

Cree[®] XLamp[®] CXA1507 LED



PRODUCT DESCRIPTION

The XLamp CXA1507 LED array expands Cree's family of high-flux, multi-die arrays in a smaller, easy-to-use platform. With XLamp lighting-class reliability, the CXA1507's small, uniform emitting surface enables both directional and non-directional lighting applications including lamp retrofit and luminaire designs. Available in 2-step and 4-step color consistency, and featuring a 9-mm optical source, the CXA1507 brings new levels of flux and efficacy to this form factor.

FEATURES

- Available in ANSI white bins as well as 4-step and 2-step EasyWhite® bins at 2700 K, 3000 K, 3500 K, 4000 K and 5000 K
- Available in ANSI white bins as well as 4-step EasyWhite bins at 5700 K and 6500 K CCT
- Available in 70-, 80-, 90- and 93-minimum CRI options
- Forward voltage: 37 V
- 85 °C binning and characterization
- Maximum drive current:
 375 mA
- 115° viewing angle, uniform chromaticity profile
- Top-side solder connections
- Thermocouple attach point
- NEMA SSL-3 2011 standard flux hins
- RoHS- and REACh-compliant
- UL-recognized component (E349212)



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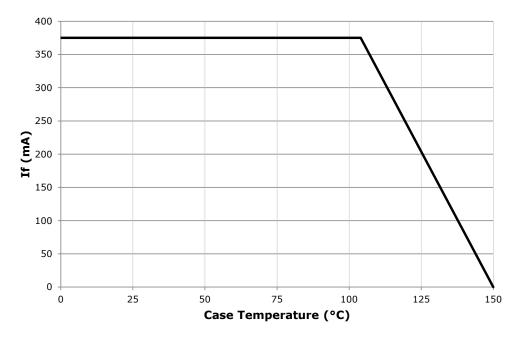
CHARACTERISTICS

Characteristics	Unit	Minimum	Typical	Maximum
Viewing angle (FWHM)	degrees		115	
ESD withstand voltage (HBM per Mil-Std-883D)	V			8000
DC forward current	mA			375*
Reverse current	mA			0.1
Forward voltage (@ 200 mA, 85 °C)	V		37	
Forward voltage (@ 200 mA, 25 °C)	V			42

^{*} Refer to the Operating Limits section.

OPERATING LIMITS

The maximum current rating of the CXA1507 is dependent on the case temperature (Tc) when the LED has reached thermal equilibrium under steady-state operation. Please refer to the Mechanical Dimensions section on page 14 for the location of the Tc measurement point.





FLUX CHARACTERISTICS, EASYWHITE ORDER CODES AND BINS ($I_F = 200 \text{ mA}$, $T_J = 85 \text{ °C}$)

The following tables provide order codes for XLamp CXA1507 LEDs. For a complete description of the order code nomenclature, please reference Bin and Order Code Formats (page 15).

ССТ	C	RI	Min.	e Order C Luminous @ 200 m/	Flux	2	2-Step Order Code		-Step Order Code
Range	Min	Тур	Group	Flux (lm) @ 85 °C	Flux (lm) @ 25 °C*	Chromaticity Region		Chromaticity Region	
			G2	780	871				CXA1507-0000-000N00G265F
	70	75	G4	840	938			65F	CXA1507-0000-000N00G465F
6500 K			H2	900	1005				CXA1507-0000-000N00H265F
6500 K			F4	730	815				CXA1507-0000-000N0HF465F
	80		G2	780	871			65F	CXA1507-0000-000N0HG265F
			G4	840	938				CXA1507-0000-000N0HG465F
			G2	780	871				CXA1507-0000-000N00G257F
	70	75	G4	840	938			57F	CXA1507-0000-000N00G457F
5700 K			H2	900	1005				CXA1507-0000-000N00H257F
3700 K			F4	730	815				CXA1507-0000-000N0HF457F
	80		G2	780	871			57F	CXA1507-0000-000N0HG257F
			G4	840	938				CXA1507-0000-000N0HG457F
			G2	780	871		CXA1507-0000-000N00G250H		CXA1507-0000-000N00G250F
	70	75	G4	840	938	50H	CXA1507-0000-000N00G450H	50F	CXA1507-0000-000N00G450F
			H2	900	1005		CXA1507-0000-000N00H250H		CXA1507-0000-000N00H250F
			F4	730	815		CXA1507-0000-000N0HF450H		CXA1507-0000-000N0HF450F
5000 K	80		G2	780	871	50H	CXA1507-0000-000N0HG250H	50F	CXA1507-0000-000N0HG250F
			G4	840	938	CXA1507-0000-000N0HG450H		CXA1507-0000-000N0HG450F	
			E4	635	5 709 CXA1507-0000-000N0UE450H	CXA1507-0000-000N0UE450H		CXA1507-0000-000N0UE450F	
	90	95	F2	680	759	50H	CXA1507-0000-000N0UF250H	50F	CXA1507-0000-000N0UF250F
			F4	730	815		CXA1507-0000-000N0UF450H		CXA1507-0000-000N0UF450F

