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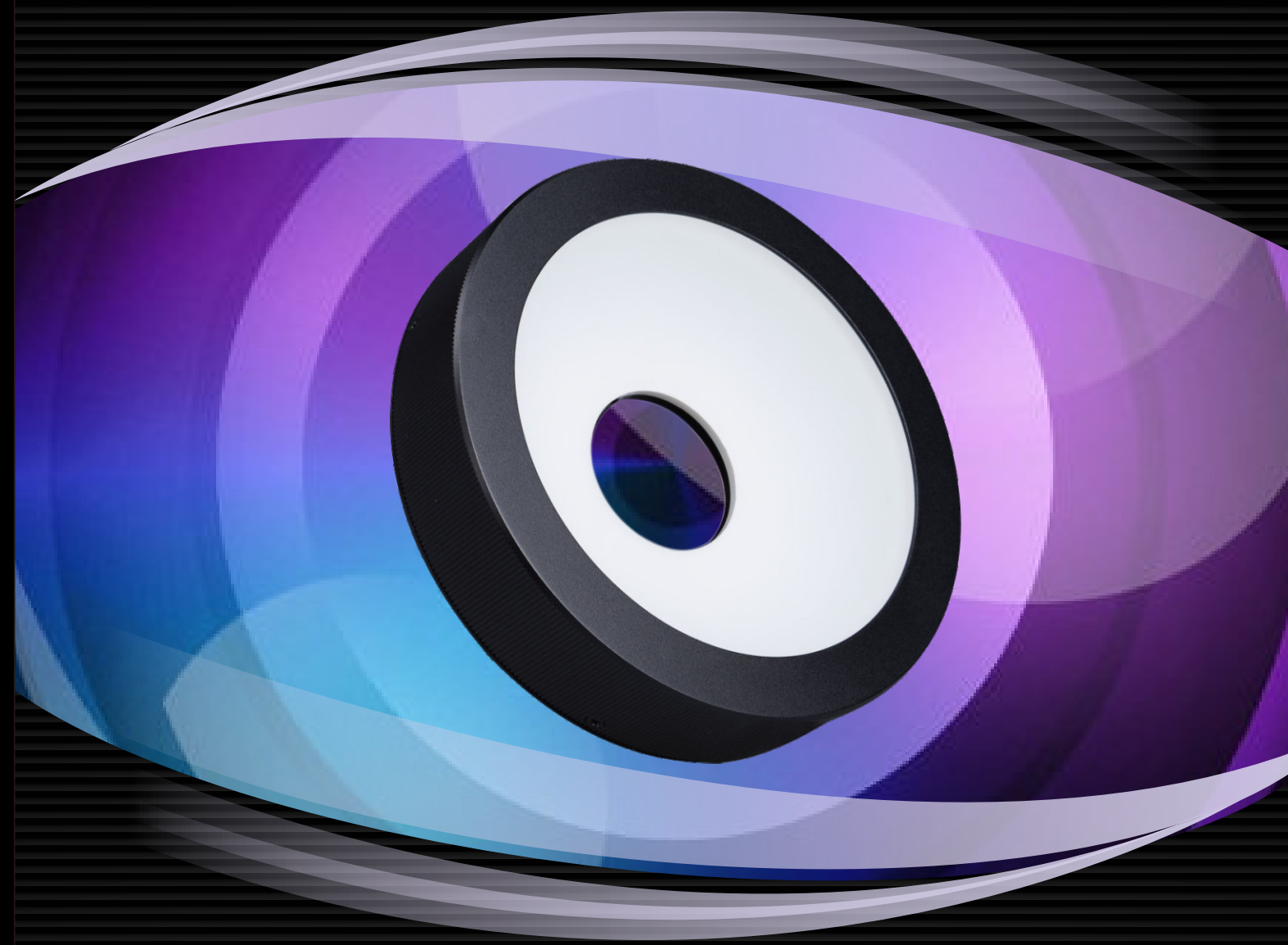
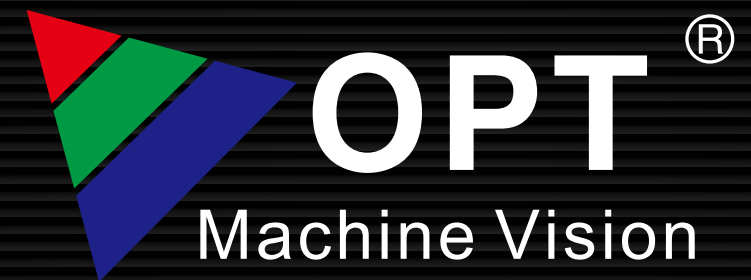
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2014~2015

World Leading LED Machine Vision Light Supplier

Work Attitude for OPT People

Focus on Dealing with One Thing Successfully in Our Life



OPT is founded 2005, following its continuous growing, OPT is developed one of the leading enterprise in machine vision industry. Our main products are included LED lights for machine vision application, lens, and other vision solution components.

OPT is very professional LED lights provider, we are focused on LED light and vision components research and production, we are always taking the challenge and making innovation. By the hard works of OPTers, we have enlarged our standard series into 38 types, besides we have more than 100,000 customized lights available for support.

Current now, OPT has 320 employees, including 23 engineers for customized lights and other vision component design, 50 software programmers for vision system research and develop, 48 application engineers for software application support, 25 engineers for vision components application and support. 35 sales engineers for the sales of worldwide customers

OPT products have already been used and supported more than 20 countries and regions and more than 10000 customers satisfied our service and support, including world 500 fortune companies, they are thought OPT is their globe trust strategy partner

**OPT is Focused on Globe,
We Never Stop Our Steps to Make Progress
OPT Target is Making OPT Brand World Famous and Effective**

OPT History

- Apr. 2014 OPT TAIWAN Office Established
- Mar. 2014 OPT brand honored “GD Famous Business Brand”
- Dec. 2013 OPT Current Automatic Test Controller Launched and Win Copyright
- Nov. 2013 OPT honored “GD Trust Business Enterprises”
- Sep. 2013 OPT certificated ISO9001 2008 successfully
- Apr. 2013 OPT held seminar in Shenzhen successfully
- Jun. 2012 Southeast China office established
- May 2012 OPT HK established
- Mar.2012 OPT launched waterproof light for food application
- Mar. 2012 OPT as OPTART exclusive distributor in China
- Jun.2011 OPT as AIA member
- May 2011 OPT products enlarged to 25 types
- Dec. 2010 OPT grew the biggest LED light provider in China with 100% sales growing
- Oct. 2010 OPT joined Vision Stuttgart as the only Chinese lighting manufacturer to world marketing
- Apr. 2010 OPT honored “DG patent raised company”
- Dec. 2009 OPT Overseas Sales Department established
- Nov. 2009 OPT honored as “National Hi-tech Enterprise”
- Jun. 2008 OPT applied national innovation fund
- May 2008 OPT products passed CE and RoHs certification
- Oct. 2007 OPT honored “GD Hi-tech Enterprise”
- Mar. 2007 OPT moved to Yifeng Building
- Mar. 2006 OPT as its brand name
- Oct. 2005 OPT established

Culture

OPT Goal

OPT is providing its products to worldwide sincerely and heartly so that we can make contribution for society . We also hope our employees can make progress together with company and enjoy the future big success



Talent Idea

OPT think the employees are the biggest treasure of company, so we always attractive talents and offer the best opportunities to help employees find their really potential abilities

OPT always insist the mutual benefit with employees, and great the best environment and make the progress together with employees

Cultural Activies

OPT create the good working, learning and life environment for employees, and make every employee feel that they are live in a big OPT family like home. In order to enrich employees’s life, we set gym room, table tennis, music room for entertainment. We also organize basketball and badminton competition for employees every week so that the employees can do some sports and keep health and stronger

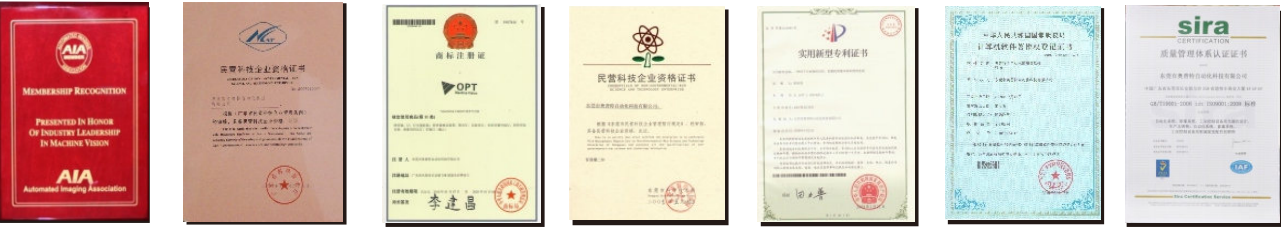


OPT Honors



Certification

ISO9001 2008 Quality System Certificate / National High-tech Enterprise / Famous Trademark in Guangdong Province / Private Technology Enterprise in Guangdong Province / Dongguan Patent Cultivate Enterprise / AIA Membership / CMVU Membership / Membership of Dongguan Science and Technology Association / Products CE&RoHS Compliant / More than 50 Patents / A Number of Computer software copyright / Several National Innovation Fund project / Over 30 Networks Worldwide
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Quality

More professional and comprehensive testing procedure is being conducted, ensuring all products' quality and stability.

Uniformity test

lighting system uniformity is perfect. Under certain power, using intensity test apparatus to test different parts of the illumination surface, and make sure the different parts intensity is the same

Vibration test

Vibration test is to make sure product keep long life span Using 50Hz vibration frequency to shake the product up and down and right and left in 30mins

High and low temperature thermal shock test

High and low temperature test is to make sure the controller work good under the high and low temperature exchange situation. Test 2 hours in the 70 degree, and 2 hours in the -20 degree and the controller is working continuos during the test.

Thermal shock test is to make sure the light can work in a good condition in the cool and hot temperature exchange. Using the max power to test 5 times

Light intensity test

Intensity test is to get the intensity value. Under certain WD, using apparatus to test the light intensity

Bending test

Bend testing is to make sure the cable not easy damaged in the application of moving. cable can burden 200g heavy and shaking more than 2000 times from the burden part to the 30cm from the cable output and the bend test machine set shaking 90 degree and 40 times/min to test cable electrified

High temperature aging test

High temperature aging test is to make sure controller with good stability and heat transfer Under full burden situation, testing the controller performance after 72 hours aging test, and using temperature measure apparatus to test the whole housing temperature and control it within inquired standard

Pulling test

Pulling test is to make sure the connector is stable. Connect the controller connector and use 30N1s/time to test 25 times and use 25N1S/times from 5 direction to pull the cable of light

Trigger test

Trigger test is to make the trigger function working good. Connect the light, and test the light can be triggered

Stability test

Stable test is to make sure light intensity not effect when it is working in the high temperature for long time Turn on the light with controller and put it into the 70 degree environment temperature for continuous working and test the trigger function of controller is ok or not, and light is not flash by itself and light intensity decrease is not over 10%

Stress test

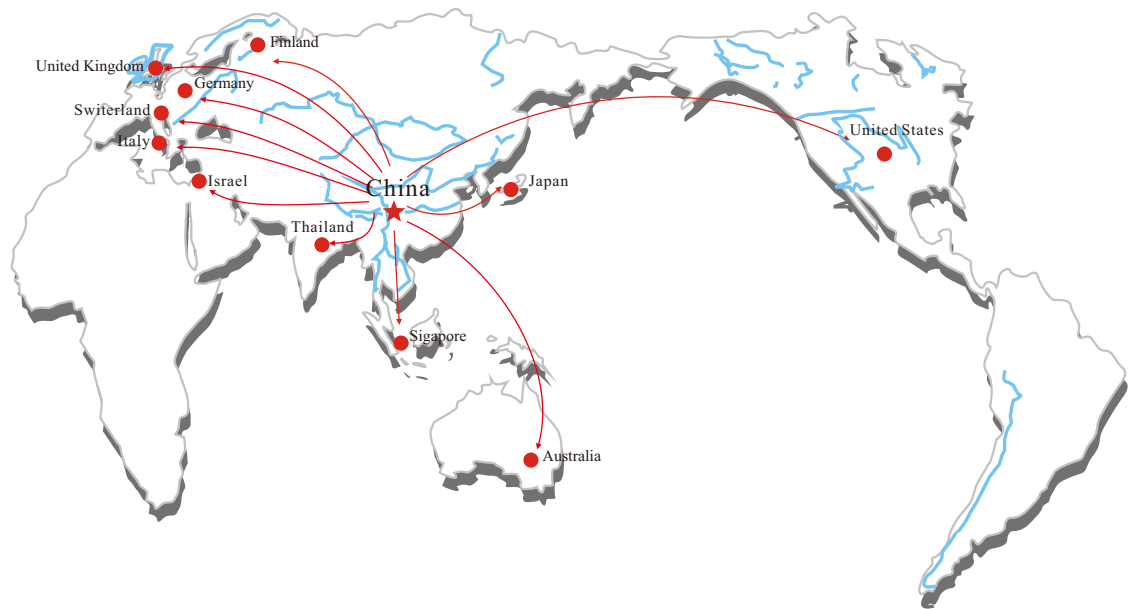
Stress test is to make sure controller housing is fit for IEC61010-1 standard. Controller burden 250N+/-10N stress and test 5mins (condition: contact area is 30mm diameter, energy level is 5J, test ball diameter is 50mm and weight 500+/-25g)

Service

Domestic service network



Global service network



Partnership

- More than 10,000 customers' trust and support
- Over 300,000 products have been used and proved our quality
- Above data will be constantly refreshed……

Key customer

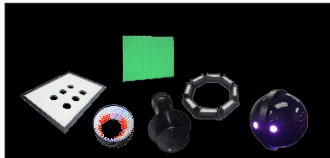


Partners



OPT Product Selection Guide

Customized Light



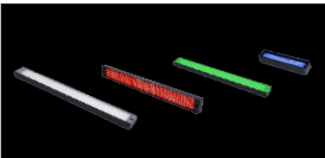
Customized Light-----P104

Ring Light



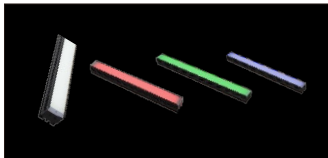
OPT -RI series-----P27

Bar Light



OPT -LI series-----P31

High Uniformity Bar Light



OPT -LIT series-----P34

Spot Light



OPT -PI series-----P61

High Intensity Spot



OPT-PIG series-----P63

High Uniformity Spot Light



OPT-PIT series-----P64

Collimated Spot Light



OPT-PIPL series-----P65

High Power Bar Light



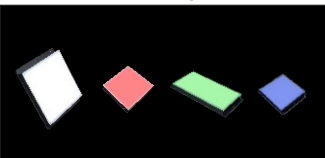
OPT-LIG series-----P36

Combined Bar Light



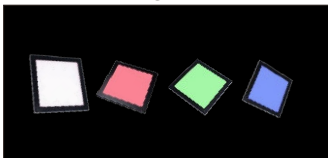
OPT -LIM series-----P38

Bottom Back Light



OPT -FL series-----P40

Side Back Light



OPT -FLC series-----P43

Fiber Light



OPT -QG series-----P66

Half Ring Light



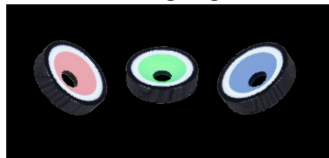
OPT-RIC series-----P67

Low Angle Ring Light



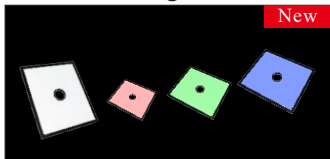
OPT -RIF series-----P69

Flat Dome Ring Light



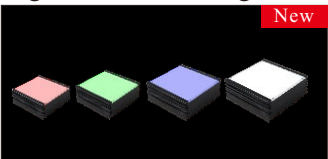
OPT -RIE series-----P71

Front Back Light



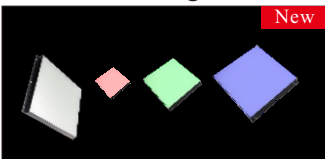
OPT-FLK series-----P45

High Power Back Light



OPT-FLG series-----P47

Parallel Back Light



OPT -FLP series-----P49

Coaxial Light



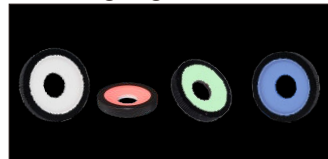
OPT -CO series-----P51

Dome Ring Light



OPT -RIW series-----P73

Flat Ring Light



OPT -RIU series-----P75

Low Angle Square Light



OPT-RIH series-----P77

Shadowless Ring Light



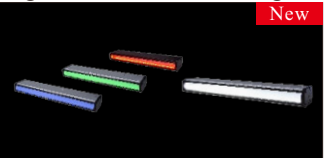
OPT-RIP series-----P79

Dome Light



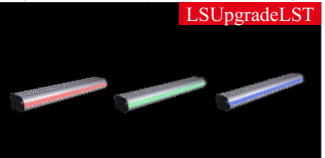
OPT -RID series-----P53

High Power Line Scan Light



OPT-LSG series-----P55

High Uniformity Line Scan Light



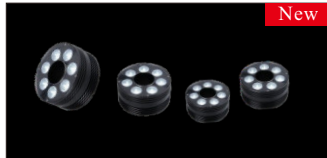
OPT-LST series-----P57

Coaxial Line Light



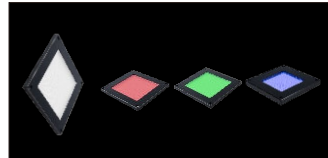
OPT -LSC series-----P59

High Power Ring Light



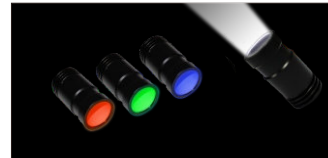
OPT-RIG series-----P81

Flat Dome Light



OPT-FC series-----P83

Parallel Spot Light



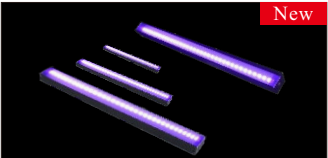
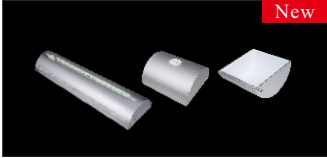
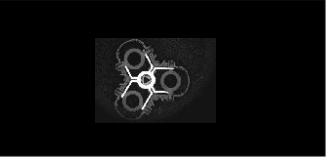
OPT-PL series-----P85

Collimated Back Light



OPT-FP series-----P87

OPT Product Selection Guide

Ultraviolet Light  OPT-UV series-----P92	High Power UV Light New  OPT-UVG series-----P95	AOI Light  OPT-RIA series-----P97	IR Light  OPT-IR series-----P89
Vault Light New  OPT-LIU series-----P99	Waterproof Light New  Waterproof light-----P101	VA Light  OPT-VA series-----P103	Applications  Applications-----P110
Mini Controller  OPT-APM0524B-2-----P123	Voltage Analogue Controller  OPT-AP1024F-4-----P124	Medium Power Analogue voltage Power Supply  OPT-APA3024-2-----P125	High Power Analog Current Power Supply  OPT-APA6024-2-----P125
Analog Controller For Spot Light  OPT-APA0405F-4-----P126	Voltage Digital Controller  OPT-DP1024F-4-----P127	Current Auto Test Digital Controller  OPT-DPA1024C-4-----P128	Current Digital Controller for Spot Light  OPT-DPA0405B-4-----P129
High Power digital current Power supply  OPT-DPA6024-2-----P130	Second Generation Current Digital Controller  OPT-DPA6024B-2-----P131	OPT Lens  OPT Lens-----P157	Accessories / Lab Stand  Accessories-----P178 Prism / diffusion plate / filter / polaroid/ Lab Stand

The function of light source

The function of light source in machine vision are as follows:

1. Illuminate the object and improve the brightness
2. Get good result for image processing
3. Avoid the interference of ambient light, to ensure the stability of the image
4. Used as measuring tool or object of reference

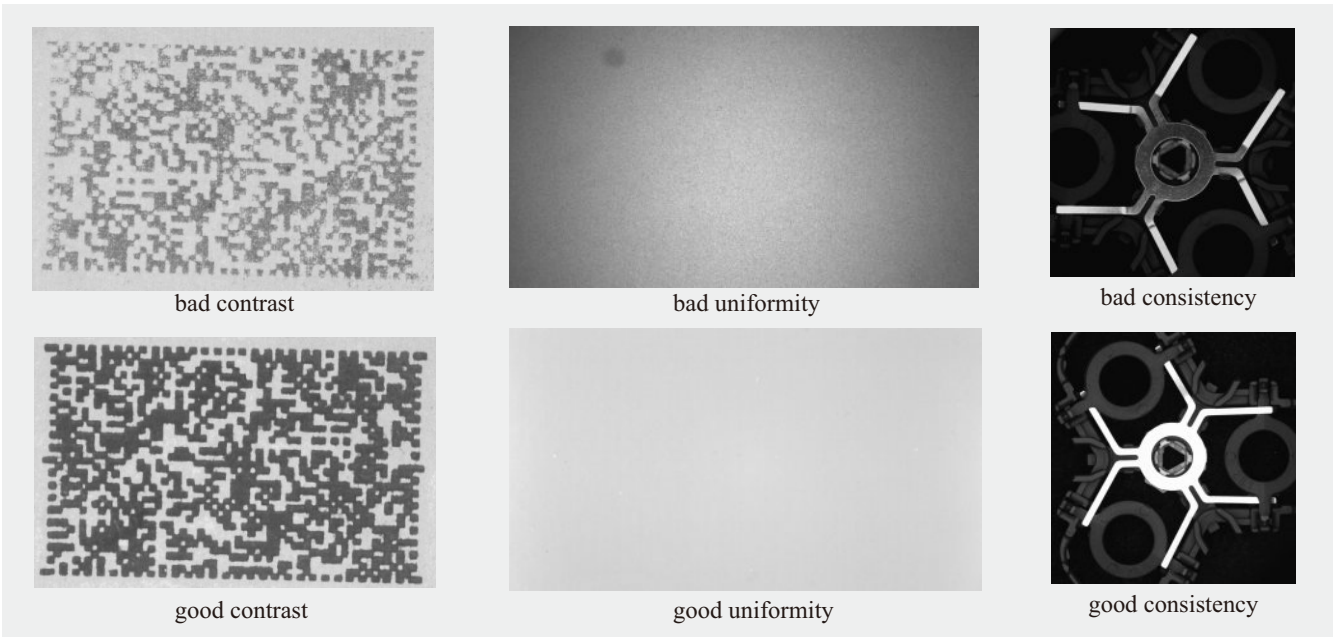
Light source is one of the most crucial part in machine vision, it greatly affects the whole system. A good lighting design can get good image, improve the resolution of the system and simplify the software operation. Otherwise, a lot of problems will occur.

A suitable light source can separate the object information from background well in the image, making image processing easier and improving the accuracy and reliability of the system.



A good image should have the following conditions

1. The contrast of object and background is very clear
2. The background is uniform and easy for image processing
3. The color information is true, moderate brightness and exposure



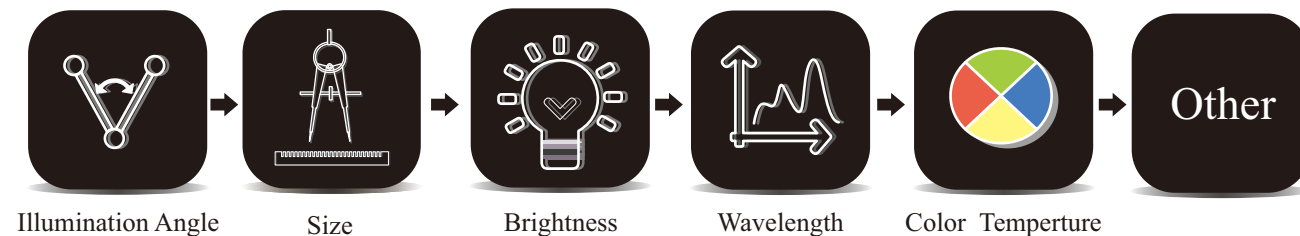
The upper images are relatively unideal, because bad contrast makes it hard to separate the object information from background, bad uniformity leads much difficulty to find a global gray differentiation criterion, and bad consistency results in incomplete object extraction. While the lower images are easy for processing and stable as well.

In order to meet customer's inquiry,
OPT has already provided 100,000 customize design products

OPT is the world leading LED machine vision with the strongest customize design ability to satisfy customer's different application. We can help to provide the customize design drawing within 3 working days as we have very strong design engineer team.

In the application, a vision system is very hard to meet customer's demand, so if we can optimize the light, it can achieve ideal image result, so it is very important to have professional lighting solution engineers.

Customize design processing



Customized procedure

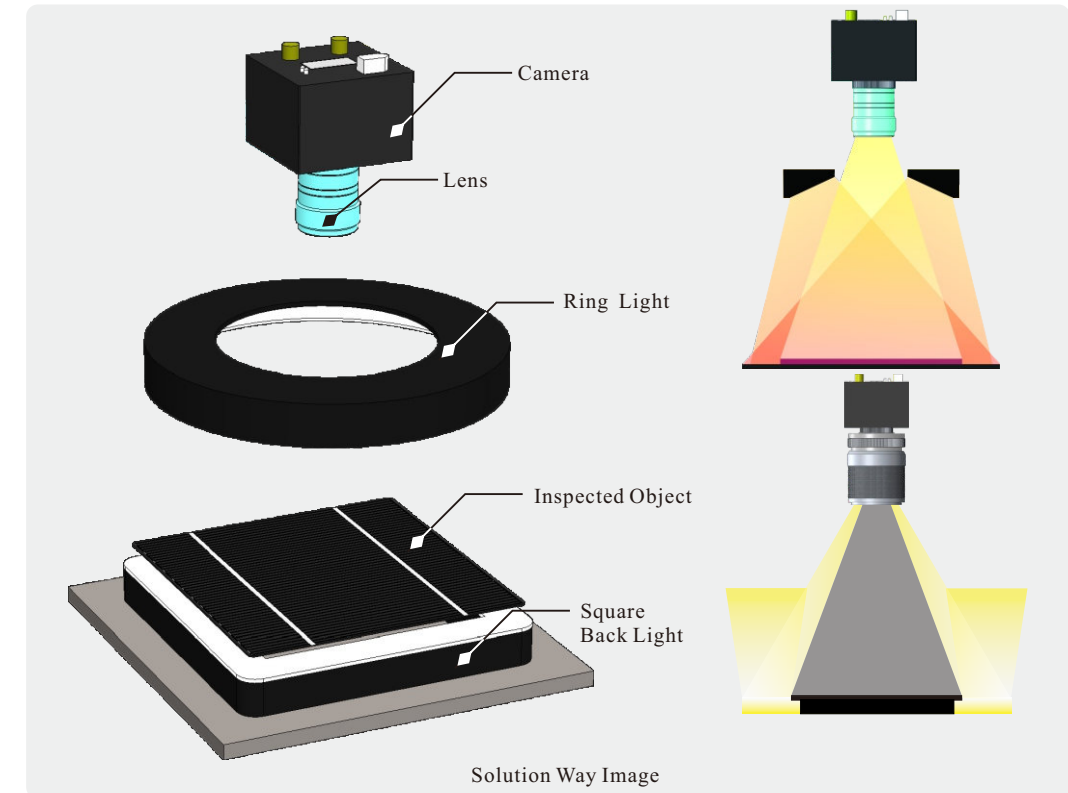


Customized Light Example

Example 1: Illuminator for solar battery inspection

Application Industry:

Carving objects (for example carving on plastic, lumber, stone) polished house of electronic objects, solar battery, kinds of coins and other diffuse reflection objects, It mainly focus on the following inspection of these objects : surface inspection , size measurement ,controller board inspection and detection.



Main Inspection Content: Size measurement, surface scratch inspection and circuit broken inspection

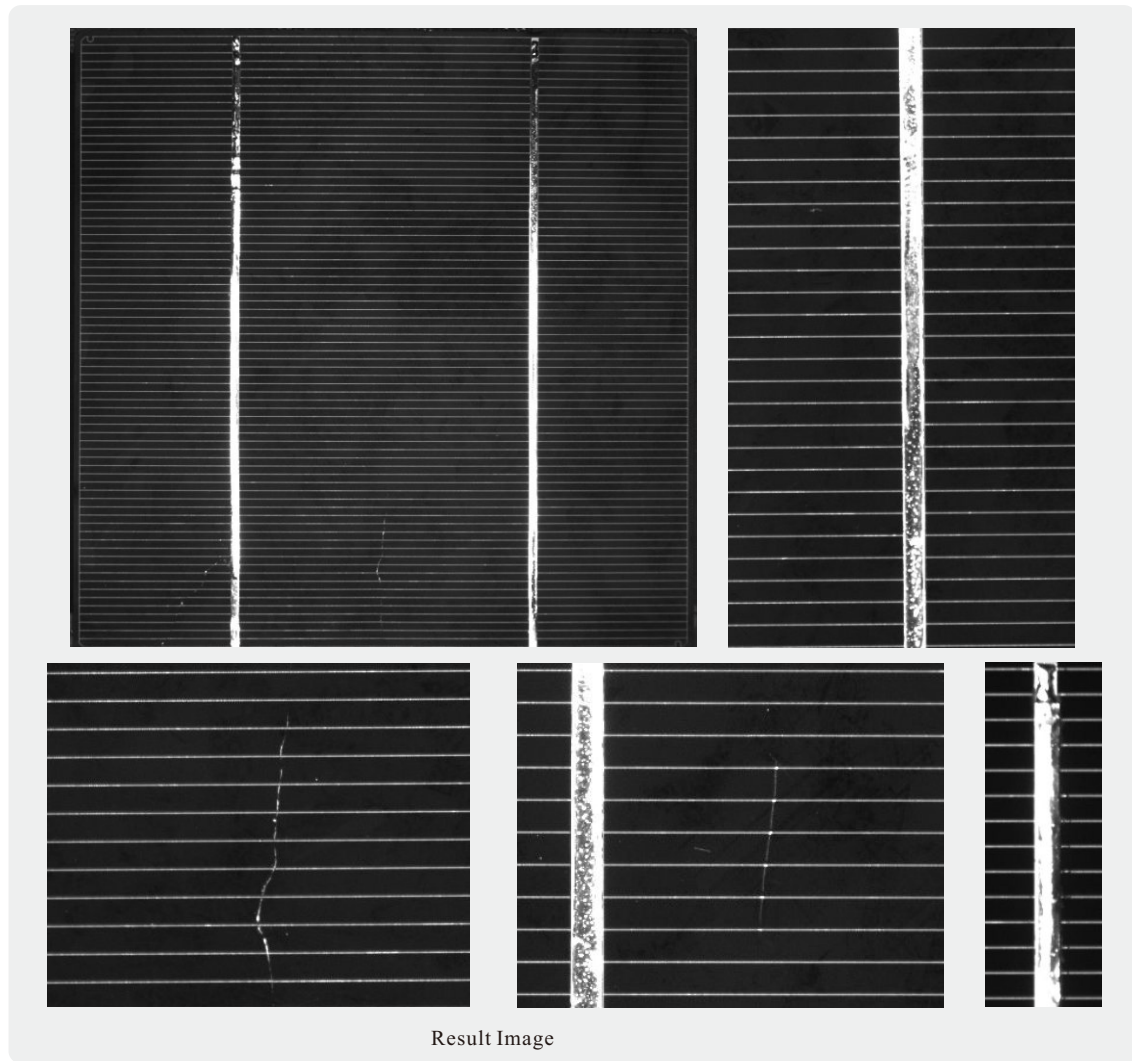
The basic pieces of solar battery is made by signal silicon or multi silicon, so the material is easy broken, even light hit or squash will cause damage, so qualified item should have perfect surface and circuit. For the important surface part, even a little defect will cause the whole item NG, so high accuracy surface inspection and size measurement is very important in the whole system, here we advise 5MP camera and lens. Another hard point is that the surface of the object is diffuse reflection, so the special angle ring light added diffuser can get very uniformity image, the whole size measure used the customized back light can get very clear outline.

According to the application inquiry, the customized light of our company should include below points:

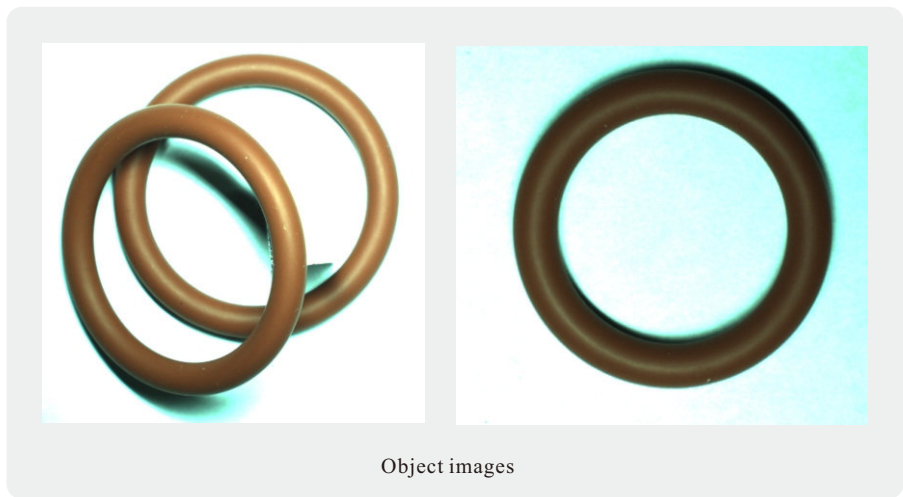
- 1.The speed and stability inquired, under the short exposure time of camera, the brightness should be strong enough
- 2.The illumination should be the rather same uniform in every direction, so that the camera could acquire a uniform and clear image, with obvious comparison and no bright spot & dazzle phenomena.
- 3.Screw installation hole in the back of light.
- 4.The working environment of light is 24 hours continuously lighting, good heat transferred system, and good brightness under long time working condition, The brightness decreases is very small in the whole year, and no special brightness adjustment needed in the whole one year.
- 5.Power supply has the strobe function, with this function, the power supply could make sure the light of long life expectancy, which is prolonged 4 or 5 times than using. If much longer life expectancy required, could choose our another power supply item-strobe unit.

The image of such light:

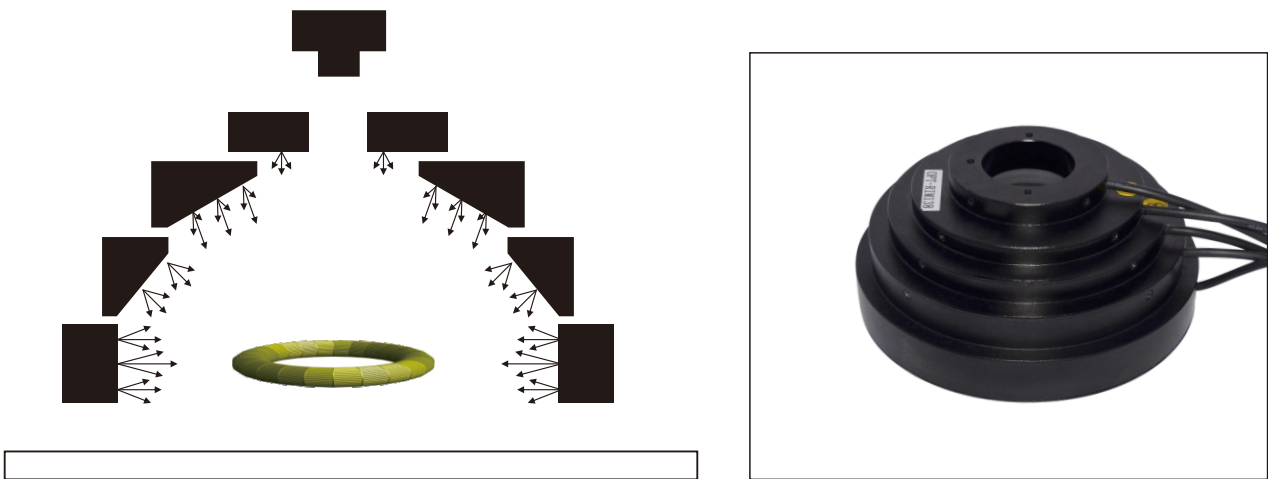




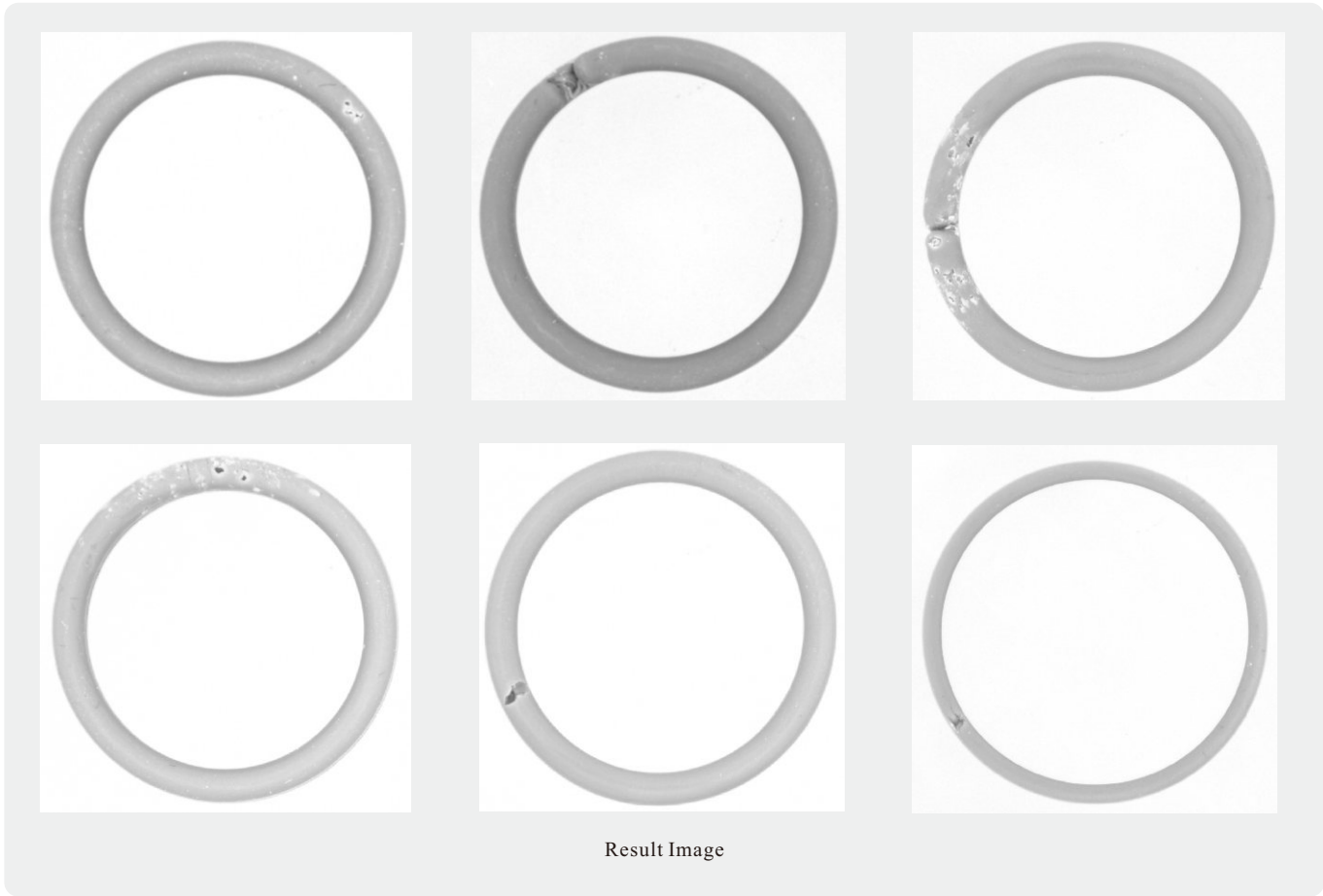
Example 2: Illuminator for O-Ring defects inspection



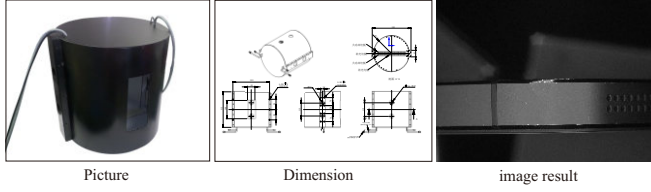
As above images, the object is O-Ring and a column shape, so the camera direction and object is in the same coaxial side. Under this situation, the angle between lens and object is from 0 degree to 90 degree. Whatever direction illuminated, there will be a reflective direction facing the lens, and this part area is very reflective, the special hard part is that the reflective part is direct way of lens, so there just has one part reflective lighting back to lens, while the reflective part can not get image. At this moment, If using the standard illuminator, we may only get the one part image or nonuniform image, just as the above right image, which is impossible for the system recognition.



- According to the project requirement, the light should meet below points:
- 1.This customized light has different layers and different angle, each layer can be adjusted individually on brightness and almost the angle be covered from low level to high level
 - 2.More horizon the level be, the lower brightness could get. But if more vertical the level be, the brightness could be higher. Through this way uniformity in different level, we could ensure the uniform image in different angle level.
 - 3.The high brightness could meet high speed line inspection demands.
 - 4.This light has the ability to resist the shake, which happening under the high speed moving situation on the turntable.
 - 5.This light has long life-expectancy feature because this inspection machine require all the components highly qualified, so must make sure each components has the high quality

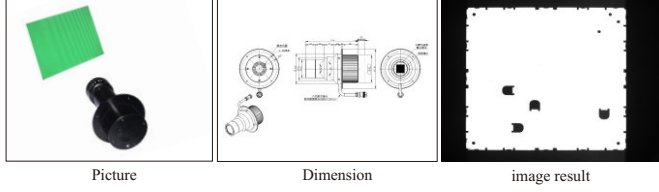


High Power Column Light



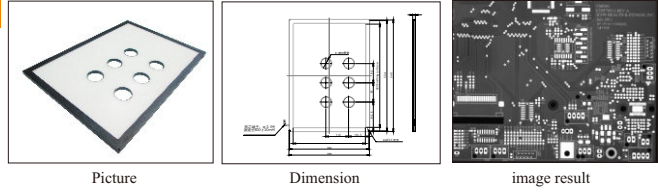
Item No: OPT-LIU321-W
Feature: Using column structure, and print reflective material inside, this can make sure inside very uniformity
Application: Used for curved or angled metal surface inspection

Pattern Light Patent product



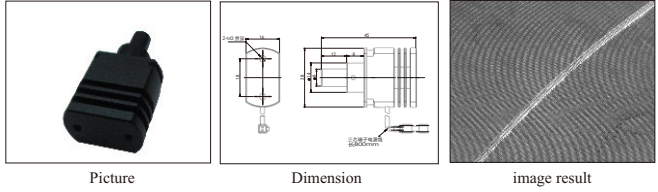
Item No: OPT-WG130D-G
Feature: Using high power LED and glass with table. The light came out is very even and uniformity and the FOV can be adjusted
Application: Used for some big FOV reflective surface inspection

Side Back Light



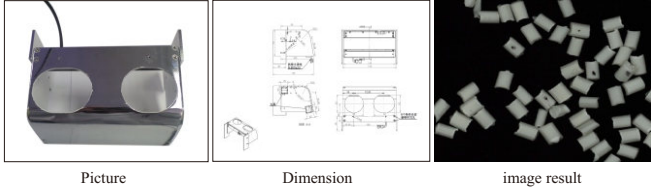
Item No: OPT-FLK540390-W
Feature: Used for big FOV with high resolution inspection. Open several holes for several camera to achieve one light with several cameras application, this can help to save the cost.
Application: Used for big PCB inspection, printing quality inspection, and account application

Special Spot Light



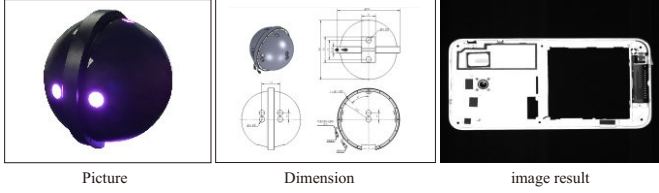
Item No: OPT-PI0803-IR
Feature: small size with cylinder structure design, it is very compact and save the space
Application: Used for mark location, chips inspection, surface scratch inspection

Bar Light Group With House



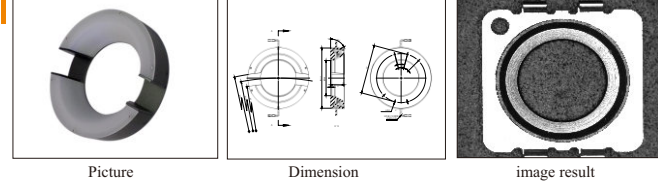
Item No: OPT-LIM16575-W
Feature: High power bar light group covered a housing to reduce the effect of environment light.
Application: Used in production to check foreign parts

Dome Light Combined



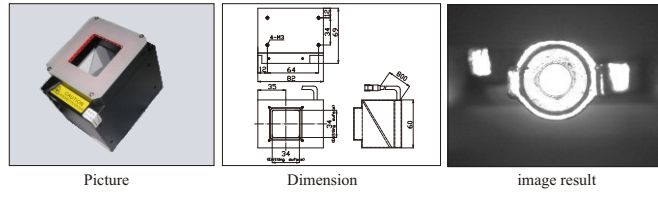
Item No: OPT-RID350-RB
Feature: Ball structure, 360 degree reflective, very uniformity
Application: Used for curve and dent surface inspection

Ring Light



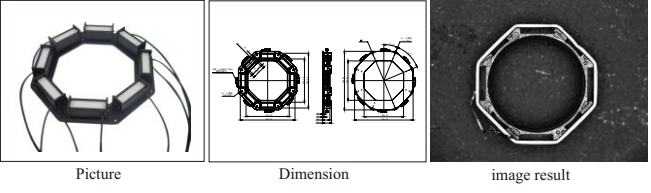
Item No: OPT-RI11360-G
Feature: Gap cut for on line moving inspection, two half ring covered for making even illumination.
Application: Used for small part side line inspection

Coaxial Light Combined Ring Light Patent Product



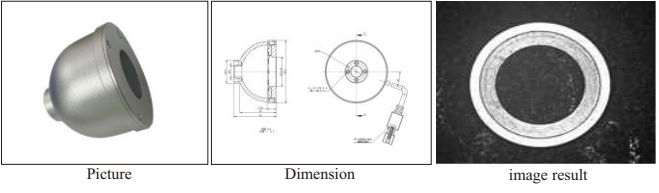
Item No: OPT-CORIR60
Feature: Coaxial light combined ring light
Application: Used for high speed on line inspection

Bar Light Combined



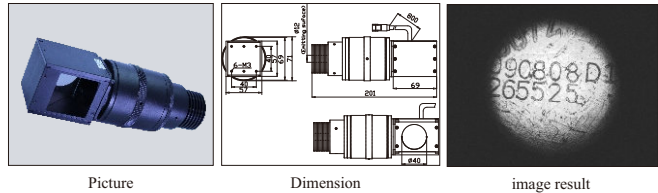
Item No: OPT-LIM75D-W
Feature: Multi bar Lights combined together, using special angle. Each pair light controlled individually. It is very good for the defect with multi direction inspection
Application: Reflective surface with defect with different direction inspection

Special Dome Light



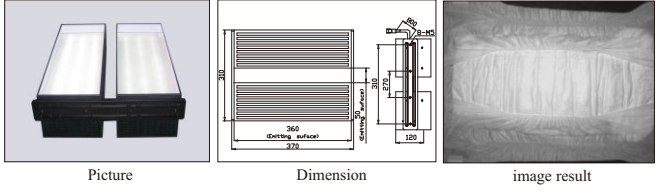
Item No: OPT-RID52-W
Feature: Small dome light structure, aluminum material heat transfer, high power LED, high uniformity diffuser inside, reduce the effect uneven surface inspection
Application: small FOV, high intensity for measurement, and electronic product inspection

Collimated Coaxial Light



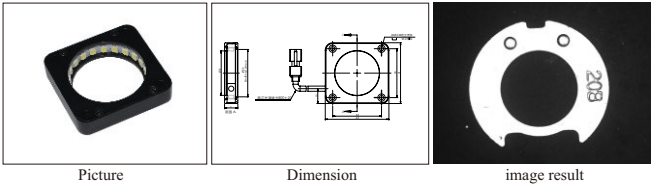
Item No: OPT-LLJ71
Feature: The light came out parallel, even and uniformity, it is very good for dent surface
Application: Used for OCR inspection, beer bottle cap printed code inspection, the surface stretch of metal, glass, chips

High Power Bar Light



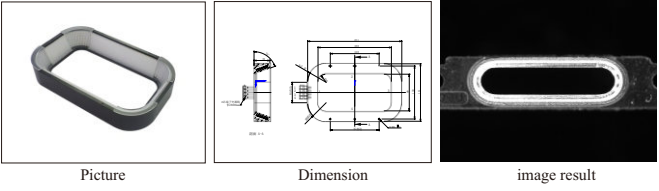
Item No: OPT-LID370H-W
Feature: Using 2 high power bar light, very bright and uniformity, big FOV illumination, angle can be adjusted. Back side with fan system and heat transfer plate to make sure the whole light system with good heat transfer
Application: Used for big object inspection like paper and plastic products surface inspection

Ring Light



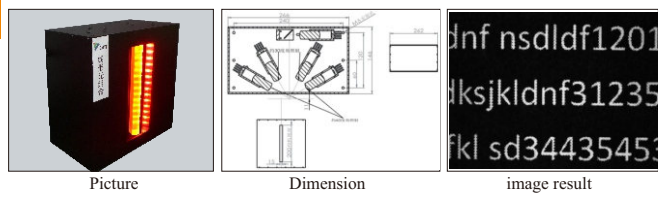
Item No: OPT-RI4390-W
Feature: high intensity low angle ring light. Using high power SMD LED, very good uniformity and brightness, small size for good installation
Application: It is very good for small part inspection

Four Side Square Light



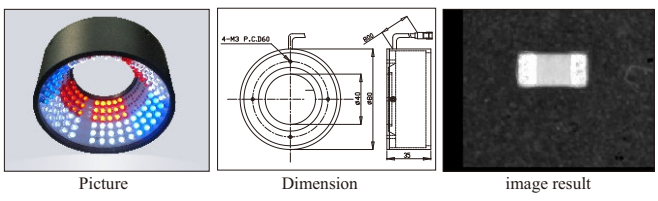
Item No: OPT-LIH231141-W
Feature: Cycle structure with uniformity diffuser, 4 angle sides and 4 sides controlled individually
Application: Used for cycle or square part measurement or surface inspection

Line Scan Light Combined



Feature: 5 high brightness line scan light combined, intensity is more than 200,000 lux
Application: Used for PCB and printing inspection

Multi Colors Ring Light



Item No: OPT-RI8060-10
Feature: High intensity LED array with high brightness; Different color combinations, better highlights the 3D information; Divided 10 Channels to control individually.
Application: Special light for capacitor, resistor surface inspection.

Ring Light OPT-RI series

Multi-angles available for ring light to get 3D information.



