POWER SOURCE

## DALI Dimmable LED Driver with PWM Output

# DDV-20 series



Features:

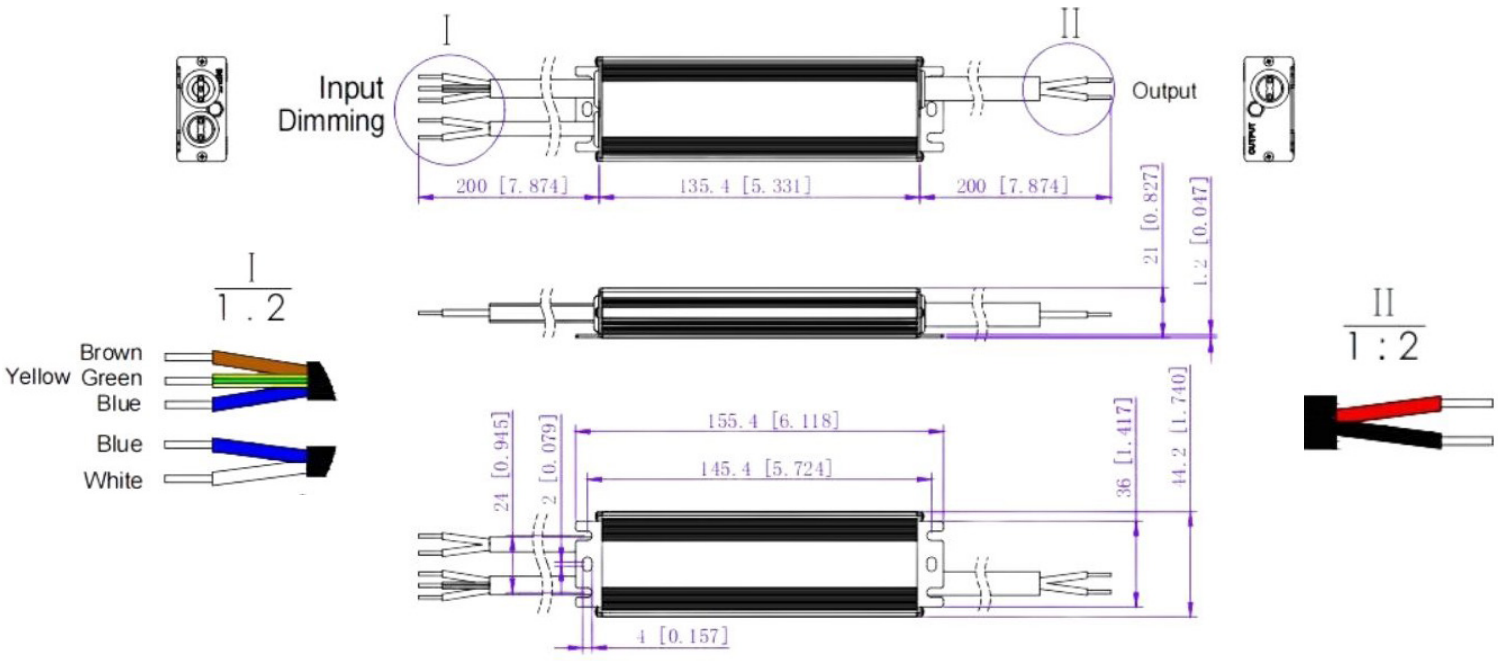
- AC Input Range: 100~277VAC
- Constant Voltage with PWM Output
- Protections: Short Circuit, Over Load, Over Temperature
- Class I Power Supply
- IP66 design for outdoor installation
- Factory fitted flex and AU Plug
- DALI-2 Protocol IEC 62386
- 5 year warranty

