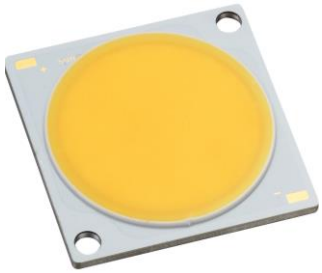
Part No.: COB-QUAD-(2700-6500K)W50



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:

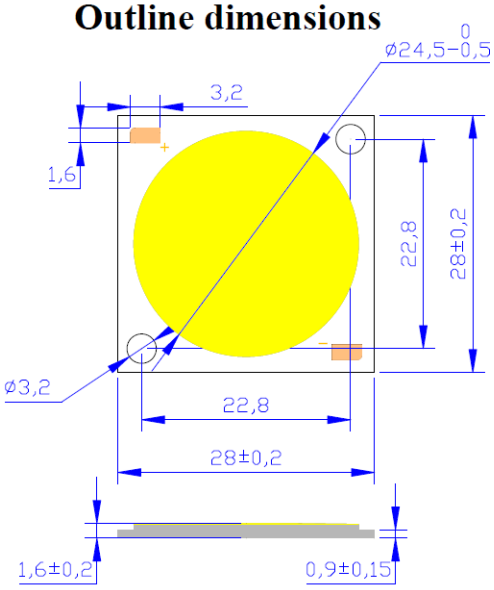
- ✧ High brightness, high reliability, long life
- ✧ Light angle：120°
- ✧ Typical color temperature：6500K/5000K/4000K/3500K/3000K/2700K
- ✧ Ra：80+
- ✧ In line with the EU ROHS standard

Typical Application

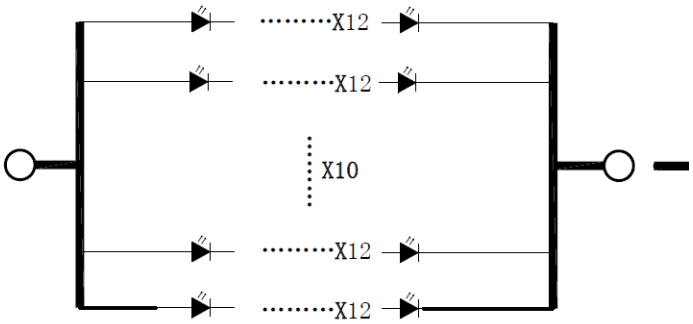
- ✧ Spot Light
- ✧ Bulb
- ✧ Down Light
- ✧ Cornering Lamp
- ✧ Panel Light
- ✧ Street Light

Part No.: COB-QUAD-(2700-6500K)W50

Outline dimensions



Circuit structure



NOTES:

- ✧ All dimensions are millimeter.
- ✧ Tolerance is ±0.3mm unless otherwise noted.
- ✧ It is strongly recommended that the temperature of T_S （Welding plate ） is not higher than 90℃.

Limit parameter（Ta = 25℃）

Parameter	Symbol	Test Condition	Value		Unit
			Min.	Max.	
DC Forward Current	I_F	----	----	1500	mA
Peak Pulse Current	I_{peak}	Duty=1/10 1kHz	----	1875	mA
Power Dissipation	P_d	----	----	59.4	W
LED Junction Temperature	T_J	----	----	125	℃
Operating Temperature	T_{opr}	----	-40	+85	℃
Storage Temperature	T_{str}	----	-40	+100	℃
ESD Sensitivity	----	HBM	2000	----	V
Soldering Temperature	----	----	350℃ for 5 Seconds max		