Special heat transferring design
High-density LED arrays with the intensity illumination

using gap design to enlarge the size of heat transfer area so that LED light has long life time



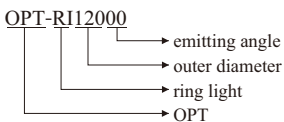
Diffuser is available for more uniform illumination



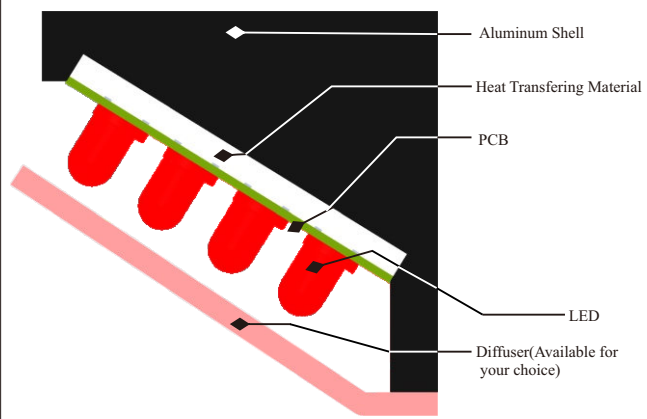
Application Area

- ◆ Inspection of printed PCB inspection
- ◆ OCR on IC chips
- ◆ Used to the microscope illumination
- ◆ Calibration
- ◆ Inspection of plastic container
- ◆ OCR on integrated circuit
- ◆ Surface inspection

Selection Guide

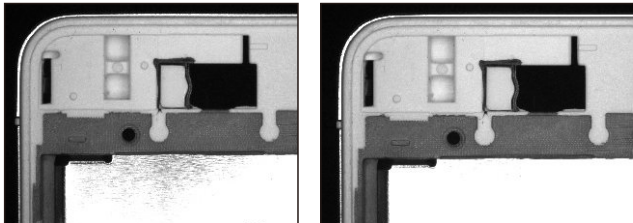


Note:The structure picture is only for your reference



Structure Display

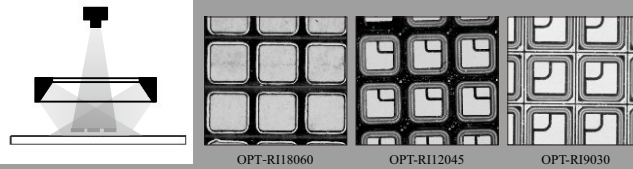
image result comparison



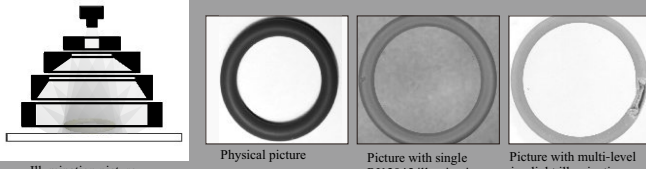
without diffuser

with diffuser

Application example



Wafer perimeter edge position marked. Different angle gets different image result as above pictures showed



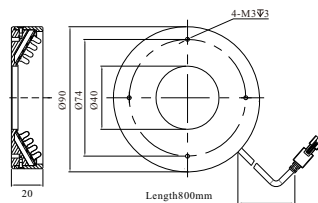
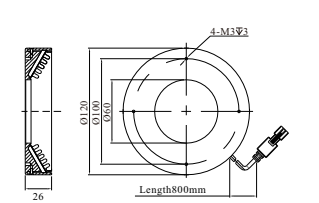
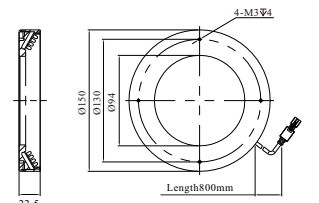
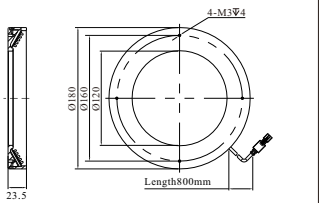
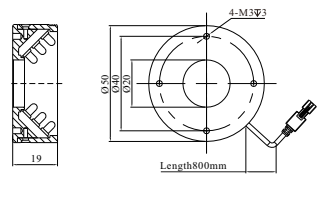
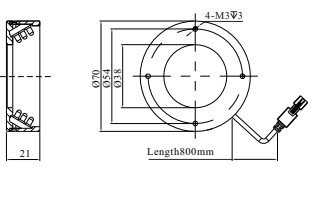
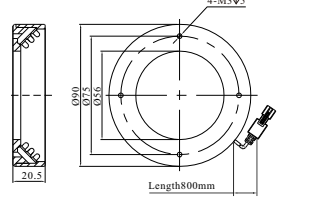
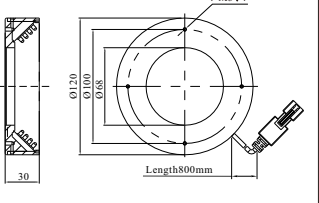
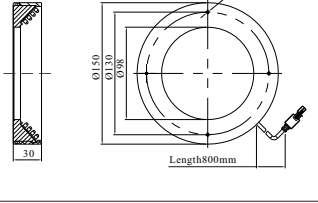
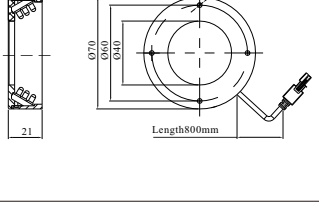
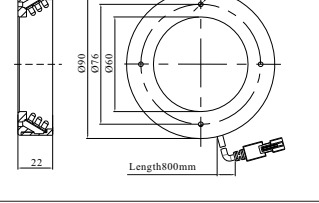
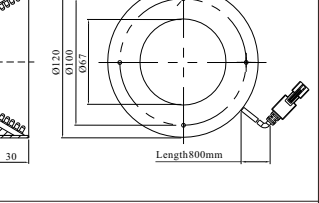
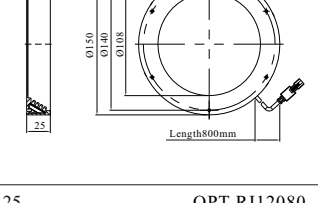
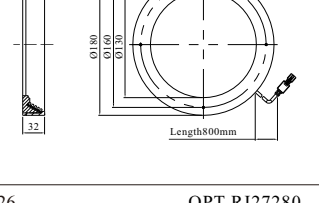
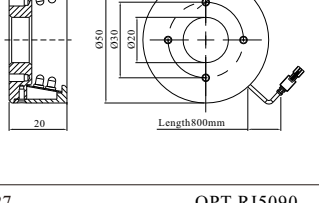
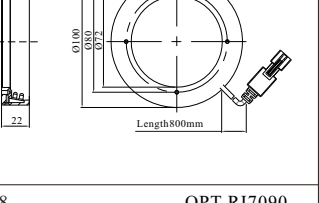
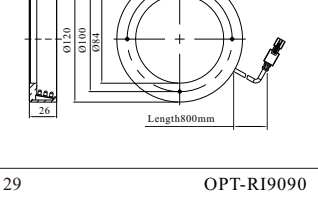
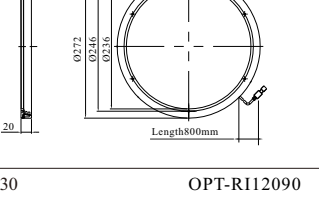
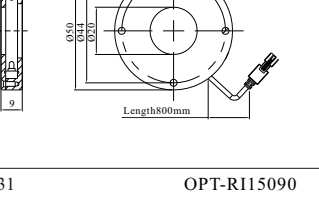
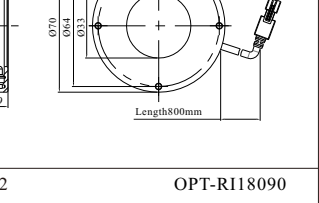
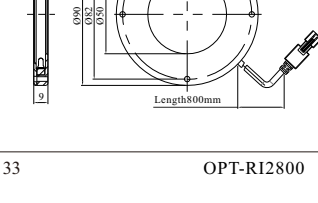
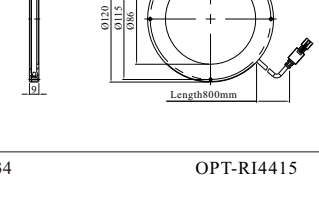
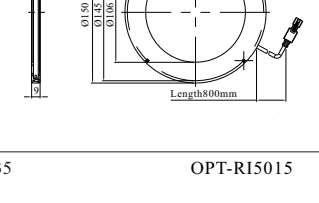
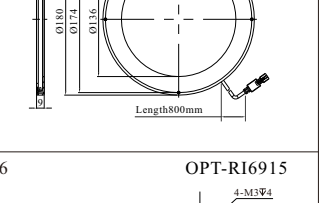
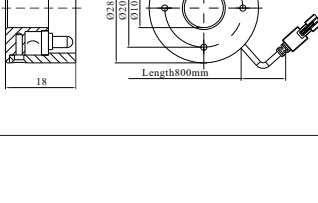
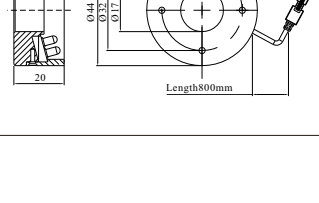
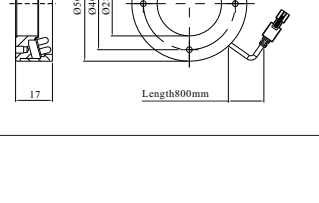
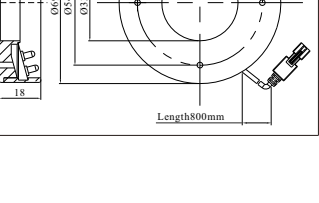
O-ring surface inspection. By using combined multi angles ring light, it is rather easy to show the curve surface information clearly

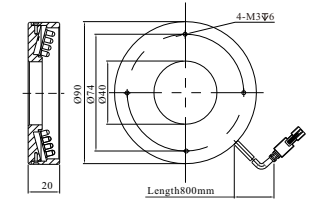
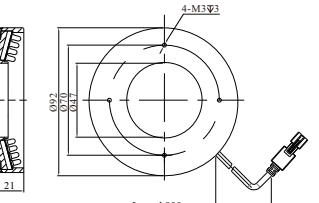
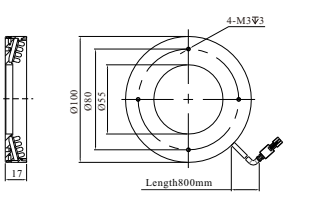
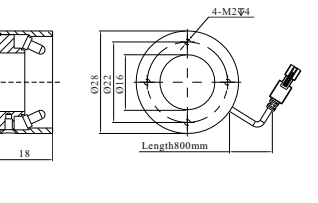
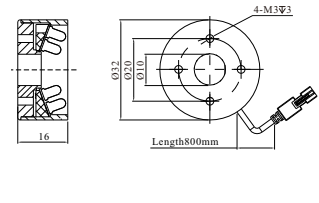
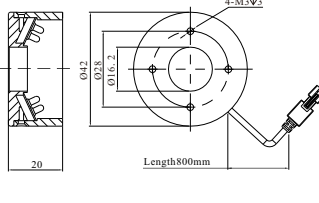
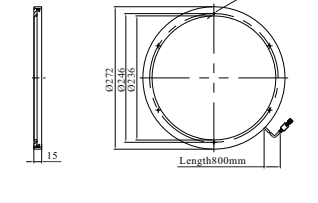
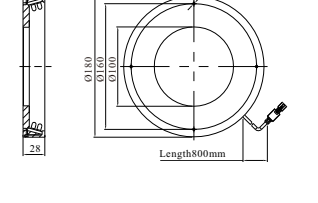
Model Table

Series	Model	Rows of LED	Output Power ● ● ●	Output Power ●	Color	Size	
RIXO series 0° illumination	OPT-RI3500	2	24V/1.3W	24V/0.9W	● ● ●	1	The angle between illumination direction and light axis is 0°
	OPT-RI5000	2	24V/1.7W	24V/0.5W	● ● ●	2	
	OPT-RI7000	3	24V/2.7W	24V/1.8W	● ● ●	3	
	OPT-RI9000	5	24V/6.0W	24V/3.5W	● ● ●	4	
	OPT-RI12000	5	24V/7.2W	24V/4.6W	● ● ●	5	
	OPT-RI15000	11	24V/15.6W	24V/10.1W	● ● ●	6	
RIX30 series 30° illumination	OPT-RI5030	2	24V/1.6W	24V/0.8W	● ● ●	7	The angle between illumination direction and light axis is 30°
	OPT-RI7030	3	24V/2.9W	24V/1.7W	● ● ●	8	
	OPT-RI9030	4	24V/5.6W	24V/3.1W	● ● ●	9	
	OPT-RI12030	5	24V/9.4W	24V/5.0W	● ● ●	10	
	OPT-RI15030	4	24V/9.4W	24V/5.3W	● ● ●	11	
	OPT-RI18030	5	24V/18.0W	24V/11.8W	● ● ●	12	
RIX45 series 45° illumination	OPT-RI5045	3	24V/2.0W	24V/1.2W	● ● ●	13	The angle between illumination direction and light axis is 45°
	OPT-RI7045	3	24V/3.4W	24V/1.8W	● ● ●	14	
	OPT-RI9045	3	24V/4.6W	24V/2.9W	● ● ●	15	
	OPT-RI12045	4	24V/8.0W	24V/4.6W	● ● ●	16	
	OPT-RI15045	4	24V/10.3W	24V/6.0W	● ● ●	17	
	OPT-RI18060	5	24V/12.0W	24V/7.2W	● ● ●	22	The angle between illumination direction and light axis is 60°
RIX60 series 60° illumination	OPT-RI7060	3	24V/3.4W	24V/2.0W	● ● ●	18	
	OPT-RI9060	3	24V/4.8W	24V/2.4W	● ● ●	19	
	OPT-RI12060	5	24V/10.1W	24V/5.0W	● ● ●	20	
	OPT-RI15060	4	24V/10.8W	24V/6.2W	● ● ●	21	
	OPT-RI18060	5	24V/12.0W	24V/7.2W	● ● ●	22	
	OPT-RI5080	2	24V/1.5W	24V/1.0W	● ● ●	23	The angel between illumination direction and light axis is 80°
RIX80 series 80° illumination	OPT-RI10080	2	24V/3.6W	24V/2.1W	● ● ●	24	
	OPT-RI12080	3	24V/8.0W	24V/4.8W	● ● ●	25	
	OPT-RI27280	2	24V/11.0W	24V/7.2W	● ● ●	26	
	OPT-RI5090	1	24V/0.8W	24V/0.5W	● ● ●	27	The angle between illumination direction and light axis is 90°
	OPT-RI7090	1	24V/1.8W	24V/0.6W	● ● ●	28	
RIX90 series 90° illumination	OPT-RI9090	1	24V/1.3W	24V/0.8W	● ● ●	29	
	OPT-RI12090	1	24V/2.2W	24V/1.6W	● ● ●	30	
	OPT-RI15090	1	24V/2.8W	24V/2.5W	● ● ●	31	
	OPT-RI18090	1	24V/3.4W	24V/2.2W	● ● ●	32	
other angle	OPT-RI2800	1	24V/0.5W	24V/0.3W	● ● ●	33	
	OPT-RI4415	2	24V/1.5W	24V/1.1W	● ● ●	34	
	OPT-RI5015	2	24V/1.7W	24V/1.2W	● ● ●	35	
	OPT-RI6915	2	24V/3.7W	24V/2.9W	● ● ●	36	
	OPT-RI9015	4	24V/6.3W	24V/4.3W	● ● ●	37	
	OPT-RI9215	4	24V/4.8W	24V/2.9W	● ● ●	38	
	OPT-RI10015	4	24V/7.7W	24V/4.1W	● ● ●	39	
	OPT-RI3220	2	24V/0.7W	24V/0.7W	● ● ●	40	
	OPT-RI2825	1	24V/0.5W	24V/0.5W	● ● ●	41	
	OPT-RI4225	2	24V/1.2W	24V/0.5W	● ● ●	42	
	OPT-RI27270	1	24V/6.0W	24V/4.8W	● ● ●	43	
	OPT-RI18075	2	24V/5.6W	24V/3.6W	● ● ●	44	

Dimensional drawings(mm)

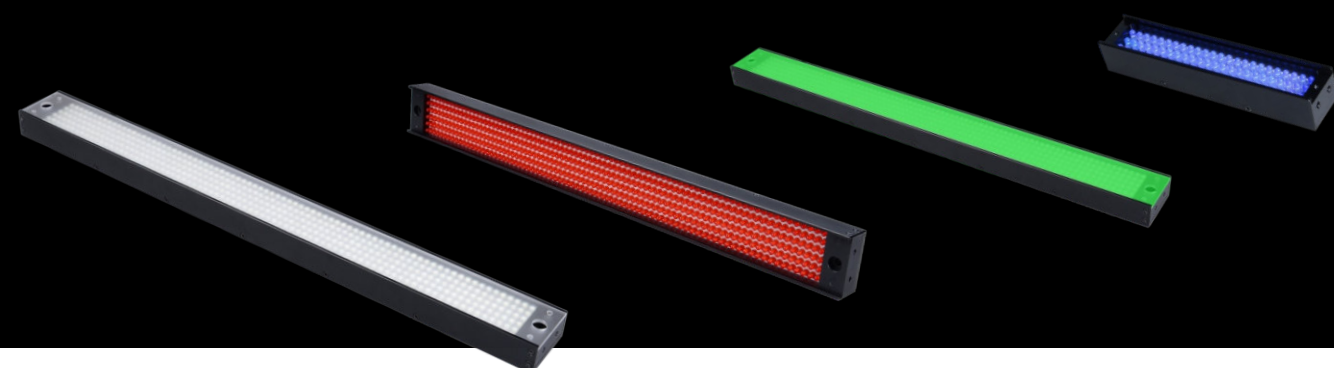
1 OPT-RI3500 	2 OPT-RI5000 	3 OPT-RI7000 	4 OPT-RI9000
6 OPT-RI12000 	5 OPT-RI15000 	7 OPT-RI5030 	8 OPT-RI7030

9 OPT-RI9030 	10 OPT-RI12030 	11 OPT-RI15030 	12 OPT-RI18030 
13 OPT-RI5045 	14 OPT-RI7045 	15 OPT-RI9045 	16 OPT-RI12045 
17 OPT-RI15045 	18 OPT-RI7060 	19 OPT-RI9060 	20 OPT-RI12060 
21 OPT-RI15060 	22 OPT-RI18060 	23 OPT-RI5080 	24 OPT-RI10080 
25 OPT-RI12080 	26 OPT-RI27280 	27 OPT-RI5090 	28 OPT-RI7090 
29 OPT-RI9090 	30 OPT-RI12090 	31 OPT-RI15090 	32 OPT-RI18090 
33 OPT-RI2800 	34 OPT-RI4415 	35 OPT-RI5015 	36 OPT-RI6915 

37 OPT-RI9015 	38 OPT-RI9215 	39 OPT-RI10015 	40 OPT-RI2825 
41 OPT-RI3220 	42 OPT-RI4225 	43 OPT-RI27270 	44 OPT-RI18075 

Bar Light OPT-LI series

Bar light is easy to be customized in color and size, it is suitable for large square object inspection



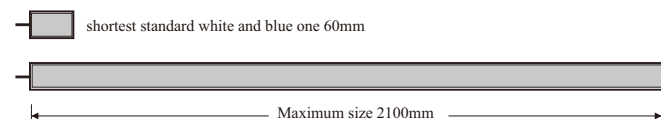
Various colors, satisfying different application demands, it is easy to be customized in size and color

The best choice for the large square illumination

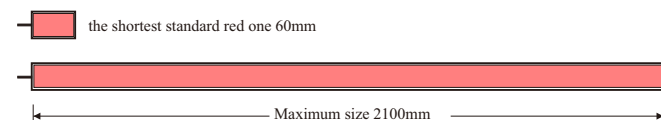
Special heat transferring design, multi-option illumination angles and installation way



The shortest standard one of white and blue color is 35mm, the longest standard one is 2100mm, other length can be customized easily



the shortest of red color is 60mm, and longest one is 2100mm. other length can be customized easily



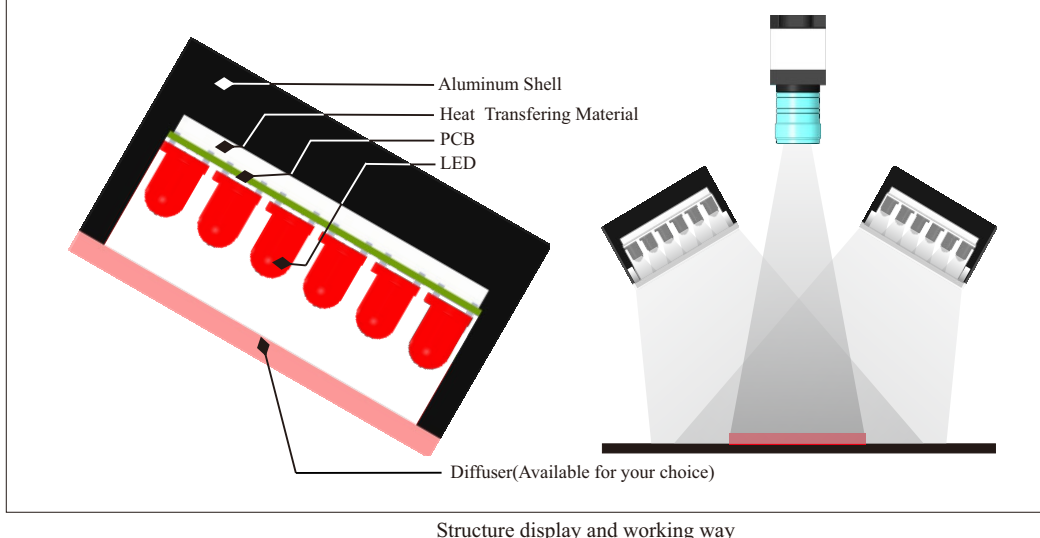
Application Area

- ◆ Metal Surface inspection
- ◆ Image scan
- ◆ Surface crack detection
- ◆ LCD panel inspection, etc.

Selection guide

OPT-LI133041
width
length
bar Light
OPT

The structure picture is only for your reference



Structure display and working way

Application example



Model Table

Model	Rows of LEDs	Output Power	Output Power	Color	Size
OPT-LI4033	6	24V/1.7W	24V/0.9W	●●●●●●	1
OPT-LI5218	3	24V/1.7W	24V/0.9W	●●●●●●	2
OPT-LI6022	3	24V/0.8W	24V/0.8W	●●●●●●	3
OPT-LI8532	6	24V/2.7W	24V/1.9W	●●●●●●	4
OPT-LI9022	3	24V/1.3W	24V/0.7W	●●●●●●	5
OPT-LI10810	1	24V/0.7W	24V/0.5W	●●●●●●	6
OPT-LI11222	3	24V/2.1W	24V/1.2W	●●●●●●	7
OPT-LI11830	6	24V/3.6W	24V/3.5W	●●●●●●	8
OPT-LI14030	6	24V/4.8W	24V/4.9W	●●●●●●	9
OPT-LI15020	3	24V/2.8W	24V/1.6W	●●●●●●	10
OPT-LI16030	6	24V/5.8W	24V/2.1W	●●●●●●	11
OPT-LI18022	3	24V/4.3W	24V/2.6W	●●●●●●	12
OPT-LI19030	6	24V/7.2W	24V/4.6W	●●●●●●	13
OPT-LI21222	3	24V/6.0W	24V/3.8W	●●●●●●	14
OPT-LI21230	6	24V/7.2W	24V/4.8W	●●●●●●	15
OPT-LI23034	6	24V/10.4W	24V/12.0W	●●●●●●	16
OPT-LI25030	6	24V/8.6W	24V/6.1W	●●●●●●	17

Model	Rows of LEDs	Output Power	Output Power	Color	Size
OPT-LI27022	3	24V/7.0W	24V/4.0W	●●●●●●	18
OPT-LI29026	3	24V/5.0W	24V/2.4W	●●●●●●	19
OPT-LI33037	6	24V/12.0W	24V/6.2W	●●●●●●	20
OPT-LI35030	6	24V/13.0W	24V/8.6W	●●●●●●	21
OPT-LI38037	6	24V/13.5W	24V/7.2W	●●●●●●	22
OPT-LI48031	5	24V/14.4W	24V/12.0W	●●●●●●	23
OPT-LI58041	6	24V/26.0W	24V/12.0W	●●●●●●	24
OPT-LI71678	12	24V/47.9W	24V/33.6W	●●●●●●	25
OPT-LI88041	6	24V/37.5W	24V/19.2W	●●●●●●	26
OPT-LI112028	3	24V/24.0W	24V/15.6W	●●●●●●	27
OPT-LI133041	6	24V/62.4W	24V/38.4W	●●●●●●	28
OPT-LI152050	6	24V/67.2W	24V/43.2W	●●●●●●	29
OPT-LI180853	6	24V/105.6W	24V/57.6W	●●●●●●	30
OPT-LI202453	6	24V/116.2W	24V/62.4W	●●●●●●	31
OPT-LI257050	6	24V/127.2W	24V/76.8W	●●●●●●	32
OPT-LI549353	6	24V/264.0W	24V/134.4W	●●●●●●	33

Dimensional drawings(mm)

1 OPT-LI4033 	2 OPT-LI5218 	3 OPT-LI6022 	4 OPT-LI8532
5 OPT-LI9022 	6 OPT-LI10810 	7 OPT-LI11222 	8 OPT-LI11830
9 OPT-LI14030 	10 OPT-LI15020 	11 OPT-LI16030 	12 OPT-LI18022
13 OPT-LI19030 	14 OPT-LI21222 	15 OPT-LI21230 	16 OPT-LI23034
17 OPT-LI25030 	18 OPT-LI27022 	19 OPT-LI29026 	20 OPT-LI33037

21 OPT-LI35030 	22 OPT-LI38037 	23 OPT-LI48031 	24 OPT-LI58041
25 OPT-LI71678 	26 OPT-LI88041 	27 OPT-LI112028 	28 OPT-LI133041
29 OPT-LI152050 	30 OPT-LI180853 	31 OPT-LI202453 	32 OPT-LI257050
33 OPT-LI549353 	Screw groove detail for 22mm width 	Screw groove detail for 30mm width 	

High Uniformity Bar Light OPT-LIT series

High uniformity bar light series can be combined freely,
and can be widely-applied for various application.



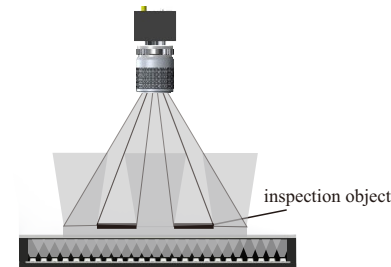
Standard length is from 75mm to 2000mm

Other size can be customized easily
different colors can be combined into one light

Standard shortest length is 75mm

longest standard length is 2000mm

Can be used as back light

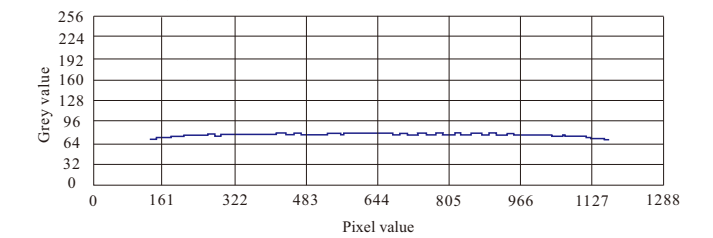


Application Area

- ◆ Electronic components identification
- ◆ Apparel & textiles application
- ◆ Printing inspection
- ◆ Surface inspection of the home appliance
- ◆ Cylinder objects surface inspection
- ◆ The package inspection
- ◆ For the general illumination
- ◆ The replacement of the fluorescent lamps

High uniformity

Uniformity drawing



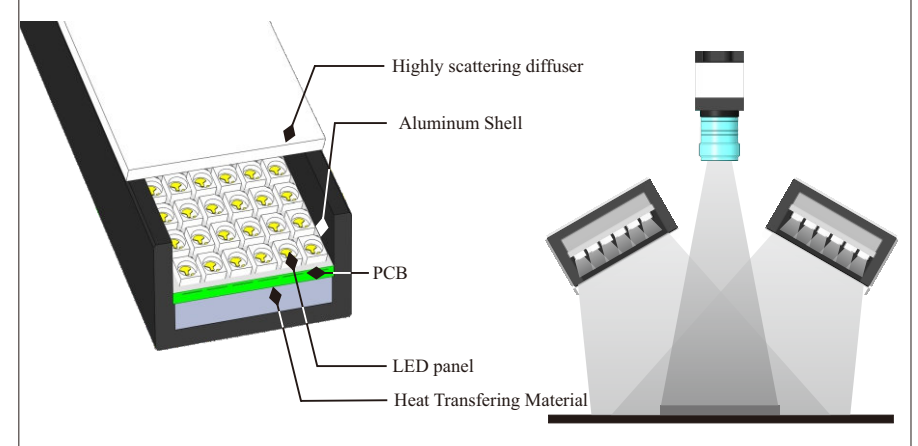
Use CCD camera to grab picture, and then analysis the grey value. above drawing is the average grey value

Above data is just for reference

Selection Guide

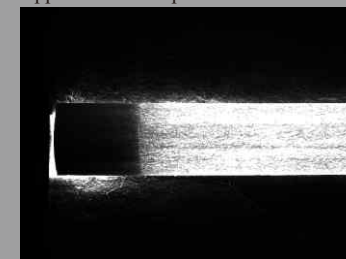
- OPT-LIT17228
- wide
 - long
 - high uniformity bar light
 - OPT

Note : The structure picture is only for your reference



Structure display and working way

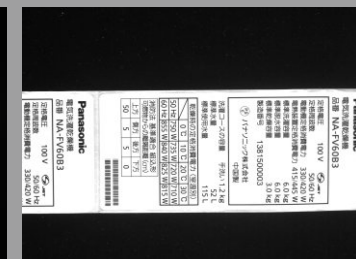
Application example



Tobacco filter mouth measurement



Cosmetic surface print letter inspection



Printing surface quality inspection

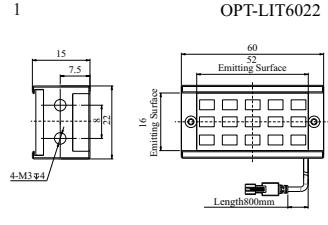
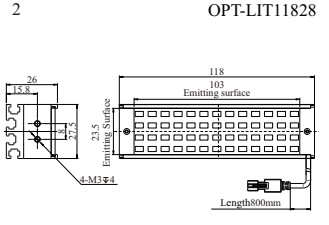
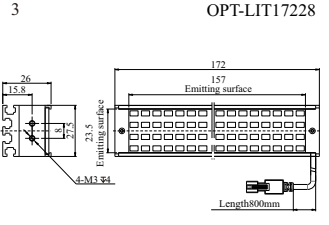
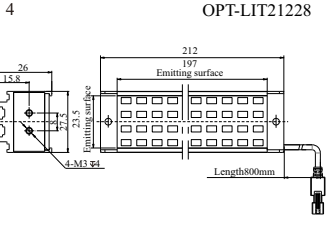
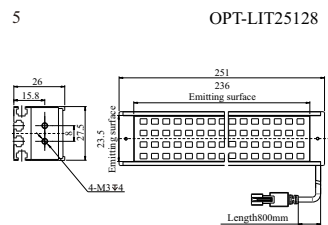
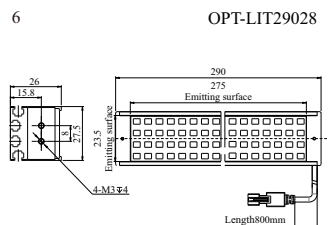
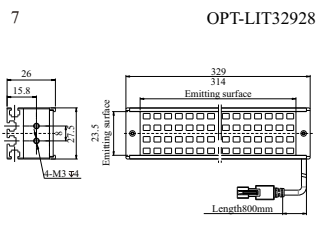
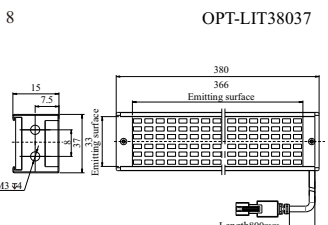
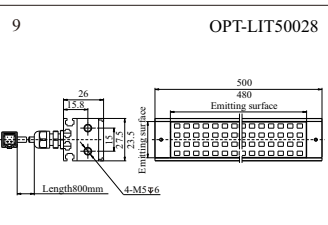
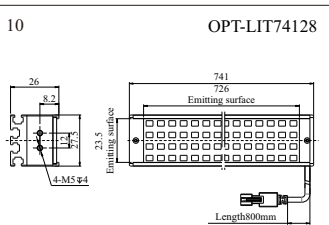
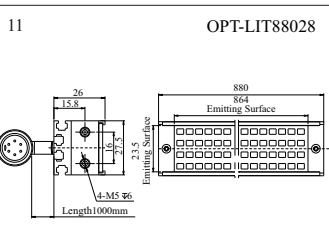
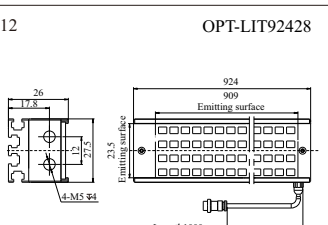
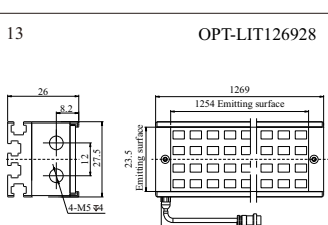
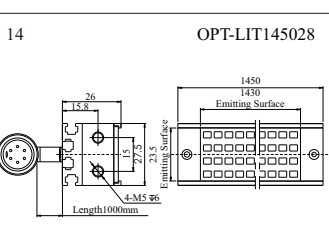
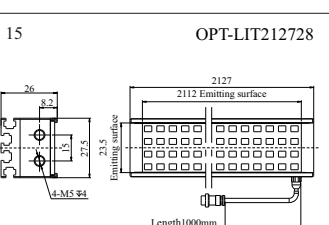


Can surface printing inspection

Model Table

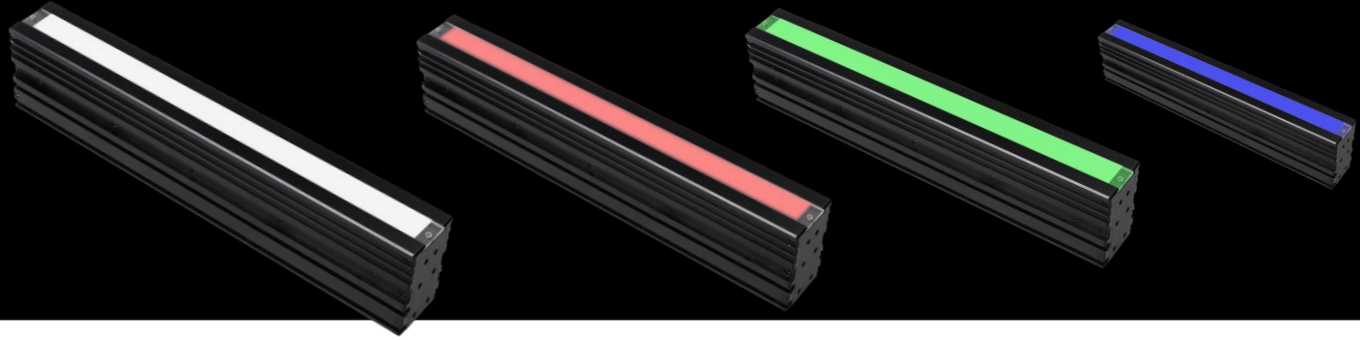
Model	Output Power ● ● ○	Output Power ●	Color ● ● ●	Size
OPT-LIT6022	24V/0.9W	24V/0.6W	● ● ●	1
OPT-LIT11828	24V/3.5W	24V/1.7W	● ● ●	2
OPT-LIT17228	24V/3.1W	24V/2.0W	● ● ●	3
OPT-LIT21228	24V/7.2W	24V/3.4W	● ● ●	4
OPT-LIT25128	24V/5.3W	24V/5.0W	● ● ●	5
OPT-LIT29028	24V/7.0W	24V/4.6W	● ● ●	6
OPT-LIT32928	24V/7.2W	24V/5.0W	● ● ●	7
OPT-LIT38037	24V/12.7W	24V8.0W	● ● ●	8
OPT-LIT50028	24V/12.7W	24V/8.0W	● ● ●	9
OPT-LIT74128	24V/18.4W	24V/11.6W	● ● ●	10
OPT-LIT88028	24V/21.3W	24V/15.0W	● ● ●	11
OPT-LIT92428	24V/23.0W	24V/16.8W	● ● ●	12
OPT-LIT126928	24V/28.8W	24V/19.2W	● ● ●	13
OPT-LIT145028	24V/33.6W	24V/24.0W	● ● ●	14
OPT-LIT212728	24V/48.0W	24V/33.6W	● ● ●	15

Dimensional drawings (mm)

1 	2 	3 	4 
5 	6 	7 	8 
9 	10 	11 	12 
13 	14 	15 	

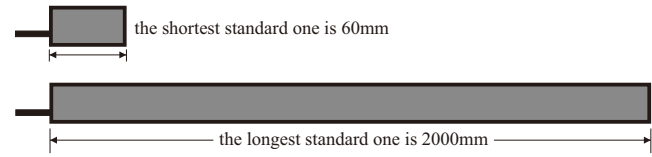
High Power Bar Light OPT-LIG series New

using high power LED, intensity is 3 times higher than standard one



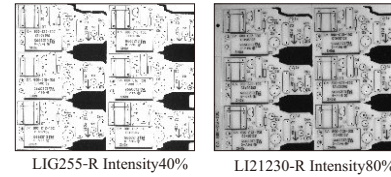
Emitting surface standard size can be made from 60mm to 2000mm

The shortest standard one of white,blue,green color is 60mm, the longest standard one is 1980mm; the shortest standard one of red color is 100mm, the longest standard one is 2000mm



other size can be customized easily
high power LED with very compact array

Image result comparison with standard one



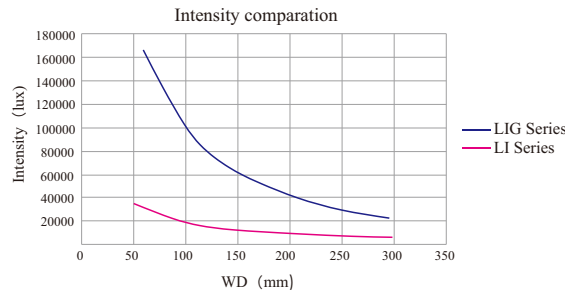
Application Area

- ◆ Long work distance illumination
- ◆ High speed on line illumination
- ◆ Big FOV illumination

Selection Guide

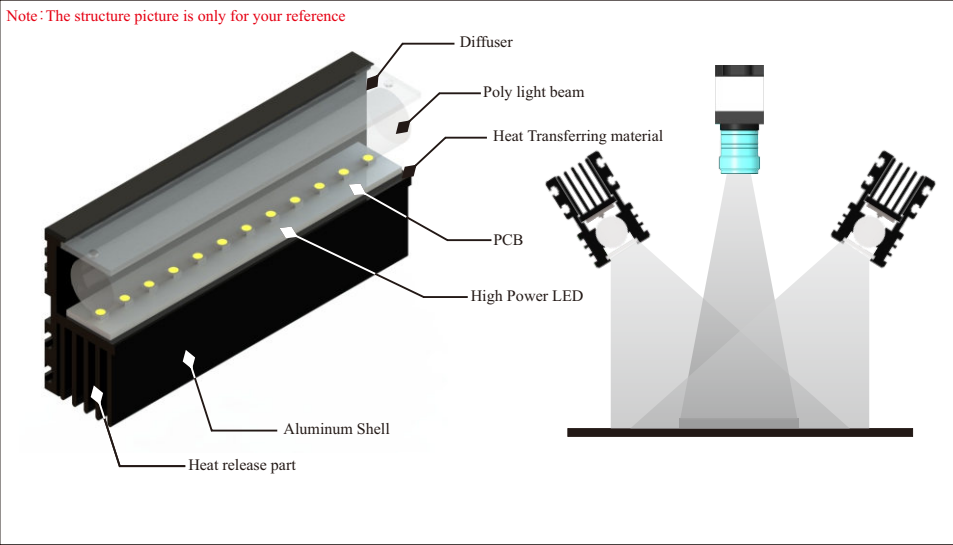
OPT-LIG255
→ length
→ high power bar light
→ OPT

Intensity is 3 times higher than standard one



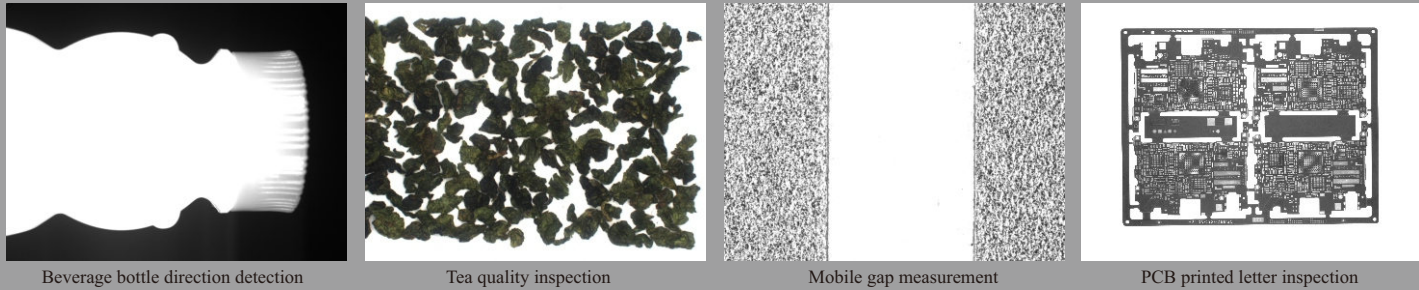
*Above data is just for reference

Length more than 2000mm can be customized easily



Structure display and working way

Application example



Beverage bottle direction detection

Tea quality inspection

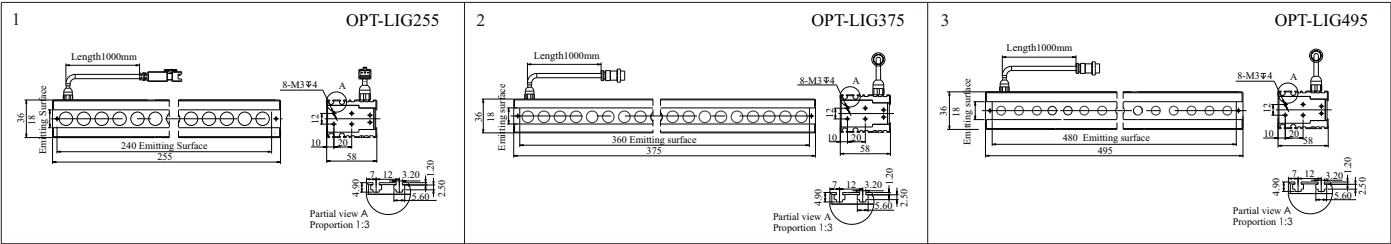
Mobile gap measurement

PCB printed letter inspection

Model Table

Model	Output Power ● ● ●	Output Power ●	Color ● ● ●	Size
OPT-LIG255	24V/14.4W	24V/9.6W	● ● ●	1
OPT-LIG375	24V/43.2W	24V/21.6W	● ● ●	2
OPT-LIG495	24V/57.6W	24V/28.8W	● ● ●	3

Dimensional drawings (mm)



Combined Bar Light OPT-LIM series

The well-combination of bar light has the advantage of freely angle adjustment and independently control.widely used and the first priority for the large square illumination.



Adjustable angle as your demands(0°-90°), suitable for kinds of application

Combination of bar light, independently illumination on each side

Large square illumination, wide range of application

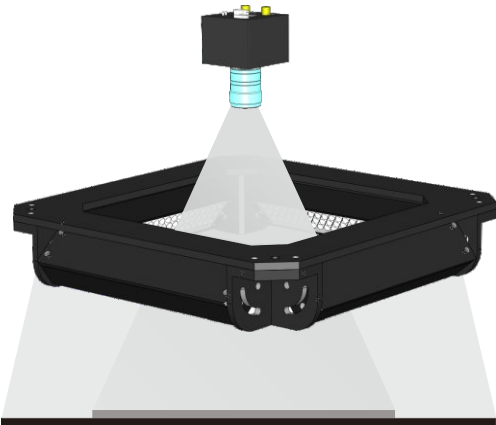
Application Area

- ◆ PCB inspection
- ◆ OCR on IC chips
- ◆ Solder inspection
- ◆ The position of mark
- ◆ Used to the microscopes illumination
- ◆ The illumination for the package label

Selection Guide

- OPT-LIM6022
- width (out side)
 - length(outside)
 - combined bar light
 - OPT

Note:The structure picture is only for your reference

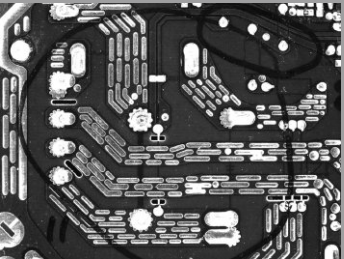


big FOV illumination way



electronic part recognition inspection

Application example



PCB solder joint inspection



Printing letters inspection



2D code read

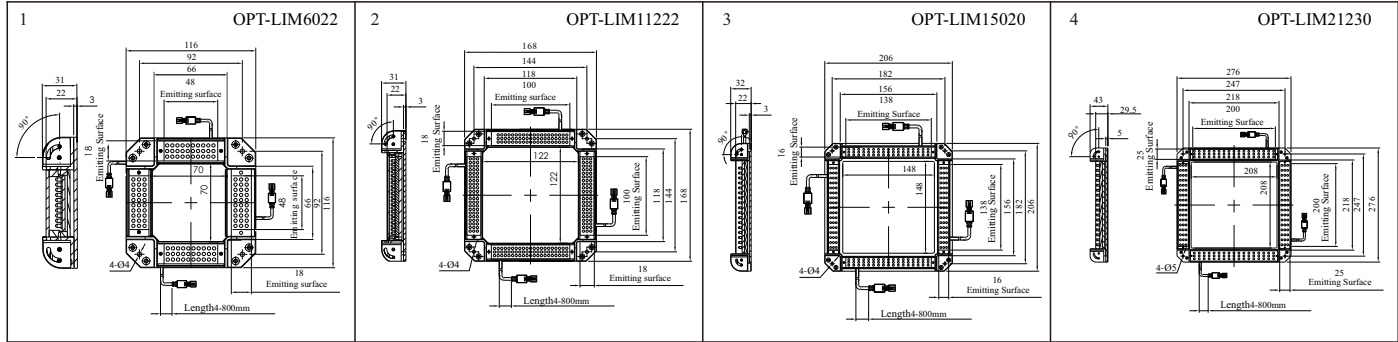


Cosmetic letter inspection

Model Table

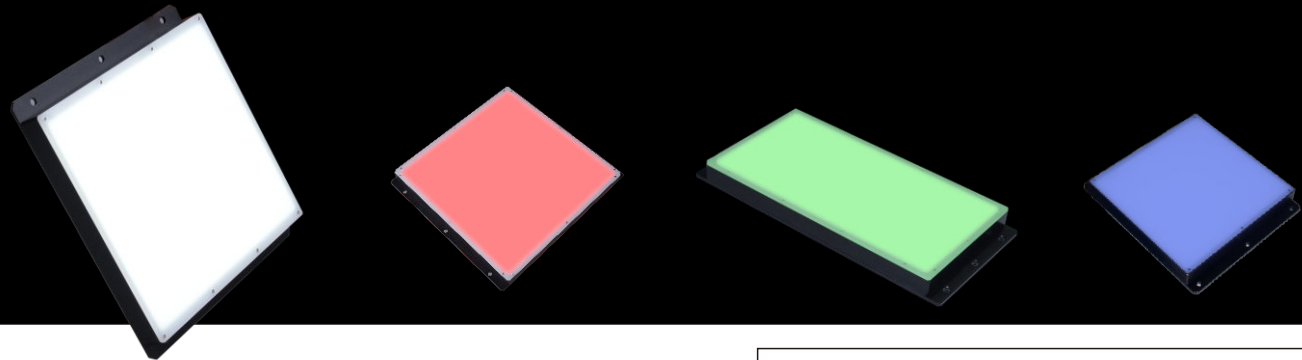
Model	Output Power 	Output Power 	Color	Size
OPT-LIM6022	24V/2.9W	24V/3.2W		1
OPT-LIM11222	24V/8.2W	24V/4.8W		2
OPT-LIM15020	24V/11.0W	24V/6.2W		3
OPT-LIM21230	24V/28.8W	24V/19.2W		4

Dimensional drawings (mm)



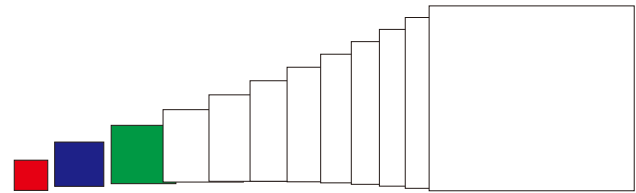
Bottom Back Light OPT-FL series

Applied in the large area illumination, to enhance the high contrast silhouettes for high speed machine



The dimension is from 30*30 to 500*500mm

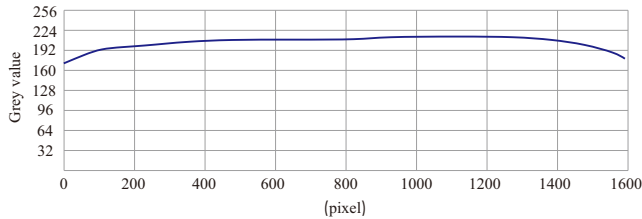
other size can be customized
Available color is red, blue, green, white
size and color combined can be customized



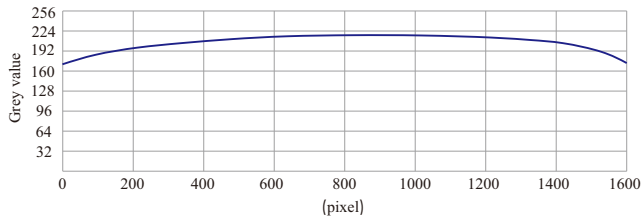
Illumination area & uniformity

Keep the same uniformity for different illumination area size

Uniformity of large size (500mmx500mm)



Illumination area (30mmx30mm)



Use CCD camera to grab the picture and analysis the grey value, above drawing is the average grey value

*Above data is just for reference

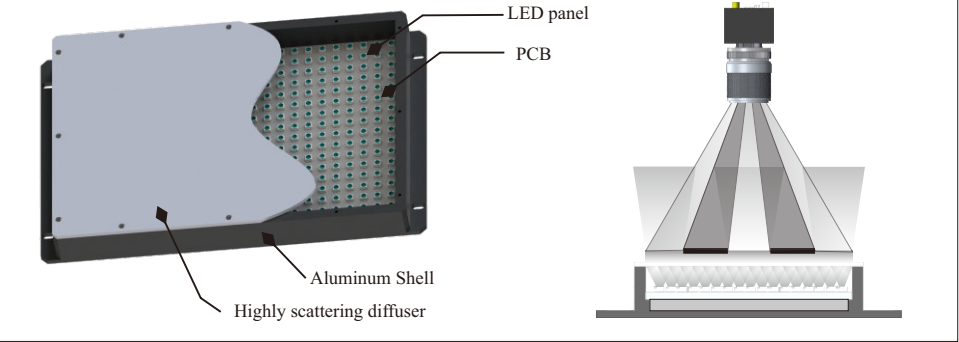
Application Area

- ◆ Measurement inspection of mechanical components
- ◆ Inspection of IC pins and electronic components
- ◆ Inspection of transparent film
- ◆ Detect scratching on transparent objects

Selection Guide

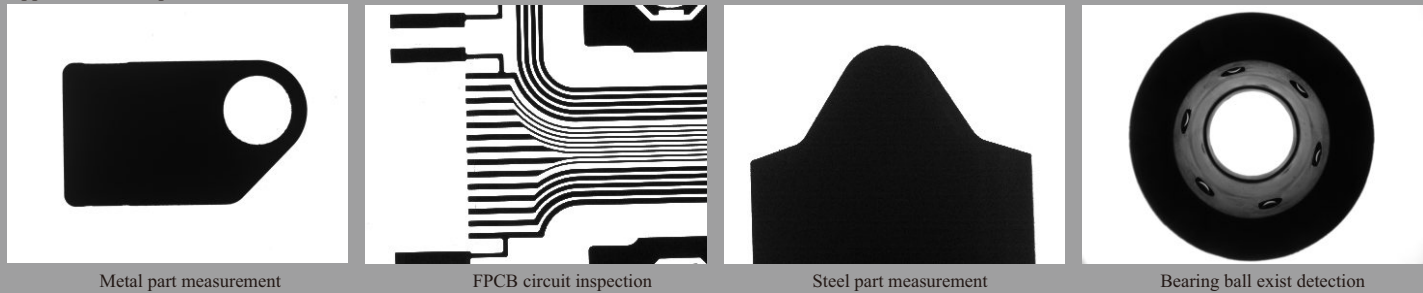
OPT-FL9090
→ width
→ length
→ bottom Back Light
→ OPT

Note: The structure picture is only for your reference



Structure display and illumination picture

Application example



Metal part measurement

FPCB circuit inspection

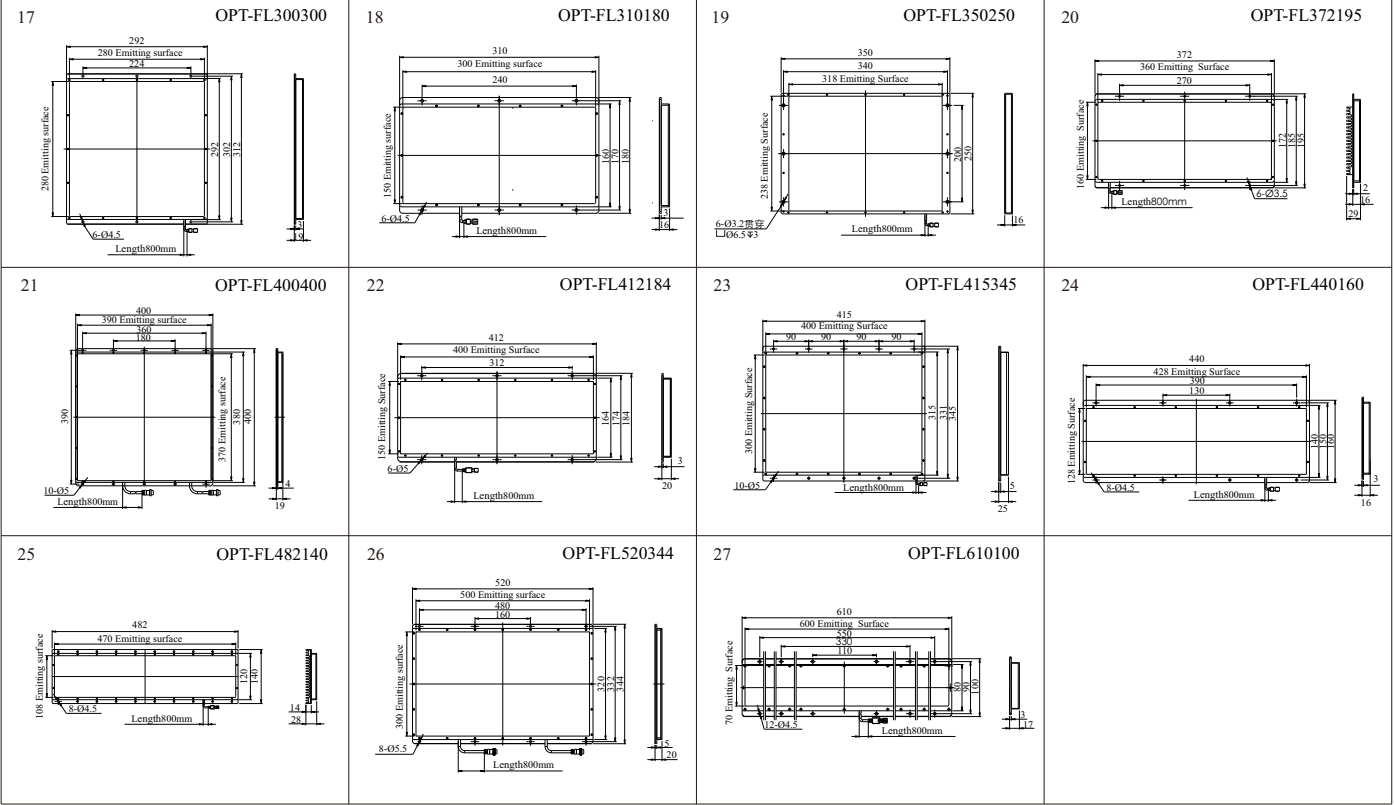
Steel part measurement

Bearing ball exist detection

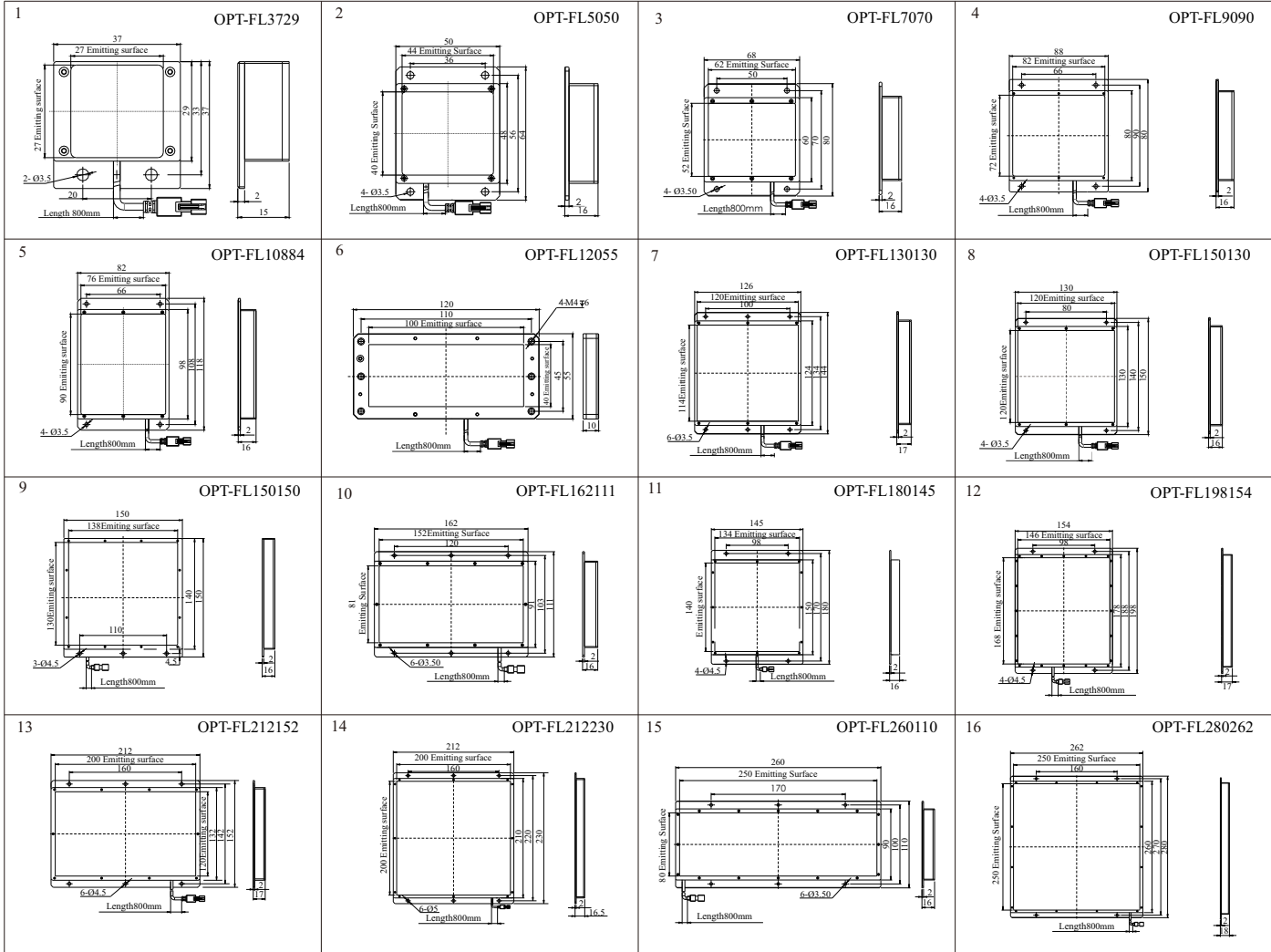
Model Table

Model	Output Power ●●○	Output Power ●●●	Color	Emitting mode	Emitting surface	Size
OPT-FL3729	24V/0.6W	24V/0.3W	●●○●	Bottom Emitting	27x27	1
OPT-FL5050	24V/1.5W	24V/0.7W	●●○●	Bottom Emitting	44x40	2
OPT-FL7070	24V/2.4W	24V/1.2W	●●○●	Bottom Emitting	62x52	3
OPT-FL9090	24V/5.0W	24V/2.7W	●●○●	Bottom Emitting	82x72	4
OPT-FL10884	24V/5.2W	24V/2.5W	●●○●	Bottom Emitting	76x90	5
OPT-FL12055	24V/4.8W	24V/2.9W	●●○●	Bottom Emitting	100x40	6
OPT-FL130130	24V/9.8W	24V/6.0W	●●○●	Bottom Emitting	120x114	7
OPT-FL150130	24V/15.6W	24V/10.0W	●●○●	Bottom Emitting	120x120	8
OPT-FL150150	24V/15.8W	24V/13.3W	●●○●	Bottom Emitting	130x138	9
OPT-FL162111	24V/10.1W	24V/5.3W	●●○●	Bottom Emitting	152x81	10
OPT-FL180145	24V/10.6W	24V/8.4W	●●○●	Bottom Emitting	134x140	11
OPT-FL198154	24V/18.0W	24V/8.9W	●●○●	Bottom Emitting	168x146	12
OPT-FL212152	24V/25.2W	24V/16.1W	●●○●	Bottom Emitting	200x120	13
OPT-FL212230	24V/27.6W	24V/16.6W	●●○●	Bottom Emitting	200x200	14
OPT-FL260110	24V/15.6W	24V/10.1W	●●○●	Bottom Emitting	250x80	15

Model	Output Power ●●○	Output Power ●●●	Color	Emitting mode	Emitting surface	Size
OPT-FL280262	24V/46.8W	24V/35.8W	●●○●	Bottom Emitting	250x250	16
OPT-FL300300	24V/36.0W	24V/21.6W	●●○●	Bottom Emitting	280x280	17
OPT-FL310180	24V/34.1W	24V/19.4W	●●○●	Bottom Emitting	300x150	18
OPT-FL350250	24V/38.1W	24V/25.4W	●●○●	Bottom Emitting	318x238	19
OPT-FL372195	24V/48.0W	24V/28.8W	●●○●	Bottom Emitting	360x160	20
OPT-FL400400	24V/96.0W	24V/57.6W	●●○●	Bottom Emitting	390x370	21
OPT-FL412184	24V/42.4W	24V/27.2W	●●○●	Bottom Emitting	400x150	22
OPT-FL415345	24V/86.4W	24V/57.6W	●●○●	Bottom Emitting	400x300	23
OPT-FL440160	24V/38.4W	24V/28.8W	●●○●	Bottom Emitting	428x128	24
OPT-FL482140	24V/57.6W	24V/38.4W	●●○●	Bottom Emitting	470x108	25
OPT-FL520344	24V/144.0W	24V/91.2W	●●○●	Bottom Emitting	500x300	26
OPT-FL610100	24V/28.8W	24V/2.0W	●●○●	Bottom Emitting	600x70	27

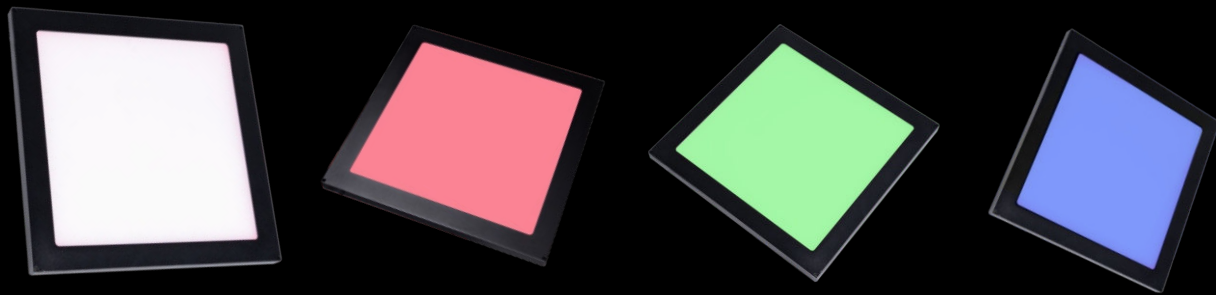


Dimensional drawings (mm)



Side Back Light OPT-FLC series

Thin depth design for easy installation; Size can be customized as inquired;
Can be used as front light when open a hole in the middle.

