

## Product datasheet



### TP series

#### 24VDC:

TP1: M21GW35E(B)

TP2: M22GW35E(B)

TP3: M23GW35E(B)

TP4: M24GW35E(B)

#### 12VDC:

TP1: M21GW35D(A)

TP2: M22GW35D(A)

TP3: M23GW35D(A)

TP4: M24GW35D(A)

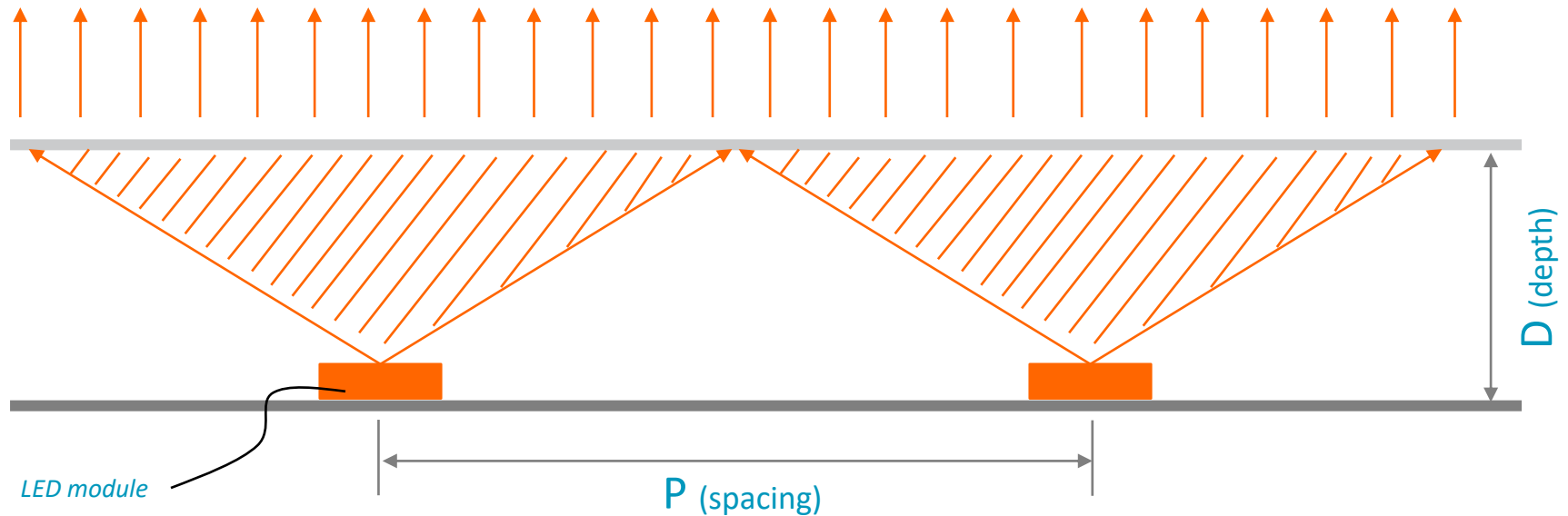
### Areas of application

- Signage and illuminated advertising.
- Backlighting of channel letters and light box.
- Best for 50mm to 200mm depth (2inch to 8inch).

