



# LED BRACKET SERIES

## Features

LED bracket series are small size and low cost products series. As super-bright LED is adopted, they maintain illumination brighter than even incandescent lamps. LED consumes electric power less than the electric consumption of incandescent lamps and has longer life, being excellent economically. Customers can choose any model freely out of fifty or more models in the LED bracket series according to your budget or scheduled design. Super-bright LED lamp series manufactured by Toyogiken Co.,Ltd. Have adopted new light source of the new era and are concentration of the company.

## In ordering LED bracket series

DPR    10    -    24    9    -    R    S  
(1)                      (2)                      (3)                      (4)                      (5)                      (6)

(1) Basic type

DP    : With out resistor  
DPR : With resistor

(4) Body material

7, 8, 9, 9B : Metal  
B            : Resin

(2) Body diameter

6.....  $\phi$  6  
7.....  $\phi$  7  
8.....  $\phi$  8  
9.....  $\phi$  9  
10.....  $\phi$  10  
16.....  $\phi$  16

(5) Light color

R.....Red  
G.....Green  
W.....White  
O.....Orange

(3) Voltage

0.....No resistor  
06....DC6V  
12....DC12V  
24....DC24V

(6) Terminal Shapes

S..... Solder terminal  
B.....Screw terminal


## Rating and specification of LED's

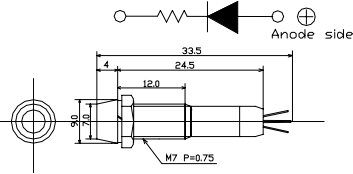
Test items	Specifications (LED bracket)
Rated voltage	3V- 12V 24V $\pm$ 10% DC
Rated amperage	10mA DC (Red) 15mA DC ( Green, White, Orange) $\phi$ 16 $\rightarrow$ 15mA DC for all
Wave length of LED element light	Red: 630nm Green: 565nm Amber:585nm Orange : 605nm
Peak reverse voltage	3V DC
Ambient temperature	-20 $\sim$ 60 $^{\circ}$ C
Life	50,000hours
Insulation resistance	More than 100M $\Omega$ at 500V DC ( between the charge part and the non-charged metal part )
Withstand voltage	For 1minute at 500V AC ( between the charged part and the non-charged metal part)
Heat resistance	After 24 hours at 80 $^{\circ}$ C, the sample should satisfy insulation resistance and withstand voltage.
Low temperature resistance	After 24 hours at -25 $^{\circ}$ C, the sample should satisfy insulation resistance and withstand voltage
Heat cycle resistance	After 85 cycles of tests (1 cycle includes 10 minutes at room temperature, 30minutes at +80 $^{\circ}$ C, 10minutes at room temperature and 30 minutes at -25 $^{\circ}$ C, the sample should satisfy insulation resistance and withstand voltage.
Vibration resistant property	After applying a power at amplitude 1mm 16 $\sim$ 55Hz while supplying a rated voltage for 30 minutes each in X, Y and Z directions, the sample should satisfy the insulation resistance and withstand voltage. No defective lamp should be observed.
Drop page resistance	After each sample shall dropped 6 times naturally from a level of 1m to a wooden floor, no defective lamp should be found. No crack or slackness should be found.
Terminal strength	2 leads shall be soldered to a terminal and these leads shall be pulled together at a 4Kg force in vertical direction for 1 minute. No problem should be found. For a pin terminal, it shall be pulled at 2Kg force.

# R resistor built-in type LED bracket

## $\phi 7$ Resistor built-in type LED bracket


DPR7-\*\*9

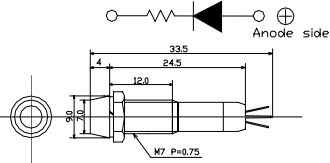




Color	DC 6V	DC 12V	DC 24V
Red	DPR7-069-RS	DPR7-129-RS	DPR7-249-RS
Green	DPR7-069-GS	DPR7-129-GS	DPR7-249-GS
White			DPR7-249-WS
Orange			DPR7-249-OS

