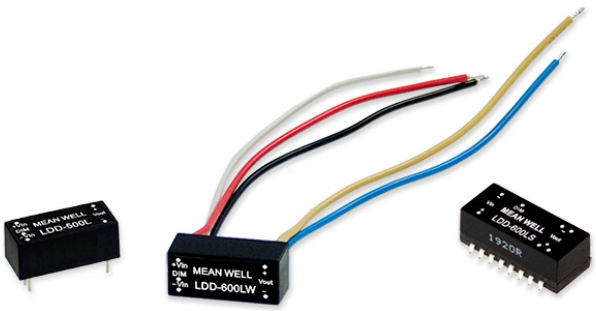
# DC-DC Constant Current Step-Down LED driver — LDD-L series



## Features :

- DC/DC step-down converter
- Constant current output: 300mA to 700mA
- Wide input voltage: 9 ~ 36VDC
- Wide output LED string voltage: 2 ~ 32VDC
- High efficiency up to 95%
- Built-in EMI filter, comply with BS EN/EN55015 and FCC part15 without additional input filter and capacitors
- Built-in PWM dimming and remote ON/OFF control
- Protections: Short circuit / Over temperature
- Cooling by free air convection
- Fully encapsulated with IP67 level for pin and wire style
- Compact size
- Low cost, high reliability
- Suitable for driving illumination LED
- 3 years warranty

## GTIN CODE

MW Search: https://www.meanwell.com/serviceGTIN.aspx

LDD-350L □ Blank : pin style
W : wire style
S : SMD style

## SPECIFICATION

| ORDER NO. | | | LDD-300L□ | LDD-350L□ | LDD-500L□ | LDD-600L□ | LDD-700L□ |
|---|---|---|---|---|---|---|---|
| OUTPUT | CURRENT RANGE | | 300mA | 350mA | 500mA | 600mA | 700mA |
| | VOLTAGE RANGE Note.4 | | 2 ~ 32VDC for LDD-300~700L/LW ; 2~ 28VDC for LDD-300~700LS | | | | |
| | CURRENT ACCURACY (Typ.) | | ±5% at 24VDC input | | | | |
| | RIPPLE & NOISE(max.) Note.2 | | 150mVp-p | 150mVp-p | 150mVp-p | 200mVp-p | 200mVp-p |
| | SWITCHING FREQENCY | | 40KHz ~ 1000KHz | | | | |
| | EXTERNAL CAPACITANCE LOAD (max.) | | 2.2uF | | | | |
| INPUT | VOLTAGE RANGE | | 9 ~ 36VDC for LDD-300~700L/LW ; 9~ 32VDC for LDD-300~700LS | | | | |
| | EFFICIENCY (max.) | | 95% at full load and 24VDC/36VDC input for LDD-300~700L/LW ; 95% at full load and 24VDC input for LDD-300~700LS | | | | |
| | DC CURRENT | Full load Note.3 | 300mA | 350mA | 500mA | 600mA | 700mA |
| | | No load | 5mA | | | | |
| | FILTER | | Capacitor | | | | |
| PWM DIMMING & ON/OFF CONTROL | REMOTE ON/OFF | | Leave open if not use | | | | |
| | | | Power ON with dimming: DIM ~ -Vin >3.5 ~ 8VDC or open circuit | | | | |
| | | | Power OFF : DIM ~ -Vin < 0.5VDC or short | | | | |
| | PWM FREQUENCY | | 100 ~ 1KHz | | | | |
| | QUIESCENT INPUT CURRENT IN SHUTDOWN MODE(max.) | | 1mA at PWM dimming OFF and 24VDC input | | | | |
| PROTECTION | SHORT CIRCUIT | | Regulated at rated output current | | | | |
| | | | Protection type: Can be continued, recovers automatically after fault condition is removed | | | | |
| | OVER TEMPERATURE | | Tj 150℃ typically(IC1) detect on main control IC | | | | |
| | | | Protection type : Shut down, recovers automatically after temperature goes down | | | | |
| ENVIRONMENT | WORKING TEMP. | | -40 ~ + 85℃ (Refer to derating curve) | | | | |
| | WORKING HUMIDITY | | 20% ~ 90% RH non-condensing for LDD-300~700L/LW ; 20% ~ 85% RH non-condensing for LDD-300~700LS | | | | |
| | STORAGE TEMP., HUMIDITY | | -55 ~ +125℃, 10 ~ 95% RH | | | | |
| | TEMP. COEFFICIENT | | ±0.03% / ℃ | | | | |
| | VIBRATION | | 10 ~ 500Hz, 2G 10min./1 cycle, period for 60min. each along X, Y, Z axes | | | | |
| | OPERATING CASE TEMP. (max.) | | 100℃ | | | | |
| EMC | SAFETY STANDARDS | | EAC TP TC 020/2011 approved | | | | |
| | EMC EMISSION | | Compliance to BS EN/EN55015, FCC part 15 class B, EAC TP TC 020 | | | | |
| | EMC IMMUNITY | | Compliance to BS EN/EN61000-4-2,3,4,6,8, light industry level, criteria A, EAC TP TC 020 | | | | |
| OTHERS | MTBF | | 1000Khrs min. MIL-HDBK-217F (25℃) | | | | |
| | DIMENSION | | 22.6*9.9*8.9mm or 0.89"*0.39"*0.35" inch (L*W*H) for LDD-300~700L/LW ; 25.4*10.5*9.3mm or 1"*0.4135"*0.366" inch (L*W*H) for LDD-300~700LS | | | | |
| | WEIGHT | | LDD-300~700L:4g ; LDD-300~700LW:7.3g ; LDD-300~700LS :3.4g | | | | |
| | POTTING MATERIAL | | Expoxy(UL94-V0) for LDD-300~700L/LW ; without potted for LDD-300~700LS | | | | |