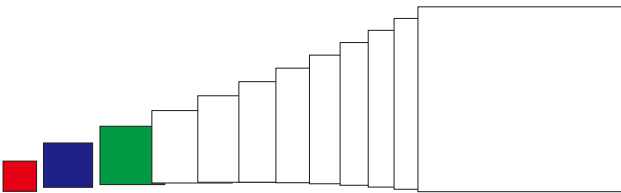


Ultra thin design, the thinness can be up to 6mm,



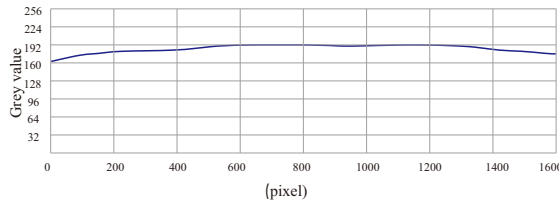
Customized size can be made, even the large size required

Illumination area size is from 30*30mm to 500*500mm
other size can be customized
size and color combined can be customized



Several times dispersion making the part and whole image uniformity

Uniformity drawing



Use CCD camera to grab the picture and analysis the grey value, above drawing is the average grey value

*Above data is just for reference

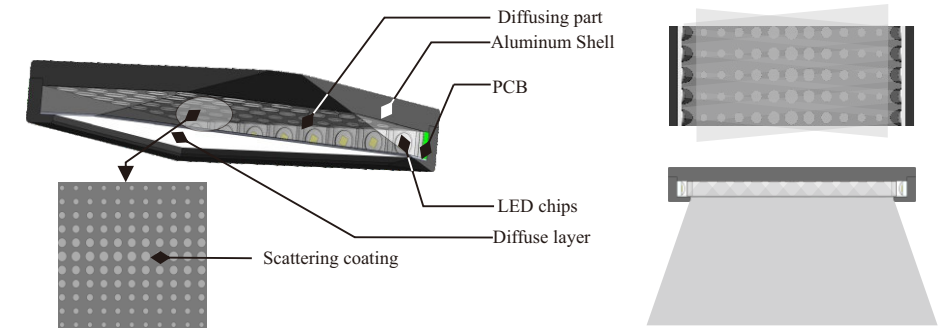
Application Area

- ◆ The identification and inspection on the large square mechanical or electronic parts
- ◆ The measurement inspection of perspective
- ◆ LED defects inspection

Selection Guide

- OPT-FLC5050
- width
 - length
 - side back light
 - OPT

Note: The structure picture is only for your reference



Structure display and working way

Application example



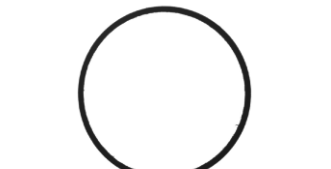
Battery size measurement



Metal part measurement



Metal part inspection

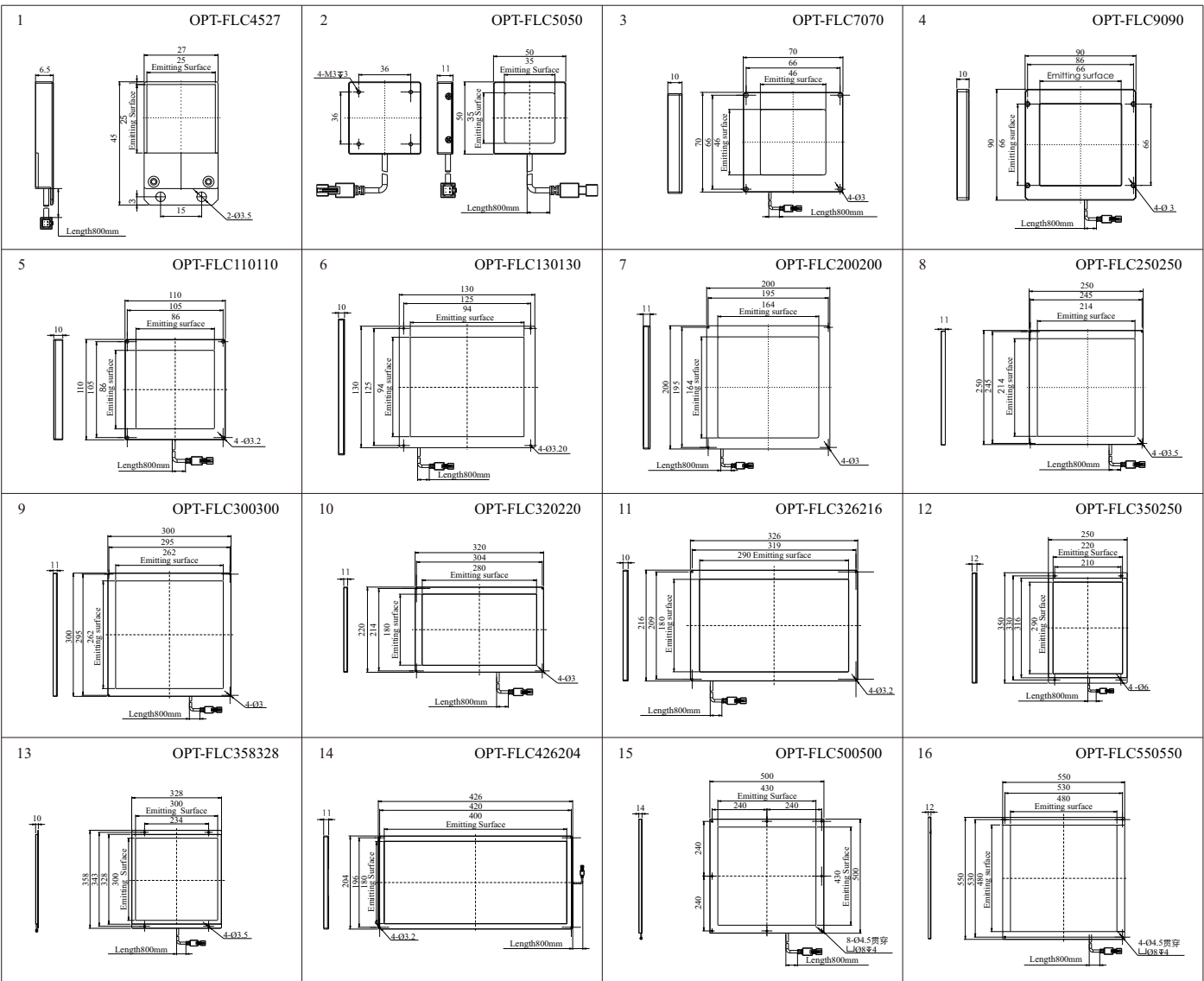


Steel tube outer diameter measurement

Model Table

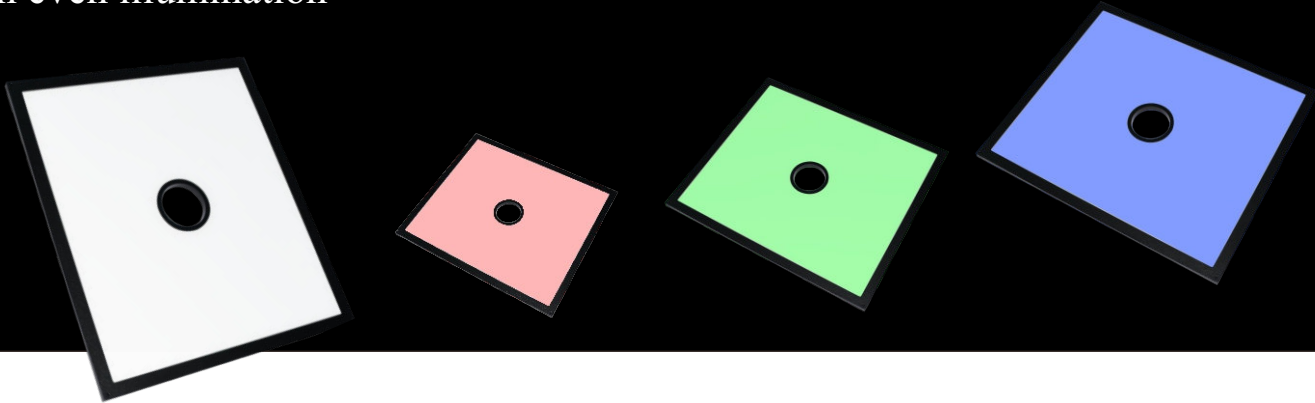
Model	Output Power   	Output Power 	Color	Emitting mode	Emitting Surface	Size
OPT-FLC4527	24V/0.2W	24V/0.1W	  	Side Back Light	25x25	1
OPT-FLC5050	24V/1.1W	24V/0.4W	  	Side Back Light	35x35	2
OPT-FLC7070	24V/1.3W	24V/1.0W	  	Side Back Light	46x46	3
OPT-FLC9090	24V/2.4W	24V/1.2W	  	Side Back Light	66x66	4
OPT-FLC110110	24V/2.5W	24V/1.7W	  	Side Back Light	86x86	5
OPT-FLC130130	24V/3.7W	24V/2.1W	  	Side Back Light	94x94	6
OPT-FLC200200	24V/5.3W	24V/2.9W	  	Side Back Light	164x164	7
OPT-FLC250250	24V/5.8W	24V/4.6W	  	Side Back Light	214x214	8
OPT-FLC300300	24V/7.0W	24V/5.0W	  	Side Back Light	262x262	9
OPT-FLC320220	24V/6.5W	24V/4.1W	  	Side Back Light	280x180	10
OPT-FLC326216	24V/6.5W	24V/4.1W	  	Side Back Light	290x180	11
OPT-FLC350250	24V/7.0W	24V/4.8W	  	Side Back Light	220x290	12
OPT-FLC358328	24V/7.2W	24V/5.3W	  	Side Back Light	300x300	13
OPT-FLC426204	24V/7.0W	24V/5.0W	  	Side Back Light	400x180	14
OPT-FLC500500	24V/11.5W	24V/7.7W	  	Side Back Light	430x430	15
OPT-FLC550550	24V/11.5W	24V/7.7W	  	Side Back Light	480x480	16

Dimensional drawings

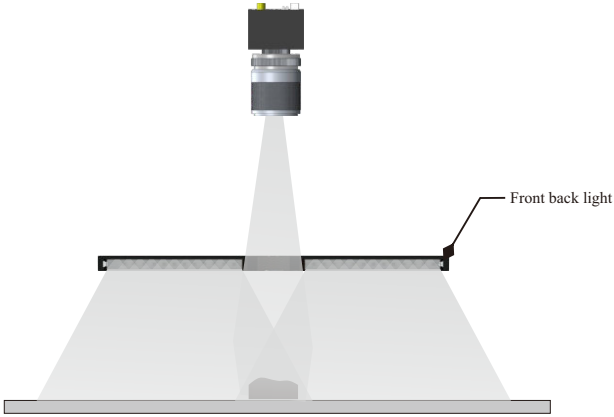


Front Back Light OPT-FLK series New

Front back light can be used as front light for the big FOV with even illumination

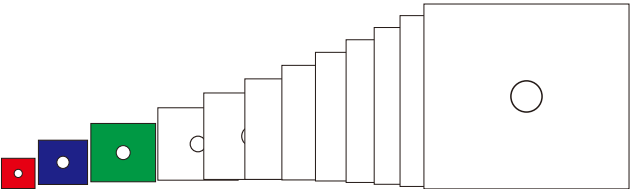


Back light as front light



Large size uniformity illumination, customized size can be made

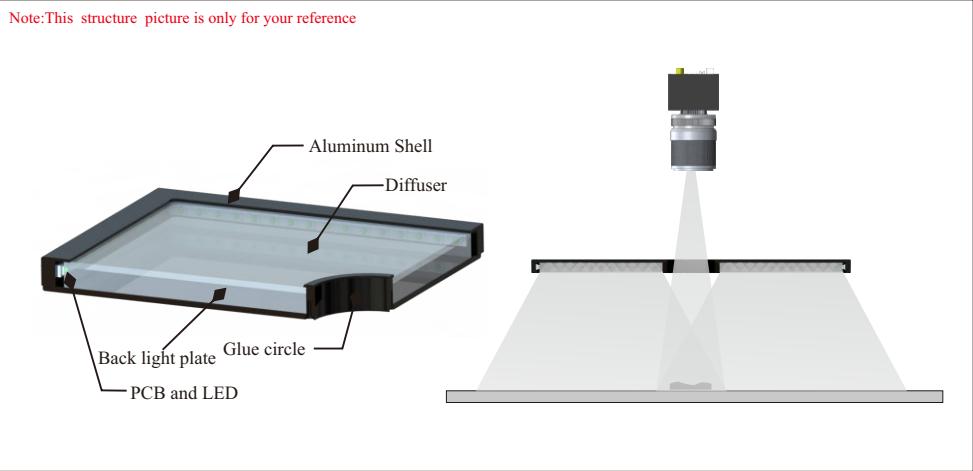
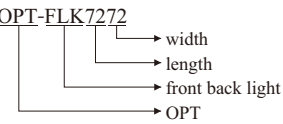
Emitting surface standard size can be made from 70×70mm to 500×500mm
Other size can be customized
LED color: red, blue, green and white
colors can be optionally combined



Application Area

- ◆ Big PCB parts inspection and recognition
- ◆ Big electronic part surface letter inspection
- ◆ The mark point position

Selection Guide

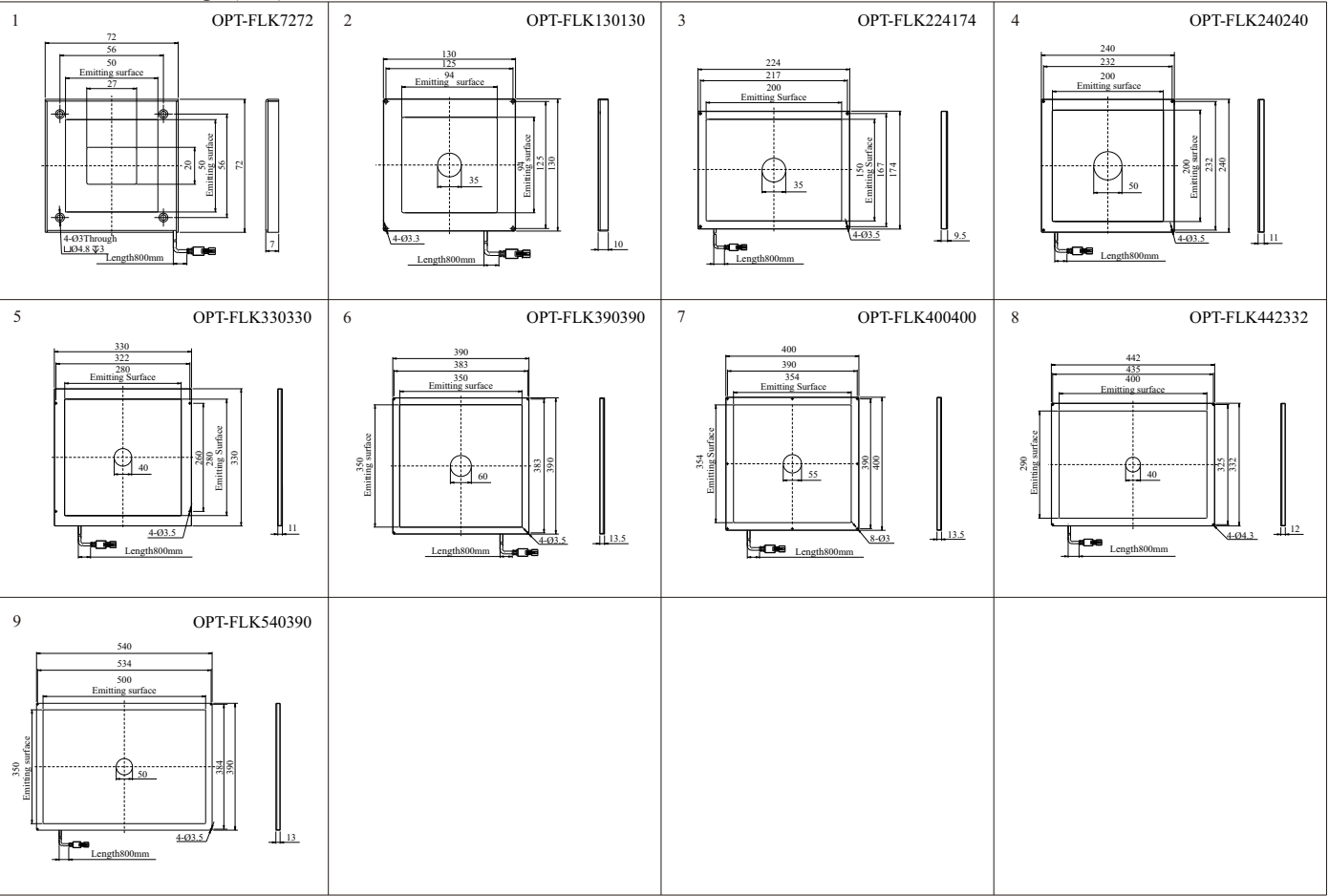


Structure display and working way

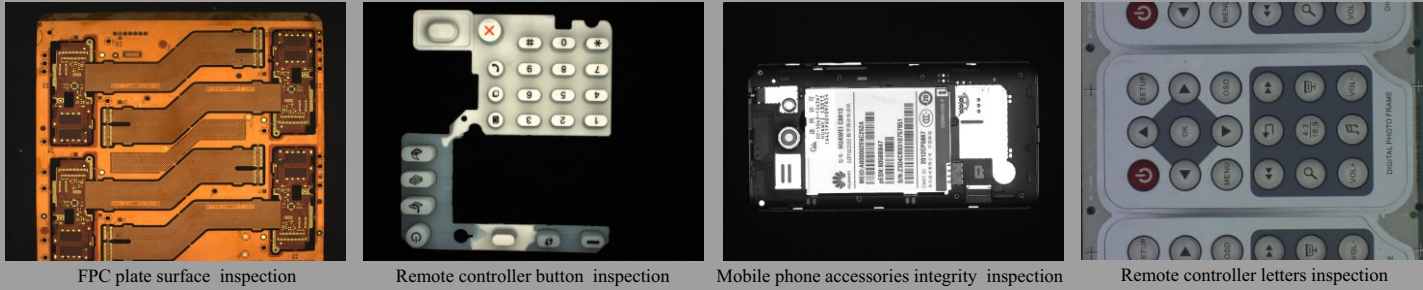
Model Table

Model	Output Power    	Output Power 	Color	Luminous mode	Emitting Surface	Size
OPT-FLK7272	24V/1.2W	24V/1.2W	   	Side lighting	50x50	1
OPT-FLK130130	24V/3.7W	24V/2.1W	   	Side lighting	94x94	2
OPT-FLK224174	24V/4.1W	24V/2.9W	   	Side lighting	200x150	3
OPT-FLK240240	24V/5.8W	24V/4.0W	   	Side lighting	200x200	4
OPT-FLK330330	24V/8.1W	24V/5.8W	   	Side lighting	280x280	5
OPT-FLK390390	24V/10.4W	24V/7.0W	   	Side lighting	350x350	6
OPT-FLK400400	24V/8.2W	24V/5.8W	   	Side lighting	354x354	7
OPT-FLK442332	24V/17.3W	24V/10.4W	   	Side lighting	290x400	8
OPT-FLK540390	24V/12.1W	24V/8.1W	   	Side lighting	500x350	9

Dimensional drawings (mm)

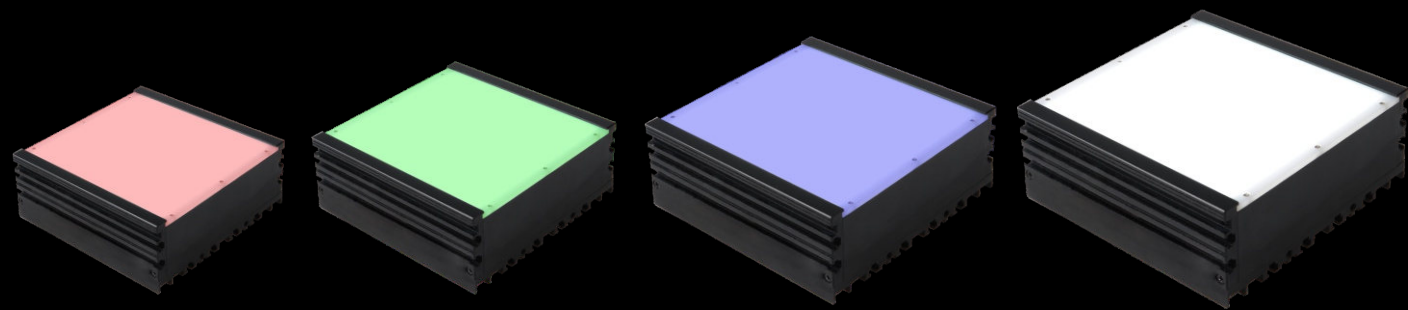


Application example



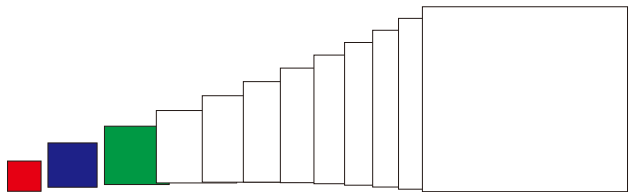
High Power Back Light OPT-FLG series

Using high power LED and heat transfer material to make the high brightness back light, it is good for short exposure application

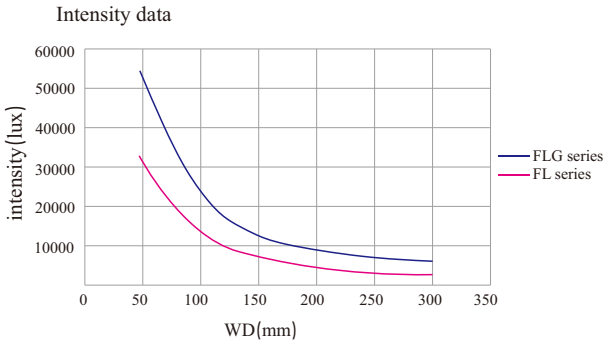


With high intensity and uniformity, size can be customized freely

Emitting surface standard size can be made from 50×50mm to 500×500mm
other size can be customized
LED color: red, blue, green and white
colors can be optionally combined



Intensity is 1.5 times higher than standard one



*above data is just for reference

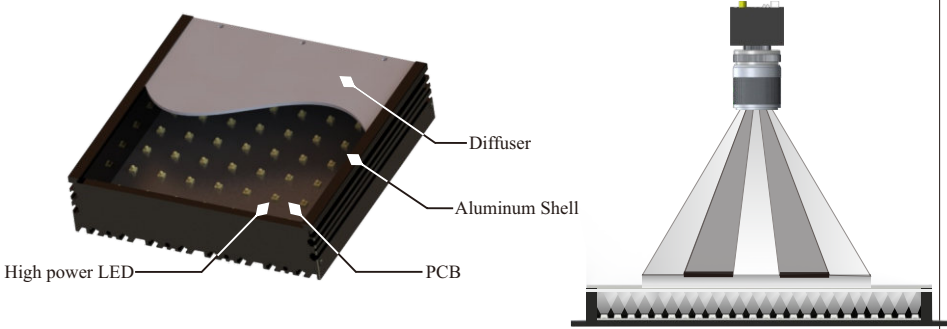
Application Area

- ◆ High speed, short exposure application
- ◆ Mechanical part measurement
- ◆ Electronic part and IC outer shape inspection

Selection Guide

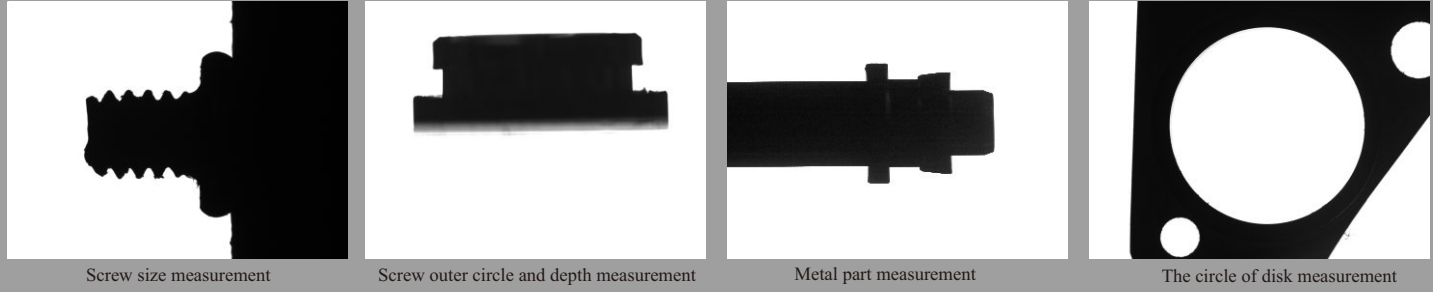
OPT-FLG100
→ outside length
→ high power back light
→ OPT

Note: This structure picture is only for your reference



Structure display and working way

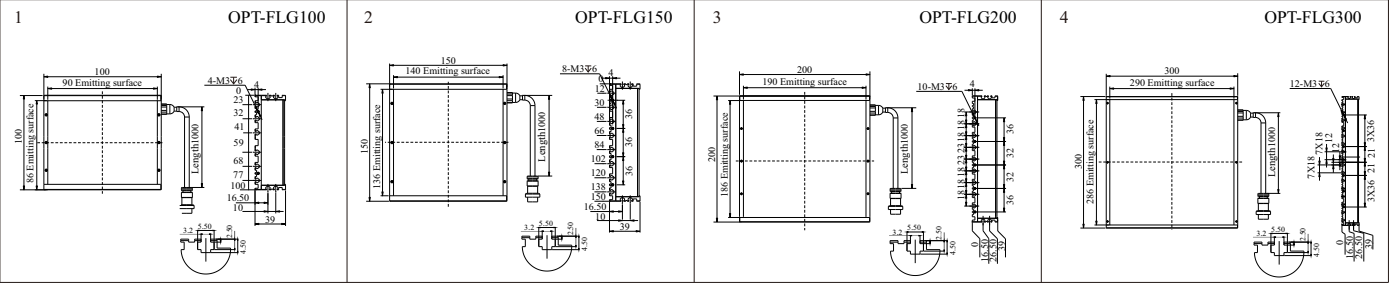
Application example



Model Table

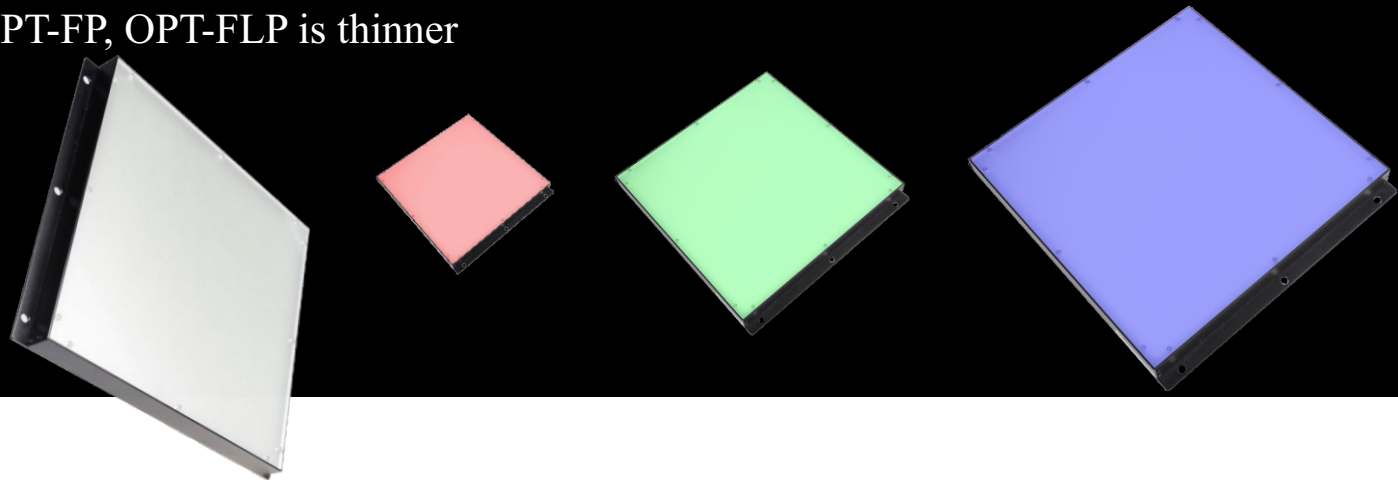
Model	Output Power	Output Power	Color	Luminous mode	Emitting Surface	Size
OPT-FLG100	24V/21.6W	24V/14.4W	●●●●	Bottom emission	90x86	1
OPT-FLG150	24V/50.4W	24V/28.8W	●●●●	Bottom emission	140x136	2
OPT-FLG200	24V/64.8W	24V/43.2W	●●●●	Bottom emission	190x186	3
OPT-FLG300	24V/100.8W	24V/57.6W	●●●●	Bottom emission	290x286	4

Dimensional drawings (mm)



Parallel Back Light OPT-FLP series

Larger emitting surface parallel back light, comparing OPT-FP, OPT-FLP is thinner



OPT-FLP is thinner than OPT-FP series,easy installation,space-efficient

Replacement of back light, applied in high-accuracy,large square product measurement

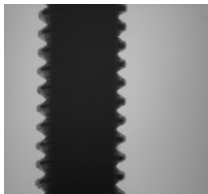


image result of OPT-FL series

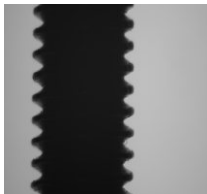
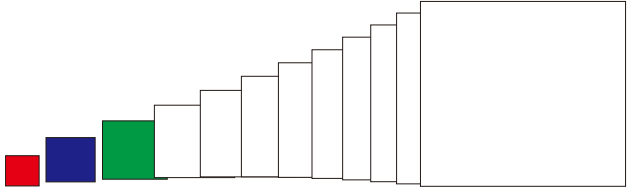


image result of OPT-FLP series

Emitting surface and size can be customized

Emitting surface standard size can be made from 30×30mm to 500×500mm
Other size can be customized
LED color: red, blue, green and white
colors can be optionally combined

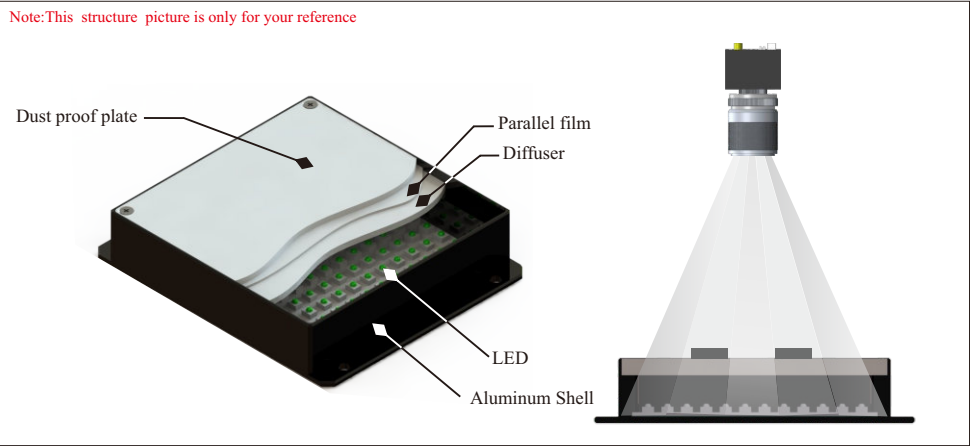


Application Area

- ◆ The identification and inspection of the large square mechanical or electronic parts
- ◆ The measurement inspection of perspective
- ◆ LED defects inspection

Selection Guide

- OPT-FLP12086
- width
 - length
 - parallel back light
 - OPT

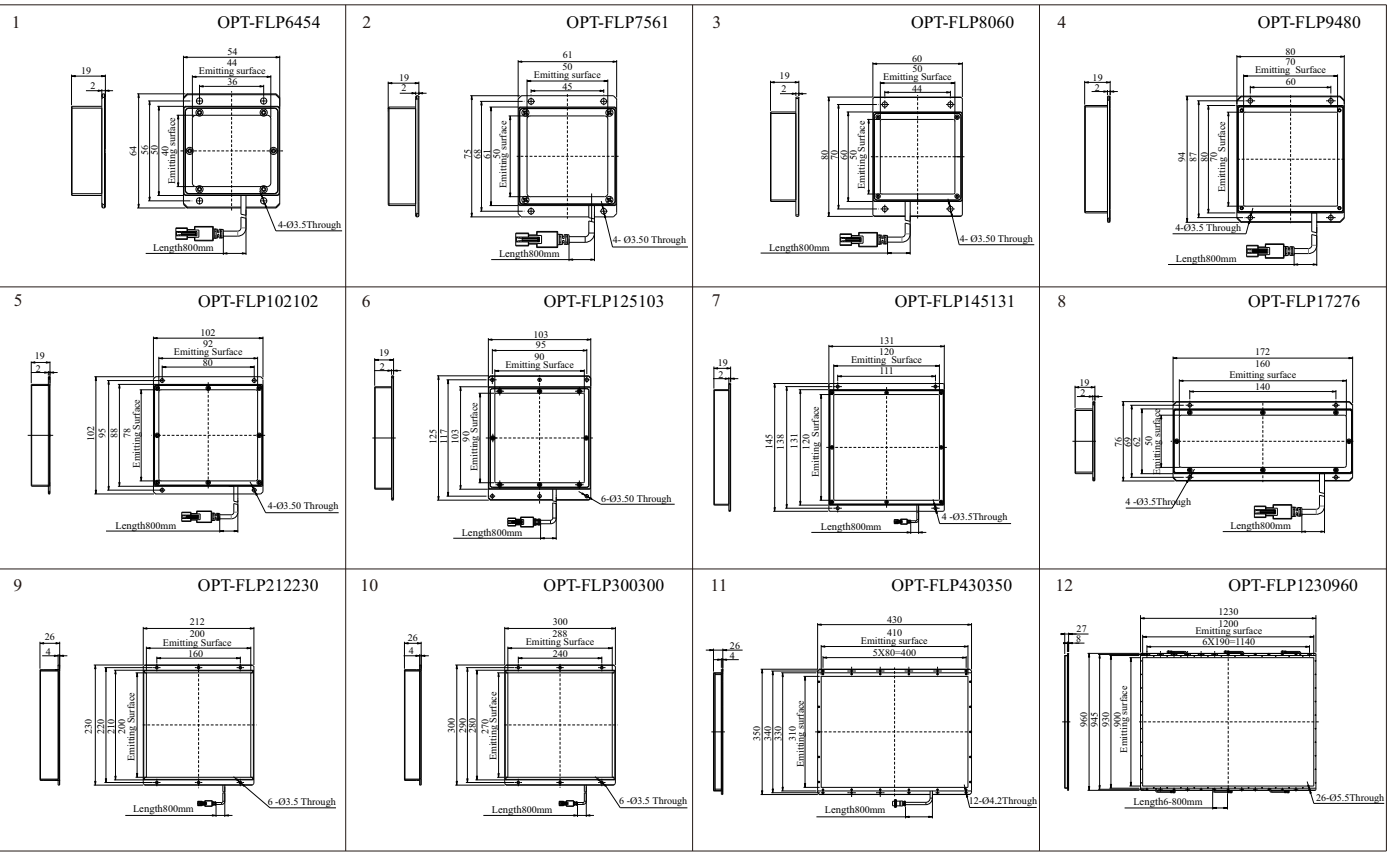


Structure display and working way

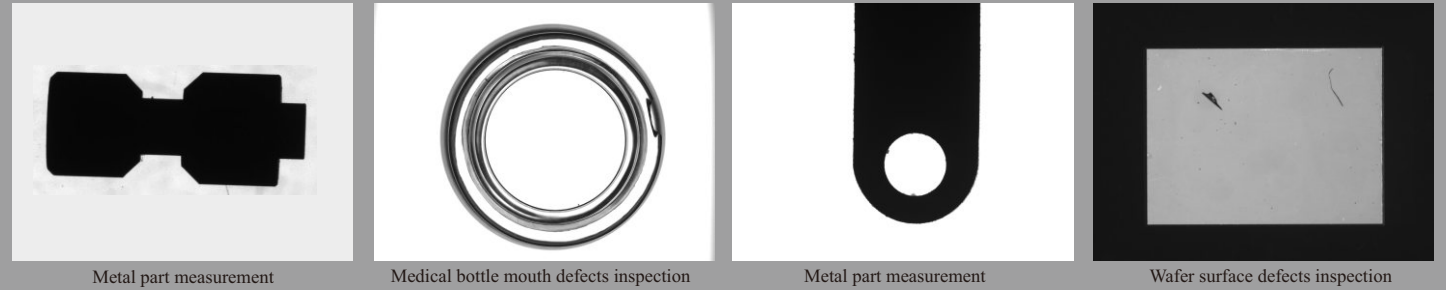
Model Table

Model	Emitting Surface	Output Power ● ● ● ○	Output Power ●	Color ● ● ● ○	Size
OPT-FLP6454	44x40	24V/1.7W	24V/1.2W	● ● ● ○	1
OPT-FLP7561	50x50	24V/2.6W	24V/1.7W	● ● ● ○	2
OPT-FLP8060	50x50	24V/2.3W	24V/1.7W	● ● ● ○	3
OPT-FLP9480	70x70	24V/5.2W	24V/3.6W	● ● ● ○	4
OPT-FLP102102	160x160	24V/7.2W	24V/4.8W	● ● ● ○	5
OPT-FLP125103	90x90	24V/10.1W	24V/8.1W	● ● ● ○	6
OPT-FLP145131	120x120	24V/13.2W	24V/9.6W	● ● ● ○	7
OPT-FLP17276	50x160	24V/7.8W	24V/5.2W	● ● ● ○	8
OPT-FLP212230	200x200	24V/24.0W	24V/19.2W	● ● ● ○	9
OPT-FLP300300	270x288	24V/62.4W	24V/38.4W	● ● ● ○	10
OPT-FLP430350	310x410	24V/96.0W	24V/48.0W	● ● ● ○	11
OPT-FLP1230960	1200x900	24V/691.2W	24V/384.0W	● ● ● ○	12

Dimensional drawings (mm)



Application example



Metal part measurement

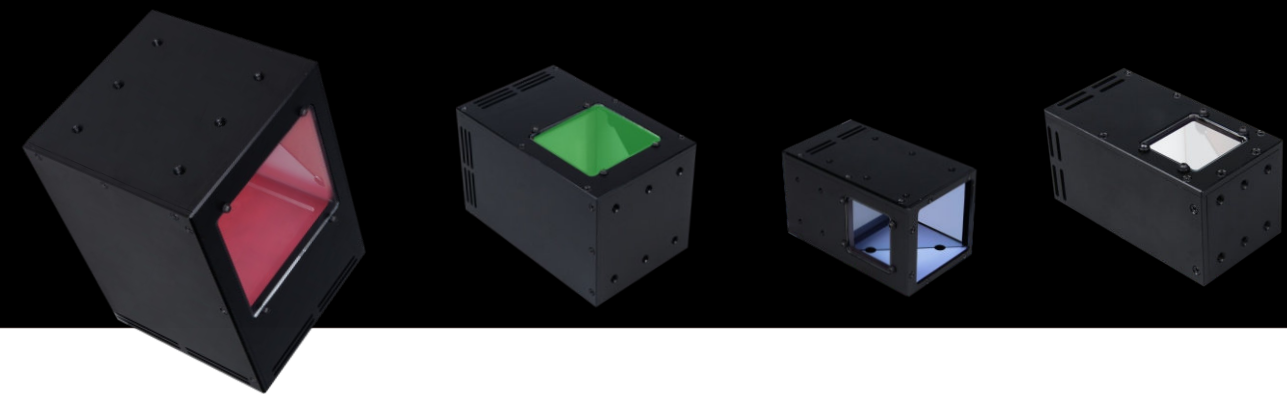
Medical bottle mouth defects inspection

Metal part measurement

Wafer surface defects inspection

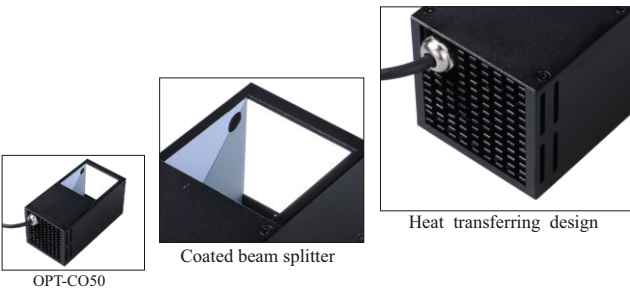
Coaxial Light OPT-CO series

Show the uneven surface information, reduce the surface reflection
Mainly used for the inspection of surface scratch, flaw, damage and so on



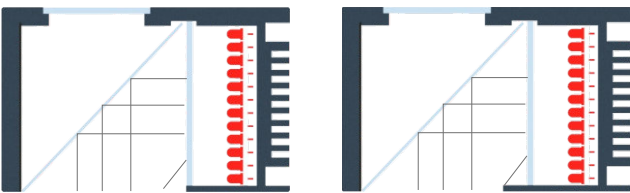
Special heat transferring design for a long service life time cycle and the stability

Special coated beam splitter to prevent the light loss



High density LED chips array, a big upgrading on the illumination brightness

High image resolution and uniform illumination



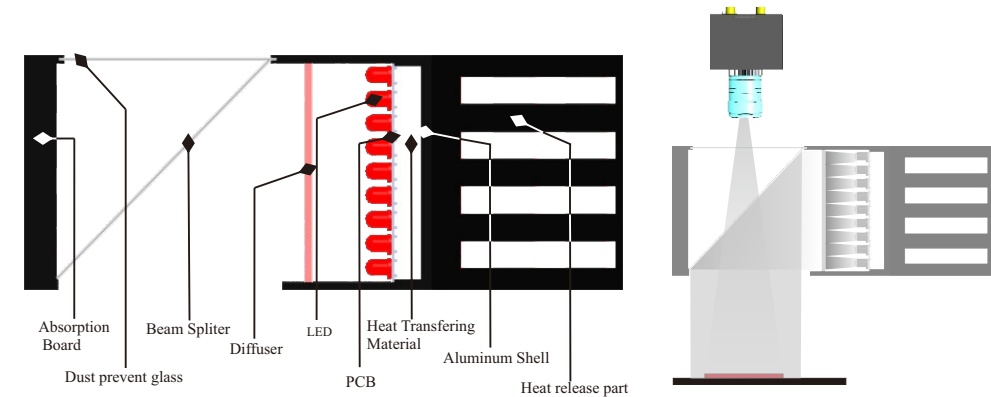
Application Area

- ◆ The inspection of the scratches on the highly reflective surface
- ◆ Inspection of the breakage on the chip parts and silicon wafers
- ◆ The mark point position
- ◆ The identification of label on the package
- ◆ The identification of laser marking characteristics and 2D code

Selection Guide

OPT-CO150
width
coaxial light
OPT

Note: The structure picture is only for your reference

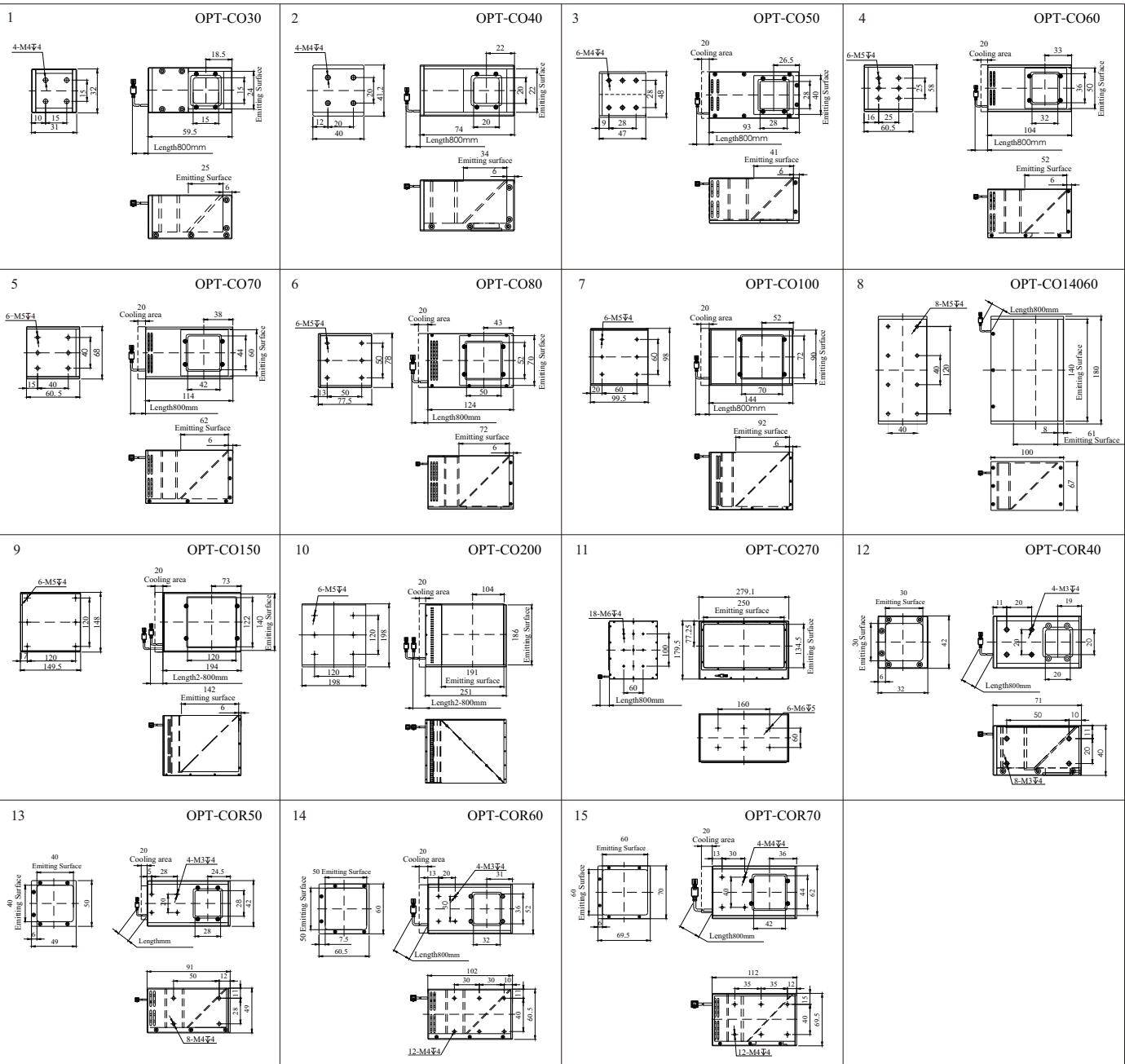


Structure display and working way

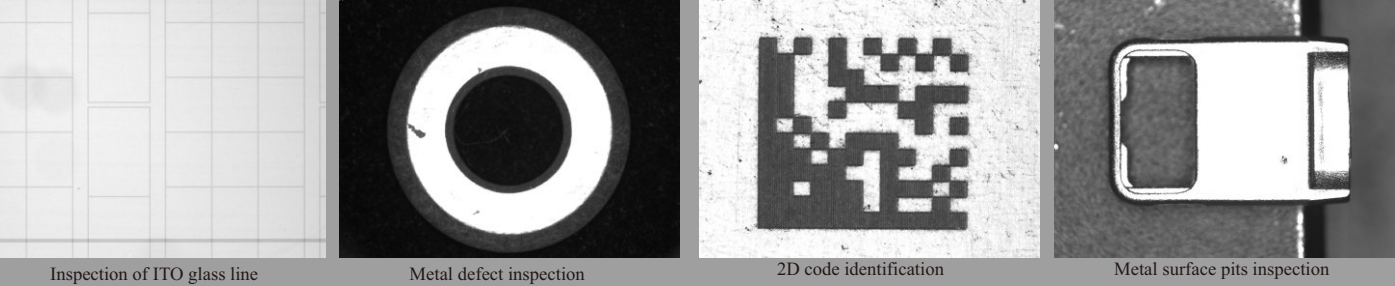
Model Table

Model	Output Power	Output Power	Color	Size
OPT-CO30	24V/1.6W	24V/0.6W	●●●●	1
OPT-CO40	24V/1.7W	24V/0.9W	●●●●	2
OPT-CO50	24V/5.0W	24V/2.8W	●●●●	3
OPT-CO60	24V/8.0W	24V/3.7W	●●●●	4
OPT-CO70	24V/11.9W	24V/6.4W	●●●●	5
OPT-CO80	24V/13.4W	24V/6.9W	●●●●	6
OPT-CO100	24V/17.5W	24V/11.3W	●●●●	7
OPT-CO14060	24V/12.5W	24V/6.1W	●●●●	8
OPT-CO150	24V/36.0W	24V/24.0W	●●●●	9
OPT-CO200	24V/57.6W	24V/48.0W	●●●●	10
OPT-CO270	24V/24.0W	24V/19.2W	●●●●	11
OPT-COR40	24V/2.0W	24V/1.2W	●●●●	12
OPT-COR50	24V/3.6W	24V/2.1W	●●●●	13
OPT-COR60	24V/5.8W	24V/3.1W	●●●●	14
OPT-COR70	24V/6.2W	24V/3.6W	●●●●	15

Dimensional drawings (mm)

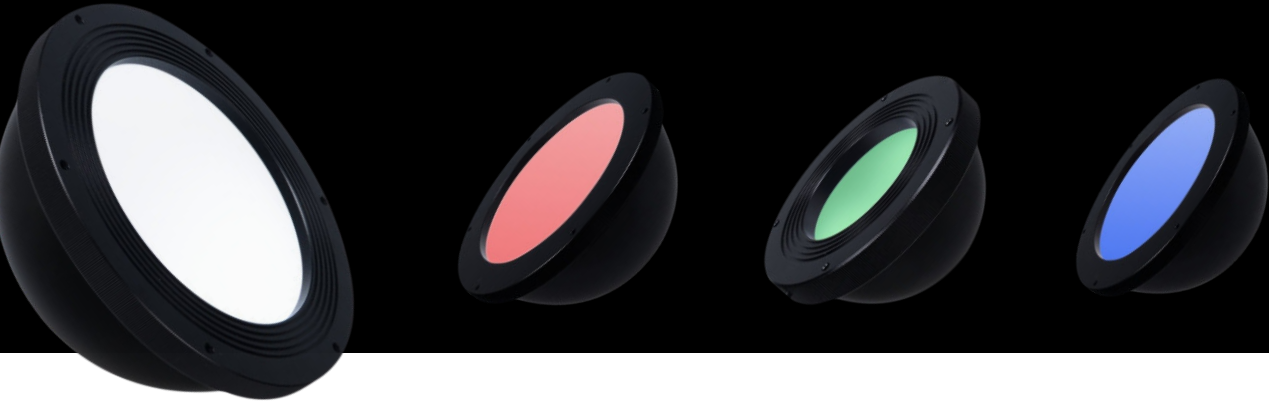


Application example



Dome Light OPT-RID series

Providing uniform and shadowless lighting, eliminating reflective and shadows, ideal choice for the shinny and curved surface.

