MacAdam 3-Step

LED Solution

DC Module

TT21252-196L8xx

Product Brief

Applications

Key Applications

Industrial/Outdoor Lighting

Troffer/Linear/Architectural Lighting

Office/Retail/Living Space Lighting

Features & Benefits

High Efficacy & Long Life

Industry Standard Mechanical Attributes Optimized for

Industry Standard Power Supplies

3 SDCM

Multiple Nanometer

A high performing 196LED breakaway linear module designed to be used as either 46 or 23 inches. TT21251-196Lxxx-x uses high quality Seoul LEDs with a metal clad circuit board for high reliability and good thermal transfer.

Table 1. Product Selection - Flux@ 25˚C

Part No.	Luminous Flux (lm)		CCT (K)	CR
	Minimum	Typical	CCT	Min.
TT21251-196L8xx-x	15000	15500	2700	80
	15000	15500	3000	
	15000	15500	3500	
	15500	16000	4000	
	15500	16000	5000	
	15500	16000	5700	
	15500	16000	6500	

References

Refer to page 5 'Part Information' regarding the meaning of 'Order Code' and 'Part No.'

Table 2. Product Selection - Vf@25˚C

Part No.	Vf Bin	Forward Voltage (Vdc)	Forward Current (mA)
TT-21251-196Lxxx-x	ALL	38	2100

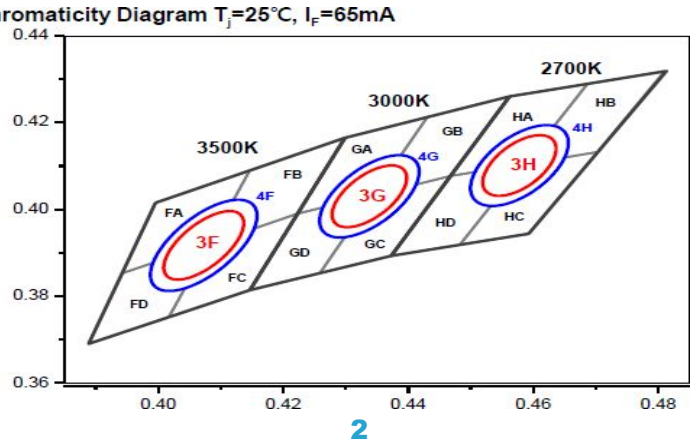
Performance Characteristics

Table 3. Electro Optical Characteristics, T_a = 25˚C(1), I_F = 2100mA

Parameter	Symbol	Value			Unit	Mark
		Min.	Typ.	Max.		
Luminous Flux	Φv(2)	15000	15500	-	lm	-
		15500	16000	-		-
		15500	16000	-		-
Correlated Color Temperature(3)	CCT	2600	2700	2900	K	-
		2900	3000	3200		-
		3200	3500	3700		-
		3700	4000	4200		-
		4700	5000	5300		-
		5300	5700	6000		-
		6000	6500	7000		-
CRI	Ra	80	-	-	-	-
Efficacy @150mA	η	-	186	-	lm/W	-
Input Voltage	Vin	37	38	39.4	Vdc	-
Forward Current	IF	-	2100mA	-	mA	150mA
Power Consumption	P	34	80	96	W	-
Viewing Angle	2Θ1/2	-	120	-	deg.	-

