

AQF120E SERIES

180 Watts

KEY FEATURES

- Enclosed Switching Power Supply 180 Watt with 18CFM FAN for 12V to 48V Output Voltage
- 150 Watt with 30CFM FAN for 5V Output Voltage
- High Efficiency up to 93%
- Universal Input: 90-264 VAC
- Low Ripple and Noise
- With P.F.C. Function >0.95
- 120 Watt with Free Air Convection
- Ultra Compact Size: 5.0 x 3.24 x 1.5 Inches
- 3-Year Product Warranty



Standard 5S	Standard (5S N/A)	A Type (5S N/A)	B Type (5S N/A)

Please refer to the types of terminal block; the pictures shown are for illustration purpose only, actual product may vary.

ELECTRICAL SPECIFICATIONS

All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

Model No.	AQF120E-5S	AQF120E-12S	AQF120E-15S	AQF120E-24S	AQF120E-48S
Max Output Wattage (W)	150 W (30CFM FAN)	180 W (18CFM FAN)			
Max Output Wattage (W)	120 W				
Input	Voltage				
	90-264 VAC or 120-370 VDC (80-274 VAC or 110-390 VDC with Derating)				
	Frequency (Hz)				
	47-63 Hz				
	Current (Full load)				
	<2.0 A max. (115 VAC) / <1.0 A max. (230 VAC)				
Output	Inrush Current (<2ms)				
	< 30 A max. (115 VAC) / < 60 A max. (230 VAC)				
	Leakage Current				
	< 0.5 mA max.				
	Power Factor				
	PF>0.99 (115 VAC) / PF>0.95 (230 VAC) at Full Load				
	Voltage (V.DC.)				
	5V 12V 15V 24V 48V				
	Voltage Accuracy				
	±2%				
	Voltage Adj. Range				
	±5% Output Voltage				
	Current (18/30 CFM FAN)(A) max				
	0~30 (30CFM FAN) 0~15 (18CFM FAN) 0~12 (18CFM FAN) 0~7.5 (18CFM FAN) 0~3.75 (18CFM FAN)				
Current (Convection) (A) max					
0~24 0~10 0~8 0~5 0~2.5					
Line Regulation					
±1%					
Load Regulation					
±1%					
Minimum Load					
5% 1%					
Maximum Capacitive Load					
100,000µF 40,000µF 35,000µF 20,000µF 1,200µF					
Ripple & Noise (max.)					
100mV 50mV 50mV 100mV 200mV					
Efficiency (typ.)					
87% 90% 90% 93% 93%					
Hold-up Time					
15 ms min.					
Protection	Over Power Protection				
	Auto recovery				
	Over Voltage Protection				
	Auto recovery (> 125% Vout) (except 5S)				
Short Circuit Protection					
Protection level 1 (nominal) : Continuous, Auto recovery					
Protection level 2 (instantaneous high current) : Latch					

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ELECTRICAL SPECIFICATIONS

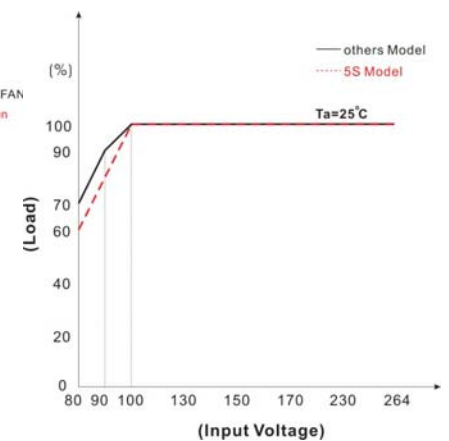
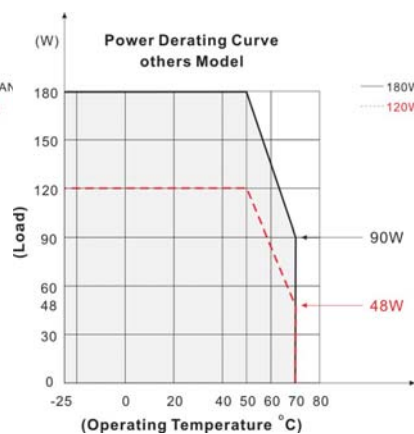
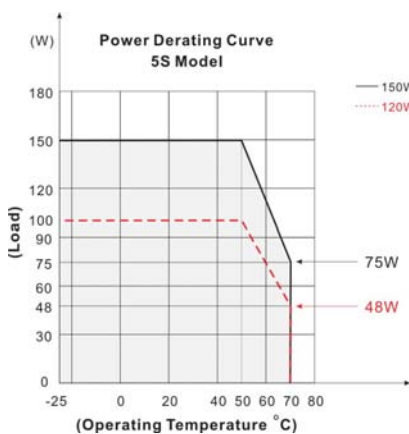
All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