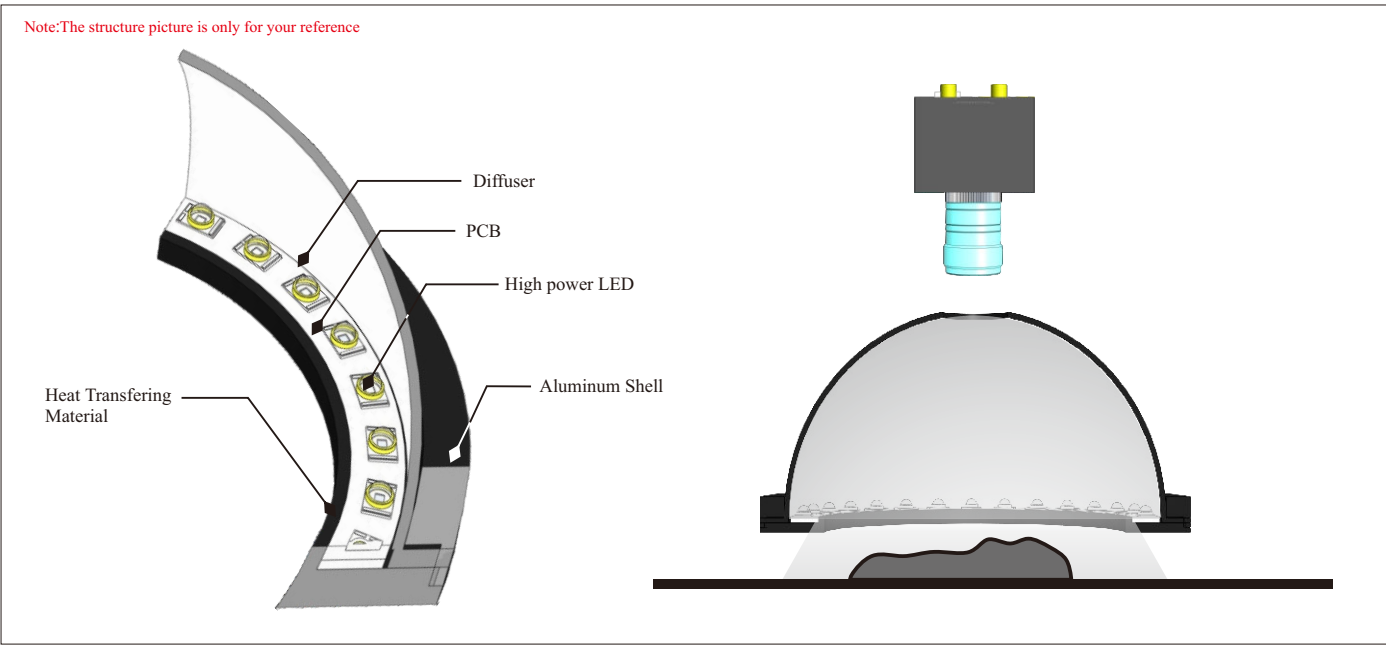
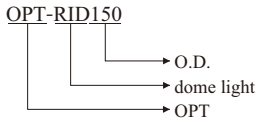


With sphere structure, lighting comes out from botton and 360 degree reflective, the whole image result is very uniformity

Application Area

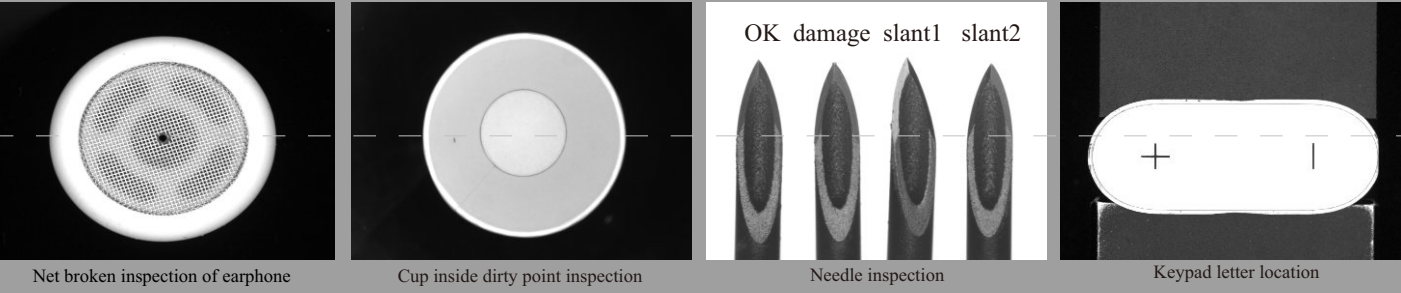
- ◆ Inspection on the curved and uneven surface
- ◆ Highly reflective metal and glass surface inspection

Selection Guide



Structure display and working way

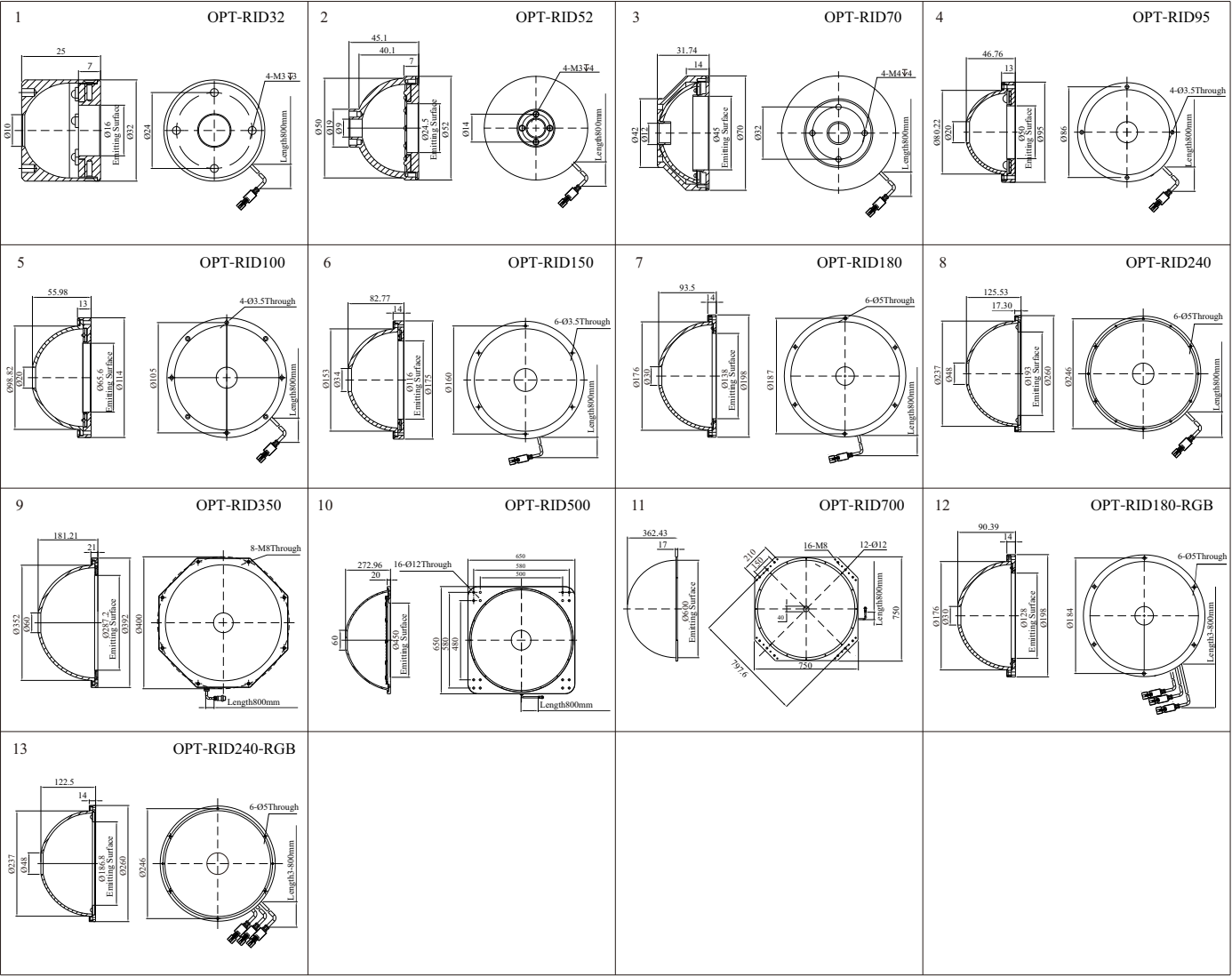
Application example



Model Table

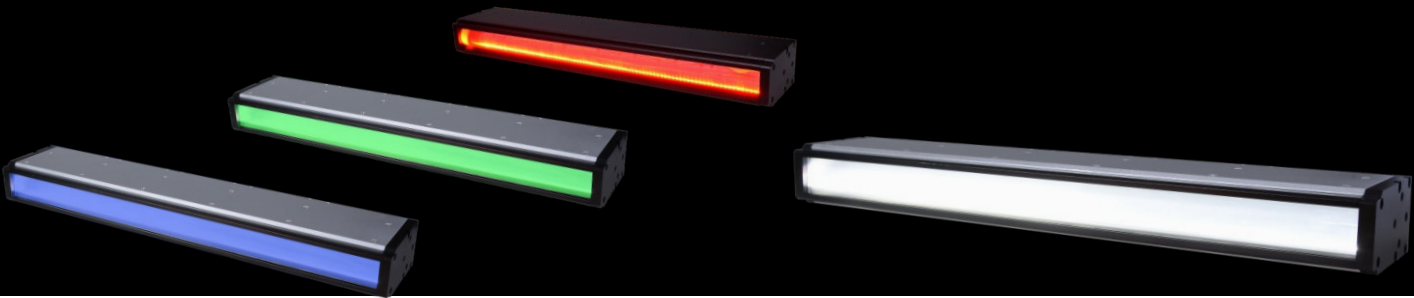
Model	Output Power 	Output Power 	Color	Size
OPT-RID32	24V/5.2W	24V/5.2W		1
OPT-RID52	24V/4.8W	24V/4.8W		2
OPT-RID70	24V/1.9W	24V/0.6W		3
OPT-RID95	24V/6.0W	24V/6.0W		4
OPT-RID100	24V/6.0W	24V/6.0W		5
OPT-RID150	24V/9.6W	24V/7.2W		6
OPT-RID180	24V/9.6W	24V/9.6W		7
OPT-RID240	24V/26.4W	24V/12.0W		8
OPT-RID350	24V/43.2W	24V/26.4W		9
OPT-RID500	24V/86.4W	24V/57.6W		10
OPT-RID700	24V/96.0W	24V/86.4W		11
OPT-RID180-RGB	24V/14.4W			12
OPT-RID240-RGB	24V/38.4W			13

Dimensional drawings(mm)

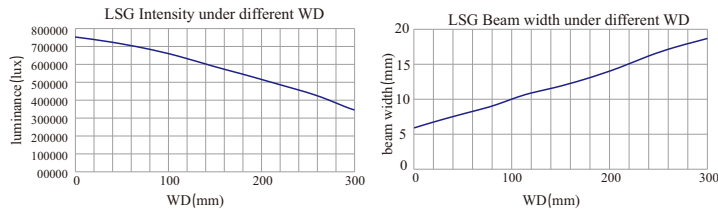


High Power Line Scan Light OPT-LSG series New

High power LED, special convergent lens,
used for line scan application



Intensity is more than 750,000 Lux

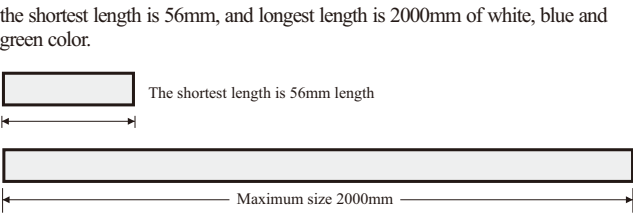


Above data is just for reference

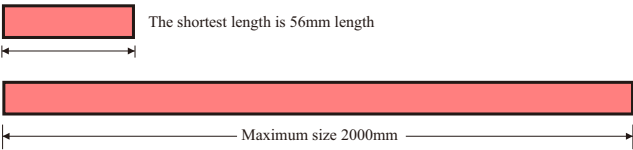
The total intensity can be more than 1M lux for special inquiry

Long work distance, line scan light is the best choose, light focus point can be made by choose.

Size can be customized as inquired



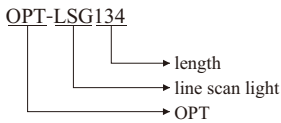
the shortest length is 88mm, and longest length is 2000mm of red color. Other length can be customized easily



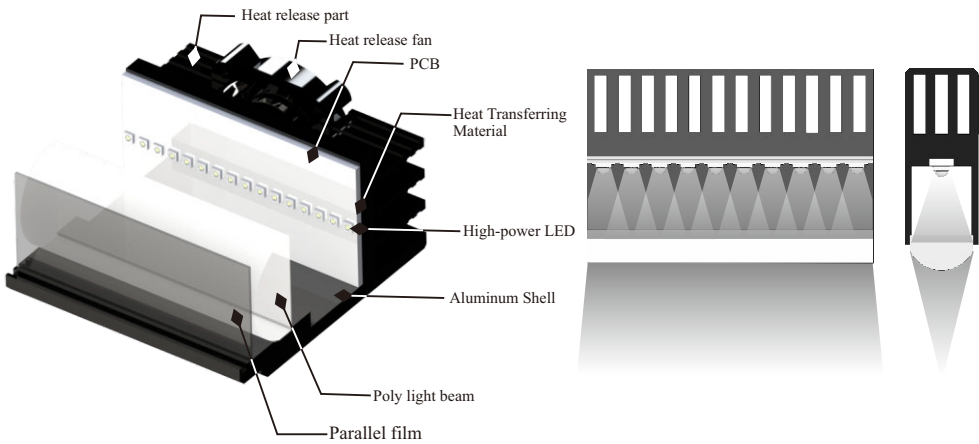
Application Area

- ◆ Mobile screen surface defects inspection
- ◆ Aluminum foil surface scratch inspection
- ◆ Steel surface defects inspection

Selection Guide

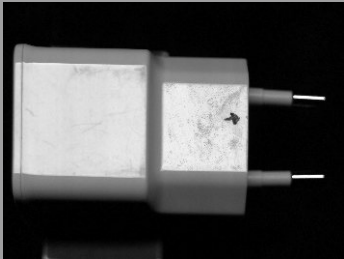


Note:The structure picture is only for your reference

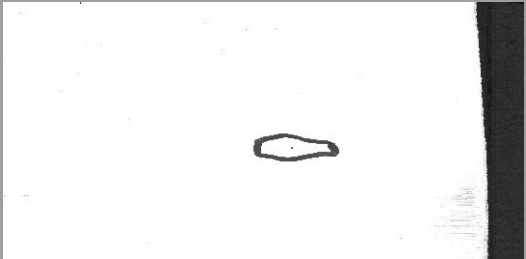


Structure display and working way

Application example



Charger surface scratches inspection



Card surface defect inspection



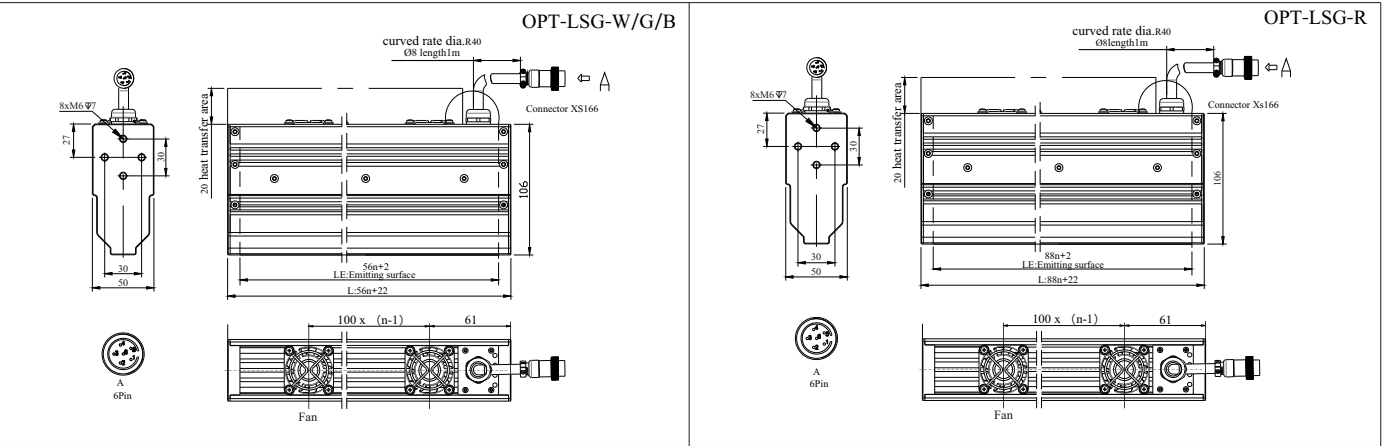
Bearing surface defect inspection

Model Table

Model	Output Power	Color	Size	Emitting Surface(LE)	n
OPT-LSG134-W	24V/33.6W	●●○	134	112	2
OPT-LSG246-W	24V/67.2W	●●○	246	224	4
OPT-LSG358-W	24V/100.8W	●●○	358	336	6
OPT-LSG470-W	24V/134.4W	●●○	470	448	8
OPT-LSG582-W	24V/168.0W	●●○	582	560	10
OPT-LSG694-W	24V/201.6W	●●○	694	672	12
OPT-LSG806-W	24V/235.2W	●●○	806	784	14
OPT-LSG918-W	24V/268.8W	●●○	918	896	16
OPT-LSG1030-W	24V/302.4W	●●○	1030	1008	18
OPT-LSG1142-W	24V/336.0W	●●○	1142	1120	20
OPT-LSG1254-W	24V/369.6W	●●○	1254	1232	22
OPT-LSG1478-W	24V/436.8W	●●○	1478	1456	26
OPT-LSG1814-W	24V/537.6W	●●○	1814	1792	32
OPT-LSG2038-W	24V/604.8W	●●○	2038	2016	36
OPT-LSG2486-W	24V/739.2W	●●○	2486	2464	44

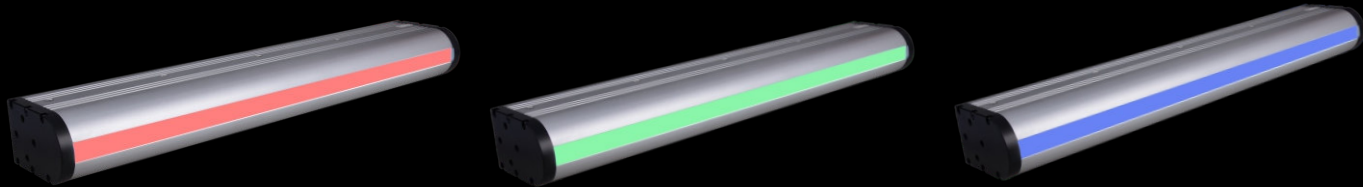
Model	Output Power	Color	Size	Emitting Surface(LE)	n
OPT-LSG110-R	24V/16.8W	●	110	88	1
OPT-LSG198-R	24V/33.6W	●	198	176	2
OPT-LSG286-R	24V/50.4W	●	286	264	3
OPT-LSG374-R	24V/67.2W	●	374	352	4
OPT-LSG462-R	24V/84.0W	●	462	440	5
OPT-LSG550-R	24V/100.8W	●	550	528	6
OPT-LSG638-R	24V/117.6W	●	638	616	7
OPT-LSG726-R	24V/134.4W	●	726	704	8
OPT-LSG814-R	24V/151.2W	●	814	792	9
OPT-LSG902-R	24V/168.0W	●	902	880	10
OPT-LSG990-R	24V/184.8W	●	990	968	11
OPT-LSG1254-R	24V/235.2W	●	1254	1232	14
OPT-LSG1606-R	24V/302.4W	●	1606	1684	18
OPT-LSG1870-R	24V/352.8W	●	1870	1848	21
OPT-LSG2046-R	24V/386.4W	●	2046	2024	23
OPT-LSG2310-R	24V/436.8W	●	2310	2288	26

Dimensional drawings(mm)

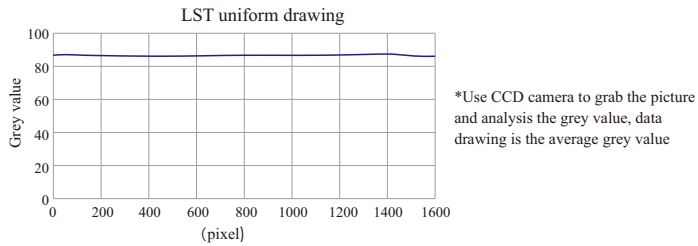


High Uniformity Line Scan Light OPT-LST series

Compact LED array and high uniformity diffuser structure can help to reduce the surface reflective and uneven problem

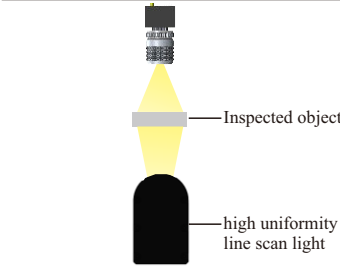


It is very uniformity



Above data is just for reference

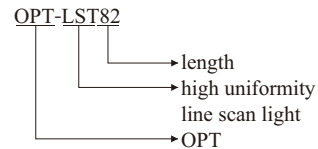
Used as back light



Application Area

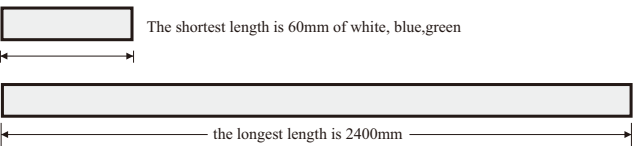
- ◆ Line scan application
- ◆ Film, glass surface scratch and dirty inspection
- ◆ High speed AOI application

Selection Guide

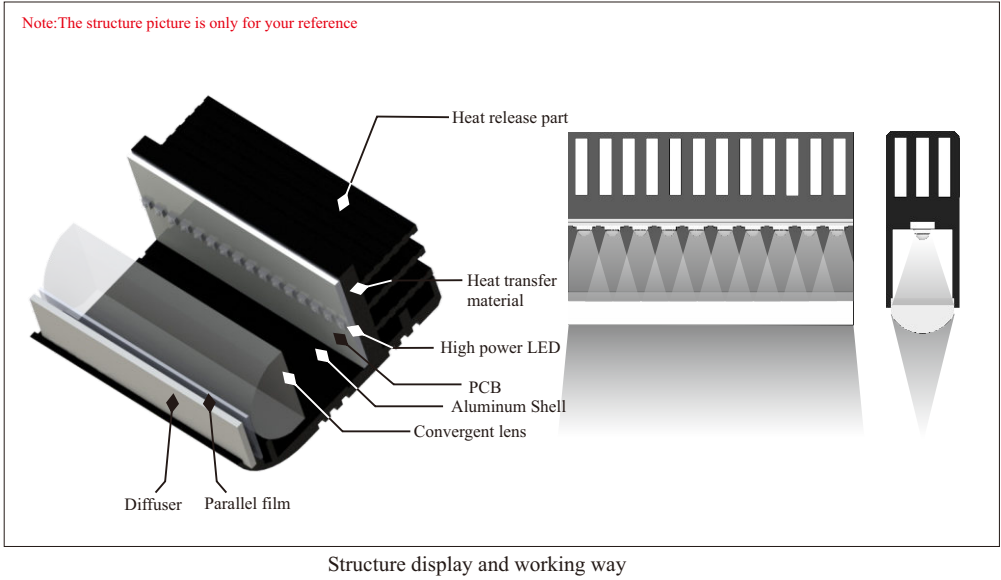
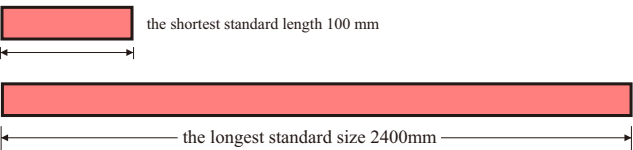


Length can be customized

The shortest standard length of white,blue,green color is 60mm, the longest standard length is 2400mm. other dimension can be customized easily



The shortest length of red is 100mm, and longest length 2400mm. other dimension can be customized



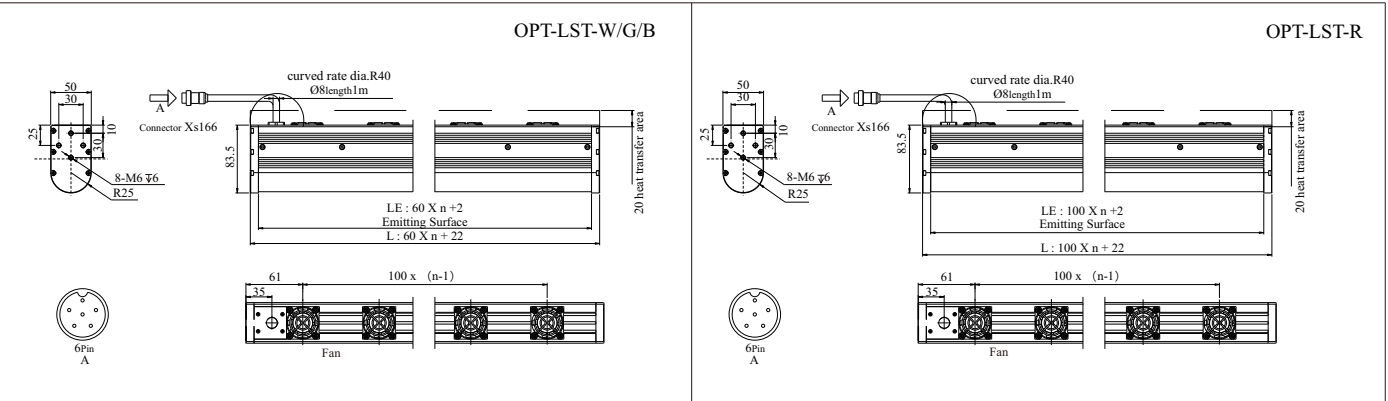
Structure display and working way

Model Table

Model	Output Power	Color	Size	Emitting Surface(LE)	n
OPT-LST82-W	24V/9.6W	●●○	82	62	1
OPT-LST142-W	24V/19.2W	●●○	142	122	2
OPT-LST202-W	24V/28.8W	●●○	202	182	3
OPT-LST262-W	24V/38.4W	●●○	262	242	4
OPT-LST322-W	24V/48.0W	●●○	322	302	5
OPT-LST382-W	24V/57.6W	●●○	382	362	6
OPT-LST442-W	24V/67.2W	●●○	422	402	7
OPT-LST502-W	24V/76.8W	●●○	502	482	8
OPT-LST562-W	24V/86.4W	●●○	562	542	9
OPT-LST622-W	24V/96.0W	●●○	622	602	10
OPT-LST682-W	24V/105.6W	●●○	682	662	11
OPT-LST742-W	24V/115.2W	●●○	742	722	12
OPT-LST802-W	24V/124.8W	●●○	802	782	13
OPT-LST862-W	24V/134.4W	●●○	862	842	14
OPT-LST922-W	24V/144.0W	●●○	922	902	15
OPT-LST982-W	24V/153.6W	●●○	982	962	16
OPT-LST1042-W	24V/163.2W	●●○	1042	1022	17

Model	Output Power	Color	Size	Emitting Surface(LE)	n
OPT-LST1102-W	24V/172.8W	●●○	1102	1082	18
OPT-LST1162-W	24V/182.4W	●●○	1162	1142	19
OPT-LST1222-W	24V/192.0W	●●○	1222	1202	20
OPT-LST2422-W	24V/384.0W	●●○	2422	2402	40
OPT-LST122-R	24V/9.6W	●○●	122	102	1
OPT-LST222-R	24V/19.2W	●○●	222	202	2
OPT-LST322-R	24V/28.8W	●○●	322	302	3
OPT-LST422-R	24V/38.4W	●○●	422	402	4
OPT-LST522-R	24V/48.0W	●○●	522	502	5
OPT-LST622-R	24V/57.6W	●○●	622	602	6
OPT-LST722-R	24V/67.2W	●○●	722	702	7
OPT-LST822-R	24V/76.8W	●○●	822	802	8
OPT-LST922-R	24V/86.4W	●○●	922	902	9
OPT-LST1022-R	24V/96.0W	●○●	1022	1002	10
OPT-LST1122-R	24V/105.6W	●○●	1122	1102	11
OPT-LST1222-R	24V/115.2W	●○●	1222	1202	12
OPT-LST2422-R	24V/192.0W	●○●	2422	2402	24

Dimensional drawings(mm)



Especially for the inspection of printing with highly reflective surface



Spectroscope design, preventing the light loss

- ◆ Suitable for the line scan camera
- ◆ Inspection of the breakage on glasses, and the inertial impurity
- ◆ Inspection of high-speed printing quality

```

graph TD
    A[OPT-LSC82] --> B[length]
    A --> C[coaxial Line Light]
    A --> D[OPT]
  
```

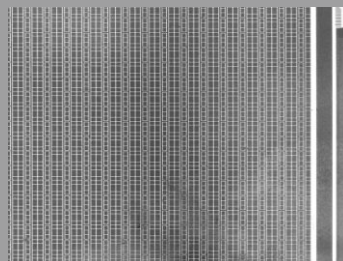
Note: The structure picture is only for your reference

Structure display and working way

PCB print circuit inspection



Card surface inspection



Mobile ITO circuit inspection



Disk surface scratch inspection

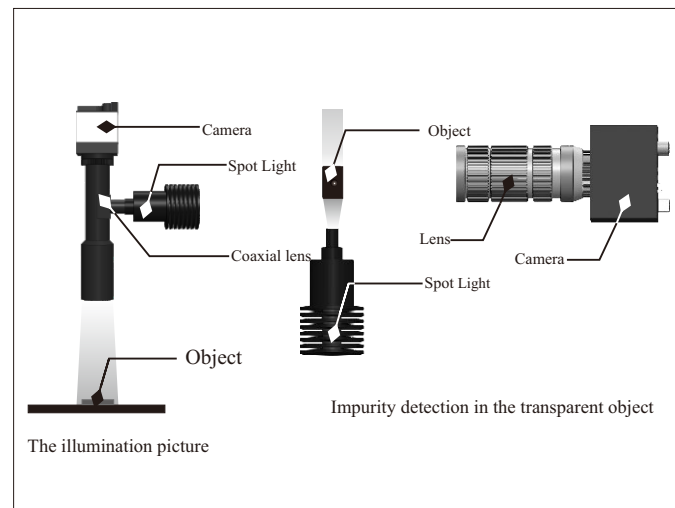
Model	Output Power	Emitting Surface (LC/mm)	Length Size (LC/mm)	Color	Size	n
OPT-LSC82-W	24V/9.6W	42	82		1	1
OPT-LSC142-W	24V/19.2W	102	142		1	2
OPT-LSC202-W	24V/28.8W	162	202		1	3
OPT-LSC262-W	24V/38.4W	222	262		1	4
OPT-LSC322-W	24V/48.0W	282	322		1	5
OPT-LSC122-R	24V/9.6W	82	122		2	1
OPT-LSC222-R	24V/19.2W	182	222		2	2
OPT-LSC322-R	24V/28.8W	282	322		2	3

[illegible]

Efficient thermal system for long life cycle

OPT-PI0803

- power
- output diameter
- spot light
- OPT



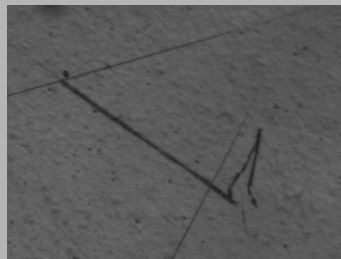
The illumination picture

Impurity detection in the transparent object

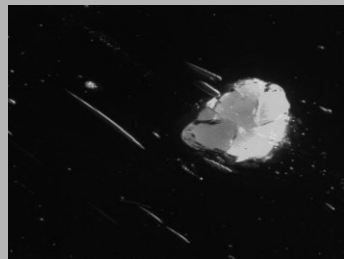
A 3D cutaway schematic diagram of the device's thermal release mechanism. The diagram shows a cylindrical aluminum shell with a textured, finned exterior. Inside the shell, a central assembly is shown. This assembly includes a light-guiding beam (a white cylinder) and a poly light beam (a blue cylinder) that are connected to high-intensity LEDs (yellow circles). A thermal releaser (a black diamond-shaped component) is positioned to interact with the central assembly. Labels with leader lines identify the following components: Thermal releaser, Aluminum Shell, Light-guiding beam, Poly light beam, and High intensity LEDs.

Structure display and working way

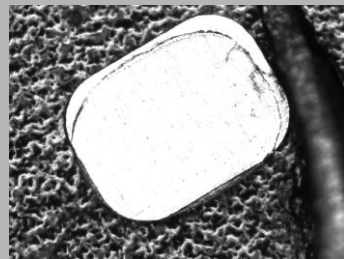
Mark point location



Smooth surface Scratches inspection



Bubble inspection in glass bottle



Bubble inspection in glass bottle

Model	Output Power🟡🔵⬜	Output Power🔴	Color	Size
OPT-PI0803	5V/3W	5V/3W	🟡🔵🔴	1
OPT-PI0805	5V/5W	5V/5W	🟡🔵🔴	2
OPT-PI0810	12V/10W	12V/10W	🟡🔵🔴	3

1 OPT-PI0803

2 OPT-PI0805

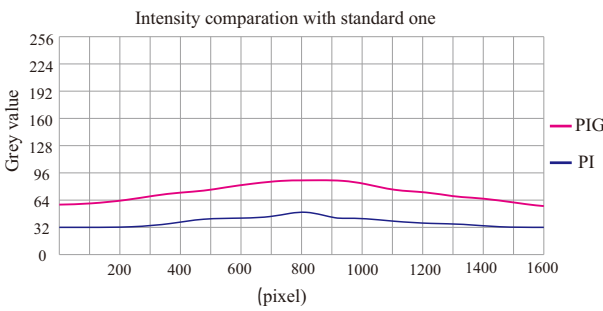
3 OPT-PI0810

High Intensity Spot Light OPT-PIG series New

High intensity LED, intensity 2 times higher than standard one



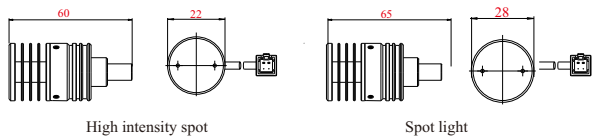
Two times intensity higher than standard one



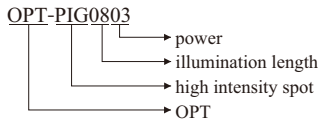
Use CCD camera to grab the picture and analysis the grey value, above drawing is the average grey value

*Above data is just for reference

Smaller dimension than standard one



Selection Guide

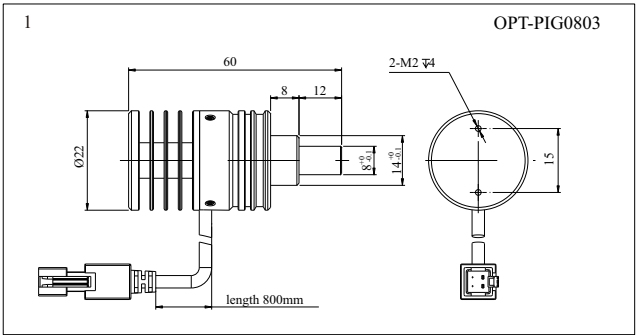


Remark: PIG and PI is used in same application

Model Table

Model	Output Power   	Output Power 	Color   	Size
OPT-PIG0803	5V/3.5W	5V/3.5W	  	1

Dimensional drawings(mm)

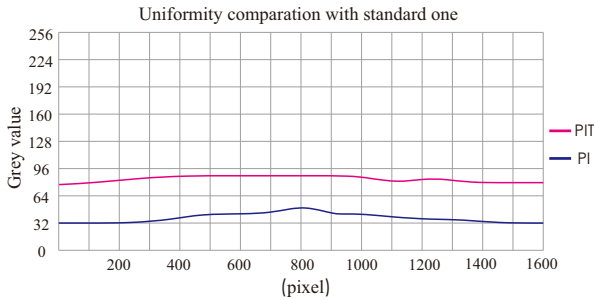


High Uniformity Spot Light OPT-PIT series New

Special illumination structure, work together with coaxial telecentric lens with bigger FOV



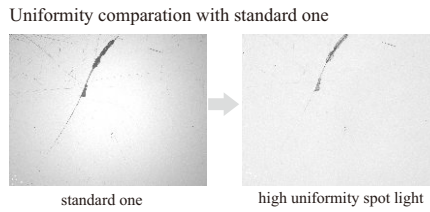
Uniformity is pretty better than standard one



Use CCD camera to grab the picture and analysis the grey value, above drawing is the average grey value

*Above data is just for reference

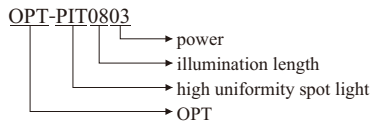
High uniformity spot light with the same dimension with high intensity spot light



Application Area

- ◆ Mark location
- ◆ Chips Inspection
- ◆ Image scan
- ◆ Surface gap inspection
- ◆ LCD surface inspection

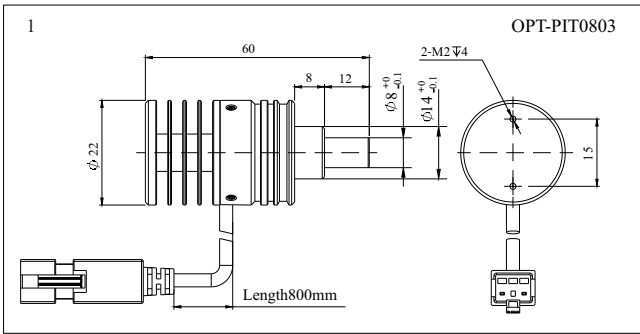
Selection Guide



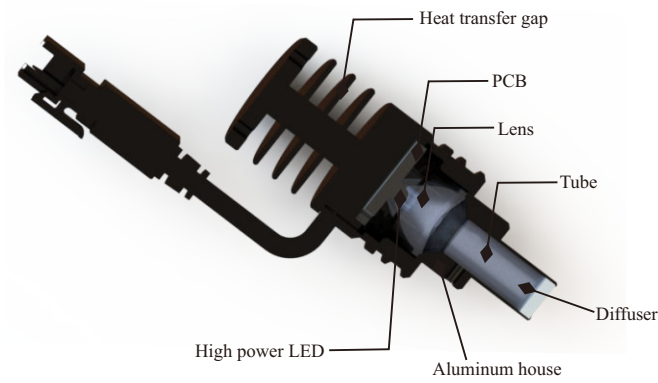
Model Table

Model	Output Power   	Output Power 	Color   	Size
OPT-PIT0803	5V/3W	5V/3W	  	1

Dimensional drawings(mm)

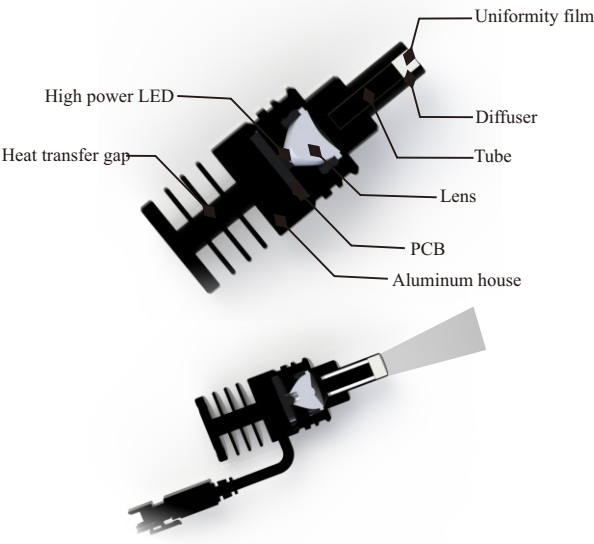


Note: the structure picture in only for your reference



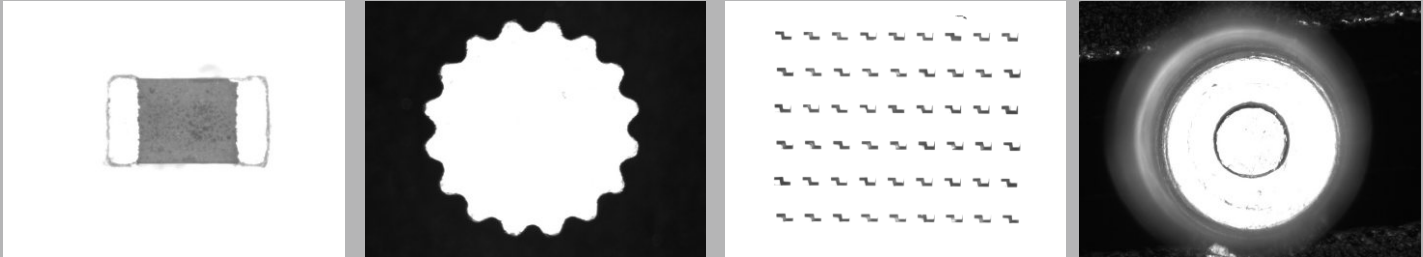
Structure display

Note: the structure picture in only for your reference



Structure display and work way

Application example



Capacitor surface inspection

Screw surface and dent or convex point inspection

Connector inside hole distance measurement

Electronic solder joint inspection

Application example



Mobile screen mark location

LED chip golden line inspection

OLED edge location

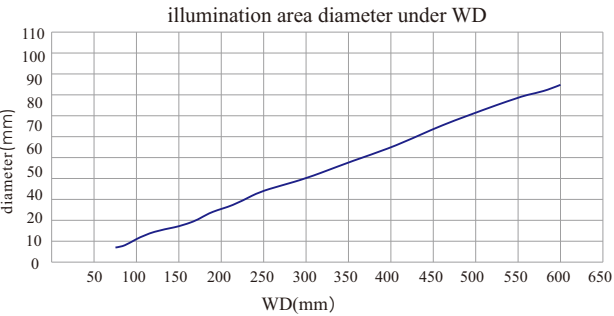
Chips configure inspection

Collimated Spot Light OPT-PIPL series New

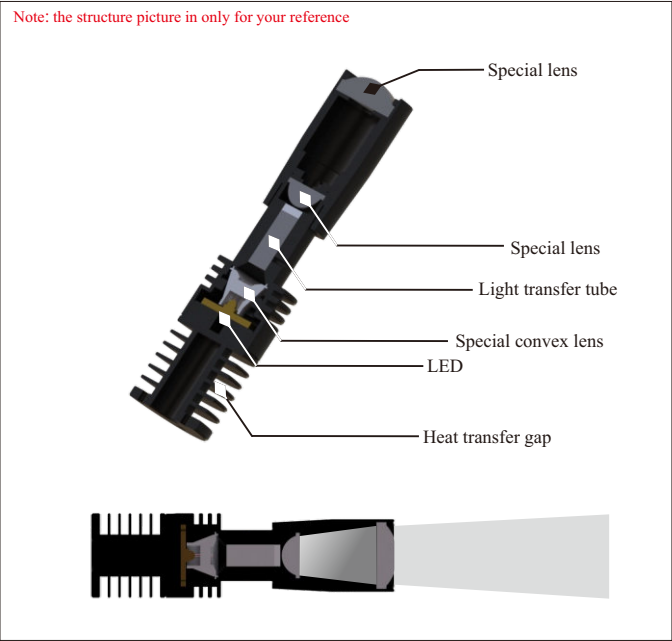
Good parallel direction



WD is 80-250mm, illumination area can be adjusted

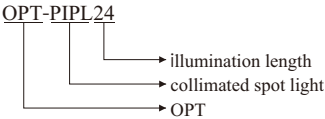


*Above data is just for reference



Structure display and working

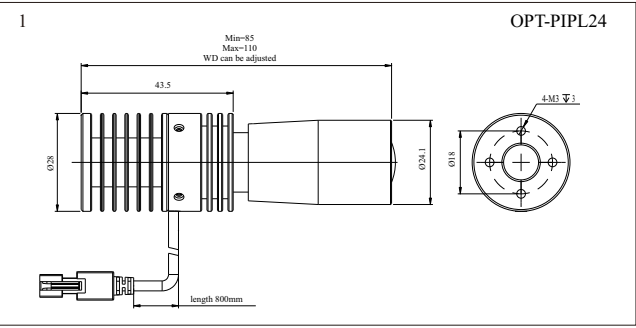
Selection Guide



Model Table

Model	Output Power	Output Power	Color	Size
OPT-PIPL24	5V/5W	5V/5W	●●●●●	1

Dimensional drawings(mm)



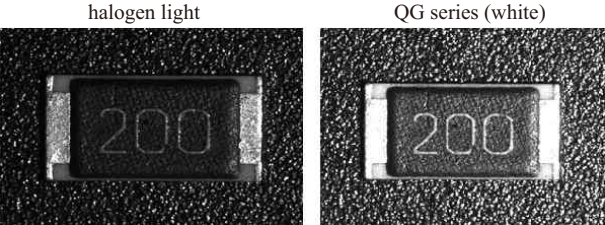
Fiber Spot Light OPT-QG series

High power fiber spot light, could be the replacement of halogen light under the circumstance of unchanged the original equipment



Take the German-original high intensity LED chips, 2 times longer life time than the halogen light

25W power cost, the brightness equivalent to 100 W halogen light

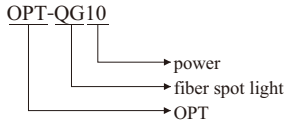


halogen light as intensity is not enough caused the image result is not good, while QG series brightness can get brightness image.

Application Area

- ◆ Be the replacement in halogen light applied area
- ◆ Illumination in the medical field
- ◆ Semiconductor equipment
- ◆ Work with microscope
- ◆ General industry illumination

Selection Guide



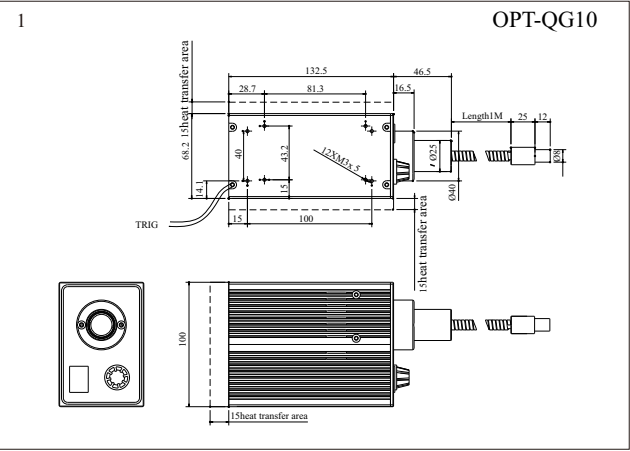
Integrated chassis, with the 100-240V power installed



Model Table

Model	Output Power	Color	Size
OPT-QG10	24V/10W	●●●●●	1

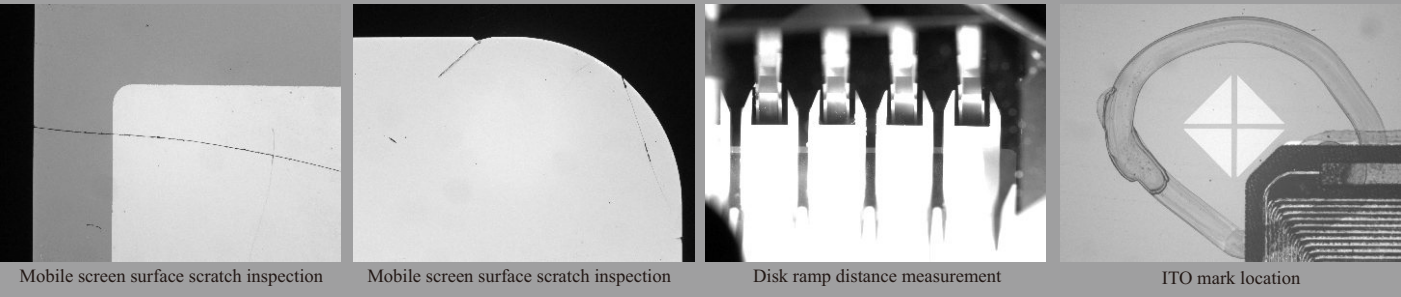
Dimensional drawings(mm)



Application example



Application example



Half Ring Light OPT-RIC series

Half ring light is good for curved object application, combined with bar light, it can be oval shape



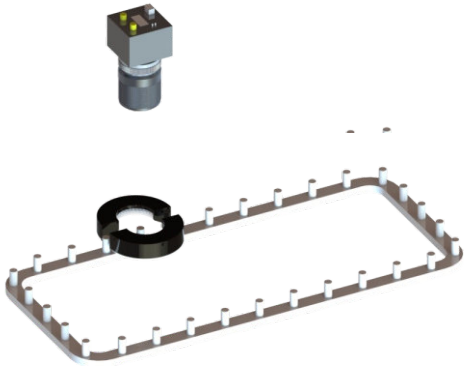
The best option for elliptical object

Special half ring light design, in the curved object inspection, it achieve low angle illumination and get very good comparison

Compact LED array to increase the intensity and uniformity

Curved angle can be customized

Combined with bar light can be circle illumination



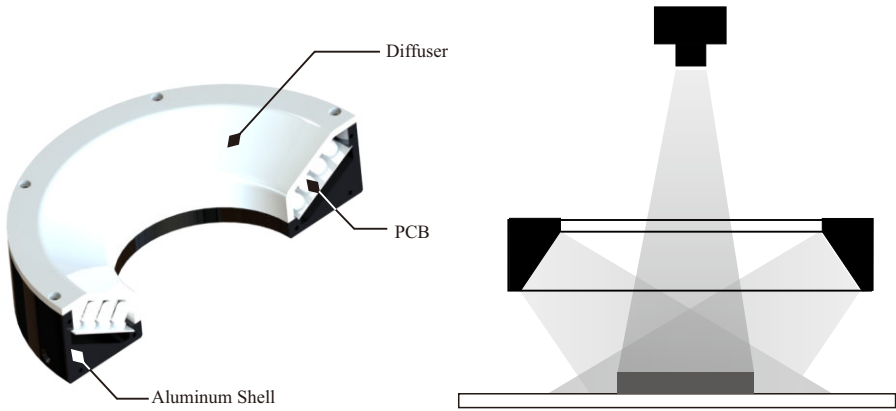
Application Area

- ◆ Curved object size measurement
- ◆ Inspection of reflective surface

Selection Guide

- OPT-RIC7075
- emitting Angle
 - outer diameter
 - half ring light
 - OPT

Note : The structure picture is only for your reference

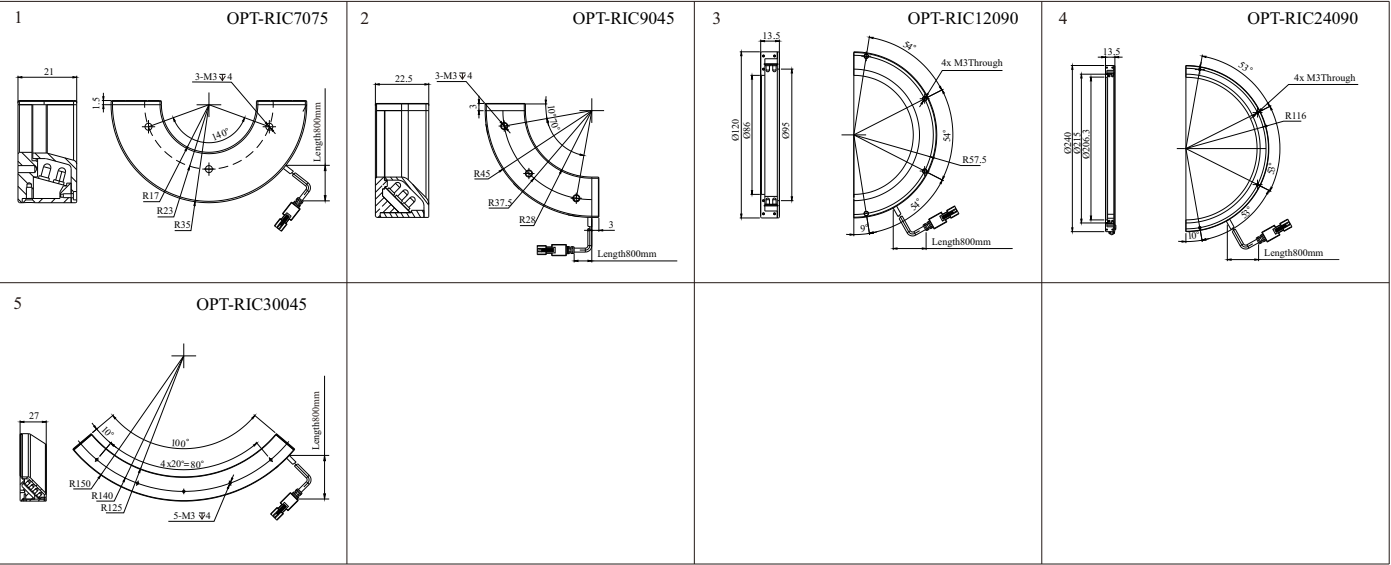


Struction display and working way

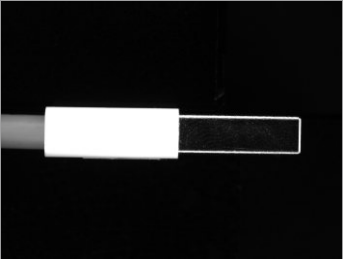
Model Table

Model	Output Power ● ● ●	Output Power ●	Color ● ● ●	Size
OPT-RIC7075	24V/1.5W	24V/0.9W	● ● ●	1
OPT-RIC9045	24V/1.5W	24V/0.9W	● ● ●	2
OPT-RIC12090	24V/2.9W	24V/2.0W	● ● ●	3
OPT-RIC24090	24V/5.2W	24V/3.7W	● ● ●	4
OPT-RIC30045	24V/7.8W	24V/4.9W	● ● ●	5

Dimensional drawings(mm)



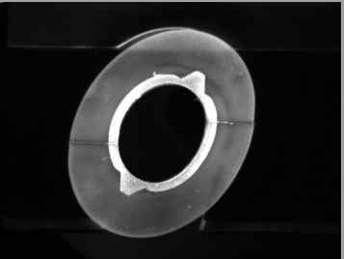
Application example



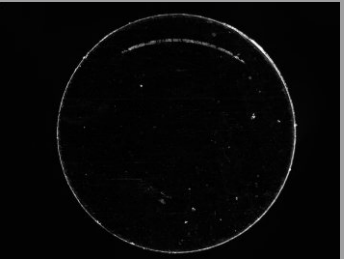
Cable dimension measurement



Wafer surface letter recognition



Silicon part shape location



Metal surface defects inspection

Low Angle Ring Light OPT-RIF series

Ring shape and diffusing illumination.Even illumination in the large square, without the shadow



Used in large ring objects and small irregularly shaped objects

Illuminate surface evenly without shadow

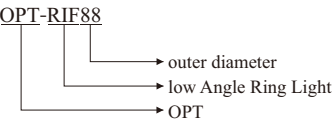
Comparing to the general ring light, it is higher uniformity illumination

In order to achieve shadowless illumination of ring light, different work distance gets different illumination result with different image result

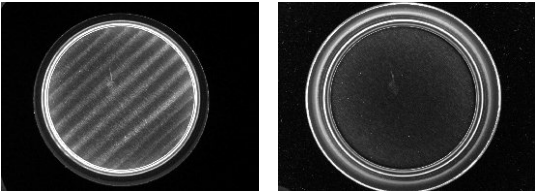
Application Area

- ◆ Inspection of surface scratches
- ◆ Identification of printing character,logo barcode, fingerprint

Selection Guide

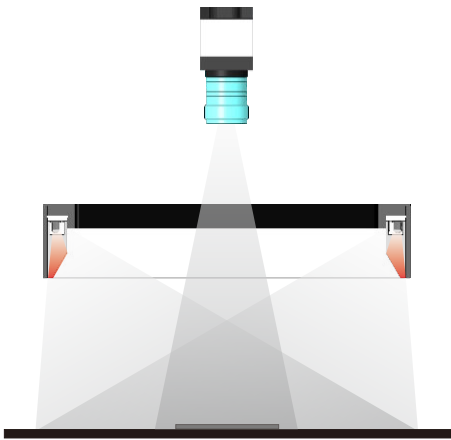
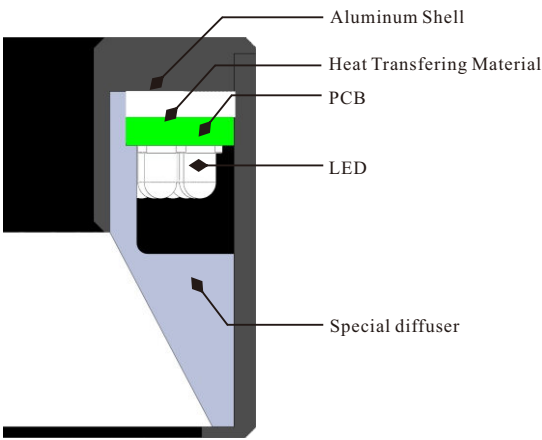


illumination result comparison



standard ring light low angle ring light

Note : The structure picture is only for your reference

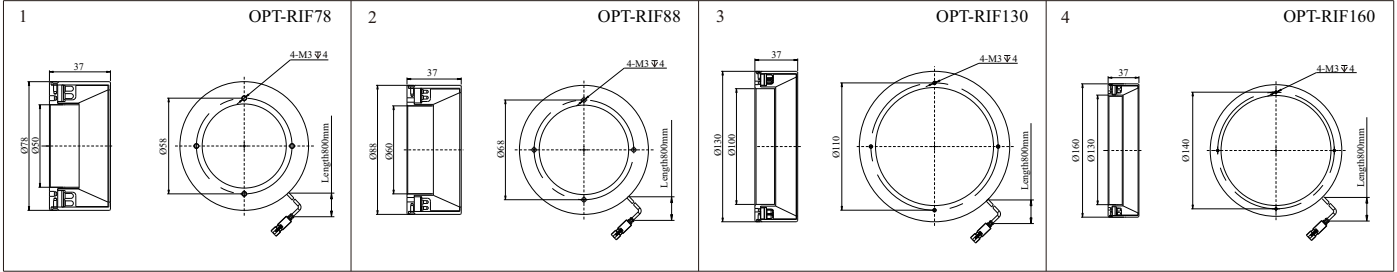


Structure display and working way

Model Table

Model	Output Power   	Output Power 	Color	Size
OPT-RIF78	24V/3.1W	24V/2.2W	   	1
OPT-RIF88	24V/4.3W	24V/2.4W	   	2
OPT-RIF130	24V/6.0W	24V/4.9W	   	3
OPT-RIF160	24V/8.0W	24V/6.0W	   	4

Dimensional drawings(mm)



Application example



Chips surface dirty inspection

Gear surface defects inspection

Glue part surface letter recognition

Knife depth measurement

Flat Dome Ring Light OPT-RIE series

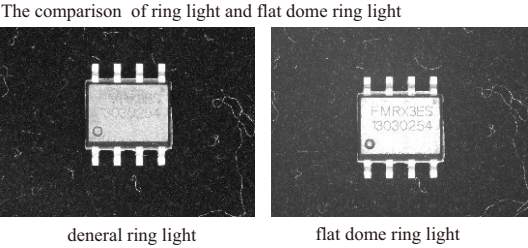
High uniform illumination for the large square area, to eliminate the flare and ghosting



Special diffuser design

Using special diffuser design to make the light diffused and reflected, and get even illumination. It can filter the tiny different and show the big different clearly.