NOTE

1.All parameters are specified at normal input(24VDC), rated load, 25℃ 70% RH ambient.
2.Ripple & noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1uf capacitor.
3.Test condition: 24VDC input.
4.Output voltage will always step down by 3 volts from input DC voltage.
5.The output of LDD-L should not be connected to the input of the same unit or output from other sources.
※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx



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# DC-DC Constant Current Step-Down LED driver

# LDD-L series




## Features :

- DC/DC step-down converter
- Constant current output: 1000mA
- Wide input voltage: 6 ~ 36VDC
- Wide output LED string voltage: 2 ~ 30VDC
- High efficiency up to 95%
- Built-in EMI filter, comply with BS EN/EN55015 and FCC part15 without additional input filter and capacitors
- Built-in PWM +analog dimming and remote ON/OFF control
- Protections: Short circuit
- Cooling by free air convection
- Fully encapsulated with IP67 level for pin and wire style
- Order No.: LDD-1000
- Compact size
- Low cost, high reliability
- Suitable for driving illumination LED
- 3 years warranty

## SPECIFICATION

| ORDER NO. | | | LDD-1000L |
|---|---|---|---|
| OUTPUT | CURRENT RANGE | | 1000mA |
| | VOLTAGE RANGE Note.4 | | 2 ~ 30VDC |
| | CURRENT ACCURACY (Typ.) | | ±5% at 24VDC input |
| | RIPPLE & NOISE(max.) Note.2 | | 1.5Vp-p |
| | SWITCHING FREQENCY | | 1000KHz |
| | EXTERNAL CAPACITANCE LOAD (max.) | | 2.2uF |
| INPUT | VOLTAGE RANGE | | 6 ~ 36VDC |
| | EFFICIENCY (max.) | | 95% at full load and 24VDC/36VDC input |
| | DC CURRENT | Full load Note.3 | 990mA |
| | | No load | 5mA |
| | FILTER | | Capacitor |
| PWM DIMMING & ON/OFF CONTROL | REMOTE ON/OFF | | Leave open if not use |
| | | | Power ON with dimming: DIM ~ -Vin >2.6 ~ 5.5VDC or open circuit |
| | | | Power OFF : DIM ~ -Vin < 0.4VDC or short |
| | PWM FREQUENCY | | 100 ~ 500Hz |
| | QUIESCENT INPUT CURRENT IN SHUTDOWN MODE(max.) | | 1mA at PWM dimming OFF and 24VDC input |
| ANALOG DIMMING & ON/OFF CONTROL | REMOTE ON / OFF | | Leave open if not use |
| | | | Power ON with dimming : DIM ~ -Vin>0.5~2.5VDC or open circuit |
| | | | Power OFF : DIM ~ -Vin<0.4VDC or short |
| PROTECTION | SHORT CIRCUIT | | Regulated at rated output current |
| | | | Protection type: Can be continued, recovers automatically after fault condition is removed |
| ENVIRONMENT | WORKING TEMP. | | -40 ~ + 71℃ (Refer to derating curve) |
| | WORKING HUMIDITY | | 20% ~ 90% RH |
| | STORAGE TEMP., HUMIDITY | | -55 ~ +125℃, 10 ~ 95% RH |
| | TEMP. COEFFICIENT | | ±0.03% / ℃ |
| | VIBRATION | | 10 ~ 500Hz, 2G 10min./1 cycle, period for 60min. each along X, Y, Z axes |
| | OPERATING CASE TEMP. (max.) | | 100℃ |
| EMC | SAFETY STANDARDS | | EAC TP TC 020/2011 approved |
| | EMC EMISSION | | Compliance to BS EN/EN55015, FCC part 15 class B, EAC TP TC 020 |
| | EMC IMMUNITY | | Compliance to BS EN/EN61000-4-2,3,4,6,8, light industry level, criteria A, EAC TP TC 020 |
| OTHERS | MTBF | | 1000Khrs min. MIL-HDBK-217F (25℃) |
| | DIMENSION | | 31.8*20.3*12.2mm or 1.25"*0.8"*0.48" inch (L*W*H) |
| | WEIGHT | | 15.6g |
| | POTTING MATERIAL | | Expoxy(UL94-V0) |
| NOTE | 1.All parameters are specified at normal input(24VDC), rated load, 25℃ 70% RH ambient.<br>2.Ripple & noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1uf capacitor.<br>3.Test condition: 36VDC input.<br>4.Output voltage will always step down by 3 volts from input DC voltage.<br>5.The output of LDD-L should not be connected to the input of the same unit or output from other sources.<br>※ Product Liability Disclaimer：For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx | | |

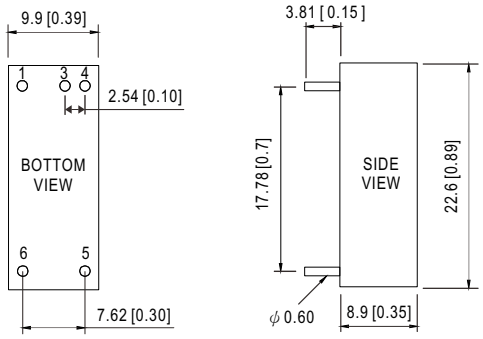


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## ■ Mechanical Specification

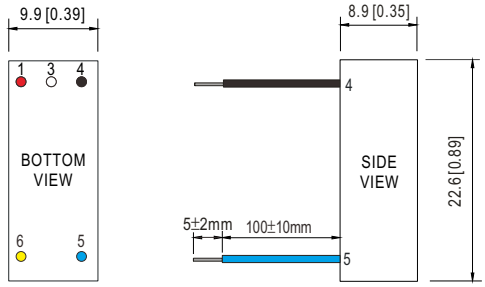
### Blank type(LDD－300~700L):

Unit: mm (inch)



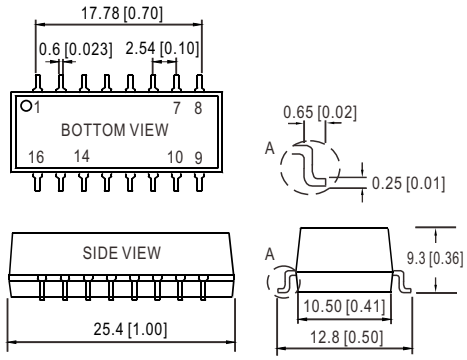

NOTE: Pin tolerance ±0.05mm

### W type(LDD－300~700LW):




NOTE: All wires UL3385 22AWG

### S type(LDD－300~700LS):



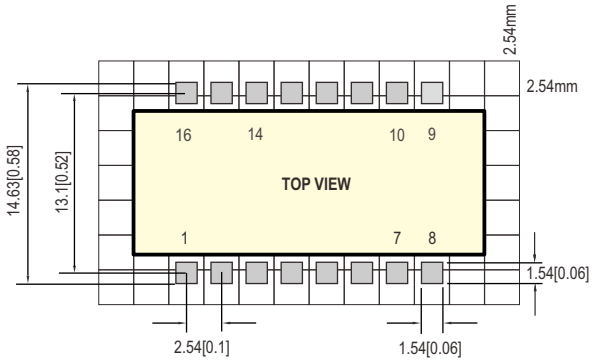

## ■ Pin Configuration

| Pin No. | | Comment |
|---|---|---|
| 1 | +Vin | DC Supply |
| 3 | PWM DIM | ON/OFF and PWM Dimming (Leave open if not used) |
| 4 | -Vin | Don't connect to -Vout |
| 5 | -Vout | LED - Connection |
| 6 | +Vout | LED + Connection |

