



Test Report: CXLDA480F-24

480W AC-DC DIN Rail (1 Φ)

■ DESIGN VERIFY TEST

Output Function Test

Input Function Test

Protection Function Test

Component Stress Test

■ SAFETY & E.M.C. TEST

Safety Test

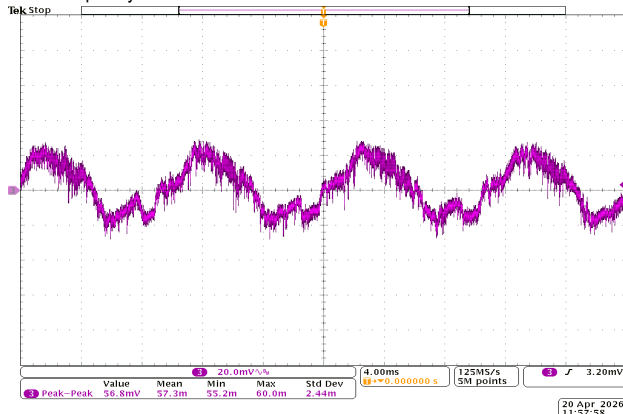
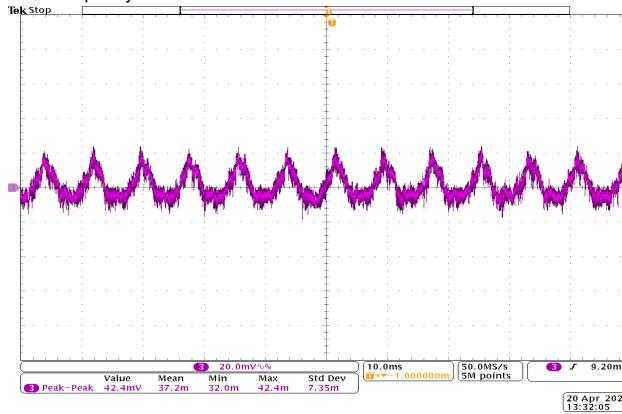
E.M.C. Test

■ RELIABILITY TEST

Environment Test

■ DESIGN VERIFY TEST

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	
1	OUTPUT VOLTAGE TOLERANCE.	No specification	I/P: 85VAC ~ 264VAC O/P: NO ~ FULL LOAD Ta: -25°C, 25°C, 55°C	23.97 ~ 24.08V	
2	LINE REGULATION	-0.5%~+0.5%	I/P: 85VAC ~ 264VAC O/P: NO ~ FULL LOAD Ta: -25°C, 25°C, 55°C	85 to 115VAC	-0.02% ~ +0.02%
				230 to 264VAC	-0.01% ~ +0.01%
3	LOAD REGULATION	-1%~+1%	I/P: 85VAC I/P: 264VAC O/P: NO ~ FULL LOAD Ta: 25°C	-0.19% ~ +0.19%	
4	RIPPLE & NOISE	100mVp-p	I/P: 85VAC I/P: 264VAC O/P: FULL LOAD Ta: 25°C	85VAC	60.0mVp-p
				264VAC	42.4mVp-p
	85VAC/ FULL LOAD		264VAC/ FULL LOAD		
	25°C Low frequency: 60.0mV 		25°C Low frequency: 42.4mV 		

