

EARLY CONSULTATION INITIATIVE
AC AND USB CHARGERS TESTING PROCEDURES

Scope:

This document contains test procedures to determine the safety risks posed by power adapters, including computer AC chargers and USB chargers.

Note that there will be variations in the way labs in the three jurisdictions will run the various tests, including differences in the test sequence followed.

Product and model: _____

Other identifying information (e.g., date code, serial number, country of origin):

References (e.g., website, specification sheet, purchase order, invoice):

(1) _____

(2) _____

(3) _____

Part I. Testing Sequence

Six samples of each unit will be collected; five are intended for testing. The five samples will be tested in the following sequence using the procedures outlined under Part II below.





Table 1

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Description	Testing Sequence				
A. External Physical Examination (drop test)	1	6	11	16	23
B. Electrical Performance					
i. Open Circuit Test	2	7	12	17	24
ii. Load Test	3	8*	X	18	25*
iii. Dielectric Strength	4	9*	X	19	26*
iv. Short Circuit Test	5	10	X	20	27
C. Security of Blades					
i. UL 498, Section 66	X	X	13 [#]	21 [#]	X
ii. CPSC Tension/Compression Test	X	X	14 [#]	22 [#]	X
D. Disassembly/Internal Physical Examination					
i. Termination of Conductors	30	X	15	X	X
E. Flammability Test (UL 94)	X	28	X	X	29
*If 1 st sample fails the load test, conduct dielectric strength tests 9, 26 first, before load test 8, 25.					
[#] These tests are for direct plug-in type samples only.					
Note: Temperatures on the charger body and the DC plug are monitored for the open circuit, load, and short circuit tests					

Table 2

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Description	Testing Sequence				
A. External Physical Examination (drop test)					
B. Electrical Performance					
i. Open Circuit Test					
ii. Load Test			X		
iii. Dielectric Strength			X		
iv. Short Circuit Test			X		
C. Security of Blades					
i. UL 498, Section 66	X	X			X
ii. CPSC Tension/Compression Test	X	X			X
D. Disassembly/Internal Physical Examination					
i. Termination of Conductors		X		X	X
E. Flammability Test (UL 94)	X		X	X	



Table 3

Test Type:	Relevant Data:	Standard and clause reference	Pass/Fail:
1. Output Voltage (Vout) at Open Load	Record Ambient Conditions: ____°C ____%RH Voltage: ____V Max temp of case: ____°C Max temp of output cable: ____°C	60950-1 Clause 4.5 and table 4c Temperature only. Voltage measured as per CPSC rationale section B similar to IEC 62680-3 2013 and CSA 22.2 No. 0.23-15	Vout within ± 5% Temp ≤ 85°C
2. Electrical Output at Rated Load. If rated load not stated default will be 5 V 500mA	Record Ambient Conditions: ____°C ____%RH Voltage: ____V Current: ____A Power: ____W	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	Vout within ± 5% Iout within 90%
a. Equilibrium Temperature at Rated Load	Case: ____°C Output Cable: ____°C Test Time: ____minutes Record Ambient Conditions: ____°C ____%RH	60950-1 Clause 4.5 and table 4c	Temp ≤ 85°C
b. Electrical Output at Equilibrium Temperature	Voltage: ____V Current: ____A Power: ____W	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	





<p>3. Dielectric Breakdown Section (Shorted output to Shorted Plug)</p>	<p>Record Ambient Conditions: ___°C ___%RH Test Voltage: ___2000 Vac (2828 Vdc) or 3000_Vac (4242 Vdc) [Connector setup: Black(GND) → Shorted Output Red(HV) → Shorted Plug]</p>	<p>60950-1 Clause 5.2, 5.3.4 and table 5B Part 1</p>	
<p>4. Electrical Output at 150% Overload</p>	<p>Record Ambient Conditions: ___°C ___%RH Voltage: _____V Current: _____A Power: _____W</p>	<p>Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3</p>	<p>No thermal, electrical, or mechanical failure</p>
<p>a. Equilibrium Temperature at 150% Overload</p>	<p>Case: ___°C Output Cable: ___°C Test Time: _____minutes Record Ambient Conditions: ___°C ___%RH</p>	<p>60950-1 Clause 4.5 and table 4c 498 Clause 88.2</p>	<p>No thermal, electrical, or mechanical failure</p>
<p>b. Electrical Output at Equilibrium Temperature</p>	<p>Voltage: _____V Current: _____A Power: _____W</p>	<p>Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3</p>	
<p>5. Short Circuit</p>	<p>Record Ambient Conditions: ___°C ___%RH Current: _____A Power: _____W Max temp of case: _____°C Max temp of output cable: _____°C</p>	<p>60950 Clause 5.3.1 Temperature only Current measured as per CPSC rationale in section B and 60950 Clause 2.5</p>	





<p>6. Security of Plug Blades</p>	<p>Pull force: 20 lbf (89N) Flexible Cord Attached? _____</p> <p>Push force: on both blades simultaneously 40 lbf (178 N)</p>	<p>CSA 22.2 No. 223-2015 Clauses 6.10.5 and 6.10.6 a UL 1310, Section 43 and 44</p>	<p>Shall not loosen during pull</p> <p>No fire or shock hazard after push</p>
<p>7. CPSC Modified Tension/Compression Test</p>	<p>Displacement: _____ in (_____ m) Force: 30 ± 0.5 lbf (133.5 N)</p> <p>Downward force applied on the front face, top edge of the USB charger</p>	<p>HC testing for information purposes only Derivative of ASTM F963 – 11 Clause 8.9 and 8.10</p>	<p>Plug blades shall not loosen or create a shock or fire hazard</p>
<p>8. Drop Test</p>	<p>Direct Plug-in: Product dropped from a height of 900 mm 3 times with different orientations for each drop</p> <p>Laptop: Product dropped from a height of 1000 ± 10 mm</p>	<p>CSA 22.2 No. 223-2015 Clauses 4.33 and 6.9 Similar to UL1310 46.2</p> <p>UL 60950-1 Clause 4.2.6</p>	
<p>9. Dielectric Breakdown following Drop Test</p>	<p>Record Ambient Conditions: _____ °C _____ %RH Test Voltage: 2000 Vac (2828 Vdc) or 3000 Vac (4242 Vdc) [Connector setup: Black(GND) → Shorted Output Red(HV) → Shorted Plug]</p>	<p>60950-1 Clause 5.2, 5.3.4 and table 5B Part 1</p>	
<p>10. Termination of conductors</p>	<p>A force of 10 N is applied to the conductor near its termination point. The conductor shall not break away or pivot on its terminal ...</p>	<p>60950 clause 3.1.9</p>	



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<p>11. Flammability Test</p>	<p>CPSC: 30 second application of a 1-inch flame Profeco: glow-wire test HC: needle flame test</p>	<p>60950-1 4.7.3.1; IEC 60695-2-11; C22.2 No. 0.17-00 section 4.3.5.2</p>	
<p>a. Section/Components Tested</p>	<p>1: _____ _____ 2: _____ _____ 3: _____ _____ 4: _____ _____ 5: _____ _____ 6: _____ _____</p>		
<p>b. Test Results (Did each material ignite? If so, what was the degree of self-extinguishment if any) For needle flame testing was there ignition and afterglow > 60s or ignition of the indicating layer.</p>	<p>1: _____ _____ 2: _____ _____ 3: _____ _____ 4: _____ _____ 5: _____ _____ 6: _____ _____</p>		





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Part II. Test Procedures

A. Physical examination – external comparison

Examine labeling for:

- i. Spelling
- ii. Manufacturer's identification and country of origin
- iii. UL Mark, Control Code, File Number or other safety agency (CSA, TUV, etc.) marking; FCC certification mark
- iv. Serial Number (may be identical over the lot)
- v. Electrical ratings
- vi. Other usage symbols (e.g., indoor use, double insulation, etc.)
- vii. Any misspelling, lack of UL markings, manufacturer's identification, etc. is suspect

Examine unit housing and any attached (or detachable) power cords or plug blades

- i. Note construction/assembly method (screw-secured, bonded or glued, snap tabs)
- ii. Evaluate strength and durability of housing (drop test)
- iii. Determine weight and dimensions of housing
- iv. Markings on AC power cord if present and construction of flexible cord and plug
- v. Markings on DC power cord if present and construction, number and size of conductors
- vi. Output connector configuration (coaxial, triaxial, pin and socket, number of contacts)

Disassemble the housing to examine internal construction

- i. Search for screws or other mechanical fasteners and remove them to open the housing.
- ii. If mechanical fasteners are not evident, use a knife-edge tool, fine-blade screwdriver, or plastic prying tool to attempt to open the enclosure.
- iii. Pry around the edges of the flat plate (for “cube chargers”) that holds the plug blades to dislodge the plate and expose the interior. For other designs, separate the “clam-shell” halves.
- iv. The housing of some “brick-style” AC chargers or the faceplate of some direct plug-in AC chargers may be held together using adhesives or some type of thermal welding and must be cut apart to gain access.
- v. Remove from the housing and examine the printed circuit assemblies.
- vi. Examine condition of solder for cleanliness, complete reflow, and absence of crystallization (“cold solder”). Examine hook-up wire connections for construction (e.g., absence of tack soldering, loose strands, etc.), wire gauge, and so on.

- vii. For direct plug-in adaptors, apply a force of 10 N to each wire that is attached to the plug blades in order to assess if the wire(s) detach from the blade(s). In non-compliant charger, the wires are tack-soldered to the ends of the blades (visible at right), not spot-welded or mechanically secured before soldering.
- viii. Look for discoloration on the circuit board or components that might indicate overheating. This observation presumes that the manufacturer conducted burn-in to prove functionality and eliminate early life cycle failures. Disassembling an overload-tested unit for inspection may be appropriate to evaluate the effects of overload on the condition of heat dissipating components.



B. Security of Blades

Many direct plug-in chargers utilize plug blades with metal flanges embedded in the plastic face (on the left in the photo below from an USB cube-shaped charger).

- i. Conduct the *Direct Plug-In Security of Input Contacts Test* as described in Section 44 of UL 1310, Class 2 Power Units, as described in Section 44 of UL 1310 and C22.2 no. 223 Section 6.10.5, 6.10.6, *Attachment Plugs and Receptacles*.



Pull Test:

Each blade and the grounding pin and the two blades in combination shall withstand a direct pull of 89 N for 2 min. The test method shall consist of supporting equipment on a horizontal plate with the blades projecting downward through a hole having sufficient diameter to permit the blades to pass through it; and suspending a mass of 9.1 kg from each blade and grounding pin and then by the two blades together.

Push Test:

- i. Three test samples shall be tested to ensure that a potentially hazardous condition does not result. The blades and the grounding pin of a direct plug-in power supply shall be capable of withstanding a gradual force of 133 N applied for 1 min parallel to the longitudinal axis of each blade towards the face of the unit; and a gradual force of 178 N applied for 1 min to the blades and grounding pin, in combination.

- ii. CPSC Modified Tension/Compression Test: For direct plug-in chargers, the blades shall be capable of withstanding a downward force of up to 133.5 N applied within 5 seconds and held for 10 seconds on the front face, top edge of the charger. The test shall be conducted with the charger inserted into a standard duplex test receptacle. The test shall be repeated with the force applied laterally to adequately capture the possible orientations of an installed receptacle. At the conclusion of the test, the charger should not present a potentially hazardous condition.



The dielectric strength test defined in section D.iii below shall then be performed to determine the potential for electric shock following the tension/compression test.

C. Electrical performance testing requirements

The test procedures used in this evaluation were developed by CPSC Electrical Engineering Division staff from the performance requirements of Underwriters Laboratories' Standard for Safety, UL60950-1 Information Technology Equipment – Safety – Part 1: General Requirements. The procedures were developed and proved out during a lengthy series of product safety assessments of copycat/counterfeit USB chargers in 2014 and have been found suitable for identifying substandard and potentially unsafe AC adapters and chargers.

Power supply voltage and current regulation under load are not addressed per se as safety requirements but are generally addressed as tolerances from nominal output ratings because excessive variance may affect the performance of the apparatus being supplied. Because information technology apparatus, such as laptop computers provide additional internal sensing and control circuitry, the generally accepted variance is ± 5 percent, although some equipment manufacturers may require tighter tolerances.

UL60950-1 Section 5.3.1 addresses protection against overload and abnormal operation and requires that "Equipment shall be so designed that the risk of fire or electric shock due to mechanical or electrical overload or failure, or due to abnormal operation or careless use, is limited as far as practicable. After abnormal operation ... the equipment shall remain safe for an operator in the meaning of this standard,



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but it is not required that the equipment should still be in full working order.” CPSC testing will consist of a 150% rating overload and short-circuiting the output and the output cable termination end.

UL60950-1 Section 5.2 addresses Electric Strength (dielectric breakdown or “hi-pot” testing) and requires that the apparatus under test withstand an applied voltage of 2000 Vac (2828 Vdc) or 3000_Vac (4242 Vdc) that is gradually ramped to a specified maximum and held for 60 seconds during which no dielectric breakdown can occur. The NPTEC facility uses a programmable QuadTech Sentry 30 AC/DC/IR Hipot Tester to conduct these evaluations. An adaptor that fails hi-pot testing may present a shock or electrocution hazard to the user.

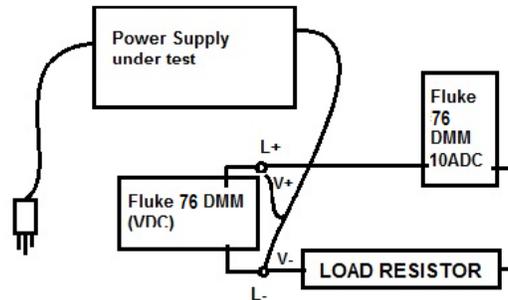
UL60950-1 Section 4.5 specifies thermal requirements to prevent touchable parts from exceeding certain temperatures and to prevent internal components, parts, and so on, from exceeding temperatures that may degrade their functional properties during normal use over the expected life of the equipment. The maximum temperature allowed for external plastic or rubber surfaces that may be touched is 95°C/203°F and for handles, knobs, grips, etc. that may be held or touched for short periods the limit is 85°C/185°F. Because the user is likely to grasp or pick up the AC adaptor or charger to plug or unplug it from an outlet or move it during use, CPSC will apply the lower temperature limit, which is, in fact greater than the staff’s generally accepted safe limits of 68°C/155°F for foreseeably hot surfaces (e.g. electric ranges) or 63°C/140°F for graspable surfaces. If an AC charger exceeds 85°C, it presents a serious risk of burn injury to the user; however test results will also be flagged when surface temperatures exceed the lower thresholds of 68°C and 63°C.

CPSC evaluations typically require a minimum of three units for electrical testing because some tests may alter or damage the device under test so that continued testing afterward is inappropriate or infeasible. Two additional units will allow one to be reserved in original state and one to be disassembled and thoroughly inspected.

D. Open Circuit, Load, Short Circuit, and Temperature Test Procedure

AC chargers operate with a wide range of DC output voltages and currents (nominally 12VDC - 30VDC and 1A - 7A). Consequently, load testing will be conducted typically using a high-wattage wire-wound variable resistor to subject the power supply to a constant load based on its label-rated output. The load resistor will be preadjusted to achieve the maximum rated load current at the rated output voltage. If no information is found on the product, then the output the default output voltage will be 5 volts with a current of 500 mA. USB chargers, on the other hand, are rated only for 5VDC and typically limited to 500mA, 1A or 2A. AC chargers will be tested using preselected precision 2.5-, 5.0- and 10.0-ohm precision resistors.

To minimize measurement errors the resistance is established and measured with a precision milliohm meter across the points identified (“L+,” “L-”) in the diagram below. Output voltage and current are measured with Fluke 76 True RMS digital multi-meters or equivalent.