Model No.	AQF120E-5S	AQF120E-12S	AQF120E-15S	AQF120E-24S	AQF120E-48S	
Isolation	Input-Output (V.AC)	4000VAC or 5656VDC				
	Input-FG (V.AC)	2000V				
	Output-FG (V.AC)	500V				
Environment	Operating Temperature	-25°C...+70°C (with derating)				
	Storage Temperature	-25°C...+85°C				
	Temperature Coefficient	±0.03%/°C (0~50°C)				
	Humidity	95% RH				
	MTBF	>120,000 h @ 25°C (MIL-HDBK-217F, Notice 1)				
	Vibration	10~500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes.				
Physical	Dimensions (L x W x H)	5.0 x 3.24 x 1.5 Inches (127.0 x 82.2 x 38.1 mm) Tolerance ±0.5 mm				
	Weight	400 g				
	Cooling Method	Free convection / 18 CFM FAN				
Safety	Agency Approvals	IEC / EN 60950(5S,15S N/A), UL/ IEC / EN 62368-1(5S,15S N/A)				
EMC	EMI (Conducted & Radiated Emission)	EN61000-6-3 · EN 55032 class B				
	EMS (Noise Immunity)	EN 55024				

NOTE

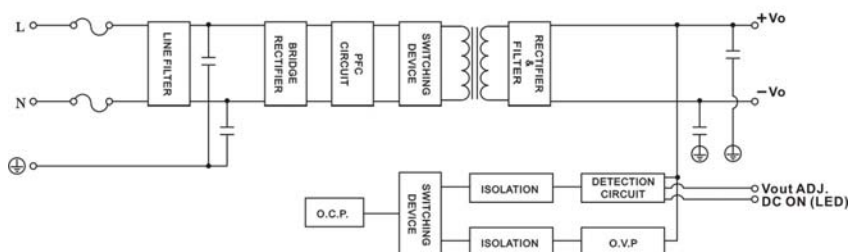
- Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.
- Hold-up Time measured at 90% Vout.
- Strongly recommend to conduct this test with DC Voltage. If customer wishes to test with AC Voltage, please disconnect all Y-Capacitors from Arch power supply.
- CAUTION: Double pole, neutral fusing. Disconnect mains before servicing.**
(ATTENTION : 2 poles avec fusible sur le neutre. Deconnecter le secteur avant intervention.)

DERATING



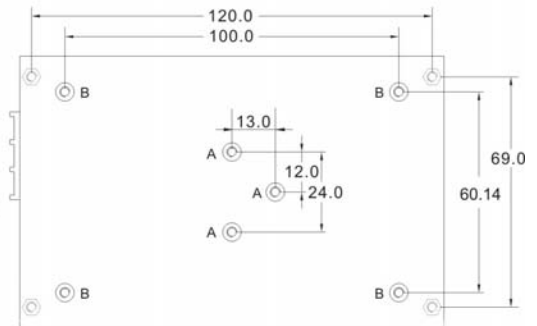
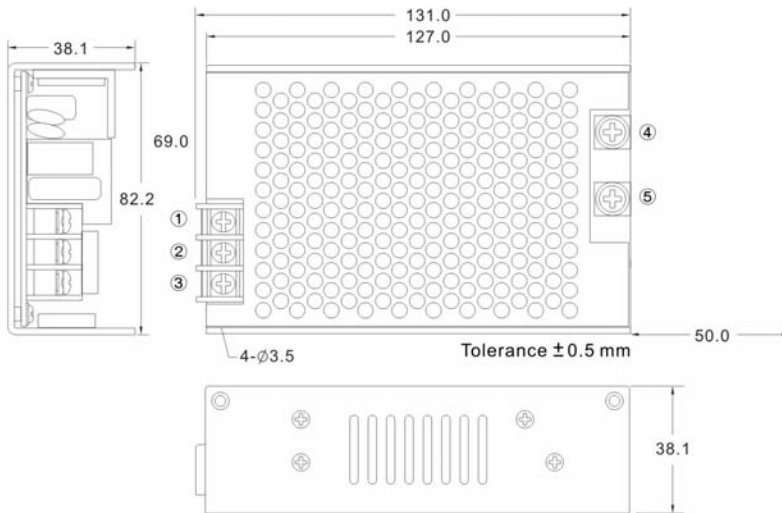
BLOCK DIAGRAM

