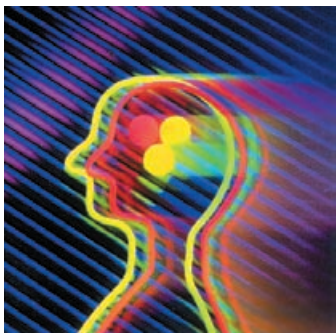




Think Controls



General Use

汎用型

Light Curtain

光幕

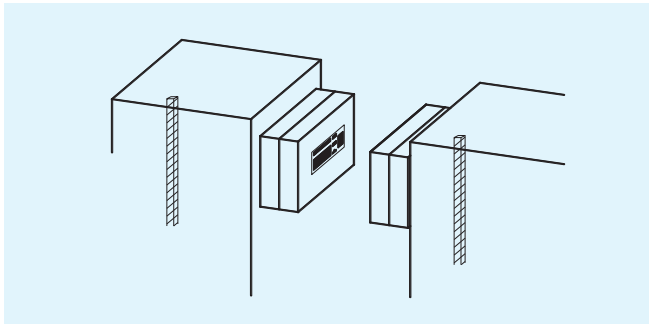
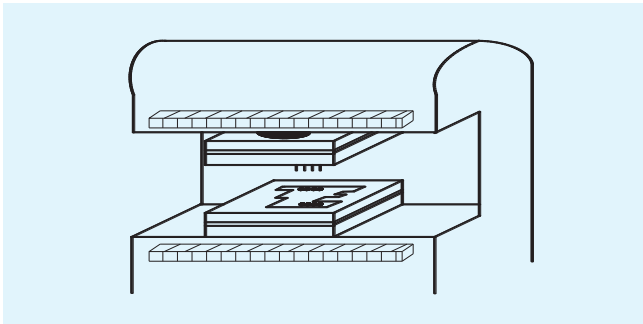
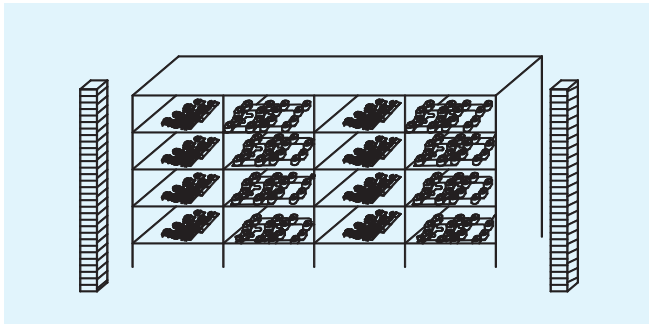
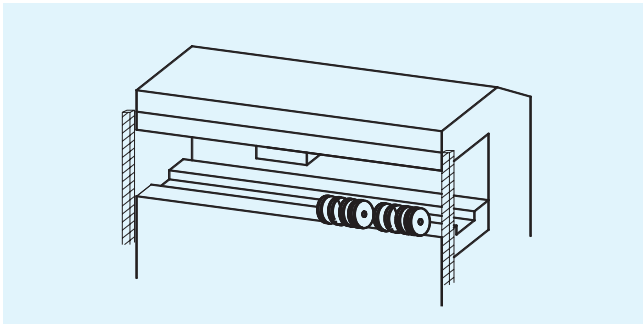
CE RoHS



- NA series Beam pitch : 40 mm
- LC series Beam pitch : 25 mm
- Two way output with NO & NC
- Output with short-circuit protection
- All type are appended with 「EMC」 enhanced circuit.

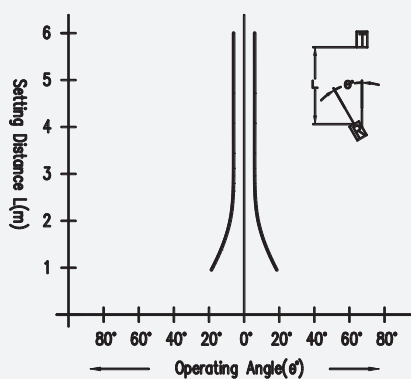


Application / 應用例

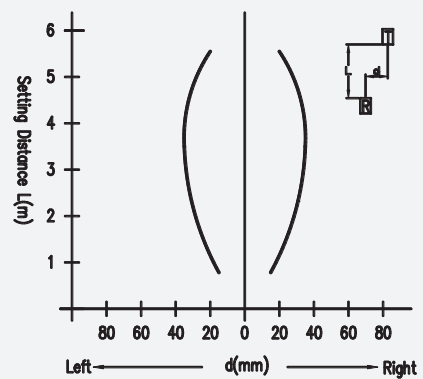


Typical light curve characteristic / 光學特性

Setting Range



Setting Angle



Specification / 規格

LC series											
Model	型號	LC-04E	LC-08E	LC-12E	LC-16E	LC-24E	LC-32E	LC-40E	LC-48E	LC-56E	LC-64E
Beams	光軸數	4	8	12	16	24	32	40	48	56	64
Protection high(mm)	保護高度	75	175	275	375	575	775	975	1175	1375	1575
Beam pitch	光軸間距	25 mm									
Sensible object	最小檢測物	Opaque object 30Φ min.									

