

Features

- Universal Input voltage 85 - 277VAC or 120 - 390VDC
- Operating ambient temperature range: -40°C to +85°C
- High reliability, efficiency up to 93%
- Output SCP, OCP, OVP, OTP
- Active PFC function
- Supports 7+1 parallel redundancy
- Supports PMBus communication
- High I/O isolation test voltage up to 4000VAC
- Complies with IEC/EN/UL/BS EN62368, UL60601



Ideal Power's 36LMF3000-20Bxx 3000W Enclosed AC/DC Medical Power Supply (PSU) Series are certified to RoHS & UL 60601-1/IEC 62368-1/EN 62368-1/UL 62368-1/BS EN 62368-1 Standards and comply with the relevant Efficiency Regulations. These are primarily used in Medical, ITE, Audio & Video Industries and customised solutions are available upon request.

Models

Part No.	Output Power (W)	Nominal Output Voltage and Current (Vo/Io)		Adjustable Range of Output Voltage		Efficiency 230VAC (%) Typ.	Maximum Capacitive Load at normal temperature (µF)	
		Vo1/Io1	Vo2/Io2	ADJ	Vprog		Vo1	Vo2
36LMF3000-20B24	3010	24V/125A	12V/0.8A	18-30	4.8-30	92	20000	470
36LMF3000-20B48	3010	48V/62.5A	12V/0.8A	36-60	9.6-60	93	10000	470

Input Specifications

Parameter	Conditions	Min	Typ	Max	Unit	
Input Voltage Range	Rated input (Certified voltage)	100	--	240	VAC	
	AC input	85	--	277		
	DC input	120	--	390	VDC	
Input Voltage Frequency	Rated input (Certified voltage)	47	--	63	Hz	
	AC input	47	--	63		
Input Current	Rated input (Certified voltage)	--	--	20	A	
	115VAC	--	--	16.5		
	230VAC	--	--	17.5		
Inrush Current	115VAC	--	20	--		
	230VAC	Cold start	--	40		--
Power Factor	115VAC	Normal temperature, full load		PF≥0.99		
	230VAC			PF≥0.95		
Start-up Delay Time	115VAC/230VAC, normal temperature, rated load		--	--	3	s
Input Fuse	Built-in fuse		--	25	--	A

Input Under-voltage Protection	Under-voltage protection start (Input voltage drops from high to low)	60	--	--	VAC
	Under-voltage protection release (Input voltage rises)	--	--	85	
Hot Plug	Unavailable				

Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit	
Output Voltage Accuracy	Full load range	--	±1	--		
Line Regulation	Rated load	--	±0.5	--	%	
Load Regulation	0% - 100% load	--	±0.5	--		
Minimum Load		0	--	--		
Ripple & Noise*	Vo1	24V	--	--	150	mV
		48V	--	--	250	
		Vo2	--	--	100	
Temperature Coefficient		--	±0.03	--	%/°C	
Hold-up Time	115VAC/230VAC, rated load	--	14	--	ms	
Short Circuit Protection	Long-term constant current without triggering over-temperature protection, self-recover after the short-circuit state is cancelled					
Over-current Protection	Enter the constant current state, and self-recover after the over-current state is cancelled					
Over-voltage Protection	24V	≤35VDC (Output voltage turn off, re-power on for recovery)				
	48V	≤70VDC (Output voltage turn off, re-power on for recovery)				
Over-temperature Protection	230VAC, 100% load	Over-temperature protection start		--	65	°C
		Over-temperature protection release		50	--	

Note: *The "Tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor, and 0.1uF ceramic capacitor, please refer to the Enclosed Switching Power Supply Application Notes for specific information.

General Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Isolation Test	Input - ⊕	2000	--	--	VAC
	Input-output	4000	--	--	
	Output - ⊕	1500	--	--	
Insulation Resistance	Input - ⊕	100	--	--	MΩ
	Input-output	100	--	--	
	Output - ⊕	100	--	--	
Isolation level	Input-output	2 × MOPP			
	Input - ⊕	1 × MOPP			
	Output - ⊕	1 × MOPP			
Operating Temperature		-40	--	85	°C
Storage Temperature		-40	--	85	
Operating Humidity	Non-condensing	10	--	95	%RH
Storage Humidity		20	--	90	
Switching Frequency	PFC	--	65	--	KHz
	DC- DC	--	82	--	
	Auxiliary source	--	65	--	
Operating temperature derating	-40°C to +50°C	0	--	--	%/°C
	+50°C to +85°C	2.5	--	--	

Power Derating	Input voltage derating	AC Input	85VAC-90VAC	6	--	--	%/VAC	
			90VAC-180VAC		1500			
		DC Input	180VAC-	3000				W
			120VDC-	1.25	--	--	%/VAC	
			180VDC-	1500				W
		350VDC-	3000					
Leakage Current	240VAC, 60Hz	Touch current		< 0.1mA				
		Earth leakage current		< 0.5mA				
Safety Standards			Design refers to IEC/EN/UL/BS EN62368-1, UL60601-1, GB4943.1					
Safety Class			CLASS I					
MTBF			MIL-HDBK-217F@25°C		≥250,000 h			
Warranty			Ambient temperature: ≤85°C		5 years			

Mechanical Specifications

Case Material	Metal SUS 304
Dimensions	279.40mm × 177.80mm × 63.50mm
Weight	3400g (Typ.)
Cooling method	Forced cooling 26.63 CFM

Electromagnetic Compatibility (EMC)

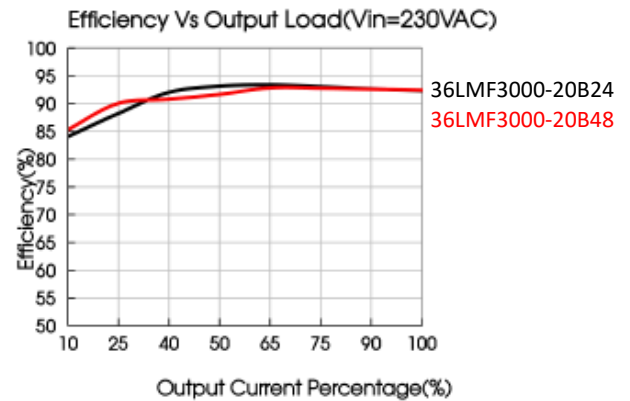
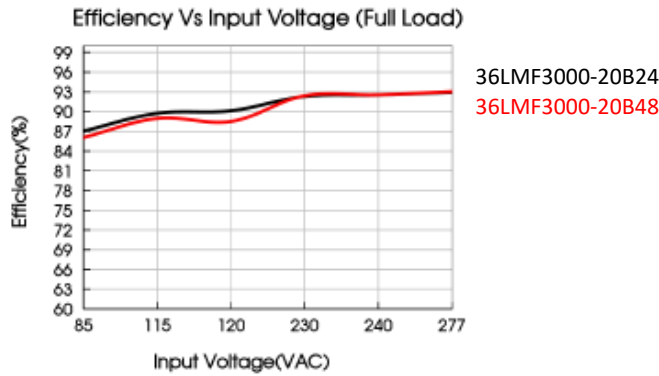
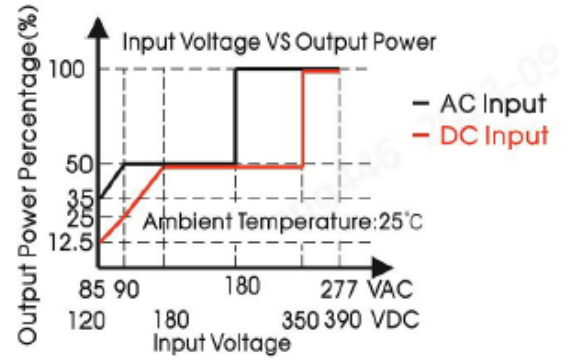
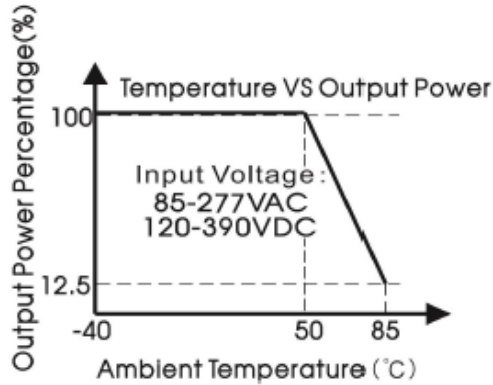
Emissions	CE	CISPR32/EN55032	CLASS A	
	RE	CISPR32/EN55032	CLASS A	
	Harmonic Current	IEC/EN61000-3-2	CLASS A & D	
Immunity	ESD	IEC/EN61000-4-2	Contact ±8KV/Air ±15KV	perf. Criteria A
	RS	IEC/EN61000-4-3	10V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4	±4KV	perf. Criteria A
	Surge	IEC/EN61000-4-5	line to line ±2KV, line to ground ±4KV	perf. Criteria A
	MS	IEC/EN61000-4-8	30A/m	perf. Criteria A
	CS	IEC/EN61000-4-6	0.15 - 80MHz 10Vr.m.s	perf. Criteria A
	Voltage dips, short interruptions and voltage variations		IEC/EN61000-4-11	0%, 70%