- Cree maintains a tolerance of ±7% on flux and power measurements, ±0.005 on chromaticity (CCx, CCy) measurements and a tolerance of ±2 on CRI measurements.
- * Flux values @ 25 °C are calculated and for reference only.



FLUX CHARACTERISTICS, EASYWHITE ORDER CODES AND BINS (I $_{\scriptscriptstyle F}$ = 200 mA, T $_{\scriptscriptstyle J}$ = 85 °C) - CONTINUED

ССТ	C	RI	Base Order Codes Min. Luminous Flux @ 200 mA		2	-Step Order Code	4-Step Order Code			
Range	Min	Тур	Group	Flux (lm) @ 85°C	Flux (lm) @ 25 °C*	Chromaticity Region		Chromaticity Region		
	70		F4	730	815		CXA1507-0000-000N00F440H		CXA1507-0000-000N00F440F	
		75	G2	780	871	40H	CXA1507-0000-000N00G240H	40F	CXA1507-0000-000N00G240F	
			G4	840	938		CXA1507-0000-000N00G440H		CXA1507-0000-000N00G440F	
4000 K	80		F4	780	815	40H	CXA1507-0000-000N0HF440H	40F	CXA1507-0000-000N0HF440F	
4000 K	80		G2	780	871	4011	CXA1507-0000-000N0HG240H	401	CXA1507-0000-000N0HG240F	
			E2	590	659		CXA1507-0000-000N0UE240H		CXA1507-0000-000N0UE240F	
	90	95	E4	635	709	40H	CXA1507-0000-000N0UE440H	40F	CXA1507-0000-000N0UE440F	
			F2	680	759		CXA1507-0000-000N0UF240H		CXA1507-0000-000N0UF240F	
			F2	680	759		CXA1507-0000-000N00F235H		CXA1507-0000-000N00F235F	
	80		F4	730	815	35H	CXA1507-0000-000N00F435H	35F	CXA1507-0000-000N00F435F	
3500 K			G2	780	871		CXA1507-0000-000N00G235H		CXA1507-0000-000N00G235F	
3500 K			D4	550	614		CXA1507-0000-000N0YD435H	35F	CXA1507-0000-000N0YD435F	
	93	95	E2	590	659	35H	CXA1507-0000-000N0YE235H		CXA1507-0000-000N0YE235F	
			E4	635	709		CXA1507-0000-000N0YE435H		CXA1507-0000-000N0YE435F	
			F2	680	759		CXA1507-0000-000N00F230H		CXA1507-0000-000N00F230F	
	80		F4	730	815	30H	CXA1507-0000-000N00F430H	30F	CXA1507-0000-000N00F430F	
			G2	780	871		CXA1507-0000-000N00G230H		CXA1507-0000-000N00G230F	
3000 K	90		D4	550	614	30H	CXA1507-0000-000N0UD430H	30F	CXA1507-0000-000N0UD430F	
3000 K	90		E2	590	659	3011	CXA1507-0000-000N0UE230H	301	CXA1507-0000-000N0UE230F	
			D2	510	569		CXA1507-0000-000N0YD230H		CXA1507-0000-000N0YD230F	
	93	95	D4	550	614	30H	CXA1507-0000-000N0YD430H	30F	CXA1507-0000-000N0YD430F	
			E2	590	659		CXA1507-0000-000N0YE230H		CXA1507-0000-000N0YE230F	
			E4	635	709		CXA1507-0000-000N00E427H		CXA1507-0000-000N00E427F	
	80		F2	680	759	27H	CXA1507-0000-000N00F227H	27F	CXA1507-0000-000N00F227F	
			F4	730	815		CXA1507-0000-000N00F427H		CXA1507-0000-000N00F427F	
			C4	475	530		CXA1507-0000-000N0UC427H		CXA1507-0000-000N0UC427F	
2700 K	90		D2	510	569	27H	CXA1507-0000-000N0UD227H	27F	CXA1507-0000-000N0UD227F	
			D4	550	614		CXA1507-0000-000N0UD427H		CXA1507-0000-000N0UD427F	
			C4	475	530		CXA1507-0000-000N0YC427H		CXA1507-0000-000N0YC427F	
	93	3 95	D2	510	569	27H	CXA1507-0000-000N0YD227H	27F	CXA1507-0000-000N0YD227F	
				D4	550	614		CXA1507-0000-000N0YD427H		CXA1507-0000-000N0YD427F

