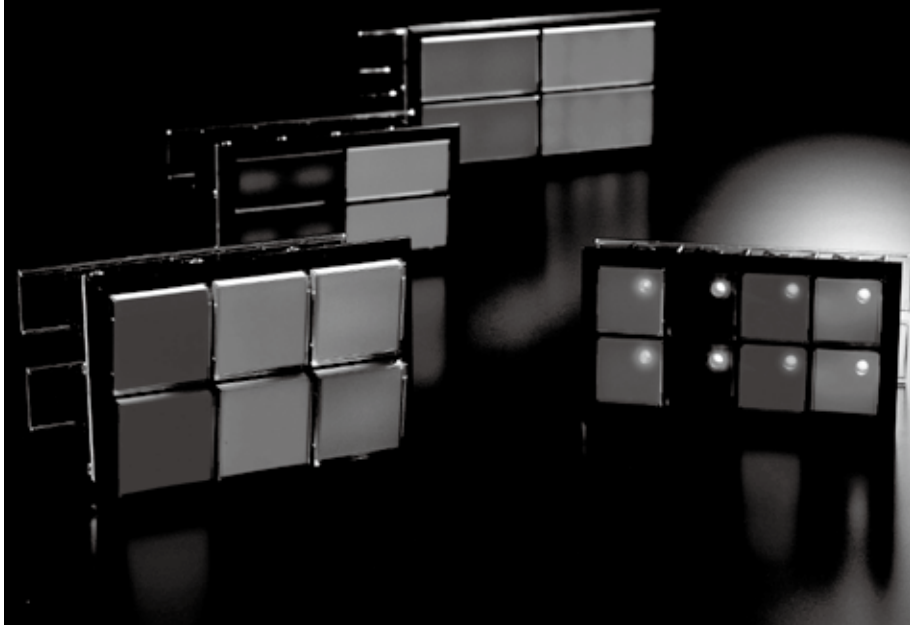




# XL TYPE

24 square / 30 square / 40 square series



## SPECIFICATIONS (RATINGS, PERFORMANCE)

Type (window size) Specification	XL2000 (24×24)	XL3000 (30×30)	XL4000(4001) (40×40)	XL3600 (30×60)	XL4800 (40×80)	XL3010 (30×30)	XL4010 (40×40)
Rated insulation voltage (UI)	250V						
Rated operational voltage (Ith)	24V, 48V, 100/110V, 125V AC/DC	24V, 48V, 100 / 110V, 125V AC / DC, 200 / 220V AC					
Rated current (per LED unit)	8mA	11mA (22mA for 24V only) For green and blue LED unit, 7mA	22mA (44mA for 24V only) For green and blue LED unit, 14mA		9mA (18mA for 24V only) For green and blue LED unit, 7mA		
Voltage fluctuation range	Within ±15%						
Operating temperature	-20 to 40℃					-20 to 50℃	
Storage temperature	-25 to 65℃						
Relative humidity	45% to 85%						
Altitude	2,000 m max.						
Panel thickness	Thickness: 1 to 6mm						
Insulation resistance	1,000MΩ or more (Whole live part to mounting panel)						
Power-frequency withstand voltage	2,000V AC / 1 min. (Whole live part to mounting panel)						
Impulse withstand voltage	±7kV / 3 times for each pole (1.2 / 50μs) (Whole live part to mounting panel)						
Terminal strengt	Tensile: 50N (1min.) in 2 directions; tightening: 0.8N·m (10 to 15 sec.)						
Recognition distance	Mounting surface luminance: 1,000 Lx; visible distance: 10m						
Degree of protection	IP40 (Panel front portion)						
Vibration resistance	10 to 55Hz; double amplitude: 1.5mm, 1 hour in each of 3 axial directions						
Shock resistance	500 m/s <sup>2</sup> ; 3 times in each of 6 directions						
Weight (per window)	Approx. 30g	Approx. 50g	Approx. 60g	Approx. 100g	Approx. 120g	Approx. 50g	Approx. 60g
Others			Oblique window				With one-point illumination
	With the function of error illumination prevention						

# PILOT LAMP & INDICATOR

## FEATURES

1

The 4-element LED (A<sub>l</sub> InGAP-LED) has been adopted to achieve higher brightness. (Four times (max.) brighter than our previous models)



(XL3000 type)



(DL303M type)

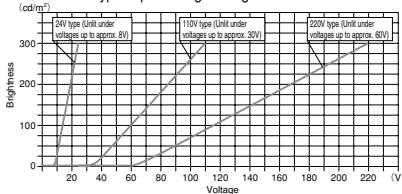
2

The short body with a reduced panel back dimension meets the requirement for smaller-size indicators.

3

The XL type provides an illumination voltage limiter circuit as a standard feature to prevent the LED from erroneously lighting due to induced voltage.