Single Output



MECHANICAL DIMENSIONS (Top View)

Standard (5S)

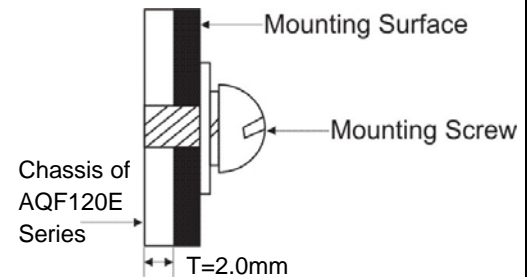


A= For fixture to chassis only
A=M3x0.5P
B=For fixture to pcb/chassis only
B=M3x0.5P
Torque:3±0.5 Kgf.cm

Brands		Terminal
PIN#	Single	
1	AC IN (L)	ANYTEK DG28S-B-03P
2	AC IN (N)	
3	FG	
4	+DC OUT	M5 Pan HD screw in 2 positions Torque to 8 lbs-in(90 cNm) max.
5	-DC OUT	

ASSEMBLY INSTRUCTIONS

*U Case T=2.0mm
Customer is advised to screw into the threads no more than 2.0mm



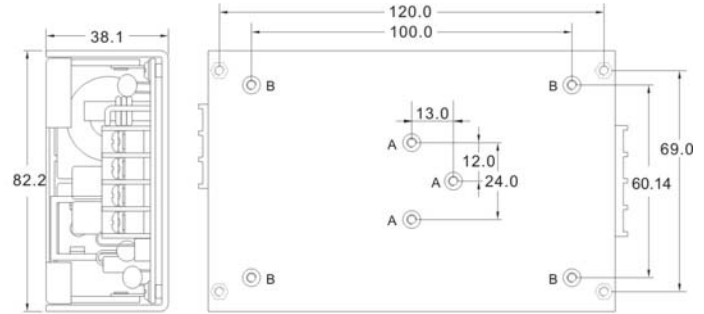
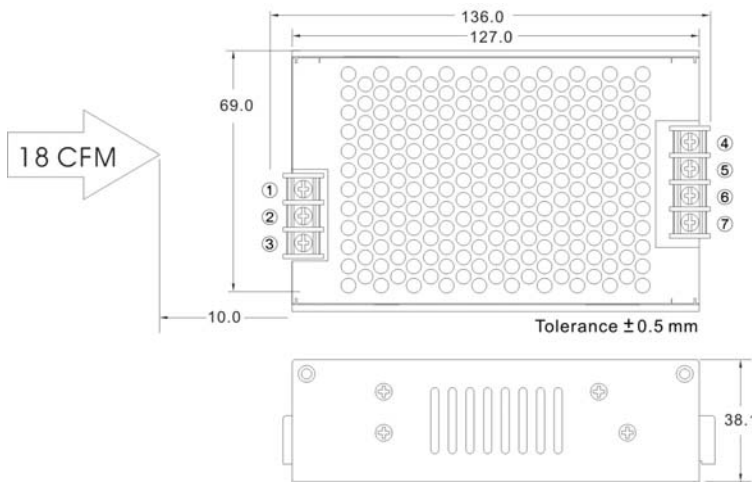
Standard (5S)



Please refer to the types of terminal block; the pictures shown are for illustration purpose only, actual product may vary.

MECHANICAL DIMENSIONS (Top View)

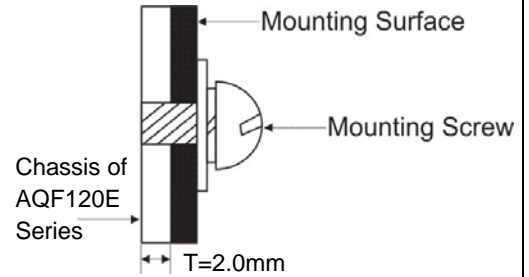
Standard (5S N/A)



A= For fixture to chassis only
A=M3x0.5P
B=For fixture to pcb/chassis only
B=M3x0.5P
Torque:3±0.5 Kgf.cm

