

PROTOCOL # 301-N

DECORATIVE_CHRISTMAS_LIGHTING_REPLACEABLE_LAMP_UL_588

Performance Test	Test Method	Samples	Test Principle/Requirements	Rating (Section or exec. Summary which failed items can be referenced)
LABELING				
Labeling / Packaging Review	FPLA 16 CFR 500 & 19 CFR 134	All Samples	<p>Should be legibly marked with the following information:</p> <p>Distributor's name, trademark or other means of identification of the manufacturer or packer & address (City, State & Zip)</p> <p>Product identification</p> <p>Net quantity of the contents in terms of weight, measure or numerical count (Metric & US Standard) or a combination so as to give accurate information and facilitate value comparison by the consumer</p> <p>Country of origin (if imported)</p>	
Verify Label Claims	Visual Check	All Samples	The labeling must comply and valid with all claims.	
FCC Labeling & Instructions	FCC Rules	All Samples	Must be listed if product is a digital device with power consumption > 6nW; and with clock frequency greater than 9 kHz for AC operated item (or greater than 1.705MHz for battery operated item).	
Regulatory Listing Mark California Energy	Visual Check	1 Sample	Should have valid NRTL Listing mark , e.g. UL , ETL or equivalent	
California Energy Commission – Appliance Energy Efficiency Compliance Regulation CEC-400	Visual Check	All Samples	<p>Covered products shall comply with the regulations and/or listed in the CEC Appliance Efficiency Database. Valid test report issued by authorized lab shall be provided for verifying.</p> <p>The products shall comply with the requirements of marking by the CEC-400 regulations.</p> <p>The CEC Appliances Efficiency Database: https://cacertappliances.energy.ca.gov/Pages/ApplianceSearch.aspx</p> <p>The product shall be marked with:</p> <ul style="list-style-type: none"> - Manufacturer name or trademark - Model no. - Date or date code of manufacturer 	
Import Permit (For Natural Materials Only)	US Department of Agriculture Animal and Plant Health Inspection Service (APHIS), Plant Protection and Quarantine (PPQ)	All Samples	<p>Product shall not have prohibited materials present per US Department of Agriculture, Animal and Plant Health Inspection Service (APHIS), Plant Protection and Quarantine (PPQ)</p> <p>Documentation and/ or proper permit(s) for specific product shall be supplied along with Testing Request form and samples.</p> <p>Permit information may be found at: https://www.aphis.usda.gov/wps/portal/aphis/home/</p> <p>It is the vendor's responsibility for the compliance to relevant requirements.</p>	
For External power supplies efficiency – labeling (if applicable)	10 CFR 430	All Samples	<p>EPS shall be listed in DOE Compliance Certification Database: http://www.regulations.doe.gov/certification-data/</p> <p>In additional, EPS shall be marked with the applicable Efficiency Level:</p> <p>Direct operation EPS: VI or above Indirect operation class A EPS: IV or above</p>	

