

BESUN LED LIMITED

2023

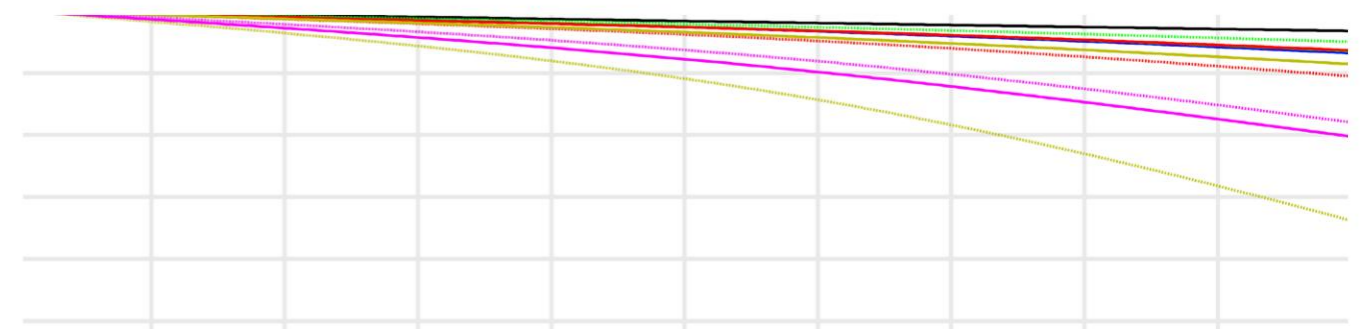
Come from BESUN, go for BEing SUN



BESUN[®] LED LIMITED
深圳市冰晟光电科技有限公司

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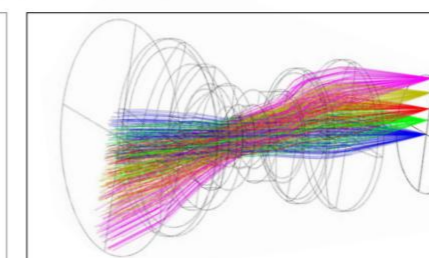
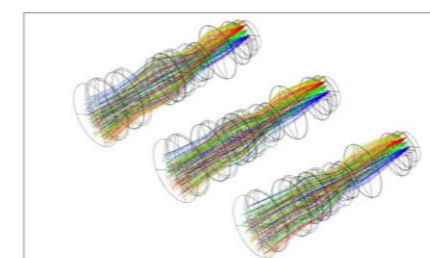


COMPANY PROFILE

As a leader in imaging optical lighting technology, BESUN LED LIMITED. is one of the earliest domestic companies focusing on the field of imaging optical lighting. With the corporate vision of "becoming the world's leading professional product and service provider in the field of imaging lighting", BESUN continues to focus on providing professional precise optical design, optical products, optical accessories, optical control and related services.

Along with the start-up development of China's LED lighting industry, BESUN LED has maintained a leading position in the Chinese market for more than 10 consecutive years. We are one of the companies with the earliest entry into the domestic imaging lighting field, the deepest technical reserves, and the most complete industrial layout. BSUN has formed a complete strategic layout of imaging optical lighting, and has R&D and manufacturing capabilities from core technology research and development such as algorithms, design, and materials to various terminal applications. With rich practical experience, BESUN LED has taken the lead in realizing the application of imaging optical systems in multiple industries or fields, such as imaging lighting optical, machine vision, military industry, lithography machine optical, etc., and has developed a large number of imaging lighting fields for more than ten years. Be the first to witness, promote and lead the development of China's imaging lighting market.

Based on the foundation of years of global development, BESUN LED has formed a global business layout and service capabilities, has allocated global resources with a global perspective, and built domestic and foreign product research and development centers including China, the United States, Russia, Germany, Italy, and South Korea. , production and marketing system, with more than 10 international patents, technology covers design, optical, material science, high-precision machining, software and multi-system combination of hardware, software and various algorithms, products are exported to more than 90 countries around the world and regions, laying a solid foundation for promoting the development of global imaging optical lighting.





Ultra-flexible architecture that allows for rapid customization, easy combination and separation of modules, convenient individual module function debugging, upgrading, and maintenance, as well as multi-person collaboration without interference.



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KA Module-10°



KA Module-15°



KA Module-36°



KA Module-55°



Anti-glare G
(honeycomb)



Anti-glare X



Soft Light Filter S



OVAL Filter S



UV Filter



Color Filter



Full Snoot



Half Snoot



Flaps (Barn door)



1



The level 1 optical accessories are unique and can only be installed one at a time. Multiple accessories cannot be installed simultaneously, and at least one accessory must be installed in order for other optical accessories to function properly.

2

The level 2 optical can carry all level 1 optical except imaging, and it is the only level that can be combined with level 3 and level 4 optical. It can also be stacked with level 3 and level 4 optical.

For example: Anti-glare Module G (honeycomb) + UV filter / Anti-glare Module G (honeycomb) + color filter + UV filter / or Anti-glare Module G (honeycomb) + UV filter + 8 Flaps (Barn door)

3

The level 3 optical can independently support all the level 1 optical, the level 2 optical, or 1+3+4 combinations. The level 3 optical can be stacked with other optics to create different effects.

For example, OVAL+ Soft light Module / OVAL+Soft Focus Module+UV Filter / Anti-glare Module G (honeycomb)+UV Filter+8 Flaps (Barn door)

4

Level 4 optical can carry all level 1 optical independently, or carry level 2 optical, or some of the level 3 optical can be in a stacked state.

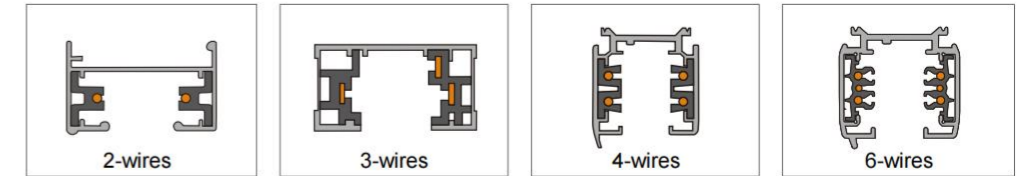
For example, OVAL+Soft light Module + 8 Flaps (Barn door) / Anti-glare Module G (honeycomb) + UV filter + Spotlight Module C (Half Snoot) , and so on.

Here is the installation module of the King of Track Light. In order to make this module operate more efficiently, conveniently, and reliably, we have redefined and designed its ceiling-mounted installation module and embedded installation module. The track-mounted installation module will also be fully compatible with other brand tracks, so you don't have to disassemble the existing track system in order to have the superior light quality of BESUN.



Track installation

This module can be adapted to almost all brands of tracks worldwide



BESUN 03 track module is commonly used for 6-wire DALI control or CASAMBI smart control and other control needs

BESUN 05 track module is commonly used for wireless Bluetooth control needs, such as 2.4G graffiti, Zigbee, and other control needs

BESUN 08 track module is commonly used for conventional 0-10V single lamp dimming control needs, or 0-10V+DIP CCT

Embedded&surface-mounted installation

A revolutionary mounting module that can be installed both as embedded and surface-mounted, providing stability and reliability, especially suitable for the installation of medium to heavy-duty lighting fixtures.



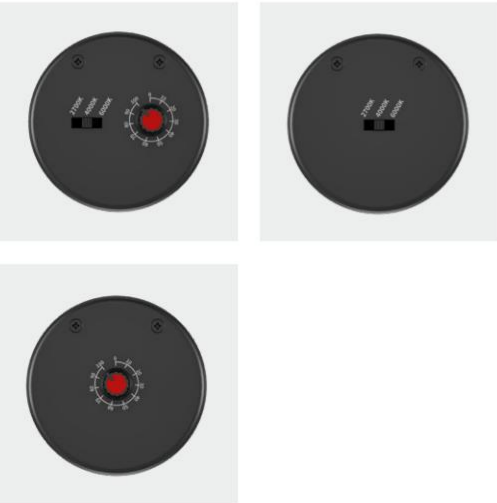
Here is one of the most hardcore parts of the whole King of Track Light module. In order to ensure that nothing is left to chance, we have redefined and redesigned the mechanical performance, optical performance and control performance as well as the safety performance of the module, which complies with zhaga safety standards.

355° Vertical 355° rotation

The new design of vertical 355 degree rotation will realize easy arbitrary angle hovering and locking. arbitrary damping adjustment, and never sag. It effectively saves the installation and commissioning time, and effectively avoids the annoyance of reworking due to the light head moving around and the light spot deviating from the original position. The device is effective under severe conditions such as ground or ceiling vibrations, or high altitude winds.

The module built-in driver control methods are generally the following

- a, Single lamp 0-10V knob dimming module features continuous dimming
- b, DIP select color temperature module
2700K/4000K/6000K
3000K/4000K/5700K
- c, DIP CCT + 0-10V knob dimming



Single lamp control

Please refer to 03,05 module for external driver.

New horizontal 355 ° rotation design, abandoned the brand track adapter with its own plastic rotation damping device, replaced by a better and more reliable and durable mechanical gear damping, will achieve easy horizontal rotation at any angle, any angle locking, any damping adjustment, and never run off. It effectively saves the installation and commissioning time, and effectively avoids the annoyance of reworking due to the light head moving around and the light spot deviating from the original position. The device is effective under severe conditions such as ground or ceiling vibrations, or high altitude winds.

355° Horizontal 355° rotation



Light color part

The color of light is not only inseparable from the high quality optics, but also from the hard index of the light source itself. BESUN does not produce light sources, but will select light sources that meet BESUN's standards.

Project	27H	30H	40H
Melanopic ratio (MR)	17.8%	18.7%	19.2%
Melanopic daylight-equivalent ratio(MDER)	91	107	108
Relative damage factor,f (mW/lm)	0.127	0.147	0.748
SCDM over time (must: SDCM ≤ 1.5)	Average±0.0013	Average±0.0013	Average±0.0013
TM-30 /Rf	94	94	93
TM-30 /Rg	102	101	100
L90B10=50000H	L90B10=50000H	L90B10=50000H	L90B10=50000H

Colour vector diagram

Model	CCT	Rf
27H	2726 K	0.0000
30H	3046 K	0.0001
40H	3985 K	0.0010

Local Color Fidelity (Rf,hl)

Model	Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8	Bin 9	Bin 10	Bin 11	Bin 12	Bin 13	Bin 14	Bin 15	Bin 16
27H	95	97	94	95	95	94	95	96	97	95	92	92	94	92	96	90
30H	96	97	95	94	96	95	98	96	92	90	92	95	92	93	89	
40H	95	97	95	94	93	96	95	95	92	89	86	90	94	95	90	90



Technical requirements:
Ambient temperature reaches 40 degrees, light source TC point <80 degrees, driver TC point <95 degrees

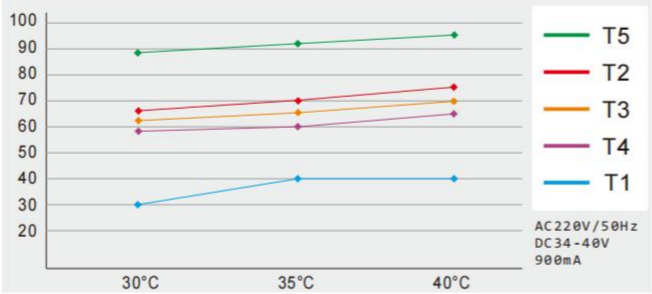
倍晟[®] King of Track Light
BESUN Temperature rise report

BESUN's heat dissipation material, with (226.W/M.K) super high thermal conductivity, can effectively reduce the temperature difference between inside and outside the lamp, and reduce the light decay, color temperature drift and other key data, and significantly improve the service life of the lamp.

