



HAYASHI-REPIC

Forerunner of Lighting Technology
照明科技先驅

PRODUCT CATALOG Vol.19

HAYASHI - REPIC



高亮度冷光照明裝置

LUMINAR ACE活躍在各種各樣領域



光源裝置在使用上的注意事項

當光源裝置本身的電源開關處於開的狀態，在接通工廠的總電源或進行組合使用時，請勿直接由主電源進行開或關。因交流電源的常電壓。電流脈衝有損壞電源內部回路的可能性。

Subject the power switch is on and link the power cord to wall socket, please don't use the wall socket power switch. Due the electricity pulse will damage the light source under AC power.

嚴格的質量管理能贏得了顧客的信賴

With our high standard of Quality Control LUMINAR ACE is highly reliable

技術能力的高度化、多樣化的世界。HAYASHI-REPIC CO., LTD. 把以多年累計的精密技術而鍛鍊出的先進的、超精密技術反映到產品製作上。以技術的匯集、先進的開發研究的姿態，一而再再而三地創出最新的產品。同時對每一個產品所實行的嚴格質量管理，提高了產品的水平，贏得巨大的信賴。具有傳統性的精密技術、嚴格的質量管理...由此創育出的LUMINAR ACE，在信賴上以高性能來回答客戶。

We are now in the world of advanced and never-ending diversified technology. We, the HAYASHI-REPIC CO., LTD. have been seeking and accumulating the higher level of ultra-precision technology for years. We are always eager to reflect the above well-trained advanced and ultra-high precision technology on making our products for our customers. Concentrating technologies and positive attitude towards R & D. Results : fruits of many new products. Furthermore, according to our strict 100% quality control, the level of the product is improving and is liked to the higher reliability on our products. Based on our traditional precision technology and strict quality control.....our Luminar-Ace is highly reliable in its high level of function for our customers.

多年來手錶製作技術所培育出的超精密技術、應用在時代的尖端的微小電子方面的精微加工技術—此卓越的技術加以高度的技巧不僅是為了林時計的產品製作，而且也有益於客戶。廣泛的領域、各式各樣的需求，為滿足這些需求，我們將同心協力於客商的产品製作。站在客戶的立場，正確的把握客戶的需求，在適當的助言的基礎上所進行的開發研究、商品化體系。僅請利用。

Our ultra-precision technology cultivated through the experience of making watches far years and ultra-fine working technology handing the micro-electronics, due of your time - our excellent technology and highly skilled technique based on the above are not only for our making products, but also for our customers. For our customers various kinds of the needs in the wide area, we co-operate with our customers when making your products. In our system, we are always standing from the customer's point of view, and are catching the customer's needs accurately. We are developing our R & D under the adequate advises. Therefore, you can depend on us. We are always at your service. Please make the most use of us !

從收訂單到交貨，以一貫性體制來迅速地答應
From order to delivery speedy response for the Customers with our thought system.

Customers 客戶



LUMINAR ACE

Fiber Light System™ 光纖照明系統™

Fiber Light Guide Insert Type

光纖光導插入式



P.1~P36

LUMINAR ACE Fiber Light System™ 光纖照明系統™

Fiber Light Guide Insert Type

光纖光導插入式

LED Light Source LED光源裝置



NEW

LED Light Source LED光源裝置

Halogen 100W, 150W
LA-HDF 10/15 series
鹵燈 100W, 150W,
LA-HDF 10/15系列
CE Compatible 適合

RoHS

PSE

4~5



LED Light Source LED光源裝置

Metal Halide light source
LA-HDF 50/70 series
金屬鹵化燈光源
LA-HDF 50/70系列

RoHS

6~7



NEW

High Luminosity Laser Diode Light Source 高輝度激光光源裝置

LA-HLF 100

8~9



Microscope illumination 顯微鏡用之LED照明

LED Light Source
LED 光源裝置
LA-HDF 15T

RoHS

10

Halogen Lamp Light Source 鹵燈光源裝置



LA-100USW

100W DC Light Source 直流型光源
Remote Control Function 程控功能

RoHS

11



LA-150UE

150W DC Light Source 直流型光源
Remote Control Function 程控功能
UL Approval 認證

RoHS

PSE

12



LA-150CE

150W DC Light Source 直流型光源
Remote Control Function 程控功能
UL Approval 認證
CE Compatible 適合

RoHS

13



LA-150FBU

150W DC Light Source 直流型光源
Feed Back Function 反饋功能
Remote Control Function 程控功能

RoHS

PSE

14

Infrared Rays Light Source 近紅外線光源裝置



LA-100IR

Infrared Rays Light Source
近紅外線光源裝置

RoHS

PSE

15

Metal Halide Lamp Light Source 金屬鹵化燈光源裝置



LA-80MT

60W Metal Halide Lamp Light Source
金屬鹵化燈光源裝置

RoHS

PSE

16

UV Violet Light Source 紫外線光源裝置



LA-410UV
Hg-Xe UV Light Source
紫外線光源
CE Compatible 適合

RoHS

17~19

Option 顧客自選



Heat Cut Filter
除熱濾片
UV Meter
測試儀



Protective Glasses
保護用眼鏡

20

Remote Control Diagram 程控功能

Remote Function, Diagram
程控功能的說明，圖解

21~23

LAN Control Unit 控制器 & 8 Bit D/A Converter 轉換器



LAN Control Unit
控制器 NIC-100A

RoHS



8 Bit D/A Converter
轉換器 DA-8U

RoHS

36

Light Guide 光導

Introduction 介紹		24
Self-back Supporting Bifurcated Optic Series 半固定分支型系列	RoHS	25
Feed Back Light Composite Flexible Bifurcated Optic Series 帶反饋的光源裝置專用光導	RoHS	26
Composite Flexible Bifurcated Optic Series 組合軟式分支型系列	RoHS	26
UV Quartz Bifurcated Fiber Optic Series UV石英分支型系列	RoHS	26
UV Liquid Bifurcated Fiber Optic Series UV液體透射型系列	RoHS	26
Backlight Fiber Optic (Standard) 面狀型系列	RoHS	26
Flexible (SUS) Tube And PVC Cladding Bifurcated Fiber Optic Series 軟式分支型系列	RoHS	27
Ring Light Guide Fiber Optic Series 環型系列	RoHS	27
Line Type Fiber Optic Series 線型系列	RoHS	28
Cross- Section Spiced Light Guide 橫切面熔接型光纖	RoHS	29

Accessory 附件

Condenser Lenses 集光透鏡	RoHS	30
Line Type Condenser Lenses 集光透鏡	RoHS	31
Shutter Unit (Option) 開閉器單元(顧客自選)	RoHS	32
Filters 濾片	RoHS	32
Light Guide Adaptor 光導互換接頭	RoHS	32
Various kinds of connection adaptor 各種附件	RoHS	32

Spare Parts 備用配件



Temp. Fuse 溫度保險絲
Metal Halide Lamp 金屬鹵化燈
Halogen Lamp 鹵燈
Hg-Xe Lamp 氣氙燈
Thermal insulated filter 熱線吸收濾片
Thermal cold filter glass 熱線反射濾片

33

Data 資料

34~35

LED 光源裝置 (LA-HDF 10 /15 Series 系列)

RoHS 適合品 PSE

CE Compatible 適合

Replaced halogen light source is inserted into the light guide LED light source. Photoconductive do not need to exchange, the intensity of light is constant, energy saving, long life benefit.

替換鹵燈光源的插入光導方式LED光源。光導不需交換，燈光強度不變，實現了節能，壽命長效益。

Features and Specifications 特長及規格

- Power supply AC100~240V
- Equipped with external light intensity adjustment
- High luminance white LED
- Attachable color filter in the light guide adapter. Then, changeable color.
- Plastic fibers and Multi constituent glass fibers, etc can be used.
- Light guide adapter for other brands, Light guide model are available (Option)
- 輸入電壓 AC100~240V
- 外部調光為標準機能裝置。
- LED 顏色高光度白色
- 可在光導適配器中安裝彩色濾光片。然後，可變顏色。
- 可用於塑料光纖及多成份玻璃光纖等。
- 可選擇各廠家的光導，配合本公司之光導適配器(可選)。

(Low illumination function model 低照度功能模型)

It will not brighten up soon 它不會很快亮起來

LA-HDF10/15AA SERIES 系列

NEW

- Illuminance 450,000 lx / 600,000 lx
- Light intensity equivalent to 100 W / 150 W halogen
- LED lighting became brighter and soon became bright. The LED light source adds an easy-to-use halogen light source.
- 照度為450,000 lx / 600,000 lx
- 相當於100 W / 150 W鹵素燈的光強度
- LED照明變得 brighter，很快就成了一片光明。LED光源添加了易於使用鹵素光源。

Main Purposes 主要用途

- For machine vision, microscope, endoscope lighting
- Various types of lighting including high reflectance workpieces such as metals, pipes, and wafers
- Transmittance of films, sheets etc. are changed significantly
- 用於機器視察，顯微鏡，內窺鏡照明
- 各種類型的照明包括高反射率的工件，例如金屬，管道和晶圓
- 膠片，紙張等的透過率大大改變照明

LA-HDF 10 SERIES 系列 (QUIET 安靜)

- Luminance 450,000lx 亮度為 450,000lx
- Light intensity contains 100W 光量相當於 100W
- Natural cooling (fanless), very quite
- Good for dust, vibration sensitive device. No. trouble due to cooling fan.
- 適用於粉塵，震動敏感的裝置以高倍率光學類，而且非常安靜。
- 由於無冷卻風扇不需擔心造成的故障。

Specifications 規格

Model 型號	LA-HDF108AS	LA-HDF108AA	LA-HDF108DS	LA-HDF108DA	LA-HDF158AS	LA-HDF158AA
Lighting color 發光顏色	White 白色					
Color temp. 色溫	6500K ※ 1					
Power supply 輸入電壓	AC 100V~240V ± 10%					
Power Consumption 耗電量	18W			20W		
Rated frequency 輸入頻率	50 / 60Hz					
Function 功能	LED Lighting 點燈 ON/OFF					
Light intensity adjustment 光亮調節	Manual 手動	Continuous dimming by frontal dimming volume 用前面的光量調節轉變進行連續調節				
	Remote 遙控 ※4	Analogue input DC0V~+5V 模擬輸入電壓 DC0V~+5V	8 bit digital light intensity control 8 bit 數碼光亮調節		Analogue input DC0V~+5V 模擬輸入電壓 DC0V~+5V	
Cooling method 冷卻方式	Room temp. cooling 自然散熱				Room temp. cooling+Forced air 自然散熱+強冷風扇	
Condition 使用環境條件	Temperature 環境溫度: 0℃~+40℃ Humidity 環境濕度: 20%~80% RH (Non-moisture 無結露)					
Luminance 亮度 ※2	Average intensity 平均亮度 450,000lx			Average intensity 平均亮度 600,000lx		
Life time 壽命	30,000 Hours 小時 ※ 3					
Filter size 濾片尺寸	Φ22.5(Light source / Screwed into the internal side of the main lamp holder) (主燈座光源內部側擰進)					
CE Approval 認證	CE Compatible 適合	CE Compatible 適合	—		CE Compatible 適合	CE Compatible 適合
Dimensions 外形尺寸	W78XH144XD200mm (Exposed item not include) (凸出部份除外)					
Weight 重量	2.0kg (Power supply cord not include) (電源電線除外)					

※1. Color temperature is just for reference only. 色溫度：參考值

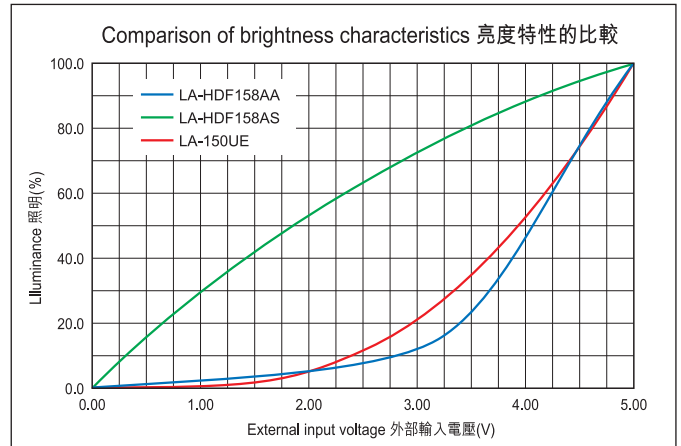
※2. Intensity of illumination is measured by inserting Light Guide LGC1-5L500 and W.D. in 15mm, it is for reference only. 亮度：將光導LGC1-5L500連接，以發光端口到距離15mm處的初期亮度的參考值。

※ Optional light level switching between High / Low 2 stages possible. 可選擇高/低兩級之間的光級切換。

※3. Life time of lamp will change by the operation temperature and is not guaranteed. This time at intensity 50% dropped.

壽命：由於使用環境溫度而產生變化，所以無保證值。這次強度下降50% (下降是可以的)

※4. Remote function, refer to P.22 程控功能請參照22頁



More powerful, new optical design 新的光學設計，帶來更強大的亮度

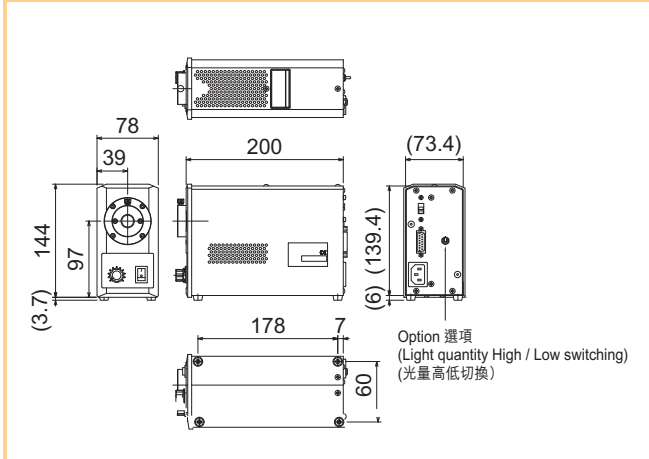
LA-HDF 15 SERIES 系列 (Bright 明亮)

- Luminance 600,000lx
- Light intensity contains 150W, no need of halogen light source.
- Even lighting regardless of bigger diameter, such as Φ11 (big diameter ring option)
- Best light source for the line sensor that needs high luminance.
- 亮度為600,000lx
- 光量相當於150W，取代鹵燈光源的時代終於到來。
- 如Φ11，粗直徑光導所放出的光也十分均勻(追加大口徑環，可選擇)。
- 最適用於需要高亮度的線性傳感器。



CE

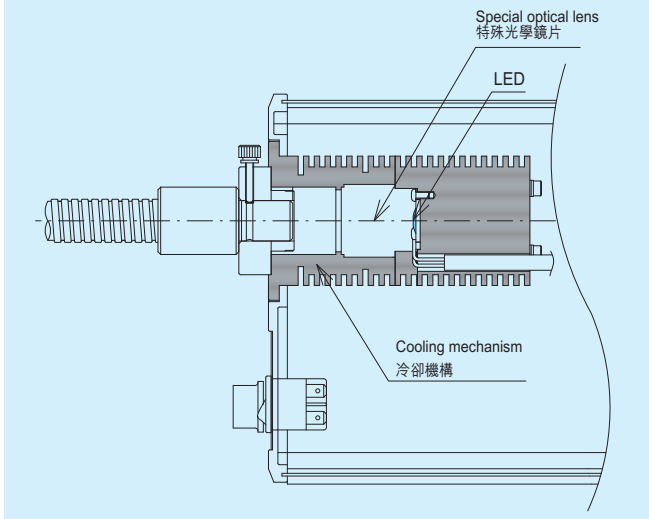
EXTERNAL DIMENSION DRAWING 外觀圖



※Fixed bracket is optional 固定支架是可選擇

獨家光學・冷卻設計
Special Optic and Cooling Design

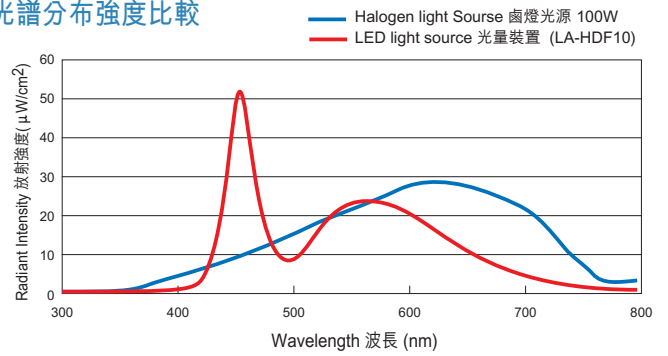
本公司擁有豐富的光導知識技術，根據獨家光學，冷卻設計實現了高亮度
By our special optic and cooling design, it realized to be high lighting intensity



※ Light guide compatible adapter. Please refer to page 7 for the mouthpiece.
光導兼容適配器。請參閱第7頁。

Illuminating Spectrum Distribution

光譜分布強度比較

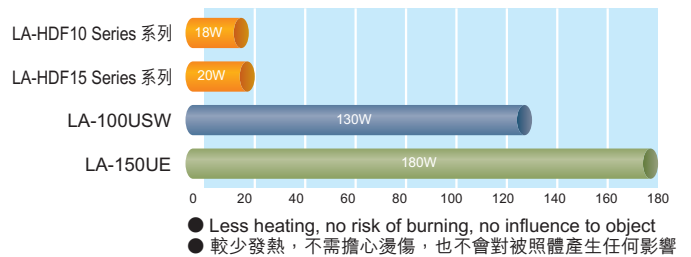


Spectral intensity is only for reference
光譜強度只供參考

Comparing with Halogen Light Source
對比鹵燈光源

- Long Life Time 壽命長
Enable to extend the life time 15~60 times, and cut down the downtime in maintenance vastly
約15~60倍的使用壽命，可大幅度減少因維修據理造成的使用停止時間
- Low power consumption 耗電量低
Comparing with halogen light source, 73~84% can be cut down
與鹵燈光源相比，可減少73~84%的耗電量。

Power Consumption 耗電量



Comparing the light intensity
亮度比較

與鹵燈光源的亮度比較
With Halogen light source compare



LED光源裝置 (LA-HDF50/70 Series系列)

A measure of the great LED light source (Equivalent Metal Halide Light Source)
大光量LED光源裝置(相當於金屬鹵化燈光源)

Expansion of the acclaimed lineup of Metal Halide Lamp Level LED light source
擴充了深受好評的金屬鹵化燈級別LED光源的陣容

Achieve a quick result due to the significant reduction in power consumption, high power-saving counter measures
由於大幅度減少耗電量，實現了速效性高省電對策

Metal Halide lamp level LED light source is about to enter the stage of a formal import
金屬鹵化燈級別LED光源即將進入一個正式導入的階段

Main Features 主要特長

- With the industry's highest level of light-brightness white LED
採用同業界最高級別的高亮度白色LED
Best suited to replace conventional metal halide light source
最適合替換以往的金屬鹵化燈光源
The amount of light is approximately 150 watts halogen light source 3 times (Compared to HAYASHI)
光量大約是150W鹵化燈光源的3倍(跟HAYASHI對比)
- Significant price advantage
顯著的價格優勢
The light source device give full play to the strengths of LED low power consumption and long life time. Can be similar to exchange light bulbs, replacement of light maintenance work simplification
本光源裝置充分發揮了LED的低耗電量和長使用壽命的特長。可以將類似交換燈泡，更換光源等的保養工作簡單化。
- Small LA-HDF5010C appearances **NEW**
小型的LA-HDF5010C出陣 **NEW**
- Equipped with a variety of protective circuit corresponding to the signal output when the exception occurred.
為對應異常發生時的信號輸出搭載了各種保護電路
Overheating protection, Ultra-current protection, LED temperature anomalies. The LED error for standard equipment.
過熱保護，超電流保護，LED溫度異常，LED異常為標準裝備
- Suitable for RS-232C, LAN **NEW**
適合於RS-232C, LAN **NEW**

Main Purposes 主要用途

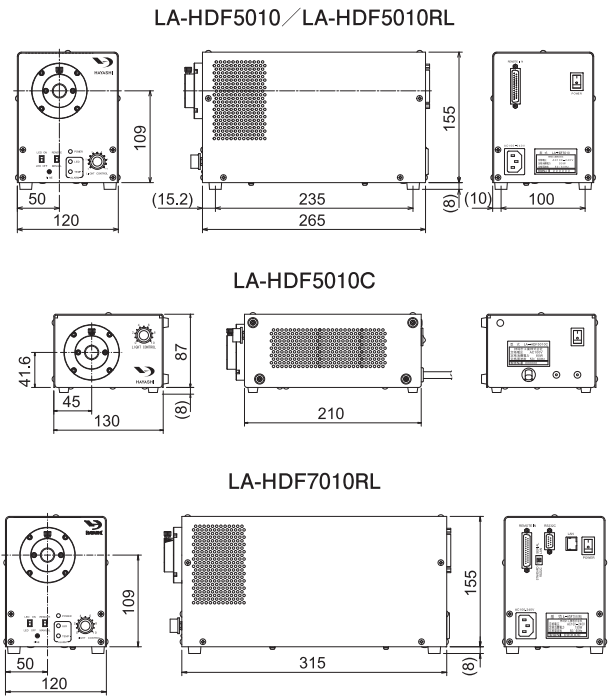
- High-speed camera spot lighting.
高速攝像機的聚光照明
- With linear light guide and line sensor for inspection.
用於線性光導和線傳感器進行檢查
- Need a large amount of light for inspection lighting.
需要大光量的檢查用照明

Specifications 規格

Model 型號	LA-HDF5010C	LA-HDF5010	LA-HDF5010RL	LA-HDF7010RL
LED color 發光色	(Cool-White) 白色 ※5			
Color temp 色溫度	6,500K (Typ.) 色溫度			
Suitable light guide / Light guide diameter 適合的光導 / 光導直徑	Φ11mm			
Centre illumination intensity 中心照度 ※1	1,400,000lx ※2			1,800,000lx ※2
LED Life 壽命	about 約 30,000H 小時 ※3			
Hand level dimming 手動調光	Light amount adjustment switch more continuous dimming 光量調整開關更連續調光			
External Dimming外部調光※4	No 無	8 bit digit數字	8 bit digit數字/RS-232C/LAN	
Power Supply 額定輸入電壓	AC 100-240V ±10% 50/60Hz			
Power consumption 額定耗電量	80W	90W	95W	155W
Cooling method 冷卻方式	Forced air 強制風扇冷卻			
Outside Dimensions 外形尺寸 (Exposed item not include) (凸起部位除外)	130X93X210mm	120X163X265mm	120X163X315mm	
Weight 重量	About 約 3.0 kg	About 約 4.0 kg	About 約 4.6 kg	

- ※1. For reference only, not guaranteed 只是參考值，不是保證值
 ※2. According to the determination 根據測定 LGC1-11L500 WD=50mm.
 ※3. Due to change by the operation temperature and is not guaranteed
 因使用環境而有異同不是保證值
 ※4. Corresponding custom-made products DCO-5V analog programmable dimming, remote function see P.23, Corresponding custom-made products can be appended to the master. Slave function.
 對應特別產品DCO-5V模擬程控調光，程控功能，請參照23頁。對應特別產品可以追加主控，從屬功能。
 ※5. LA-HDF5010 color for order red, green, blue
 LA-HDF5010可能訂貨生產紅色，綠色，藍色

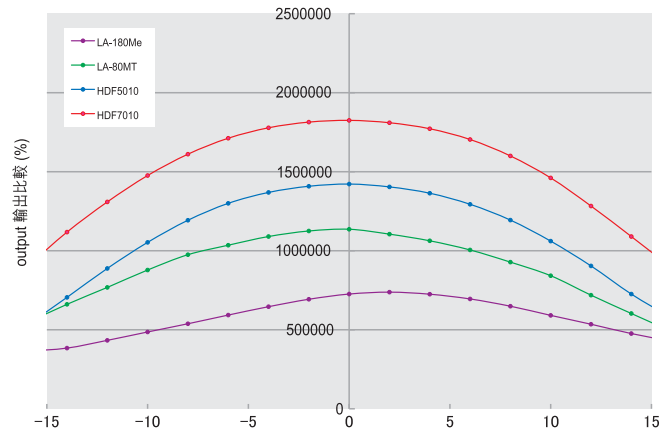
EXTERNAL DIMENSION DRAWING 外觀圖



Output ratio and output Distribution

輸出比和輸出分佈

Light output Distribution 光源的輸出分佈比較 : LGC1-11L500/WD=50mm



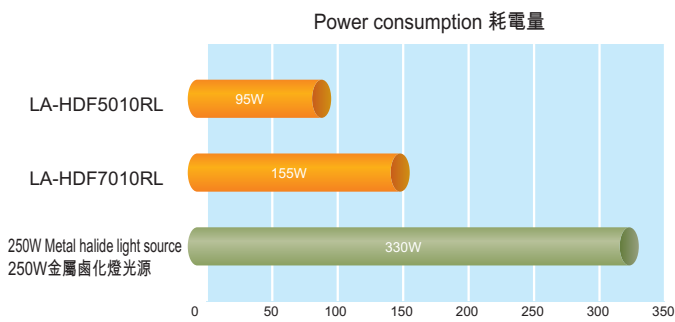


LA-HDF5010

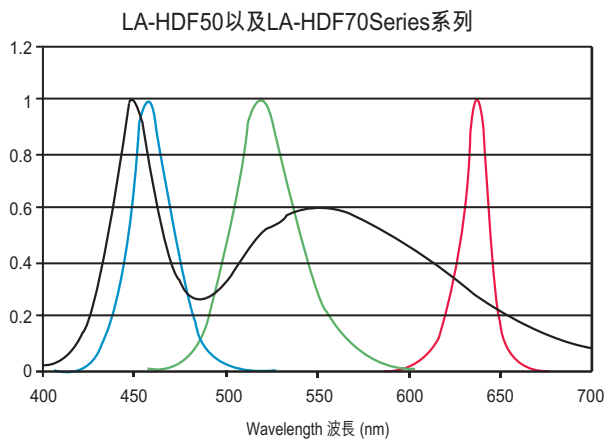


LA-HDF7010

Power Consumption Comparison (W) 耗電量比較 (W)

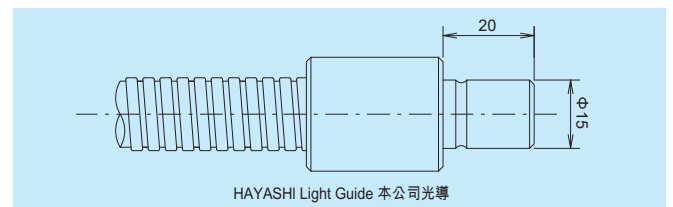


Luminous Spectrum 波長分佈和相對光輸出



Light Guide Adaptor 光導互換接頭

Enable to use another brand light guide by HAYASHI Exchange Adaptors. 不需浪費現在所使用的別廠家的光導，本公司備有各種互換接頭。



Model 型號	Applications 用途
Light guide adaptor MLC-1517 光導互換接頭 MLC-1517	Fix for company "M" light guide join with MLC-1517 Luminar Ace "M" 光源光導追加 MLC-1517
Light guide adaptor HCL-1511 光導互換接頭 HLC-1511	Fix for company "H" light guide join with HLC-1511 Luminar Ace "H" 光源光導追加 HLC-1511
Exchange Adaptor MLR-1537 光導互換接頭 MLR-1537	Fix for company "M" light guide join with MLR-1537 Luminar Ace "M" 光源光導互換接頭 MLR-1537
Exchange Adaptor HLR-1531 光源光導互換接頭 HLR-1531	Fix for company "H" light guide join with HLR-1531 Luminar Ace "H" 光源互換接頭 HLR-1531
Exchange Adaptor SLR-1330 光導互換接頭 SLR-1330	Fix for company "S" light guide join with SLR-1330 Luminar Ace "S" 光源光導互換接頭 SLR-1330

Remark: Any style and shape light guide adaptor available.
備註：也有不適合光導互換接頭，光源互換接頭的光導，請注意。
●Size problem in placing the LED lighting or uneven issues such as LED light, please feel free to contact us.
在擺放LED照明有尺寸問題或LED燈有不均勻等問題，請隨時聯絡我們。



Laser Light Source 激光光源: LA-HLF100

Longer life and higher power realization!
更長的壽命和更高的功率實現!