Part No.: COB-QUAD-(2700-6500K)W50

Photoelectric parameters （Ta = 25℃）

ITEMS		Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
2700-6500K ANSI/IEC		Forward Voltage	V_F	I_F = 1000mA	--	36	--	V
		Color Rendening	R_a		80	--	--	
		Thermal Resistance	R_J		--	0.4	--	℃/W
ANSI	2700K	Color Temperature	CCT	I_F = 1000mA	2650	2725	2800	K
		Luminous Flux	Φ_v		--	3910	--	lm
	3000K	Color Temperature	CCT		2970	3045	3120	K
		Luminous Flux	Φ_v		--	4080	--	lm
	3500K	Color Temperature	CCT		3350	3465	3580	K
		Luminous Flux	Φ_v		--	4250	--	lm
	4000K	Color Temperature	CCT		3850	3985	4125	K
		Luminous Flux	Φ_v		--	4420	--	lm
	5000K	Color Temperature	CCT		4850	5030	5210	K
		Luminous Flux	Φ_v		--	4420	--	lm
	6500K	Color Temperature	CCT		6190	6530	6910	K
		Luminous Flux	Φ_v		--	4420	--	lm
IEC	2700K	Color Temperature	CCT	I_F =1000mA	2650	2725	2800	K
		Luminous Flux	Φ_v		--	3910	--	lm
	3000K	Color Temperature	CCT		2850	2940	3030	K
		Luminous Flux	Φ_v		--	4080	--	lm
	3500K	Color Temperature	CCT		3340	3450	3560	K
		Luminous Flux	Φ_v		--	4250	--	lm
	4000K	Color Temperature	CCT		3850	3985	4125	K
		Luminous Flux	Φ_v		--	4420	--	lm
	5000K	Color Temperature	CCT		4820	5000	5180	K
		Luminous Flux	Φ_v		--	4420	--	lm
	6500K	Color Temperature	CCT		6190	6530	6910	K
		Luminous Flux	Φ_v		--	4420	--	lm

Part No.: COB-QUAD-(2700-6500K)W50

Typical curves:

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

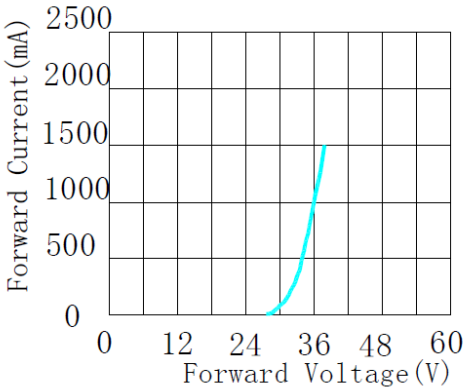


Fig.2 Relative Intensity Vs Forward Current (mA)

