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 **LIGHT UP YOUR HOME - DAY AND NIGHT** 



GRAPHENE LIGHTING

LED LIGHT BULB CATALOGUE



About Us

Graphene Lighting Limited (UK) was spun off from the thermal dissipation and thermal management department of BGT Materials (UK) in 2014. We mainly uses the excellent heat dissipation ability of graphene to provide various thermal management of LED lighting, which improves the luminous efficiency and life of LED lighting to achieve energy saving, carbon reduction and environmental protection. Two Nobel Prize winners, Sir. Andre Geim and Sir Konstantin Novoselov, are shareholders of the UK Graphene Lighting Limited and director. After research and development for years, we has created a series of achievements and patents in graphene heat dissipation technology for LED lighting. In 2018, we established Graphene Lighting China Limited as a product development and production base of our graphene light bulbs.



OUR VISION

World climate change bring disaster to human life. Lights consume 15 percent of global electricity consumption and account for 5 percent of worldwide greenhouse gas emissions. Also, the old LED integrated light use too much materials, therefore it is difficult to manufacture and be recycled. Our mission is to reduce the energy consumption and emissions in manufacturing and operation. Graphene lights underpins sustainability, longer lifetime and higher efficiency.

OUR VALUES

Graphene Lighting vision is to enable a new generation of lighting which looks beautiful no matter it is light up or off. At the very core of our values is our responsibility to care for the environment and have a positive impact on the community using ground breaking Graphene and 2D materials heat dissipation technologies. We strive to reduce the amount of materials needed to be recycled and aim for the lowest possible running costs and carbon footprint, all while applying the latest innovations.

WHAT WE DO

We accelerate the world's transition to more sustainable lighting by offering next-generation lighting enabled by Nobel Prize winning material Graphene. We make good looking light which has gorgeous appearance days and nights.



Graphene Technology Advantage

The longevity of lights is determined by their ability to rapidly extract heat. This is because the process which generates light on an atomic level, also generates heat. The ability to remove this heat, or the so-called heat dissipation, is an important parameter in designing LED lights which affects their performance.

Graphene, the wonder material of the 21st century, is the most thermally conductive material ever discovered. At Graphene Lighting we harness graphene's heat properties, to quickly dissipate the heat generated during the light emission process.

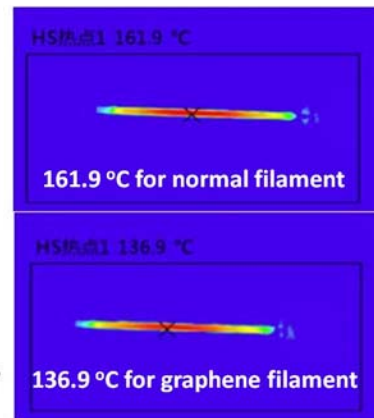
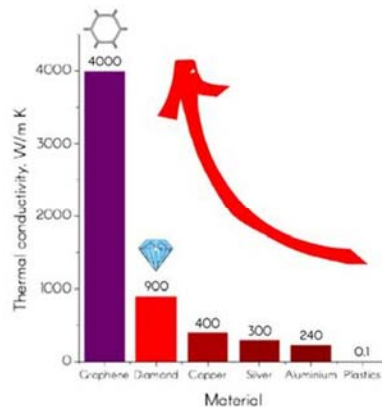
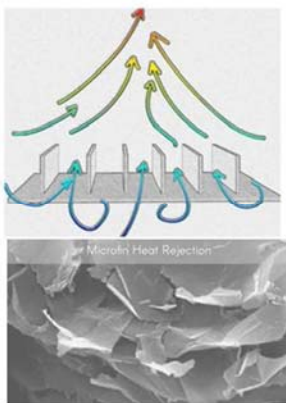
Graphene Lighting utilizes its patented heat dissipation technology to disperse heat which is generated by the LED chip. This breakthrough technology allows us to place a stronger focus on innovative designs, with less need to worry about using complicated electronics or bulky metal heat sinks.

Uniquely designed lights able to light all spaces whether indoor or outdoor, home or office, garden or street. We place people at the center of our design process and make sure that our products light space in the most appropriate way; allowing for optimum lighting experience but also reduced capital and running costs.

We are proud to be leaders in technology, design and manufacture of next-generation lights, here to light the future.







