

Product Specification

Product Name: UV Curing LED Driver Power Supply

Model: MD3000W-XXXX / MD2500W-XXXX

Specifications: 3000W Constant Current Output



- 1、A digitally-driven dedicated power supply for UV curing LEDs
- 2、Dual dimming modes optional: analog dimming and RS485 digital communication dimming
- 3、High power factor correction
- 4、High conversion efficiency up to 95%
- 5、High reliability with 2-year warranty
- 6、Forced air cooling equipped with high-speed fan
- 7、Output built-in relay, supporting frequent ON/OFF switching
- 8、Switchable function between analog dimming and communication dimming
- 9、Near-zero neutral line current under three-phase balanced operation
- 10、Real-time readback of LED forward voltage (VF) and output current
- 11、Real-time internal temperature monitoring
- 12、Standard RS485 Modbus RTU and custom open protocols supported
- 13、Communication achieves electrical isolation and reduces interference
- 14、3-in-1 analog dimming compatible
- 15、Alarm function for undervoltage and zero-output-current faults
- 16、Flexible mounting: horizontal and vertical installation available
- 17、Internal circuit with three-proof treatment (moisture-proof, dust-proof, anti-corrosion)
- 18、Communication address setting via DIP switch

Product Parameters

Product model	Output power	Output voltage	No-load voltage	output current	Output Mode CC/CV	Power On/Off Signal	Dimmer way	Communication Interface	Cooling Method
MD-2500W-200	2500W	12-200V	210V	12.5A	CC	±12/24V	three-in-one	RS485	Forced Air Cooling
MD-2500W-240	2500W	150-240V	250V	10A	CC	±12/24V	three-in-one	RS485	Forced Air Cooling

MD-2500W-300	2500W	180-300V	310V	8. 3A	CC	±12/24V	three-in-one	RS485	Forced Air Cooling
MD-2500W-350	2500W	250-350V	360V	7. 2A	CC	±12/24V	three-in-one	RS485	Forced Air Cooling
MD-2500W-400	2500W	280-400V	410V	6. 25A	CC	±12/24V	three-in-one	RS485	Forced Air Cooling
MD-3000W-200	3000W	120-200V	210V	15A	CC	±12/24V	three-in-one	RS485	Forced Air Cooling
MD-3000W-250	3000W	150-250V	260V	12. 0A	CC	±12/24V	three-in-one	RS485	Forced Air Cooling
MD-3000W-300	3000W	180-300V	310V	10A	CC	±12/24V	three-in-one	RS485	Forced Air Cooling
MD-3000W-350	3000W	200-350V	360V	8. 6A	CC	±12/24V	three-in-one	RS485	Forced Air Cooling
MD-3000W-400	3000W	280-400V	410V	7. 5A	CC	±12/24V	three-in-one	RS485	Forced Air Cooling
MD-3000W-450	3000W	320-450V	460V	6. 6A	CC	±12/24V	three-in-one	RS485	Forced Air Cooling

Note:3-in-1 analog dimming modes: 0-10V analog dimming, resistance dimming and PWM dimming. RS485 digital communication is also supported.

1、Product Input Parameters

Item	Parameter	least value	typical value	maximum value	Remarks
1.1	Input Voltage Range (Vac)	185	200-240V	264	Rated: 200-240Vac
1.2	Input Frequency Range (Hz)	47Hz		63Hz	
1.3	Maximum input current A			12.2A	Vin=185Vac
1.4	Input surge current A		60A	64 A	Vin=230Vac/50Hz, cold start
1.5	Power Factor (PF)	0.95	0.99	---	Vin=230Vac/50Hz, full load
1.6	Total Harmonic Distortion (THD %)		8%	15%	Vin=230Vac/50Hz, full load

All parameters listed above are typical test values of the corresponding samples. Minor numerical deviations may occur due to instrument precision limits.

2. Product Output Parameters

MD-2500W-200

Item	Parameter	least value	typical value	maximum value	Remarks
2.1	Output Current (A)	8.5A	12.5A	13.5A	
2.2	No-load Voltage (dcV)	---		210V	Voltage adjustable
2.3	Output Voltage Ripple (mVpp)	---	1.4V	2.0V	Vin=230Vac/50Hz, full load
2.4	Efficiency	94%	95%		Vin=230Vac/50Hz, full load
2.5	Output Overshoot			5%	When S+/S- is enabled for output
2.6	Switch Rise Time			27ms	When S+/S- is enabled for output
2.7	Power-on Delay Time		1.0s	1.2s	

All parameters above are typical test data of corresponding samples, excluding numerical inaccuracies caused by instrument precision errors.

