

LIGHT ENGINE ARRAY FINA PROJECT 24in 126 LEDs CREE 2SM

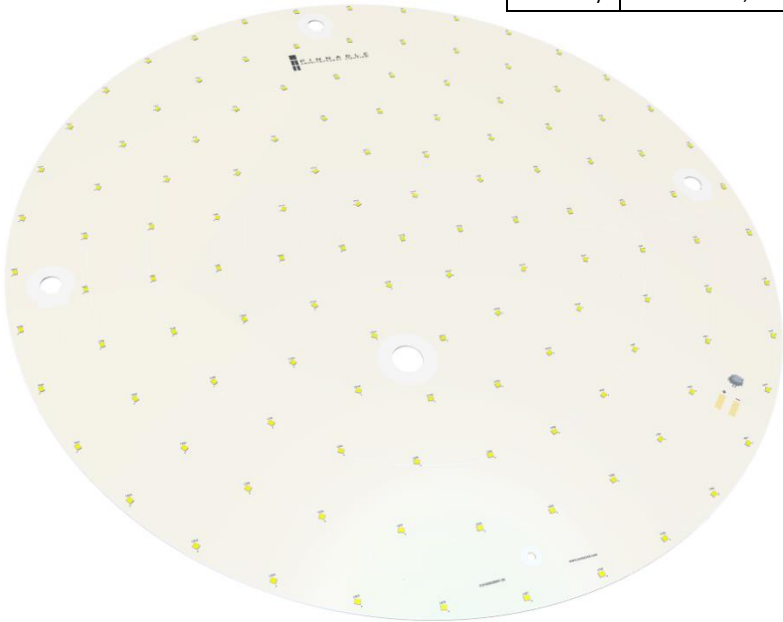
Issue Date	September, 2024
Issued by	Nascimento, K.

Applications

- Projectors
- Decorative lighting
- Indoor light

Characteristics

- Module Efficacy – up to 172 lm/W
- L70 > 50,000 hours
- CRI > 90 (Typ.95)
- 02 SDCM
- CCTs 2,700K / 3,000K / 3,500K / 4,000K
- 05 years warranty



DRIVE PARAMETERS

Parameter	Nominal	Max
I _{board} (Current)	495 mA	1,800 mA
V _{board} (Voltage)	37.1 V	41.0 V

MODULE TEMPERATURES

Parameter	Nominal	Max
T _c (case temperature at T _c point)	75 °C	85 °C

PRODUCT PART NUMBER

	90 CRI 2 Step				
Audax PN	80608600100	80608700100	80608800100	80608900100	80609000100
Pinnacle PN	C-L126RND24-927	C-L126RND24-930	C-L126RND24-935	C-L126RND24-940	C-L126RND24-950
Kenosha PN	L-6747	L-6748	L-6749	L-6750	L-6751
	2,700K	3,000K	3,500K	4,000K	4,000K