● XL Type Input Voltage – Brightness Characteristics



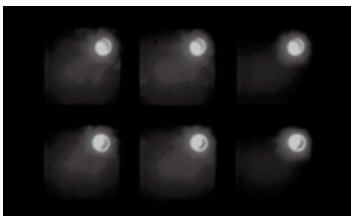
4

The energy-saving design can reduce power consumption by approx. 30% (as compared with previous models).

- Rated operating current (at 110 V AC)  
XL type: approx. 11 mA  
DL type: approx. 18 mA

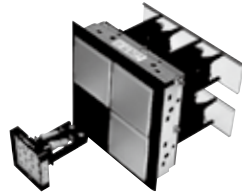
5

XL3010 and XL4010 are equipped with the bullet LED for one-point illumination, allowing easy recognition even in outdoor use. The one-point illumination lights up the LED of each color.



6

The front access method simplifies the procedure for changing power supply voltage. We can accept orders for a single unit and handle short delivery periods.



7

With the new lens structure, you can easily insert a name label. To improve ease of use, print film applicable to laser printers is also available. (Available accessory)



8

To enhance safety, the XL type provides the terminal cover for the wiring screw live parts as a standard equipment. As the terminal cover is a joint type, you can mount and dismount the cover without dropping and losing it.

- With the XL2000 type, the terminal cover is to be mounted for each window.

9

The XL type uses chip modules, ensuring high performance, high reliability and low cost.

10

The XL type can use both AC and DC power supplies (AC/DC power supply type).

- The 220 V type is exclusive to AC power supply.



# XL TYPE

## HOW TO ORDER

[XL type]

① Combination of single color and same voltage

**XL3000 - 02 × 10 - 110 - R W**

① ② ③ ④ ⑤ \*3

② Combination of multiple colors and same voltage

**XL3000 - 02 × 10 - 110 - M W Specification**

① ② ③ ④ ⑤ \*3 \*4

③ Combination of multiple colors and different voltages

**XL3000 - 02 × 10 - MIX - M W Specification**

① ② ③ ④ ⑤ \*3 \*4

No.	Item	Code	Description	Remark	
①	Basic type	XL2000	Size 24×24		
		XL2040	Size 24×24	Power supply voltage 110V only	
		XL3000	Size 30×30	When 30 × 30 and 30 × 60 are mixed, it becomes	
		XL3600	Size 30×60	the basic form of one with many lights.	
		XL4000	Size 40×40	When 40 × 40 and 40 × 80 are mixed, it becomes	
		XL4800	Size 40×80	the basic form of one with many lights.	
		XL3010	Size 30×30	With one-point illumination	
		XL3040	Size 30×30	Power supply voltage 110V only	
		XL4010	Size 40×40	With one-point illumination	
	XL4001	Size 40×40	—		
	XL4040	Size 40×40	Power supply voltage 110V only		
②	Number of vertical lights	Please check below for the maximum number of lights.		—	
③	Number of horizontal lights	Please check below for the maximum number of lights.		—	
④	Voltage	000	With no LED unit	It becomes only the body frame part	
		024	AC・DC24V	—	
		048	AC・DC48V	—	
		110	AC・DC100 / 110V	—	
		125	AC・DC125V	—	
		220	AC200 / 220V	A separate resistor is required for DC 200 / 220V. XL2000 is excluded.	
		MIX	Combination of multiple colors and different voltages	Please indicate quantity by display color, usage voltage.*3	
		⑤	Color	R	Red
G	Green			—	
O	Orange			—	
W*5	Milky White			—	
P	Pure White			Special color	XL3000 only
Y	Yellow				—
B	Blue				—
M	Combination of multiple colors				Please indicate the display color arrangement

\*1 Please indicate the display color array as the upper left reference from the front view.

\*2 When mixed voltages are mixed, please display in order of display color, quantity, voltage.

\*3 It is also possible to use white (W) for all lenses. In that case, please write "W". Also, in the case of mixing of different voltages, please indicate the display color "W". (Ex: RW12/024)

\*4 Please download and fill in the XL type collective indicator light order sheet from our website.

\*5 W (milky white) is like an amber color of an incandescent lamp.

Type	Maximum number of lamps
<b>XL2000</b>	27 rows and 27 columns
<b>XL30 Series</b>	20 rows and 20 columns
<b>XL36 Series</b>	20 rows and 10 columns
<b>XL40 Series</b>	15 rows and 15 columns
<b>XL48 Series</b>	15 rows and 7 columns

