the LED Eye Safety application note.

Hot Plugging

The LED PCBAs must not be electrically connected to a driver that is already energized.