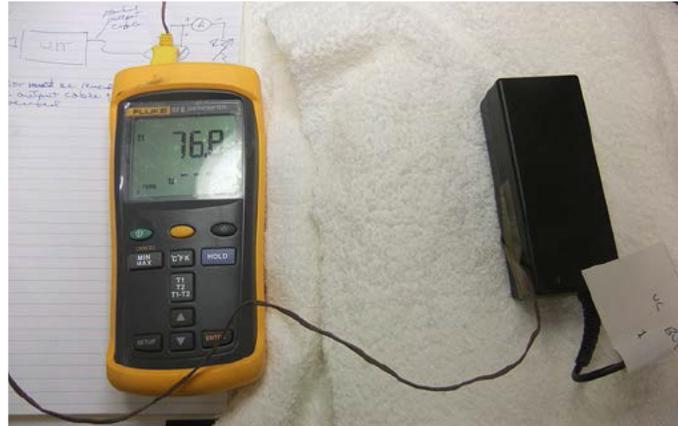
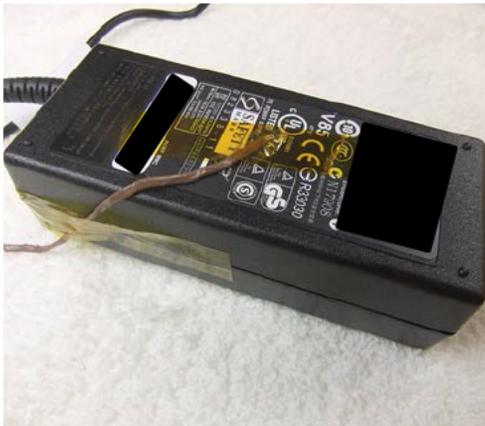
Some of the power supplies have coaxial plugs, with an insulated central female terminal surrounded by an outer metal shell on their output cable (shown adjacent-left), and some have “triaxial” plugs, with a central male pin isolated from an outer barrel that has metal shells on the inside and outside of the barrel (shown adjacent-



right). Because of the variety of connector plugs, the connectors are removed from the output cable and insulation is removed from the individual conductors, as illustrated below, so that direct electrical connections can be made.



During testing the power supply is positioned atop an insulating foam block to eliminate any heat-sink effect by the test bench and rests on four layers of standard terry cloth fabric which serve as an ignition/char indicator. Temperature measurements are conducted using a standard prefabricated thermocouple and a Fluke 52 II digital thermometer or equivalent (illustrated below-right) that has built-in temperature compensation for direct reading. The thermocouple is secured to the center of the bottom surface of the power supply with high temperature tape, shown below-left. Preliminary testing found that heat distribution is fairly uniform across the housing when it is placed on the terry cloth and foam block and is highest near the center of the base. The base is usually identified as the side bearing a product label, as illustrated in the photograph. Some AC adaptors have pads or debossed dots, such as are visible in the lower-left photo, at the corners to elevate the unit from the resting surface.



During the test cycle, the AC line voltage, current drain and wattage are measured periodically with a Global Specialties 1522 Digital Wattmeter or equivalent, along with the DC output voltage and current and the unit's case temperature. AC measurements assure that any changes in output characteristics can be isolated from (or associated with) line variations. The power supply is energized with the load resistor disconnected at point "L-" in the above test diagram, the initial case temperature, open circuit output voltage and line voltage are recorded. The load resistor is then connected and all measurements are recorded as Time Zero. Measurements are recorded periodically until the case temperature stabilizes (signaled by minor temperature change reversals).



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i. Open Circuit Test:

- a. Using a USB cable stub (or equivalent), create an open-circuit load across the 5 volt DC supply connectors.
- b. Measure the output voltage across the resistor leads. The open-circuit secondary voltage shall be measured and be in the range of 4.75 to 5.25 volts DC. Observe stability of voltage for no more than 30 seconds and note any range of variations.

ii. Load test: Find the unit's specified ampere load at its rated DC output voltage.

- a. Measure the open-circuit (non-loaded) output voltage to verify operation.
- b. Using an appropriate cable stub (or equivalent), connect a resistive load across the DC supply connectors using the following formula:
Resistance (ohms, Ω) = rated voltage / specified ampere load

- a. Measure the output voltage across the resistor leads until thermal stability: If the full-load voltage drops below 10% of rating, the charger may damage the device under charge or overheat itself. In the case of USB charger testing, the test cable must be of the best quality (Lowest DC resistance) to minimize spurious voltage drop across the cable itself.
- b. Monitor and record the operating temperature of a central point on the housing. Observe load voltage until the temperature stabilizes.
- c. Measure the voltage drop across the direct output of the power supply, if possible, to determine the voltage drop across the cable/ output power cord. Conducting this test may require operating one unit with its case open to provide access to measurement points. Once the voltage drop is determined, the housing may be reassembled to allow accurate temperature measurement, or those measurements may be taken on other units of the same model.
- d. To evaluate overload performance for general chargers, move the resistance tap from full-load resistance to lower the resistance of the load, increasing the current to 150% of rated output and observe the output voltage and current. Short-circuit the load resistor and observe final outcome (i.e., current drops to zero; unit overheats, melts, arcs or produces smoking or flame). For USB chargers, connect a fixed resistor that should double the rated load current, and record output voltage and current; then short-circuit the output and observe the final outcome.

iii. Dielectric breakdown test: the Unit Under Test (UUT) should be able to withstand a potential difference of 2000 Vac r.m.s. (2828 Vdc peak) or 3000_Vac r.m.s. (4242 Vdc peak) ramped for 60 seconds between the AC plug blades and the DC (USB) output conductors (performance limits under UL60950-1)



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- a. Use a QuadTech Sentry30 Hi-Pot Tester, or equivalent, programmed to a 0.5mA current limit with a maximum output of 2828 Vdc (2.83 kV) or 4242 Vdc peak (4.24 kV)¹, ramping linearly from 0 Vdc initially to the maximum over a 60 second duration.
- b. Connect the Return/Low lead to the DC voltage output pair and the Output lead to the shorted pair of AC plug blades.
- c. Press the START button and observe from a safe distance (WARNING: the potential on the device under test may be lethal).
- d. A failure of this test indicates that the charger under test may present a shock hazard to the user and may damage any electronic device connected to its output.

E. Flammability Test

Large Adapter:

According to a review of available documentation, IEC 60695-11-4 Fire Hazard Testing procedures are essentially the same as those specified in the UL 94 Standard for Tests for Flammability of Plastic Materials. Although both require specially prepared 125mm x 13mm specimens of specified thickness, current engineering laboratory practice is to acquire the largest available flat portion from the unit under test and subject a vertical flame test procedure approximating those described Section 8 of UL 94 and related sections.

Small Adapter:

From 60950-1 (section 4.7.3.1 to 4.7.3.3) the enclosure of the charger should have a flame rating of HB75 (thin walled units <3mm); however, this test requires a plastic sample which is 125 mm in length and it is unlikely that a sample of this size will be available. In C22.2 no. 60950-1-07/UL 60950-1 (section 4.7.3.1) it is established that, where HB75 class material is required, material passing the glow-wire test at 550 °C according to IEC 60695-2-11 is acceptable as an alternative.

In C22.2 No. 0.17-00 (section 4.3.5.2) the minimum test sample size shall be 20 mm by 20 mm (50 mm by 50 mm specimens are preferred). Small parts that lie within a 15 mm circle shall be considered too small to conduct the glow-wire test (consistent with 60695-2-11, Section 4.4); however, a needle-flame test may be conducted as an alternative. Five applications are technically required.

- i. Apply the glow wire test or the needle flame test to charger samples in the method described in the appropriate standard.

¹ This voltage value is from Table 5B, *Test voltages for electric strength tests based on peak working voltages*, of UL 60950-1, and is specified for reinforced insulation and specified voltages between 210 VAC and 420 VAC. For AC chargers with input voltages of up to 210 VAC, the test voltage is 2000 VAC r.m.s., or 2828 VAC peak.



- ii. Apply heat source to central portion of charger wall; avoid the cut edges if the enclosure has been disassembled.

Standards

For this project the following standards apply:

Table 4

CPSC	Health Canada	PROFECO
UL 60950-1 Information Technology Equipment — Safety — Part 1: General	CAN/CSA-C22.2 No. 60950-1-07 (IEC 60950-1:2005, MOD) A National Standard of Canada <i>reaffirmed 2012</i> Information Technology Equipment — Safety — Part 1: General Requirements	UL 60950-1 Information Technology Equipment — Safety — Part 1: General
UL 498 Standard for safety Attachment plugs and receptacles	C22.2 No. 223-15, Clause 4.13	UL 498 Standard for safety Attachment plugs and receptacles
UL 1310 Standard for safety Class 2 Power Units	C22.2 No. 223-15 Power Supplies with extra low voltage Class 2 outputs.	UL 1310 Standard for safety Class 2 Power Units
ASTM F963 – 11 Standard Consumer Safety Specification for Toy Safety	ASTM F963 – 11 Standard Consumer Safety Specification for Toy Safety	ASTM F963 – 11 Standard Consumer Safety Specification for Toy Safety
		NMX-J-565/2-11-ANCE based upon the IEC 60695-2-11 Fire hazard testing - Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products
IEC 62680-1:2013: Universal serial bus interfaces for data and power - Part 1: Universal serial bus specification, revision 2.0	IEC 62680-1:2013: Universal serial bus interfaces for data and power - Part 1: Universal serial bus specification, revision 2.0	IEC 62680-1:2013: Universal serial bus interfaces for data and power - Part 1: Universal serial bus specification, revision
IEC 62680-3:2013 Universal serial bus interfaces for data and power – Part 3: USB Battery	IEC 62680-3:2013 Universal serial bus interfaces for data and power – Part 3: USB Battery	IEC 62680-3:2013 Universal serial bus interfaces for data and power – Part 3: USB



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Charging Specification, Revision 1.2	Charging Specification, Revision 1.2	Battery Charging Specification, Revision 1.2
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APPENDIX B: Physical Examination Sheet

AC Adapter Model:	_____			
Product Label	<i>Circle One When Necessary</i>			
Accurate spelling		Y	N	
Manufacturer's Identification		Y	N	
Country of origin	_____			
FCC Certification Mark		Y	N	
3rd Party Safety Mark		Y	N	Remarks: _____
Safety Agency File Number (if any)	_____			
Serial Number (SN)	_____			
SN identical across group?		Y	N	
Electrical Ratings	_____			
Double insulation marking		Y	N	
Indoor use only or Outdoor capable	_____			
External Examination	<i>Circle One When Necessary</i>			
Construction/Assembly method	Screw Secured	Bonded or Glued	Snap Tabs	Other: _____
Product Weight	_____			
Product Dimensions	_____			
Markings on AC power cord	_____			
Plug	2-pin or 3-pin	Polarized	Non-polarized	Ratings: _____
Markings on DC power cord	_____			
Output connector configuration	Coaxial	Triaxial	Pin and Socket	# of contacts: _____
Internal Examination	<i>Circle One When Necessary</i>			
Solder connections	Mechanically Secured	Tack Soldered	Loose Strands	Remarks: _____
Wire gauge	Input: _____	Output: _____		
Circuit Board	Discolored	Conformal Coating		Ratings: _____
Direct plug in blades	Mechanically Secured	Tack Soldered	Loose Strands	Remarks: _____
Direct plug in 10 N Test		Pass	Fail	Remarks: _____
Component condition after testing	Discolored	Thermal Damage		Remarks: _____

APPENDIX C: Compiled Test Results

Product information and room conditions for all the electrical tests

Product and model: CPSC Model "A"

Electrical specifications: Input: 100- 240 VAC, 1.5 A, 50/60 Hz

Output: 16.5 VDC, 3.65 A

Record room conditions for all the tests: Temperature: between 22.7 °C and 23.1 °C

Humidity: between 56 %RH and 63 %RH

Other: Product purchased from [REDACTED]



Section A: Electrical Performance Tests

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
1	Output Voltage (Vout) at Open Load	A1, A2, A3, A4, A5	Average Voltage: 16.61 V Max temperature of case: No change (N/C) Max temperature of output cable: N/C	Vout within ± 5% Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c Temperature only. Voltage measured as per CPSC rationale section B similar to IEC 62680-3 2013 and CSA 22.2 No. 0.23-15	PASS	Actual Output Voltages: A1: 16.68 A2: 16.63 A3: 16.67 A4: 16.66 A5: 15.23 - 16.40 (fluctuates)
2	Electrical Output at Rated Load	A1	Voltage: 16.26 V Output Current: 3.65 A Input Current: 0.99 A Input Power: 71.1 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Electronic DC Load bank used to maintain constant output current
2. a	Equilibrium Temperature at Rated Load	A1	Case: 76.8 °C Output Cable: 27 °C Test Time: 150 minutes	Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c	PASS	Case temp did not exceed 85°C under normal load
2. b	Electrical Output at Equilibrium Temperature	A1	Voltage: 16.19 V Output Current: 3.65 A Input Current: 1.05 A Input Power: 69.9 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Electronic DC Load bank used to maintain constant output current
2.1	Electrical Output at Rated Load	A2	Voltage: 16.22 V Output Current: 3.65 A Input Current: 0.98 A Input Power: 70.7 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Electronic DC Load bank used to maintain constant output current

2.1 a	Equilibrium Temperature at Rated Load	A2	Case: 84.9 °C Output Cable: 27.8 °C Test Time: 150 minutes	Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c	PASS	Case temp did not exceed 85°C under normal load
2.1 b	Electrical Output at Equilibrium Temperature	A2	Voltage: 16.17 V Current: 3.65 A Input Current: 1.03 A Input Power: 69.9 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Electronic DC Load bank used to maintain constant output current
2.2	Electrical Output at Rated Load	A4	Voltage: 16.23 V Output Current: 3.65 A Input Current: 1.00 A Input Power: 71.1 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Electronic DC Load bank used to maintain constant output current
2.2 a	Equilibrium Temperature at Rated Load	A4	Case: 69.5 °C Output Cable: 26.6 °C Test Time: 75 minutes	Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c	PASS	Case temp did not exceed 85°C under normal load
2.2 b	Electrical Output at Equilibrium Temperature	A4	Voltage: 16.19 V Current: 3.65 A Input Current: 1.05 A Input Power: 70.1 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Electronic DC Load bank used to maintain constant output current
2.3	Electrical Output at Rated Load	A5	Voltage: 16.28 V Output Current: 3.65 A Input Current: 0.99 A Input Power: 70.8 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Electronic DC Load bank used to maintain constant output current
2.3 a	Equilibrium Temperature at Rated Load	A5	Case: 78.5 °C Output Cable: 27.6 °C Test Time: 75 minutes	Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c	PASS	Case temp did not exceed 85°C under normal load
2.3 b	Electrical Output at Equilibrium Temperature	A5	Voltage: 16.23 V Current: 3.65 A Input Current: 1.02 A Input Power: 70.0 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Electronic DC Load bank used to maintain constant output current
3	Dielectric Breakdown (Shorted output to Shorted Plug)	A1, A2, A4, A5	Insulation breakdown: No Breakdown voltage: N/A	No breakdown of the insulation Insulation breakdown is considered when the current that flows as a result of the test voltage rapidly increases in an uncontrolled manner.	UL 60950-1 Clause 5.2, 5.3.4 and table 5B Part 1	PASS	Test voltage: 4.24 kVdc (ramping linearly from 0 V initially to the test voltage within 5 seconds and held at the test voltage for 60 seconds). Trip current: 0.5 mA.

