



Test Report: CXLDA120F-12

120W 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

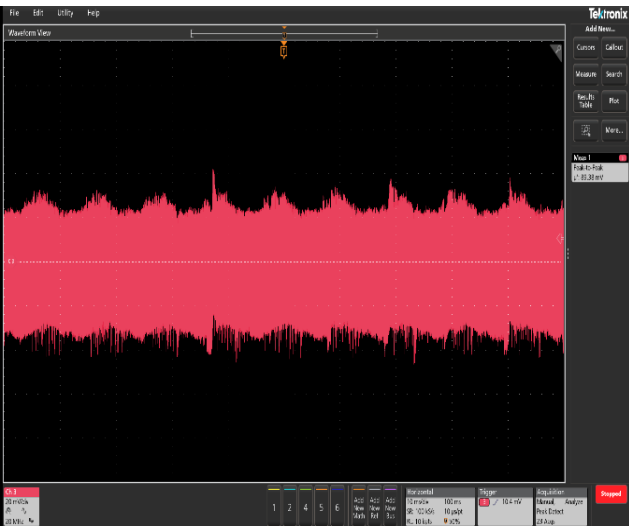
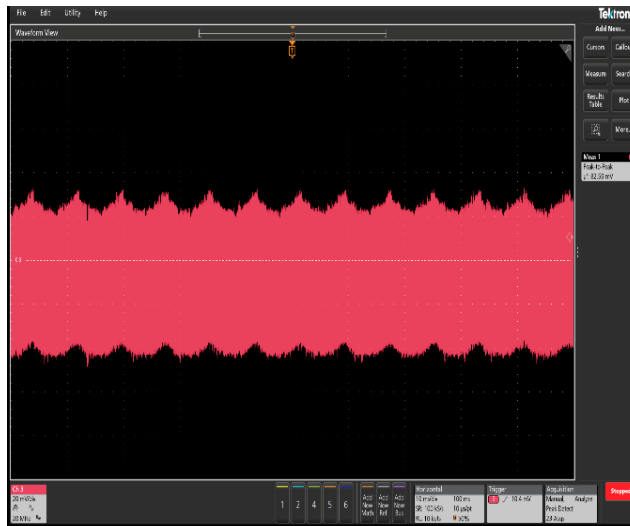
Environment Test