For External power supplies (if applicable)	10 CFR 430	All Samples	<p>Efficiency and No load power use shall comply with the requirements of 10 CFR 430.32 (W).</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Direct Operation, AC-DC, Low-Voltage with nameplate output voltage less than 3 voltage and nameplate output current greater than or equal to 1,000 milliamps and charges the battery of a product that is fully or primarily motor operated 2. An external power supply that requires Federal Food and Drug Administration (FDA) listing and approval as a medical device in accordance with section 513 of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 360(c)) 3. An AC- to- AC external power supply with a nameplate output of 20 watts or more, that is certified to the Secretary as being designed to be connected to a security or life safety alarm or surveillance system component. <p>In lieu of testing, test report can be submitted if dated within two years.</p>	
<p>Adult Tracking Label: **If space limitations exist, contact Kohl's Quality Assurance & Product Integrity teams to discuss minimum required information: (MR.QA.PI@kohls.com).**</p>	Kohl's Requirement	All Samples	<p>Kohl's Assigned Factory Number Manufacture Date (Month/Year) UPC #</p>	
Energy star certificate (if applicable)	Energy star requirement	All Samples	<p>If the product with Energy stars logo, the Brand, model#, electrical rating etc. all available information on the energy star website shall be verified and the valid certificate report shall be provided for verified.</p>	
Energy star certificate requirement on carton(if applicable)	Energy star requirement	All Samples	<p>If the product with Energy stars logo, the package shall include below information:</p> <ul style="list-style-type: none"> - Product suitability: Indoor-only or indoor/outdoor use - Product description: (1) Number of lamps on the decorative light string (2) Total lighted length of string in metric and imperial units (3) Total rated wattage of decorative light string. - Correlated color temperature for white-light strings: Package shall indicate if "warm-white", "pure-white" or "cool-white" lam. These three terms pertain to the correlated color temperature (CCT) of the white-light lamps: Warm-white < 3500 CCT Pure-white 3500 – 5000 CCT Cool-white > 5000 CCT 	
MARKING AND INSTRUCTIONS				
Instructions	UL 588 19th Ed Sect 128.1	1 Sample	Shall provide written instructions regarding use, safety and maintenance	
PRODUCT / CORD TAG MARKINGS				
NRTL Listing Symbol	Visual Check	1 Sample	Yes/No?	
Mfr.'s Name, Trademark	UL 588 19th Ed Sect 124.1.2	1 Sample	Required	
Model Number	UL 588 19th Ed Sect 124.1.2	1 Sample	Required	
Input Voltage And Current Rating	UL 588 19th Ed Sect 124.1.2	1 Sample	Required	
Frequency Rating	UL 588 19th Ed Sect 124.1.2	1 Sample	Required	
Date Code	UL 588 19th Ed Sect 124.1.2	1 Sample	Required	
On A Tag Within 6in. Of Plug or Current Tap:				
"For Temporary (90 Days Max.) Installation And Use Only."	UL 588 19th Ed Sect 125.1.2	1 Sample	Required	
Indoor Or Indoor / Outdoor Use	UL 588 19th Ed Sect 125.1.4	1 Sample	Required	

"Always Unplug Product Before Installing Or Replacing Fuses."	UL 588 19th Ed Sect 125.2.1	1 Sample	Required	
"Always Unplug Product Before Installing Or Replacing Lamps."	UL 588 19th Ed Sect 125.3.1	1 Sample	Required	
"Caution: To Reduce The Likelihood Of Excessive Heat And Possible Damage, Use Only Decorative Lamp Accessories Packaged With This Product."	UL 588 19th Ed Sect 125.1.5	1 Sample	Required	
Candelabra Or Inter. Lamps	UL 588 19th Ed Sect 125.3.2	1 Sample	"Caution: Replace Only With The Same Type ____ W Max. ____ UL Classified Lamps."	
Medium Lamps	UL 588 19th Ed Sect 125.3.3	1 Sample	"Caution: To Reduce The Risk Of Fire Use Only Type __ Lamp (s), ____ w Max."	
Shunted Lamps	UL 588 19th Ed Sect 125.3.4	1 Sample	"Caution: To Reduce The Risk Of Overheating, Replace Burned Out Lamps Promptly. Use ____ Volt Lamps Only."	
Less Than 8 Miniature Or 10 Push – In / Midget Lamps	UL 588 19th Ed Sect 125.3.5	1 Sample	"Caution: Replace Only With ____ Volt Spare Lamps Provided With This Product."	
Product With Load Fittings:				
Series Or Series / Parallel (with a non-polarized fitting)	UL 588 19th Ed Sect 125.4.1	1 Sample	"CAUTION: This lighting string is rated _ watts (_ Amps), Do Not Overload. Connect other lighting string or decorative outfits end-to-end up to a maximum of 216 watts (1.8Amps) total."	
Series Or Series / Parallel (with nonstandard multi-pin connector)	UL 588 19th Ed Sect 125.4.2	1 Sample	a) "This lighting string is rated ____ Watts (____ Amps), do not overload. Connect end-to-end only lighting strings or decorative outfits of the same model number from the same manufacturer for a maximum total of ____ Watts (____ Amps)." For the second set of blanks the maximum total shall not exceed 216 Watts (1.8 Amps). b) "Do not replace or modify any connectors on this product, discard product if connector is damaged." c) "Make sure connectors are fully inserted and any connector rings are twisted until completely secured such that the ring can no longer be turned and the two portions of the connector are completely assembled."	
Products Without Load Fittings	UL 588 19th Ed Sect 125.5.1	1 Sample	(Current Of Over 1.75 A Or More Than 30 Parallel Lamps)" Caution: Do Not Connect To Another Lighting String, Dec. Outfit, Or Seasonal Product."	
Strings	UL 588 19th Ed Sect 125.6.1	1 Sample	Must identify either series or parallel	
Decorative Outfits	UL 588 19th Ed Sect 125.7.1	1 Sample	"Caution: This Is An Electric Product - Not A Toy! To Avoid Risk Of Fire, Burns, Personal Injury And Electric Shock It Should Not Be Played With Or Placed Where Small Children Can Reach It."	
Ornaments	UL 588 19th Ed Sect 125.9.1	1 Sample	Shall provide electrical ratings. "Disconnect the lighting string or dec. outfit from the outlet before removing a lamp and replacing it with the ornament."	
CARTON / SHEET / PRODUCT OR CORD TAG MARKINGS <i>May be found on carton, tag, product, or in stuffer sheet</i>				
Products With Power Inlets	UL 588 19th Ed Sect 126.2.1	1 Sample	"Caution: To Reduce The Risk Of Electric Shock, Use Only The Power Supply Cord Provided Or With A Cord Set Intended For Outdoor Use. Do Not Use A Frayed, Cracked Or Damaged Cord. Inspect The Cord Periodically. Do Not Abuse Cord. Do Not Carry Product By The Cord Or Yank Or Pull It To Disconnect From The Outlet. Disconnect Product When Not In Use."	
Products With Skeleton Lampholders	UL 588 19th Ed Sect 126.3.1	1 Sample	"Caution: To Reduce The Risk Of Fire, Do Not Deliberately Reposition Either Contact."	
Strings	UL 588 19th Ed Sect 126.4.1	1 Sample	"Caution: To Reduce The Risk Of Fire And Electric Shock: Do Not Install On Trees Having Needles, Leaves Or Branch Coverings Of Metal Or Materials Which Look Like Metal And Do Not Mount Or Support Strings In A Manner That Can Cut Or Damage Wire."	
Ornaments	UL 588 19th Ed Sect 126.5.1	1 Sample	"For Use With Series Connected String Or Dec. Outfit Which Employs ____ Voltage Push-In Type Lamps Only And Which Complies With The Requirements Of UL 588." An Electronically Operated Unit Shall Include "Connect No More Than Three Ornaments To Each Lighting String Or Outfit."	
CARTON MARKINGS				