4	Electrical Output at 150% Overload	A1, A2, A4, A5	Voltage: N/A Current: N/A Input Current: N/A Input Power: N/A	No thermal, electrical, or mechanical failure	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Upon application of the overload condition, all units immediately entered fold-back, cycling on and off.
4. a	Equilibrium Temperature at 150% Overload	A1, A2, A4, A5	Case: N/A Output Cable: N/A Test Time: N/A	No thermal, electrical, or mechanical failure	UL 60950-1 Clause 4.5 and table 4c UL 498 Clause 88.2	PASS	Upon application of the overload condition, all units immediately entered fold-back, cycling on and off.
4. b	Electrical Output at Equilibrium Temperature	A1, A2, A4, A5	Voltage: N/A Current: N/A Input Current: N/A Power: N/A		Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		Upon application of the overload condition, all units immediately entered fold-back, cycling on and off.
5	Short Circuit	A1, A2, A4, A5	Current: N/A Power: N/A Max temperature of case: N/A Max temperature of output cable: N/A	The sample shall not overheat, melt, arc or produce smoke or flame	UL 60950 Clause 5.3.1 Temperature only. Current measured as per CPSC rationale in section B and IEC 60950 Clause 2.5	PASS	Upon application of the short circuit condition, all units immediately entered fold-back, cycling on and off.
9	Dielectric Breakdown following Drop Test	A1, A2, A3, A4, A5	Insulation breakdown: No Breakdown voltage: NA	No breakdown of the insulation Insulation breakdown is considered when the current that flows as a result of the test voltage	IEC 60950-1 Clause 5.2, 5.3.4 and table 5B Part 1	PASS	Test voltage: 4.24 kVdc (ramping linearly from 0 V initially to the test voltage within 5 seconds and held at the test voltage for 60 seconds). Trip current: 0.5 mA.

Section B: Mechanical Testing

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
6	Security of Plug Blades	NA	NA	Shall not loosen during pull (pull force: 89N) No fire or shock hazard after push (push force: on both blades simultaneously 178 N)	CSA 22.2 No. 223-2015 Clauses 6.10.5 and 6.10.6 a UL 1310, Section 43 and 44	NA	
7	CPSC Modified Tension/Compression Test	NA	NA	Plug blades shall not loosen or create a shock or fire hazard with a force of 133.5 N	HC testing for information purposes only Derivative of ASTM F963 – 11 Clause 8.9 and 8.10	NA	

8	Drop Test	A1, A2, A3, A4, A5	A3: Enclosure cracked at seam A5: LED diffuser Displaced A1,A2,A4: No damage	It shall not be possible to touch inside live parts with a test probe.	CSA 22.2 No. 223-2015 Clauses 4.33 and 6.9 Similar to UL1310 46.2 UL 60950-1 Clause 4.2.6	PASS	Laptop charger: Product dropped from a height of 1000 ± 10 mm A3 & A5: live parts inaccessible with test probe
10	Termination of Conductors	A1, A3	Conductors did not break away from the soldered connection	A force of 10 N is applied to the conductor near its termination point. The conductor shall not break away or pivot on its terminal.	UL 60950 clause 3.1.9	PASS	The conductors were mechanically secured to the PCB prior to soldering

Section C: Flammability Test

Observation: This test was conducted using a methane fueled Bunsen burner

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
11	30 Second Application of a 1-inch Flame	A2, A5	Ignition occurs: Yes Flaming droplets: Yes Self-extinguished: Yes	The material shall not ignite and if it does, the flame must self-extinguish within 30 seconds.	UL 60950-1 Clause 4.7.3.1	FAIL	After the material ignited, the flame continued to propagate but self-extinguished upon removal of the test flame. However, flaming droplets produced during testing. Sections Tested: Top and bottom Plastic Enclosure

Section D: Labelling and Housing

AC Adapter Model:	A			
Product Label				
<i>Circle One When Necessary</i>				
Accurate spelling		(Y)	N	
Manufacturer's Identification		Y	(N)	
Country of origin	China			
FCC Certification Mark		(Y)	N	
3rd Party Safety Mark		Y	(N)	Remarks: Only CE mark
Safety Agency File Number (if any)	N/A			
Serial Number (SN)	N/A			
SN identical across group?	N/A			
Electrical Ratings	Input: 100-240 V, 1.5 A, 50/60 Hz		Output: 16.5 V, 3.65 A	
Double insulation marking		(Y)	N	
Indoor use only or Outdoor capable	Indoor Use Only			
External Examination				
<i>Circle One When Necessary</i>				
Construction/Assembly method	Screw Secured	(Bonded or Glued)	Snap Tabs	Other: _____
Product Weight	204.64 g			
Product Dimensions	4.31" x 1.94" x 1.31"			
Markings on AC power cord	227 IEC (52) H03VVH2-F 2x0.75mm ² KELF-75 N15075 NF-USE 1327 2002010105009305 300/300V			
Plug	(2-pin) or 3-pin	Polarized	(Non-polarized)	Ratings: N/A Remarks: Model HY-065
Markings on DC power cord	N/A			
Output connector configuration	Coaxial	Triaxial	(Pin and Socket)	# of contacts: 5
Internal Examination				
<i>Circle One When Necessary</i>				
Solder connections	(Mechanically Secured)	Tack Soldered	Loose Strands	Remarks: Poorly done/ Cold solder
Wire gauge	Input: 19 AWG & 20 AWG	Output: 20 AWG		
Circuit Board	Discolored	(Conformal Coating)		Ratings: N/A
Direct plug in blades	Mechanically Secured	Tack Soldered	Loose Strands	Remarks: N/A
Direct plug in 10 N Test		Pass	Fail	Remarks: N/A
Component condition after testing	Discolored	Thermal Damage		Remarks: Appears normal

Product information and room conditions for all the electrical tests

Product and model: CPSC Model “B”

Electrical specifications: Input: 100- 240 VAC, 1.5A, 50/60 Hz

Output: 19 VDC, 3.42A

Record room conditions for all the tests: Temperature: between 22.3 °C and 22.9 °C

Humidity: between 60 %RH and 63 %RH

Other: Product purchased from [REDACTED]



Section A: Electrical Performance Tests

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
1	Output Voltage (Vout) at Open Load	B1, B2, B3, B4, B5	Average Voltage: 19.01 V Max temperature of case: No change (N/C) Max temperature of output cable: N/C	Vout within ± 5% Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c Temperature only. Voltage measured as per CPSC rationale section B similar to IEC 62680-3 2013 and CSA 22.2 No. 0.23-15	PASS	Actual Output Voltages: B1: 18.95 B2: 18.93 B3: 19.04 B4: 18.95 B5: 19.16
2	Electrical Output at Rated Load	B1	Voltage: 18.66 V Output Current: 3.42 A Input Current: 1.08 A Input Power: 75.1 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Electronic DC Load bank used to maintain constant output current
2. a	Equilibrium Temperature at Rated Load	B1	Case: 110.8 °C Output Cable: 27.5 °C Test Time: 120 minutes	Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c	FAIL	Case temp exceeded 85°C under normal load
2. b	Electrical Output at Equilibrium Temperature	B1	Voltage: 18.6 V Current: Unknown* Input Power: Unknown*	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		*: Unit failure occurred after approximately 45 minutes. Approximately 18.6 V at shutdown.
2.1	Electrical Output at Rated Load	B2	Voltage: 18.64 V Output Current: 3.42 A Input Current: 1.04 A Input Power: 75.2 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Electronic DC Load bank used to maintain constant output current
2.1 a	Equilibrium Temperature at Rated Load	B2	Case: 92.5 °C Output Cable: 29 °C Test Time: 120 minutes	Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c	FAIL	Case temp exceeded 85°C under normal load

2.1 b	Electrical Output at Equilibrium Temperature	B2	Voltage: 18.64 V Current: Unknown* Input Power: Unknown*	Vout within $\pm 5\%$ Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		*: Unit failure occurred after approximately 39 minutes. Approximately 18.64 V at shutdown.
2.2	Electrical Output at Rated Load	B4	Voltage: 18.64 V Output Current: 3.42 A Input Current: 1.06 A Input Power: 76.1 W	Vout within $\pm 5\%$ Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Electronic DC Load bank used to maintain constant output current
2.2 a	Equilibrium Temperature at Rated Load	B4	Case: 107.8 °C Output Cable: 27.9 °C Test Time: 38 minutes	Temp $\leq 85^{\circ}\text{C}$	UL 60950-1 Clause 4.5 and table 4c	FAIL	Case temp exceeded 85°C under normal load
2.2 b	Electrical Output at Equilibrium Temperature	B4	Voltage: 18.65 V Current: Unknown* Input Power: Unknown*	Vout within $\pm 5\%$ Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		*: Unit failure occurred after approximately 38 minutes. Approximately 10 minutes prior to shutdown: 18.57 V, 3.42 A, 1.14 A (Input Current), 77 W
2.3	Electrical Output at Rated Load	B5	Voltage: 18.86 V Output Current: 3.42 A Input Current: 1.06 A Input Power: 76.3 W	Vout within $\pm 5\%$ Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Electronic DC Load bank used to maintain constant output current
2.3 a	Equilibrium Temperature at Rated Load	B5	Case: 97.6 °C Output Cable: 31.8 °C Test Time: 45 minutes	Temp $\leq 85^{\circ}\text{C}$	UL 60950-1 Clause 4.5 and table 4c	FAIL	Case temp exceeded 85°C under normal load
2.3 b	Electrical Output at Equilibrium Temperature	B5	Voltage: 18.9 V Current: 3.42 A* Input Current: 1.3 A* Input Power: 76.1 W*	Vout within $\pm 5\%$ Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	*: Unit failure occurred after approximately 45 minutes.
3	Dielectric Breakdown (Shorted output to Shorted Plug)	B1, B2, B4, B5	Insulation breakdown: Yes Breakdown voltage: N/A	No breakdown of the insulation Insulation breakdown is considered when the current that flows as a result of the test voltage rapidly increases in an uncontrolled manner.	UL 60950-1 Clause 5.2, 5.3.4 and table 5B Part 1	FAIL	Test voltage: 4.24 kVdc (ramping linearly from 0 V initially to the test voltage within 5 seconds and held at the test voltage for 60 seconds). Trip current: 0.5 mA. All units failed during initial ramp-up.
4	Electrical Output at 150% Overload	B3	Voltage: 18.59 V Current: 5.13 A Input Current: 1.62 A Input Power: 116.5 W	No thermal, electrical, or mechanical failure	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	

4. a	Equilibrium Temperature at 150% Overload	B3	Case: 68.7 °C Output Cable: 28.5 °C Test Time: 60 minutes	No thermal, electrical, or mechanical failure	UL 60950-1 Clause 4.5 and table 4c UL 498 Clause 88.2	PASS	
4. b	Electrical Output at Equilibrium Temperature	B3	Voltage: 18.37 V Current: 5.13 A Input Current: 1.86 A Power: 137 W		Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		After approximately 5 minutes, the unit entered fold-back, cycling on and off
3.1	Dielectric Breakdown (Shorted output to Shorted Plug)	B3	Insulation breakdown: Yes Breakdown voltage: N/A	No breakdown of the insulation Insulation breakdown is considered when the current that flows as a result of the test voltage rapidly increases in an uncontrolled manner.	UL 60950-1 Clause 5.2, 5.3.4 and table 5B Part 1	FAIL	Test voltage: 4.24 kVdc (ramping linearly from 0 V initially to the test voltage within 5 seconds and held at the test voltage for 60 seconds). Trip current: 0.5 mA. Unit failed during initial ramp-up. This test only performed on B3 after 150% overload as the other samples died after normal load testing.
5	Short Circuit	B3	Current: N/A Power: N/A Max temperature of case: N/A Max temperature of output cable: N/A	The sample shall not overheat, melt, arc or produce smoke or flame	UL 60950 Clause 5.3.1 Temperature only. Current measured as per CPSC rationale in section B and IEC 60950 Clause 2.5		Unit immediately entered a fold-back condition.
9	Dielectric Breakdown following Drop Test	B1, B3, B4	Insulation breakdown: Yes Breakdown voltage: NA	No breakdown of the insulation Insulation breakdown is considered when the current that flows as a result of the test voltage	IEC 60950-1 Clause 5.2, 5.3.4 and table 5B Part 1		Test voltage: 4.24 kVdc (ramping linearly from 0 V initially to the test voltage within 5 seconds and held at the test voltage for 60 seconds). Trip current: 0.5 mA. Unit failed during initial ramp-up.

Section B: Mechanical Testing

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
6	Security of Plug Blades	NA	NA	Shall not loosen during pull (pull force: 89N) No fire or shock hazard after push (push force: on both blades simultaneously 178 N)	CSA 22.2 No. 223-2015 Clauses 6.10.5 and 6.10.6 a UL 1310, Section 43 and 44	NA	
7	CPSC Modified Tension/Compression Test	NA	NA	Plug blades shall not loosen or create a shock or fire hazard with a force of 133.5 N	HC testing for information purposes only Derivative of ASTM F963 – 11 Clause 8.9 and 8.10	NA	

8	Drop Test	B1, B2, B3, B4, B5	No visible damage	It shall not be possible to touch inside live parts with a test probe.	CSA 22.2 No. 223-2015 Clauses 4.33 and 6.9 Similar to UL1310 46.2 UL 60950-1 Clause 4.2.6	PASS	Direct Plug-in charger: Product dropped from a height of 900 mm 3 times with different orientations for each drop Laptop charger: Product dropped from a height of 1000 ± 10 mm
10	Termination of Conductors	B1, B3	Conductors did not break away from the soldered connection	A force of 10 N is applied to the conductor near its termination point. The conductor shall not break away or pivot on its terminal.	UL 60950 clause 3.1.9	PASS	The conductors were mechanically secured to the PCB prior to soldering

Section C: Flammability Test

Observation: This test was conducted using a methane fueled Bunsen burner

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
11	30 Second Application of a 1-inch Flame	B2, B5	Ignition occurs: Yes Flaming droplets: Yes Self-extinguished: Yes	The material shall not ignite and if it does, the flame must self-extinguish within 30 seconds.	UL 60950-1 Clause 4.7.3.1	FAIL	After the material ignited, the flame continued to propagate but self-extinguished upon removal of the test flame. However, flaming droplets produced during testing. Sections Tested: Top and bottom Plastic Enclosure

Section D: Labelling and Housing

AC Adapter Model:	B			
Product Label				
	Circle One When Necessary			
Accurate spelling		(Y)	N	
Manufacturer's Identification		Y	(N)	
Country of origin	China			
FCC Certification Mark		Y	(N)	
3rd Party Safety Mark		Y	(N)	Remarks: Only CE mark
Safety Agency File Number (if any)	N/A			
Serial Number (SN)	N/A			
SN identical across group?	N/A			
Electrical Ratings	Input: 100-240 V, 1.5 A, 50/60 Hz		Output: 19 V, 3.42 A	
Double insulation marking		Y	(N)	
Indoor use only or Outdoor capable	Not specified			
External Examination				
	Circle One When Necessary			
Construction/Assembly method	Screw Secured	(Bonded or Glued)	Snap Tabs	Other: _____
Product Weight	180.78 g			
Product Dimensions	4.38" x 0.94" x 1.19"			
Markings on AC power cord	VDE IEMMEQU H0VVH2-F 2x0.75mm ² ADMENG 134544 N20920			
Plug	(2-pin) or 3-pin	Polarized	(Non-polarized)	Ratings: 250 V, 6A
Markings on DC power cord	RU E189674 AWM 2464 VW-1SC 80°C 300V			
Output connector configuration	(Coaxial)	Triaxial	Pin and Socket	# of contacts: _____
Internal Examination				
	Circle One When Necessary			
Solder connections	(Mechanically Secured)	Tack Soldered	Loose Strands	Remarks: None
Wire gauge	Input: 20 AWG	Output: 22 AWG		
Circuit Board	Discolored	(Conformal Coating)		
Direct plug in blades	Mechanically Secured	Tack Soldered	Loose Strands	Remarks: N/A
Direct plug in 10 N Test		Pass	Fail	Remarks: N/A
Component condition after testing	(Discolored)	(Thermal Damage)		Remarks: Only on B5