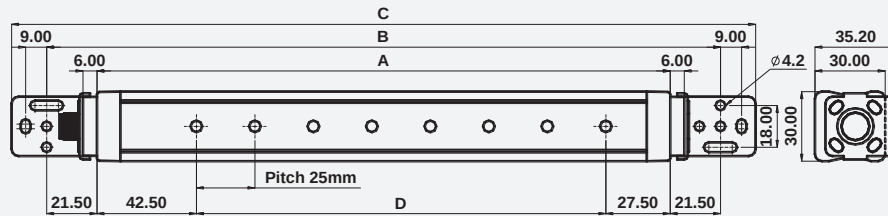
NA series											
Model	型號	NA-04E	NA-06E	NA-08E	NA-12E	NA-16E	NA-20E	NA-24E	NA-28E	NA-32E	NA-36E
Beams	光軸數	4	6	8	12	16	20	24	28	32	36
Protection high(mm)	保護高度	120	200	280	440	600	760	920	1080	1240	1400
Beam pitch	光軸間距	40 mm									
Sensible object	最小檢測物	Opaque object 45Φ min.									

General Specification / 共同規格

Setting distance	安裝距離	0.5 m ~ 6.0 m
Operating voltage	工作電壓	24 ± 20%VDC ; Ripple ±20% P-P max.
Current consumption	消耗電流	8.0 mA/beam max.
Output method	輸出方式	NPN NO & NPN NC two way output
Output current	最大輸出電流	100 mA max.
Output status	輸出狀態	All light channel light NO
Protection circuit	保護電路	Short circuit & polarity reversed protection
Residual voltage	殘留電壓	0.8 V max.
Leakage current	洩漏電流	0.8 mA max.
Response time	反應時間	10 ms max.
Reset time	復歸時間	Output reset time < 200 ms
Illumination	耐外亂光	Lamp < 10,000 LUX ; Sunlight < 20,000 LUX
Protection class	保護等級	IP - 65
Connection method	接線方式	M12x1.0 CONNECTOR 四芯接頭
Housing method	外殼材質	Housing : Aluminum ; END CAP : PBT ; Front cover : ACRYLIC
Circumstance	使用環境	0°C ~ 50°C ; 25% ~ 85% RH
Vibration resistance	抗震動	10 ~ 55 HZ / 1.5 mm , 2 小時 / X . Y . Z 方向
Classification	認證標準	CE MARK
EMC Standard	EMC 標準	ESD: 8 KV Air charge (level 3)/EN-61000-4-2 ; Burst test: 2 KV/EN61000-4-4 RF Interference: 10 V/M /ENV50140

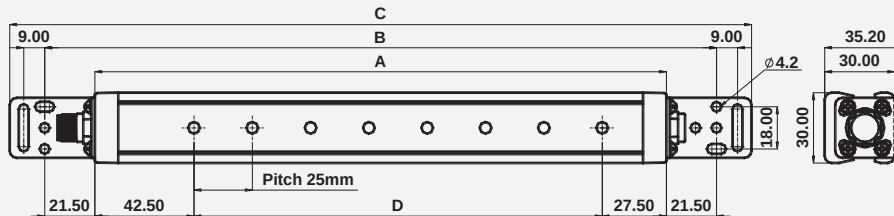
■ Dimension / 安裝尺寸圖

LC-E series Anti-vibration fixed method / 抗震動固定方式



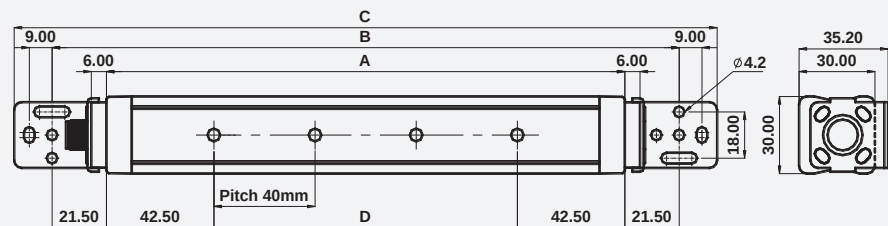
Type	LC-04	LC-08	LC-12	LC-16	LC-24	LC-32	LC-40	LC-48	LC-56	LC-64
A (mm)	145	245	345	445	645	845	1045	1245	1445	1645
B (mm)	188	288	388	488	688	888	1088	1288	1488	1688
C (mm)	218	318	418	518	718	918	1118	1318	1518	1718
D (mm)	75	175	275	375	775	775	975	1175	1375	1575