| Pin No. | | Comment |
|---|---|---|
| 1 | +Vin (Red) | DC Supply |
| 3 | PWM DIM (White) | ON/OFF and PWM Dimming (Leave open if not used) |
| 4 | -Vin (Black) | Don't connect to -Vout |
| 5 | -Vout (Blue) | LED - Connection |
| 6 | +Vout (Yellow) | LED + Connection |

| Pin No. | | Comment |
|---|---|---|
| 1 | +Vin | DC Supply |
| 7,8 | +Vout | LED + Connection |
| 9,10 | -Vout | LED - Connection |
| 14 | PWM DIM | ON/OFF and PWM Dimming (Leave open if not used) |
| 16 | -Vin | Don't connect to -Vout |
| others | N.C | LED - Connection |

## ■ Recommended PCB layout (for LDD-300~700LS)



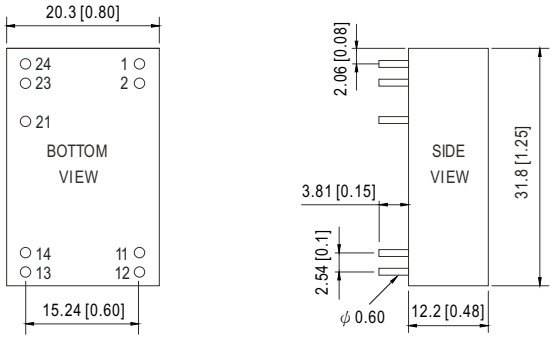



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## ■ Mechanical Specification

**Blank type(LDD－1000L):**

Unit: mm (inch)

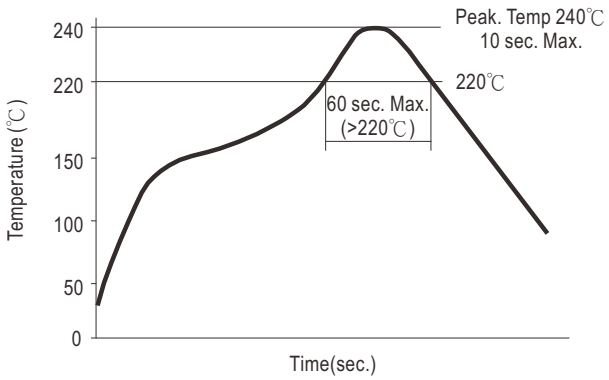



NOTE: Pin tolerance ±0.05mm

## ■ Pin Configuration

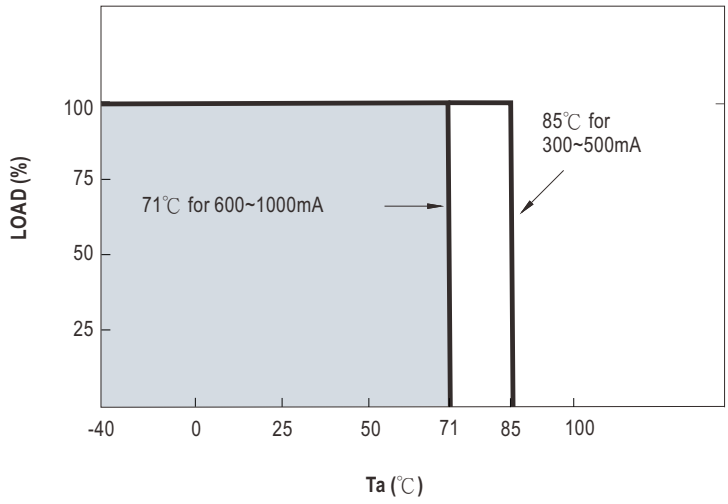
| Pin No. | | Comment |
|---|---|---|
| 1,2 | -Vin | Don't connect to -Vout |
| 11,12 | -Vout | LED - Connection |
| 13,14 | +Vout | LED + Connection |
| 21 | PWM +analog DIM | ON/OFF and PWM / analog Dimming (Leave open if not used) |
| 23,24 | +Vin | DC Supply |

## ■ Reflow Soldering Curve (for LDD-300~700LS)




Remark: The curve applies only to the hot air reflow soldering,Single-sided SMT process only.
This product is limited to one reflow cycle on the TOP side.

