

# QUALIFICATION TEST REPORT

Customer: **Cisco**Model name: **FSP018-DHAA1**Tested by: **Brian Chien**Report Rev: **01**Stage: **B-TEST**Checked by: **Brian Lin**Spec. Rev: **00**Date: **2019/06/14**Approved by: **Jason Wei**

Item	Sub-Item	Results	Page	Comments
Input Characteristics	Efficiency	Pass	1	
	Power saving	Pass	5	
	Input current	Pass	6	
	Inrush current	Pass	7	
	Turn on time	Pass	11	
	Hold up time	Pass	19	
Output Characteristics	Output voltage regulation	Pass	27	
	Ripple & Noise	Pass	29	
	Dynamic load	Pass	31	
	Overshoot (turn on)	Pass	36	
	Overshoot (turn off)	Pass	59	
	Rise time	Pass	82	
	Brownout and recovery	Pass	90	
Protections	Short circuit	Pass	92	
	Over current	Pass	94	
	Over voltage	Pass	95	
Safety	Leakage current	Pass	102	
	Hi-pot	Pass	103	
	Insulation resistance	Pass	104	

Environment/Reliability	Thermal	Pass	105	
	Power de-rating	Pass	108	
	Acoustic emissions	Pass	115	
	Burn in	Pass	117	IEC60068-2-2
	ON/OFF cycling	Pass	118	
	Low temperature storage	Pass	119	IEC60068-2-1
	High temperature storage	Pass	120	IEC60068-2-2
	Temperature & Humidity cycling	Pass	121	IEC60068-2-14
	Cold start	Pass	123	IEC60068-2-1
E.M.C.	Lightning surge	Pass	125	EN61000-4-5
	ESD	Pass	133	EN61000-4-2
	EFT	Pass	135	EN61000-4-4
	EMI	Pass	138	EN55032
	AC Voltage DIPS and Short interruptions	Pass	163	EN61000-4-11
	Harmonic current	Pass	166	EN61000-3-2

表單編號:A000W-00502

## Efficiency

### 1. Specification:

DOE(Level VI):

(1)115Vac / 0A load  $\leq 0.1W$

(2)115Vac / 25%,50%,75%,100% load  $\geq 85\%$

(Average Active Mode Efficiency ,Warm up 30 minutes later , DC Cable  $\leq 1500$  mm,20AWG)

### 2. Test condition:

Input: 100Vac/60Hz; 115Vac/60Hz; 230Vac/50Hz; 240Vac/50Hz

Ambient Temperature: 25°C

Load	+12V
No load	0A
10%	0.15A
25%	0.375A
50%	0.75A
75%	1.125A
Max	1.5A

### 3. Test record:

## Sample No.1

Load	Vin (Vac)	Iinrms (A)	Pin (W)	Pout (W)	PF	Eff (%)	Spec (%)	Result
Max	100.29	0.36550	20.982	17.472	0.57230	83.271	*	REF
	240.87	0.21010	20.512	17.477	0.40520	85.204	*	REF

	115V/60Hz					
	No load	Active power values				
Load	0%	10%	25%	50%	75%	100%
Iout (A)	--	0.15	0.38	0.75	1.13	1.50
Vout (V)		12.11	12.06	11.99	11.92	11.84
Pout (W)		1.82	4.53	9.01	13.44	17.79
Fin (Hz)	60	60	60	60	60	60
Iin (A)	0.0095	0.0521	0.1080	0.1873	0.2597	0.3330
Vin (V)	115.07	115.05	115.05	115.02	115.01	114.99
Pin (W)	0.023	2.10	5.14	10.21	15.32	20.80
THDv (%)	0.22	0.05	0.21	0.22	0.12	0.14
PF (W/VA)	0.02	0.35	0.41	0.47	0.51	0.54
Power Consumed (W)	0.023	0.28	0.61	1.20	1.88	3.01
Efficiency	--	0.8650	0.8818	0.8826	0.8770	0.8555
Average Efficiency	--	--	0.8742			

	230V/50Hz					
	No load	Active power values				
Load	0%	10%	25%	50%	75%	100%
Iout (A)	--	0.15	0.38	0.75	1.13	1.50
Vout (V)		12.09	12.02	11.90	11.78	11.65
Pout (W)		1.82	4.52	8.94	13.28	17.51
Fin (Hz)	50	50	50	50	50	50
Iin (A)	0.0158	0.0360	0.0699	0.1233	0.1711	0.2155
Vin (V)	230.08	230.08	230.08	230.06	230.07	230.06
Pin (W)	0.046	2.26	5.26	10.37	15.42	20.43
THDv (%)	0.18	0.07	0.15	0.14	0.14	0.14
PF (W/VA)	0.01	0.27	0.33	0.37	0.39	0.41
Power Consumed (W)	0.046	0.44	0.74	1.43	2.14	2.92
Efficiency	--	0.8043	0.8585	0.8626	0.8613	0.8571
Average Efficiency	--	--	0.8599			