Product information and room conditions for all the electrical tests

Product and model: CPSC Model "C"

Electrical specifications: Input: 100- 240 VAC, 1.6 A, 50/60 Hz

Output: 19.5 VDC, 3.34 A

Record room conditions for all the tests: Temperature: between 22.8 °C and 23.7 °C

Humidity: between 49.5 %RH and 52 %RH

Other: Product purchased from [REDACTED]



Section A: Electrical Performance Tests

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
1	Output Voltage (Vout) at Open Load	C1, C2, C3, C4, C5	Average Voltage: 0 V Max temperature of case: No change (N/C) Max temperature of output cable: N/C	Vout within ± 5% Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c Temperature only. Voltage measured as per CPSC rationale section B similar to IEC 62680-3 2013 and CSA 22.2 No. 0.23-15		Actual Output Voltages: C1: N/A: Inoperable after test #9 C2: N/A: Inoperable after test #9 C3: N/A: Inoperable after test #9 C4: N/A: Inoperable after test #9 C5: N/A: Inoperable after test #9
2	Electrical Output at Rated Load	C1, C2, C3, C4, C5	Voltage: N/A Output Current: N/A Input Current: N/A Input Power: N/A	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		Immediately after applying power to the units after test #9, an audible component failure (popping sound) was heard. Vout for all units was measured at 0 V.
2. a	Equilibrium Temperature at Rated Load	C1, C2, C3, C4, C5	Case: N/A Output Cable: N/A Test Time: N/A	Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c		[REDACTED]
2. b	Electrical Output at Equilibrium Temperature	C1, C2, C3, C4, C5	Voltage: N/A Output Current: N/A Input Current: N/A Input Power: N/A	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		
3	Dielectric Breakdown (Shorted output to Shorted Plug)	C1, C2, C3, C4, C5	Insulation breakdown: N/A Breakdown voltage: N/A	No breakdown of the insulation Insulation breakdown is considered when the current that flows as a result of the test voltage rapidly increases in an uncontrolled manner.	UL 60950-1 Clause 5.2, 5.3.4 and table 5B Part 1		All units inoperable after test #9

4	Electrical Output at 150% Overload	C1, C2, C3, C4, C5	Voltage: N/A Current: N/A Input Current: N/A Input Power: N/A	No thermal, electrical, or mechanical failure	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		All units inoperable after test #9
4. a	Equilibrium Temperature at 150% Overload	C1, C2, C3, C4, C5	Case: N/A Output Cable: N/A Test Time: N/A	No thermal, electrical, or mechanical failure	UL 60950-1 Clause 4.5 and table 4c UL 498 Clause 88.2		All units inoperable after test #9
4. b	Electrical Output at Equilibrium Temperature	C1, C2, C3, C4, C5	Voltage: N/A Current: N/A Input Current: N/A Power: N/A		Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		All units inoperable after test #9
5	Short Circuit	C1, C2, C3, C4, C5	Current: N/A Power: N/A Max temperature of case: N/A Max temperature of output cable: N/A	The sample shall not overheat, melt, arc or produce smoke or flame	UL 60950 Clause 5.3.1 Temperature only. Current measured as per CPSC rationale in section B and IEC 60950 Clause 2.5		All units inoperable after test #9
9	Dielectric Breakdown following Drop Test	C1, C2, C3, C4, C5	Insulation breakdown: Yes Breakdown voltage: NA	No breakdown of the insulation Insulation breakdown is considered when the current that flows as a result of the test voltage	IEC 60950-1 Clause 5.2, 5.3.4 and table 5B Part 1	FAIL	Test voltage: 4.24 kVdc (ramping linearly from 0 V initially to the test voltage within 5 seconds and held at the test voltage for 60 seconds). Trip current: 0.5 mA. Units failed during initial ramp-up.

Section B: Mechanical Testing

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
6	Security of Plug Blades	NA	NA	Shall not loosen during pull (pull force: 89N) No fire or shock hazard after push (push force: on both blades simultaneously 178 N)	CSA 22.2 No. 223-2015 Clauses 6.10.5 and 6.10.6 a UL 1310, Section 43 and 44	NA	
7	CPSC Modified Tension/Compression Test	NA	NA	Plug blades shall not loosen or create a shock or fire hazard with a force of 133.5 N	HC testing for information purposes only Derivative of ASTM F963 – 11 Clause 8.9 and 8.10	NA	

8	Drop Test	C1, C2, C3, C4, C5	No visible damage	It shall not be possible to touch inside live parts with a test probe.	CSA 22.2 No. 223-2015 Clauses 4.33 and 6.9 Similar to UL1310 46.2 UL 60950-1 Clause 4.2.6	PASS	Direct Plug-in charger: Product dropped from a height of 900 mm 3 times with different orientations for each drop Laptop charger: Product dropped from a height of 1000 ± 10 mm
10	Termination of Conductors	C1, C3	Conductors did not break away from the soldered connection	A force of 10 N is applied to the conductor near its termination point. The conductor shall not break away or pivot on its terminal.	UL 60950 clause 3.1.9	PASS	The conductors were mechanically secured to the PCB prior to soldering E3 SN: 201511SK2206

Section C: Flammability Test

Observation: This test was conducted using a methane fueled Bunsen burner

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
11	30 Second Application of a 1-inch Flame	C2, C5	Ignition occurs: Yes Flaming droplets: No Self-extinguished: Yes	The material shall not ignite and if it does, the flame must self-extinguish within 30 seconds.	UL 60950-1 Clause 4.7.3.1	PASS	After the material ignited, softened, but self-extinguished upon removal of the test flame. Sections Tested: Top and bottom Plastic Enclosure

Section D: Labelling and Housing

AC Adapter Model:	C			
Product Label				
<i>Circle One When Necessary</i>				
Accurate spelling		(Y)	N	
Manufacturer's Identification		Y	(N)	
Country of origin	China			
FCC Certification Mark		(Y)	N	
3rd Party Safety Mark		Y	(N)	Remarks: Only CE mark
Safety Agency File Number (if any)	N/A			
Serial Number (SN)	██████████			Remarks: SN for sample C1
SN identical across group?		Y	(N)	
Electrical Ratings	Input: 120-240 V, 1.6 A, 50/60 Hz		Output: 19.5 V, 3.34 A	
Double insulation marking		Y	(N)	
Indoor use only or Outdoor capable	Not Specified			
External Examination				
<i>Circle One When Necessary</i>				
Construction/Assembly method	Screw Secured	(Bonded or Glued)	Snap Tabs	Other: _____
Product Weight	230.36 g			
Product Dimensions	6" x 2.25" x 1.38"			
Markings on AC power cord	CCC 2008010105285822 60227 IEC 52(RVV) 3x0.75mm ² 300/300V GB/T5023.5-2008			
Plug	2-pin or (3-pin)	(Polarized)	Non-polarized	Ratings: 250V, 10A
Markings on DC power cord	N/A			
Output connector configuration	(Coaxial)	Triaxial	Pin and Socket	# of contacts: _____
Internal Examination				
<i>Circle One When Necessary</i>				
Solder connections	(Mechanically Secured)	Tack Soldered	Loose Strands	Remarks: _____
Wire gauge	Input: 21 AWG	Output: 20 AWG		
Circuit Board	Discolored	(Conformal Coating)		Ratings: None Remarks: Conformal coating uneven
Direct plug in blades	Mechanically Secured	Tack Soldered	Loose Strands	Remarks: N/A
Direct plug in 10 N Test		Pass	Fail	Remarks: N/A
Component condition after testing	(Discolored)	(Thermal Damage)		Remarks: All Samples. Identical component failure and PCB damage

Product information and room conditions for all the electrical tests

Product and model: CPSC Model “D”

Electrical specifications: Input: 100- 240 VAC, 1.8 – 0.6 A, 50/60 Hz

Output: 18.5 VDC, 3.5 A

Record room conditions for all the tests: Temperature: between 22.8 °C and 23 °C

Humidity: between 58 %RH and 63 %RH

Other: Product purchased from [REDACTED]



Section A: Electrical Performance Tests

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
1	Output Voltage (Vout) at Open Load	D6	Average Voltage: 18.93 V Max temperature of case: 24.7 °C Max temperature of output cable: 24.9 °C	Vout within ± 5% Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c Temperature only. Voltage measured as per CPSC rationale section B similar to IEC 62680-3 2013 and CSA 22.2 No. 0.23-15	PASS	Actual Output Voltages: D1: N/A: Inoperable after test #9 D2: N/A: Inoperable after test #9 D3: N/A: Inoperable after test #9 D4: N/A: Inoperable after test #9 D5: N/A: Inoperable after test #9 D6: 18.93
2	Electrical Output at Rated Load	D6	Voltage: 18.74 V Output Current: 3.5 A Input Current: 0.60 A Input Power: 38.3 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Electronic DC Load bank used to maintain constant output current
2. a	Equilibrium Temperature at Rated Load	D6	Case: 90.8 °C Output Cable: 26.2 °C Test Time: 240 minutes	Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c	FAIL	Case temp exceeded 85°C under normal load
2. b	Electrical Output at Equilibrium Temperature	D6	Voltage: 14.15 V Output Current: 3.5 A Input Current: 0.95 A Input Power: 68.2 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	FAIL	Vout is not within ± 5% of rated output. The measured value is approximately 76% of rated output.
3	Dielectric Breakdown (Shorted output to Shorted Plug)	D6	Insulation breakdown: Yes Breakdown voltage: N/A	No breakdown of the insulation Insulation breakdown is considered when the current that flows as a result of the test voltage rapidly increases in an uncontrolled manner.	UL 60950-1 Clause 5.2, 5.3.4 and table 5B Part 1	FAIL	Test voltage: 4.24 kVdc (ramping linearly from 0 V initially to the test voltage within 5 seconds and held at the test voltage for 60 seconds). Trip current: 0.5 mA. Unit failed during initial ramp-up.

4	Electrical Output at 150% Overload	D1, D2, D3, D4, D5, D6	Voltage: N/A Current: N/A Input Current: N/A Input Power: N/A	No thermal, electrical, or mechanical failure	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		Unable to perform this test on any sample as all samples were inoperable after Dielectric Breakdown Test.
4. a	Equilibrium Temperature at 150% Overload	D1, D2, D3, D4, D5, D6	Case: N/A Output Cable: N/A Test Time: N/A	No thermal, electrical, or mechanical failure	UL 60950-1 Clause 4.5 and table 4c UL 498 Clause 88.2		Unable to perform this test on any sample as all samples were inoperable after Dielectric Breakdown Test.
4. b	Electrical Output at Equilibrium Temperature	D1, D2, D3, D4, D5, D6	Voltage: N/A Current: N/A Input Current: N/A Power: N/A		Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		Unable to perform this test on any sample as all samples were inoperable after Dielectric Breakdown Test.
5	Short Circuit	D1, D2, D3, D4, D5, D6	Current: N/A Power: N/A Max temperature of case: N/A Max temperature of output cable: N/A	The sample shall not overheat, melt, arc or produce smoke or flame	UL 60950 Clause 5.3.1 Temperature only. Current measured as per CPSC rationale in section B and IEC 60950 Clause 2.5		Unable to perform this test on any sample as all samples were inoperable after Dielectric Breakdown Test.
9	Dielectric Breakdown following Drop Test	D1, D2, D3, D4, D5	Insulation breakdown: No Breakdown voltage: NA	No breakdown of the insulation Insulation breakdown is considered when the current that flows as a result of the test voltage	IEC 60950-1 Clause 5.2, 5.3.4 and table 5B Part 1	FAIL	Test voltage: 4.24 kVdc (ramping linearly from 0 V initially to the test voltage within 5 seconds and held at the test voltage for 60 seconds). Trip current: 0.5 mA. All units failed during initial ramp-up.

Section B: Mechanical Testing

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
6	Security of Plug Blades	NA	NA	Shall not loosen during pull (pull force: 89N) No fire or shock hazard after push (push force: on both blades simultaneously 178 N)	CSA 22.2 No. 223-2015 Clauses 6.10.5 and 6.10.6 a UL 1310, Section 43 and 44	NA	
7	CPSC Modified Tension/Compression Test	NA	NA	Plug blades shall not loosen or create a shock or fire hazard with a force of 133.5 N	HC testing for information purposes only Derivative of ASTM F963 – 11 Clause 8.9 and 8.10	NA	

8	Drop Test	D1, D2, D3, D4, D5	No visible damage	It shall not be possible to touch inside live parts with a test probe.	CSA 22.2 No. 223-2015 Clauses 4.33 and 6.9 Similar to UL1310 46.2 UL 60950-1 Clause 4.2.6	PASS	Direct Plug-in charger: Product dropped from a height of 900 mm 3 times with different orientations for each drop Laptop charger: Product dropped from a height of 1000 ± 10 mm
10	Termination of Conductors	D1, D3	Conductors did not break away from the soldered connection	A force of 10 N is applied to the conductor near its termination point. The conductor shall not break away or pivot on its terminal.	UL 60950 clause 3.1.9	PASS	The conductors were mechanically secured to the PCB prior to soldering

Section C: Flammability Test

Observation: This test was conducted using a methane fueled Bunsen burner

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
11	30 Second Application of a 1-inch Flame	D2, D5	Ignition occurs: Yes Flaming droplets: No Self-extinguished: Yes	The material shall not ignite and if it does, the flame must self-extinguish within 30 seconds.	UL 60950-1 Clause 4.7.3.1	PASS	After the material ignited, the flame continued to propagate but self-extinguished upon removal of the test flame. Sections Tested: Top and bottom Plastic Enclosure

Section D: Labelling and Housing

AC Adapter Model:	D			
Product Label				
	<i>Circle One When Necessary</i>			
Accurate spelling		(Y)	N	
Manufacturer's Identification		(Y)	N	
Country of origin	China			
FCC Certification Mark		(Y)	N	
3rd Party Safety Mark		Y	(N)	Remarks: Only CE mark
Safety Agency File Number (if any)	N/A			
Serial Number (SN)	N/A			
SN identical across group?	N/A			
Electrical Ratings	Input: 100-240 V, 1.8 - 0.6 A, 50/60 Hz		Output: 18.5 V, 3.5 A	
Double insulation marking		Y	(N)	
Indoor use only or Outdoor capable	Not Specified			
External Examination				
	<i>Circle One When Necessary</i>			
Construction/Assembly method	Screw Secured	Bonded or Glued	(Snap Tabs)	Other: _____
Product Weight	185.32 g			
Product Dimensions	4.25" x 1.81" x 1.19"			
Markings on AC power cord	CCC 2008010105285822 60227 IEC 52(RVV) 3x0.75mm ² 300/300V GB/T5023.5-2008			
Plug	2-pin or (3-pin)	(Polarized)	Non-polarized	Ratings: 250V, 10A,
Markings on DC power cord	N/A			
Output connector configuration	(Coaxial)	Triaxial	Pin and Socket	# of contacts:
Internal Examination				
	<i>Circle One When Necessary</i>			
Solder connections	(Mechanically Secured)	Tack Soldered	Loose Strands	Remarks: SMD
Wire gauge	Input: 19 AWG	Output: 20 AWG		
Circuit Board	(Discolored)	Conformal Coating		Ratings: None
Direct plug in blades	Mechanically Secured	Tack Soldered	Loose Strands	Remarks: N/A
Direct plug in 10 N Test		Pass	Fail	Remarks: N/A
Component condition after testing	(Discolored)	(Thermal Damage)		Remarks: Diode D5

Product information and room conditions for all the electrical tests

Product and model: CPSC Model “E”

Electrical specifications: Input: 100- 240 VAC, 1.8 – 0.6 A, 50/60 Hz

Output: 18.5 VDC, 3.5A

Record room conditions for all the tests: Temperature: between 22.9 °C and 23.7 °C

Humidity: between 49.5 %RH and 52 %RH

Other: Product purchased from [REDACTED]



