



SHENZHEN FOREVER-LIGHT ELECTONICS CO.,LTD

Quality Control of LED Flood Light



Three Major Inspections

IQC

IPQC

OQC

Three Major Parts

Power Supply

Lighting Source

Housing

5 inspections

3 inspections

3 inspections

16 tests

8 inspections

I. IQC: (11 Inspections)

1. Power Supply: (5 Inspections)



(1) Appearance Inspection

Purpose: Make sure the model number and parameters of the marking on power supply are in accord with the specification, and the appearance meet the requirement.

Standard: GB/T2828.1-2003/ISO 2859-1:1999

Plan: GB/T2828.1-2003 General Testing Level II.



(2) Electrical Parameters Inspection

Purpose: Make sure the floating voltage, output current, power, PF and power supply efficiency are in accord with the specification.

Standard: GB/T2828.1-2003/ISO 2859-1:1999

Plan: GB/T2828.1-2003 General Testing Level II.



(3) Grounding Inspection

Purpose: Make sure the preventive measures for leakage current in accord with standard, testing rated current 25A, grounding resistance $\leq 0.1 \Omega$, testing time 5s.

Standard: GB/T2828.1-2003/ISO 2859-1:1999

Plan: GB/T2828.1-2003 General Testing Level II.



(4) High Voltage Resistance Inspection

Purpose: Make sure the safety performance of the power supply in accord with standard, testing voltage 3750v, current 3mA, testing time 5s.

Standard: GB/T2828.1-2003/ISO 2859-1:1999

Plan: GB/T2828.1-2003 General Testing Level II.



(5) Water-proof Rate Inspection

Purpose: Make sure the waterproof rate of the power supply is in accord with specification requirements, water pressure 800L/H, test time 15min and flexing angle of the spray pipe 140°.

Standard: GB/T2828.1-2003/ISO 2859-1:1999

Plan: GB/T2828.1-2003 General Testing Level II.

2. LED Light Source (3 Inspections)



(1) Appearance Inspection

Purpose: Make sure the specification and chip arrangement of the LED lighting source is in accord with order requirement, inside and outside without dust.

Standard: GB/T2828.1-2003/ISO 2859-1:1999

Plan: GB/T2828.1-2003 General Testing Level II.



(2) Photoelectric Parameters Inspection

Purpose: Make sure the color temperature, luminous efficiency, CRI and luminous flux are in accord with order requirement.

Standard: GB/T2828.1-2003/ISO 2859-1:1999

Plan: GB/T2828.1-2003 General Testing Level II.



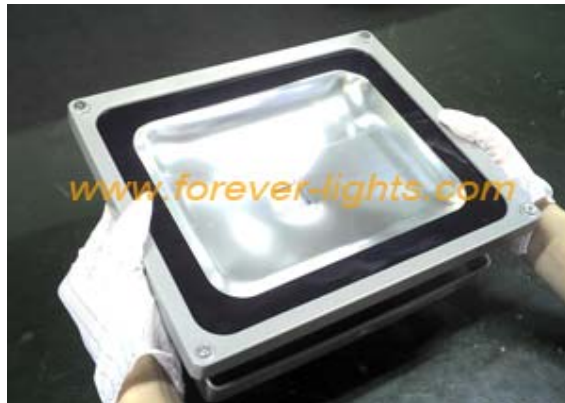
(3) High Voltage Resistance Inspection

Purpose: Make sure the insulation grade between the lighting source and substrate in accord with standard, voltage 500v, current 3mA, testing time 5s.

Standard: GB/T2828.1-2003/ISO 2859-1:1999

Plan: GB/T2828.1-2003 General Testing Level II.

3. Housing (3 Inspections)



(1) Appearance Inspection

Purpose: Make sure the specification and size of the housing are in accord with the sample and specification requirement, surface no scratch, smudge, white/black spot, deformation, damage, drops and color aberration, etc.

Standard: GB/T2828.1-2003/ISO 2859-1:1999

Plan: GB/T2828.1-2003 General Testing Level II.



(2) Trial Assembly Inspection

Purpose: Make sure the lamp structural parts are matched.

Standard: GB/T2828.1-2003/ISO 2859-1:1999

Plan: GB/T2828.1-2003 General Testing Level II.



(3) Waterproof Rate Inspection

Purpose: Make sure the waterproof rate of the power supply is in accord with specification requirements, water pressure 800L/H, test time 15min and flexing angle of the spray pipe 140°.

Standard: GB/T2828.1-2003/ISO 2859-1:1999

Plan: GB/T2828.1-2003 General Testing Level II.

II. IPQC (16 tests)



(1) Static Electricity Inspection

Purpose: To eliminate static electricity on human body, prevent electronic component is destroyed by the static electricity and LED failed during the manufacturing process.

Testing Frequency: Twice a day, once in the morning and the other in the afternoon, IPQC is in charge of the confirmation of check.



(2) First Article Inspection

Purpose: To prevent mass errors occurs. After first article has been confirmed by IPQC, the production line start the mass produce.



(3) Power Supply Adjusting inspection before Assembling

Purpose: Adjust output current of the power supply to match the actual working current of the LED lighting source and make it work properly, according to the requirements of the order, 100% check.