Features 特長

- High intensity, Double of 350W Metal halide
- Long life 20,000H (When the intensity declines 40%)
- Filter changer available (Red, Green, Blue)
- Lining up accessory (Socket for other brand light guide, Condenser lenses)
- 高強度，2倍高於350W金屬鹵化燈
- 長壽命20,000小時（之後強度漸降至40%）
- 可選用的過濾器（紅色，綠色，藍色）
- 排列配件（其他品牌導光板插座，聚光鏡）

Specifications 規格

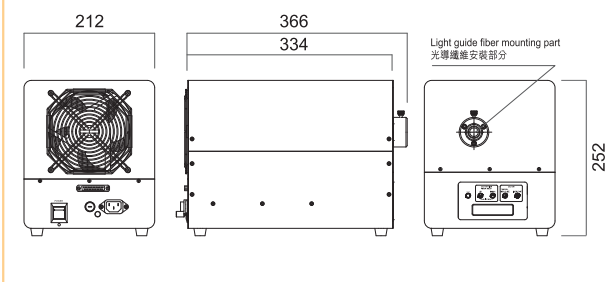
Specification of LED Light Source LED 光源裝置規格

型式 Item	LA-HLF100
Input voltage 輸入電壓	AC90-240V ± 10%, 50/60Hz
Power consumption 耗電量	350W
Lighting method 照明方法	Laser diode excited fluorescent light Laser diode 激發螢光發光
Light intensity / Color temperature 光強度、色溫	Above 約8,000lm ※1 7,500K
Light intensity adjustment 光亮調節	Front panel operation or remote control (256 STEP) 前面板的操作或遙控器 (256步)
Integrated filter 內置過濾器	R, G, B, None Switch by front panel operation or remote control 紅、綠、藍、無通過前面板操作或遙控進行切換
Cooling method 冷卻方法	Forced fan cooling 強制風扇冷卻
Condition 使用環境條件	Temperature: 5 to 35° Humidity: 70% or less 溫度：5~35℃ 濕度：70%以下
Function 機能	Internal temperature fault protection, remote control, hour indicator 內部溫度保護器，遙控器，小時指示器
Dimensions 外形尺寸	W212 X D334 X H240 (mm) (Exposed item not include 凸起部位除外)
Weight 重量	11 kg

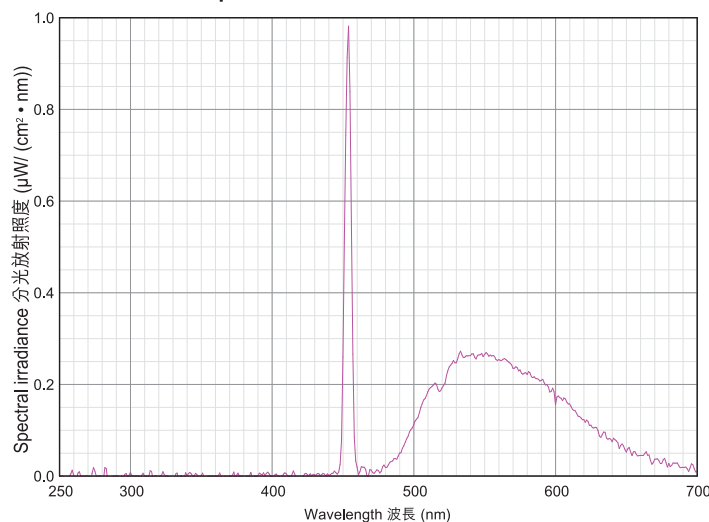
※ 1 The amount of light is the initial lighting of the reference values, not guaranteed values.
※ 1 光量是照明開始時的參考值，不是保證值。



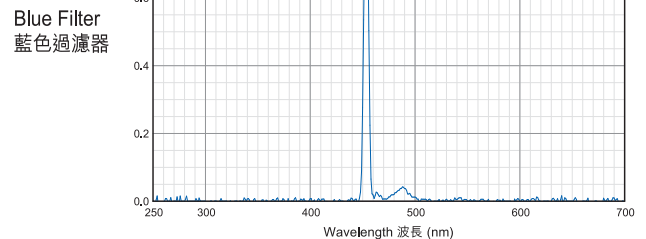
EXTERNAL DIMENSION DRAWING 外觀圖



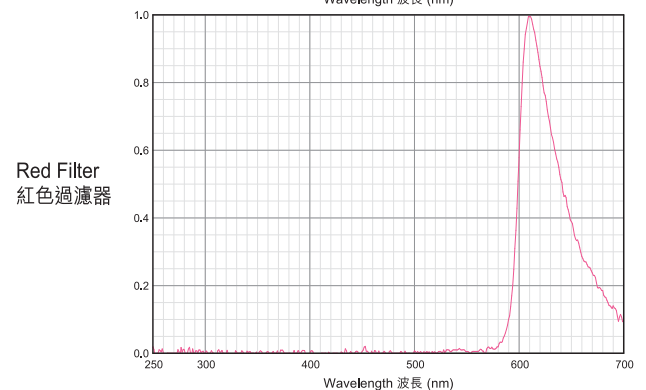
LA-HLF Spectral characteristics 光源分光



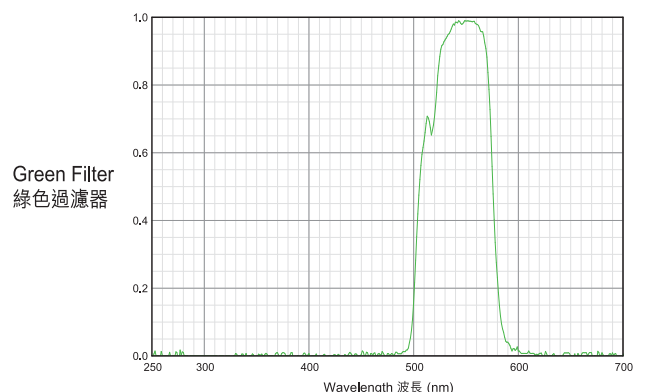
No Filter (White) 沒有過濾器 (白色)



Blue Filter 藍色過濾器



Red Filter 紅色過濾器



Green Filter 綠色過濾器

Remote Controller Specifications 遙控器規格

External Internal (Pin Assignment) 外部接口(引腳分配)

PIN No. PIN號碼	Signal Name 信號名稱	Notes 註釋
01	Enable / Disable Remote Control 啟用/禁用遙控器	(Input) (輸入)
02	FO Filter Switch 濾波器開關	(Input 輸入)
03	D0 Dimming Values 調光值	(Input 輸入)
04	D1 Dimming Values 調光值	(Input 輸入)
05	D2 Dimming Values 調光值	(Input 輸入)
06	D3 Dimming Values 調光值	(Input 輸入)
07	D4 Dimming Values 調光值	(Input 輸入)
08	D5 Dimming Values 調光值	(Input 輸入)
09	D6 Dimming Values 調光值	(Input 輸入)
10	D7 Dimming Values 調光值	(Input 輸入)
11	F1 Filter Switch 濾波器開關	(Input 輸入)
12	-	(Input) Unused (Please do not connect anything) (輸入) 未使用(請勿連接任何東西)
13	Input Common (Power VCC) 輸入通用(電源VCC)	(Input) VCC (+12V - +24V) (輸入) VCC (+12V - +24V)
14	-	(Output) Unused (Please do not connect anything) (輸出) 未使用(請不要連接任何東西)
15	-	(Output) Unused (Please do not connect anything) (輸出) 未使用(請不要連接任何東西)

PIN No. PIN號碼	Signal Name 信號名稱	Notes 註釋
16	-	(Output) Unused (Please do not connect anything) (輸出) 未使用(請不要連接任何東西)
17	-	(Output) Unused (Please do not connect anything) (輸出) 未使用(請不要連接任何東西)
18	Temperature Abnormality Signal 溫度異常信號	(Output) (輸出)
19	NC	Unused (Please do not connect anything) 未使用(請勿連接任何東西)
20	Remote Power ON/OFF 遙程電源開/關	DC24V (+)
21	Remote Power ON/OFF 遙程電源開/關	DC24V (-)
22	NC	Unused (Please do not connect anything) 未使用(請不要連接任何東西)
23	NC	Unused (Please do not connect anything) 未使用(請不要連接任何東西)
24	NC	Unused (Please do not connect anything) 未使用(請不要連接任何東西)
25	Output Common (Power GND) 輸出公共端(電源GND)	(GND)

Hardware Specifications 硬件規格

Switching manual / remote dimming : switch by signal input to enabling/disabling remote control pin number 01.

Type of remote control terminal : 25 pin D-sub connector (female on the device side)

Position of the remote control terminal : on the back panel

Input format : Isolated at the photo isolator in the active L interior.

* The photo isolator / anode has a common connection with the Vcc, so please supply +12V to +24V to the Vcc.

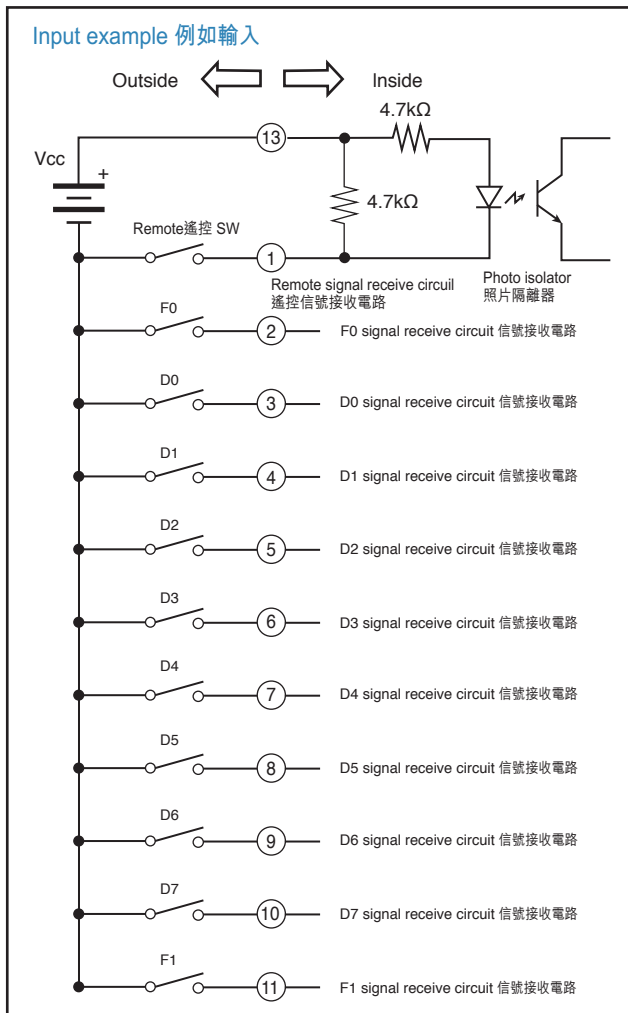
切換手動/遠程調光 : 通過信號輸入切換到啟用/禁用遙控器引腳編號01。

遠程控制終端的類型 : 25針D-sub連接器(設備側的母頭)

遙控終端的位置 : 在後面板上

輸入格式 : 在活動L內部的隔離器處隔離。

* 光隔離器/陽極與Vcc有共同連接, 所以請向Vcc提供+12V至+24V的電壓。



Output format :

Open collector output through a photo isolated transistor, and output is ON when asserted.

Withstanding voltage output 30V

Output current 10mA (max 15mA)

ON voltage 1.0V (max at 10mA)

OFF voltage 50 μ A (max at 24V)

輸出格式 :

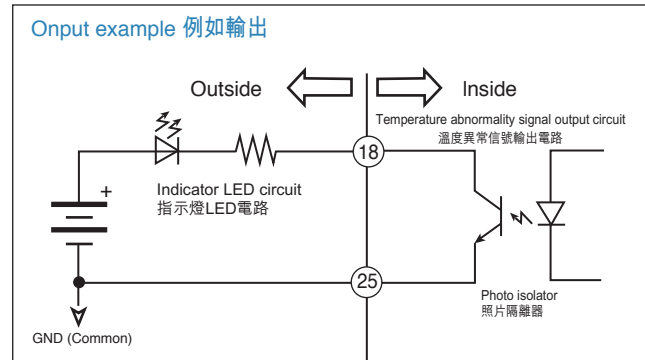
集電極開路輸出通過光電隔離晶體管, 斷言時輸出為ON。

耐電壓輸出30V

輸出電流10mA (最大15mA)

ON電壓1.0V (10mA時最大)

OFF電壓50 μ A (最大24V)



LA-HDF15T

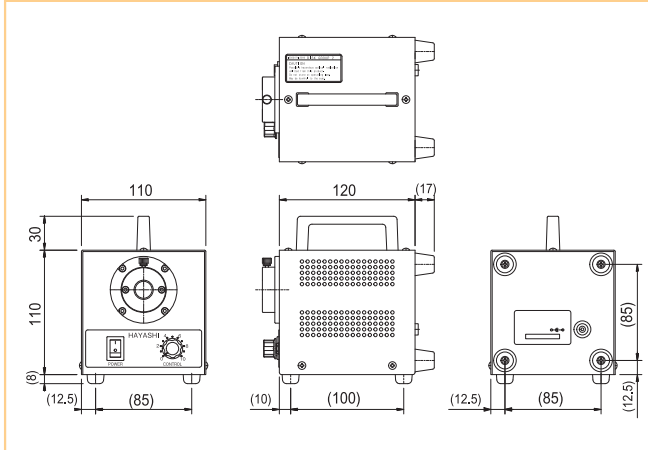
LED light source of light guide insertion type that investigated the space-saving and cost. Vertical is ok! It is fanless LED light source, and a new appearance to the microscope LED lighting series!!

節省空間和成本之光導插入式光源，垂直橫放也可以，無需風扇散熱，用於顯微鏡之照明

Features 特長

- Space-saving design that can be both horizontal and vertical.
- Light intensity contains 70W, but the power consumption is only 16W
- Long lifetime (15 times of halogen lamp)
- Easy to carry with the handle.
- Fanless, very quiet.
- It is idea for microscopic dust, vibration test match, and natural cooling design.
- DC24V input type that can be connected to the battery.
- 節省空間設計，橫直放置也可以
- 光強達75W，耗電量只需16W
- 壽命長(鹵素燈胆之15倍使用壽命)
- 小巧輕盈，方便使用
- 無需風扇散熱，靜
- 最佳用於防塵顯微鏡及振重試配合自然冷卻設計
- 以DC24V輸入電源

EXTERNAL DIMENSION DRAWING 外觀圖



Specifications 規格

Specification of LED Light Source LED 光源裝置規格

Input voltage 輸入電壓	DC24V, 1A
Power consumption 耗電量	16W
Light intensity adjustment 光亮調節	0~100% 0~260,000lx※
LED lifetime 壽命	30,000 (H) 小時
Condition 使用環境條件	0~40 °C/20~80%RH (Non-moisture 無結露)
Dimensions 外形尺寸	W110XH110XD120mm (Exposed item not include 凸起部位除外)
Weight 重量	1.7 kg

※ Fiber Φ5mm, Length 500mm from light out 15mm side of intensity.
光纖Φ5mm, 長度500mm從投光端15mm位置的亮度

Specification of subsidiary AC adaptor 附件變壓器規格

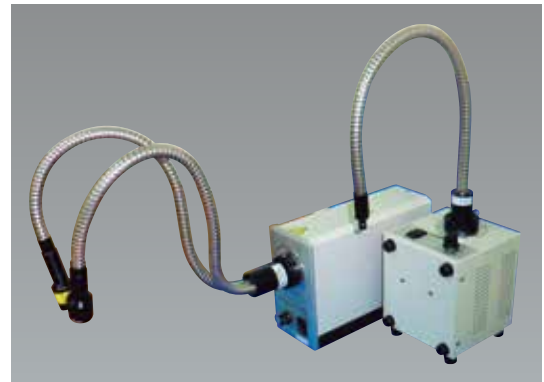
Power supply 額定輸入電壓	AC 100-240V, 50/60Hz, 0.6A
Output voltage 額定輸出電壓	DC 24V, 1A
Condition 使用環境條件	0~40 °C/20~80%RH (Non-moisture 無結露)
Dimensions 外形尺寸	W44XH28XD96mm (Exposed item not include 凸起部位除外)
Weight 重量	130g



Combination example with stereomicroscope
連結顯微鏡範例



Compare with LA-HDF108AS
跟產品LA-HDF108AS之比較



Option
顧客自選

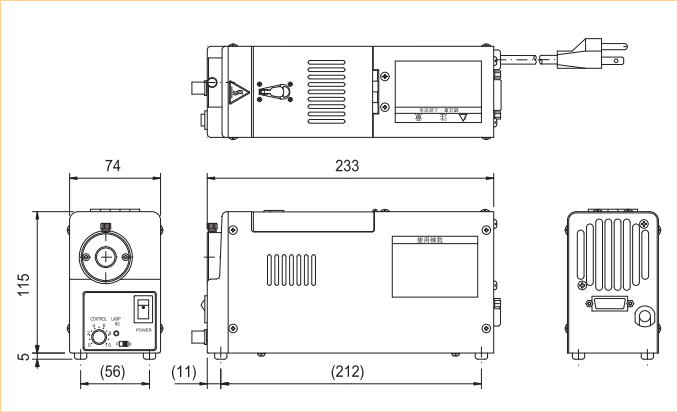


LA-100USW

RoHS

Input power allowed AC 100V~240V
輸入電壓可對應 AC 100V~240V

EXTERNAL DIMENSION DRAWING 外觀圖



Remote Control Functions, Compact, Multi Use 帶有程控功能的小型化·多用途

Features 特長

LA-100USW is an excellent light source for image processing. It is compact and light weight. This DC lighting device has multiple functions and standard features that support diverse lighting requirements. Input power allowed AC 100V~240V world standard. LA-100USW is a powerful light source with lamp on/off function, lamp indicator, light intensity adjustment and can use remote control. It also has special features of 8 bit digital circuit (option) and light intensity digital control.

LA-100USW為最適合圖像處理儀器的具有小型化、輕量化、備有多種標準功能等特色，可用於多種使用目的的直流型光源裝置。AC100V~240V的輸入電壓可對應全球規格。還具備程控功能，可利用外部控制進行燈泡的ON / OFF、燈泡燒斷的檢測、光亮調節。而且與8 bit D / A轉換器相連接，對光亮調節可進行數字程控。

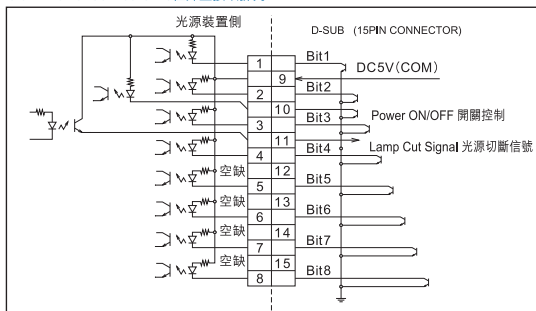
Main Purposes 主要用途

- Lighting source for image processor machine
- Lighting source for microscope
- Lighting source for scientific research
- 圖像處理儀器的照明
- 顯微鏡的照明
- 理科試驗觀察用的照明

Options 顧客自選

- Shutter Unit 開閉器
- **USW-2E24V** (Refer to P.32) (參照32頁)
- 8 bit轉換器 **DA-8U** Converter Unit Internal Version Available 也可以內部組裝

8 bit External Connection 8位外置接頭排列

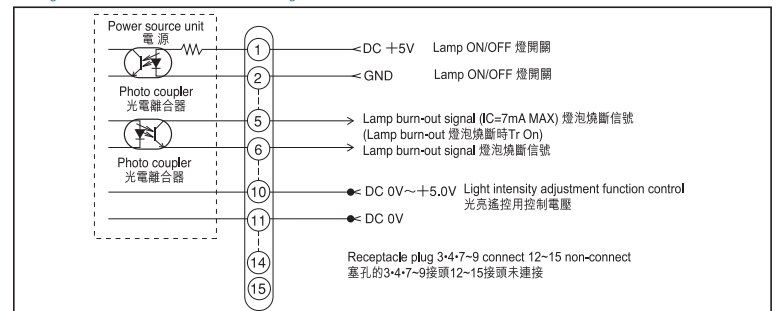


Specifications 規格

LA-100USW	
Power supply 輸入電壓	AC100~240V
Rated frequency 頻率	50 / 60Hz
Power consumption 耗電量	130W (100W bulb 燈泡) 75W (50W bulb 燈泡) ※4
Adaptable lamp type 燈泡	JCR12V100WH10 Color Temp. 色溫: 3100K ※1. Average life 平均壽命: 1000(H)小時 ※2. Average intensity 平均亮度: 500,000 lx (光源內燈泡為最大額定負荷時)
Lighting type 亮燈方式	直流型 DC
Stable intensity 光亮穩定性	Input voltage variation ±10%, lamp intensity stability ±0.3% (lamp in good condition) 輸入電壓變化±10%時，亮度變化為±0.3% (燈泡劣化除外)
Light intensity adjustment 光亮調節	Output voltage adjustment range DC3V-12V Lighting adjustment range 2%~100% 電壓可變範圍: DC3V~12V 光亮可變範圍: 2%~100%
Protection circuit 保護功能	Overload circuit: Auto recovery (Auto restart) 超電流保護回路: 下垂型(自動恢復型) Overheat circuit: Auto shut down and auto recovery (Restart by power on again) 過熱保護回路: 輸出切斷型(再接通電源時即可恢復型)
Cooling method 冷卻方式	Forced air cooler 強冷風扇
Optical filter 內藏過濾片	Thermal insulated filter 熱線吸收過濾片
Condition of temp. for operation 使用環境溫度	0℃~+40℃ / 20%~80%RH (Non-moisture) (無結露)
Remote functions 程控功能	1) Lamp on/off 燈泡ON / OFF 2) Light intensity remote control function (Control voltage: DC 0V~+5VMAX)※3 光亮調節程控功能(控制電壓為DC 0V~+5VMAX)※3 3) Lamp burn-out detect function (LED) Outputs a lamp burn-out signal when the lamp is burn-out 燈泡燒斷檢測功能(監視LED顯示燈)燈泡燒斷、燈泡未裝時輸出燈泡燒斷信號
Dimensions 尺寸(mm)	H115×W74×D233 (Exposed item not include) (凸起部位除外)
Weight 重量(kg)	2.0 kg

- ※ 1. Average lamp life is calculated from test results and is not guaranteed. 燈泡壽命為實測值，並非保證值
- ※ 2. Intensity of illumination is measured by Φ 5mm light guide, L=500 mm and W.D. in 15 mm
光度的測試方法為使用光纖束直徑Φ 5mm，長度500mm，測試點到投光部距離15mm
- ※ 3. Lamp supply voltage below 3V, the bulb blown seized detection function can not be started.
燈泡的供給電壓在3V以下時，燈泡燒斷檢測功能無法啟動。
- ※ 4. 50W bulb installation choice for customers 50W 燈泡的安裝為客戶自選

Analog DCOV-5V External Connection Analog DCOV-5V 外置接頭排列

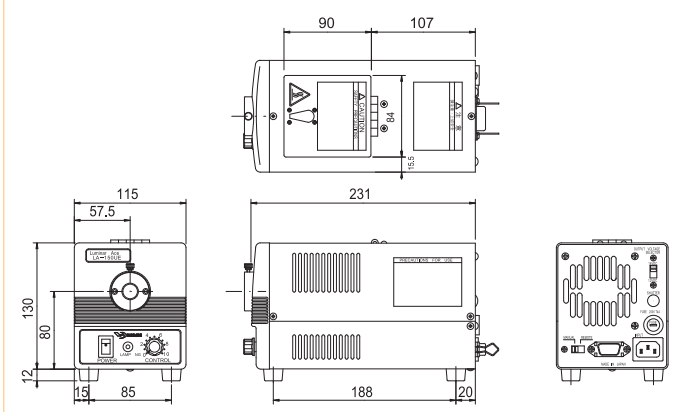


LA-150UE

RoHS PSE

UL Approval 認證

EXTERNAL DIMENSION DRAWING 外觀圖



DC Type Visual System Standard Lighting 直流式圖像處理用照明的標準型

Features 特長

LA-150UE is an excellent light source for image processing. It is compact and light weight. This DC lighting device has multiple functions and standard features that support diverse lighting requirements. It can be used 12V or 15V halogen lamp. LA-150UE is a powerful light source with lamp on/off function, lamp indicator, light intensity adjustment and can be use remote control. It also has special features of 8 bits digital circuit (option) and light intensity digital control.

