

AB-GES- S04124WxxNN1

Features:

- 24W 40X40 mm square AC LED light engine
- SimpleDrive® - 120V AC drive technology
- Driver on COB structure
- Ceramic base COB
- Long life - No Electrolytic capacitors
- Easily integrated
- UL Recognized – E361187

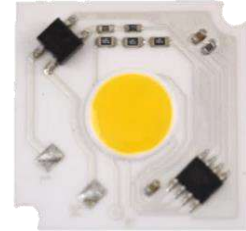


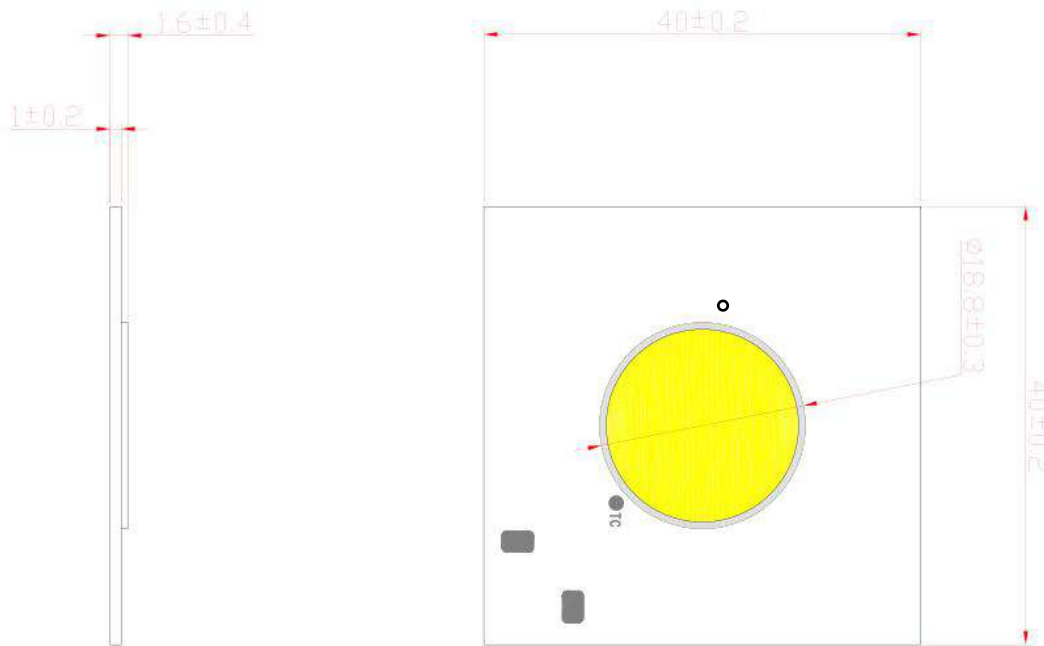
Figure: AC Module

Applications:

- Downlight (Diffused type & Lens type)
- Can Lights
- Track Lights
- Wall Sconces
- In Ground Lights
- Spot Lights
- Vandal Proof Lights
- Ceiling Lights



Outline Dimensions



Units: mm

Notes:

1. No Terminal block
2. No Wire connection
3. Substrate is Ceramic base
4. Thickness of PCB is 1.0mm
5. The Temperature of Tc points needs to be lower than 75 °C and the temperature of top of IC needs to be lower than 110 °C.
6. Tolerance of dimension and thickness is ± 0.15 mm



Characteristics

Parameter	Symbol	Rating	Unit
Input Voltage	V _{in}	130	Vac
LED Junction Temperature ^[2]	T _j	115	°C
Storage Temperature	T _{stg}	-40 ~ 85 °C	°C
Operation Temperature	T _{opr}	-40 ~ 85 °C	°C

Absolute Maximum Ratings

- Proper current rating must be observed to maintain junction temperature below maximum at all time. For this product, we suggest to keep the Temperature of TC point under 75°C, and the temperature of Top IC surface under 110°C. After passing the maximum temperature of IC, the rating current will be lower automatically for protecting the whole circuit.