DPR7-\*\*9B




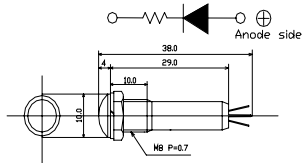


Color	DC 6V	DC 12V	DC 24V
Red	DPR7-069B-RS	DPR7-129B-RS	DPR7-249B-RS
Green	DPR7-069B-GS	DPR7-129B-GS	DPR7-249B-GS
White			DPR7-249B-WS
Orange			DPR7-249B-OS

## $\phi 8$ Resistor built-in type LED bracket


DPR8-\*\*D

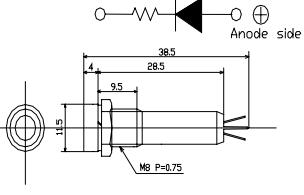




Color	DC 6V	DC 12V	DC 24V
Red	DPR8-06D-RS	DPR8-12D-RS	DPR8-24D-RS
Green	DPR8-06D-GS	DPR8-12D-GS	DPR8-24D-GS
White			DPR8-24D-WS
Orange			DPR8-24D-OS


## DPR8-\*\*DP

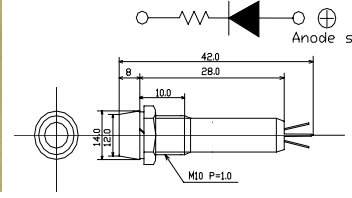




Color	DC 6V	DC 12V	DC 24V
Red	DPR8-06DP-RS	DPR8-12DP-RS	DPR8-24DP-RS
Green	DPR8-06DP-GS	DPR8-12DP-GS	DPR8-24DP-GS
White			DPR8-24DP-WS
Orange			DPR8-24DP-OS


## DPR8-\*\*M

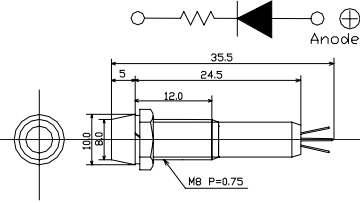




Color	DC 6V	DC 12V	DC 24V
Red	DPR8-06M-RS	DPR8-12M-RS	DPR8-24M-RS
Green	DPR8-06M-GS	DPR8-12M-GS	DPR8-24M-GS
White			DPR8-24M-WS
Orange			DPR8-24M-OS


## DPR8-\*\*9

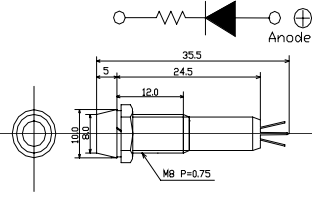




Color	DC 6V	DC 12V	DC 24V
Red	DPR8-069-RS	DPR8-129-RS	DPR8-249-RS
Green	DPR8-069-GS	DPR8-129-GS	DPR8-249-GS
White			DPR8-249-WS
Orange			DPR8-249-OS

## DPR8-\*\*9B




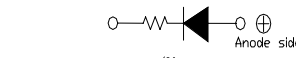
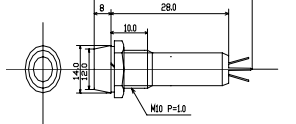


Color	DC 6V	DC 12V	DC 24V
Red	DPR8-069B-RS	DPR8-129B-RS	DPR8-249B-RS
Green	DPR8-069B-GS	DPR8-129B-GS	DPR8-249B-GS
White			DPR8-249B-WS
Orange			DPR8-249B-OS

# φ 10 Resistor built-in type LED bracket


## DPR10-\*\*\*M

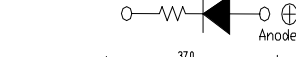
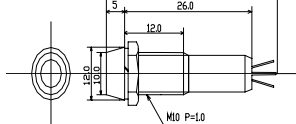


Color	DC 6V	DC 12V	DC 24V
Red	DPR10-06M-RS	DPR10-12M-RS	DPR10-24M-RS
Green	DPR10-06M-GS	DPR10-12M-GS	DPR10-24M-GS
White			DPR10-24M-WS
Orange			DPR10-24M-OS


