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# Test Report

## Surge Combination-Wave testing compliant with IEC/EN 61000-4-5

Test Report Number: 28103

Report Issue Date: 1/12/2023

**CREE**  **LIGHTING**

A COMPANY OF  **IDEAL INDUSTRIES, INC.**

Cree Lighting 9201 Washington Ave., Racine, WI 53406 - USA

Tel: +1 262-886-1900

US toll-free: 800-236-6800

Fax: 800-236-7500

<https://www.creelighting.com/>

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# Test Report

Test Report Number: 28103

Report Issue Date: 1/12/2023

**Product Description:** XI055C180V054BSJ1

Manufacturer: Cree Lighting

Headquarters: 9201 Washington Ave., Racine, WI - USA  
Address: Tel: +1 919-407-5300

Factory: 9201 Washington Ave., Racine, WI 53406 - USA  
Address: Tel: +1 262-886-1900

Tested By: T.DeBoer

This report applies only to the specific sample tested under the stated test conditions. Construction of the actual test samples has been documented.

The purpose of this conformity testing is to increase the probability of adherence to the essential requirements or conformity specifications, as appropriate.

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# Test Report

## Test Standards:

IEC 61000-4-5

## Test Facility:

Cree Lighting  
9201 Washington Ave., Racine, WI 53406 - USA

## Product Information:

Product Name:	Rul-C
Model #:	XI055C180V054BSJ1
Input Rating (V,A,W,Hz):	277, 0.21, 53, 60Hz

Prepared by:

T.DeBoer  
(Engineering Technician)

Date: 1/12/2023

Reviewed by:

R. Dahl

Date: 12/20/2022

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# Test Report

## 1. Summary of Test and Results

### 1.1 Description of Test Results

This test was performed on the product described on page 2. Other test sections include test name, the specified test method, a list of the actual test equipment used, a documentation photo, and the test results.

Test (Immunity)		Test Result
Surge Combination-Wave Immunity Test	IEC 61000-4-5	PASS

### 1.2 Test Equipment

Asset #	Description	Manufacture	Model #	Serial #	Cal Date
8326	Power Analyzer	Xitron	2801		6/29/2021
8446	Fluke	287	287		6/28/2021
8015	Fluke	287	287		6/28/2021
1232	Haefely		psurge 30.2		11/15/2021
1231	Haefely		FP-Surge 3010		11/15/2021

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# Test Report

## 2. Test Setup and Test Data

### 2.1 Test Specification

#### 1.2/50 $\mu$ S – 8/20 $\mu$ S Combination-Wave test per IEEE C62.41.2/ANSI C136.2-2015

Parameter	Test level/configuration		
1.2/50 $\mu$ S open-circuit voltage peak	Typical: 6KV	Enhanced: 10KV	Extreme: 20KV
8/20 $\mu$ S short-circuit current peak	Typical: 3kA	Enhanced: 5kA	Extreme: 10kA
Coupling modes	L1 to PE, L2 to PE, L1 to L2, L1+L2 to PE		
Polarity and phase angle	Positive at 90° and negative at 270°		
Consecutive test strikes	5 for each coupling mode and polarity/phase angle combination		
Time between strikes	1 minute maximum between consecutive strikes		
Total number of strikes single input voltage	5 strikes x 4 coupling modes x 2 polarity/phase angles (40 strikes)		
Total number of strikes for wide range input voltage	5 strikes x 4 coupling modes x 1 polarity/phase angles (positive at 90°) at minimum input voltage followed by 5 strikes x 4 coupling modes x 1 polarity/phase angles (negative at 270°) at maximum input voltage. (40 strikes)		

### 2.2 Test Procedure:

Surge testing is compliant with IEC 61000-4-5

The 1,2/50  $\mu$ S surge is to be applied to the EUT power supply terminals via the capacitive coupling/decoupling network. Decoupling networks are required in order to avoid possible adverse effects on equipment not under test that may be powered by the same lines and to provide sufficient decoupling impedance to the surge wave so that the specified wave may be applied on the lines under test.

For purposes of this test, power ports are considered to be only those ports directly connected to the a.c. mains or distributed d.c. power systems. If not otherwise specified the power cord between the EUT and the coupling/decoupling network shall not exceed 2m in length.

The DUT must function normally and show no evidence of failure following the completion of a Combination-Wave Test. A DUT failure will be deemed to have occurred if either of the following conditions exists following the completion of the electrical transient immunity testing:

The DUT noticeably fails to operate as intended - A hard power reset is required to return the DUT to normal operation - Any of the post-test measurements, other than THD-I, vary from the corresponding pre-test measurements greater than 2% - The THD-I post-test measurement varies from the pre-test measurement greater than 10% - The DUT or any component in the DUT has ignited or shows evidence of melting. Evidence of cracking, splitting, rupturing, or smoke damage on any component used to provide electrical immunity protection is acceptable. Evidence of cracking, splitting, rupturing, or smoke damage on any other component shall constitute a DUT failure.

