

RAYTRO Fluorescent Lamp

Features

Wavelength selectivity

Fit CCD Camera's photosensitive elements. Wavelength characteristics of our lamps provide excellent color reproducibility.

Flicker-Free

To obtain a Flicker-Free image, all fluorescent lamps are operated at high frequency by original power supply.

Uniform lighting throughout the area

Our fluorescent lamps provide cost-effective solutions for wide area applications.

Low heat-generating

The device is designed to reduce the heat-generating and power loss for continuous operation. It can be easily operated with the host equipment.

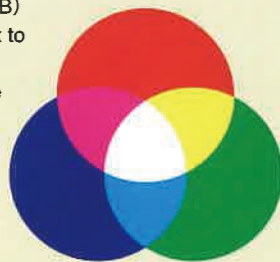


Products Line-up

Raytro fluorescent lamps are available in various color temperature. Near-ultraviolet lamp 'BL', UV free 'YEX' lamps are also available. Various sizes are selective according to applications. Ring : 50mm~300mm Linear : 95mm~1600mm.

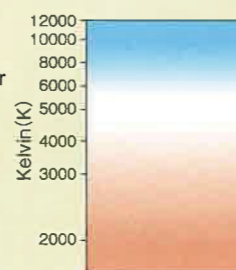
The primary 3 colors of light

Red (R), Green (G), and Blue (B) are the 3 colors of light can mix to create various colors. With different amounts of these three colors, RAYTRONICS creates original color characteristics of light.



Color temperature

Color temperature is measured on a Kelvin (K). The lower the K rating, the warmer or more yellow / red the light. The higher the rating, the cooler or more blue the light.



PRODUCT CODE

Example :

80 B-NEX

Ring lamp outer size

Shape, type A or B

Mark (Phosphor type) NEX-standard REX-(red)...

FL 210-NEX

Linear lamp

Lamp overall length

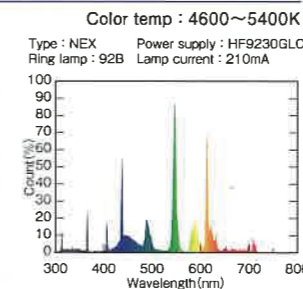
Mark (Phosphor type)

NOTE:

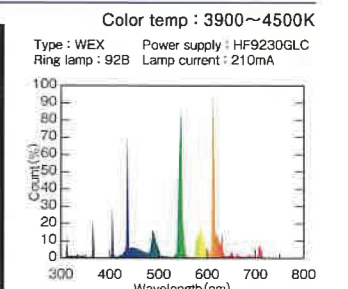
Frequent switching on/off in a short time may cause lamp failure. The recommended ambient temperature is between 20°C ~ 30°C for the best performance. Operation at extremely cold (below 5°C) or hot (over 40°C) temperatures may result in reduced light output.

Adequate and uniform lighting is very important for computer vision application. And for most machine vision, a diffused light source is best. Fluorescent lighting is the simplest and most common way of obtaining diffused illumination.

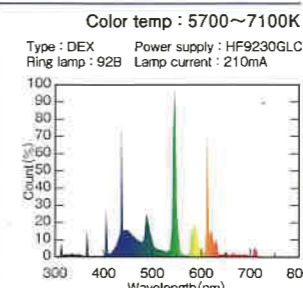
NEX (Triple color phosphor, Daylight White)



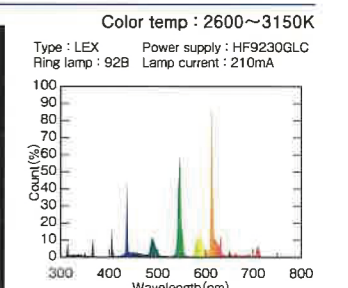
WEX (Triple color phosphor, White)



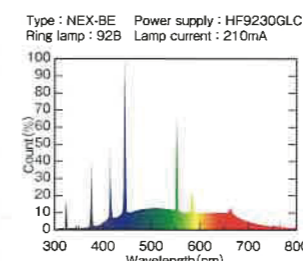
DEX (Triple color phosphor, Daylight)