LA-150UE為最適合圖像處理機器的具有小型化、輕量化、多功能等特色，可用於多種使用目的的直流型光源裝置。可使用12V/15V型號的鹵燈。LA-150UE還具備程控功能，可利用外部控制進行燈泡的ON/OFF、燈泡燒斷的檢測、光亮調節。而且與8 bit D/A轉換器相連接，對光亮調節可進行數字程控。

Main Purposes 主要用途

- Lighting source for image processor machine
- Lighting source for microscope
- Lighting source for scientific research
- 圖像處理機器的照明
- 顯微鏡的照明
- 理科試驗觀察用的照明

Options 顧客自選

- 8 bit轉換器**DA-8U** D/A Converter Unit
For LA-150UE only (只用於LA-150UE)
Internal Version Available Certify to UL Standard
也可內部組裝(此時為依照UL規格)
(Refer to P.36) (參照36頁)
- Shutter 開閉器
SU-2E12V / 24V
(Refer to UL Standard Optical Installation)
安裝開閉器為依照UL規格
(Refer to P.32) (參照32頁)

Specifications 規格

LA-150UE	
Power supply 輸入電壓	AC100V(Allow range 容許範圍 AC85~132V) AC200V(Allow range 容許範圍 AC170~264V)*1
Rated frequency 頻率	50 / 60Hz
Power consumption 耗電量	180W(150W Long life halogen lamp with a dichronic mirror 鹵燈最大規格負載時)
Lamp type 燈泡	Adaptable to 15V/12V lamp(output voltage change)可使用15V / 12V系燈泡 (進行輸出電壓的轉換) (15V Lamp燈泡) JCR15V150W5H/ 5 Color temp. 色溫:3100K Average life 平均壽命:700Hours(H)小時*2 Average intensity 平均亮度: 650,000 lx*3 (12V Lamp燈泡) JCR12V100WH10 Color temp. 色溫: 3100K Average life 平均壽命:1000(H)小時 * 2 Average intensity 平均亮度: 500,000 lx*3 JCR12V50W20H Color temp. 色溫: 3000K Average life 平均壽命: 2000(H)小時*2 Average intensity 平均亮度: 260,000 lx*3
Lighting type 亮燈方式	直流型 DC
Stable Intensity 光亮穩定性	Input voltage variation $\pm 10\%$ lamp intensity stability $\pm 0.3\%$ (Lamp in good condition) 輸入電壓變化 $\pm 10\%$ 時, 亮度變化為 $\pm 0.3\%$ (燈泡劣化除外)
Light intensity adjustment 光亮調節	Output voltage adjustment range (in progress output voltage change) 輸出電壓可變式(進行輸出電壓轉換) Voltage adjustment range 電壓可變範圍: DC3V~12V / 14V Light adjustment range 光亮可變範圍: 2%~100%
Protection circuit 保護功能	Overload circuit: Auto recovery (Auto restart) 超電流保護回路: 下垂型(自動恢復型) Overheat circuit: Auto shut down and auto recovery (Restart by power on again) 過熱保護回路: 輸出切斷型(再接通電源時即可恢復型)
Cooling method 冷卻方式	Forced air 強冷風扇
Optical filter 內藏過濾片	Thermal insulated filter, Heat cut filter 熱線反射過濾片、熱線吸收過濾片
Ambient temp. 使用環境溫度	-10 °C ~ +45 °C /20%~80%RH (Non-moisture) (無結露)
Circuit breaker 保險絲	AC250VT4A Glass tube fuse 玻璃管保險絲 (Φ 5.2 × 20mm)
Remote function 程控功能	1) Lamp ON/OFF 燈泡ON / OFF 2) Light intensity remote control function (Control voltage:DC 0V~+5VMAX)*4 光亮調節程控功能(控制電壓為DC 0V~+5VMAX)*4 3) Lamp burn-out detect function (LED) Outputs a lamp burn-out signal when the lamp is burn-out * 5 燈泡燒斷檢測功能(監視LED顯示燈)燈泡燒斷、燈泡未裝時輸出燈泡燒斷信號 * 5
Safety standard 安全規格	UL61010-1
Dimensions尺寸(mm)	H130 × W115 × D231(Exposed item not include) (凸起部位除外)
Weight 重量(kg)	2,6 kg

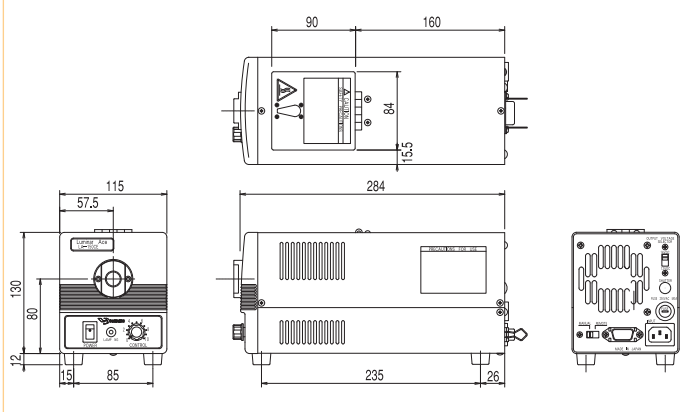
- * 1. AC 200V specifications set by the manufacturer. AC 200V規格由生產商設置
 * 2. Average lamp life is calculated from test results and is not guaranteed. 燈泡壽命為實測值，並非保證值
 * 3. Intensity of illumination is measured by Φ5mm light guide, L= 500mm and W.D. in 15 mm
 光度的測試方法為使用光導管直徑Φ5mm，長度500mm，測試點到投光部距離15mm
 * 4. Remote function (Refer P.21) built in 150W lamp without any special request.
 程控功能請參照21頁無特別要求時，內裝150W燈泡出廠。
 * 5. Lamp supply voltage below 3V, the bulb blown seized detection function can not be started.
 燈泡的供給電壓在3V以下時，燈泡燒斷檢測功能無法起動。
 * Built in 150W lamp without any special request. 無特別要求時，內裝150W燈泡出廠。

LA-150CE

RoHS

UL Approval 認證, CE Compatible 適合

EXTERNAL DIMENSION DRAWING 外觀圖



Certificate of Safety Light Source 以安全面來選用的標準型

Features 特長

LA-150CE built in filter unit for high frequency more adjustment. Approval for UL certificate & IEC certificate In confirmation of EMC indication EMI、EMS certification.

LA-150CE是滿足安全上的需求，UL規格和IEC規格的認定品。內裝有高次諧波過濾元件，符合EMC指示中的EMI、EMS規格。

Main Purposes 主要用途

- Lighting source for image processor machine
- Lighting source for microscope
- Lighting source for scientific research
- 圖像處理機器的照明
- 顯微鏡的照明
- 理科試驗觀察用的照明

Options 顧客自選

- 8 bit轉換器D/A-8U Converter Unit
Internal Version Available Certify To UL Standard
也可內部組裝(此時為依照UL規格)
(Refer to P.36) (參照36頁)
- Shutter 開閉器
SU-2E12V / 24V
(Ref to UL Standard Optical Installation)
若裝開閉器時為依照UL規格
(Refer to P.32) (參照32頁)

Specifications 規格

LA-150CE	
Power supply 輸入電壓	AC200V~240V (Allowed range 容許範圍: AC180V~264V)
Rated frequency 頻率	50 / 60Hz
Power consumption 耗電量	200W(150W halogen lamp maximum loading 鹵燈最大規格負載時)
Adaptable lamp type 燈泡	Adaptable to 15V/12V lamp(output voltage change) 可使用15V / 12V系燈泡(進行輸出電壓的轉換) (15V Lamp 燈泡) JCR15V150W5H/5 / JCR15V150WB Color Temp. 色溫: 3100K / 3200K ※1 Average life 平均壽命: 700(H)小時 ※2 Average intensity 平均亮度: 650,000 lx (12V Lamp 燈泡) JCR12V100W10H Color Temp. 色溫: 3100K ※1 Average life 平均壽命: 1000(H)小時 ※2 Average intensity 平均亮度: 500,000 lx
Lighting type 亮燈方式	直流型 DC
Stable intensity 光亮穩定性	Input voltage variation $\pm 10\%$, 輸入電壓變化 $\pm 10\%$ 時, Lamp intensity stability $\pm 0.3\%$ 亮度變化為 $\pm 0.3\%$ (Lamp in good condition) (燈泡劣化除外)
Light intensity adjustment 光亮調節	Output voltage adjustment range (in progress output voltage change) 輸出電壓可變式(進行輸出電壓轉換) Voltage adjustment range 電壓可變範圍: DC3V~12V / 14V Light adjustment range 光亮可變範圍: 2%~100%
Protection circuit 保護功能	Overload circuit: Auto recovery (Auto restart) 超電流保護回路:下垂型(自動恢復型) Overheat circuit: Auto shut down and auto recovery (Auto restart) 過熱保護回路:輸出切斷型(再接通電源時即可恢復型)
Cooling method 冷卻方式	Forced air 強冷風扇
Optical filter 內藏過濾片	Thermal insulated filter, Heat cut filter 熱線反射過濾片、熱線吸收過濾片
Condition of temp. for operation 使用環境溫度	-10 c ~ +45 c / 20%~80%RH (Non-moisture) (無結露)
Circuit breaker 保險絲	AC250V1T4A Glass tube fuse 玻璃管保險絲(Φ5.2 × 20mm)
Remote functions 程控功能	1) Lamp on/off 燈泡ON / OFF 2) Light intensity remote control function (Control voltage:DC 0V~+5VMAX)※3 光亮調節程控功能(控制電壓為DC 0V~+5VMAX) 3) Lamp burn-out detect function (LED) Outputs a lamp burn-out signal when the lamp is burn-out ※4 燈泡燒斷檢測功能(監視LED顯示燈)燈泡燒斷、燈泡未裝時輸出燈泡燒斷信號
Safety standard 安全規格	UL61010-1, EN61010-1
EMC	EN55011, EN61000-3-2, EN61000-3-3, EN61000-6-2
Dimensions 尺寸(mm)	H130 × W115 × D284 (Exposed item not include) (凸起部位除外)
Weight 重量(kg)	3.5 kg

- ※ 1. Average lamp life is calculated from test results and is not guaranteed.
燈泡壽命為實測值，並非保證值。
- ※ 2. Intensity of illumination is measured by Φ5 mm light guide, L: 500 mm and W,D. in 15 mm
光度的測試方法為使用光纖直徑Φ5mm，長度500mm，測試點到投光部距離15mm
- ※ 3. Remote function (Refer P.21) 程控功能請參照21頁
Built in 150W lamp without any special request. 無特別要求時，內裝150W燈泡出廠。
- ※ 4. Lamp supply voltage below 3V, the bulb blown seized detection function can not be started.
燈泡的供給電壓在3V以下時，燈泡燒斷檢測功能無法啟動。
- ※ Built in 150W lamp without any special request. 無特別要求時，內裝150W燈泡出廠。

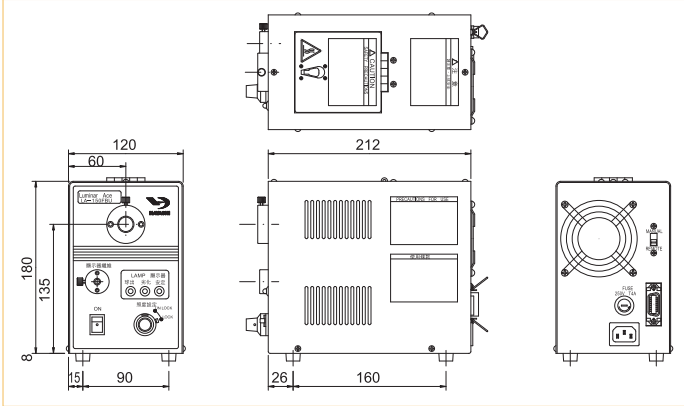
LA-150FBU

RoHS PSE

FEED-BACK LIGHT SOURCE

帶有反饋功能的鹵燈光源器

EXTERNAL DIMENSION DRAWING 外觀圖



Watching light intensity with the monitor lamp elapse deterioration and keeping the same light intensity automatically.
監視光亮的變化並自動維持光亮的穩定

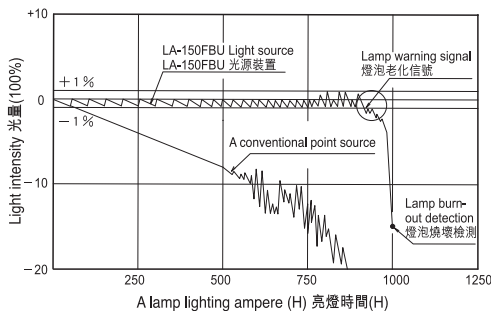
Features 特長

LA-150FBU lighting apparatus has a built-in automatic dimming circuit and is provided with a light quantity monitor, it is newly developed for visible light applications for image processors, measuring instruments, and automated lines. It always monitors a change of light quantity, and when there is an error (brightness and darkness) of +/-1% or more to the set light quantity, this system controls a power output to the set light quantity. Subject to use special light guide for monitoring
LA-150FBU是利用監視光纖監視鹵燈因長期使用劣化而引起的光亮變化，自動控制光亮的輸出來維持光亮的穩定性。因保持同一的光亮是圖像處理用理想的照明。(使用帶監視光纖的專用光纖)

Main Purposes 主要用途

- Lighting source for image processor machine
- Lighting source for microscope
- Lighting source for scientific research
- 圖像處理機器的照明
- 顯微鏡的照明
- 理科試驗觀察用的照明

Lamp lighting ampere-hour and luminous energy (Luminous flux) change 燈泡亮燈時間與光亮的推移圖



The figure is a luminous energy state of a conventional point source apparatus, and a new point source apparatus.
上圖將顯示無反饋功能的光源裝置和新型的鹵燈光源裝置LA-150FBU的光束維持狀態。燈泡更換後，也會發生與前一個的燈泡的亮度不同的現象。

Options 顧客自選

- 8 bit轉換器DA-8U Converter Unit
Internal Version Available 也可內部組裝
(Refer to P.36) (參照36頁)

Specifications 規格

LA-150FBU	
Power supply 輸入電壓	AC100V(Allow range 容許範圍 AC85~132V) AC200V(Allow range 容許範圍 AC170~264V)※1
Rated frequency 頻率	50 / 60Hz
Power consumption 耗電量	190W(150W halogen lamp maximum loading 鹵燈最大規格負載時)
Adaptable lamp type 燈泡	JCR15V150W5H/5 Color temp. 色溫: 3100K Average life 平均壽命: 1000H小時※2
Lighting type 亮燈方式	直流型 DC
Stable intensity 光亮穩定性	Lighting intensity variable $\pm 1\%$ (LED green signal by using feed-back light guide) Lamp older detect function(LED yellow signal) ※2 Should be use specially light guide 反饋精度: 設定光亮 $\pm 1\%$ (綠色LED亮燈)因鹵燈劣化而有超過設定光亮的 $\pm 1\%$ 光亮誤差時, 黃色LED亮燈以示燈泡劣化。 ※3 使用專用的光纖。
Light intensity adjustment 光亮調節	Voltage adjustment range 電壓可變範圍: DC5V~14V Light adjustment range 光亮可變範圍3%~100% (Max. light) 最大亮度: 500,000lx※4
Protection circuit 保護功能	Overload circuit: Auto recovery (Auto restart) 超電流保護回路: 下垂型(自動恢復型) Overheat circuit: Auto shut down and auto recovery (Restart by power on again) 過熱保護回路: 輸出切斷型(再接通電源時即可恢復型)
Cooling method 冷卻方式	Forced air 強冷風扇
Optical filter 內藏過濾片	Thermal insulated filter, Heat cut filter 熱線反射過濾片、熱線吸收過濾片
Ambient temp. 使用環境溫度	0 °C ~ +40 °C / 20%~80%RH (Non-moisture)(無結露)
Circuit breaker 保險絲	AC250V4A Glass tube fuse 玻璃管保險絲(Φ5.2×20mm)
Remote function 程控功能	1) Lamp on/off 燈泡 ON / OFF 2) Light quantity remote control function (Control voltage: DC 0V~+5VMAX)※5 光亮調節程控功能(控制電壓為DC 0V~+5VMAX)※5 3) Stable intensity detect function (LED green signal) 光亮穩定檢測功能(綠色LED顯示燈) 4) Lamp older detect function (LED yellow signal) 燈泡劣化檢測功能(黃色LED顯示燈) 燈泡劣化時輸出劣化信號 5) Lamp burn-out detect function (LED red signal) 燈泡燒斷檢測功能(紅色LED顯示燈) Lamp burn-out detect function, Outputs a lamp burn-out signal when the lamp is burn-out 燈泡燒斷檢測功能、燈泡燒斷、燈泡未裝時輸出燈泡燒斷信號
Dimensions 尺寸(mm)	H180×W120×D212 (Exposed item not include) (凸起部位除外)
Weight 重量(kg)	3.4kg

※1 AC 200V specifications set by the manufacturer. AC 200V規格由生產商設置。

※2 Average lamp life is calculated from test results and is not guaranteed.
燈泡壽命為實測值, 並非保證值。

※3 Please order the Specially Light Guide match to use.
購買本產品時請與專用光纖配套購買。

※4 Intensity of Illumination is measured by Φ5 mm light guide, L:500 mm and W.D. in 15 mm.
光度的測試方法為使用光纖束直徑Φ5mm, 長度500mm, 測試點到投光部距離15mm。

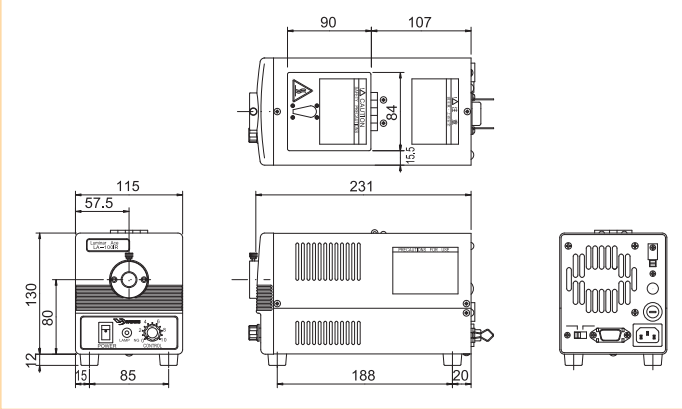
※5 Remote function see P.21 程控功能參考21頁。

Resulting in widened different between our light guide and other manufacturers.
Best result use our light source together with our Light Guide.
光導請與光源器配套購買, 弊公司以外的光導使用時會有效果不好的現象請多加注意。

LA-100IR

RoHS PSE

EXTERNAL DIMENSION DRAWING 外觀圖



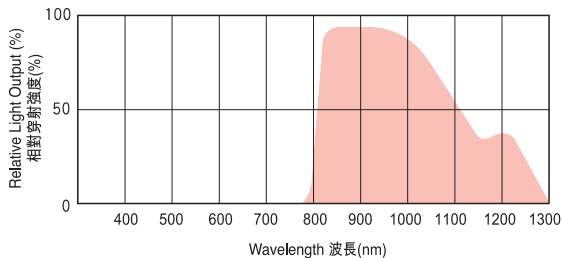
Powerful Lighting In IR Solution 高效能紅外線照明方案

Features 特長

LA-100IR is infrared rays device which irradiates only infrared rays of Halogen Lamp.
Halogen Lamp with infrared rays reflection mirror and IR80 filter. Transmitted over 800nm are built in.
Infrared rays over 800-1100nm are irradiated without taking out visible light.

LA-100IR是只射出鹵燈的近紅外線的光源裝置。因內置帶有反射近紅外線反射鏡的鹵燈和IR80過濾片(800nm以上才可透過)所以只射出近紅外線(800nm~1100nm)。

LA-100IR Illuminating Spectrum Distribution 光譜分佈圖



Specifications 規格

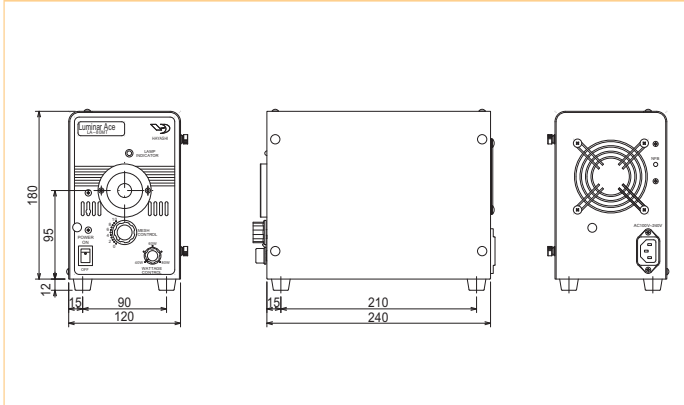
LA-100IR	
Power supply 輸入電壓	AC100V(Allowed range 容許範圍 AC85~132V) AC200V(Allowed range 容許範圍 AC170~264V) ※1
Rated frequency 頻率	50 / 60Hz
Power consumption 耗電量	130W
Lamp type 燈泡	JCR12V100W10H/IR Long life halogen lamp with a infrared rays mirror 帶有反射近紅外線反射鏡的鹵燈 Average life 平均壽命: 1000(H)小時 ※2
Output type 輸出方式	直流型 DC
Light intensity adjustment 光亮調節	Output voltage adjustment method 輸出電壓可變方式 Adjustment range 可變範圍: DC3V~12V Lighting adjustment range 光亮變化範圍: 2%~100%
Protection circuit 保護功能	Overload circuit: Auto recovery (Auto restart) 超電流保護回路: (自動恢復型) Overheat circuit: Auto shut down and auto recovery (Auto restart) 過熱保護回路: 輸出切斷型(再接通電源即可恢復型)
Cooling method 冷卻方式	Forced air 強冷風扇
Filter 過濾片	IR80 filter 過濾片
Condition of temp. for operation 使用環境溫度	0℃~+40℃ / 20%~80%RH (Non-moisture) (無結露)
Circuit breaker 保險絲	AC250VT4A Glass tube-fuse 玻璃管保險絲 (Φ5.2×20mm)
Remote function 程控功能	1) Lamp 燈泡ON / OFF 2) Light intensity adjustment remote function (control DC 0V~+5VMAX)※3 光亮調節程控功能 (控制電壓為DC 0V~+5VMAX)※3 3) Lamp burn-out detect function (LED) Outputs a lamp burn-out signal when the lamp is burn-out※4 燈泡燒斷檢測功能(監視LED顯示燈)燈泡燒斷、未裝時輸出燈泡燒斷信號※4
Dimensions 尺寸	H130×W115×D231 (Exposed item not include) (凸起部位除外)
Weight 重量(Kg)	2.7 kg

- ※ 1 AC 200V specifications set by the manufacturer. AC 200V規格由生產商設置。
 ※ 2 Average lamp life is calculated from test results and is not guaranteed. 燈泡壽命為實測值，並非保證值。
 ※ 3 Remote function refer to P.21 程控功能請參照21頁。
 ※ 4 Lamp supply voltage below 3V, the bulb blown seized detection function can not be started.
 燈泡的供給電壓在3V以下時，燈泡燒斷檢測功能無法起動。

LA-80MT

RoHS

EXTERNAL DIMENSION DRAWING 外觀圖

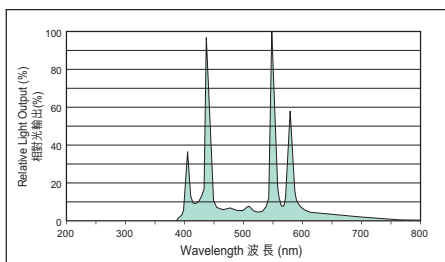


Not Crack, More Bright, Long Life Metal Halide Lighting 不易碎，高量度，壽命特長之金屬鹵化燈

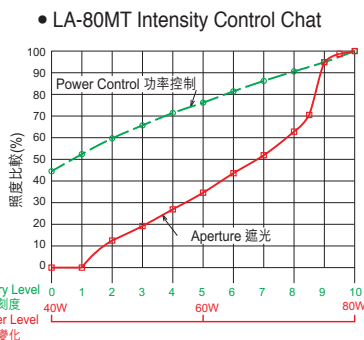
Features 特長

First in the world use the lamp material is not crack and strong, lower consume and high power.
市場上首次使用不易碎及堅固物料生產之燈泡，低電量及高效能。

