

- UL / IEC / EN 60601 3.1 Edition & UL / IEC / EN 60950 AM2 Safety Approvals
- High power density: 500W in 3" x 5" footprint
- Open Frame or Enclosed Versions Available
- Remote ON/OFF Function
- Built-in 12V/0.3A Auxiliary Output
- Standby 5V @ 1A with Fan, @ 0.4A without Fan
- High Efficiency up to 93%
- P.F.C. Function >0.95

Electrical Specifications

Input

Input Voltage	90-264 VAC or 120-370 VDC
Input Frequency	47-63 Hz
Input Current (RMS)	<6.0A @ 115 VAC; <3.00A @ 230 VAC
Power Factor	>0.95 @ full load (230 VAC)
Inrush Current (<2ms)	<40A @ 115 VAC; <80A @ 230 VAC
Earth Leakage Current	< 0.1 mA max. (Input-Output)

Environmental & Operating

Operating Temperature	-40°C to +70°C (with derating)
Storage Temperature	-40°C to +85°C
Humidity	95% RH
Operating altitude	<3000m for medical use
MTBF:	>160K hours per MIL-HDBK-217F at full load and 25°C ambient

Output

Total Output	500W max. See table for details
Output Voltage	See table
Hold Up Time	8ms typical at full load and 115VAC nominal line. (Note 4)
Efficiency	Up to 93%. See table for details
Minimum Load	0%

Compliance

Safety Approvals

USA/Canada	UL60601-1 3 rd Edition , UL/cUL60950-1 UL62368-1 (Pending)
Europe	IEC/EN60601-1 3rd edition, TUV EN60950-1 CB Report EN62368-1 (Pending)

Isolation:

4000VAC input to output, 2 x MOPP
1500VAC input to ground, 1 x MOPP
1500VAC output to ground, 1 x MOPP

EMC (IEC60601-1-2:2014) :

Harmonic Currents	IEC 61000-3-2:
Voltage Flicker	IEC 61000-3-3
Electrostatic Discharge	IEC 61000-4-2: 15kV Air, 8kV contact
Radiated Immunity	IEC 61000-4-3: 10V/m
EFT/Burst	IEC 61000-4-4: +/-2kV
Surge Immunity	IEC 61000-4-5: 2005 1kV diff, 2kV com
Conducted Immunity	IEC 61000-4-6: 10Vrms
Magnetic Field	IEC 61000-4-8: 30A/m
Dips / Interruptions	IEC 61000-4-11: 30% reduction for 500ms, 100% reduction for 10ms.

Protection

Overvoltage	110-132%, Auto recovery
Overload	145-170%, Auto recovery
Short Circuit	Auto recovery

General

Dimensions	3.0"W x 5.03"L x 1.38"H
Weight	1.058 pounds (480 g)