- ✓ Graphene flake was used as micro fin to enhance the heat dissipation due to the high thermal conductivity and high surface area of graphene flake.
- ✓ The heat conduction, convection and radiation pathways are utilized to enhance the heat dissipation ability.
- ✓ From the thermal dissipation test of LED filament, graphene heat dissipation coating can further reduce the surface temperature of filament up to 25°C.
- ✓ Fast heat dissipation of LED light can improve the LED heat issue and increase the LED light efficiency and life time, which can save more than 20% energy consumption.
- ✓ The prolongation of life time to 1 time means we can save all materials of one LED light for our earth.

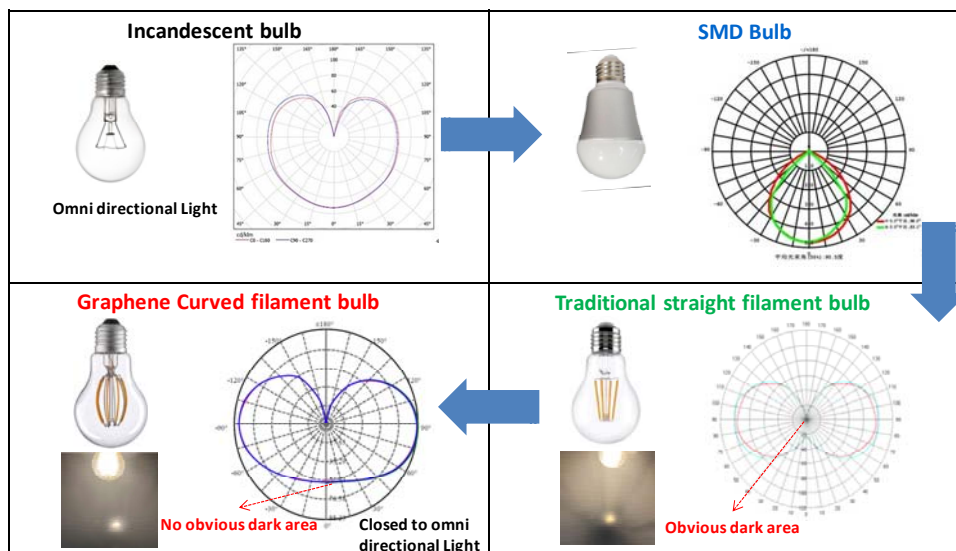


- Illustration of graphene flake as micro fin and cooling result of LED filament.



From the comparison of lamp between graphene LED light bulb and traditional light bulbs, our graphene LED light bulb show many advantages, such as (1) closed to omni directional light distribution, (2) high efficiency and energy saving, (3) long life time and easy to recycle, (4) weight Light and no heavy metal case, (5) beautiful appearance, and (6) graphene cooling technology protected by global patents. The light distribution shown our graphene light bulb is very closed to the omni directional light of Incandescent bulb, which is difficultly reached by SMD bulb and traditional straight filament light bulb.

Incandescent bulb	SMD Bulb	Traditional straight filament bulb	Graphene Curved filament bulb
			
Advantage : <ul style="list-style-type: none"> ● Omni directional Light ● High CRI ● Low cost Disadvantage : <ul style="list-style-type: none"> ● Low efficiency · high energy consumption ● Hot and ● Short life time ● Glass, easy to break 	Advantage : <ul style="list-style-type: none"> ● Plastic case, easy to transport ● Simple production procedures Disadvantage : <ul style="list-style-type: none"> ● Small Beam angle, obvious dark area ● Normal appearance ● Middle efficiency, middle energy consumption. ● Weight heavy 	Advantage : <ul style="list-style-type: none"> ● High efficiency, energy saving ● Low cost · easy to recycle ● Weight Light, no heavy metal case Disadvantage : <ul style="list-style-type: none"> ● Obvious dark area on the top of bulb ● Non-uniform light distribution ● Normal appearance ● Glass, easy to break 	Advantage : <ul style="list-style-type: none"> ● Closed to Omni directional light ● High efficiency · energy saving ● Long life time, easy to recycle. ● Weight Light, no heavy metal case ● Beautiful appearance ● Graphene cooling technology protected by global patents Disadvantage : <ul style="list-style-type: none"> ● Glass, easy to break



➤ Comparison of lamp performance between graphene LED light bulb and traditional light bulbs.



Granted Patent

Our team had many granted patents about appearance and graphene heat dissipation techniques for light bulb and other lights. These patents can protect our products by graphene heat dissipation and maintain our benefits as well as advantages in LED lighting market.