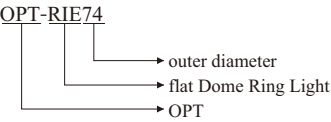
Comparing the general ring light, it is higher uniformity illumination



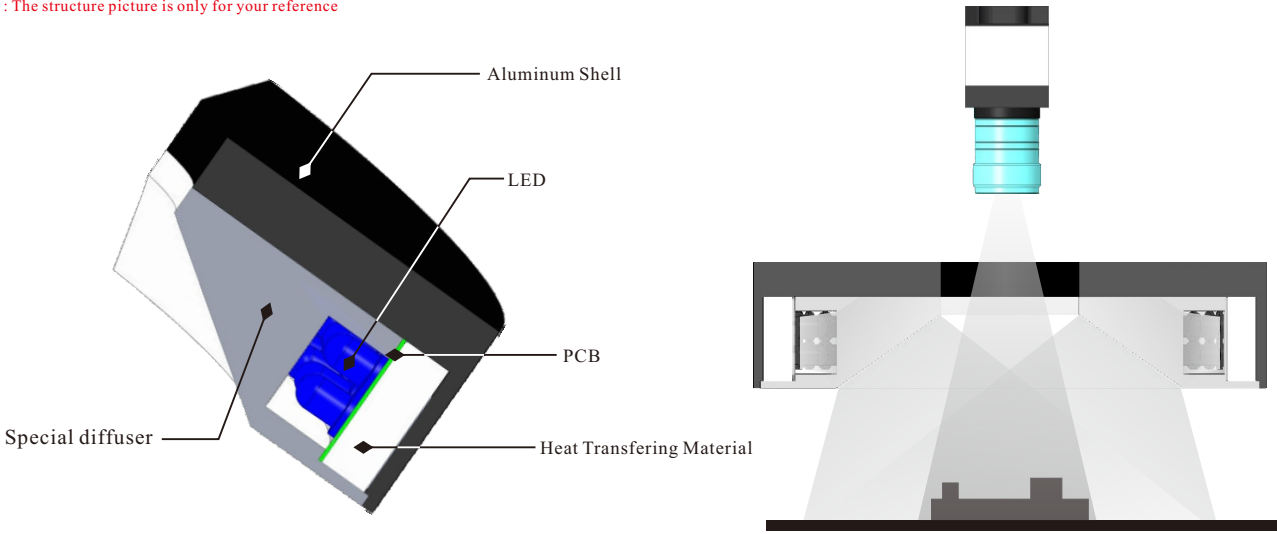
Application Area

- ◆ Metal objects locating and measurement
- ◆ Inspection of scratches

Selection Guide

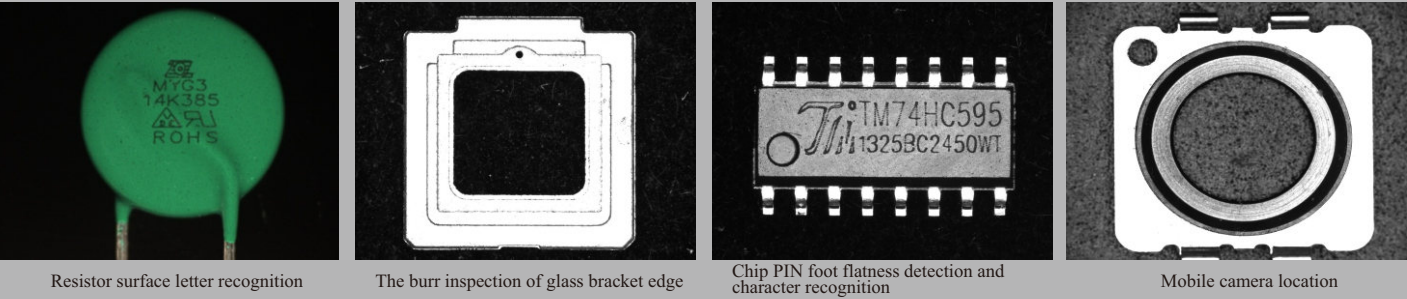


Note : The structure picture is only for your reference



Structure display and working way

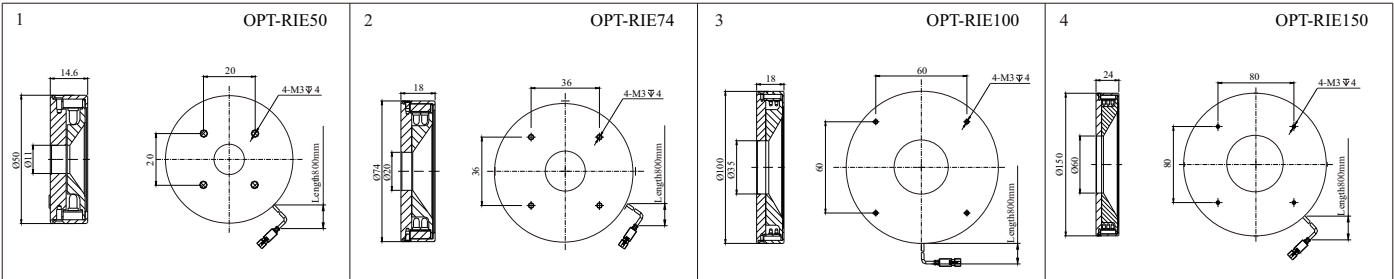
Application example



Model Table

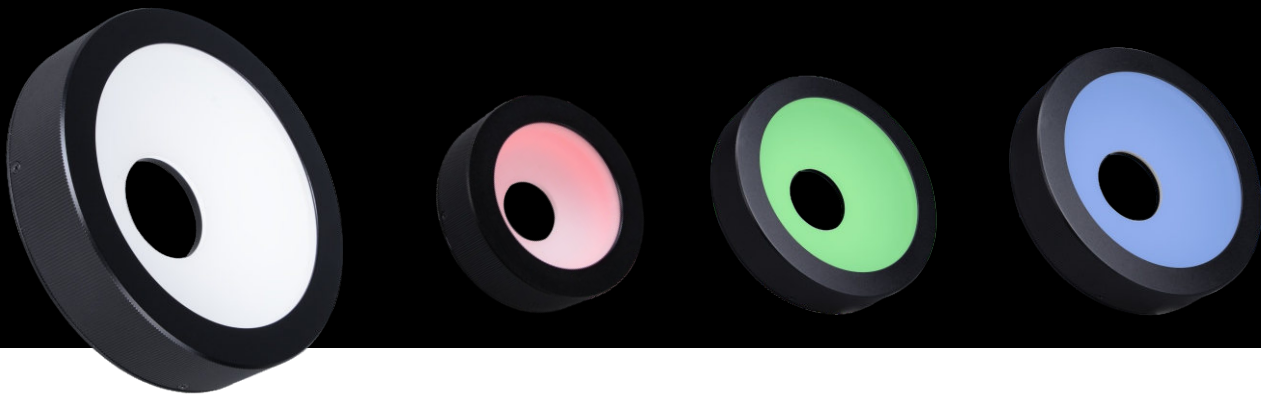
Model	Output Power ●●●	Output Power ●	Color ●●●●	Size
OPT-RIE50	24V/1.4W	24V/0.9W	●●●●	1
OPT-RIE74	24V/2.9W	24V/2.0W	●●●●	2
OPT-RIE100	24V/4.8W	24V/3.1W	●●●●	3
OPT-RIE150	24V/8.0W	24V/5.0W	●●●●	4

Dimensional drawings(mm)



Dome Ring Light OPT-RIW series

High uniform illumination in large area, even illumination on the multi-slope objects to eliminate the reflection



Special diffuser equipped design

Special diffuser design makes the light multi refract and reflect, it makes the multi direction and uniformity illumination

Comparing to the general ring light,higher uniformity illumination

Application Area

- ◆ Electronic part repair or collection inspection
- ◆ Electronic part installation location
- ◆ Surface letter and image recognition
- ◆ Size measurement

Selection Guide

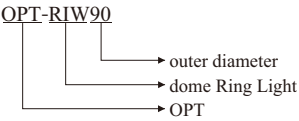
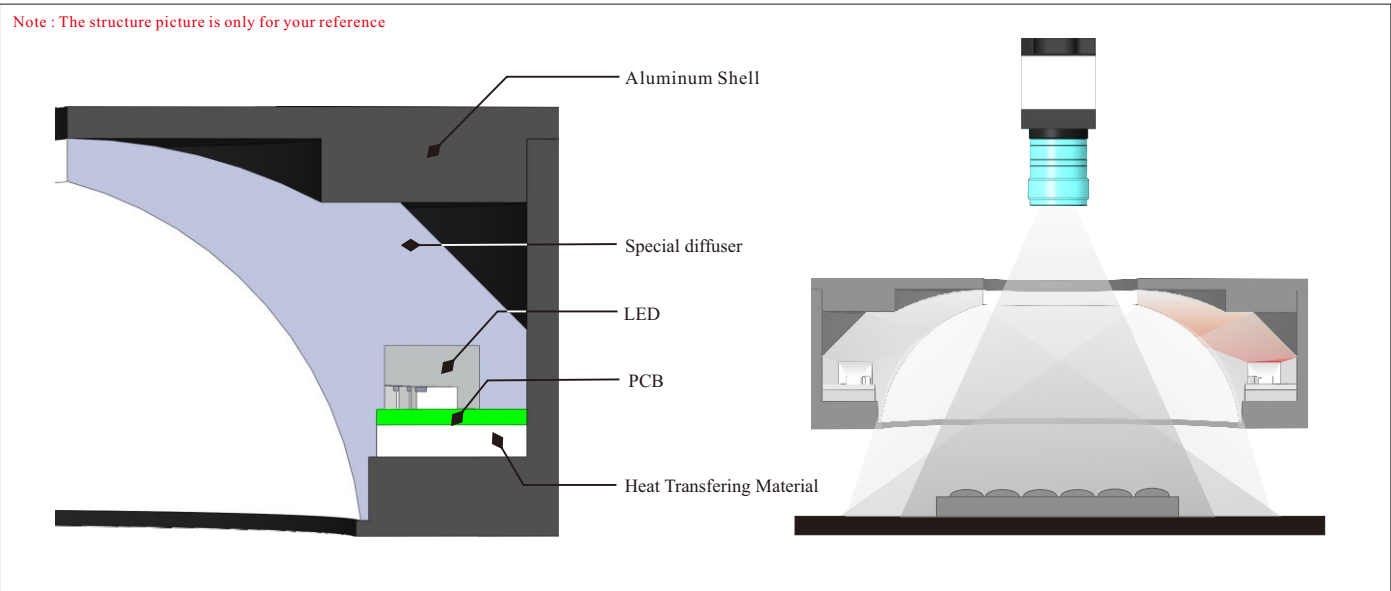
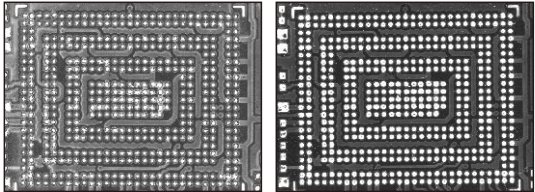


Image result comparison with standard ring light

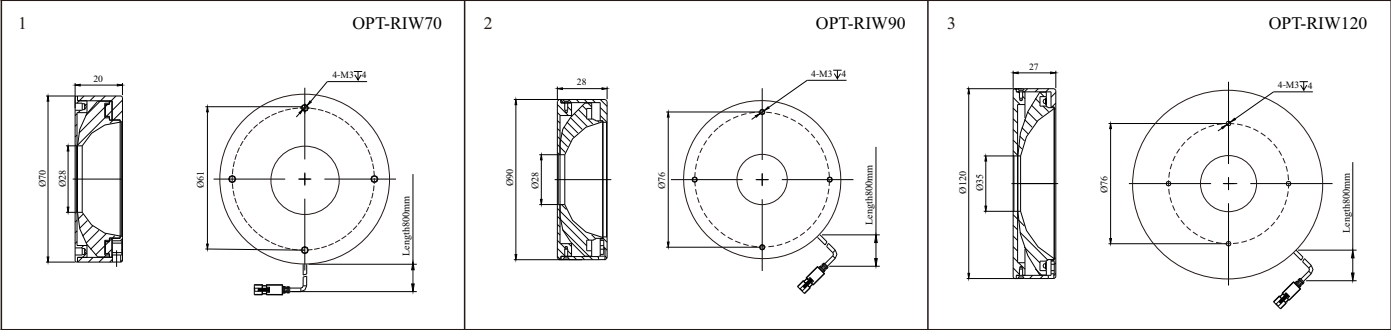


Structure display and working way

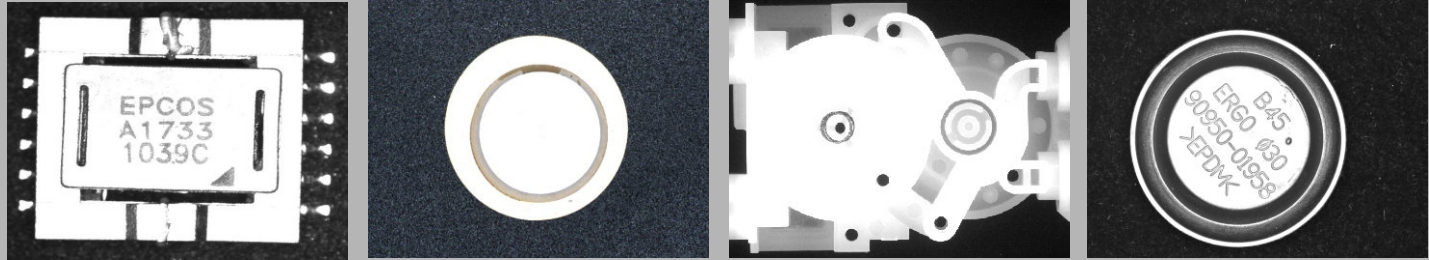
Model Table

Model	Output Power ● ● ●	Output Power ●	Color	Size
OPT-RIW70	24V/1.0W	24V/0.7W	● ● ●	1
OPT-RIW90	24V/2.2W	24V/1.0W	● ● ●	2
OPT-RIW120	24V/2.5W	24V/1.3W	● ● ●	3

Dimensional drawings(mm)



Application example



Plastic part surface letter recognition and location

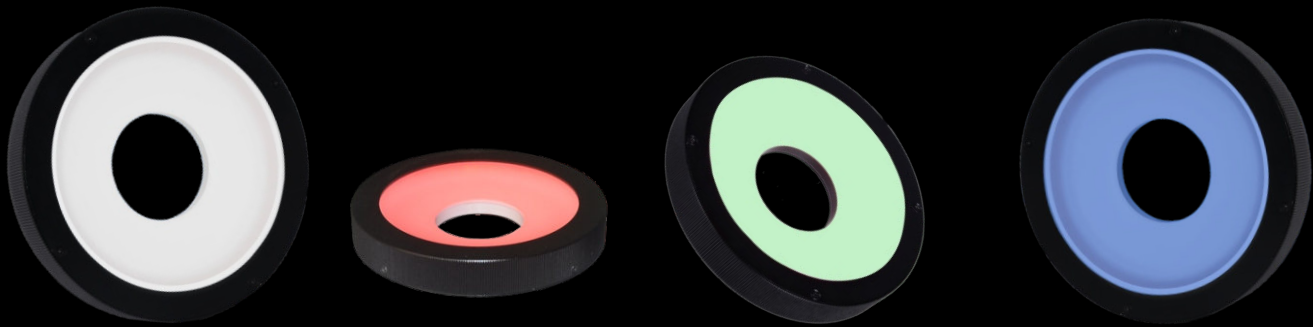
Earphone glue defects inspection

Installation location recognition

Part letter recognition

Flat Ring Light OPT-RIU series

Spherical design, to eliminate the reflection on the surface effectively



Special diffuser design to diffuse the light in multi-angle direction,for the uniform illumination on the uneven surface.

Special diffuser makes light reflect to different direction, and achieve dome illumination to reduce reflective and make the whole part even.

Comparing to the general right light, it is higher uniformity illumination

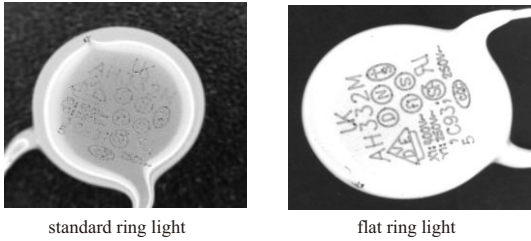
Application area

- ◆ Reflective surface letter or image inspection and recognition
- ◆ Electronic part and glass products inspection
- ◆ Punching metal inspection
- ◆ Injection plastic inspection

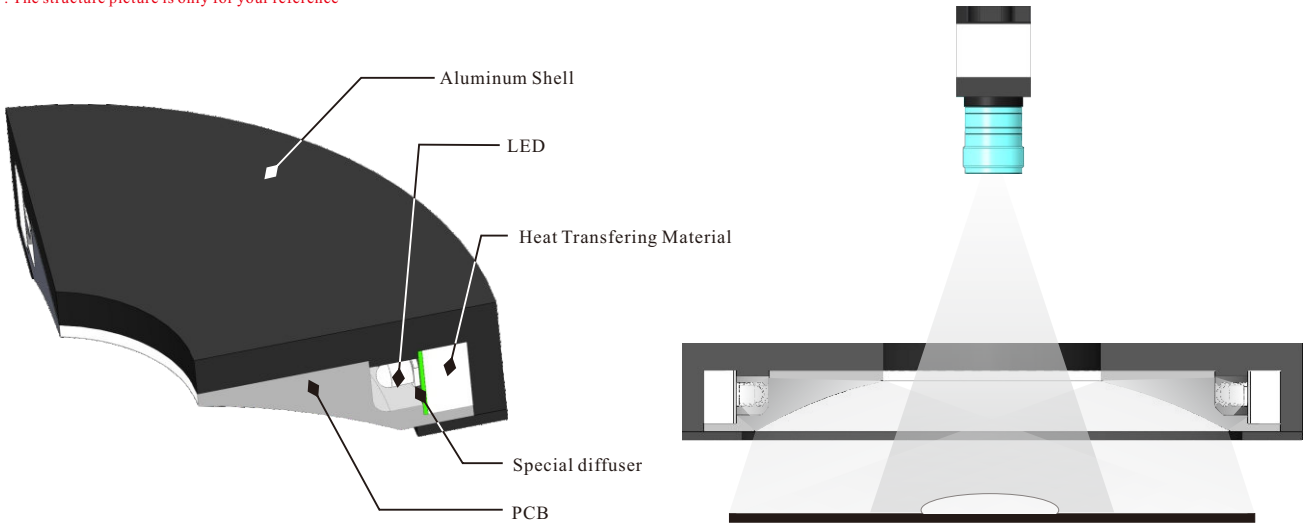
Selection Guide

- OPT-RIU114
- outer diameter
 - flat Ring Light
 - OPT

Image result comparison with standard ring light



Note : The structure picture is only for your reference

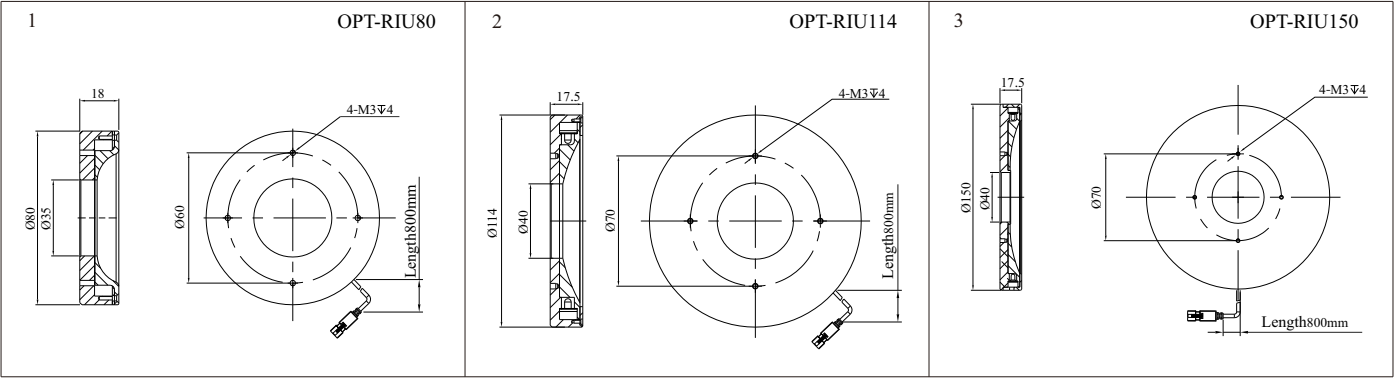


Structure display and working way

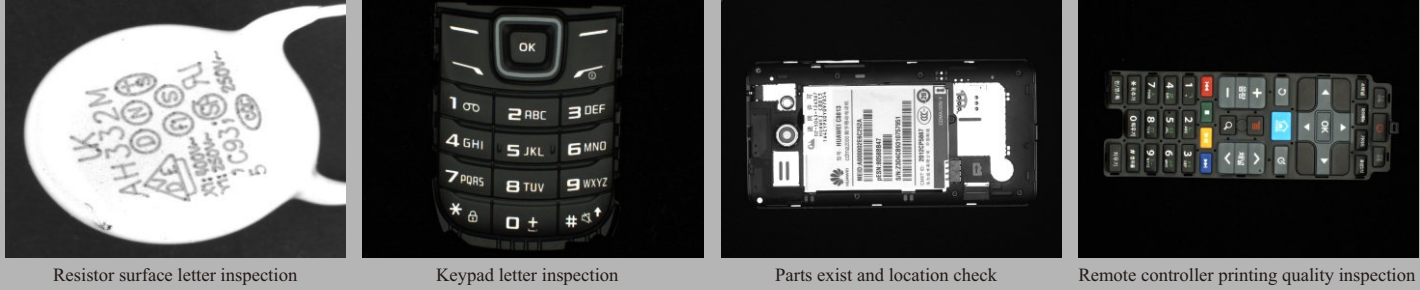
Model Table

Model	Output Power ●●●	Output Power ●	Color ●●●●	Size
OPT-RIU80	24V/1.5W	24V/1.0W	●●●●	1
OPT-RIU114	24V/2.9W	24V/2.0W	●●●●	2
OPT-RIU150	24V/3.6W	24V/2.2W	●●●●	3

Dimensional drawings(mm)



Application example



Resistor surface letter inspection

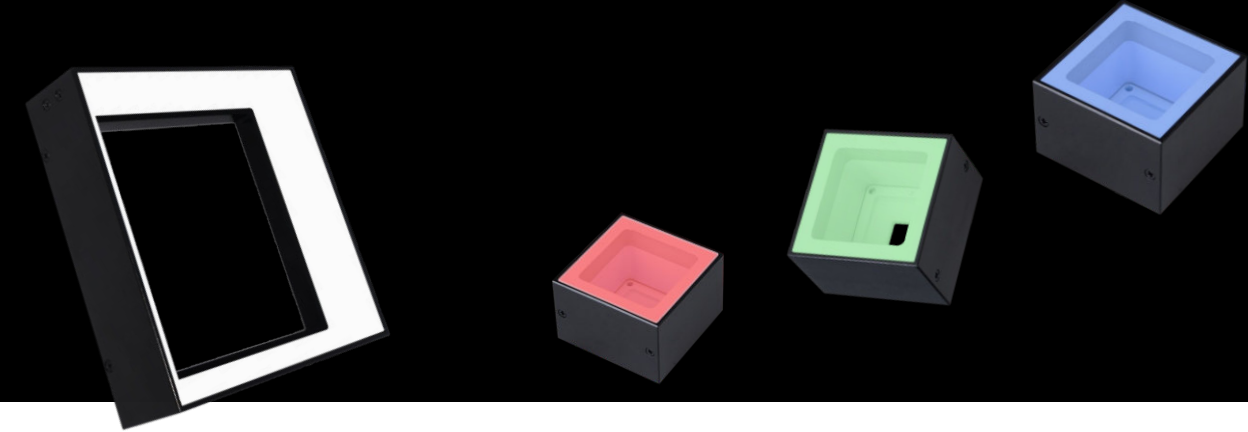
Keypad letter inspection

Parts exist and location check

Remote controller printing quality inspection

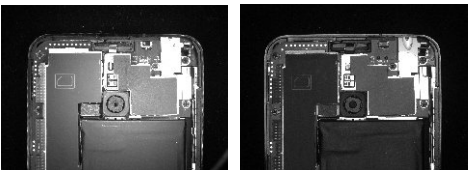
Low Angle Square Light OPT-RIH series

High uniform illumination onto the field of view from four directions



It is good for square objects or different shape object inspection

Illuminate surface evenly without shadow



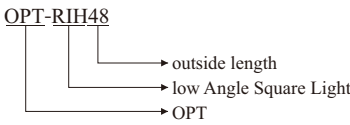
It is achieved the four side shadowless result, it is good for different object inspection as different WD with different image result.

It is more uniform than bar light combined

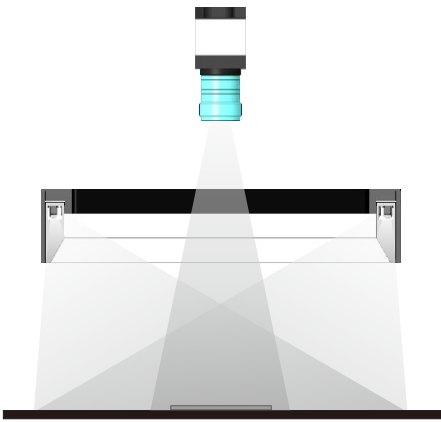
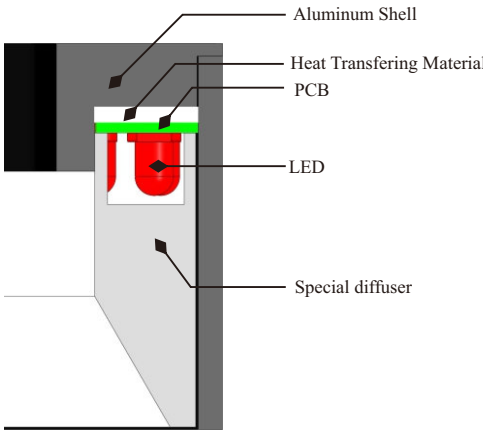
Application Area

- ◆ Surface scratch, dent and some other defects inspection
- ◆ Print letters, marks, bar code, finger print and image recognition

Selection Guide



Note: The structure picture in only for your reference

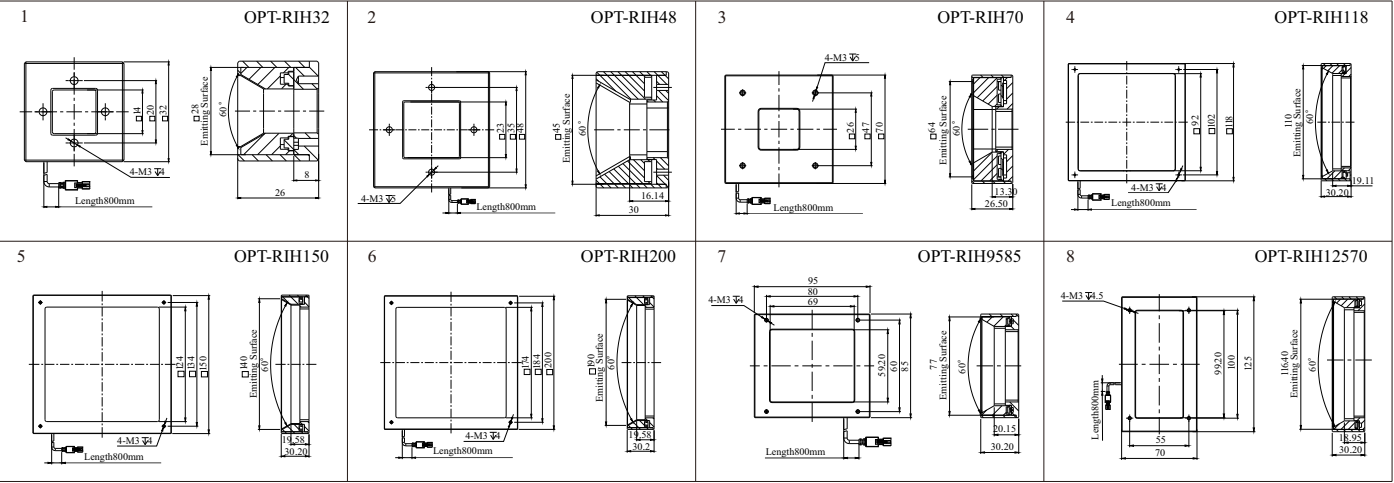


Structure Display and working way

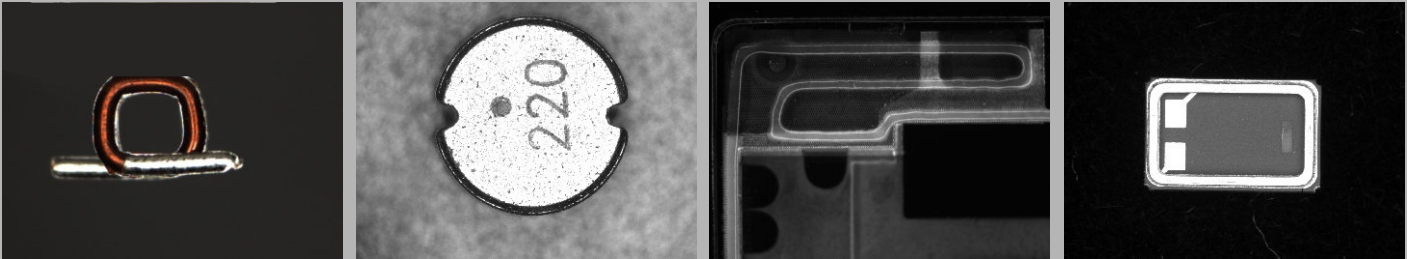
Model Table

Model	Output Power   	Output Power 	Color	Size
OPT-RIH32	24V/0.6W	24V/0.3W	  	1
OPT-RIH48	24V/1.4W	24V/0.7W	  	2
OPT-RIH70	24V/2.1W	24V/1.1W	  	3
OPT-RIH118	24V/2.9W	24V/2.0W	  	4
OPT-RIH150	24V/4.3W	24V/2.4W	  	5
OPT-RIH200	24V/5.5W	24V/3.1W	  	6
OPT-RIH9585	24V/1.7W	24V/1.2W	  	7
OPT-RIH12570	24V/2.3W	24V/1.4W	  	8

Dimensional drawings(mm)



Application example



Metal clip surface solder inspection

Electronic surface letter print defects inspection

Mobile inside glue inspection

Parts surface golden circle location

Shadowless Ring Light OPT-RIP series

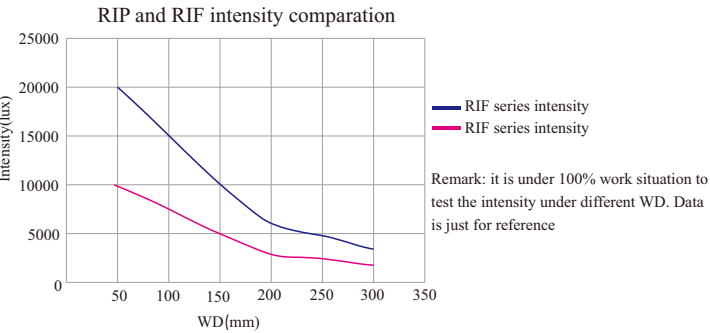
Using high power LED and diffuser with high emission to get high intensity shadowless area



High power LED, high concentration and shadowless result

RIP series and RIF intensity comparison

WD	50	100	150	200	250	300
Item No.	Intensity					
RIP120	1.99	1.51	1.01	0.62	0.47	0.34
RIF130	0.99	0.74	0.51	0.3	0.24	0.17

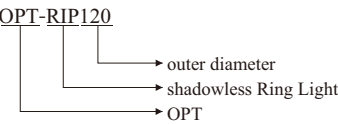


*Above data is just for reference, not for quality insurance

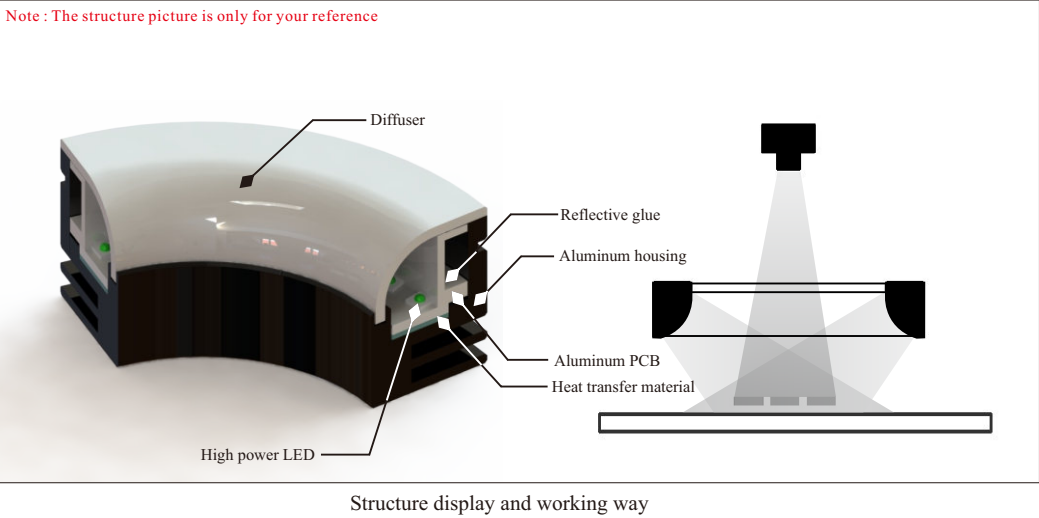
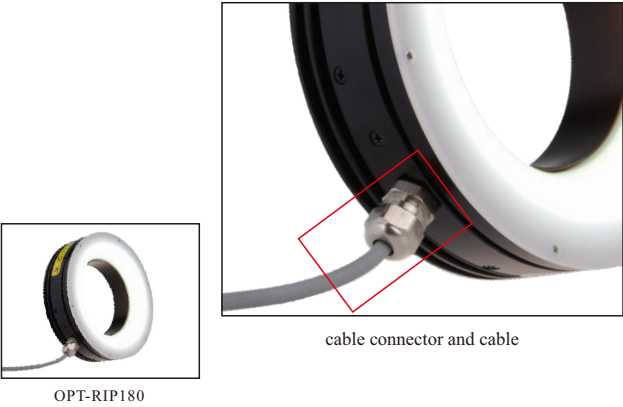
Application Area

- ◆ Electronic part surface inspection
- ◆ Cylinder object inside surface dirty point inspection

Selection Guide



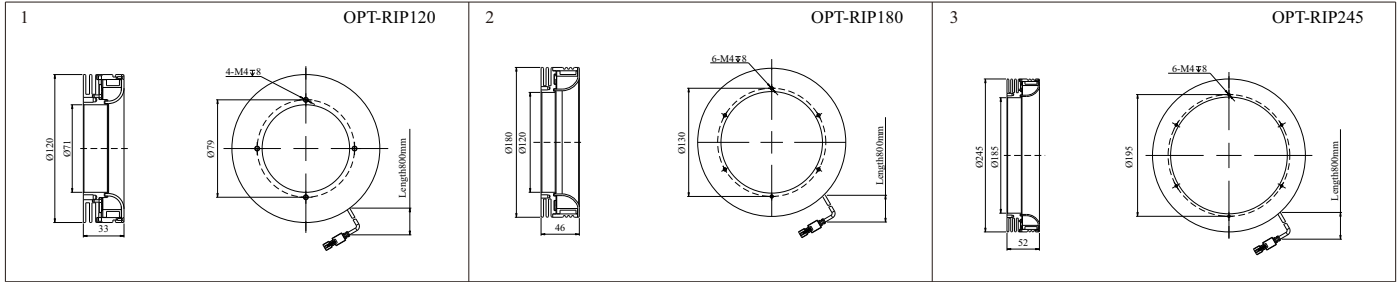
Output area is used connector to make cable stable



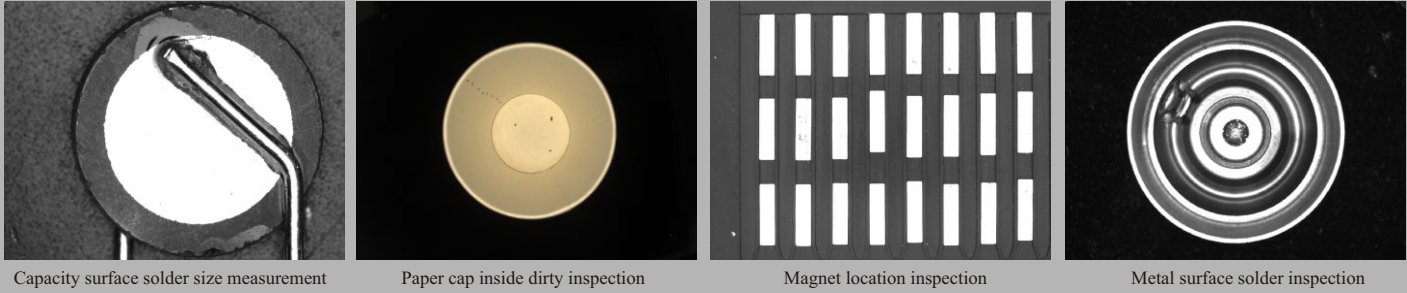
Model Table

Model	Output Power 	Output Power 	Color	Size
OPT-RIP120	24V/9.6W	24V/7.7W	 	1
OPT-RIP180	24V/19.2W	24V/12.7W	 	2
OPT-RIP245	24V/24.0W	24V/16.8W	 	3

Dimensional drawings(mm)



Application example



High Power Ring Light OPT-RIG series New

High power LED, compact LED array, intensity is 2 times than standard one

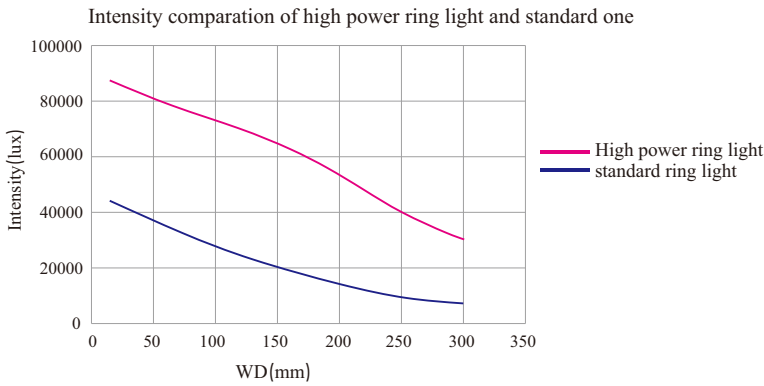


Gap design for good heat transfer, light is stable with long life time



Item no:OPT-RIG9000

Double intensity compared with standard one



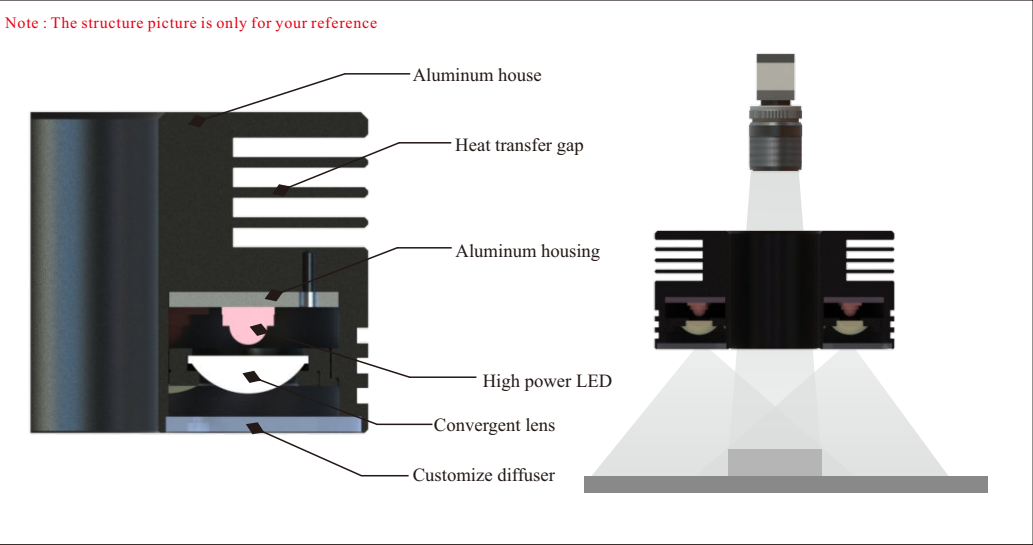
*Above data is just for reference, not for quality insurance

Application Area

- ◆ Long working distance illumination
- ◆ High speed on-line inspection
- ◆ Big FOV illumination

Selection Guide

- OPT-RIG9000
- outer diameter
 - high power ring light
 - OPT

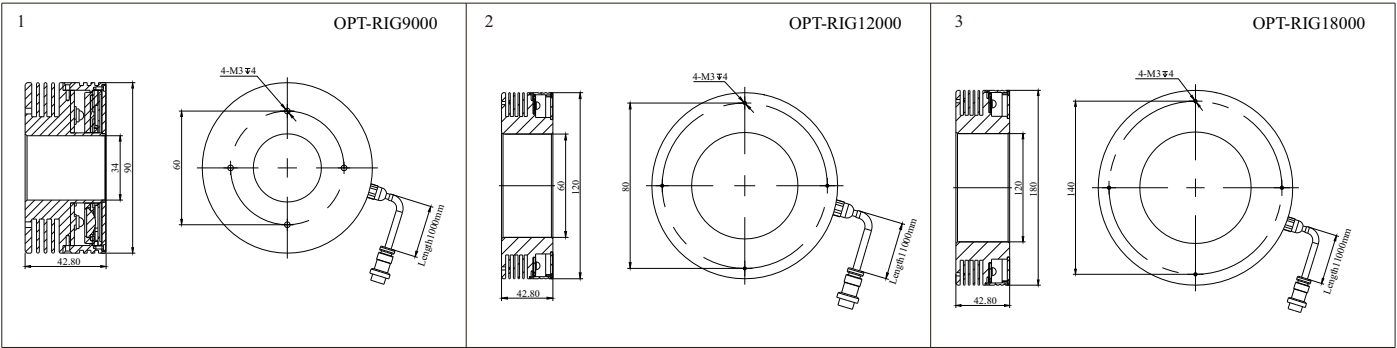


Structure displag and working way

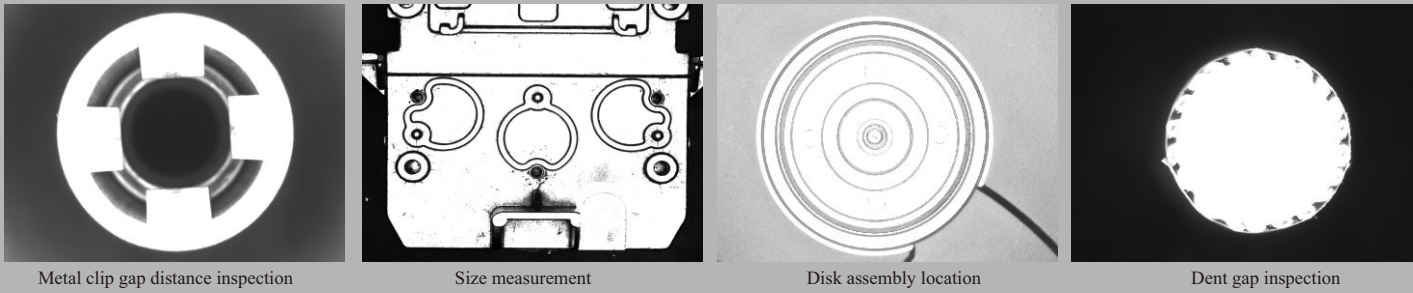
Model Table

Model	Output Power   	Output Power 	Color    	Size
OPT-RIG9000	24V/7.2W	24V/4.8W	   	1
OPT-RIG12000	24V/14.4W	24V/9.6W	   	2
OPT-RIG18000	24V/28.8W	24V/19.2W	   	3

Dimensional drawings(mm)



Application example



Metal clip gap distance inspection

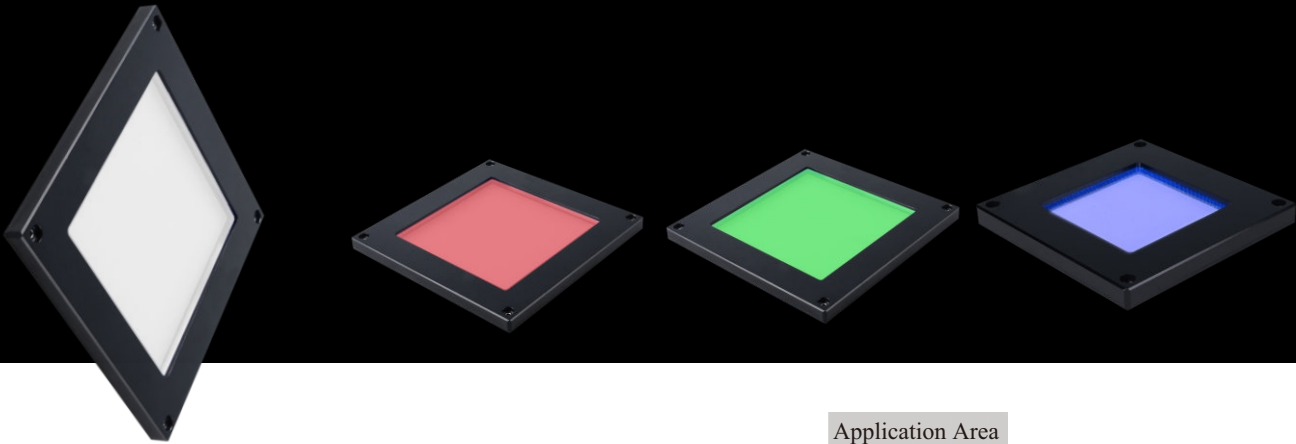
Size measurement

Disk assembly location

Dent gap inspection

Flat Dome Light OPT-FC series

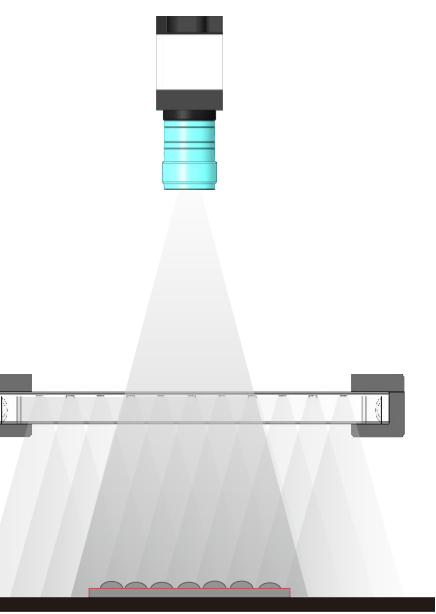
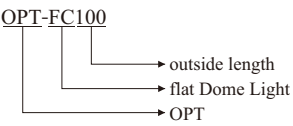
Flat dome light combined the function of shadowless light and coaxial light



Application Area

- ◆ The package inspection of food ,cigarette, etc
- ◆ The inspection and measurement on the electronic parts or shell .
- ◆ The inspection and identification on the high reflective and uneven surface

Selection Guide

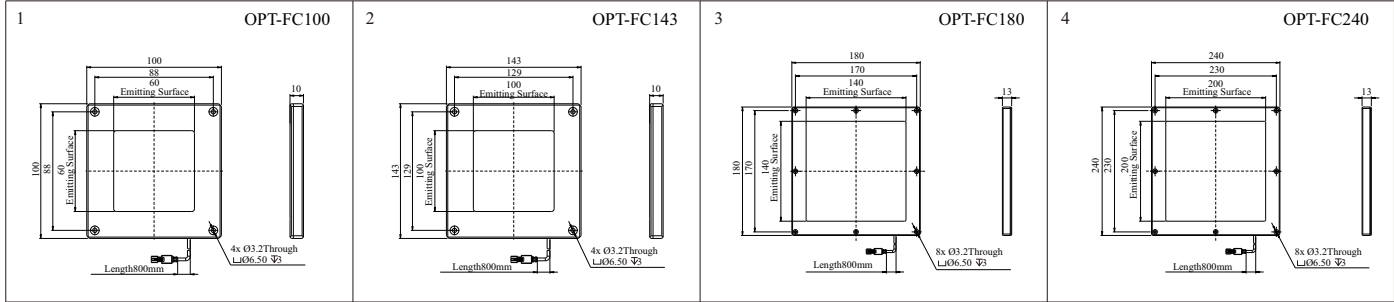


Structure display and working way

Model Table

Model	Output Power   	Output Power 	Color    	Size
OPT-FC100	24V/2.1W	24V/1.1W	   	1
OPT-FC143	24V/3.1W	24V/2.0W	   	2
OPT-FC180	24V/3.5W	24V/2.3W	   	3
OPT-FC240	24V/17.8W	24V/10.7W	   	4

Dimensional drawings(mm)



Parallel Spot Light OPT-PL Type

The Parallel Spot Light
Can diverge the light even at long distance



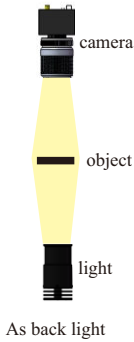
High intensity LED arrays combined with special heat releaser, to ensure high brightness

Use lens and diffuser to make the light concentrate and uniformity. The light has good parallel direction it can keep long work distance illumination.
As the light is very concentrate, so it is also considered as back light in some application

As back light or long work distance illumination

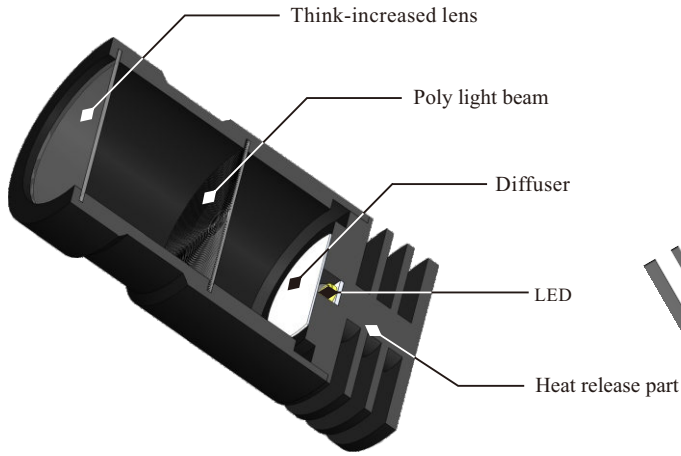
Selection Guide

- OPT-PL50
- outer diameter
- parallel Spot Light
- OPT



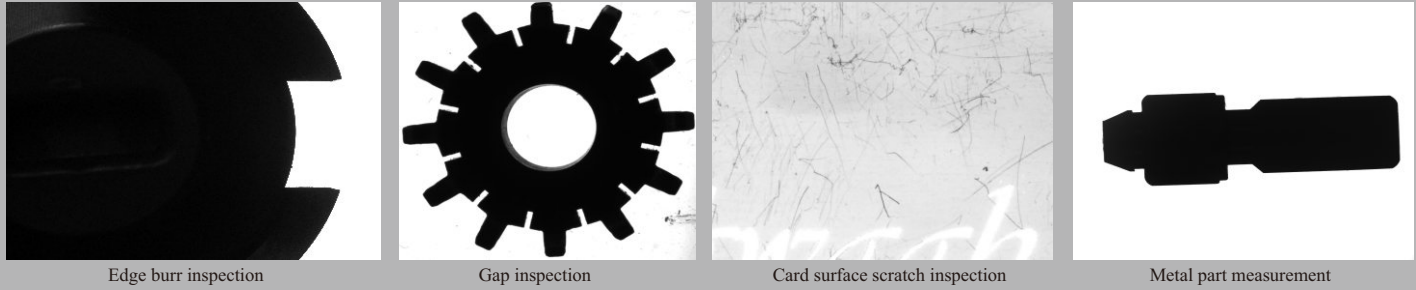
*Above data is just for reference, not for quality insurance

Note : The structure picture is only for your reference



Structure display and working way

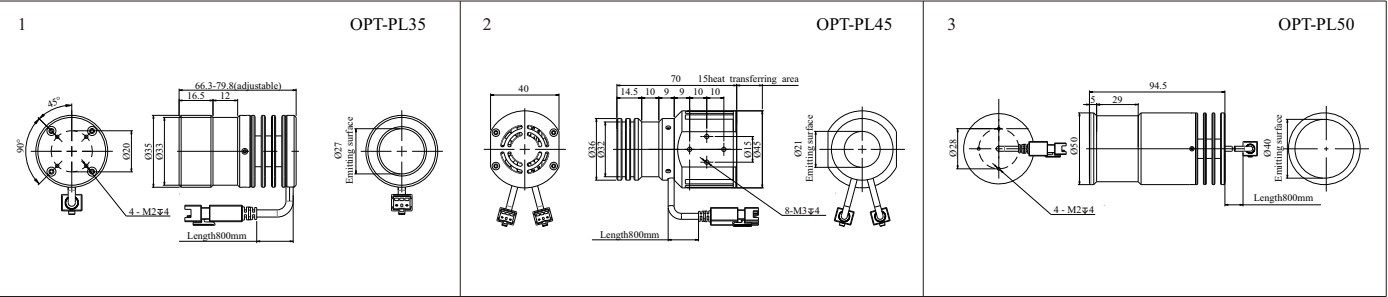
Application example



Model Table

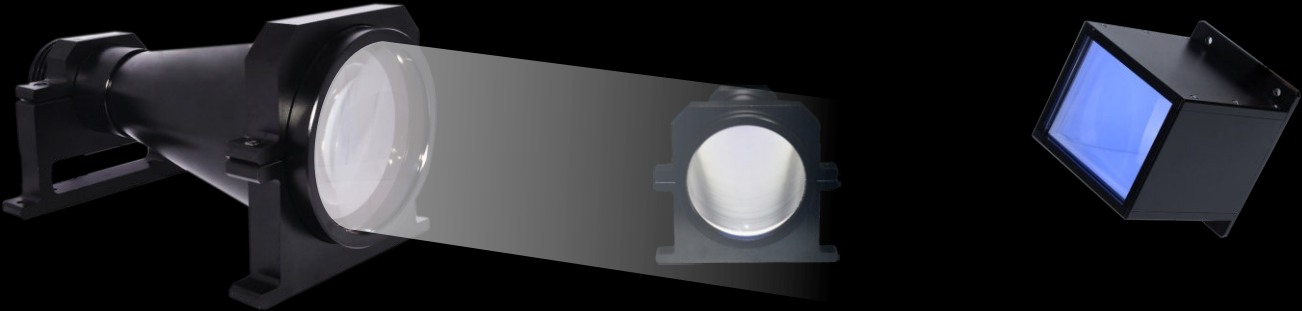
Model	Output Power	Output Power	Color	Size
OPT-PL35	5V/3W	5V/3W	●●●●	1
OPT-PL45	5V/3W	5V/3W	●●●●	2
OPT-PL50	5V/3W	5V/3W	●●●●	3

Dimensional drawings(mm)



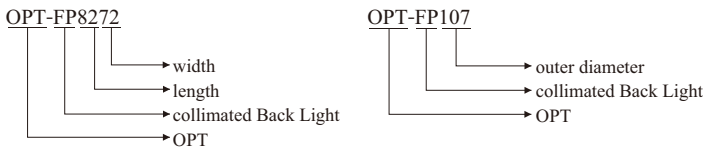
Collimated Back Light OPT-FP series

High precious parallel light,which is suitable to have good images of an object shape.
For example the edge measurement and defects inspection on the smooth surface



Precious circuit design, output an ideal parallel light.The compact structure design,can be used as the back flat light for the size measurement, or used with the coaxial optical system,for the inspection of the scratches or breakage on the smooth surface

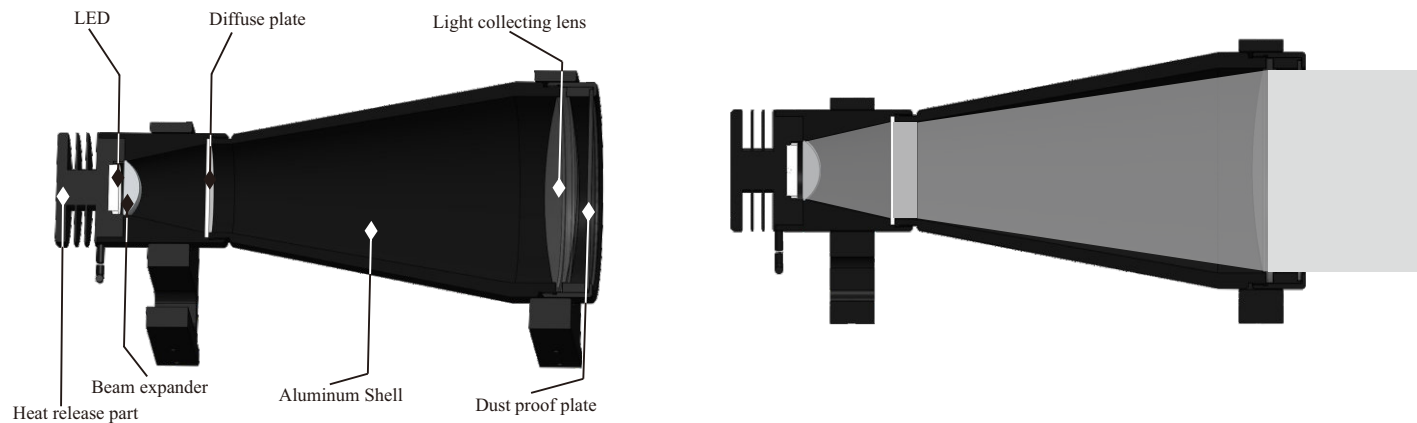
Selection Guide



Application Area

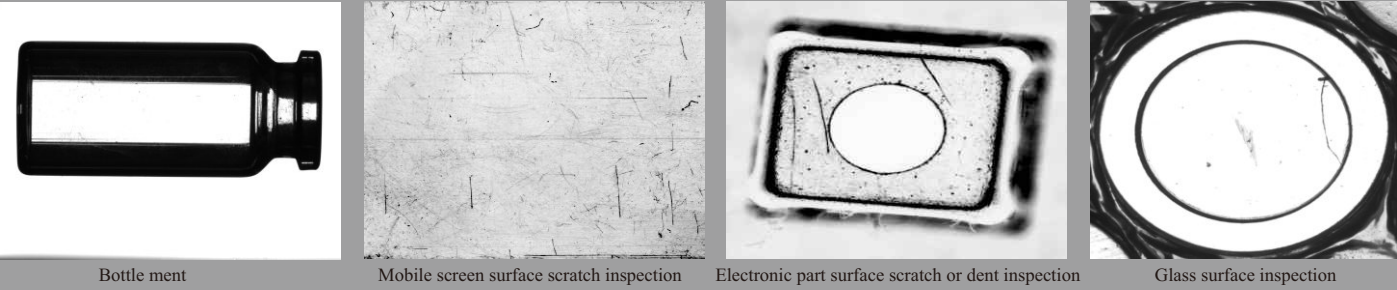
- ◆ High-accuracy, mechanical components size measurement
- ◆ Electronic component outline inspection
- ◆ Objects super fine inspection

Note : The structure picture is only for your reference



Structure display and working way

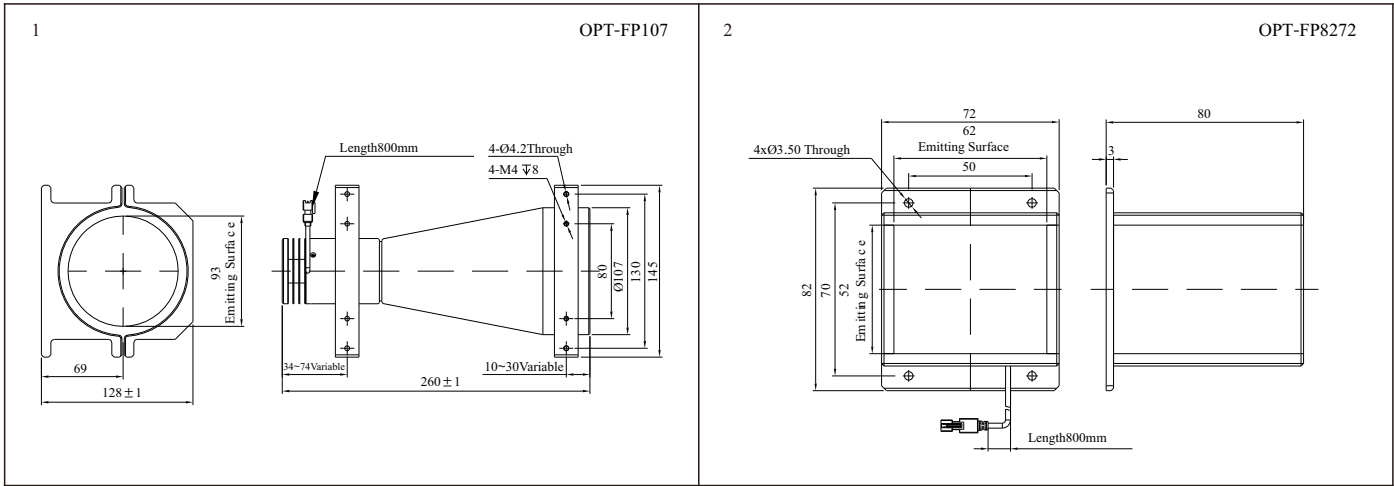
Application example



Model Table

Model	Output Power ●●●	Output Power ●	Color ●●●●	Size
OPT-FP107	5V/3.0W	5V/3.0W	●●●●	1
OPT-FP8272	24V/2.4W	24V/1.4W	●●●●	2

Dimensional drawings(mm)



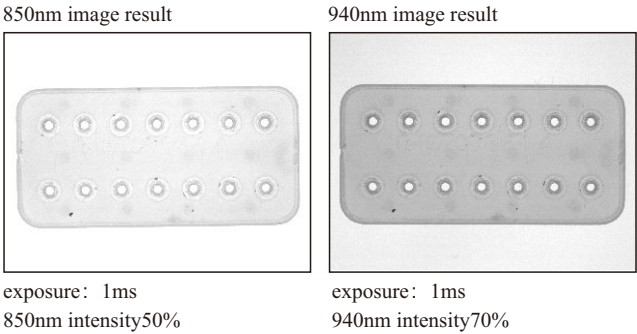
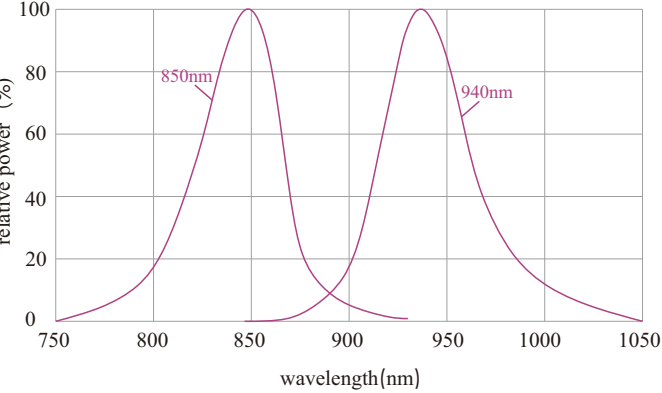
IR Light OPT-IR series

The 850nm,940nm wavelength is available, and the shape and illumination angle can be customized.