LC-E series General fixed method / 一般固定方式



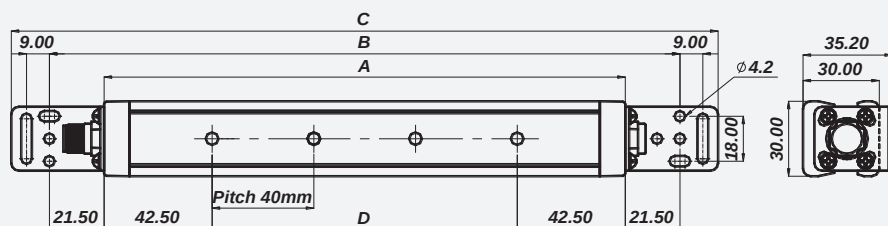
Type	LC-04	LC-08	LC-12	LC-16	LC-24	LC-32	LC-40	LC-48	LC-56	LC-64
A (mm)	145	245	345	445	645	845	1045	1245	1445	1645
B (mm)	188	288	388	488	688	888	1088	1288	1488	1688
C (mm)	218	318	418	518	718	918	1118	1318	1518	1718
D (mm)	75	175	275	375	775	775	975	1175	1375	1575

NA-E series Anti-vibration fixed method / 抗震動固定方式



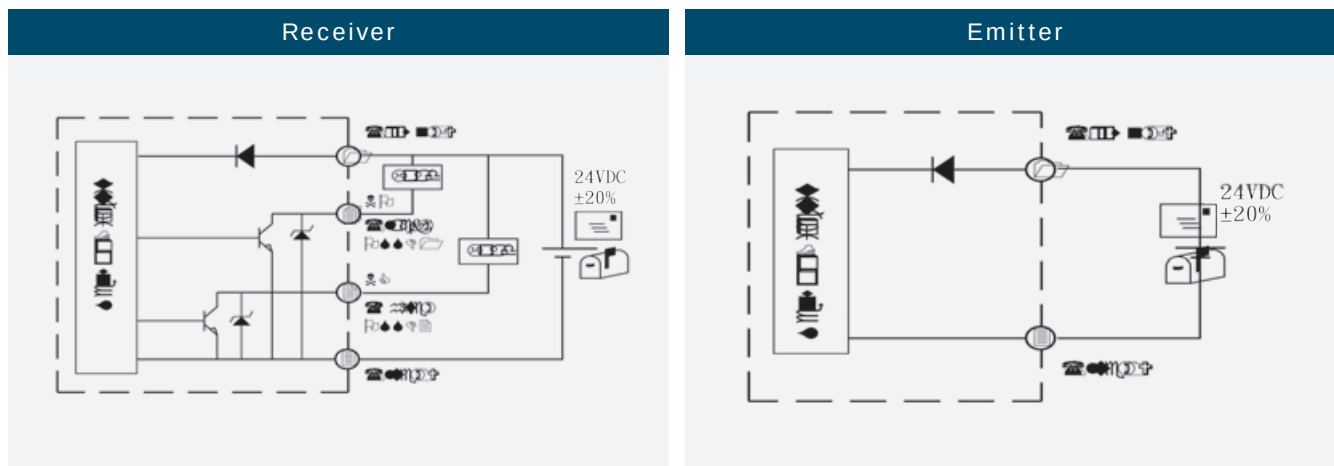
Type	NA-4	NA-6	NA-8	NA-12	NA-16	NA-20	NA-24	NA-28	NA-32	NA-36	NA-40
A (mm)	205	285	365	525	685	845	1005	1165	1325	1485	1645
B (mm)	248	328	408	568	728	888	1048	1208	1368	1528	1688
C (mm)	278	358	438	598	758	918	1078	1238	1398	1558	1718
D (mm)	120	180	280	440	600	760	920	1080	1240	1400	1560