ASSEMBLY INSTRUCTIONS

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Brands		Terminal
PIN#	Single	
1	AC IN (L)	ANYTEK DG28S-B-03P
2	AC IN (N)	
3	FG	
4-5	+DC OUT	ANYTEK DG28S-B-04P
6-7	-DC OUT	

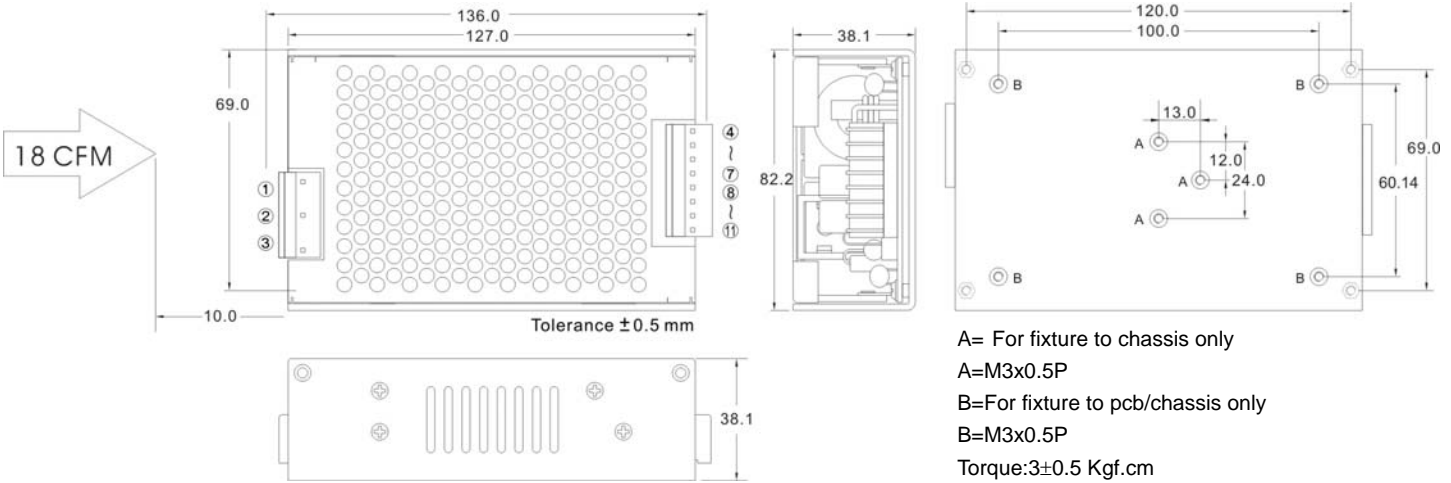
Standard (5S N/A)



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MECHANICAL DIMENSIONS (Top View)

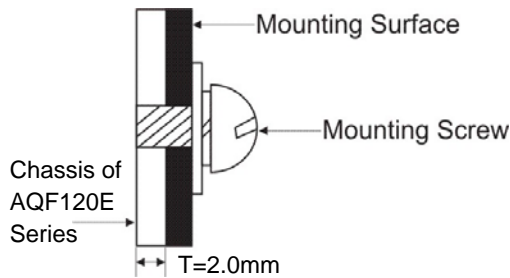
A Type (5S N/A)



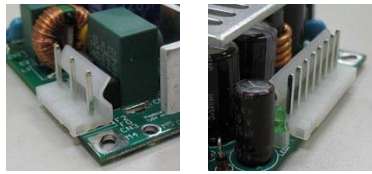
ASSEMBLY INSTRUCTIONS

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A Type (5S N/A)