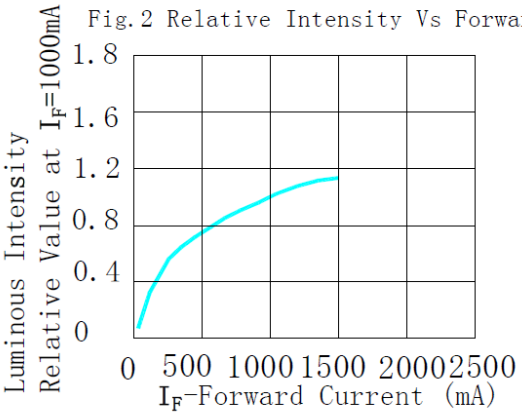


Fig.3 Forward Current Vs Ambient Temperature

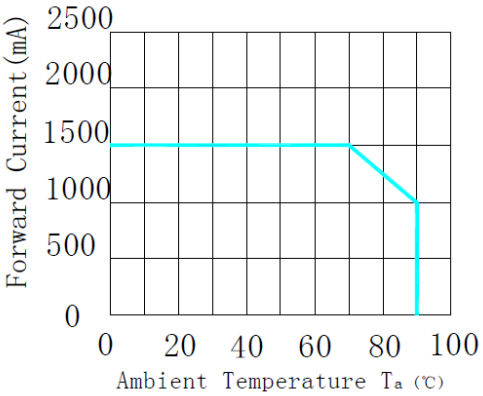
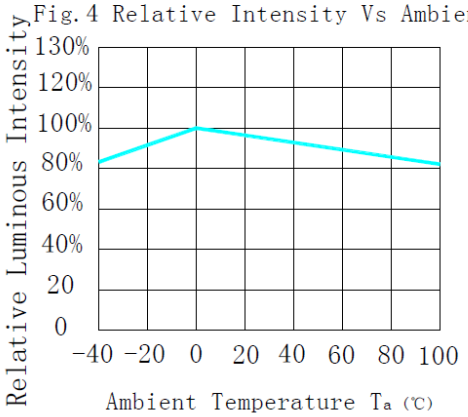
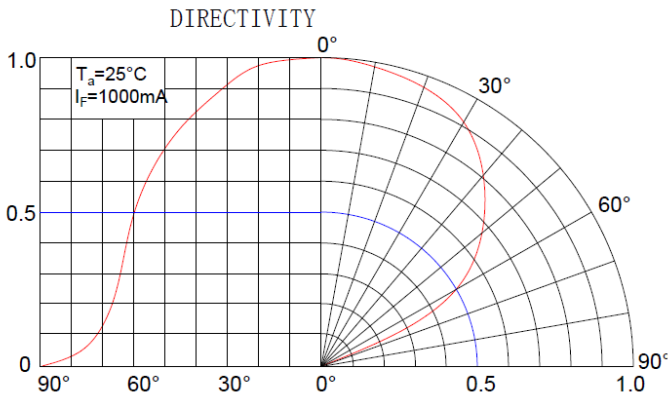
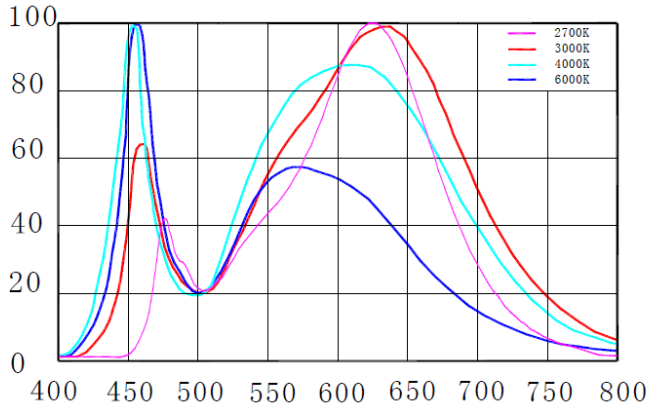


Fig.4 Relative Intensity Vs Ambient Temperature







Part No.: COB-QUAD-(2700-6500K)W50

Stands	Colour tenperature	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	0.00892	0.0038	58.23	4-step MacAdam
	5000K	0.3460	0.3590	0.00822	0.00354	59.62	3-step MacAdam
	4000K	0.3800	0.3800	0.00939	0.00402	53.72	
	3500K	0.4090	0.3940	0.00951	0.00417	52.58	
	3000K	0.4400	0.4030	0.00714	0.00408	53.22	
	2700K	0.4630	0.4200	0.00774	0.00411	53.7	

Code	Colour tenperature
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 ±2%V
- ✧ Tolerance of measurements of the Luminous Flux is ±10%
- ✧ 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℃

Part No.: COB-QUAD-(2700-6500K)W50

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℃(30min)∽25℃(5min)∽100℃(30min)∽25℃(5min)or -40℃(30min) ∽ 100℃(30min)	100cycles	0/10
High Temperature Storage	JEITA ED-4701 200 201	T_A=90℃	1000hours	0/10
HighTemperature Humidity Storage	JEITA ED-4701 100 103	T_A=85℃ RH=90%	1000hours	0/10
Low Temperature Storage	JEITA ED-4701 200 202	T_A=-40℃	1000hours	0/10
High Temperature Operating Life	JESD22-A108D	TC=85℃ I_F=1000mA	1000hours	0/10
Electrostatic Discharges	JEITA ED-4701 300 304	HBM 2KV 3KΩ 100Pf 3pulses nedative		0/10
Temperature Cycle *1	Sunpu-opto	-40℃(30min)∽ (90s)∽110℃(30min) ∽ (90s) -40℃	300cycles	0/10
Temperature Humidity Storage*2	Sunpu-opto	T_A=85℃ RH=85% I_F=1000mA	1000hours	0/10

NOTES:

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

Failure Criteria

Items	Conditions	Failure Criteria
Forward Voltagd (VF)	I_F=1000mA	>Initial value x 1.1
Luminous Flux (ΦV)	I_F=1000mA	<Initial value x 0.7