| Model | | DDV-20-12 | DDV-20-24 |
|---|---|---|---|
| Output | DC Voltage (V) | 12V | 24V |
| | Voltage Tolerance | ±3% | |
| | Voltage Regulation | ≤0.5% | |
| | Rated Current | 1.67A | 0.83A |
| | Rated Power | 20W | |
| | Load Regulation | ≤2% | |
| | Voltage Ripple | 160mVp-p | |
| | Overshoot voltage | <1% (full load), <2% (no load) | |
| Input | Voltage Range | 100~277VAC | |
| | Frequency Range | 50/60Hz | |
| | Power Factor @ Full load | >0.90 | |
| | THD (Typ.) @ Full load | ≤10%@120VAC ≤10%@230VAC ≤10%@277VAC | |
| | Efficiency @ full load | >81.00%@120VAC<br>>81.0%@230VAC<br>>80.0%@277VAC | >84.0%@120VAC<br>>84.0%@230VAC<br>>83.0%@277VAC |
| | AC Current (Max.) | 0.28mA | |
| | Inrush Current | 1.94A,35us @50%Ipeak 120VAC 3.76A,36us @50%Ipeak 230VAC 4.52A,34us @50%Ipeak 277VAC | |
| | Leakage Current | <0.5mA | |
| Protection | Short circuit | Hiccup mode, automatically recovers after fault condition is removed | |
| | Over loading | 105%~120% Hiccup mode, recover automatically after fault condition is removed | |
| | Over Temperature | When the ambient temperature exceeds 50°C ±5°C, the output is turned off | |
| Environment | Working TEMP. | -40 ~ +50°C (refer to de-rating curve) | |
| | Working humidity | 20-95%RH, non-condensing | |
| | Storage TEMP., humidity | -40~+80°C,10-95%RH non-condensing | |
| | TEMP. coefficient | ±0.03%/°C (0~50°C) | |
| | Vibration | 10~500Hz, 5G 12min./1 cycle,period for 72min. each along X,Y,Z axes | |
| Safety & EMC | Safety standards | EN61347-1 EN61347-2-13 | |
| | Withstand voltage | I/P-O/P:3.75KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC (EU)<br>I/P-O/P:1.88KVAC I/P-FG:1.88KVAC O/P-FG:0.5KVAC (US) | |
| | Isolation resistance | I/P-O/P:100MΩ / 500VDC / 25°C / 70%RH | |
| | EMC immunity | EN61000-4-2,3,4,5,6,11; EN61547 | |
| | EMC emissions | EN55015; EN61000-3-2,3 | |
| Others | Net. weight | 0.45kg | |
| | Size | 155.4*44.2*21mm (L*W*H) | |
| | Packing | 350*245*205mm outside carton 30PCS /CTN | |
| Notes | 1. Unless otherwise specified, all specifications are measured at 120V input, rated load, and 25°C ambient temperature.<br>2. In the case of low input voltage, derated output should be used to ensure a long service life.<br>3. Regarding LED driver load types where the driver meets the harmonic emissions requirements of ANSI C82.77-10. | | |

# MCB Recommendation

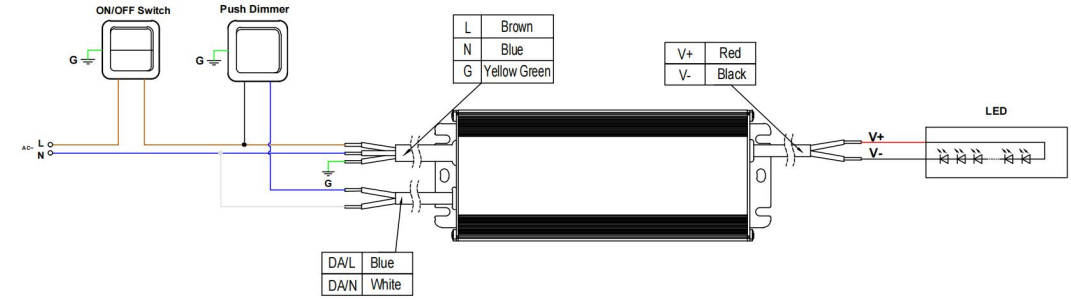
| | | |
|---|---|---|
| When the input voltage is 120VAC,the number of LED Driver matched by circuit breakers is as follows: | | |
| MCB Type | Level | The Number of LED Driver |
| C Type | 10A | 22 |
| | 13A | 29 |
| | 16A | 36 |
| | 20A | 45 |
| When the input voltage is 230VAC,the number of LED Driver matched by circuit breakers is as follows: | | |
| MCB Type | Level | The Number of LED Driver |
| C Type | 10A | 43 |
| | 13A | 56 |
| | 16A | 69 |
| | 20A | 86 |
| When the input voltage is 277Vac,the number of LED Driver matched by circuit breakers is as follows: | | |
| MCB Type | Level | The Number of LED Driver |
| C Type | 10A | 51 |
| | 13A | 66 |
| | 16A | 82 |
| | 20A | 102 |

