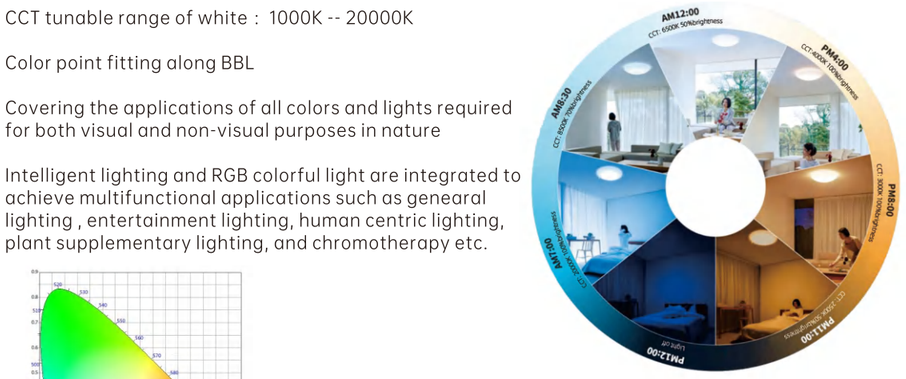
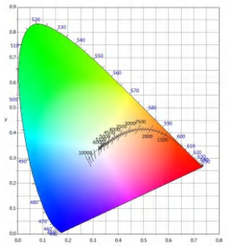
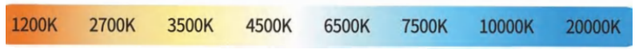
Concept and definition of RGBCW COB

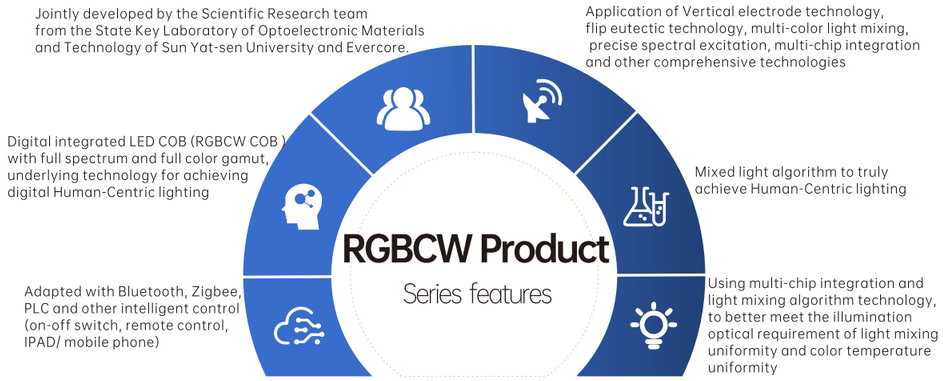
- CCT tunable range of white： 1000K -- 20000K
- Color point fitting along BBL
- Covering the applications of all colors and lights required for both visual and non-visual purposes in nature
- Intelligent lighting and RGB colorful light are integrated to achieve multifunctional applications such as genearal lighting , entertainment lighting, human centric lighting, plant supplementary lighting, and chromotherapy etc.







