Guide about Breakdown (LED LIGHT)

Guide about Breakdown

1. Failure Definition and Cause Classification

The product Failure is the lighting does not work properly after installation.
(No turn on light, flickering, weak light, afterimage)

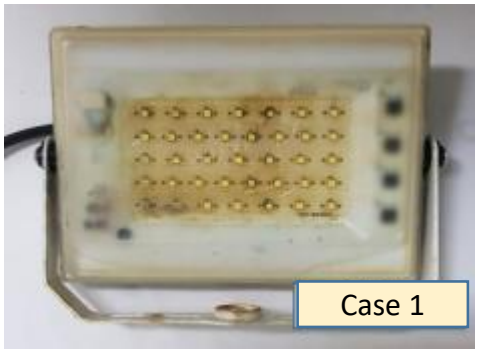
There are two main causes of failure, one of which is defective product and the other is caused by electrical factors.

2. Defective product.

This is our product probloem. We will exchange it 1: 1 within 2 years from the purchase date.

□. For Waterproof and moisture proof (Case 1)

Water droplets or large amounts of moisture appear inside the product.



□. Aluminum film coating (Case 2)

The heat sink or converter box is corroded by salt.

□. Leakage Current

The breaker breaks down after installing the lighting, 70% of which causes leakage current in electrical distribution and 30% of leakage current occurs due to poor assembly of the lighting. After disconnecting the product, check leakage current test or short circuit breaker. If you suspect that the product is defective, please send it to us.

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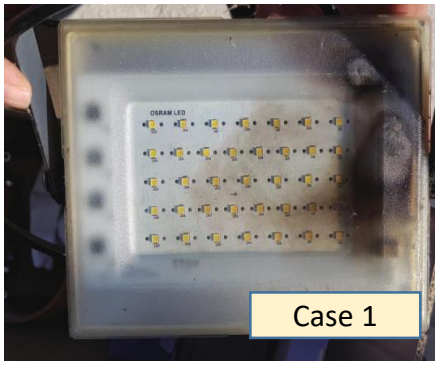
3. Breakdown caused by electrical causes – Lightning and no lighting by surge


Case 1

□. Electrical problem causes is not correspond to a free 1 : 1 exchange.

Korea Certificate and Electromagnetic Certification are designed to protect against a certain level of surge.

All of our products are designed to protect the product from surges higher than the regulations, but much higher surges (voltage, current) If it comes, the product can be damage or destroy.

□. Cases 1 and case 2 are very powerful surges suspected of lightning strikes that caused major components to burst.

Case 1 is direct lightning , Case 2 is indirect lightning

In this case, many products are turned off within a few days or 1-2 weeks, regardless of product usage time.


Case 2

□. In case 3, the circuit breaks due to the repeated influx of relatively small surges.

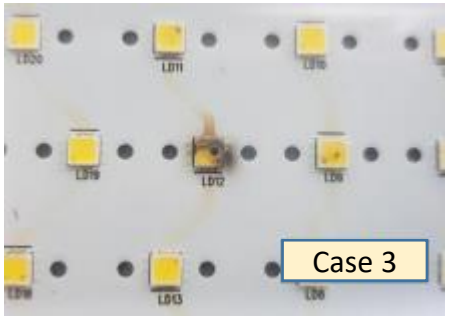
In this case, surges often come from equipment or products that use large amounts of induced power.

(Various motors such as refrigeration motors, large fans, welding machines, cutters, grinders, etc.)

It may also occur in case of contact failure, damage of wire coating, breakdown of switch or breaker.

This happens more easily, especially in high humidity conditions, which can increase in high humidity summers and high humidity environments.

In this case, one or two lights may breakdown for several weeks or months or year regardless of the product's usage period.


Case 3

□. In the case of fuse disconnection even though there is no special abnormality in appearance

In order to prevent the risk of fire, Korea Certification is legally required to cut off the fuse when the voltage is over the specific voltage. (Fire prevention due to blown fuse) As a result, a blown fuse is evidence of an overvoltage.

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3. Breakdown due to electrical causes – afterglow, intermittent tremor

□. Afterglow is when the light is turned off and the light is not turned off completely.