The temperature of the driver TC point in the chart is normal, because this driver can provide high P flicker-free 5 years warranty when the TC point is less than 100 degrees.

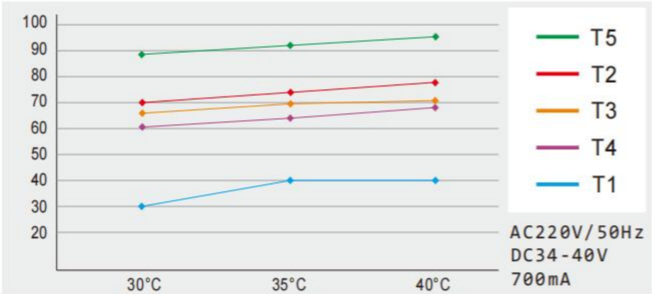
Temperature Measuring Point	environmental temperature (T1)	29.8	31.5	34.8	39.8
	welding spot's negative pole (T2)	29.8	66.1	69.2	76.5
	inside (T3)	29.8	61.2	64.7	69.9
	outside (T4)	29.8	58.1	60.8	66.8
	driver TC point (T5)	30.0	89.8	93.5	94.5

T4008 Result OK



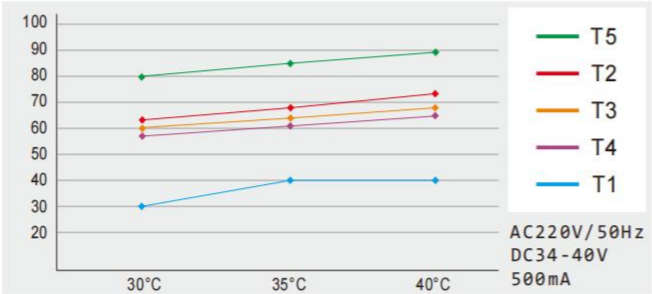
Temperature Measuring Point	environmental temperature (T1)	29.8	31.5	34.8	39.8
	welding spot's negative pole (T2)	29.9	69.4	72.1	78.5
	inside (T3)	29.8	66.7	69.4	71.5
	outside (T4)	29.8	61.8	64.7	68.5
	driver TC point (T5)	30.0	88.7	92.5	95.3

T3008 Result OK



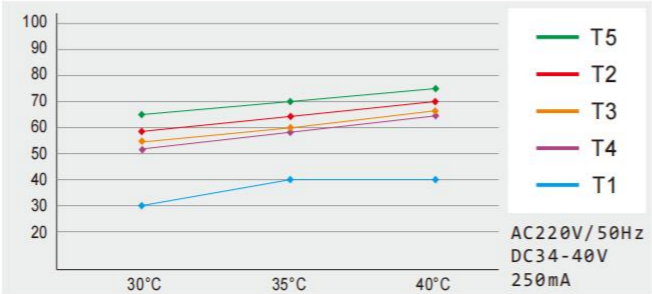
Temperature Measuring Point	environmental temperature (T1)	29.8	30.7	35.8	40.1
	welding spot's negative pole (T2)	29.9	63.1	68.9	72.2
	inside (T3)	29.8	60.4	65.2	68.4
	outside (T4)	29.8	57.0	62.6	65.9
	driver TC point (T5)	30.1	79.8	85.4	88.2

T2008 Result OK



Temperature Measuring Point	environmental temperature (T1)	29.9	30.0	36.5	40.0
	welding spot's negative pole (T2)	29.8	58.9	64.2	65.2
	inside (T3)	29.8	54.6	59.9	65.1
	outside (T4)	29.8	53.3	58.8	64.1
	driver TC point (T5)	29.8	65.8	70.6	75.3

T1008 Result OK

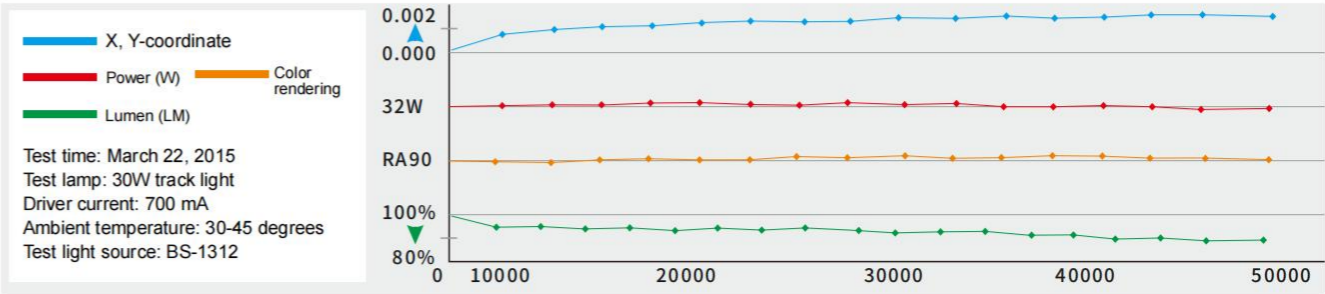


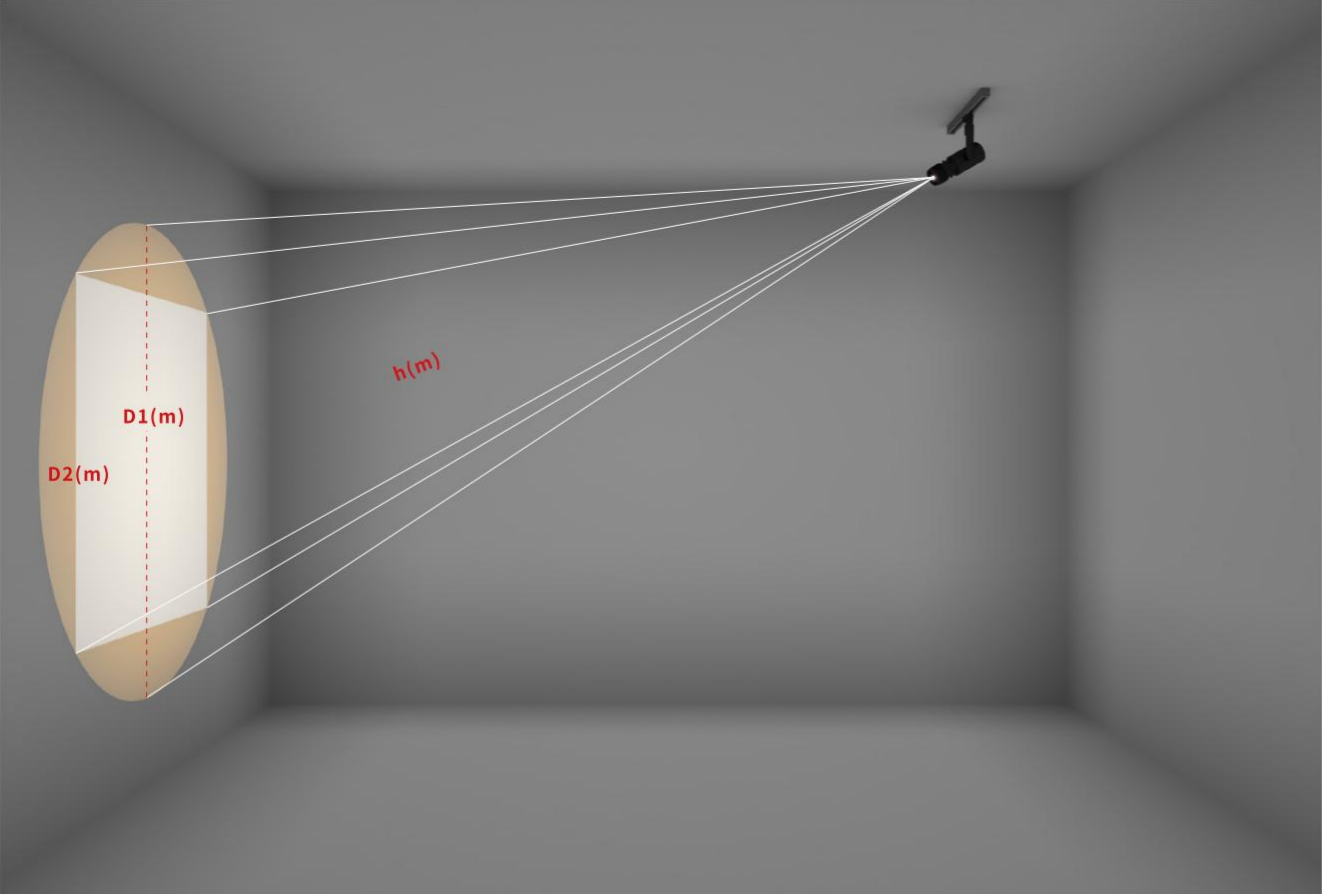
倍晟[®] King of Track Light
BESUN Light Decay Report

The whole lamp permanent 24 hours non-stop aging, every 3,000 hours to extract data, the highest monitoring data has 100,000 hours, 30,000 hours within the original LM maintenance rate of more than 95%, 50,000 hours of the original lumen maintenance rate of more than 90%, power color rendering, color temperature and other parameters in 97% maintenance rate.