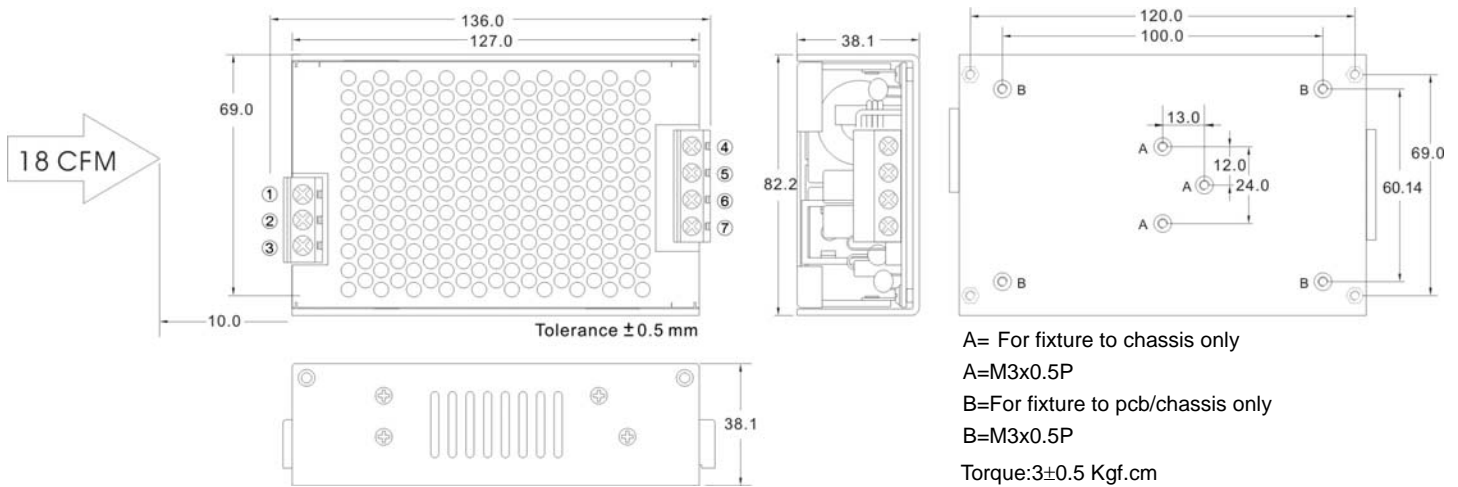


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Brands		Alex		Molex	
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
1	AC IN (L)	8639-05N2 8095-05N2	23T or 24T series 94T or 95T series	5195-05	5194T
2	AC IN (N)				
3	FG				
4-7	+DC OUT	8639-08N2 8095-08N2	23T or 24T series 94T or 95T series	5195-08	5194T
8-11	-DC OUT				

MECHANICAL DIMENSIONS (Top View)

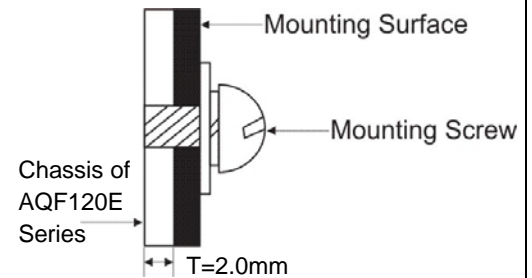
B Type (5S N/A)



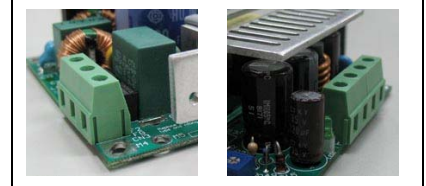
Brands		Terminal
PIN#	Single	
1	AC IN (L)	ANYTEK TI0324500010G
2	AC IN (N)	
3	FG	
4-5	+DC OUT	DINKLE DT-128V-1711-04P3
6-7	-DC OUT	

ASSEMBLY INSTRUCTIONS

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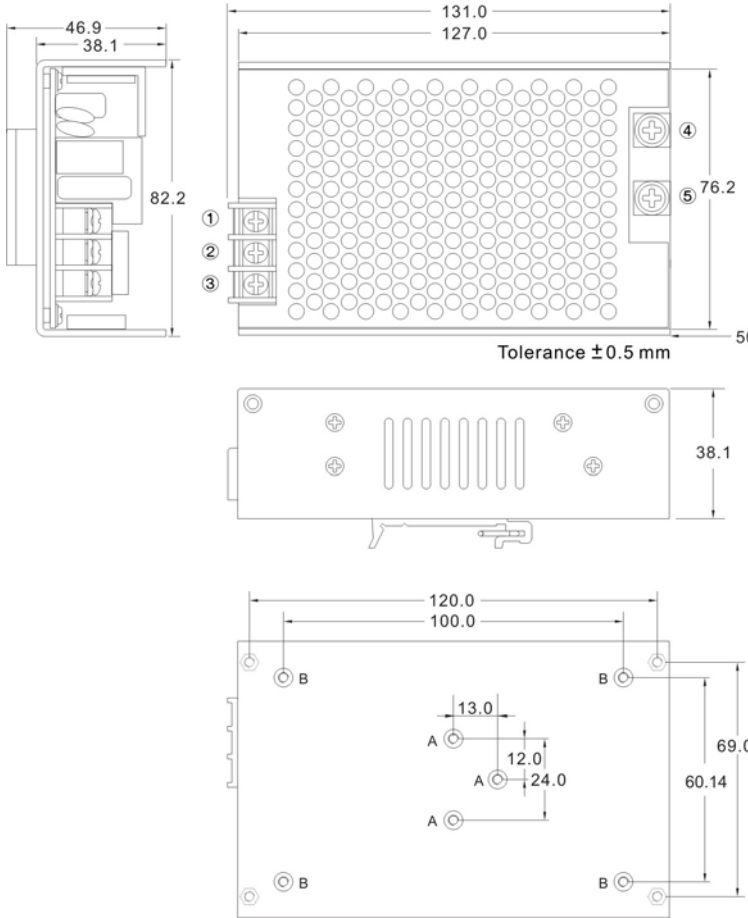
B Type (5S N/A)



