

## General Inspection Checklist for LED bulb

### Scope:

A general quality inspection checklist for LED bulb if clients have not defined their requirement.

### Defective Classification

- \* **Critical Defect** – Defects which could result in hazardous or unsafe conditions for individuals using or maintaining the product as well as defects contravening legal regulations;
- \* **Major Defect** – Function defects reducing the usability or solidity of the product as well as obvious visual defects reducing the sales value of the product.
- \* **Minor Defect** – Defects that are unlikely to reduce the use of the product, but nevertheless may influence the sale.

Item code	Details	Defective Classification		
		Critical	Major	Minor
1	<b>Packaging check (For all sample size)</b>			
	Non-conform found	Reject		
2	<b>General appearance (For all sample size)</b>			
	A			
	Instruction (sheet)/warning/warranty etc. Printing material			
	Dirt /scratch/ unclear/ illegible/ wrong/ damaged/ wrinkled/peeled/detached/smeared/displaced		√	√
	Misleading/incorrect descriptions/claims		√	
	Wrong label/ instruction used		√	
	Missing instruction/ warning/ warranty sheet	√	√	
	Bar code label is damaged		√	√
	Two same bar code labels were respectively stuck on two cartons of one set		√	
	B			
	Appearance of unit			
	No functional sharp point and sharp edge (May injure customer)	√		
	Glass component with sharp or ragged edge		√	√
	Wrong color or material style		√	
	Deformed, damaged, scratched, dent mark, pits		√	√
	Two warning labels not be provided for laser device		√	
	Rust/corrosion on metal parts		√	
	Missing/ illegal warning/caution label or marking	√		
	Missing/illegal other label or marking		√	
	Untrimmed flash/burr		√	√
	Crack, chip		√	√



	Missing/detached/loosed part		√	
	Broken		√	
	Dirt/stain		√	√
	Coating peeled off		√	√
	Enclosure coating uneven			
	Excess gap between housing / cap			
	Excess glue on tube fixing			
	Poor coating on tube caused coating peeling off, uneven....			
	Rust / corrosion marks on any metal components.			
	Product poor finishing / electric plating/painted			
	Product with scratches / dents / flaking / contamination			
	Painting overspray/under spray		√	√
	No air holes for battery packages		√	
	Damaged wire/cord (not exposed metal)		√	√
	Damaged wire/cord (exposed metal)	√		
	Missing wire/cord protector (such as cord grip)		√	
	Wrong part (cannot satisfy using)	√	√	
	Wobble unit		√	√
	Bulb not in correct voltage			
	Enclosure assembly coming apart from housing			
	Cap assembly coming apart from housing			
	Bulb packed with incorrect wattage			
	Bulb packed with incorrect wattage			
	Bulb - contact cap poor alignment, damaged, bent, incorrect dimensions			
	Foreign matter inside housing			
	Insect/hair found from product/packaging			
<b>3</b>	<b>Bar Code verification (3pcs, at least 1 sample/item)</b>			
	Non-conform found			Reject
<b>4</b>	<b>Function check (For all sample size)</b>			
	☆ ON/OFF 5 times, check start/stop function, commuting spark,		√	
	☆ Locking device to lock switch in the ON position check if any			
	☆ Locking device to lock switch in the OFF position check, if any			
	☆ Rotation direction charging device check, if any			
	☆ Function conversion device check, if any			
	☆ Regulating device check, if any			
	☆ Other function check			
	Without any function/intermitted against reference samples and/or requirement if client		√	