Test time: March 22, 2015
Test lamp: 30W track light
Driver current: 700 mA
Ambient temperature: 30-45 degrees
Test light source: BS-1312

Time (h)	Power (W)	PF	Color temperature(K)	Color rendering	Lumen (LM)	X-coordinate	Y-coordinate	Lumen maintenance rate
0	32.60	0.98	3012	89.9	3420	0.4350	0.4113	100%
3000	32.45	0.96	3031	90.0	3368	0.4337	0.4112	98.5%
6000	32.45	0.96	3030	90.0	3324	0.4340	0.4114	97.2%
9000	32.35	0.96	3029	90.0	3330	0.4339	0.4111	97.4%
12000	32.43	0.96	3034	90.0	3342	0.4332	0.4100	97.7%
15000	32.51	0.96	3023	90.0	3255	0.4340	0.4107	95.2%
18000	32.38	0.96	3031	90.1	3217	0.4338	0.4107	94.1%
21000	32.27	0.96	3037	90.1	3213	0.4330	0.4112	93.9%
24000	32.37	0.96	3029	90.0	3204	0.4329	0.4112	93.7%
27000	32.29	0.96	3043	89.9	3228	0.4328	0.4113	94.4%
30000	32.37	0.96	3047	89.8	3339	0.4326	0.4114	97.6%
33000	32.35	0.96	3041	89.9	3243	0.4329	0.4108	94.8%
36000	32.23	0.96	3036	90.0	3233	0.4332	0.4108	94.5%
39000	32.40	0.99	3036	90.0	3224	0.4330	0.4107	94.3%
42000	32.50	0.99	3039	90.0	3199	0.4334	0.4106	93.5%
45000	32.45	0.96	3039	90.1	3180	0.4331	0.4106	93.0%
48000	32.20	0.97	3045	90.0	3130	0.4339	0.4105	91.5%



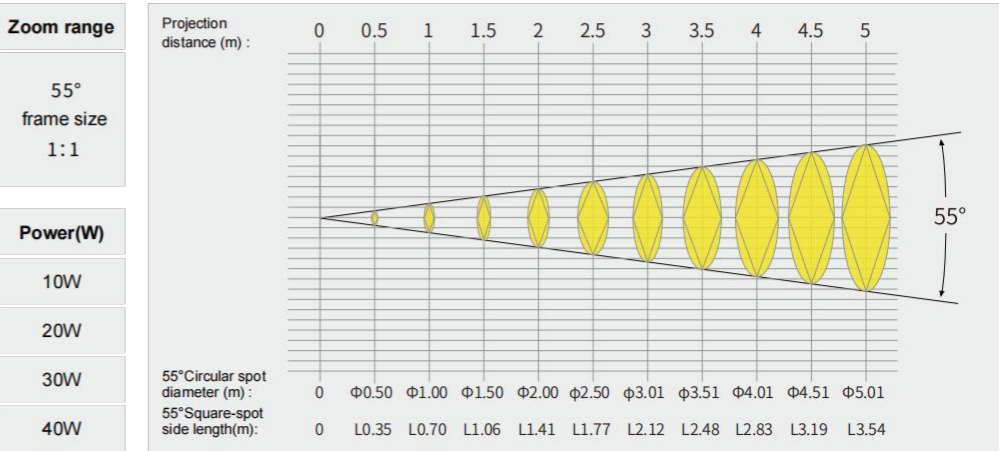
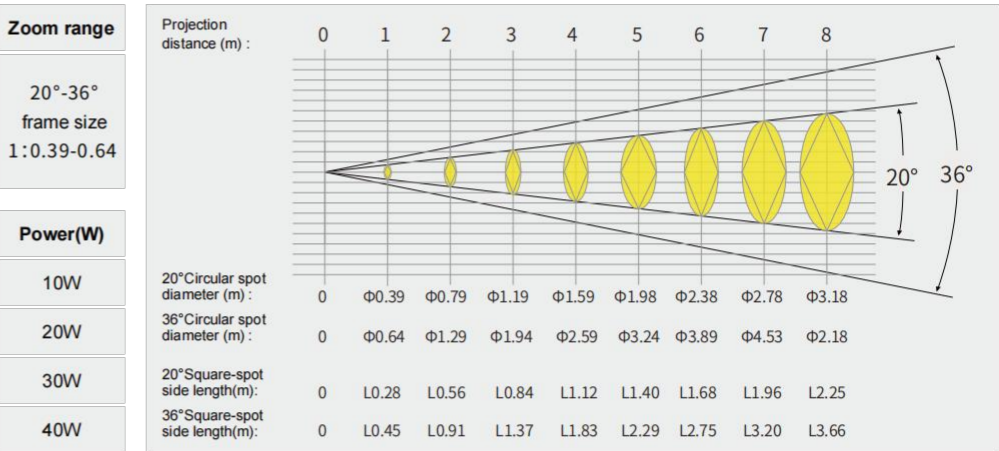
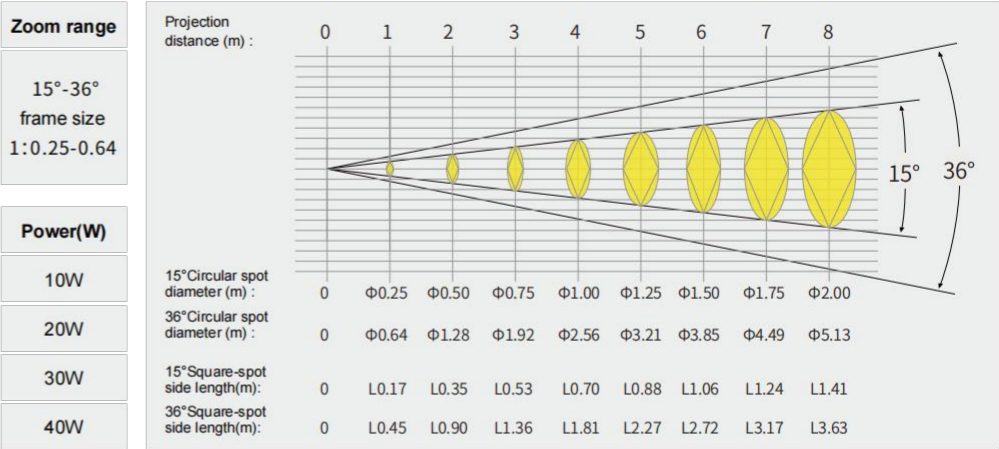
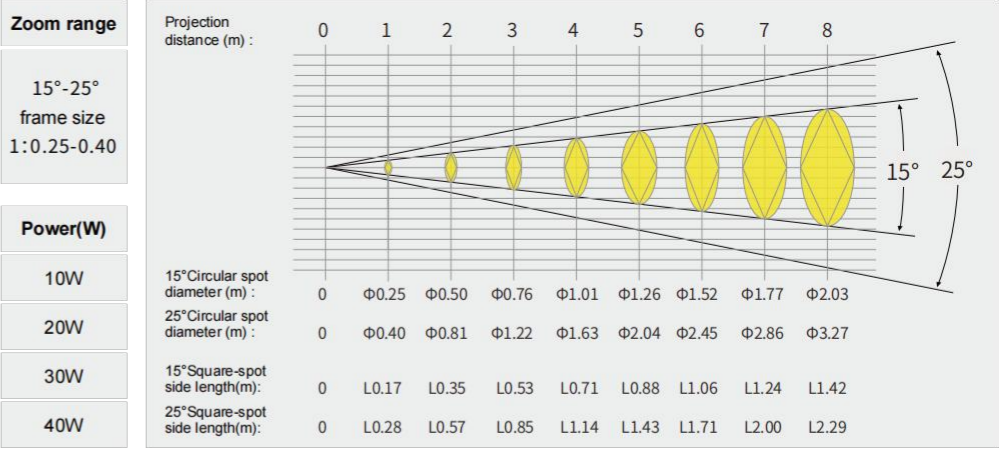


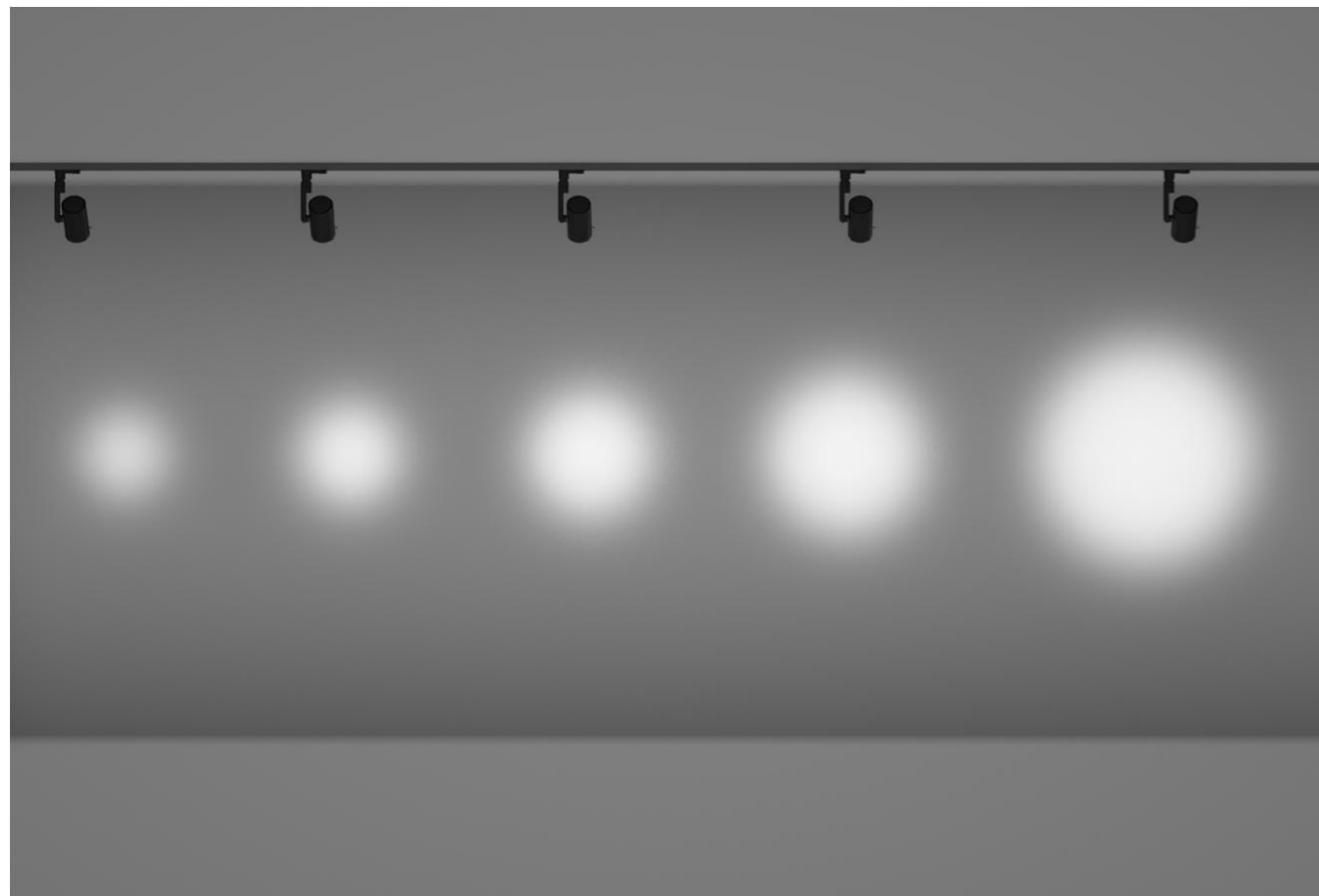
倍晟 BESUN®
King of Track Light - Full-Scene
Distributed Module

h: Irradiation distance between light spot and lamp

D1: Circular spot diameter

D2: Square spot side length

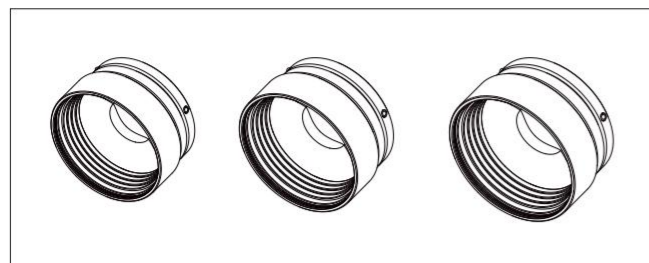




倍晟 King of Track Light **BESUN KA Module**

In the BESUN full-scene distributed module, KA module belongs to level 1 optical, level 1 optical must be selected and unique, which can interoperate with other level 1 optical, interchangeable and complementary, and can be equipped with level 2, 3, 4 optical. It has the characteristics of super color mixing ability, super low glare, super high center light intensity, etc.

