

# XLamp® LED Components IES LM-80-2008 Testing Results Revision: 88 (June 25, 2024)



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## INTRODUCTION

This document provides the results of IES LM-80-2008, LM-80-2015, and LM-80-2020 ("LM-80") testing on Cree LED components in the CreeLED SSL Laboratory. Cree LED is providing this data so that the public can verify the reliability of Cree LEDs as part of a complete LED lighting system.

Note that this document provides only the end results of the LM-80 tests. This is not a complete LM-80 report. Do not use this document to submit luminaires or lamps to an agency. Customers who need the full LM-80 reports should contact their Cree LED sales representative.

Customers who wish to share LM-80 results with their customers have permission to link to this document from their website. This document is subject to change without notice, so please do not link to a local copy.

## NVLAP® ACCREDITATION FOR LM-80 TESTING

Cree LED's SSL testing laboratory in Durham, NC, USA is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP®) to perform IES LM-80-2008, LM-80-2015, and LM-80-2020 testing. All LM-80-2008, LM-80-2015, and LM-80-2020 results produced by Cree LED are generated in Cree LED's accredited laboratory. Full details on Cree LED's NVLAP accreditation are available here:

<https://www-s.nist.gov/niws/index.cfm?event=directory.search#no-back>

Lab Name: CreeLED SSL Laboratory

Lab Code: 500041-0

This report must not be used to claim product certification, approval, or endorsement by the NVLAP, the National Institute of Standards and Technology (NIST) or any other agency of the federal government.

**XLAMP® CHA0304 STANDARD WHITE LEDs (REV 2)**

Revision: 2 (April 20, 2023)

**Description Of LED Light Sources**

XLamp® CHA0304 White LEDs (Series: CHA0304)

This LM-80 report is applicable to the following order codes:

CHA0304 21-V CHA0304-xxxx-xxxGxxxxxxx

No failures occurred during testing.

**CHA0304 21-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	126 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	190 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**XLAMP® CHA0304 PRO9™ WHITE LEDS (REV 2)**

Revision: 2 (April 20, 2023)

**Description Of LED Light Sources**

XLamp CHA0304 Pro9™ White LEDs (Series: CHA0304 Pro9)

This LM-80 report is applicable to the following order codes:

CHA0304 21-V Pro9      CHA0304-xxxx-xxPGxxxxxxx

No failures occurred during testing.

**CHA0304 21-V Pro9****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	126 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	190 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

## XLAMP® CHA0410 STANDARD WHITE LEDS (REV 2)

Revision: 2 (April 20, 2023)

## Description Of LED Light Sources

XLamp CHA0410 White LEDs (Series: CHA0410)

This LM-80 report is applicable to the following order codes:

CHA0410 12-V CHA0410-xxxx-xxxDxxxxxxxx

CHA0410 36-V CHA0410-xxxx-xxxNxxxxxxxx

No failures occurred during testing.

## CHA0410 12-V

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	378 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	570 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

## CHA0410 36-V

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	126 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	190 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

## XLAMP® CHA0410 PRO9™ WHITE LEDS (REV 2)

Revision: 2 (April 20, 2023)

## Description Of LED Light Sources

XLamp CHA0410 Pro9 White LEDs (Series: CHA0410 Pro9)

This LM-80 report is applicable to the following order codes:

CHA0410 12-V Pro9      CHA0410-xxxx-xxPDxxxxxxx

CHA0410 36-V Pro9      CHA0410-xxxx-xxPNxxxxxxx

No failures occurred during testing.

## CHA0410 12-V Pro9

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	378 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	570 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

## CHA0410 36-V Pro9

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	126 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	190 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

## XLAMP® CHA0612 STANDARD WHITE LEDS (REV 2)

Revision: 2 (April 20, 2023)

## Description Of LED Light Sources

XLamp CHA0612 White LEDs (Series: CHA0612)

This LM-80 report is applicable to the following order codes:

CHA0612 18-V CHA0612-xxxx-xxxFxxxxxxx

CHA0612 36-V CHA0612-xxxx-xxxNxxxxxxx

No failures occurred during testing.

## CHA0612 18-V

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	506 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	758 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

## CHA0612 36-V

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	253 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	379 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs



## XLAMP® CHA0612 PRO9™ WHITE LEDS (REV 2)

Revision: 2 (April 20, 2023)

## Description Of LED Light Sources

XLamp CHA0612 Pro9 White LEDs (Series: CHA0612 Pro9)

This LM-80 report is applicable to the following order codes:

CHA0612 18-V Pro9      CHA0612-xxxx-xxPFxxxxxxx

CHA0612 36-V Pro9      CHA0612-xxxx-xxPNxxxxxxx

No failures occurred during testing.

## CHA0612 18-V Pro9

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	506 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	758 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

## CHA0612 36-V Pro9

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	253 mA	CMT1420 36-V @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	379 mA	CMT1420 36-V @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**XLAMP® CHA0825 STANDARD WHITE LEDS (REV 2)**

Revision: 2 (April 20, 2023)

**Description Of LED Light Sources**

XLamp CHA0825 White LEDs (Series: CHA0825)

This LM-80 report is applicable to the following order codes:

CHA0825 36-V CHA0825-xxxx-xxxNxxxxxxxx

No failures occurred during testing.