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Din Rail Kit

Take AQF120E-5S-DRK as an example

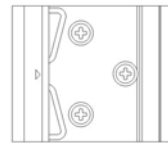


30 CFM



A= For fixture to din rail kit /chassis only
A=M3x0.5P
B=For fixture to pcb/chassis only
B=M3x0.5P
Torque:3±0.5 Kgf.cm

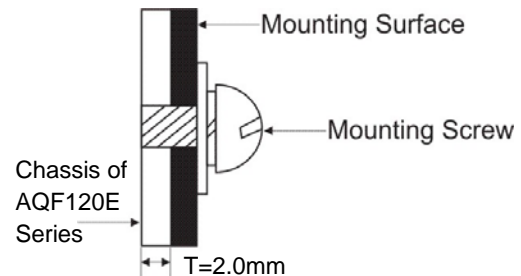
Din Accessory



Brands		Terminal
PIN#	Single	
1	AC IN (L)	ANYTEK DG28S-B-03P
2	AC IN (N)	
3	FG	
4	+DC OUT	M5 Pan HD screw in 2 positions Torque to 8 lbs-in(90 cNm) max.
5	-DC OUT	

ASSEMBLY INSTRUCTIONS

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EFFICIENCY VERSUS LOAD

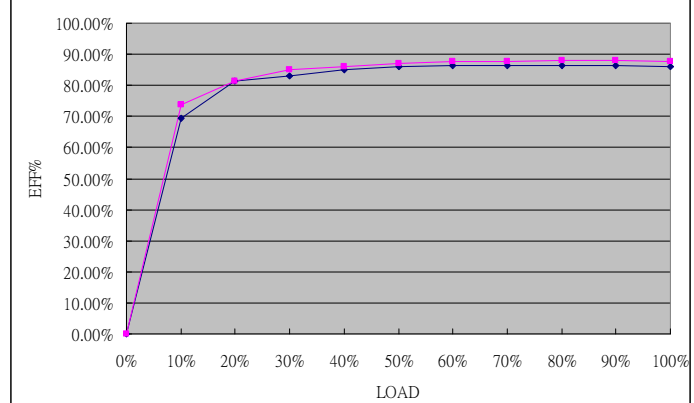
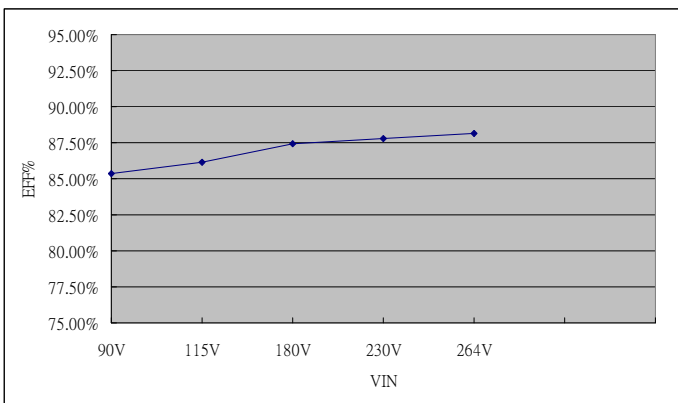
AQF120E-5S

VIN VS Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	85.37	86.17	87.46	87.76	88.14

