Cree® XLamp® CXA2530 LED

PRODUCT DESCRIPTION

The XLamp CXA2530 LED array expands Cree's family of high-flux, multi-die arrays, offering high performance in an easy-to-use platform. With XLamp lighting-class reliability, the CXA2530's uniform emitting surface enables both directional and non-directional lighting applications and luminaire designs. Available in 2-step and 4-step color consistency, and featuring a 19-mm optical source, the CXA2530 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 CCT
- 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: 1600 mA
- 115° viewing angle, uniform chromaticity profile
- Top-side solder connections
- Thermocouple attach point
- NEMA SSL-3 2011 standard flux bins
- RoHS- and REACh-compliant
- UL-recognized component (E349212)

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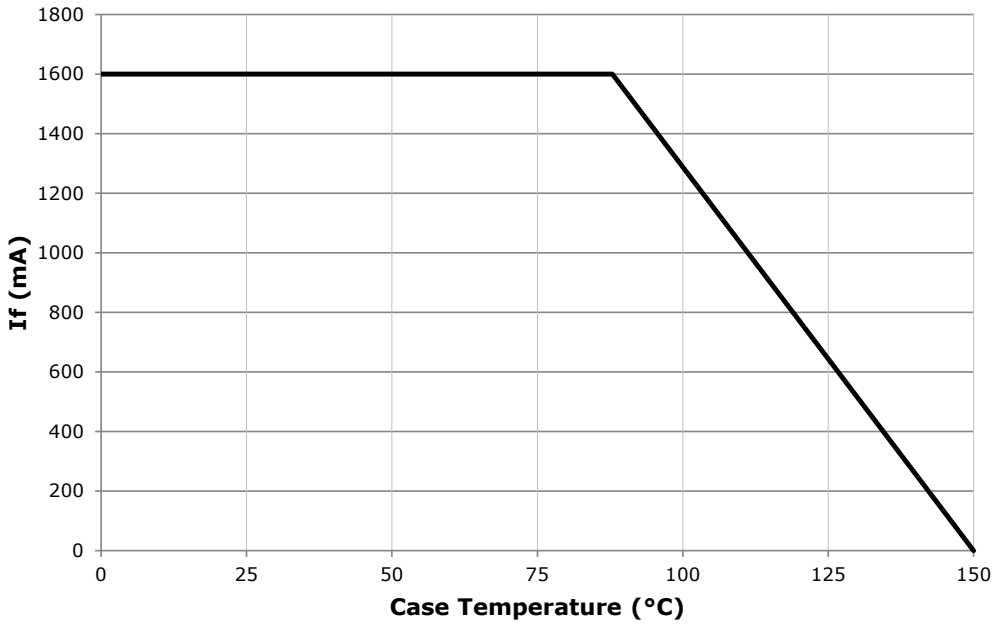
CHARACTERISTICS

Characteristics	Unit	Minimum	Typical	Maximum
Viewing angle (FWHM)	degrees		115	
ESD classification (HBM per Mil-Std-883D)	V			8000
DC forward current	mA			1600*
Reverse current	mA			0.1
Forward voltage (@ 800 mA, 85 °C)	V		37	
Forward voltage (@ 800 mA, 25 °C)	V			42

* Refer to the Operating Limits section.

OPERATING LIMITS

The maximum current rating of the CXA2530 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 = 800 mA, T_J = 85 °C)

The following tables provide order codes for XLamp CXA2530 LEDs. For a complete description of the order code nomenclature, please reference Bin and Order Code Formats (page 14).

CCT Range	CRI		Base Order Codes Min. Luminous Flux @ 800 mA			2-Step Order Code		4-Step Order Code	
	Min	Typ	Group	Flux (lm) @ 85 °C	Flux (lm) @ 25 °C*	Chromaticity Region		Chromaticity Region	
6500 K	70	75	T4	3440	3879			65F	CXA2530-0000-000N00T465F
			U2	3680	4150				CXA2530-0000-000N00U265F
	80	---	S4	2990	3372			65F	CXA2530-0000-000N0HS465F
			T2	3200	3609				CXA2530-0000-000N0HT265F
			T4	3440	3879				CXA2530-0000-000N0HT465F
5700 K	70	75	T4	3440	3879			57F	CXA2530-0000-000N00T457F
			U2	3680	4150				CXA2530-0000-000N00U257F
	80	---	S4	2990	3372			57F	CXA2530-0000-000N0HS457F
			T2	3200	3609				CXA2530-0000-000N0HT257F
			T4	3440	3879				CXA2530-0000-000N0HT457F
5000 K	70	75	T4	3440	3879	50H	CXA2530-0000-000N00T450H	50F	CXA2530-0000-000N00T450F
			U2	3680	4150		CXA2530-0000-000N00U250H		CXA2530-0000-000N00U250F
	80	---	S4	2990	3372	50H	CXA2530-0000-000N0HS450H	50F	CXA2530-0000-000N0HS450F
			T2	3200	3609		CXA2530-0000-000N0HT250H		CXA2530-0000-000N0HT250F
			T4	3440	3879		CXA2530-0000-000N0HT450H		CXA2530-0000-000N0HT450F
	90	95	R4	2600	2932	50H	CXA2530-0000-000N0UR450H	50F	CXA2530-0000-000N0US450F
			S2	2780	3135		CXA2530-0000-000N0US250H		CXA2530-0000-000N0US250F
			S4	2990	3372		CXA2530-0000-000N0US450H		CXA2530-0000-000N0US450F
4000 K	70	75	T2	3200	3609	40H	CXA2530-0000-000N00T240H	40F	CXA2530-0000-000N00T240F
			T4	3440	3879		CXA2530-0000-000N00T440H		CXA2530-0000-000N00T440F
			U2	3680	4150		CXA2530-0000-000N00U240H		CXA2530-0000-000N00U240F
	80	---	S4	2990	3372	40H	CXA2530-0000-000N0HS440H	40F	CXA2530-0000-000N0HS440F
			T2	3200	3609		CXA2530-0000-000N0HT240H		CXA2530-0000-000N0HT240F
	90	95	R2	2420	2729	40H	CXA2530-0000-000N0UR240H	40F	CXA2530-0000-000N0UR240F
			R4	2600	2932		CXA2530-0000-000N0UR440H		CXA2530-0000-000N0UR440F
			S2	2780	3135		CXA2530-0000-000N0US240H		CXA2530-0000-000N0US240f

