

2 Channels Output Switching Power Supply LL-DR-36W-2TX series

■ Features:

- 2 Channels Input (36W)
- Universal AC input / Full range(100-277Vac)
- Built-in active PFC function
- Protections: Short circuit / Over voltage
- LVLE power unit
- Three in one dimming function (0-10Vdc or PWM or resistance)
- Suitable dry / damp locations
- 100% full load burn-in test
- High Efficiency :88%-90%(Typ.)
- 5 years warranty

SPECIFICATION

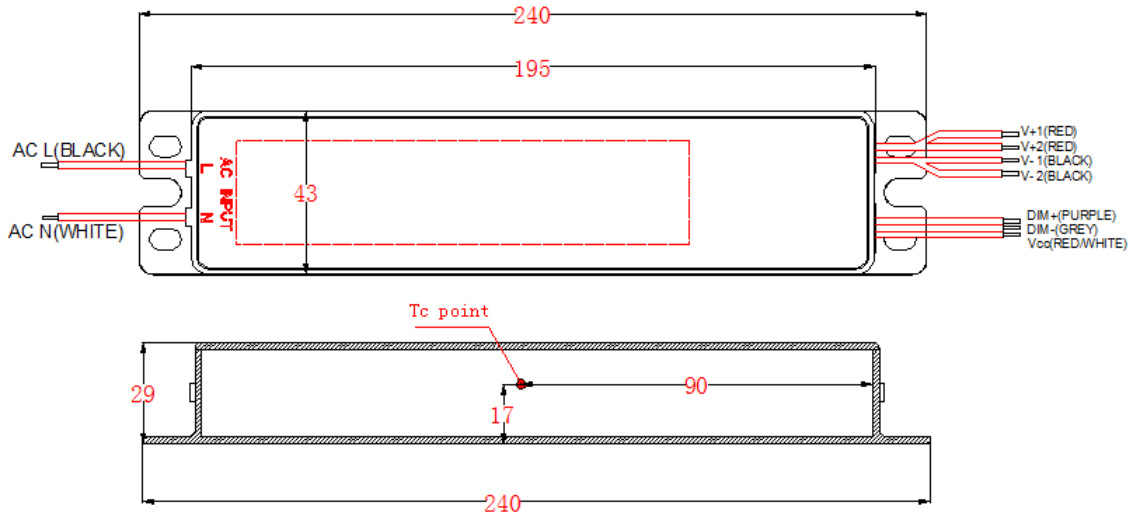
| MODEL | | LL-DR-36W-2TX |
|------------------|-------------------------|--|
| OUTPUT | DC VOLTAGE(Max) | 48V |
| | CONSTANT CURRENT REGION | 23-42V |
| | RATED CURRENT | 0.89A |
| | RIPPLE&NOISE(max.) | 2Vp-p |
| | CURRENT TOLERANCE | ±10% |
| | LINE REGULATION | ±2% |
| | LOAD REGULATION | ±5% |
| | SETUP,RISETIME | <2000ms/ 115VAC at full load , <1000ms / 277V AC at full load |
| | HOLD UP TIME(TYP) | 16ms at full load 277VAC / 115VAC |
| INPUT | VOLTAGE RANGE | 100~277VAC |
| | RATED POWER | 36W |
| | FREQUENCY RANGE | 47~63Hz |
| | POWER FACTOR(Typ) | PF>0.99/115VAC, PF>0.98/230VAC, PF>0.95/277VAC at full load |
| | THD | <20% |
| | EFFICIENCY(Typ.) | 90% |
| | ACCURRENT AT 36W (TYP) | 0.31A / 115VAC 0.13A / 277VAC |
| | INRUSH CURRENT(TYP) | COLD START 75A at 277VAC |
| PROTECTION | LEAKAGE CURRENT | <0.75mA/277VAC |
| | OVER CIRCUIT | 95-110 % Protection type : Constant current limiting, recovers automatically after fault condition is removed |
| | Integral short circuit | Hiccup mode, recovers automatically after fault condition is removed |
| | Open Voltage protection | 50-60V Protection type : Shut down and latch off o/p voltage, re-power on to recover |
| | Overload protection | 105-120 % Hiccup mode, recovers automatically after fault condition is removed |
| ENVIRONMENT | WORKING TEMP. | -40 ~ +60℃ |
| | WORKING HUMIDITY | 20~95%RH non-condensing |
| | STORAGE TEMP.,HUMIDITY | -40 ~ +80℃ , 10 ~ 95%RH |
| | TEMP.COEFFICIENT | ±0.03%/℃(0~50℃) |
| | VIBRATION | 10~500Hz, 2G 12 min./1cycle, period for 72 min.each along X,Y,Z axes |
| SAFETY STANDARDS | | design refer to UL8750, CSA C22.2 No. 250.0-08, EN61347-1, EN61347-2-13, UL60950-1, TUV EN60950-1 |