LOAD VS Efficiency

Load (%)	10	20	30	40	50
115V (%)	69.59	81.53	83.15	84.92	85.96
230V (%)	73.66	81.49	85.04	86.21	87.16
Load (%)	60	70	80	90	100
115V (%)	86.44	86.45	86.37	86.48	86.20
230V (%)	87.57	87.75	87.98	87.94	87.80



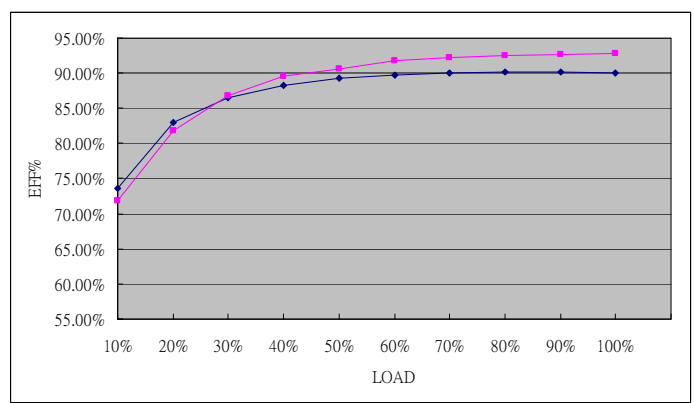
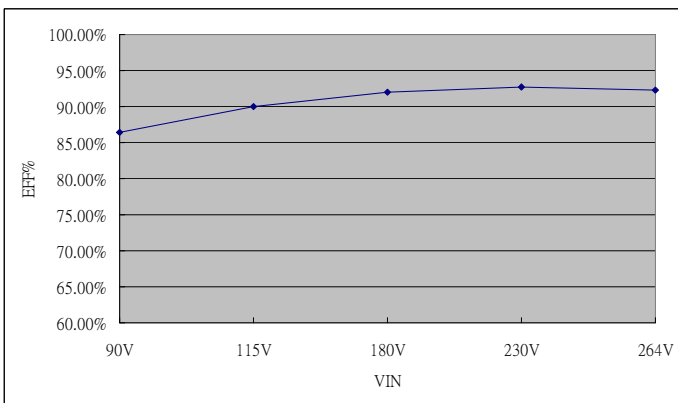
AQF120E-12S

VIN VS Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	86.45	89.96	92	92.77	92.3

LOAD VS Efficiency

Load (%)	10	20	30	40	50
115V (%)	73.62	82.98	86.43	88.26	89.27
230V (%)	71.83	81.82	86.81	89.54	90.58
Load (%)	60	70	80	90	100
115V (%)	89.72	89.95	90.11	90.1	89.96
230V (%)	91.74	92.18	92.53	92.62	92.77



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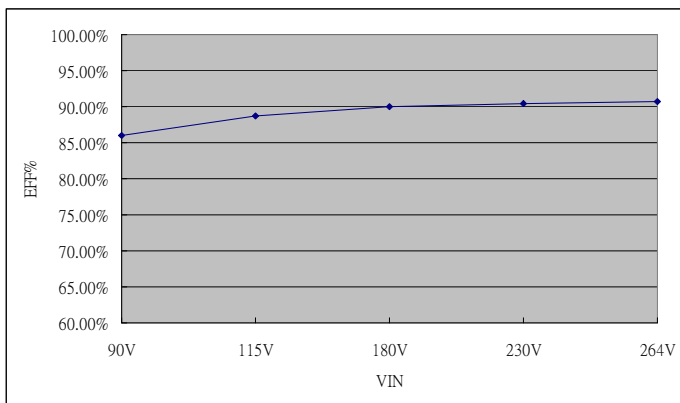
180 Watts

EFFICIENCY VERSUS LOAD

AQF120E-15S

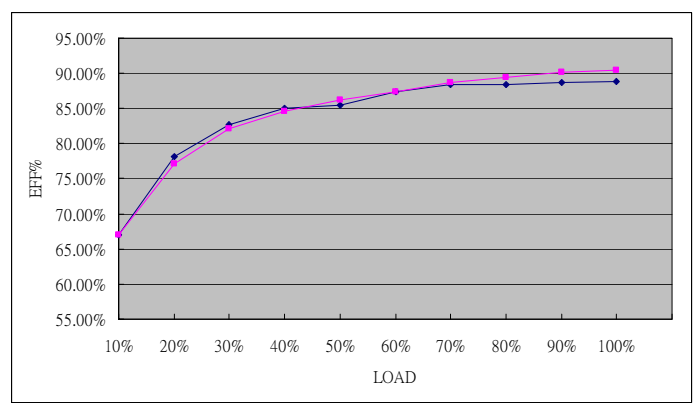
VIN VS Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	86.03	88.78	90.06	90.45	90.75