TIS INSPECTION CHECKLIST

5	Data Measurement & On-site Test (all sample size for A-E, 3pcs for F-O)			
A	Hi-pot test 1. Hand-held tools ☆ For Europe and Australia market: 1250Vac, 5mA, 2s for class I ; 3750Vac, 5mA, 2s for class II ☆ For North America market: 1250Vac, 10mA, 2s for class I ; 3750Vac, 10mA, 2s for class II 2. Transportable and fixed tools ☆ For Europe market: 1250Vac, 5mA, 2s for class I ; 3750Vac, 5mA, 2s for class II ☆ For North America market: 1250Vac, 10mA, 2s for grounding tools; 3750Vac, 10mA, 2s for double insulation tools. ☆ For Australia market: 1000Vac, 5mA, 2s for equipment with earth facility. 3. For charger/adaptor: ☆ For Europe and Australia market: 3000Vac, 5mA, 2s for tool kits; 4200Vac, 5mA, 2s for individual unit ☆ For North America market: 1250Vac, 10mA, 2s;	using factory's equipment		
	Flashover continuity test	Reject		
B	Earth continuity test Inspection criteria: less than 0.1 ohm with 25A current except for stationary and fixed tools to north America market, which equal to the current rating to the largest branch-circuit over current-protective device may be employed with the tool	using factory's equipment		
	More than 0.1 ohm	Reject		
C	No-load current/power consumption test Measure after the tool has been operated for 15 Min. Over the specified range	using factory's equipment	√	
D	Charging/discharging function check for charger/battery pack No function	using factory's equipment	√	
E	Manual shock test for hand-held tools	√	√	
F	Foreign metal material in cabinet			
G	Start on at 85% rated voltage test Unit cannot start or overload protection devices operate	using factory's equipment	Reject	
H	No load speed test Over the specified value range	using factory's equipment	Pending the shipment	
H	Power supply cord pull test Inspection criteria For hand-held tools and Europe market transportable tools & charger/adaptor: Up and including 1 kg, 30N, 1s; over 1 up to and including 4kg, 60N, 1s; Over 4kg, 100N, 1s (all conducting 25 times, except transportable tool which is	using factory's equipment		



	100 times) For stationary and fixed tools to US: 35lbs, 1min, For charger/adaptor to US: 35 lbs, 1 min.			
	Longitudinal displacement more than 2mm or motion distance more than 1 mm in terminals except transportable and fix tools & charger/adaptor to US which is without displacement;	Reject		
I	Rubbing test			
	EN inspection criteria: water 15s, then petroleum spirit 15s; UL inspection criteria: 3M adhesive tape	using factory's equipment		
	Marking cannot be easily legible	Pending the shipment		
J	Set-up (Fitting) test			
	Malfunction found	Pending the shipment		
K	Stability test for bench tools			
	10 degree incline plane and method specified on part 2 for EU, AS; 7 degree incline plane for US	using factory's equipment		
L	Switch ON/OFF 50 times operating			
	Out of function		√	
M	Power supply cord length measuring	using factory's equipment		
	Less than specification or description on color box	Reject		
N	No load running time for full-charged battery pack			
	Less than the specification or description on instruction manual		√	
O	Full-charged time for battery pack	using factory's equipment		
	Over the specification on description on instruction manual	Pending the shipment		
P	Capacity of full-charged battery package check	using factory's equipment		
	Discharging at 5C current, until 0.8 voltage per battery cell			
	Discharging time less than 9 minutes	Reject		
Q	Running test on 4 hours duration			
	Malfunction found		√	
	Hi-pot test failed	Reject		
R	Size (including weight) of unit check	using factory's equipment		
	Not conformed to ref. sample or specification	Reject		
S	Drop test for hand-held tools and battery-powered tools			
	For hand-held tools: drop from 1m, 3 times or per part 2; For battery-powered tool: battery package, charger, tool, tool with battery package: 1m, 3 time	using factory's equipment		
	The function of mechanical safety devices impaired	Reject		
	Hi-pot test fail	Reject		
T	Actual operating test			
	Malfunction found	Reject		
U	Internal workmanship check	using factory's equipment		
	Plug fuse was not conformed to ref. sample or spec.	Reject		
	Test finger/test pin touch live parts	Reject		
	Earth terminal not anti-loosen device for class I tools	Reject		



	Creepage distance, clearance, distance through insulation Over the specified valve	Reject		
	Switch can ON unintentionally for bench tools	Reject		
	Unit start automatically after voltage recovery for bench tools	Reject		
	Test probe can touch moving parts through chip outlet opening/below table/guards for bench tools	Reject		
	Battery package can fit the charger slot/unit in the reverse polarity way	Reject		
	Overload protection device be of self-resetting type	Reject		
	Internal wiring is not free from sharp edge	Reject		
	The internal wiring tough the moving parts or heat-sink	Reject		
	Missing components or accessories	Reject		
	Electrolyte leakage in battery pack	Reject		
<b>6</b>	<b>Transportation drop check</b>			
	Critical defect or malfunction or broken carton cannot be shipped.	Reject		
	Wrinkle carton or slightly visual defect on unit such as slightly scratch or deformation which that does not effect on shipment purpose.	Record it in report		

\*\*\*Note\*\*\*: Check the product from 50cm distance,  
 if you can see the defect, then class as a major defect.  
 if you can't see the defect, then class as a minor defect.

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