Location	UL 588 19th Ed Sect 127.1.1	1 Sample	The marking shall be located on the individual carton or container in which a product is packaged, where readily visible without opening the packaging The location of marking shall comply with one of the following: a) When packaged in a carton, the marking shall appear on the outside front cover. b) When packaged in a bag, the marking shall appear on two opposing sides of the bag. If the bag is opaque the letters shall be printed on a high contrast background. If the bag is transparent, the letters shall be printed in black on a white opaque background. c) When packaged in a bag attached to a piece of cardboard, the marking shall appear on both sides of the cardboard. d) When packaged in a transparent polymeric covering attached to cardboard, the marking shall appear on the front of the package, on the cardboard.	
Carton or Container (Indoor only)	UL 588 19th Ed Sect 127.1.2	1 Sample	The carton or container in which a seasonal product intended for indoor use only is packaged shall be marked "For Indoor Use Only" or "Indoor Use" or equivalent	
Carton or Container (Indoor and Outdoor)	UL 588 19th Ed Sect 127.1.3	1 Sample	The carton or container in which a seasonal product intended for both indoor and outdoor use is packaged shall be marked "For Indoor and Outdoor Use", "Indoor and Outdoor Use" or "Indoor and Outdoor" or equivalent	
PHYSICAL CHARACTERISTICS				
Circuit Configuration	Visual Check	All Samples	Parallel, Series, Or Series-Parallel. if a dec. outfit, then a dec. lighting harness (Parallel).	
Dimensions (LxWxH) (In.)	FPLA/ UPLR	1 Sample	As Claimed/ measured (+3%/ - 0%)	
Weight (Lbs.)	FPLA/ UPLR	1 Sample	As Claimed/ measured (+3%/ - 0%)	
Features (Explain In Detail)	Visual Check	All Samples	Claimed / Measured	
CONSTRUCTION / WORKMANSHIP				
Workmanship	UL 588 19th Ed	1 Sample	Shall have no major defects	
Fit Characteristics Of Plug	UL 588 19th Ed Sect 12	1 Sample	Shall fit recognized receptacles without any exposure of live parts and with good conduction	
Fit Characteristics Of Lampholders	Visual Check	1 Sample	Designated lamps shall fit lamp holders to provide good conduct without exposing live parts	
Lamp Types	Visual Check	1 Sample	Shall provide claimed lamp types.	
Plug Connector:	UL 588 19th Ed Sect 13.3.3	1 Sample	Current taps shall provide no more than 3 load fittings.	
	UL 588 19th Ed Sect 13.3.5	1 Sample	The face of a cord connector, current tap or dedicated receptacle employed in a seasonal lighting product shall be: A) Circular with a minimum area equal to the area of a 9/16 inch (14.2 mm) radius circle. B) Rectangular with a minimum area equal to the area of a 1 by ¾ inch (25.4 by 19.0 mm) rectangle with a 7/32 inch (5.6 mm) radius at the corners and provided with a 3/16 inch (4.8 mm) radius half-circle projection from the center of each of the 1 inch (25.4 mm) sides.	
	UL 588 19th Ed Sect 13.3.6	1 Sample	Attachment plug for this type of product shall be rated a minimum of 8A for use with 18 AWG wire (for 18AWG products with a 5Amp fuse rating, the wiring device rating shall be a minimum of 5 amps), a minimum of 5A for use with 20 AWG wire and a minimum of 3A for use with 22 AWG wire. A current tap shall be rated 15 A.	
Plug Polarization:				
Parallel Strings And Harnesses, Those That Consume More Than 0.6 A Or Have 20 AWG Or Larger Wire	UL 588 19th Ed Sect 13.4	1 Sample	Shall be properly polarized	
Series Strings, Those That Draw Less Than 0.6 A.	UL 588 19th Ed Sect 13.4	1 Sample	Shall be non-polarized	
No. of Lampholders				
Series Connected w/Shunt	UL 588 19th Ed Sect 23.2	1 Sample	Min. of 8 miniature or 20 push-in or midget.	
Series Connected	UL 588 19th Ed Sect 28.1	1 Sample	Accommodate only one size of lamp with a minimum of 8 miniature-base lamps or 10 push-in or midget-base lamps.	