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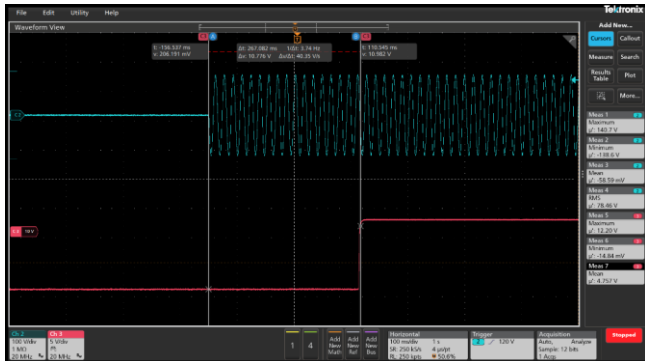
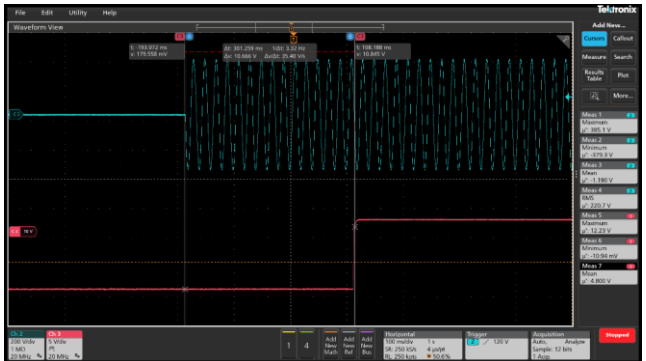
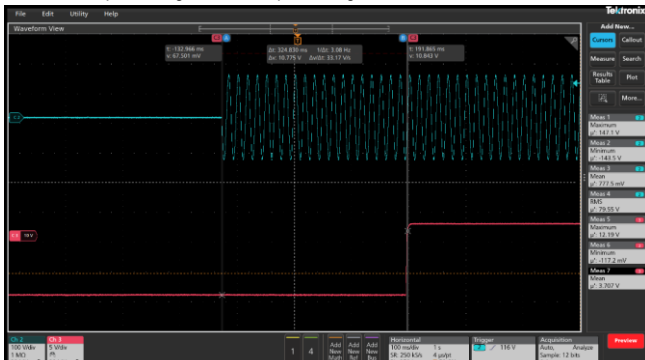
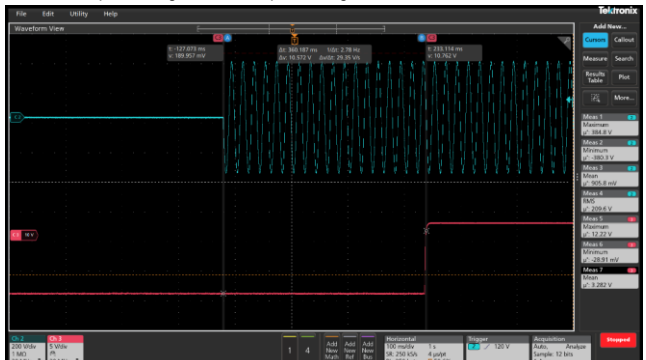
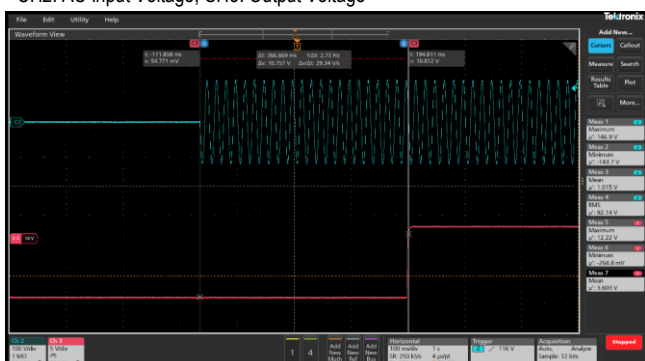
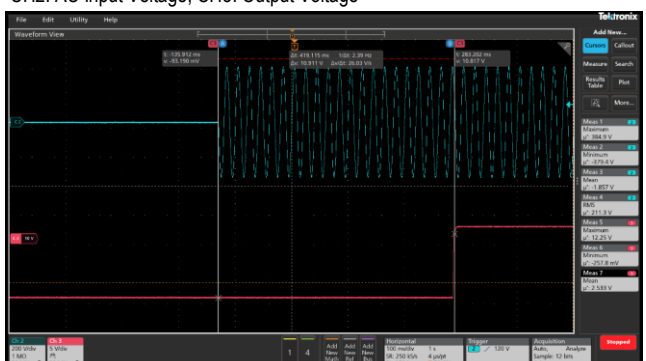
DESIGN VERIFY TEST

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	11.91 ~ 12.10V	
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	-0.05% ~ +0.05%
				230 to 264VAC	-0.03% ~ +0.03%
3	LOAD REGULATION	-1%~+1%	I/P: 85VAC I/P: 264VAC O/P: NO ~ FULL LOAD Ta: 25°C	-0.51% ~ +0.51%	
4	RIPPLE & NOISE	100mVp-p	I/P: 85VAC I/P: 264VAC O/P: FULL LOAD Ta: 25°C	85VAC	89.3mVp-p
				264VAC	82.5mVp-p
	85VAC/ FULL LOAD		264VAC/ FULL LOAD		
	25°C 89.3mV		25°C 82.5mV		
					

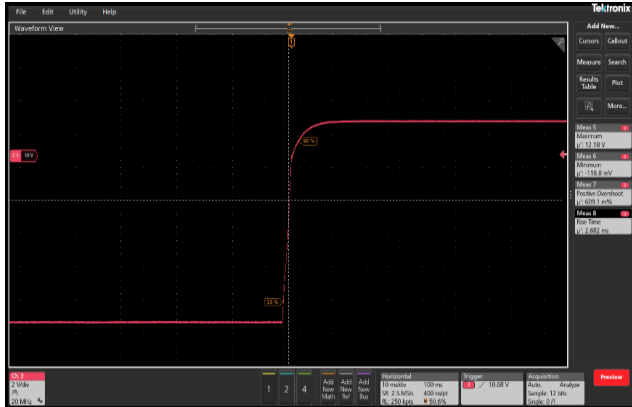
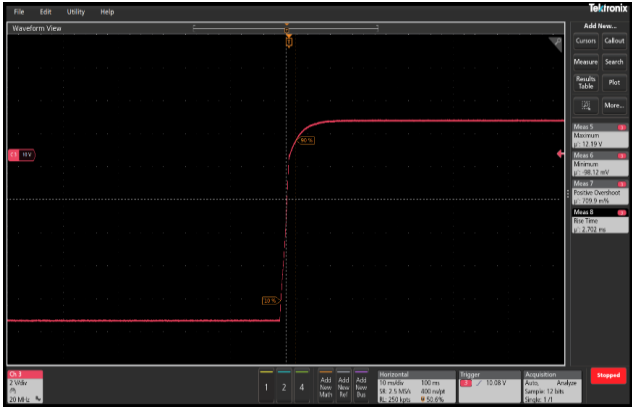
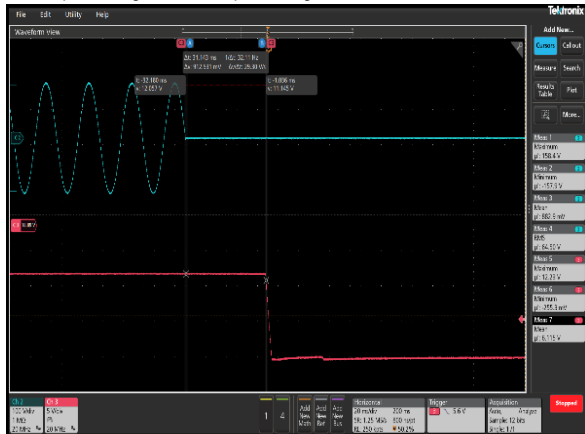
120W AC-DC DIN Rail (1 Φ)