Illuminating Spectrum Distribution 光譜分佈圖



Light intensity levels and rate of the light intensity for LA-80MT LA-80MT的階段與光亮比較



Specifications 規格

LA-80MT	
Power supply 輸入電壓	AC100V-240V
Rated frequency 頻率	50 / 60Hz
Power consumption 耗電量	115W
Lamp type 燈泡	60W FH60MER ※1. Average intensity 平均亮度: 可變80W時 1,900,000lx ※2. Average life 平均壽命: 3000H 小時 ※3. Color temp. 色溫度: 7400K
Lamp lighting indicate 燈泡亮燈顯示	A green light appears when the lamp is ON 以綠色信號燈顯示燈泡亮燈
Output type 輸出方式	直流型 DC
Light intensity adjustment 光亮調節	Intensity Range 光量變化範圍 (40-80W) Mesh Range 遮光片變化範圍 (0.5-100%)
Protection circuit 保護功能	Overheat circuit: Auto shut down and auto recovery (Auto restart) 過熱保護回路: 輸出切斷型 (再接通電源即可恢復型)
Cooling method 冷卻方式	Forced air 強冷風扇
Filter 過濾片	Thermal insulated filter, Heat cut filter 出熱線反射過濾片, 熱線吸收過濾片
Condition of temp. for operation 使用環境溫度	0℃~+40℃ / 30%~80%RH (Non-moisture) (無結露)
Circuit breaker 電閘	250V 2.5A
Dimensions 尺寸	W120XH180XD240mm (Exposed item not include) (凸起部位除外)
Weight 重量(Kg)	3.4kg

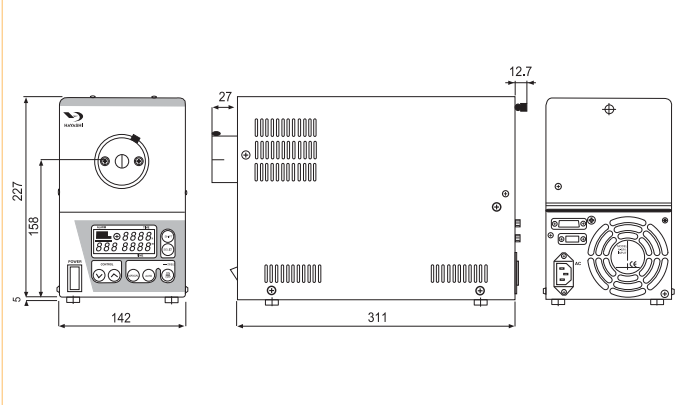
- ※ 1 Intensity of Illumination is measured by $\Phi 8$ mm light guide, L:500 mm and W.D. in 35 mm. 光度的測試方法為使用光纖束直徑 $\Phi 8$ mm, 長度500mm, 測試點到投光部距離35mm。
- ※ 2 Average lamp life is calculated from test results and is not guaranteed. 燈泡壽命為實測值, 並非保證值。(Lamp in good condition under use each 2 hours 45 minutes the rest 15 minutes. Lamp life depend on light usage) (點燈使用條件為2小時45分鐘亮燈, 15分鐘滅燈。燈泡壽命因使用條件不同有所變化)
- ※ 3 Color temp. just for reference only. 色溫度只供參考
- ※ For use LGA2-5L500VN light guide, need to change the light guide adapter 使用LGA2-5L500VN光導需要更換光導互換接頭

LA-410UV

RoHS



EXTERNAL DIMENSION DRAWING 外觀圖



Perfect UV Curing In Powerful And Selectable Control 使用高效及選擇性控制之完美操作

Features 特長

- High Power output
UV intensity : 3500mW/cm² (LA-410UV-4, at 365nm)
- Long life
4,000 hours (Guaranteed life)
- Substantial external control
RS-232C/D-SUB Connector attachment : Standard
Terminal Blocks : Option
- The irradiation intensity, irradiation time, and can be programmed. For 7 grades procedure preset 9 ways registers. Cure object under take the best lighting
- Input voltage 100V/200V, equipped with a power supply automatically converted
- Bulb replacement is more easy and fast even use one hand to do within 30sec.
- Output in front or rear can be chosen before confirm order.
- Easy exchange of filter
- 輸出功率大
紫外線照射強度：3500mW/cm² (LA-410UV-4, at 365nm)
- 壽命長
4,000小時 (保證壽命)
- 充實的外部控制
RS-232C / D-SUB 連接器附件：標準裝備
端主台：自選
- 照射強度，照射時間可以編制程序
對7等級的程序可進行9種方式登錄，所以對粘結對象可進行最佳的照射
- 輸入電壓100V/200V，裝有電源自動轉換
- 更換燈泡非常方便及容易，使用操作亦只須30秒內
- 正面出光或背面出光可於訂購時要求配合
- 容易交換濾片

Specifications 規格

LA-410UV-4/LA-410UV-5/LA-410UV-3		
UV Intensity 紫外線照射強度 *1		3500mW/cm ² (at 365nm, LA-410UV-4)
Oval Reflector (without filter)	LA-410UV-4	300nm~450nm
	LA-410UV-5	240nm~400nm
輻射波長*2	LA-410UV-3	400nm~700nm
Lamp Model No. 燈泡型號	LA-410UV-4	MX4040 : 200W (Hg-Xe lamp)
	LA-410UV-5	MX4040 : 200W (Hg-Xe lamp)
	LA-410UV-3	XE4030 : 150W (Hg-Xe lamp Quartz free type)
Lamp life 燈泡壽命	LA-410UV-4/5	Guaranteed life 保證壽命 : 4,000(H)小時*3
	LA-410UV-3	Guaranteed life 保證壽命 : 2,000(H)小時*3 (Life壽命 3,000(H)小時)
Power supply 額定輸入電壓		AC100V~240V (Auto Detect 自動轉換) 50/60Hz
Power consumption 耗電量		300VA Below 以下
Light intensity adjustment 調光方式		Mechanical aperture control method continuously variable 0~100% 由步進電動機的運轉來帶動網眼光欄的旋轉(0~100%)
Condition of temp. for operation 使用環境溫度		+5 °C ~ +35 °C /80% Below 以下 (Non-moisture 無結露)
Cooling method 冷卻方式		Forced air 強冷風扇
Dimensions尺寸(mm)		W142XH227XD311mm (Exposed Item not include) (凸起部位除外)
Function (standard) 功能(標準型)		Input signal輸入信號: Lamp燈泡 ON/OFF Shutter 開關器動作 Control time 控制用計時 External signal 外部操作信號: lamp燈泡 ON/Off shutter-release signal開關器動作信號
Weight 重量(Kg)		About 約6.4kg

*1 I.D. 5mm L=1000mm Light Guide and W.D. in 10mm center intensity.
光纖內徑5mm長度1000mm的出光口10mm位置，中心部位的亮度。

*2 Oval Reflector reference Rate.
放射波長參考數值。

*3 Repeated by turn On & Off, will be make a Short Life of the Lamp.
不斷的開關光源，使燈泡壽命加速老化。

Control 控制

Control Contents 控制內容	Panel operating 正面顯示板操作	通訊用接頭(RS232C)	External control signal (D-sub connector)*1 外部控制接頭(D-sub連接器)*1
Power ON/OFF 主要電源的開關	○	—	—
Lamp ON/OFF 燈泡的亮和滅	○	○	○
Shutter 開閉器 Open/Close 開/閉 Open/Close by control times*2 計時開/閉操作*2 Setting open time in auto 自動開閉時間的設定	○	○	○
	○	○	○
	○	○	—
	○	○	—
Illumination program 照射程序設定	○	○	—
(UP / DOWN) Light intensity adjustment 光亮的調節	○	○	○
Lamp indicator 燈泡亮燈顯示	○	○(output signal)(輸出信號)	○(output signal)(輸出信號)
Lamp stable indicator 燈泡穩定顯示	○	○(output signal)(輸出信號)	○(output signal)(輸出信號)
Shutter open indicator 開閉器開狀態顯示	○	○(output signal)(輸出信號)	○(output signal)(輸出信號)
Total lamp ON time 燈泡亮燈時間累計	○	○	—
Overheat Alarm 過熱警報	○	○(output signal)(輸出信號)	○(output signal)(輸出信號)
Total lamp ON time Alarm 燈泡亮燈累計時間到警報	○	○(output signal)(輸出信號)	○(output signal)(輸出信號)
Saving Mode Transformation *3 省電動作模式的轉換 *3	—	—	—

*1 The adaptor with 10 pins will be prepared for option.
 *1 備有作為顧客自選的個接頭的接合器
 *2 For LC6 series, shutter Open/Close is operated by the Start/Stop of the memory step TM.
 *2 LC6系列時，對應於記憶步驟TM的開始/停止
 *3 you can switch the internal device
 *3 可以轉換裝置內部的開關

■LA-410UVF

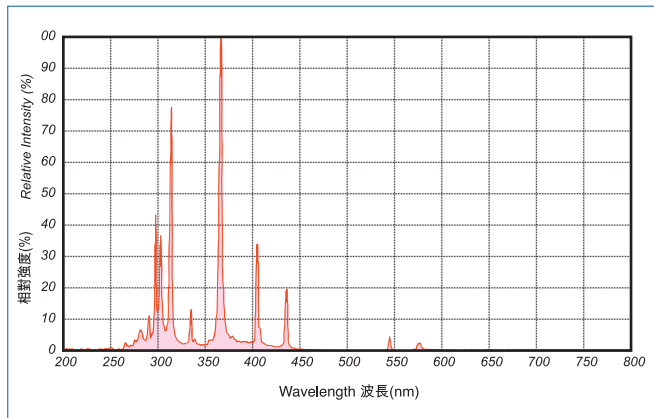
Internal light feedback function mode

Maintain a fixed amount of light, make it stable irradiation, Tropicly, the amount of light is influential variation with time of the lamp, equipped with a sensor to control the amount of light can be effectively fixed amount of light. This product internal built-in to keep setting the amount of light a proprietary light feedback function, without the need for feedback light guide. The digital data of the irradiation light amount (reference figure), an LCD display on the board. When measured timing lest human error and environmental conditions. The possibility of meticulous and strict management with the fully automated production line fulfilled.

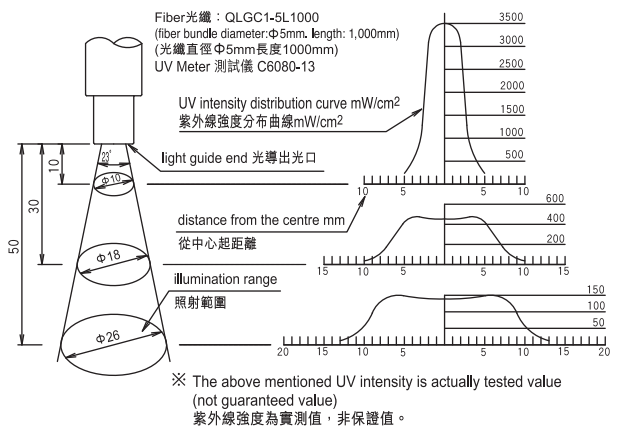
內部設有光反饋功能

保持固定光量，使能安定的照射，通常，光量是有影響電燈的經時變化，裝有感應器控制光量，能有效固定光量。本製品內置保持設定光量專有的光線反饋功能，而不要反饋光導配合，照射光量(參考數值)數字數據表示，以LCD顯示於表板上。當測定時被免有人為的誤差及環境條件的偏差。以配合全自動化生產線上細緻嚴格管理達成之可能性。

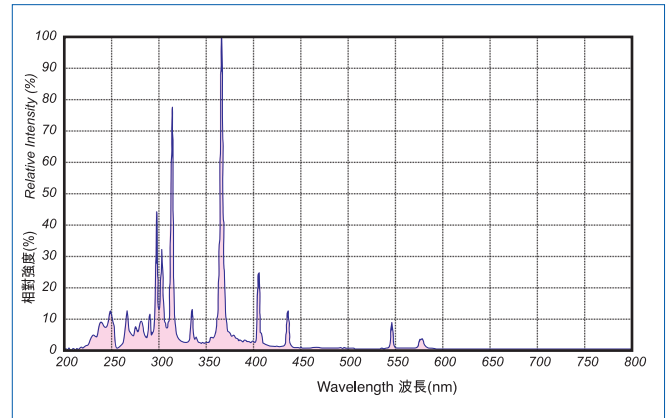
● LA-410UV-4 Illuminating Spectral Disribution 光譜分佈圖



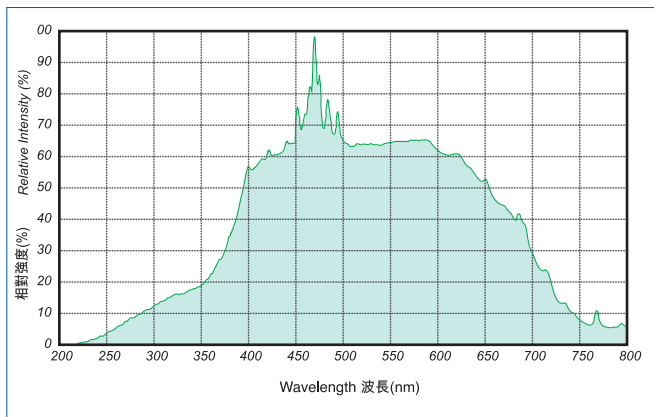
UV Intensity Distribution 紫外線強度的分佈圖



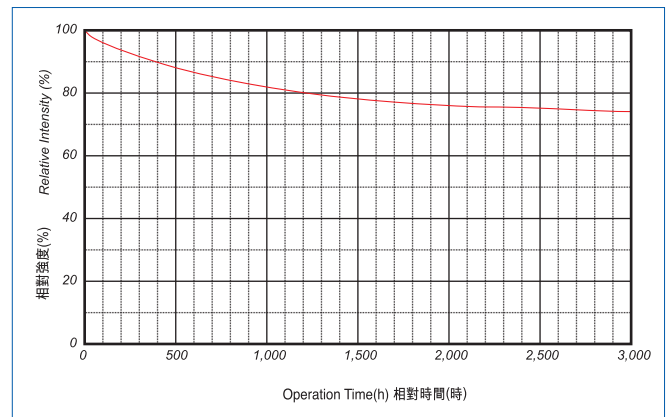
● LA-410UV-5 Illuminating Spectral Distribution 光譜分佈圖



● LA-410UV-3 Illuminating Spectral Disribution 光譜分佈圖



● UV intensity of life time 紫外線照射強度(365nm)的時間變化(代表值)



Stabilize UV Lighting dispence with adjustment of the Cross Focus

Whole UV series was built in the more stability Xenon Lamp, Low electrode consume, non shifted light spot. When change the UV Lamp, not necessary to adjust the cross focus in operaton.

無需光軸調整射出穩定的紫外線

所有的裝置都採用高穩定性的水銀氣氙燈，電極消耗少，又無發光點的移動。更換燈泡時，即使是使用中也無需光軸的調整。

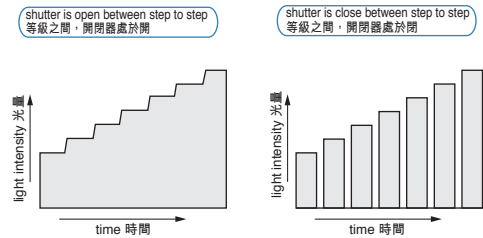
New trustiness technology for UV glue curing 裝有追求UV硬化的可靠性的功能

7 Steps and 9 Models intensity and time control 7個等級、9種程序的照射條件

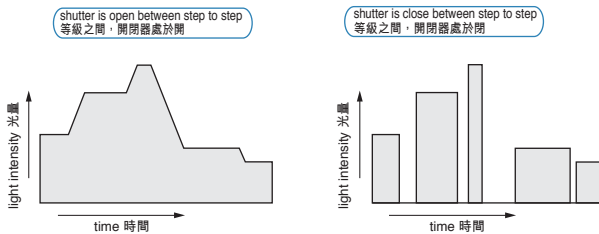
Available to programming the power intensity and timing control. Curing in irradiation area automatic adjust. New design of the control method for 7 different steps and 9 different models even change setup in operation. You can change the program setup in front of the control panel up to 9 models. Refer in high precision level products, decrease for cure gel stress changes and without shift. Can be make a lower defective creation.

對照射強度、照射時間可任意編程。根據粘結對象可自動改變UV照射條件。對同一製造工程投入多種的粘結對象或轉移到其他生產線時，只需更改程序編碼，即可對粘結物施行最佳的照射。特別是對需要高精度固定的零部件，由於粘膠的應力應變和收縮會產生位移的問題。本產品可解決此問題提高成品率，對加強生產穩定性有較大的貢獻。

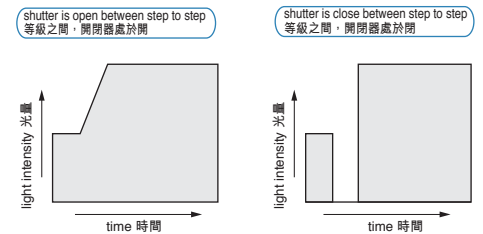
Program 1 : increased power with 7 steps
程序例1：以7個等級增大光亮



Program 2 : Random control the power intensity and timing
程序例2：隨機地設定光亮、照射時間



Program 3 : Opening in lower intensity, change to higher intensity and long time
程序例3：低光亮之後，長時間的高光亮

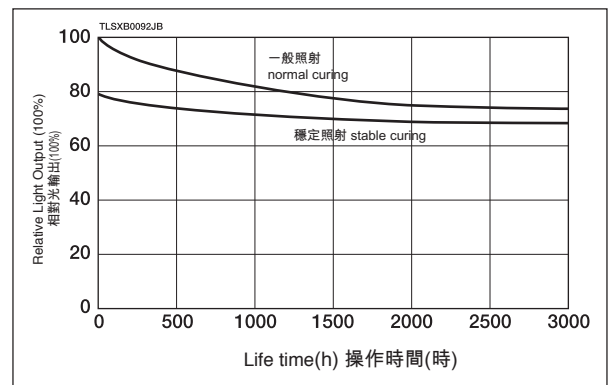


Available to used the more stable curing method 可選擇穩定操作的方式

Compare with the normal UV curing method, the stable curing can save more than 10% power consume up to life end of UV Lamp. Lighting power will be changes from starting between 3,000 hours less than 15% different. You can operate in stability UV curing.

與一般的操作相比，耗電量減少10%又可選擇出光率的隨時間變化小的穩定操作方式。因出光率變化在3000小時內為15%，所以在燈泡壽命末期為止可得到較穩定的光亮輸出。

Lighting output changes chart 光輸出的變化

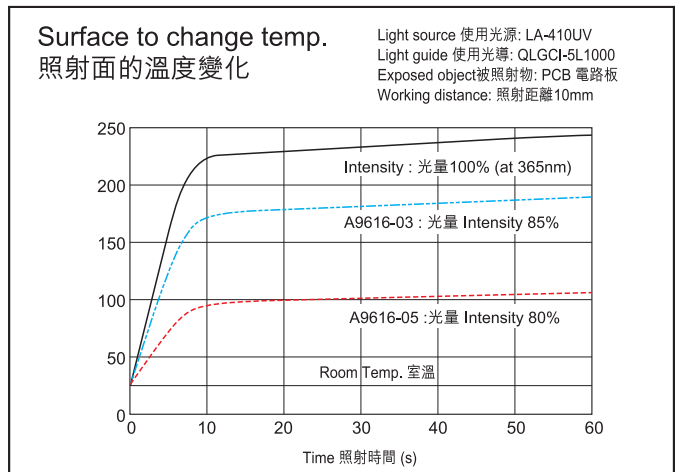
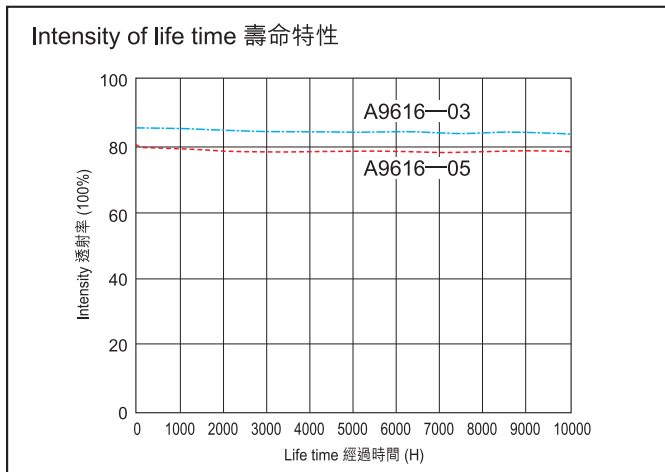
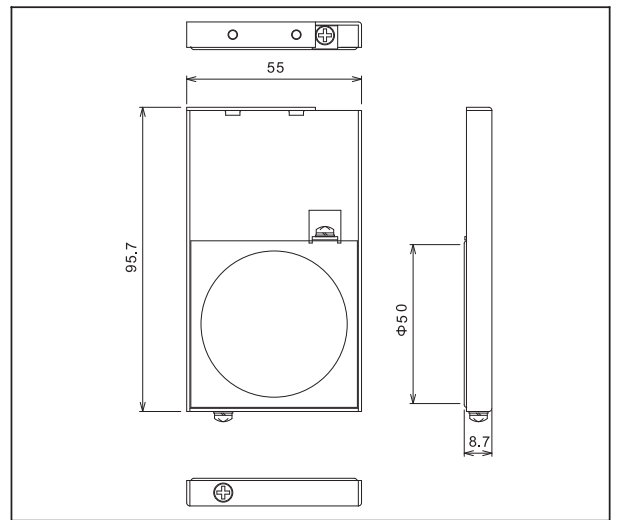


Option 顧客自選

Heat Cut Filter 除熱濾片

規格 Specifications

Through filter Item 濾片型號	A9616-03	A9616-05
The light of filter Piece 濾片片數	1	2
Wavelength 穿射波長 (mm)	280~400	320~400
Cut the light of wavelength 除去波長 (mm)	400~700	400~1000
UV Heat Rate 紫外線穿射率 (100%)	About 約85	About 約80
Remark 備註	UV intensity very high 紫外線穿射率高	Cuts infrared rays light A9616-03 or higher cuts infrared characteristic 可除去範圍廣的近紅外線 (為A9616-03以上去除 紅外線特性)



UV Meter (測試儀)



UV-Light bulb Lighting illuminance meter 紫外線燈泡照明用度計

Model 型號	Receive Hole 受光口 (mm)	Wavelength Sensitivity 靈敏度校正波長 (nm)	Testing Range 測試範圍 (mW / cm ²)
C6080-02	Φ6	248	0~1999
C6080-03	Φ1	365	
C6080-04	Φ1	436	
C6080-13	Φ1	365	

UV-LED illuminance with a light meter UV-LED 照明用照度計

Model 型號	Receive Hole 受光口 (mm)	Wavelength Sensitivity 靈敏度校正波長 (nm)	Testing Range 測試範圍 (mW / cm ²)
C6080-365	Φ1	365	10~19990
C6080-365-03	Φ1	365	1~1999
C6080-385	Φ1	385	10~19990

※ Used sensitivity corrected. The case of the wavelength spectrum of different light sources, indicate the value of different situations occurs.
※ 已使用感度校正波長校正過。波長光譜不同光源的情況下，會出現表示值不同的情況。

UV- illumination with ultraviolet light meter totalizer UV- 照明用紫外線積算光量計

Model 型號	Receive Hole 受光口 (mm)	Wavelength Sensitivity 靈敏度校正波長 (nm)	Testing Range 測試範圍 (mW / cm ²)
C10427	Φ1	—	0.001~100
H10428	Φ10	310~380	(1秒間隔~1999秒之積算表示值)

Accessories: Sensor cable (2m), USB cable (1.5m) RS-232C cable (1m) the analog output cable (1m), AC adapter, AC codes, special handbag. ※ 4 single battery not included.
附屬品: 傳感器連接線(2m), USB線(1.5m), RS-232C(1m), 模擬輸出線(1m), AC適配器, AC編碼, 專用手提包, ※不附帶4電池

UV-LED illumination with ultraviolet light meter totalizer UV-LED 照明用紫外線積算光量計

Model 型號	Receive Hole 受光口 (mm)	Wavelength Sensitivity 靈敏度校正波長 (nm)	Testing Range 測試範圍 (mW / cm ²)
C12144	Φ1	—	強度測定 0.1mW / cm ² ~100W / cm ² 積算光量 0.1mJ / cm ² ~9999J / cm ²
H12684-365	Φ1	320~400 (365)	
H12684-385		300~470 (385)	
H12684-395		300~470 (395)	
H12684-405		300~470 (405)	

Accessories: USB cable (1.5m), RS-232C cable (1m), the analog output cable (1m), AC adapter, AC codes, special handbag. ※ 4 single battery not included.
附屬品: USB線(1.5m), RS-232C線(1m), 模擬輸出線(1m), AC適配器, AC編碼, 專用手提包, ※不附帶4電池

Protective Glasses 保護用眼鏡



A6905

Due the UV light is not visible lighting, please used. Protective glasses before operation.
UV點射光源將放射出看不見的強烈的紫外線。使用時必須帶保護用眼鏡。

Portable for UV intensity spot light measuring, slim and delicate design. 為測試UV點射光源的紫外線強度的測試儀。Daily Management of production and the amount of light, simple to use controls, portable and easy to use. 每日於光亮管理生產，簡單使用控制，輕便易用。

LA-150FBU/LA-150UE/LA-150CE/LA-100IR Remote Function 程控功能的說明

External Control Functions 外部控制系統的接續方法

1. Halogen lamp ON/OFF

Use this function when you want to turn on/off the lamp repeatedly while activating the functions (light quantity remote control, Lamp burn-out detection) of this apparatus. If it is short-circuited between the no. 1 pin and no. 8 pin (SG) of the remote control receptacle, the lamp will be turned off (unilluminated); it will be turned on (illuminated) by resetting.