Characteristics of the RGBCW COB Product Series



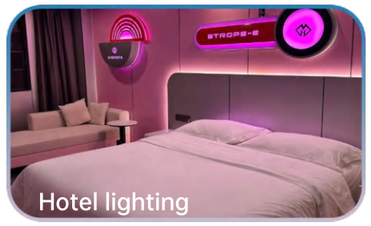
Applications


Home lighting


Chain Store lighting


Underground lighting


Office lighting


Hotel lighting


Postpartum care lighting

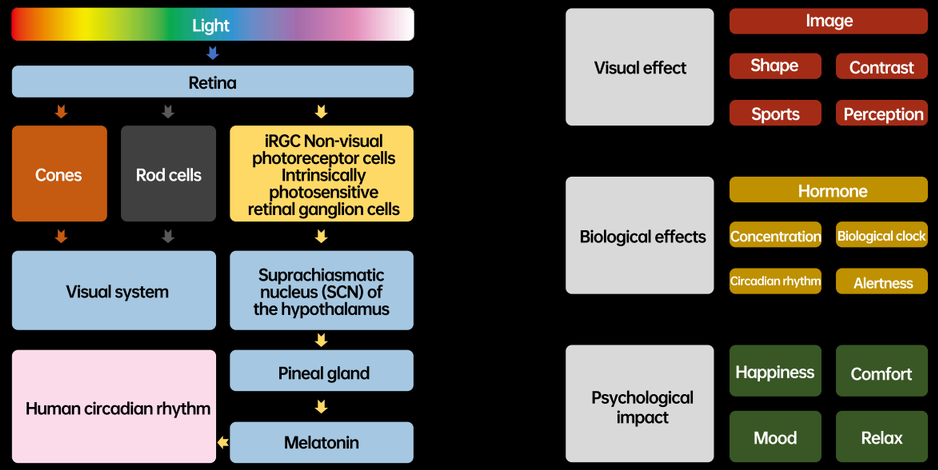

Wellness and physiotherapy lighting


Light therapy for depression


Light therapy for autism


Light therapy for Alzheimer's disease

The application value of light and color



*ipRGC affects human rhythm and regulates biological clock.

Connection between color and human emotions

Vision is the 1st sense of people, and color has the greatest impact on vision.
Color affects people's emotions, while emotions dominate behaviors.
Color can affect human brain waves.

- Brain waves respond to Red as alertness, Blue as relaxation, and Yellow as warning .
- Pink is relaxing and soothing
- Monotonous colors, especially Dark green, can easily cause hallucinations and delusions to patients in mental hospitals

The Value of Phototherapy

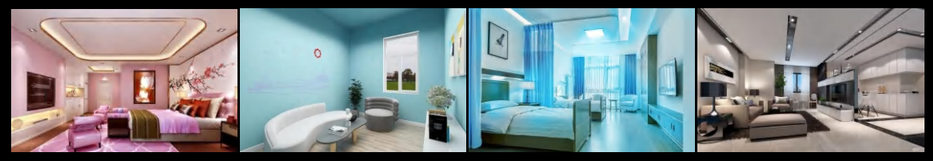
There are already a lot of scientific experimental evidences indicating that lighting has a significant impact on the physical and mental health of medical staff and patients, such as: lighting affects sleep onset time, quality and duration, emotions (such as pleasure, relaxation, restlessness, tension and fear, etc.), and mental disorders such as depression.

- Studies show that human fear is not related to the brain, but determined by the hypothalamus of mammals. Depression and autism are actually excessive stress responses of the limbic system of the brain.

- Health problems related to emotions and stress, can be tackled by phototherapy methods.

- Human Centric Lighting (HCL) adjusts illuminance, color temperature and color according to the physiological rhythm of the human body to effectively adjust human functions and emotions, thereby having a healing effect on patients and various specific mental diseases.

Human-Centric Health Lighting Application Solutions Reference



Postpartum care center | Psychological Counseling Room | Health & Wellness Spa | Residential Living Room

RGBCW Series

Product Features:

1、CCT tunable range: 1000-20000K

2、Color point fitting along BBL

3、CRI > 90

4、Covering the applications of all colors and lights required for both visual and non-visual purposes in nature

5、Adapted with Bluetooth, Zigbee, PLC and other intelligent control (on-off switch, remote control, IPAD/ mobile phone).

Applications:

Widely used for High-end smart homes, spaces for light therapy-assisted applications (psychological counseling rooms, confinement centers, psychotherapy rooms, health care and physiotherapy centers, etc.), high-end commercial boutique spaces and other places.