Electrical Characteristics, Ta=25°C

Parameter	Symbol	Min.	Max.	Unit
Input Voltage	V _{in}	110	130	Vac
Input Frequency	Freq.	50/60		Hz
Power Factor	PF	0.9	0.95	-
Surge Protection	Voltage		0.5	kV
Dielectrics strength	Voltage		1.5	kV
Flicker % ^[1]			100%	
Flicker Index ^[1]			0.3	

- Surge protection is up to 0.5KV

Optical Characteristics (V_{in}=120V), Ta=25°C

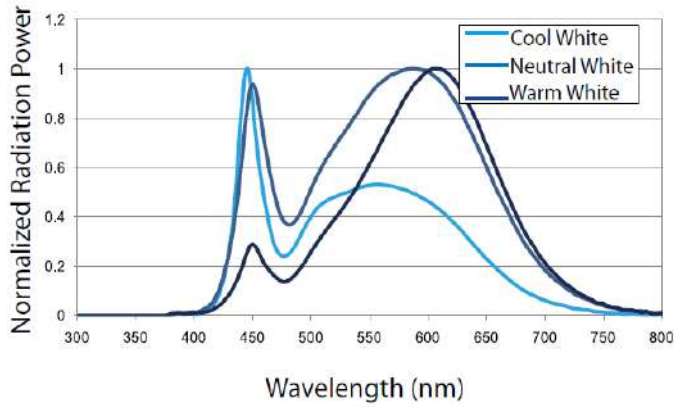
Model name	AC Power(W)			Color Temp	Luminous Flux(lm)		CRI
	Min	Typ.	Max	(K)	Min	Typ	
AB-GES-S04124W30NN1	20.8	24.0	27.0	3000	1920	2100	>80
AB-GES-S04124W40NN1	20.8	24.0	27.0	4000	1920	2100	>80
AB-GES-S04124W50NN1	20.8	24.0	27.0	5000	1920	2100	>80

- Correlated color temperature is derived from the CIE 1931Chromaticity diagram.
- The luminous flux tolerance is ± 10%.
- This CRI value tolerance is ± 2.
- Calibration accuracy of CIE_x and CIE_y : ±0.007 ;
- Calibration error CCT 3000K ±175K ; 4000K ±300K ; 6500K ±400K

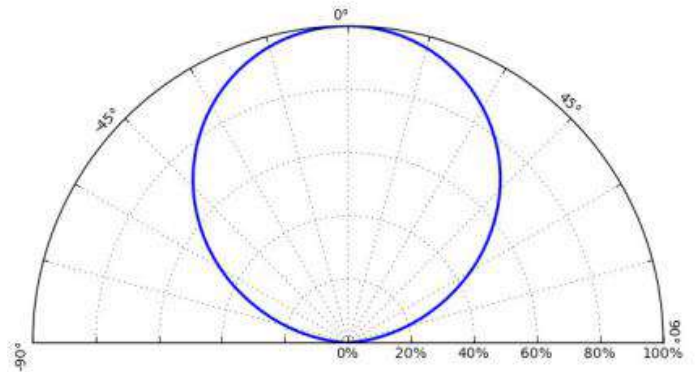
Thermal Resistance, Ta=25°C

Part	Min.	Typ.	Max.	Unit
IC	15		20	°C/W
COB Junction to Tc		0.33		°C/W

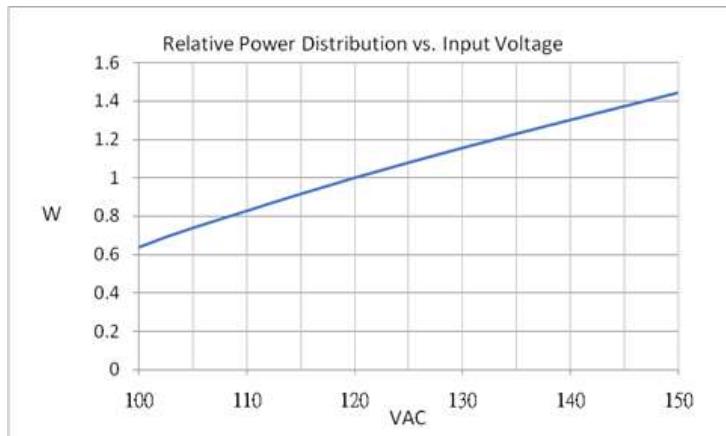
■ **Relative Spectrum of Emission (Ta=25°C, Test current=60mA)**