LED TYPE

Manufacturer: CREE®

LED Series: J Class 2835 2 Steps Precision Dimming

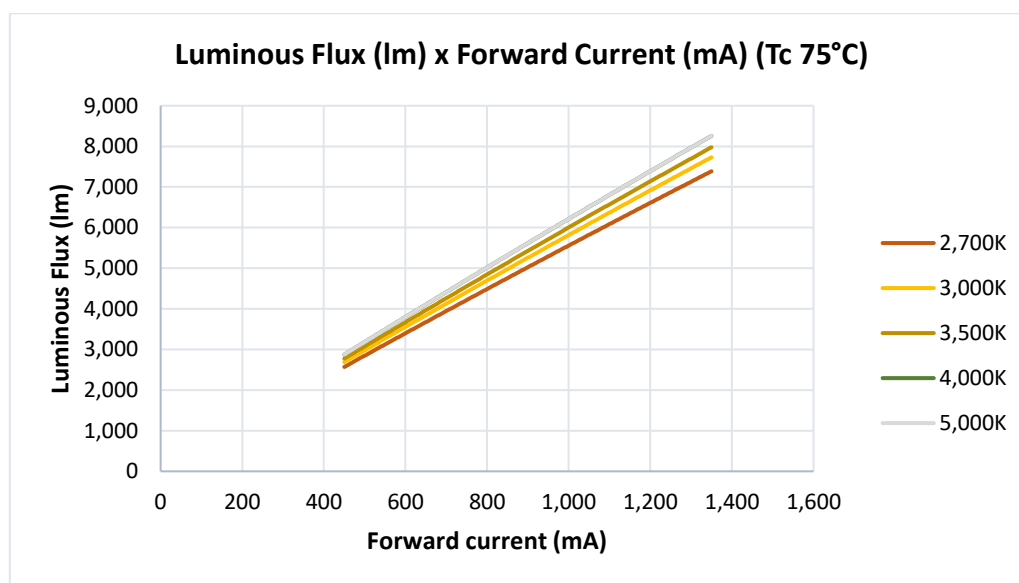
TECHNICAL INFORMATION

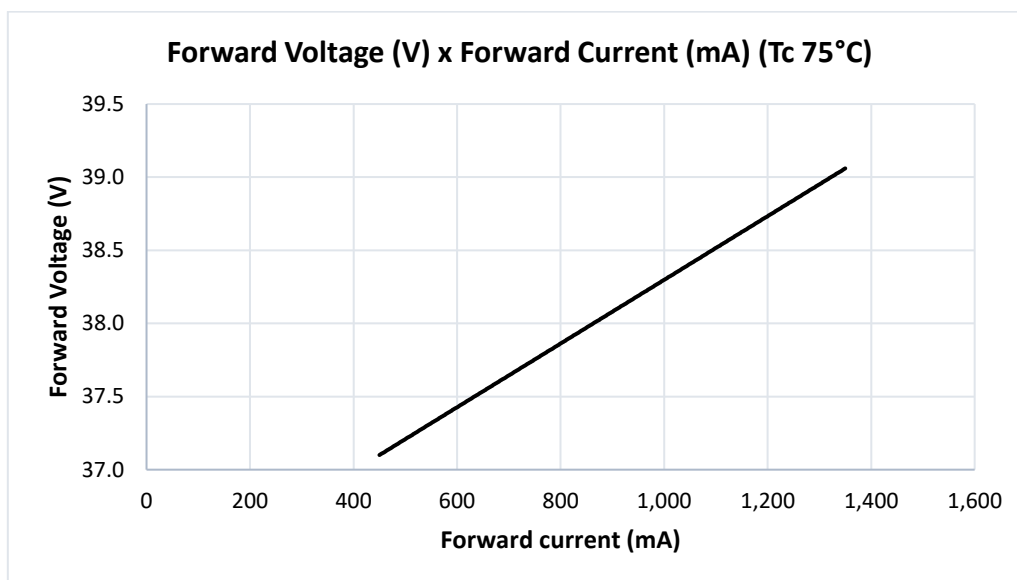
CCT	LED Driver Current (mA)	# LEDs	Luminous Flux (lm)*	Forward Voltage (V)**	LED Forward Current (mA)	T _c (°C)	Power (W)	Efficacy (lm/W)
2,700K	450	126	2,570	37.1	50	75	16.7	154
2,700K	900	126	5,025	38.1	100	75	34.3	147
2,700K	1,350	126	7,386	39.1	150	75	52.7	140
3,000K	450	126	2,689	37.1	50	75	16.7	161
3,000K	900	126	5,258	38.1	100	75	34.3	153
3,000K	1,350	126	7,729	39.1	150	75	52.7	147
3,500K	450	126	2,776	37.1	50	75	16.7	166
3,500K	900	126	5,427	38.1	100	75	34.3	158
3,500K	1,350	126	7,977	39.1	150	75	52.7	151
4,000K	450	126	2,874	37.1	50	75	16.7	172
4,000K	900	126	5,618	38.1	100	75	34.3	164
4,000K	1,350	126	8,258	39.1	150	75	52.7	157
5,000K	450	126	2,874	37.1	50	75	16.7	172
5,000K	900	126	5,618	38.1	100	75	34.3	164
5,000K	1,350	126	8,258	39.1	150	75	52.7	157

*Luminous flux may vary by +/- 10%

**Forward Voltage may vary by +/- 2%

TECHNICAL GRAPHS





LED PN

The selected LEDs for the project have the following commercial part number.