(4) Fixed Test for Connection between Power Lines

Purpose: Make sure that the electrodes of connection lines is connected with each other correctly, soldering correctly and firmly, water joint screwed tightly and reach water proof standard.



(5) Flow Card Management

Purpose: Every product has a matched flow card which records the order number, model number, specification, quantity, every working procedure and operator's work number, testing data, serial number of the power supply and product, in order to trace. IPQC will also follow up and confirm.



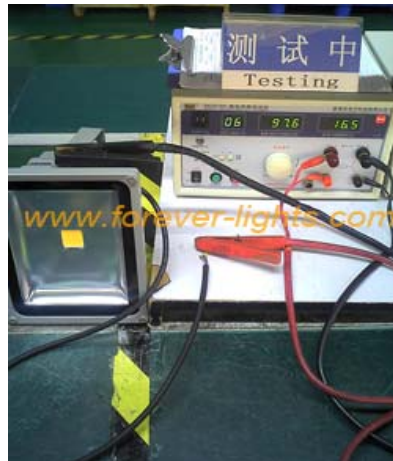
(6) Soldering iron temperature Inspection

Purpose: Control the temperature of soldering iron to avoid the excess high or low temperature causing the damage or failed work of the components or materials.



(7) Electric Screw Driver Torsion Inspection

Purpose: Control the torsion of the electric screw driver to avoid the excess high or low force causing the screw loose, broken or failed work.



(8) Grounding Test before Aging

Purpose: Make sure the preventive measures for leakage current in accord with standard, test the rated current 25A, grounding resistance $\leq 0.1 \Omega$, and testing time 5s, 100% check.



(9) High Voltage Resistance Test before Aging

Purpose: Make sure safety insulation performance of the product in accord with standard, voltage 1500V, current 3mA, testing time 5s, 100% check.



(10) Electrical Parameters Test before Aging

Purpose: Make sure the power, PF in accord with standard and the product works properly, without failed lamps and color aberration, 100% check.



(11) 48H Aging Test

Purpose: Estimate the stability of the product when it is in long-term working and avoid potential failure products. Confirm the color of different products is consistent regarding to the same batch of goods.

During the aging test, 8 times switch test for impacting during 48hours, 1min each time, frequency 30 times, aging inspection 2 hours a time.



(12) Grounding Test for Finished Products after Aging

Purpose: Make sure the preventive measures for leakage current in accord with standard,

rated current 25A, grounding resistance $\leq 0.1 \Omega$, testing time 5s, 100%check.



(13) High Voltage Resistance Inspection of Finished Products after Aging

Purpose: Make sure safety insulation performance of the product in accord with standard, voltage 1500V,current 3mA, testing time 5s, 100% check.



(14) Electrical Parameters Inspection of Finished Products after Aging

Purpose: Make sure the power, PF records in accord with standard and the product works properly, without failed lamps and color aberration, meet the customer ' s requirements, 100% check after aging.



(15) Packaging appearance Inspection

Purpose: Confirm the package appearance meet the request.



(16) Labels, Attachments and Package Inspection

Purpose: Confirm the labels, serial number, electrode, QC pass tags and instructions of the product are well finished. Reflector, external size, mark and package are in accord with the customer' s requirements.

III. OQC: (8 Inspections)



(1) Labels, Attachments and Package Sampling Inspection

Purpose: Confirm again the labels, serial number, electrode, QC pass tags and instructions of the product are well finished. Reflector, external size, mark and package are in accord with the customer' s requirements,

Standard: GB/T2828.1-2003/ISO 2859-1:1999

Plan: GB/T2828.1-2003 General Testing Level II.



(2) Appearance Sampling Inspection

Purpose: Confirm again appearance of the product meet the request.

Standard: GB/T2828.1-2003/ISO 2859-1:1999

Plan: GB/T2828.1-2003 General Testing Level II.



(3) Grounding Sampling Inspection

Purpose: Make sure the preventive measures for leakage current in accord with standard.

Standard: GB/T2828.1-2003/ISO 2859-1:1999

Plan: GB/T2828.1-2003 General Testing Level II.



(4) High Voltage Resistance Sampling Inspection

Purpose: Make sure safety insulation performance in accord with standard.

Standard: GB/T2828.1-2003/ISO 2859-1:1999

Plan: GB/T2828.1-2003 General Testing Level II.



(5) Electrical and Luminous Parameters Sampling Inspection

Purpose: Make sure again electrical and luminous parameters of product meet the customer's requirements.

Standard: GB/T2828.1-2003/ISO 2859-1:1999

Plan: GB/T2828.1-2003 General Testing Level II.



(6) Waterproof Rate Sampling Inspection

Purpose: Make sure again the waterproof rate of the product in accord with specification and customer's requirements.

Standard: GB/T2828.1-2003/ISO 2859-1:1999

Plan: GB/T2828.1-2003 General Testing Level II.



(7) Dropping Sampling Inspection

Purpose: Confirm the protective measures for the product package meet the request.



(8) Simulating transportation Vibration Sampling Inspection

Purpose: Make sure the internal assembly and soldering of the product are in good condition, without damage after vibration test(simulate the shaking situation that finished product will actually encounter during the transportation process), test speed 240rpm, test time 15mins.