## ■ Derating Curve

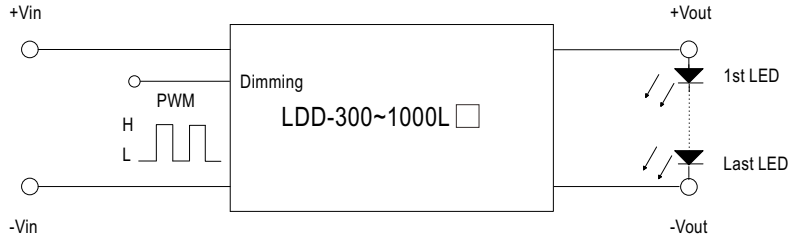





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## ■ PWM Dimming Control (for 300~1000mA)

Io Adjustment by PWM signal :




300 ~ 700mA :

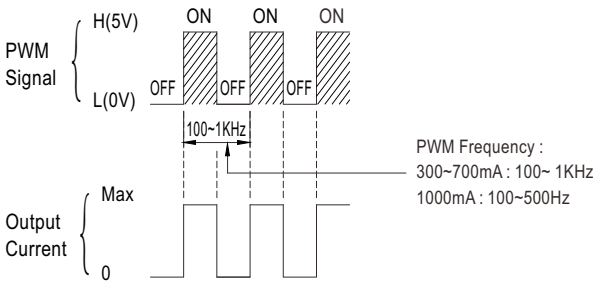
H: > 3.5~8VDC or open circuit

L: < 0.5VDC or short

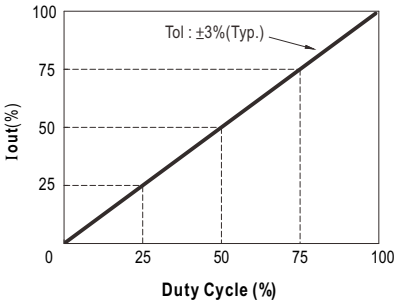
1000mA :

H: > 2.6~5.5VDC or open circuit

L: < 0.4VDC or short

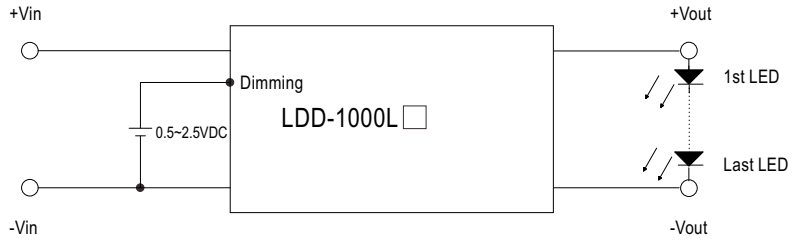


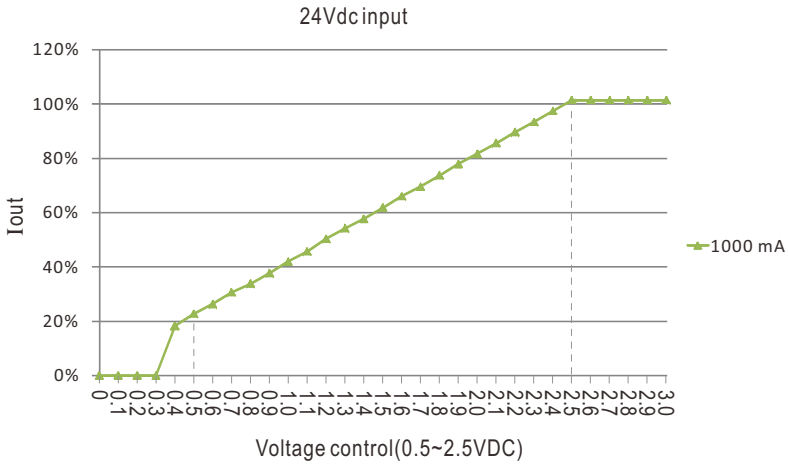

◎ During PWM dimming operation, the output current will change to PWM style.