	UL 588 19th Ed Sect 28.2	1 Sample	Max. current draw shall be 0.6 A.	
Parallel Connected	UL 588 19th Ed Sect 28.1	1 Sample	Shall use only intermediate or candelabra lamps with 7 Min. WIRE 20 AWG 30 W/ Cord Connector, 60 W/O Cord Connector 18 AWG 30 W/ Cord Connector, 60 W/O Cord Connector MAX. LAMPS	
Lighting Harness	UL 588 19th Ed Sect 30.1	1 Sample	Same as above, but may use less than 7 lamps and may use medium lamps	
Workmanship	Visual Check	1 Sample	There shall be no rough areas or sharp points / edges	
Drop Tests:				
All Products With Polymeric Enclosures	UL 588 19th Ed Sect 59.1	1 Sample	Shall endure three, 3 ft. drops with no exposure of live parts or create a hazard	
Parallel Strings, Harnesses, And Dec. Outfits	Actual Use	1 Sample	Shall light after the packaged sample is dropped above	
Ornament (Electronic)	UL 588 19th Ed Sect 108.2	1 Sample	Shall endure three, 6 ft. drops, revealing no hazards	
Wiring:				
Parallel Strings	UL 588 19th Ed Sect 13.2.3	1 Sample	Min. 20 Awg, type XTWO or 18 Awg, type SPT-1 or SPT-2. All wire must be minimum insulation temperature rating of 221 °F (105 °C)	
Series Strings	UL 588 19th Ed Sect 13.2.4	1 Sample	Min. Of 22 Awg, type CXTW twisted cord. All wire must be minimum insulation Temperature rating of 221 °F (105 °C).	
Length of CXTW Conductors	UL 588 19th Ed Sect 13.2.5	1 Sample	The maximum length of the conductors shall not exceed an average, between any two fittings, of 15 times the sum of the outside diameters of the wires which are twisted together.	
Detachable Power Cord	UL 588 19th Ed Sect 13.2.6	1 Sample	A detachable power supply cord provided with a seasonal lighting product which employs a power inlet shall be type SPT-2, or the equivalent	
Motorized Devices	UL 588 19th Ed Sect 32.1, 32.3	1 Sample	120 Volts or less, no more than 3 dedicated outlets.	
Decorative Outfits With Medium Lampholder(s)	UL 588 19th Ed Sect 31.2, 31.3	1 Sample	Max temp rise of 117 °F (65 °C) on any external part of the product. Marked with its maximum tested replacement lamp wattage.	
Cord Push In Protection	UL 588 19th Ed Sect 47.1, 47.2	1 Sample	For dec. outfits, a means must be provided to prevent cord entry into the product and contacting sharp edges, moving parts, temperatures above design ratings, etc.	
OVERCURRENT PROTECTION:				
Size Requirement	UL 588 19th Ed Sect 7.4	1 Sample	See table 6.1 and 6.2 for size. Required of all products except ornaments and units powered by class 2 power units, UL 1310.	
Location	UL 588 19th Ed Sect 7.2, 7.3	1 Sample	Shall be located (1) in the attachment plug or (2) between attachment plug and first lampholder (Less than 6 in. from plug)	
Parallel Strings	UL 588 19th Ed Figs 7.1, 7.2	1 Sample	Shall have only one fuse, wired to the "Hot" connector.	
Series Strings	UL 588 19th Ed Figs 7.3, 7.4, 7.5	1 Sample	Series strings may or may not have replaceable fuses. Must have two fuses, wired to both conductors if non-polarized.	
ELECTRICAL PROPERTIES:				
Current Limits:				
Series Strings	UL 588 19th Ed Sect 121.2	1 Sample	0.6 A Max., with no more than three strings connected together (1.8 A For 22 Awg Wire)	
Parallel Strings	UL 588 19th Ed Sect 121.4	1 Sample	1.75 A Max. with load fitting, Or 3.5 A without	
Dec. Outfits	UL 588 19th Ed Sect 121.2	1 Sample	1) 0.6 A Max. with 22 Awg wire and non-polarized 2) 1.75 A for 20 Awg and polarized 3) 3.5 A Max. for 20 Awg, polarized, and marked to indicate that it is not to be connected to another	
Surface To Ground Leakage Current	UL 588 19th Ed Sect 40.1	1 Sample	From all surfaces to ground, there shall be no more than 0.5 mA	
Dielectric Breakdown	UL 588 19th Ed Sect 45.1	1 Sample	Shall withstand 1250V, one minute	
Outdoor Use	UL 588 19th Ed Sect SB 20.5	1 Sample	Repeat dielectric breakdown and current leakage tests above in simulated rain (3 Ft. water column)	
Lampholder Millivolt Drop (Series Only)	UL 588 19th Ed Sect 81.1	1 Sample	Push-In, miniature, and midget bulbs: max. 200mv	