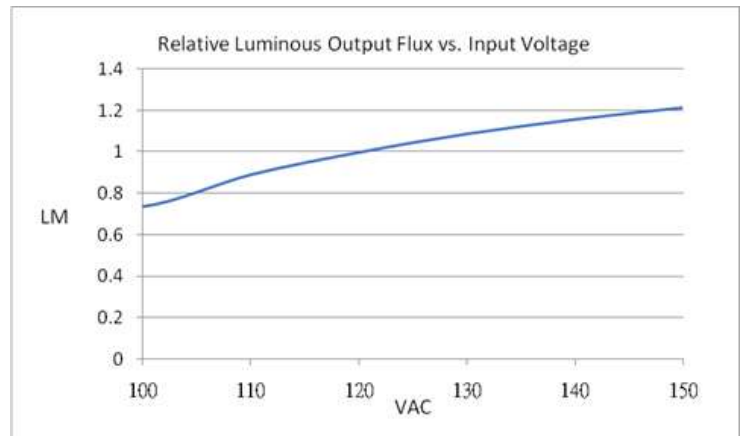
■ **Radiation Pattern (Tj=25 °C)**



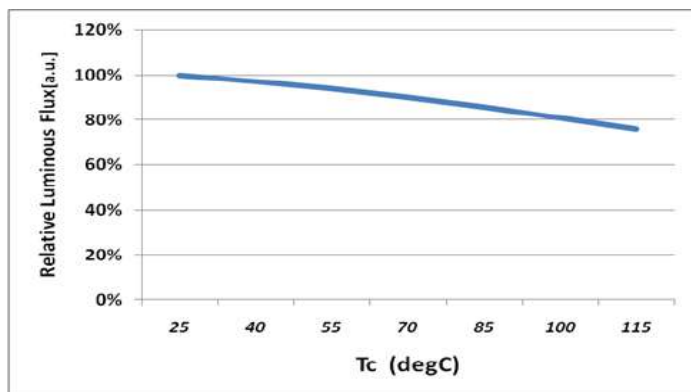
■ **Relative power distribution vs. Input voltage (Ta=25°C)**



■ **Relative luminous output vs. Input voltage (Ta=25°C)**

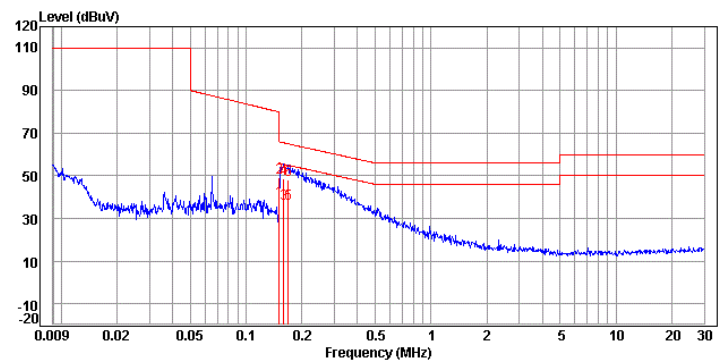


■ **Relative flux vs. Tc temperature (Ta=25°C)**



■ **Conduction Testing^[2] 1 (120Vac/60Hz)**

Standard: EN 55015 (QP), Temp. (C)/Hum.(%): 25°C/57%





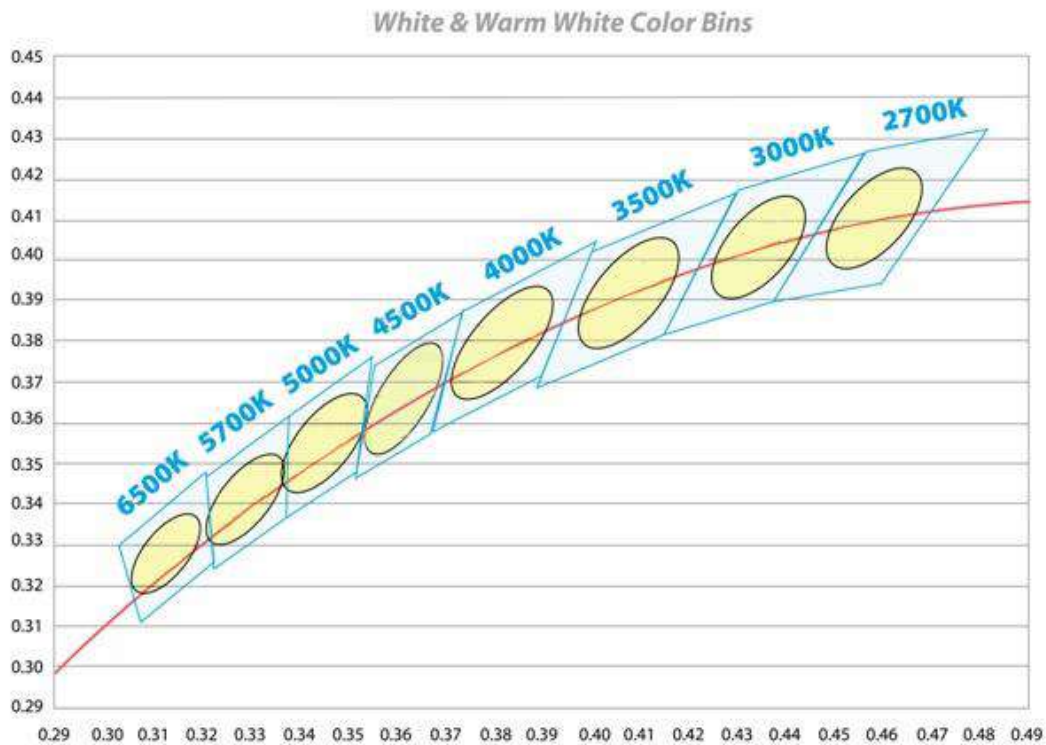
Color Bin Code

Color region stays within Macadam "5-Step" ellipse from the chromaticity center.
The chromaticity center refers to ANSI C78.377:2008.