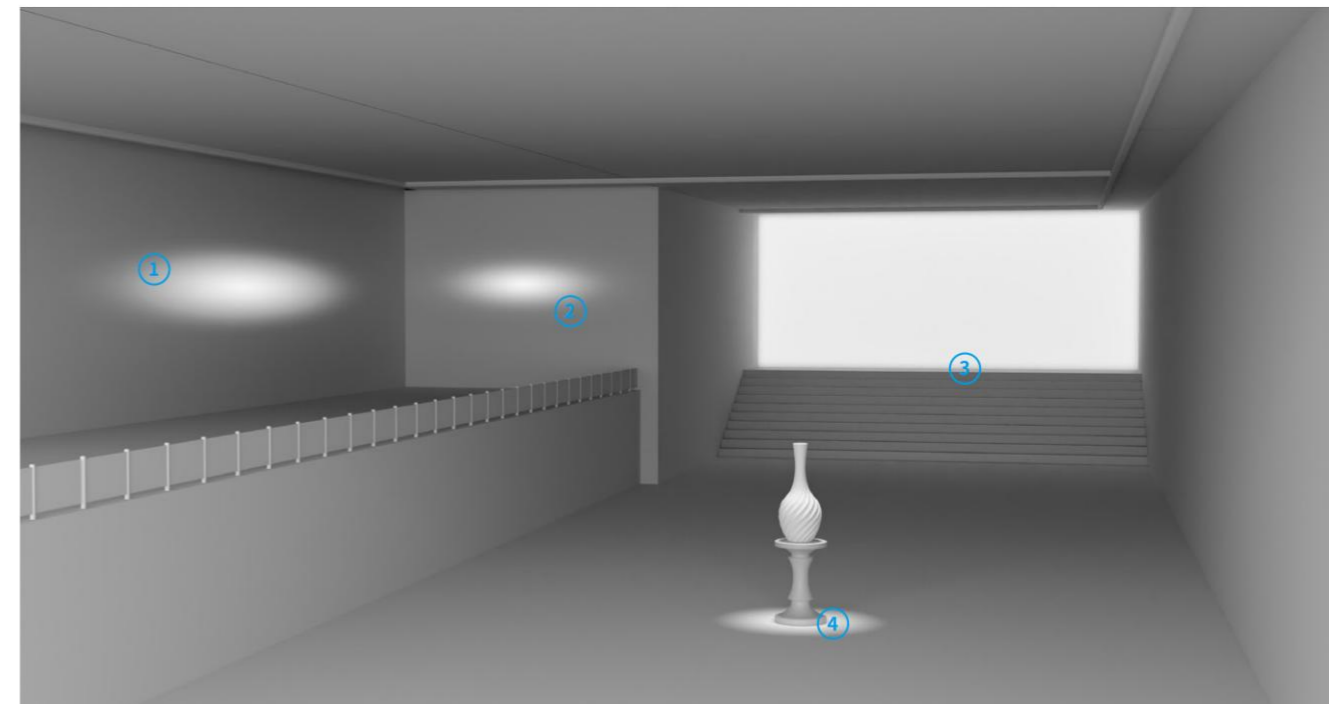
Mainly used for commercial lighting and accent lighting, or equipped with other optical modules to become specific area lighting, available in 10°, 15°, 24°, 36°, 55°.



10W
φ=65mm

20W
φ=75mm

28W
φ=85mm

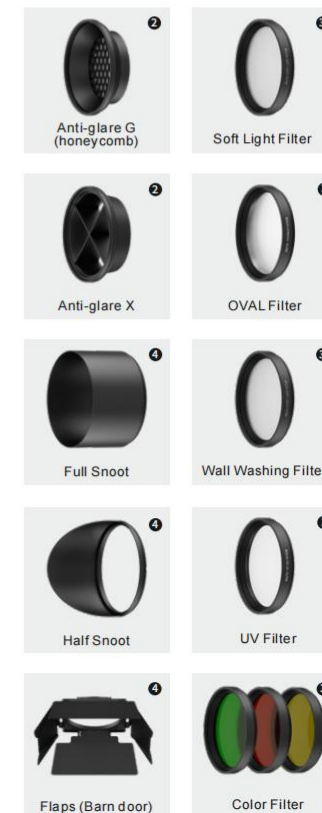


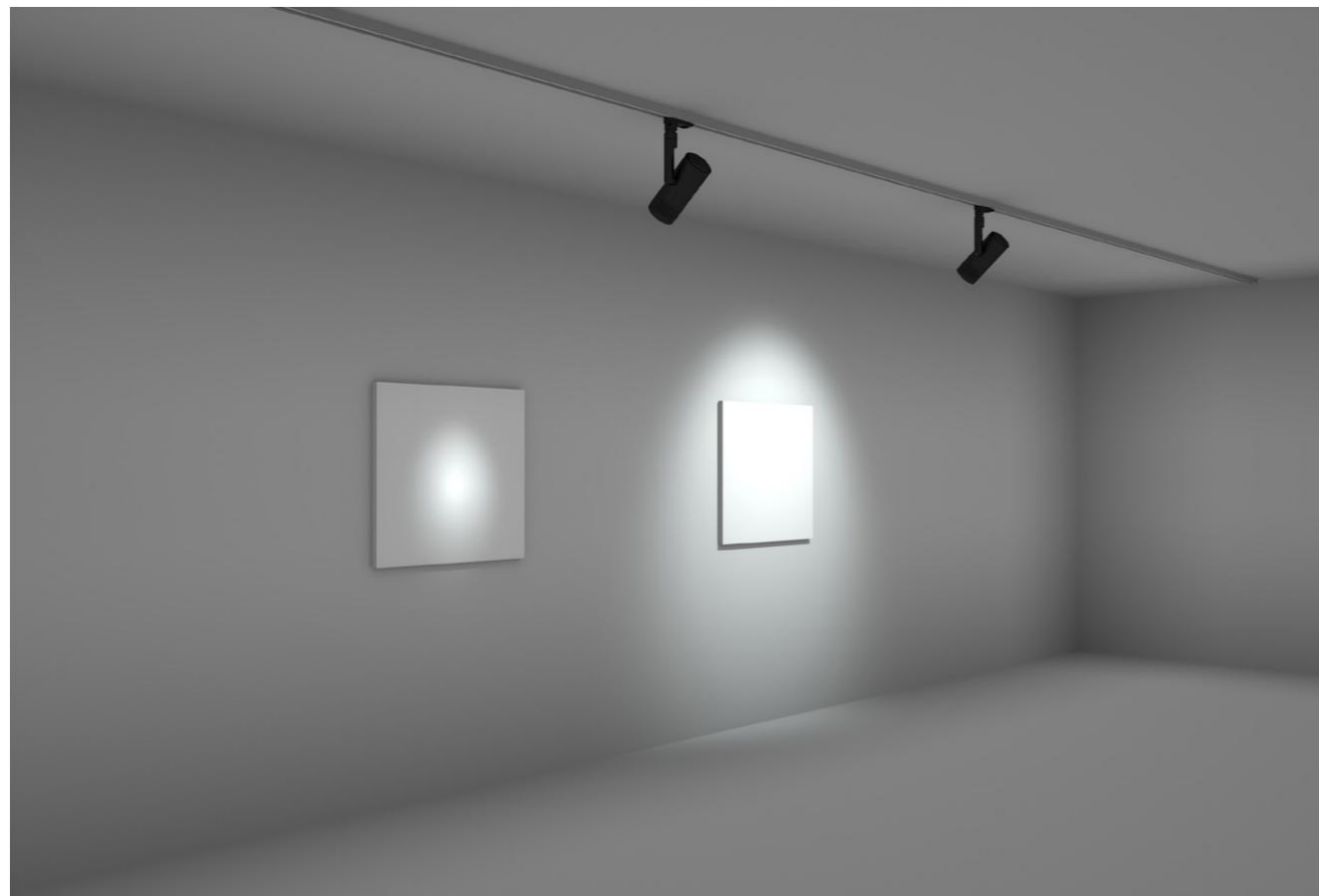
Classic application case study

- 1, 15°+Oval Filter L.
- 2, 15°+Oval Filter S.
- 3, 15°+Wall Washing Filter.
- 4, 10° Accent Lighting.



Optional Accessories





倍晟 King of Track Light **BESUN Zoom Module**

In the BESUN full-scene distributed module, the zoom module belongs to level 1 optical. This unique optics must be selected, for it can interoperate, interchange and complement with other level 1 optical. This module can also be equipped with level 2, 3 and 4 optical. The zoom angle range is 10°-55° adjustable.

