
Part No.: COB-QUAD-(2700-6500K)W20

Product introduction



The series of products ,which use mirror aluminum for substrate.The products have high brightness, long life, a variety of power, easy installation, general size, which are especially suitable for indoor and outdoor lighting products, etc.

Features:

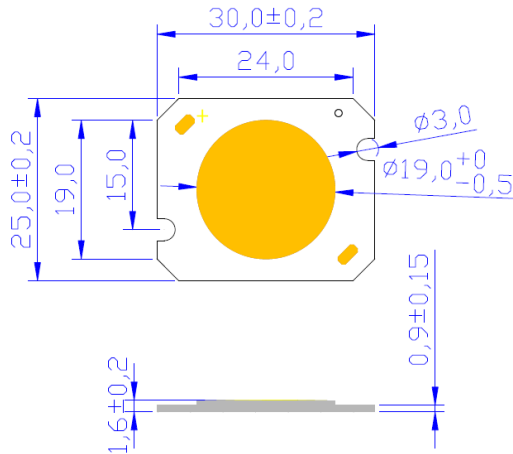
- ✧ High brightness, high reliability, long life
- ✧ Light angle: 120°
- ✧ Typical color temperature: 6500K/5000K/4000K/3500K/3000K/2700K
- ✧ Ra: 80+
- ✧ In line with the EU ROHS standard

Typical Application

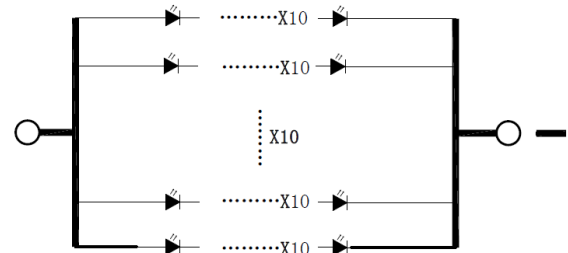
- ✧ Spot Light
- ✧ Bulb
- ✧ Down Light
- ✧ Cornering Lamp
- ✧ Panel Light
- ✧ Street Light

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Outline dimensions



Circuit structure



NOTES:

- ✧ All dimensions are millimeter.
- ✧ Tolerance is $\pm 0.3\text{mm}$ unless otherwise noted.
- ✧ It is strongly recommended that the temperature of T_s (Welding plate) is not higher than 90°C .

Limit parameter ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Test Condition	Value		Unit
			Min.	Max.	
DC Forward Current	I_F	----	----	1050	mA
Peak Pulse Current	I_{peak}	Duty=1/10 1kHz	----	1310	mA
Power Dissipation	P_d	----	----	34.6	W
LED Junction Temperature	T_J	----	----	125	$^\circ\text{C}$
Operating Temperature	T_{opr}	----	-40	+85	$^\circ\text{C}$
Storage Temperature	T_{str}	----	-40	+100	$^\circ\text{C}$
ESD Sensitivity	----	HBM	2000	----	V
Soldering Temperature	----	----	350 $^\circ\text{C}$ for 5 Seconds max		

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Photoelectric parameters (Ta = 25°C)

ITEMS		Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
2700-6500K ANSI/IEC		Forward Voltage	V _F	I _F = 700mA	--	30	--	V
		Color Rendering	R _a		80	--	--	
		Thermal Resistance	R _J		--	1.1	--	°C/W
ANSI	2700K	Color Temperature	CCT	I _F = 700mA	2650	2725	2800	K
		Luminous Flux	Φ _v		--	2415	--	lm
	3000K	Color Temperature	CCT		2970	3045	3120	K
		Luminous Flux	Φ _v		--	2520	--	lm
	3500K	Color Temperature	CCT		3350	3465	3580	K
		Luminous Flux	Φ _v		--	2625	--	lm
	4000K	Color Temperature	CCT		3850	3985	4125	K
		Luminous Flux	Φ _v		--	2730	--	lm
	5000K	Color Temperature	CCT		4850	5030	5210	K
		Luminous Flux	Φ _v		--	2730	--	lm
IEC	2700K	Color Temperature	CCT	I _F = 700mA	2650	2725	2800	K
		Luminous Flux	Φ _v		--	2415	--	lm
	3000K	Color Temperature	CCT		2850	2940	3030	K
		Luminous Flux	Φ _v		--	2520	--	lm
	3500K	Color Temperature	CCT		3340	3450	3560	K
		Luminous Flux	Φ _v		--	2625	--	lm
	4000K	Color Temperature	CCT		3850	3985	4125	K
		Luminous Flux	Φ _v		--	2730	--	lm
	5000K	Color Temperature	CCT		4820	5000	5180	K
		Luminous Flux	Φ _v		--	2730	--	lm
	6000K	Color Temperature	CCT	I _F = 700mA	5720	6000	6350	K
		Luminous Flux	Φ _v		--	2730	--	lm

