

250W Single Output LED Driver with PFC

DR250 series



- Constant Voltage and Current Output
- Universal AC Input of 100~305VAC
- Built-in Active PFC function
- Protections: Short Circuit/Over Voltage/Over Load/Over Temperature
- Cooling by Free Air Convection
- 3 in 1 Dimming Function (optional)
- Adjustable Output Voltage and Current (optional)
- Suitable for LED Lighting and LED Electronic Display Applications
- IP66 ~ IP67 Design for Indoor or Outdoor Installations
- Suitable for Dry / Damp / Wet Locations
- 5 Year Warranty

c **UL** [®] us **CE** **FCC** **IP67** **RoHS**

Model Number	Output Voltage	Rated Output Amps	Efficiency	Constant Current Range (Note 3)
DR250-054S463	54Volts(DC)	4.63 Amps	91%	33~54 Volts(DC)
DR250-048S520	48Volts(DC)	5.2 Amps	91%	29~48 Volts(DC)
DR250-042S600	42Volts(DC)	6.0 Amps	91%	26~42 Volts(DC)
DR250-036S700	36Volts(DC)	7.0 Amps	91%	22~36 Volts(DC)
DR250-030S833	30Volts(DC)	8.33 Amps	91%	18~30 Volts(DC)
DR250-024S1000	24Volts(DC)	10.0 Amps	90%	15~24 Volts(DC)

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INPUT SPECIFICATIONS

Input Voltage Range (Note 4)	100-305VAC
Frequency Range	47-63 Hz (50/60 Hz nominal)
Input Current	3.0 Amps max @ 100VAC 1.4 Amps max @ 220VAC
Leakage Current	<0.75mA/230VAC <0.5mA/120VAC
Inrush Current	65A
Power Factor	0.96 (220Vac)

OUTPUT SPECIFICATIONS

Voltage and Current	See Selection Chart
Constant Current Range	See Selection Chart
Dimming Current Range	10~100% rated output current, ≥50% rated output voltage
Voltage Tolerance (Note 2)	±5%
Line Regulation	±2%
Load Regulation	±5%
Efficiency	See Selection Chart
Ripple/Noise (Note 1)	≤10% Output Voltage
Turn-on Delay Time (Note 6)	3S, max.
Temperature Coefficient	±0.03%/°C (0~50°C)
Output Overshoot / Undershoot	10% When powered on or off
Over Voltage Protection	Shut down at 140%Vo and latch off o/p voltage, re-power on to recover
Over Current Protection (Note 3)	Constant current limiting
Short Circuit Protection	≤10W with 3 in 1 Dimmer Function Hiccup Auto Recover w/o Dimmer
Over Temperature Protection	Shut down and latch off o/p voltage

PHYSICAL SPECIFICATIONS

Size	261 x 68 x 40 mm
Weight	52.91 oz (1500g)

All specifications are typical at nominal input, full load, and 25°C unless otherwise noted

ENVIRONMENTAL SPECIFICATIONS

Oper. Temperature	-40°C to +60 (See Derate Curve)
Operating Humidity	20~95%RH, non-condensing
Storage Temp. / Humidity	-45°C to +85°C / 10~95%RH
Max. Case Temperature	80 °C
Vibration	10~300Hz, 1G, Period for 60min, each along X,Y,Z axes
MTBF	200KHrs
IP Rating	IP67 without Adjustment Option IP66 with Adjustment Option

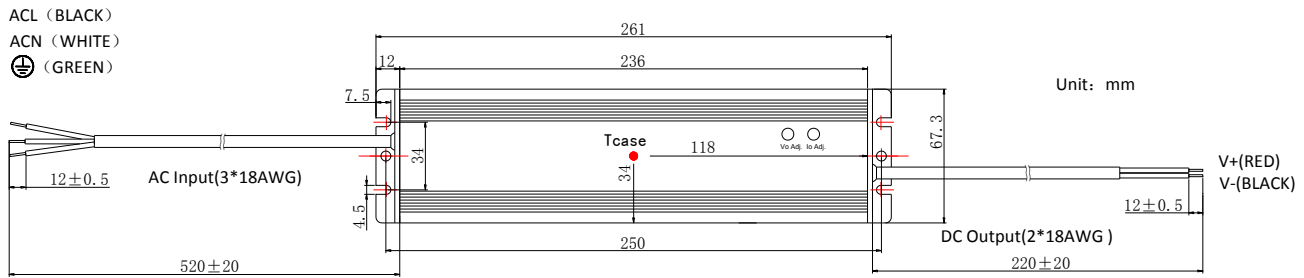
GENERAL SPECIFICATIONS

Safety (Note 5)	UL8750, IEC61347, EN55015
Isolation I/P-OP:	3.75K VAC
I/P-GND, O/P-GND:	1.56K VAC
Isolation Resistance	100MΩ/500VDC/25°C/70%RH
EMC Interference (Note 5)	Compliance to EN55015, EN55022 (CISPR22) Class B
EMC Emission (Note 5)	Compliance to EN61000-3-2 Class C (≥50%load); EN61000-3-3
EMC Immunity (Note 5)	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11 ENV50204, EN61547, EN55024