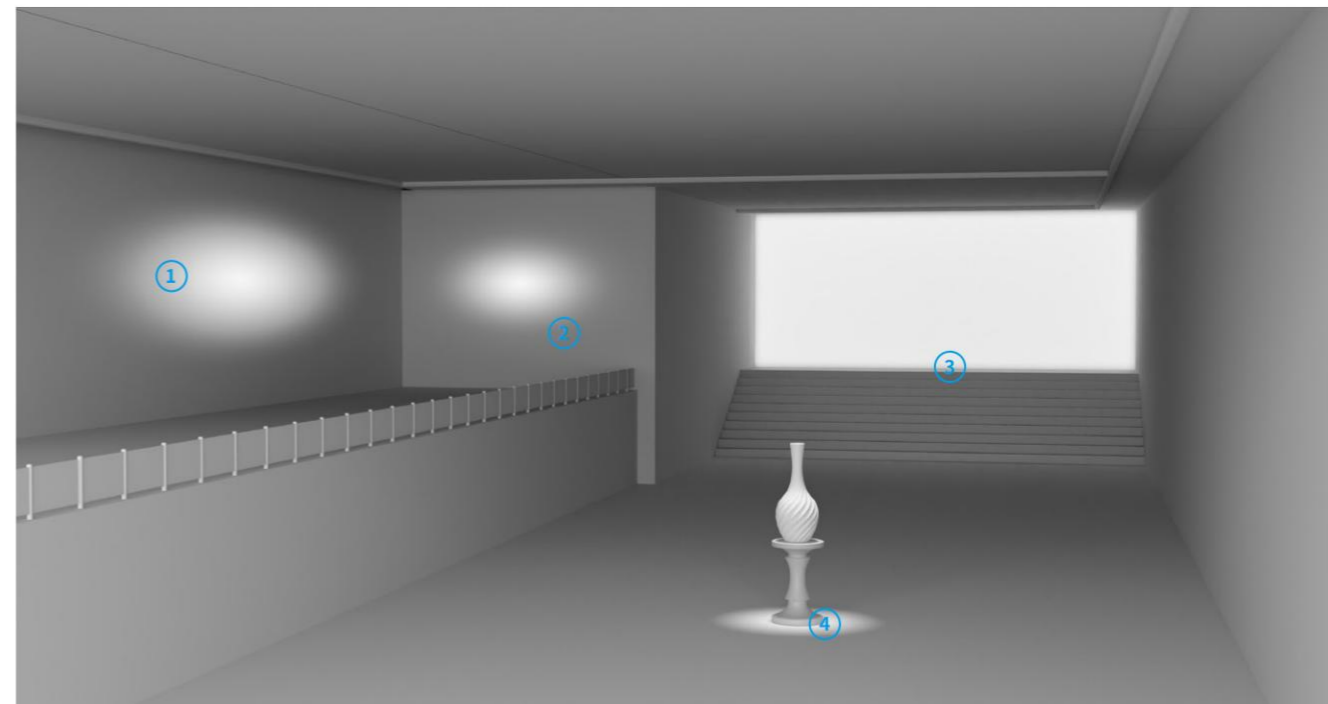
It is mainly suitable for the scene where the sizes of objects are different and the angle requirements are more flexible. With stretching module, it can project a linear elliptical spot.



10W
 $\phi=65\text{mm}$

20W
 $\phi=75\text{mm}$

28W
 $\phi=85\text{mm}$

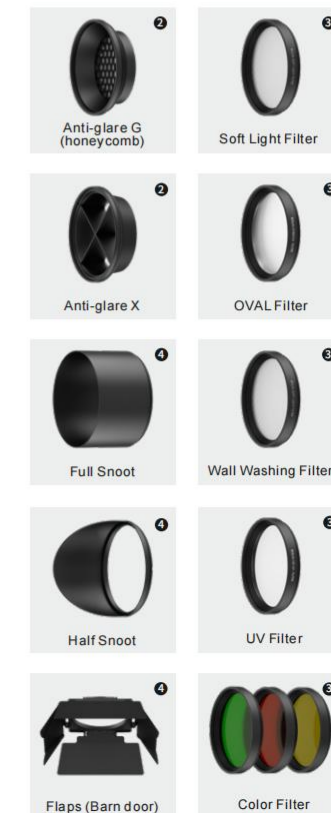


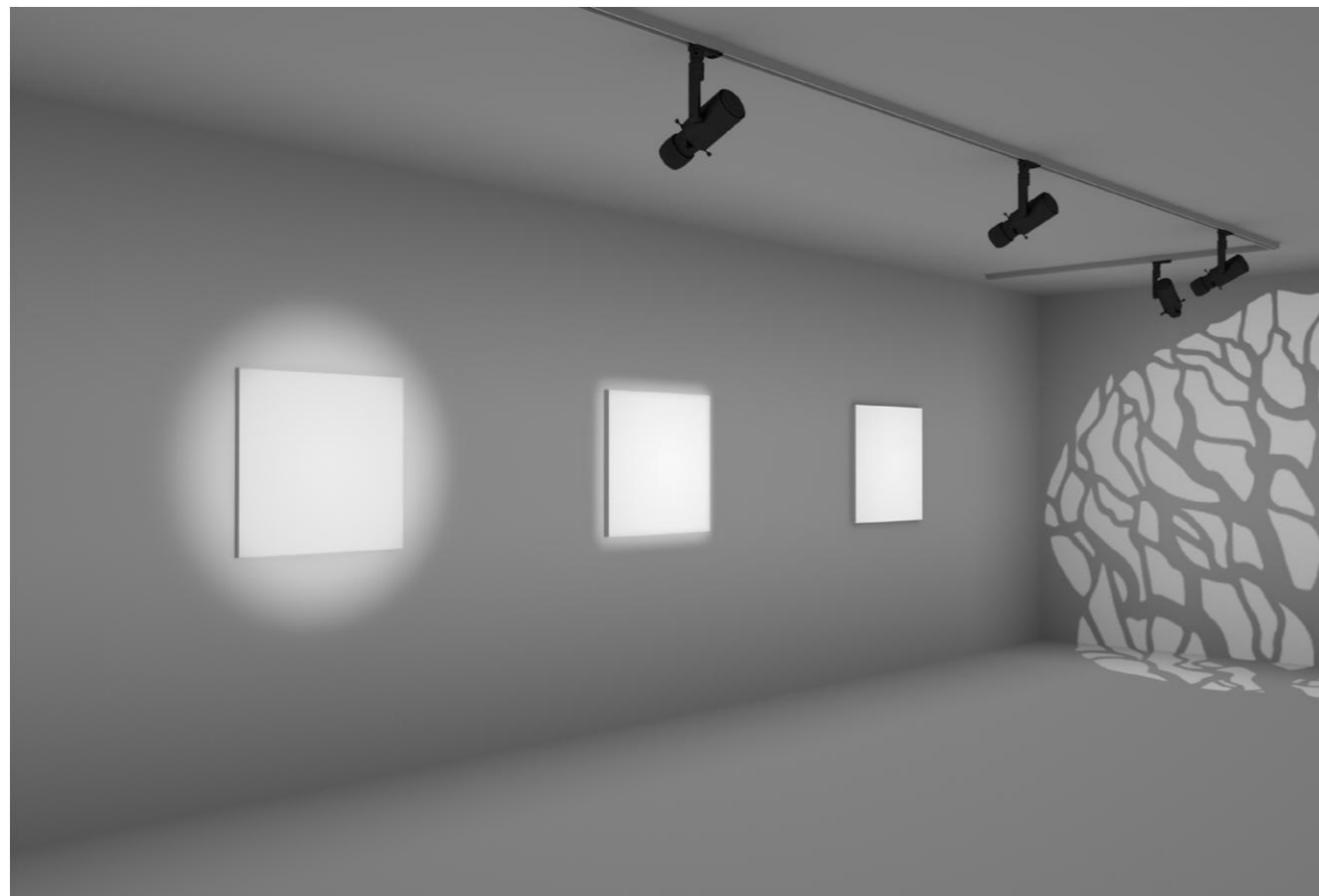
Classic application case study

- 1, Zoom + Oval Filter L.
- 2, Zoom + Oval Filter S.
- 3, Zoom + Wall Washing Filter.
- 4, 10° Accent Lighting.



Optional Accessories





倍晟[®] King of Track Light BESUN DQ & XQ Series Module

In the BESUN full-scene distributed module, the barrier between fixed-angle optics and zoom optics is completely broken. DQ and XQ series module of king of track light not only realize that both optical can interoperate, interchange and complement, but also can interoperate and interchange with all of BESUN's level 1 optical. Therefore, the unique level 1 optical must be selected!

Zoom

The scenes where frame is varies and minimum, and installation distance is far enough, are recommended to use this light. Its distance-to-frame ratio can reach 1:0.26-0.62, which means that 1 meter of installation distance has a spot with diameter of 0.26 to 0.62 meter. It can also be as gobo projector with projection effect.

Fixed-Focus

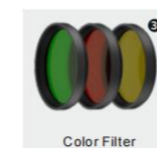
The scenes where frame is relatively large, and installation distance is relatively close, are recommended to use this light. Its distance-to-frame ratio can reach 1:1, which means that 1 meter of installation distance has a spot with diameter of 1 meter. It can also as gobo projector with projection effect.

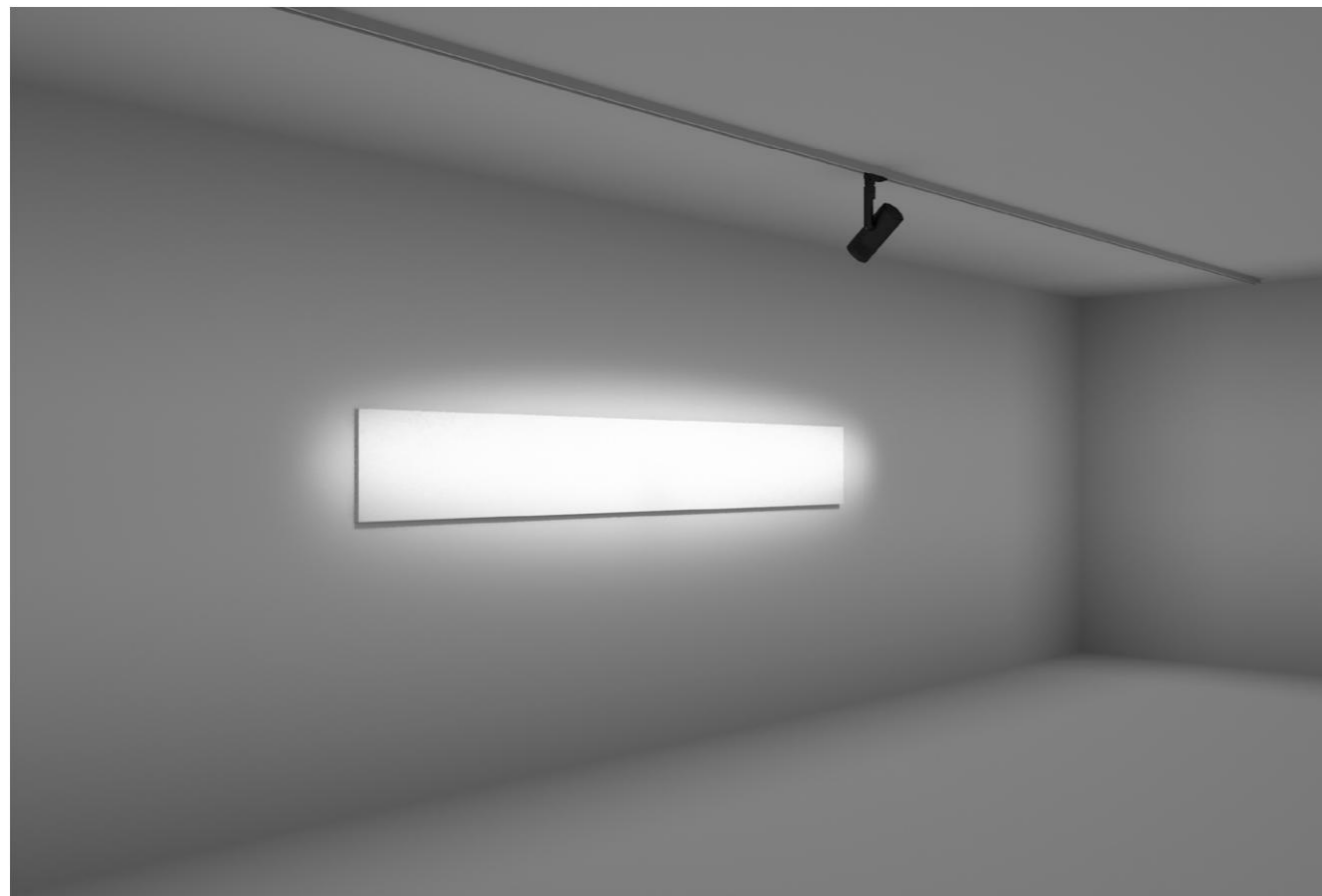


Classic application case study

DQ and XQ Series collaborate on precise cutting lighting and HD projection cases.

