



Arrant-Light Oy

# Datasheet

CALD1607

# CA L D 1607-M 17 XX

CA = Citizen Array

L = Linear LED Module

D = Array Type

1607 = 16 Series, 7 Parallel

M = General Color Rendering Index Min. 80

17 = 17 watt module

XX = Energy Star Correlated Color Temperature

L2 = 2700K

L1 = 3000K

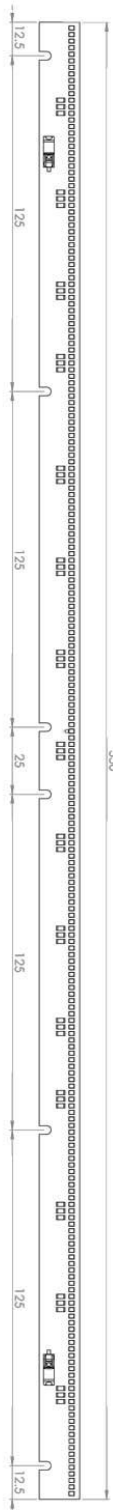
WW1 = 3500K

W1 = 4000K

N1 = 5000K

D = 6500K

## 1. Outline drawing



Led used in array:

CLL130-0101B2-\* depending on the color temperature

## 2. Performance

Following data is based on Citizen CLL130-0101B2-\* diode datasheet. Please find more information about the led from datasheet for different CCTs.

### Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Power Dissipation	$P_D$	32,4	W
Forward Current	$I_F$	595	mA
Reverse Voltage *1	$V_R$	40	V
Operating Temperature	$T_{OP}$	-30 – +85	°C
Storage Temperature	$T_{ST}$	-40 – +100	°C
Tc-point max. Temperature	$T_{C\ MAX.}$	85	°C

\*1 This module is not designed to be driven in reverse bias.

### Typical Electro-optical characteristics:

Parameter	CCT	Symbol	Condition	Min	Typ	Max	Unit
Forward Voltage	All	$V_f$	350mA	43,20	48,32	52,80	V
CRI	All	$R_a$		80	83	-	-
Luminous flux	2700K	$\phi_v$		1669	1971	-	lm
	3000K			1725	2038	-	
	3500K			1792	2117	-	
	4000K			1837	2162	-	
	5000K			1971	2330	-	
6500K	1870	2206	-				

Notice: These modules should be driven with constant current LED driver.

## Chromaticity coordinates (Condition: $I_F = 350\text{mA}$ , $T_s = 25\text{ }^\circ\text{C}$ )

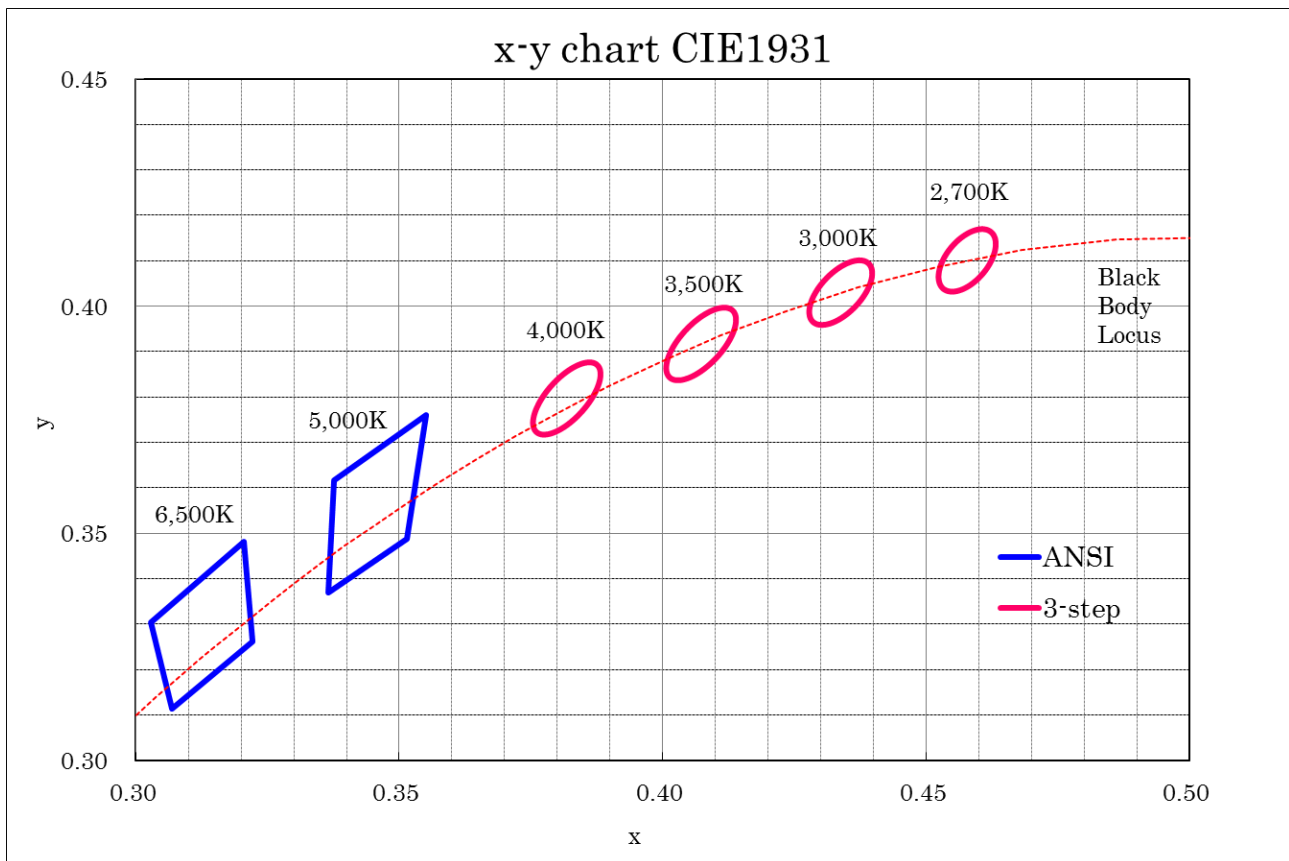
Oval parameter			
	Major axis	Minor axis	Rotation Angle
	a	b	$\theta^\circ$
2700K	0,007774	0,00411	57,28
3000K	0,00834	0,00408	53,17
3500K	0,00951	0,00417	52,97
4000K	0,00939	0,00402	54,00

