

# Test Report

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

Test Report Number: 28092

Report Issue Date: 1/12/2023



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

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<https://lighting.cree.com/>

# Test Report

Test Report Number: 28092

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, 50/60

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	<b>PASS</b>

### 1.2 Test Equipment

Asset #	Description	Manufacture	Model #	Serial #	Cal Date
8055	Surge Tester	Teseq	NSG3060		5/17/2021
8398	CDN	Teseq	CDN3063		5/17/2021
1605	Single channel Power Analyzer	Xitron	2801		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		
1.2/50uS open-circuit voltage peak	Typical: 6KV	Enhanced: 10KV	Extreme: 20KV
8/20uS 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 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 5% - 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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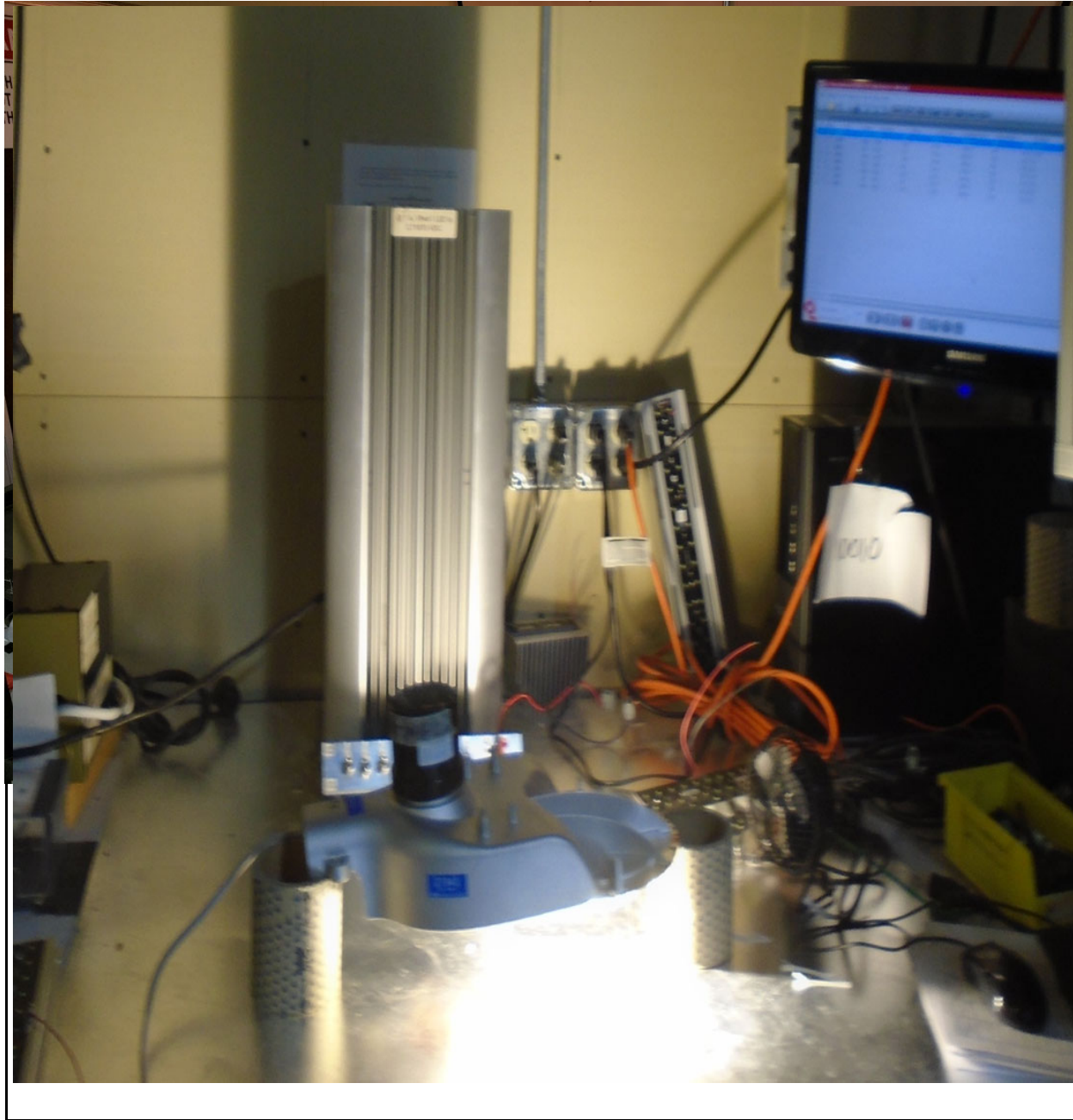
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### 2.3 Setup Photo:



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## 2.4 Test Data

Equipment Under Test Power Configuration			
Rated Voltage	Rated Current	Rated Power	Rated Frequency
277	0.21	53	50/60

Product Model #:	XI055C180V054BSJ1						
Environment:	Temp:	ROOM TEMP	Humidity:	N/A	Surge Test Voltage:	6kV	
Unit #:	F8			Surge Pack:		N/A	
Driver #:	XI055C180V054BSJ1			Output Surge Pack:		N/A	
Test Modes:	L1-L2 L1-PE L2-PE L1L2-PE			Output Surge Pack:		N/A	
Test Voltages:	120/60VAC 277/60VAC			Output Surge Pack:		N/A	
Tested by:	T.DeBoer			Impedance:		2 Ω	
Test Date:	11/14/2022			Result:		PASS	

Product Model #:	XI055C180V054BSJ1						
Environment:	Temp:	ROOM TEMP	Humidity:	N/A	Surge Test Voltage:	6kV	
Unit #:	0			Surge Pack:		N/A	
Driver #:	XI055C180V054BSJ1			Output Surge Pack:		N/A	
Test Modes:	L1-L2 L1-PE L2-PE L1L2-PE			Output Surge Pack:		N/A	
Test Voltages:	120/60VAC 277/60VAC			Output Surge Pack:		N/A	
Tested by:	T.DeBoer			Impedance:		2 Ω	
Test Date:	11/14/2022			Result:		PASS	

Product Model #:	XI055C180V054BSJ1						
Environment:	Temp:	ROOM TEMP	Humidity:	N/A	Surge Test Voltage:	6kV	
Unit #:	0			Surge Pack:		N/A	
Driver #:	XI055C180V054BSJ1			Output Surge Pack:		N/A	
Test Modes:	L1-L2 L1-PE L2-PE L1L2-PE			Output Surge Pack:		N/A	
Test Voltages:	120/60VAC 277/60VAC			Output Surge Pack:		N/A	
Tested by:	T.DeBoer			Impedance:		2 Ω	
Test Date:	11/14/2022			Result:		PASS	

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## Test Report

### 3. Product Photo:

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