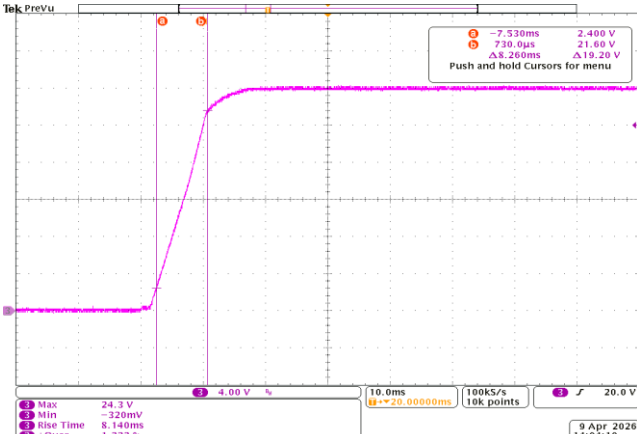
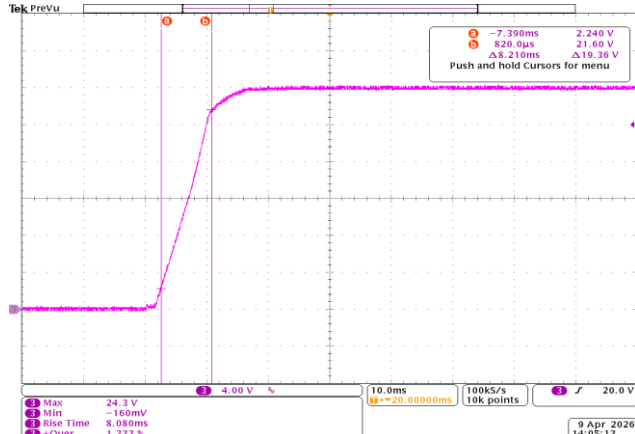
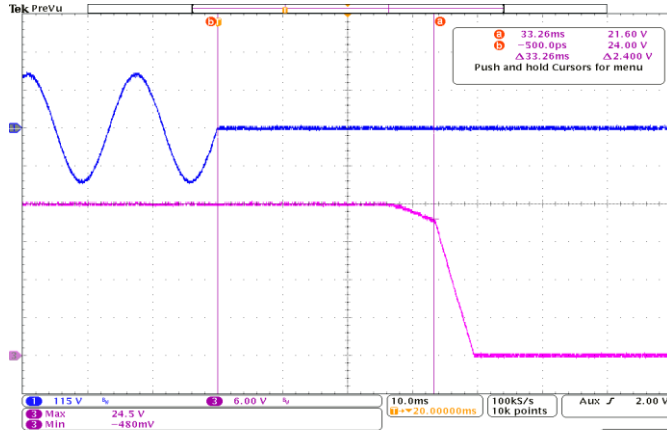
480W AC-DC DIN Rail (1 Φ)

CXLDA480F-24

5	START UP TIME		2000ms	I/P: 100VAC I/P: 264VAC O/P: FULL LOAD Ta: -25°C, 25°C, 55°C	100VAC	1464ms
	INPUT=100VAC/60HZ @ FULL LOAD			INPUT=264V/50HZ @ FULL LOAD		
	-25°C: 1464ms			-25°C: 538.0ms		
	CH1: AC Input Voltage, CH3: Output Voltage			CH1: AC Input Voltage, CH3: Output Voltage		
	25°C: 724.6ms			25°C: 743.8ms		
	CH1: AC Input Voltage, CH3: Output Voltage			CH1: AC Input Voltage, CH3: Output Voltage		
	55°C: 848ms			55°C: 1013ms		
	CH1: AC Input Voltage, CH3: Output Voltage			CH1: AC Input Voltage, CH3: Output Voltage		