- Cree maintains a tolerance of ±7% on flux and power measurements, ±0.005 on chromaticity (CCx, CCy) measurements and a
 tolerance of ±2 on CRI measurements.
- * Flux values @ 25 °C are calculated and for reference only.



FLUX CHARACTERISTICS, ANSI WHITE ORDER CODES AND BINS ($I_F = 200 \text{ mA}, T_J = 85 \text{ °C}$)

The following tables provide order codes for XLamp CXA1507 LEDs. For a complete description of the order code nomenclature, please reference Bin and Order Code Formats (page 15).

сст	CI	RI	Base Order Codes Min. Luminous Flux @ 200 mA			Chromaticity Regions	Order Code	
Range	Min	Тур	Group	Flux (lm) @ 85 °C	Flux (lm) @ 25 °C*			
			G2	780	871		CXA1507-0000-000N00G20E1	
	70	75	G4	840	938	1A0, 1B0, 1C0, 1D0	CXA1507-0000-000N00G40E1	
6500 K			H2	900	1005		CXA1507-0000-000N00H20E1	
0300 K			F4	730	815		CXA1507-0000-000N0HF40E1	
	80		G2	780	871	1A0, 1B0, 1C0, 1D0	CXA1507-0000-000N0HG20E1	
			G4	840	938		CXA1507-0000-000N0HG40E1	
	70		G2	780	871		CXA1507-0000-000N00G20E2	
		75	G4	840	938	2A0, 2B0, 2C0, 2D0	CXA1507-0000-000N00G40E2	
5700 K			H2	900	1005		CXA1507-0000-000N00H20E2	
3700 K	80	80		F4	730	815		CXA1507-0000-000N0HF40E2
			80		G2	780	871	2A0, 2B0, 2C0, 2D00
			G4	840	938		CXA1507-0000-000N0HG40E3	
			G2	780	871		CXA1507-0000-000N00G20E3	
	70	75	G4	840	938	3A0, 3B0, 3C0, 3D0	CXA1507-0000-000N00G40E3	
			H2	900	1005		CXA1507-0000-000N00H20E3	
			F4	730	815		CXA1507-0000-000N0HF40E3	
5000 K	80		G2	780	871	3A0, 3B0, 3C0, 3D0	CXA1507-0000-000N0HG20E3	
			G4	840	938		CXA1507-0000-000N0HG40E3	
			E4	635	709		CXA1507-0000-000N0UE40E3	
	90	95	F2	680	759	3A0, 3B0, 3C0, 3D0	CXA1507-0000-000N0UF20E3	
			F4	730	815		CXA1507-0000-000N0UF40E3	

- Cree maintains a tolerance of ±7% on flux and power measurements, ±0.005 on chromaticity (CCx, CCy) measurements and a tolerance of ±2 on CRI measurements.
- * Flux values @ 25 °C are calculated and for reference only.