Nominal CCT	CREE® PN	Flux BIN	Voltage BIN
5,000 K	JB2835BWT-J-U50HAPAUD-N06A0001	Discontinued C9	AC
4,000 K	JB2835BWT-J-U40HAPAUD-N06A0001	C9	AC
3,500 K	JB2835BWT-J-U35HAPAUD-N06A0001	C9	AC
3,000 K	JB2835BWT-J-U30HAPAUD-N06A0001	C8	AC
2,700 K	JB2835BWT-J-U27HAPAUD-N06A0001	C8	AC

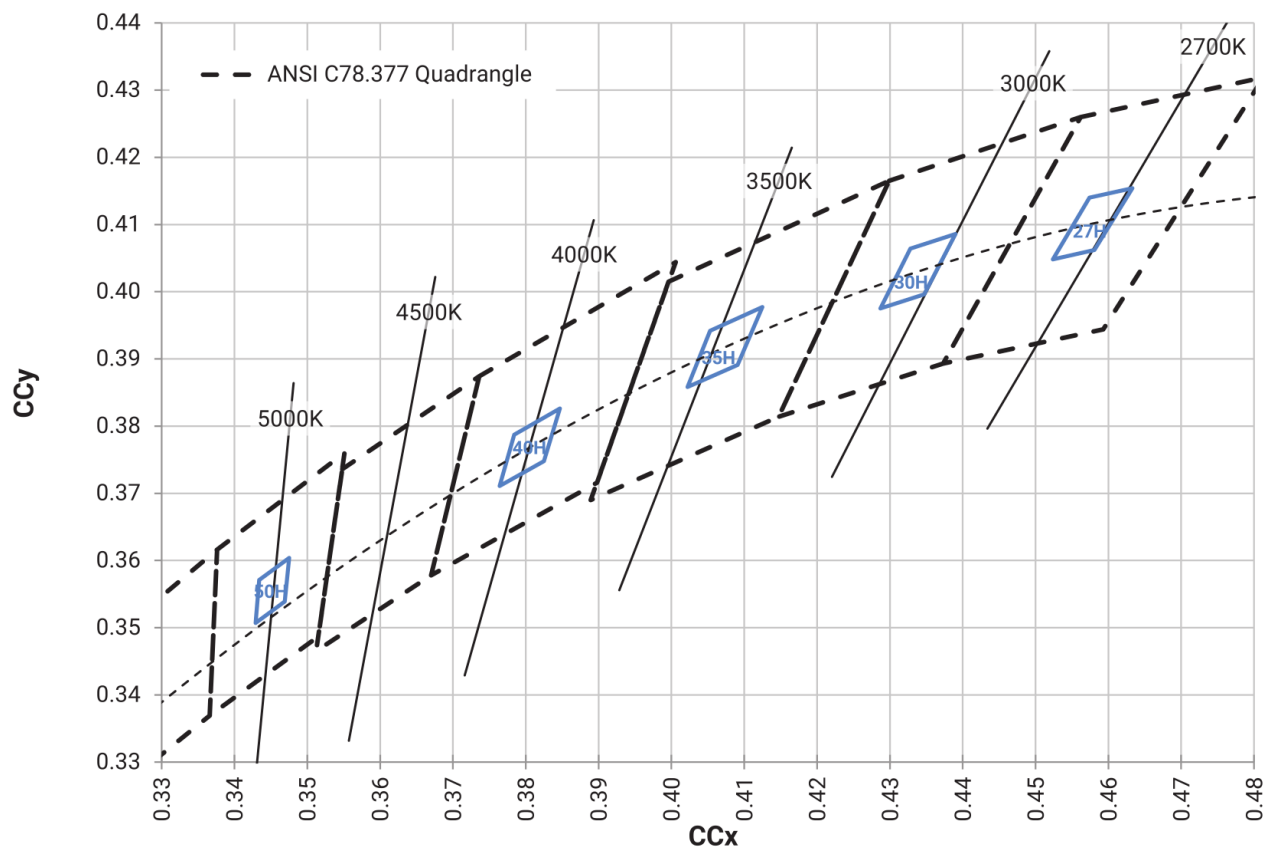
LED COLOR VARIANCE

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

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	0.3777	0.3739
		0.3797	0.3816
		0.3861	0.3855
		0.3838	0.3777
35H	3500 K	0.4022	0.3858
		0.4053	0.3942
		0.4125	0.3977
		0.4091	0.3891
30H	3000 K	0.4287	0.3975
		0.4328	0.4064
		0.4390	0.4086
		0.4347	0.3996
27H	2700 K	0.4524	0.4048
		0.4574	0.4140
		0.4633	0.4154
		0.4581	0.4062

A tolerance of +/- 0.005 on chromaticity (CCx, CCy) is expected by the LED manufacturer.