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# Test Report

## 2.3 Setup Photo:



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# Test Report

## 2.4 Test Data

Equipment Under Test Power Configuration			
Rated Voltage	Rated Current	Rated Power	Rated Frequency
277	0.21	53	60Hz

Product Model #:		XI055C180V054BSJ1					
Environment:	Temp:	room	Humidity:	0	Surge Test Voltage:	10KV + 20KV	
Unit #:	180523FC380			Surge Pack:		10K=CE138X63R1	
Driver #:	F8					20K=CE138X65R1	
Test Modes:	L1-PE L1L2-PE L1-L2 L2-PE			Output Surge Pack:		0	
Test Voltages:	120Vac/60Hz 277Vac/60Hz						
Tested by:	T.DeBoer			Impedance:		2ohms	
Test Date:	11/14/2022			Result:		PASS	

Product Model #:		XI055C180V054BSJ1					
Environment:	Temp:	room	Humidity:	0	Surge Test Voltage:		10KV + 20KV
Unit #:	0			Surge Pack:		10K=CE138X63R1	
Driver #:	F8					20K=CE138X65R1	
Test Modes:	L1-PE L1L2-PE L1-L2 L2-PE			Output Surge Pack:		0	
Test Voltages:	120Vac/60Hz 277Vac/60Hz						
Tested by:	T.DeBoer			Impedance:		2ohms	
Test Date:	11/14/2022			Result:			

Product Model #:		XI055C180V054BSJ1					
Environment:		Temp:	room	Humidity:	0	Surge Test Voltage: 10KV + 20kV	
Unit #:		0			Surge Pack:		10K=CE138X63R1
Driver #:		F8					20K=CE138X65R1
Test Modes:		L1-PE L1L2-PE L1-L2 L2-PE			Output Surge Pack:		0
Test Voltages:		120Vac/60Hz 277Vac/60Hz					
Tested by:		T.DeBoer			Impedance:		2ohms
Test Date:		11/14/2022			Result:		

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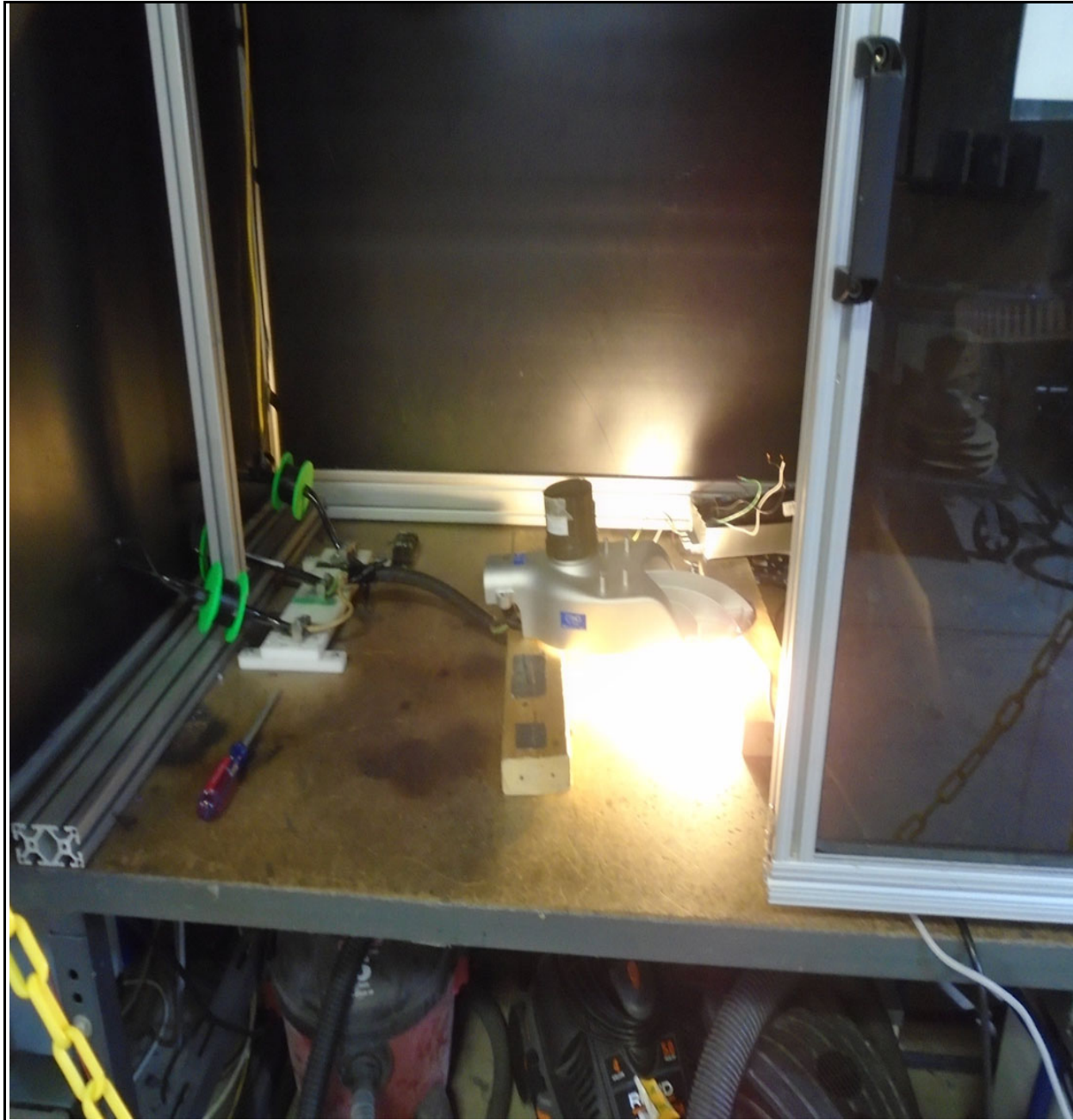
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# Test Report

## 3. Product Photo:



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