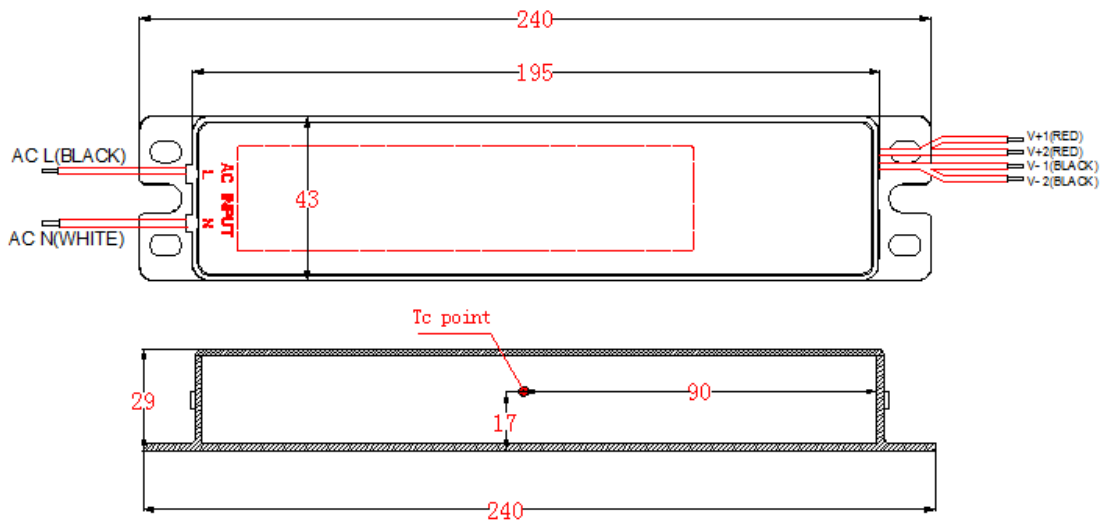
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| | | |
|-------------------------|--|---|
| SAFETY & EMC | WITHSTAND VOLTAGE | I/P-O/P:3.75KVAC I/P-FG: 2KVAC O/P-FG:0.5KVAC |
| | ISOLATION RESISTANCE | I/P-O/P , I/P-FG , O/P-FG : 100M Ohms /500VDC /25℃//70%RH |
| | EMC EMISSION | Compliance to EN55015, EN61000-3-2 Class C ;EN61000-3-3 |
| | EMC IMMUNITY | Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, EN55024, light industry level (surge 4KV),criteria A |
| OTHERS | MTBF | 300Khrs min. MIL-HDBK-217F(25℃) |
| | DIMENSION | 240*43*29mm(L*W*H) |
| | PACKING | |
| NOTE | X=P,S X=P:support 0-10Vdc or PWM X=S:nonsupport dimming function,without dimming switch. | |

Mechanical Specification



Remark: Support 0-10Vdc or PWM or resistance dimming function.