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START UP TIME	2000ms	I/P: 100VAC I/P: 264VAC O/P: FULL LOAD Ta: -25°C, 25°C, 55°C	100VAC	366.6ms
			264VAC	419.1ms
INPUT=100VAC/60HZ @ FULL LOAD		INPUT=264V/50HZ @ FULL LOAD		
-25°C: 267.0ms CH2: AC Input Voltage, CH3: Output Voltage 		-25°C: 301.2ms CH2: AC Input Voltage, CH3: Output Voltage 		
25°C: 324.8ms CH2: AC Input Voltage, CH3: Output Voltage 		25°C: 360.1ms CH2: AC Input Voltage, CH3: Output Voltage 		
55°C: 366.6ms CH2: AC Input Voltage, CH3: Output Voltage 		55°C: 419.1ms CH2: AC Input Voltage, CH3: Output Voltage 		

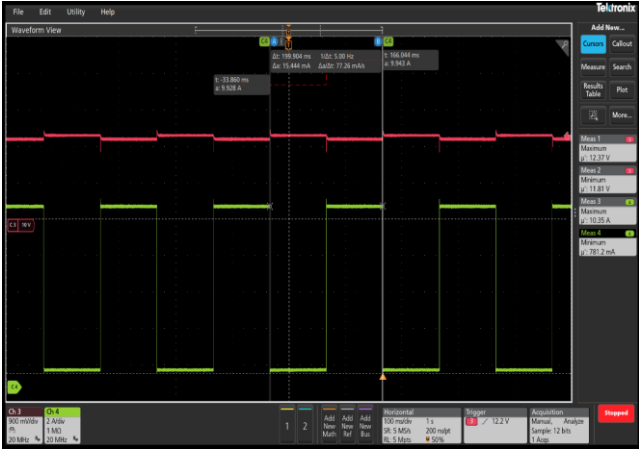
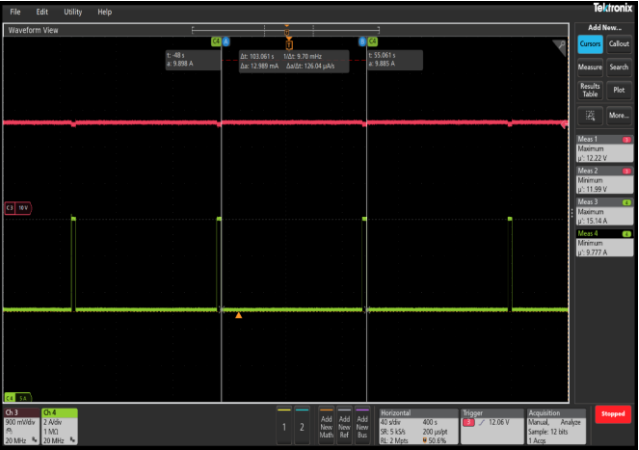
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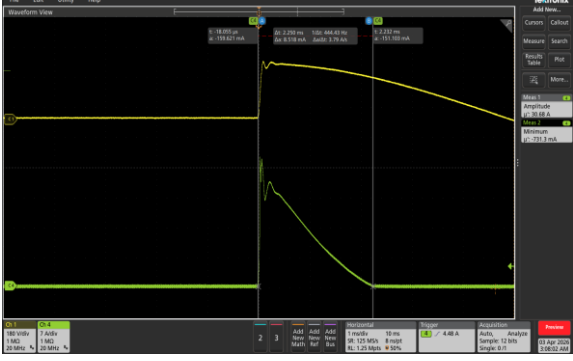
6	RISE TIME	50ms	I/P: 100VAC I/P: 264VAC O/P: FULL LOAD Ta: 25°C	100VAC 264VAC	2.682ms 2.702ms
	INPUT=100VAC/47HZ @ FULL LOAD			INPUT=264V/63HZ @ FULL LOAD	
	25°C: 2.682ms 			25°C: 2.702ms 	
7	HOLD UP TIME	> 20ms / 115VAC	I/P: 115VAC O/P: FULL LOAD Ta: 25°C	34.14ms	
	INPUT=115VAC/60HZ @ FULL LOAD			25°C CH2: AC Input Voltage, CH3: Output Voltage 	