NA-E series General fixed method / 一般固定方式



Type	NA-4	NA-6	NA-8	NA-12	NA-16	NA-20	NA-24	NA-28	NA-32	NA-36	NA-40
A (mm)	205	285	365	525	685	845	1005	1165	1325	1485	1645
B (mm)	248	328	408	568	728	888	1048	1208	1368	1528	1688
C (mm)	278	358	438	598	758	918	1078	1238	1398	1558	1718
D (mm)	120	180	280	440	600	760	920	1080	1240	1400	1560

■ Connection diagram / 輸出迴路 & 接線圖



■ Status of indicator / 狀態指示燈

Yellow LED : Power indicator

Green LED : Clear status (OSSD1 ON & OSSD2 OFF)

Red LED : Break status (OSSD1 OFF & OSSD2 ON)

黃色指示燈：電源燈

綠色指示燈：警戒狀態（OSSD1 ON & OSSD2 OFF）

紅色指示燈：遮斷狀態（OSSD1 OFF & OSSD2 ON）

■ Cautions / 注意事項

1. This product is not designed to protect [life], [bodily injury] or [property damage] from dangerous machinery
2. This product is not conformed to any safety standards
3. The power on delay time of sensor output signal less than 0.2s, please do not use the sensor output signal this time
4. IT may cause malfunction, if put the sensor cable with the power lines or high voltage lines
5. IT is suggested to settle the protection system with two outputs of sensor to avoid occurring danger, if one of the two output is broke down
6. IF may be malfunction, if the sensor affected by the reflected light from the glossy object

1. 本產品不是設計使用在危險機器上。
2. 本產品是一般用途光幕，未申請任何安全認證。
3. 送電輸出動作延遲時間約0.2秒，這段期間請勿使用控制器的輸出信號。
4. 如果控制器的信號線和動力線或高壓線綁在一起可能造成誤動作。
5. 建議同時使用兩個輸出作連鎖控制以防止其中一個輸出被破壞無法正常工作，導致控制器無法關閉輸出。
6. 四周光亮的物體可能造成控制器失效。

- Beam pitch: 25 mm & 10 mm
- Ultra slim: 12.0 mm
- Output status NO or NC selectable
- Two different distance selectable
- Two different frequency selectable
- Pilot status constant or flash selectable



Specification / 規格

Model	型號	LA -05E	LA - 05PE	LA - 11E	LA - 11PE
Output method	輸出方式	NPN	PNP	NPN	PNP
Beams	光軸數	5 beams		11 beams	
Beam pitch	光軸間距	25 mm		10 mm	
Sensible object	最小檢測物	Opaque object 30Φ min.		Opaque object 12Φ min.	
Protection high(mm)	保護高度	100 mm			
Setting distance	安裝距離	Standard range: 0.1m ~ 1.6m or Long range: 0.2m ~ 3.2m selectable			
Operating voltage	工作電壓	24 ± 20%VDC ; Ripple ±20% P-P max.			
Current consumption	消耗電流	60 mA max.			
Output current	最大輸出電流	50 mA max.			
Output status	輸出狀態	All light channel light NO			
Protection circuit	保護電路	Short circuit & polarity reversed protection			
Response time	反應時間	10 ms max.			
Reset time	復歸時間	Output reset time < 200 ms			
Illumination	耐外亂光	Lamp < 10,000 LUX ; Sunlight < 20,000 LUX			
Protection class	保護等級	IP - 65			
Connection method	接線方式	Tx: 3c-4Φ-3m : Rx : 4c-4Φ-3m			
Housing method	外殼材質	Housing: Aluminum ; END CAP: PBT ; Front cover: ACRYLIC			
Circumstance	使用環境	0℃ ~ 50℃ ; 25% ~ 85% RH			
Vibration resistance	抗震動	10 ~ 55 HZ / 1.5 mm ; 2 小時/ X . Y . Z 方向			
Classification	認證標準	CE MARK RoHS			

Setting of function / 功能設定

How to select the operating frequency / 如何選擇發射頻率

防止互相干擾，可選擇發射頻率及接收頻率

投光器「Tx」或接收器「Rx」按「SET」3秒放開後可切換發射頻率，

「Fre」(黃燈)亮著：頻率 (A)；「Fre」LED(黃燈)熄掉：頻率 (B)