RGBCW LED

Product Picture	Model Number	LES (mm)	Power (W)	TyP Current (mA)	MAX Current (mA)	Voltage (V)	CCT (K)	CRI (Ra)	Efficiency (lm/W)
	NCW1611A-30W-LSH-P	Φ9	4	160	200	24	R	/	/
			7	280	400	24	G	/	/
			7	280	400	24	B	/	/
			7	280	400	24	C:6000	≥90	115
			7	280	400	24	W:2700	≥90	100
	NCW1814B-60W-LSH-P	Φ12	12	320	400	36	R	/	/
			12	320	400	36	G	/	/
			12	320	400	36	B	/	/
			12	320	400	36	C:6000	≥90	110
			12	320	400	36	W:2700	≥90	95
	NCW1916B-50W-LSH-P	Φ14	6	160	200	36	R	/	/
			12	320	400	36	G	/	/
			12	320	400	36	B	/	/
			12	320	400	36	C:6000	≥90	110
			12	320	400	36	W:2700	≥90	95
	NCW2320B-100W-LSH-P	Φ18	12	320	400	36	R	/	/
			12	320	400	36	G	/	/
			12	320	400	36	B	/	/
			25	700	900	36	C:6000	≥90	115
			25	700	900	36	W:2700	≥90	100
	DCW1913A-30W-LSH	Φ13	4	160	200	24	R	/	/
			7	280	400	24	G	/	/
			7	280	400	24	B	/	/
			7	280	400	24	C:6000	≥90	95
			7	280	400	24	W:2700	≥90	75
	DCW1916B-60W-LSH	Φ16	12	320	400	36	R	/	/
			12	320	400	36	G	/	/
			12	320	400	36	B	/	/
			12	320	400	36	C:6000	≥90	95
			12	320	400	36	W:2700	≥90	75
	PX3838RGBW 2W25P01	Φ3.15	0.3	120	180	3	R	/	/
			0.3	120	180	3	G	/	/
			0.3	120	180	3	B	/	/
			0.3	120	180	3	W: 2500	≥70	116

RGBCW DOB

Product Picture	Model Number	LES (mm)	Power (W)	Control	Frequency (mA)	Voltage AC (V)	CCT (K)	CRI (Ra)	Efficiency (lm/W)
	SLEM7214A-RGBCW-50WH-E/A	Φ12	8	Blue tooth Mesh	50/60	200~240 / 110~130	R	/	/
			8				G	/	/
			8				B	/	/
			14				C:6000	≥90	105
			14				W:2700	≥90	90

High-power Ceramic SMD Series

Single color SMD/Multi-color SMD

Product Features:

1、LM-80 certified

2、CRI > 60/70/80/90

3、Light efficiency: 150lm/W

4、With ceramic thermo-electric separation and eutectic packaging technology to achieve lower thermal resistance, good stability and good air-tightness

5、Specially customized high-efficiency chip and high reflection and transmission material

6、60deg,90deg,120deg beam angle are available (only for 3535 ceramic SMD product)

7、Power range 1W ,6W and 8W for 3535 SMD, 10W and 20W for 4040/5050 SMD

Applications:

Widely used for
Indoor: Home lighting
Outdoor: Urban landscape lighting and outdoor portable lighting.

High-power Ceramic SMD Series-Single-color SMD

Product Picture	Model Number	Power (W)	Power MAX (W)	TyP Current (mA)	MAX Current (mA)	Voltage (V)	CRI (Ra)	CCT (K)	Efficiency (lm/W)
	CX353511EW*S01-PC	1	3	350	1000	3.2	≥95	2700-6500	70-130
	CX353511EW*H01-PC	1	3	350	1000	3.2	≥90	2700-6500	80-130
	CX353511EW*G01-PC	1	3	350	1000	3.2	≥80	2700-6500	90-150
	CX353511EW*P01-PC	1	3	350	1000	3.2	≥70	2700-6500	100-160
	CX353511FW*S01-PC	1	3	350	1000	3.2	≥95	2700-6500	90-140
	CX353511FW*H01-PC	1	5	350	1500	3.2	≥90	2700-6500	110-160
	CX353511FW*G01-PC	1	5	350	1500	3.2	≥80	2700-6500	120-180
	CX353511FW*P01-PC	1	5	350	1500	3.2	≥70	2700-6500	130-200
	CX353522DW**H01-P	6	10	1050	1600	6.0	≥90	2700-6500	480-600
	CX353522DW**S01-P	6	10	1050	1600	6.0	≥95	2700-6500	400-500
	CX353514EW**H01-P	8	12	700	1000	12.0	≥90	2700-6500	500-620
	CX353514EW**S01-P	8	12	700	1000	12.0	≥95	2700-6500	420-520
	CX404011GW60001	10	10	3000	3000	3.8	≥60	6000-6500	600-700
	CX404011HW60001	20	20	5000	5000	3.8	≥60	6000-6500	1000-1200
	CX505011GW60001	10	10	3000	3000	4.0	≥60	6000-6500	600-700
	CX505011HW60001	20	20	6000	6000	4.0	≥60	6000-6500	1000-1200