Sample No.2

Load	Vin (Vac)	Iinrms (A)	Pin (W)	Pout (W)	PF	Eff (%)	Spec (%)	Result
Max	100.59	0.36550	20.978	17.481	0.57040	83.330	*	REF
	240.26	0.21030	20.506	17.483	0.40570	85.258	*	REF

	115V/60Hz					
	No load	Active power values				
Load	0%	10%	25%	50%	75%	100%
Iout (A)	--	0.15	0.38	0.75	1.13	1.50
Vout (V)		12.14	12.10	12.04	11.98	11.92
Pout (W)		1.83	4.55	9.05	13.51	17.93
Fin (Hz)	60	60	60	60	60	60
Iin (A)	0.0099	0.05	0.11	0.19	0.26	0.33
Vin (V)	115.07	115.06	115.06	115.04	115.03	115.01
Pin (W)	0.023	2.12	5.17	10.25	15.37	20.84
THDv (%)	0.05	0.08	0.09	0.09	0.11	0.24
PF (W/VA)	0.02	0.35	0.41	0.47	0.51	0.54
Power Consumed (W)	0.023	0.29	0.62	1.20	1.86	2.91
Efficiency	--	0.8620	0.8809	0.8827	0.8792	0.8602
Average Efficiency	--	--	0.8757			

	230V/50Hz					
	No load	Active power values				
Load	0%	10%	25%	50%	75%	100%
Iout (A)	--	0.15	0.38	0.75	1.13	1.50
Vout (V)		12.12	12.07	11.96	11.85	11.73
Pout (W)		1.82	4.53	8.99	13.36	17.63
Fin (Hz)	50	50	50	50	50	50
Iin (A)	0.0164	0.0365	0.0706	0.1243	0.1727	0.2166
Vin (V)	230.08	230.07	230.06	230.07	230.05	230.04
Pin (W)	0.045	2.27	5.29	10.42	15.47	20.50
THDv (%)	0.13	0.04	0.14	0.06	0.14	0.18
PF (W/VA)	0.01	0.27	0.33	0.36	0.39	0.41
Power Consumed (W)	0.045	0.45	0.75	1.43	2.11	2.88
Efficiency	--	0.8031	0.8578	0.8632	0.8637	0.8597
Average Efficiency	--	--	0.8611			

## Sample No.3

Load	Vin (Vac)	Iinrms (A)	Pin (W)	Pout (W)	PF	Eff (%)	Spec (%)	Result
Max	100.39	0.36610	21.009	17.674	0.57150	84.126	*	REF
	240.58	0.21030	20.570	17.677	0.40640	85.936	*	REF

	115V/60Hz					
	No load	Active power values				
Load	0%	10%	25%	50%	75%	100%
Iout (A)	--	0.15	0.38	0.75	1.13	1.50
Vout (V)		12.13	12.10	12.04	11.98	11.92
Pout (W)		1.82	4.54	9.05	13.51	17.92
Fin (Hz)	60	60	60	60	60	60
Iin (A)	0.0097	0.0523	0.1084	0.1883	0.2607	0.3341
Vin (V)	115.16	115.15	115.15	115.13	115.12	115.10
Pin (W)	0.025	2.11	5.15	10.23	15.33	20.80
THDv (%)	0.22	0.07	0.08	0.11	0.11	0.24
PF (W/VA)	0.02	0.35	0.41	0.47	0.51	0.54
Power Consumed (W)	0.025	0.29	0.60	1.18	1.82	2.89
Efficiency	--	0.8640	0.8833	0.8847	0.8810	0.8612
Average Efficiency	--	--	0.8776			

	230V/50Hz					
	No load	Active power values				
Load	0%	10%	25%	50%	75%	100%
Iout (A)	--	0.15	0.38	0.75	1.13	1.50
Vout (V)		12.13	12.09	12.02	11.94	11.86
Pout (W)		1.82	4.54	9.03	13.46	17.83
Fin (Hz)	50	50	50	50	50	50
Iin (A)	0.0161	0.0362	0.0702	0.1237	0.1723	0.2167
Vin (V)	230.08	230.06	230.08	230.08	230.07	230.07
Pin (W)	0.046	2.26	5.27	10.38	15.43	20.45
THDv (%)	0.09	0.05	0.12	0.12	0.18	0.19
PF (W/VA)	0.01	0.27	0.33	0.36	0.39	0.41
Power Consumed (W)	0.046	0.44	0.73	1.35	1.96	2.62
Efficiency	--	0.8064	0.8620	0.8703	0.8727	0.8718
Average Efficiency	--	--	0.8692			