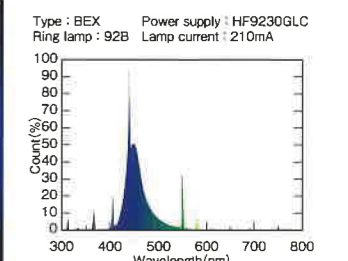
LEX (Triple color phosphor, Incandescent light bulb color)



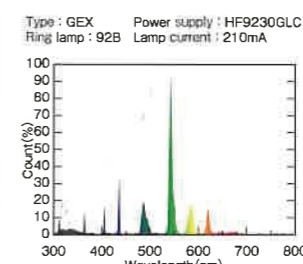
NEX-BE (High color-rendering, Day White)



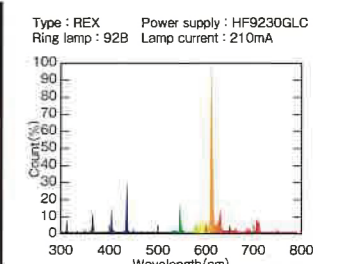
BEX (Rare-earth activator, Blue)



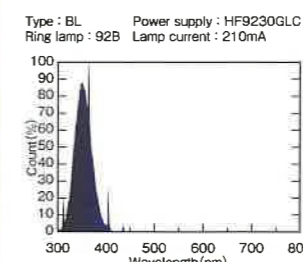
GEX (Rare-earth activator, Green)



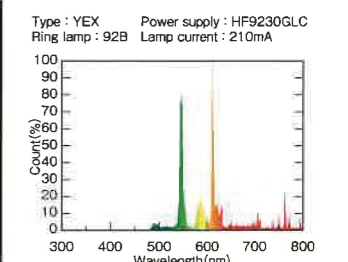
REX (Rare-earth activator, Red)



BL (Black light)



YEX (Yellow, UV free)



Ring Fluorescent Lamp Illuminator

Line-up of RAYTRO Ring lamps
Ring outer size 50~300mm ϕ types are provided



※ The code above is a complete set of illuminator.

Features

Shadow-free illumination

With Ring adapter and Lamphousing assembly, it can be attached directly to CCD Video Camera. The lamp assembly offers uniform and shadow-free illumination.

Compact Design

10, 12, 14 mm slim glass tubes are used.

Lamp shape

Ring lamp 50~127mm : B type
Ring lamp 160~300mm : GB type
(A type and GA type are also provided)

Flicker-Free

High intensity fluorescent lamp with triple color phosphor coating operated by electric inverter circuit performs its role best.

Lamp housing

Ring lamp 50~127mm : Aluminum made
Ring lamp 160~300mm : Aluminum mirror made.

Ring lamp : Type B



Standard Ring lamp types.
Electrodes are straight against the lamp socket.

Ring lamp : Type GB



The gap of electrodes is designed to be narrow. It can create circular light distribution.

Lamphousing with DF



Glare reduction...
Creates soft light.