## ■ Analog Dimming Control for 1000mA

Io Adjustment by DC voltage :



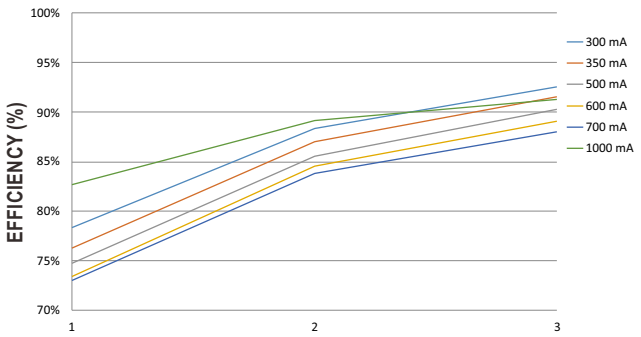






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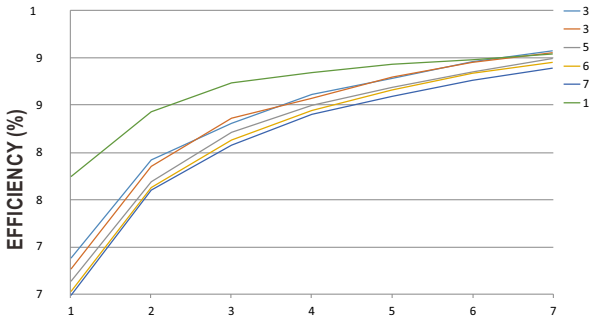
## ■ Efficiency VS Output Voltage(Number of LEDs)

Fig-1 12VDC input, 1~3 LEDs(Vf=3V)



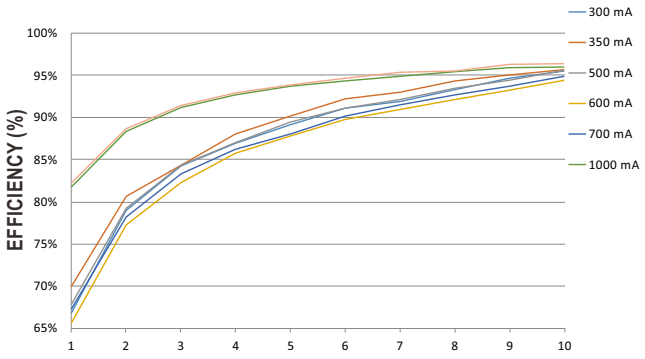

Output Voltage(LEDs)

Fig-2 24VDC input, 1~7 LEDs(Vf=3V)




Output Voltage(LEDs)

Fig-3 36VDC input, 1~10 LEDs(Vf=3V)

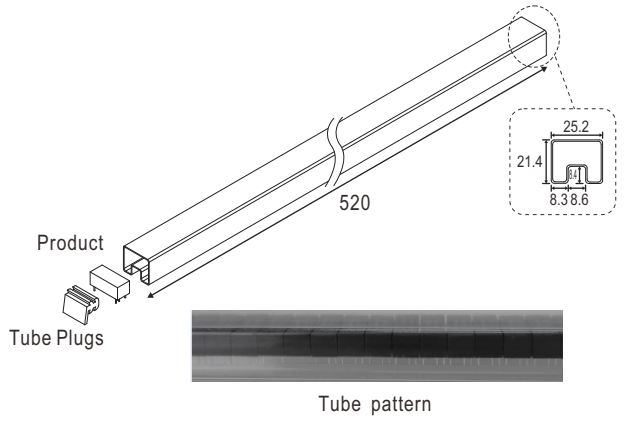


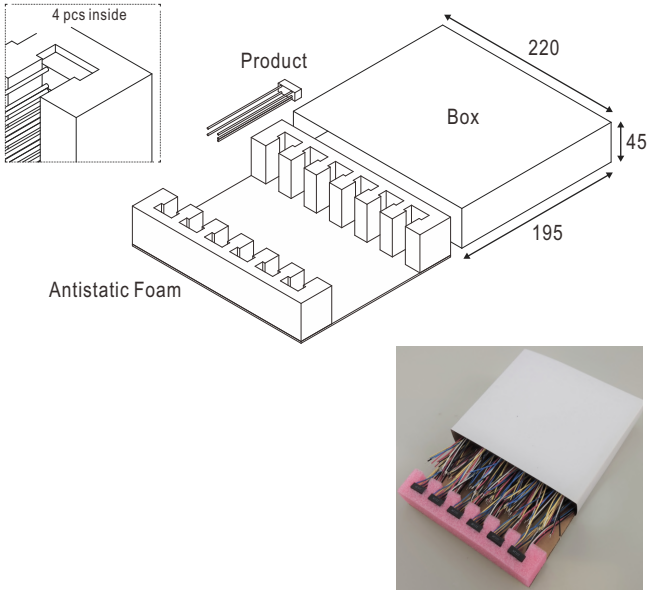

Output Voltage(LEDs)



