

SPECIFICATIONS

FOR TOPLIGHT COB MODULE

MODEL: ATL-AB72



TOPLIGHT INTERNATIONAL LLC.

www.toplightusa.com



TECHNICAL DATA SHEET

ATL-AB72 SERIES

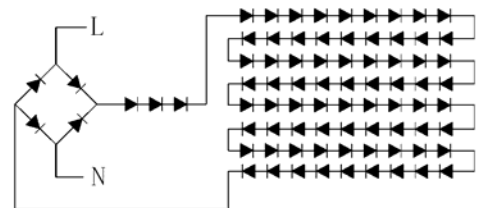
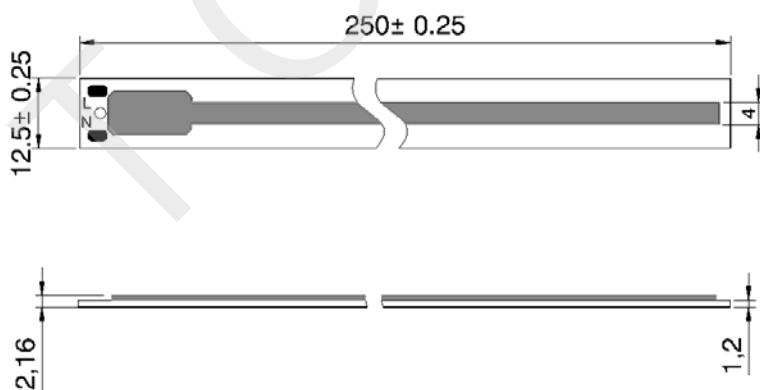
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1. PRODUCT APPEARANCE



2. OUTLINE DRAWING



Unit: mm

Tolerance: ±0.25

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3. PERFORMANCE PARAMETERS**3-1. ABSOLUTE MAXIMUM RATINGS**

ITEM	SYMBOL	RATING	UNIT
Power Dissipation	P	4.4	W
Forward Current	V_F	220	V
Reverse Voltage	V_R	250	V
Operating Temperature	T_{opr}	- 30 ~ + 85	°C
Storage Temperature	T_{stg}	- 40 ~ + 100	°C
Junction Temperature	T_{jmax}	+ 125	°C
Thermal Resistance	RJ-C	3.5	°C/W

Note:

*1. Forward Current allows maximum surge current ≤ 10 ms.

*2. Power dissipation and forward current are the values when the LED is used within the range of the derating curve in this data sheet.



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3-2. ELECTRICAL-OPTICAL CHARACTERISTICS

(T_a=25°C)

**	PARAMETER	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT		
common	Forward Voltage ^{*1}	I _F	V _F =220V	16	18	20	mA		
	Beam Angle	—		—	120	—	Deg		
W	** Color Temp.	—	V _F =220V	2870	3045	3220	K		
	** Color Rendering Index ^{*3}	Ra		80	—	—	—		
	W ₁	Luminous Flux ^{*2}		Φ	260	330	—	lm	
		Luminous Efficiency		η	70	83	—	lm/W	
	W ₂	Luminous Flux ^{*2}		Φ	331	400	—	lm	
		Luminous Efficiency		η	84	95	—	lm/W	
	W ₃	Luminous Flux ^{*2}		Φ	400	470	—	lm	
		Luminous Efficiency		η	96	105	—	lm/W	
	D	** Color Temp.		—	V _F =220V	4745	5028	5311	K
		** Color Rendering Index ^{*3}		Ra		80	—	—	—
D ₁		Luminous Flux ^{*2}	Φ	320		410	—	lm	
		Luminous Efficiency	η	80		99	—	lm/W	
D ₂		Luminous Flux ^{*2}	Φ	411		500	—	lm	
		Luminous Efficiency	η	100		113	—	lm/W	
D ₃		Luminous Flux ^{*2}	Φ	501		590	—	lm	
		Luminous Efficiency	η	114		130	—	lm/W	
C		** Color Temp.	—	V _F =220V		6020	6530	7040	K
		** Color Rendering Index ^{*3}	Ra			80	—	—	—
	C ₁	Luminous Flux ^{*2}	Φ		330	420	—	lm	
		Luminous Efficiency	η		82	102	—	lm/W	
	C ₂	Luminous Flux ^{*2}	Φ		421	510	—	lm	
		Luminous Efficiency	η		103	115	—	lm/W	
	C ₃	Luminous Flux ^{*2}	Φ		511	600	—	lm	
		Luminous Efficiency	η		116	132	—	lm/W	