*** 務必選擇一樣的投光器「Tx」或接收器「Rx」頻率否則會無法正常工作！**

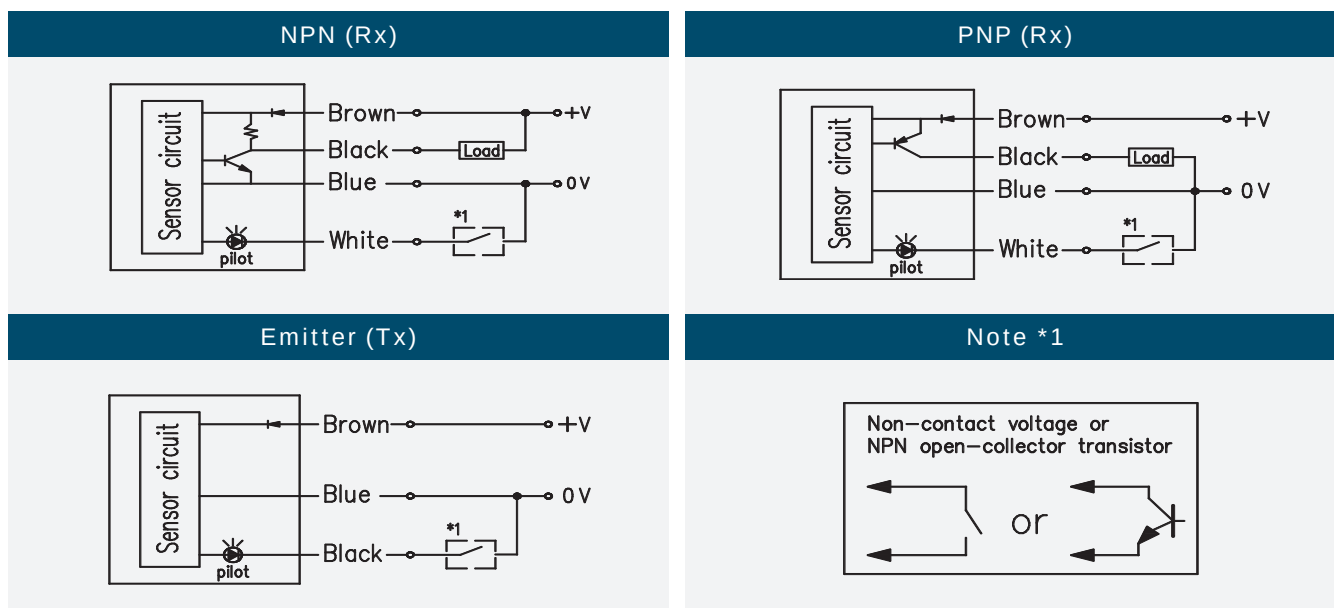
Interrupt muting

After pressing the 「SET」 key of Emitter or Receiver 3 seconds to change the operating frequency,

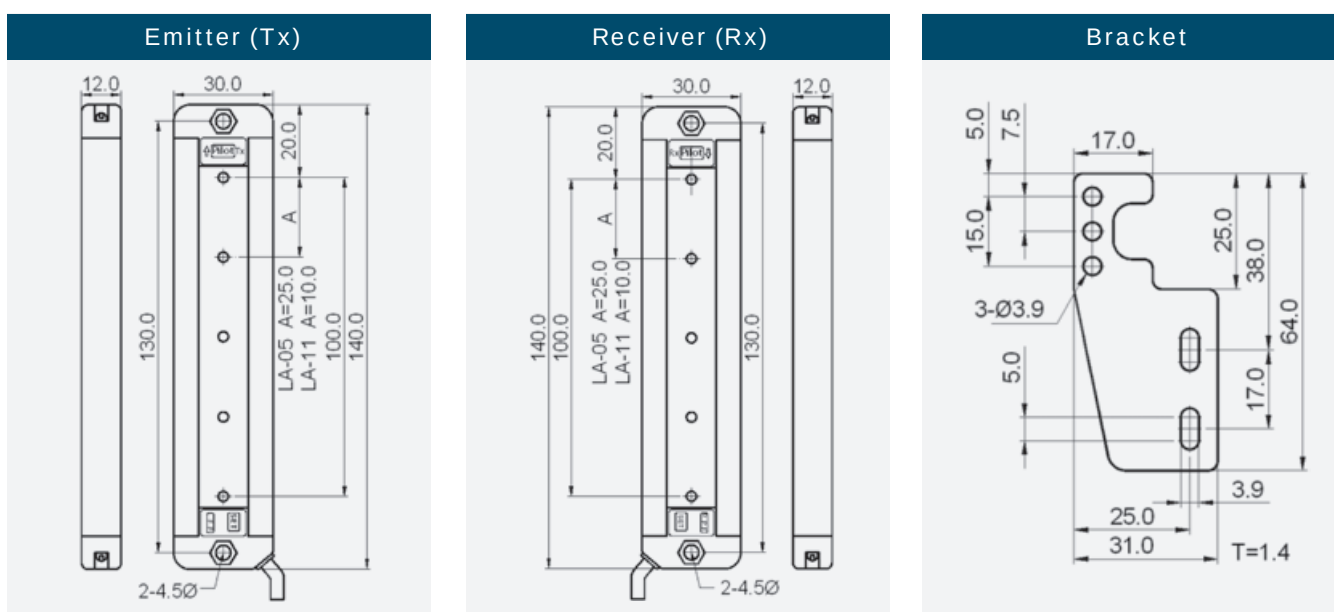
「Fre」 yellow pilot ON: frequency (A); (Fre)yellow pilot OFF: frequency (B)