Fuse Calibration Test	UL 588 19th Ed Sect 65.1	1 Sample	Shall open within 60 minutes @135% of rating; shall open within 2 min. @ 200% of rating	
Lamp Burnout Power (Series Lamps)	UL 588 19th Ed Sect SA 6.1	1 Sample	Lamp shall burn out within 2 min. When wattage is 3 times the area of the outside glass bulb	
PERFORMANCE				
Actual Use Testing	Actual Use	1 Sample	Should operate as intended without failure	
Effects of Humidity	Kohl's TM 31	1 Sample	No failure @ 95% RH @ 100° F (38° C) for below defined hours. Tier 1 Tier 2 24 Hours 48 Hours	
Effects of Extreme Temperature	Kohl's TM 30	1 Sample	Tier 1 : 24 Hours @ 30° F (1.1°C) and 24 Hours @ 100° F (37.7°C) - no failure. Tier 2 : 24 Hours @ 0° F (-18°C) and 24 Hours @ 120° F (49°C) - no failure. Tier 3 : 48 Hours @ 0° F (-18°C) and 48 Hours @ 120° F (49°C) - no failure.	
Cold Resistance (For Outdoor Sets)	UL 588 19th Ed Sect 61	1 Sample	Sample shall be cooled to -31.0 ±3.6 °F (-35°C) and maintained at this temperature for 3 hours. Within 30 seconds of removal from the chamber the units are to be subjected to the Impact Test described in Section 60 of this Standard. This test will swing a 2 inch diameter steel sphere weighing 1.18 pounds from a height which will produce an impact of 5 ft-lbs.	
Decorative Parts – Burning Rate	UL 588 19th Ed Sect 50	1 Sample	Specimens shall comply with the following criteria: max. 10 sec. flaming at each test flame application in the vertical position. max. 4 in. / min., downward burn rate	
Temperature Rise	UL 588 19th Ed Sect 43	1 Sample	Conduct test over 7 hour period, with cotton cheesecloth. components shall not exceed those listed in table 43.1.	
Spare Lamps	UL 588 19th Ed Sect 24.2	1 Sample	All items with push-in, miniature, or midget lamps must provide a min. of 2 spare bulbs. If the item has unshunted push-ins, then 4 spares.	
Insulation-Piercing Devices	UL 588 19th Ed Sect 54.4.3	1 Sample	The device is to be cycled 4 times between on and off 3.5 Hrs). Afterwards, device will resist a pull of 20 lbs. For 18 Awg wire, or 8 lbs. For 20 Awg or smaller.	
Cascade Burnout Test (Series Only)	UL 588 19th Ed Sect 84.1	1 Sample	There shall be no melting or ignition when the current is increased by 25%, 30%, 35%, 40%, 45%, 50%, Until lamp burnout	
Strain Relief:	UL 588 19th Ed Sect 15	1 Sample	If provided and needed because wires are not permanently assembled to the wiring device must comply with no exposure of conductors or live part	
Cord / Plug Or Current Tap:				
18 Awg Or Larger	UL 588 19th Ed Sect 71.2	1 Sample	30 lbs. for 1 min.	
Smaller Than 18 Awg	UL 588 19th Ed Sect 71.2	1 Sample	20 lbs. for 1 min.	
Blade Security	UL 588 19th Ed Sect 73.1	1 Sample	20 lbs. For 2 min.	
Conductor Insulation:				
20 Awg Or Larger	UL 588 19th Ed Sect 75.2	1 Sample	15 lbs.	
Less Than 20 Awg	UL 588 19th Ed Sect 75.2	1 Sample	10 lbs.	
Wire / Wire Horizontal:				
20 Awg Or Larger	UL 588 19th Ed Sect 79.1	1 Sample	Avg. 27 lbs. (Min. 24 lbs.)	
Secureness Of Lampholder Contacts	UL 588 19th Ed Sect 80.1	1 Sample	Shall allow max. 1/32" displacement of contact when a 2 lb. axial compression is applied to single conductor, 1 min.	
Skeleton Lampholder	UL 588 19th Ed Sect SB 7.4	1 Sample	Shall be properly polarized. When each contact is subjected to 3 lbs. In any directions, the contacts should not contact each other with or without the lamp in place.	
Envelope / Base Torque Resistance:				
Candelabra	UL 588 19th Ed Sect SB 14.2	1 Sample	Candelabra: Shall resist 10.6 in.-lbs. For 60 sec.	