1. 鹵燈的開關
用於邊啟動光源裝置 (LA-150FBU) 的功能 (光亮遙控、燈泡燒斷輸出)，邊重複亮燈、滅燈的操作。將遙控用塞孔的1和8接頭連接時，燈滅(OFF)。解除時燈亮(ON)。



2. Light intensity remote control

A control voltage, 0 to 5.0V DC (current consumption of 10mA or less), is applied to between the no. 2 pin and no. 9 pin (SG) of the remote control receptacle.

2. 光亮調節遙控

將光亮遙控用轉換鍵置為遙控側(REMOTE)，將控制電壓DC 0V~+5V施加在遙控用塞孔的2和9 (SG) 接頭之間。

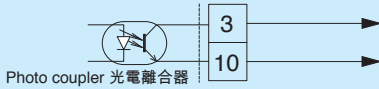


3. Lamp warning detection

If a lamp filament is burn-out or the lamp is left unattached, the red warning LED will be turned on, and at the same time, a lamp Burn-out signal will be output (open collector output, transistor ON) to between the no. 3 pin and no. 10 pin of the remote control receptacle.

3. 燈泡燒斷輸出

燈泡的燈絲燒斷或燈泡未裝時紅色警告燈亮，同時在遙控用的塞孔的3和10接頭之間輸出 (開路集電極輸出) 燈泡燒斷信號。



4. Lamp warning detection

If a lamp is burn-out and cannot function well in pre-set boundary, the yellow warning LED will be turned on, and at the same time, a lamp Burn-out signal will be output (open collector output, transistor ON) to between the No.4 pin and No.11 pin to the remote control receptacle.

4. 燈泡老化輸出

由於燈泡老化等原因，在初期設定的光量範圍內產生不能維持狀態時，黃色亮燈，同時從遙控用塞孔的4和11接頭之間輸出 (開路集電極輸出:Tr ON) 燈泡老化信號。



※ If using lamps monitoring fibres, and ordinary fibres (without monitoring) that do not conform to the specifications, it will result non-functioning, and the yellow detection lamp (burn-out) will turn on sporadically

※ 如果使用指定規格外的燈泡，以及指定外的帶監視光纖的專用光纖和普通光纖(無帶監視光纖)會造成錯誤運作，而且黃色燈泡監視(老化)會時不時亮燈。

(Receptacle for remote control) (遙控用塞孔)

1-8 : Halogen lamp on/off

3 : Lamp burn-out signal output (+)

10 : Lamp burn-out signal output (-)

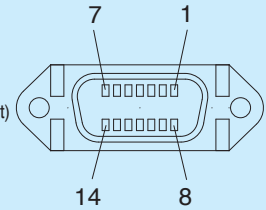
2-9 : Light intensity remote control voltage (input)
(DC 0V~+5V MAX)

1-8 : 鹵燈開關

3 : 燈泡燒斷信號輸出(+)

10 : 燈泡燒斷信號輸出(-)

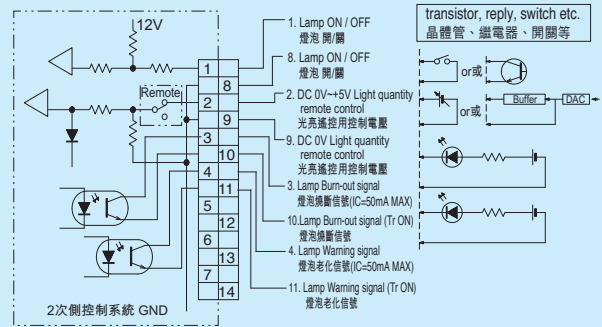
2-9 : 光亮遙控用控制電壓的輸入
(DC 0V~+5V MAX)



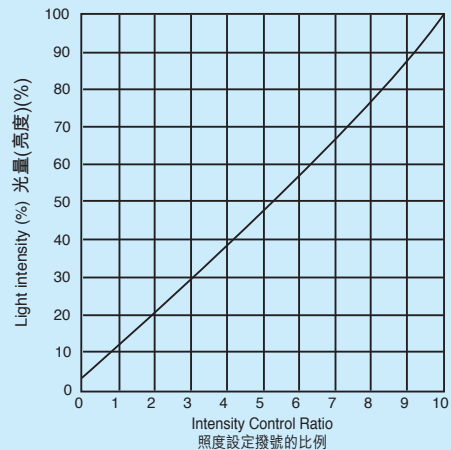
Receptacle model 塞孔型號57-40140
第一電子工業(株)
Plug model (插塞型號57-30140)

●LA-150FBU

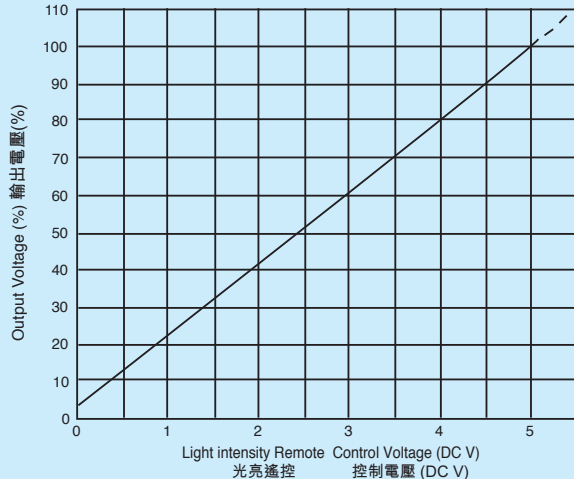
(External control system diagram) (外部控制系統連接圖)



Relative between Light intensity 光量(亮度)和照度設定撥號盤的關係

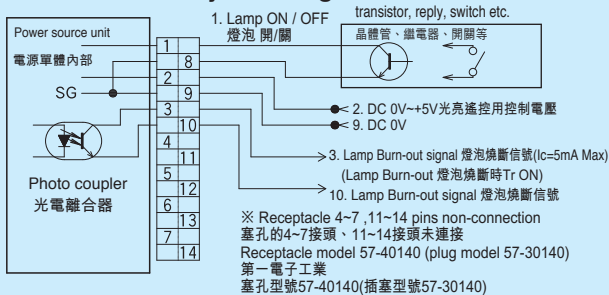


(Control Voltage Versus Output Voltage) (輸出電壓與遙控用控制電壓的關係)

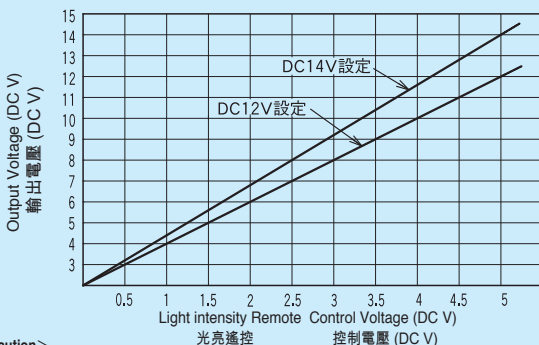


●LA-150UE/LA-150CE/LA-100IR

《External control system diagram》《外部控制用塞孔》



《Control Voltage Versus Output Voltage》《輸出電壓與遙控用控制電壓的關係》



<Caution>

A remote control voltage should not be up to DC+ 5V at maximum. If this limit is exceed, an output voltage will go beyond the rating, leading to lamp burn-out or power source failure.

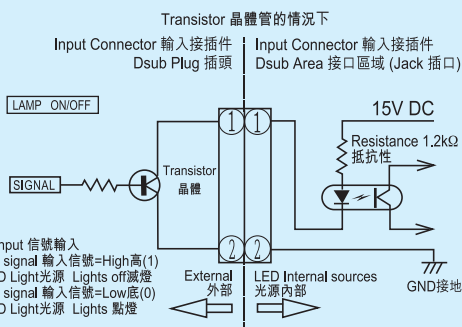
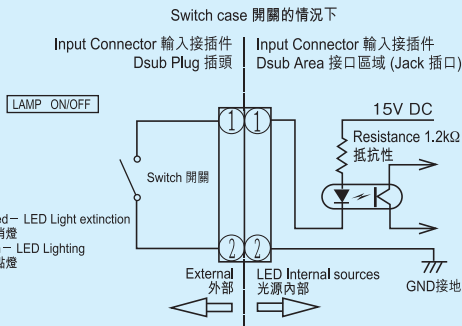
<注意>

在使用時，遙控用控制電壓的最大值請不要超過DC+5V若超過DC+5V時，輸出電壓將超過規定值，會發生燈泡燒斷及電源故障。

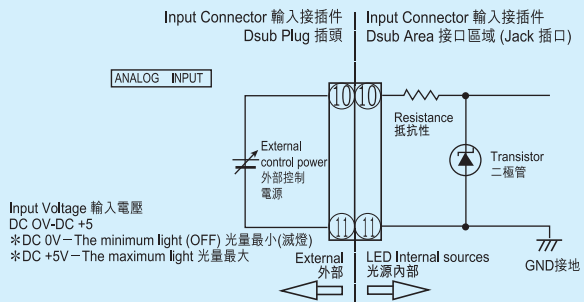
LA-HDF108AS, AA / LA-HDF158AS, AA Remote Function 程控功能說明

(The method of connecting external control example) (外部控制的接續方法 例子)

1. LED lighting ON/OFF function LED開/關功能
There are LED lights ON/OFF function enables INPUT short circuit to turn off the light, open to light. (MANUAL/REMOTE functions are available) 有點亮，關閉LED燈的功能，使INPUT短路為熄燈，打開為亮燈。(MANUAL或REMOTE功能都可以)

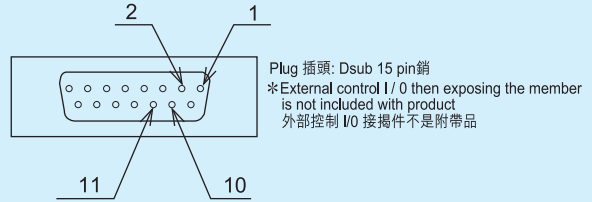


2. Light intensity Adjustment 光量調節 (REMOTE程控)
Switch (SELECTOR SW) in the REMOTE side the light amount adjustment function effectively and No.10 pin. Plus DCOV-DC5V (maximum) of the LED light amount vaible between and No.11 pin.
切換開關(SELECTOR SW)在REMOTE側射光量調節有效10號銷孔和11號銷孔之間加DCOV-DC5VLED(最大)的光量變更



* Please use a stable power supply 請使用穩定的電源
Use electrical instability may appear flashing lights 使用不穩定的電可能會出現閃燈

(INPUT connector arranging 接插件配列)

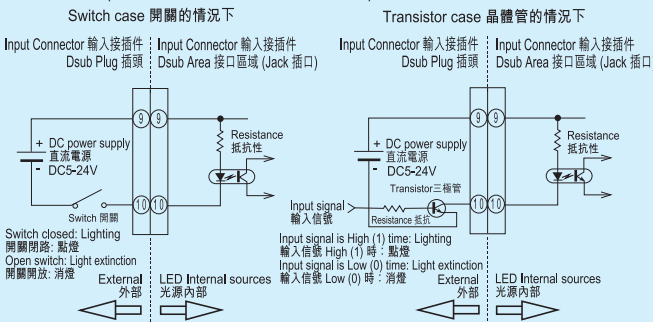


* External control cables Shield, please use the following 2m, connecting cable length, then the impact of signal noise vulnerable, circumstances beyond our control the amount of light may occur
* 外部控制的連接線Shield請使用2m以下，接線線長的話容易受信號噪音的影響，可能出現無法控制光量的情況

LA-HDF108DS, DA Remote Function 程控功能說明

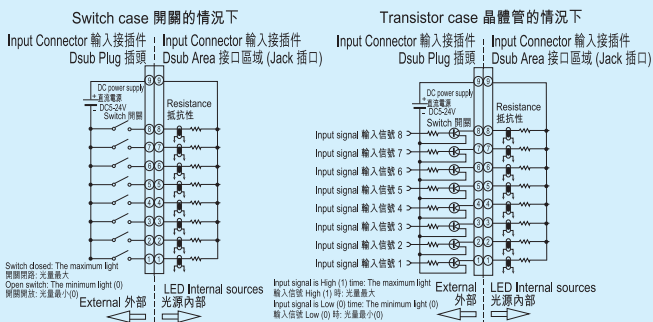
(The method of connecting external control example) (外部控制的接續方法 例子)

1. LED lighting ON/OFF function LED開/關功能
There are LED lights ON/ OFF function. INPUT through No.10 pin external power supply to GND(-) short circuit to turn off the lights. Open to light. (MANUAL or REMOTE) function are available) 有點亮，關閉LED燈的功能，使INPUT通過10號銷外部供給電源至GND(-)短路為熄燈，打開為亮燈。(MANUAL或REMOTE功能都可以)。



2. (REMOTE) Light intensity adjustment 光量調節

REMOTE switch in the amount of time adjustment function effectively under the note is connected cases and conditions and the amount of light output status table
切換開關在REMOTE時光量調節功能有效下。記是連接線和輸狀況以及光量狀況表



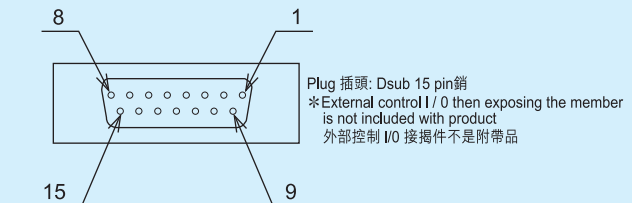
* Note that when connecting the power supply phase of the power supply and may cause damaged
連接時請注意供給電源的相性並可能引起電源破壞
* Please use the external power supply between DC5V-DC24V exceeds this range may cause the phenomenon of stable LED light source device uncertain damaged
外部供給電源請使用DC+5V-DC+24V之間的超過此範圍可能會使LED光源裝置不定破壞的現象

Enter the condition statement of the amount of light 輸入狀況光量狀況表 0: Short circuit 短路 1: Open開放

SIG.1	SIG.2	SIG.3	SIG.4	SIG.5	SIG.6	SIG.7	SIG.8	The amount of light condition 光量狀況
0	0	0	0	0	0	0	0	The least amount of light 光量最少(0)
1	0	0	0	0	0	0	0	
0	1	0	0	0	0	0	0	
1	1	0	0	0	0	0	0	
0	0	1	0	0	0	0	0	
1	0	1	0	0	0	0	0	
0	1	1	0	0	0	0	0	Intensity increase direction 光量加大的方向
1	1	1	0	0	0	0	0	↓
0	0	0	1	0	0	0	0	
1	0	0	1	0	0	0	0	
0	1	0	1	0	0	0	0	
1	1	0	1	0	0	0	0	
0	0	1	1	0	0	0	0	
1	0	1	1	0	0	0	0	
0	1	1	1	0	0	0	0	
1	1	1	1	0	0	0	0	
:	:	:	:	:	:	:	:	
1	1	1	1	1	1	1	1	The maximum amount of light 光量最大

* The external power supply output current over 100mA. 在100mA外部電源的輸出電流。

(INPUT connector arranging 接插件配列)



* External control cables Shield, please use the following 2m, connecting cable length, then the impact of signal noise vulnerable, circumstances beyond our control the amount of light may occur
* 外部控制的連接線Shield請使用2m以下，接線線長的話容易受信號噪音的影響，可能出現無法控制光量的情況

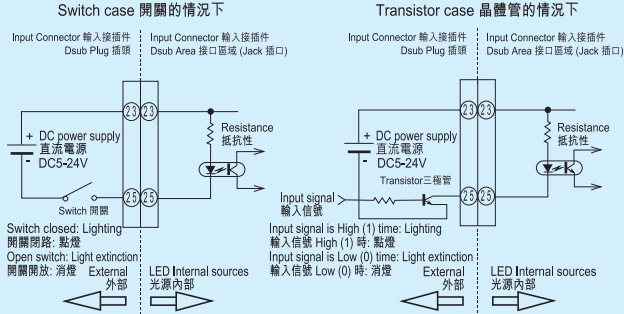
LA-HDF5010/LA-HDF5010RL/LA-HDF7010RL Remote Function 程控功能說明

(The method of connecting external control example)

(外部控制的接續方法 例子)

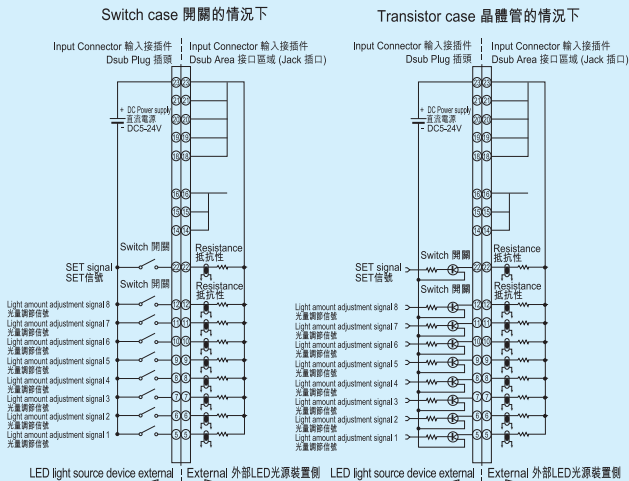
1. LED lighting ON/OFF function LED開關功能

There are LED lights ON/OFF function. MANUAL/REMOTE switch to REMOTE side in function. INPUT connector (REMOTE IN) No. 25 pin supply power to GND(-) short circuit turn on light, open to turn off the light. 有點亮，關閉LED燈的功能，MANUAL/REMOTE 切換到REMOTE側生效。INPUT 通過(REMOTE IN)往25號銷供續電源至GND(-)短路為點燈，打開為熄燈。



2. Light intensity adjustment 光量調節 (REMOTE程控) (Parallel Communications并聯通信)

Fixed 1-8, then settable. When input pulse signal more than 1msec after internal 2msec 固定1-8，然後設定。當間隔2毫秒後，輸入脈衝信號超過1毫秒。



※ Please note that when connecting the power supply grid drive, then the wrong power supply may cause damaged 接續的時候請注意供電的極性，錯了的話可能引起電源破壞

※ Please use the external power supply DC5V-DC24V exceed this range, it may cause the LED light source device unstable, broken phenomenon 外部供給電源請使用DC+5V-DC+24V超過此範圍的話，可能會使LED光源裝置不穩定，破壞的現象

※ Please use the external power supply more than 100mA output current capacity 外部供給電源請使用輸出電流量100mA以上

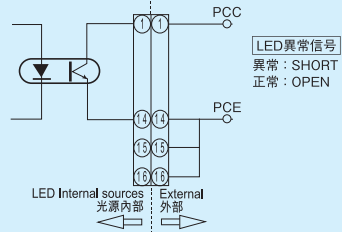
Enter the condition statement of the amount of light 輸入狀況光量狀況表 0 : Short circuit 短路 1 : Open 開放

No.5 pin銷 (Below)	No.6 pin銷	No.7 pin銷	No.8 pin銷	No.9 pin銷	No.10 pin銷	No.11 pin銷	No.12 pin銷 (The top)	INPUT 輸入 Designation 標誌	光量狀況 (The amount of light condition)
0	0	0	0	0	0	0	0		The least amount of light 光量最少(0)
1	0	0	0	0	0	0	0		
0	1	0	0	0	0	0	0		
0	0	1	0	0	0	0	0		
1	1	0	0	0	0	0	0		
0	0	0	1	0	0	0	0		
1	0	0	1	0	0	0	0		
0	1	0	1	0	0	0	0		
1	1	0	1	0	0	0	0		
0	0	1	1	0	0	0	0		
1	0	1	1	0	0	0	0		
0	1	1	1	0	0	0	0		
1	1	1	1	0	0	0	0		
:	:	:	:	:	:	:	:		
1	1	1	1	1	1	1	1		The maximum amount of light 光量最大

Attention 注意 2,3,13,17,24, pin number is multi-purpose pin. Please do not connect the sound with absolute cause failure 2,3,13,17,24, 號銷是多用的銷。用聲請絕對別連接會產生故障

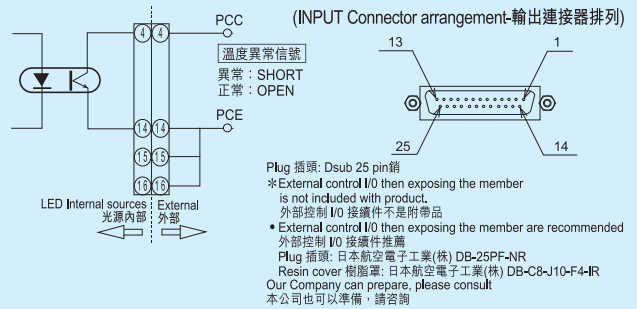
3. LED Alarm output 異常輸出

LED when a disconnection of this exception, then the input jack (REMOTE) No. 1 pin, the 14th pin SHORT room output. Front LED (orange) indicator it will be bright. LED output abnormal case, discontinue use, find the manufacturer for repair. LED 斷線等此一異常的時候，在輸入接插口(遙控)的1號銷，14號銷間SHORT輸出。前面LED (橙)指示燈也會亮。LED異常輸出的情況下，找生產商修理。



4. Temperature alarm output 溫度異常輸出

When the temperature will be to much high, then No.4 pin and No.15 pin will be SHORT as a signal and then, the red indicator will be ON and LED light OFF. 當溫度至太高時，4號銷和15號銷將出現短期的一個信號，然後紅色指示燈亮起和LED燈熄滅。



※ External control cables Shield, please use the following 2m, connecting cable length, then the impact of signal noise vulnerable, circumstances beyond our control the amount of light may occur 外部控制的連接線Shield請使用2m以下，接續線長的話容易受信號噪音的影響，可能出現無法控制光量的情況

5. RS232C LAN區域網絡 (Serial communication串聯通信)

(1) Communication Specification 通信規格

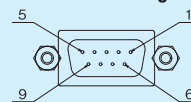
Communication 通信	RS232C
Baud Rate 波特率	9600bps
Stop 停止bit	1 bit

※STX and ETX Data transceiver outside all capital-byte word processing STX和ETX以外的收發信號數據全部用大寫半角文字處理

Connector Specification 連接器規格

• RS232C Connector 連接器

(RS232C Connector arrangement-連接器排列)



Connector pin 連接器銷	Signal content 信號內容
1	CD
2	RXD
3	TXD
4	SD
5	GND
6	DER
7	RTS
8	CTS
9	-

Plug 插頭: Dsub 9 pin銷
 ※External control I/O then exposing the member is not included with product. 外部控制 I/O 接續件不是附帶品
 ※Please use the straight line connecting the case PC 和PC連接的情況下交代集線連接的時候請使用直線

• LAN區域網絡(Lantronix社製X-PORT)

Left左LED No Lighting 無燈-HUB Not connected 不連接
 Green Light :100BASE Lighting connection 綠燈:100BASE基礎-T連接時,點燈連接
 Orange Light :10BASE Lighting connection 橙燈:10BASE基礎-T連接時,點燈連接



※ And the case of PC connection cable set account when using the straight-line 和PC連接的情況下交代集線連接的時候請使用直線

Signal Name 信號名稱	Direct 直接	Contact 聯絡	Primary Function 主要功能
TX+	Output 輸出	1	Differential Ethernet transmit data +微分以網絡傳輸數據+
TX-	Output 輸出	2	Differential Ethernet transmit data +微分以網絡傳輸數據+
FX+	In 入	3	Differential Ethernet transmit data +微分以網絡傳輸數據+
FX-	In 入	4	Differential Ethernet transmit data +微分以網絡傳輸數據+
Not used 不用		5	Terminated 終止
Not used 不用		6	Terminated 終止
Not used 不用		7	Terminated 終止
Not used 不用		8	Terminated 終止
SHIELD 掩護			Chassis ground 機箱接地

The default settings 初期設定值

Item 項目	Setting 設定值	Remarks 備考
Communication consultation 通信協議 TCP/UDP	TCP	When the Dutch factory 工場出時
Reticulum子網掩碼	192.168.0.101	When the Dutch factory 工場出時
IP Address地址	255.255.255.0	When the Dutch factory 工場出時
Network Jour 網關	0.0.0.0	When the Dutch factory 工場出時
End opening 端口	10001	When the Dutch factory 工場出時

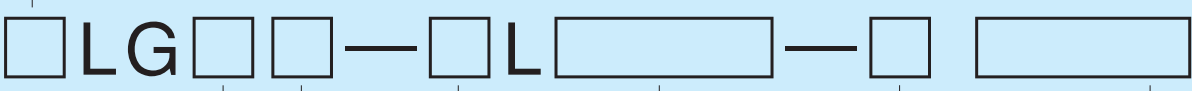
※ For the PC, you must make the initial settings on the PC side 為了在PC操作,必須在PC操作初期設定
 ※ Please refer to the initial setting (Ethernet import hand along the book) 初期設定請參照(Ethernet導入手冊)
 ※ Refer to the instruction (instruction program) 指令請參照(指令程序)