*** The operating frequency of Emitter and Receiver must be same! otherwise it may be malfunction!**

■ Connection diagram & Output circuit / 輸出回路及接線圖



■ Dimension / 安裝尺寸圖



■ Setting of function / 功能設定

How to select the operating distance / 如何選擇安裝距離

投光器「Tx」按「SET」10 秒放開後可切換設定距離

藍燈亮著：Sd (A) = 0.2m ~ 3.2m；藍燈熄掉：Sd (B) = 0.1 ~ 1.6m

After pressing the 「SET」 key of Emitter 10 second to change the operating distance,

Blue pilot ON: Sd(A)= 0.2m ~ 3.2m ; Blue pilot OFF: Sd(B)= 0.1 ~ 1.6m

How to select the output status / 如何選擇輸出狀態

接收器「Rx」按「SET」10 秒放開後可切換輸出狀態，OP 燈顯示輸出狀態。

正常狀況：OP 燈熄掉/ 輸出ON；遮光狀況：OP 燈亮著/ 輸出OFF

After pressing the 「SET」 key of Receiver 10 seconds to change the output status.

Clean status: OP pilot OFF / Output ON ; Break status: OP pilot On / Output OFF

- Beam pitch: 20 mm or 40 mm
- Ultra slim: 12.0 mm
- Output status NO or NC tow output
- Two different distance selectable
- Two different frequency settable



Specification / 規格【LA-2/LA-4】

LA2 series Standard distance type

Model	型號	LA2-08	LA2-12	LA2-16	LA2-20	LA2-24	LA2-28	LA2-32
Beams	光軸數	8	12	16	20	24	28	32
Protection high(mm)	保護高度	140	220	300	380	460	540	620
Beam pitch	光軸間距	20 mm						
Setting distance	安裝距離	Standard range: 0.1m ~ 1.6m or Long range: 0.2m ~ 3.2m selectable						
Sensible object	最小檢測物	Opaque object 25Φ min.						

LA2-L series Long distance type

Model	型號	LA2-08L	LA2-12L	LA2-16L	LA2-20L	LA2-24L	LA2-28L	LA2-32L
Beams	光軸數	8	12	16	20	24	28	32
Protection high(mm)	保護高度	140	220	300	380	460	540	620
Beam pitch	光軸間距	20 mm						
Setting distance	安裝距離	Standard range: 0.2m ~ 6.0m or Long range: 0.5m ~ 12.0m selectable						
Sensible object	最小檢測物	Opaque object 25Φ min.						

LA4 series Standard distance type

Model	型號	LA4-04	LA4-06	LA4-08	LA4-12	LA4-16	LA4-20	LA4-24	LA4-28
Beams	光軸數	4	6	8	12	16	20	24	28
Protection high(mm)	保護高度	120	200	280	440	600	760	920	1080
Beam pitch	光軸間距	40 mm							
Setting distance	安裝距離	Standard range: 0.1m ~ 1.6m or Long range: 0.2m ~ 3.2m selectable							
Sensible object	最小檢測物	Opaque object 45Φ min.							

LA4-L series Standard distance type

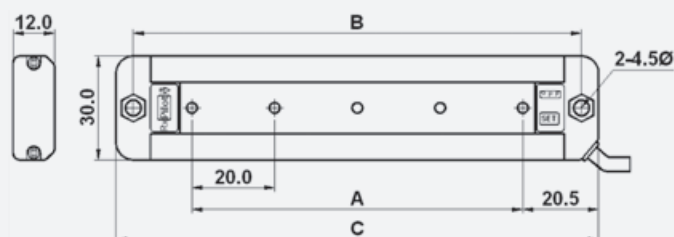
Model	型號	LA4-04L	LA4-06L	LA4-08L	LA4-12L	LA4-16L	LA4-20L	LA4-24L	LA4-28L
Beams	光軸數	4	6	8	12	16	20	24	28
Protection high(mm)	保護高度	120	200	280	440	600	760	920	1080
Beam pitch	光軸間距	40 mm							
Setting distance	安裝距離	Standard range: 0.2m ~ 6.0m or Long range: 0.5m ~ 12.0m selectable							
Sensible object	最小檢測物	Opaque object 45Φ min.							