FLUX CHARACTERISTICS, ANSI WHITE ORDER CODES AND BINS (I $_{\scriptscriptstyle F}$ = 200 mA, T $_{\scriptscriptstyle J}$ = 85 °C) - CONTINUED

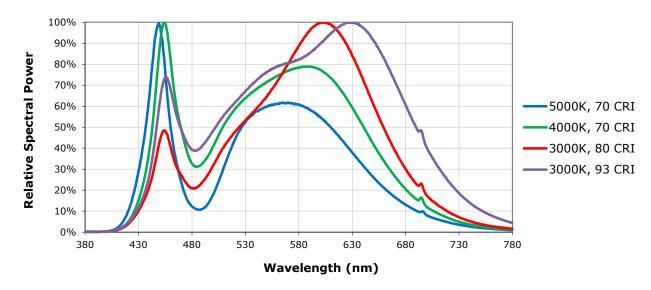
сст	CRI			Base Order Cod in. Luminous F @ 200 mA		Chromaticity Regions	Order Code			
Range	Min	Тур	Group	Flux (lm) @ 85 °C	Flux (lm) @ 25 °C*					
			F4	730	815		CXA1507-0000-000N00F40E5			
	70	75	G2	780	871	5A0, 5B0, 5C0, 5D0	CXA1507-0000-000N00G20E5			
			G4	840	938		CXA1507-0000-000N00G40E5			
4000 1/	00		F4	780	815	540 FRO 500 FRO	CXA1507-0000-000N0HF40E5			
4000 K	80		G2	780	871	5A0, 5B0, 5C0, 5D0	CXA1507-0000-000N0HG20E5			
			E2	590	659		CXA1507-0000-000N0UE20E5			
	90	95	E4	635	709	5A0, 5B0, 5C0, 5D0	CXA1507-0000-000N0UE40E5			
			F2	680			CXA1507-0000-000N0UF20E5			
			F2	680	759		CXA1507-0000-000N00F20E6			
	80		F4	730	815	6A0, 6B0, 6C0, 6D0	CXA1507-0000-000N00F40E6			
3E00 K			G2	780	871		CXA1507-0000-000N00G20E6			
3500 K	93	93		D4	550	614		CXA1507-0000-000N0YD40E6		
			93	95	E2	590	659	6A0, 6B0, 6C0, 6D0	CXA1507-0000-000N0YE20E6	
			E4	635	709		CXA1507-0000-000N0YE40E6			
			F2	680	759		CXA1507-0000-000N00F20E7			
	80	80	80	80		F4	730	815	7A0, 7B0, 7C0, 7D0	CXA1507-0000-000N00F40E7
			G2	780	871		CXA1507-0000-000N00G20E7			
3000 K	90		D4	550	614	740 780 700 700	CXA1507-0000-000N0UD40E7			
3000 K	90		E2	590	659	7A0, 7B0, 7C0, 7D0	CXA1507-0000-000N0UE20E7			
			D2	510	569		CXA1507-0000-000N0YD20E7			
	93	95	D4	550	614	7A0, 7B0, 7C0, 7D0	CXA1507-0000-000N0YD40E7			
			E2	590	659		CXA1507-0000-000N0YE20E7			
			E4	635	709		CXA1507-0000-000N00E40E8			
	80		F2	680	759	8A0, 8B0, 8C0, 8D0	CXA1507-0000-000N00F20E8			
			F4	730	815		CXA1507-0000-000N00F40E8			
			C4	475	530		CXA1507-0000-000N0UC40E8			
2700 K	90		D2	510	569	8A0, 8B0, 8C0, 8D0	CXA1507-0000-000N0UD20E8			
			D4	550	614		CXA1507-0000-000N0UD40E8			
			C4	475	530		CXA1507-0000-000N0YC40E8			
	93	95	D2	510	569	8A0, 8B0, 8C0, 8D0	CXA1507-0000-000N0YD20E8			
			D4	550	614		CXA1507-0000-000N0YD40E8			

- Cree maintains a tolerance of ±7% on flux and power measurements, ±0.005 on chromaticity (CCx, CCy) measurements and a
 tolerance of ±2 on CRI measurements.
- * Flux values @ 25 °C are calculated and for reference only.



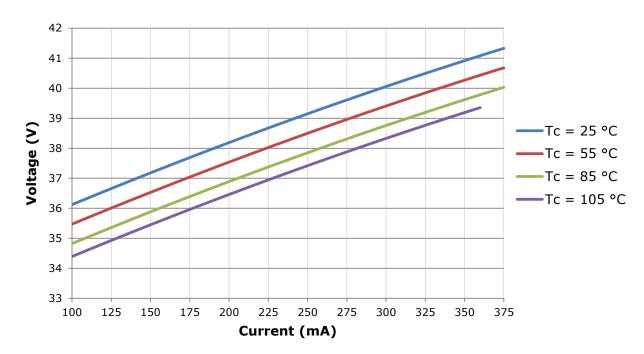
RELATIVE SPECTRAL POWER DISTRIBUTION ($I_F = 200 \text{ mA}, T_1 = 85 \text{ °C}$)

The following graph is the result of a series of pulsed measurements at 200 mA and $T_1 = 85$ °C.