### Product main benefits

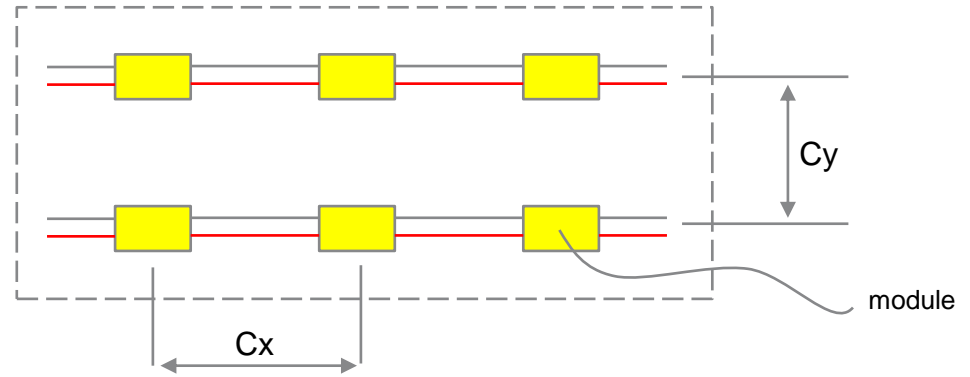
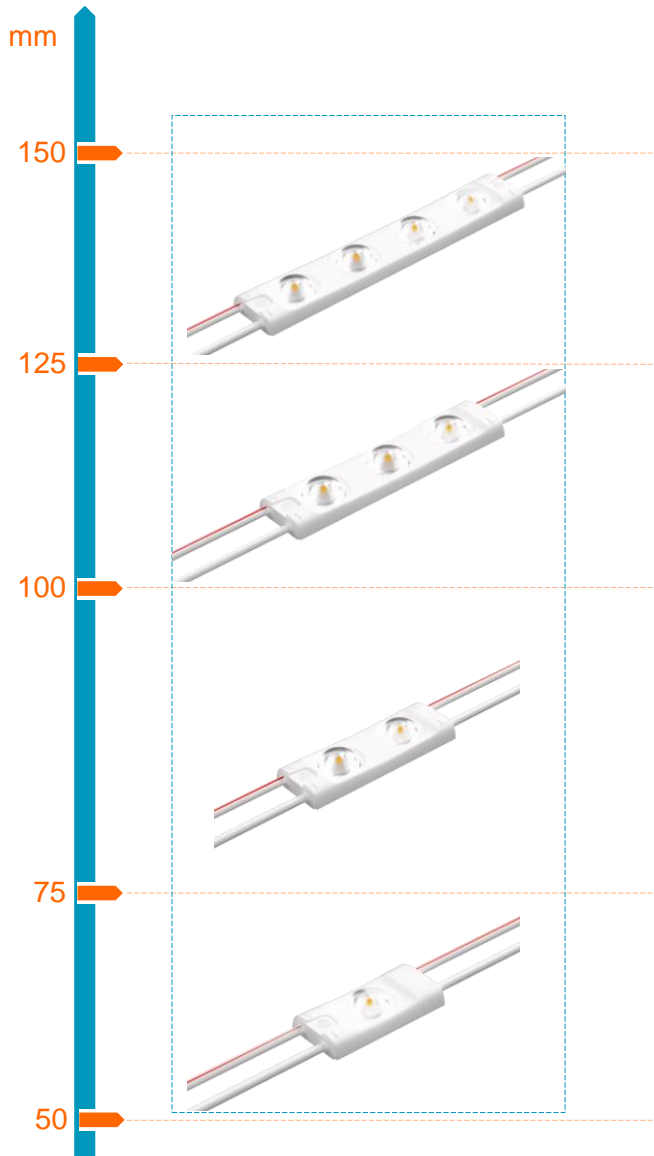
- New excellent small lens design can get much more uniformity performance in application.
- New technology to get high efficiency.
- 5 years warranty.
- 170 lm/W (6500K).





$$\text{optical performance proportion} = \frac{D(\text{depth})}{P(\text{spacing})} = 1:2.5$$

- The proportion of “P” and “D” can show the performance of lens optics design.
- The bigger proportion, the wider light spot.
- The proportion is for reference from lab, actual layout need based on real application.