General Specification / 共同規格

Operating voltage	工作電壓	24 ± 20%VDC ; Ripple ±20% P-P max.
Current consumption	消耗電流	8.0 mA/beam max.
Output method	輸出方式	NPN & PNP two way output
Output current	最大輸出電流	100 mA max.
Output status	輸出狀態	All light channel light NO (NO/NC changeable)
Protection circuit	保護電路	Short circuit & polarity reversed protection
Residual voltage	殘留電壓	0.8 V max.
Leakage current	洩漏電流	0.8 mA max.
Response time	反應時間	10 ms max.
Reset time	復歸時間	Output reset time < 200 ms
Illumination	耐外亂光	Lamp < 10,000 LUX ; Sunlight < 20,000 LUX
Protection class	保護等級	IP - 65
Connection method	接線方式	Tx: 2c-4ψ-3m: Rx: 4c-4ψ-3m
Housing method	外殼材質	Housing: Aluminum ; END CAP: PBT: Front cover: ACRYLIC
Circumstance	使用環境	0°C ~ 50°C ; 25% ~ 85% RH
Vibration resistance	抗震動	10 ~ 55 HZ / 1.5 mm , 2 小時 / X . Y . Z 方向
Classification	認證標準	CE MARK
EMC Standard	EMC 標準	ESD: 8 KV Air charge (level 3)/EN-61000-4-2 ; Burst test: 2 KV/EN61000-4-4 RF Interference: 10 V/M /ENV50140

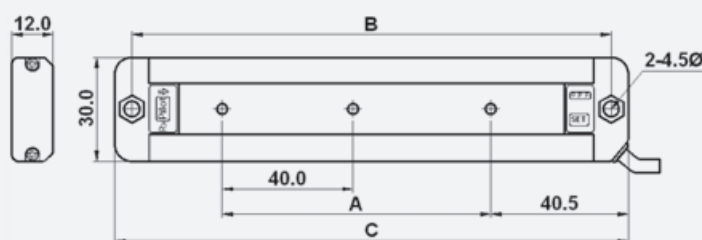
Dimension / 安裝尺寸圖

LA2-xxx Pitch = 20.0mm



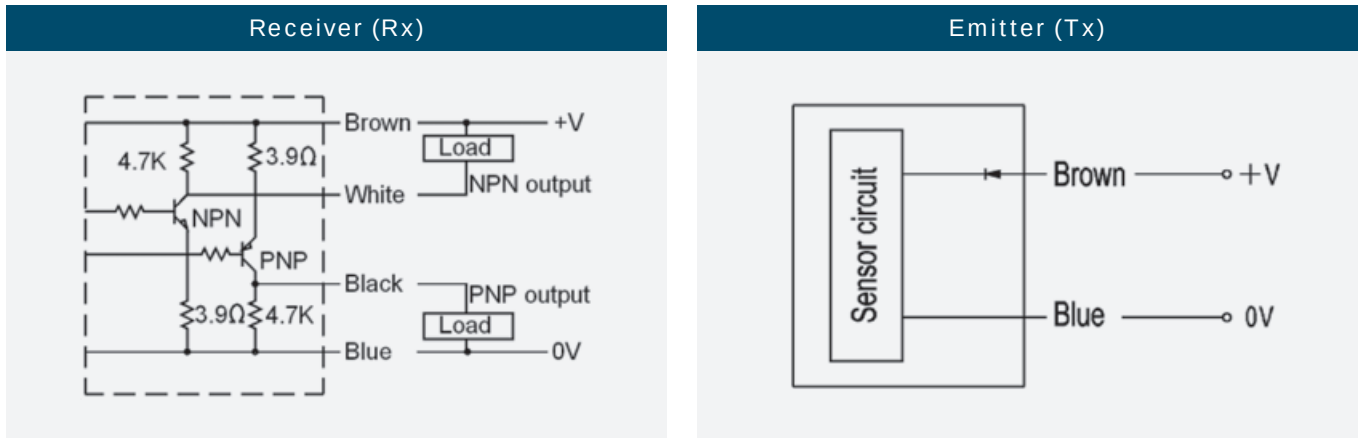
Type	LA2-08	LA2-12	LA2-16	LA2-20	LA2-24	LA2-28	LA2-32
A(mm)	140	220	300	380	460	540	620
B(mm)	180	260	340	420	500	580	660
C(mm)	190	270	350	430	510	590	670