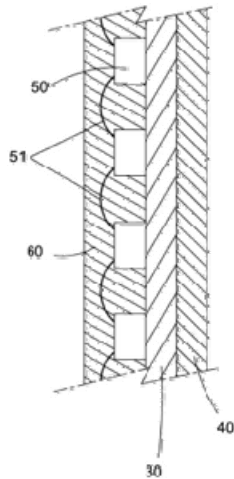
➤ Our grant patent list.

Item	Grant number	Item	Grant number	Item	Grant number
1	201830032817.6	11	EP 3 208 514 B1	21	US9596788B1
2	201830032770.3	12	EU No 002624288-0001	22	US9689560B2
3	201830042857.9	13	EU No 002682674-0001	23	US9933121B2
4	201830055449.7	14	EUP 003304682-001	24	USD759269S
5	201830087400.X	15	TW104144769	25	USD763480S
6	201721511507.9	16	TWD1711130	26	US10082256B2
7	CN204906766U	17	TWD172953	27	201721891347.5
8	CN303370306S	18	TWI588408	28	201830421874.3
9	CN303429636S	19	TWI591290	29	US10281129B1
10	CN303797386S	20	TWM515062	30	US10283683B1
Item	Grant number	Item	Grant number		
31	201821522566	41	201920624795.1		
32	HK 18115127.4	42	201330013130.5		
33	JP實願2019-001073	43	201330014216.X		
34	JP實願2019-001074	44	16/036057		
35	201920214745.6	45	201930034150.8		
36	TW108204483	46	201930034162		
37	JP特願2018-215576	47	TW108204484		
38	201920504647.6	48	201921668319.6		
39	201930181118.2	49	201921557073.5		
40	201930415959.5	50	201921148946.7		



Patents Granted

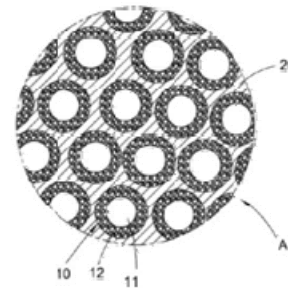
A. Heat radiation filament



B. Appearance design



C. Other heat dissipation



Total 50 granted patents. There are three patents extended to 11 countries by PCT (Patent Cooperation Treaty).

- Granted patents of heat dissipation technology and graphene LED filament light bulb.



Graphene LED Filament Light Bulb

-  **With graphene coating**
New cooling technology
-  **Protected by global patents**
Total 50 global patents
-  **Green**
Easy to recycle
-  **Uniform Lighting**
360° illumination
-  **High light efficiency**
Brighter, longer lasting
-  **Low energy consumption**
A++ Energy efficiency rating
-  **Longer life time**
15,000+ hours
-  **Lightweight**
Non-heavy metal shell
-  **Reasonable price**
profitable
-  **Healthy and non-toxic**
Mercury free
-  **Flicker free** Not
hurting the eyes
-  **Unique appearance**
Curved filament design

Our light bulbs are ranged from **4W** to **50W**, from **home** to **engineering**,
from **400LM** to **10,000LM**.





Specification

Model	GLC-BU-0C35
Rated voltage	AC220V/50HZ
Power Consumption (W)	4.0 ±10% (Non-Dimming); 4.2 ±10% (Dimming)
Color Temperature (K)	2700K, 4000K, 6000K (Customizable)
Power Factor (PF)	> 0.5 (Non-Dimming); > 0.7 (Dimming)
Rated luminous flux¹ (lm)	470 (Non-Dimming); 400 (Dimming)
Beam Angle(Degree)	280
Outline Dimensions (mm)	35 x 35 x 98
Operation Temperature (°C)	-10°C~+40°C
Storage Temperature (°C)	-25°C~+70°C
Cover Material / Type	Glass / C35
Base Type	E14
Color Rendering Index (CRI)	>80 Ra
Dimming	Dimming / Non-Dimming (Customizable)

1. IEC/PAS 62612:2013, the initial luminous flux² of each individual LED lamp in the measured sample shall not be less than the rated luminous flux by more than 10 %;

2. (EU) No 1194/2012, the initial luminous flux means the luminous flux of a lamp after a short operating period.

Application

- Indoor Lighting
- Commercial Lighting
- Residential Lighting

Features

- Light source: Multi-Chip Filament LED
- Graphene thermal technology.
- Energy saving and environment friendly.