Section A: Electrical Performance Tests

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
1	Output Voltage (Vout) at Open Load	E1, E2, E3, E4, E5	Average Voltage: 18.96 V Max temperature of case: No change (N/C) Max temperature of output cable: N/C	Vout within ± 5% Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c Temperature only. Voltage measured as per CPSC rationale section B similar to IEC 62680-3 2013 and CSA 22.2 No. 0.23-15	PASS	Actual Output Voltages: E1: 18.93 E2: 19.00 E3: 18.89 E4: 19.10 E5: 18.90
2	Electrical Output at Rated Load	E1	Voltage: 18.53 V Output Current: 3.5 A Input Current: 1.06 A Input Power: 71.8 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Electronic DC Load bank used to maintain constant output current E1 SN: 201511SK2411
2. a	Equilibrium Temperature at Rated Load	E1	Case: 64.4 °C Output Cable: 25.5 °C Test Time: 110 minutes	Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c	PASS	Case temp did not exceed 85°C under normal load
2. b	Electrical Output at Equilibrium Temperature	E1	Voltage: 18.45 V Output Current: 3.5 A Input Current: N/A Input Power: 70.4 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	
2.1	Electrical Output at Rated Load	E2	Voltage: 18.61 V Output Current: 3.5 A Input Current: 1.08 A Input Power: 74.9 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Electronic DC Load bank used to maintain constant output current [REDACTED]
2.1 a	Equilibrium Temperature at Rated Load	E2	Case: 65.5 °C Output Cable: 25.4 °C Test Time: 130 minutes	Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c	PASS	Case temp did not exceed 85°C under normal load

2.1 b	Electrical Output at Equilibrium Temperature	E2	Voltage: 18.50 V Output Current: 3.49 A Input Current: 1.09 A Input Power: 74.3 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	
2.2	Electrical Output at Rated Load	E4	Voltage: 18.67 V Output Current: 3.5 A Input Current: 1.07 A Input Power: 75.1 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Electronic DC Load bank used to maintain constant output current [REDACTED]
2.2 a	Equilibrium Temperature at Rated Load	E4	Case: 56.0 °C Output Cable: 27.2 °C Test Time: 90 minutes	Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c	PASS	Case temp did not exceed 85°C under normal load
2.2 b	Electrical Output at Equilibrium Temperature	E4	Voltage: 18.62 V Output Current: 3.5 A Input Current: 1.07 A Input Power: 74.3 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	
2.3	Electrical Output at Rated Load	E5	Voltage: N/A Output Current: N/A Input Current: N/A Input Power: N/A	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		Unit inoperable after test #9 [REDACTED]
2.3 a	Equilibrium Temperature at Rated Load	E5	Case: N/A Output Cable: N/A Test Time: N/A	Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c		
2.3 b	Electrical Output at Equilibrium Temperature	E5	Voltage: N/A Current: N/A Input Current: N/A Input Power: N/A	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		
3	Dielectric Breakdown (Shorted output to Shorted Plug)	E1, E2, E4	Insulation breakdown: Yes Breakdown voltage: E1: 3.35 kVdc E2: 4.24 kVdc after 2s E4: 3.52 kVdc	No breakdown of the insulation Insulation breakdown is considered when the current that flows as a result of the test voltage rapidly increases in an uncontrolled manner.	UL 60950-1 Clause 5.2, 5.3.4 and table 5B Part 1	FAIL	Test voltage: 4.24 kVdc (ramping linearly from 0 V initially to the test voltage within 5 seconds and held at the test voltage for 60 seconds). Trip current: 0.5 mA.
4	Electrical Output at 150% Overload	E2	Voltage: 18.34 V Current: 5.25 A Input Current: 1.54 A Input Power: 112.2 W	No thermal, electrical, or mechanical failure	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	E1: Inoperable after test #3 E4: Immediately entered fold-back condition

4. a	Equilibrium Temperature at 150% Overload	E2	Case: 27 °C Output Cable: 25.1 °C Test Time: 2 minutes	No thermal, electrical, or mechanical failure	UL 60950-1 Clause 4.5 and table 4c UL 498 Clause 88.2	PASS	After approximately 2 minutes, the unit entered fold-back
4. b	Electrical Output at Equilibrium Temperature	E2	Voltage: 18.28 V Current: 5.25 A Input Current: N/A Power: 112.2 W		Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		After approximately 2 minutes, the unit entered fold-back
5	Short Circuit	E2, E4	Current: N/A Power: N/A Max temperature of case: N/A Max temperature of output cable: N/A	The sample shall not overheat, melt, arc or produce smoke or flame	UL 60950 Clause 5.3.1 Temperature only. Current measured as per CPSC rationale in section B and IEC 60950 Clause 2.5	PASS	Units immediately entered a fold-back condition.
9	Dielectric Breakdown following Drop Test	E3, E5	Insulation breakdown: Yes Breakdown voltage: NA	No breakdown of the insulation Insulation breakdown is considered when the current that flows as a result of the test voltage	IEC 60950-1 Clause 5.2, 5.3.4 and table 5B Part 1	FAIL	Test voltage: 4.24 kVdc (ramping linearly from 0 V initially to the test voltage within 5 seconds and held at the test voltage for 60 seconds). Trip current: 0.5 mA. Units failed during initial ramp-up.

Section B: Mechanical Testing

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
6	Security of Plug Blades	NA	NA	Shall not loosen during pull (pull force: 89N) No fire or shock hazard after push (push force: on both blades simultaneously 178 N)	CSA 22.2 No. 223-2015 Clauses 6.10.5 and 6.10.6 a UL 1310, Section 43 and 44	NA	
7	CPSC Modified Tension/Compression Test	NA	NA	Plug blades shall not loosen or create a shock or fire hazard with a force of 133.5 N	HC testing for information purposes only Derivative of ASTM F963 – 11 Clause 8.9 and 8.10	NA	
8	Drop Test	E1, E2, E3, E4, E5	No visible damage	It shall not be possible to touch inside live parts with a test probe.	CSA 22.2 No. 223-2015 Clauses 4.33 and 6.9 Similar to UL1310 46.2 UL 60950-1 Clause 4.2.6	PASS	Direct Plug-in charger: Product dropped from a height of 900 mm 3 times with different orientations for each drop Laptop charger: Product dropped from a height of 1000 ± 10 mm

10	Termination of Conductors	E1, E3	Conductors did not break away from the soldered connection	A force of 10 N is applied to the conductor near its termination point. The conductor shall not break away or pivot on its terminal.	UL 60950 clause 3.1.9	PASS	The conductors were mechanically secured to the PCB prior to soldering [REDACTED]
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Section C: Flammability Test

Observation: This test was conducted using a methane fueled Bunsen burner

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
11	30 Second Application of a 1-inch Flame	E2, E5	Ignition occurs: Yes Flaming droplets: No Self-extinguished: Yes	The material shall not ignite and if it does, the flame must self-extinguish within 30 seconds.	UL 60950-1 Clause 4.7.3.1	PASS	After the material ignited, softened, but self-extinguished upon removal of the test flame. Sections Tested: Top and bottom Plastic Enclosure

Section D: Labelling and Housing

AC Adapter Model:	E			
Product Label				
<i>Circle One When Necessary</i>				
Accurate spelling		Y	N	
Manufacturer's Identification		Y	N	
Country of origin	China			
FCC Certification Mark		Y	N	
3rd Party Safety Mark		Y	N	Remarks: Only CE mark
Safety Agency File Number (if any)	N/A			
Serial Number (SN)	██████████			Remarks: SN for sample E1
SN identical across group?		Y	N	
Electrical Ratings	Input: 120-240 V, 1.8 - 0.6 A, 50/60 Hz		Output: 18.5 V, 3.5 A	
Double insulation marking		Y	N	
Indoor use only or Outdoor capable	Not Specified			
External Examination				
<i>Circle One When Necessary</i>				
Construction/Assembly method	Screw Secured	Bonded or Glued	Snap Tabs	Other: _____
Product Weight	178.42 g			
Product Dimensions	4.19" x 1.75" x 1.13"			
Markings on AC power cord	CCC 2008010105285822 60227 IEC 52(RVV) 3x0.75mm ² 300/300V GB/T5023.5-2008			
Plug	2-pin or 3-pin	Polarized	Non-polarized	Ratings: 250V, 10A,
Markings on DC power cord	N/A			
Output connector configuration	Coaxial	Triaxial	Pin and Socket	# of contacts:
Internal Examination				
<i>Circle One When Necessary</i>				
Solder connections	Mechanically Secured	Tack Soldered	Loose Strands	Remarks: DC Sense Connection poorly soldered
Wire gauge	Input: 21 AWG	Output: 21 AWG		
Circuit Board	Discolored	Conformal Coating		Ratings: None Remarks: Conformal coating contains voids
Direct plug in blades	Mechanically Secured	Tack Soldered	Loose Strands	Remarks: N/A
Direct plug in 10 N Test		Pass	Fail	Remarks: N/A
Component condition after testing	Discolored	Thermal Damage		Remarks: All Samples. Sections of the PCB traces were vaporized

Product information and room conditions for all the electrical tests

Product and model: CPSC Model "F"

Electrical specifications: Input: 100-240 VAC, 1.8 - 0.6 A, 50/60 Hz

Output: 18.5 VDC, 3.5 A

Record room conditions for all the tests: Temperature: between 22.8 °C and 23.0 °C

Humidity: between 58 %RH and 60 %RH

Other: Product purchased from [REDACTED]



Section A: Electrical Performance Tests

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
1	Output Voltage (Vout) at Open Load	F1, F3, F4, F5	Average Voltage: 19.01 V Max temperature of case: No change (N/C) Max temperature of output cable: N/C	Vout within ± 5% Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c Temperature only. Voltage measured as per CPSC rationale section B similar to IEC 62680-3 2013 and CSA 22.2 No. 0.23-15	PASS	Actual Output Voltages: F1: 18.89 F2: N/A: Inoperable after test #9 F3: 19.03 F4: 19.08 F5: 19.02
2	Electrical Output at Rated Load	F1	Voltage: 18.51 V Output Current: 3.5 A Input Current: 1.11 A Input Power: 72.5 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Electronic DC Load bank used to maintain constant output current [REDACTED]
2. a	Equilibrium Temperature at Rated Load	F1	Case: 81.5 °C Output Cable: 29.3 °C Test Time: 135 minutes	Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c	PASS	Case temp did not exceed 85°C under normal load
2. b	Electrical Output at Equilibrium Temperature	F1	Voltage: 18.45 V Output Current: 3.5 A Input Current: 1.16 A Input Power: 72.9 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	
2.1	Electrical Output at Rated Load	F3	Voltage: 18.63 V Output Current: 3.5 A Input Current: 1.08 A Input Power: 75.7 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Electronic DC Load bank used to maintain constant output current [REDACTED]
2.1 a	Equilibrium Temperature at Rated Load	F3	Case: 92.8 °C Output Cable: 26.6 °C Test Time: 120 minutes	Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c	FAIL	Case temp exceeded 85°C under normal load

2.1 b	Electrical Output at Equilibrium Temperature	F3	Voltage: 18.53 V Current: 3.5 A Input Current: 1.12 A Input Power: 75.9 W	Vout within $\pm 5\%$ Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	
2.2	Electrical Output at Rated Load	F4	Voltage: 18.71 V Output Current: 3.5 A Input Current: Unknown* Input Power: Unknown*	Vout within $\pm 5\%$ Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Electronic DC Load bank used to maintain constant output current *: Information unavailable [REDACTED]
2.2 a	Equilibrium Temperature at Rated Load	F4	Case: 75.5 °C Output Cable: 26.6 °C Test Time: 135 minutes	Temp $\leq 85^\circ\text{C}$	UL 60950-1 Clause 4.5 and table 4c	PASS	Case temp did not exceed 85°C under normal load
2.2 b	Electrical Output at Equilibrium Temperature	F4	Voltage: 18.58 V Current: 3.5 A Input Current: 1.07 A Input Power: 44.8 W	Vout within $\pm 5\%$ Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	
2.3	Electrical Output at Rated Load	F5	Voltage: 18.63 V Output Current: 3.5 A Input Current: 1.06 A Input Power: 75.5 W	Vout within $\pm 5\%$ Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Electronic DC Load bank used to maintain constant output current [REDACTED]
2.3 a	Equilibrium Temperature at Rated Load	F5	Case: 71.4 °C Output Cable: 25.8 °C Test Time: 120 minutes	Temp $\leq 85^\circ\text{C}$	UL 60950-1 Clause 4.5 and table 4c	PASS	Case temp did not exceed 85°C under normal load
2.3 b	Electrical Output at Equilibrium Temperature	F5	Voltage: 18.5 V Current: 3.5 A Input Current: 1.08 A Input Power: 76.2 W	Vout within $\pm 5\%$ Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	
3	Dielectric Breakdown (Shorted output to Shorted Plug)	F1, F3, F4, F5	Insulation breakdown: Yes Breakdown voltage: N/A	No breakdown of the insulation Insulation breakdown is considered when the current that flows as a result of the test voltage rapidly increases in an uncontrolled manner.	UL 60950-1 Clause 5.2, 5.3.4 and table 5B Part 1	FAIL	Test voltage: 4.24 kVdc (ramping linearly from 0 V initially to the test voltage within 5 seconds and held at the test voltage for 60 seconds). Trip current: 0.5 mA. All units failed during initial ramp-up.
4	Electrical Output at 150% Overload	F1, F3, F5	Voltage: N/A Current: N/A Input Current: N/A Input Power: N/A	No thermal, electrical, or mechanical failure	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		Upon application of input power, internal component failure heard. Voltage = 0 V Current = 0 A

4. a	Equilibrium Temperature at 150% Overload	F1, F3, F5	Case: N/A Output Cable: N/A Test Time: N/A	No thermal, electrical, or mechanical failure	UL 60950-1 Clause 4.5 and table 4c UL 498 Clause 88.2		Upon application of input power, internal component failure heard. Voltage = 0 V Current = 0 A
4. b	Electrical Output at Equilibrium Temperature	F1, F3, F5	Voltage: N/A Current: N/A Input Current: N/A Power: N/A		Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		Upon application of input power, internal component failure heard. Voltage = 0 V Current = 0 A
4.1	Electrical Output at 150% Overload	F4	Voltage: 18.46 V Current: 5.25 A Input Current: 1.59 A Input Power: 66.6 W	No thermal, electrical, or mechanical failure	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	
4.1 a	Equilibrium Temperature at 150% Overload	F4	Case: 66.2 °C Output Cable: 28.8 °C Test Time: 20 minutes	No thermal, electrical, or mechanical failure	UL 60950-1 Clause 4.5 and table 4c UL 498 Clause 88.2	PASS	
4.1 b	Electrical Output at Equilibrium Temperature	F4	Voltage: 18.32 V Current: 5.25 A Input Current: 1.55 A Power: 57.4 W		Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		
5	Short Circuit	F4	Current: N/A Power: N/A Max temperature of case: N/A Max temperature of output cable: N/A	The sample shall not overheat, melt, arc or produce smoke or flame	UL 60950 Clause 5.3.1 Temperature only. Current measured as per CPSC rationale in section B and IEC 60950 Clause 2.5		Upon application of the short circuit condition, the unit immediately entered fold-back, cycling on and off.
9	Dielectric Breakdown following Drop Test	F2, F4	Insulation breakdown: Yes Breakdown voltage: F2: 4.24 kVdc F4: N/A	No breakdown of the insulation Insulation breakdown is considered when the current that flows as a result of the test voltage	IEC 60950-1 Clause 5.2, 5.3.4 and table 5B Part 1	FAIL	Test voltage: 4.24 kVdc (ramping linearly from 0 V initially to the test voltage within 5 seconds and held at the test voltage for 60 seconds). Trip current: 0.5 mA. F4: Unit failed during initial ramp-up.