NOTES

1. O/P Noise measured directly at the terminals at nominal load, 20MHz bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
2. Includes set up tolerance, line regulation and load regulation
3. Constant current operation region is within 60% ~100% rated output voltage. This is the suitable operation region for LED related applications, but please reconfirm special electrical requirements for some specific system designs.
4. Derating may be needed under low input voltages. Please check the Static Characteristics for more details.
5. Safety and EMC design refer to EN60598-1, subject 8750(UL), CNS15233, GB7000.1, FCC part18. The power supply is considered a component that will be installed in the end application. EMC performance must be re-qualified in the completed installation.
6. Cold start. Turning ON/OFF the power supply may lead to increase of set up time

■ Mechanical Outline



※Tcase: Max. Case Temperature

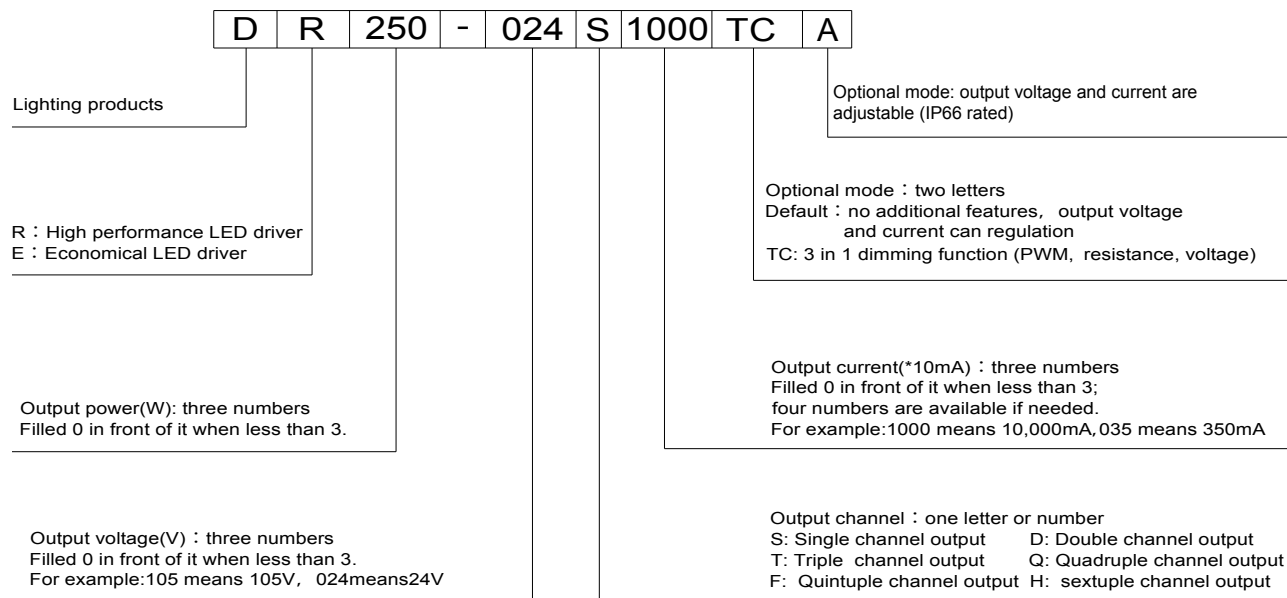


※Power's internal temperature is 15 °C warmer than case temperature.