Specification

Model	GLC-BU-0T35
Rated voltage	AC220V/50HZ
Power Consumption (W)	4.0 ±10% (Non-Dimming); 4.2 ±10% (Dimming)
Color Temperature (K)	2700K, 4000K, 6000K (Customizable)
Power Factor (PF)	> 0.5 (Non-Dimming); > 0.7 (Dimming)
Rated luminous flux¹ (lm)	470 (Non-Dimming); 400 (Dimming)
Beam Angle(Degree)	280
Outline Dimensions (mm)	35 x 35 x 115
Operation Temperature (°C)	-10°C~+40°C
Storage Temperature (°C)	-25°C~+70°C
Cover Material / Type	Glass / T35
Base Type	E14
Color Rendering Index (CRI)	>80 Ra
Dimming	Dimming / Non-Dimming (Customizable)

1. IEC/PAS 62612:2013, the initial luminous flux² of each individual LED lamp in the measured sample shall not be less than the rated luminous flux by more than 10 %;

2. (EU) No 1194/2012, the initial luminous flux means the luminous flux of a lamp after a short operating period.

Application

- Indoor Lighting
- Commercial Lighting
- Residential Lighting

Features

- Light source: Multi-Chip Filament LED
- Graphene thermal technology.
- Energy saving and environment friendly.



Specification

Model	GLC-BU-0G45
Rated voltage	AC220V/50HZ
Power Consumption (W)	4.0 ±10% (Non-Dimming); 4.2 ±10% (Dimming)
Color Temperature (K)	2700K, 4000K, 6000K (Customizable)
Power Factor (PF)	> 0.5 (Non-Dimming); > 0.7 (Dimming)
Rated luminous flux¹ (lm)	470 (Non-Dimming); 400 (Dimming)
Beam Angle(Degree)	280
Outline Dimensions (mm)	45 x 45 x 78
Operation Temperature (°C)	-10°C~+40°C
Storage Temperature (°C)	-25°C~+70°C
Cover Material / Type	Glass / G45
Base Type	E27
Color Rendering Index (CRI)	>80 Ra
Dimming	Dimming / Non-Dimming (Customizable)

1. IEC/PAS 62612:2013, the initial luminous flux² of each individual LED lamp in the measured sample shall not be less than the rated luminous flux by more than 10 %;

2. (EU) No 1194/2012, the initial luminous flux means the luminous flux of a lamp after a short operating period.

Application

- Indoor Lighting
- Commercial Lighting
- Residential Lighting

Features

- Light source: Multi-Chip Filament LED
- Graphene thermal technology.
- Energy saving and environment friendly.



Specification

Model	GLC-BU-0A60
Rated voltage	AC220V/50HZ
Power Consumption (W)	6 ±10%
Color Temperature (K)	2700K, 4000K, 6000K (Customizable)
Power Factor (PF)	> 0.5 (Non-Dimming); > 0.7 (Dimming)
Rated luminous flux¹ (lm)	600
Beam Angle(Degree)	280
Outline Dimensions (mm)	60 x 60 x 105
Operation Temperature (°C)	-10°C~+40°C
Storage Temperature (°C)	-25°C~+70°C
Cover Material / Type	Glass / A60
Base Type	E27
Color Rendering Index (CRI)	>80 Ra
Dimming	Dimming / Non-Dimming (Customizable)

1. IEC/PAS 62612:2013, the initial luminous flux² of each individual LED lamp in the measured sample shall not be less than the rated luminous flux by more than 10 %;
2. (EU) No 1194/2012, the initial luminous flux means the luminous flux of a lamp after a short operating period.

Application

- Indoor Lighting
- Commercial Lighting
- Residential Lighting

Features

- Light source: Multi-Chip Filament LED
- Graphene thermal technology.
- Energy saving and environment friendly.



Specification

Model	GLC-BU-0A60
Rated voltage	AC220V/50HZ
Power Consumption (W)	7.5 ±10%; 9±10%
Color Temperature (K)	2700K, 4000K, 6000K (Customizable)
Power Factor (PF)	> 0.5 (Non-Dimming); > 0.7 (Dimming)
Rated luminous flux¹ (lm)	806 (7.5W); 1055 (9W)
Beam Angle(Degree)	280
Outline Dimensions (mm)	60 x 60 x 105
Operation Temperature (°C)	-10°C~+40°C
Storage Temperature (°C)	-25°C~+70°C
Cover Material / Type	Glass / A60
Base Type	E27
Color Rendering Index(CRI)	>80 Ra
Dimming	Dimming / Non-Dimming (Customizable)

1. IEC/PAS 62612:2013, the initial luminous flux² of each individual LED lamp in the measured sample shall not be less than the rated luminous flux by more than 10 %;

2. (EU) No 1194/2012, the initial luminous flux means the luminous flux of a lamp after a short operating period.