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Typical curves:

Fig.1 Forward Current(mA) Vs Forward Voltage(V)

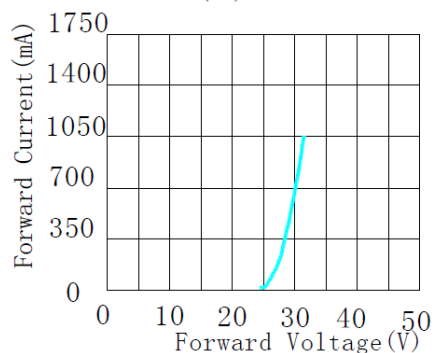


Fig.2 Relative Intensity Vs Forward Current (mA)

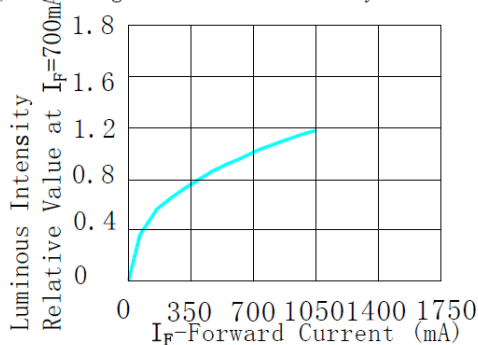


Fig.3 Forward Current Vs Ambient Temperature

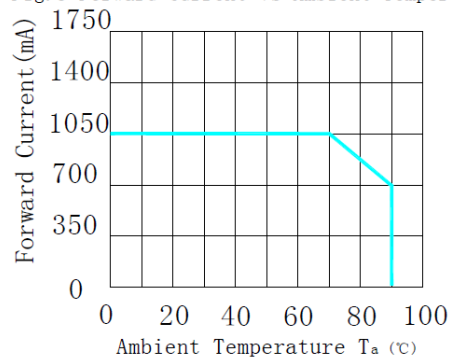
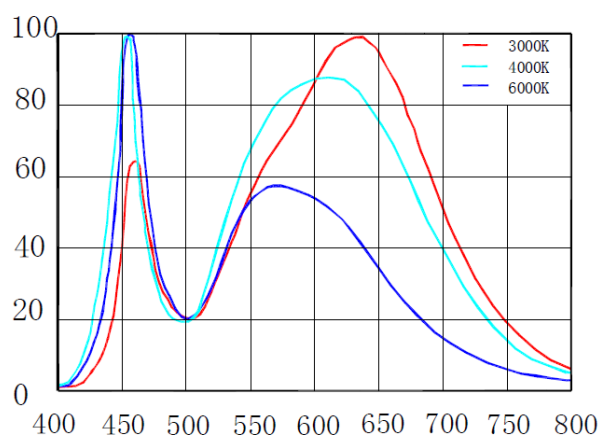
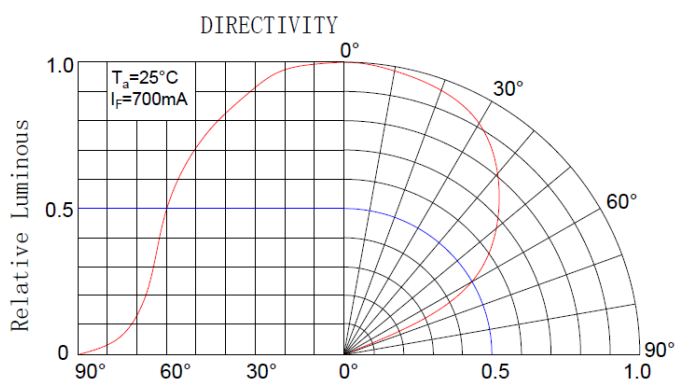
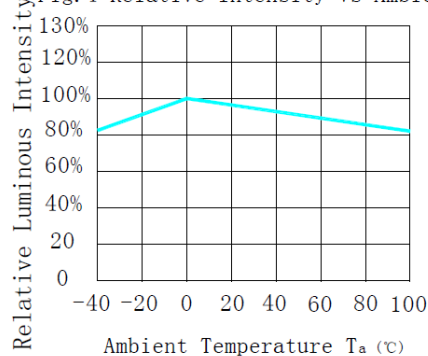
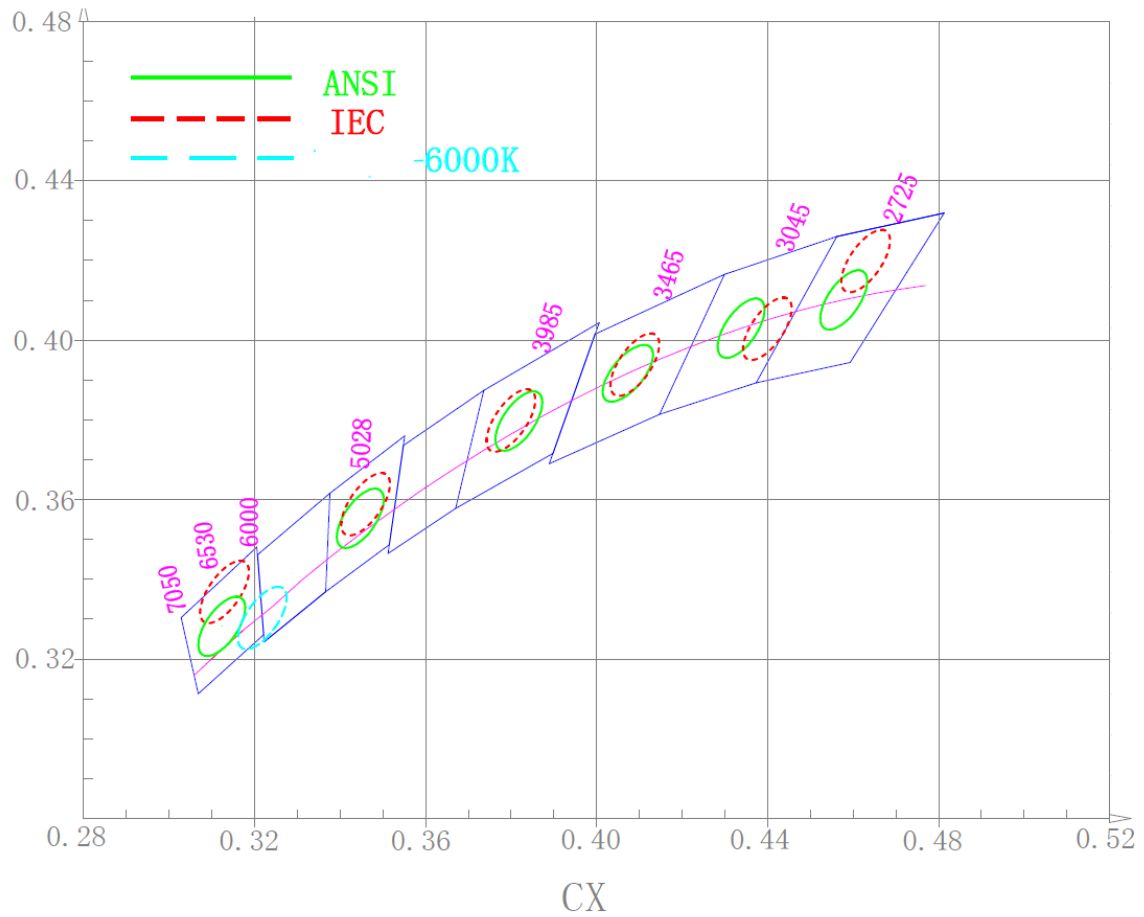