This is caused by the fact that the wires are not completely cut off, which is usually solved by replacing the light switch.

If it is difficult to replace the light switch, it can be solved by using a capacitor to cut off the current.

Capacitor for removing LED afterlight

□. Intermittent lighting shakes 1

This is the case when products using high current are connected in the same electric network as lighting.

(When the lights momentarily flicker when driving certain equipment, or irregularly flickering)

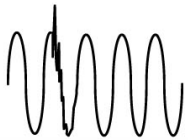
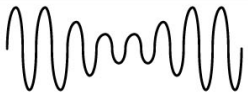
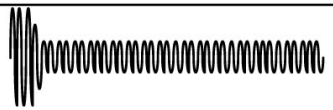
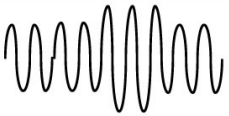
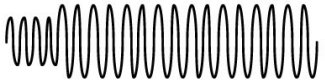
It can be solved by disconnecting the equipment electrically.

□. Intermittent lighting shakes 2

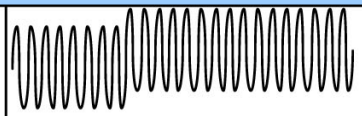
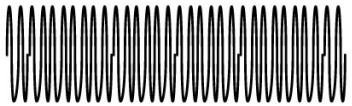
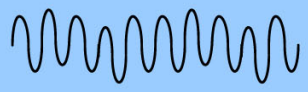
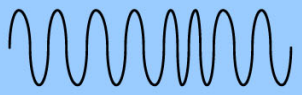
Electricity is unstable due to unstable contact of some parts or damage to the electric network connected to the lighting.

In some cases, an additional fire or damage to other equipment may occur. Therefore, you should consult a specialist to remove the cause as soon as possible.

The Seven Types of Power Problems

Disturbance Category	Wave Form	Effects	Possible Causes	Possible Solutions
1. Transient				
Impulsive		Loss of data, possible damage, system halts	Lightning, ESD, switching impulses, utility fault clearing	TVSS, maintain humidity between 35-50%
Oscillatory		Loss of data, possible damage	Switching off inductive/capacitive loads	TVSS, UPS, Reactors/Chokes, Zero Crossing Switch
2. Interruptions				
		Loss of data, possible damage, shutdown	Switching, utility faults, circuit breaker tripping, component failures	UPS
3. Sag / Undervoltage				
Sag		System halts, loss of data, shutdown	Startup loads, faults	Power Conditioner, UPS
Undervoltage		System halts, loss of data, shutdown	Utility faults, load changes	Power Conditioner, UPS
4. Swell / Overvoltage				
Swell		Nuisance tripping, equipment damage/reduced life	Load changes, utility faults	Power conditioner, UPS, ferroresonant "control" transformers
Overvoltage		equipment damage/reduced life	Load changes, utility faults	Power conditioner, UPS, ferroresonant "control" transformers

The Seven Types of Power Problems

Disturbance Category	Wave Form	Effects	Possible Causes	Possible Solutions
5. Waveform Distortion				
DC Offset		Transformers heated, ground fault current, nuisance tripping	Faulty rectifiers, power supplies	Troubleshoot and replace defective equipment
Harmonics		Transformers heated, System halts	Electronic loads (non-linear loads)	Reconfigure distribution, install k-factor transformers, use PFC power supplies
Interharmonics		light flicker, heating, communication interference	Control signals, faulty equipment, cycloconverters, frequency converters, induction motors, arcing devices	Power Conditioner, Filters, UPS
Notching		System halts, data loss	Variable speed drives, arc welders, light dimmers	Reconfigure distribution, relocate sensitive loads, install filters, UPS
Noise		System halts, data loss	Transmitters (radio), faulty equipment, ineffective grounding, proximity to EMI/RFI source	Remove transmitters, reconfigure grounding, moving away from EMI/RFI source, increase shielding, filters, isolation transformer
6. Voltage Fluctuations		System halts, light flicker	Intermittent operation of load equipment	Reconfigure distribution, Relocate sensitive loads, Power Conditioner, UPS
7. Power Frequency Variations		Synchronous equipment failure, No effect on IT equipment	Standby generators ineffectively governed	Upgrade generator governor