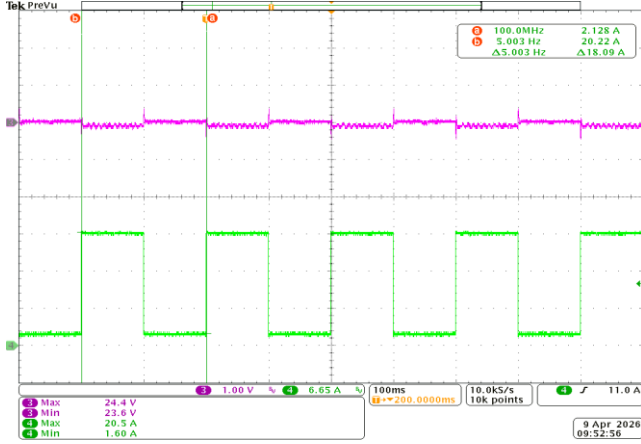
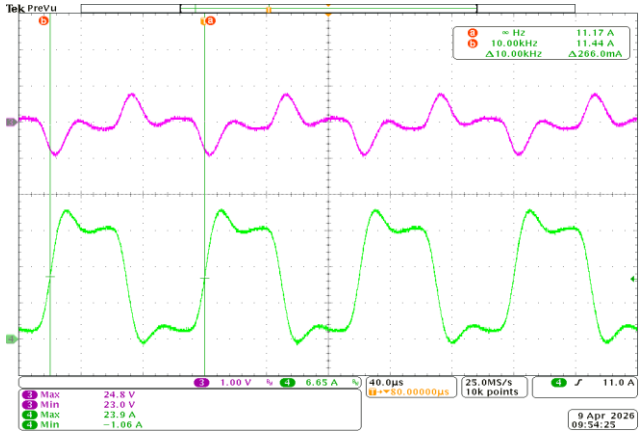
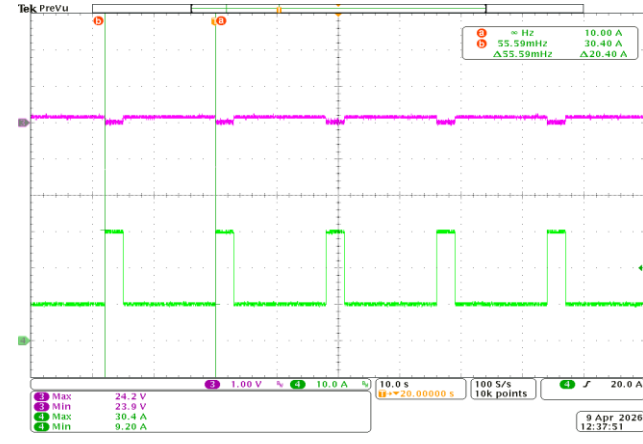
480W AC-DC DIN Rail (1 Φ)

CXLDA480F-24

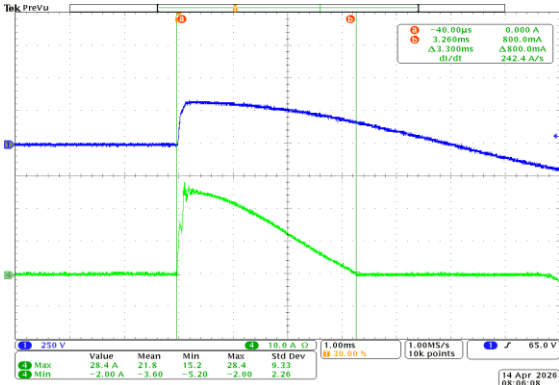
6	RISE TIME	50ms	I/P: 100VAC O/P: FULL LOAD Ta: 25°C	100VAC	8.14ms
				264VAC	8.08ms
	INPUT=100VAC/47HZ @ FULL LOAD		INPUT=264V/63HZ @ FULL LOAD		
25°C: 8.14ms			25°C: 8.08ms		
					
HOLD UP TIME		> 16ms / 115VAC	I/P: 115VAC O/P: FULL LOAD Ta: 25°C	33.26ms	
INPUT=115VAC/60HZ @ FULL LOAD					
25°C CH1: AC Input Voltage, CH3: Output Voltage					
					

480W AC-DC DIN Rail (1 Φ)

CXLDA480F-24

DYNAMIC LOAD		No specification	I/P: 115VAC O/P: (1) LOAD 10%~100% 50%DUTY / 5HZ (2) LOAD 10%~100% 50%DUTY / 10kHz (3) LOAD 100%~150% 100%: 100s, 150%: 3s (4) LOAD 50%~150% 50%: 15s, 150%: 3s Ta: 25°C	-
(1) INPUT=115VAC/60HZ @ LOAD 10%~100% 50%DUTY / 5HZ		(3) INPUT=115VAC/60HZ @ LOAD 100%~150% 100%: 100s, 150%: 3s		
25°C CH3: Output Voltage, CH4: Output Current		25°C CH3: Output Voltage, CH4: Output Current		
				
(2) INPUT=115VAC/60HZ @ LOAD 10%~100% 50%DUTY / 10KHZ		(4) INPUT=115VAC/60HZ @ LOAD 50%~150% 50%: 15s, 150%: 3s		
25°C CH3: Output Voltage, CH4: Output Current		25°C CH3: Output Voltage, CH4: Output Current		
				

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT CURRENT	5.0A/115VAC 2.5A/230VAC	I/P: 115VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	4.55A @115VAC 2.20A @230VAC
2	LEAKAGE CURRENT	< 0.75mA / 240VAC	I/P: 240VAC O/P: FULL LOAD Ta: 25°C	L-PE: 0.536mA N-PE: 0.530mA
3	STANDBY POWER	<1.5W	I/P: 115VAC I/P: 230VAC O/P: NO LOAD Ta: 25°C	115VAC/0.74W 230VAC/0.83W
4	INRUSH CURRENT	40A at 230Vac (cold start)	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	28.4A
	INPUT=230VAC/50HZ @ FULL LOAD CH1: AC Input Voltage, CH4: Input Current			
5	EFFICIENCY	94.0% / FULL LOAD at 230VAC	I/P: 115VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	115VAC/92.8% 230VAC/95.1%
6	POWER FACTOR	> 0.9	I/P: 115VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	115VAC/0.998 230VAC/0.998

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER CURRENT PROTECTION	150%~185% rated current 30A<OCP<37A	I/P: 85VAC I/P: 100VAC I/P: 264VAC O/P: TESTING Ta: 25°C	85VAC/33.2A 100VAC/33.6A 264VAC/33.6A
2	OVER VOLTAGE PROTECTION	<35V Auto-recovery	I/P: 85VAC I/P: 264VAC O/P: NO LOAD Ta: 25°C	85VAC/32.0V 264VAC/32.0V
3	SHORT CIRCUIT PROTECTION	NO DAMAGE (auto-recovery)	I/P: 85VAC I/P: 264VAC O/P: NO LOAD, FULL LOAD Ta: 25°C	PASS
4	OVER TEMPERATURE PROTECTION	NO DAMAGE (auto-recovery)	I/P: 100VAC O/P: FULL LOAD	O.T.P. Active at 73.2°C Shut down o/p voltage recovers automatically after temperature goes down

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	PWM Power Transistor	Q050 Rated 30.8A/600V	O/P: (1) Peak voltage at I/P: 264VAC (2) Peak current at I/P: 90VAC	(1) 398.7V (2) 2.231A
2	PWM Power Transistor	Q051 Rated 30.8A/600V	O/P: (1) Peak voltage at I/P: 264VAC (2) Peak current at I/P: 90VAC	(1) 404.5V (2) 2.164A
3	PFC Power Transistor	Q010 Rated 31A/600V	O/P: (1) Peak voltage at I/P: 264VAC (2) Peak current at I/P: 90VAC	(1) 427.8V (2) 2.458A
4	PFC Power Transistor	Q011 Rated 31A/600V	O/P: (1) Peak voltage at I/P: 264VAC (2) Peak current at I/P: 90VAC	(1) 440.1V (2) 2.565A
5	Input Capacitor	C050 Rated 330uF/450V	O/P: (1) Peak voltage at I/P: 264VAC (2) Peak current at I/P: 90VAC	(1) 412.3V (2) 2.414A

480 W AC-DC DIN Rail (1 Φ)**CXLDA480F-24****SAFETY TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	I/P-O/P: 3.0KVAC/min I/P-PE: 2.0KVAC/min O/P-PE: 0.5KVAC/min	I/P-O/P: 3.0KVAC/min I/P-PE: 2.0KVAC/min O/P-PE: 0.5KVAC/min Ta: 25°C	PASS
2	ISOLATION RESISTANCE	I/P-O/P: 500VDC: >100M Ω I/P-PE: 500VDC: >100M Ω O/P-PE: 500VDC: >100M Ω	I/P-O/P: 500VDC I/P-PE: 500VDC O/P-PE: 500VDC Ta: 25°C	PASS

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	HARMONIC	EN61000-3-2 CLASS A	I/P: 115VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS
2	RADIATION	EN55032 CLASS B	I/P: 115VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS
3	CONDUCTION	EN55032 CLASS B	I/P: 110VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS
4	E. S. D	EN61000-4-2 Air: ± 15 KV, Contact: ± 8 KV CRITERIA A	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS
5	E. F. T	EN61000-4-4 INPUT: ± 2 KV CRITERIA A	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS
6	SURGE	EN61000-4-5 L-N: ± 2 KV L, N-PE: ± 4 KV CRITERIA A	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS
7	VOLTAGE DIPS	IEC61000-4-11 (1) < 5 % residual voltage, 0.55 cycle CRITERIA A (2) 70% residual voltage, 27.5 cycles (at 50Hz) CRITERIA A (3) < 5 % residual voltage, 275 cycles (at 50 Hz) CRITERIA B	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS

CXLDA480F-24480W AC-DC DIN Rail (1 Φ)

8	Conducted Immunity	IEC61000-4-6 0.15-10 MHz, 3V, 80% AM (1kHz), 10-30 MHz, 3V-1V, 80% AM (1kHz), 30-80 MHz, 1V, 80% AM (1kHz), CRITERIA A	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS
9	Radiated Immunity	IEC61000-4-3 (1) 80 to 1000(MHz), 3 V/m, 80 % AM (1 kHz) (2) 1800, 2600, 3500, 5000 MHz (± 1 %), 3V/m, 80% AM (1kHz) CRITERIA A	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS
10	Power Frequency Magnetic Field	IEC61000-4-8 1A/m, 50Hz CRITERIA A	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS

■ RELIABILITY TEST

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	TEMPERATURE	No components damaged	I/P: 100VAC @ 47Hz O/P: FULL LOAD Ta: 50°C	PASS*Table 1
2	CAPACITOR LIFE CYCLE	The electrolytical capacitor life is greater than 43,800 hours	I/P: 230 VAC @ 50Hz O/P: 70% Load Ta: 50°C	LIFETIME= 45,017 hours
3	MTBF	The power supply reliability, when calculated by SR332 exceeds 1,000,000 hours with all output at 100% of maximum load and at ambient temperature of 25°C		1,002,241 hours @ 230VAC
4	HUMIDITY	Storage: 25°C / 5 ~ 95% RH Working: 25°C/ 20 ~ 95% RH I/P: 100~240VAC (Working) O/P: 100% load (Working)		PASS
5	VIBRATION TEST	Ware form: Random Acceleration: 2Grms Axis/Time: X, Y, Z / 10min per axis Frequency: 10~500Hz No functional, mechanical and safety fail.		PASS
6	ALTITUDE	Operational and Non-operational Altitude: 5000 meters Temperature: -5°C Dwell time: 24Hrs O/P: 100% load (Operational)		PASS
7	OVERLOAD BURN-IN TEST	I/P: 100VAC/ 47Hz O/P: Just before OCP kicks in Ta: 50°C		PASS

*1 All component temperatures should not exceed maximum operation temperature.

480W AC-DC DIN Rail (1Φ)

CXLDA480F-24

Table 1. Components temperature @ 50°C 100% Load. (Unit °C)

No.	Location	100VAC	Result
1	CN001	79.5	Pass
2	F001	96.6	Pass
3	L001	96.4	Pass
4	C001	99.2	Pass
5	L002	109.5	Pass
6	BD001	121.0	Pass
7	L201	121.6	Pass
8	C212	110.9	Pass
9	CN202	98.8	Pass
10	L004	95.4	Pass
11	C004	94.4	Pass
12	L010_W	105.1	Pass
13	L010_C	105.7	Pass
14	Q010	109.3	Pass
15	Q011	107.1	Pass
16	D003	109.8	Pass
17	RT001	90.0	Pass
18	C050	98.2	Pass
19	C113	109.8	Pass
20	C055	103.6	Pass
21	T050_W	112.7	Pass
22	T050_C	108.4	Pass
23	C114	113.2	Pass
24	C208	98.6	Pass
25	C210	98.9	Pass
26	L200	104.5	Pass
27	C206	97.0	Pass
28	R009	110.0	Pass
29	RT101	99.6	Pass
30	Q050	122.6	Pass
31	Q051	118.2	Pass
32	IC201	116.9	Pass
33	Q201	114.0	Pass
34	Q203	117.1	Pass

480W AC-DC DIN Rail (1Φ)

CXLDA480F-24

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	Luke Zhou	Jerry Huang	Xiubing Xiag