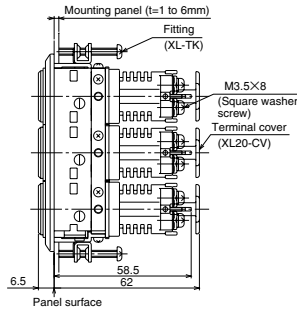
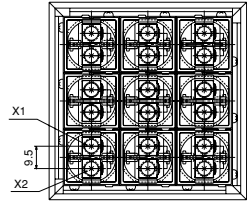
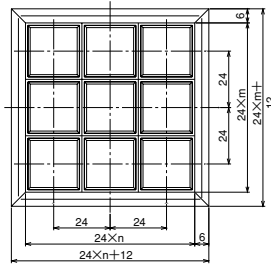
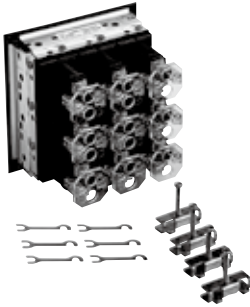
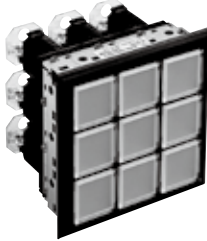
\* Power supply voltage 200 / 220V is only AC.

\* In case of XL2000, until AC・DC 125V is available.

# PILOT LAMP & INDICATOR

## STANDARD PRODUCTS

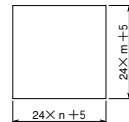
### XL2000 (24×24)



#### ●Applicable accessories

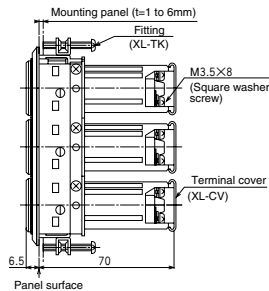
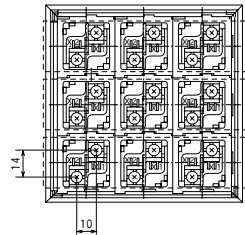
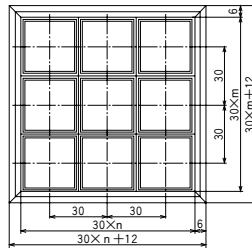
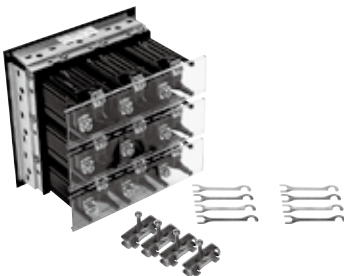
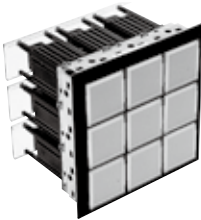
LED unit	XL20-LED <input type="checkbox"/> - <input type="checkbox"/>
Lens	XL20-LENS- <input type="checkbox"/>
Terminal cover	XL20-CV
Fitting	XL-TK
Jumper	XL-SB5
Removing tool	XL-NQ (Sold separately)
Voltage label	XL-NP <input type="checkbox"/> (Sold separately)
Film	XL20-FM (Sold separately)

#### ●Panel cut dimensions



m: No. of rows, n: No. of columns

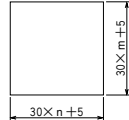
### XL3000 (30×30)



#### ●Applicable accessories

LED unit	XL30-LED <input type="checkbox"/> - <input type="checkbox"/>
Lens	XL30-LENS- <input type="checkbox"/>
Terminal cover	XL-CV
Fitting	XL-TK
Jumper	DL-SB1
Removing tool	XL-NQ (Sold separately)
Voltage label	XL-NP <input type="checkbox"/> (Sold separately)
Film	XL30-FM (Sold separately)

#### ●Panel cut dimensions



m: No. of rows, n: No. of columns

B22

A SWITCH

PILOT LAMP &  
INDICATOR

CONNECTING  
DEVICES

ELECTRONIC  
DEVICES

CONTROL  
CENTER PARTS

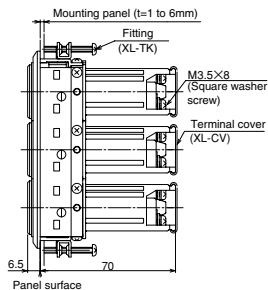
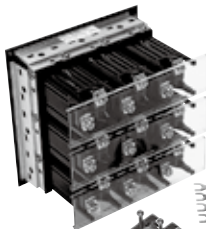
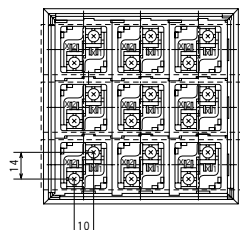
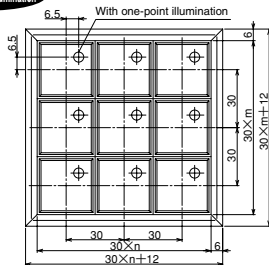
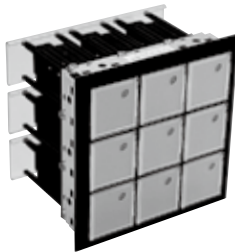