Notes

- 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_F = 800 mA, T_J = 85 °C) - CONTINUED

CCT Range	CRI		Base Order Codes Min. Luminous Flux @ 800 mA			2-Step Order Code		4-Step Order Code	
	Min	Typ	Group	Flux (lm) @ 85 °C	Flux (lm) @ 25 °C*	Chromaticity Region		Chromaticity Region	
3500 K	80	---	S4	2990	3372	35H	CXA2530-0000-000N00S435H	35F	CXA2530-0000-000N00S435F
			T2	3200	3609		CXA2530-0000-000N00T235H		CXA2530-0000-000N00T235F
			T4	3440	3879		CXA2530-0000-000N00T435H		CXA2530-0000-000N00T435F
	93	95	Q4	2260	2549	35H	CXA2530-0000-000N0YQ435H	35F	CXA2530-0000-000N0YQ435F
			R2	2420	2729		CXA2530-0000-000N0YR235H		CXA2530-0000-000N0YR235F
			R4	2600	2932		CXA2530-0000-000N0YR435H		CXA2530-0000-000N0YR435F
3000 K	80	---	S4	2990	3372	30H	CXA2530-0000-000N00S430H	30F	CXA2530-0000-000N00S430F
			T2	3200	3609		CXA2530-0000-000N00T230H		CXA2530-0000-000N00T230F
	90	95	Q4	2260	2549	30H	CXA2530-0000-000N0UQ430H	30F	CXA2530-0000-000N0UQ430F
			R2	2420	2729		CXA2530-0000-000N0UR230H		CXA2530-0000-000N0UR230F
			R4	2600	2932		CXA2530-0000-000N0UR430H		CXA2530-0000-000N0UR430F
	93	95	Q2	2100	2368	30H	CXA2530-0000-000N0YQ230H	30F	CXA2530-0000-000N0YQ230F
			Q4	2260	2549		CXA2530-0000-000N0YQ430H		CXA2530-0000-000N0YQ430F
			R2	2420	2729		CXA2530-0000-000N0YR230H		CXA2530-0000-000N0YR230F
2700 K	80	---	S2	2780	3135	27H	CXA2530-0000-000N00S227H	27F	CXA2530-0000-000N00S227F
			S4	2990	3372		CXA2530-0000-000N00S427H		CXA2530-0000-000N00S427F
			T2	3200	3609		CXA2530-0000-000N00T227H		CXA2530-0000-000N00T227F
	90	95	Q2	2100	2368	27H	CXA2530-0000-000N0UQ227H	27F	CXA2530-0000-000N0UQ227F
			Q4	2260	2549		CXA2530-0000-000N0UQ427H		CXA2530-0000-000N0UQ427F
	93	95	P4	1965	2201	27H	CXA2530-0000-000N0YP427H	27F	CXA2530-0000-000N0YP427F
			Q2	2100	2368		CXA2530-0000-000N0YQ227H		CXA2530-0000-000N0YQ227F
			Q4	2260	2549		CXA2530-0000-000N0YQ427H		CXA2530-0000-000N0YQ427F

Notes

- 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 = 800 mA, T_J = 85 °C)

The following tables provide order codes for XLamp CXA2530 LEDs. For a complete description of the order code nomenclature, please reference Bin and Order Code Formats (page 14).