## DPR10-\*\*\*9

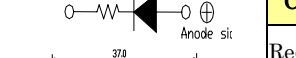
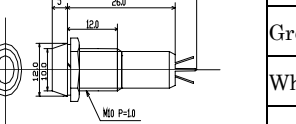


Color	DC 6V	DC 12V	DC 24V
Red	DPR10-069-RS	DPR10-129-RS	DPR10-249-RS
Green	DPR10-069-GS	DPR10-129-GS	DPR10-249-GS
White			DPR10-249-WS
Orange			DPR10-249-OS

## DPR10-\*\*\*9B

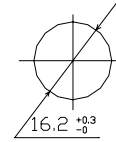
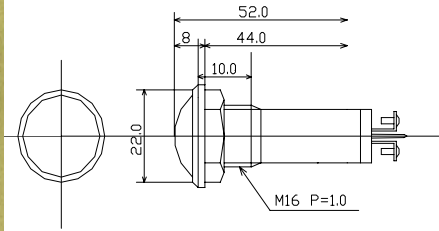


Color	DC 6V	DC 12V	DC 24V
Red	DPR10-069B-RS	DPR10-129B-RS	DPR10-249B-RS
Green	DPR10-069B-GS	DPR10-129B-GS	DPR10-249B-GS
White			DPR10-249B-WS
Orange			DPR10-249B-OS

# φ 16 Resistor built-in type LED bracket

## DPR16-\*\*-DB

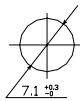


Panel cut dimension  
Panel thickness 0.5 - 6.0mm

Color	DC 6V	DC 12V	DC 24V
Red	DPR16-06DB-RS	DPR16-12DB-RS	DPR16-24DB-RS
Green	DPR16-06DB-GS	DPR16-12DB-GS	DPR16-24DB-GS
White			DPR16-24DB-WS
Orange			DPR16-24DB-OS

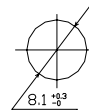
## Panel cut dimension

**φ 7 (7.1~7.4)**



Panel cut dimension  
Panel thickness 0.5 - 4.0mm

**φ 8(8.1~8.4)**



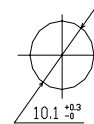
Panel cut dimension  
Panel thickness 0.5 - 6.0mm

**φ 9 (9.1~9.4)**



Panel cut dimension  
Panel thickness 0.5 - 6.0mm

**φ 10 (10.1~10.4)**



Panel cut dimension  
Panel thickness 0.5 - 6.0mm

# No resistor type LED bracket

When brackets which do not have current limiting resistor in them are to be used at voltage above the standard value (2V DC) of forward voltage, be sure to insert a current limiting resistor.

Resistance listed in the below table shall be calculated according to the formula shown below.

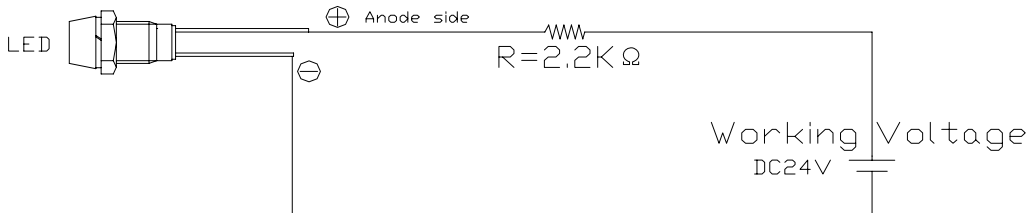
## ● Condition

1: DP6-09-RS ( φ 6 No resistor type LED bracket Color : Red )

2: Working voltage DC24V

Sample of Connection

DP6-09-RS    Rated Voltage : DC 3V - DC 24V  
 Rated Ampare : DC 10mA



Resistance(Ω)=Working voltage(V)-2 / Rated amperage (I)  
 =24V-2 / DC10mA  
 =2.2KΩ