# XL TYPE

## STANDARD PRODUCTS

### XL3010 (30×30)

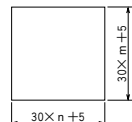
With one-point illumination



#### ●Applicable accessories

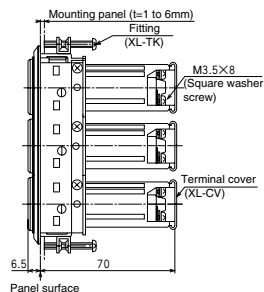
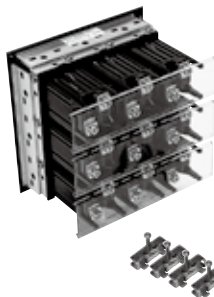
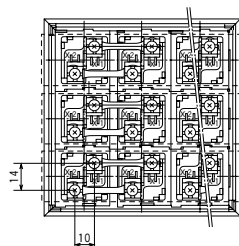
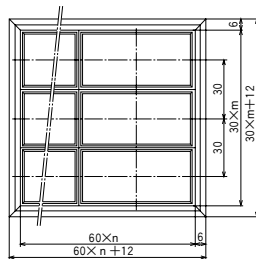
LED unit	XL3010-LED-□-□
Lens	XL3010-LENS-□
Terminal cover	XL-CV
Fitting	XL-TK
Jumper	DL-SB1
Removing tool	XL-NQ (Sold separately)
Voltage label	XL-NP-□ (Sold separately)
Film	XL30-FM (Sold separately)

#### ●Panel cut dimensions



m: No. of rows, n: No. of columns

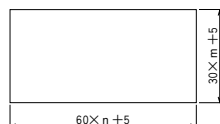
### XL3600 (30×60)



#### ●Applicable accessories

LED unit	XL30-LED-□-□
Lens	XL36-LENS-□
Terminal cover	XL-CV
Fitting	XL-TK
Jumper	DL-SB1
Removing tool	XL-NQ (Sold separately)
Voltage label	XL-NP-□ (Sold separately)
Film	XL36-FM (Sold separately)

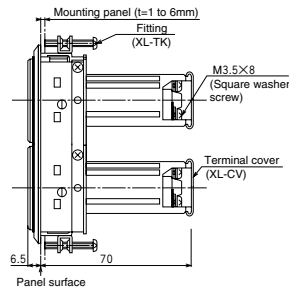
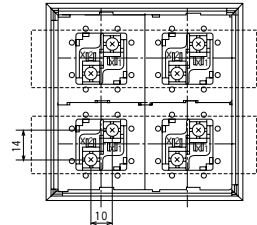
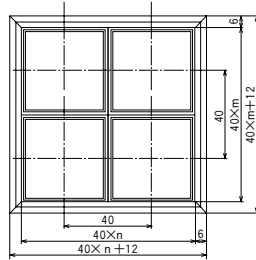
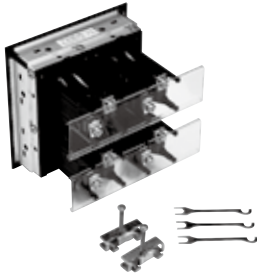
#### ●Panel cut dimensions



m: No. of rows, n: No. of columns

# PILOT LAMP & INDICATOR

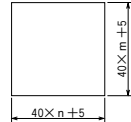
## XL4000 (40×40)



### ●Applicable accessories

LED unit	XL40-LED	-	□
Lens	XL40-LENS	-	□
Terminal cover	XL-CV		
Fitting	XL-TK		
Jumper	DL-SB2		
Removing tool	XL-NQ	(Sold separately)	
Voltage label	XL-NP	(Sold separately)	
Film	XL40-FM	(Sold separately)	

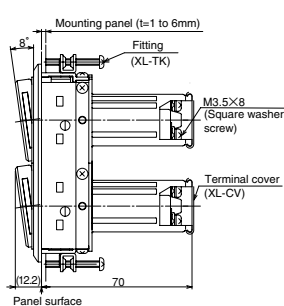
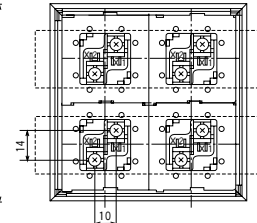
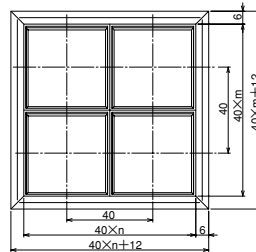
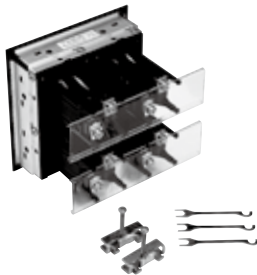
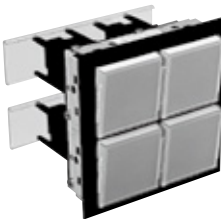
### ●Panel cut dimensions



m: No. of rows, n: No. of columns

## XL4001 (40×40)

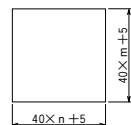
### Oblique window type



### ●Applicable accessories

LED unit	XL40-LED	-	□
Lens	XL4001-LENS	-	□
Terminal cover	XL-CV		
Fitting	XL-TK		
Jumper	DL-SB2		
Removing tool	XL-NQ	(Sold separately)	
Voltage label	XL-NP	(Sold separately)	
Film	XL40-FM	(Sold separately)	