Application

- Indoor Lighting
- Commercial Lighting
- Residential Lighting

Features

- Light source: Multi-Chip Filament LED
- Graphene thermal technology.
- Energy saving and environment friendly.



Specification

Model	GLC-BU-ST58
Rated voltage	AC220V/50HZ
Power Consumption (W)	6 ±10%
Color Temperature (K)	2700K, 4000K, 6000K (Customizable)
Power Factor (PF)	> 0.5 (Non-Dimming); > 0.7 (Dimming)
Rated luminous flux¹ (lm)	600
Beam Angle(Degree)	280
Outline Dimensions (mm)	58×58×136
Operation Temperature (°C)	-10°C~+40°C
Storage Temperature (°C)	-25°C~+70°C
Cover Material / Type	Glass / ST58
Base Type	E27
Color Rendering Index(CRI)	>80 Ra
Dimming	Dimming / Non-Dimming (Customizable)

1. IEC/PAS 62612:2013, the initial luminous flux² of each individual LED lamp in the measured sample shall not be less than the rated luminous flux by more than 10 %;

2. (EU) No 1194/2012, the initial luminous flux means the luminous flux of a lamp after a short operating period.

Application

- Indoor Lighting
- Commercial Lighting
- Residential Lighting

Features

- Light source: Multi-Chip Filament LED
- Graphene thermal technology.
- Energy saving and environment friendly.



Specification

Model	GLC-BU-ST64
Rated voltage	AC220V/50HZ
Power Consumption (W)	7.5 ±10% ; 9±10%
Color Temperature (K)	2700K, 4000K, 6000K (Customizable)
Power Factor (PF)	> 0.5 (Non-Dimming); > 0.7 (Dimming)
Rated luminous flux¹ (lm)	806 (7.5W); 1055 (9W)
Beam Angle(Degree)	280
Outline Dimensions (mm)	64 x 64 x 143
Operation Temperature (°C)	-10°C~+40°C
Storage Temperature (°C)	-25°C~+70°C
Cover Material / Type	Glass / ST64
Base Type	E27
Color Rendering Index(CRI)	>80 Ra
Dimming	Dimming / Non-Dimming (Customizable)

1. IEC/PAS 62612:2013, the initial luminous flux² of each individual LED lamp in the measured sample shall not be less than the rated luminous flux by more than 10 %;

2. (EU) No 1194/2012, the initial luminous flux means the luminous flux of a lamp after a short operating period.

Application

- Indoor Lighting
- Commercial Lighting
- Residential Lighting

Features

- Light source: Multi-Chip Filament LED
- Graphene thermal technology.
- Energy saving and environment friendly.



Specification

Model	GLC-BU-TU38-Double layers
Rated voltage	AC220V/50HZ
Power Consumption (W)	11 ±10%
Color Temperature (K)	2700K, 4000K, 6000K (Customizable)
Power Factor (PF)	> 0.9
Rated luminous flux¹ (lm)	1521
Beam Angle(Degree)	280
Outline Dimensions (mm)	38 x 38x 150
Operation Temperature (°C)	-10°C~+40°C
Storage Temperature (°C)	-25°C~+70°C
Cover Material / Type	Glass / TU38
Base Type	E27
Color Rendering Index(CRI)	>80 Ra
Dimming	Dimming / Non-Dimming (Customizable)

1. IEC/PAS 62612:2013, the initial luminous flux² of each individual LED lamp in the measured sample shall not be less than the rated luminous flux by more than 10 %;
2. (EU) No 1194/2012, the initial luminous flux means the luminous flux of a lamp after a short operating period.

Application

- Indoor Lighting
- Commercial Lighting
- Residential Lighting

Features

- Light source: Multi-Chip Filament LED
- Graphene thermal technology.
- Energy saving and environment friendly.