Standard of rated electric power (W) of the resistor

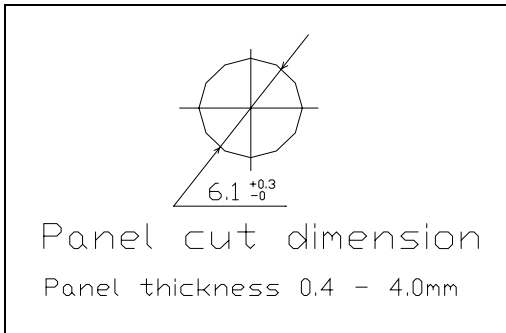
W = Stabilized amperage (I) × Working Voltage (V) × 2  
 = 10mA × 24V × 2  
 =0.01 ×24 × 2  
 = 0.48W (about 0.5 W )

Therefore the Resistance use 2.2 KΩ 0.5W


## Capacities of outer resistors

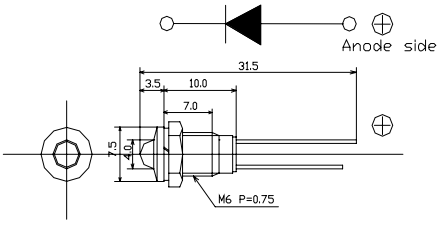
Voltage	Red (R)	Green (G)	White (W)	Orange (O)
DC 6V	390Ω 0.5W	270Ω 0.5W	270Ω 0.5W	270Ω 0.5W
DC 12C	1 KΩ 0.5W	680Ω 0.5W	680Ω 0.5W	680Ω 0.5W
DC 24V	<b>2.2 KΩ 0.5W</b>	1.5 KΩ 0.5W	1.5 K 0.5W	1.5 KΩ 0.5W

## φ 6 No resistor type LED bracket




### DP6-08-\*

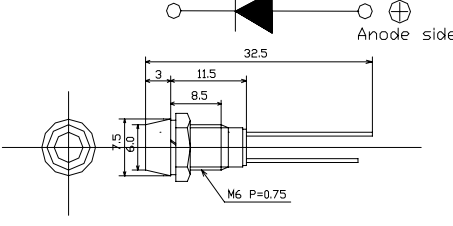




Light Color	Order Form
Red	DP6-08-RP
Green	DP6-08-GP


### DP6-09-\*

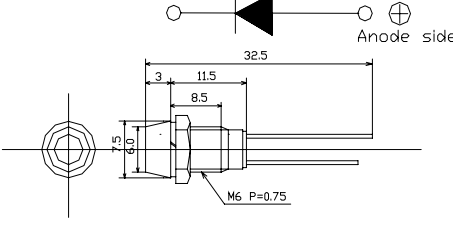




Light Color	Order Form
Red	DP6-09-RP
Green	DP6-09-GP

### DP6-09B-\*






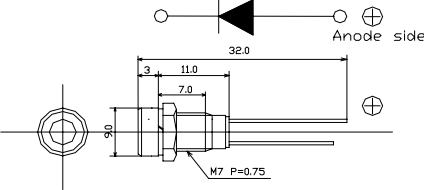
Light Color	Order Form
Red	DP6-09B-RP
Green	DP6-09B-GP