CCT Range	CRI		Base Order Codes Min. Luminous Flux @ 800 mA			Chromaticity Regions	Order Code
	Min	Typ	Group	Flux (lm) @ 85 °C	Flux (lm) @ 25 °C*		
6500 K	70	75	T4	3440	3879	1A0, 1B0, 1C0, 1D0	CXA2530-0000-000N00T40E1
			U2	3680	4150		CXA2530-0000-000N00U20E1
	80	---	S4	2990	3372	1A0, 1B0, 1C0, 1D0	CXA2530-0000-000N0HS40E1
			T2	3200	3609		CXA2530-0000-000N0HT20E1
			T4	3440	3879		CXA2530-0000-000N0HT40E1
5700 K	70	75	T4	3440	3879	2A0, 2B0, 2C0, 2D0	CXA2530-0000-000N00T40E2
			U2	3680	4150		CXA2530-0000-000N00U20E2
	80	---	S4	2990	3372	2A0, 2B0, 2C0, 2D0	CXA2530-0000-000N0HS40E2
			T2	3200	3609		CXA2530-0000-000N0HT20E2
			T4	3440	3879		CXA2530-0000-000N0HT40E2
5000 K	70	75	T4	3440	3879	3A0, 3B0, 3C0, 3D0	CXA2530-0000-000N00T40E3
			U2	3680	4150		CXA2530-0000-000N00U20E3
	80	---	S4	2990	3372	3A0, 3B0, 3C0, 3D0	CXA2530-0000-000N0HS40E3
			T2	3200	3609		CXA2530-0000-000N0HT20E3
			T4	3440	3879		CXA2530-0000-000N0HT40E3
	93	95	R4	2600	2932	3A0, 3B0, 3C0, 3D0	CXA2530-0000-000N0UR40E3
			S2	2780	3135		CXA2530-0000-000N0US20E3
			S4	2990	3372		CXA2530-0000-000N0US40E3
4000 K	70	75	T2	3200	3609	5A0, 5B0, 5C0, 5D0	CXA2530-0000-000N00T20E5
			T4	3440	3879		CXA2530-0000-000N00T40E5
			U2	3680	4150		CXA2530-0000-000N00U20E5
	80	---	S4	2990	3372	5A0, 5B0, 5C0, 5D0	CXA2530-0000-000N0HS40E5
			T2	3200	3609		CXA2530-0000-000N0HT20E5
	93	95	R2	2420	2729	5A0, 5B0, 5C0, 5D0	CXA2530-0000-000N0UR20E5
			R4	2600	2932		CXA2530-0000-000N0UR40E5
			S2	2780	3135		CXA2530-0000-000N0US20E5

Notes

- 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.

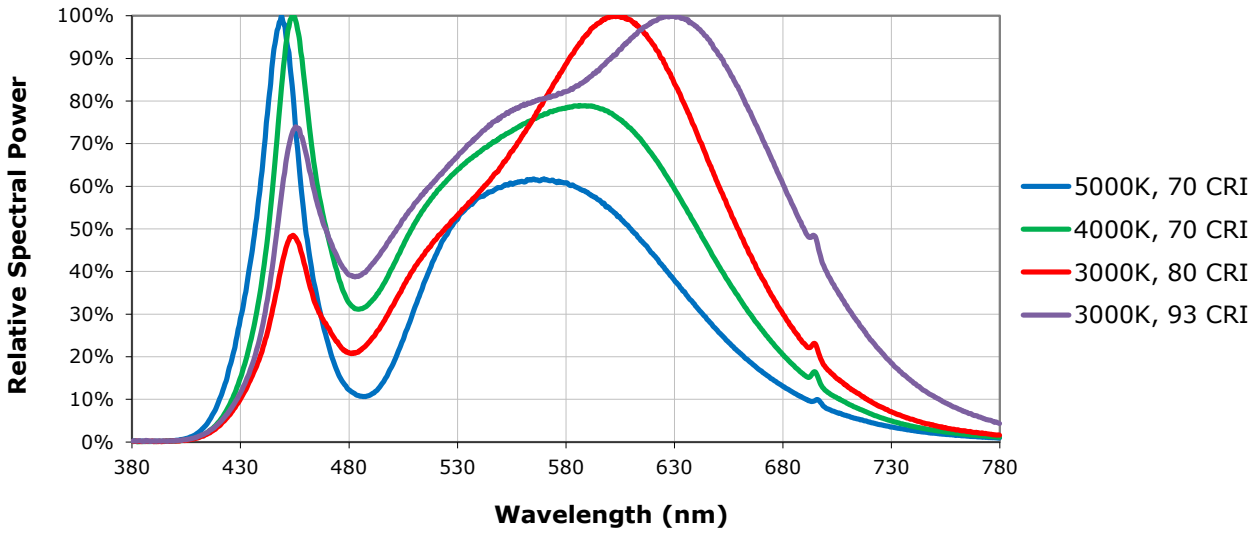
* Flux values @ 25 °C are calculated and for reference only.