### ●Panel cut dimensions



m: No. of rows, n: No. of columns

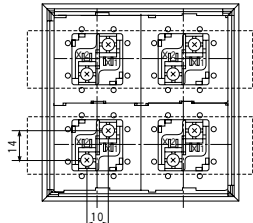
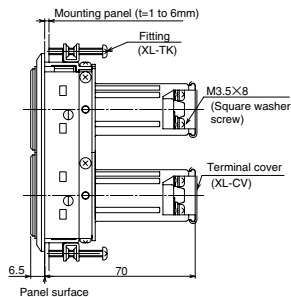
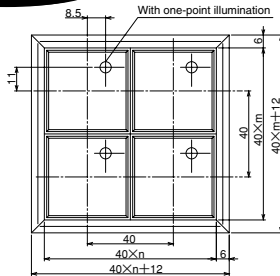
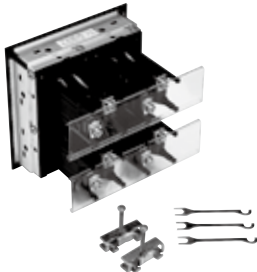
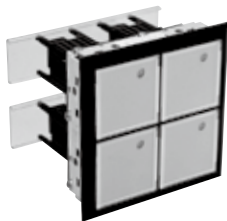


# XL TYPE

## STANDARD PRODUCTS

### XL4010 (40×40)

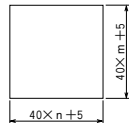
With one-point illumination



#### ●Applicable accessories

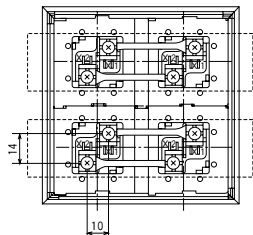
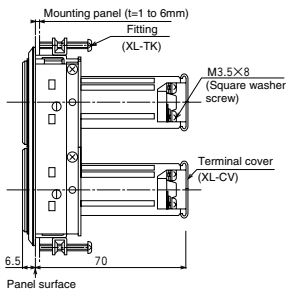
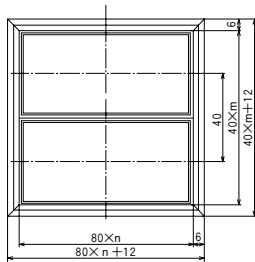
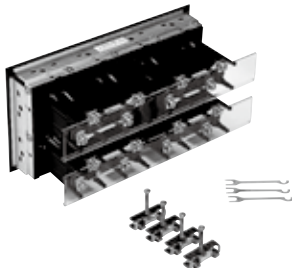
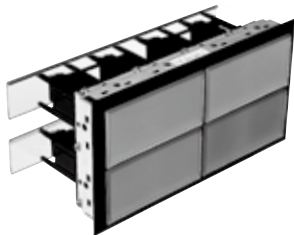
LED unit	XL4010-LED <input type="checkbox"/> - <input type="checkbox"/>
Lens	XL4010-LENS- <input type="checkbox"/>
Terminal cover	XL-CV
Fitting	XL-TK
Jumper	DL-SB2
Removing tool	XL-NQ (Sold separately)
Voltage label	XL-NP <input type="checkbox"/> (Sold separately)
Film	XL40-FM (Sold separately)

#### ●Panel cut dimensions



m: No. of rows, n: No. of columns

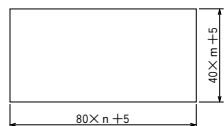
### XL4800 (40×80)



#### ●Applicable accessories

LED unit	XL40-LED <input type="checkbox"/> - <input type="checkbox"/>
Lens	XL48-LENS- <input type="checkbox"/>
Terminal cover	XL-CV
Fitting	XL-TK
Jumper	DL-SB2
Removing tool	XL-NQ (Sold separately)
Voltage label	XL-NP <input type="checkbox"/> (Sold separately)
Film	XL48-FM (Sold separately)

#### ●Panel cut dimensions



m: No. of rows, n: No. of columns

●LED TYPE



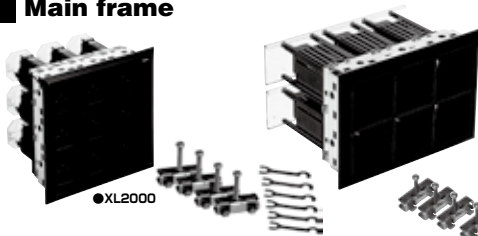
MULTI-WINDOW INDICATOR

# XL TYPE

## ACCESSORIES

### Main frame

(Order unit: 1)



#### HOW TO ORDER

### XL3000-02×10-000

Basic type	No. of rows	No. of columns	Frame only
Code	Window size (mm)	Compatible model	
XL2000	24×24	XL2000	
XL3000	30×30	XL3000, XL3010	
XL3600	30×60	XL3600	
XL4000	40×40	XL4000, XL4001, XL4010	
XL4800	40×80	XL4800	

### LED unit

(Order unit: 10)



Note) To use XL3600 or XL4800, two LED units are required per lamp.