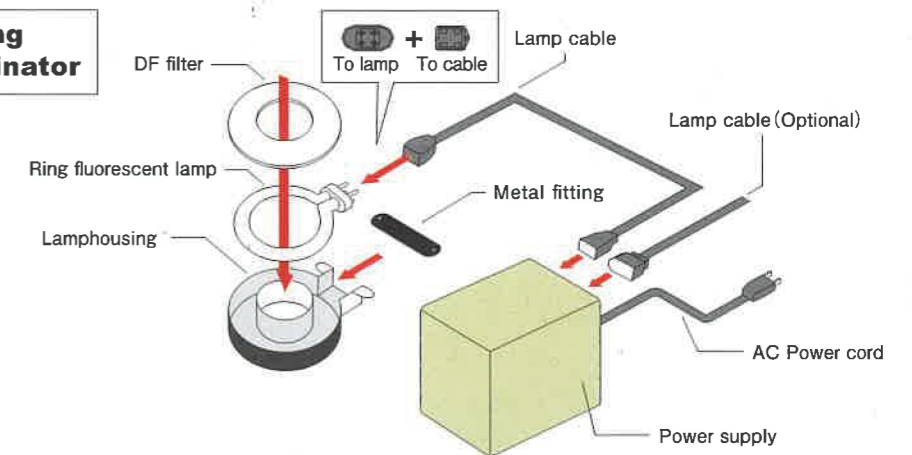
Lamphousing with PL



Minimizes reflection from the test object. Reduces halation.

Ring Fluorescent Lamp of diffused light is:
Non-directional and produces a shadow-free illumination.

Complete system of ring fluorescent lamp illuminator



Example)

Type	80B-GLC
Lamp	80B-NEX
Lamphousing	LH80B
Power supply	HF8030GLC
Lamp cable	HF8012M

Ordering Code

Ring lamp illuminator	Unit of ring lamp illuminator			
	Ring fluorescent lamp	Lamphousing	H.F. Power supply	Lamp cable(length 2m)
50B-GLC	50B-NEX	LH50B	HF5030GLC	HF8012M
60B-GLC	60B-NEX	LH60B	HF5030GLC	HF8012M
80B-GLC	80B-NEX	LH80B	HF8030GLC	HF8012M
92B-GLC	92B-NEX	LH92B	HF9230GLC	HF8012M
110B-GLC	110B-NEX	LH110B	HF41030GLC	HF8012M
127B-GLC	127B-NEX	LH127B	HF41030GLC	HF8012M
RDY160GB-FLC	160GB-NEX-T14-10W	DY160GB	EF4830FLC	MKR-2M
RDY200GB-FLC	200GB-NEX-T14-10W	DY200GB	EF4830FLC	MKR-2M
RDY250GB-FLC	250GB-NEX-T14-10W	DY250GB	EF4830FLC	MKR-2M
RDY300GB-FLC	300GB-NEX-T14-10W	DY300GB	EF4830FLC	MKR-2M

Low cost type

80B-RAY-LC	80B-NEX	LH80B	RAY10W-LC
92B-RAY-LC	92B-NEX	LH92B	RAY10W-LC
110B-RAY-LC	110B-NEX	LH110B	RAY10W-LC

Example)

● For the Lamphousing with diffusion filter or polarization filter, please add the mark of "-DF" or "-PL" to the end of the ordering code. → 80B-GLC-DF / 80B-GLC-PL

● Lamp cables of 3 meters 4 meters and 5 meters are in option.

80B-GLC with 3 meters cable → 80B-GLC-3M (ref. Cable length limits P. 13)

※ Please specify your input voltage.

※ Please choose the type of AC Power plug. (ref. P. 22)

Electrical Specifications

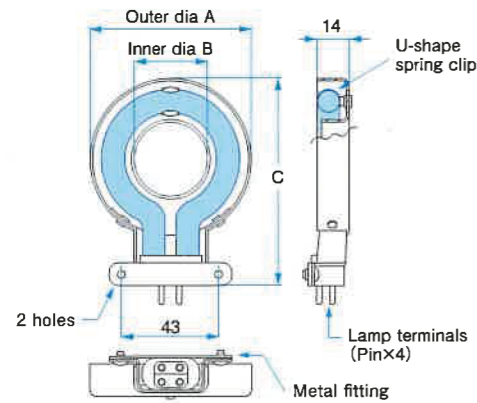
Ring lamp	Applicable power supply	Outer diameter(mm)	Lamp wattage (W)	Lamp current(mA)	Average [※] lamp life(h)	Operation frequency(kHz)
50B-NEX 50GB-NEX	HF5030GLC	50	4	120	1500	25
60B-NEX 60GB-NEX	HF5030GLC	60	5	120	1500	25
80B-NEX 80GB-NEX	HF8030GLC	80	8	150	2500	26
92B-NEX 92GB-NEX	HF9230GLC	92	10	210	2500	22
110B-NEX 110GB-NEX	HF41030GLC	110	11	230	2500	24
127B-NEX 127GB-NEX	HF41030GLC	127	12	230	2500	24
160GB-NEX-T14-10W	EF4830FLC	160	19	310	3000	22
200GB-NEX-T14-10W	EF4830FLC	200	24	310	3000	22
250GB-NEX-T14-10W	EF4830FLC	250	31	310	3000	22
300GB-NEX-T14-10W	EF4830FLC	300	36	310	3000	22