Section B: Mechanical Testing

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
6	Security of Plug Blades	NA	NA	Shall not loosen during pull (pull force: 89N) No fire or shock hazard after push (push force: on both blades simultaneously 178 N)	CSA 22.2 No. 223-2015 Clauses 6.10.5 and 6.10.6 a UL 1310, Section 43 and 44	NA	
7	CPSC Modified Tension/Compression Test	NA	NA	Plug blades shall not loosen or create a shock or fire hazard with a force of 133.5 N	HC testing for information purposes only Derivative of ASTM F963 – 11 Clause 8.9 and 8.10	NA	
8	Drop Test	F1, F2, F3, F4, F5	No visible damage	It shall not be possible to touch inside live parts with a test probe.	CSA 22.2 No. 223-2015 Clauses 4.33 and 6.9 Similar to UL1310 46.2 UL 60950-1 Clause 4.2.6	PASS	Direct Plug-in charger: Product dropped from a height of 900 mm 3 times with different orientations for each drop Laptop charger: Product dropped from a height of 1000 ± 10 mm
10	Termination of Conductors	F1, F3	Conductors did not break away from the soldered connection	A force of 10 N is applied to the conductor near its termination point. The conductor shall not break away or pivot on its terminal.	UL 60950 clause 3.1.9	PASS	The conductors were mechanically secured to the PCB prior to soldering

Section C: Flammability Test

Observation: This test was conducted using a methane fueled Bunsen burner

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
11	30 Second Application of a 1-inch Flame	F2, F5	Ignition occurs: Yes Flaming droplets: No Self-extinguished: Yes	The material shall not ignite and if it does, the flame must self-extinguish within 30 seconds.	UL 60950-1 Clause 4.7.3.1	PASS	After the material ignited, the flame continued to propagate but self-extinguished upon removal of the test flame. Sections Tested: Top and bottom Plastic Enclosure

Section D: Labelling and Housing

AC Adapter Model:	F			
Product Label				
	<i>Circle One When Necessary</i>			
Accurate spelling		<input checked="" type="radio"/> Y	<input type="radio"/> N	
Manufacturer's Identification		Y	<input checked="" type="radio"/> N	
Country of origin	China			
FCC Certification Mark		<input checked="" type="radio"/> Y	<input type="radio"/> N	
3rd Party Safety Mark		Y	<input checked="" type="radio"/> N	Remarks: Only CE mark
Safety Agency File Number (if any)	N/A			
Serial Number (SN)	██████████			Remarks: SN for sample F1
SN identical across group?		Y	<input checked="" type="radio"/> N	
Electrical Ratings	Input: 100-240 V, 1.8 - 0.6 A, 50/60 Hz		Output: 18.5 V, 3.5 A	
Double insulation marking		Y	<input checked="" type="radio"/> N	
Indoor use only or Outdoor capable	Not specified			
External Examination				
	<i>Circle One When Necessary</i>			
Construction/Assembly method	Screw Secured	<input checked="" type="radio"/> Bonded or Glued	<input type="radio"/> Snap Tabs	Other: _____
Product Weight	186.93 g			
Product Dimensions	4.25" x 1.75" x 1.19"			
Markings on AC power cord	CCC 2008010105285822 60227 IEC 52(RVV) 3x0.75mm ² 300/300V GB/T5023.5-2008			
Plug	2-pin or <input checked="" type="radio"/> 3-pin	<input checked="" type="radio"/> Polarized	<input type="radio"/> Non-polarized	Ratings: 250 V, 10A
Markings on DC power cord	N/A			
Output connector configuration	Coaxial	<input checked="" type="radio"/> Triaxial	<input type="radio"/> Pin and Socket	# of contacts: _____
Internal Examination				
	<i>Circle One When Necessary</i>			
Solder connections	<input checked="" type="radio"/> Mechanically Secured	<input type="radio"/> Tack Soldered	<input type="radio"/> Loose Strands	Remarks: None
Wire gauge	Input: 18 AWG	Output: 21 AWG		
Circuit Board	Discolored	<input checked="" type="radio"/> Conformal Coating		Ratings: None
Direct plug in blades	Mechanically Secured	<input type="radio"/> Tack Soldered	<input type="radio"/> Loose Strands	Remarks: N/A
Direct plug in 10 N Test		<input type="radio"/> Pass	<input type="radio"/> Fail	Remarks: N/A
Component condition after testing	<input checked="" type="radio"/> Discolored	<input checked="" type="radio"/> Thermal Damage		Remarks: Blown component

Product information and room conditions for all the electrical tests

Product and model: CPSC Model “G” (First model tested)
 Electrical specifications: Input: 100-240 VAC, 1.8 A, 50/60 Hz
 Output: 16 VDC, 4.5 A

Record room conditions for all the tests: Temperature: between 22.9 °C and 24.9 °C
 Humidity: between 58 %RH and 60 %RH
 Other: Product purchased from [REDACTED]



Section A: Electrical Performance Tests

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
1	Output Voltage (Vout) at Open Load	G1, G2, G3, G4, G5	Average Voltage: 16.79 V Max temperature of case: No change (N/C) Max temperature of output cable: N/C	Vout within ± 5% Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c Temperature only. Voltage measured as per CPSC rationale section B similar to IEC 62680-3 2013 and CSA 22.2 No. 0.23-15	PASS FAIL (G1)	Actual Output Voltages: G1: 16.87 (Greater than +5% of 16V) G2: 16.80 G3: 16.73 G4: 16.76 G5: 16.77
2	Electrical Output at Rated Load	G1	Voltage: 16.35 V Output Current: 4.55 A Input Current: N/A Input Power: 93 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Electronic DC Load bank used to maintain constant output current
2. a	Equilibrium Temperature at Rated Load	G1	Case: 77.9 °C Output Cable: N/A Test Time: 11 minutes	Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c	PASS	Case temp did not exceed 85°C under normal load
2. b	Electrical Output at Equilibrium Temperature	G1	Voltage: N/A* Output Current: N/A* Input Current: N/A Input Power: N/A*	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		*: Unit failure occurred after approximately 11 minutes. Electrical output at shutdown unknown.
2.1	Electrical Output at Rated Load	G2	Voltage: 16.31 V Output Current: 4.5 A Input Current: N/A Input Power: 93.3 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Electronic DC Load bank used to maintain constant output current
2.1 a	Equilibrium Temperature at Rated Load	G2	Case: 126.3 °C Output Cable: N/A Test Time: 15.5 minutes	Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c	FAIL	Case temp exceeded 85°C under normal load

2.1 b	Electrical Output at Equilibrium Temperature	G2	Voltage: N/A* Output Current: N/A* Input Current: N/A Input Power: N/A*	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		*: Unit failure occurred after approximately 15.5 minutes. Electrical output at shutdown unknown.
2.2	Electrical Output at Rated Load	G4	Voltage: 16.17 V Output Current: 4.5 A Input Current: N/A Input Power: 93.4 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Electronic DC Load bank used to maintain constant output current
2.2 a	Equilibrium Temperature at Rated Load	G4	Case: 102.3 °C Output Cable: N/A Test Time: 18 minutes	Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c	FAIL	Case temp exceeded 85°C under normal load
2.2 b	Electrical Output at Equilibrium Temperature	G4	Voltage: N/A* Output Current: N/A* Input Current: N/A Input Power: N/A*	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		*: Unit failure occurred after approximately 18 minutes. Electrical output at shutdown unknown.
2.3	Electrical Output at Rated Load	G5	Voltage: 16.16 V Output Current: 4.5 A Input Current: N/A Input Power: 92.5 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Electronic DC Load bank used to maintain constant output current
2.3 a	Equilibrium Temperature at Rated Load	G5	Case: 129.8 °C Output Cable: N/A Test Time: 35 minutes	Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c	FAIL	Case temp exceeded 85°C under normal load
2.3 b	Electrical Output at Equilibrium Temperature	G5	Voltage: N/A* Output Current: N/A* Input Current: N/A Input Power: N/A*	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		*: Unit failure occurred after approximately 35 minutes. Electrical output at shutdown unknown.
3	Dielectric Breakdown (Shorted output to Shorted Plug)	G1, G2, G4, G5	Insulation breakdown: Yes Breakdown voltage: G1: 3.70 kVdc G2: 3.77 kVdc G4: 2.92 kVdc G5: 3.41 kVdc	No breakdown of the insulation Insulation breakdown is considered when the current that flows as a result of the test voltage rapidly increases in an uncontrolled manner.	UL 60950-1 Clause 5.2, 5.3.4 and table 5B Part 1	FAIL	Test voltage: 4.24 kVdc (ramping linearly from 0 V initially to the test voltage within 5 seconds and held at the test voltage for 60 seconds). Trip current: 0.5 mA. All units failed during initial ramp-up.
4	Electrical Output at 150% Overload	G1, G2, G4, G5	Voltage: N/A Current: N/A Input Current: N/A Input Power: N/A	No thermal, electrical, or mechanical failure	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		All units inoperable after Test #3

4. a	Equilibrium Temperature at 150% Overload	G1, G2, G4, G5	Case: N/A Output Cable: N/A Test Time: N/A	No thermal, electrical, or mechanical failure	UL 60950-1 Clause 4.5 and table 4c UL 498 Clause 88.2		All units inoperable after Test #3
4. b	Electrical Output at Equilibrium Temperature	G1, G2, G4, G5	Voltage: N/A Current: N/A Input Current: N/A Power: N/A		Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		All units inoperable after Test #3
5	Short Circuit	G1, G2, G4, G5	Current: N/A Power: N/A Max temperature of case: N/A Max temperature of output cable: N/A	The sample shall not overheat, melt, arc or produce smoke or flame	UL 60950 Clause 5.3.1 Temperature only. Current measured as per CPSC rationale in section B and IEC 60950 Clause 2.5		All units inoperable after Test #3
9	Dielectric Breakdown following Drop Test	G3	Insulation breakdown: Yes Breakdown voltage: 4.02 kVdc	No breakdown of the insulation Insulation breakdown is considered when the current that flows as a result of the test voltage	IEC 60950-1 Clause 5.2, 5.3.4 and table 5B Part 1	FAIL	Test voltage: 4.24 kVdc (ramping linearly from 0 V initially to the test voltage within 5 seconds and held at the test voltage for 60 seconds). Trip current: 0.5 mA. Unit failed during initial ramp-up.

Section B: Mechanical Testing

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
6	Security of Plug Blades	NA	NA	Shall not loosen during pull (pull force: 89N) No fire or shock hazard after push (push force: on both blades simultaneously 178 N)	CSA 22.2 No. 223-2015 Clauses 6.10.5 and 6.10.6 a UL 1310, Section 43 and 44	NA	
7	CPSC Modified Tension/Compression Test	NA	NA	Plug blades shall not loosen or create a shock or fire hazard with a force of 133.5 N	HC testing for information purposes only Derivative of ASTM F963 – 11 Clause 8.9 and 8.10	NA	
8	Drop Test	G1, G2, G3, G4, G5	No visible damage	It shall not be possible to touch inside live parts with a test probe.	CSA 22.2 No. 223-2015 Clauses 4.33 and 6.9 Similar to UL1310 46.2 UL 60950-1 Clause 4.2.6	PASS	Direct Plug-in charger: Product dropped from a height of 900 mm 3 times with different orientations for each drop Laptop charger: Product dropped from a height of 1000 ± 10 mm

10	Termination of Conductors	G1, G3	Conductors did not break away from the soldered connection	A force of 10 N is applied to the conductor near its termination point. The conductor shall not break away or pivot on its terminal.	UL 60950 clause 3.1.9	PASS	The conductors were mechanically secured to the PCB prior to soldering
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Section C: Flammability Test

Observation: This test was conducted using a methane fueled Bunsen burner

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
11	30 Second Application of a 1-inch Flame	G2, G5	Ignition occurs: Yes Flaming droplets: Yes Self-extinguished: No	The material shall not ignite and if it does, the flame must self-extinguish within 30 seconds.	UL 60950-1 Clause 4.7.3.1	FAIL	After the material ignited, produced flaming droplets, and continued to propagate upon removal of the test flame until it was manually extinguished. Sections Tested: Top and bottom Plastic Enclosure

Section D: Labelling and Housing

AC Adapter Model:	G			
Product Label				
<i>Circle One When Necessary</i>				
Accurate spelling		(Y)	N	
Manufacturer's Identification		Y	(N)	
Country of origin	China			
FCC Certification Mark		Y	(N)	
3rd Party Safety Mark		Y	(N)	Remarks: Only CE mark
Safety Agency File Number (if any)	N/A			
Serial Number (SN)	██████			
SN identical across group?		(Y)	N	
Electrical Ratings	Input: 120-240 V, 1.8 A, 50/60 Hz		Output: 16 V, 4.5 A	
Double insulation marking		Y	(N)	
Indoor use only or Outdoor capable	Not Specified			
External Examination				
<i>Circle One When Necessary</i>				
Construction/Assembly method	Screw Secured	(Bonded or Glued)	Snap Tabs	Other: _____
Product Weight	181.8 g			
Product Dimensions	4.94" x 2" x 1.06"			
Markings on AC power cord	CCC 2008010105285822 60227 IEC 52(RVV) 3x0.75mm ² 300/300V GB/T5023.5-2008			
Plug	2-pin or 3-pin	(Polarized)	Non-polarized	Ratings: 250V, 10A,
Markings on DC power cord	LC2014 AWM 2464 80°C 300V 20AWG VW-1			
Output connector configuration	(Coaxial)	Triaxial	Pin and Socket	# of contacts:
Internal Examination				
<i>Circle One When Necessary</i>				
Solder connections	(Mechanically Secured)	Tack Soldered	Loose Strands	Remarks: SMD
Wire gauge	Input: 22 AWG	Output: 21 AWG		
Circuit Board	Discolored	(Conformal Coating)		Ratings: None
Direct plug in blades	Mechanically Secured	Tack Soldered	Loose Strands	Remarks: N/A
Direct plug in 10 N Test		Pass	Fail	Remarks: N/A
Component condition after testing	(Discolored)	(Thermal Damage)		Remarks: All Samples

Product information and room conditions for all the electrical tests

Product and model: CPSC Model “H”

Electrical specifications: Input: 100- 240 VAC, 1.6A, 50/60 Hz

Output: 12VDC, 3.6A max

Record room conditions for all the tests: Temperature: between 22 °C and 23 °C

Humidity: between 52%RH and 57%RH

Other: Purchased on [REDACTED]

Section A: Electrical Performance Tests

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
1	Output Voltage (Vout) at Open Load	H1,H2, H4-H6	Voltage(VDC): 1) 12.45 Max temperature of case: 23-26°C Max temperature of output cable: 23-24°C	Vout within ± 5% Temp ≤ 85°C	IEC 60950-1 Clause 4.5 and table 4c Temperature only. Voltage measured as per CPSC rationale section B similar to IEC 62680-3 2013 and CSA 22.2 No. 0.23-15	PASS (temperature) FAIL (voltage)	
2	Electrical Output at Rated Load		Voltage (VDC): 1) 11.95 2) 11.77 4) 11.99 5) 11.89 6) 11.98 ACin Current: 0.75 - 0.77A AC Power: 51.9 – 52.6W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	
2. a	Equilibrium Temperature at Rated Load		Case: 49.2-57.4°C Output Cable: 27.5-29.0°C	Temp ≤ 85°C	IEC 60950-1 Clause 4.5 and table 4c	PASS	
2. b	Electrical Output at Equilibrium Temperature		Voltage (VDC): 1) 11.92 2) 11.69 4) 11.82 5) 11.89 6) 11.93 ACin Current: 0.75 - 0.77A AC Power: 51.9 – 52.6W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Iout preset to 3.6A
3	Dielectric Breakdown (Shorted output to Shorted Plug)		Insulation breakdown @ Breakdown voltage: NA 1) NONE 2) FAIL@4.24KV-54sec 4) FAIL@3.64KV 5) N/A 6) NONE	No breakdown of the insulation Insulation breakdown is considered when the current that flows as a result of the test voltage	IEC 60950-1 Clause 5.2, 5.3.4 and table 5B Part 1	PASS / FAIL	Test voltage: 4.24 kVdc (ramping linearly from 0 V initially to the maximum over a 60 second duration)