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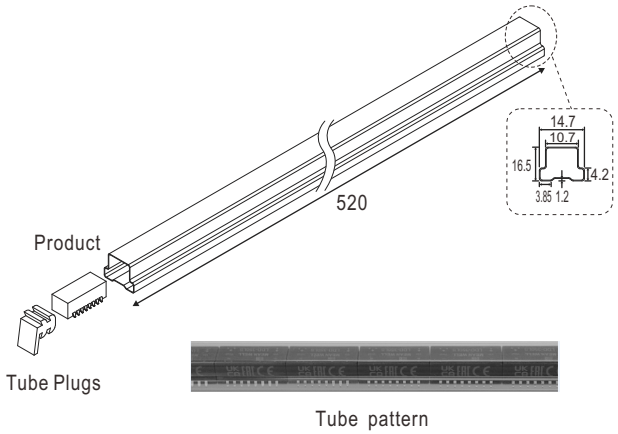
## ■ Packing

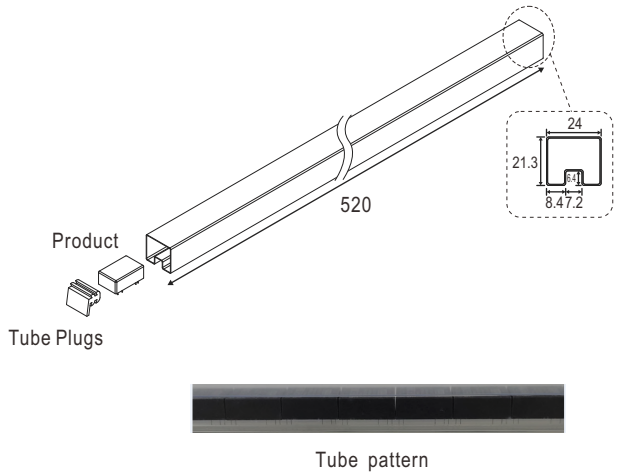
| Standard Tube Packing | LDD-L | | | |
|---|---|---|---|---|
| | MPQ Per Tube (PCS) | One Tube G.W. | Max. Q'TY/ Carton(PCS) | One Carton G.W. |
| Unit : mm   | 50 | 280g | 2500 | 14.8Kg |

| Standard Tube Packing | LDD-LW | | | |
|---|---|---|---|---|
| | MPQ (Box) | One Box G.W. | Max. Q'TY/ Carton(PCS) | One Carton G.W. |
| Unit : mm    | 48 | 430g | 576 | 5.96Kg |



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| Standard Tube Packing | LDD-LS | | | |
|---|---|---|---|---|
| | MPQ Per Tube (PCS) | One Tube G.W. | Max. Q'TY/ Carton(PCS) | One Carton G.W. |
| Unit : mm   | 19 | 100g | 2280 | 12.8Kg |

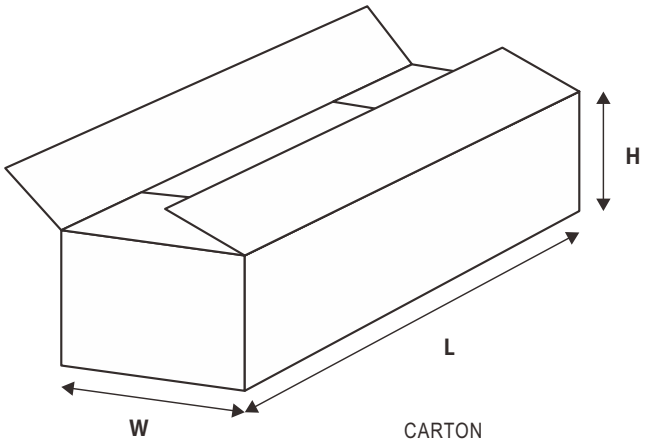
| Unit : mm | LDD-1000L | | | |
|---|---|---|---|---|
| | MPQ Per Tube (PCS) | One Tube G.W. | Max. Q'TY/ Carton(PCS) | One Carton G.W. |
|   | 15 | 260g | 750 | 13.8Kg |



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## Standard Tube Packing

Unit : mm




CARTON
L620 x W230 x H230



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