※ Measured at AC 100V.

※ The average life is defined as the time span for the brightness of the lamp to be reduced to 70% from the initial value.

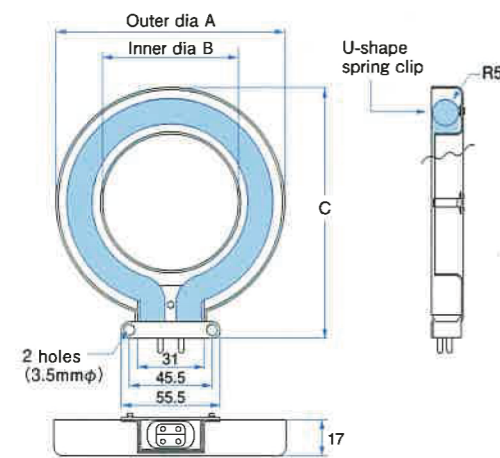
Dimension of lamphousing ※photo : Ring lamp is mounted.

LH type



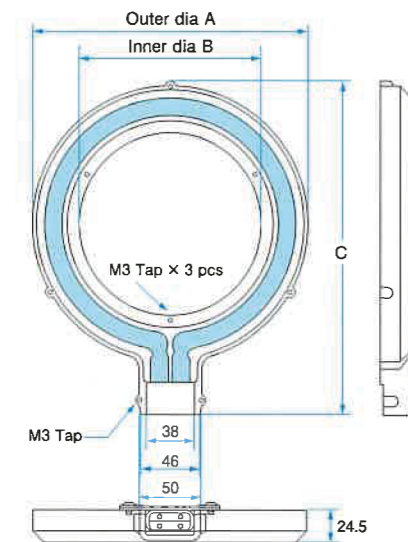
Lamphousing	Outer diaA	Inner diaB	C
LH50B	56	17	77
LH60B	70	32	90

LH type



Lamphousing	Outer diaA	Inner diaB	C
LH80B	90	47.5	110
LH92B	102	58.5	115
LH110B	120	68	132
LH127B	145	85	157

DY type



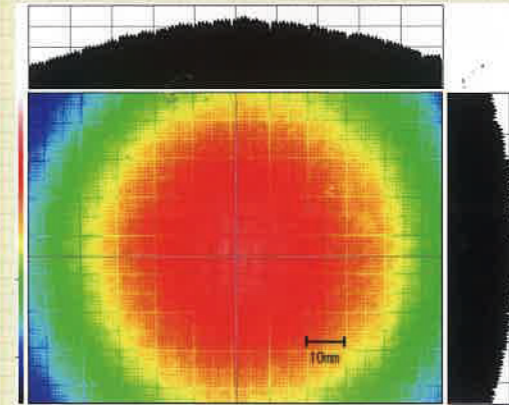
Lamphousing	Outer diaA	Inner diaB	C
DY160GB	180	106	228
DY200GB	220	146	268
DY250GB	270	200	318
DY300GB	317	240	364.5

Ring fluorescent lamp

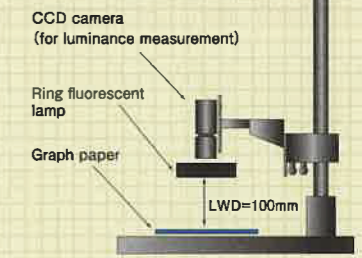
A type and GA type are also available.
(A type : 90 degree angled electrodes)