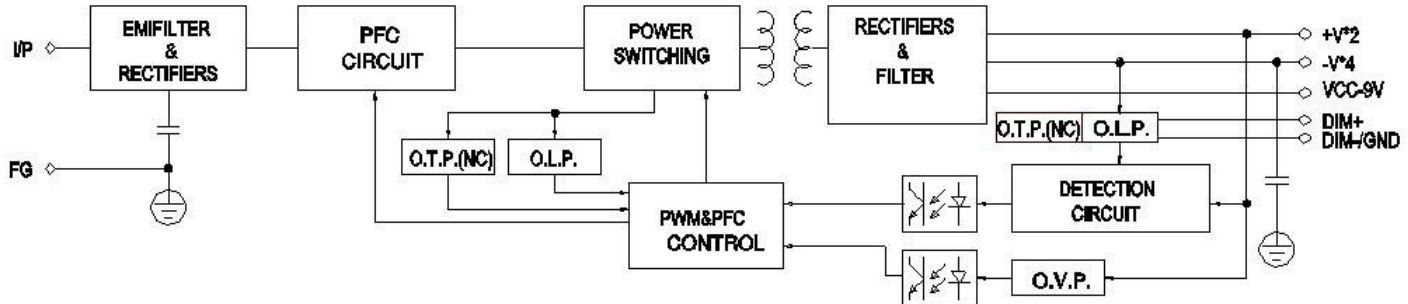


Remark: without dimming switch.



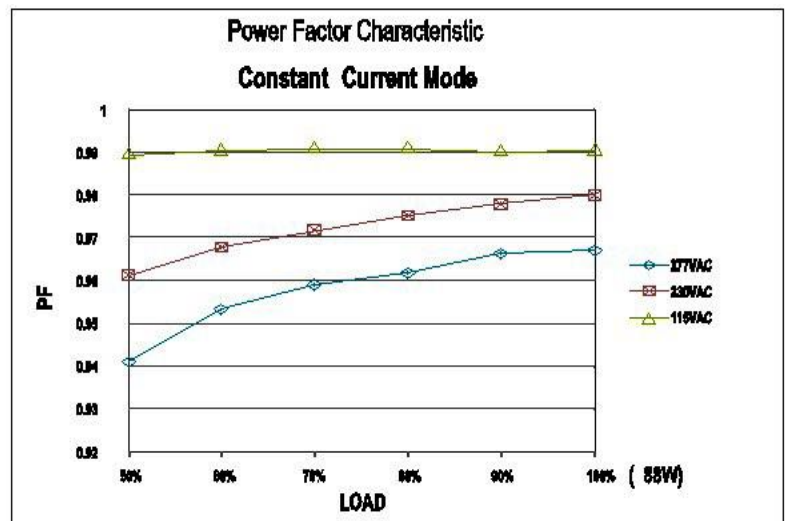
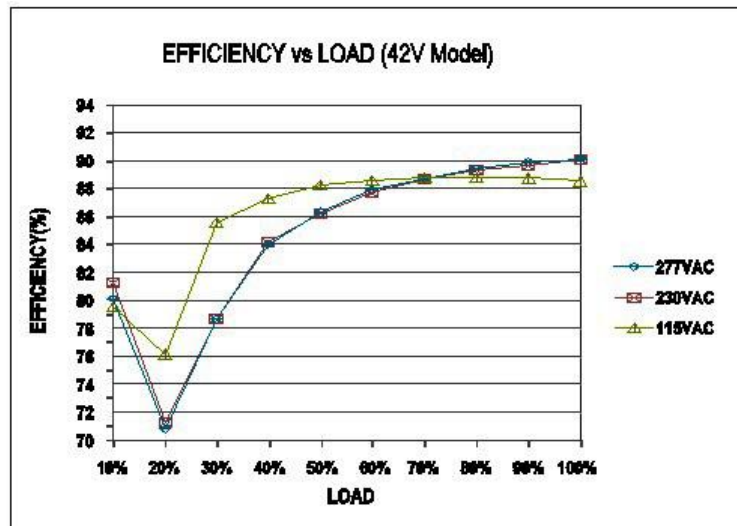
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Block Diagram