Fig.4 Relative Intensity Vs Ambient Temperature



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Chromaticity Coordinates Ranks($I_F=700\text{mA}$ $T_a=25^\circ\text{C}$)



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Standards	Colour temperature	Center of Coordinates		Long axis	Minor axis	Gradient	Explain
ANSI	TC	X	Y	a	b	θ	SDCM
	6500K	0.3123	0.3282	0.00892	0.0038	58.23	4-step MacAdam
	5000K	0.3447	0.3553	0.00822	0.00354	59.62	3-step MacAdam
	4000K	0.3818	0.3797	0.00939	0.00402	53.72	
	3500K	0.4073	0.3917	0.00951	0.00417	52.58	
	3000K	0.4338	0.403	0.00714	0.00408	53.22	
	2700K	0.4578	0.4101	0.00774	0.00411	53.7	
IEC	6500K	0.3130	0.3370	0.00670	0.00285	58.23	4-step MacAdam
	5000K	0.3460	0.3590	0.00820	0.00355	59.62	3-step MacAdam
	4000K	0.3800	0.3800	0.00940	0.00400	53.72	
	3500K	0.4090	0.3940	0.00950	0.00415	52.58	
	3000K	0.4400	0.4030	0.00715	0.00410	53.22	
	2700K	0.4630	0.4200	0.00775	0.00410	53.70	
6000K	6000K	0.3217	0.3303	0.00892	0.0038	58.23	4-step MacAdam

Code	Colour temperature
W27	2700K
W30	3000K
W35	3500K
W40	4000K
W50	5000K
W60	6000K
W65	6500K

Notes:

- ✧ Our company deliver according to the 3 order macadam ellipses among 2700K-5000K and deliver the 4 order macadam ellipses among 6000K-6500K for above 3 stands.
- ✧ Tolerance of measurements of the Forward Voltage is $\pm 2\%V$
- ✧ Tolerance of measurements of the Luminous Flux is $\pm 15\%$
- ✧ Tolerance of measurements of the Color Rendering R_a is ± 2
- ✧ Chromaticity Coordinates (x,y) is measured with an accuracy of ± 0.01
- ✧ The center of Coordinates (x,y) is based on C78.377:2008 ANSI reference
- ✧ Ellipse refer to IEC 60081:1997
- ✧ Ranking at $T_c=25^\circ C$

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BIN	Luminous Flux (lm)	BIN	Luminous Flux (lm)
A	0-5	R2	3000-3500
B	5-10	S2	3500-4000
C	10-15	T2	4000-4500
D	15-20	U2	4500-5000
E	20-25	V2	5000-5500
F	25-30	W2	5500-6000
G	30-35	X2	6000-6500
H	35-40	Y2	6500-7000
J	40-50	Z2	7000-7500
K	50-60	A3	7500-8000
L	60-80	B3	8000-8500
M	80-100	C3	8500-9000
N	100-120	D3	9000-9500
P	120-140	E3	9500-10000
Q	140-160	F3	10000-10500
R	160-180	G3	10500-11000
S	180-200	H3	11000-11500
T	200-240	J3	11500-12000
U	240-280	K3	12000-12500
V	280-320	L3	12500-13000
W	320-360	M3	13000-13500
X	360-400	N3	13500-14000
Y	400-450	P3	14000-14500
Z	450-500	Q3	14500-15000
A2	500-600	R3	15000-15500
B2	600-700	S3	15500-16000
C2	700-800	T3	16000-16500
D2	800-900	U3	16500-17000
E2	900-1000	V3	17000-17500
F2	1000-1200	W3	17500-18000
G2	1200-1400	X3	18000-18500
H2	1400-1600	Y3	18500-19000
J2	1600-1800	Z3	19000-19500
K2	1800-2000	A4	19500-20000
L2	2000-2200	B4	20000-20500
M2	2200-2400	C4	20500-21000
N2	2400-2600	D4	21000-21500
P2	2600-2800	E4	21500-22000
Q2	2800-3000	F4	22000-22500

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Reliability Tests and Results