MD-2500W-240

Item	Parameter	least value	typical value	maximum value	Remarks
2.8	Output Current (A)	---	---	10.4A	
2.9	No-load Voltage (dcV)		---	250V	Voltage adjustable
2.10	Output Voltage Ripple (mVpp)	---	1.5V	2.2V	Vin=230Vac/50Hz, full load
2.11	Efficiency	94%	95%		Vin=230Vac/50Hz, full load
2.12	Output Overshoot			5%	When S+/S- is enabled for output
2.13	Rise Time			45mS	When S+/S- is enabled for output
2.14	Power-on Delay Time		1.0S	1.2S	185-265Vac

All parameters listed above are typical test values of the corresponding samples. Minor numerical deviations may occur due to instrument precision limits.

MD-2500W-300

Item	Parameter	least value	typical value	maximum value	Remarks
2. 15	Output Current (A)	---	---	8.3A	
2. 16	No-load Voltage (dcV)		---	310V	Voltage adjustable
2. 17	Output Voltage Ripple (mVpp)	---	1.8V	2.5V	Vin=230Vac/50Hz, full load
2. 18	Efficiency	94%	95%		Vin=230Vac/50Hz, full load
2. 19	Output Overshoot			5%	When S+ /S- is enabled for output
2. 20	Rise Time			45mS	When S+ /S- is enabled for output
2. 21	Power-on Delay Time		0.2S	0.5S	185-265Vac

All parameters listed above are typical test values of the corresponding samples. Minor numerical deviations may occur due to instrument precision limits.

MD-2500W-350

Item	Parameter	least value	typical value	maximum value	Remarks
2. 15	Output Current (A)	---	---	7.2A	
2. 16	No-load Voltage (dcV)		---	360V	Voltage adjustable
2. 17	Output Voltage Ripple (mVpp)	---	200	800mV	Vin=230Vac/50Hz, full load
2. 18	Efficiency	92%	94%		Vin=230Vac/50Hz, full load
2. 19	Output Overshoot			+10%	When S+ /S- is enabled for output
2. 20	Switch Rise Time			27mS	When S+ /S- is enabled for output
2. 21	Power-on Delay Time		0.2S	0.5S	185-265Vac

All parameters listed above are typical test values of the corresponding samples. Minor numerical deviations may occur due to instrument precision limits.

MD-2500W-400

Item	Parameter	least value	typical value	maximum value	Remarks
2. 15	Output Current (A)	3.6A	6.25A	7.5A	Voltage correction: Readback voltage $\div 100 \times 110 =$ actual output voltage
2. 16	No-load Voltage (dcV)		---	410V	
2. 17	Output Voltage Ripple (mVpp)	---	2.4V	3.1V	Vin=230Vac/50Hz, full load
2. 18	Efficiency	94%	95.5%		Vin=230Vac/50Hz, full load
2. 19	Output Overshoot			5%	When S+/S- is enabled for output
2. 20	Rise Time			27mS	When S+/S- is enabled for output
2. 21	Power-on Delay Time		1.0S	1.4S	185-265Vac

All parameters listed above are typical test values of the corresponding samples. Minor numerical deviations may occur due to instrument precision limits.

MD-3000W-200

Item	Parameter	least value	typical value	maximum value	Remarks
2. 15	Output Current (A)	11.5A	15A	16.0A	Voltage correction: Readback voltage $\div 100 \times 150 =$ actual output voltage
2. 16	No-load Voltage (dcV)		---	210V	
2. 17	Output Voltage Ripple (mVpp)	---	1.2V	1.8V	Vin=230Vac/50Hz, full load
2. 18	Efficiency	94%	95.6%		Vin=230Vac/50Hz, full load
2. 19	Output Overshoot			5%	When S+/S- is enabled for output
2. 20	Rise Time			27mS	When S+/S- is enabled for output
2. 21	Power-on Delay Time		1.2S	1.5S	185-265Vac

All parameters listed above are typical test values of the corresponding samples. Minor numerical deviations may occur due to instrument precision limits.