FLUX CHARACTERISTICS, ANSI WHITE ORDER CODES AND BINS (I_F = 800 mA, T_J = 85 °C) - CONTINUED

CCT Range	CRI		Base Order Codes Min. Luminous Flux @ 800 mA			Chromaticity Regions	Order Code
	Min	Typ	Group	Flux (lm) @ 85 °C	Flux (lm) @ 25 °C*		
3500 K	80	---	S4	2990	3372	6A0, 6B0, 6C0, 6D0	CXA2530-0000-000N00S40E6
			T2	3200	3609		CXA2530-0000-000N00T20E6
			T4	3440	3879		CXA2530-0000-000N00T40E6
	93	95	Q4	2260	2549	6A0, 6B0, 6C0, 6D0	CXA2530-0000-000N0YQ40E6
			R2	2420	2729		CXA2530-0000-000N0YR20E6
			R4	2600	2932		CXA2530-0000-000N0YR40E6
3000 K	80	---	S4	2990	3372	7A0, 7B0, 7C0, 7D0	CXA2530-0000-000N00S40E7
			T2	3200	3609		CXA2530-0000-000N00T20E7
	90	95	Q4	2260	2549	7A0, 7B0, 7C0, 7D0	CXA2530-0000-000N0UQ40E7
			R2	2420	2729		CXA2530-0000-000N0UR20E7
			R4	2600	2932		CXA2530-0000-000N0UR40E7
	93	95	Q2	2100	2368	7A0, 7B0, 7C0, 7D0	CXA2530-0000-000N0YQ20E7
			Q4	2260	2549		CXA2530-0000-000N0YQ40E7
			R2	2420	2729		CXA2530-0000-000N0YR20E7
2700 K	80	---	S2	2780	3135	8A0, 8B0, 8C0, 8D0	CXA2530-0000-000N00S20E8
			S4	2990	3372		CXA2530-0000-000N00S40E8
			T2	3200	3609		CXA2530-0000-000N00T20E8
	90	95	Q2	2100	2368	8A0, 8B0, 8C0, 8D0	CXA2530-0000-000N0UQ20E8
			Q4	2260	2549		CXA2530-0000-000N0UQ40E8
	93	95	P4	1965	2201	8A0, 8B0, 8C0, 8D0	CXA2530-0000-000N0YP40E8
			Q2	2100	2368		CXA2530-0000-000N0YQ20E8
			Q4	2260	2549		CXA2530-0000-000N0YQ40E8

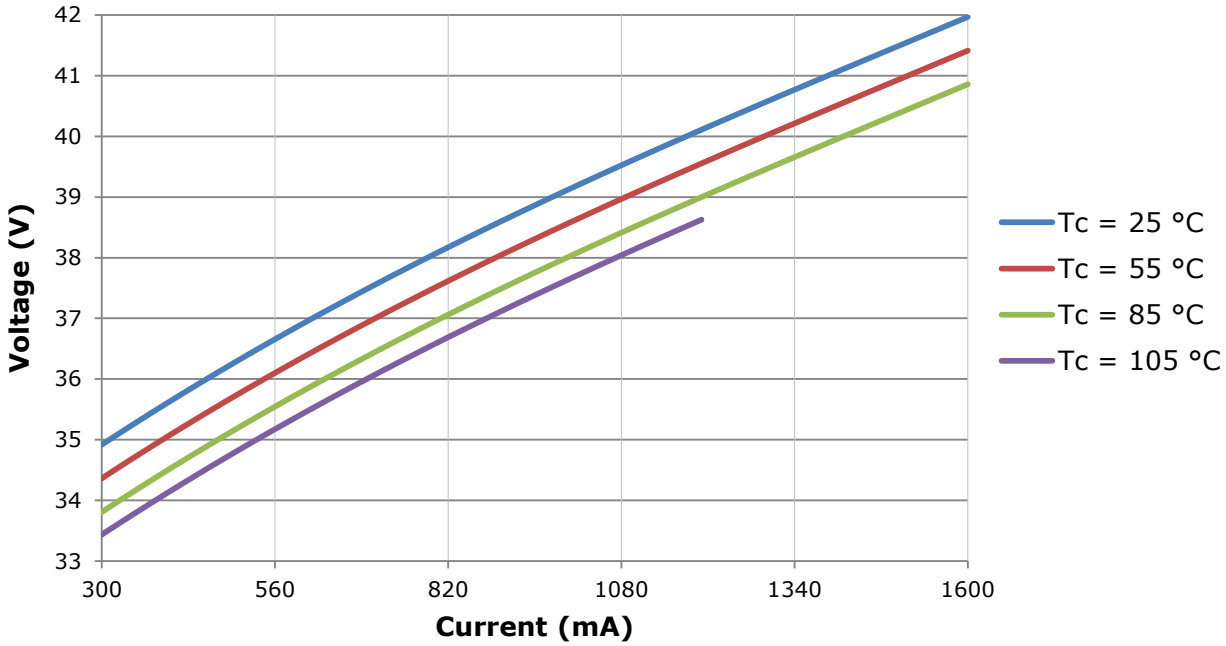
RELATIVE SPECTRAL POWER DISTRIBUTION (I_F = 800 mA, T_J = 85 °C)

The following graph is the result of a series of pulsed measurements at 800 mA and T_J = 85 °C.