Light Guide 光導

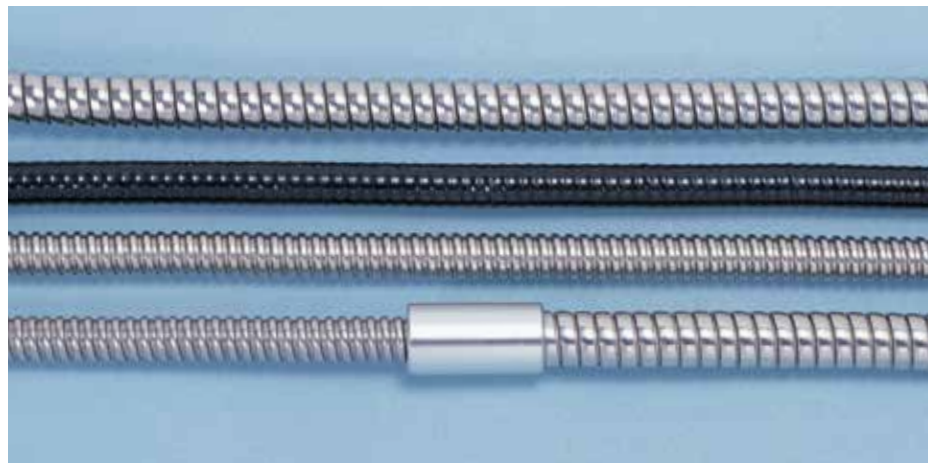
We design, engineer and manufacture special configurations of light guides open customer request, within 20 days.
特別定做從設計到生產為一貫性，20日即可交貨。

Come to light, the guide light, the correct irradiation light guide.
拿出光線，導光線，正確照射的光導

Part Number 型號編碼的說明

Fiber material 光導的材料性質 Q quartz(UV) Q 石英(UV) P plastics P 塑料 □ multi-constituent glass 無 多成份玻璃 R Liquid R 液體 FB for Feed-Back Light Source FB 帶監視光導		例 (Example) : LGC1-8L1000-R50 * Glass fiber * 使用玻璃光纖 * Flexible SUS tube * 軟SUS套管 * Fiber bundle diameter 8mm * 光纖光束直徑8mm * Overall length of fiber 1000mm * 光纖全長1000mm * Ring type diameter 50mm * 環形內(直)徑50mm	
			
Cover material 外套管 A self support SUS tube A 半固定型SUS套管 B flexible SUS tube with PVC cladding B 軟式SUS套管，外套有氯乙烯膜套管 C flexible SUS tube C 軟式SUS套管 D self-support composite A and C D 半固定型SUS套管與軟式SUS套管組合使用		Light out figure 投光部形狀 R Ring type 環形線條型狹縫的尺寸 LS Line type 線條狀 LR } Back light type 面狀 B Back light type 塑膠外殼面狀 PB Non-mark straight type 直線型 無	
Branch (es)分支數目 Effective diameter光導 at the end of light guide 出光頭光導的直徑		Overall length光導長度	
		Right inside diameter 中圓環內徑 Dimension尺寸: mm毫米 Line type slit length 線條狀光種長度	

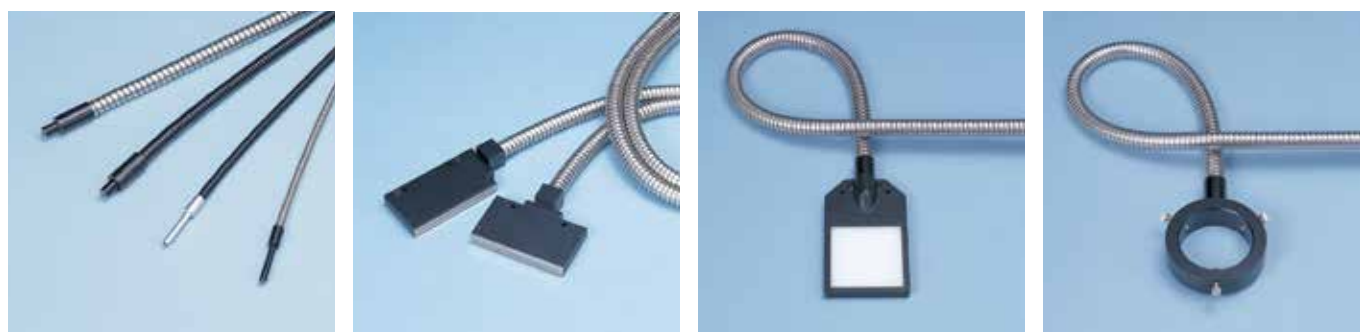
Cover Material 外套管



Acceptance angle (for reference only)
彎曲度(謹供參考)

- A** Outside diameter Φ 12.5 : R50 Φ 16 : R55
外徑
- B** Outside diameter Φ 7 : R45 Φ 10 : R55 Φ 17 : R65
外徑
- C** Outside diameter Φ 6 : R45 Φ 10 : R50 Φ 16 : R60
外徑
- D** Composite A & C together A型及C型配合使用

Light Out Figure 投光部形狀



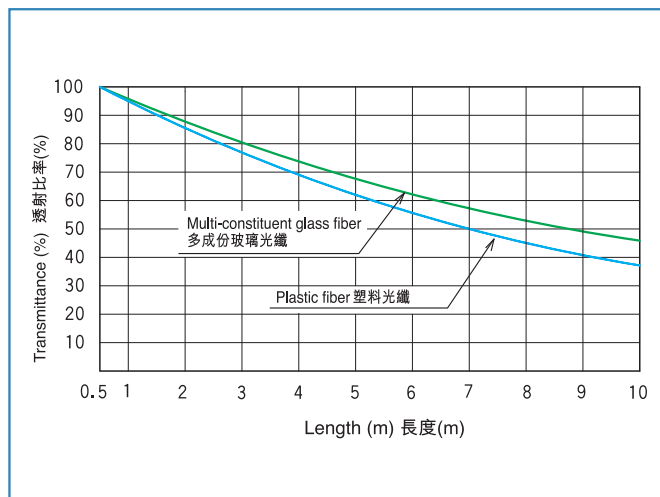
● In 2 branches or more, random material select used.
2分支以上時，光導分支時為隨意抽取。

● Robot type available, please ask.
若需用可移動式光導請諮詢。

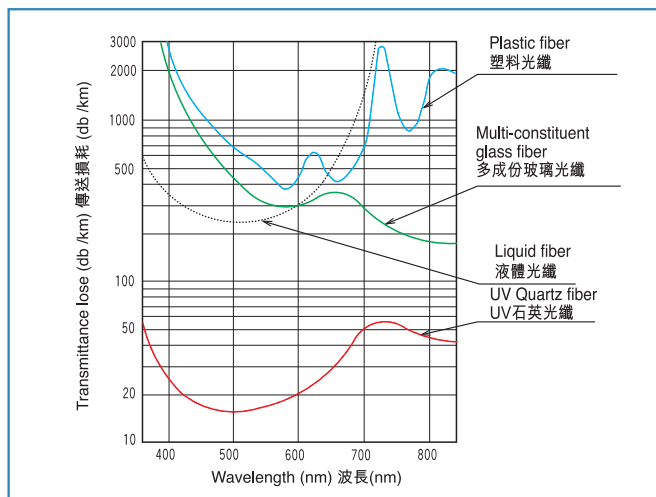
Specification 規格

Model No. 型號	LG	PLG	QLG	RLG
Fiber 光纖	Multi-constituent glass fiber 多成份玻璃	Plastic fiber 塑料	UV quartz fiber UV石英	Liquid fiber 液體
Single fiber diameter 單纖維直徑	50 μ m	250 μ m	200 μ m	5mm
Reflective index of core material 纖維芯材彎曲率	1.62	1.49	純石英	透明液體
Reflective index of cladding material 覆蓋材料彎曲率	1.51	1.40	加有氟的石英	塑料塑膠
Number aperture (N.A) 數值孔徑(N.A)	0.57	0.50	0.22	0.47
Acceptance angle 受射角度	70 \angle	60 \angle	25.9 \angle	56 \angle
Condition of temp. for operation 使用溫度範圍	-30 $^{\circ}$ C~+350 $^{\circ}$ C	-40 $^{\circ}$ C~+80 $^{\circ}$ C	-20 $^{\circ}$ C~+80 $^{\circ}$ C	-15 $^{\circ}$ C~+70 $^{\circ}$ C
	※ Condition of temp. for operation: heat-resistant temp. of optic fiber material. ※ 為原材料的耐熱溫度，不同與光導的耐熱溫度			

● Percent Transmittance of Light Guide 光導的透射比率



● Lose Transmittance of Light Guide 光導傳送損耗波長特色



● Multi-constituent glass fiber 多成份玻璃光纖

Material: Well-selected glass fiber standard glass fiber for versatile use. (Heat-resistant and moisture-proof)
為採用可見光透射率強的光學玻璃原材料的，直徑為50 μ m的光纖纖維。耐熱性及耐濕性強，在一般的光導中最常採用。

● Plastic fiber 塑料光纖

Core: High purity, poly methacrylic plastics excellent transmittance. Durable and at a reasonable cost.
為芯材料採用可見光穿射率高的高純度聚甲基丙烯酸甲酯樹脂的光纖。耐彎曲、不易斷線但耐熱性差。價廉物美為其特長。

● UV Quartz fiber UV 石英光纖

Best quality quartz fiber developed for UV transmittance suitable for UV light source.
為採用為穿射紫外線所開發的最高級石英纖維，用於紫外線光源最理想的光導。

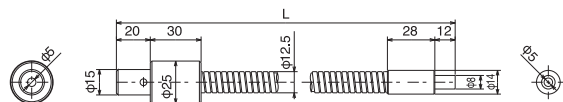
● Liquid fiber 液體光纖

Special chemical fill in plastic tube, non toxicity, non conflagrate fiber, used quartz material seal up for keeping available for UV lighting transmittance.
為塑料套管內封入芯材的透射率強，無毒無可燃性液體的光纖。因兩端是用石英玻璃封住的，也可用做透射紫外線的光纖。

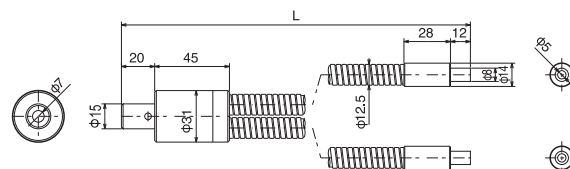
* Black parts is standard, Blue parts please inquiry. 黑字為標準庫存，藍字需諮詢。

Self-Back Supporting Bifurcated Optic Series 半固定分支型系列

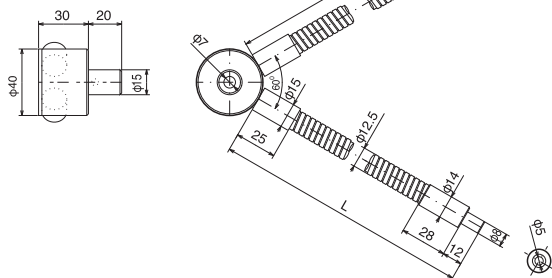
LGA1-5L500/1000N
PLGA1-5L500N



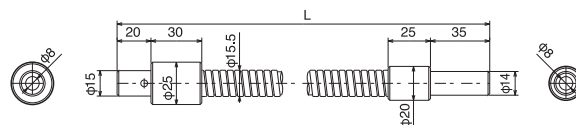
LGA2-5L500/1000N
PLGA2-5L500N



LGA2-5L500VN



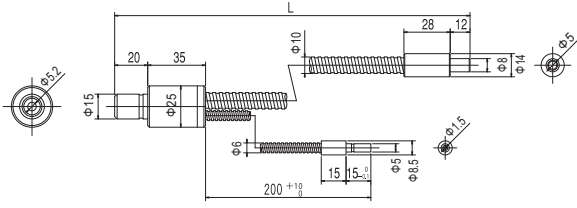
LGA1-8L500N



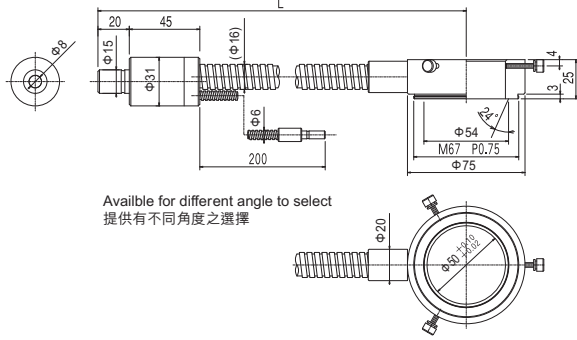
* Black parts is standard, Blue parts please inquiry.
 黑字為標準庫存，藍字需諮詢。

Feed Back Light Composite Flexible Bifurcated Optic Series 帶反饋的光源裝置專用光導

FB-LGB (C) 1-5L1000/1500/2000

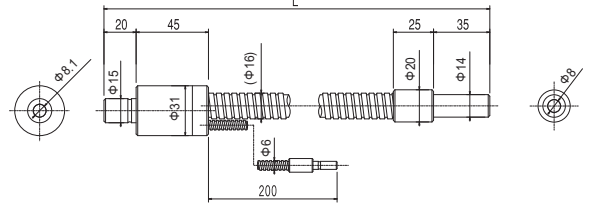


FB-LGB (C) 1-8L1000-R50

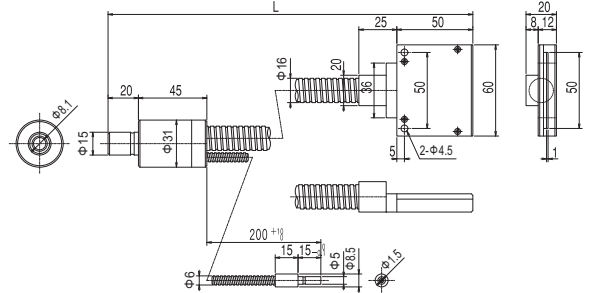


Purpose subject to different, special design model.
 針對不同之產品，而特製之型號。

FB-LGB (C) 1-8L1000/2000

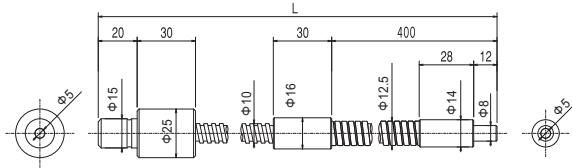


FB-LGB (C) 1-8L1000-LS50X1.0

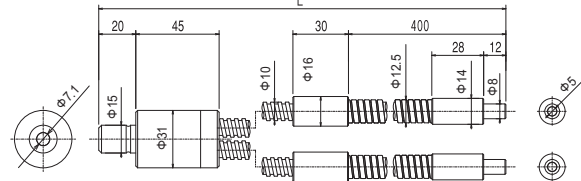


Composite Flexible Bifurcated Optic Series 組合軟式分支型系列

LGD1-5L1000/2000



LGD2-5L1000/2000

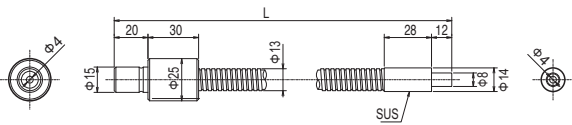


Self support sus tube flexible sus tube
 半固定型SUS及軟式SUS套管

Inside diameter $\Phi 5$
 出光口內徑 $\Phi 5$

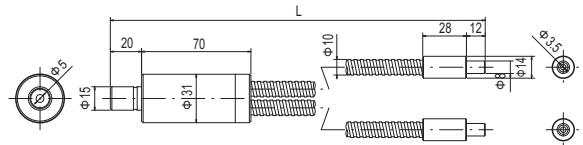
UV Quartz Bifurcated Fiber Optic Series UV石英分支型系列

QLGC1-4(5)L1000/1500/2000



4L: Receive side diameter $\Phi 4$, inside diameter $\Phi 4$ 4L: 受光口內徑 $\Phi 4$, 出光口內徑 $\Phi 4$
 5L: Receive side diameter $\Phi 5$, inside diameter $\Phi 5$ 5L: 受光口內徑 $\Phi 5$, 出光口內徑 $\Phi 5$

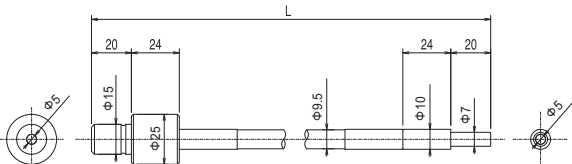
QLGC2-3.5L1000/1500/2000



Receive side diameter $\Phi 5$, inside diameter $\Phi 3.5$
 受光口內徑 $\Phi 5$, 出光口內徑 $\Phi 3.5$

UV Liquid Bifurcated Fiber Optic Series UV液體透射型系列

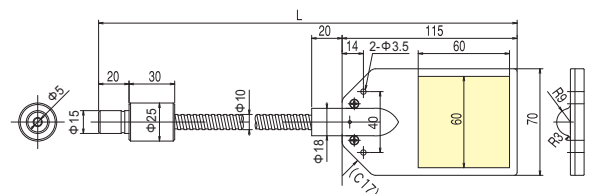
RLGB1-5L1000



Receive side diameter $\Phi 5$, inside diameter $\Phi 5$
 受光口內徑 $\Phi 5$, 出光口內徑 $\Phi 5$

Backlight Fiber Optic (Standard) 面狀型系列

LGB (C) 1-5L1000-PB60X60
 LGB (C) 1-8L1000-PB60X60

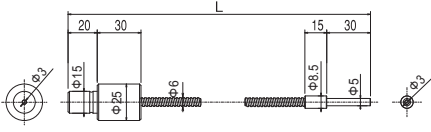


Receive side diameter 5L: $\Phi 5$ 8L: $\Phi 8$
 受光口內徑 5L: $\Phi 5$ 8L: $\Phi 8$

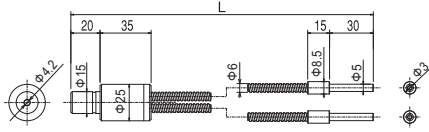
* Black parts is standard, Blue parts please inquiry.
黑字為標準庫存，藍字需咨詢。

Flexible (SUSTube) And PVC Cladding Bifurcated Fiber Optic Series 軟式分支型系列

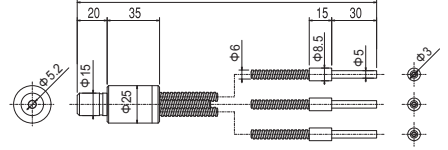
LGB (C) 1-3L1000/2000



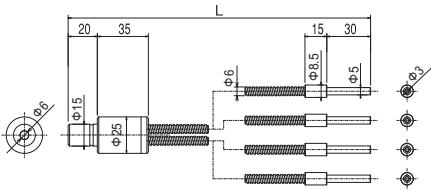
LGB (C) 2-3L1000/2000



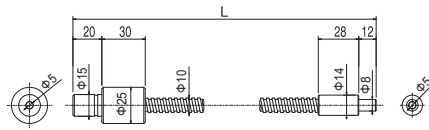
LGB (C) 3-3L1000/2000



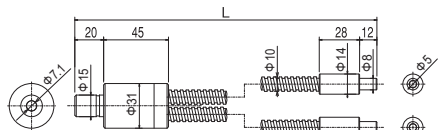
LGB (C) 4-3L1000/2000



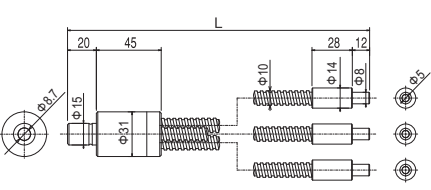
LGB (C) 1-5L500/1000/1500/2000/3000
PLGB (C) 1-5L500/1000/1500/2000



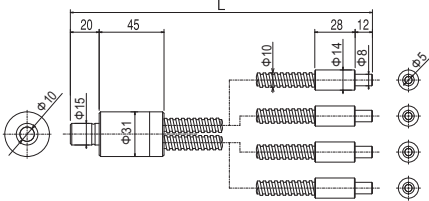
LGB (C) 2-5L500/1000/1500/2000
PLGB (C) 2-5L500/1000/1500/2000



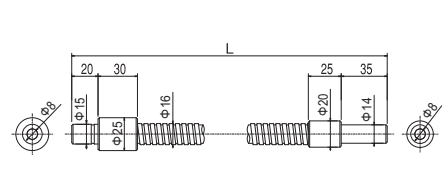
LGB (C) 3-4L1000/2000
PLGB (C) 3-5L1000



LGB (C) 4-4L1000/2000
LGB (C) 4-5L1000
PLGB (C) 4-5L1000

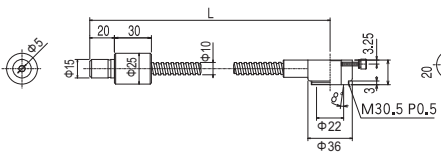


LGB (C) 1-8L1000/2000

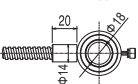


Ring Light Guide Fiber Optic Series 環形系列

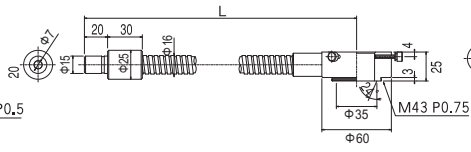
LGB (C) 1-5L1000-R18



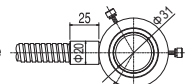
Can be choose the angle
照射角度可選定



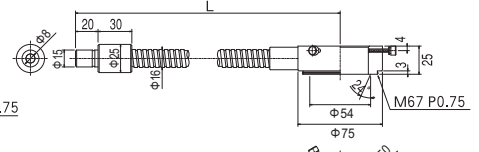
LGB (C) 1-7L1000-R31



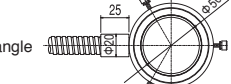
Can be choose the angle
照射角度可選定



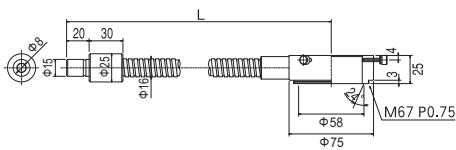
LGB (C) 1-8L1000-R50



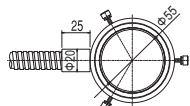
Can be choose the angle
照射角度可選定



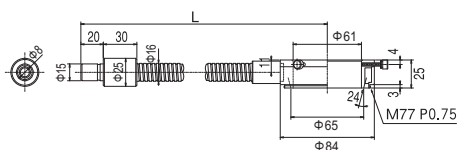
LGB (C) 1-8L1000-R55



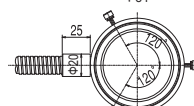
Can be choose the angle
照射角度可選定



LGB (C) 1-8L1000-R61



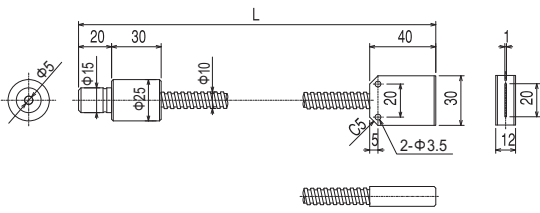
Can be choose the angle
照射角度可選定



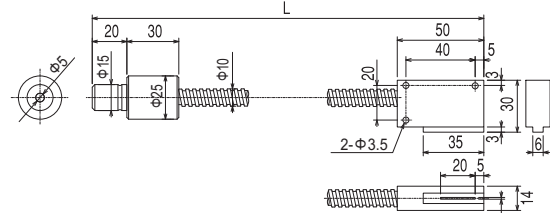
* Black parts is standard, Blue parts please inquiry
 黑字為標準庫存，藍字需諮詢。

Line Type Fiber Optic Series 線狀系列

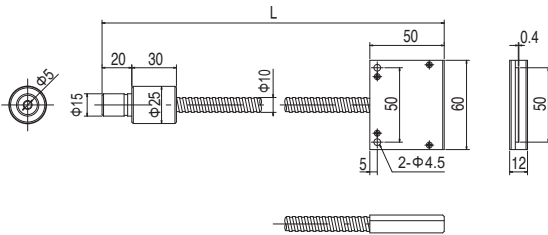
LGB (C) 1-5L1000-LS20X1.0



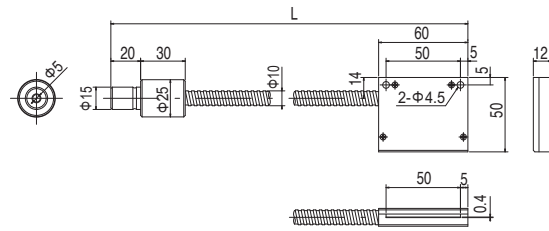
LGB (C) 1-5L1000-LR20X1.0



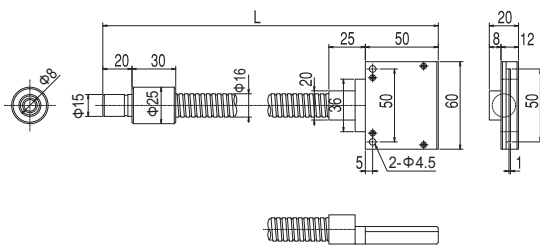
LGB (C) 1-5L1000-LS50X0.4



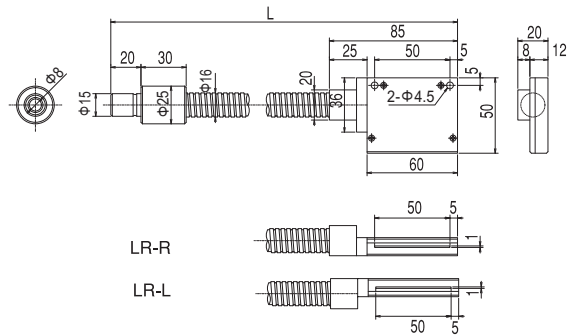
LGB (C) 1-5L1000-LR50X0.4



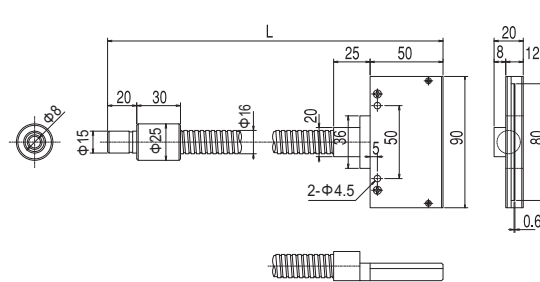
LGB (C) 1-8L1000-LS50X1.0



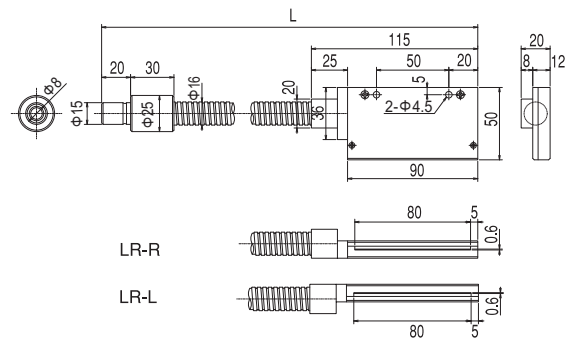
LGB (C) 1-8L1000-LR-R50X1.0
 LGB (C) 1-8L1000-LR-L50X1.0