Note 1) Color region stays within MacAdam 3-step ellipse for the LED module.

Note 2)  $\theta$  is the angle between the major axis of the ellipse, and a and b are the major and minor semi-axes of an ellipse.

Note 3) For CCT versions 5000K and 6500K, ANSI C78.377:2011 binning is used for color coordinates.

Note: Data above is calculated and extrapolated based on CLL130-0101B2-\* diode datasheets.



## Precaution:

### Handling with care for this product:

- This product should not have the physical contact with any other parts when assembled as part of your lighting fixture or luminaire.
- Do not touch LED area with hands when installing the product into your lighting fixture or luminaire.
- Handle the product with care, touch the product only on the edges of the LED module.
- Do not bend the LED module.

### Countermeasure against static electricity:

- It is recommended to use countermeasures, such as wearing a wristband or antistatic gloves when handling of this product, to prevent any static electricity being produced.
- Throughout the production line, any manufacturing facility, that involves the contact with this product, is recommended to be grounded, if possible.
- LED modules could be tested by a light-on test with minimum current value in order to find the possible modules damaged by static electricity.

### Caution of product assembly:

- When you assemble your luminaire, please use M3 screws or two-sided thermally conductive tape to attach the LED module into your luminaire or metal profile in your luminaire.
- Please do not use tighten the screw too much because it may bend the LED module and affect the performance of the LED components.

### Driving current:

- A constant current is used with these modules, the values in this data sheet are given for constant current driving.
- Typical current given in the data sheet table is a recommendation; you can use also other current values as long as the current value does not exceed the maximum current value given in the table of Absolute Maximum Ratings.
- Do not apply reverse voltage, the LED components are not designed to be driven in reverse bias.

### Lighting at a minimum current value:

- Please notice that if you drive the LED module with minimum or very small current value, there may be differences in brightness between individual LED components due to manufacturing tolerances of individual components.
- The above is not meaning that the LED module itself would be non-functional.

### Electrical Safety:

- This product is designed and produced in compliance with IEC 62031: 2008 standard.
- IEC 62031:2008 LED modules for general lighting. Safety specification.
- As for conformity assessment for IEC 62031:2008, almost all items of the specification depend on your final product of LED lighting system.
- Please confirm with your final product for electrical safety of your product.

## Eye Safety:

- According to IEC 62471:2006 standard Photobiological safety of lamps and lamp systems our LED modules could be classified either to Exempt Group (no hazard) or to Risk Group 1 (low risk)
- Great care has to still be taken when directly viewing a LED module that is driven with high current.

## Condition limitations:

- There are some conditions under which you should evaluate their effect on the LED module and appropriate them.
- If the LED module gets directly or indirectly wet due to rain.
- If the LED module is damaged by seawater
- If the LED module is exposed to corrosive gas
- If the LED module is exposed to dust, fluid or oil

Notice: 5 year warranty is not given if one or more of those conditions above are met.

## Precautions with regard to product use:

- 1) This document is provided for reference purposes only so that the products that Arrant-Light sells are used as intended. Arrant-Light neither makes warranties or representations with respect to the accuracy or completeness of the information contained in this document nor grants any license to any intellectual property rights or any other rights of Arrant-Light or any third party with respect to the information in this document.
- 2) All information included in this document such as product data, diagrams, charts, is current as of the date this document is issued. Such information, however, is subject to change without any prior notice. Before purchasing or using any Arrant-Light's products listed in this document, please confirm the latest product information with Arrant-Light's sales office, and formal specifications must be exchanged and signed by both parties prior to mass production.
- 3) Arrant-Light has used reasonable care in compiling the information included in this document, but Arrant-Light assumes no liability whatsoever for any damages incurred as a result of errors or omissions in the information included in this document.
- 4) Absent a written signed agreement, except as provided in the relevant terms and conditions of sale for product, and to the maximum extent allowable by law, Arrant-Light assumes no liability whatsoever, including without limitation, indirect, consequential, special, or incidental damages or loss, including without limitation, loss of profits, loss of opportunities, business interruption and loss of data, and disclaims any and all express or implied warranties and conditions related to sale, use of product, or information, including warranties or conditions of merchantability, fitness for a particular purpose, accuracy of information, or no infringement.
- 5) Though Arrant-Light works continually to improve products' quality and reliability, products can malfunction or fail. Customers are responsible for complying with safety standards and for providing adequate designs and safeguards to minimize risk and avoid situations in which a malfunction or failure of a product could cause loss of human life, bodily injury or damage to property, including data loss or corruption. In addition, customers are also responsible for determining the appropriateness of use of any information contained in this document such as application cases not only with evaluating by their own but also by the entire system. Arrant-Light assumes no liability for customers' product design or applications.
- 6) Please contact Arrant-Light's sales office if you have any questions regarding the information contained in this document, or if you have any other inquiries.

aLED is a registered trademark of Arrant-Light Oy.