Color Bin Structure

CIE Chromaticity Diagram T_j=25°C, I_F=65mA

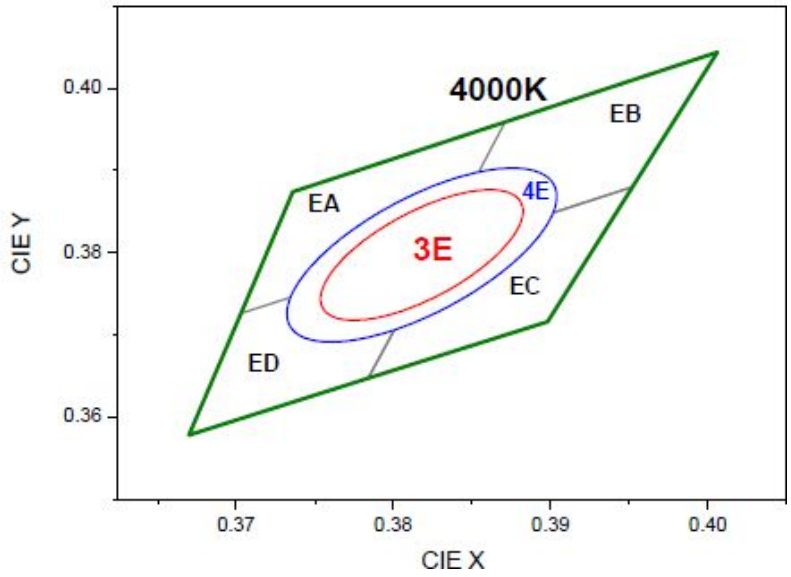


Notes :

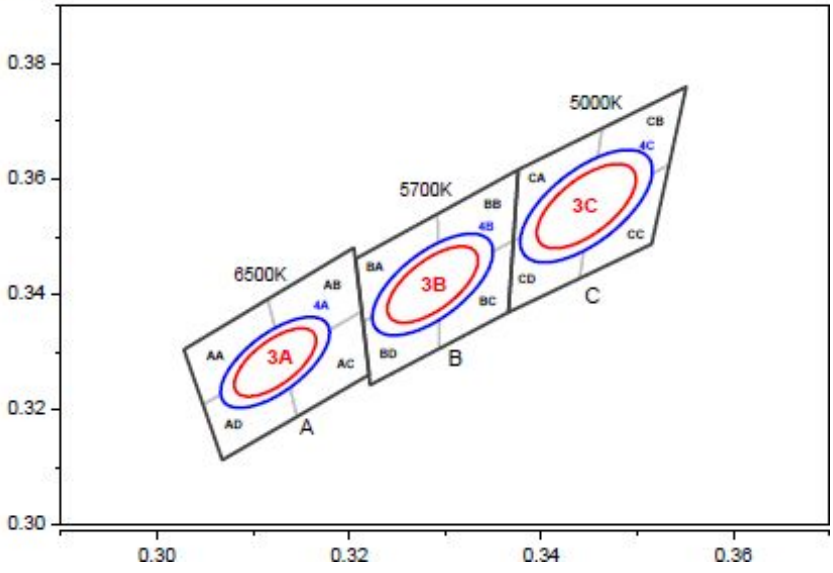
1) The above data were tested at T_a = 25˚C
2) Φ_v is the total luminous flux output measured with an integrated sphere. Its tolerance is ±5%.
3) Correlated Color Temperature is derived from the CIE 1931 Chromaticity diagram. Tolerance of Duv is
4) ±0.003.
5) To use the module properly, recommend to drive the module by a Constant Current Source (CCS). But the Maximum output voltage of the CCS should be limited by referring to this sheet. Tolerance of Voltage, Power Consumption is ±2%.