(Note) Parameters is formulated based on shipping samples

*1. After 20 ms drive, Measurement tolerance: ± 3 %

*2. Monitored by Toplight's 1m integrating sphere, after 20 ms drive, Measurement tolerance: ± 10 %

*3. Monitored by Toplight's 1m integrating sphere, after 20 ms drive, Measurement tolerance:± 2

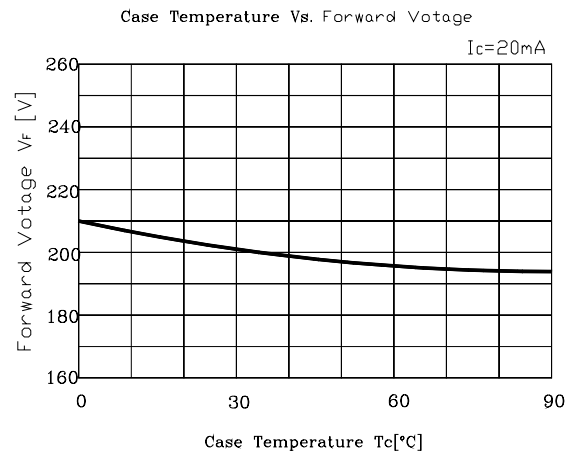
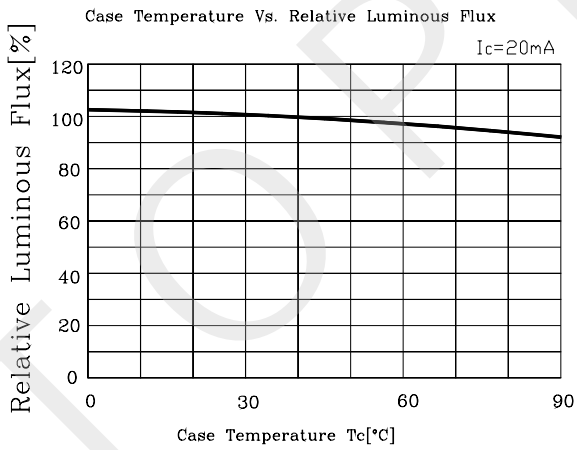
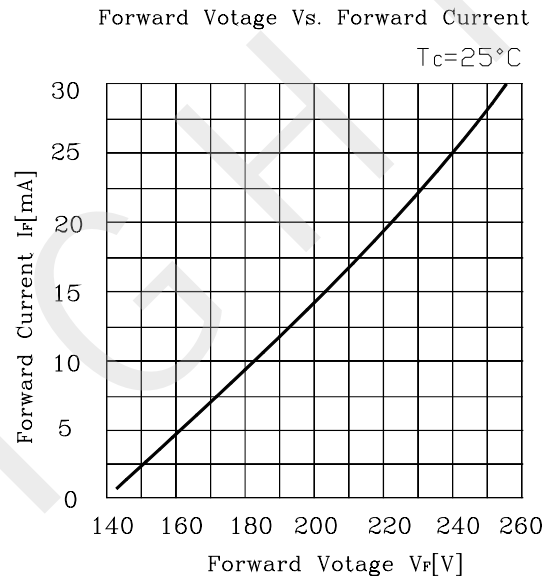
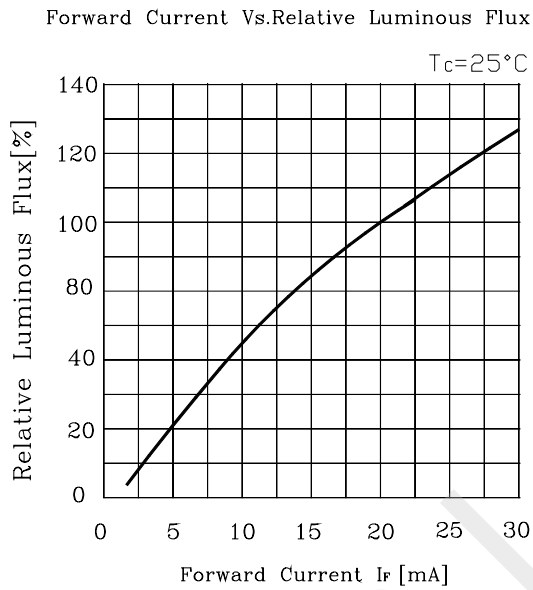


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3-3. Characteristics diagram (TYP.)