Please refer to ANSI C78.377 for the chromaticity center.

CC	Steps	C	C	a	b	theta
2700K	5	0.4578	0.4101	0.01350	0.00700	53.7
3000K	5	0.4338	0.4030	0.01390	0.00680	53.2
3500K	5	0.4073	0.3917	0.01545	0.00690	54.0
4000K	5	0.3818	0.3797	0.01565	0.00670	53.7
4500K	5	0.3611	0.3658	0.01260	0.00563	57.5
5000K	5	0.3447	0.3553	0.01370	0.00590	59.6
5700K	5	0.3287	0.3417	0.01243	0.00533	59.0
6500K	5	0.3123	0.3282	0.01115	0.00475	58.5

5-step MacAdam Bin Group



AC Module Flicker

Flicker for AC driven LED modules can be measured in two different manners, Percent and Index.

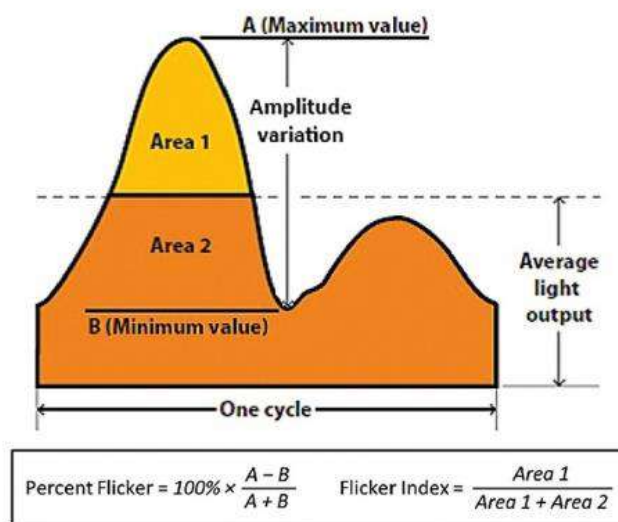
Percent - Older more common metric that measures peak to peak amplitude. No other attributes of the AC wave are taken into account. Measurements of percent range from 0%-100%

AC Module Flicker	100%
Any LED system with Electrolytic Capacitor	2%-90%

Index - A metric defined by the IES (Illuminating Engineering Society) that measures the shape, duty cycle, and peak to peak amplitude. This is a true measure of eye response to flicker. Measurement of index range form 1-1.0.

AC Module Index	<.3
Any LED system with Electrolytic Capacitor	.02~.2

Graph showing measurement differences





Reference Information

[1] Flicker information, please refer to page 6.

[2] The primary goal of **EMC testing** is to identify the sources of electromagnetic energy emitted from an electronic device in an effort to reduce potential interference to other equipment, as well as determine the susceptibility of the equipment from electromagnetic energy emitted from other electronic devices nearby.



Warranty

American Bright Optoelectronics Corp., warrants that its AC LED MODULES will be free from defects in material and workmanship from the date of manufacture by American Bright Optoelectronics Corp. for a period of 5 years (LED light generation module case temperature(s) not to exceed 75°C, IC temperature(s) not to exceed 110°C). The AC LED MODULES consists of a LED lighting components and the driver circuit (collectively, the "Power circuit"). This limited warranty only applies when the American Bright Optoelectronics Corp. LED module is properly connected and installed on the luminaire; operated within the electrical values recommended by American Bright Optoelectronics Corp.; and used in situations approved for the application and in the environmental conditions (temperature, humidity) within the normal specified operating range of the system.

This warranty is further conditioned upon proper storage, installation, use and maintenance. This warranty is not applicable to any Product which is not installed and operated in accordance with the current edition of The National Electric Code (NEC), the Standards for Safety of Underwriters' Laboratory, Inc. (UL), the Standards for the American National Standards Institute (ANSI), and with American Bright Optoelectronics Corp.'s instructions and guidelines for the Product. This warranty is not applicable to any Product or component subjected to abnormal stresses and operating conditions. Replacement of the American Bright Optoelectronics Corp. Product with LED components of other manufacturers will void the entire warranty.

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