Intermediate	UL 588 19th Ed Sect SB 14.2	1 Sample	Intermediate: Shall resist 15 In.-lbs. For 60 sec.
Rain Test	UL 588 19th ED Sect. 89	1 Sample	The construction of a product intended for outdoor use shall not permit the entrance of water into the interior space of the enclosure
*Replacement Bulb:			
Filament Lead (Centre and Side)	UL 588 19th Ed Sect SA 2.2.4	1 Sample	Shall not protrude more than 1 mm
Power Consumed	Std. Measure	1 Sample	As claimed / +5%
Envelope-to-Base Securement	UL 588 19th Ed Sect SA8	1 Sample	Shall withstand for 5 seconds a torque of 5 pound inches without any indication of separation of the envelope from its base
Lamp-Envelope Temperature	UL 588 19th Ed Sect. SA9 (modified)	1 Sample	Surface temperature shall not be higher than 97oC when energized at 120V 60 Hz for 5 minutes (or the rated voltage of the lamp if this is less than 90V)
Lamp Fitting	Actual Use	1 Sample	Should fit in standard UL listed socket
Filament Durability	Actual Use	1 Sample	Must withstand 100 on/off cycles with no failure at 120V
Abnormal Use	Actual Use	1 Sample	Must withstand 132V supply voltage for 4 hours

