Interte	Taymark Test specification		aylor
Product:	Flexible Lighting Product		
Scope:	Electrical Flexible Lighting Products	Protocol No.	TYCP-LU004 (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 <u>http://www.cpsc.gov/about/cpsia/faq/elecertfaq.pdf</u>.

<u>Key</u>

†: Any element on the attached form with the following symbol ("†") is a <u>Mandatory Requirement to which the product(s) or components of</u> <u>product(s) you supply to Taymark must conform.</u> 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.
*** 0 4 10		See AC Adaptor Protocol posted at <u>nttp://www.taymarkinc.com</u>
(mandatory in state California)		Proposition 65.
		See Http://oehha.ca.gov/prop65.html
Flexible Lighting	TYCP-LU004 (US)	Must all also test to the Flexible Lighting protocol if applicable.
		See Flexible Lighting Protocol posted at
		http://www.taymarkinc.com
Note: Additional cost, sample size & Please refer to the above reference	& TAT may be required if testing t ad supplemental protocol(s) for ac	o 1 or more supplemental protocol is necessary. Iditional 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	F.P. & L. Act (16 CFR 500)	Manufacturer, packer, or distributor's name & address (city, state & zip)
Labeling Act OR	OR NIST Uniform Laws and	Product Identification
All Other Products Uniform Packaging and Labeling Regulations	Regulations Handbook 130	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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	Attribute	Test Method/Standard	Requirement / Limit
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 diamerter 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 14 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 2388, Cls 40	On tag located less than 6" from plug face, in 1/8" high letters shall be:
		a) Catalog number and manufacturer's identifier
		b) Electrical rating (voltage and current)
		c) "WARNING – Do not mount or support flexible light in a
		manner that can damage the outer jacket or cord
		insulation."
		d) "WARNING – Risk of Fire and Electric Shock. Uncoil
		flexible light prior to plugging in."
		e) Do not install near flammable liquids.
12 Coution marking		Signal words are to be in letters not less than 3/16 high
12. Caution marking	UL 2388, CIS 40	A cautionary of warning marking intended to inform the user of a
		provided.
13. Indoor Use Markings	UL 2388, Cls. 40	Indoor use products shall have the additional markings:
		14. "CAUTION – Use indoors only."
		15. "CAUTION – Risk of Electric Shock. Do not use flexible
		lighting product or any extension cord near water or where
		Water may accumulate.
16 Outdoor Use Markings	111 2388 Cls 11	Outdoor use products shall be marked additionally with:
	02 2000, 013. 41	a) "Suitable for outdoor use" or "Suitable for indoor and
		outdoor use."
		b) "CAUTION – Risk of Electric Shock. Do not use with
		extension cord near water or where water may
		accumulate. For use only on GFCI protected circuits."
		c) "Material may become brittle when cold. Do not install
		where it may be stepped on or subject to physical
		damage."
17 Lloor Monual / Important		Signal words are to be in letters not less than 3/16 high.
Safety Instructions /	UL 2300, UIS. 42	identifying reasonable foreseeable uses or misuses of the product
Assembly Instructions		It shall also include instructions regarding the installation use
Aboombly moradione		safety and maintenance.
		All accessories shall be described in the user's manual and
		provided with instructions for proper use
18. Outdoor Use Instructions	UL 2388, Cls. 43	Instructions for outdoor use shall include the verbatim
		requirements of the clause.
19. 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
20 Derte Inventoria	Viewel Check	On the reader.
20. Parts Inventory	VISUAI CRECK	Shall meet label claims.

