



TEST SPECIFICATION

Product:	Seasonal Decorative Products		
Scope:	Seasonal Decorative Products, including those with electrical components such as “twinkle lights” aka “Christmas or Holiday” lights.	Protocol No.	TYCP-LU002 (US)
		Version	1.0
		Issue Date	Sep 12, 2011
		Prepared by	Tiger Yang
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Instructions to Vendors:

Dear Valued Vendor:

Product safety is a top priority at Taymark. We, with the assistance of Intertek, a CPSC-accredited third-party testing partner or lab, have identified the various rules and regulations as well as the necessary test requirements that we need to meet in our partnership to sell products in the United States. This has been assembled into our required Test Protocol. Each product that is supplied to us must comply with this Test Protocol and any required associated test protocol(s) identified within it.

You are required by the US Law to verify the products you provide to Taymark (or any other customer marketing to children in the USA) meet the required safety standards. Likewise, Taymark is required by US Law to assure that we have documentation to confirm that you have verified that your products meet the applicable safety standards. Once you have verified that the product(s) you have supplied to us conforms to the corresponding Test Protocol(s), and the testing was conducted within the past twelve (12) months, we ask that the appropriate representative from your company provide Taymark with the proper General Certificate of Conformity (“GCC”) and the corresponding documentation that you used to support the GCC, including, where applicable and required, the CPSC-accredited third-party test data. For an example of an acceptable GCC, please go to <http://www.cpsc.gov/about/cpsia/faq/elecfaq.pdf>.

Key

†: Any element on the attached form with the following symbol (“†”) is a Mandatory Requirement to which the product(s) or components of product(s) you supply to Taymark must conform. You must perform the associated test(s) and provide Taymark with the test data to support the fact that the test(s) was (were) conducted and that the product(s) or components of product(s) meets the described requirements. You are responsible for conducting the mandatory testing, and you are responsible for any expenses incurred as a result of conducting the test(s) (including, without limitation, the costs and expenses associated with providing any samples, testing, reporting, and preparing the General Certificate of Conformity).

: The symbol (“”) on the attached form indicates that additional charges may apply. Taymark’s preferred Accredited Third-Party Testing Facility is Intertek. If you choose to use Intertek to conduct the mandatory testing, please reference Taymark and Taylor Corporation when submitting your requests for testing to Intertek as you may be able to take advantage of Taymark and Taylor Corporation’s volume discount. You may contact Intertek for a price quote and any additional information they might need in order to conduct the required testing.

Additional Accredited Third-Party Testing facilities can be found at <http://www.cpsc.gov/cgi-bin/labsearch/>.

Note:

Where there is no applicable US standard, Intertek has chosen the most relevant International Standard to assess the product safety and performance. For undated references, the latest edition of the referenced document (including any amendments) applies.

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Attribute	Test Method/Standard	Requirement / Limit
Supplemental Protocol(s)		
*Battery Operated Product	TYCP-PS001	Must all also test to the Battery Operated Product protocol if applicable. See Battery Operated product protocol posted at http://www.taymarkinc.com
*Batteries	TYCP -PS002	Must all also test to the Batteries protocol if applicable. See Batteries protocol posted at http://www.taymarkinc.com
*AC Adaptor	TYCP -PS003	Must all also test to the AC Adaptor protocol if applicable. See AC Adaptor protocol posted at http://www.taymarkinc.com
*†CA Prop 65 (mandatory in state California)	Intertek Protocol	Consent Judgment of related court case based on California Proposition 65. See http://oehha.ca.gov/prop65.html
Note: Additional cost, sample size & TAT may be required if testing to 1 or more supplemental protocol is necessary. Please refer to the above referenced supplemental protocol(s) for additional information.		
Chemical Analysis		
1. * Lead Content in Paint and Similar Surface Coating	16 CFR 1303 (Scope Widened)	Shall not exceed 90ppm (0.009% by weight) total lead.
Document Check		
2. †One Time Use Products Fair Packaging and Labeling Act OR All Other Products Uniform Packaging and Labeling Regulations	F.P. & L. Act (16 CFR 500) OR NIST Uniform Laws and Regulations Handbook 130	Manufacturer, packer, or distributor's name & address (city, state & zip)
		Product Identification
		Net quantity of contents shall be expressed in terms of weight or mass, measure, numerical count, or combination so as to give accurate information to facilitate consumer comparison (U.S. and metric units).
3. †Country of Origin Marking	19 CFR 134.11	Shall indicate country of origin legibly, permanently, and in comparable size and close proximity to any mention of country other than country in which the article was manufactured or produced. Must be visible at point of purchase.
4. Use Labelling	Visual Check	Use/care instructions that are clear and understandable shall be provided in language appropriate to destination countries
5. Verify Label Claims (if any)	Visual Check	Must comply with all claims