Color Bin Structure

CIE Chromaticity Diagram T_j=25℃, I_F=65mA



CIE Chromaticity Diagram T_j=25℃, I_F=65mA



Mechanical Dimensions

Image 1. Assembly

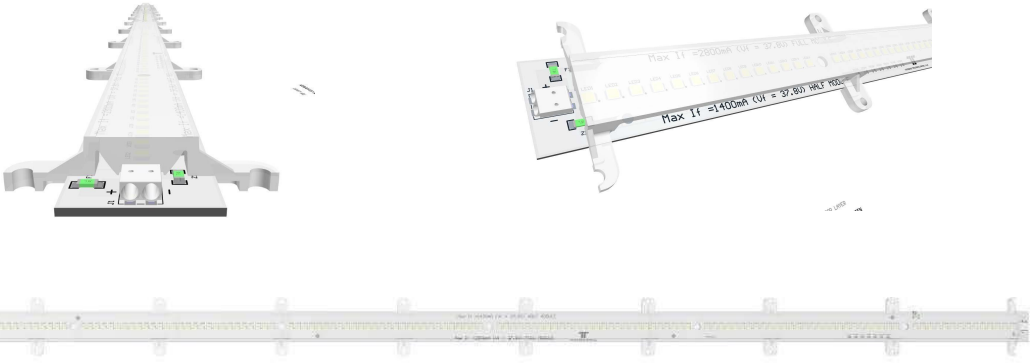


Image 2. Mechanical Dimensions

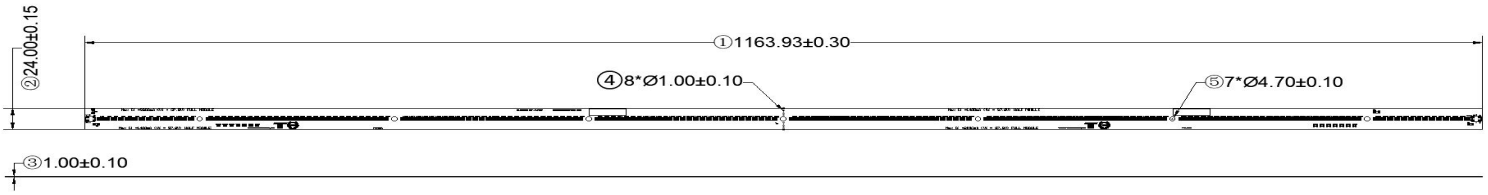
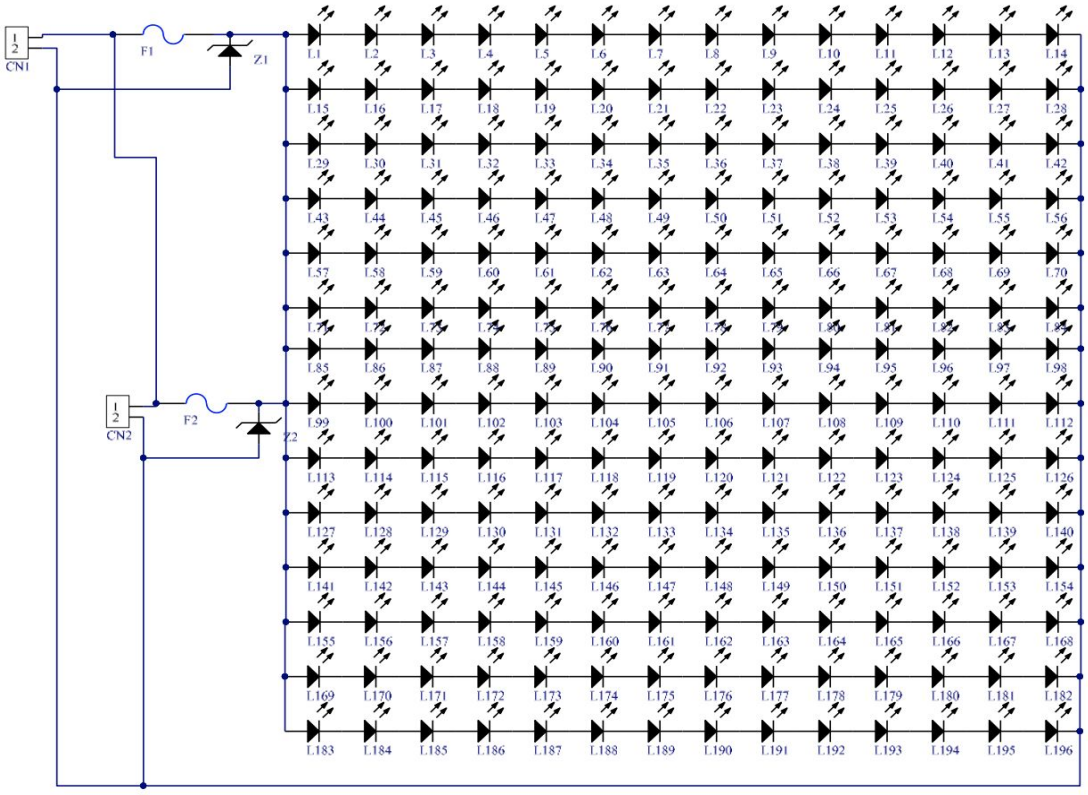


Image 3. Circuit Schematic



Notes :

1) All dimensions are in millimeters
2) Scale: None
3) Module Thickness: 1.0 +0.10