ELECTRICAL CHARACTERISTICS

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

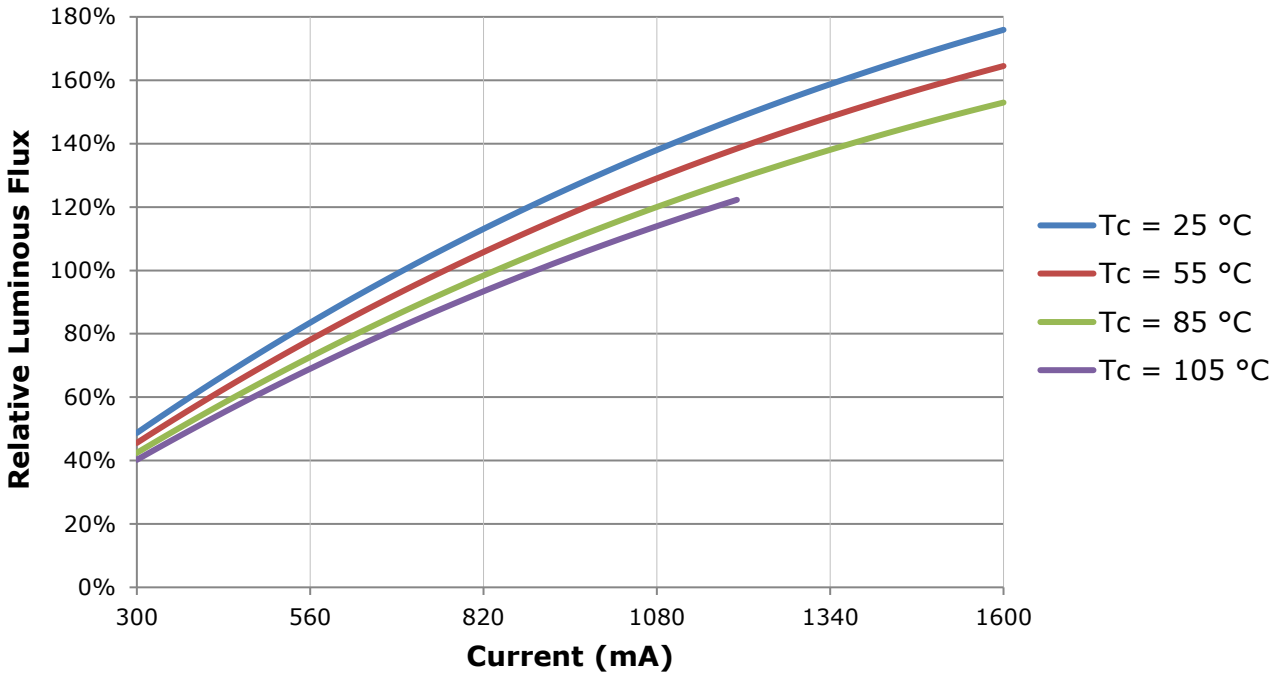


RELATIVE LUMINOUS FLUX VS. CURRENT (T_J = 85 °C)

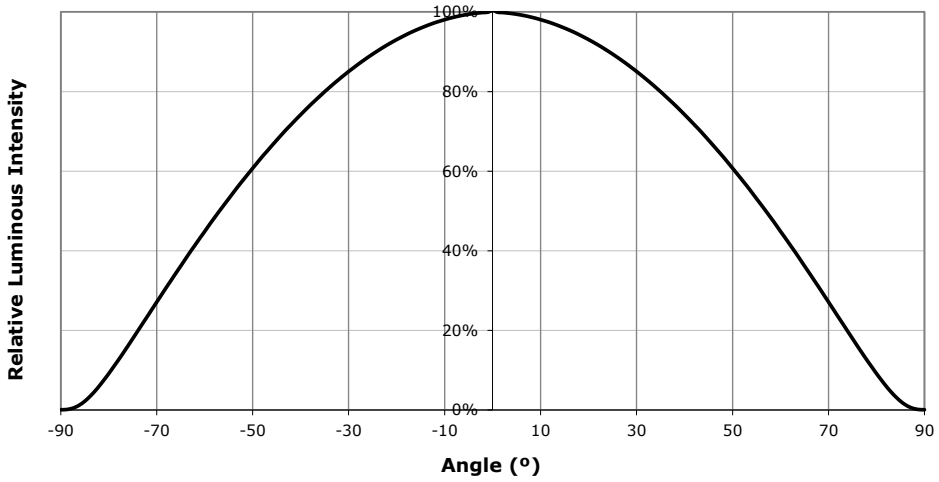
The relative luminous flux values provided below are the ratio of:

- Measurements of CXA2530 at steady-state operation at the given conditions, divided by
- Flux measured during binning, which is a pulsed measurement at 800 mA at T_J = 85 °C.

For example, at steady-state operation of Tc = 85 °C, I_F = 1080 mA, the relative luminous flux ratio is 120% in the chart below. A CXA2530 LED that measures 3200 lm during binning will deliver 3840 lm (3200 * 1.2) at steady-state operation of Tc = 85 °C, I_F = 1080 mA.



TYPICAL SPATIAL DISTRIBUTION



PERFORMANCE GROUPS - BRIGHTNESS (I_F = 800 mA, T_J = 85 °C)

XLamp CXA2530 LEDs are tested for luminous flux and placed into one of the following bins.

Group Code	Min. Luminous Flux @ 800 mA	Max. Luminous Flux @ 800 mA
P4	1965	2100
Q2	2100	2260
Q4	2260	2420
R2	2420	2600
R4	2600	2780
S2	2780	2990
S4	2990	3200
T2	3200	3440
T4	3440	3680
U2	3680	3955

PERFORMANCE GROUPS - CHROMATICITY (T_J = 85 °C)

XLamp CXA2530 LEDs are tested for chromaticity and placed into one of the regions defined by the following bounding coordinates.