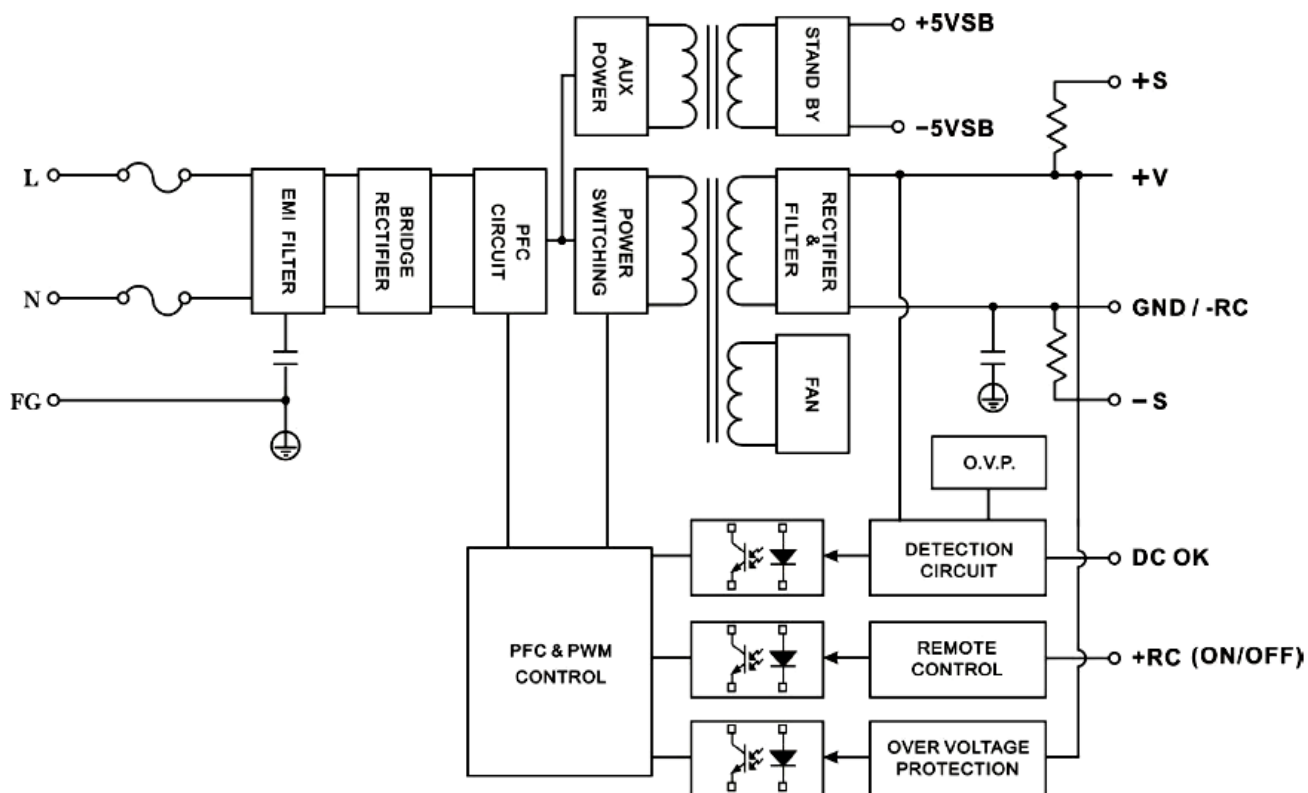
Models and Ratings

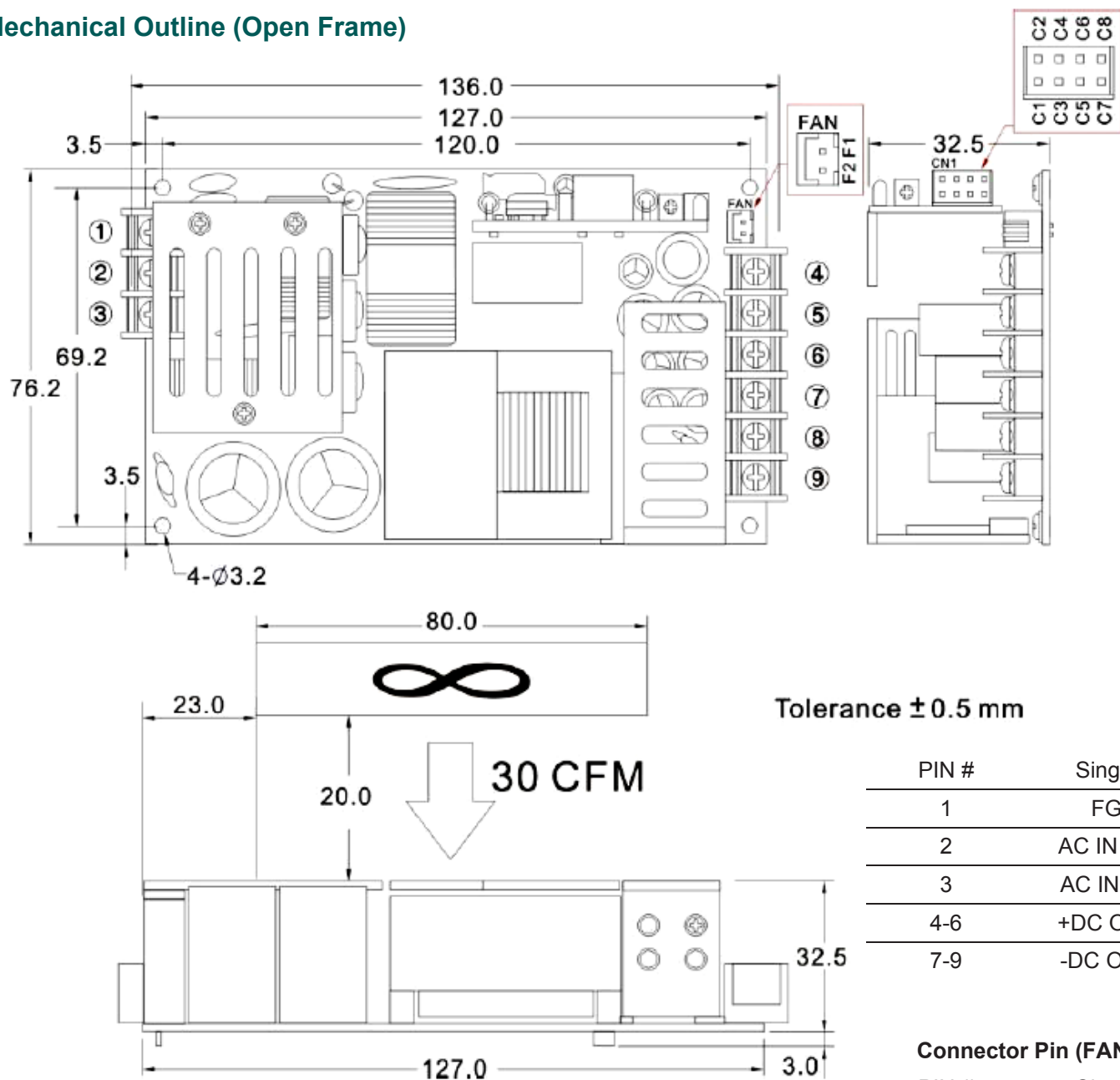
Model ¹	Output Voltage	Max Load Convection ²	Max Load 30CFM Forced Air	Output Regulation	Ripple & Noise ⁶	Efficiency (230 VAC)	Fan Output	+5VSB Output ⁷
PDAM500-12A	12V	20A	41.5A	±1.2%	160mV	90.5%	12V/0.3A	5V/1A
PDAM500-13A	15V	14.66A	33.3A	±1.0%	160mV	90.5%	12V/0.3A	5V/1A
PDAM500-14A	24V	10A	20.8A	±1.0%	240mV	92%	12V/0.3A	5V/1A
PDAM500-18A	48V	5A	10.41A	±1.0%	480mV	93%	12V/0.3A	5V/1A