Brightness data



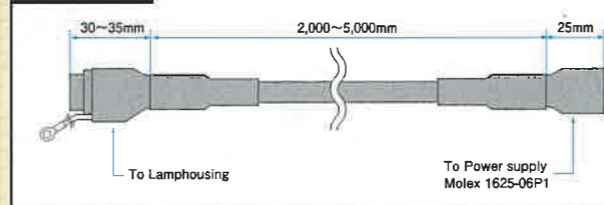
(Measuring method)



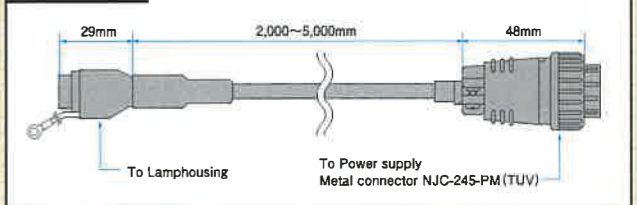
Illuminator set : 80B-GLC
Distance : LWD=100mm
Measuring instrument : ZERO-CORE ZERO-M
Brightness after 10 minutes of lighting

Output cable

HF8012M



MKR



HF8012M cable is for Ring lamp. (Ring outer size : 50mm~127mm)

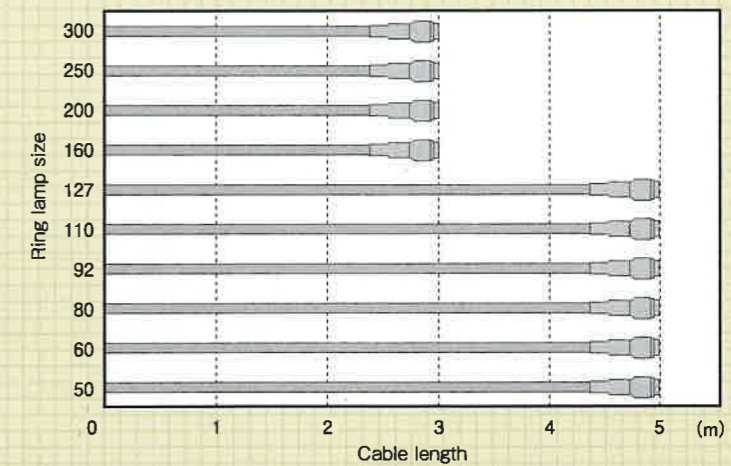
- Standard length : 2m.
- Available in 3m (HF8013M), 4m(HF8014M) and 5m(HF8015M) length.
- The Table lists the maximum permissible cable lengths for each ring lamp.
- High flexible Robot cables (RBT-HF801OM) are available in request.

MKR cable is for Ring lamp. (Ring outer size : 160 ~ 300mm)

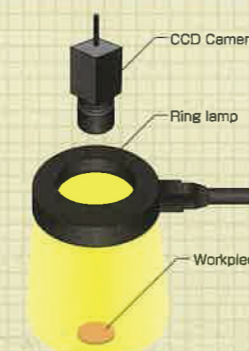
- Standard length : 2m.
- Available in 3m (MKR-3M), 4m(MKR-4M) and 5m(MKR-5M) length.
- The Table lists the maximum permissible cable lengths for each ring lamp.
- High flexible Robot cables (RBT-MKR-OM) are available in request.

【 Cable Length Limits 】

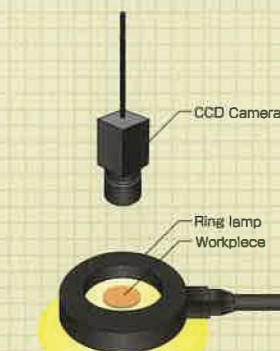
※RAY10W-LC
-cable extension is not applicable.



The Differences in Images by Lighting



CCD Camera Image



CCD Camera Image



■ Standard application

■ Low-angle application