LA-4 series Pitch = 40.0mm



Type	LA4-04	LA4-06	LA4-08	LA4-12	LA4-16	LA4-20	LA4-24	LA4-28
A(mm)	120	200	280	440	600	760	920	1080
B(mm)	180	260	340	500	660	820	980	1140
C(mm)	190	270	350	510	670	830	990	1150

■ Connection diagram & Output circuit / 輸出回路及接線圖



■ Setting of function / 功能設定

How to select the operating frequency / 如何選擇發射頻率

防止互相干擾，可選擇發射頻率及接收頻率

投光器「Tx」或接收器「Rx」按「SET」3秒放開後可切換發射頻率，

「Fre」(黃燈)亮著：頻率(A)；「Fre」LED(黃燈)熄掉：頻率(B)

***務必選擇一樣的投光器「Tx」或接收器「Rx」頻率否則會無法正常工作！**

Interrupt muting

After pressing the 「SET」 key of Emitter or Receiver 3 seconds to change the operating frequency,

「Fre」yellow pilot ON: frequency (A); (Fre)yellow pilot OFF: frequency (B)

*** The operating frequency of Emitter and Receiver must be same! otherwise it may be malfunction!**

How to select the operating distance / 如何設定安裝距離

投光器「Tx」按「SET」10秒放開後可切換設定距離

標準距離型：

藍燈亮著：Sd (A) = 0.2m ~ 3.2m；藍燈熄掉：Sd (B) = 0.1 ~ 1.6m

長距離型：

藍燈亮著：Sd (A) = 0.5m ~ 12.0m；藍燈熄掉：Sd (B) = 0.2m ~ 6.0m

After pressing the 「SET」 key of Emitter 10 second to change the operating distance,

Standar distance type:

Blue pilot ON: Sd(A)= 0.2m ~ 3.2m ; Blue pilot OFF: Sd(B)= 0.1 ~ 1.6m

Long distance type:

Blue pilot ON: Sd(A)= 0.5m ~ 12.0m ; Blue pilot OFF: Sd(B)= 0.2m ~ 6.0m

How to select the output status / 如何選擇輸出狀態

接收器「Rx」按「SET」10秒放開後可切換輸出狀態，OP燈顯示輸出狀態。

正常狀況：OP燈熄掉/輸出ON；遮光狀況：OP燈亮著/輸出OFF

After pressing the 「SET」 key of Receiver 10 seconds to change the output status.

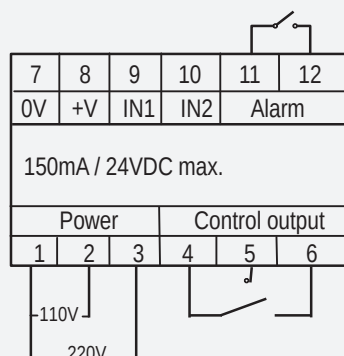
Clean status: OP pilot OFF / Output ON ; Break status: OP pilot On / Output OFF

- To detect output malfunction of light curtain
 - Output broke wire detection
 - Output short circuit detection
- Malfunction detection with latching function
- 光幕異常偵測
 - 輸出斷線偵測
 - 輸出短路偵測
- 異常偵測附鎖住功能

Specification / 規格

Product	產品	Light curtain controller 光幕安全控制器			Power supply 24V電源供應器	
Model	型號	C-1-LCK			C-1-24V	
Control method	控制方式	OSSD1 & OSSD2 Interlock control			Non	
Control output	控制輸出	Relay 1c ; 5A/250VAC			Non	
Alarm output	警報輸出	Relay 1a ; 5A/250VAC			Non	
Latching function	保持功能	Error latching			Non	
Power supply	工作電壓	110V / 220VAC 50/60Hz				
Current consumption	耗電流	3VA Max.				
DC power output	直流輸出	150mA / 24V Max.				
Alarm reset	警報復歸	Manual reset				
Output current	工作環境	-20℃ ~ +80℃ ; 35% ~ 85% RH				
Operating circumstance	功能	Status	OSSD1	OSSD2	Run	Alarm
		Clear	L	H	ON	OFF
		Brake	H	L	OFF	OFF
		Error	H	H	OFF	ON
		Error	L	L	OFF	ON

Connection diagram 接線圖



Outline dimension 外形尺寸