ELECTRICAL CHARACTERISTICS

The following graph is the result of a series of steady-state measurements.



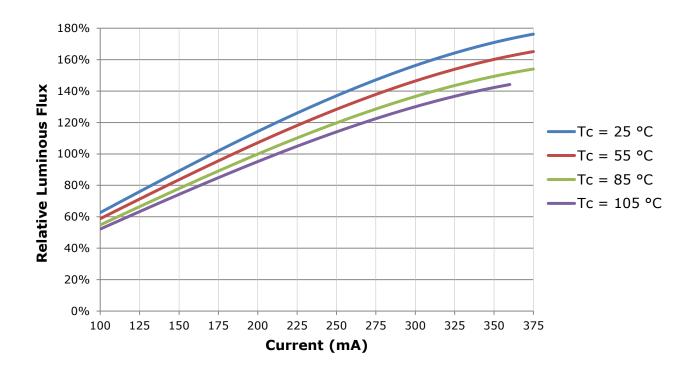


RELATIVE LUMINOUS FLUX

The relative luminous flux values provided below are the ratio of:

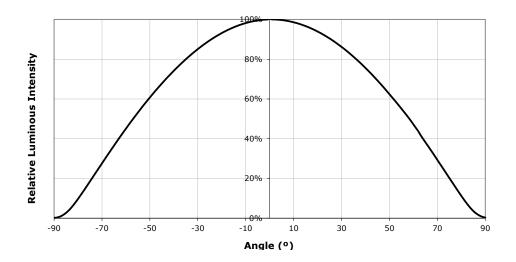
- Measurements of CXA1507 at steady-state operation at the given conditions, divided by
- Flux measured during binning, which is a pulsed measurement at 200 mA at $T_1 = 85$ °C.

For example, at steady-state operation of Tc = 55 °C, I_F = 300 mA, the relative luminous flux ratio is 140% in the chart below. A CXA1507 LED that measures 710 lm during binning will deliver 994 lm (710 * 1.4) at steady-state operation of Tc = 55 °C, I_F = 300 mA.





TYPICAL SPATIAL DISTRIBUTION



PERFORMANCE GROUPS - BRIGHTNESS ($I_F = 200 \text{ mA}, T_J = 85 \text{ °C}$)

XLamp CXA1507 LEDs are tested for luminous flux and placed into one of the following bins.

Group Code	Min. Luminous Flux @ 200 mA	Max. Luminous Flux @ 200 mA
C4	475	510
D2	510	550
D4	550	590
E2	590	635
E4	635	680
F2	680	730
F4	730	780
G2	780	840
G4	840	900
H2	900	970



PERFORMANCE GROUPS - CHROMATICITY (T₁ = 85 °C)

XLamp CXA1507 LEDs are tested for chromaticity and placed into one of the regions defined by the following bounding coordinates.

EasyWhite Color Temperatures – 4-Step							
Code	ССТ	х	у				
		0.3253	0.3325				
65F	6500 K	0.3249	0.3439				
ססר	0300 K	0.3331	0.3514				
		0.3330	0.3393				
		0.3097	0.3196				
57F	5700 K	0.3079	0.3297				
3/1	3700 K	0.3164	0.3382				
		0.3176	0.3275				
		0.3407	0.3459				
50F	5000 K	0.3415	0.3586				
301	5000 K	0.3499	0.3654				
		0.3484	0.3521				
	4000 K	0.3744	0.3685				
40F		0.3782	0.3837				
401		0.3912	0.3917				
		0.3863	0.3758				
		0.3981	0.3800				
35F	3500 K	0.4040	0.3966				
331	3300 K	0.4186	0.4037				
		0.4116	0.3865				
		0.4242	0.3919				
205	3000 K	0.4322	0.4096				
30F	3000 K	0.4449	0.4141				
		0.4359	0.3960				
		0.4475	0.3994				
275	2700 K	0.4573	0.4178				
27F	2700 K	0.4695	0.4207				
		0.4589	0.4021				