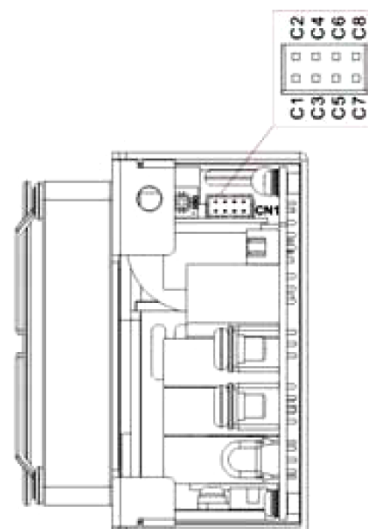
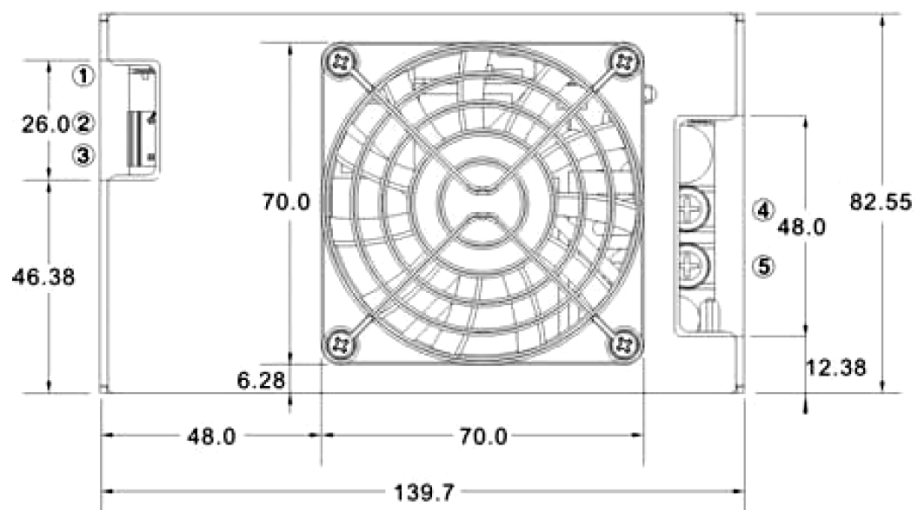
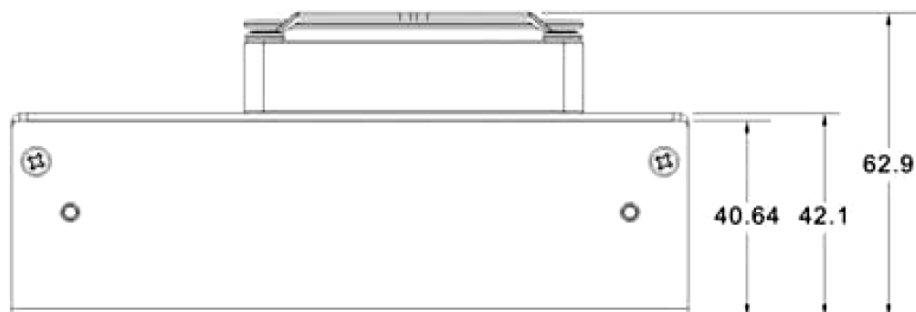
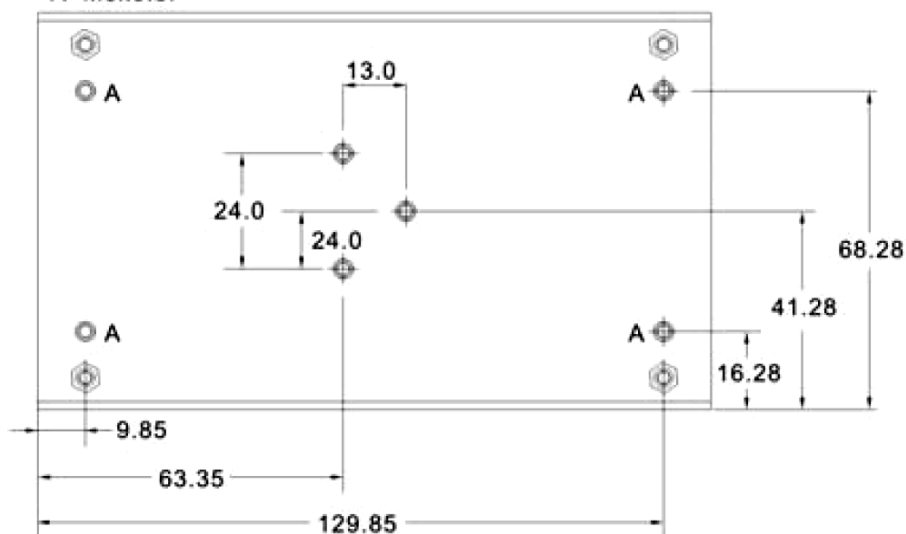
Note:

1. All models are available in an enclosed version (e.g. PDAM500-12A would be PDAM500-12C).
2. Listed values are taken at 230VAC. At 115VAC, 19.16A, 9.58A, and 4.8A for the models listed as shown.
3. Recommended to add Varistor 14S471K at L/N input side in parallel.
4. Hold-up Time measured at 90% Vout
5. Main Vout >3% Load, 12V (Aux) / 0.3A.
6. Measured at 20MHz bandwidth with a 47uF electrolytic capacitor and 0.1uF ceramic capacitor in parallel at the output connector.
7. 400mA convection rated.

Block Diagram



Mechanical Outline (Open Frame)


Mechanical Outline (Enclosed)

Tolerance ± 0.5 mm

A=M3x0.5P

Connector Pin (CN1)

PIN #	Single
C1	-5VSB
C2	+5VSB
C3	GND
C4	DC OK
C5	-RC
C6	+RC
C7	-S
C8	+S

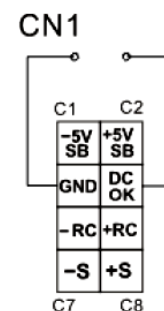
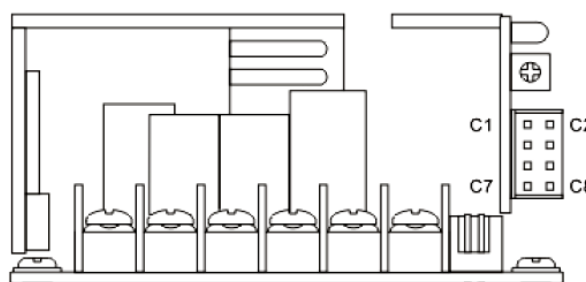
Function Description of CN1

Pin No.	Function	Description
C1	-5VSB	This pin connects to the negative terminal (-V). Return for DC-OK and -RC signal output.
C2	+5VSB	Stand by voltage output ground 3.7~6V, referenced to pin C8 (+5VSB). The maximum load current is 0.6A.
C3	GND	This pin connects to the negative terminal (-V). Return for DC-OK and -RC signal output.
C4	DC OK	DC-OK signal is a DC output, referenced to pin C6 (DC-OK GND).
C5	-RC	This pin connects to the negative terminal (-V). Return for DC-OK and -RC signal output.
C6	+RC	Turns the output on and off by electrical or dry contact between pin C4 (-RC), Short: Power OFF, Open: Power ON.
C7	-S	Negative sensing. The -S Signal should be connected to the negative terminal of the load. The -S and +S leads should be twisted in pair to minimize noise pick-up effect. The maximum line drop compensation is 0.3V.
C8	+S	Positive sensing. The +S Signal should be connected to the negative terminal of the load. The +S and -S leads should be twisted in pair to minimize noise pick-up effect. The maximum line drop compensation is 0.3V.

Function Manual & Application

1. DC-OK Signal

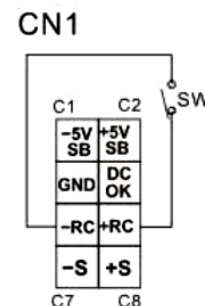
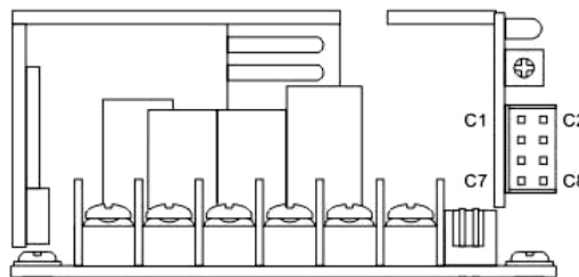
Between DC-OK and GND	Output Status
3.7~6V	ON
0~1V	OFF