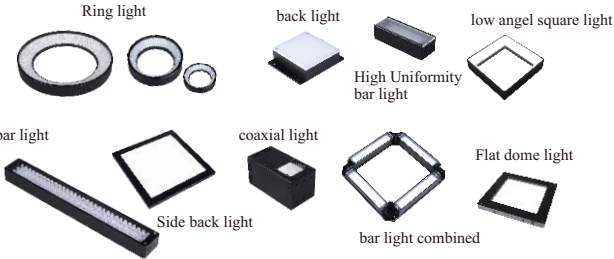


850nm/940nm as standard one

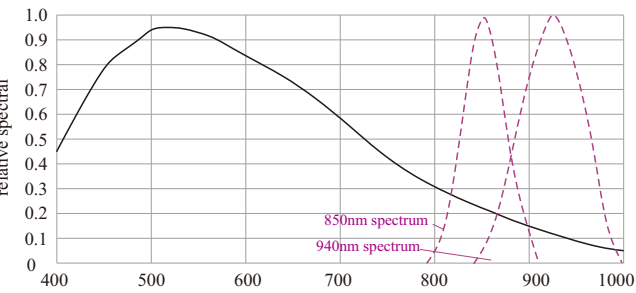
Spectrum drawing of 850nm and 940nm



IR for below lights, drawing is the same with standard one



IR CCD response light drawing

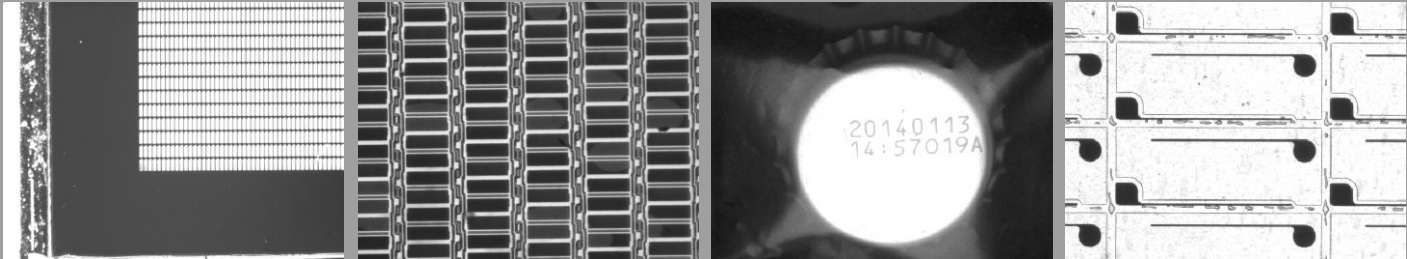


*Above data is just for reference, not for quality insurance

Application Area

- Medical(the recognition of the vascular net, the marking of the eye ball)
- Package(transparent plastic material)
- Cloth and textile
- Electronic and the semiconductor
- Pharmaceutical industry
- LCD、OLED

Application example



Model Table

Series	Model	Output Power	Color	Size
CO Series	OPT-CO30	24V/1.2W	IR	1
	OPT-CO40	24V/1.4W	IR	2
	OPT-CO50	24V/1.9W	IR	3
	OPT-CO60	24V/2.9W	IR	4
	OPT-CO70	24V/4.7W	IR	5
	OPT-CO80	24V/5.0W	IR	6
	OPT-CO100	24V/8.7W	IR	7
FL series	OPT-FL3729	24V/0.3W	IR	8
	OPT-FL5050	24V/1.3W	IR	9
	OPT-FL7070	24V/1.6W	IR	10
	OPT-FL9090	24V/3.7W	IR	11
	OPT-FL10884	24V/4.4W	IR	12
	OPT-FL130130	24V/7.5W	IR	13
	OPT-FL150130	24V/12.2W	IR	14
	OPT-FL212230	24V/20.6W	IR	15
LI series	OPT-LI6022	24V/0.6W	IR	16
	OPT-LI9022	24V/1.2W	IR	17
	OPT-LI8532	24V/1.9W	IR	18

Series	Model	Output Power	Color	Size
LI Series	OPT-LI11222	24V/1.2W	IR	19
	OPT-LI15020	24V/1.9W	IR	20
	OPT-LI21230	24V/5.6W	IR	21
	OPT-LI25030	24V/6.9W	IR	22
	OPT-LI29026	24V/3.7W	IR	23
	OPT-LI38037	24V/10.0W	IR	24
	OPT-RI3500	24V/0.6W	IR	25
RI Series	OPT-RI5030	24V/1.0W	IR	26
	OPT-RI7000	24V/1.9W	IR	27
	OPT-RI7030	24V/1.9W	IR	28
	OPT-RI9030	24V/3.4W	IR	29
	OPT-RI9090	24V/0.9W	IR	30
	OPT-RI10080	24V/2.8W	IR	31
	OPT-RI12000	24V/6.0W	IR	32
	OPT-RI12030	24V/3.4W	IR	33
	OPT-RI12045	24V/6.0W	IR	34
	OPT-RI15060	24V/7.5W	IR	35
	OPT-RI18030	24V/11.2W	IR	36

Dimensional drawings (mm)

1 OPT-CO30-IR 4-M4Φ4 18.5 59.5 Length800mm Emitting Surface 25 Emitting Surface	2 OPT-CO40-IR 4-M4Φ4 22 74 Length800mm Emitting surface 34 Emitting surface	3 OPT-CO50-IR 6-M4Φ4 20 26.5 93 Length800mm Emitting surface 42 Emitting surface	4 OPT-CO60-IR 6-M5Φ4 30 33 104 Length800mm Emitting surface 6 Emitting surface
5 OPT-CO70-IR 6-M5Φ4 20 38 114 Length800mm Emitting Surface 62 Emitting Surface	6 OPT-CO80-IR 6-M5Φ4 20 43 124 Length800mm Emitting Surface 72 Emitting surface	7 OPT-CO100-IR 6-M5Φ4 20 52 144 Length800mm Emitting surface 92 Emitting surface	
8 OPT-FL3729-IR 27Emitting Surface 37 27 2-03.5 20 Length800mm	9 OPT-FL5050-IR 44Emitting Surface 50 44 4-03.5 20 Length800mm	10 OPT-FL7070-IR 62Emitting Surface 68 62 4-03.5 20 Length800mm	11 OPT-FL9090-IR 82Emitting Surface 88 82 4-03.5 20 Length800mm
12 OPT-FL10884-IR 76Emitting surface 82 76 4-03.5 20 Length800mm	13 OPT-FL130130-IR 126Emitting surface 126 120 6-03.5 20 Length800mm	14 OPT-FL150130-IR 120Emitting surface 130 120 4-03.5 20 Length800mm	15 OPT-FL212230-IR 200Emitting surface 212 200 6-03.5 20 Length800mm

16 OPT-LI6022-IR 	17 OPT-LI8532-IR 	18 OPT-LI9022-IR 	19 OPT-LI11222-IR
20 OPT-LI15020-IR 	21 OPT-LI21230-IR 	22 OPT-LI25030-IR 	23 OPT-LI29026-IR
24 OPT-LI38037-IR 			
25 OPT-RI3500-IR 	26 OPT-RI5030-IR 	27 OPT-RI7000-IR 	28 OPT-RI7030-IR
29 OPT-RI9030-IR 	30 OPT-RI9090-IR 	31 OPT-RI10080-IR 	32 OPT-RI12000-IR
33 OPT-RI12030-IR 	34 OPT-RI12045-IR 	35 OPT-RI15060-IR 	36 OPT-RI18030-IR

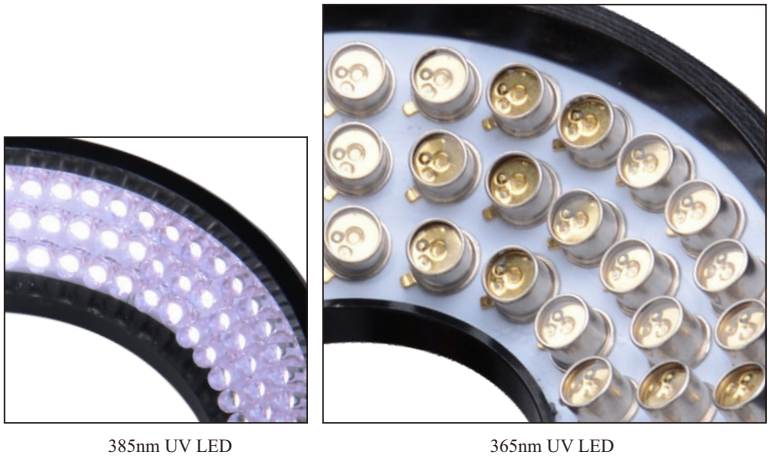
Ultraviolet Light OPT-UV series

The 385nm wavelength is available, and the shape and illumination angle can be customized.

Used the world's famous UV LED, assuring the stability of the UV light



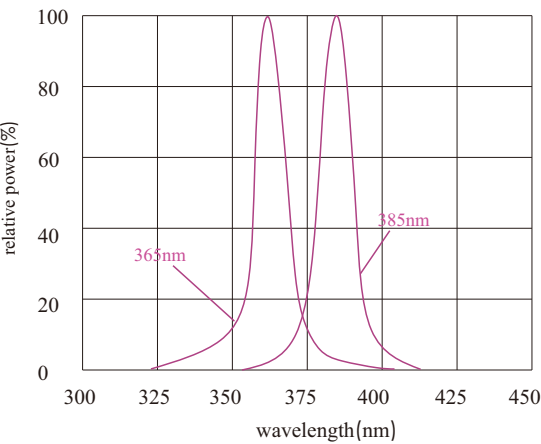
Used the world-class UV LED, higher stability



385nm UV LED

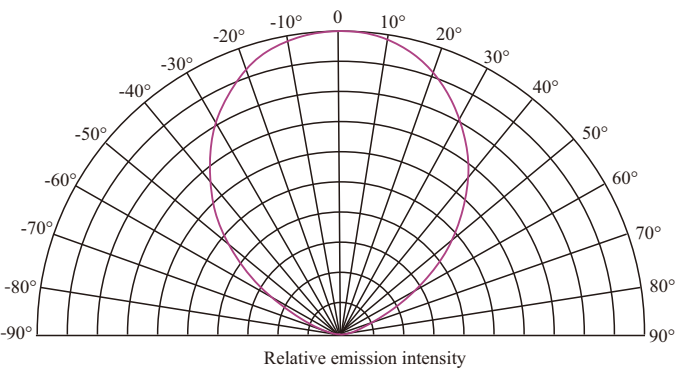
365nm UV LED

Spectrum drawing



*Above data is just for reference, not for quality insurance

365 wavelength LED



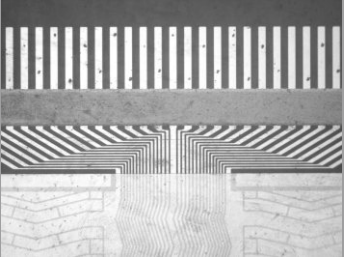
Application Area

- ◆ Money inspection
- ◆ The fluorescent objects inspection
- ◆ The fluorescent character, bar-code and the 2D code identification
- ◆ Glass scratches inspection
- ◆ Classification inspection in the photochemical effects
- ◆ Defects inspection

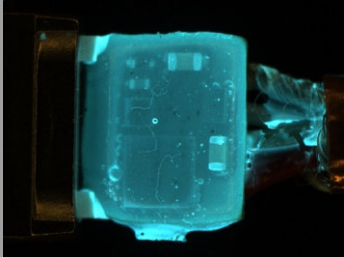
Application example



Color recognition of pregnant test bar



ITO gold print circuit inspection



USB printed glue inspection



UV glue inspection

Model Table(385nm)

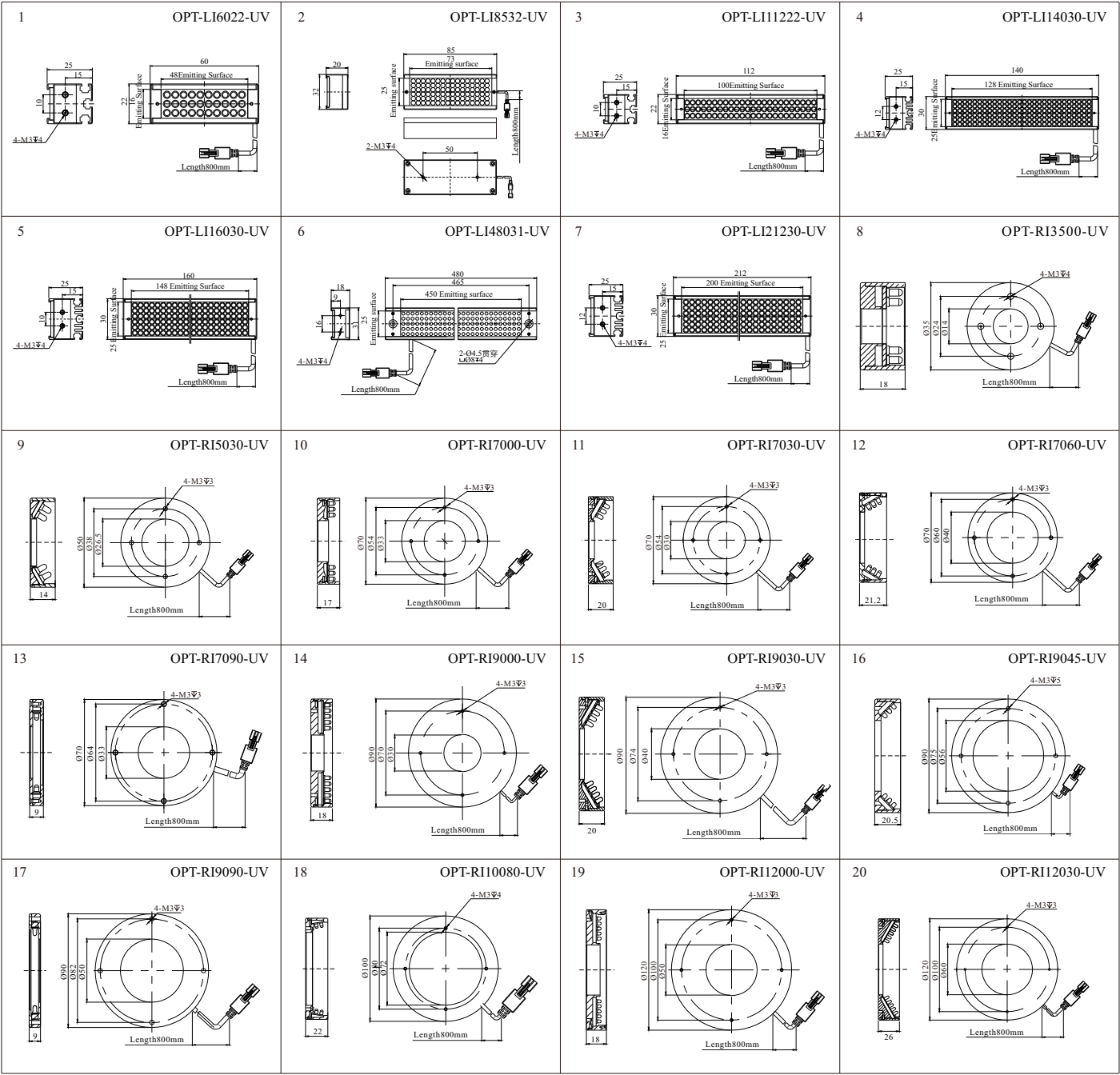
Series	Model	Output Power	Color	Size
LISeries	OPT-LI6022	24V/1.4W	UV	1
	OPT-LI8532	24V/4.6W	UV	2
	OPT-LI11222	24V/3.2W	UV	3
	OPT-LI14030	24V/8.1W	UV	4
	OPT-LI16030	24V/8.6W	UV	5
	OPT-LI48031	24V/23.0W	UV	6
	OPT-LI21230	24V/13.0W	UV	7
RISeries	OPT-RI3500	24V/6.0W	UV	8
	OPT-RI5030	24V/1.4W	UV	9
	OPT-RI7000	24V/2.3W	UV	10

Series	Model	Output Power	Color	Size
RISeries	OPT-RI7030	24V/5.2W	UV	11
	OPT-RI7060	24V/4.3W	UV	12
	OPT-RI7090	24V/5.8W	UV	13
	OPT-RI9000	24V/1.7W	UV	14
	OPT-RI9030	24V/10.4W	UV	15
	OPT-RI9045	24V/7.0W	UV	16
	OPT-RI9090	24V/7.2W	UV	17
	OPT-RI10080	24V/2.3W	UV	18
	OPT-RI12000	24V/13.2W	UV	19
	OPT-RI12030	24V/14.4W	UV	20

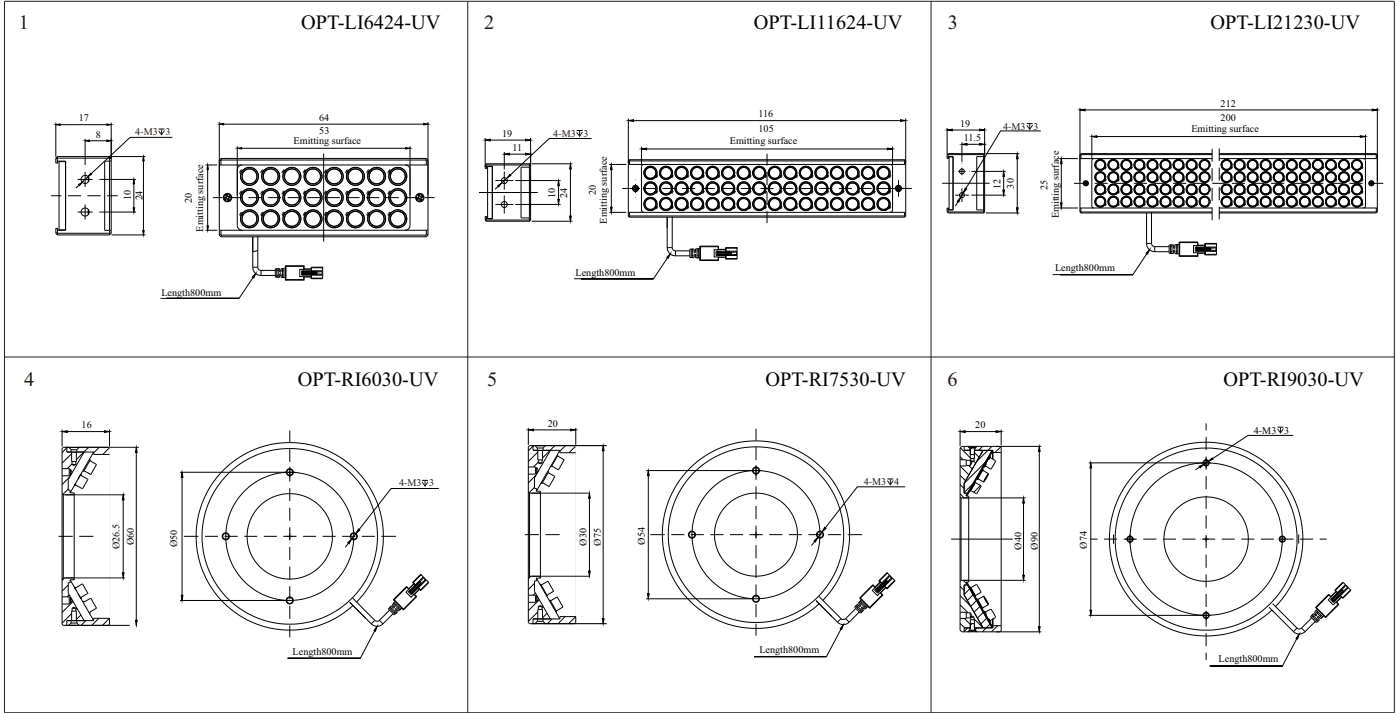
Model Table(365nm)

Series	Model	Output Power	Color	Size
LI Series	OPT-LI6424	24V/1.3W	UV	1
	OPT-LI11624	24V/2.7W	UV	2
	OPT-LI21230	24V/6.7W	UV	3
RI Series	OPT-RI6030	24V/2.3W	UV	4
	OPT-RI7530	24V/4.1W	UV	5
	OPT-RI9030	24V/5.0W	UV	6

Dimensional drawings(mm)

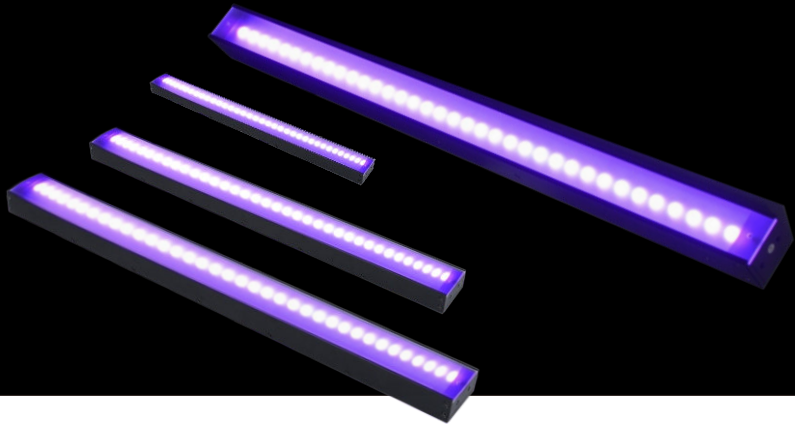


Dimensional drawings(mm)

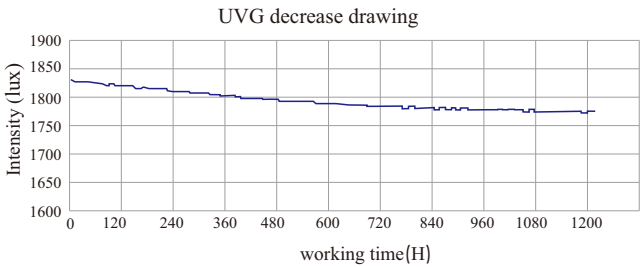


High power UV light OPT-UVG Series New

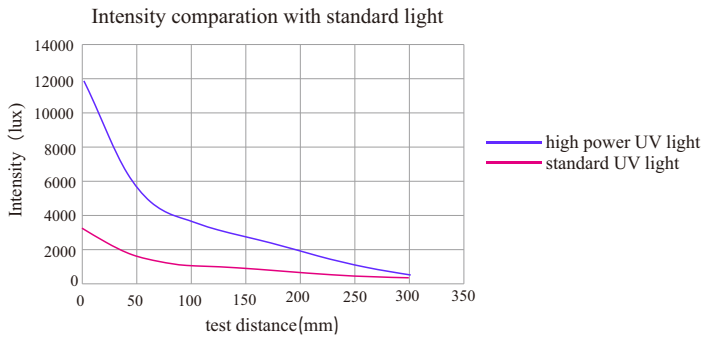
Using high quality high power UV LED with high intensity and few decrease



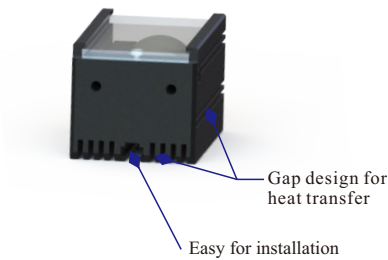
Under environment temperature, the UV works 1200 hours with complete load, intensity is just reduced 2.8%



High power UV light intensity is 3 times higher than standard one

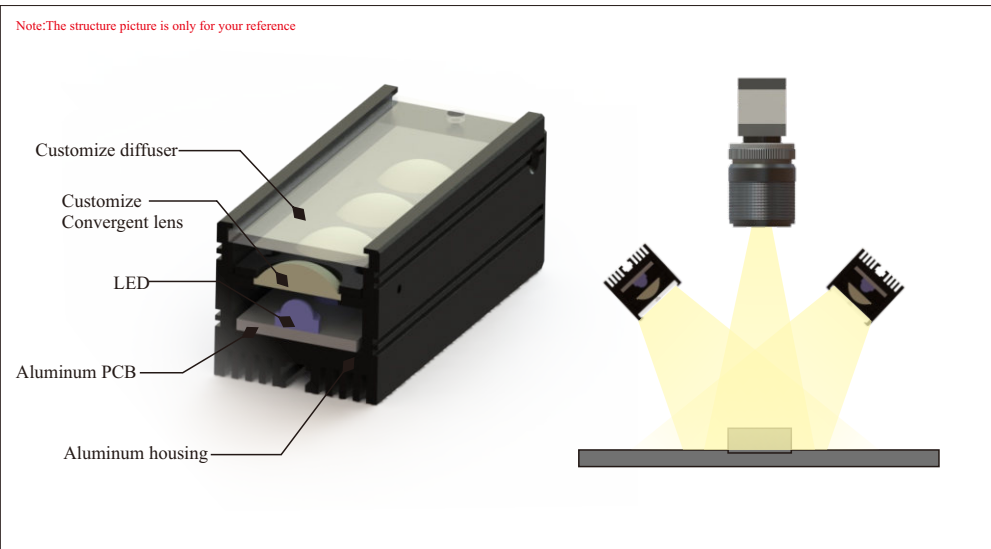


Using heat trasnfer gap to improve the heat transfer and enlarge LED life time



application

- ◆ ITO print circuit inspection
- ◆ Surface tiny scratch and defect inspection
- ◆ Electric product print glue
- ◆ Fluorescence material inpection

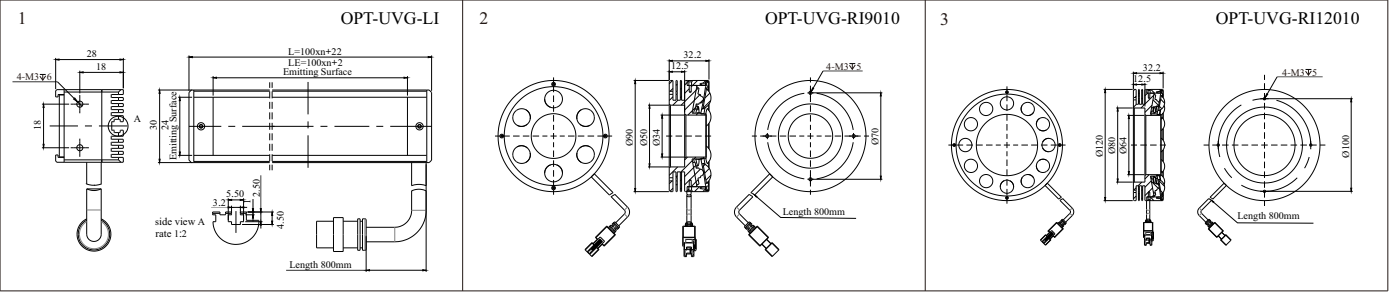


Structure display and working way

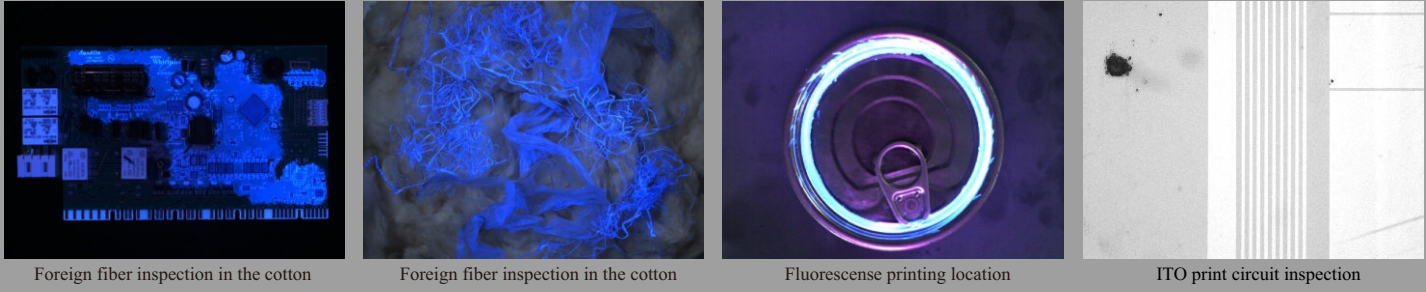
Model Table

Series	Model	Output Power	Color	n	Size
LISeries	OPT-UVG-LI12230	24V/7.2W	UV	1	1
	OPT-UVG-LI22230	24V/14.4W	UV	2	1
	OPT-UVG-LI32230	24V/21.6W	UV	3	1
	OPT-UVG-LI42230	24V/28.8W	UV	4	1
	OPT-UVG-LI52230	24V/36.0W	UV	5	1
	OPT-UVG-LI62230	24V/43.2W	UV	6	1
	OPT-UVG-LI72230	24V/50.4W	UV	7	1
	OPT-UVG-LI82230	24V/57.6W	UV	8	1
	OPT-UVG-LI92230	24V/64.8W	UV	9	1
	OPT-UVG-LI102230	24V/72.0W	UV	10	1
RISeries	OPT-UVG-RI9010	24V/7.2W	UV		2
	OPT-UVG-RI12010	24V/14.4W	UV		3

Dimensional drawings(mm)



Application example



Foreign fiber inspection in the cotton

Foreign fiber inspection in the cotton

Fluorescence printing location

ITO print circuit inspection

AOI Light OPT-RIA series

Multi-color illumination from different angles, 3D information can be highlighted.
Widely applied in the defects inspection of multi-shape objects



Multi-color illumination from different angles,highlights the 3D information.

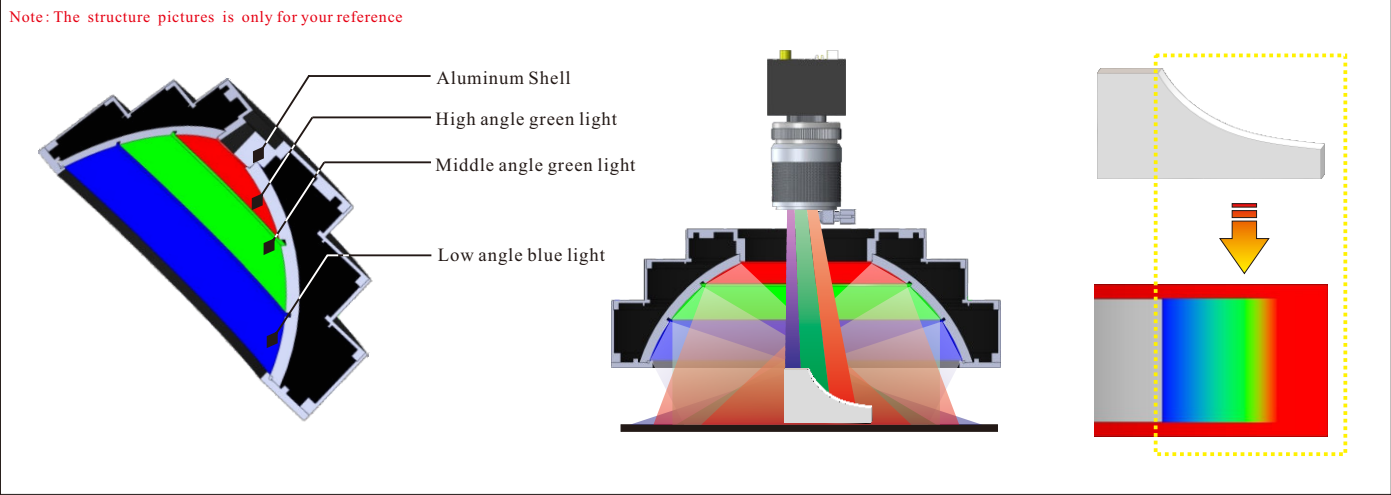
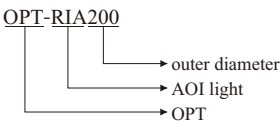
Diffuser equipped to guide the illumination, prevent the light loss

RIM combination of different angles

Application Area

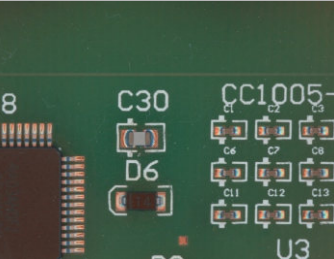
- ◆ Specially applied in the inspection of the circuit board solder tin
- ◆ Defects inspection for the rotates shapes,
- ◆ Inspection for the multi-level objects

Selection Guide

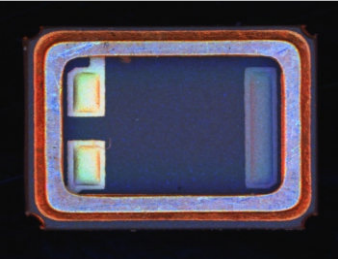


Structure display and working way

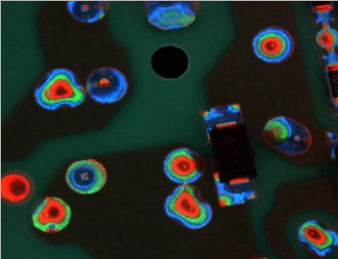
Application example



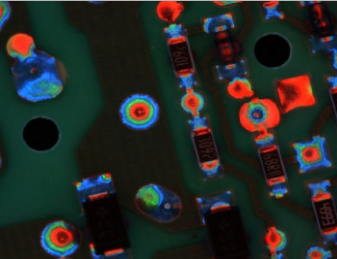
Patch panel solder inspection



The multi-level objects inspection



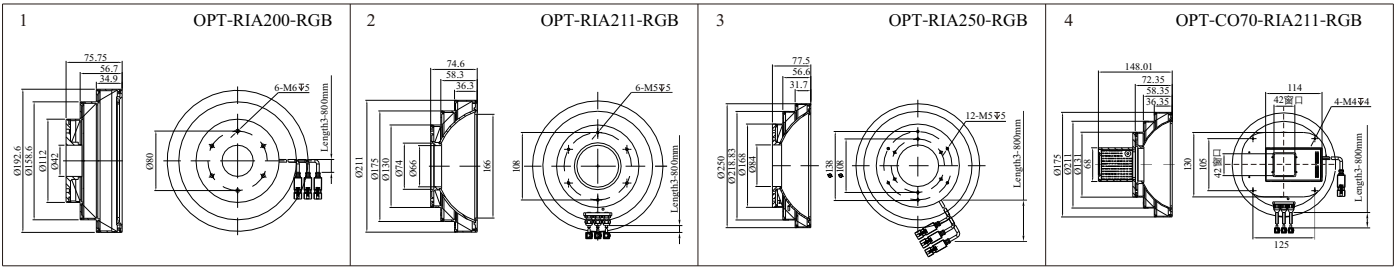
Weld joints, bridge and other testing



Model Table

Model	Output Power	Color	Size
OPT-RIA200	24V/27.1W	●●●	1
OPT-RIA211	24V/32.0W	●●●	2
OPT-RIA250	24V/52.1W	●●●	3
OPT-CO70-RIA211	24V/32.4W	●●○●	4

Dimensional drawings(mm)

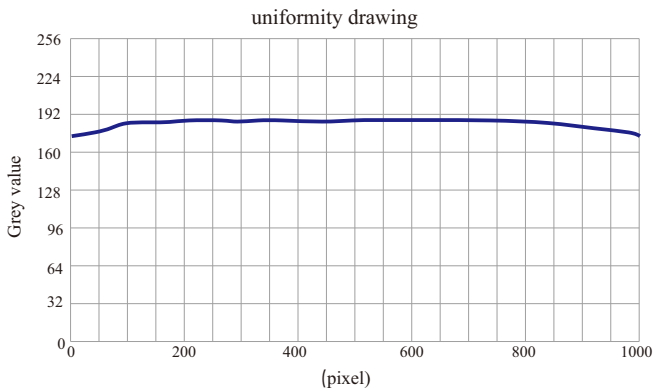


Vault Light OPT-LIU series New

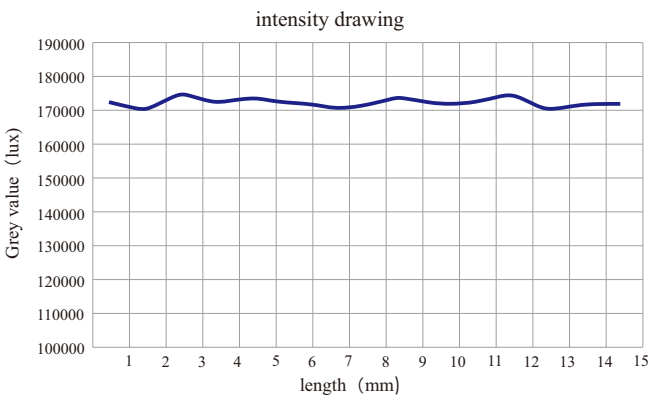
With the function of dome light and bar light.
The top can be open hole or gap for the area scan or line scan application



It can get pretty even illumination



High intensity light



Use CCD camera to grab the picture and analysis the grey value, above drawing is the average grey value
*Above data is just for reference

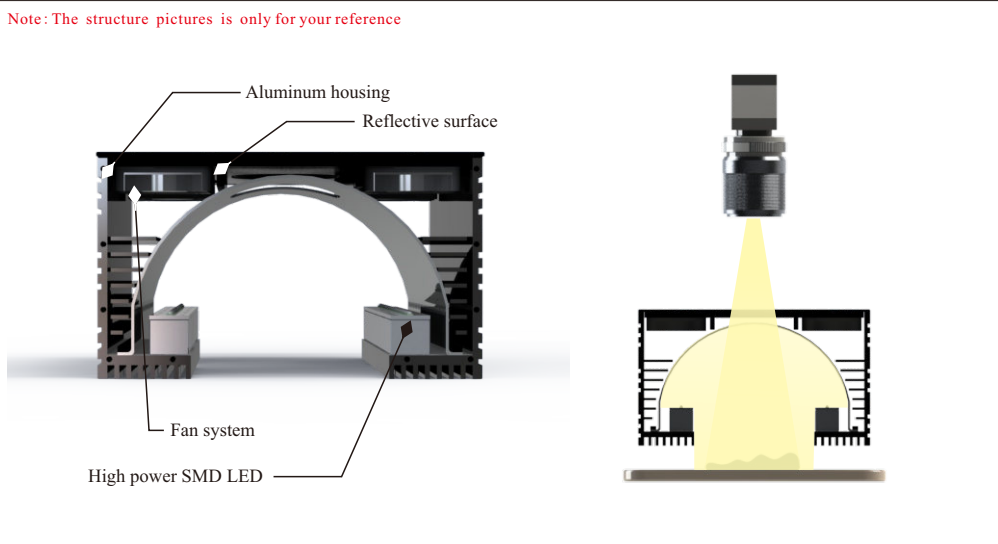
Remark: the test sample is LIU900-W, and take the picture every 60mm

Selection Guide

- OPT-LIU205
- length
 - vault light
 - OPT

Selection Guide

- ◆ Tobacco box surface inspection
- ◆ Electronic part housing defects and dirty points inspection
- ◆ Line scan AOI inspection
- ◆ Big FOV surface defects inspection

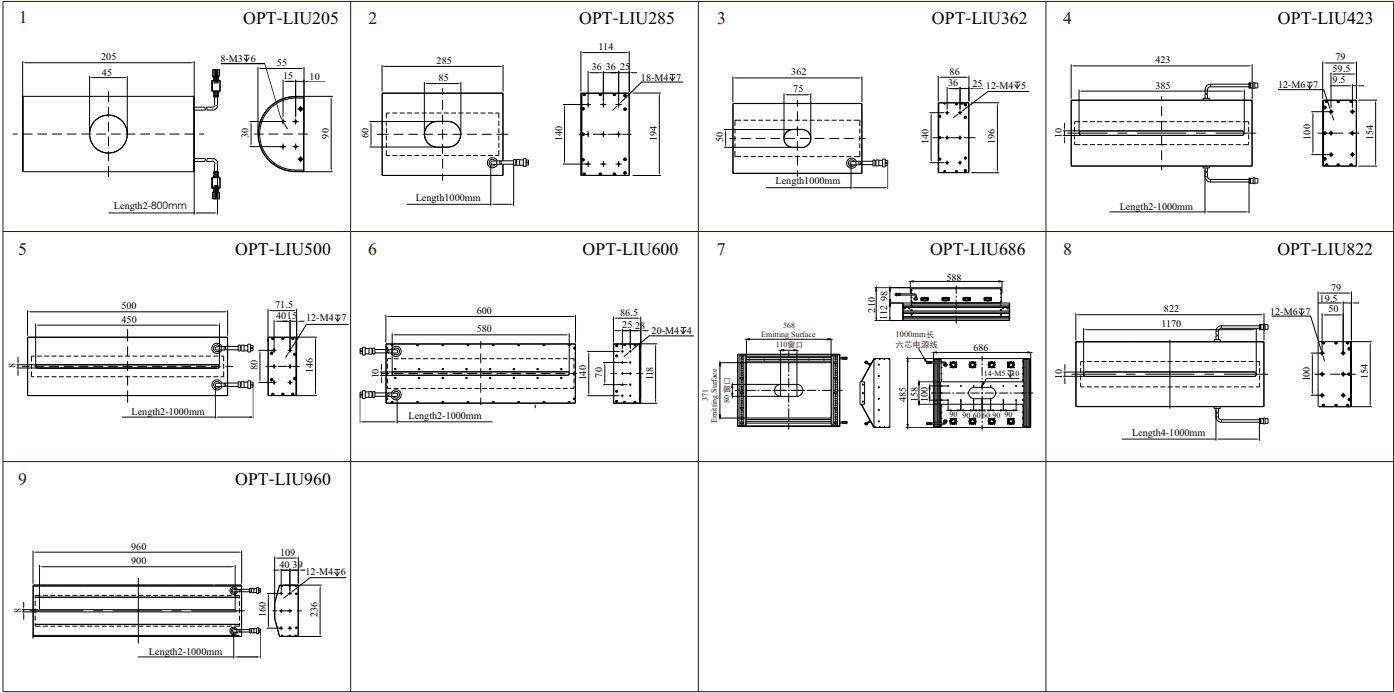


Structure display and working way

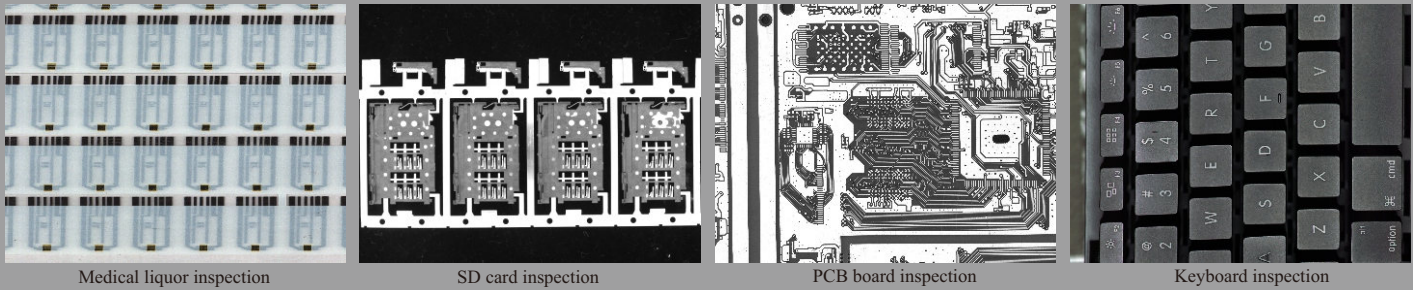
Model Table

Model	Output Power   	Output Power 	Color	Emitting surface	Size
OPT-LIU205	24V/9.6W	24V/9.6W	  	189x46	1
OPT-LIU285	24V/115.2W	24V/57.6W	  	265x100	2
OPT-LIU362	24V/96.0W	24V/57.6W	  	350x102	3
OPT-LIU423	24V/168.0W	24V/96.0W	  	401x60	4
OPT-LIU500	24V/115.2W	24V/76.8W	  	480x52	5
OPT-LIU600	24V/134.4W	24V/76.8W	  	590x94	6
OPT-LIU686	24V/211.2W	24V/134.4W	  	568x371	7
OPT-LIU822	24V/235.2W	24V/168.0W	  	800x60	8
OPT-LIU960	24V/288.0W	24V/172.8W	  	940x142	9

Dimensional drawings(mm)



Application example



Medical liquor inspection

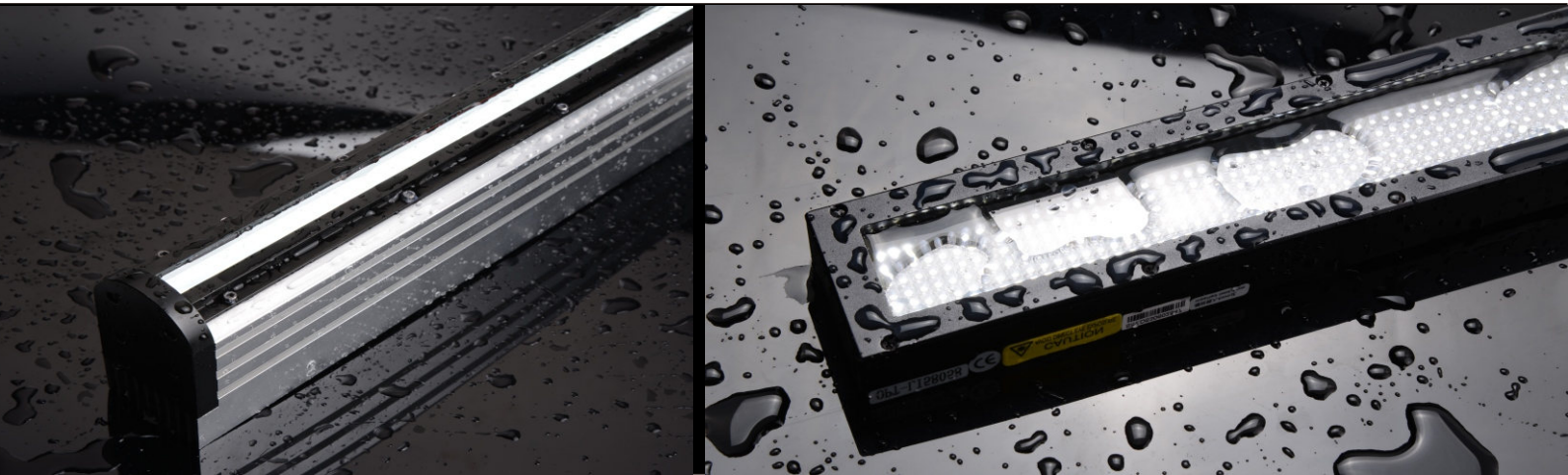
SD card inspection

PCB board inspection

Keyboard inspection

Waterproof light New

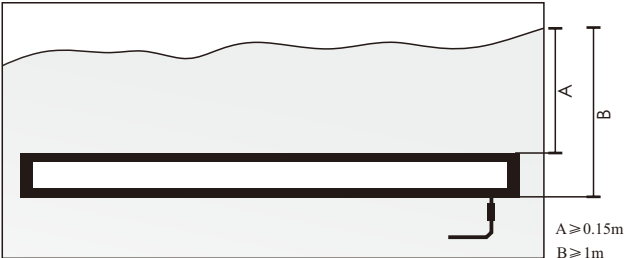
Used in much dust and water environment,
waterproof ability reaches Ip67



OPT standard items can be produced as waterproof products

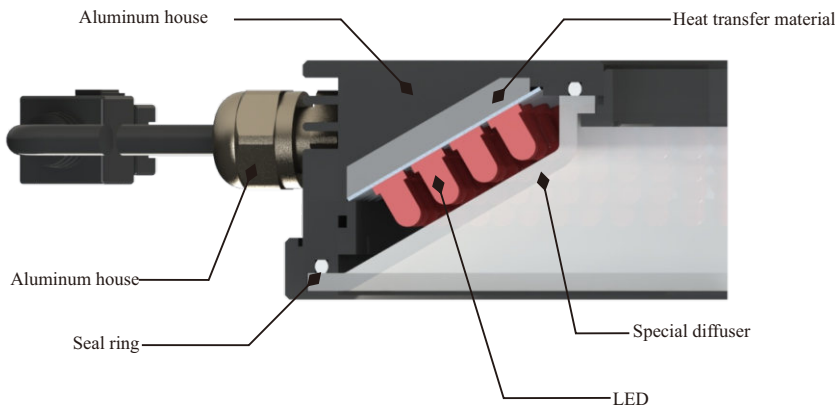
After several times test, OPT waterproof light is very stable, it is not just used for dusty and water environment, but also used for outside or water condition. It is very compact design, and few gap to make sure the whole structure is sealed very good. It is also added heat transfer system so that it also has good heat transfer under sealed condition to prolong the life time

Waterproof ability is Ip67



When the light is put into the water tank, the distance between the the surface of the water and the bottom of the light should be at least 1m, the distance between the the surface of the water and the top of the light should be at least 0.15m.
Test period: 2h

Note: The structure pictures is only for your reference

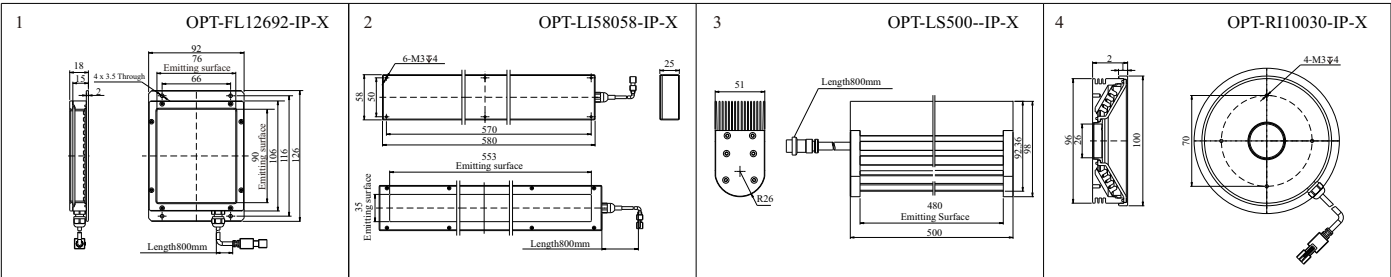


Waterproof light structure

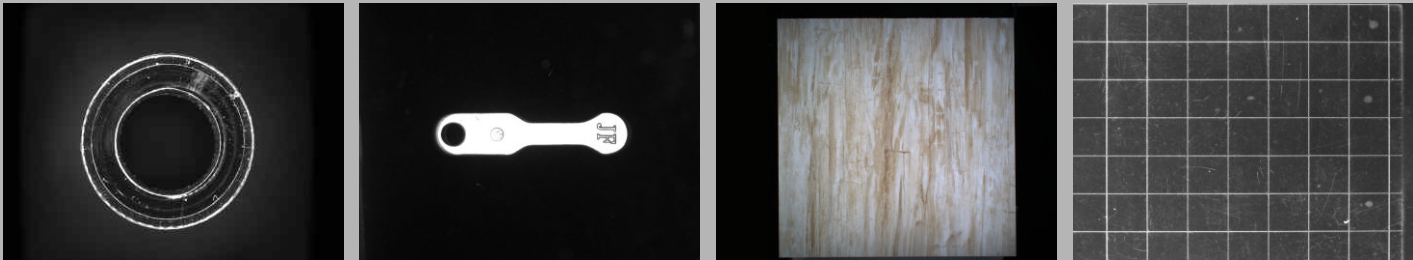
Model Table

Model	Output Power   	Output Power 	Color    	Size
OPT-FL12692-IP	24V/5.2W	24V/2.5W	   	1
OPT-LI58058-IP	24V/35.0W	24V/21.0W	   	2
OPT-LS500-IP	24V/76.8W	24V/48.0W	   	3
OPT-RI10030-IP	24V/5.5W	24V/3.1W	   	4

Dimensional drawings(mm)



Application example



Bottle mouth burr and bubble inspection

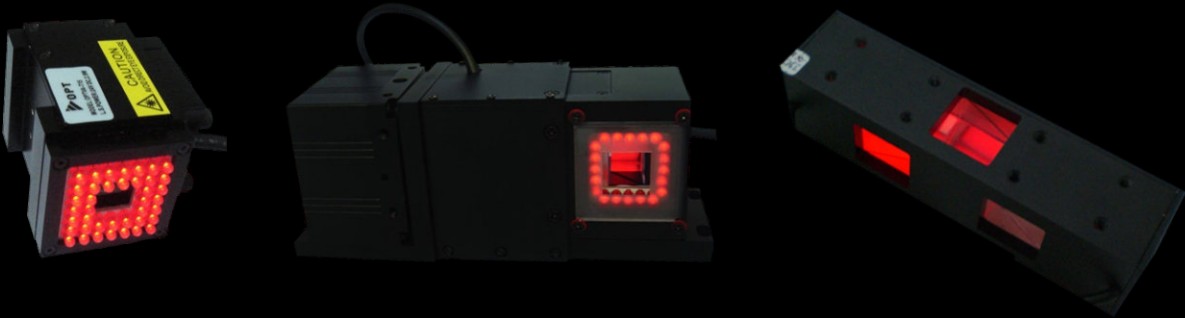
Metal surface letter location

China surface color and lines inspection

Glass edge size measurement

VA Light OPT-VA series

SMT Industry-dedicated light , with high precision ,
high speed and compact design

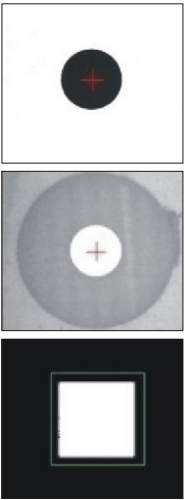


- High accuracy,high speed alignment,rich field of view
- Compact design easy for the image acquisition
- High brightness can be a subsidiary for the ring light

Application Area

◆ For the alignment in the full automatic printing inspection

Model Table

Model	VA-S	VA-T	VA-D	VA-U	Resulting Image
Characteristics	High speed position	Rich FOV and ideally suit to inspection lump	High speed position, rich FOV,ideally suit to inspection lump	High speed position, rich FOV,ideally suit to inspection lump	 ■ mark counterpoint
Camera mounting	USB/IEEE1394/Simulation			--	
3D inspect laser	Optional			Optional	
Illumination	Coaxial light+ring light			Coaxial light or ring light ,optional	
Field of view	Available from 4*3 to 12*9			--	
MAGE.	Available from 0.5x to 2x			--	
The max pixel	1280x1024			--	
Transmission distance	4.5m(with trunking , could reach 72m)			--	
PLC	Image dimension,brightness,exposure time			--	
Power consumption	2.9W			2.0W	

Semiconductor industry

Electronic Industry

Laser processing industry

Automative industry

Package industry

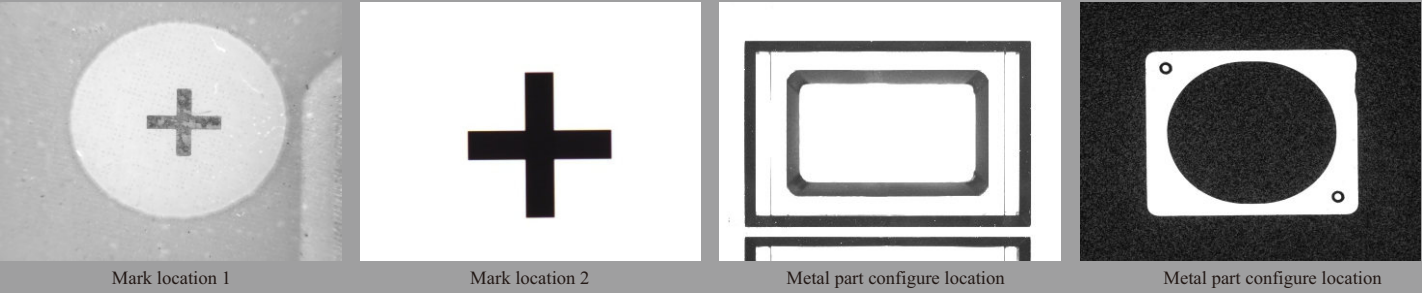
Medical industry

Hardware processing industry

Cosmetic industry

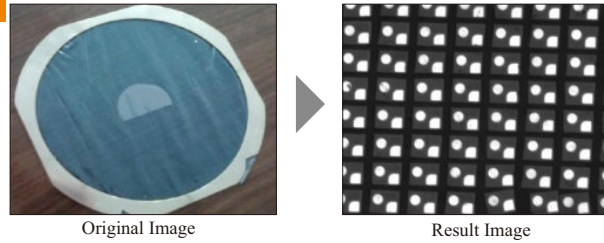
Surface inspection

Application example



Semiconductor Industry

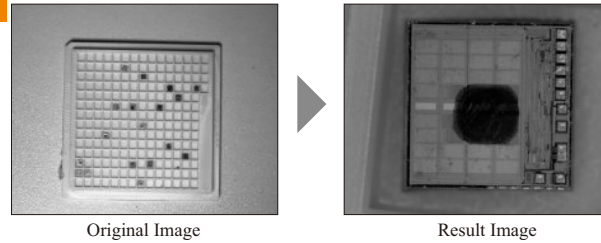
LED chip recognition and location



Illuminator: OPT-COR30-W

Chips solder joint surface like glass, size is small, so it need direct light into lens with big FOV, 90 degree coaxial light is the right choose, spot light FOV is small

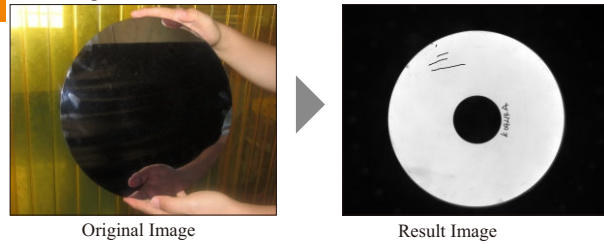
Chip red point inspection



Illuminator: OPT-RI7030-W

chips is small, and it need to inspect in the tooling, chips can reflect different color by the light color and angle. OPT-RI7030 can help chip reflect the color under certain WD.