EasyWhi	EasyWhite Color Temperatures – 2-Step							
Code	ССТ	х	у					
		0.3429	0.3507					
50H	5000 K	0.3434	0.3571					
30П	3000 K	0.3475	0.3604					
		0.3469	0.3539					
		0.3784	0.3741					
40H	4000 K	0.3804	0.3818					
400	4000 K	0.3867	0.3857					
		0.3844	0.3778					
	3500 K	0.4030	0.3857					
35H		0.4061	0.3941					
3311		0.4132	0.3976					
		0.4099	0.3890					
		0.4291	0.3973					
30H	3000 K	0.4333	0.4062					
30П	3000 K	0.4395	0.4084					
		0.4351	0.3994					
		0.4528	0.4046					
27H	2700 K	0.4578	0.4138					
2/Π	2/00 K	0.4638	0.4152					
		0.4586	0.4060					



PERFORMANCE GROUPS - CHROMATICITY ($T_{\rm j}$ = 85 °C) - CONTINUED

	ANSI White Bins									
Code	ССТ	Bin Code	x	У						
			0.3048	0.3207						
		1A0	0.3130	0.3290						
		IAU	0.3144	0.3186						
			0.3068	0.3113						
			0.3028	0.3304						
	6500 K	1B0	0.3115	0.3391						
			0.3130	0.3290						
0F1			0.3048	0.3207						
OEI			0.3115	0.3391						
			0.3205	0.3481						
		100	0.3213	0.3373						
			0.3130	0.3290						
			0.3130	0.3290						
		1D0	0.3213	0.3373						
		100	0.3221	0.3261						
			0.3144	0.3186						

	ANSI White Bins									
Code	ССТ	Bin Code	x	У						
			0.3215	0.3350						
		2A0	0.3290	0.3417						
		ZAU	0.3290	0.3300						
			0.3222	0.3243						
			0.3207	0.3462						
	5700 K	2B0	0.3290	0.3538						
			0.3290	0.3417						
0E2		F700 K	5700 K		0.3215	0.3350				
UEZ		2C0	0.3290	0.3538						
			0.3376	0.3616						
		200	0.3371	0.3490						
			0.3290	0.3417						
			0.3290	0.3417						
		2D0	0.3371	0.3490						
		200	0.3366	0.3369						
			0.3290	0.3300						

ANSI White Bins								
Code	ССТ	Bin Code	x	У				
			.3371	.3490				
		3A0	.3451	.3554				
		SAU	.3440	.3427				
			.3366	.3369				
			.3376	.3616				
	5000 K	3B0	.3463	.3687				
			.3451	.3554				
0E3			.3371	.3490				
UE3		3C0	.3463	.3687				
			.3551	.3760				
		300	.3533	.3620				
			.3451	.3554				
			.3451	.3554				
		300	.3533	.3620				
		3D0	.3515	.3487				
			.3440	.3427				

ANSI White Bins				
Code	ССТ	Bin Code	х	У
	4000 K	5A0	.3670	.3578
			.3702	.3722
0E5			.3825	.3798
			.3783	.3646
		5B0	.3702	.3722
			.3736	.3874
			.3869	.3958
			.3825	.3798
		5C0	.3825	.3798
			.3869	.3958
		300	.4006	.4044
			.3950	.3875
		5D0	.3783	.3646
			.3825	.3798
			.3950	.3875
			.3898	.3716

ANSI White Bins				
Code	сст	Bin Code	х	У
0E6	3500 K	6A0	.3889	.3690
			.3941	.3848
			.4080	.3916
			.4017	.3751
		6B0	.3941	.3848
			.3996	.4015
			.4146	.4089
			.4080	.3916
		6C0	.4080	.3916
			.4146	.4089
			.4299	.4165
			.4221	.3984
		6D0	.4017	.3751
			.4080	.3916
			.4221	.3984
			.4147	.3814