MD-3000W-250

Item	Parameter	least value	typical value	maximum value	Remarks
2. 15	Output Current (A)	8.0	12.0	13.0A	Voltage correction: Readback voltage $\div 100 \times 150 =$ actual output voltage
2. 16	No-load Voltage (dcV)		---	260V	

2. 17	Output Voltage Ripple (mVpp)	---	1.2V	2.0V	Vin=230Vac/50Hz, full load
2. 18	Efficiency	94%	95.6%		Vin=230Vac/50Hz, full load
2. 19	Output Overshoot			+10%	When S+/S- is enabled for output
2. 20	Rise Time			27mS	When S+/S- is enabled for output
2. 21	Power-on Delay Time		1.2S	1.5S	185-265Vac

All parameters listed above are typical test values of the corresponding samples. Minor numerical deviations may occur due to instrument precision limits.

MD-3000W-300

Item	Parameter	least value	typical value	maximum value	Remarks
2. 15	Output Current (A)	7.0	10.0A	11.5A	Voltage correction: $\text{Readback voltage} \div 100 \times 150 = \text{actual output voltage}$
2. 16	No-load Voltage (dcV)		---	310V	
2. 17	Output Voltage Ripple (mVpp)	---	2.0V	2.4V	Vin=230Vac/50Hz, full load
2. 18	Efficiency	94%	95.6%		Vin=230Vac/50Hz, full load
2. 19	Output Overshoot			+10%	When S+/S- is enabled for output
2. 20	Rise Time			27mS	When S+/S- is enabled for output
2. 21	Power-on Delay Time		1.2S	1.5S	185-265Vac

All parameters listed above are typical test values of the corresponding samples. Minor numerical deviations may occur due to instrument precision limits.

MD-3000W-350

Item	Parameter	least value	typical value	maximum value	Remarks
2. 15	Output Current (A)	4.5A	8.6A	9.6A	Voltage correction: $\text{Readback voltage} \div 100 \times 150 = \text{actual output voltage}$
2. 16	No-load Voltage (dcV)		---	360V	
2. 17	Output Voltage Ripple (mVpp)	---	2.0V	2.4V	Vin=230Vac/50Hz, full load
2. 18	Efficiency	94%	95.6%		Vin=230Vac/50Hz, full load
2. 19	Output Overshoot			5%	When S+/S- is enabled for output
2. 20	Rise Time			27mS	When S+/S- is enabled for output

2. 21	Power-on Delay Time		1.2S	1.5S	185-265Vac
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All parameters listed above are typical test values of the corresponding samples. Minor numerical deviations may occur due to instrument precision limits.

MD-3000W-400

Item	Parameter	least value	typical value	maximum value	Remarks
2. 15	Output Current (A)	4.5A	7.5A	8.5A	Voltage correction: Readback voltage $\div 100 \times 110 =$ actual output voltage
2. 16	No-load Voltage (dcV)		---	410V	
2. 17	Output Voltage Ripple (mVpp)	---	2.4V	3.1V	Vin=230Vac/50Hz, full load
2. 18	Efficiency	94%	95.5%		Vin=230Vac/50Hz, full load
2. 19	Output Overshoot			5%	When S+/S- is enabled for output
2. 20	Rise Time			27mS	When S+/S- is enabled for output
2. 21	Power-on Delay Time		1.0S	1.4S	185-265Vac

All parameters listed above are typical test values of the corresponding samples. Minor numerical deviations may occur due to instrument precision limits.

MD-3000W-450

Item	Parameter	least value	typical value	maximum value	Remarks
2. 15	Output Current (A)	3.5A	6.6A	7.6A	Voltage correction: Readback voltage $\div 100 \times 150 =$ actual output voltage
2. 16	No-load Voltage (dcV)		---	460V	
2. 17	Output Voltage Ripple (mVpp)	---	3.0V	3.4V	Vin=230Vac/50Hz, full load
2. 18	Efficiency	94%	95.6%		Vin=230Vac/50Hz, full load
2. 19	Output Overshoot			5%	When S+/S- is enabled for output
2. 20	Rise Time			27mS	When S+/S- is enabled for output
2. 21	Power-on Delay Time		1.2S	1.5S	185-265Vac

All parameters listed above are typical test values of the corresponding samples. Minor numerical deviations may occur due to instrument precision limits.