| Product (6500K) | Depth | Cx    | Cy    | Surface illuminance |
|-----------------|-------|-------|-------|---------------------|
| TP1             | 50mm  | 75mm  | 70mm  | 3000lux             |
| TP2             | 80mm  | 125mm | 120mm | 2500lux             |
| TP3             | 100mm | 175mm | 170mm | 1800lux             |
| TP4             | 130mm | 200mm | 190mm | 1500lux             |

| PRODUCTS | PART NUMBERS | Typical Voltage | Energy Consumption (W/module) | Energy Consumption (W/chain) | Energy Consumption (W/ft.) | Additional Information (modules/chain) |
|----------|--------------|-----------------|-------------------------------|------------------------------|----------------------------|--|
| TP1      | M21GW35E     | 24VDC           | 0.36                          | 36                           | 1.5                        | 100                                    |
|          | M21GW35B     |                 |                               | 10.8                         |                            | 30                                     |
| TP2      | M22GW35E     | 24VDC           | 0.72                          | 36                           | 1.8                        | 50                                     |
|          | M22GW35B     |                 |                               | 21.6                         |                            | 30                                     |
| TP3      | M23GW35E     | 24VDC           | 1.08                          | 43.2                         | 1.9                        | 40                                     |
|          | M23GW35B     |                 |                               | 32.4                         |                            | 30                                     |
| TP4      | M24GW35E     | 24VDC           | 1.44                          | 43.2                         | 2.2                        | 30                                     |
|          | M24GW35B     |                 |                               | 36                           |                            | 25                                     |

Remark:

1. Ranking at  $t_a = 25^\circ\text{C}$ .
2. M2xGW35E are constant current design, M2xGW35B are constant voltage design.

| PRODUCTS | PART NUMBERS | Typical Voltage | Energy Consumption (W/module) | Energy Consumption (W/chain) | Energy Consumption (W/ft.) | Additional Information (modules/chain) |
|----------|--------------|-----------------|-------------------------------|------------------------------|----------------------------|--|
| TP1      | M21GW35D     | 12VDC           | 0.36                          | 10.8                         | 1.5                        | 30                                     |
|          | M21GW35A     |                 |                               | 7.2                          |                            | 20                                     |
| TP2      | M22GW35D     | 12VDC           | 0.72                          | 18                           | 1.8                        | 25                                     |
|          | M22GW35A     |                 |                               | 14.4                         |                            | 20                                     |
| TP3      | M23GW35D     | 12VDC           | 1.08                          | 21.6                         | 1.9                        | 20                                     |
|          | M23GW35A     |                 |                               |                              |                            |  |
| TP4      | M24GW35D     | 12VDC           | 1.44                          | 28.8                         | 2.2                        | 20                                     |
|          | M24GW35A     |                 |                               |                              |                            |  |

Remark:

1. Ranking at  $t_a = 25^\circ\text{C}$ .
2. M2xGW35D are constant current design, M2xGW35A are constant voltage design.

# Photometrical data (24VDC)

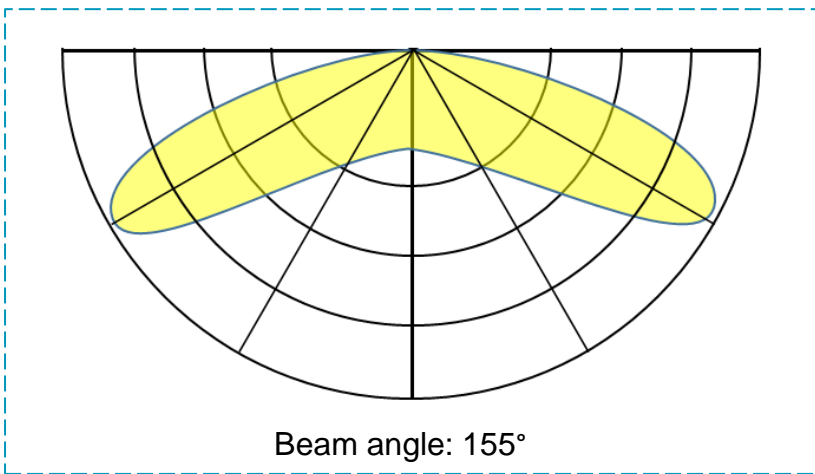
| Products | Part Numbers | Light color (designation) | Color (CCT, wavelength) | Typical Brightness (lumen/module) | Typical Brightness (lumen/ft.) |
|----------|--------------|---------------------------|-------------------------|-----------------------------------|--------------------------------|
| TP1      | M21GW35E(B)  | Warm white                | 3000K/4000K             | 50                                | 203                            |
|          |              | White                     | 5000K/6500K/7100K       | 54                                | 220                            |
|          |              | Cool White                | 8000K/10000K            | 50                                | 203                            |
| TP2      | M22GW35E(B)  | Warm white                | 3000K/4000K             | 116                               | 286                            |
|          |              | White                     | 5000K/6500K/7100K       | 122                               | 298                            |
|          |              | Cool White                | 8000K/10000K            | 116                               | 286                            |
| TP3      | M23GW35E(B)  | Warm white                | 3000K/4000K             | 150                               | 261                            |
|          |              | White                     | 5000K/6500K/7100K       | 160                               | 279                            |
|          |              | Cool White                | 8000K/10000K            | 150                               | 261                            |
| TP4      | M24GW35E(B)  | Warm white                | 3000K/4000K             | 233                               | 355                            |
|          |              | White                     | 5000K/6500K/7100K       | 245                               | 373                            |
|          |              | Cool White                | 8000K/10000K            | 233                               | 355                            |