4	Electrical Output at 150% Overload		Voltage (VDC): 1) 11.69 2) 11.69 4) 11.82 5) 11.89 6) 11.93 ACin Current: 1.09-1.11A AC Power: 75.5 – 77.8W		Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		out preset to 5.4A
4. a	Equilibrium Temperature at 150% Overload	H1,H2, H4-H6	case /cable temperature: 1) n/a* 2) 90.1/33.9°C 4) n/a** 5) 79.3/34.6°C ^ 6) 79.5/33 °C ^^	No thermal, electrical, or mechanical failure	IEC 60950-1 Clause 4.5 and table 4c UL 498 Clause 88.2		*H1 failed (Vout→0) after 94 min **H4 output went into fold-back (Vout→0) when load was applied ^ H5 output intermittently went into fold-back while load was applied ^^ H5 output intermittently went into fold-back while load was applied after 50 min
4. b	Electrical Output at Equilibrium Temperature		Voltage (VDC): 1) 11.29* 2) 11.11 4) 11.44 (open-circuit)** 5) 12.45 ^ 6) 11.48 ACin Current: 0.75 - 0.77A AC Power: 51.9 – 52.6W		Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		
5	Short Circuit		Current: 0.0 A Power: NA	The sample shall not overheat, melt, arcs or produces smoking or flame	IEC 60950 Clause 5.3.1 Temperature only. Current measured as per CPSC rationale in section B and IEC 60950 Clause 2.5		All tested units went into fold-back when shorted H1 became inoperative after shorting
9	Dielectric Breakdown following Drop Test		Insulation breakdown@ Breakdown voltage 1) fail @ 3.52KV * 2) fail @ 4.026KV * 4) fail @ 4.24KV (8 sec) 5) n/a 6) pass after short-circuit	No breakdown of the insulation Insulation breakdown is considered when the current that flows as a result of the test voltage	IEC 60950-1 Clause 5.2, 5.3.4 and table 5B Part 1		Test voltage: 4.24 kVdc (ramping linearly from 0 V initially to the maximum over a 60 second duration) *H1,H2 failed after 150% overload testing

Section B: Mechanical Testing

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
6	Security of Plug Blades	NA	NA	Shall not loosen during pull (pull force: 89N) No fire or shock hazard after push (push force: on both blades simultaneously 178 N)	CSA 22.2 No. 223-2015 Clauses 6.10.5 and 6.10.6 a UL 1310, Section 43 and 44	NA	
7	CPSC Modified Tension/Compression Test	NA	NA	Plug blades shall not loosen or create a shock or fire hazard with a force of 133.5 N	HC testing for information purposes only Derivative of ASTM F963 – 11 Clause 8.9 and 8.10	NA	

8	Drop Test	H1,H2, H4-H6	No visible damage	It shall not be possible to touch inside live parts with a test probe.	CSA 22.2 No. 223-2015 Clauses 4.33 and 6.9 Similar to UL1310 46.2 UL 60950-1 Clause 4.2.6	PASS #	Laptop charger: Product dropped from a height of 1000 ± 10 mm # H6 case broke on second drop (see photo) but contact by probe is not possible
10	Termination of Conductors	NA	NA	A force of 10 N is applied to the conductor near its termination point. The conductor shall not break away or pivot on its terminal.	IEC 60950 clause 3.1.9	NA	

Section C: Flammability Test

Observation: This test was conducted using a methane-fueled Bunsen burner in the laboratory test enclosure

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
11	30 Second Application of a 1-inch Flame	H2, H5	Ignition occurs: YES Flaming droplets: YES	The material shall not ignite and if it does, the flame must self-extinguish within 30 seconds.	UL 60950-1 Clause 4.7.3.1	FAIL	Sections Tested: Top and bottom Plastic Enclosure H2: top ignited, dripped molten drops, self-extinguished, bottom did not self-extinguish H5: top ignited, dropped flaming droplets, did not self-extinguish; bottom ignited, melted, self-extinguished



Section D: Labelling and Housing

AC Adapter Model:	H			
Product Label	Circle One When Necessary			
Accurate spelling		(Y)	N	
Manufacturer's Identification		Y	(N)	Label includes "Registered" trade name
Country of origin	China			
FCC Certification Mark		Y	(N)	
3rd Party Safety Mark		Y	(N)	CE appears to be in authorized format
Safety Agency File Number (if any)	N/A			
Serial Number (SN)	N/A			
SN identical across group?	N/A			
Electrical Ratings	Input: 100-240 V~, 1.6 A, 50/60 Hz		Output: 19 V[DC], 3.6 A	
Double insulation marking		Y	(N)	
Indoor use only or Outdoor capable	[indoor only] symbol			
External Examination	Circle One When Necessary			
Construction/Assembly method		(Bonded or Glued)		Other: _____
Product Weight	187.06g			
Product Dimensions	4.1" x 1.2" x 1.75"			
Markings on AC power cord	VDE OVE KEMA-EUR CEBC H03VVH2-F2X0.75mm2 LEADER H/15382			
Plug	3-pin	Polarized	(Non-polarized)	Ratings: 250 V, 6A
Markings on DC power cord	None			
Output connector configuration		Triaxial		# of contacts: <u>5</u>
Internal Examination	Circle One When Necessary			
Solder connections	(Mechanically Secured)	Tack Soldered	(Loose Strands)	
Wire gauge	Input: 21 AWG	Output: 22 AWG		
Circuit Board		(Conformal Coating*)		Ratings: None
Direct plug in blades				Remarks: N/A
Direct plug in 10 N Test				Remarks: N/A
Component condition after testing				Remarks: moisture present

*Coating not uniformly applied

Product information and room conditions for all the electrical tests

Product and model: CPSC Model “J”

Electrical specifications: Input: 100- 240 VAC 50/60 Hz 1.6A

Output: 12VDC 3.6A max

Record room conditions for all the tests: Temperature: between 22.7 °C and 23.4 °C

Humidity: between 56%RH and 59%RH

Other: Purchased on [REDACTED]

Section A: Electrical Performance Tests

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
1	Output Voltage (Vout) at Open Load	J1 - J5	Voltage(VDC): 1) 12.45 2)12.33 3)12.35 4)12.31 5)12.25 Max temperature of case: 22.8 – 23.5°C Max temperature of output cable: 22.6-23.6°C	Vout within ± 5% Temp ≤ 85°C	IEC 60950-1 Clause 4.5 and table 4c Temperature only. Voltage measured as per CPSC rationale section B similar to IEC 62680-3 2013 and CSA 22.2 No. 0.23-15	PASS (temperature) FAIL (voltage)	
2	Electrical Output at Rated Load		Voltage (VDC): 1) 12.11 2) 12.33 3) 12.35 4) 12.31 5) 12.25 ACin Current: 0.71 - 0.72A AC Power: 52.1 – 53.3W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Iout preset to 3.6A with electronic load bank
2. a	Equilibrium Temperature at Rated Load		Case: 65.5 - 70.2°C Output Cable: 24.1-25.8°C	Temp ≤ 85°C	IEC 60950-1 Clause 4.5 and table 4c	PASS	
2. b	Electrical Output at Equilibrium Temperature		Voltage (VDC): 1) 12.11 2) 12.06 3) 12.08 4) 12.04 5) 11.97 ACin Current: 0.72 - 0.78A AC Power: 52.7 – 54.0W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	FAIL	All units began to cycle off and on after case temperature exceeded 60 °C (typically 35 to 45 minutes into the test)
3	Dielectric Breakdown (Shorted output to Shorted Plug)		Insulation breakdown @ Breakdown voltage: NA 1) PASS 2) PASS 4) PASS 5) PASS 6) PASS	No breakdown of the insulation Insulation breakdown is considered when the current that flows as a result of the test voltage	IEC 60950-1 Clause 5.2, 5.3.4 and table 5B Part 1	PASS / FAIL	Test voltage: 4.24 kVdc (ramping linearly from 0 V initially to the maximum over a 60 second duration) J1, J2, J4 were tested before the load test, J3 and J5 were tested after the load test

4	Electrical Output at 150% Overload		Voltage (VDC): 1) 0.0 2) 3) 4) 5)		Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		All units went into fold-back (Vout →0VDC)
4. a	Equilibrium Temperature at 150% Overload	J1 – J5	case /cable temperature: 1) 2) 4) 5) 6)	No thermal, electrical, or mechanical failure	IEC 60950-1 Clause 4.5 and table 4c UL 498 Clause 88.2		All units went into fold-back (Vout →0VDC)
4. b	Electrical Output at Equilibrium Temperature		Voltage (VDC): 1) 2) 3) 4) 5)		Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		All units went into fold-back (Vout →0VDC)
5	Short Circuit		Current: 0.0 A Power: NA	The sample shall not overheat, melt, arcs or produces smoking or flame	IEC 60950 Clause 5.3.1 Temperature only. Current measured as per CPSC rationale in section B and IEC 60950 Clause 2.5		All tested units went into fold-back when shorted
9	Dielectric Breakdown following Drop Test		Insulation breakdown@ Breakdown voltage 1) fail @ 3.52KV * 2) fail @ 4.026KV * 4) fail @ 4.24KV (8 sec) 5) n/a 6) pass after short-circuit	No breakdown of the insulation Insulation breakdown is considered when the current that flows as a result of the test voltage	IEC 60950-1 Clause 5.2, 5.3.4 and table 5B Part 1		Test voltage: 4.24 kVdc (ramping linearly from 0 V initially to the maximum over a 60 second duration) *H1,H2 failed after 150% overload testing

Section B: Mechanical Testing

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
6	Security of Plug Blades	J2,J4	NA	Shall not loosen during pull (pull force: 89N) No fire or shock hazard after push (push force: on both blades simultaneously 178 N)	CSA 22.2 No. 223-2015 Clauses 6.10.5 and 6.10.6 a UL 1310, Section 43 and 44	PASS	
7	CPSC Modified Tension/Compression Test	J2,J4	No displacement	Plug blades shall not loosen or create a shock or fire hazard with a force of 133.5 N	HC testing for information purposes only Derivative of ASTM F963 – 11 Clause 8.9 and 8.10	PASS	

8	Drop Test	H1,H2, H4-H6	No visible damage	It shall not be possible to touch inside live parts with a test probe.	CSA 22.2 No. 223-2015 Clauses 4.33 and 6.9 Similar to UL1310 46.2 UL 60950-1 Clause 4.2.6	PASS	Laptop charger: Product dropped from a height of 1000 ± 10 mm
10	Termination of Conductors	J4	NA	A force of 10 N is applied to the conductor near its termination point. The conductor shall not break away or pivot on its terminal.	IEC 60950 clause 3.1.9	PASS	

Section C: Flammability Test

Observation: This test was conducted using a methane-fueled Bunsen burner in the laboratory test enclosure

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
11	30 Second Application of a 1-inch Flame	J2, J5	Ignition occurs: YES Flaming droplets: NO	The material shall not ignite and if it does, the flame must self-extinguish within 30 seconds.	UL 60950-1 Clause 4.7.3.1	PASS	Sections Tested: Top and bottom Plastic Enclosure J2: both ignited, melted, self-extinguished J5: both ignited, melted, self-extinguished



Section D: Labelling and Housing

AC Adapter Model:	J			
Product Label	<i>Circle One When Necessary</i>			
Accurate spelling		(Y)	N	
Manufacturer's Identification		(Y)	N	Label includes "Registered" brand name
Country of origin	China			
FCC Certification Mark		(Y)	N	
3rd Party Safety Mark		Y	(N)	CE appears to be in authorized format
Safety Agency File Number (if any)	N/A			
Serial Number (SN)	N/A			
SN identical across group?	N/A			
Electrical Ratings	Input: 100-240 V~, 1.6 A, 50/60 Hz		Output: 19 V[DC], 3.6 A	
Double insulation marking		Y	(N)	
Indoor use only or Outdoor capable	[indoor only] symbol			
External Examination	<i>Circle One When Necessary</i>			
Construction/Assembly method		Bonded or Glued	(Snap Tabs)	Other: _____
Product Weight	164.05g			
Product Dimensions	3" x 1.5" x 2"			
Markings on AC power cord	N/A Direct Plug-in unit			
Plug	2-pin	Polarized	(Non-polarized)	Ratings: no markings
Markings on DC power cord	None			
Output connector configuration		Triaxial		# of contacts: <u> 5 </u>
Internal Examination	<i>Circle One When Necessary</i>			
Solder connections	(Mechanically Secured)	Tack Soldered	Loose Strands	Excessive Flux Residue, Poor soldering
Wire gauge	Input: 21 AWG	Output: 22 AWG		
Circuit Board		(Conformal Coating*)		Ratings: None
Direct plug in blades				Remarks: N/A
Direct plug in 10 N Test		(Pass)		Remarks: N/A
Component condition after testing				Remarks: possible solder bridge over SMD

Product information and room conditions for all the electrical tests

Product and model: CPSC Model “K”

Electrical specifications: Input: 100-240 VAC, 1.4 A, 50/60 Hz

Output: 19 VDC, 2.1-3.6A max

Power: 90 W

Record room conditions for all the tests: Temperature: between 22.6 °C and 23.3 °C

Humidity: between 58% and 61%RH

Other: Purchased on [REDACTED]

Section A: Electrical Performance Tests

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
1	Output Voltage (Vout) at Open Load	K1 – K5	Voltage (VDC): 1)19.78 2)19.70 3)19.92 4)19.64 5)19.63 Max temperature of case: 24.5 - 26.3 °C Max temperature of	Vout within ± 5% Temp ≤ 85°C	IEC 60950-1 Clause 4.5 and table 4c Temperature only. Voltage measured as per CPSC rationale section B similar to IEC 62680-3 2013 and CSA 22.2 No. 0.23-15	PASS (temperature) PASS (voltage)	
2	Electrical Output at Rated Load	K1 – K5	Voltage (VDC): 1) 19.44 2) 19.33 3) 19.59 4) 19.31 5) 19.31 AC Current: 0.98 - 0.99A AC Power: 74.5 – 76.0W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	
2. a	Equilibrium Temperature at Rated Load		Case (°C): 1) 88.1 @45min 2) 87.3 @97min 3) >100.0 @115min 4) 102.2 @140min 5) 131.4 @145min Output Cable: (unchanged)	Temp ≤ 85°C	IEC 60950-1 Clause 4.5 and table 4c	FAIL	K1 output failed at 45 minutes, K3 output failed at 115 minutes K3 thermocouple came loose mid-test K3, K4, K5 developed deformation or melting at hotspots
2. b	Electrical Output at Equilibrium Temperature		Voltage (VDC): 1) N/A* 2) 18.95* 3) 19.23 4) 18.92 5) 18.77 AC Current: 1.01 AC Power: 66.8 – 71.2W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		K1, K3 failed before reaching equilibrium
	Dielectric Breakdown (Shorted output to Shorted Plug)		Insulation breakdown: 1) n/a 2) fail @ramp-up 3) n/a 4) fail @ramp-up 5) fail @ ramp-up Breakdown voltage: NA	No breakdown of the insulation Insulation breakdown is considered when the current that flows as a result of the test voltage	IEC 60950-1 Clause 5.2, 5.3.4 and table 5B Part 1	FAIL	Test voltage: 4.24 kVdc (ramping linearly from 0 V initially to the maximum over a 60 second duration) K1, K3 could not be tested; K5 was tested after load-testing, K2, K4 were testing before load-testing