The LED unit for XL4000, XL4001 and XL4800 are common.

The LED unit for XL3000 and XL3600 are common.

#### HOW TO ORDER

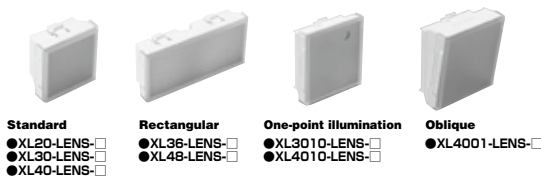
### XL30-LED024-R

Basic type		Power supply voltage		Illumination color	
Code	Compatible model	Code	Voltage	Code	Color
XL20	XL2000	024	24V AC / DC	R	Red
XL30	XL3000, XL3600	048	48V AC / DC	O	Orange
XL40	XL4000, 4001, 4800	110	100 / 110V AC / DC	W	Milky white
XL3010	XL3010	125	125V AC / DC	G	Green
XL4010	XL4010	220	220 / 220V AC *	Y	Yellow
				B	Blue

\* Except for XL20

### Lens

(Order unit: 10)

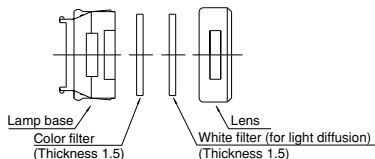


#### HOW TO ORDER

### XL30-LENS-R

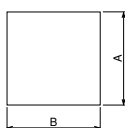
Basic type		Illumination color	
Code	Compatible model	Code	Color
XL20	XL2000	R	Red
XL30	XL3000	O	Orange
XL36	XL3600	W	Milky white
XL40	XL4000	G	Green
XL48	XL4800	Y	Yellow
XL4001	XL4001	B	Blue
XL3010	XL3010		
XL4010	XL4010		

### Lens configuration



\* To engrave letters, use the diffusion filter (milky white) as a nameplate.

#### Color filter • Diffusion filter size



Code	Dimension mm	A	B	Thickness
XL20	18.8	18.8	1.5	
XL30	24.8	24.8	1.5	
XL36	24.8	54.8	1.5	
XL40	34.8	34.8	1.5	
XL48	34.8	74.8	1.5	
XL4001	34.8	34.8	1.5	
XL3010	24.8	24.8	1.5	
XL4010	34.8	34.8	1.5	



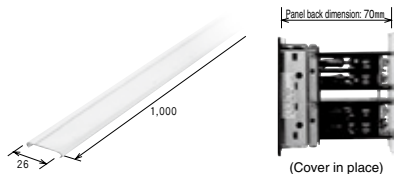
## MULTI-WINDOW INDICATOR



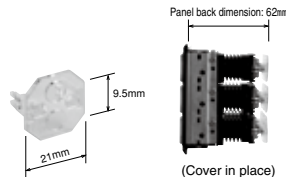
# XL TYPE

### Terminal cover

●XL-CV (for XL3000・4000 type)



\* The cover may be attached either vertically or horizontally in accordance with the crimp terminal connection type.



(Order unit: 100)

<b>XL-SB5</b>	<b>DL-SB1</b>	<b>XL-SB1C</b>	<b>DL-SB2</b>	<b>XL-SB2C</b>
(Thickness: 0.5)	(Thickness: 0.5)	(Thickness: 0.5)	(Thickness: 0.5)	(Thickness: 0.5)
For horizontal crossover only		With insulation coat		With insulation coat
<b>Applicable to XL2000</b>	<b>Applicable to XL3000, 3010, 3040, 3600</b>		<b>Applicable to XL4000, 4001, 4010, 4040, 4800</b>	

### Removing tool

●XL-TK

(Order unit: 10)



●XL-NQ

(Order unit: 10)



\* Removal use for lens and LED unit

**Film (Name label)** A4 size (Order unit: 1)

After printing letters, cut the film into pieces along the perforations with scissors. For printing, use a laser printer. With features of excellent heat resistance and weather resistance, the film is reliable to use.