Part Information

Table 4. Part List

No.	Part	Reference	Specification	Qty
1	LED PKG	L1~L196	STW8A2PD-E1(H)(S)	196
2	PCB	-	MCPCB 1W/ 1 layer / 24.0(W)x1163.93(L)x1.0(T)mm / Cu=2oz / OSP	1
3	Connector	CN1, CN2	2059-302/998-403	2
4	Fuse	F1,F2	12.000.2	2

Figure 1. Part Information

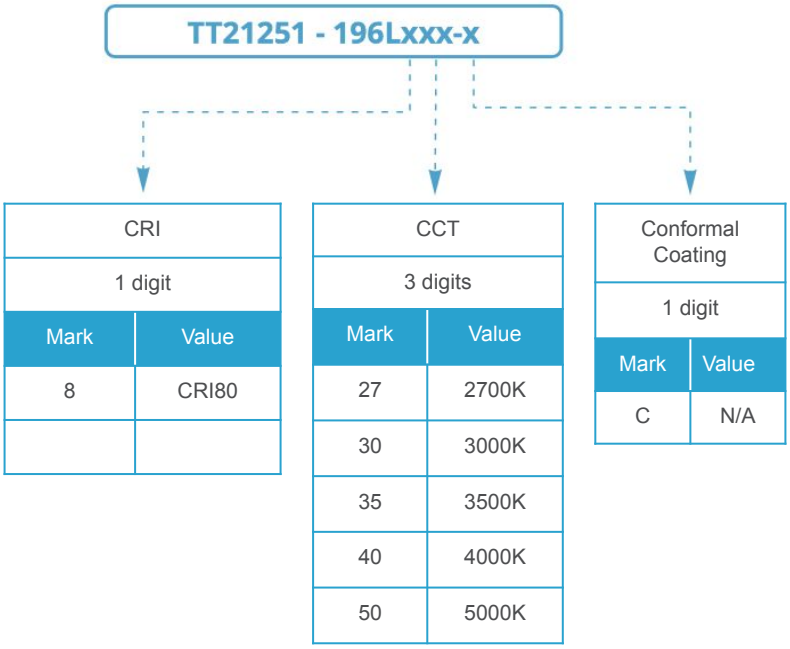


Table 5. Marking Point & Information

MF. Date (YYMMDD)	Module Rank(1)				Customer Part No.	Serial No.
	Flux Rank	CCT Rank	CRI Rank	Vf Rank		
200825	G82	EO3	8	ALL	TT21251-196L8xx-x(2)	00001

Notes :

(1) Module rank: refer to rank information in below table.

(2) Customer part no.: TT21251-196L830 for CCT 3000K

• TT21251-196L827 for CCT 2700K • TT21251-196L850 for CCT 5000K

• TT21251-196L835 for CCT 3500K • TT21251-196L865 for CCT 6500K

• TT21251-196L840 for CCT 4000K

(3) Module CCT rank

Marking Information

Notes :

1) Marking information should be printed in two places

Image 4. Marking point 1
Do ink printing into marking border (from LED L71 to L75)