COLORFASTNESS

*Light	AATCC 16 Option 3 10AFU	1 Sample	Min. Class 4.0 @ 10hrs.
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ANALYTICAL

* Lead In Scrapable Surface Coating	ASTM E1613/E1645	All Samples	≤90 ppm (0.0090% by weight).
* CA Prop 65	Refer to Protocol 1300	All Samples	All shall be reviewed against the requirements of California Proposition 65 to determine if additional testing or labeling is required.
Lead in PVC Power Cord (Test only if No Prop 65 Warning On Package)	EPA SW846 Method #3050	1 Sample	If ≥ 0.020%Pb by weight (200ppm), then the Cal Prop 65 warning should be present  WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov
Refer to protocol Hardlines Regulatory Supplement for additional State & Federal Regulations	Refer to Protocol 1800	All Samples	All samples shall be reviewed against the requirements of the Hardlines Regulatory Supplemental Protocol (State Regulation Only) to determine if additional testing or labeling is required

ADDITIONAL NOTE:

***** It is suggested number of samples required for basic package testing only. It may vary depending on the actual samples and no. of tests that are required for testing. The number of working days will depend on the actual candle-burning hours. For large candle additional days are required to complete burn. Please consult your nearest laboratory for details.**

PROTOCOL VERSION	DESCRIPTION OF CHANGE	Revised By	Approved By
301 – 0	Initial Release	CY Chan Feb 10, 2004	Roger Mayerson Mar 08, 2004
301 – 1	Deleted M.A.V.S.	Simon Leung Dec 20, 2004	Roger Mayerson Dec 20, 2004
301 – 2	Amend labeling section, to include acceptance of ETL certification	Simon Leung Feb 14, 2005	Roger Mayerson Feb 21, 2005
301 – 3	Added A New Section for Replacement Bulbs. Updated the FCC and Prop 65 Warning Labels. Price Adjustment.	Simon Leung Oct. 31, 2008	Ro Jain Oct. 31, 2008
301-4	Added Lead in Solder Test	Elizabeth Armstrong June 8, 2009	Ro Jain June 8, 2009
301-A	Changed protocol number from 301-4 to 301-A, price adjustment	Elizabeth Armstrong April 1, 2010	Ro Jain April 1, 2010
301-B	Separate the test line of Prop 65 to supplementary protocol	Winnie Yu Mar 18, 2013	Ro Jain April 15, 2013
301-C	Differentiate the performance rating (Effect of humidity and Effects of Extreme Temperature tests) to Tier 1/Tier 2/Tier 3 Added tolerance requirements of dimensions and weight Adjusted the package price	Jeetendra Shelatkar Oct 4, 2013	Ro Jain Dec 16, 2013
301-D	Updated lead content pricing	Candy Chan Jul 30, 2014	Jeetendra Shelatkar Aug 4, 2014
301-E	Renamed in-house methods	Candy Chan Sep.4, 2014	Jeetendra Shelatkar Sept 4, 2014

301-F	Added colorfastness test	Teana Robinette April 28, 2015	Jeetendra Shelatkar April 28, 2015
301-G	Update the requirement of CEC, and add the test item of DOE	Elizabeth Armstrong March 11, 2016	Jeetendra Shelatkar March 11, 2016
301-H	Update the CEC website Revised Item "Lead In Scrapable Surface Coating" from "600ppm" to "90ppm"	Jerry Chen March 23, 2016	Jeetendra Shelatkar March 23, 2016
301-I	Update the UL588 version from 18th to 19th Add the marking location (Clause 127.1, UL588) requirement	Hanly Han April 26, 2017	Teana Robinette May 3, 2017
301-J	Updated Prop 65 Warning Verbiage	Teana Robinette June 27, 2018	Teana Robinette June 27, 2018
301-K	Updated Title	Elizabeth Armstrong May 28, 2020	Elizabeth Armstrong May 28, 2020
301-L	Added adult tracking label and import permit requirements and added energy star certificate requirements	Charlene Swanson July 8, 2020	Charlene Swanson July 8, 2020
301-M	Updated format and updated performance rating to Tier 1 and Tier 2	Violet Nelson Oct. 25, 2022	Violet Nelson Oct. 25, 2022
301-N	Added 1800 Hardlines Regulatory Supplement for additional State & Federal Regulations	Isaac Grossman February 2025	Isaac Grossman February 2025