# Photometrical data (12VDC)

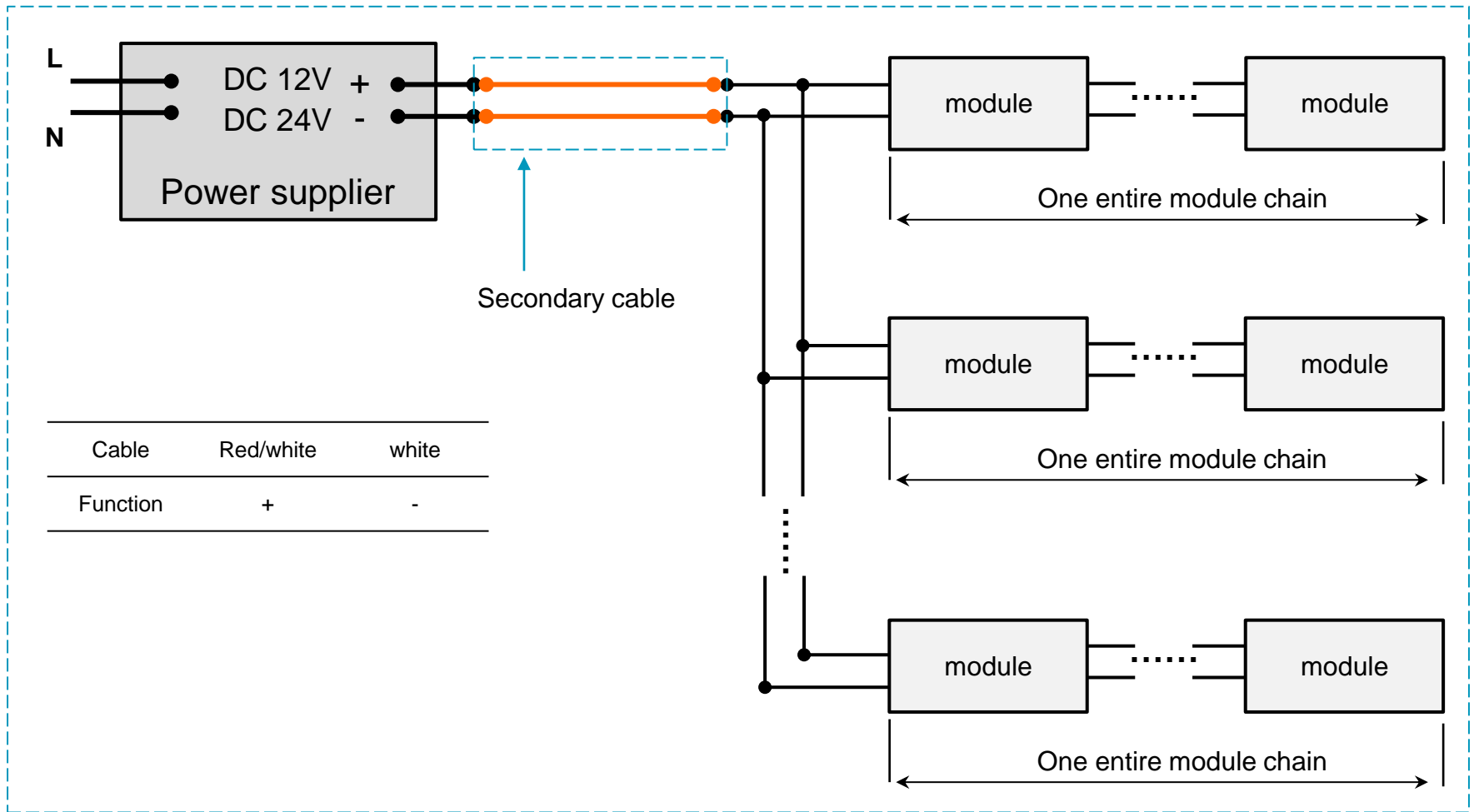
| Products | Part Numbers | Light color (designation) | Color (CCT, wavelength) | Typical Brightness (lumen/module) | Typical Brightness (lumen/ft.) |
|----------|--------------|---------------------------|-------------------------|-----------------------------------|--------------------------------|
| TP1      | M21GW35D(A)  | Warm white                | 3000K/4000K             | 58                                | 236                            |
|          |              | White                     | 5000K/6500K/7100K       | 61                                | 248                            |
|          |              | Cool White                | 8000K/10000K            | 58                                | 236                            |
| TP2      | M22GW35D(A)  | Warm white                | 3000K/4000K             | 116                               | 283                            |
|          |              | White                     | 5000K/6500K/7100K       | 122                               | 298                            |
|          |              | Cool White                | 8000K/10000K            | 116                               | 283                            |
| TP3      | M23GW35D(A)  | Warm white                | 3000K/4000K             | 174                               | 303                            |
|          |              | White                     | 5000K/6500K/7100K       | 184                               | 321                            |
|          |              | Cool White                | 8000K/10000K            | 174                               | 303                            |
| TP4      | M24GW35D(A)  | Warm white                | 3000K/4000K             | 233                               | 355                            |
|          |              | White                     | 5000K/6500K/7100K       | 245                               | 373                            |
|          |              | Cool White                | 8000K/10000K            | 233                               | 355                            |