LED BINNING STRUCTURE



LED PRECISION DIMMING BINNING

The Precision Dimming technology presented by Cree requires a very careful assembly and mixing process. Here are the variations of the BIN available for this custom LED:

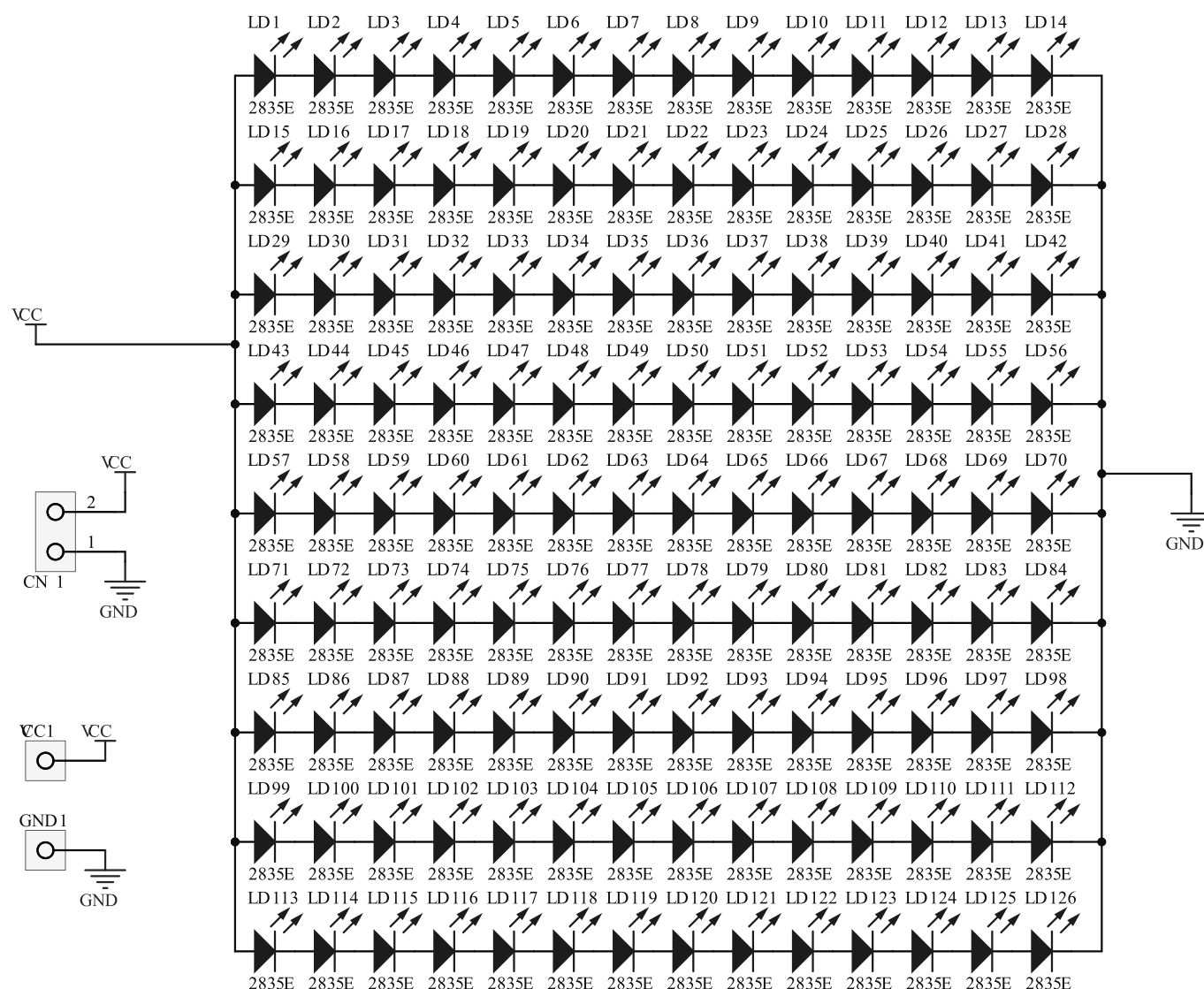
Nominal CCT	Precision Dimming BINs	CREE® PN
5,000 K	L, M	JB2835BWT-J-U50HAPAUD-N06A0001
4,000 K	L, M	JB2835BWT-J-U40HAPAUD-N06A0001
3,500 K	L, M	JB2835BWT-J-U35HAPAUD-N06A0001
3,000 K	K, L	JB2835BWT-J-U30HAPAUD-N06A0001
2,700 K	K, L	JB2835BWT-J-U27HAPAUD-N06A0001