Test	Reference Standard	Test Conditions	Test Duration	Units Failed/ Tested
Temperature Cycle	JEITA ED-4701 100 105 or MIL-STD-202 G	-40°C (30min) ∼ 25°C (5min) ∼ 100°C (30min) ∼ 25°C (5min) or -40°C (30min) ∼ 100°C (30min)	100cycles	0/10
High Temperature Storage	JEITA ED-4701 200 201	TA=90°C	1000hours	0/10
High Temperature Humidity Storage	JEITA ED-4701 100 103	TA=85°C RH=90%	1000hours	0/10
Low Temperature Storage	JEITA ED-4701 200 202	TA=-40°C	1000hours	0/10
High Temperature Operating Life	JESD22-A108D	TC=85°C IF=700mA	1000hours	0/10
Electrostatic Discharges	JEITA ED-4701 300 304	HBM 8KV 3K Ω 100Pf 3pulses negative		0/10
Temperature Cycle *1	Sunpu-opto	-40°C (30min) ∼ (90s) ∼ 110°C (30min) ∼ (90s) -40°C	300cycles	0/10
Temperature Humidity Storage*2	Sunpu-opto	TA=85°C RH=85% IF=700mA	1000hours	0/10

NOTES:

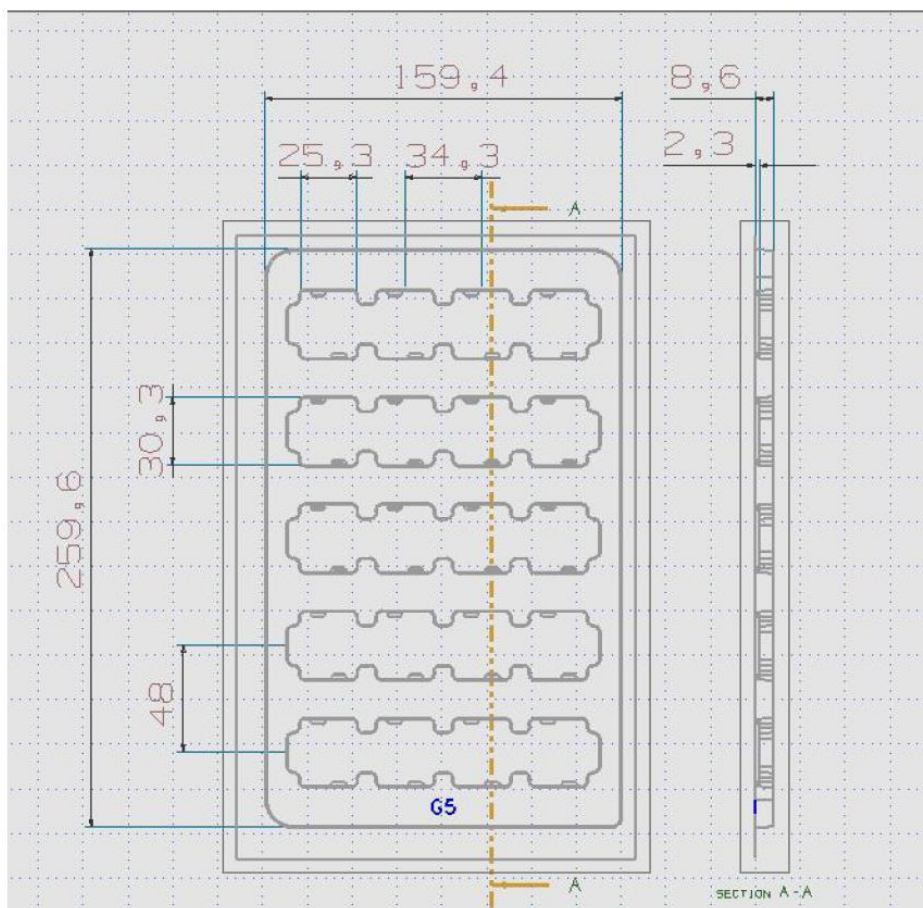
* Measurements are performed after allowing the LEDs to return to room temperature

Failure Criteria

Items	Conditions	Failure Criteria
Forward Voltage (VF)	IF=700mA	>Initial value x 1.1
Luminous Flux (ΦV)	IF=700mA	<Initial value x 0.7

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Packaging



20PCS for each layer