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6. †Toxics in Packaging	Toxics in Packaging Act	Intentional introduction of any amount of lead, mercury, cadmium or hexavalent chromium in any packaging is prohibited. Incidental presence of these metals is limited to 100 ppm total concentration of lead, mercury, cadmium and hexavalent chromium in any packaging. In lieu of testing, supplier may submit a Certificate of Compliance.
7. †Plastic Bag Warning Statement (if applicable)	Based on Various State Laws: New York, Chicago, Massachusetts, and Rhode Island State and City Laws modified	Plastic bags with a thickness less than one mil (1/1000 inch) having an opening size of five inches in diameter or more must have the following warning or an equivalent warning visible from each side of the bag. If the total length and width is more than 40 inches, this warning or an equivalent warning must repeat at 20 inch intervals and be visible on each side of the bag: Warning: To avoid danger of suffocation, keep this plastic bag away from babies and children. Do not use this bag in cribs, beds, carriages or playpens. This bag is not a toy. Massachusetts, New York, and Rhode Island provide minimum type size for the warning. The following table sets forth type sizes that will satisfy all four state requirements. Total Length and Width of Bag Size of Print 60 inches or more at least 24 point 40 to 59 inches at least 18 point 25 to 39 inches at least 14 point Less than 25 inches at least 10 point *Virginia's law is intended for dry cleaning bags only and requires at least 36 point type.
8. Safety Listing Mark	NFPA 70	Shall have valid ETL, UL or CSA listing or equivalent. Verify listing by NRTL product directory with the sample's listing number and model number.
9. †FCC Rules	Document Check	Products shall have valid FCC report if operating frequency > 9 kHz for AC, or operating frequency > 1.705MHz for battery operated product.
10. †FCC marking and instruction	Visual	Products shall have FCC required marking and instruction if operating frequency > 9 kHz for AC, or operating frequency > 1.705MHz for battery operated product.

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11. General markings	UL 588, Section 116.1.2	A product shall be legibly and permanently marked with: <ul style="list-style-type: none"> a) The manufacturer's name, trade name, or trademark, or other descriptive marking by which the organization responsible for the product may be identified; b) A distinctive model number or the equivalent; c) The voltage and current rating d) Frequency rating e) The date of other dating period of manufacture not exceeding any three consecutive months f) Temporary installation g) Indoor / outdoor use (or both as applicable) h) Lamp / Fuse replacing cautionary markings
12. Caution marking	Visual	(For bubble lights) Includes “Caution – Vial contains Methylene Chloride. If exposed to liquid, contact your local poison control hotline.” (Required only if above specified labelling is not provided) Test report is submitted by the manufacturer which indicates the composition of the liquid is not Methylene Chloride.
13. Caution marking	Visual	(For series connected string which employs non-replaceable lamps) Includes non-replaceable lamp caution.
14. Caution marking	Visual	(For products with less than 20 push-in or midget-screw lampholders, or a product with lamps not equipped with shunts) Includes “Caution – Replace lamps only with ___ volts spare lamps provided with the product.”
15. Cord tag markings	UL 588, Section 117	The markings specified in this section shall be located on a tag attached to the product within 6 inches (152.4 mm) of the face of the attachment plug, current tap, direct plug-in unit, or power inlet.
16. Carton or sheet or product or cord tag markings	UL 588, Section 118	The markings specified in this Section shall be located on the product or a tag attached to the product, on the carton in which a product is packaged, or on a stuffer sheet or instruction manual provided with the product.
17. Carton markings	UL 588, Section 119	The markings specified in this Section shall be located on the individual carton or container in which a product is packaged, where readily visible without opening the package.
18. UPC code	Actual Use	Using a commercial available bar code reader to read the UPC code printed on the package/artwork. The code readout shall match with the number underneath. Record the reading displayed on the reader.
19. Parts Inventory	Visual Check	Shall meet label claims.
Electrical Safety		
20. Packing	Visual Check	No hazard when removing the packing