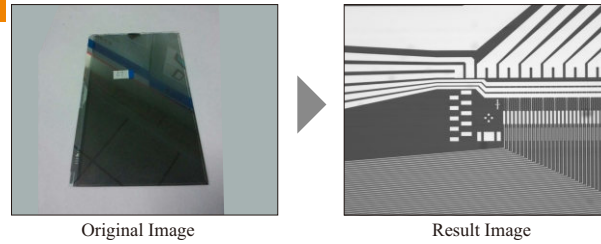
Wafer inspection



Illuminator: OPT-LI21230-B 4PCS

Wafer surface scratch inspection. As the object is big and surface very reflective, so it is better to use 4pcs bar light combined with low angle to get good image result

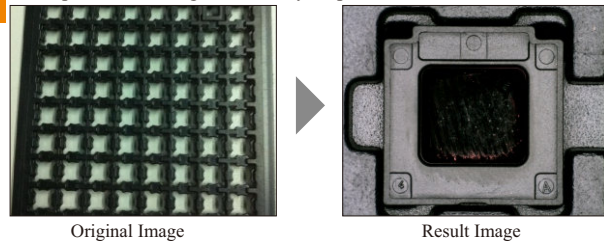
Touch screen inspection of tablet PC



Illuminator: OPT-PI0803-B

The material of circuit of touch pannel is metal, using direct light can get good image result. As the integrate circuit is very high, so it is better to use telecentric lens with spot light

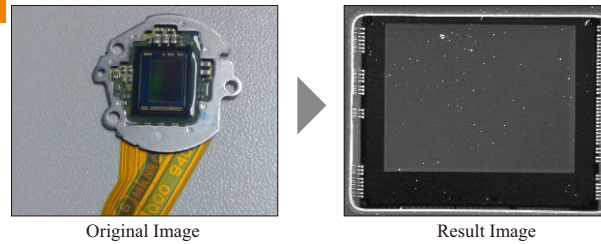
IC chip surface over glue and dirty inspection



Illuminator: OPT-RID100-W

It need to inspect the over glue in the side of chip and dirty point in the surface, so it is better to use dome light as the chips in the table.

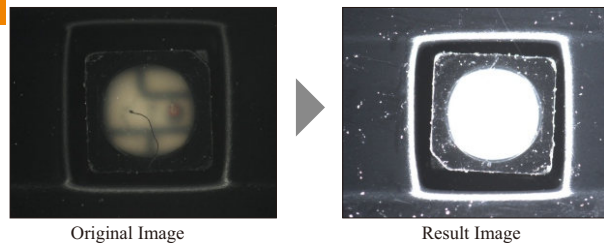
Chip dirty surface inspection



Illuminator: OPT-RIF88-B

Chip surface is high glass reflective, so it is better to use low angle right to make the surface foreign point brightness. If use normal ring light, the LEDs will reflect on the surface.

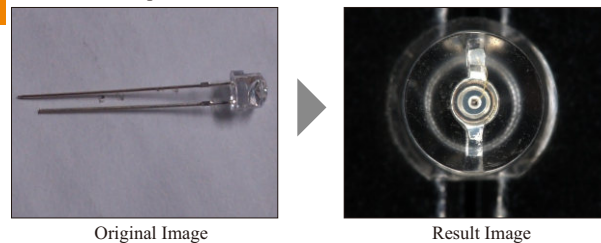
SMD LED location



Illuminator: OPT-RI7090-W

The SMD LED in the plastic belt, and the belt covered by transparent glass, using low angle right light can get the outline of SMD LED clearly, and reduce the reflective effect

LED defects inspection

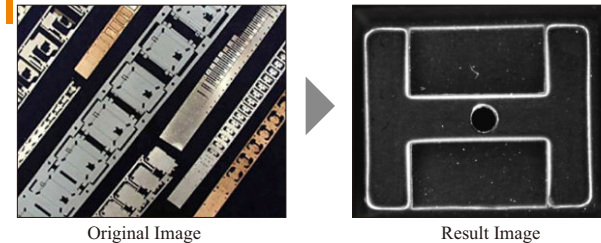


Illuminator: OPT-RI9090-W

Inspect the foreign part, chips slant, less glue, short bracket and so on

Electronic Industry

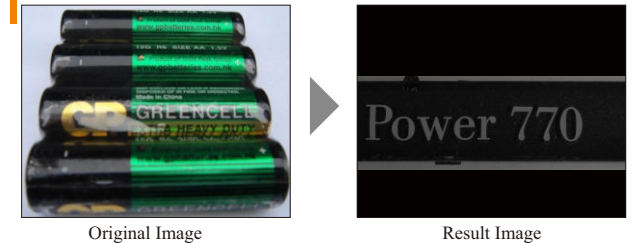
Material belt shape inspection



Illuminator: OPT-RI10080-W

Inspection the black material belt to check the shape is good or bad

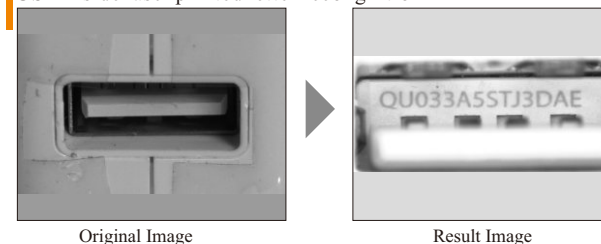
Reflective cylinder object surface inspection



Illuminator: OPT-LI11222-W 2 PCS

The surface of battery or cylinder is very reflective, if use light in the front, the image will be glared and effect the inspection and recognition

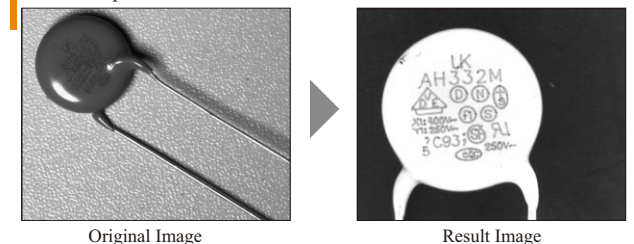
USB inside laser printed letter recongintion



Illuminator: OPT-CO50-W

USB inside space is small and narrow, it is better to use coaxial for illumination direct and the image result is clear

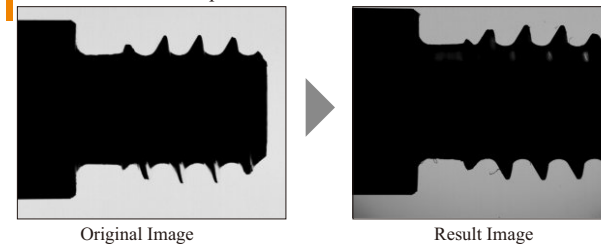
Letter Inspection



Illuminator: OPT-RIU80-W

Surface is very reflective, edge bulge, middle dent, it is better to use OPT-RIU80-W to get very clear image result, other light can cause the edge with bright circle and effect the letter reading on the surface of resistor. OPT-RIU80-W has very good performance diffuser, the light is very gentle, and cause very strong reflective.

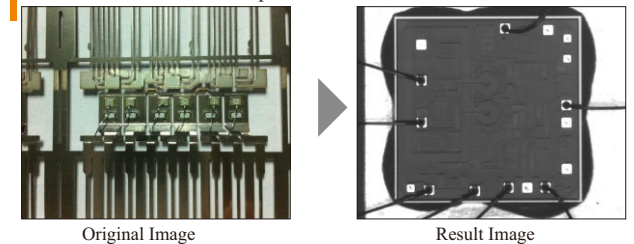
Screw dimension inspection



Illuminator: OPT-PI0805-W+ Parallel Pipe

object is cylinder structure, if use back light, it is very easy to cause dazzle light in the edge, so the result It is not accurate and the vision system is not stable. OPT-PI0805+parallel tube is making light very parallel and showing the edge very clear.

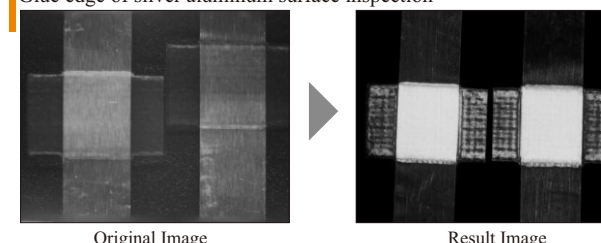
Mobile screen surface inspection



Illuminator: OPT-CO30-B

Inspection weld line broken, weld line exist on the surface of chips. As workpiece is tiny, and just can watch clear if the light come inside directly, so coaxial light is the better choose, as the weld line is gold, so blue coaxial light is the best choose

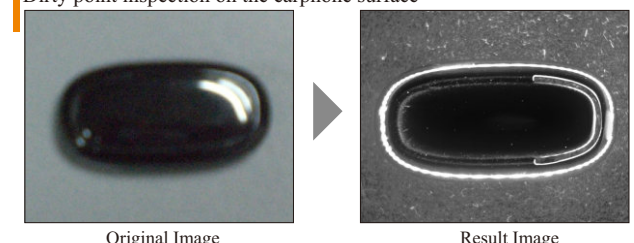
Glue edge of silver aluminum surface inspection



Illuminator: OPT-RI7030W+P

Inspect the plastic glue on the surface of silver aluminum. The glue is very transparent, it is very hard to distinguish and filter the plastic glue with other light except OPT-RI7030-W+P

Dirty point inspection on the earphone surface

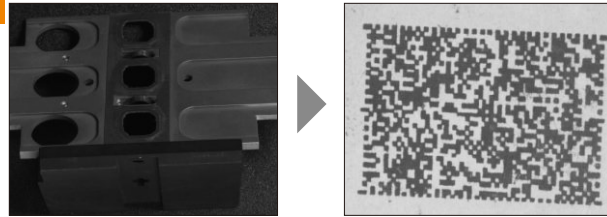


Illuminator: OPT-RI9090-W

Used low angle ring light, it is easy to show the mini scratch and foreign object on the smooth surface of bluetooth

Laser Processing Industry

Laser 2D code inspection



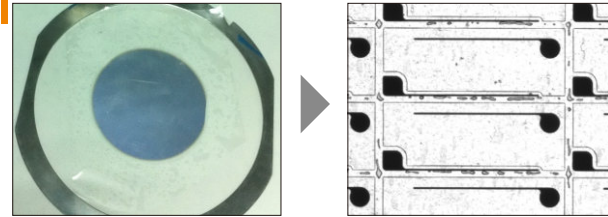
Original Image

Result Image

Illuminator: OPT-CO40-W

The laser 2D code is on the grey or black surface, but it needs to inspect it very clear and accurate.

Wafer gap cut inspection



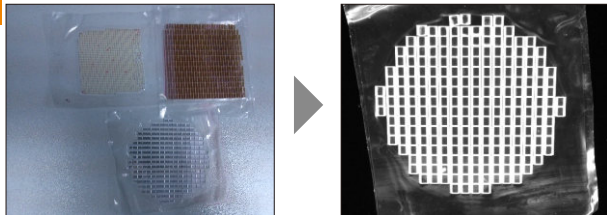
Original Image

Result Image

Illuminator: OPT-PI0803-IR

Find the gap so that laser cut. It is very hard to use other light accept the collimated light, cause other light is very hard to go through the gap.

Wafer chips account



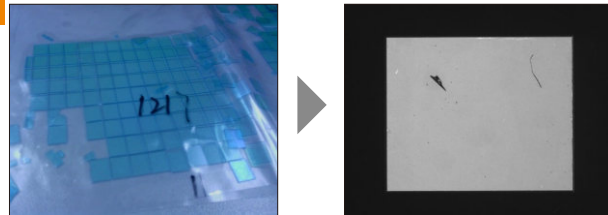
Original Image

Result Image

Illuminator: OPT-RI27270-R

There has three different colors wafer, so it needs to find different color light for the inspection.

Chips surface inspection



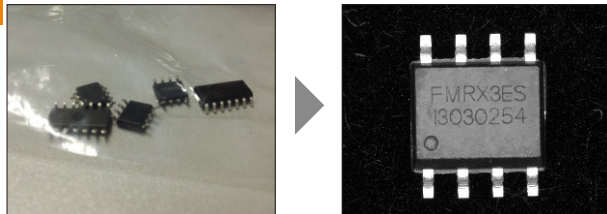
Original Image

Result Image

Illuminator: OPT-FP107-W

Inspect the scratch, dent on the chip surface, as the defects are very tiny, so it need collimated light to find the tiny defects.

IC Surface letter detection and pin distance test



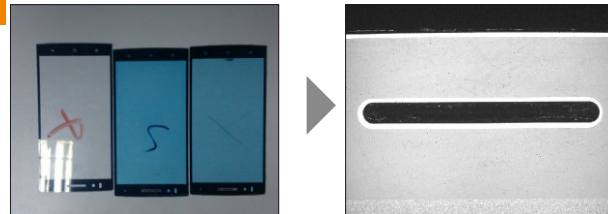
Original Image

Result Image

Illuminator: OPT-RID100-R

Inspect the IC flat rate, pin distance and the laser cut letter

Hear hole of mobile location



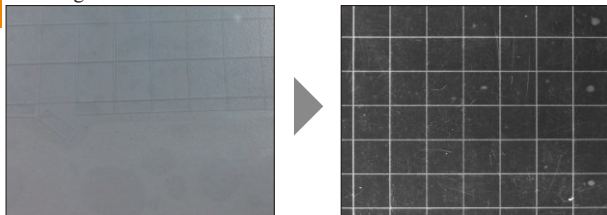
Original Image

Result Image

Illuminator: OPT-CO50-B

Location of the hear hole so that the laser can cut

Glass edge size measurement



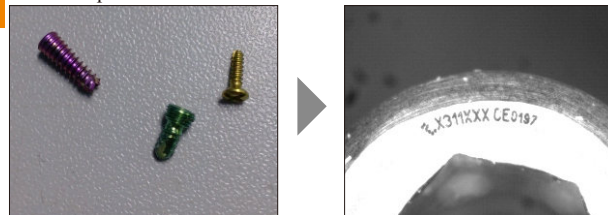
Original Image

Result Image

Illuminator: OPT-LI21230-B 4PCS

The glass is transparent and reflective material, if use some standard lights, the LEDs will be reflected on the surface of glass. It need to cut a sizable glass, so it is better to use short wavelength, blue color is some right choose.

Letters inspection of screw surface



Original Image

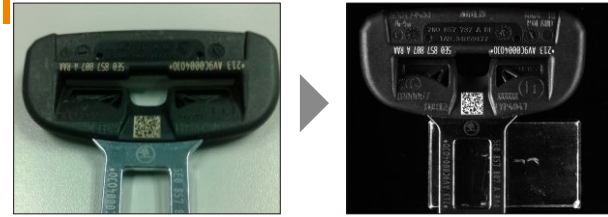
Result Image

Illuminator: OPT-RI7045-W+OPT-RIE74-W

There has 3 types of screw, the yellow and pink one can use OPT-RI7045-W, the green one can use RIE74-W

Automotive Industry

Letter inspection on the surface of clip



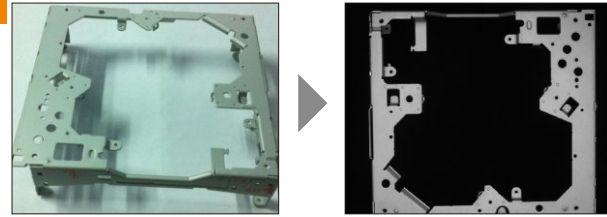
Original Image

Result Image

Illuminator: OPT-LI21230-R 2PCS

Inspect the letters on the surface of plastic part and metal part

Configure inspection



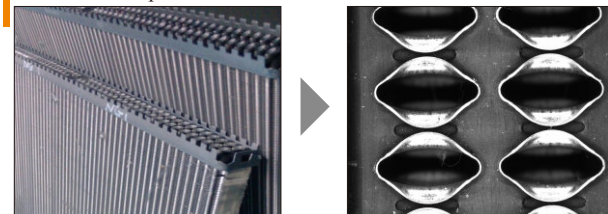
Original Image

Result Image

Illuminator: OPT-FLC540390-W

Inspect the surface scratch, dent, side flat rate. As the objects have many different types, it is very hard to just use one light for all types inspection.

Hole broken inspection of car board



Original Image

Result Image

Illuminator: OPT-RI9060-W

Using low angle ring to show the hole configure, but the space is very limited and light WD can't lower 50mm, so 60 degree ring light is the right choose

Car panel remarks inspection



Original Image

Result Image

Illuminator: OPT-FLC540390-W

Inspect the car panel color, remarks and letter recognition. As the panel is very big, so it is better to use big back light for direct illumination

Bearing angle measurement



Original Image

Result Image

Illuminator: OPT-PI0803-B

Bearing angle measurement, the accurate is 0.002mm/pix, and the edge is required very clear. In order not to get unreal edge, it needs a back light with the same direction light, 5M pixel camera with 1.5 times telecentric lens combined blue spot light as back light, it can make the edge very clear.

Letter Inspection



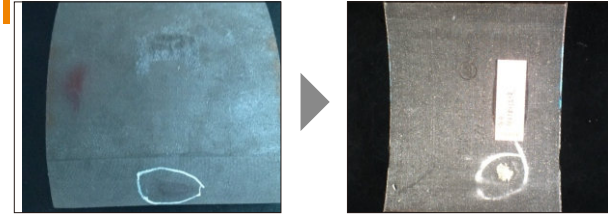
Original Image

Result Image

Illuminator: OPT-LIM21230-R

Using bar light group to show the letter information, and avoid the surface glue reflection.

Brake surface defects inspection



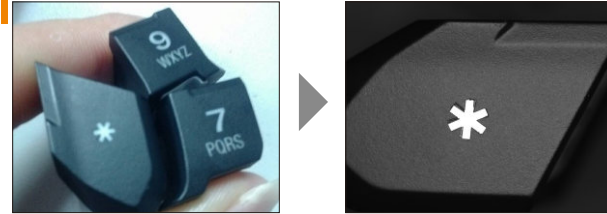
Original Image

Result Image

Illuminator: OPT-LI38037-W (2pcs)

There has some different colors, caking, and black covers on the surface of brake, and the surface is curved that makes reflective and uneven, so it is better to use the white bar light from two sides and make low angle illumination way, this can help to avoid the reflective and show the defects easily.

Letter defects inspection



Original Image

Result Image

Illuminator: OPT-RID100-B

Letter inspection to check more prints, unclear print, double print, out of print, print bubble, print slip, dome light is the right choose for this application

Package Industry

Bottle mouth broken inspection



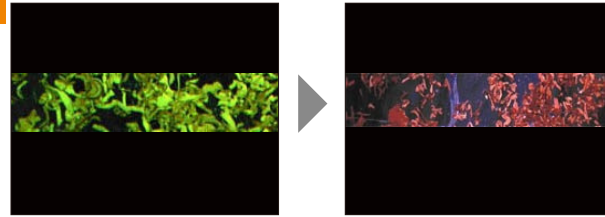
Original Image

Result Image

Illuminator: OPT-RI13075-R

month broken inspection of beer bottle, custom bottle, just for the clear configure defects

Tobacco amount account



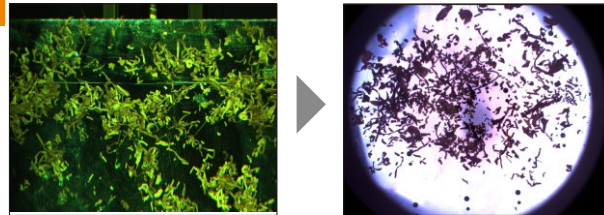
Original Image

Result Image

Illuminator: OPT-LS

Tobacco is moving very quickly in the production line. In order to get clear image, and line scan camera used, and exposure time is very short and the light need very high intensity.

Tobacco configure inspection



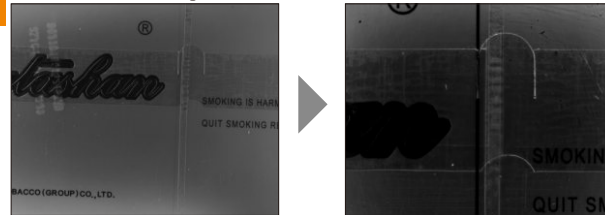
Original Image

Result Image

Illuminator: OPT-RID240-RGB

Check the shape and size of tobacco, and get clear edge information.

Tobacco box film inspection



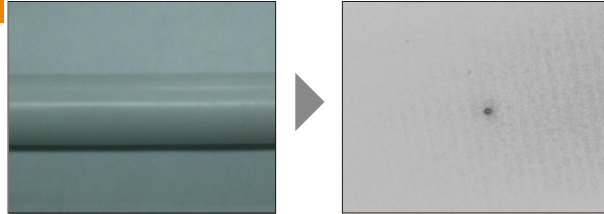
Original Image

Result Image

Illuminator: OPT-LI11222-R

Check the printing quality and show seal line shape

Dirty point inspection of plastic pipe



Original Image

Result Image

Illuminator: OPT-LI15020-B 2PCS

The surface is very reflective, while use 2 bar lights from the side can reduce the reflective.

Dirty inspection inside the bottle



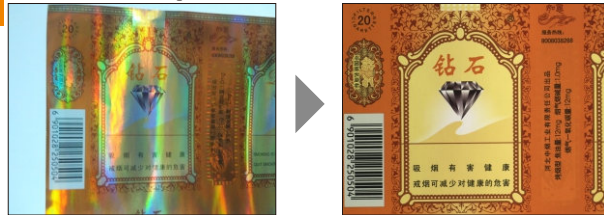
Original Image

Result Image

Illuminator: OPT-FL300300-W

The transfer ability of bottle is bad, so it is better to use high intensity back light

Tobacco surface inspection



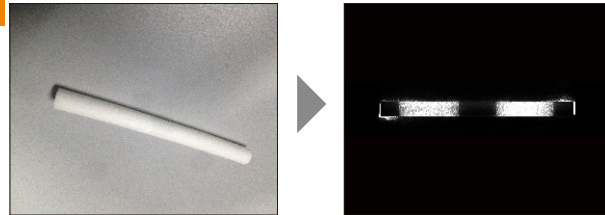
Original Image

Result Image

Illuminator: OPT-LIU433-W

Check the letters and images miss print and dirty inspection on the surface. The speed inquired very quickly speed, and the surface is strange reflective, so it is better to choose vault light for even surface illumination, better to use together with line scan camera.

Filter size measurement



Original Image

Result Image

Illuminator: OPT-LIT17228-B

Using back light to transfer the light and inspection. It is better to choose high uniformity blue back light, and the illumination area is better to near the object size.

Medical Industry

Capsule surface inspection



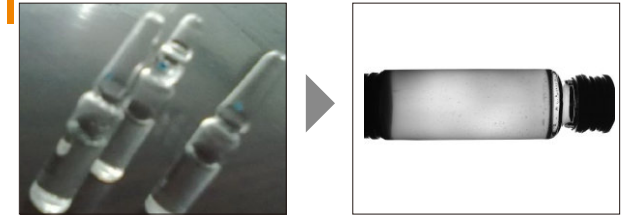
Original Image

Result Image

Illuminator: OPT-LIU205+CO60-W

check capsule surface, and dirty point inspection and other defects inspection. The tough point for this application is the surface very reflective and the object is column.

Foreign object inspection in the liquid



Original Image

Result Image

Illuminator: OPT-PI0803-B

The liquid with some foreign object as not good production, the foreign object is very small and it is very hard to watch by human eyes.

Bottle month defects inspection



Original Image

Result Image

Illuminator: OPT-FLP12086-B

Check the month damage, bubble, blurr and so on. Better to use collimated back light to get sharp edge image

Pill surface and damage inspection



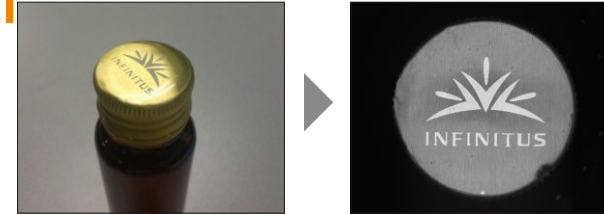
Original Image

Result Image

Illuminator: OPT-LI11222-W (4PCS) +P

Check the pill damage and dirty points and inspect two sides at the same time. As pills packed inside the plastic package, so the surface is very reflective, the polarizer is a good way to reduce this reflection.

Letter and cap shape inspection



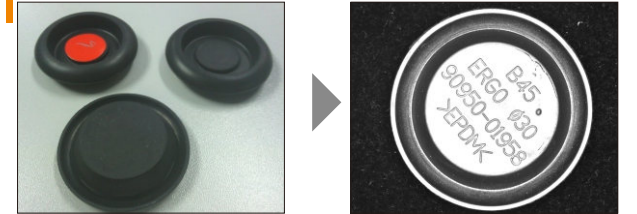
Original Image

Result Image

Illuminator: OPT-RID100-B

Check the printed letters and cap scratch, disform, and dent

Rubber cap inspection



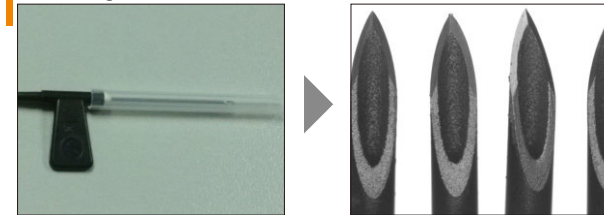
Original Image

Result Image

Illuminator: OPT-RIW120-R

check the surface bubble, and damages. Using high uniformity diffused light can get very good image result for the defects.

Needle inspection



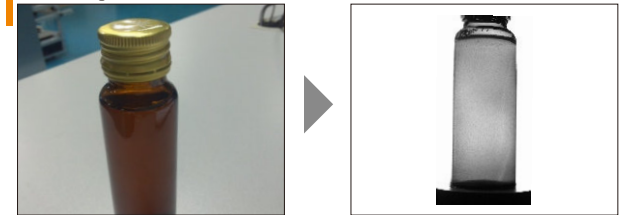
Original Image

Result Image

Illuminator: OPT-RID100-W

Check the needle defects like slant needle, multi angle needle. As the needle with many directions, it is better to use dome light for 360 degree even illumination

Bottle inspection



Original Image

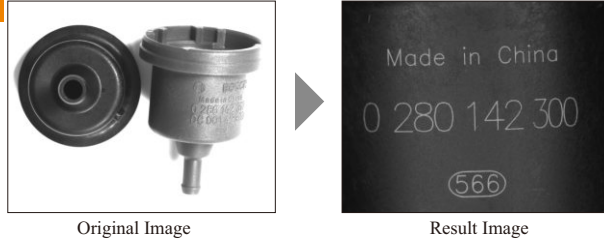
Result Image

Illuminator: OPT-FL18060-R

Dirty point check like hair, metal, other object and so on in the liquid. Bottle color is brown, so it is better to choose high intensity red back light

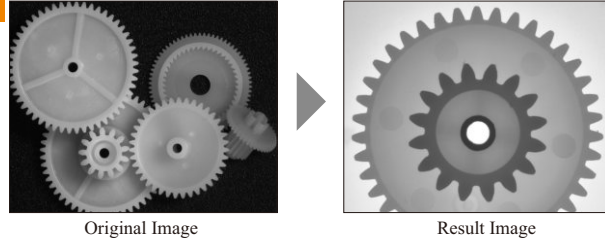
Metal processing industry

Plastic surface letter inspection



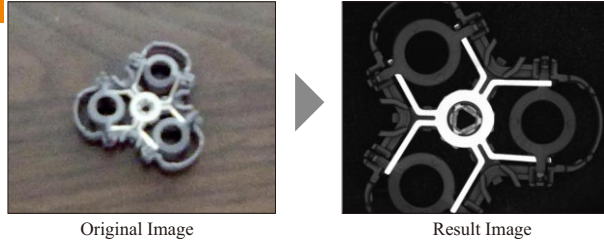
Illuminator: OPT-RI9030-W(half one)
The surface of object is black and red, and letters engraved on the surface, it is column and surface is reflection

Gear shape and defect inspection



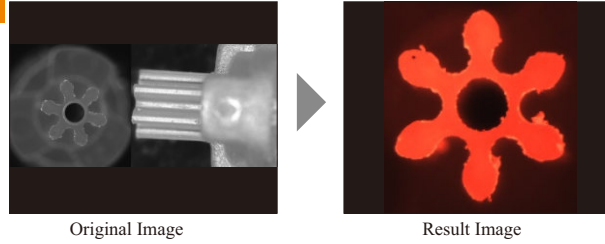
Illuminator: OPT-FL5050-W
Check the plastic gear shape and defect, different object with different layer, and the image should be clear of each layer shape and defect

Razor bracket inspection



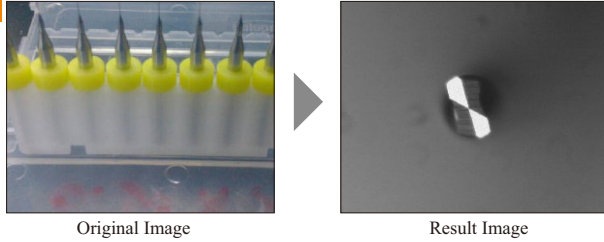
Illuminator: OPT-RID150-W
Razor steel bracket with 6 bend part, it needs to separate the plastic presser and bracket, so dome light is the right choose for this application

Gear damage inspection



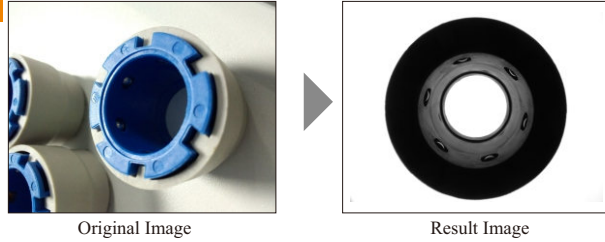
Illuminator: OPT-RI7045-W
Inject little gear inspection, the workpiece is very small, just around 1mm, while it need to check every angle is good

PCB point mouth inspection



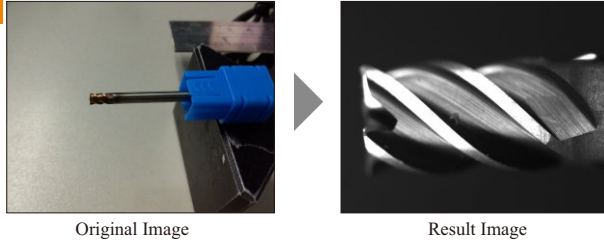
Illuminator: OPT-RI7030-B
point mouth defects inspection. The point month is very tiny, and it is better to use big magnify telecentric lens, the DOF should also meet the demand, the light will use 30 degree to make the mouth surface brightness.

Rolling ball exist check in glue



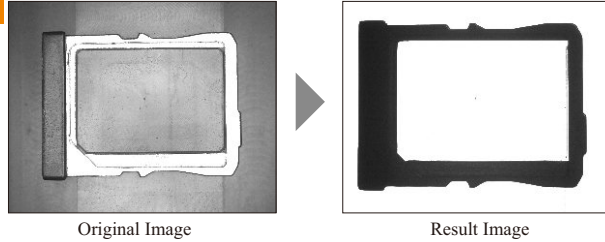
Illuminator: OPT-FL130130-R
Rolling ball is high reflective steel material, using back light to make the rolling ball brightness, at the same time using the distortion of short focus lens to enlarge the inner size of glue

Milling cutter depth inspection



Illuminator: OPT-RIF130-W
Using direct light to illuminate the column surface, it is easy to cause dazzle, and uneven surface, so it is better to choose shadowless ring light from side to illuminate.

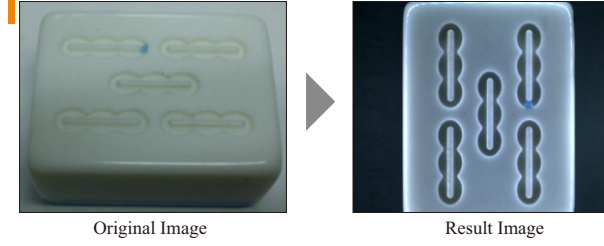
Mobile card slot size measurement



Illuminator: OPT-FL7070-B
Configure size measurement of small metal, it is better to choose blue back light for good image. The illumination area just need 20% bigger than object size, and don't need over exposure

Daily Chemical Industry

Impurity on the Letters of Mahjong Inspection



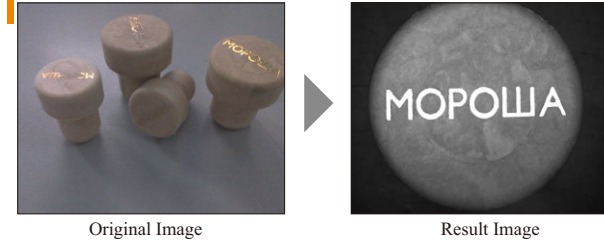
Illuminator: OPT-RI12090-W
Impurity on the Letters of Mahjong Inspection

Cosmetic bottle surface letter inspection



Illuminator: OPT-RI20775-W
Check the letters, tag barcode defects.

Gold letter quality check of plug



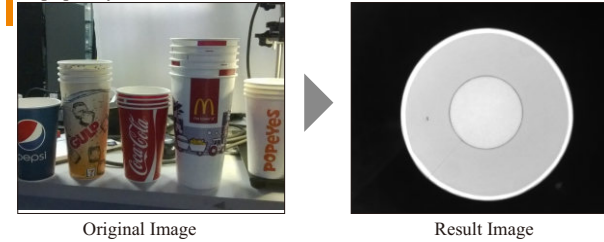
Illuminator: OPT-CO70-R
Check the golden print letters on the surface of plug to find less print, lost print defects. As golden color is very reflective, so it is better to find similar color light for this application, and red coaxial light is best choose

Cosmetic bottle surface letter inspection



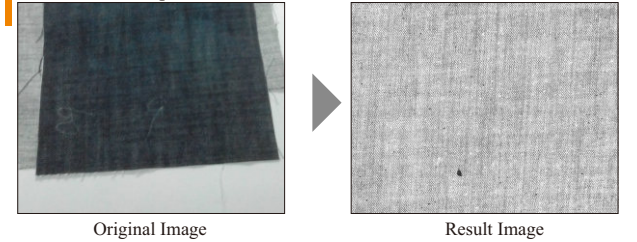
Illuminator: OPT-LIT38037-R
Check the letter on the curved bottle surface, if use high angle ring light, it will cause very strong reflective, so it is better to choose low angle ring light for even illumination.

Cup quality inspection



Illuminator: OPT-RID180-B
Check the dirty points, bottom, printing, and paint defects like wrinkle, bubble, finger print. Using the high distortion of short focus lens to explore the inner cap, and dome light can make the defects obvious.

Cloth defects inspection



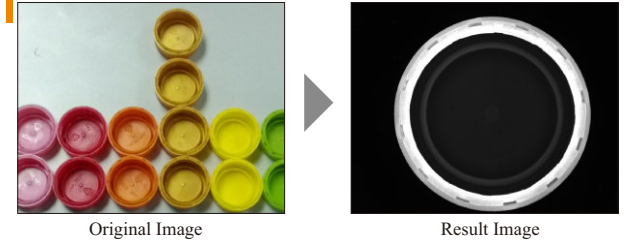
Illuminator: OPT-FLC540390-W
Check the broken, knots on the surface of cloth, as the FOV is big, and the light should be very even, so back light with hole as front light is the best choose.

Microwave surface inspection



Illuminator: OPT-LI38037-W (4PCS)
The surface of microwave is crystal material, and it needs to check the crystal size and the surface printing, using bar lights combined to illuminate with low angle.

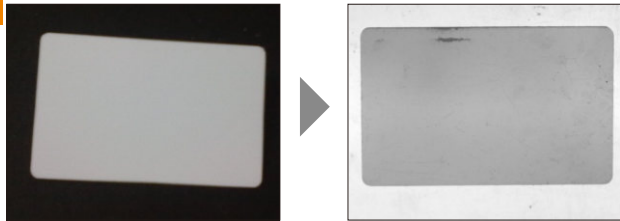
Cap defects inspection



Illuminator: OPT-RI12090-W
Check the quality of caps, like dent, edge damage, there are total with 12 colors of cap, and the light should inspect all of this colors

Surface Inspection

Card surface scratch inspection



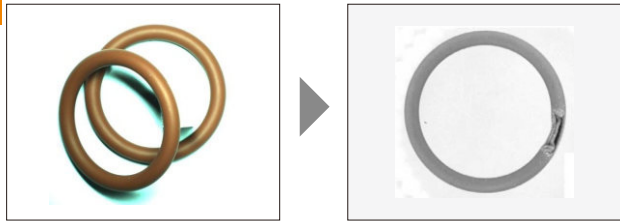
Original Image

Result Image

Illuminator: OPT-FL212230-W

Using the back light to lean the card surface, and lens is on the right direction of reflection, if the surface is good enough, the reflection is very strong like above picture, if the scratch area is not even and the reflection is week, so the area is dark like above picture.

O ring surface inspection



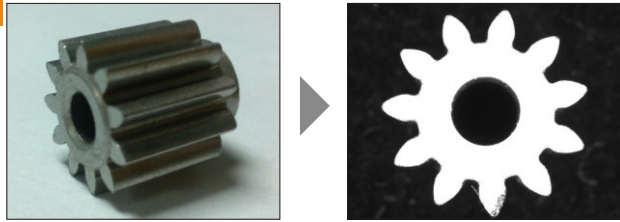
Original Image

Result Image

Illuminator: OPT-RIMX

O ring surface is curved, and the angle is from horizontal to vertical, the reflection into lens is very different, so it is very hard to get even image result.

Gear Inspection



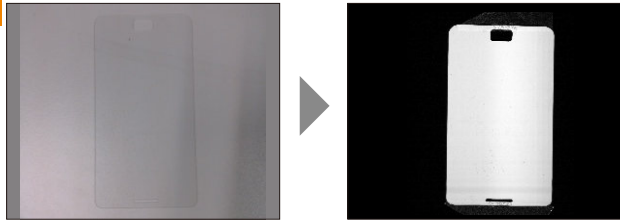
Original Image

Result Image

Illuminator: OPT-RIF88-B

Check the damage angle, material overlay, gear diameter and scratch point.

Mobile Screen Scratch Inspection



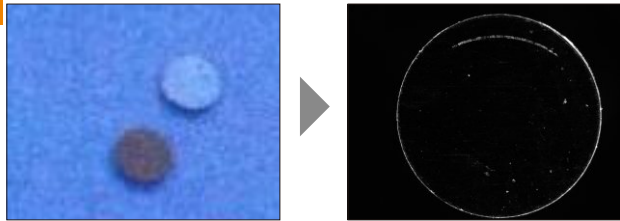
Original Image

Result Image

Illuminator: OPT-LS382-W

As the object surface is smooth as glass, it is better to lean the light and camera, using total reflection feature to distinguish the scratch and background

Metal surface inspection



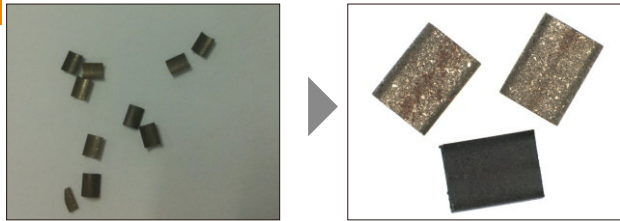
Original Image

Result Image

Illuminator: OPT-CO70-W

Anodized aluminum surface scratch inspection

Iron color distinguish and damage inspection



Original Image

Result Image

Illuminator: OPT-RID100-W

Check iron surface rusty part. Iron is vault, and it is very hard to make the object surface even, so it is better to use dome light and install it in low working distance

Lens back side surface inspection



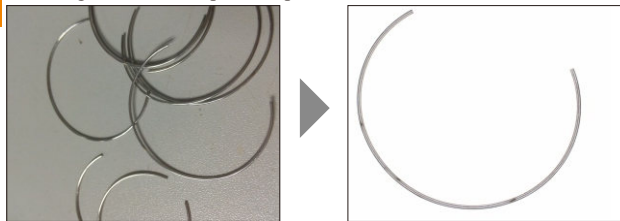
Original Image

Result Image

Illuminator: OPT-FL5050-B

Lens surface black point and scratch inspection. The surface is curved, and use front light is easy to cause uneven reflection

Steel ring surface black point inspection



Original Image

Result Image

Illuminator: OPT-RID180-W+FL9090-W

Check the black point, foreign object and rusty point of steel surface the curved surface is easy reflective, it is better to use dome light as front light and back light as fill light

Power Supply

Controller Function

Selection Instruction

Trigger Principle

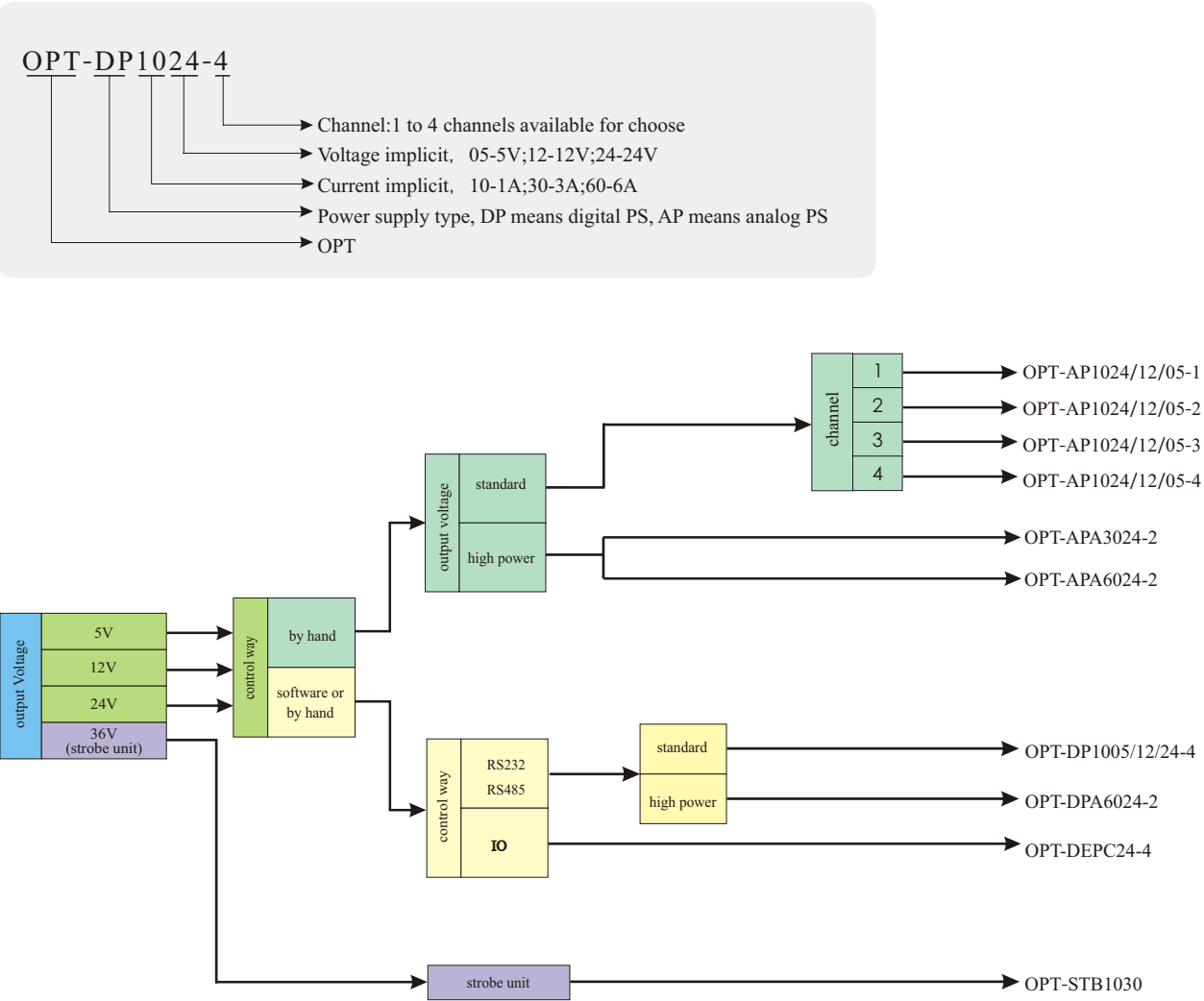
Trigger Connection

Controller Type

Why Need to Use Power Supply

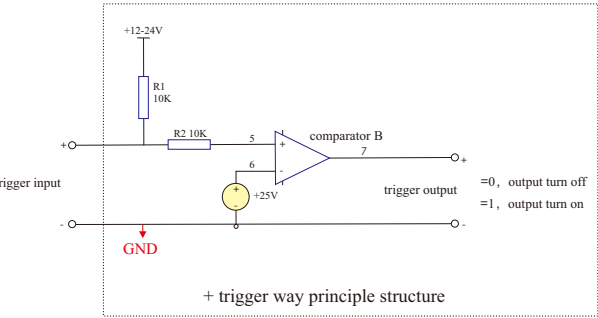
The main purpose of using power supply is to provide power for lights, control the brightness, and flash the light to enlarge the life time of light. OPT power supplies are mainly divided into two kinds, digital power supply and analog power supply. Digital power supply can use PC to control, so we could choose power supply according to the application requirements.

Power Supply Instruction



Trigger principle

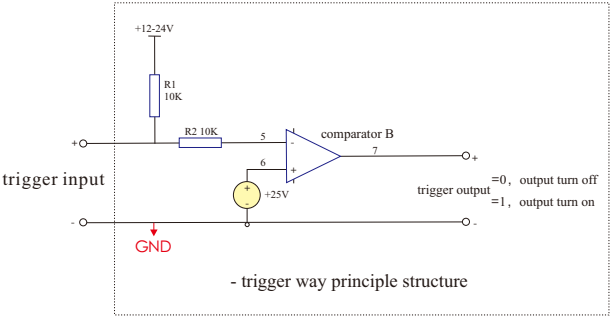
The power supply has +/- two types trigger way, customer can choose it according to demand.



+ Trigger

Trigger way	light on	light off
Trigger turn on /off	disconnection	connection
High power trigger	High power trigger: 5V-24V	Low power trigger: 0V-2.4V

When the input trigger voltage is more than 5V, the output turns on
When the input trigger voltage is less than 2.4V, the output turns off
When the trigger mount without connection, then the output turns on



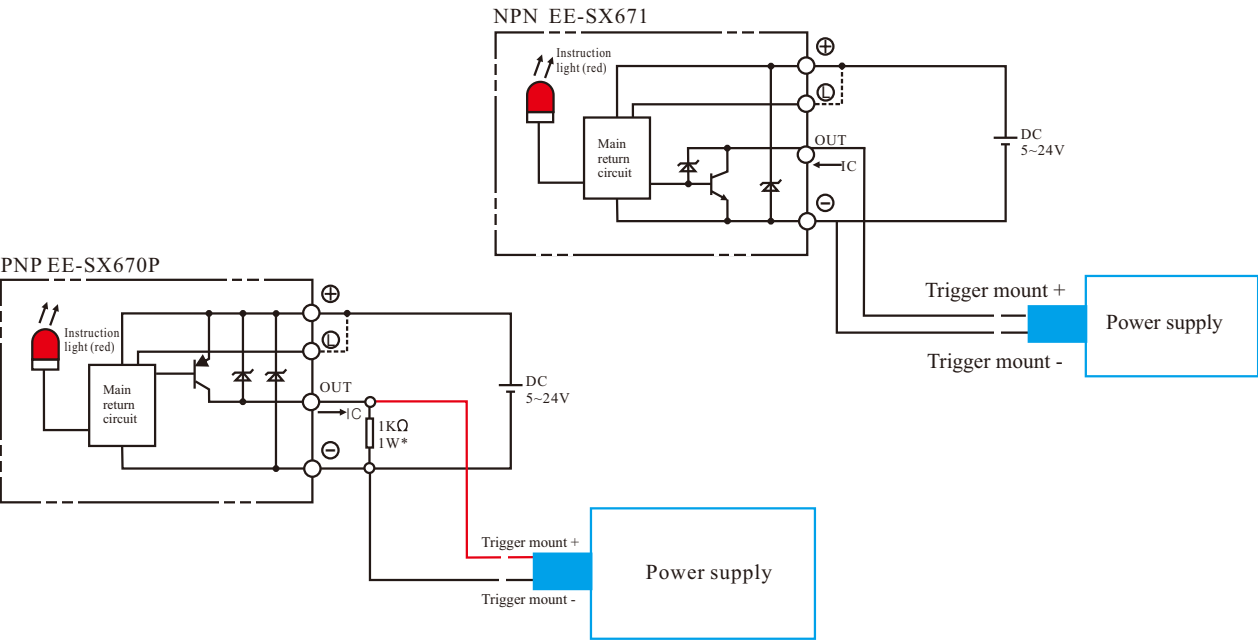
- Trigger

Trigger way	light on	light off
Trigger turn on /off	connection	disconnection
High power trigger	High power trigger: 0V-2.4V	Low power trigger: 5V-24V

When the input trigger voltage is more than 5V, the output turns off
When the input trigger voltage is less than 2.4V, the output turns on
When the trigger mount without connection, then the output turns off

Trigger Connection Instruction Picture

Below trigger connection way we use OMRON two types of sensor as example



*Note: when the sensor offer 5V power, then we can use 1K 1/8W resistor
Note: "OMRON" is the trademark of Omron Corporation

Power Supply Classification

According to different functions of OPT power supply , its range can generally be divided into two types - digital power supply and analog power supply .

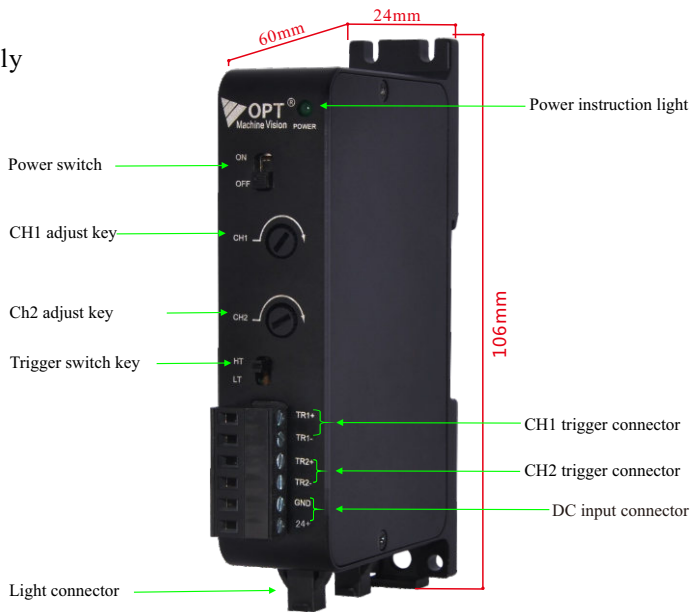
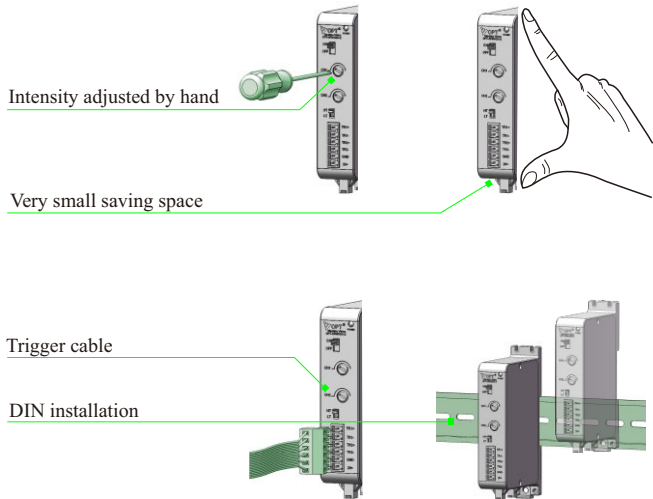
Type	Voltage/Current driven	Model	Applicable light units	English name
Analog Power Supply	Voltage driven	OPT-APM0524B-2	24V light units	Mini controller
		OPT-AP1024F-X		Voltage analogue controller
	Current driven	OPT-APA3024-2	Line light	Medium power analog voltage power supply
		OPT-APA6024-2	Line light	High power analog current power supply
		OPT-APA0405F-4	Spot light	Analogue controller for spot light
Digital Power Supply	Voltage driven	OPT-DP1024F-4	24V light units	Voltage digital controller
		OPT-DPA1024C-4	24V light units	Current auto test digital controller
	Current driven	OPT-DPA0405B-4	Spot light	Current digital controller for spot light
		OPT-DPA6024-2	Line light	High power digital current power supply
		OPT-DPA6024B-2	Line light	Second generation current digital controller

Mini Voltage Controller

Mini, Easy operation

OPT-APM0524B-2

No intensity level adjust,each channel can be adjust individually



working environment:-5°C-45°C working humidity:20RH-80%RH
storage temperature:-25°C-70°C storage humidity:10RH-80%RH

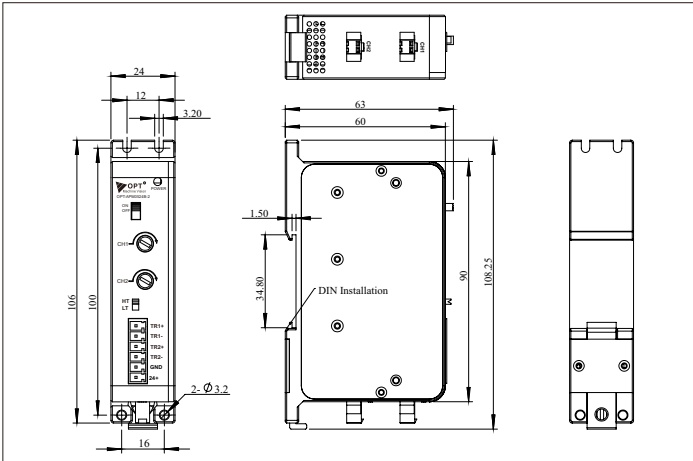
- Hardware trigger
- Trigger signal input: put the signal like camera trigger signal into controller, it can make the light flash and increase life span of controller.
- Voltage (AC1500V 1min withstand<10mA)
- Insulation resist (DC500V >20MΩ)
- Input DC20-24V,can be got from machine easily

OPT-APM0524B-2
OPT---Company name
APM---Controller type: analogue voltage
05---Output current:0.5A
24---Output voltage: 24V
B---Second generation
2---Channels: 2 CH

Parameter Description

Items	Parameter	Description
Input voltage	DC20-24V	
Output voltage	14.0-24.0V ±0.2V	Adjust continuously
Light intensity	Stepless control	Adjust light intensity by potentiometer
Power anti-connect protection	yes	it is not damaged as the power anti connection
External trigger input	Trigger with signal	
Trigger delay time	<80us	
Trigger frequency	1/T	Decided by strobe time,for example T=1ms, the trigger frequency can be reached 1K
HT/LT switch	yes	Can be changed by the HT/LT switch key
Load	12W/CH 24W/2CH	Single channel max output is 20W, 2 channels total output is not over 40W
Standby power	<3W	
Voltage withstand	AC1500V 1min < 10mA	
Insulation resist	DC500V >20MΩ	
Working temperature	-5°C-50°C	
Vibration test	10~50Hz (amplitude X/Y/Z direction 80mins	
Shock test	From 6 directions, each direction for 3 times(up&down,right&left, front&back	
Size(mm)	106*60*24	
Weight	0.13Kg	

Dimensional drawings

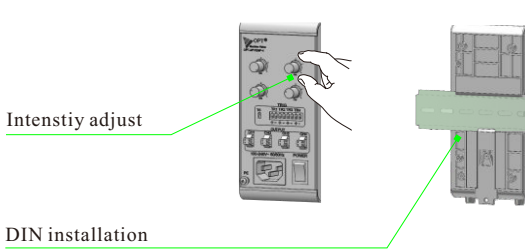


Voltage Analogue Controller

No intensity level adjust,each channel can be adjust individually

OPT-AP1024F-4

Standard channel for 4 channels available choose



- Easy operation
- Trigger signal input: put the signal like camera trigger signal into controller,it can make the light flash and increase life span of controller.
- Voltage(AC1500V withstand less10mA)
- Insulate(DC500VWithstand>20MΩ)

OPT-AP1024F-4
OPT---Company Name
AP---Controller type: Analogue voltage controller
10---Output current: 1A
24---Output voltage: 24V
F---Panel
4---Channels: 4 CH

Model	No.of channels	External trigger	Output power
OPT-AP1024F-1	1	HT/LToptional	24V
OPT-AP1024F-2	2	HT/LToptional	24V
OPT-AP1024F-3	3	HT/LToptional	24V
OPT-AP1024F-4	4	HT/LToptional	24V

Parameter Description

Items	Parameter	Description
Output voltage	Adjust from14V to 24V	Adjust continuously
Light intensity	Stepless control	Intensity adjust key
External trigger input	+/- Trigger way available	HT:+ Trigger LT:- trigger
Trigger delay time	<80us	<80us
Trigger frequency	1/T	Decided by strobe time,for example T=1ms, the trigger frequency can be reached 1K
HT/LT switch	yes	Can be changed by the HT/LT switch key
load	20W/CH 40W/4CH	Single channel max output is 20W, 2 channels total output is not over 40W
Input voltage	100~240V AC 1.5A	
Standby power	<3W	
Voltage withstand	AC1500V 1min < 10mA	
Insulation resist	DC500V >20MΩ	
Size(mm)	160*75*110	
Weight	0.92KG	

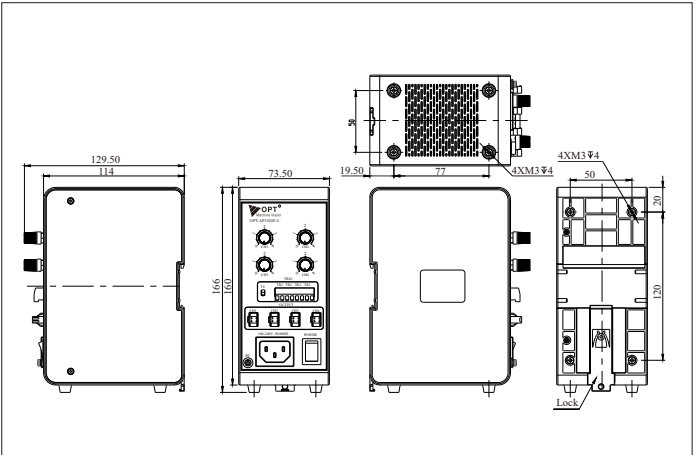


working environment:-5°C-45°C working humidity:20RH-80%RH
storage temperature:-25°C-70°C storage humidity:10RH-80%RH

Panel Instruction

Panel	Instruction	Remark
Intensity Adjust key	There has 4 intensity adjust keys for 4 lights,it can increase the intensity by clockwise,and decrease the intensity by anticlockwise	Please adjust the key to zero before turn on the power.and then get 220Vpower, connect the light with power supply.
Trigger switch key	When put trigger switch key up,it will be + trigger, when put trigger switch key down, it will be - trigger.	
Light connector	2 pin connector	
AC power input	Input 100-240VAC	
Trigger connection	Connect the signal for flash	The max strobe frequency reach 1KHz
Power switch	Turn on/off the power	
Ground	Safety ground connection	

Dimensional drawings

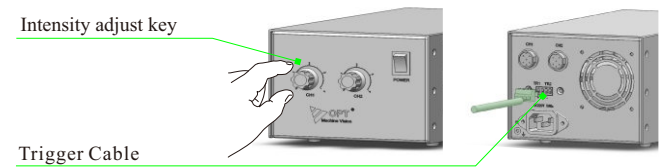


Analogue Current Controller

For Line Scan Light

OPT-APA3024-2(Mid Power Analogue Current Controller)
OPT-APA6024-2(High Power Analogue Current Controller)

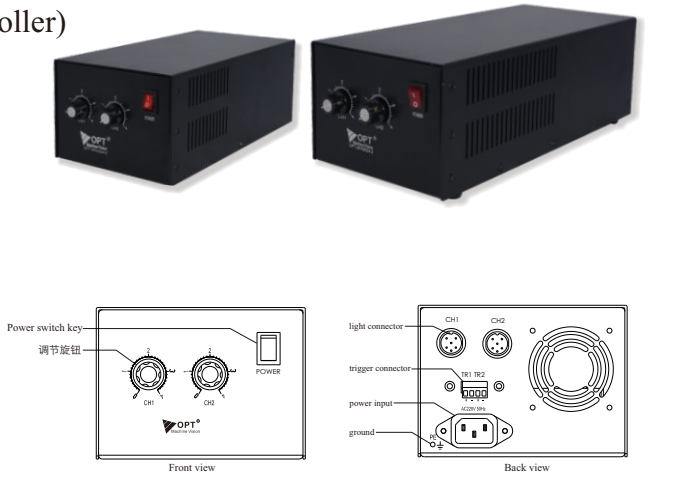
With 2 Channels, and each channel can be controlled separately
Can be set max. current by remark resistor



■ Trigger signal input: put the signal like camera trigger signal into controller,it can make the light flash and increase life span of controller.

- High integrate
- High power output

OPT-APA3024-2
OPT—Company name
APA—Controller type: analogue voltage
30—Output current: 3A
24—Output voltage: 24V
2—Channels: 2 CH
OPT-APA6024 - 2
60—Output current: 6A Others same with APA3024

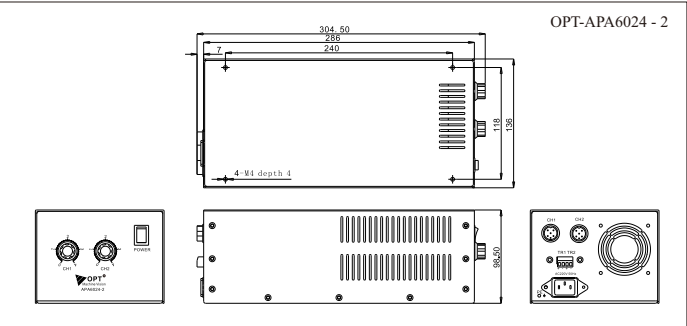
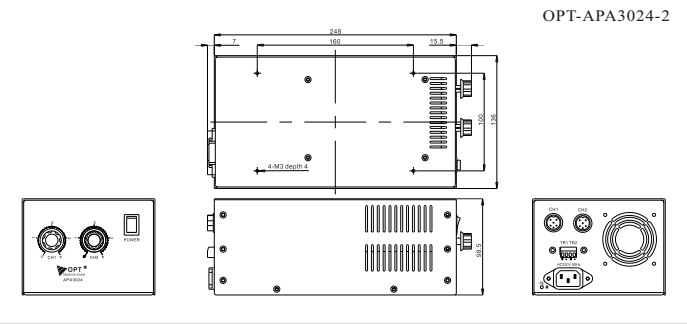


APA3024-2 and APA6024 has same configure

Panel instruction

Panel	Instruction
Power switch	Turn on/off the power
Intensity adjust key	Adjust the intensity
Light connector	For OPT 24V light using
Trigger connection	Connect the signal for flash
Power interface	Input 100-240VAC
Ground	Safety ground connection
Fan system	

Dimensional drawings



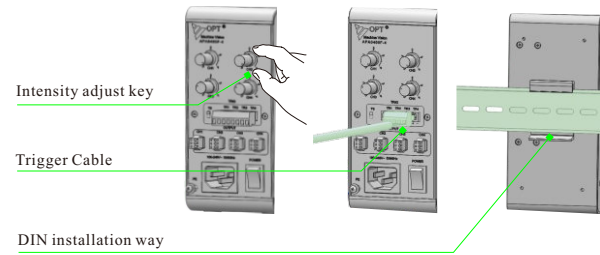
Parameter Description

Item	Parameter	Instruction
Power input	100-120VAC 7A 200-240VAC 4A	Can be switched
Light input voltage	OPT-APA3024-2 DC24V OPT-APA6024-2 DC27V	For 24V Line scan light using
Output voltage	OPT-APA3024-2 3A/1CH 6A/2CH OPT-APA6024-2 5A/1CH 10A/2CH	Max output current not over 6A Max output current not over 10A
Light intensity	Stepless control	Hand adjust
External trigger input	Switch value trigger	Used in the fixture with switch value output
Trigger delay time	<150us	
Trigger frequency	1/T	Decided by strobe time,for example T=1ms, the trigger frequency can be reached 1K
Channel	2CH	For 2 Line lights
Voltage withstand	AC1500V 1min <10mA	
Insulation resist	DC500V >20MΩ	
Vibration test	10~50Hz amplitude X/Y/Z direction 80mins	
Shock test	From 6 directions, each direction for 3 times(up&down,right&left,front&back	
Standby power	<3W	
Size(mm)	OPT-APA3024-2 270.5×136×98.5 OPT-APA6024-2 304.5×136×98.5	
Weight	OPT-APA3024-2 1.8kg OPT-APA6024-2 2.1kg	

Current Analogue Controller for Spot Light

Trigger with signal,for 5V spot light using

OPT-APA0405F-4
No intensity level adjust,each channel can be adjust individually

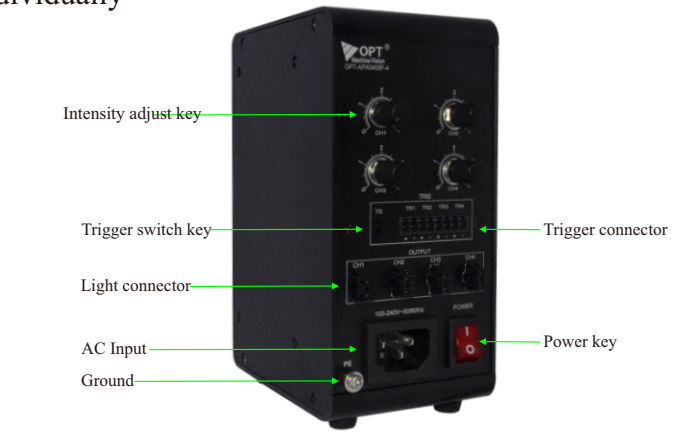


- High integrator
- Short circuit protection
- Trigger signal input: put the signal like camera trigger signal into controller,it can make the light flash and increase life span of controller
- Hand adjust: by hand to adjust the intensity
- +/- trigger way switch

OPT-APA0405F-4
OPT---Company name
APA---Controller type: analogue voltage
04—Output current: 0.4A
05---Output voltage: 5V
F---Pannel
4---Channels: 4CH

Parameter Description

Item	Parameter	Instruction
Power input	100-240AC	
Current adjust range	0-0.4A	For 5V spot light using
Current output	0.4A/Ch,4Chs total not over 2.5A	Can't be over the max power output
Light intensity	Stepless control	Hand adjust
+/- trigger switch	1/T	Decided by strobe time,for example T=1ms, the trigger frequency can be reached 1K
External trigger input	Trigger switch	Switch signal output from apparatus
Trigger delay time	<80us	
Short circuit protection	Yes	Short circuit protection start when it happened short
Trigger frequency	1/T	Decided by strobe time,for example T=1ms, the trigger frequency can be reached 1K
Voltage withstand	AC1500V 1min <10mA	
Insulation resist	DC500V > 20MΩ	
Vibration resist	10~50Hz (amplitude X/Y/Z direction 80mins	
Shock resist	150m/S ² from 6 directions, each direction for 3 times(up&down, right&left,front&back	
Standby power	<3W	
Size(mm)	160*110*75	
Weight	0.92Kg	

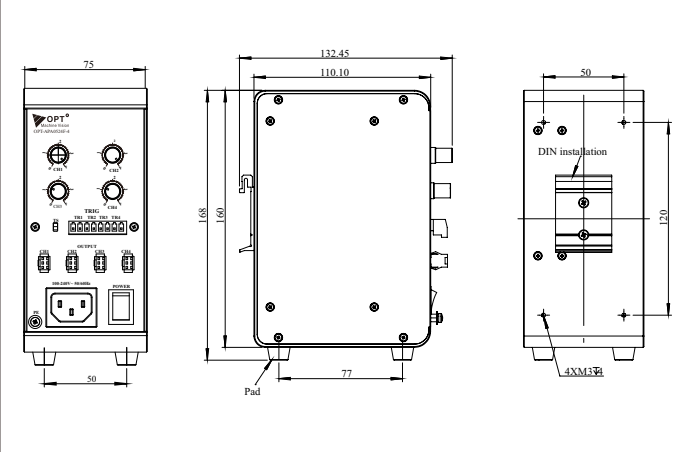


working environment:-5°C-45°C working humidity:20RH-80%RH
storage temperature:-25°C-70°C storage humidity:10RH-80%RH

Panel instruction

Panel	Instruction	Remark
Power switch	Turn on/off the power	For 5V spot light using
Intensity adjust key	Adjust the light intensity	
Light connector	For 5V spot light using	
AC Power input	Input 100-240VAC	
AC power input	Connect the signal for flash	
Ground	Safety ground connection	
Trigger switch key	+/- trigger switch	Trigger key up is + trigger, trigger key down is - trigger

Dimensional drawings

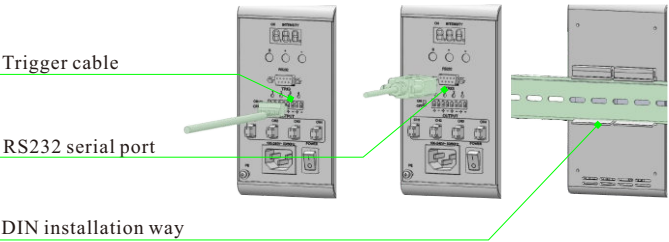


Voltage Digital Controller

Total 4 Chs, each channel operated individually, intensity can be adjusted by hand

OPT-DP1024F-4

Using U mode to make the wind circle,this can make sure very good heat transfer

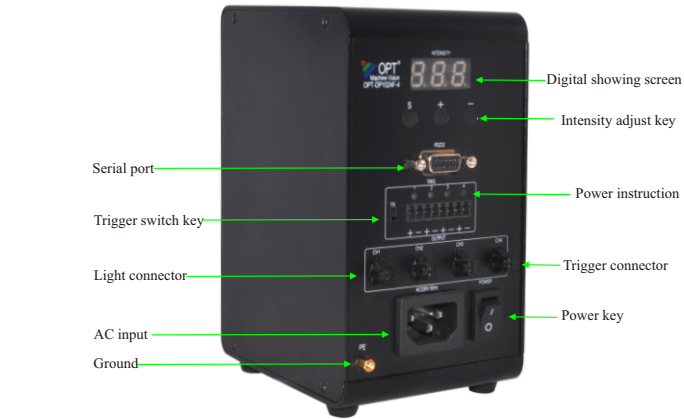


- 256 intensity level control
- High integrator
- Integrate short protection and over current protection.
- Trigger signal input: put the signal like camera trigger signal into controller, it can make the light flash and increase life span of controller.
- Controlled by PC: connect computer by serial port,then the light intensity and trigger can be controlled by computer. We can help to offer the software so that it can integrate into your system
- Record after shut down: you don't need to reset the previous parameter after the controller shut down

OPT-DP1024F-4
OPT---Company name
DP---Controller type:Voltage digital controller
10---Current output: 1A
24---Output voltage: 24V
F---Pannel
4---Channel: 4 channels

Parameter Description

Item	Parameter	Instruction
Input voltage	14V to 24V adjustable	For 24V light using
Intensity adjust	256 level	Hand adjust or software adjust
External trigger input	Trigger switch	Used in the fixture with switch value output
Short circuit protection	Yes	
Trigger delay time	<80us	
Trigger frequency	1/T	Decided by strobe time,for example T=1ms, the trigger frequency can be reached 1K
Channel	4CH	For 4 lights
RS-232/ Baud rate	RS-232 / Baud rate 9600bps	Open the communication protocol for customer
Output power	20W/CH 60W/4CH	4Chs total not over 2.5A
Input voltage	100~240vAC 1.5A	
Voltage withstand	AC1500V 1min <10mA	
Insulation resist	DC500V > 20MΩ	
Vibration resist	10~50Hz amplitude X/Y/Z direction 80mins	
Shock resist	From 6 directions, each direction for 3 times(up&down,right&left,front&bac	
Standby power	<3W	
Size(mm)	160*88*110	
Weight	1.05KG	

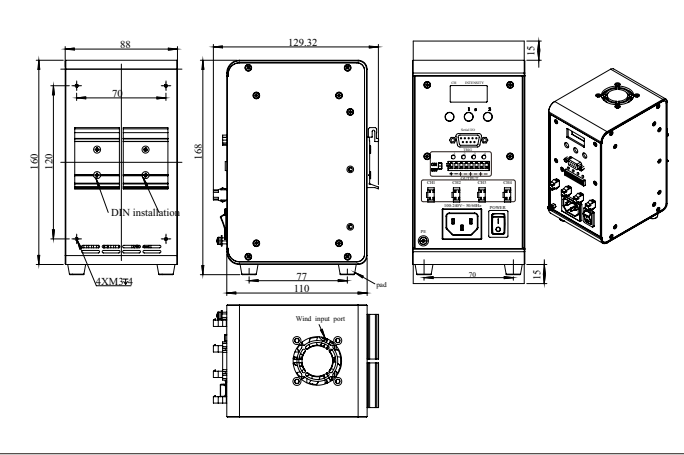


working environment:-5°C-45°C working humidity:20RH-80%RH
storage temperature:-25°C-70°C storage humidity:10RH-80%RH

Panel instruction

Panel	Instruction	Remark
Digital showing screen	The first number is channel,later two numbers is intensity	Show the intensitdy data
Intensity adjust key	(S)-set key,+/- intensity increase -intensity decrease	
Serial communication	Connect with PC	
Trigger switch	+/- trigger way switch	Switch light on/off working status
Light connector	For 24V light using	
AC Power input	Input100-240VACVoltage	
Ground	Ground protection	
Power key	Controller turn on/off	
Trigger connector	Connect with signal and strobe it	The max frequency is 1KHz
Indicating lamp	Show the channel working status.when indicating light on, the channel with output,when indicating light off,the channel is without output.	This function is very good for showing the working status of each channel

Dimensional drawings



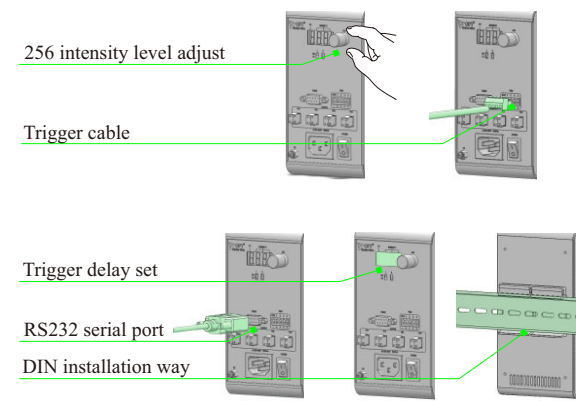
Auto Test Current Digital Controller

For 20mA-1A 24V light using, the light current can be auto test

OPT-DPA1024C-4

Patent product

256 intensity level adjust, each channel can be adjust individually



- Hand set the max current output
- Trigger signal input: put the signal like camera trigger signal into controller,it can make the light flash and increase life span of controller.
- Voltage withstand (AC1500V 1min current leak<10mA)
- Insulation resist (DC500V >20MΩ)

OPT-DPA1024C-4
OPT---Company name
DPA---Controller type: digital current
10---Max current output: 1A
24---Output voltage: 24V
C---Third generation
4---Channel: 4 channels

Parameter Description

Item	Parameter	Instruction
Input voltage	AC100-240V	
Auto test max current load	For 20mA-1A 24V light using	Auto test the max load current by software
Max current set by hand	10mA to 1A can be set	Hand set by software to adjust the max load current
Light intensity	256 intensity level adjust	By intensity adjust key or software to adjust
Short circuit protection	Yes	When the output is short, related channel start short circuit protection, and shut and the screen show ER2 mistake mention
Over current protection	Yes	When the current over 10% of set value,it will start the over protection, and related channel will be shut and screen show ER1 mistake mention
Trigger input	Dual couple isolate	Trigger voltage: 5-30V
Normal trigger way	0-255 level set	By function switch key
High intensity trigger way	255 level	By function switch key
Normal trigger delay time	0.1ms-99.9ms	By intensity adjust key or software to adjust
High intensity trigger delay time	0.01ms-5.00ms	By intensity adjust key or software to adjust
Overload	1A/CH 2.2A/4CH	For 24V light using
Communication	Rs232	
Standby power	<3W	
Voltage withstand	AC1500V 1min <10mA	
Insulation resist	DC500V > 20MΩ	
Working temperature	-5°C-50°C	
Size(mm)	110*88*160mm	
Weight	1.12kg	



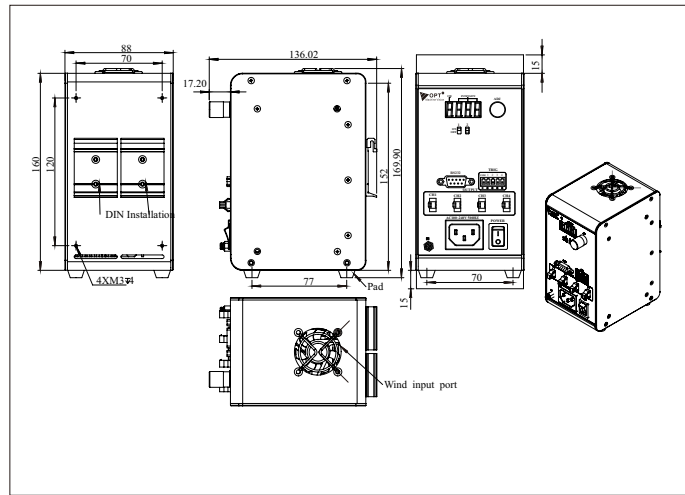
working environment:-5°C-45°C working humidity:20RH-80%RH
storage temperature:-25°C-70°C storage humidity:10RH-80%RH

Panel instruction

Panel	Instruction	Remark
4 digital showing screen	The first number from the left is channel,and the later 3 numbers is the intensity adjust of this channel	
Intensity adjust key	Adjust the intensity and trigger delay time	
Function switch key	Change the triger mode	
Serial port	Communicate with computer	
Trigger connector	Connect with signal and strobe it	Delay time can be set
Light connector	Total for 4 lights,and each can be controlled individually	
AC power input	InputAC100-240V 50/60Hz	
Power key	Controller turn on/off	
Ground	Ground protection	

Model	Channel	Light type	Remark
OPT-DAP1024C-8	8	24Vlight	auto test current when the light changed
OPT-DAP1024C-16	16	24Vlight	

Dimensional drawings



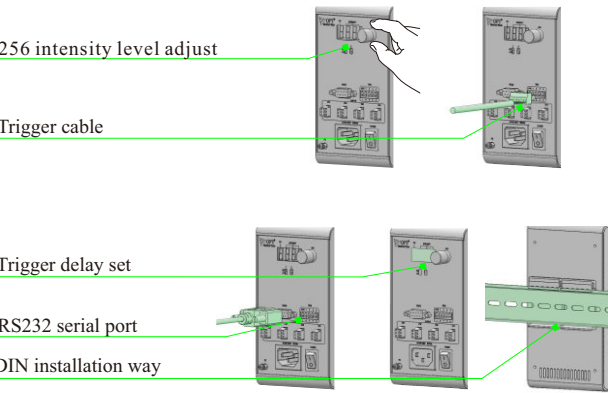
Digital Current Controller for Spot Light

256 intensity level adjust, each channel can be controlled individually

High Power Digital Current Controller

With record function when the power shut down,this controller is for line scan light

OPT-DPA0405B-4



working environment:-5°C-45°C working humidity:20RH-80%RH
storage temperature:-25°C-70°C storage humidity:10RH-80%RH

- Trigger signal input: put the signal like camera trigger signal into controller,it can make the light flash and increase life span of controller.
- Voltage withstand (AC1500V 1min current leak<10mA)
- Insulation resist (DC500V >20MΩ)

OPT-DPA0405B-4

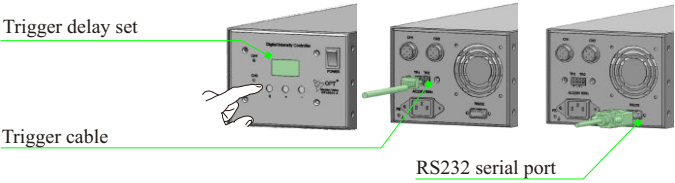
OPT---Company name
DPA---Controller type: digital current
04---Max current output: 0.4A
05---Output voltage: 5V
B---Second generation of DPA0405
4---Channel: 4 channels

Panel instruction

Panel	Instruction	Remark
4 digital showing screen	The first number from the left is channel,and the later 3 numbers is the intensity adjust of this channel	
Intensity adjust key	Adjust the intensity and trigger delay time	
Function switch key	Change the triger mode	
Serial port	Communicate with computer	
Trigger connector	Connect with signal and strobe it	Delay time can be set
Light connector	Total for 4 lights,and each can be controlled individually	
AC power input	InputAC100-240V 50/60Hz	
Power key	Controller turn on/off	
Ground	Ground protection	

OPT-DPA6024-2

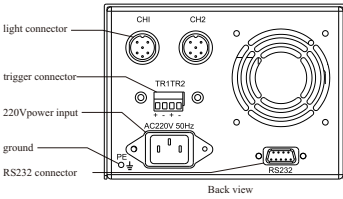
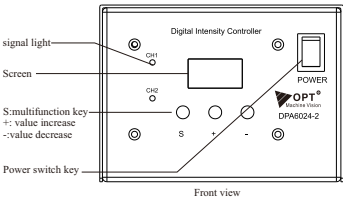
Decode digital power supply with 2 channels, each channel can be controlled individually.
Adjust the intensity by hand available
Can set the max current by outside remark resistor



- 256 intensity level control
- High integrator
- Trigger signal input: put the signal like camera trigger signal into controller,it can make the light flash and increase life span of controller.
- Controlled by PC: connect computer by serial port,then the light intensity and trigger can be controlled by computer. We can help to offer the software so that it can integrate into your system
- Record after shut down: you don't need to reset the previous parameter after the controller shut down

OPT-DPA6024-2

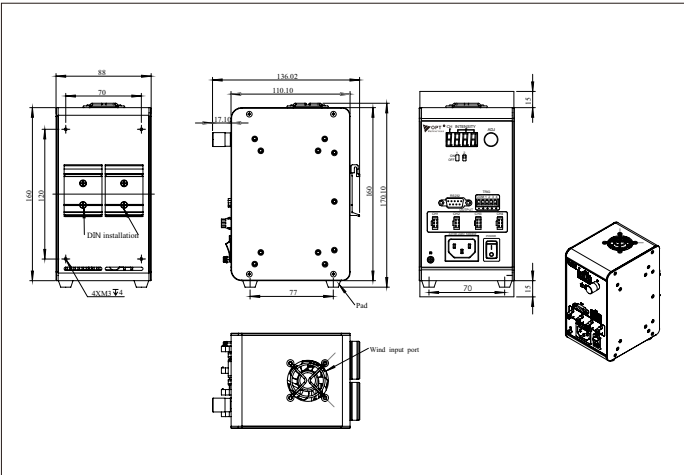
OPT---Company name
DPA---Controller type: digital current
60---Current output: 6A
24---Output voltage:24V
2---Channel number: 2 channels



Parameter Description

Item	Parameter	Instruction
Input voltage	AC100-240V	
Intensity adjust	256 intensity level adjust	By intensity adjust key or software to adjust
Short circuit protection	Yes	When the output is short, related channel start short circuit protection, and shut and the screen show ER2 mistake mention
Over current protection	Yes	When the current over 10% of set value, it will start the over current protection, and related channel will be shut and screen show ER1 mistake mention
Trigger input	Dual couple isolate	Trigger input voltage : 5-30V
Normal trigger way	0-255 level set	By function switch key
High intensity trigger way	255 level	By function switch key
Normal trigger delay time	0.1ms-99.9ms	By intensity adjust key or software to adjust
High intensity trigger delay time	0.01ms-5.00ms	By intensity adjust key or software to adjust
Overload	0.4A/CH 1.6A/4CH	For 5V spot light
Communication	RS232	
Standby power	<3W	
Voltage withstand	AC1500V 1min {10mA	
Insulation resist	DC500V > 20MΩ	
Working temperature	-5°C-50°C	
Size(mm)	110*88*160mm	
Weight	1.03kg	

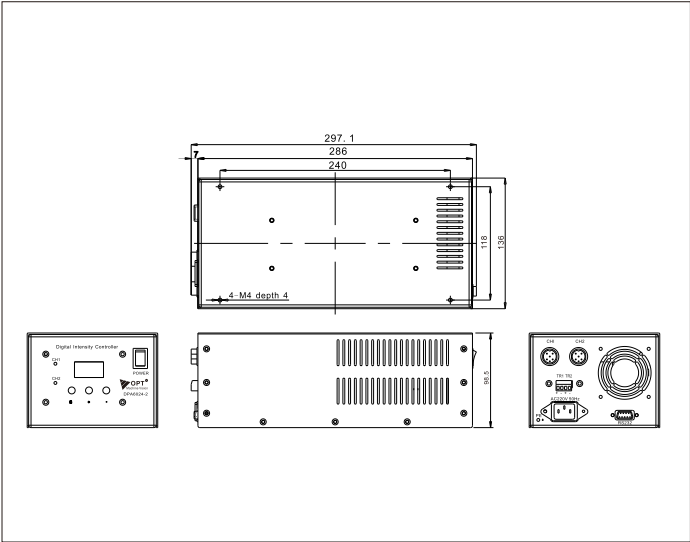
Dimensional drawings



Parameter Description

Item	Parameter	Instruction
Power input	100-120VAC 7A 200-240VAC 4A	Can be switched
Light input voltage	DC24V	For 24V line scan light using
Current output	5A/1CH 10A/2CH	Max output current not over 10A
Intensity level	256 level	Can be adjusted by hand or software
External trigger input	Switch value trigger	Used in the fixture with switch value output
Trigger delay time	<150us	
Trigger frequency	1/T	Decided by strobe time,for example T=1ms, the trigger frequency can be reached 1K
Channel	2CH	For 2 lights
RS232 communication	RS-232baud rate: 9600bps	Open the communication protocol for customer
Voltage withstand	AC1500V 1min <10mA	
Insulation resist	DC500V <20MΩ	
Vibration resist	10~50Hz amplitude X/Y/Z direction 80mins	
Shock resist	From 6 directions, each direction for 3 times(up&down,right&left, front&back	
Standby power	<3W	
Size(mm)	297.1×136×98.5	
Weight	2.1kg	

Dimensional drawings

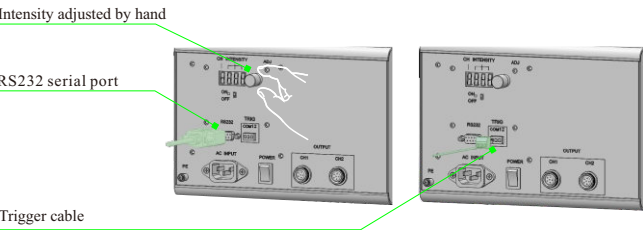


Second Generation High Power Digital Controller

Max current can be set by remark resistor, for line scan light using

OPT-DPA6024B-2

Decode digital power supply with 2 channels, each channel can be controlled individually.



- 256 intensity level control
- Max output current can be set by remark resistor
- Trigger signal input: put the signal like camera trigger signal into controller, it can make the light flash and increase life span of controller.
Controlled by PC: connect computer by serial port, then the light intensity and trigger can be controlled by computer. We can help to offer the software so that it can integrate into your system
- Delay time can be set
- Record after shut down: you don't need to reset the previous parameter after the controller shut down

OPT-DPA6024B-2

OPT---Company name
DPA---Controller type: digital current
60---Current output: 6A
24---Output voltage:24V
B---The second generation
2---Channel number: 2 channels

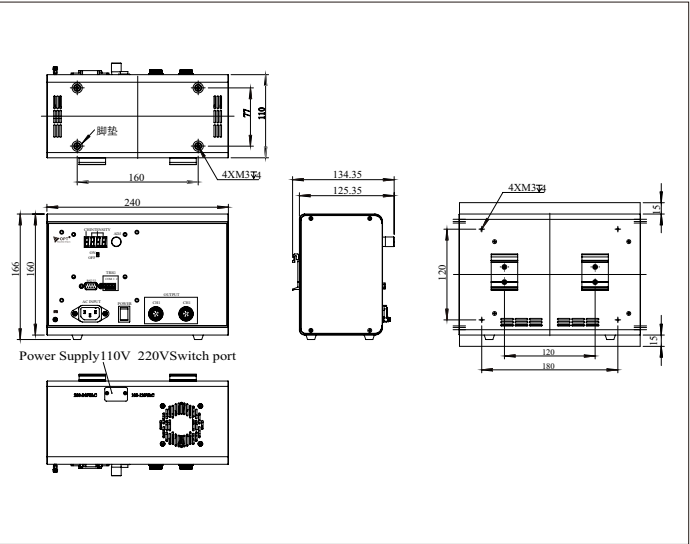


working environment:-5°C-45°C working humidity:20RH-80%RH
storage temperature:-25°C-70°C storage humidity:10RH-80%RH

Panel instruction

Panel	Instruction	Remark
4 digital showing screen	The first number from the left is channel,and the later 3 numbers is the intensity adjust of this channel	
Intensity adjust key	Adjust the intensity and trigger delay time	
Function switch key	Change the tiger mode	
Serial port	Communicate with computer	
Trigger connector	Connect with signal and strobe it	Delay time can be set
Light connector	Total for 2 lights, and each can be controlled individually	
AC power input	InputAC100-240V 50/60Hz	Can be switched
Power key	Controller turn on/off	
Ground	Ground protection	

Dimensional drawings



Parameter Description

Item	Parameter	Instruction
Input voltage	100-120VAC 7A 200-240VAC 4A	Can be switched
Max current auto test	Connect1A-6A Line light	
Light intensity	256 intensity level adjust	By intensity adjust key or software to adjust
Short circuit protection	Yes	When the output is short, related channel start Short circuit protection, and shut and the screen show ER2 mistake mention
Over current protection	Yes	When the current over 10% of set value, it will start the over current protection, and related channel will be shut and screen show ER1 mistake mention
Normal trigger way	0-255 level set	By function switch key
Normal trigger delay time	0.1ms-99.9ms	By intensity adjust key or software to adjust
Overload	5.5A/CH 11A/2CH	For 6 pin connector light
Communication	RS232	
Standby power	<3W	
Voltage withstand	AC1500V 1min <10mA	
Insulation resist	DC500V <20MΩ	
Working temperature	-5°C-50°C	
Size(mm)	240*160*110mm	
Weight	2.736KG	

Lens

Telecentric Lens



65MM WD Lens Specification



65MM WD Lens Specification

- Object telecentric design
- Compatible for 0.8MP camera
- Small and light design
- Compatible for 1/2,2/3
- High depth of field design
- C Mount

Customize available for other parameter

Type	Coaxial	OPT-H08-65T	OPT-H1-65T	OPT-H2-65T	OPT-H3-65T	OPT-H4-65T	OPT-H6-65T	OPT-H8-65T
	Straight	OPT-H08-65	OPT-H1-65	OPT-H2-65	OPT-H3-65	OPT-H4-65	OPT-H6-65	OPT-H8-65
Mag.		0.8X	1X	2X	3X	4X	6X	8X
WD		65mm						
Depth of Field		2mm	1.8mm	0.58mm	0.3mm	0.2mm	0.12mm	0.09mm
Telecentric Degree		0.02	0.025	0.02	0.02	0.02	0.02	0.02
Resolution		11um	10um	5.5um	5.2um	4.2um	4um	4.2um
TV distortion		0.005%	0.006%	0.02%	0.006%	0.015%	0.013%	0.015%
Camera		2/3"	2/3"	1/2"	1/2"	2/3"	2/3"	2/3"
Mount		C Mount(17.526MM)						

Telecentric Lens---110MM WD



Telecentric Lens---110MM WD

- 110 WD
- Compatible with 1/2; 1/3 camera
- High depth of field design
- C Mount
- Object telecentric design
- Compatible with 0.8 MP camera
- Small and light design

Customize available for other parameter

Type	Coaxial	OPT-H03-110T	OPT-H05-110T	OPT-H08-110T	OPT-H1-110T	OPT-H2-110T	OPT-H3-110T	OPT-H4-110T	OPT-H6-110T
	Straight	OPT-H03-110	OPT-H05-110	OPT-H08-110	OPT-H1-110	OPT-H2-110	OPT-H3-110	OPT-H4-110	OPT-H6-110
Mag.		0.3X	0.5X	0.8X	1X	2X	3X	4X	6X
WD		110mm							
Depth of Field		17mm	7mm	2.7mm	2.2mm	0.5mm	0.37mm	0.26mm	0.18mm
Telecentric Degree		0.02	0.16	0.02	0.02	0.1	0.02	0.02	0.02
Resolution		33um	22um	13.75um	13.75um	8um	6.8um	6.5um	6.5um
TV distortion		0.03%	0.03%	0.01%	0.03%	0.02%	0.02%	0.01%	0.01%
Camera		1/2"	1/2"	2/3"	2/3"	1/2"	1/2"	2/3"	2/3"
Mount		C Mount(17.526MM)							

Long WD Lens Specification



Long WD Lens Specification

- WD more than 150mm, the longest reach 420mm
- Compatible for 1/2 camera
- High depth of view design
- C Mount
- Compatible for 0.8MP camera
- Telecentric design

Customize available for other parameter

Type	Coaxial	OPT-H1-150T	OPT-H2-150T	OPT-H2-200T	OPT-H1-250T	OPT-H1-300T	OPT-H2-300T	OPT-H1-420T
	Straight	OPT-H1-150	OPT-H2-150	OPT-H2-200	OPT-H1-250	OPT-H1-300	OPT-H2-300	OPT-H1-420
Mag.		1X	2X	2X	1X	1X	2X	1X
WD		150mm	150mm	200mm	250mm	300mm	300mm	420mm
Depth of Field		2.2mm	0.75mm	1mm	2.1mm	3.7mm	0.8mm	2.6mm
Telecentric Degree		0.1	0.5	0.4	<0.1	0.1	0.1	0.1
Resolution		13.75um	10.31um	13.75um	14.3um	22um	11um	18.3um
TV distortion		<0.05%	<0.1%	<0.1%	<0.4%	<0.04%	<0.06%	<0.01%
Camera		1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Mount		C Mount(17.526MM)						

Mega Pixel Telecentric Lens



Mega Pixel Telecentric Lens

- High resolution, compatible with 2/3" 2MP camera
- Telecentric design, low distortion, good for high accurate detection and measurement
- Small magnify lens make the even from center to side
- C Mount

Customize available for other parameter

Type	Coaxial	Mag.	WD	DOV	Degree	Resolution	Distortion	camera	Type	Camera	Mount
	Straight										
OPT-M045-85	Straight	0.45X	85mm	4.4mm	0.05	18.3um	<0.08%	2MP	object	1/2"	C Mount 17.526mm
OPT-M08-65T	Coaxial	0.8X	65mm	1.66mm	0.06	8.25um	<0.09%	2MP	object	2/3"	C Mount 17.526mm
OPT-M08-65	Straight										
OPT-M1-65T	Coaxial	1X	65mm	1.15mm	0.06	7.3um	<0.002%	2MP	object	2/3"	C Mount 17.526mm
OPT-M1-65	Straight										
OPT-M08-110T	Coaxial	0.8X	110mm	1.7mm	0.02	8.25um	<0.01%	2MP	object	2/3"	C Mount 17.526mm
OPT-M08-110	Straight										
OPT-M1-110T	Coaxial	1X	110mm	1.2mm	0.02	7.3um	<0.03%	2MP	object	2/3"	C Mount 17.526mm
OPT-M1-110	Straight										
OPT-M1.5-110T	Coaxial	1.5X	110mm	0.55mm	0.1	5.24um	<0.07%	2MP	object	2/3"	C Mount 17.526mm
OPT-M1.5-110	Straight										
OPT-M2-110T	Coaxial	2X	110mm	0.36mm	0.08	4.46um	<0.1%	2MP	object	2/3"	C Mount 17.526mm
OPT-M2-110	Straight										

OPT-MP Series MP Telecentric Lens



OPT-MP Series MP Telecentric Lens

- High resolution, compatible for 5MP camera using (2/3 inch)
- Telecentric design, parts are bilateral telecentric design
- high accuracy inspection
- Compatible with 2/3 camera
- Low magnify lens, when using spot light, the uniformity is the same between center and side edge.
- Standard C Mount

Customize available for other parameter

Type	Coaxial Straight	Mag.	WD	DOV	Degree	Resolution	Distortion	Camera	Type	Camera	Mount
OPT-5M05-65T	Coaxial	0.5X	65mm	2.6mm	0.068	8.2um	<0.02%	5MP	Bilateral	2/3"	C Mount 17.526mm
OPT-5M05-65	Straight										
OPT-5M03-110T	Coaxial	0.3X	110mm	8.6mm	0.03	16.5um	<0.02%	5MP	Bilateral	2/3"	17.526mm
OPT-5M03-110	Straight										
OPT-5M018-110T	Coaxial	0.18X	110mm	21.5mm	0.1	27.3um	<0.07%	5MP	Bilateral	1/2"	17.526mm
OPT-5M018-110	Straight	0.18X	110mm	21.5mm	0.1	27.3um	<0.07%	5MP	Bilateral	2/3"	17.526mm
OPT-5M03-178	Straight	0.3X	178mm	21.5mm	0.1	17.4um	<0.03%	5MP	Bilateral	2/3"	17.526mm

Accessories

Prism



Prism is using for changing the direction and position, and two prism combined can change the two points distance, multi prism combined can watch many targets

Item No.	Item No.	Item No.
OPT-PNJ10-10-50-ZF-FG	OPT-PNJ1.5-1.5-15-SJ-FX	OPT-PNJ5-5-25-SJ-FX
OPT-PNJ30-30-45-ZF-FX	OPT-PNJ1.5-1.5-19-SJ-FX	OPT-PNJ30-30-30-ZF-FX
OPT-PNJ30-30-30-SJ-FX	OPT-PNJ1.5-1.5-21-SJ-FX	OPT-PNJ45-45-45-ZF-FX
OPT-PNJ45-45-45-SJ-FX	OPT-PNJ1.5-1.5-25-SJ-FX	OPT-PNJ5-5-5-ZF-FG
OPT-PNJ1.5-1.5-13-SJ-FX	OPT-PNJ1.5-1.5-5-SJ-FX	OPT-PNJ6-6-6-ZF-FG

Diffuser



Diffuser is used for even illumination and reduce the reflective
Optional(RI、LI、LIM)

Item No.	Item No.	Item No.
OPT-RI2800-DF	OPT-RI9060-DF	OPT-LI16030-DF
OPT-RI3500-DF	OPT-RI12060-DF	OPT-LI21221-DF
OPT-RI5000-DF	OPT-RI15060-DF	OPT-LI21222-DF
OPT-RI7000-DF	OPT-RI18060-DF	OPT-LI21230-DF
OPT-RI9000-DF	OPT-RI5090-DF	OPT-LI26730-DF
OPT-RI12000-DF	OPT-RI7090-DF	OPT-LI29026-DF
OPT-RI15000-DF	OPT-RI9090-DF	OPT-LI29233-DF
OPT-RI5030-DF	OPT-RI12090-DF	OPT-LI33037-DF
OPT-RI7030-DF	OPT-RI15090-DF	OPT-LI38034-DF
OPT-RI9030-DF	OPT-RI18090-DF	OPT-LI38037-DF
OPT-RI12030-DF	OPT-LI4424-DF	OPT-LI46046-DF
OPT-RI15030-DF	OPT-LI6022-DF	OPT-LI48031-DF
OPT-RI18030-DF	OPT-LI8532-DF	OPT-LI58039-DF
OPT-RI5045-DF	OPT-LI9022-DF	OPT-LI70025-DF
OPT-RI7045-DF	OPT-LI10810-DF	OPT-LI71678-DF
OPT-RI9045-DF	OPT-LI11222-DF	OPT-LI88039-DF
OPT-RI12045-DF	OPT-LI11533-DF	OPT-LI133041-DF
OPT-RI15045-DF	OPT-LI11830-DF	OPT-LI262534-DF
OPT-RI18045-DF	OPT-LI14040-DF	
OPT-RI7060-DF	OPT-LI15020-DF	

Filter



Filter is also very important accessory in machine vision application, sometimes it can help get unbelievable image result in the whole system. OPT offer the full range of filters in different types, such as long pass filters, band pass filters. All filters are mounted in standard sizes, matching different brands mega-pixel of lenses demand. We also offer the customize service as the special inquired.

Item No.	Item No.
OPT-PLG30.5-B465-470	OPT-PLG27-R625-630
OPT-PLG30.5-R625-630	OPT-PLG27-Y585-590
OPT-PLG30.5-Y585-590	OPT-PLG27-IR940
OPT-PLG30.5-IR850	OPT-PLG27-UV365
OPT-PLG27-B465-470	

Polarizer

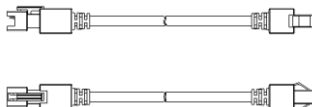


Polarizer is used for reducing the reflective and the size, shape, and installation way can be provided as inquired

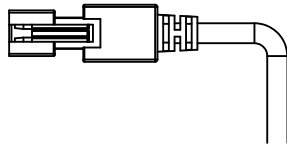
Item No.	Item No.	Item No.
OPT-PPZ-RI3220	OPT-PPZ-RI12060	OPT-PPZ-LI15020-HO
OPT-PPZ-RI5030	OPT-PPZ-RI15060	OPT-PPZ-LI15020-VE
OPT-PPZ-RI6615	OPT-PPZ-LI6022-VE	OPT-PPZ-LI21222-VE
OPT-PPZ-RI7000	OPT-PPZ-LI6022-HO	OPT-PPZ-LI21222-HO
OPT-PPZ-RI7030	OPT-PPZ-LI8532-VE	OPT-PPZ-LI21230-VE
OPT-PPZ-RI7260	OPT-PPZ-LI8532-HO	OPT-PPZ-LI21230-HO
OPT-PPZ-RI9215	OPT-PPZ-LI11222-HO	OPT-PPZ-LI38037-HO
OPT-PPZ-RI9030	OPT-PPZ-LI11222-VE	OPT-PPZ-LI38037-VE
OPT-PPZ-RI9000	OPT-PPZ-LI14030-HO	OPT-PPZ-LI48031-VE
OPT-PPZ-RI12030	OPT-PPZ-LI14030-VE	OPT-PPZ-LI48031-HO

Extension cable(standard light cable length is 800mm)

Item No.	Length
OPT-EX1M	1m
OPT-EX2M	2m
OPT-EX3M	3m
OPT-EX5M	5m

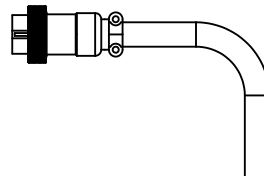


Item No.	Length
OPT-EX2	1m
OPT-EX2	2m
OPT-EX2	3m
OPT-EX2	5m



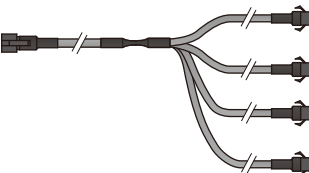
6 pin extension cable

Item No.	Item No.
OPT-EX6	1m
OPT-EX6	2m
OPT-EX6	3m
OPT-EX6	5m
OPT-EX6	10m



Branch extension cable

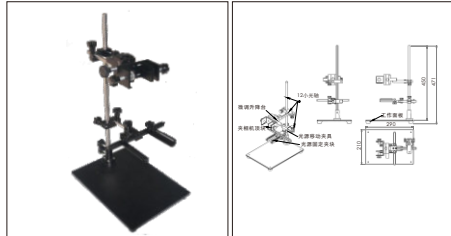
Item No.	Item No.
OPT-EX1-2(2branch)	1m
OPT-EX1-4(4branch)	2m



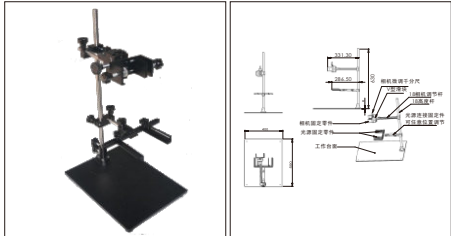
Lab Equipment

Lab Stand

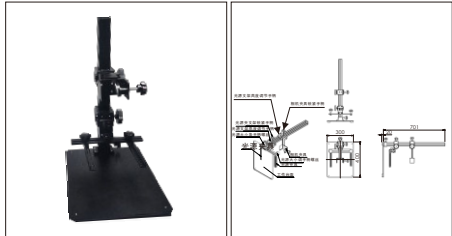
OPT-ES300-A



OPT-ES500-A



OPT-ES400300



High speed rolling lab equipment



High speed rolling lab equipment, is a test platform simulating the inspection on high speed rolling production line . It has the feature as follows:

- 1.The rolling speed is available to adjust; have the light mount and trigger function ; the camera & lens height is adjustable too .
- 2.Regarding the line inspection of bending easily objects ,this equipment could make one or more at one time and most often applied together with line scan camera and area scan camera.

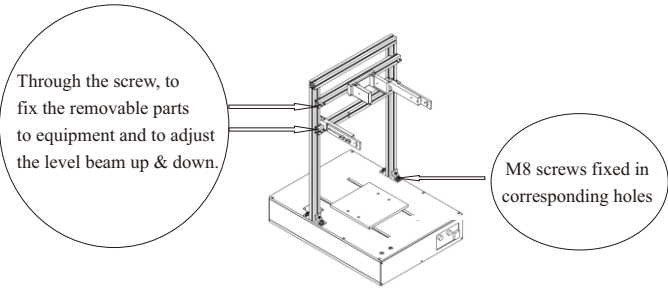
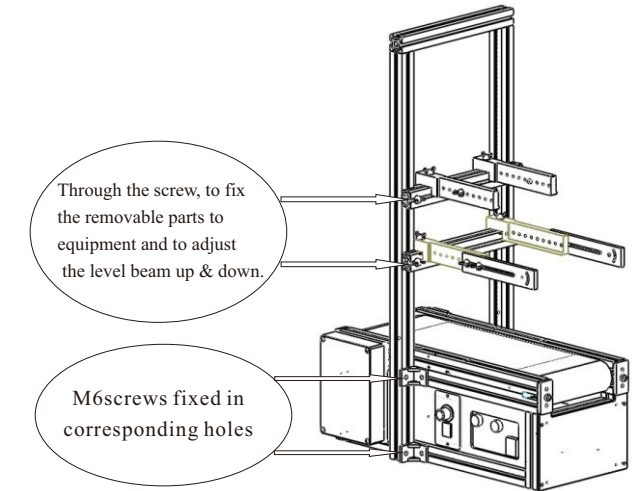
The high speed rolling lab equipment ,with easy use design and adapting lever equipped, ideally suit to simulating the production line and well for any light installation.



Moving forward-back lab equipment, is a test platform simulating the inspection on high speed production line . It has the feature as follows:

- 1.The rolling speed is available to adjust; have the light mount and trigger function ; the camera & lens height is adjustable too
- 2.Regarding the line inspection of bending hard objects ,this equipment could make one or more at one time and most often applied together with area scan and low speed line scan camera .

The Moving forward-back lab equipment ,with easy use design and adapting lever equipped, ideally suit to simulating the production line and well for any light



Model	OPT-LBLS10R
Rolling speed	1000mm/s(the fastest speed)
The conveyor width	200mm
The conveyor perimeter	1m
Controller	OPT-AP3024-2
Light brightness adjust steps	adjust without steps
High level trigger or switch trigger	Trigger signal: high level trigger is 5V, light on . low trigger is 0V, light off.)
Light trigger extend time	<10US
Output trigger frequency	Decided by strobe time ,for example ,if T=1ms, the output trigger frequency could reach 1K.
Working temperature	0~60℃
Power Supply	100~240VAC 1.5A(input through voltage)
Size	780mm*510mm*380.5mm
Power	80W
Weight Details	20kg

Model	OPT-LBLS10
Size of working table	300mm/s(the fastest speed)
Platform size	220mmx220mm
Light brightness adjust steps	adjust without steps
Controller	OPT-AP3024-2
Output trigger to light	Trigger signal: high level trigger is 5V, light on . low trigger is 0V, light off.
Light trigger extend time	<10us
Output trigger frequency	Decided by strobe time ,for example ,if T=1ms, the output trigger frequency could reach 1K.
Working temperature	0~60℃
Power Supply	100~240VAC 1.5A(input through voltage)
Size	630mmx460mmx716mm
Power	50W
Weight details	30kg