2. Remote Control

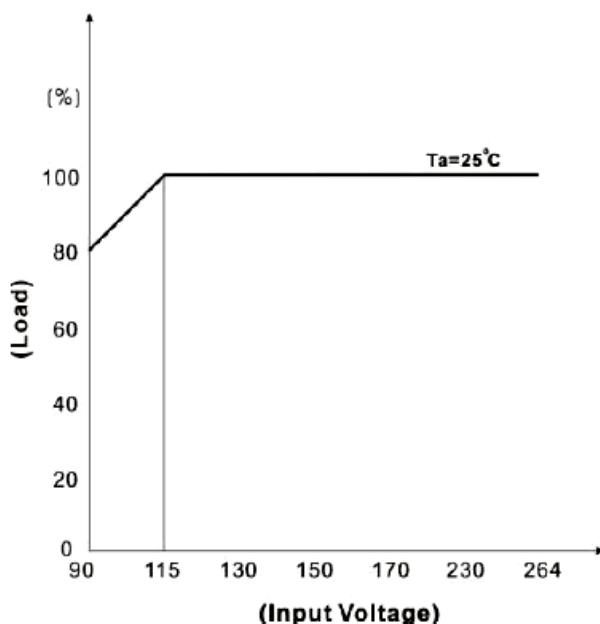
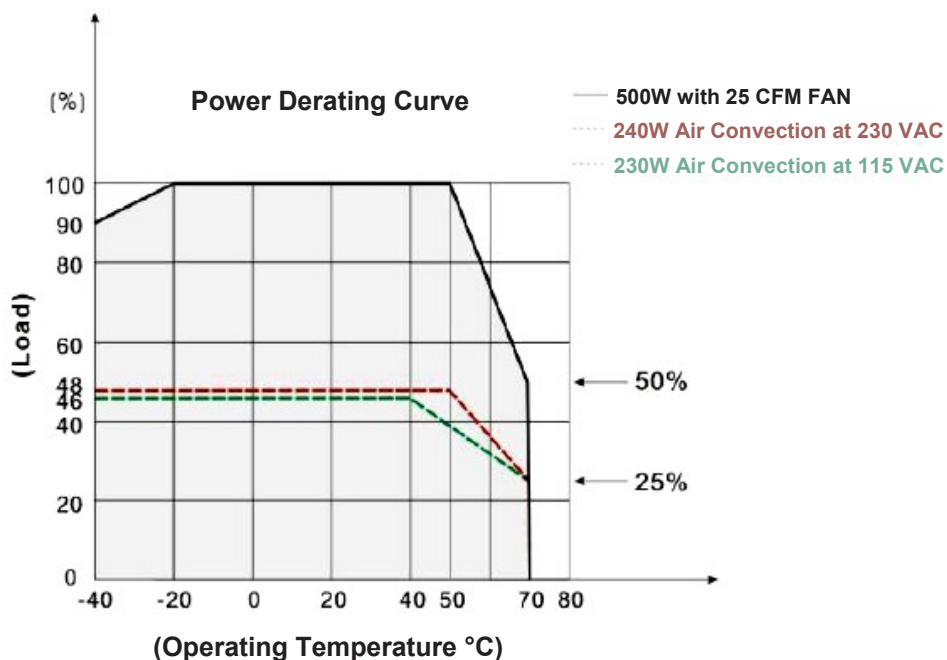
The unit can be turned ON/OFF by using the "Remote Control" function.