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21. Workmanship – external	Visual Check	Shall have no sharp points/edges, other than those required for function. Shall have no components missing, malformed, and/or fractured.
22. Workmanship – internal	Visual Check	Solder connections shall be secured Components shall be reliably mounted on PCB or other proper fixing.
23. Mechanical Assembly	Visual Check	All mechanical parts shall be securely fixed and prevented from turning.
24. Securement of the single conductor	Visual Check	Check the securement of the single conductor CXTW wire and lampholders supported by a frame provided with the product. No unraveled braids at lampholders, attachment plugs, or other fittings
25. Movable Parts (Swivel, joints etc)	Visual Check	Movement or rotation is limited to 360 degree and parts / internal wire is crimped, pinched or/and damaged by movement or rotation.
26. Internal Wiring	Visual Check	Wireways shall not allow wires to come in contact with sharp points, edges or moving parts.
27. Power cord and fuse rating	UL 588, Section 6, 13.2.10, 13.2.4	A cord-connected appliance shall be provided with an appropriate type, length of flexible cord and fuse rating indicated in table 6.1 and 6.2. The flexible cord of class 2 circuit with a maximum available power of 50 Watts shall not less than No. 24 AWG For net lighting string employs single conductor Type CXTW flexible cord, it shall be a minimum No. 18 AWG or the wire shall twisted with a non-current carrying polymeric supporting rope.
28. Lamps	UL 588, Section 23.2, 29.3	A lamp provided with a shunt shall be provided only in a series-connected string or a decorative outfit employing 20 or more push-in or midget screw lampholders or 8 or more miniature screw lampholders A lamp employed in a parallel-connected string shall have a maximum rating of 7 watts (0.058 A at 120 V).
29. Power cord - cross section area of conductor	ASTM E 29 / ASTM D4356	The cross section area of conductor shall comply with Table 20.1 of UL1581 for the AWG claimed.
30. Plug	UL588 Section 13.4	The attachment plug, current tap, or load fitting are provided with 2-pole, 2-wire, non-grounding configuration and with the following polarization - (parallel string) Polarized - (series string) Non-polarized
31. Fuse	Visual Check	Products equipped with a non-polarized line fitting include a fuse on each conductor (fuses do not need to be replaceable)
32. Drain holes	Visual Check	Drain holes are provided in lampholders intended for outdoor use

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33. On-off switch	Visual Check	On-off switch is of the following type: <ul style="list-style-type: none"> - Single-pole when polarized plug is employed - Double-pole when non-polarized plug is employed Tungsten rated, if controls load fitting
34. Polarization	UL 588 Cl. 13.4.5 – 13.4.6	The center contact of a parallel-connected screw lampholder, the terminal or lead of a load fitting intended to be ungrounded, the overcurrent protective device in a parallel-connected product and single-pole switch shall be connected to the conductor of the power-supply cord that is intended to be ungrounded. Candelabra, intermediate, and medium base parallel strings and screw shell series strings shall be properly polarized. Series strings using push-in sockets need not be polarized
35. Series connected lampholders	Visual Check	Series connected string equipped with individual flashing lamps that operate by means of a self contained thermostatically operated shunting device consists of one of the following: <ul style="list-style-type: none"> • Not less than 18 push-in and 2 midget-screw lampholders or • Not less than 18 midget-screw and 2 miniature-screw lampholders or Not less than 35 lamps if a minimum of half the lamps are steady illuminating and one of the following; 1) all of the lamps in the string are not replaceable; 2) all of the lamps are replaceable and constructed such that flashing lamps cannot fit into lampholders intended for steady-illuminating lamps
36. Spare lamp	UL 588, Section 24	Includes at least two spare lamps for push-in, or midget, or miniature screw lampholders, or LED Includes at least four spare lamps for push-in type lamps without lamp shunts.
37. Spare fuse	UL 588, Section 7.6	Includes at least one spare fuse, if replaceable fuse is employed.
38. Leakage current test	UL 588, Section 40	The leakage current shall not exceed 0.5mA. (No conditioning)
39. Input test	UL 588, Section 42	The power input to an appliance shall be within 10% of maximum marked rating. LED lamps, the measured input current at maximum voltage shall not exceed 110% of marked rating.
40. Dielectric strength test	UL 588, Section 45	When a test voltage of 1250 Vac is applied for a period of 1 minute between a live part and any accessible part, the insulation and spacings shall not breakdown.
41. Lampholder contacts secureness	UL 588 Section 80	(For series-connected lampholders only) The lampholder contacts are not displaced more than 1/32 inch as the result of a 2-lb force applied for 1 minute to the individual wire or cord in a direction tending to force the contacts out of the body.