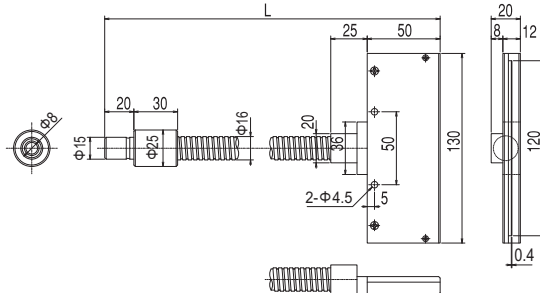
LGB (C) 1-8L1000-LS80X0.6



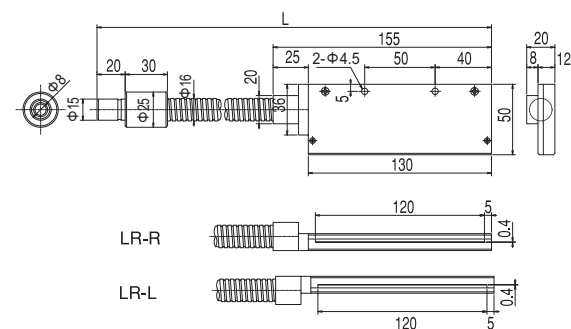
LGB (C) 1-8L1000-LR-R80X0.6
 LGB (C) 1-8L1000-LR-L80X0.6



LGB (C) 1-8L1000-LS120X0.4



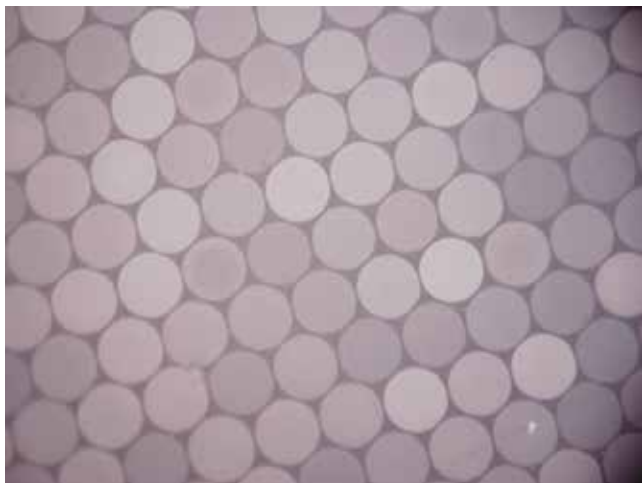
LGB (C) 1-8L1000-LR-R120X0.4
 LGB (C) 1-8L1000-LR-L120X0.4



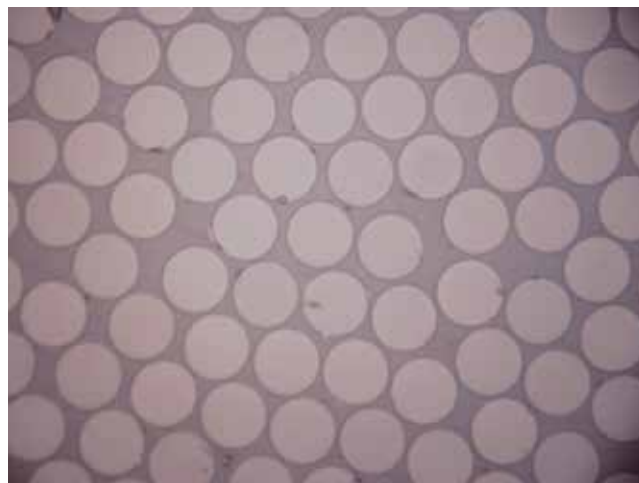
Cross-Section Heat Welding Light Guide 橫切面熔接型光纖

No using adhesive, the fiber for the fiber and fiber self fixed.
This fiber-optic special order products, please contact.
不使用膠粘劑，為光纖和光纖自我固定的光纖，此光纖為特殊訂購產品請諮詢。

Cross-section Photo 橫切面照片



Heat Welding Type 熔接型

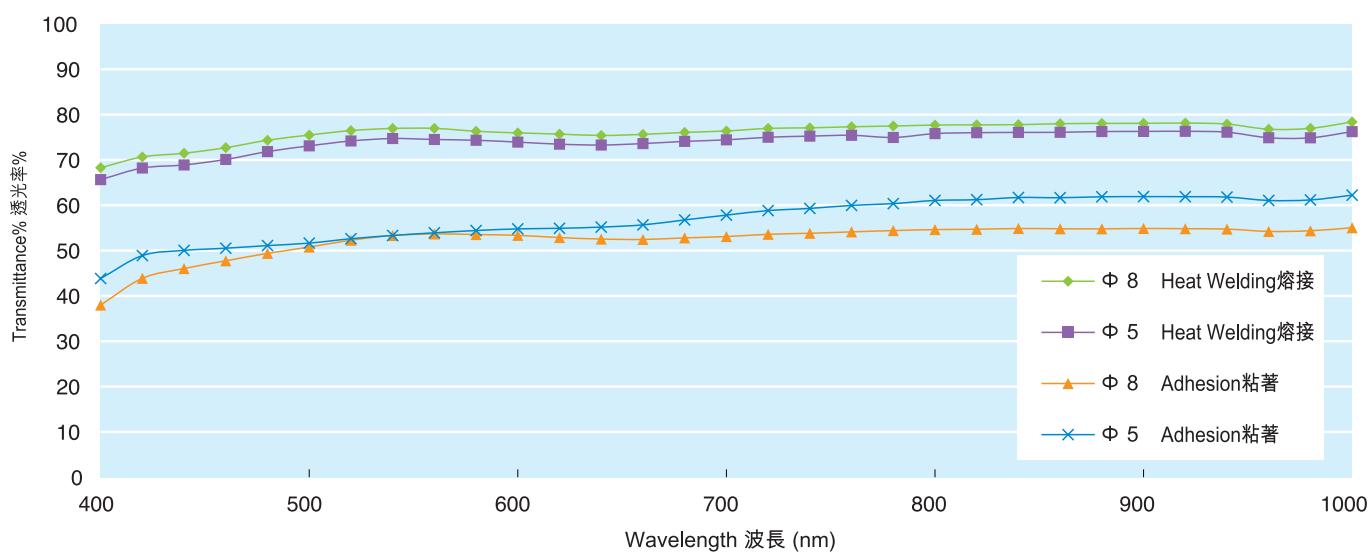


Adhesion Type 粘著型

Features 特長

- Because of no using adhesive, increase heat resistance.
由於不使用膠粘劑，增強了耐熱性。
- The Core area is expanding, such that under conditions of the same diameter, increase the total amount of absorbed light.
核心面積的擴大，使得在同樣直徑的條件下增加總的吸收光量。
- Due to the absorption of the increase in the amount of light, so that the radiation light amount to the maximum increase of 25%.
由於吸收光量的增加，使得放射光量也能最大增加25%。

透光率(參考數據) Transmittance (for reference only)



※ Applicable for multi-component glass fiber and plastic optical fiber.
UV quartz fiber and liquid fiber is not applicable.
可適用的為多成份玻璃光纖和塑料光纖。UV石英光纖和液體光纖不可適用。

Accessory 附件 (For visible light 適用於可見光)

Condenser Lenses 集光透鏡

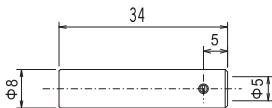
With the help of a condenser lens, light from the end of the light guide diffuse at an angle of 70° . Especially, excellent for high intensity spotlight illumination. Various types of condenser lenses are available according to the customer's applications.

最適用於從出光頭所射出的光線以 70° 進行擴散，為在需要光點更集中，高亮度的照明時，使光點集中取得出色的照明效果的時刻。根據用途不同，備有各種類型可供選擇。



Various Type of Condenser Lenses 各種集光透鏡

SH-F8G



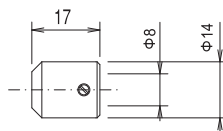
Condenser lens for small diameter

Lens structure 1 piece coated lens
Effective dia. of lens $\Phi 6\text{mm}$
Internal dia. of mounting $\Phi 5\text{mm}$ ($\Phi 3$ light guide only)

小型集光透鏡

- 透鏡構成 1片塗有防反射膜
- 有效徑 $\Phi 6\text{mm}$
- 安裝用內徑 $\Phi 5\text{mm}$ (為光纖束 $\Phi 3$ 光導專用)

SH-F8B



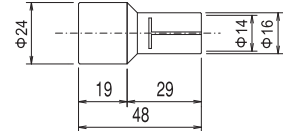
Mini-condenser lens

Lens structure 1 piece coated lens
Effective dia. of lens $\Phi 7\text{mm}$
Internal dia. of mounting $\Phi 8\text{mm}$ ($\Phi 5$ light guide only)

小型集光透鏡

- 透鏡構成 1片塗有防反射膜
- 有效徑 $\Phi 7\text{mm}$
- 安裝用內徑 $\Phi 8\text{mm}$ (為光纖束 $\Phi 5$ 光導專用)

SH-F16



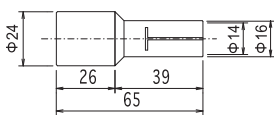
Standard condenser lens

Lens structure 1 piece coated lens
Effective dia. of lens $\Phi 16\text{mm} / \Phi 22.5\text{mm}$
Internal dia. of mounting $\Phi 14\text{mm}$

標準型集光透鏡

- 透鏡構成 1片塗有防反射膜
- 有效徑 $\Phi 16\text{mm} / \Phi 22.5\text{mm}$
- 安裝用內徑 $\Phi 14\text{mm}$

SH-F30



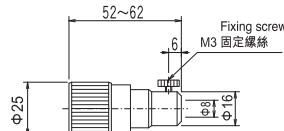
Standard high efficiency condenser lens

Lens structure 1 piece coated lens
Effective dia. of lens $\Phi 19\text{mm} / \Phi 22.5\text{mm}$
Internal dia. of mounting $\Phi 14\text{mm}$

標準型高集光透鏡

- 透鏡構成 1片塗有防反射膜
- 有效徑 $\Phi 19\text{mm} / \Phi 22.5\text{mm}$
- 安裝用內徑 $\Phi 14\text{mm}$

SHZ-1



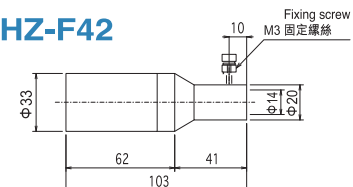
Zoom condenser lens

Lens structure 2 group 3 pieces coated lens
Effective dia. of lens $\Phi 18\text{mm} / \Phi 22.5\text{mm}$
Internal dia. of mounting $\Phi 8\text{mm}$ ($\Phi 5$ mm light guide only)
※ Tailor made when use $\Phi 8$ mm light guide

標準型高集光透鏡

- 透鏡構成 2組 3片塗有防反射膜
- 有效徑 $\Phi 18\text{mm} / \Phi 22.5\text{mm}$
- 安裝用內徑 $\Phi 8\text{mm}$ (為光纖束 $\Phi 5$ 光導專用)
- ※ 光纖束 $\Phi 8$ 光導專用時為特製

SHZ-F42



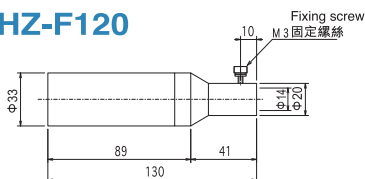
High intensity illumination condenser lens(zoom)

Lens structure 2 group, 3 piece coated lens
Effective dia. of lens $\Phi 28.5\text{mm} / \Phi 30.5\text{mm}$
Internal dia. of mounting $\Phi 14\text{mm}$ ($\Phi 5$ mm light guide only)
※ Tailor made when use $\Phi 8$ mm light guide

高光度集光透鏡

- 透鏡構成 2組 3片塗有防反射膜
- 有效徑 $\Phi 28.5\text{mm} / \Phi 30.5\text{mm}$
- 安裝用內徑 $\Phi 14\text{mm}$ (為光纖束 $\Phi 5$ 光導專用)
- ※ 光纖束 $\Phi 8$ 光導專用時為特製

SHZ-F120



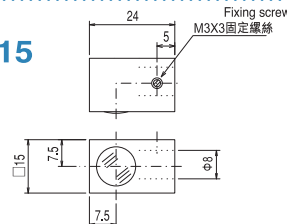
Standard high efficiency condenser lens

Lens structure 3 group 4 piece coated lens
Effective dia. of lens $\Phi 28.5\text{mm} / \Phi 30.5\text{mm}$
Internal dia. of mounting $\Phi 14\text{mm}$ ($\Phi 5$ mm light guide only)
※ Tailor made when use $\Phi 8$ mm light guide

高集光透鏡

- 透鏡構成 3組 4片塗有防反射膜
- 有效徑 $\Phi 28.5\text{mm} / \Phi 30.5\text{mm}$
- 安裝用內徑 $\Phi 14\text{mm}$ (為光纖束 $\Phi 5$ 光導專用)
- ※ 光纖束 $\Phi 8$ 光導專用時為特製

SHM-F15



Condenser lens (light direction perpendicular to guide axis)

Lens structure 1 piece of lens + mirror plate
Effective dia. of lens $\Phi 9.5\text{mm}$
Internal dia. of mounting $\Phi 8\text{mm}$ ($\Phi 5$ mm light guide only)

直角射光透鏡

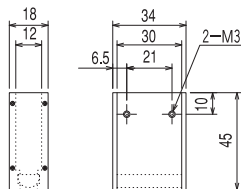
- 透鏡構成 1片+平面反射鏡
- 有效徑 $\Phi 9.5\text{mm}$
- 安裝用內徑 $\Phi 8\text{mm}$ (為光纖束 $\Phi 5$ 光導專用)

Line Type Condenser Lenses 集光透鏡

SHL-W20F8 (LS)

Lens structure 1 piece of lens
 Effective dia. of lens $\Phi 8\text{mm} \times 20\text{mm}$
 Internal dia. of mounting $\Phi 12\text{mm} \times 30\text{mm}$

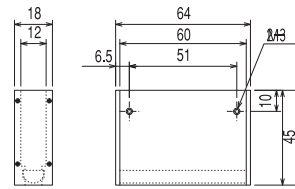
- 透鏡構成 1片半圓柱型透鏡
- 有效徑 $\Phi 8\text{mm} \times 20\text{mm}$
- 安裝用內徑 $\Phi 12\text{mm} \times 30\text{mm}$



SHL-W50F8 (LS) SHLR-W50F8 (LR•LL)

Lens structure 1 piece of lens
 Effective dia. of lens $\Phi 8\text{mm} \times 50\text{mm}$
 Internal dia. of mounting $\Phi 12\text{mm} \times 60\text{mm}$

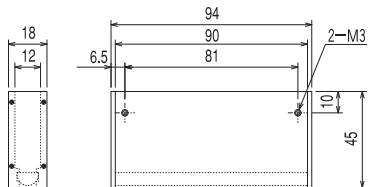
- 透鏡構成 1片半圓柱型透鏡
- 有效徑 $\Phi 8\text{mm} \times 50\text{mm}$
- 安裝用內徑 $\Phi 12\text{mm} \times 60\text{mm}$



SHL-W80F8 (LS) SHLR-W80F8 (LR•LL)

Lens structure 1 piece of lens
 Effective dia. of lens $\Phi 8\text{mm} \times 80\text{mm}$
 Internal dia. of mounting $\Phi 12\text{mm} \times 90\text{mm}$

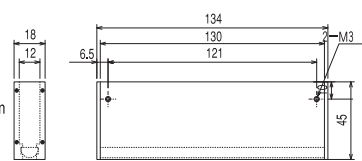
- 透鏡構成 1片半圓柱型透鏡
- 有效徑 $\Phi 8\text{mm} \times 80\text{mm}$
- 安裝用內徑 $\Phi 12\text{mm} \times 90\text{mm}$



SHL-W120F8 (LS) SHLR-W120F8 (LR•LL)

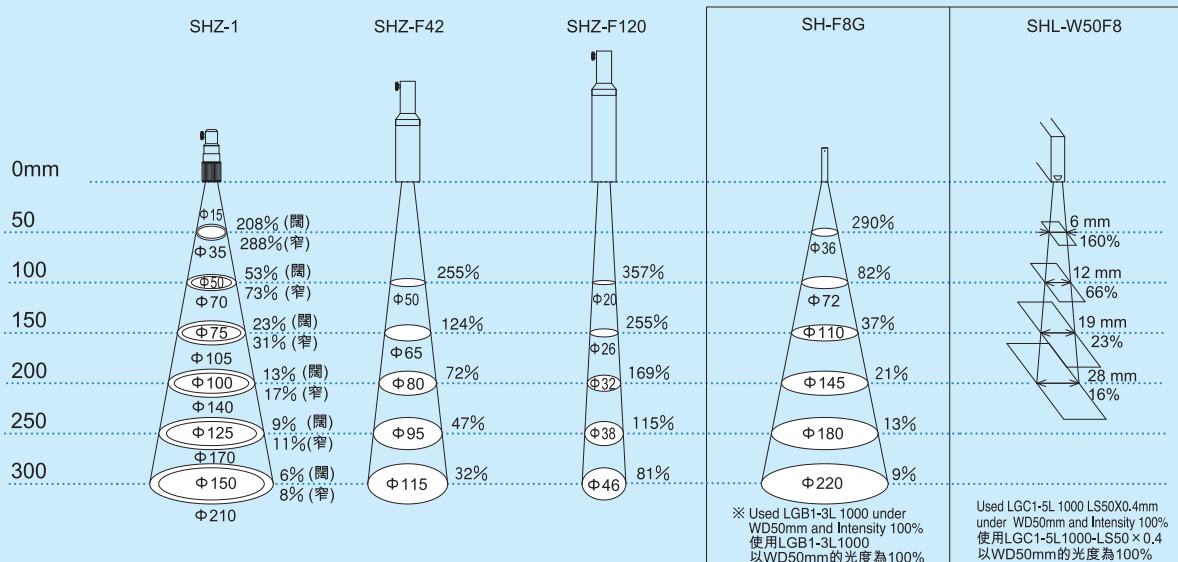
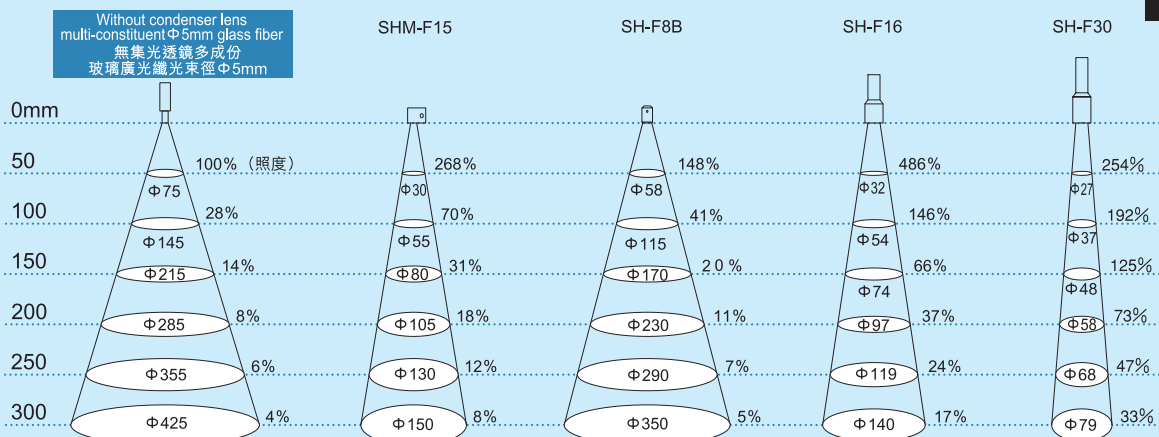
Lens structure 1 piece of lens
 Effective dia. of lens $\Phi 8\text{mm} \times 130\text{mm}$
 Internal dia. of mounting $\Phi 12\text{mm} \times 120\text{mm}$

- 透鏡構成 1片半圓柱型透鏡
- 有效徑 $\Phi 8\text{mm} \times 120\text{mm}$
- 安裝用內徑 $\Phi 12\text{mm} \times 130\text{mm}$



Illumination characteristics of condenser lenses ※ Illumination characteristics are dependent upon the light guide and condenser mounting position 透鏡的投射特性 ※ 投射特性因集光透鏡安裝在光導上的位置不同有所變化

參考值
Reference Data





Light guide adaptor 光導互換接頭

Customer use another brand light guide, can be convert as our light guide adaptor, more save money to purchase new.

使用其他公司光導時，應配合本公司所制的互換接頭，可節省重新購買費用。

Model 型號	Applications 用途
Standard diagram LR-1520HSP 標準接頭LR-1520HSP	For all HAYASHI light guide 可用於HAYASHI所有的光導
Exchange light guide adaptor MLC-1517 光導互換接頭MLC-1517	Fixed for company "M" light guide join with MLC-1517 本公司光源與M公司光導相接加用MLC-1517
Exchange light guide adaptor HLC-1511 光導互換接頭HLC-1511	Fixed for company "H" light guide join with HLC-1511 本公司光源與M公司光導相接加用HLC-1511
Exchange adaptor MLR-1537 互換光源接頭MLR-1537	Fixed for company "M" light guide join with MLR-1537 本公司光源與M公司光導相接加用MLR-1537
Exchange adaptor HLR-1531 互換光源接頭HLR-1531	Fixed for company "H" light guide join with HLR-1531 本公司光源與H公司光導相接換用HLR-1531
Exchange adaptor SLR-1330 互換光源接頭SLR-1330	Fixed for company "S" light guide join with SLR-1330 本公司光源與S公司光導相接換用SLR-1330

Remark : Any shape and style light guide adaptor are available.
備註：設有不同形狀及款式的光導互換接頭，以供選擇。

Various kinds of connecting adaptor 各種附件

Model 型號	Applications 用途
Light guide connecting adaptor 光導連接套管 LC-1508	Used when connecting two light guides for extension. Results in 1/2 value of the original lamp intensity. (Adaptable light guides) 用於之根光導相接延長使用時 光亮減為1/2
Condenser lens attachment 集光透鏡固定套管 SK-16	Used when fixing the condenser lens tightly to the light guide by screws. (Adaptable condenser lens). SH-F16, SH-F30 用於將集光透鏡固定在光導上時。 所使用透鏡 SH-F16、SH-F30
Light guide arm attachment 光導固定架 A-14-□	Used when fixing the ring type light guide. 用於分支光導的固定標準型 (A-14-3)套有 Standard 標準型(A-14-3) ※ Condenser lens use fixed available diameter $\Phi 16$ 集光透鏡使用時安裝孔徑為 $\Phi 16$
Light guide arm attachment 光導固定架 A-20-□	Used when fixing the ring type light guide. 用於環狀光導的固定

Shutter Unit (Options) 開閉器單元(顧客自選)

Model 型號	Applications 用途	Operation power 驅動用電源
USW-2E24V	DC24V Rotary solenoid DC24V旋轉式電磁線圈方式	DC24V 0.5A Over DC24V 0.5A以上
SU-2E12V	DC12V Rotary solenoid (with mounting bracket) DC12V旋轉式電磁線圈方式(帶有安裝用的角鐵)	DC12V 1A Over DC12V 1A以上
SU-2E24V	DC24V Rotary solenoid (with mounting bracket) DC24V旋轉式電磁線圈方式(帶有安裝用的角鐵)	DC24V 0.5A Over DC24V 0.5A以上

※ External power (12V/24V) for shutter unit. 驅動開閉器用的電源(12V / 24V)是由外部提供的。
※ Internal power used in LA-150TX with SU-2E-12V in LA-150TX 選擇SU-2E12V時驅動用電源為內藏。

Power component specification 電磁線圈規格	Specifications 規格
Voltage / Watt 電壓/瓦特	DC24V / 0.25A
Shutter unit power circuit 開閉器用電源回路	Power Component fixed under open or close with rotary solenoid 電磁線圈用電源零件只在選定開閉器時才被裝入。

※ Shutter open or close under non power setting is subject to customer choose before delivery
不接電源時的開閉器的遠近狀態的「時常開的狀態」:光照射、「時常閉的狀態」:遮光，是在出廠時由顧客指定進行調整。