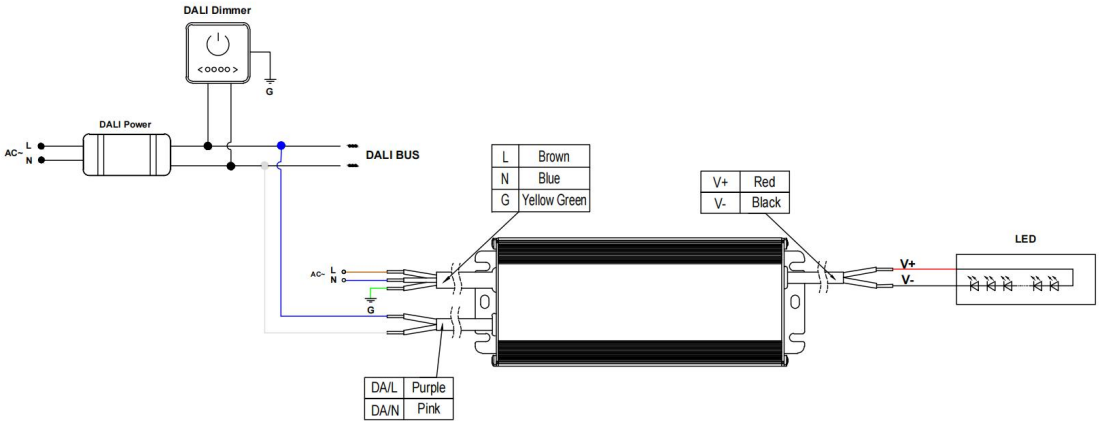
# Mechanical Specifications



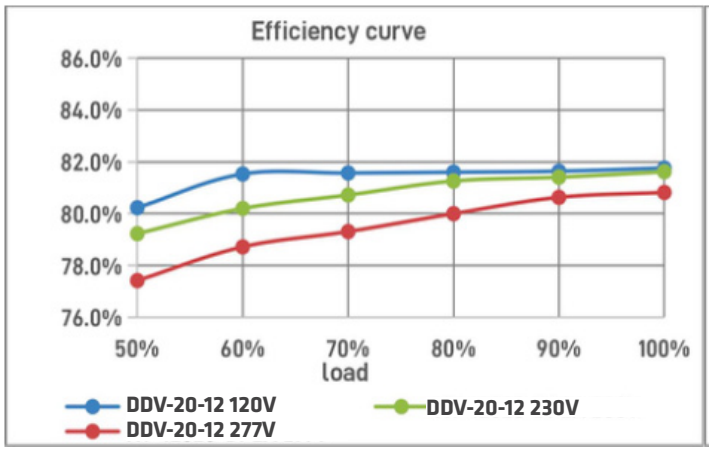

- Input: 1m AU Flex and Plug.
- Output: Rubber Cable 2*10.75mm$^{2,}$ Red: (V Positive), Black: (V-Negative)
- Dimming: Rubber Cable 2*1.00mm$^{2,}$ Blue: DA/L, White DA/N (Non-Polarised)