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42. Strain relief - cord	UL 588, Cl. 71	<p>The cord or pair of wires is to be subjected to a straight pull of 30 lbs (133 N) for an assembly with No. 18 AWG (0.82 mm²) or larger conductors and 20 lbs (89 N) if the conductors are smaller than No. 18 AWG. The pull is to be applied by suspending a weight from the cord or wires in a direction normal to the plane of the cord-entry hole. The pull is to be gradually applied and maintained for a period of 1 minute.</p> <p>After test,</p> <ul style="list-style-type: none"> Neither conductor of the pair shall become detached from the terminal to which it is connected, There shall not be exposure of live parts as determined by contact with the probe illustrated in Figure 9.1, There shall not be any breakage of the cord, and The leads shall not be displaced more than 1/16 inch (1.6 mm) from the point of entry into the device.
43. Lampholder strain relief tests - pull test	UL 588, Cl. 79.1	<p>For No. 20 AWG (0.52 mm²) or larger conductors: Lampholder connections shall withstand a force of at least 107 N with an overall average of at least 120 N for all lampholders in the string.</p> <p>For conductors smaller than No. 20 AWG (0.52 mm²): Lampholder connections shall withstand a force of at least 36 N with an overall average of at least 40 N for all lampholders in the string.</p>
44. Wire push-back relief test	UL 588 Section 47	Provides means to prevent external wire from being pushed into the enclosure and to place stress on internal connections when a casual force is applied. The force is applied until the wire buckles, or until a force of 6 lb is attained.
45. Cascade lamp burnout simulation test	UL 588, Section 83	<p>The test is intended to simulate the maximum lamp temperatures that may be attained as a result of lamp-filament burnouts in products employing series-connected lampholders with push-in or midjet or miniature screw-base lamps having internal shunts. As a result of the test, there shall not be:</p> <ol style="list-style-type: none"> Ignition of the lampholder or any decorative features of the product, Melting or distortion of the lampholder that would result in an increase in the risk of electric shock as determined by compliance with the Dielectric Voltage-Withstand Test, Section 45, Exposure of live parts either in the lamp assembly under test or in the unenergized lampholder resting on the energized lampholder as determined by contact with the accessibility probe illustrated in Figure 9.1, or Glowing, charring, or flaming of the cotton or cheesecloth specified in 83.2 (f) and (g).