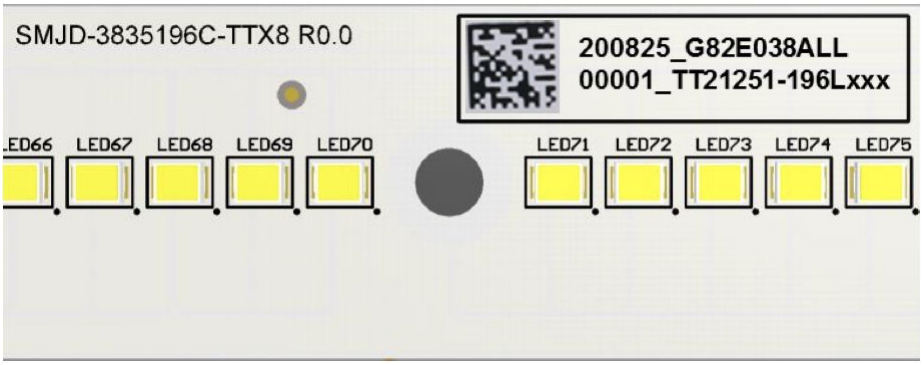
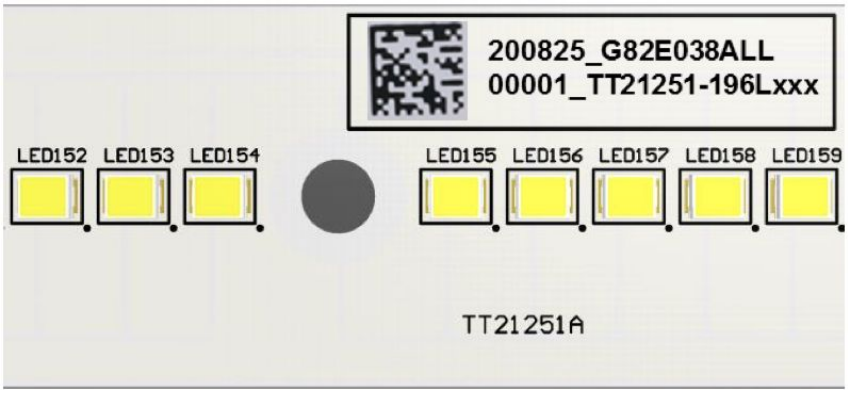


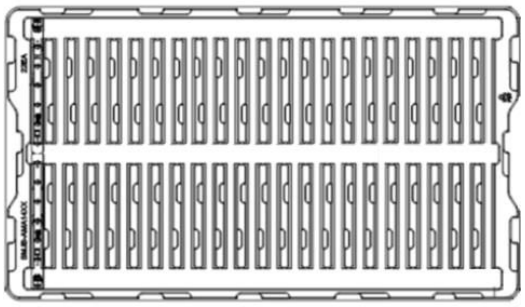
Image 5. Marking point 2:
Do ink printing into marking border (from LED L155 to L159)



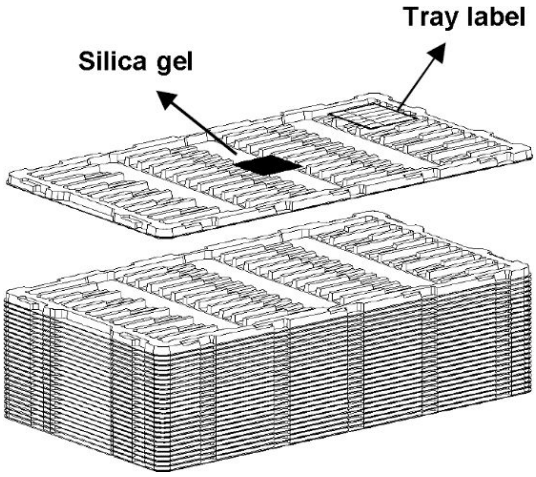
Packing

Table 6. Packing

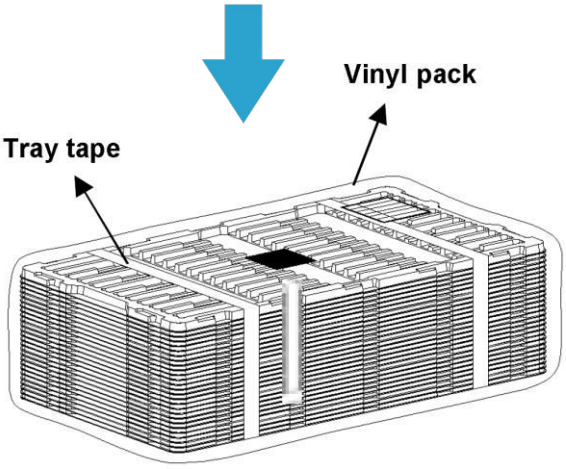
Tray			Box			Pallet		
Size (mm)	Module Qty (EA)	Material	Size (mm)	Tray Qty (EA)	Module Qty (EA)	Size (mm)	Box Qty (EA)	Module Qty (EA)
1230 x 335 x 21	18	Anti-static PET	1230 x 355 x 126	6(+1) Trays	108	1310 x 1100 x 150	18	1944