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

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

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

ANSI White Bins				
Code	CCT	Bin Code	x	y
0E1	6500 K	1A0	0.3048	0.3207
			0.3130	0.3290
			0.3144	0.3186
			0.3068	0.3113
		1B0	0.3028	0.3304
			0.3115	0.3391
			0.3130	0.3290
			0.3048	0.3207
		1C0	0.3115	0.3391
			0.3205	0.3481
			0.3213	0.3373
			0.3130	0.3290
		1D0	0.3130	0.3290
			0.3213	0.3373
			0.3221	0.3261
			0.3144	0.3186

ANSI White Bins				
Code	CCT	Bin Code	x	y
0E2	5700 K	2A0	0.3215	0.3350
			0.3290	0.3417
			0.3290	0.3300
			0.3222	0.3243
		2B0	0.3207	0.3462
			0.3290	0.3538
			0.3290	0.3417
			0.3215	0.3350
		2C0	0.3290	0.3538
			0.3376	0.3616
			0.3371	0.3490
			0.3290	0.3417
		2D0	0.3290	0.3417
			0.3371	0.3490
			0.3366	0.3369
			0.3290	0.3300

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

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

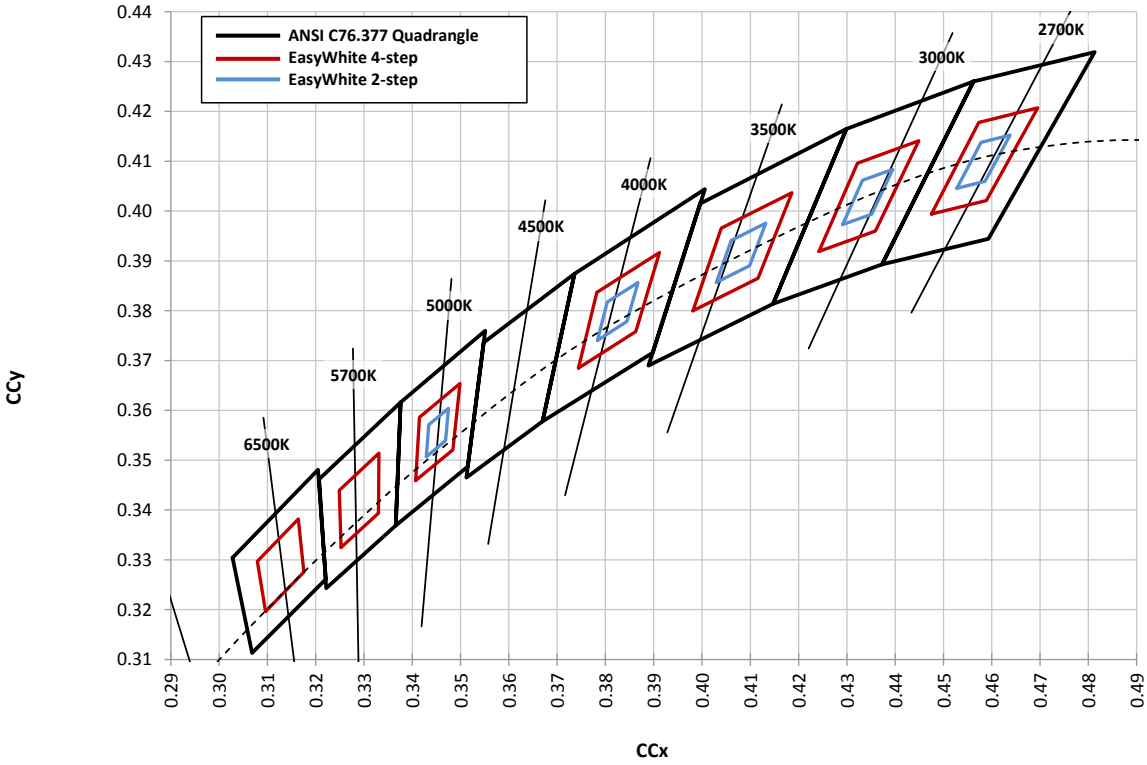
ANSI White Bins				
Code	CCT	Bin Code	x	y
0E6	3500 K	6A0	.3889	.3690
			.3941	.3848
			.4080	.3916
			.4017	.3751
		6B0	.3941	.3848
			.3996	.4015
			.4146	.4089
			.4080	.3916
		6C0	.4080	.3916
			.4146	.4089
			.4299	.4165
			.4221	.3984
		6D0	.4017	.3751
			.4080	.3916
			.4221	.3984
			.4147	.3814