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46. Overcurrent protection reliability	UL 588 Section 65	Demonstrates adequate operation and opens within 60 minutes when carrying 135% of its rated current and within 2 minutes when carrying 200% of its rated current.
47. *Downward burning rate test	UL 588, Section 50	The vertical downward burning rate of the material used in seasonal lighting product shall not be more than 4 inches (102 mm) per minute for the following parts, <ul style="list-style-type: none"> - Decorative part - Diffusers - Structural components
48. Heat resistance	UL 588 Section 78	(Series-connected strings) Lampholders withstand a 2 hours exposure to a temperature of 248degF without exposure of live parts
49. Security of blade test	UL 817, 11ed. Section 82	Each blade and pin shall be capable of withstanding a pull of 20 lbf for 2 minutes. Displacement of more than 2.4 mm is not acceptable.
50. Crush resistance	UL 588 Section 68, 82	(Fuseholder / Lampholder) Withstands without cracking or exposure of live parts a 16 lb crushing force for 1 minute while placed between two parallel maple block surfaces with fuse removed. (Fuseholder incorporated into an attachment plug is excluded) <ul style="list-style-type: none"> - Fuseholder - Lampholder - Bubble light liquid vial withstands 30 lb crushing force applied as outlined above with no liquid of fluid
51. Crush resistance	UL 588 Section 62	(Enclosure) Enclosure withstands a steady crush force of 75 lb for 1 minute when placed between two parallel maple block surfaces, with no visible damage resulting in exposure of live parts or increase in the risk of electric shock and with no cracking or denting of the enclosure which presents risk of injury.
52. Drop test	UL 588 Section 59	Enclosure withstands three drops from a height of three (3) feet with no visible damage resulting in exposure of live parts, reduction of consumer serviceability, or presenting a risk of injury <ul style="list-style-type: none"> - Hardwood surface (for indoor products) - Concrete (for outdoor strings) <p>Compliance with requirements of Dielectric voltage-withstand tests following the drop test.</p>

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53. Impact test	UL 588 Section 60, 61	No visible damage to the enclosure resulting in exposure of live parts, or effecting the function of any constructional features, or presenting a risk of injury to persons when enclosure subjected to a single impact produced by dropping or swinging a 2 inch diameter sphere, weighting 1.18 lbs from a height which produces 5 ft-lb with the following condition, <ul style="list-style-type: none"> - Room temperature - Cooled to -31degF for 3 hours (for outdoor use)
54. Standing water immersion test	UL 588 Section 86	Controller or any other enclosure intended for outdoor use and likely to be ground supported, withstands without water penetrating into the interior space, a one time 4 hour submersion in 1 foot of water.
55. Stability test	UL 588, Section 44	The appliance is to be placed on a horizontal support and tilted in the most unfavorable direction through an angle of 8 degrees. The results are considered to be acceptable if the appliance does not overturn.
56. *Rain test (For outdoor product)	In-house method	No cracking, crazing, separation of parts, runs in the coating, other detrimental effects, or loss of serviceability during handling when subjecting the product to a 1 hour application of downward spray of water at an angle of 45° to the vertical.
57. Permanence of cord tag	UL 588 Section 56	The cord tag resists tearing longer than 1/16 inch and does not separate from the cord when a 5 lb load is applied for 1 minute to the uppermost corner of the tag, farthest from the cord, and is applied vertically downward in a direction parallel to the major axis of the cord. The printing remains legible and the tag is not torn or otherwise damaged when scraped 10 times across printed areas and edges, with a force of approximately 2 lbs, using the edge of a 5/64 inch thick steel blade.
Performance Test		
58. Functional Check	Actual Use	All the major features shall be matched with the installation and use instructions and claims made on the packaging, with no inaccurate or misleading statements about the product, or any other user-friendliness problems.
59. Ease of Installation	Actual use	Follow the instructions for assembly and disassembly the product; and comment on the method of the installation. Parts shall not be easy to break during normal use.
60. Ease of Cleaning	Actual use	Follow the instructions to clean up the unit. Comment on the method of cleaning.
61. Range of operation	In-house method	The unit should operate within the voltage range of 106-127 volts.

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62. Continuous Operation Test	In-house method	Set the unit to normal operation; continuously operate for 4 hours. If any abnormal operation occurs, rate as fail and report. Polymeric material used as decorative parts shall not melt or deform in such a way as to interfere with normal operation of the product. During the test, check for excessive temperatures on supporting surface and all accessible surfaces. In case of doubt, measure the temperature rise and shall not exceed the following, External surfaces (other than lamps): 65degC (117F) If the temperatures of accessible surfaces are greater than 35degC (95F), report the location and temperature measured.
63. Durability of Switches	In-house method	Switches shall continue to function correctly after 200 cycles of operations.

Remark: Additional tests may be incurred subject to the final samples reviewed by Intertek.