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4. RELIABILITY

The reliability of products shall be satisfied with items listed below.

4-1. TEST ITEMS AND TEST CONDITIONS

NO.	TEST ITEM	TEST CONDITIONS	RESULT
1	Continuous operation test	$T_a = 25^{\circ}\text{C}$, $V_F = 220\text{ V} \times 1000$ hours(with Al fin)	PASS
		$T_a = 80^{\circ}\text{C}$, $T_j = 120^{\circ}\text{C}$, $I_F = 220\text{ V} \times 1000$ hours(with Al fin)	
2	Low temperature storage	$T_a = -40^{\circ}\text{C} \times 1000$ hours	PASS
3	High temperature storage	$T_a = 100^{\circ}\text{C} \times 1000$ hours	PASS
4	Moisture resistance	$T_a = 60^{\circ}\text{C}$, 90%RH for 1000 hours	PASS
5	Thermal shock	$T_a = -40^{\circ}\text{C} \times 30$ minutes ~ $100^{\circ}\text{C} \times 30$ minutes, 100 cycle	PASS

4-2. FAILURE CRITERIA

NO.	PARAMETER	SYMBOL	FAILURE CRITERIA
1	Forward Voltage	V_F	$V_F > \text{Initial value} \times 1.1$
2	Luminous Flux	Φ	$\Phi < \text{Initial value} \times 0.7$



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5. CHROMATICITY COORDINATES REGIONAL

5-1. 3000K CHROMATICITY COORDINATES

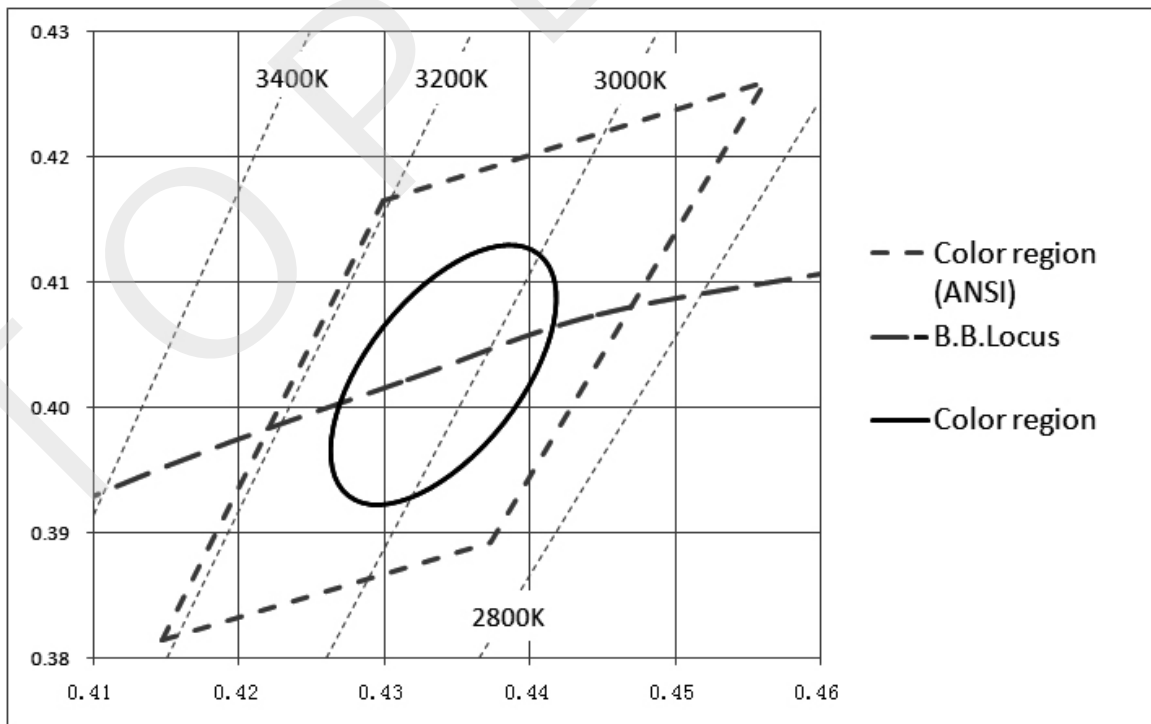
(Tolerance: $x,y \pm 0.005$)