NOTE:

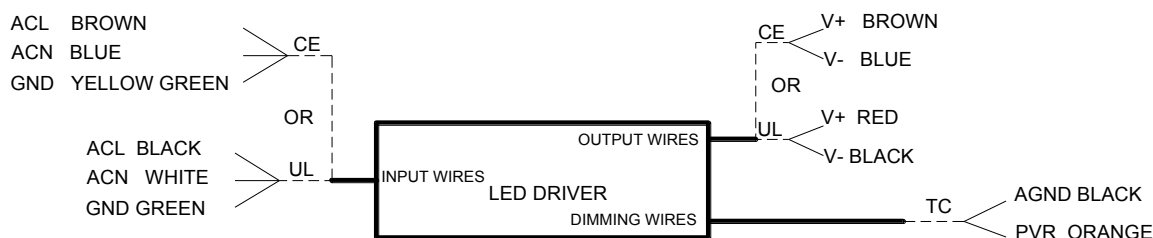
NO.	DC Output Current	Wire Number	Wire specification
1	≤6A	1	2×AWG18
2	6~8A(Including 8A)	1	2×AWG16
3	8~10 (Including 10A)	2	2×AWG18

Part number code

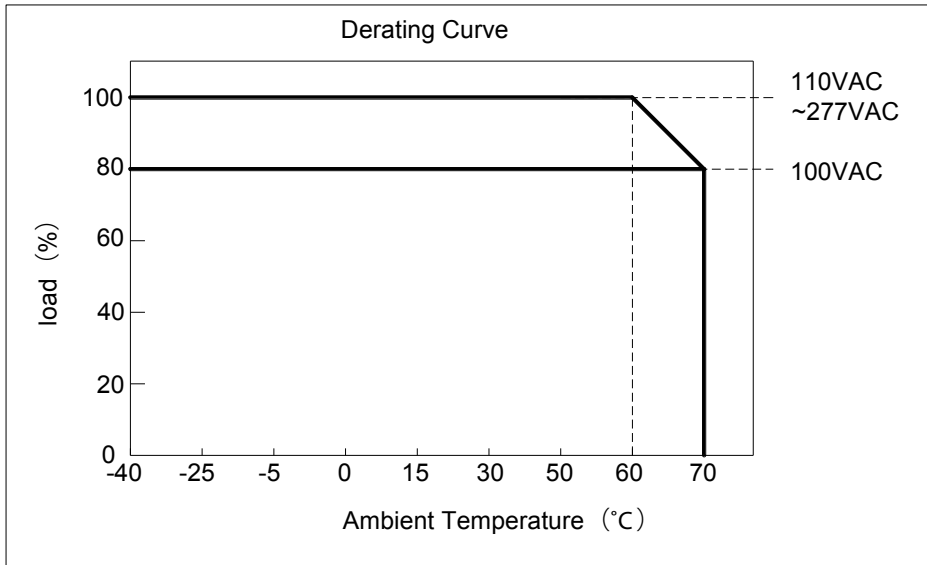


For example: DR250-024S1000TC means it is a high performance LED driver, output power 250W, output voltage 24Vdc, output current 10000mA , single output, with 3 in 1 dimming function.