High-power Ceramic SMD Series-Multi-color SMD

Product Features:

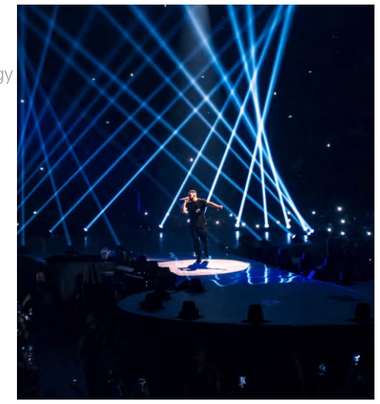
1、LM-80 certified

2、With ceramic thermo-electric separation and eutectic packaging technology to achieve lower thermal resistance, good stability and good air-tightness

3、Specially customized high-efficiency chip and high reflection and transmission material

4、60deg,90deg,120deg beam angle are available (only for 3535 ceramic SMD product)

5、Two options for 5060, 15W and 40W.



Applications:

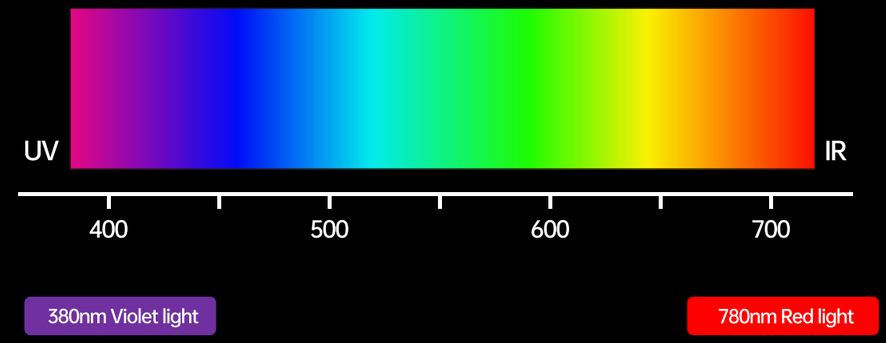
Widely used for
Indoor: Home ambient lighting.
Outdoor: Urban landscape lighting and stage lighting.