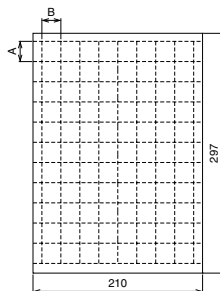
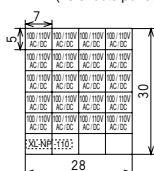
Type	Dimension A (mm)	Dimension B (mm)	Length ( $\mu\text{m}$ )	No. of windows
XL20-FM	19.0	17.5	125	154 windows / sheet
XL30-FM	25.0	23.5		88 windows / sheet
XL36-FM	25.0	53.5		33 windows / sheet
XL40-FM	35.0	33.5		48 windows / sheet
XL48-FM	35.0	73.5		16 windows / sheet

(Order unit: 10)

●XL-NP

(20 sheets per set)

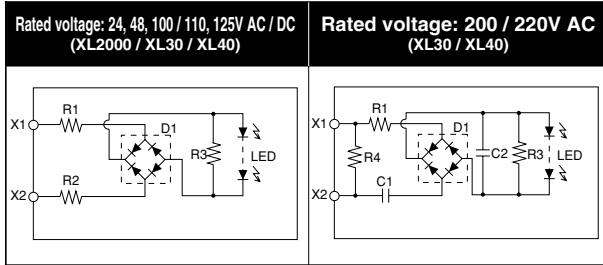
Power supply voltage		
Code	Voltage	Background color
024	24V AC / DC	Brown
048	48V AC / DC	Orange
110	100 / 110V AC / DC	Blue
125	125V AC / DC	Blue
220	220 / 220V AC	Red



\* For details of dimensions and specifications, contact Fuji Electric Industry.

## TECHNICAL DATA

### ■ Circuit diagram



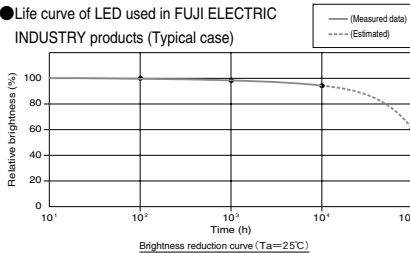
- R1: Limit resistance 1  
R2: Limit resistance 2  
R3: Illumination voltage control resistance  
R4: Protection resistance  
D1: Rectifying diode  
LED: Light emitting diode  
C1: Limit capacitor  
C2: Protection capacitor

Note) The 220 V AC type of XL30 / XL40 develops an inrush current of approx. 70 mA (max.) per lamp. With the XL3600 / XL4800, the inrush current is approx. 140 mA (max.). Be careful about the power supply capacity. With the XL3600 / XL4800, two circuits (shown on the left) are connected in parallel.

### ■ LED service life

Generally, the brightness of LED decreases over time while energized. Fuji Electric Industry defines the time when LED brightness is reduced to half the initial value as the LED service life. (The brightness reduction rate varies depending on operating conditions such as temperature and humidity.)

- Life curve of LED used in FUJI ELECTRIC INDUSTRY products (Typical case)



### ■ Component materials

- Major component list

Name	Material	Remarks
Color frame*	Modified PPO	UL-94-V0, Oxygen index: 26 or higher
Lens*	Polycarbonate	UL-94-V0, Oxygen index: 26 or higher
Housing*	Modified PPO	UL-94-V0, Oxygen index: 26 or higher
Unit	PBT	UL-94-V0
Terminal	Copper alloy	Tin solder plated
Terminal screw	Carbon steel	Nickel plated
Terminal cover	Polycarbonate	UL94-V2

<Compliance with the Fire Law>

Among all the components marked with \* (asterisk), those exposed on the panel surface are made of flame-retardant materials with a 26 or higher oxygen index.



# XL TYPE

## TECHNICAL DATA

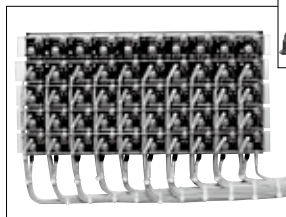
### ■Wiring

To use many lamps, consider the wiring route by referring to the following examples:

Use thorough caution with the wiring route, so that you can easily check the screw tightening conditions and wire numbers.

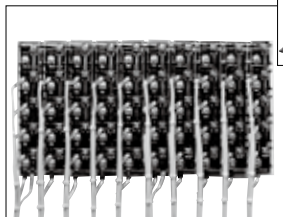
### Wiring for XL3000-05 x 10

- Ex. 1** To route wires  
inside the terminal cover (XL-CV)  
[Along cover lateral side]



- Align wires between the units and route the wires downward or upward.

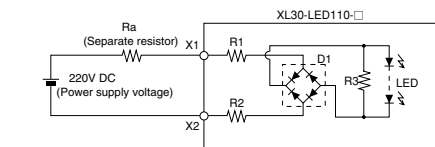
- Ex. 2** To route wires  
outside the terminal cover (XL-CV)  
[Along cover vertical side]



- Draw wires so they clear the cover and route the wires downward or upward.