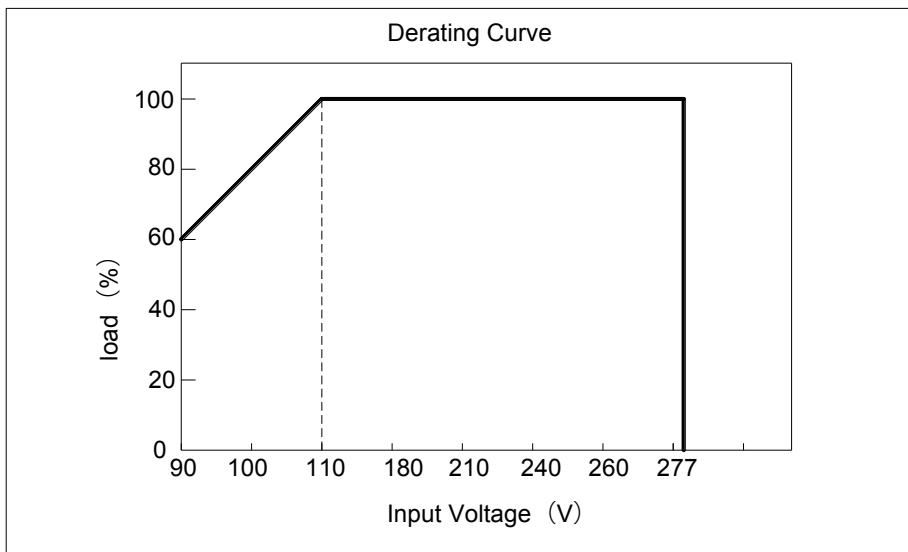
wiring diagram



■ Derating Curve

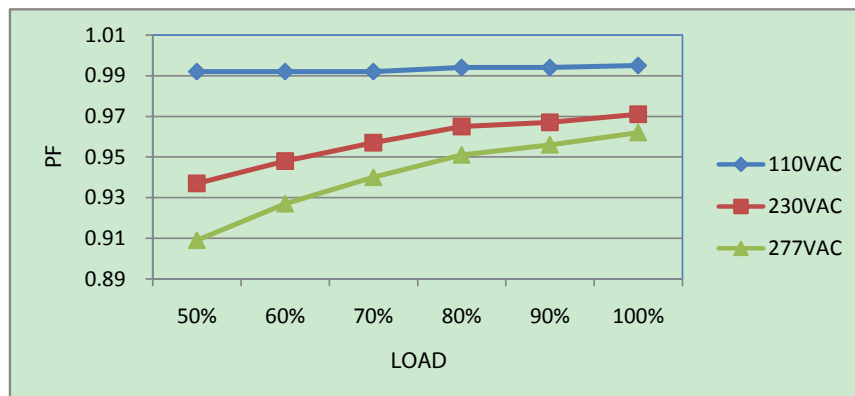


■ Static Characteristics

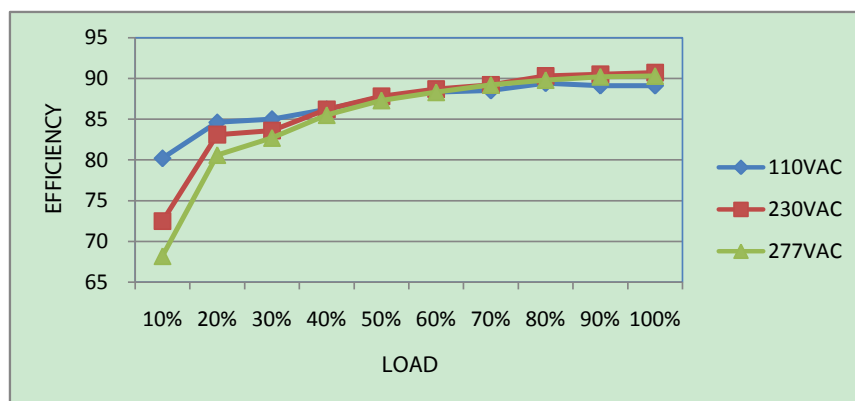


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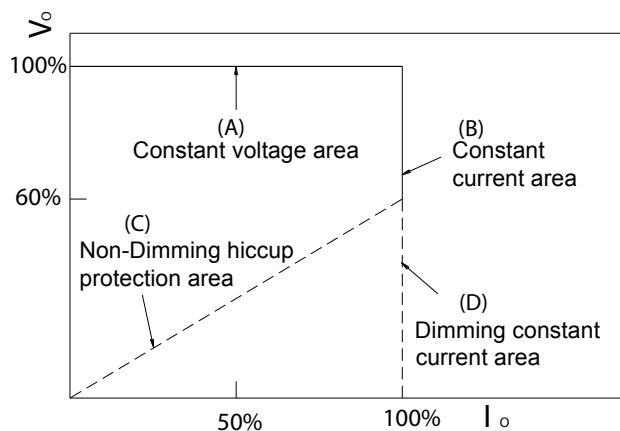
■ Power Factor Characteristic(DR250-024S1000)



■ EFFICIENCY vs LOAD(DR250-024S1000)



■ Typical LED power supply I-V curve



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■ Non-isolated 3 in 1 dimming function

Reference resistance value for output current adjustment (Typical)

Resistance value	Single driver	10K Ω	20K Ω	30K Ω	40K Ω	50K Ω	60K Ω	70K Ω	80K Ω	90K Ω	100K Ω	OPEN
	Multiple drivers	10K Ω /N	20K Ω /N	30K Ω /N	40K Ω /N	50K Ω /N	60K Ω /N	70K Ω /N	80K Ω /N	90K Ω /N	100K Ω /N	OPEN
Percentage of rated current		10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	98%~108%

1 ~ 10V dimming function for output current adjustment (Typical)

Dimming value	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	98%~108%

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

Duty value	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	98%~108%

■ Input and output Dielectric strength

Isolation	Input Wires	Output Wires	Isolated Dimming Control Wires	Chassis
Input Wires	NA	3750	2000	1560
Output Wires	3750	NA	2000	2000
Isolated Dimming Control Wires	2000	2000	NA	2000
Chassis	1560	2000	2000	NA

■ Fixed derating-cutoff type temperature protection