4	Electrical Output at 150% Overload	NONE	Voltage: N/A AC Current: N/A AC Power: N/A		Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		No functional units were available for overload testing
4. a	Equilibrium Temperature at 150% Overload	NONE	Case: °C Output Cable: °C s	No thermal, electrical, or mechanical failure	IEC 60950-1 Clause 4.5 and table 4c UL 498 Clause 88.2		
4. b	Electrical Output at Equilibrium Temperature	NONE	Voltage (VDC): AC Current: A AC Power:		Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		
5	Short Circuit	NONE	Current: A Power: NA Max temperature of case: °C Max temperature of output cable: °C	The sample shall not overheat, melt, arc or produce smoking or flame	IEC 60950 Clause 5.3.1 Temperature only. Current measured as per CPSC rationale in section B and IEC 60950 Clause 2.5		
9	Dielectric Breakdown following Drop Test	NONE	Insulation breakdown: No Breakdown voltage: NA	No breakdown of the insulation Insulation breakdown is considered when the current that flows as a result of the test voltage	IEC 60950-1 Clause 5.2, 5.3.4 and table 5B Part 1		Test voltage: 4.24 kVdc (ramping linearly from 0 V initially to the maximum over a 60 second duration)

Section B: Mechanical Testing

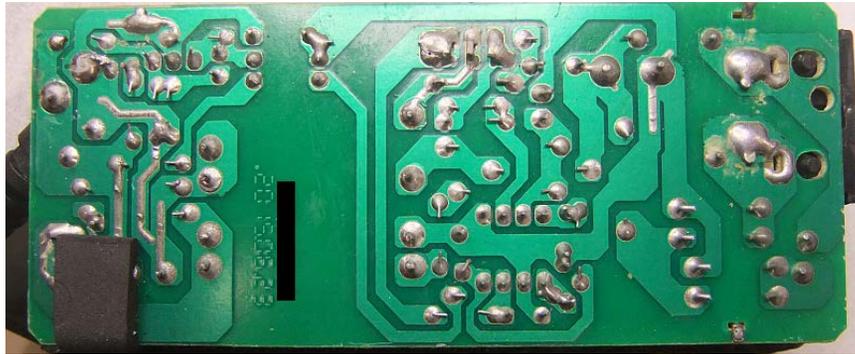
Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
6	Security of Plug Blades	NA	NA	Shall not loosen during pull (pull force: 89N) No fire or shock hazard after push (push force: on both blades simultaneously 178 N)	CSA 22.2 No. 223-2015 Clauses 6.10.5 and 6.10.6 a UL 1310, Section 43 and 44	NA	
7	CPSC Modified Tension/Compression Test	NA	NA	Plug blades shall not loosen or create a shock or fire hazard with a force of 133.5 N	HC testing for information purposes only Derivative of ASTM F963 – 11 Clause 8.9 and 8.10	NA	

8	Drop Test	K1-K5	No visible damage	It shall not be possible to touch inside live parts with a test probe.	CSA 22.2 No. 223-2015 Clauses 4.33 and 6.9 Similar to UL1310 46.2 UL 60950-1 Clause 4.2.6	PASS	Laptop charger: Product dropped from a height of 1000 ± 10 mm
10	Termination of Conductors	NA	NA	A force of 10 N is applied to the conductor near its termination point. The conductor shall not break away or pivot on its terminal.	IEC 60950 clause 3.1.9	NA	

Section C: Flammability Test

Observation: This test was conducted using a methane-fueled pilot flame produced in the CPSC laboratory test enclosure

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
11	30 Second Application of a 1-inch Flame	K2, K5	Ignition occurs: YES Flaming droplets: YES	The material shall not ignite and if it does, the flame must self-extinguish within 30 seconds.	UL 60950-1 Clause 4.7.3.1	FAIL	Sections Tested: Top and bottom Plastic of Enclosure Results: no self-extinguishment



Section D: Labelling and Housing

AC Adapter Model:	K			
Product Label	Circle One When Necessary			
Accurate spelling		(Y)	N	
Manufacturer's Identification		Y	(N)	
Country of origin	China			
FCC Certification Mark		Y	(N)	
3rd Party Safety Mark		Y	(N)	CE, NOM(Mexico) and Other Internat'l Marks
Safety Agency File Number (if any)	N/A			
Serial Number (SN)	N/A			
SN identical across group?	N/A			
Electrical Ratings	Input: 100-240 V~, 1.6 A, 50/60 Hz		Output: 19 V[DC], 2.1-3.6 A	
Double insulation marking		Y	(N)	
Indoor use only or Outdoor capable	[indoor only] symbol			
External Examination	Circle One When Necessary			
Construction/Assembly method		(Bonded or Glued)		Other: _____
Product Weight	199.29 g			
Product Dimensions	4.45" x 1.1" x 1.95"			
Markings on AC power cord	RVVZ 18AWGX3C P.V.C. WIRE			
Plug	3-pin	Polarized	(Non-polarized)	Ratings: 250 V, 6A
Markings on DC power cord	464 18AWG 60°C VW-1 300V CU AWM 60°C FT1 XIN			
Output connector configuration		Triaxial		# of contacts: _____
Internal Examination	Circle One When Necessary			
Solder connections	(Mechanically Secured)	Tack Soldered	(Loose Strands)	Remarks: Impurities/foreign deposits present
Wire gauge	Input: 27 AWG	Output: 23 AWG		
Circuit Board	Discolored	(Conformal Coating)		Ratings: None
Direct plug in blades	Mechanically Secured	Tack Soldered	Loose Strands	Remarks: N/A
Direct plug in 10 N Test		Pass	Fail	Remarks: N/A
Component condition after testing	(Discolored)	(Thermal Damage)		Remarks: Component failure

Product information and room conditions for all the electrical tests

Product and model: CPSC Model “L”

Electrical specifications: Input: 100- 240 Vac, 1.5A, 50/60 Hz

Output: 19 Vdc, 4.74A

Record room conditions for all the tests: Temperature: between 22.6 °C and 23.2 °C

Humidity: between 56 %RH and 62 %RH

Other: Product purchased from [REDACTED]



Section A: Electrical Performance Tests

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
1	Output Voltage (Vout) at Open Load	L1, L2, L3, L5, L6	Average Voltage: 19.53 V Max temperature of case: No change (N/C) Max temperature of output cable: N/C	Vout within ± 5% Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c Temperature only. Voltage measured as per CPSC rationale section B similar to IEC 62680-3 2013 and CSA 22.2 No. 0.23-15	PASS	Actual Output Voltages: L1: 19.52 L2: 19.48 L3: 19.55 L4: N/A: Inoperable after test #9 L5: 19.51 L6: 19.58
2	Electrical Output at Rated Load	L1	Voltage: 19.24 V Output Current: 4.74 A Input Current: 1.52 A Input Power: 106 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Electronic DC Load bank used to maintain constant output current
2. a	Equilibrium Temperature at Rated Load	L1	Case: 96.4 °C Output Cable: 26.8 °C Test Time: 68 minutes	Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c	FAIL	Case temp exceeded 85°C under normal load
2. b	Electrical Output at Equilibrium Temperature	L1	Voltage: 18.86 V Current: Unknown* Input Power: Unknown*	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		*: Unit failure occurred after approximately 68 minutes. Approximately 18.86 V at shutdown.
2.1	Electrical Output at Rated Load	L2	Voltage: 19.2 V Output Current: 4.74 A Input Current: 1.46 A Input Power: 105.3 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Electronic DC Load bank used to maintain constant output current
2.1 a	Equilibrium Temperature at Rated Load	L2	Case: 87.2 °C Output Cable: 27.9 °C Test Time: 90 minutes	Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c	FAIL	Case temp exceeded 85°C under normal load

2.1 b	Electrical Output at Equilibrium Temperature	L2	Voltage: 18.89 V Current: 4.74 A* Input Current: 1.48 A* Input Power: 106 W*	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		*: Unit began to cycle on/off after approximately 43 minutes. On for approximately 40 seconds, off for approximately 15 seconds.
2.2	Electrical Output at Rated Load	L5	Voltage: 19.23 V Output Current: 4.74 A Input Current: 1.49 A Input Power: 106 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Electronic DC Load bank used to maintain constant output current
2.2 a	Equilibrium Temperature at Rated Load	L5	Case: 88.1 °C Output Cable: 27.4 °C Test Time: 125 minutes	Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c	FAIL	Case temp exceeded 85°C under normal load
2.2 b	Electrical Output at Equilibrium Temperature	L5	Voltage: 18.75 V Current: 4.74 A Input Current: 1.5 A Input Power: 105.1 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	
2.3	Electrical Output at Rated Load	L6	Voltage: 19.31 V Output Current: 4.74 A Input Current: 1.48 A Input Power: 106.5 W	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Electronic DC Load bank used to maintain constant output current
2.3 a	Equilibrium Temperature at Rated Load	L6	Case: 83.4 °C Output Cable: 27.1 °C Test Time: 66 minutes	Temp ≤ 85°C	UL 60950-1 Clause 4.5 and table 4c	PASS	
2.3 b	Electrical Output at Equilibrium Temperature	L6	Voltage: 19.0 V* Current: 4.74 A* Input Current: 1.49 A* Input Power: 106.3 W*	Vout within ± 5% Iout within 90%	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	*: Unit shut down approximately 66 minutes after start of normal load test.
3	Dielectric Breakdown (Shorted output to Shorted Plug)	L1, L2, L5, L6	Insulation breakdown: No Breakdown voltage: N/A	No breakdown of the insulation Insulation breakdown is considered when the current that flows as a result of the test voltage rapidly increases in an uncontrolled manner.	UL 60950-1 Clause 5.2, 5.3.4 and table 5B Part 1	PASS	Test voltage: 4.24 kVdc (ramping linearly from 0 V initially to the test voltage within 5 seconds and held at the test voltage for 60 seconds). Trip current: 0.5 mA.
4	Electrical Output at 150% Overload	L1, L2, L5, L6	Voltage: N/A Current: N/A Input Current: N/A Input Power: N/A	No thermal, electrical, or mechanical failure	Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3	PASS	Upon application of the overload condition, all units immediately entered fold-back, cycling on and off.

4. a	Equilibrium Temperature at 150% Overload	L1, L2, L5, L6	Case: N/A Output Cable: N/A Test Time: N/A	No thermal, electrical, or mechanical failure	UL 60950-1 Clause 4.5 and table 4c UL 498 Clause 88.2	PASS	Upon application of the overload condition, all units immediately entered fold-back, cycling on and off.
4. b	Electrical Output at Equilibrium Temperature	L1, L2, L5, L6	Voltage: N/A Current: N/A Input Current: N/A Power: N/A		Voltage and current measured as per CPSC rationale in section B similar to IEC 62680-3		Upon application of the overload condition, all units immediately entered fold-back, cycling on and off.
5	Short Circuit	L1, L2, L5, L6	Current: N/A Power: N/A Max temperature of case: N/A Max temperature of output cable: N/A	The sample shall not overheat, melt, arc or produce smoke or flame	UL 60950 Clause 5.3.1 Temperature only. Current measured as per CPSC rationale in section B and IEC 60950 Clause 2.5		Upon application of the short circuit condition, all units immediately entered fold-back, cycling on and off.
9	Dielectric Breakdown following Drop Test	L1, L2, L4, L5	Insulation breakdown: No Breakdown voltage: NA	No breakdown of the insulation Insulation breakdown is considered when the current that flows as a result of the test voltage	IEC 60950-1 Clause 5.2, 5.3.4 and table 5B Part 1	PASS	Test voltage: 4.24 kVdc (ramping linearly from 0 V initially to the test voltage within 5 seconds and held at the test voltage for 60 seconds). Trip current: 0.5 mA.

Section B: Mechanical Testing

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
6	Security of Plug Blades	NA	NA	Shall not loosen during pull (pull force: 89N) No fire or shock hazard after push (push force: on both blades simultaneously 178 N)	CSA 22.2 No. 223-2015 Clauses 6.10.5 and 6.10.6 a UL 1310, Section 43 and 44	NA	
7	CPSC Modified Tension/Compression Test	NA	NA	Plug blades shall not loosen or create a shock or fire hazard with a force of 133.5 N	HC testing for information purposes only Derivative of ASTM F963 – 11 Clause 8.9 and 8.10	NA	
8	Drop Test	L1, L2, L3, L4, L5	No visible damage	It shall not be possible to touch inside live parts with a test probe.	CSA 22.2 No. 223-2015 Clauses 4.33 and 6.9 Similar to UL1310 46.2 UL 60950-1 Clause 4.2.6	PASS	Direct Plug-in charger: Product dropped from a height of 900 mm 3 times with different orientations for each drop Laptop charger: Product dropped from a height of 1000 ± 10 mm

10	Termination of Conductors	L1, L3	Conductors did not break away from the soldered connection	A force of 10 N is applied to the conductor near its termination point. The conductor shall not break away or pivot on its terminal.	UL 60950 clause 3.1.9	PASS	The conductors were mechanically secured to the PCB prior to soldering
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Section C: Flammability Test

Observation: This test was conducted using a methane fueled Bunsen burner

Test #	Test Title	Sample reported	Recorded data	Test Criteria for Pass/Fail	Standard used	Result (Pass/Fail)	Observations
11	30 Second Application of a 1-inch Flame	L2, L5	Ignition occurs: Yes Flaming droplets: No Self-extinguished: Yes	The material shall not ignite and if it does, the flame must self-extinguish within 30 seconds.	UL 60950-1 Clause 4.7.3.1	PASS	After the material ignited, the flame continued to propagate but self-extinguished upon removal of the test flame. Sections Tested: Top and bottom Plastic Enclosure

Section D: Labelling and Housing

AC Adapter Model:	L			
Product Label				
	<i>Circle One When Necessary</i>			
Accurate spelling		<input checked="" type="radio"/> Y	N	
Manufacturer's Identification		<input checked="" type="radio"/> Y	N	
Country of origin	China			
FCC Certification Mark		<input checked="" type="radio"/> Y	N	
3rd Party Safety Mark		Y	<input checked="" type="radio"/> N	Remarks: Only CE mark
Safety Agency File Number (if any)	N/A			
Serial Number (SN)	N/A			
SN identical across group?	N/A			
Electrical Ratings	Input: 100-240 V, 1.5 A, 50/60 Hz		Output: 19 V, 4.74 A	
Double insulation marking		<input checked="" type="radio"/> Y	N	
Indoor use only or Outdoor capable	Indoor Use Only			
External Examination				
	<i>Circle One When Necessary</i>			
Construction/Assembly method	Screw Secured	Bonded or Glued	<input checked="" type="radio"/> Snap Tabs	Other:
Product Weight	260.72 g			
Product Dimensions	5" x 1.94" x 1.25"			
Markings on AC power cord	CCC A062276 227 IEC 52(RVV) 300/300V 2x0.75mm ²			
Plug	<input checked="" type="radio"/> 2-pin or 3-pin	Polarized	<input checked="" type="radio"/> Non-polarized	Ratings: 125 V, 10A, UL Listed
Markings on DC power cord	RU AWM 2464 18AWG 80°C 300V VW-1 E347717 MAGIC			
Output connector configuration	<input checked="" type="radio"/> Coaxial	Triaxial	Pin and Socket	# of contacts: _____
Internal Examination				
	<i>Circle One When Necessary</i>			
Solder connections	<input checked="" type="radio"/> Mechanically Secured	Tack Soldered	Loose Strands	Remarks: None
Wire gauge	Input: 19 AWG	Output: 19 AWG		
Circuit Board	Discolored	<input checked="" type="radio"/> Conformal Coating		Ratings: 90w Note: Conformal coating not uniform
Direct plug in blades	Mechanically Secured	Tack Soldered	Loose Strands	Remarks: N/A
Direct plug in 10 N Test		Pass	Fail	Remarks: N/A
Component condition after testing	Discolored	Thermal Damage		Remarks: No damage