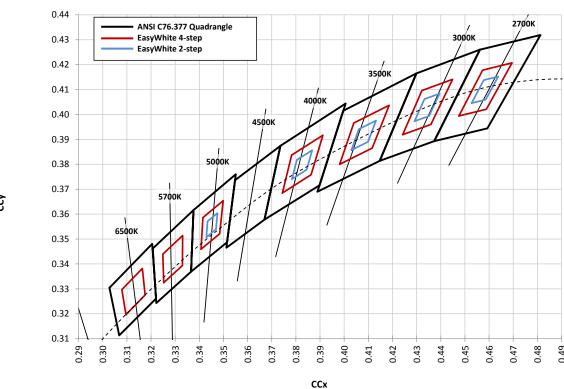


PERFORMANCE GROUPS - CHROMATICITY (T₁ = 85 °C) - CONTINUED

ANSI White Bins					
Code	ССТ	Bin Code	х	У	
0E7	3000 K	7A0	.4147	.3814	
			.4221	.3984	
			.4342	.4028	
			.4259	.3853	
		7B0	.4221	.3984	
			.4299	.4165	
			.4430	.4212	
			.4342	.4028	
		7C0	.4342	.4028	
			.4430	.4212	
			.4562	.4260	
			.4465	.4071	
		7D0	.4259	.3853	
			.4342	.4028	
			.4465	.4071	
			.4373	.3893	

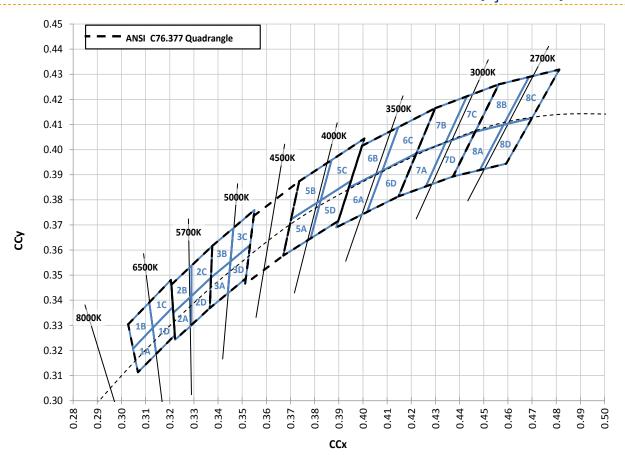
	ANSI White Bins				
Code	ССТ	Bin Code	x	У	
0E8	2700 K	8A0	.4373	.3893	
			.4465	.4071	
			.4582	.4099	
			.4483	.3919	
		8B0	.4465	.4071	
			.4562	.4260	
			.4687	.4289	
			.4582	.4099	
		8C0	.4582	.4099	
			.4687	.4289	
			.4813	.4319	
			.4700	.4126	
		8D0	.4483	.3919	
			.4582	.4099	
			.4700	.4126	
			.4593	.3944	

CREE EASYWHITE BINS PLOTTED ON THE 1931 CIE COLOR SPACE $(T_1 = 85 \text{ °C})$





CREE ANSI WHITE BINS PLOTTED ON THE 1931 CIE COLOR SPACE (T, = 85 °C)



B = 70 min CRIH = 80 min CRI

U = 90 min CRI $Y = 93 \min CRI$



BIN AND ORDER CODE FORMATS

Bin codes and order codes are configured as follows:

Order Code Bin Code - Series = CXA15 Series = CXA15 Chromaticity bin Internal code Vf class: N0 = 37-V class **CRI Specification** 0 = Standard CRI - Internal code H = 80 min CRI $U = 90 \min CRI$ SSSSCC-WWW-FF-GGR-AAAAA $Y = 93 \min CRI$ CRI Specification SSSSCC-HHHH-HHHGGNNNNNN - Kit code Vf class: N0 = 37-V class Flux bin Performance class Performance class

MECHANICAL DIMENSIONS

Dimensions are in mm.

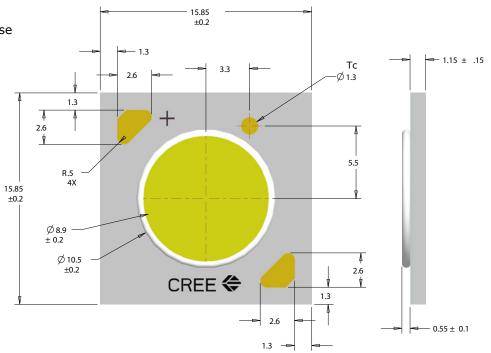
Tolerances unless otherwise specified:

 $.x \pm .10$

 $.xx \pm .03$

 $.xxx \pm .010$

 $x^{\circ} \pm 1^{\circ}$





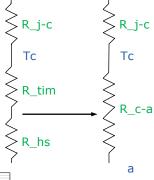
THERMAL DESIGN

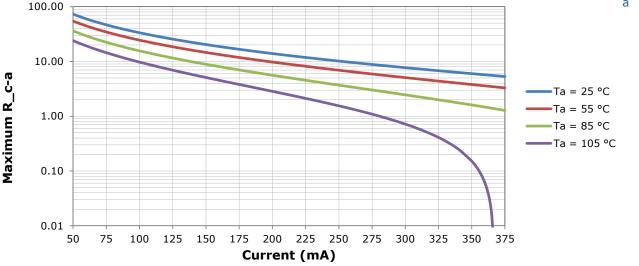
The CXA family of LED arrays can include over a hundred different LED die inside one package, and thus over a hundred different junction temperatures (T_j) . Cree has intentionally removed junction-temperature-based operating limits and replaced the commonplace maximum T_j calculations with maximum ratings based on forward current (I_F) and case temperature (Tc). No additional calculations are required to ensure the CXA LED is being operated within its designed limits. Please refer to page 2 for the Operating Limit specification.

Cree has measured the temperature at the bottom of the package, commonly referred to as the solder point (T_{SP}) , and found this value to be equivalent to the temperature at the Tc location at the top of the package once the LED has reached thermal equilibrium. There is no need to calculate for T_J inside the package, as the thermal management design process, specifically from T_{SP} to ambient (T_a) , remains identical to any other LED component. For more information on thermal management of Cree XLamp LEDs, please refer to the XLamp Thermal Management application note at www.cree.com/xlamp_app_notes/thermal_management. For CXA soldering recommendations and more information on thermal interface materials (TIM) and connection methods, please refer to the Cree XLamp CXA Family LEDs soldering and handling document at www.cree.com/xlamp_app_notes/CXA_SH.

To keep the CXA1507 LED at or below the maximum rated Tc, the case to ambient temperature thermal resistance (R_c -a) must be at or below the maximum R_c -a value shown on the following graph, depending on the operating environment. The y-axis in the graph is a base 10 logarithmic scale.

As the figure at right shows, the R_c -a value is the sum of the thermal resistance of the TIM (R_t) plus the thermal resistance of the heat sink (R_t).







NOTES

Lumen Maintenance Projections

Cree now uses standardized IES LM-80-08 and TM-21-11 methods for collecting long-term data and extrapolating LED lumen maintenance. For information on the specific LM-80 data sets available for this LED, refer to the public LM-80 results document at www.cree.com/xlamp app notes/LM80 results.

Please read the XLamp Long-Term Lumen Maintenance application note at www.cree.com/xlamp_app_notes/lumen_maintenance for more details on Cree's lumen maintenance testing and forecasting. Please read the XLamp Thermal Management application note at www.cree.com/xlamp_app_notes/thermal_management for details on how thermal design, ambient temperature, and drive current affect the LED junction temperature.

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 representative or from the Product Documentation sections of www.cree.com.

REACh Compliance

REACh substances of high concern (SVHCs) information is available for this product. Since the European Chemical Agency (ECHA) has published notice of their intent to frequently revise the SVHC listing for the foreseeable future, please contact a Cree representative to insure you get the most up-to-date REACh SVHC Declaration. REACh banned substance information (REACh Article 67) is also available upon request.

UL Recognized Component

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 Claim

Users should be cautioned not to stare at the light of this LED product. The bright light can damage the eye.



BIN CODE, QTY, LOT#

PACKAGING

Cree CXA1507 LEDs are packaged in trays of 20. Five trays are sealed in an anti-static bag and placed inside a carton, for a total of 100 LEDs per carton. Each carton contains 100 LEDs from the same performance bin.

Dimensions are in inches. Tolerances: .x <u>+</u> .1 .xx <u>+</u> .05 5.875 R.375 $.xxx \pm .005$ x° <u>+</u> 1° .875 5.875 .38 LABEL WITH CREE BIN CODE, QTY, LOT# .875 PATENT LABEL IS LOCATED ON UNDERSIDE OF CARTON BAG LABEL WITH CREE BIN CODE, QTY, LOT# LABEL WITH CREE