($V_F=220V, T_c=25^\circ C$)

Range		Chromaticity coordinates				
		NO.1	NO.2	NO.3	NO.4	NO.5
	x	0.4363	0.4305	0.4320	0.4340	0.4377
	y	0.4201	0.4206	0.4201	0.4188	0.4180

* The percentage of each rank in the shipment shall be determined by TOPLIGHT.

Chromaticity Diagram



Note: The tolerance of measurement at our tester is $V_F \pm 3\%$, $D_v \pm 10\%$, Chromaticity(x,y) ± 0.005 .



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5-2. 5000K CHROMATICITY COORDINATES

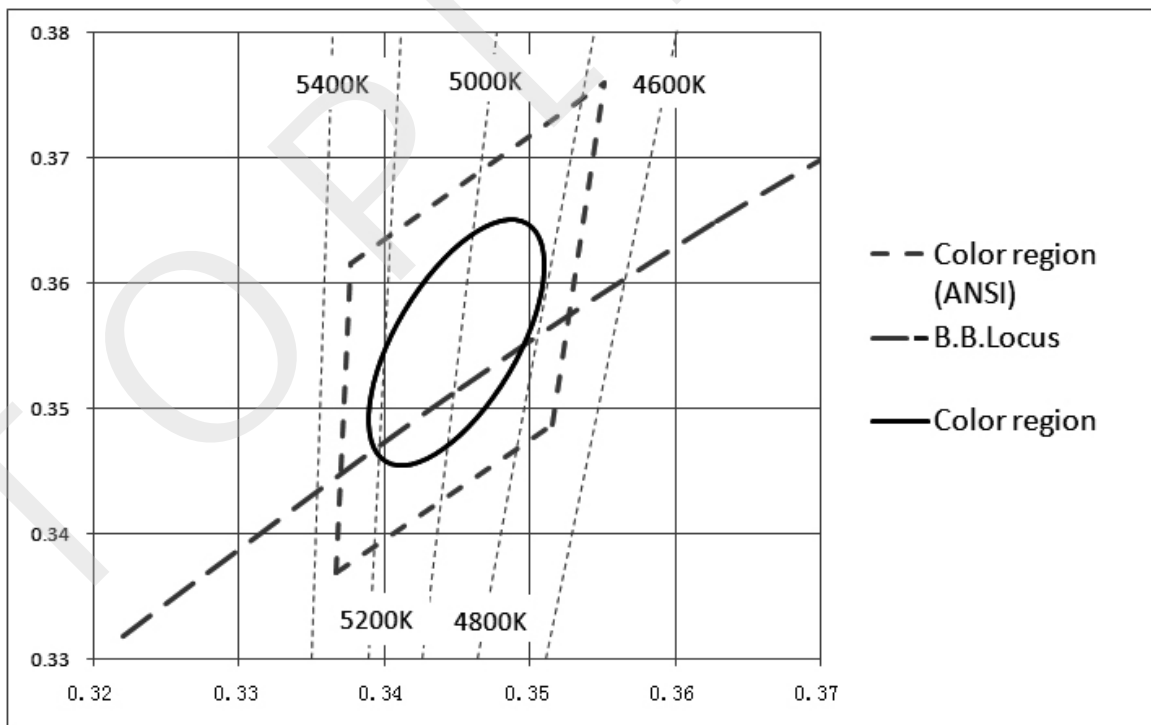
(Tolerance: $x,y \pm 0.005$)

($V_F = 220V, T_c = 25^\circ C$)

Range		Chromaticity coordinates				
		NO.1	NO.2	NO.3	NO.4	NO.5
	x	0.3551	0.3376	0.3366	0.3515	0.3551
	y	0.376	0.3616	0.3369	0.3487	0.376

* The percentage of each rank in the shipment shall be determined by TOPLIGHT.