### ■Separate resistor setup

- (Example) To use the 110 V type indicator with 220 V DC power supply:



$$R_a = \frac{(\text{Power supply voltage}) - (\text{Rated voltage of indicator})}{(\text{Rated voltage of indicator})} = \frac{220\text{V} - 110\text{V}}{11\text{mA}} = 10\text{k}\Omega$$

### ■Voltage fluctuations

(Voltage fluctuation range and illumination time)

Note) To consider heat generation during illumination, use the indicator under the following conditions:

Number of lamps assembled	Max. operating voltage range (Time)		
	All windows ON	50% max.	30% max.
Up to 4 lamps	+15% (continuous) +30% (3h)	+30% (continuous)	
Up to 5 lamps	—	+15% (3h)	+15% (continuous) +30% (3h)

\* The minimum operating voltage is set at -15% of the rated voltage in consideration of the brightness. For detailed information, contact Fuji Electric Industry.

- The following modes conform to the power standard (B402).  
For detailed information, contact Fuji Electric Industry.

Basic type	Window size (mm)	Power supply voltage
XL2040	24×24	Rated voltage: 100 / 110V AC / DC only
XL3040	30×30	
XL3640	30×60	
XL4040	40×40	
XL4840	40×80	

## INSTRUCTION MANUAL

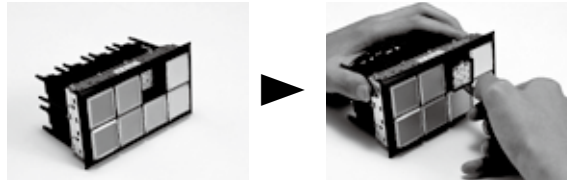
### ■How to remove lenses

Press the suction cup of the removing tool (XL-NQ) against the lens and then remove the lens.



### ■How to remove LED units

Hook the wider claw of the removing tool (XL-NQ) onto the LED unit removing slit and then pull out the LED unit horizontally.



### ■How to mount LED units and lenses

Assemble the lens to the LED unit and then insert them together into the main body. Sufficiently press the lens with your finger until it stops.

Note: Do not try to directly press the LED unit with your fingers.



### ■Instructions

- The terminal screws should be tightened at 0.8 N-m.
- To connect wiring, be sure to use an insulating tube or the like.
- To mount the main body to the panel, use fittings (XL-TK).
- The fittings (XL-TK) should be tighten at 0.2 N-m.
- The fittings (XL-TK) should be positioned diagonally.
- The LED unit should be inserted into the main body with the lens assembled to the LED unit.
- To remove the LED unit, hook the leading end of the stick of the removing tool (XL-NQ) onto the LED unit removing slit and then pull out the LED unit toward you.
- To remove the lens, press the suction cup of the removing tool (SL-NQ) against the lens and then pull out the lens.

# XL TYPE MULTI-WINDOW INDICATOR ORDER SHEET

Order date (Year / Month / Day )

Company name					Person in charge				
E-mail address					Phone No.				
Order type	Basic type		No. of rows	No. of columns	Power supply voltage	Illumination color	Color (when unit)		
	XL <input type="text"/>		- <input type="text"/>	×	<input type="text"/>	- <input type="text"/>	- <input type="text"/>	<input type="text"/>	
Quantity	Units	Delivery period	(DD / MM / YY)		Order No.				

- Draw a solid line to show the shape of the illumination frame to order in the following layout diagram.
- For the lens color arrangement, specify the illumination color code (R, O, W, G, Y, B).
- To specify a combination of different voltages, specify the power supply voltage code (024, 048, 110, 125, 220).
- Before you issue an order, thoroughly check the contents of your order. For orders with a short delivery period, we may not accept cancellation or change of your order.

## Illumination Color and Power Supply Voltage Layout Diagram

If an illumination color is not specified, the color of the illumination face is .

If a power supply voltage is not specified, the voltage is  V.

Column	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20
Row	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20
01																				
Voltage																				
02																				
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08																				
Voltage																				
09																				
Voltage																				
10																				
Voltage																				

XL 36 / XL 48  
XL 00 / XL 48  
XL 30 / XL 40

**Example** If an illumination color is not specified, the color of the illumination face is **R**.

If a power supply voltage is not specified, the voltage is **1:1:0** V.

Column	01	02	03	04	05	06	07	08
Row	01	02	03	04	05	06	07	08
01								
Voltage								

Indicates an order for XL2000 / XL30 / XL40 with an illumination color of "O" and power supply voltage of "024".

Indicates an order for XL2000 / XL30 / XL40 with an illumination color of "W" and power supply voltage of "024".

Indicates an order for XL2000 / XL30 / XL40 with an illumination color of "G" and power supply voltage of "110".

Indicates an order for XL2000 / XL30 / XL40 with an illumination color of "R" and power supply voltage of "110".