Filters 濾片

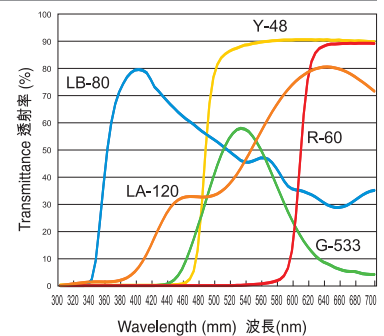


Filter type number 型號	Filter type number 類型	
LB-80 22.5mm LA-120 22.5mm Y-48 22.5mm G-533 22.5mm R-60 22.5mm KF-20 22.5mm PL-20 22.5mm	color temp. conversion filter (light blue) 改變色溫濾色片(淺藍色) color temp. conversion filter (Umbra) 改變色溫濾色片(棕色) sharp cut filter (yellow) 銳截止濾色片(黃色) green filter 綠濾色片 sharp cut filter (red) 銳截止濾色片(紅色) diffusion filter 漫射濾片 polarizer 偏振光濾片	SH-F16, SH-F30, SHZ-1, SHZ-2 "Lamp House" inside fixed available 可裝在SH-F30, SHZ-1, SHZ-2 光源插孔內側上
LB-80 30.5mm LA-120 30.5mm Y-48 30.5mm G-533 30.5mm R-60 30.5mm KF-30 30.5mm PL-30 30.5mm	color temp. conversion filter (light blue) 改變色溫濾色片(淺藍色) color temp. conversion filter (Umbra) 改變色溫濾色片(棕色) sharp cut filter (yellow) 銳截止濾色片(黃色) green filter 綠濾色片 sharp cut filter (red) 銳截止濾色片(紅色) diffusion filter 漫射濾片 polarizer 偏振光濾片	Fixed available SH-F42、SHZ-F120 Spot ACE (SPA-10 series) 可裝在SH-F42、SHZ-F120上 點光源高亮 (SPA-10系列)
KF-55R PL-55R	diffusion filter 漫射濾片 polarizer 偏振光濾片	$\Phi 55$ ring light guide 適用於 $\Phi 55$ 環形光導 $\Phi 55$ ring light guide 適用於 $\Phi 55$ 環形光導

※ Color filters (Y.G.R.) for ring light guides are also available upon customer's request.
※ 環形用彩色濾片(Y·G·R)為特製。

Color Filter Characteristics 濾片的特性

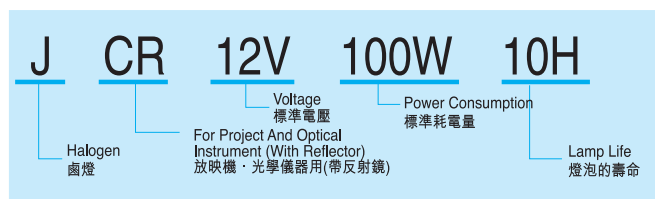
- A color filter can be used to make a subject more prominent against the background by absorbing one specific color. It is also used for control of image contrast. 彩色濾片使照射光帶有顏色，強調了被照物，更易判別。同時增加演繹效果。
- A diffusion filter is used to change the original light into soft one by diffusing high intensity light from the optical Fiber. 彩色濾片使照射光帶有顏色，強調了被照物，更易判別。同時增加演繹效果。
- A polarizer is used to prevent diffused reflection. Accordingly, effective. 偏振光濾片可用於防止亂反射，以得有效的照明。



Spare Parts 備用配件

Wide varieties of standard accessories and their spare parts are available. Resulting in a long life time for our LUMINAR-ACE products and meeting customer's needs. Usable for parts of experimental equipment and others. For further details please contact us. 為使顧客能長期愛用 LUMINAR-ACE，庫存有各式備件。同時還備有試驗器材，懇請選用。

Part Number Code for Halogen lamps 鹵燈型號的說明



Halogen Lamp 鹵燈

Model 型號	Voltage 固定電壓	Reflector 反射鏡	Color temp. 色溫	Life 壽命
JCR12V30W20H	12V	dichronic 二色鏡	3000K	2,000H
JCR12V50W20H	12V	dichronic 二色鏡	3000K	2,000H
JCR12V100WH10	12V	dichronic 二色鏡	3100K	1,000H
JCR12V100WBS	12V	Special dichronic 特殊二色鏡	4000K	1,000H
JCR12V100W10H /IR	12V	Infrared Rays 近紅外線鏡		1,000H
JCR15V150W5H/5	15V	dichronic 二色鏡	3100K	500H
JCR15V150WB	15V	dichronic 二色鏡	3200K	500H
JCR12V100W10H/ G1/AL	12V	AL mirror 真空鍍金	3000K	1,000H
JCR15V150WS /G1/AL	15V	AL mirror 真空鍍金	3400K	50H

Lamp Intensity Chart (Used LGC1-5L1000 Light Guide)

各種燈泡光亮變化率(使用LGC1-5L1000時的參考值)

	JCR12V50W20H	JCR12V100W10H	JCR15V150W5H/5	MCR180FK33H
光亮(1x)	40300	70100	91500	225000
50(mm)	100 (%)	100 (%)	100 (%)	100 (%)
100	28.5	27.5	28.5	27.5
150	14.0	13.5	13.5	13.5
200	8.5	8.0	8.0	8.5
250	5.5	5.5	5.5	5.5
300	4.0	4.0	4.0	4.0

Hg-Xe Lamp 氣氙燈

Model 型號	Description 名稱	Life 壽命	Used Model 所使用機種
MX3040	200W Hg-Xe lamp 水銀氣氙燈	4000H	LA-300UV-1 / LA-300UV-2 / LA-310UV-1 / LA-310UV-2 / LA-330UV-1/LA-330UV-2
MX4040	200W Hg-Xe lamp 水銀氣氙燈	4000H	LA-410UV-1 / LA-410UV-2 / LA-410UV-4 / LA-410UV-5
XE3030	150W Hg-Xe lamp (Quartz type) 高穩定性氣氙燈	3000H	LA-250Xe / LA-251Xe / LA-253Xe
XE4030	150W Hg-Xe lamp (Quartz type) 高穩定性氣氙燈	3000H	LA-V250Xe / LA-410UV-3

Metal Halide Lamp 金屬鹵化燈

Model No.型號	Description 名稱	Life 壽命	Suitable Model 所適合機種
MCR180FK33H	With thermal reflection metal halide lamp 帶熱線反射鏡的金屬鹵化燈	2000H	LA-180Me / LA-180Me-R4
MCR180K04H	With thermal reflection metal halide lamp 帶熱線反射鏡的金屬鹵化燈	2000H	LA-180Me / LA-180Me-R4
M66G18	With thermal reflection metal halide lamp 帶熱線反射鏡的金屬鹵化燈	2000H	LA-60Me
FH60MER	With thermal reflection metal halide lamp 帶熱線反射鏡的金屬鹵化燈	4000H	LA-60Me-R/LA-80MT/LA-80MR

Lamp Socket (5 pieces) 燈泡插座 (5個/包)

Model No.型號	Suitable Model 所適合機種
HS-310-100-T	LA-150TX (LA-30T · LA-50T · LA-50DX · LA-100T · LA-150T)
HS-310-100-S	LA-50USW · LA-100USW · 150UE · 150UX · 150FBU · 150CE · TKG-440-100 (LA-50DT · 50SX · 50UE · 100S · 150S · 150SX · 150SE)
HS-310-100-X	TKG-66-100 · TKG-135-100 · (TKG-75-100)
HS-310-250G-E	(LA-100 · 150 · 100SAE · 150SAE · 100SR · 150SR)
HS-310-250G (標準型)	Non contact pin, for all model 不帶壓接接頭，全機種兼用

Temp. Fuse 溫度保險絲

Model No.型號	Suitable Models 所適合機種
X2E	LA-150TX (LA-30T · LA-50T · LA-100T · LA-150T)

Filter 濾片

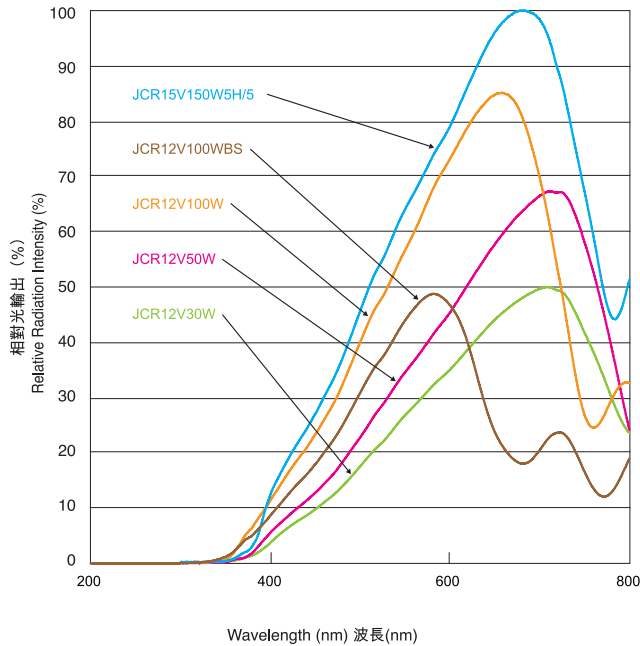
Model No.型號	Specification 規格
HF-5030	Thermal insulated filter 熱線吸收濾片 Φ30 t3
HF-1080CF	Thermal cold filter glass 熱線反射濾片 Φ30 t3

Color temp. and spectral distribution of the halogen lamp 鹵燈的型號和光譜分佈

● Dichronic with Reflector halogen lamp 帶二色反射鏡的鹵燈

In this diagram, the peak value of the radiation intensity in JCR15V150W5H/5 is referring to as 100%
下圖顯示帶二色反射鏡的鹵燈的光譜分佈。

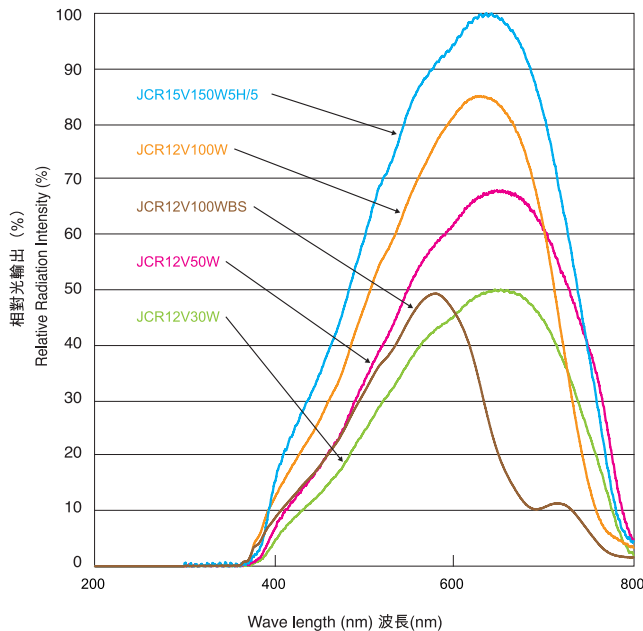
※ 相對放射強度是以JCR15V150W5H/5的最高峰值為100%。



● When our Light Guide is installed (LGC1-5L500) 光導安裝時(LGC1-5L500)

The spectroscopic distribution is shown in this diagram. In this case, our Luminar-Ace light source (built-in cold filter and thermal insulated filter) is installed to our light guide LGC1-5L500.
※ In this diagram, the peak value of the radiation intensity in JCR15V150WH5/5 is referred to as 100%
下圖顯示本公司光源裝置(內裝有熱線吸收濾片和熱線反射濾片)與光導LGC1-5L500配套使用時光譜分佈。

※ 相對放射強度是以JCR15V150WH5/5的最高峰值為100%。

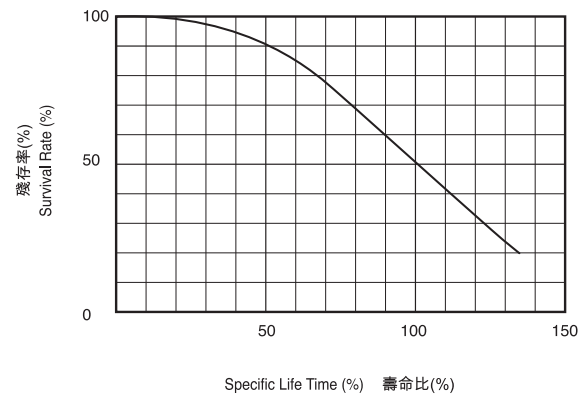


Life time of the halogen lamp and survival rate 燈泡壽命與殘餘率曲線

Life time of the halogen lamp is defined according to the procedure as below.

1. The lamps are random-sampled from the lot.
2. The rated voltage is applied to the sampled lamps under the prescribed condition.
3. After a continuous lighting test, when lamps pass the point of 50% of survival rate, that point is defined as the life time of the halogen lamp. (Refer to the figure on survival rate curve.)

隨機抽樣所選出的鹵燈在一定條件下，施加標準電壓進行持久亮燈試驗(破壞性試驗)。燈泡亮燈個數的殘餘率為50%時的亮燈累計時間為壽命時間。



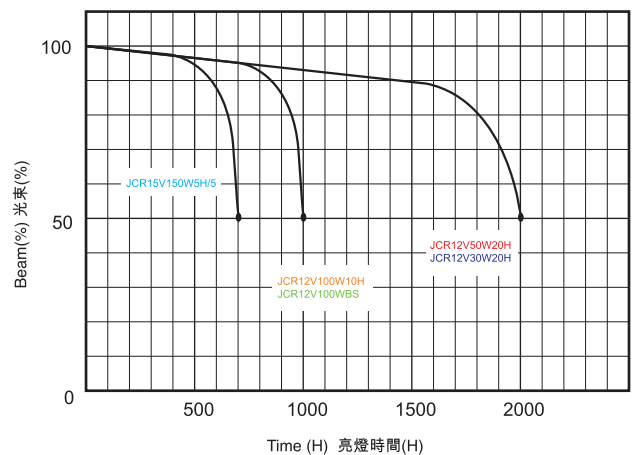
Life time of the halogen lamp is dependent 燈泡壽命和光流量衰減率

The above mentioned life time of the halogen lamp is dependent upon the following shown below:

Temperature, humidity, dust, vibration, shock, ventilation, over-voltage, lighting frequencies and others in the surrounding conditions, such as light sources and installation places. Please be cautions when using.
※ (Related between life time of the halogen lamp and beam attenuation factor)

下圖顯示在理想的操作環境下進行持續亮燈時，燈泡的壽命與光流量衰減率的關係。

※ 鹵燈的壽命因光源裝置的設置環境及使用條件(溫度、濕度、震動衝擊、灰塵、通風狀態、超高壓、亮燈次數)不同，有所變化。



Kinds of reflectors and their spectroscopic distribution 反射鏡的種類與光譜分佈

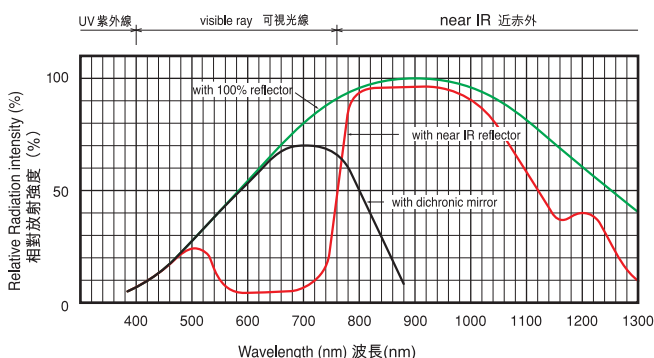
The spectroscopic distribution of the following reflectors is shown in this diagram.

The reflectors are 100% reflectors, near IR reflector and dichronic mirror.

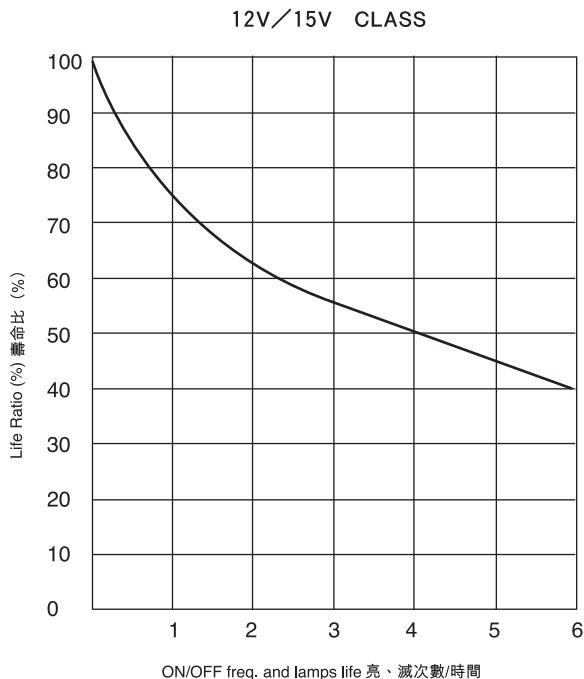
*In this diagram, the peak value of the relative radiation intensity of halogen lamps with 100% reflector is referred to as 100%

(帶全反射鏡、近紅外線反射鏡、二色反射鏡的鹵燈)下圖顯示分別帶全反射鏡(真空鍍鋁)、近紅外線反射鏡、二色反射鏡的鹵燈的光譜分佈。

※相對放射強度是以帶全反射鏡鹵燈的最高峰值為100%



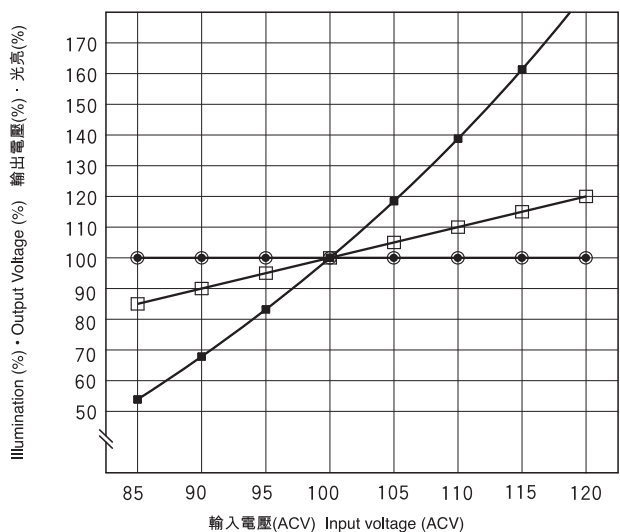
The relative between ON/OFF freq. of the lamps and the lamp life (measured value) 燈泡開關次數與壽命的關係(實測值)



The relative between the change in input voltage and the change in output voltage and illumination. 輸入電壓變化與輸出電壓變化、光亮變化的關係

The change in output voltage and illumination (100% 1 light flux) against the change in input voltage is shown in this diagram. In this case, it is measured under the condition that the environmental temperature is constant.

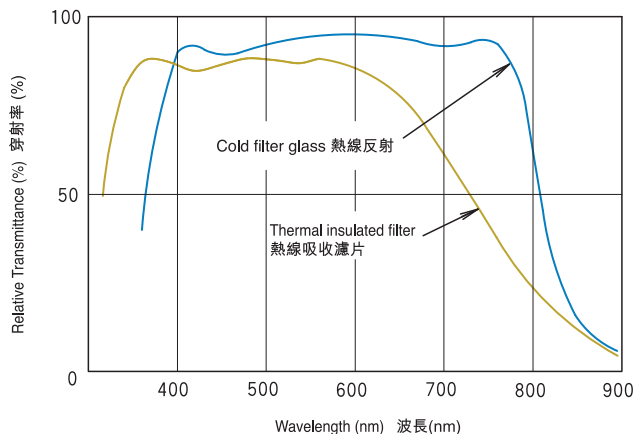
下圖顯示隨輸入電壓變化而引起的輸出電壓變化、光亮(全光流量)變化的關係



○ Output voltage ● Illumination LA-150UE • LA-150CE (DC switch-on type light source)
□ Output voltage ■ Illumination LA-150TX (AC switch-on type light source)
○輸出電壓 ●光亮 LA-150UE • LA-150CE (直流型光源裝置)
□輸出電壓 ■光亮 LA-150TX (交流型光源裝置)

Characteristics of built-in filters 熱線吸收、熱線反射濾片的光譜穿射特性

- **Cold filter glass**
Coated with a thin-multi-layered heat ray reflecting film.
Effective transmission for visible light ray.
- **Thermal insulated filter**
Absorb heat rays. Transmits visible rays.
(It is so called the heat-ray absorbing filter.)
- **熱線反射濾片**
玻璃表面塗有多層熱線反射薄膜，使可見光有效地穿射。
- **熱線吸收濾片**
玻璃濾片本身吸收熱線，穿射可見光。



LAN Control Unit 控制器 & 8 bit D/A Control Unit 轉換器

LAN Control Unit 控制器 NIC-100A

RoHS



● Use for Light Source & Control Unit 使用於光源裝置與控制器

Description 裝置名稱	Model 裝置型號	Model for Cable 連接線型號	Remark 備註
Halogen Lamp Light Source 鹵燈光源裝置	LA-150UE	NC - ## C	
	LA-150FBU	NC - ## C	
	LA-150CE	NC - ## C	
	LA-100USW	NC - ## D	
IR Light Source 近紅外線光源裝置	LA-100IR	NC - ## C	
LED Light Control LED 光源控制	LA-HDF7010	NC - ## G	
	LA-HDF5010	NC - ## G	
	LA-HDF108AS	NC - ## H	
	LA-HDF158AS	NC - ## H	
	LA-HDF108DS	NC - ## I	
	LP-3015R	NC - ## B	
	LP-3024RD	NC - ## B	
	LP-2424RA5	NC - ## F	
	LP-2448RA5	NC - ## F	

※ If Connection cable Model No. 如連接線## is 05 = (Length長度0.5M), 10= (Length長度1M), 15 = (Length長度1.5M) , 20 = (Length長度2M) Not Provide over 2M 並沒有2米以上提供

● LAN Control Unit use for HAYASHI Source LAN 控制使用於HAYASHI照明系統

● Use for 10BASE-T / 100BASE-T 對應

● UDP/TCP Plug 插座

● Specifications 規格

Description 名稱	LAN CONTROL UNIT 控制器	Power Consumption 耗電量	5W
Model 型號	NIC-100A	AC Adaptor 電源變壓器	Input 輸入: AC100-240V 50/60Hz Output 輸出: AC12V 1A
LAN Connection LAN 連接	1. Interface 界面: RJ45 Ethernet 10BASE-T/ 100BASE-T 2. Protocol 數據交換: UDP/TCP 3. IP Address 地址: 192.168.0.101-192.168.0.130 192.168.9.101-192.168.0.130 4. Polling method as host PC is master 輪詢方法,主機是主	Condition for Operation 使用環境溫度	1. Indoor Use室內用 2. 0-40 c / 20-80%RH
		Dimension 尺寸	W110 X H28 X D153
Power Input 電壓輸入	DC 12V/DC24V(±10%)	Weight 重量	510g not included Accessory 不含配件
		Options 選購品	1. Light Source Cable 光源接線 2. Vertical Mounting 垂直支架 3. Horizontal Mounting 水平支架

8 Bit D/A Converter DA-8U 8 位數 D/A 轉換器 DA-8U

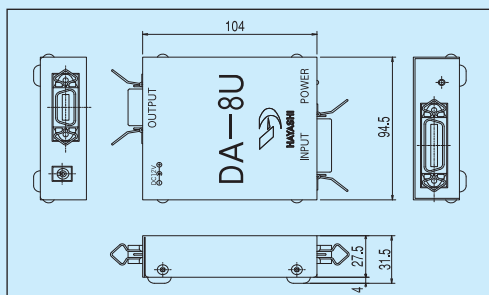
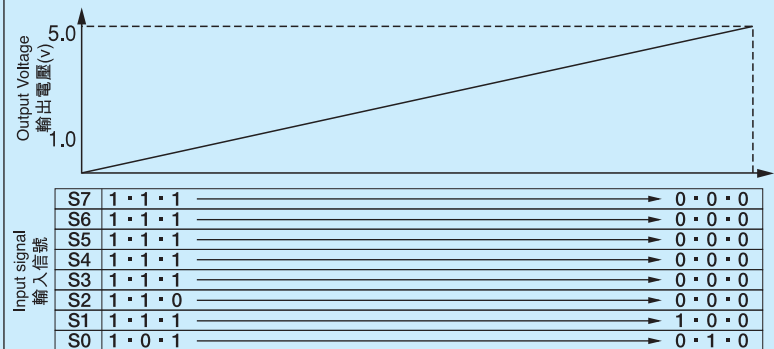
RoHS

This is a converter unit to use 8-bit digital signal to operate light intensity adjustment by the analog input system of the external control provided for the light source unit, LUMINAR ACE series

為以8位數字輸入信號,進行控制 LA-150UE / LA-150CE / LA-100IR / LA-150FBU的光亮遙控的D / A-8U轉換器。



< Input signal and Output Voltage 輸入信號與輸出電壓的關係 >



● Specifications 規格

Light Intensity Adjustment 輸入(光亮調節)256等級	8 Bit digital 8位接點或三極管的開路集電極(負邏輯)
Power Supply 電源電壓	DC12V ± 7%
Power Consumption 耗電量	1.2W
Condition of temp. 使用溫度範圍	-0 c → +40 c
Size 尺寸(mm)	W94.5 × H31.5 × D104 mm
Weight 重量(g)	320g

● Accessories 附件

Exclusive AC Adapter AC電源接頭	Model 型號 US301210 AC100-240V 50 /60Hz
Exclusive connection cable 中繼線	LA-150UE / LA-150CE/ LA-150FBU用
Input (I/O) Plug 插塞	Model 型號 57-30240(DDK)

< Connecting diagram 接續插孔的接頭排列 >