# Application Conditions and light distribution

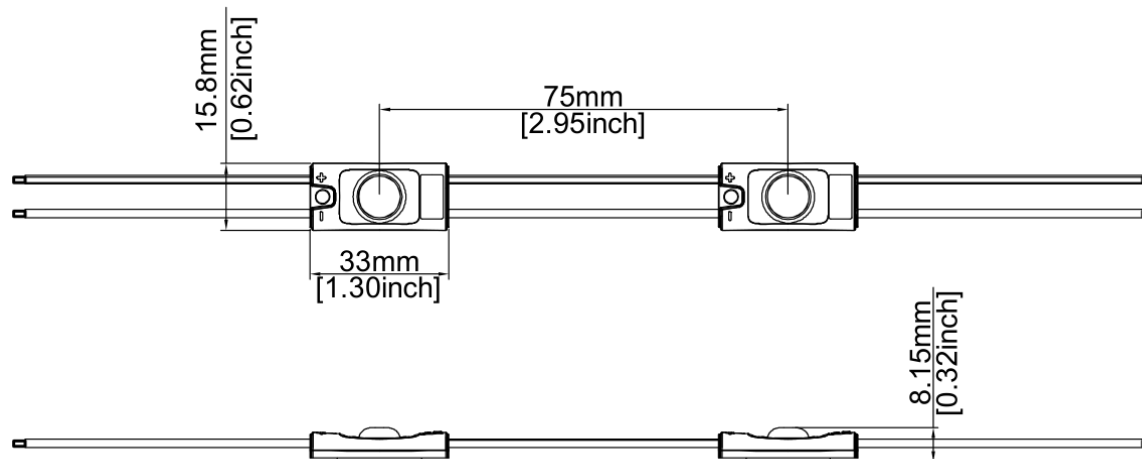
|                                     |                                  |
|-------------------------------------|----------------------------------|
| Operating Environment ( $t_a$ )     | -25°C to +60°C                   |
| Storage Temperature Range ( $t_s$ ) | -40°C to +85°C                   |
| IP Rating                           | IP66                             |
| Lifetime (L70B50)                   | 5 years                          |
| $t_c$ temperature                   | 80°C                             |
| Dimming mode                        | Dimmable                         |
| Energy Efficacy Class               | B<br>( $\eta_{TM} = 185lm/W$ )   |
| Cutting Resolution                  | Cut on wire between every module |