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

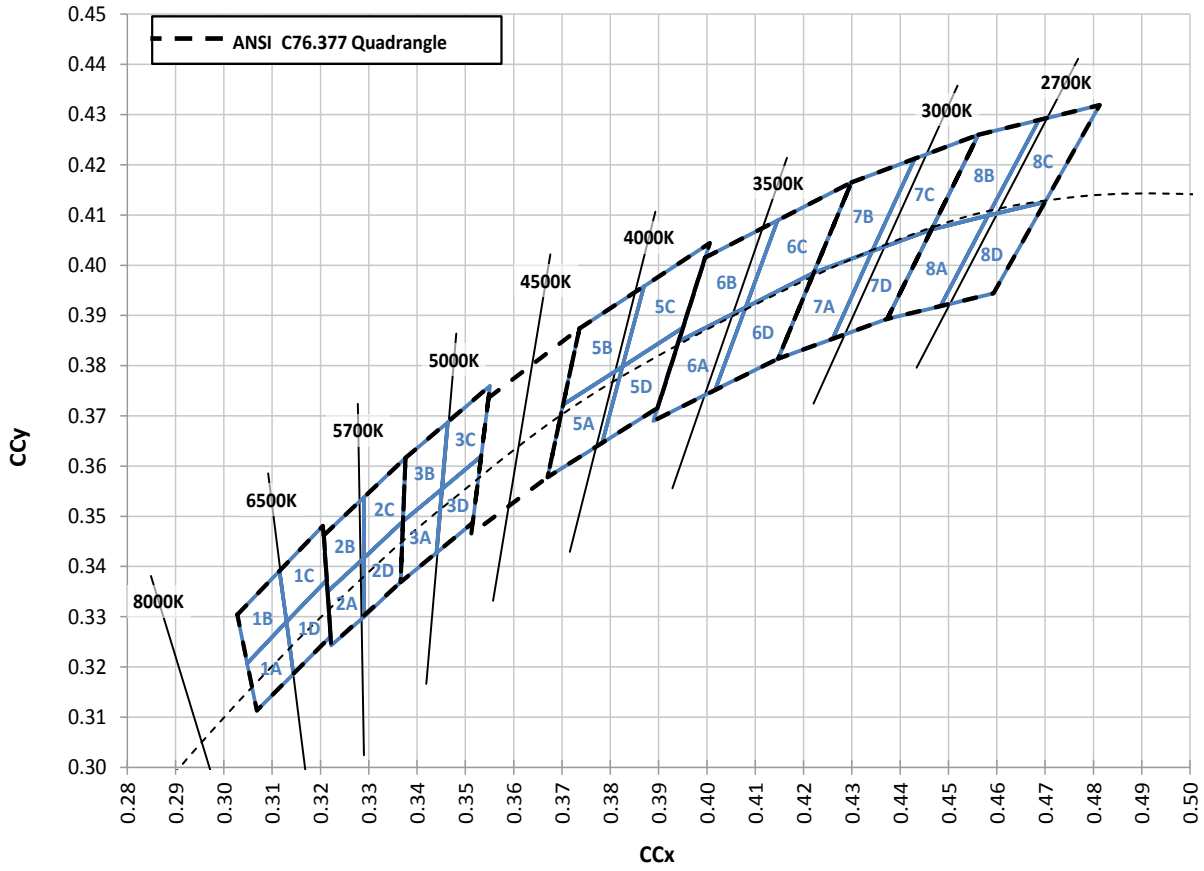
ANSI White Bins				
Code	CCT	Bin Code	x	y
0E7	3000 K	7A0	.4147	.3814
			.4221	.3984
			.4342	.4028
			.4259	.3853
		7B0	.4221	.3984
			.4299	.4165
			.4430	.4212
			.4342	.4028
		7C0	.4342	.4028
			.4430	.4212
			.4562	.4260
			.4465	.4071
		7D0	.4259	.3853
			.4342	.4028
			.4465	.4071
			.4373	.3893

ANSI White Bins				
Code	CCT	Bin Code	x	y
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_j = 85 °C)



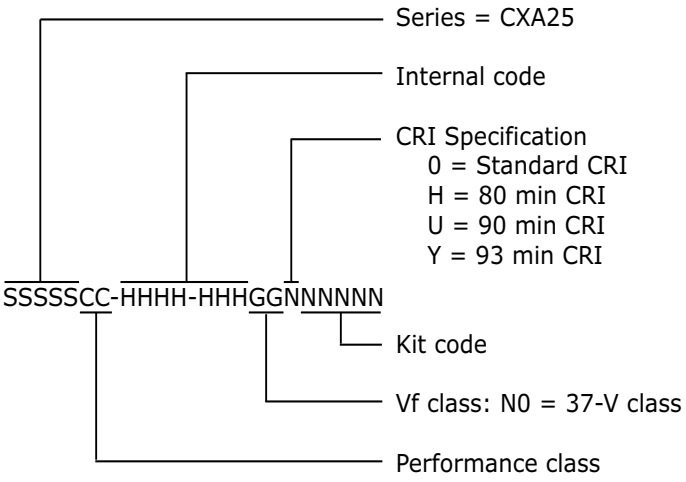
CREE ANSI WHITE BINS PLOTTED ON THE 1931 CIE COLOR SPACE (T_J = 85 °C)



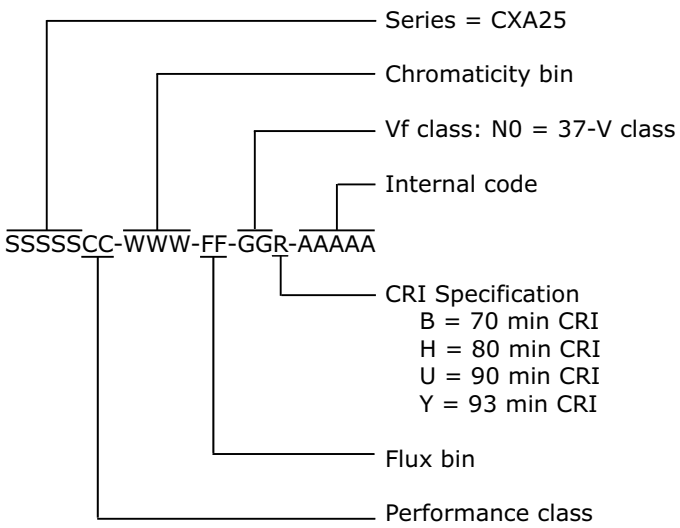
BIN AND ORDER CODE FORMATS

Bin codes and order codes are configured as follows:

Order Code



Bin Code



MECHANICAL DIMENSIONS

Dimensions are in mm.