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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	1.19A @115VAC 0.59A @230VAC
2	LEAKAGE CURRENT	< 0.75mA / 240VAC	I/P: 240VAC O/P: FULL LOAD Ta: 25°C	L-PE: 0.073mA N-PE: 0.073mA
3	STANDBY POWER	< 1.5W	I/P: 115VAC I/P: 230VAC O/P: NO LOAD Ta: 25°C	115VAC/0.46W 230VAC/0.52W
4	INRUSH CURRENT	40A at 230Vac (cold start)	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	30.7A
	INPUT=230VAC/50HZ @ FULL LOAD CH1: AC Input Voltage, CH4: Input Current 			
5	EFFICIENCY	90.0% / FULL LOAD at 230VAC	I/P: 115VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	115VAC/89.7% 230VAC/91.1%
6	POWER FACTOR	> 0.9	I/P: 115VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	115VAC/0.998 230VAC/0.996

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER CURRENT PROTECTION	150%~185% rated current 15A<OCP<18.5A	I/P: 85VAC I/P: 100VAC I/P: 264VAC O/P: TESTING Ta: 25°C	85VAC/15.98A 100VAC/15.97A 264VAC/15.94A
2	OVER VOLTAGE PROTECTION	<16V Auto-recovery	I/P: 85VAC I/P: 264VAC O/P: NO LOAD Ta: 25°C	90VAC/15.6V 264VAC/15.6V
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 67.7°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 35A/700V	O/P: (1) Peak voltage at I/P: 264VAC (2) Peak current at I/P: 90VAC	(1) 424.1V (2) 0.518A
2	PWM Power Transistor	Q052 Rated 35A/700V	O/P: (1) Peak voltage at I/P: 264VAC (2) Peak current at I/P: 90VAC	(1) 416.1V (2) 0.562A
3	PFC Power Transistor	Q010 Rated 34A/750V	O/P: (1) Peak voltage at I/P: 264VAC (2) Peak current at I/P: 90VAC	(1) 416.2V (2) 1.533A
4	Input Capacitor	C050 Rated 120uF/450V	O/P: (1) Peak voltage at I/P: 264VAC (2) Peak current at I/P: 90VAC	(1) 412.2V (2) 1.082A

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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: 110VAC 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, 0.5 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°C	PASS

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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: 55°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: 55°C	LIFETIME= 59,552 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°C		2,545,268 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: 55°C		PASS

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

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

No.	Location	100VAC	Result
1	F001	80.1	Pass
2	L001	91.3	Pass
3	C001	89.1	Pass
4	L002	92.7	Pass
5	C223	94.4	Pass
6	L202	92.5	Pass
7	L003	80.3	Pass
8	C003	81.2	Pass
9	RL001	84.6	Pass
10	L010-C	90.9	Pass
11	L010-W	89.2	Pass
12	Q010	98.9	Pass
13	IC906	89.4	Pass
14	D010	99.1	Pass
15	C050	91.2	Pass
16	C055	91.8	Pass
17	T050-C	107.7	Pass
18	T050-W	110.3	Pass
19	C113	90.3	Pass
20	C114	88.4	Pass
21	C211	94.6	Pass
22	RL201	86.6	Pass
23	BD050	103.3	Pass
24	D004	87.7	Pass
25	RT101	86.0	Pass
26	R014	94.7	Pass
27	IC100	94.9	Pass
28	Q052	91.5	Pass
29	Q051	91.5	Pass
30	C210	95.8	Pass
31	RT001	75.7	Pass
32	D200	107.4	Pass
33	D201	110.8	Pass
34	PC300	87.8	Pass
35	RT901	92.8	Pass

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