High-power Ceramic SMD Series-Multi-color SMD

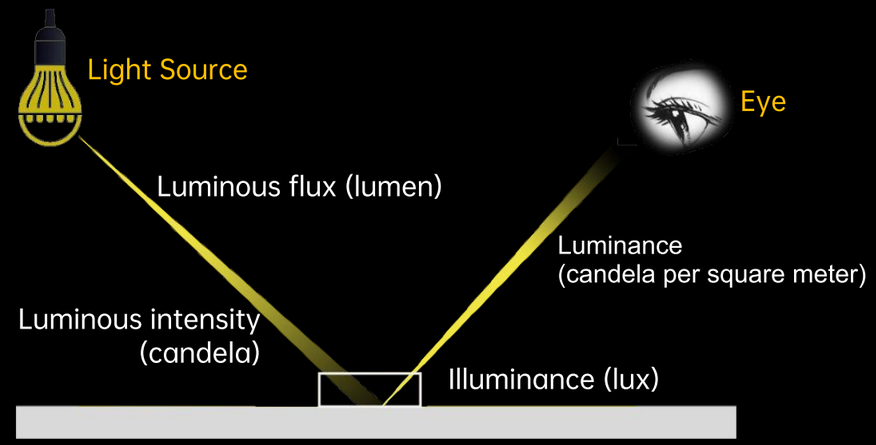
Product Picture	Model Number	Power (W)	Power MAX (W)	TyP Current (mA)	MAX Current (mA)	Voltage (V)	CCT/Dominant wavelength (K)	CRI (Ra)	Efficiency (lm/W)
	CX353522BWLSH01-B	2	3	350	500	6	2700	≥90	150
		2	3	350	500	6	6000	≥90	200
	CX353522BWLSS01-B	2	3	350	500	6	2700	≥95	140
		2	3	350	500	6	6000	≥95	160
	CX3535RGBW4W*G01	4	6	350	400	2.3	620-630	/	30-50
		4	6	350	400	3.2	520-530	/	90-110
		4	6	350	400	3.2	460-470	/	20-30
		4	6	350	400	3.2	3000/4000	≥80	80-100
	CX5060RGBW15W60001	10	15	700	1200	2.4	620-630	/	60-80
		10	15	700	1200	3.3	520-530	/	150-170
		10	15	700	1200	3.3	460-470	/	40-60
		10	15	700	1200	3.3	6000	≥60	200-220
	CX5060RGBW40W60001	15	40	1000	2500	2.6	620-630	/	100-120
		15	40	1000	2500	3.6	520-530	/	230-250
		15	40	1000	2500	3.6	450-455	/	40-60
		15	40	1000	2500	3.6	6000	≥60	260-280
	CX5050RGBCW3WLSH01-B	0.3	0.5	150	200	2.3	620-630	/	10-20
		0.5	0.6	150	200	3.2	520-530	/	40-50
		0.5	0.6	150	200	3.2	450-460	/	0-10
		0.5	1.2	150	200	3.2	2700	≥90	40-50
		0.5	1.2	150	200	3.2	6000	≥90	50-60

Composition of light spectrum

- Wavelength of visible light ranges from 380nm-780nm
- Color range is from violet to red.



Units and Measurements in Lighting



Luminous FluX

Definition: The sum of the amount of light emitted by a luminous body per second.

Unit: Lumen(lm)

Symbol: Φ

Luminous efficiency

Definition: The amount of light that a light source can emit per watt of electrical energy consumed

Unit:lumen per watt (lm/w)

Remark: The luminous efficacy of a lighting system is usually lower than that of the light source.

$$\text{Efficiency} = \frac{\text{Luminous flux}}{\text{Power}}$$

Luminous intensity

Definition: The luminous flux emitted within a unit solid angle in a specific direction by a luminous body.

Unit: candela（cd）

Symbol :I

$$\text{Candela} = \frac{\text{Luminous flux}}{\text{Unit solid angle}}$$

Illuminance

Definition: The luminous flux of the luminous body irradiating on the unit area of the illuminated object.

Unit: lux

Symbol:E

$$\text{Lux} = \frac{\text{Lumen} * \text{Design coefficient}}{\text{Area}}$$

luminance

Definition: The ratio of the luminous intensity of a light source in a certain direction to the area "seen" by the human eye.

Unit: candela per square meter (cd/m^2)

Symbol: L

Contrast

Definition: The ratio of the luminance difference between the target and the background in the field of vision to the background luminance.

Symbol :C

Color temperature

Definition: Heating a standard black body, when the temperature rises to a certain level, its color begins to change gradually from deep red, to light red, to orange-yellow, to white, and then to blue. Utilize the characteristic of this change in light color, which is the absolute temperature of the black body at that time.

Unit: Kelvin scale（K）

Symbol :TC

Glare

Definition: A visual phenomenon in which an uncomfortable feeling is caused or the ability to observe bright parts or targets is reduced due to the inappropriate distribution or range of brightness in the field of vision, or the existence of extreme contrasts.

Unified Glare Rating

Definition: Psychometric measurement used by the International Commission on illumination (CIE) to measure the subjective response of discomfort caused to the human eye by the light emitted from lighting fixtures in an indoor visual environment.

Glare Index	Glare Standard Classification
10	Barely perceptible glare
16	Acceptable glare
19	Glare threshold
22	Discomfort glare
28	Unbearable glare