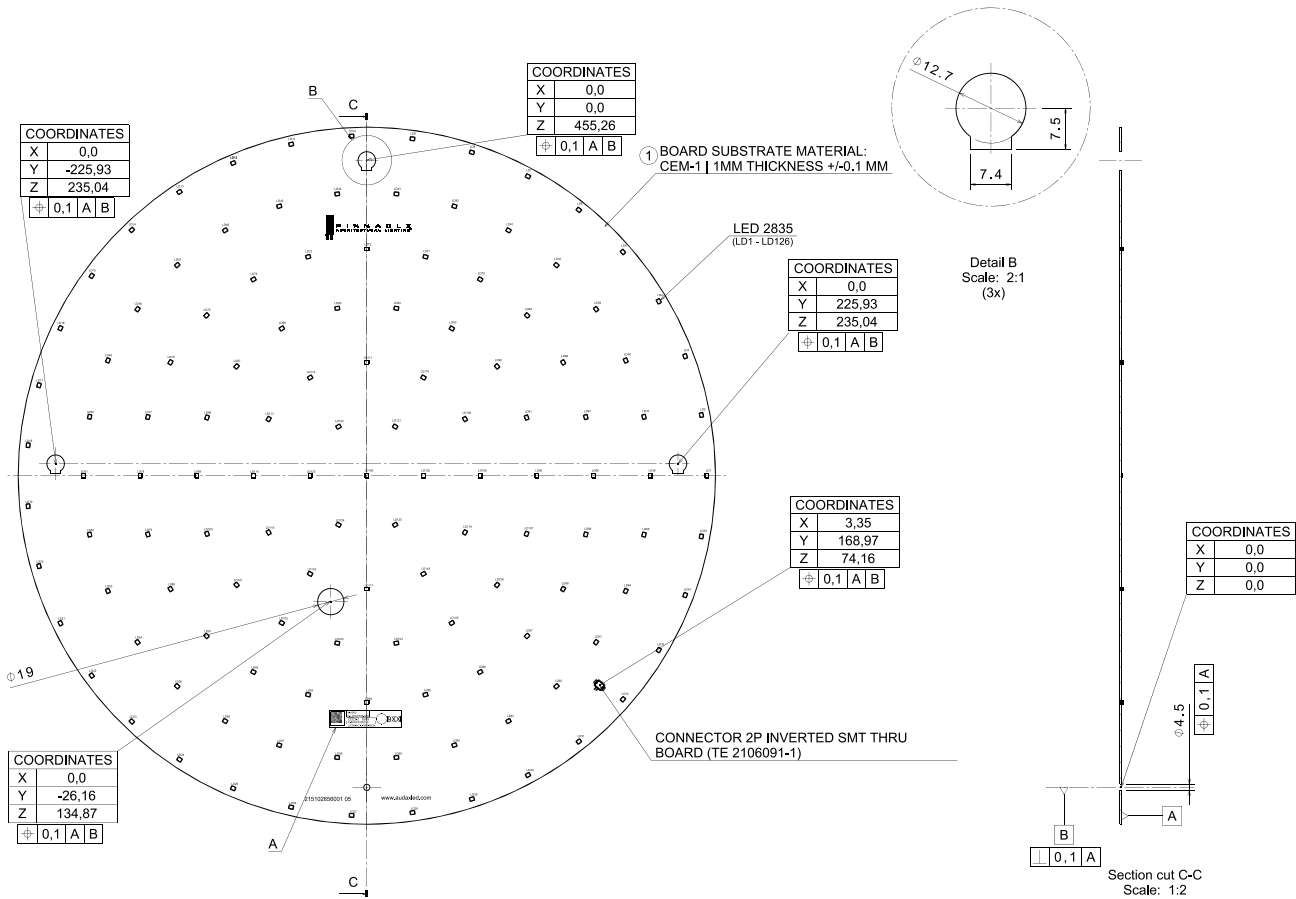
Discontinued

If necessary, the mixing BIN will follow these principles:

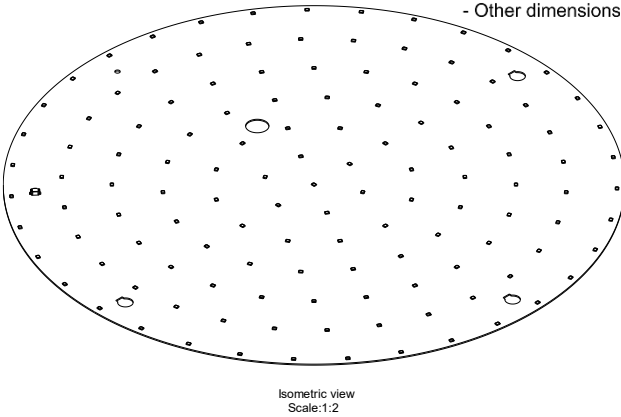
1. Do not use dissimilar Precision Dimming bins in parallel strings when each string is a single bin.
2. Use a single Precision Dimming bin and CCT/CRI bin for an entire board build.
3. If mixing bins, only mix equal numbers of each Precision Dimming bin and CCT/CRI bin in each parallel string.

SCHEMATICS





- Notas:
- Peça isenta de rebarbas e imperfeições;
 - Tolerâncias não indicadas considerar $\pm 0,1\text{mm}$
 - Dimensões não especificadas seguir conforme modelo matemático;
- Notes:
- Product don't have must be sharp edges and burrs;
 - Tolerances not indicated consider $\pm 0,1\text{mm}$
 - Other dimensions see on 3D model.



③			①			
Audax Part Number	Pinnacle Part Number	Kenosha Part Number	Description	CRI [Z]	CCT [VV]	Icon
80608600100	C-L126RND24-927	L-6747	LIGHT ENGINE 24IN ARRAY FINA PROJECT 927 CREE J CLASS 2SM	90 [9]	2700K [27]	
80608700100	C-L126RND24-930	L-6748	LIGHT ENGINE 24IN ARRAY FINA PROJECT 930 CREE J CLASS 2SM	90 [9]	3000K [30]	
80608800100	C-L126RND24-935	L-6749	LIGHT ENGINE 24IN ARRAY FINA PROJECT 935 CREE J CLASS 2SM	90 [9]	3500K [35]	
80608900100	C-L126RND24-940	L-6750	LIGHT ENGINE 24IN ARRAY FINA PROJECT 940 CREE J CLASS 2SM	90 [9]	4000K [40]	
80609000100	C-L126RND24-950	L-6751	LIGHT ENGINE 24IN ARRAY FINA PROJECT 950 CREE J CLASS 2SM	90 [9]	5000K [50]	

SOLDERMASK COLOR

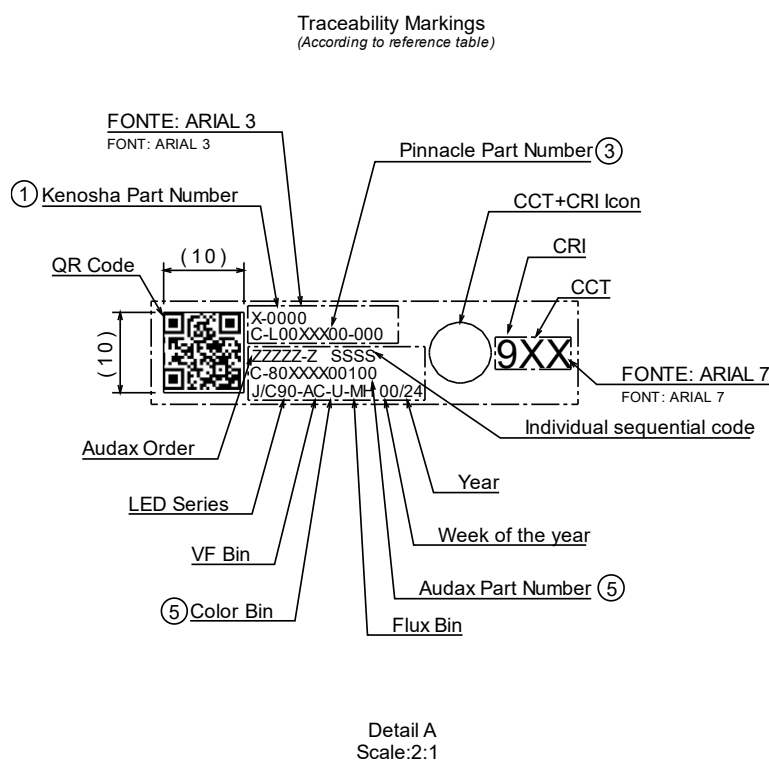
The solder mask model for all products is **Taiyo® PSR-4000 LEW7S**, combined with the **CA-40 LEW7S hardener** (5 unit of solder mask material for 1 unit of hardener). The final product has a thickness range of 30µm to 50µm.