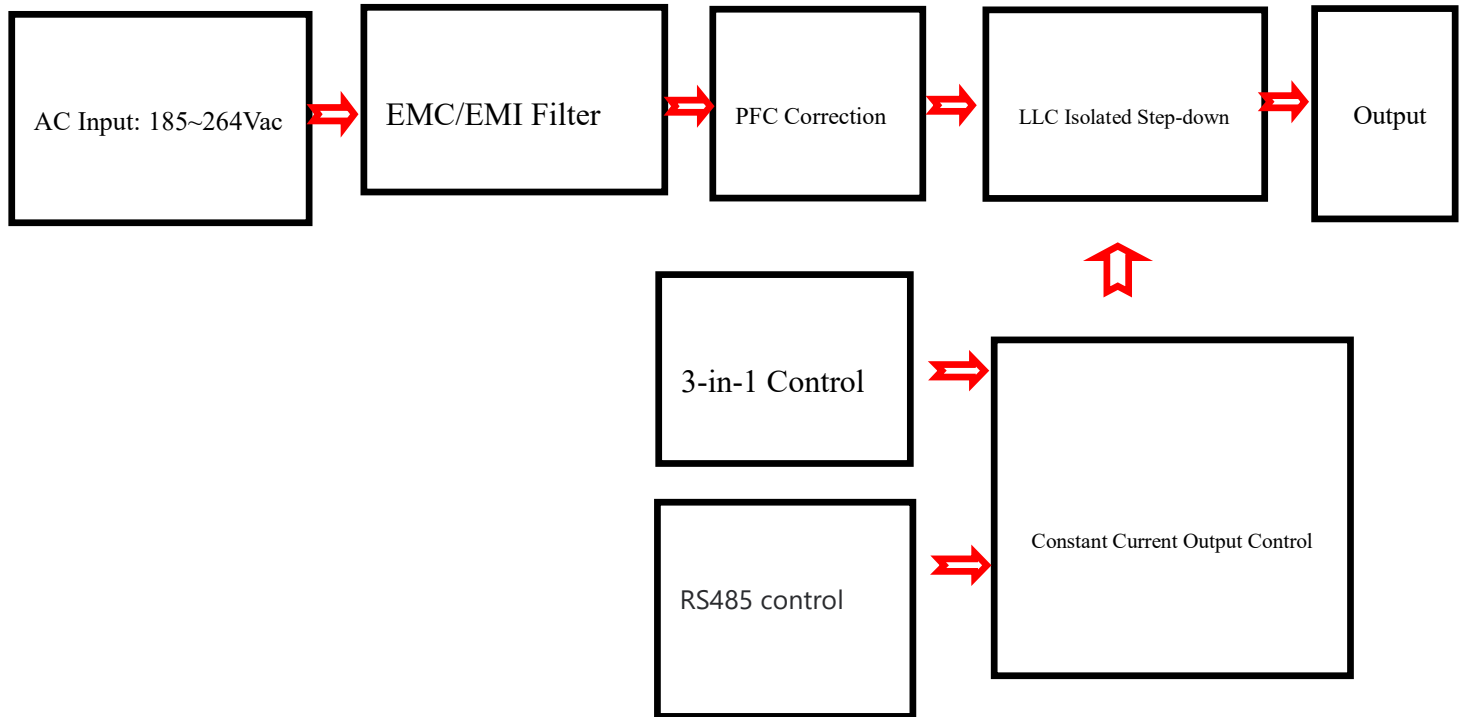
3. Protection Functions

Item	Parameter	least value	typical value	maximum value	Remarks
3.1	Output Overpower Protection		110%		Over Voltage Recovery
3.2	Input Undervoltage Protection (Vac)	170V	---	175V	Power supply shuts down below this voltage
3.3	Under-voltage protection recovery voltage (Vac)	185V	---	190V	
3.4	Over-temperature Protection (°C)	90°C	100°C	110°C	Temperature of internal heat sink
3.5	Over-temperature Recovery Temp (°C)		95°C		Auto-recovery when temperature drops
3.6	Short Circuit Protection	Can withstand long-term short circuit without damage, short-circuit power $\leq 10W$			Auto-recoverable, hiccup mode

4.Environmental Requirements

Item	Parameter	least value	typical value	maximum value	Remarks
4.1	Operating Temperature	-25° C	28° C	+50° C	Ventilated or open environment
4.2	Storage Temperature	-40° C	28° C	+85° C	---
4.3	Operating Humidity	10%RH	---	90%RH	No condensation
4.4	storage humidity	5%RH	---	95%RH	No condensation
4.5	Altitude	-100m	---	2000m	-----

5. Block diagram of the scheme



Encapsulation diagram:

