For Reference

COSELSYNC.

Test Report: CXLDA120F-48

120W AC-DC DIN Rail (1Φ)

■ 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

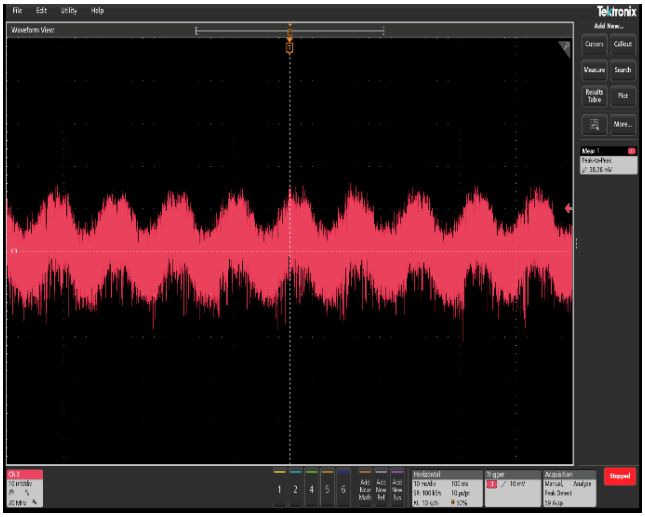
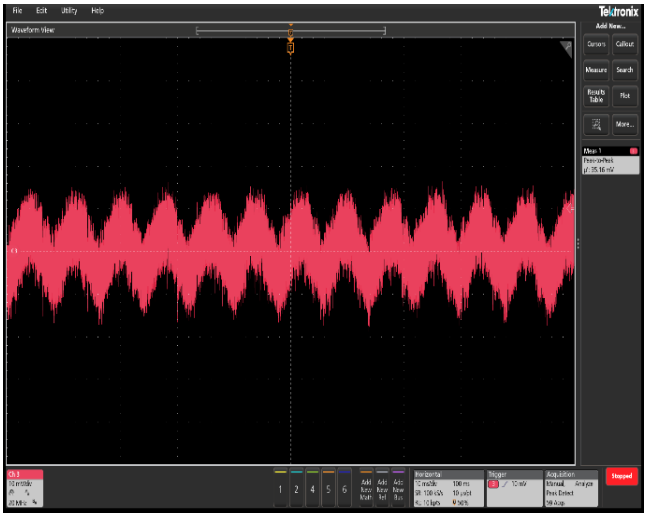
COSELSYNC.

120W AC-DC DIN Rail (1Φ)

CXLDA120F-48

■ DESIGN VERIFY TEST

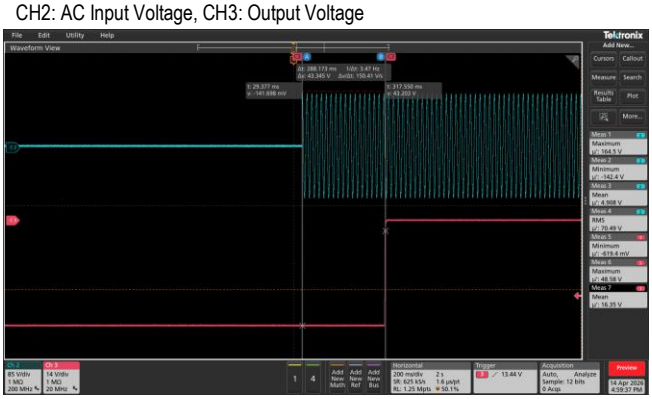
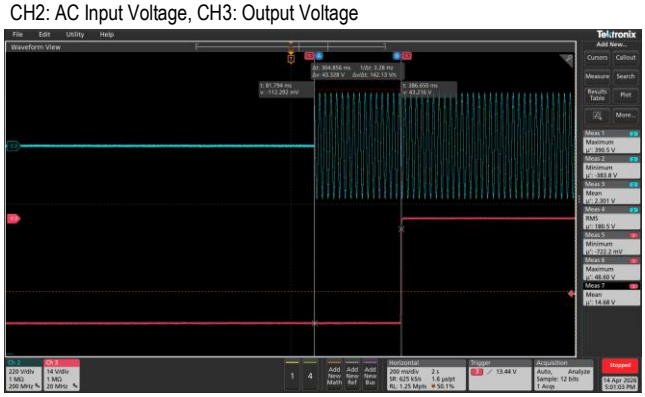
OUTPUT FUNCTION TEST

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	47.72 ~ 48.22V	
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	-0.03% ~ +0.03%
				230 to 264VAC	-0.02% ~ +0.02%
3	LOAD REGULATION	-1%~+1%	I/P: 85VAC I/P: 264VAC O/P: NO ~ FULL LOAD Ta: 25°C	-0.21% ~ +0.21%	
4	RIPPLE & NOISE	120mVp-p	I/P: 85VAC I/P: 264VAC O/P: FULL LOAD Ta: 25°C	85VAC	38.3mVp-p
				264VAC	35.2mVp-p
	85VAC/ FULL LOAD		264VAC/ FULL LOAD		
	25°C 38.3mV 		25°C 35.2mV 		

COSELSYNC.

120W AC-DC DIN Rail (1Φ)

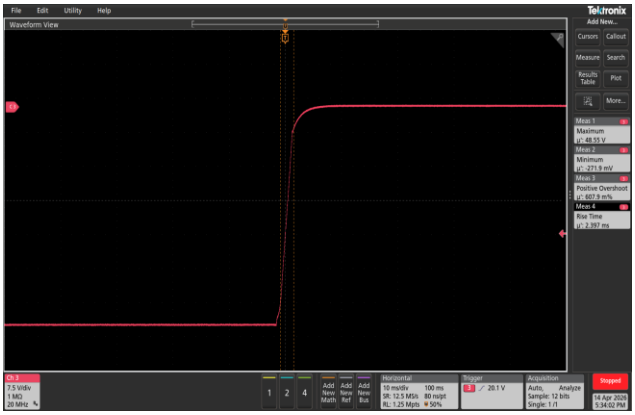
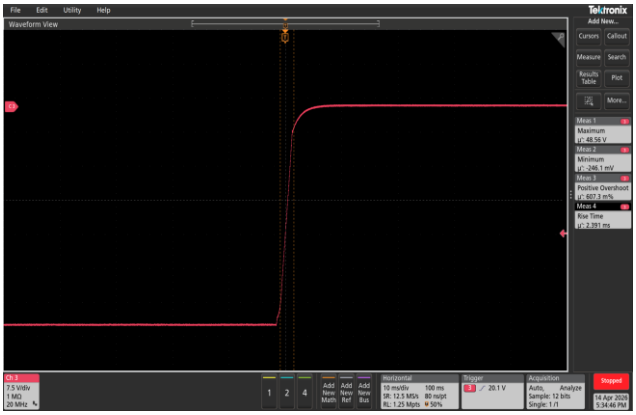
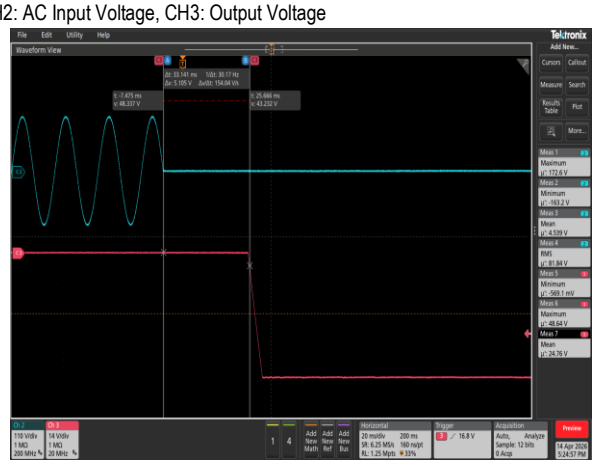
CXLDA120F-48

<table>
<tr><td rowspan="4">5</td><td>START UP TIME</td><td>2000ms</td><td>I/P: 100VAC
I/P: 264VAC
O/P: FULL LOAD
Ta: -25°C, 25°C, 55°C</td><td>100VAC</td><td>390.3ms</td></tr>
<tr><td colspan="2"></td><td>264VAC</td><td>448.6ms</td></tr>
<tr><td colspan="2">INPUT=100VAC/60HZ @ FULL LOAD</td><td colspan="3">INPUT=264V/50HZ @ FULL LOAD</td></tr>
<tr><td colspan="2">-25°C: 288.1ms
CH2: AC Input Voltage, CH3: Output Voltage
  </td><td colspan="3">-25°C: 304.8ms
CH2: AC Input Voltage, CH3: Output Voltage
  </td></tr>
<tr><td colspan="2">25°C: 320.2ms
CH2: AC Input Voltage, CH3: Output Voltage
  </td><td colspan="3">25°C: 403.1ms
CH2: AC Input Voltage, CH3: Output Voltage
  </td></tr>
<tr><td colspan="2">55°C: 390.3ms
CH2: AC Input Voltage, CH3: Output Voltage
  </td><td colspan="3">55°C: 448.6ms
CH2: AC Input Voltage, CH3: Output Voltage
  </td></tr>
</table>

COSELSYNC.

120W AC-DC DIN Rail (1Φ)

CXLDA120F-48

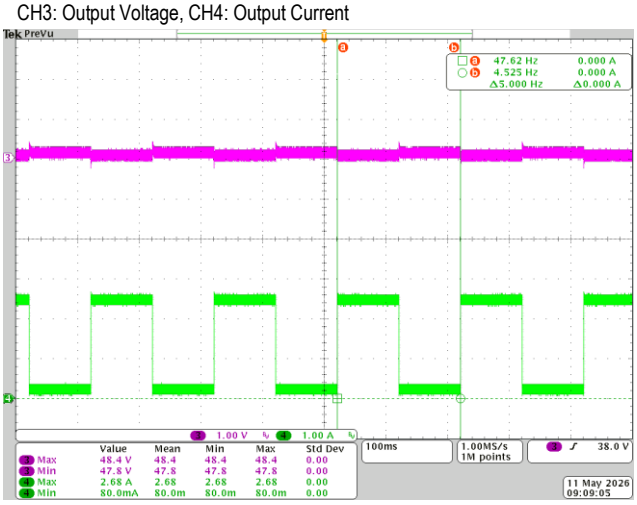
<table>
<tr><td rowspan="4">6</td><td>RISE TIME</td><td>50ms</td><td>I/P: 100VAC
I/P: 264VAC
O/P: FULL LOAD
Ta: 25°C</td><td>100VAC</td><td>2.397ms</td></tr>
<tr><td colspan="3"></td><td>264VAC</td><td>2.391ms</td></tr>
<tr><td colspan="3">INPUT=100VAC/47HZ @ FULL LOAD</td><td colspan="2">INPUT=264V/63HZ @ FULL LOAD</td></tr>
<tr><td colspan="3">25°C: 2.397ms
 
</td><td colspan="2">25°C: 2.391ms
 
</td></tr>
<tr><td rowspan="3">7</td><td>HOLD UP TIME</td><td>> 20ms / 115VAC</td><td>I/P: 115VAC
O/P: FULL LOAD
Ta: 25°C</td><td colspan="2">33.14ms</td></tr>
<tr><td colspan="5">INPUT=115VAC/60HZ @ FULL LOAD</td></tr>
<tr><td colspan="5">25°C
CH2: AC Input Voltage, CH3: Output Voltage
 
</td></tr>
</table>

8	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

25°C

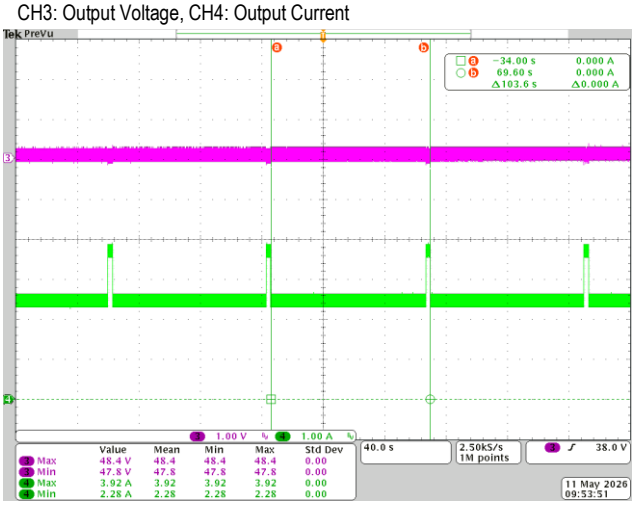
CH3: Output Voltage, CH4: Output Current



(3) INPUT=115VAC/60HZ @ LOAD 100%~150% 100%: 100s, 150%: 3s

25°C

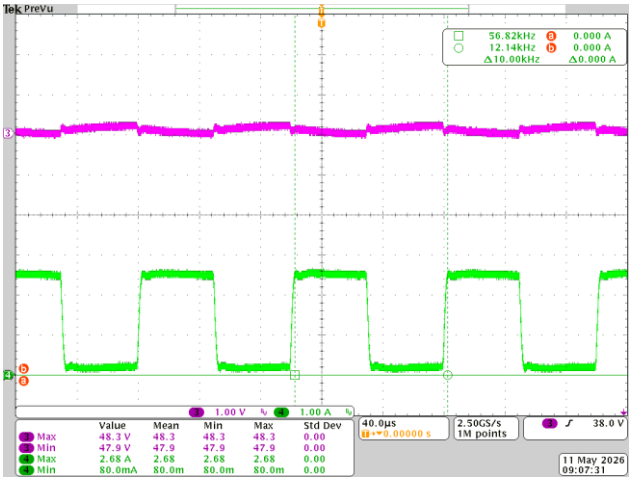
CH3: Output Voltage, CH4: Output Current



(2) INPUT=115VAC/60HZ @ LOAD 10%~100% 50%DUTY / 10KHZ

25°C

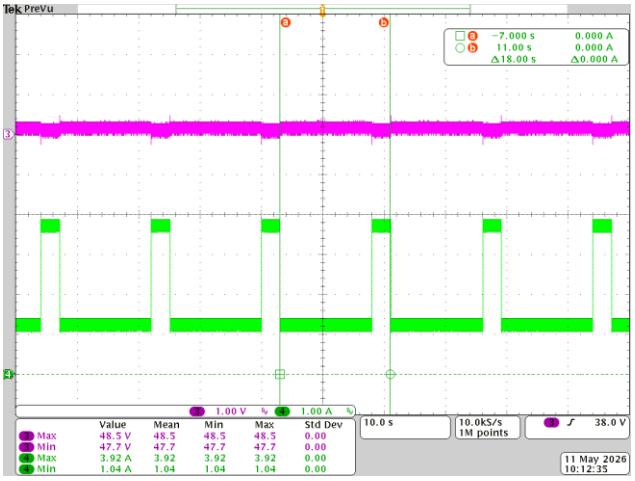
CH3: Output Voltage, CH4: Output Current



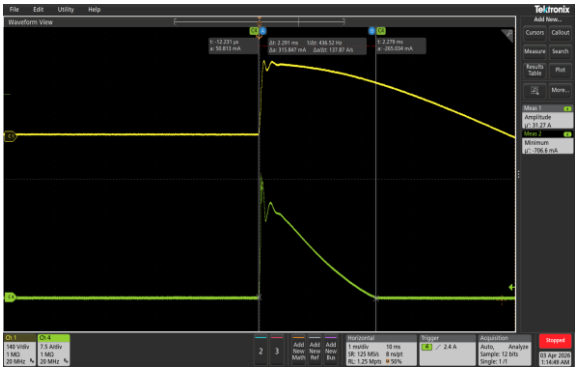
(4) INPUT=115VAC/60HZ @ LOAD 50%~150% 50%: 15s, 150%: 3s

25°C

CH3: Output Voltage, CH4: Output Current



INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT CURRENT	1.3A/115VAC 0.65A/230VAC	I/P: 115VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	1.17A @115VAC 0.58A @230VAC
2	LEAKAGE CURRENT	< 0.75mA / 240VAC	I/P: 240VAC O/P: FULL LOAD Ta: 25°C	L-PE: 0.078mA N-PE: 0.078mA
3	STANDBY POWER	< 1.5W	I/P: 115VAC I/P: 230VAC O/P: NO LOAD Ta: 25°C	115VAC/1.02W 230VAC/1.04W
4	INRUSH CURRENT	40A at 230Vac (cold start)	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	31.3A
	INPUT=230VAC/50HZ @ FULL LOAD CH1: AC Input Voltage, CH4: Input Current 			
5	EFFICIENCY	92.0% / FULL LOAD at 230VAC	I/P: 115VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	115VAC/92.3% 230VAC/93.5%
6	POWER FACTOR	> 0.9	I/P: 115VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	115VAC/0.997 230VAC/0.987

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER CURRENT PROTECTION	150%~185% rated current 3.75A<OCP<4.625A	I/P: 85VAC I/P: 100VAC I/P: 264VAC O/P: TESTING Ta: 25°C	85VAC/4.29A 100VAC/4.32A 264VAC/4.30A
2	OVER VOLTAGE PROTECTION	<63V Auto-recovery	I/P: 85VAC I/P: 264VAC O/P: NO LOAD Ta: 25°C	85VAC/62.2V 264VAC/62.3V
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 69.7°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	Q051 Rated 10A/600V	O/P: (1) Peak voltage at I/P: 264VAC (2) Peak current at I/P: 90VAC	(1) 412.3V (2) 0.533A
2	PWM Power Transistor	Q052 Rated 10A/600V	O/P: (1) Peak voltage at I/P: 264VAC (2) Peak current at I/P: 90VAC	(1) 412.5V (2) 0.541A
3	PFC Power Transistor	Q010 Rated 25.8A/600V	O/P: (1) Peak voltage at I/P: 264VAC (2) Peak current at I/P: 90VAC	(1) 412.3V (2) 1.63A
4	Input Capacitor	C050 Rated 120uF/450V	O/P: (1) Peak voltage at I/P: 264VAC (2) Peak current at I/P: 90VAC	(1) 408.2V (2) 0.841A

COSELSYNC.

120W AC-DC DIN Rail (1Φ)

CXLDA120F-48

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℃	PASS
2	ISOLATION RESISTANCE	I/P-O/P; 500VDC: >100MΩ I/P-PE; 500VDC: >100MΩ O/P-PE; 500VDC: >100MΩ	I/P-O/P: 500VDC I/P-PE: 500VDC O/P-PE: 500VDC Ta: 25℃	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℃	PASS
2	RADIATION	EN55032 CLASS B	I/P: 110VAC I/P: 230VAC O/P: FULL LOAD Ta: 25℃	PASS
3	CONDUCTION	EN55032 CLASS B	I/P: 110VAC I/P: 230VAC O/P: FULL LOAD Ta: 25℃	PASS
4	E. S. D	EN61000-4-2 Air: ±15KV, Contact: ±8KV CRITERIA A	I/P: 230VAC O/P: FULL LOAD Ta: 25℃	PASS
5	E. F. T	EN61000-4-4 INPUT: ±2KV CRITERIA A	I/P: 230VAC O/P: FULL LOAD Ta: 25℃	PASS
6	SURGE	EN61000-4-5 L-N: ±2KV L, N-PE: ±4KV CRITERIA A	I/P: 230VAC O/P: FULL LOAD Ta: 25℃	PASS
7	VOLTAGE DIPS	IEC61000-4-11 (1) < 5 % residual voltage, 0.5 cycle CRITERIA A (2) 70% residual voltage, 25 cycles (at 50Hz) CRITERIA A (3) < 5 % residual voltage, 250 cycles (at 50 Hz) CRITERIA B	I/P: 230VAC O/P: FULL LOAD Ta: 25℃	PASS

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℃	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℃	PASS
10	Power Frequency Magnetic Field	IEC61000-4-8 1A/m, 50Hz CRITERIA A	I/P: 230VAC O/P: FULL LOAD Ta: 25℃	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: 55℃	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: 55℃	LIFETIME= 71,910 hours
3	MTBF	The power supply reliability, when calculated by SR332 exceeds 1,250,000 hours with all output at 100% of maximum load and at ambient temperature of 25℃		5,441,768 hours @ 230VAC
4	HUMIDITY	Storage: 25℃ / 5 ~ 95% RH Working: 25℃/ 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℃ 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: 55°C		PASS

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

Table 1. Components temperature @ 55℃ 100% Load. (Unit ℃)

No.	Location	100VAC	Result
1	F001	77.9	Pass
2	L001	88.8	Pass
3	C001	86.7	Pass
4	L002	87.4	Pass
5	L202	76.6	Pass
6	L003	79.4	Pass
7	C003	78.7	Pass
8	RL001	78.8	Pass
9	L010-C	89.7	Pass
10	L010-W	90.6	Pass
11	Q010	93.5	Pass
12	IC906	76.8	Pass
13	D010	94.9	Pass
14	C050	85.7	Pass
15	C055	85.6	Pass
16	T050-C	100.4	Pass
17	T050-W	98.7	Pass
18	C113	85.9	Pass
19	C114	85.4	Pass
20	C211	80.5	Pass
21	RL201	79.6	Pass
22	BD050	99.6	Pass
23	D004	84.5	Pass
24	RT101	81.6	Pass
25	R014	92.8	Pass
26	IC100	90.5	Pass
27	Q052	86.9	Pass
28	Q051	86.7	Pass
29	C210	79.6	Pass
30	RT001	74.3	Pass
31	D200	88.2	Pass
32	D201	88.9	Pass
33	PC300	80.2	Pass

COSELSYNC.

120W AC-DC DIN Rail (1Φ)

CXLDA120F-48

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