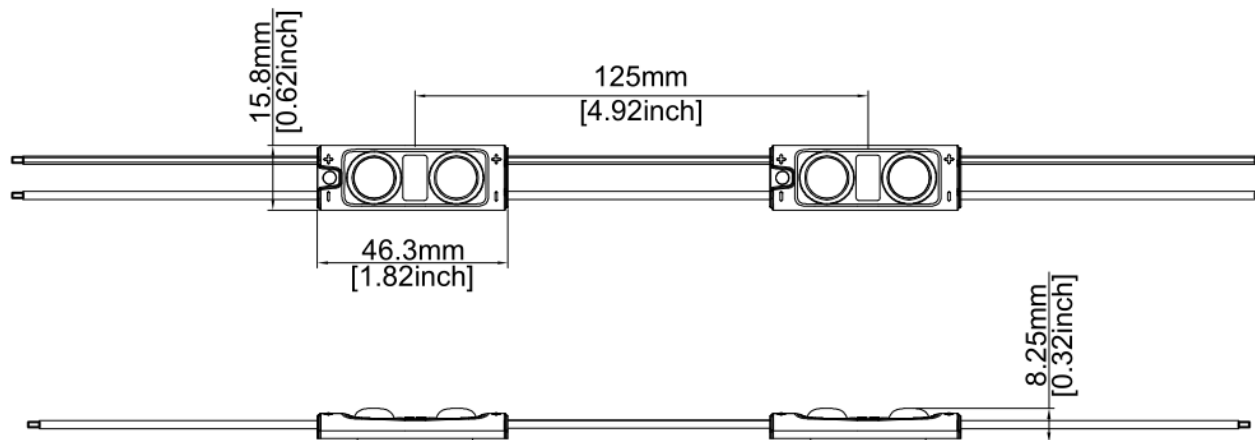




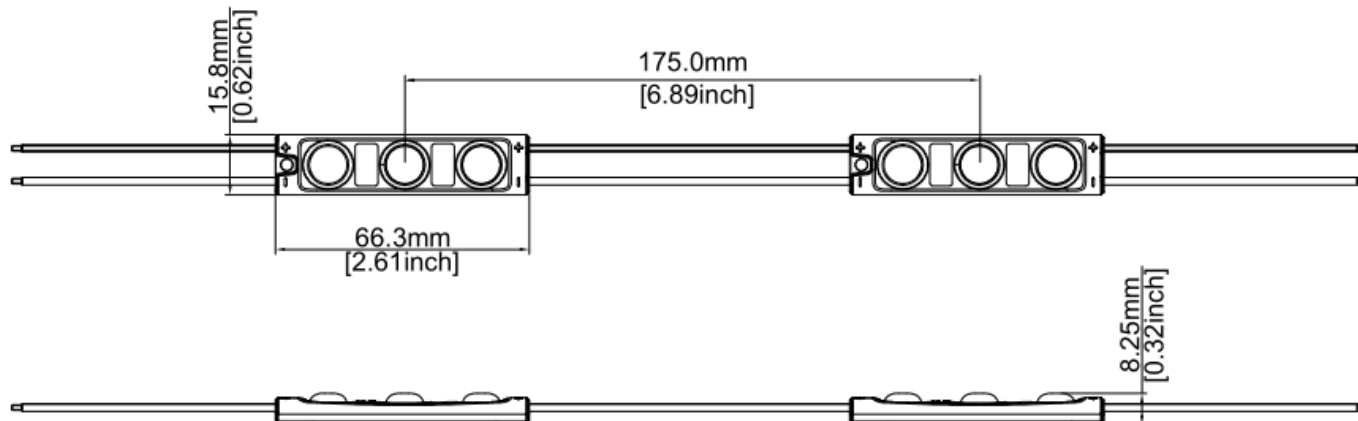
## TP1



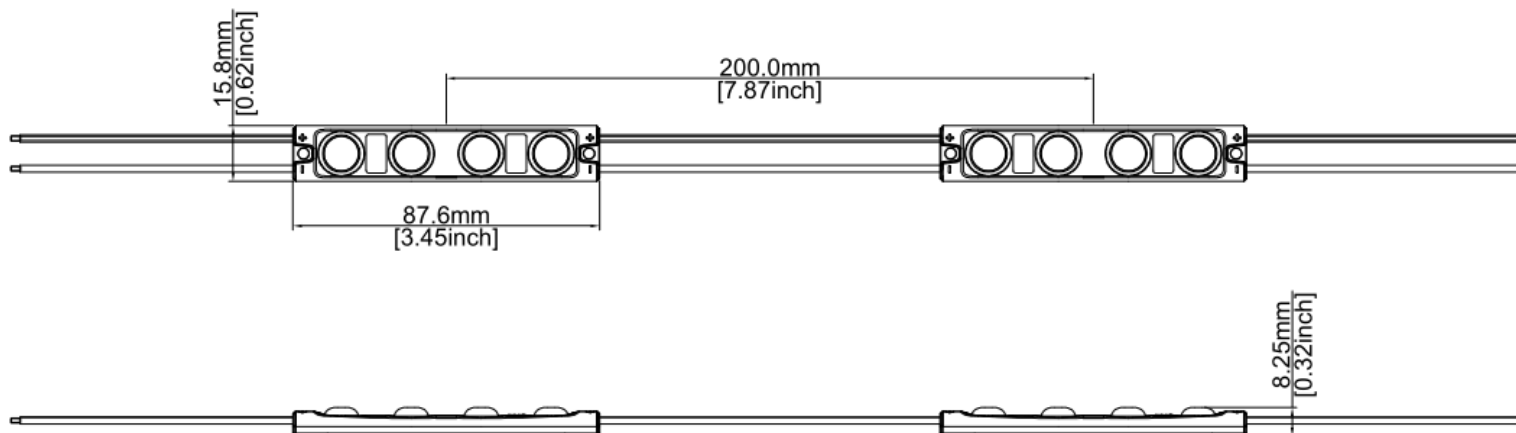
## TP2



## TP3



## TP4



| PRODUCTS | PART NUMBERS | Package unit (modules/carton box) | Carton box Dimensions (length x width x height) |
|----------|--------------|-----------------------------------|---|
| TP1      | M21GW35x     |                                   | 52 x 37 x 26 cm                                 |
| TP2      | M22GW35x     |                                   | 52 x 37 x 26 cm                                 |
| TP3      | M23GW35x     |                                   | 52 x 37 x 26 cm                                 |
| TP4      | M24GW35x     |                                   | 52 x 37 x 26 cm                                 |

## Additional information:

- Installation of LED modules (with power supplies) needs to be made under consideration of all valid regulations and norms.
- Installation by qualified electrician only.
- Parallel connection is mandatory for safe electrical operation. Serial connection of LED modules is discouraged. Unbalanced voltage drop in serial connection can cause hazardous overload
- Electrical contact is achieved with the contact cables or the terminals of the module. Please refer to the technical data for maximum number of LED modules that can be operated on one control gear.
- To avoid mechanical damage, the LED modules have to be attached securely to the intended mounting surface. It is recommended to avoid heavy vibration.
- LED modules are dimmable by means of PWM (pulse width modulation).