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Attribute		Test Method/Standard	Requirement / Limit	
Elec	ctrical Safety			
21.	Packing	Visual Check	No hazard when removing the packing	
22.	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.	
23.	Workmanship – internal	Visual Check	Solder connections shall be secured Components shall be reliably mounted on PCB or other proper fixing.	
24.	Mechanical Assembly	Visual Check	All mechanical parts shall be securely fixed and prevented from turning.	
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.	Assembly and Packaging	UL 2388, Cls. 6	Shall be completely wired with each electrical connections complete. Detachable cords shall be provided if designed to be powered by detachable cord.	
28.	Light Sculptures	UL 2388, Cls. 9	Unless powered by Class 2 circuit, metal frames shall have no edges or points that may penetrate flexible light, and polymeric frames shall withstand Section 30. If sculpture folds, conductor length shall be sufficient.	
29.	Accessibility of Current Carrying Parts	UL 2388 Cls. 10	Uninsulated parts shall be enclosed per accessibility probe and end cap pull test.	
30.	Lamps	UL 2388, Cls. 13	Shall not be user replaceable or provided with an internal shunt device.	
31.	Conductors	UL 2388, Cls. 14	Shall be copper or copper alloy. Shall be 18 AWG minimums. Max current shall be per Table 14.1.	
32.	Attachment Plugs	UL 2388, Cls. 16	Shall be polarized, and NEMA 1-15 or 1-20 type. Extendable types shall have fused plug and polarized.	
33.	Interconnecting Means	UL 2388, Cls. 17	Shall not require any special assembly by user other than joining male & female connectors. Shall maintain correct polarity and be secure.	
34.	Switches, Fuses, and Controllers	UL 2388, Cls. 18	If present, shall be rated for application. Fuses shall not exceed rating of internal conductors, or 120% of switches or controllers.	
35.	Power Supply and Interconnecting Cords	UL 2388, Cls. 19	Shall be at least SPT-2, and 18 AWG and rated VW-1 or better, and per table 14.1.	
36.	Mounting Means	UL 2388, Cls. 21	Mounting means shall be included. They shall not damage the insulation. They shall not be for permanent, irremovable installation to buildings, and tools shall not be required to remove from brackets or clips.	

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Attribute	Test Method/Standard	Requirement / Limit
37. Security of Blade Test	UL 817, 11ed. Cls.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.
38. Input Test	UL 2388, Cls. 22	Report rated input (watts) and measured input. Input shall not exceed rating by more than 10% at 120 V, when maximum numbers of lights are connected.
39. Normal Temperature Test	UL 2388, Cls. 23 & 24.1	Temperature shall not exceed values of table when coiled tightly about 6" mandrel. Shall meet table 23.1
40. Insulation Resistance Test	UL 2388, Cls. 25	Shall not be less than 100 megohms between conductor and surface. Outdoor units to surface in metallic tub of salt water.
41. Dielectric Voltage Withstand	UL 2388, Cls. 26	Shall not breakdown at 1250 V ac between conductors and foil about surface.
42. Cold Bend Test	UL 2388, Cls. 31	After 4 hours at –20 °C wrap around a 3" mandrel shall be no cracking.
43. Strain Relief Test	UL 2388, Cls. 32	35 Lb for 1 min shall not cause strain on internal conductors.
44. Rain Test	UL 2388, Cls. 35	After 4-hour rain test as described, shall not fail 1250 V ac dielectric test with 300 mA trip. No water shall be on uninsulated live parts (appropriate fused plugs exempted)
Performance Test		
45. 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.
46. 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.
47. Ease of Cleaning	Actual use	Follow the instructions to clean up the unit. Comment on the method of cleaning.
48. Range of operation	In-house method	The unit should operate within the voltage range of 106-127 volts.

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49. Operation Test	In-house method	Set the unit to normal operation; continuously operate for 2 hours. Shall not indicate safety issue, fire risk, or any other abnormality.
		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 and shall not exceed the following, External surfaces (other than lamps or lenses): 90degC Operating knobs, handles for momentary contact: 50degC (metallic); 70degC (glass); 85degC (plastic) Handles or surfaces intended to be grasped: 50degC (metallic); 60degC (non-metallic) Surfaces adjacent to the portable lamp: 90degC
50. Durability of Switches	In-house method	Switches shall continue to function correctly after 200 cycles of operations.
51. Flexibility Test	In-house method	The flexible light is to be tightly wound around the 3 inch (76.2 mm) diameter mandrel for 1 complete turn and then unwound. Repeat for 100 cycles. Inspect the sample for any damage; breakage on the surface and the function shall be remained.

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

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