Between +RC and -RC	Output Status
SW ON (Short)	OFF
SW OFF (Open)	ON





Power Derating

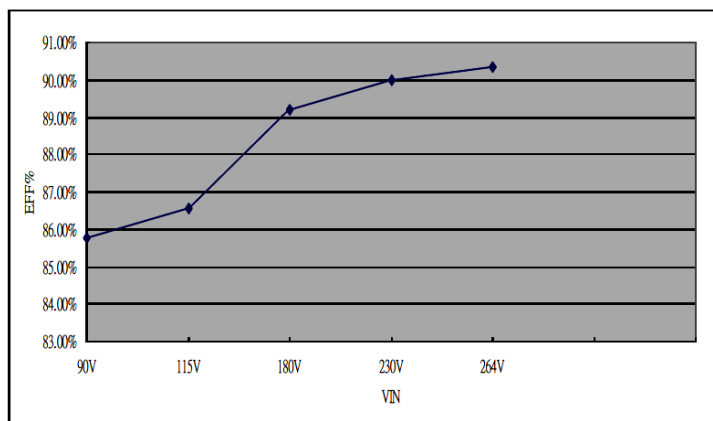




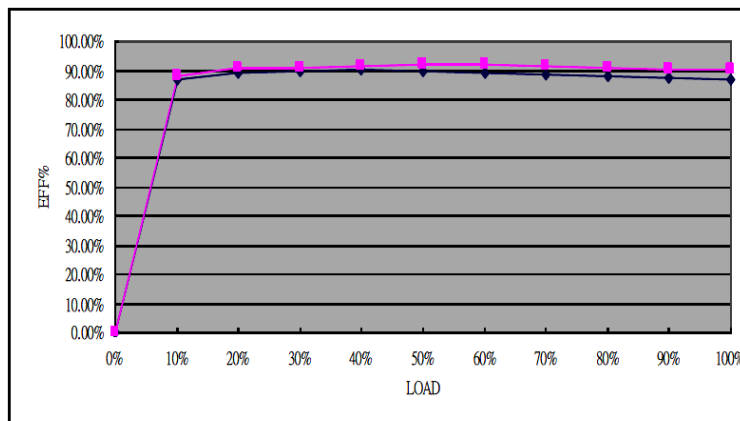
Efficiency Versus Load

PDAM500-12

VIN VS Efficiency					
Input Voltage (V)	90	115	180	230	264
Efficiency (%)	85.78	86.58	89.21	90.01	90.34



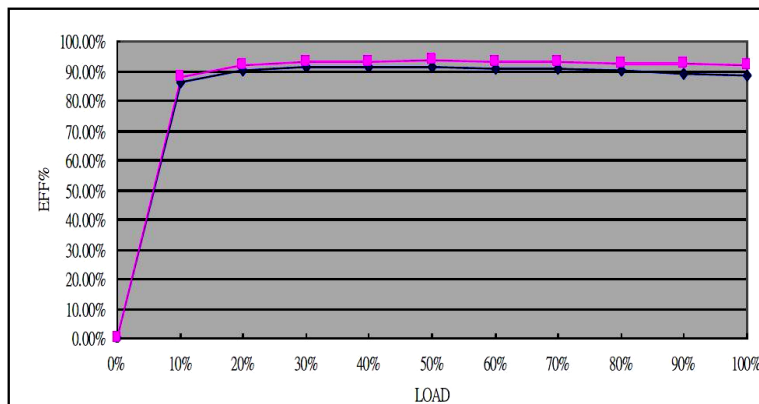
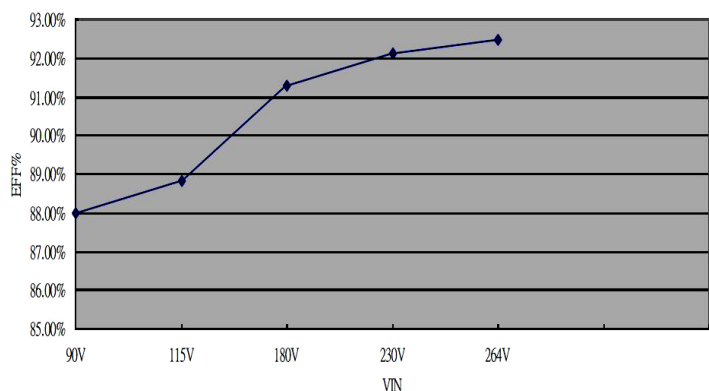
LOAD VS Efficiency					
Load (%)	10	20	30	40	50
115V (%)	86.67	89.20	89.80	90.06	89.87
230V (%)	88.19	90.82	91.00	91.71	91.86
Load (%)	60	70	80	90	100
115V (%)	89.30	88.77	88.18	87.27	86.58
230V (%)	91.77	91.40	90.79	90.44	90.01