The life time curve:

| TC (°C) | 60°C | 65°C | 70°C | 75°C | 80°C | 85°C | 90°C | 95°C | 100°C | 105°C |
|--------------------------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|
| TA (°C) | 25°C | 30°C | 35°C | 40°C | 45°C | 50°C | 55°C | 60°C | 65°C | 70°C |
| The power of life (Hour) | 323531 | 239850 | 190225 | 133791 | 92923 | 75409 | 59646 | 57311 | 53029 | 50110 |



DRIVING

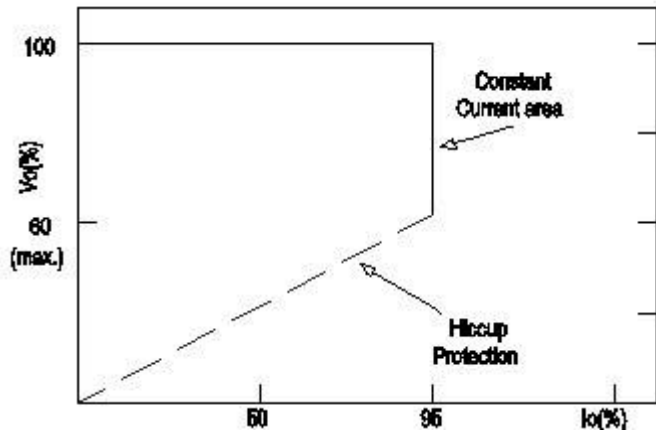
METHODS OF LED MODULE

This LED power supply is suggested to work in constant current mode area (CC) to drive the LEDs

350000
300000
250000
200000
150000
100000
50000
0

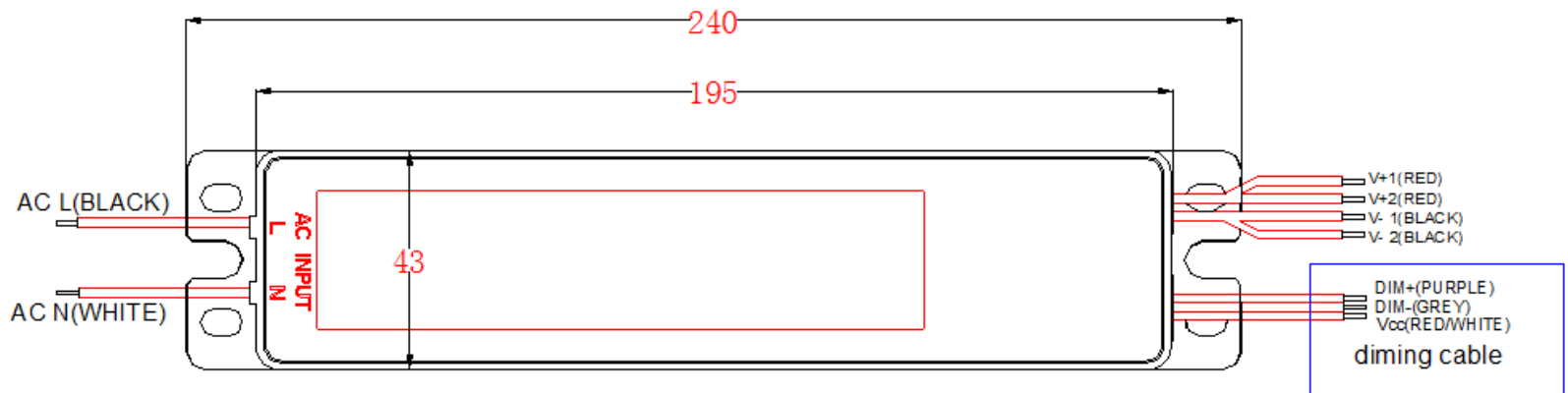


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Typical LED power supply I-V curve

DIMMING OPERATION



Built-in 3 in 1 dimming function, output constant current level can be adjusted through dimming cable by connecting a resistance or 0~10Vdc or 10V PWM signal between DIM+ and GND. Please DO NOT connect "DIM-" to "V-1".