Functional Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit	
Remote Control Switch	All input voltage range, all load range	Power on	PS_ON /OFF (JP1300 Pin1) and SGND (JP1300 Pin2) are short			
		Power off	PS_ON/OFF (JP1300 Pin1) and SGND (JP1300 Pin2) are open			
DC_OK Signal	All input voltage range, all load range	Power on	--	0	0.5	V
		Power off	10	--	12	
Current Sharing Accuracy	Output > 50%Io1	--	±10	--	%	
Remote Sense	The total compensated voltage value of Vs+ and Vs- (Pin12 and Pin18 of the JP1300) when they are shorted to both ends of the output load (Vs+ to +Vo, Vs- to -Vo) respectively	--	200	--	mV	

LED Signal*	Main output status indication	Normal output	Green on
		Abnormal output, protected	Red on
		Power off (AC without input)	Light off
SDA, SCL for I2C		Internal 2.4kΩ pull-up resistor to internal 3.3V	
Oring		Support direct parallel use, achieve 3+1 parallel redundancy	

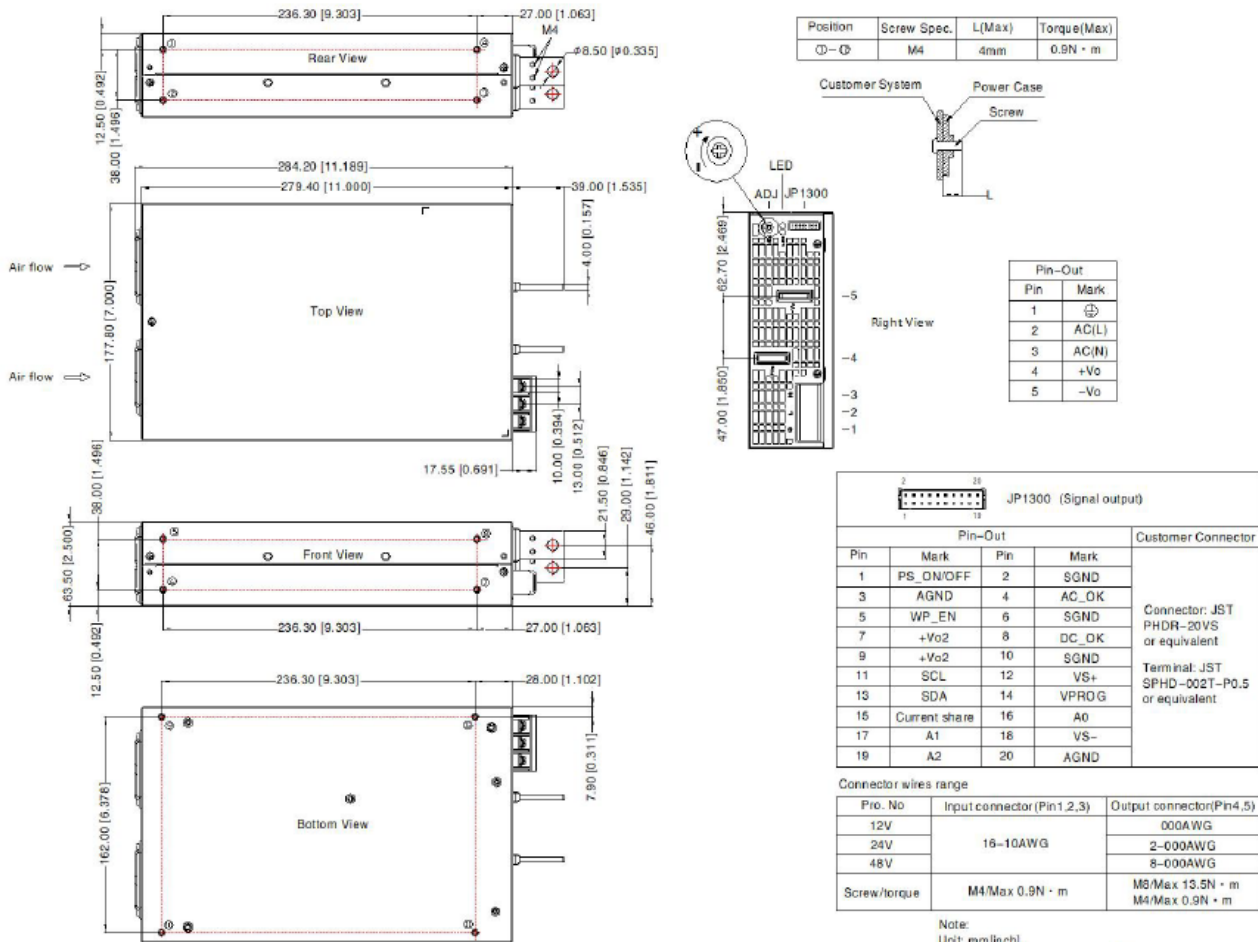
Efficiency Curves



AC - DC

Dimensions and Recommended Layout

THIRD ANGLE PROJECTION 



Note:
Unit: mm[inch]
LED: Output status indicator LED
ADJ: Output adjustable resistor
General tolerances: ± 1.00[± 0.039]

Notes:

1. For additional information on Product Packaging please refer to www.Idealpower.co.uk. Packaging bag number: 58220625
2. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25°C, humidity <75%RH with nominal input voltage, and rated output load.
3. The room temperature derating of 5°C/1000m is needed for operating altitude greater than 2000m.
4. All index testing methods in this datasheet are based on our company's corporate standards.
5. To improve the efficiency at high input voltage, there will be audible noise generated, but it does not affect product performance and reliability.
6. We can provide product customization service, please contact our technicians directly for specific information.
7. Products are related to laws and regulations: see "Features" and "EMC";
8. The out case needs to be connected to PE (⊕) of the system when the terminal equipment in operating.
9. The output voltage can be adjusted by the ADJ, clockwise to increase.
10. Our products shall be classified according to ISO14001 and related environmental laws and regulations and shall be handled by qualified units.
11. The power supply is considered a component which will be installed into a terminal equipment. All EMC tests should be confirmed with the final equipment. Please consult our FAE for EMC test operation instructions.