Optional Accessories





倍晟 King of Track Light **BESUN Oval Module**

In the BESUN full-scene distributed module, the stretch module belongs to level 3 optical, which can interoperate, complement, mutual assist even overlap with other optical. To fit scene lighting needs, this module is mainly used to stretch a round spot into an oval or rectangular spot.

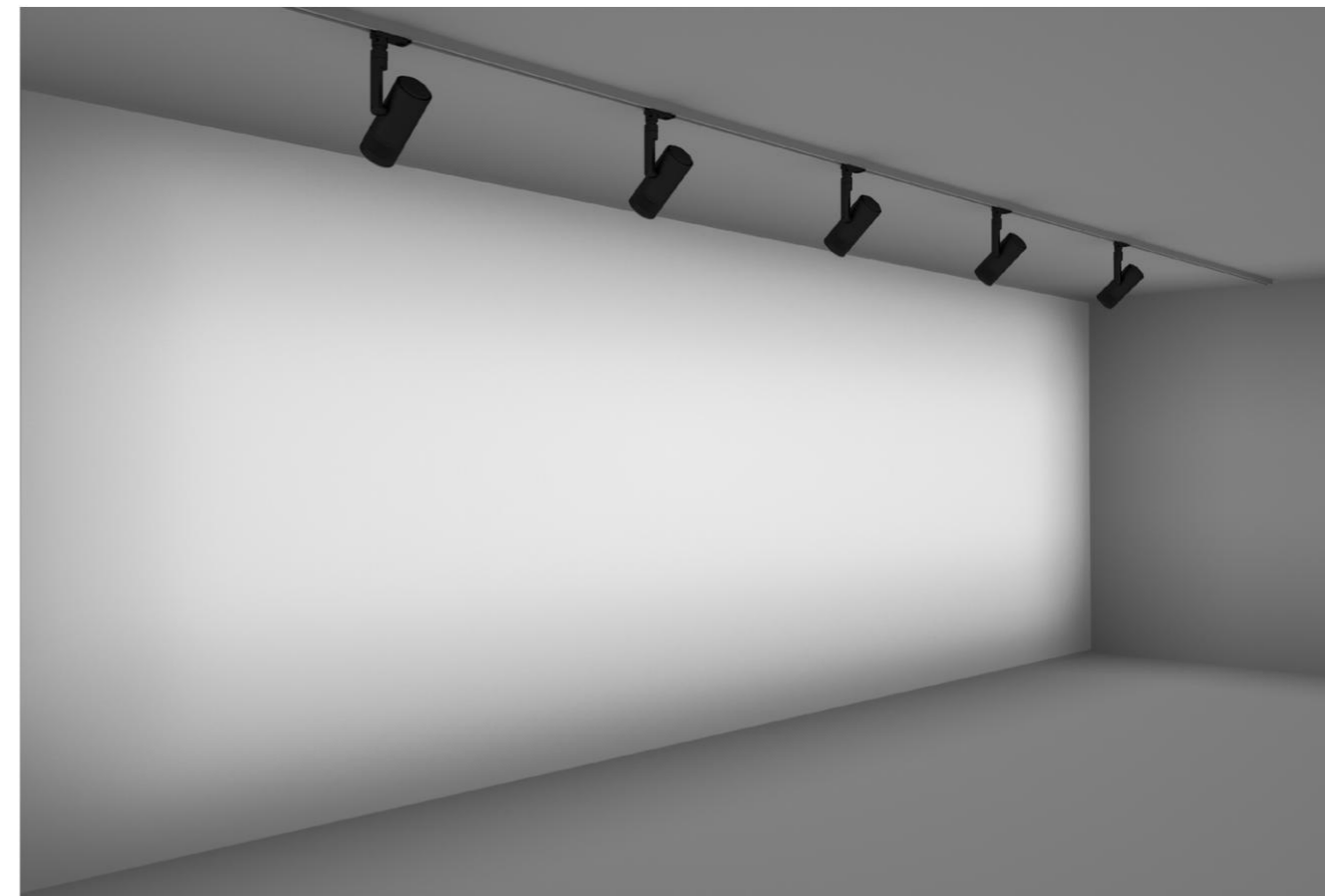
There are 3 sizes of stretch modules: L, M and S, which represent large, medium and small respectively. In the same specification, the smaller the corresponding level 1 optical angle, the thinner and longer the stretched spot shape will be. On the contrary, the larger, the shorter and thicker the stretched spot shape will be. The effect of selecting zoom module as level 1 optical is excellent, which can realize linear stretching its thickness.



10W
 $\phi=65\text{mm}$

20W
 $\phi=75\text{mm}$

28W
 $\phi=85\text{mm}$



倍晟 King of Track Light **BESUN Wall Washing Module**

In the BESUN full-scene distributed module, the wall washing module belongs to level 3 optical, which can interoperate, complement, mutual assist with other optical. This module is mainly used in track with wall washing effect.

There is only one specification for the wall washing module. "Wall washing" requires the light to project at the wall at a 45-degree angle. The smaller the corresponding level 1 optical angle, the higher the effective height of the wall washing and the denser the arrangement of lights will be. On the contrary, the larger, the shorter the effective height of the wall washing and the more sparse the arrangement of lights will be.

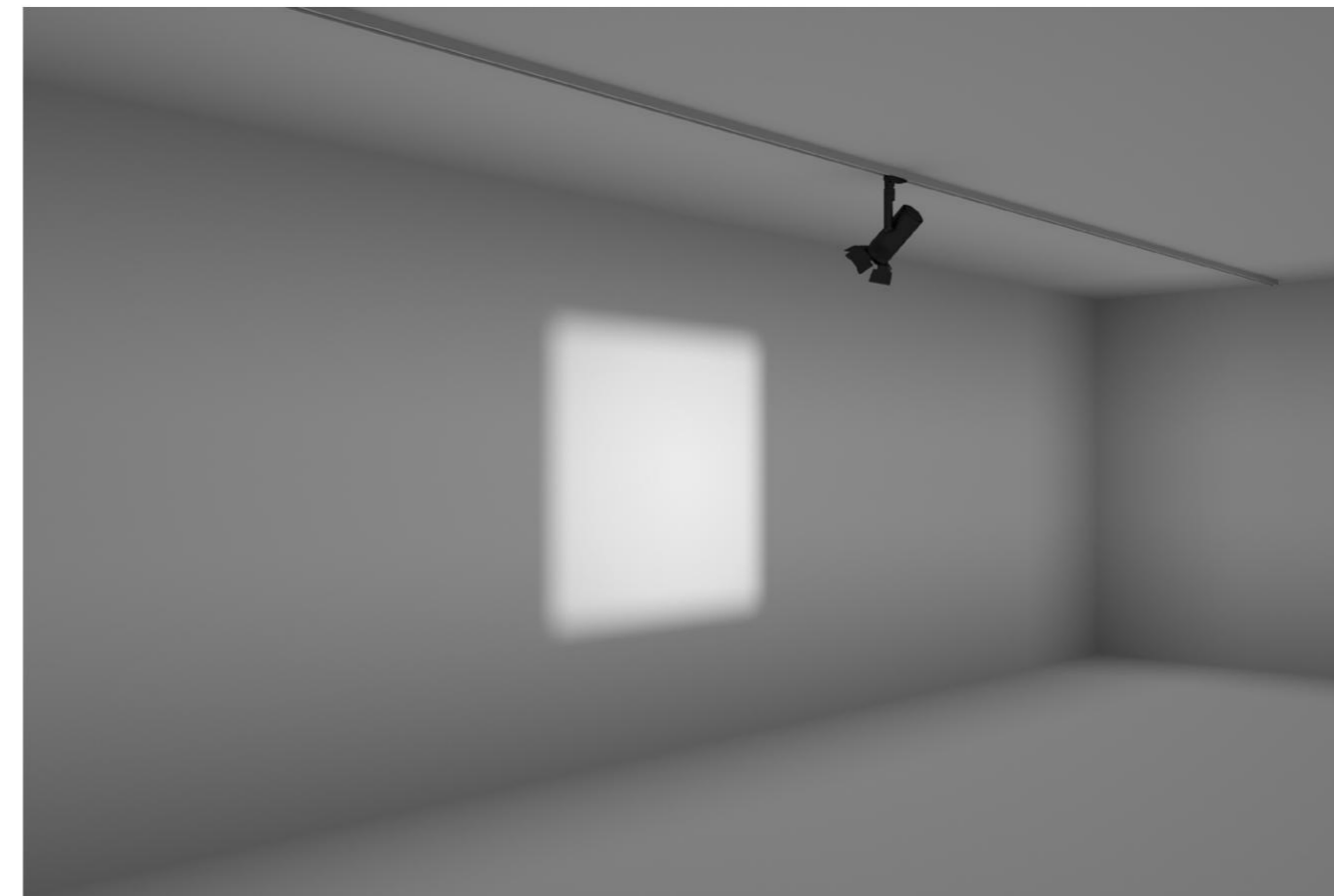
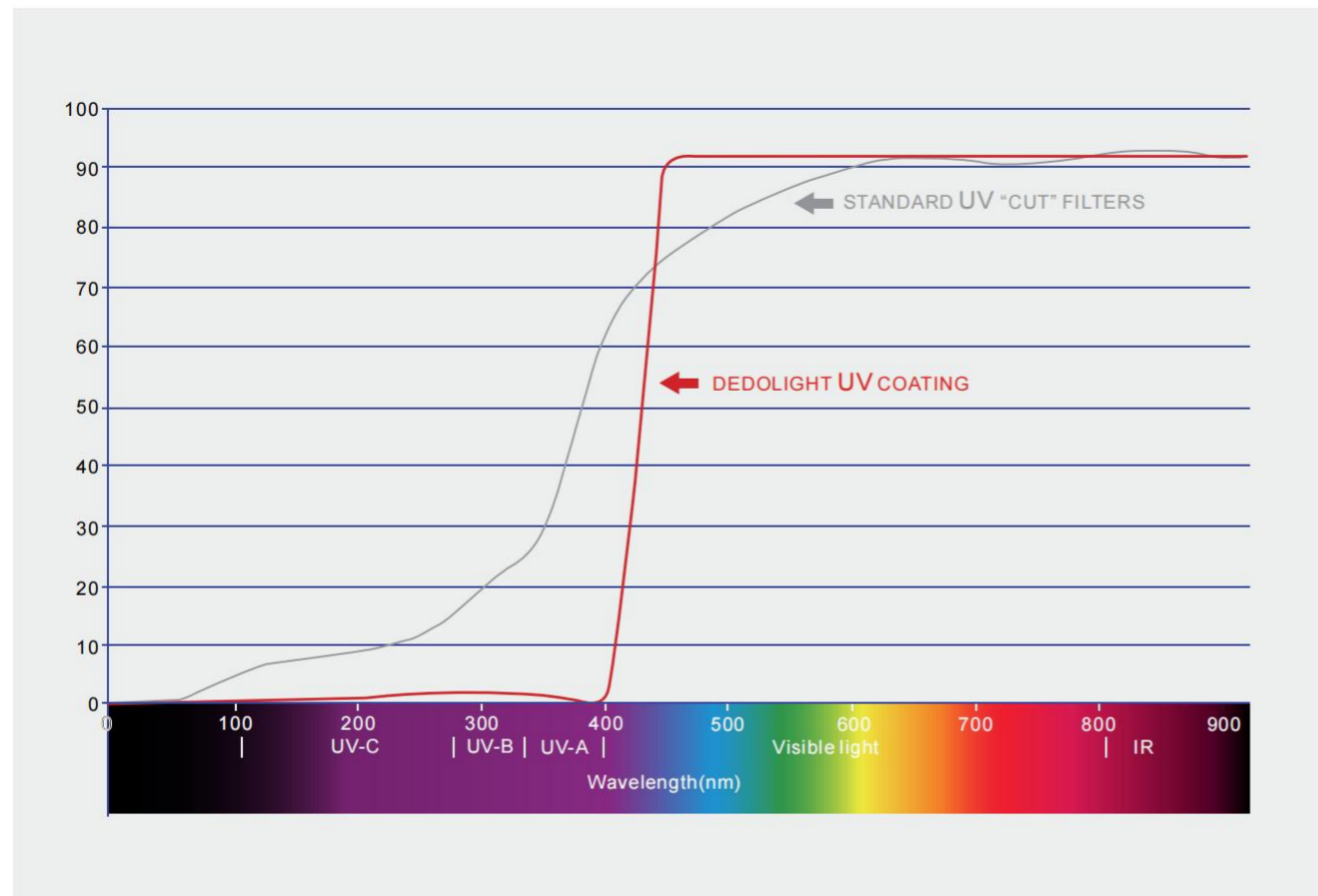


10W
 $\phi=65\text{mm}$

20W
 $\phi=75\text{mm}$

28W
 $\phi=85\text{mm}$





倍晟 King of Track Light BESUN UV Module

In the BESUN full-scene distributed module, the UV module belongs to level 3 optical. It can overlap with almost all modules to prevent from the trace amounts of UV light residue in LED luminaires and to protect the illuminated objects.

Valuable furniture, literature, calligraphy, paintings, silk, satin and other items are particularly sensitive to UV rays. Improper lighting will accelerate aging, yellowing, embrittlement, of such items. Adding a UV module in front of the light can reduce the occurrence of such incidents.



10W
φ=65mm

20W
φ=75mm

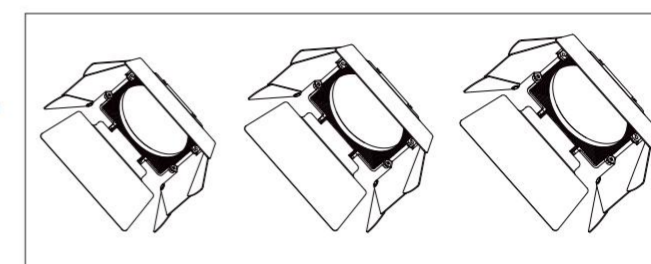
28W
φ=85mm



倍晟 King of Track Light BESUN Flaps Module

In the BESUN full-scene distributed module, the flaps module belongs to level 4 optical, which can be added at the end of the selection of other optical, depending on whether it is necessary or not. The correct use of this optics can get a relatively soft square or rectangle spot. It is generally used for more than 36° optical module.

BESUN's flaps has 8 flaps that can be freely adjusted to a more delicate spot, and more different spot shapes, so it adapts to a wider range.



10W
φ=65mm

20W
φ=75mm

28W
φ=85mm

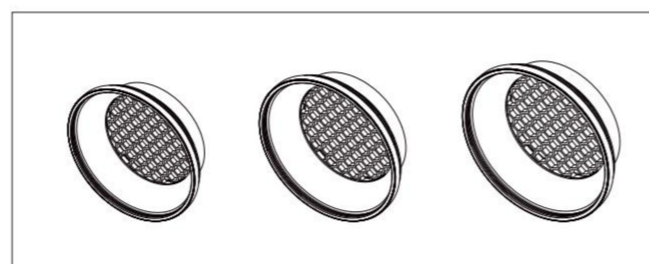




倍晟 King of Track Light **BESUN Anti-glare Module G**

In the BESUN full-scene distributed module, the anti-glare module G belongs to level 2 optical and can only be used with level 1 lighting optical modules to achieve anti-glare effect. Normal use can reduce the glare index to 9.

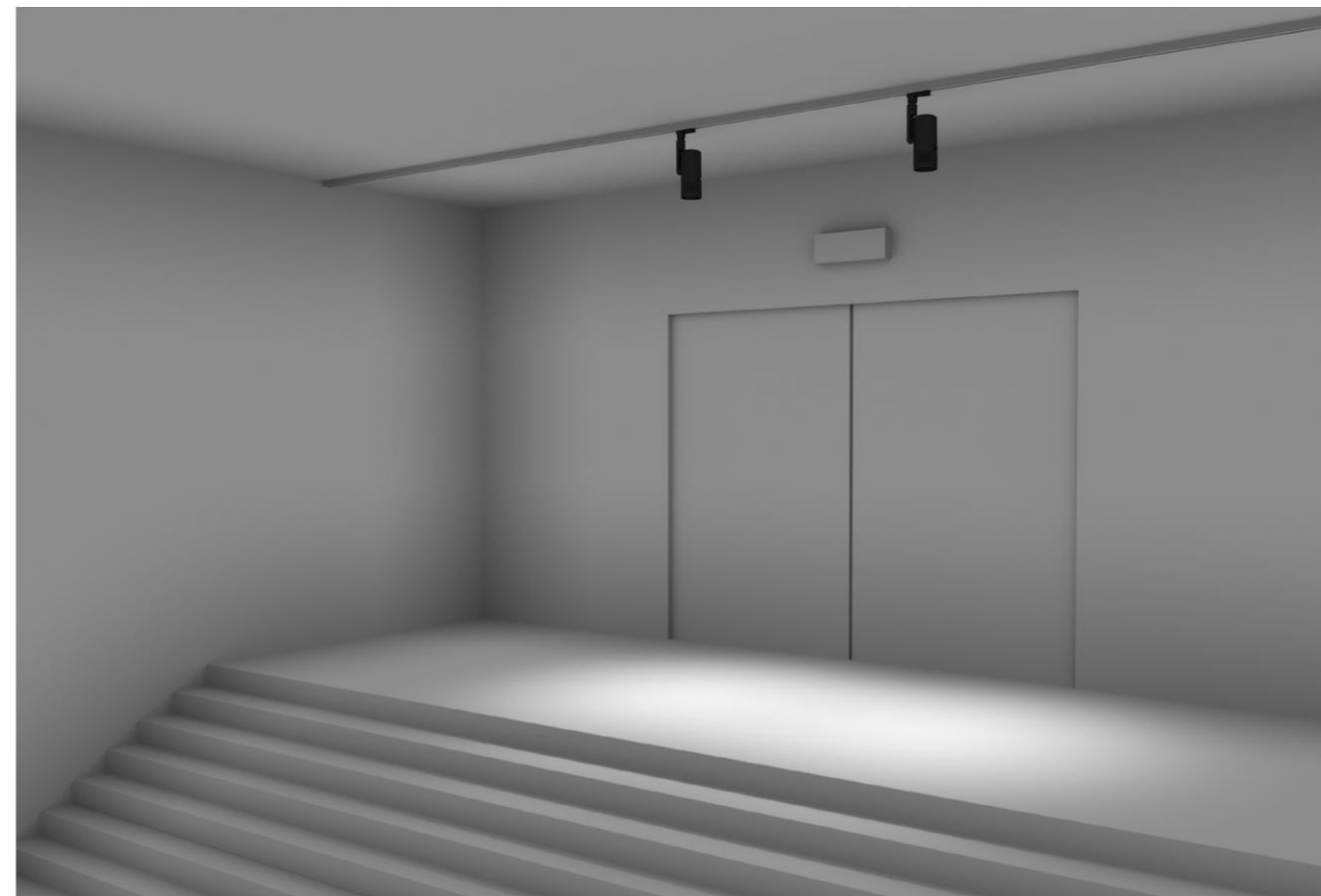
Anti-glare module G, belongs to the level 2 optical module, adding stretch module, soft light module, wall washing module and other optics in front of it will make the light-emitting surface migrate and lose the anti-glare effect; The only level 3 optical that can be equipped are UV filter and color filter two, and all level 4 optical can be installed.



10W
 $\phi=65\text{mm}$

20W
 $\phi=75\text{mm}$

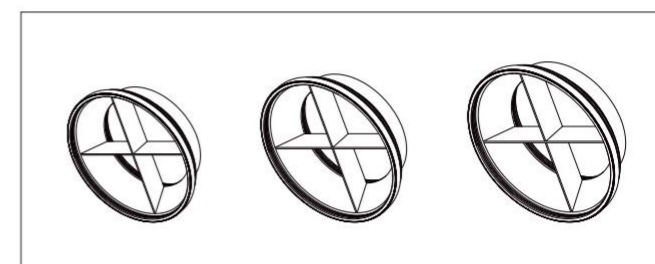
28W
 $\phi=85\text{mm}$



倍晟 King of Track Light **BESUN Anti-glare Module X**

In the BESUN full-scene distributed module, the anti-glare module X belongs to level 2 optical and can only be used with level 1 lighting optical modules to achieve anti-glare effect. Normal use can reduce the glare index to 11.

Anti-glare module X, belongs to the 2nd level optical module, adding stretch module, soft light module, wall washing module and other optics in front of it will make the light-emitting surface migrate and lose the anti-glare effect; The only level 3 optical that can be equipped are UV filter and color filter two, and all level 4 optical can be installed.



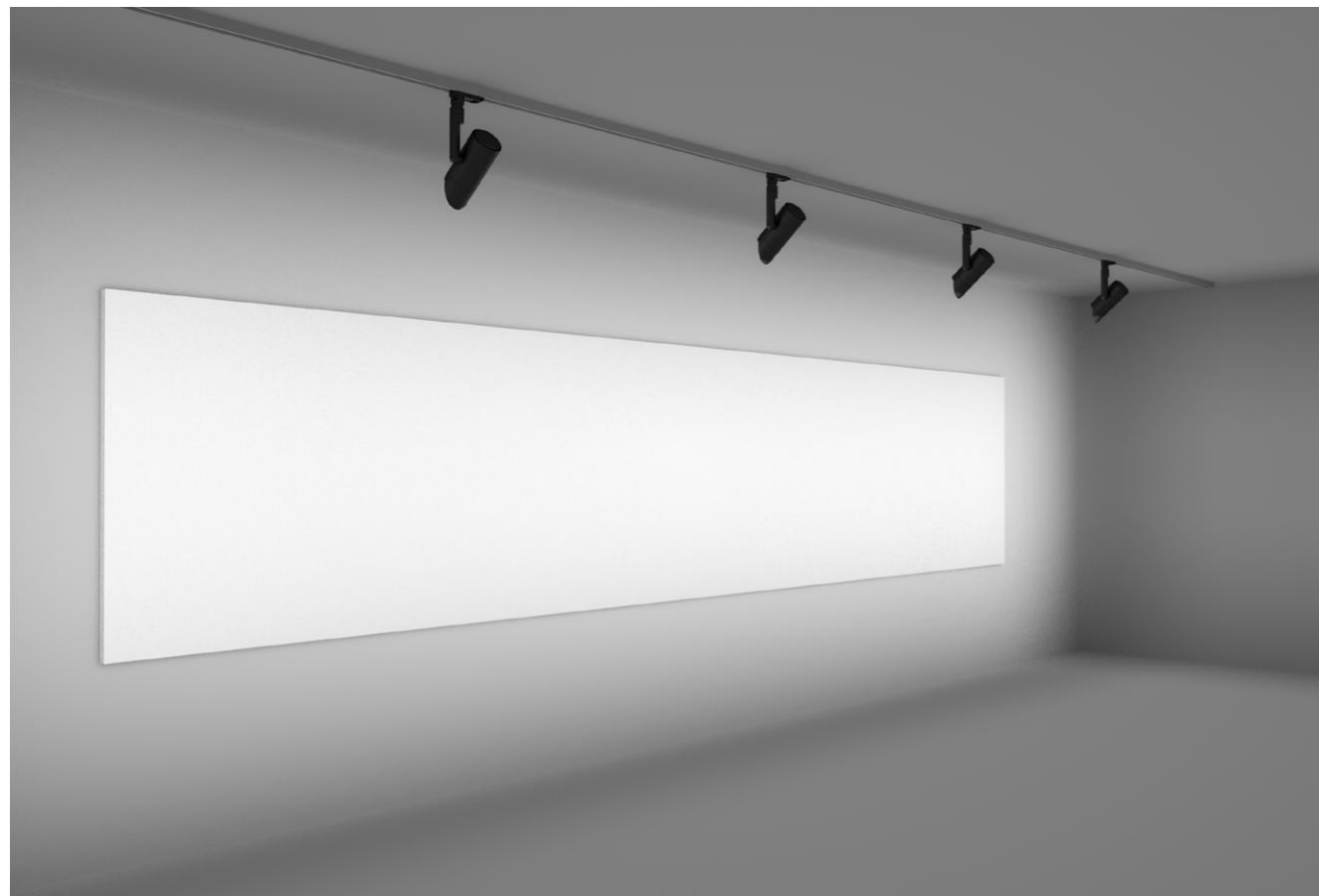
10W
 $\phi=65\text{mm}$

20W
 $\phi=75\text{mm}$

28W
 $\phi=85\text{mm}$

Its main function is the anti-glare function, mainly used in some forced to raise their heads, or involuntarily raised places, such as: elevator room, entrances, escalators, slopes, culverts, promenades and other places of lighting.

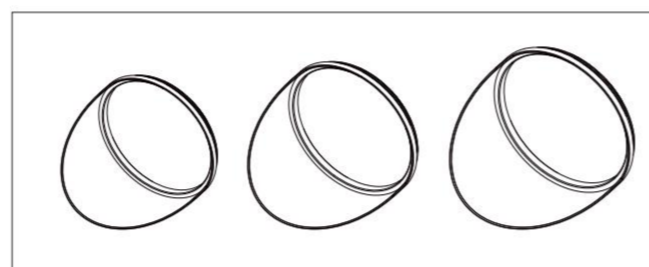




倍晟 King of Track Light **BESUN Spotlight Module C (Half Snoot)**

In the BESUN full-scene distributed module, the Spotlight Module C (Half Snoot) belongs to the level 4 optical, which can be considered after choosing other optics whether it is necessary to add this optic; The correct use of this optic can let the light within a specific angle get through, and the rest of the angle stray light will be blocked.

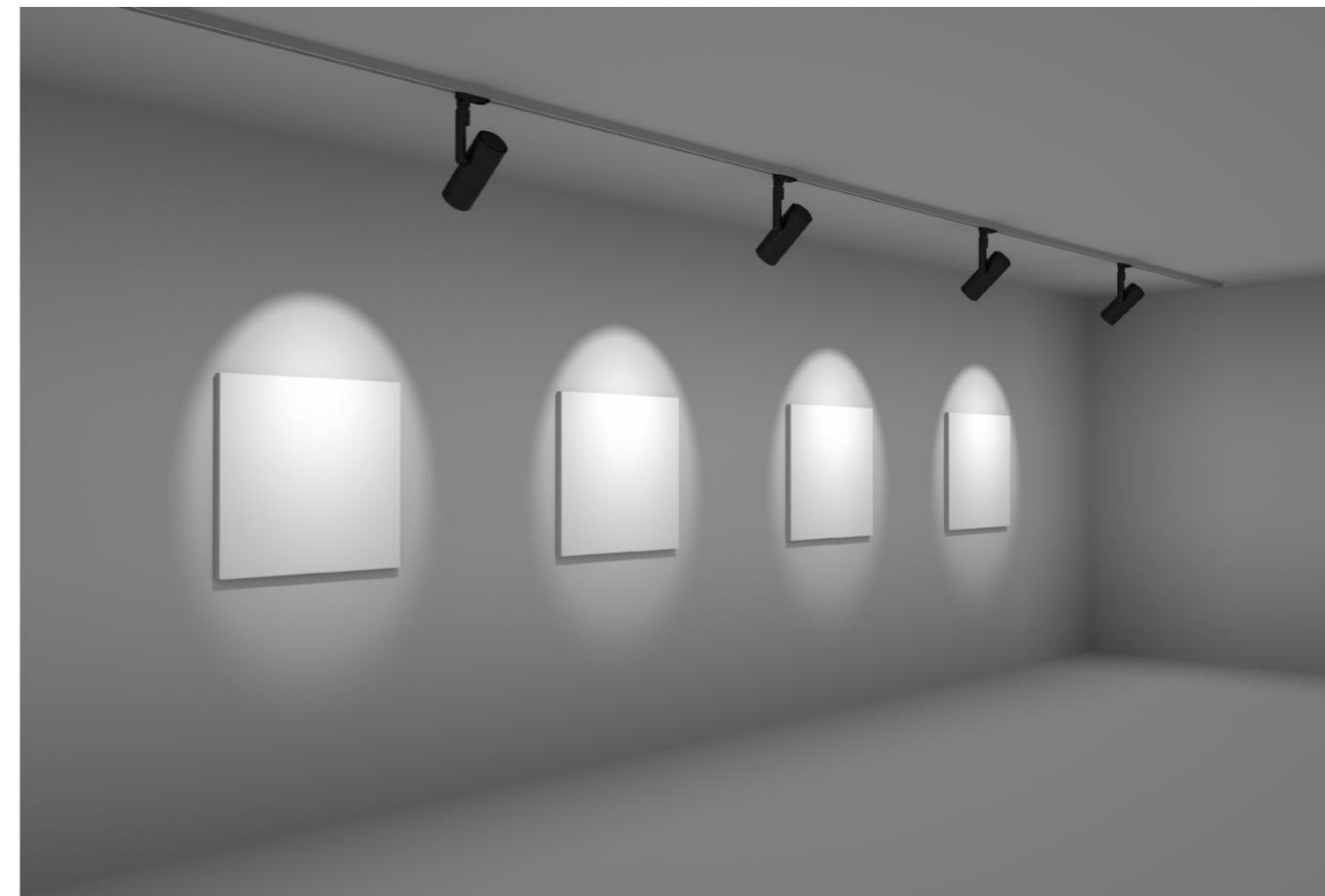
Spotlight Module C (Half Snoot), a semi-open blocking module, is generally used to match with track type wall washing module, which can not only obtain pure wall washing spots, but also block stray light outside the wall. For example, calligraphy and painting display lighting, wall washing lighting, signboard lighting, tile board display lighting, etc.



10W
 $\phi=65\text{mm}$

20W
 $\phi=75\text{mm}$

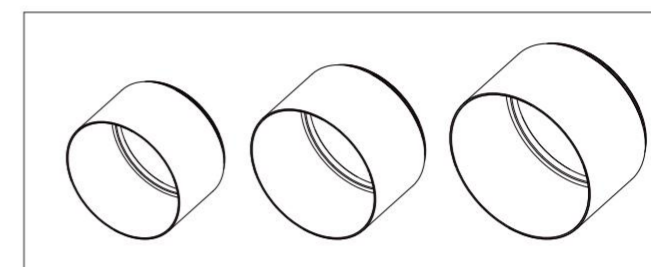
28W
 $\phi=85\text{mm}$



倍晟 King of Track Light **BESUN Spotlight Module O (Full Snoot)**

In the BESUN full-scene distributed module, the Spotlight Module O (Full Snoot) belongs to the level 4 optical, which can be considered after choosing other optics whether it is necessary to add this optic; The correct use of this optical module can make the light passing through the device appear purer, more concentrated, further reducing glare.

Spotlight Module O (Full Snoot), a fully enclosed light blocking module, is generally used to remove the stray light other than the main light spot, so that the light spot appears more focused and brighter, if used with a large angle KA module, the cutoff line will be very clear lighting effect..



10W
 $\phi=65\text{mm}$

20W
 $\phi=75\text{mm}$

28W
 $\phi=85\text{mm}$