PDAM500-14

VIN VS Efficiency					
Input Voltage (V)	90	115	180	230	264
Efficiency (%)	87.99	88.84	91.29	92.13	92.48

LOAD VS Efficiency					
Load (%)	10	20	30	40	50
115V (%)	86.38	90.14	91.42	91.48	91.52
230V (%)	87.90	91.79	93.12	93.40	93.58
Load (%)	60	70	80	90	100
115V (%)	91.12	90.61	90.20	89.35	88.84
230V (%)	93.39	93.27	92.72	92.47	92.13

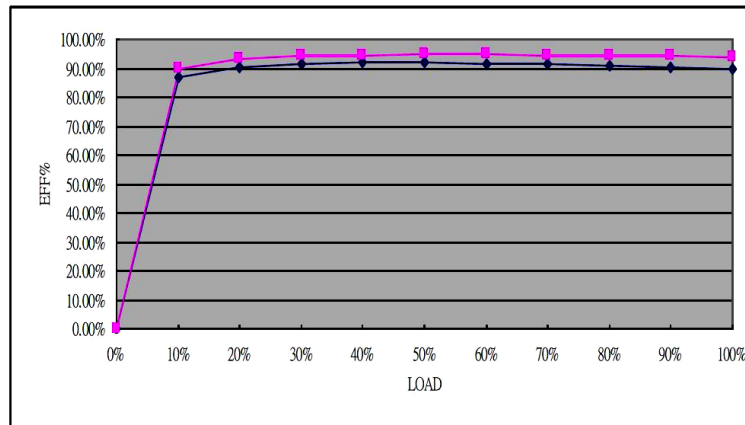
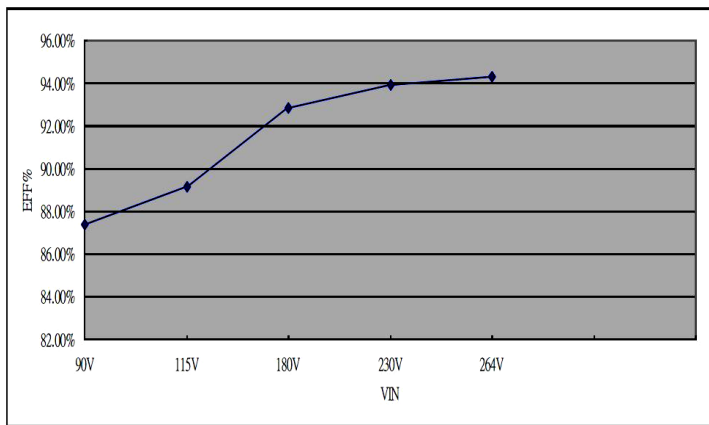


Efficiency Versus Load

PDAM500-18

VIN VS Efficiency					
Input Voltage (V)	90	115	180	230	264
Efficiency (%)	87.36	89.18	92.88	93.89	94.33

LOAD VS Efficiency					
Load (%)	10	20	30	40	50
115V (%)	86.60	90.27	91.54	91.83	91.84
230V (%)	89.45	93.31	94.10	94.45	94.66
Load (%)	60	70	80	90	100
115V (%)	91.67	91.33	90.72	90.14	89.47
230V (%)	94.65	94.47	94.22	94.29	93.96



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