A Multispectral Visual System is used to determine the solder mask color by evaluating the intensity of eight individual spectra of light, with values ranging from 0 to 255 on the final product. The tolerance range is provided below. For more information, visit the [Keyence website](#).

	UV	B	G	AM	R	IF	FR	W
Minimum	96.0	145.0	146.0	154.0	156.0	162.0	135.0	147.0
Maximum	109.0	168.0	163.0	170.0	171.0	180.0	153.0	163.0

RASTREABILITY

To maintain internal and external records, the following engraving has been marked on the boards.



The QR code present the following text structure ("string"):

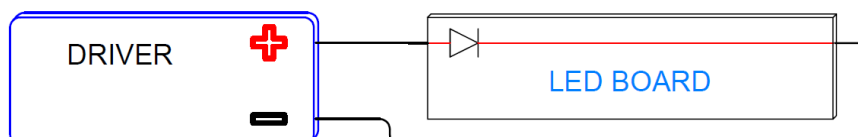
X-0000, ZZZZZ-ZZ SSSS, C-80XXXXXXXXXX CCC BBBB WW/YY

As an example: L-6215, 013485-04 0653, C-80607600100 927 J/C90-AC-U-MH 25/24

CODE	EXAMPLE	MEANING
X-0000	L-6737	Kenosha PN
ZZZZZ-ZZ	013485-04	Audax Order
SSSS	0653	Individual Sequential code
C-8043XX00100	C-80607600100	Audax PN
CCC	927	CRI (90) + CCT (2,700K)
BBBB	J/C90-AC-U-MH	LED Bin
WW	16	Week number
YY	24	Year

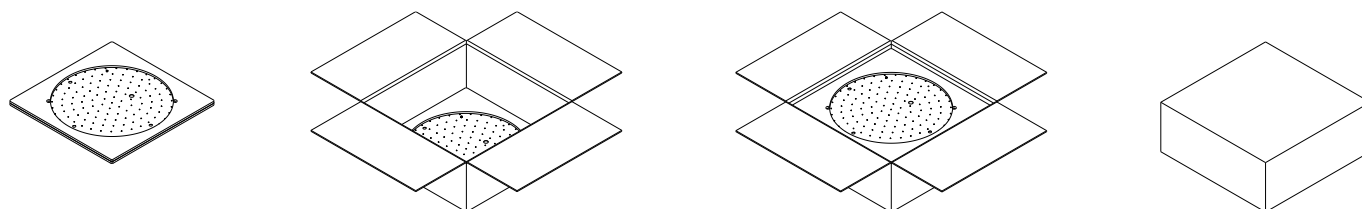
WIRING

Specification item	Value	Unit	Condition
Input wire cross- section	0.5...1.3 20...16	mm ² AWG	Solid wire
Input wire strip length	5...6	mm	Solid wire
Input wire cross-section	0.5...1.3 20...16	mm ² AWG	Stranded wire
Input wire strip length	5...6	mm	Stranded wire



PACKING

CARDBOARD BOX 600mm x 600mm x 250mm



Minimum Packing Quantity: 11pcs

*Each cardboard box contains only one CCT/Part Number

REVISION HISTORY

VERSION	ENGINEER IN CHARGE	DATE	CHANGE
00	KVN	Abril 30, 2024	Preliminary Release
01	KVN	May 14, 2024	Kenosha and Pinnacle PN added Solder mask color measurement make on the final product information Solder mask material / hardener ratio Board material and thickness added
02	CFA	June 05,2024	Mechanical drawing update
03	KVN	July 15, 2024	Kenosha and Pinnacle PN engraving updated Removed Color Group Label from the mechanical drawing Pinnacle PN added to the mechanical drawing table LED Precision Dimming Binning Section added Solder mask color tolerances added
04	KVN	August 19, 2024	Solder mask color tolerances updated Luminous flux, board voltage, and chromaticity tolerance added Traceability marking updated with CREE BIN
05	KVN	September 16, 2024	5,000K option discontinued Precision Diming BIN updated