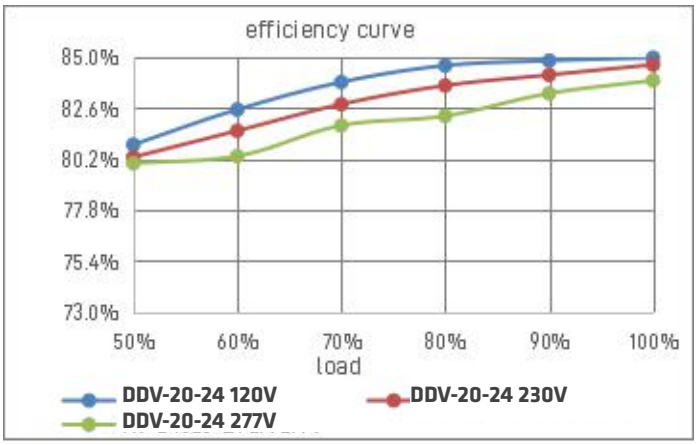
## Connection Diagram



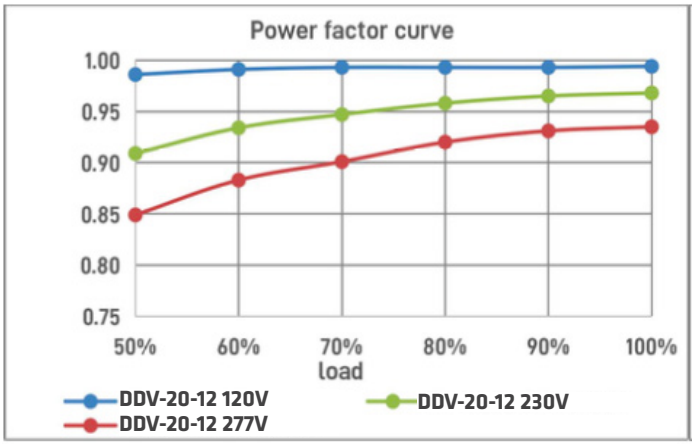



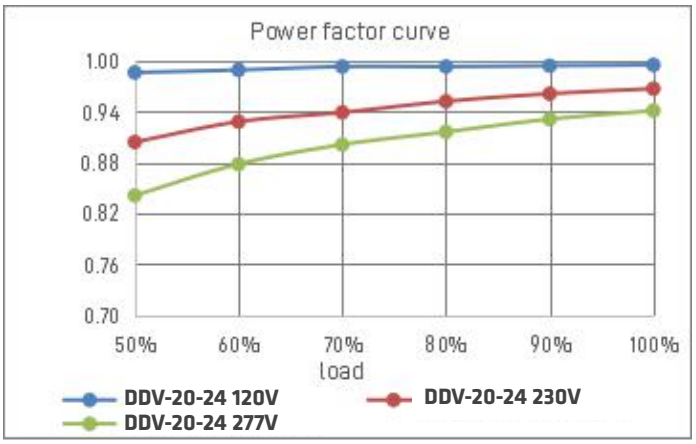

## Efficiency Curve



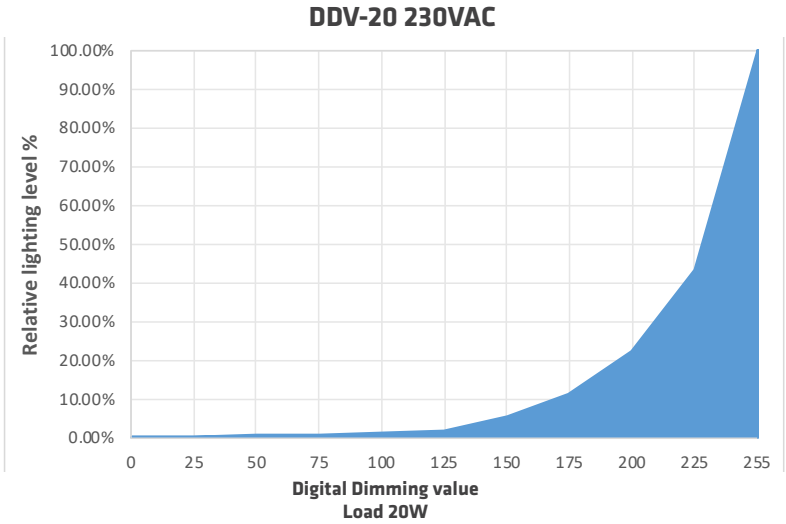




## Power Factor Curve



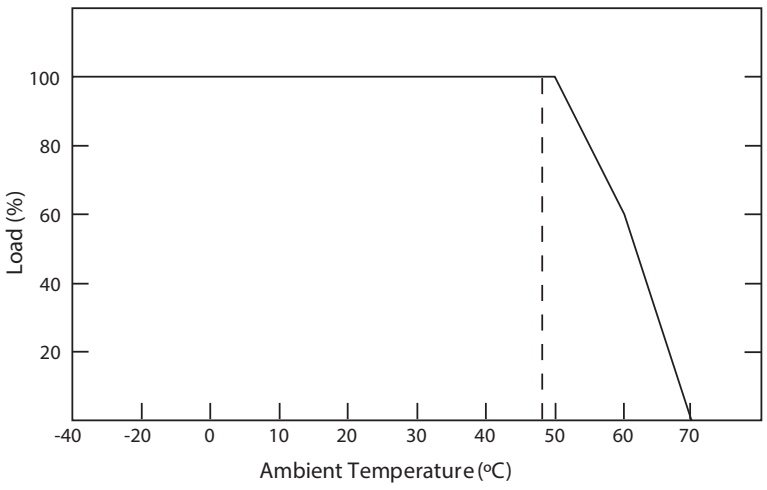



## Direct Arc Power (DAP)




| Illumination percentage test. Mode: DDV-20 230Vac Load: 20W | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Dimming level | 25 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 255 |
| Illuminance percentage (%) | 0.27% | 0.52% | 0.80% | 1.40% | 1.91% | 5.67% | 11.29% | 22.23% | 43.35% | 100.00% |

## De-rating Curve




- If being used in higher ambient temperatures, ensure the load on the LED driver is de-rated in accordance with this chart. Failure to do so could lead to a failure, which is not covered by the warranty

1) Refer to Power Source Installation Manual.
2) Do Not Cover.
3) This LED driver should be installed by a qualified electrician.
4) Please make sure the LED driver is installed with adequate ventilation around it to allow for heat dissipation.
5) Ensure that all wiring is correct before testing in order to avoid damage to the LED driver, or the LEDs.