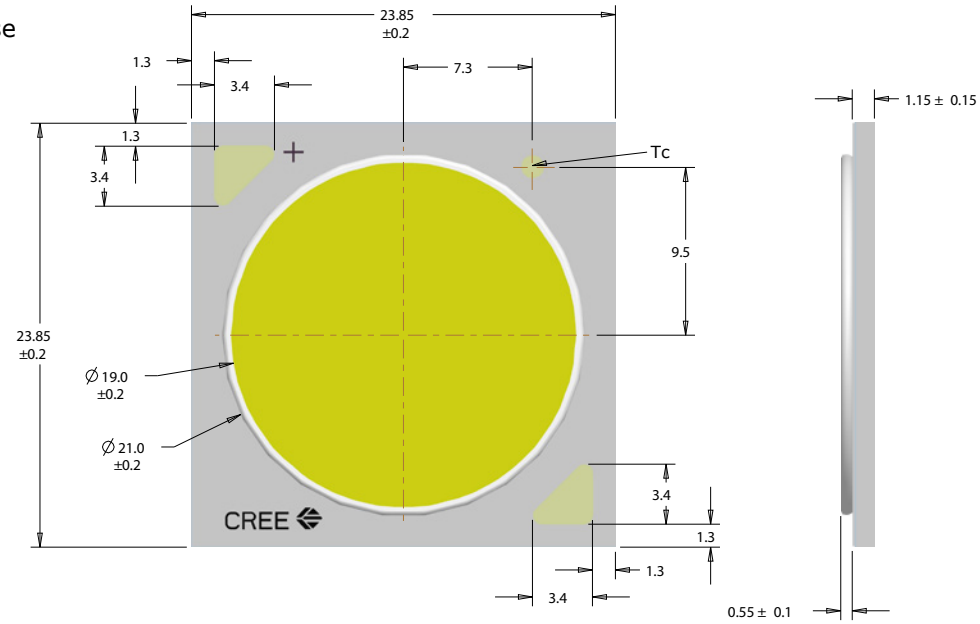
Tolerances unless otherwise specified:

.x ± .10

.xx ± .03

.xxx ± .010

x° ± 1° x ± .10



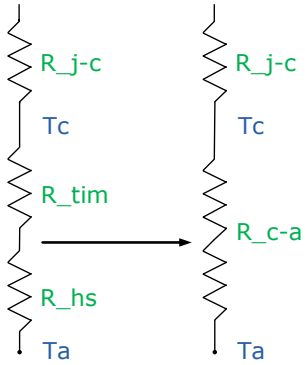
THERMAL DESIGN

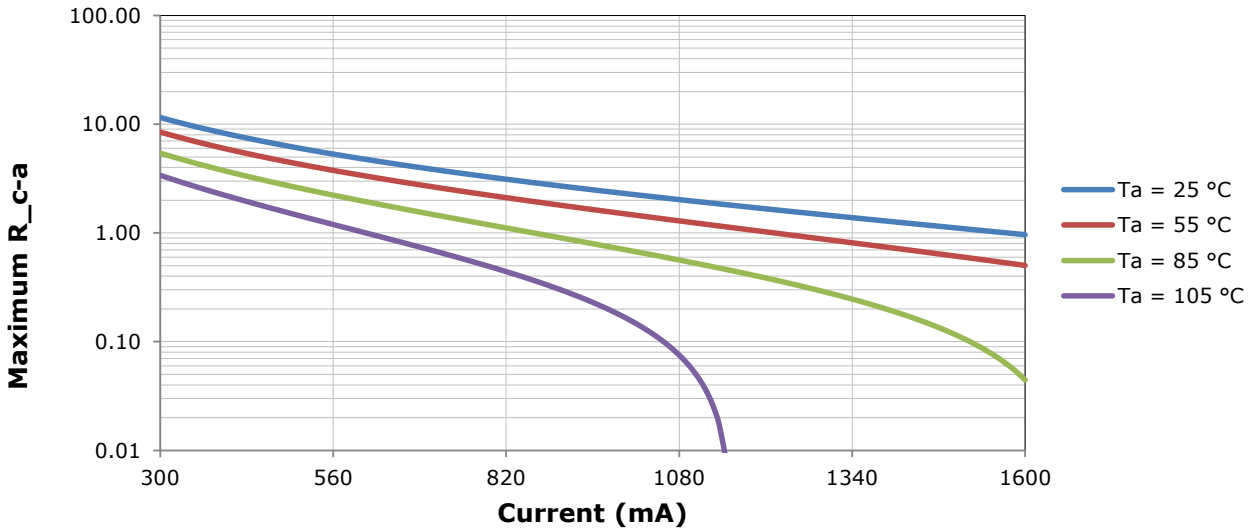
The CXA family of LED arrays can include over a hundred different LED die inside one package, and thus over a hundred different junction temperatures (T_J). Cree has intentionally removed junction-temperature-based operating limits and replaced the commonplace maximum T_J calculations with maximum ratings 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 CXA2530 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_tim) plus the thermal resistance of the heat sink (R_hs).





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.

PACKAGING

Cree CXA2530 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 ± .1
.xx ± .05
.xxx ± .005
x° ± 1°