Chromaticity Diagram



Note: The tolerance of measurement at our tester is $V_F \pm 3\%$, $D_v \pm 10\%$, Chromaticity(x,y) ± 0.005 .



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5-3. 6500K CHROMATICITY COORDINATES

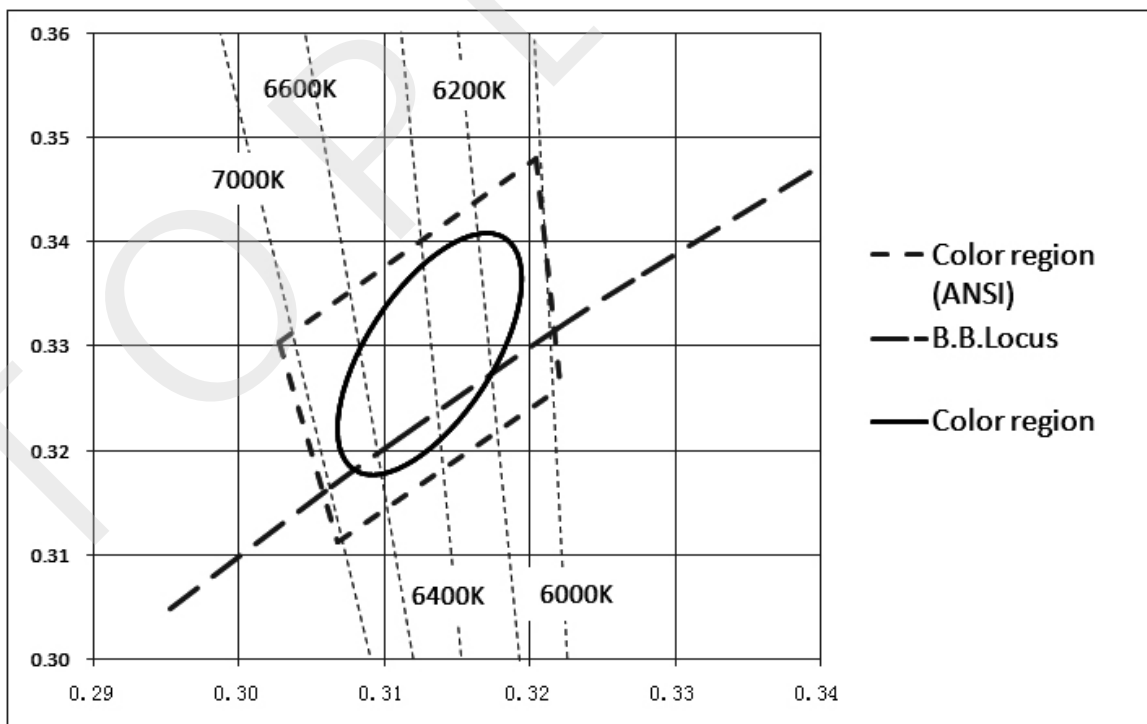
(Tolerance: $x,y \pm 0.005$)

($V_F = 220V, T_c = 25^\circ C$)

Range		Chromaticity coordinates				
		NO.1	NO.2	NO.3	NO.4	NO.5
	x	0.3205	0.3028	0.3068	0.3221	0.3205
	y	0.3481	0.3304	0.3113	0.3261	0.3481

* The percentage of each rank in the shipment shall be determined by TOPLIGHT.

Chromaticity Diagram



Note: The tolerance of measurement at our tester is $V_F \pm 3\%$, $D_v \pm 10\%$, Chromaticity(x,y) ± 0.005 .



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6. PACKING

- ◆ One packaging tube installed a light bar
- ◆ One cardboard box interior 60, total of 60pieces
- ◆ Packaging Tube Size: 330mm × 14mm × 5.5mm
- ◆ Dimensions of outer carton: 400 × 190 × 95mm (Reference value)

60 pieces × 1 box = 60 pieces

1 piece × 60 = 60 pieces

1 piece × 1 tube = 1 piece