Reference resistance value for output current adjustment (Typical)

| Resistance value | Single driver | 0 Ω | 10K Ω | 20K Ω | 30K Ω | 40K Ω | 50K Ω | 60K Ω | 70K Ω | 80K Ω | 90K Ω | 100K Ω | OPEN |
|-----------------------------|---|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|-----------|
| | Multiple drivers (N=driver quantity for synchronized dimming operation) | 0Ω /N | 10KΩ /N | 20KΩ /N | 30KΩ /N | 40KΩ /N | 50KΩ /N | 60KΩ /N | 70KΩ /N | 80KΩ /N | 90KΩ /N | 100KΩ /N | ---- |
| Percentage of rated current | | 0% | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | 95%-110 % |

0~10V dimming function for output current adjustment (Typical)

| Dimming value | 0V | 1V | 2V | 3V | 4V | 5V | 6V | 7V | 8V | 9V | 10V | OPEN |
|-----------------------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|----------|
| Percentage of rated current | 0% | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | 95%-110% |

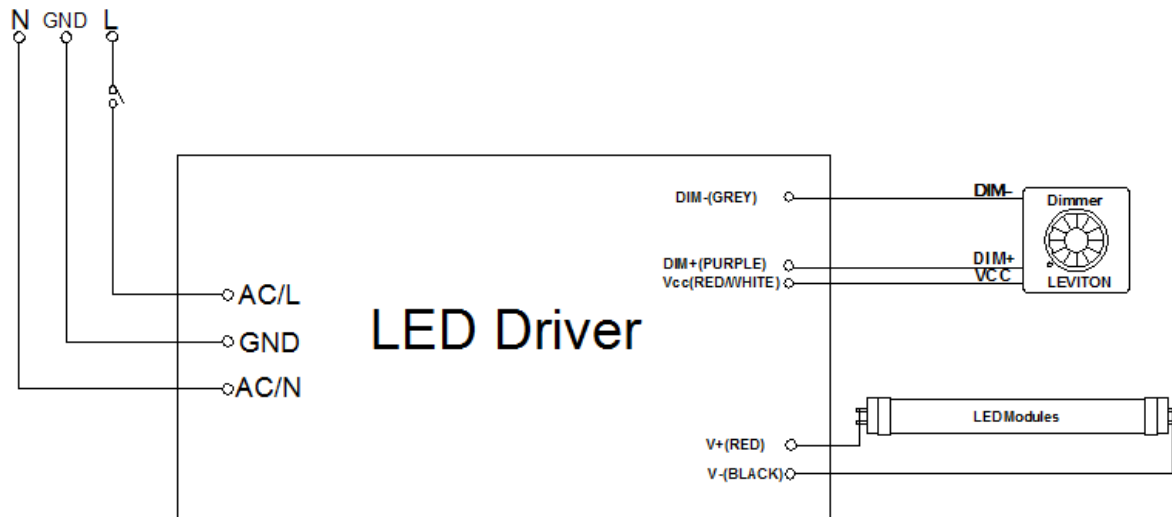
10V PWM signal for output current adjustment (Typical): Frequency range: 100HZ~3KHz

| Duty value | 0% | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | OPEN |
|-----------------------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|----------|
| Percentage of rated current | 0% | 10% | 20% | 30% | 40% | 50% | 50% | 70% | 80% | 90% | 100% | 95%-110% |

Using the built-in dimming function can't turn the lighting fixture to tally dark. Please refer to the connection method below to achieve 0% brightness of the lighting fixture connecting to the LED power supply unit.

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Dimming connection diagram for turning the lighting fixture ON/OFF:



Using a switch and relay can turn ON/OFF the lighting fixture.

1. Output constant current level can be adjusted through dimming cable by connecting a resistance or 0~10Vdc or 10V PWM signal between DIM+ and DIM-.
2. The LED lighting fixture can be turned ON/OFF by the switch or dimming.