## φ 7 No resistor type LED bracket

Panel cut dimension : φ 7.1 -0, +0.3


### DP7-07-\*

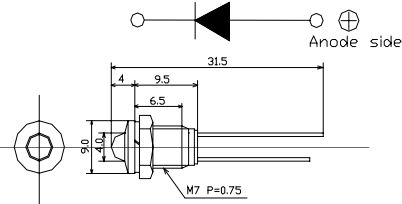




Light Color	Order Form
Red	DP7-07-RP
Green	DP7-07-GP


### DP7-08-\*

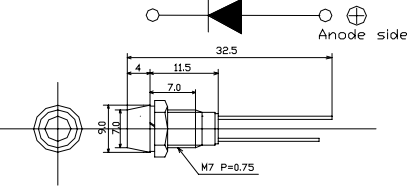




Light Color	Order Form
Red	DP7-08-RP
Green	DP7-08-GP


### DP7-09-\*

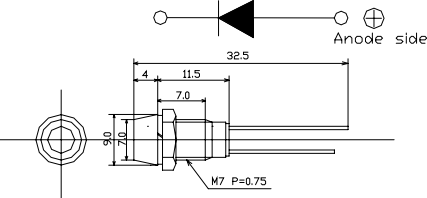




Light Color	Order Form
Red	DP7-09-RP
Green	DP7-09-GP

### DP7-09B-\*




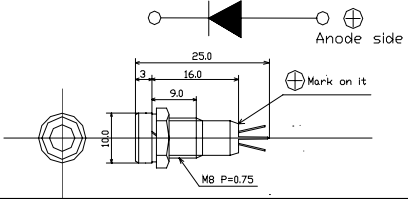


Light Color	Order Form
Red	DP7-09B-RP
Green	DP7-09B-GP


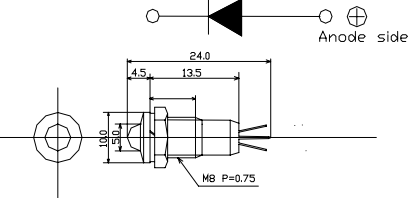
φ 8 No resistor type LED bracket

Panel cut dimension : φ 8.1 -0, +0.3


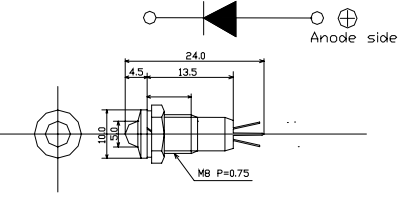
**DP8-07-\***

		Light Color	Order Form
		Red	DP8-07-RP
		Green	DP8-07-GP


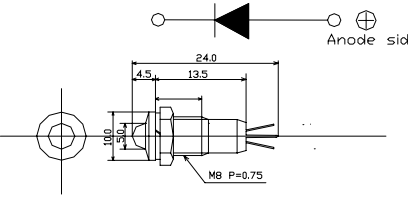
**DP8-08-\***

		Light Color	Order Form
		Red	DP8-08-RP
		Green	DP8-08-GP

**DP8-09-\***

		Light Color	Order Form
		Red	DP8-09-RP
		Green	DP8-09-GP


**DP8-09B-\***

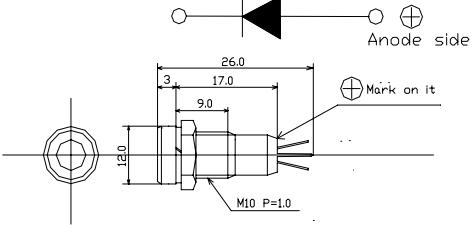
		Light Color	Order Form
		Red	DP8-09B-RP
		Green	DP8-09B-GP

# φ 10 No resistor type LED bracket

Panel cut dimension : φ 10.1 -0, +0.3


## DP10-07-\*

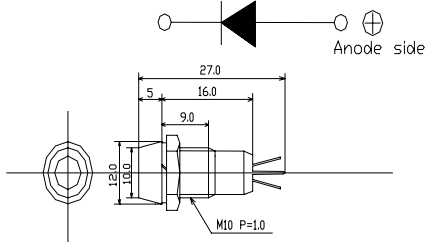




Light Color	Order Form
Red	DP10-07-RP
Green	DP10-07-GP

## DP10-09-\*

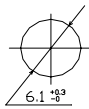




Light Color	Order Form
Red	DP10-09-RP
Green	DP10-09-GP

## Panel cut dimension

φ 6 (6.1~6.4)



Panel cut dimension  
Panel thickness 0.4 - 4.0mm

φ 7(7.1~7.4)



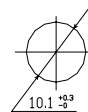
Panel cut dimension  
Panel thickness 0.5 - 4.0mm

φ 8 (8.1~8.4)



Panel cut dimension  
Panel thickness 0.5 - 6.0mm

φ 10 (10.1~10.4)



Panel cut dimension  
Panel thickness 0.5 - 6.0mm