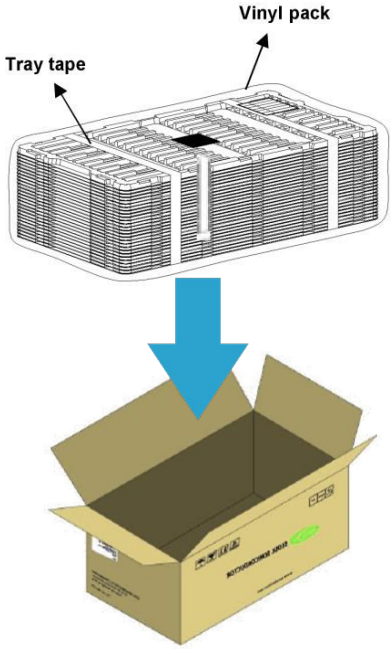
18 pcs LED module per Tray



6pcs Tray with LED Module
1pcs Dummy Tray with No LED Module should be covered LED module trays on top



1. Taping the bunch of Trays by 3 positions:
   - 2 outer side and middle
2. Packing Anti-static vinyl



1 box = 6pcs Tray
= 108pcs LED Modules

Conditions of Acceptable Usage

This component has been judged on the basis of the required spacing distances in the Standard for LED Equipment for Use in Lighting Products, UL 8750.

1) The LED modules are intended for connection to a constant current, Class 2 power supply. When the arrays are connected and used with power supplies other than class 2, the need for an additional evaluation shall be considered in the end use product investigation.
2) The LED modules shall be installed in compliance with the mounting, spacing, casualty, and the segregation requirements applicable to the ultimate application.
3) The LED modules were not subjected to the Normal Temperature Test. A Temperature Test shall be conducted in the end product with considerations for the following components, their ratings, and LED-to-LED spacing:
    - Printed Wiring Board – 105°C
    - Connectors – 105°C
4) The LED modules are intended for use in dry and damp locations when connected to a Class 2 power supply. Use in other than dry and damp locations powered by a Class 2 power supply shall be evaluated to the end use application.
5) All models shall be marked with any voltage and current rating that doesn't exceed the maximum ratings in the ELECTRICAL RATINGS table of this report. All models are to be used within their marked ratings.

Precaution for Use

1) Do not touch the optic with bare hands. Use cotton gloves to prevent oils from contaminating the optics.
2) Do not flex or bend the PCB as this could cause the lenses to fall off.
3) The circuit board operates a high voltage, do no touch any of the circuit board, components or terminals with body or metal while circuit is active.
4) Long time exposure to sunlight or UV can cause the lens to discolor.
5) Please do not use adhesives or other materials that outgas VOCs as they can damage the LEDs.
6) Please do not assemble in conditions of high moisture and/or oxidizing gas such as Cl, H2S, N H3, SO2, NOX,etc.
7) Please do not make any modification on module.
8) Please be cautious when soldering to board so as not to create a short between different trace patterns.

Handling with Regards to Static Electricity

1) Please handle using equipment that prevents static electricity.
2) Do not touch unless ESD protection is used.

Handling of Silicone Resign for LEDs

1) If the Optics are removed from the please take care in handling the exposed LEDs.
2) Do not touch the silicone resin area with sharp objects such as tweezers.
3) Do Not touch the top of the LED surface as fingerprints on silicone resin area may affect the performance.
4) Please store LEDs in covered containers to prevent dust accumulation as this may affect performance.
5) Excessive force more than 3000gf to the silicone lens can result in fatal or permanent damage with LEDs.
6) Please do not cover the silicone resin area with any other resins such as epoxy, urethane, etc.

Storage Before Use

1) Do not impact or place pressure on this product because even a small amount of pressure can damage the product. The product should also not be placed in high temperatures, high humidity or direct sunlight since the device is sensitive to these conditions.
2) When storing devices for a long period of time before usage, please following these guidelines.
   - The device should be stored in the anti-static foam trays and fingers they were shipped in.
   - Store in a cool dry place preventing air and moisture from being present.

Legal Disclaimer

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Revision History

Table 6. Revision History

Revision	Date	Remarks
A	2021.0901	Data sheet for TT21251-196L8xx-x