Specification

Model	GLC-BU-0C35-CCT dimmable
Rated voltage	AC220V/50HZ
Power Consumption (W)	4.0 ±10%
Color Temperature (K)	2200K-2700K; 2700K-3500K (Customizable)
Power Factor (PF)	> 0.7
Rated luminous flux¹ (lm)	470
Beam Angle(Degree)	280
Outline Dimensions (mm)	35 x 35 x 98
Operation Temperature (°C)	-10°C~+40°C
Storage Temperature (°C)	-25°C~+70°C
Cover Material / Type	Glass / C35
Base Type	E14
Color Rendering Index(CRI)	>80 Ra
Dimming	Dimming

1. IEC/PAS 62612:2013, the initial luminous flux² of each individual LED lamp in the measured sample shall not be less than the rated luminous flux by more than 10 %;
2. (EU) No 1194/2012, the initial luminous flux means the luminous flux of a lamp after a short operating period.

Application

- Indoor Lighting
- Commercial Lighting
- Residential Lighting

Features

- Light source: Multi-Chip Filament LED
- Graphene thermal technology.
- Energy saving and environment friendly.



Specification

Model	GLC-BU-0A60-CCT dimmable
Rated voltage	AC220V/50HZ
Power Consumption (W)	7.5 ± 10%
Color Temperature (K)	2200K-2700K; 2700K-4000K (Customizable)
Power Factor (PF)	> 0.7
Rated luminous flux¹ (lm)	806
Beam Angle(Degree)	280
Outline Dimensions (mm)	60 x 60 x 105
Operation Temperature (°C)	-10°C~+40°C
Storage Temperature (°C)	-25°C~+70°C
Cover Material / Type	Glass / A60
Base Type	E27
Color Rendering Index(CRI)	>80 Ra
Dimming	Dimming

1. IEC/PAS 62612:2013, the initial luminous flux² of each individual LED lamp in the measured sample shall not be less than the rated luminous flux by more than 10 %;
2. (EU) No 1194/2012, the initial luminous flux means the luminous flux of a lamp after a short operating period.

Application

- Indoor Lighting
- Commercial Lighting
- Residential Lighting

Features

- Light source: Multi-Chip Filament LED
- Graphene thermal technology.
- Energy saving and environment friendly.



Specification

Model	GLC-BU-0A67
Rated voltage	AC220V/50HZ
Power Consumption (W)	11 ±10%
Color Temperature (K)	2700K, 4000K, 6000K (Customizable)
Power Factor (PF)	> 0.9
Rated luminous flux¹ (lm)	1521
Beam Angle(Degree)	280
Outline Dimensions (mm)	67 x 67x 120
Operation Temperature (°C)	-10°C~+40°C
Storage Temperature (°C)	-25°C~+70°C
Cover Material / Type	Glass / A67
Base Type	E27
Color Rendering Index(CRI)	>80 Ra
Dimming	Dimming / Non-Dimming (Customizable)

1. IEC/PAS 62612:2013, the initial luminous flux² of each individual LED lamp in the measured sample shall not be less than the rated luminous flux by more than 10 %;
2. (EU) No 1194/2012, the initial luminous flux means the luminous flux of a lamp after a short operating period.

Application

- Indoor Lighting
- Commercial Lighting
- Residential Lighting

Features

- Light source: Multi-Chip Filament LED
- Graphene thermal technology.
- Energy saving and environment friendly.



Specification

Model	GLC-BU-ED90/E120
Rated voltage	AC220V/50HZ
Power Consumption (W)	20, 30, 40, 55 (±10%)
Color Temperature (K)	2700K, 4000K, 6000K (Customizable)
Power Factor (PF)	> 0.95
Rated luminous flux¹ (lm)	3200, 4800, 6800, 10000 (± 10%)
Beam Angle(Degree)	280
Outline Dimensions (mm)	90x90x225 (ED90); 120x120x270 (ED120)
Operation Temperature (°C)	-10°C~+40°C
Storage Temperature (°C)	-25°C~+70°C
Cover Material / Type	Glass / ED90 & ED 120
Base Type	E40
Color Rendering Index(CRI)	>80 Ra; >70 Ra (10,000 LM)
Dimming	Non-Dimming

1. IEC/PAS 62612:2013, the initial luminous flux² of each individual LED lamp in the measured sample shall not be less than the rated luminous flux by more than 10 %;
2. (EU) No 1194/2012, the initial luminous flux means the luminous flux of a lamp after a short operating period.

Application

- Indoor Lighting
- Commercial Lighting
- Outdoor Lighting

Features

- Light source: Multi-Chip Filament LED
- Graphene thermal technology.
- Energy saving and environment friendly.