LOAD VS Efficiency

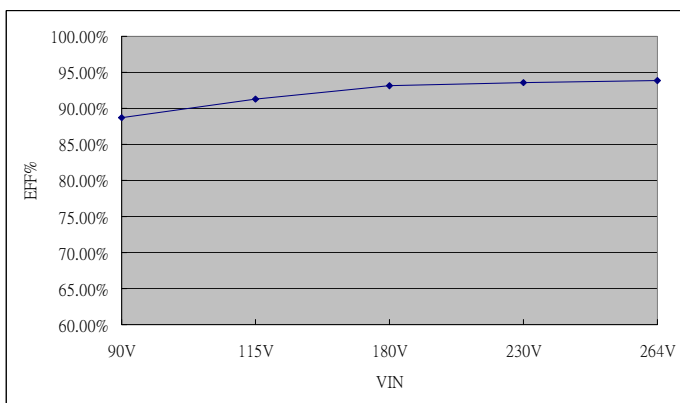
Load (%)	10	20	30	40	50
115V (%)	67.05	78.17	82.74	85.07	85.52
230V (%)	67.05	77.17	82.17	84.61	86.14
Load (%)	60	70	80	90	100
115V (%)	87.40	88.34	88.44	88.67	88.78
230V (%)	87.39	88.68	89.5	90.14	90.45



AQF120E-24S

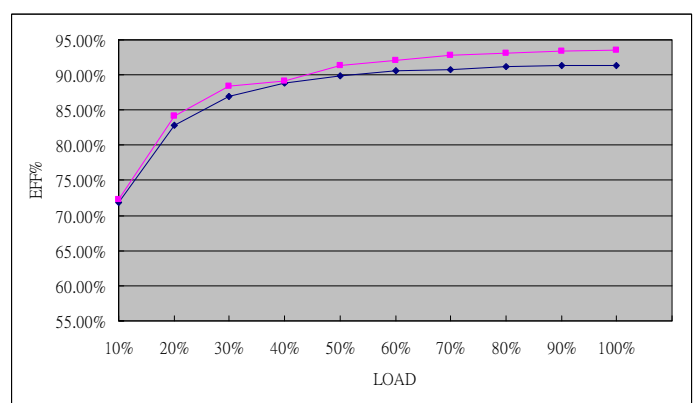
VIN VS Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	88.78	91.27	93.11	93.52	93.81



LOAD VS Efficiency

Load (%)	10	20	30	40	50
115V (%)	71.89	82.79	86.97	88.9	89.82
230V (%)	72.3	84.22	88.46	89.21	92.29
Load (%)	60	70	80	90	100
115V (%)	90.54	90.78	91.13	91.4	91.27
230V (%)	92.14	92.86	93.14	93.44	93.52

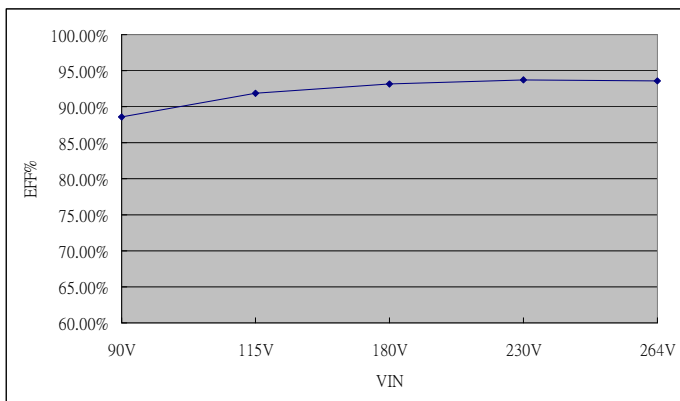


EFFICIENCY VERSUS LOAD

AQF120E-48S

VIN VS Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	88.56	91.86	93.20	93.76	93.61



LOAD VS Efficiency

Load (%)	10	20	30	40	50
115V (%)	74.99	83.9	87.25	89.17	90.01
230V (%)	67.31	79.29	84.97	88.18	89.99
Load (%)	60	70	80	90	100
115V (%)	90.69	91.18	91.46	91.84	91.86
230V (%)	91.24	92.15	92.84	93.36	93.76