**CHA0825 21-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	505 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	758 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**XLAMP® CHA0825 PRO9™ WHITE LEDS (REV 2)**

Revision: 2 (April 20, 2023)

**Description Of LED Light Sources**

XLamp CHA0825 Pro9 White LEDs (Series: CHA0825 Pro9)

This LM-80 report is applicable to the following order codes:

CHA0825 36-V Pro9      CHA0825-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**CHA0825 21-V Pro9****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	505 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	758 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**XLAMP® CMA1303 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMA1303 White LEDs (Series: CMA1303)

This LM-80 report is applicable to the following order codes:

CMA1303 9-V CMA1303-xxxx-xx0Cxxxxxxx

CMA1303 18-V CMA1303-xxxx-xx0Fxxxxxxx

CMA1303 36-V CMA1303-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

**CMA1303 9-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	536 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	804 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**CMA1303 18-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	268 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	402 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**CMA1303 36-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	134 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	201 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

## XLAMP® CMA1306 STANDARD WHITE LEDS (REV 14)

Revision: 14 (March 10, 2023)

## Description Of LED Light Sources

XLamp CMA1306 White LEDs (Series: CMA1306)

This LM-80 report is applicable to the following order codes:

CMA1306 9-V CMA1306-xxxx-xx0Cxxxxxxx

CMA1306 18-V CMA1306-xxxx-xx0Fxxxxxxx

CMA1306 36-V CMA1306-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

## CMA1306 9-V

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	771 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1156 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

## CMA1306 18-V

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	385 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	578 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

## CMA1306 36-V

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	193 mA	CMT1420 36-V @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	289 mA	CMT1420 36-V @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**XLAMP® CMA1306 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (May 1, 2023)

**Description Of LED Light Sources**

XLamp CMA1306 Pro9 White LEDs (Series: CMA1306 Pro9)

This LM-80 report is applicable to the following order codes:

CMA1306 9-V Pro9 CMA1306-xxxx-xxPCxxxxxxx

CMA1306 18-V Pro9 CMA1306-xxxx-xxPFxxxxxxx

CMA1306 36-V Pro9 CMA1306-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**CMA1306 9-V Pro9****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	771 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1156 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**CMA1306 18-V Pro9****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	385 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	578 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**CMA1306 36-V Pro9****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	193 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	289 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**XLAMP® CMA1516 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMA1516 White LEDs (Series: CMA1516)

This LM-80 report is applicable to the following order codes:

CMA1516 36-V CMA1516-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

**CMA1516 36-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	560 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	840 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**XLAMP® CMA1516 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (May 1, 2023)

**Description Of LED Light Sources**

XLamp CMA1516 Pro9 White LEDs (Series: CMA1516 Pro9)

This LM-80 report is applicable to the following order codes:

CMA1516 36-V Pro9 CMA1516-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**CMA1516 36-V Pro9****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	560 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	840 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs



**XLAMP® CMA1825 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMA1825 White LEDs (Series: CMA1825)

This LM-80 report is applicable to the following order codes:

CMA1825 36-V CMA1825-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

**CMA1825 36-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	731 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1067 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**XLAMP® CMA1825 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (May 1, 2023)

**Description Of LED Light Sources**

XLamp CMA1825 Pro9 White LEDs (Series: CMA1825 Pro9)

This LM-80 report is applicable to the following order codes:

CMA1825 36-V Pro9 CMA1825-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**CMA1825 36-V Pro9****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	731 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1067 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**XLAMP® CMA1840 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMA1840 White LEDs (Series: CMA1840)

This LM-80 report is applicable to the following order codes:

CMA1840 36-V CMA1840-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

**CMA1840 36-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	1206 mA	CMU2287 54-V Standard @ 105 °C, 2200 mA	2700 K	84	13	12,000 hrs	L90(12k) = 37,900 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1644 mA	CMU2287 54-V Standard @ 85 °C, 3000 mA	2700 K	84	13	12,000 hrs	L90(12k) = 33,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

**XLAMP® CMA1840 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (May 1, 2023)

**Description Of LED Light Sources**

XLamp CMA1840 Pro9 White LEDs (Series: CMA1840 Pro9)

This LM-80 report is applicable to the following order codes:

CMA1840 36-V Pro9 CMA1840-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**CMA1840 36-V Pro9****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	980 mA	CMA3090 48-V Standard @ 105 °C, 2400 mA	3000 K	83	13	12,000 hrs	L90(12k) = 34,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1261 mA	CMA3090 48-V Standard @ 85 °C, 3300 mA	3000 K	83	13	12,000 hrs	L90(12k) = 30,100 hrs L80(12k) = 61,600 hrs L70(12k) > 66,000 hrs

**XLAMP® CMA2550 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMA2550 White LEDs (Series: CMA2550)

This LM-80 report is applicable to the following order codes:

CMA2550 36-V CMA2550-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

**CMA2550 36-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	2067 mA	CMU2287 54-V Standard @ 105 °C, 2200 mA	2700 K	84	13	12,000 hrs	L90(12k) = 37,900 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	2818 mA	CMU2287 54-V Standard @ 85 °C, 3000 mA	2700 K	84	13	12,000 hrs	L90(12k) = 33,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

**XLAMP® CMA2550 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (May 1, 2023)

**Description Of LED Light Sources**

XLamp CMA2550 Pro9 White LEDs (Series: CMA2550 Pro9)

This LM-80 report is applicable to the following order codes:

CMA2550 36-V Pro9 CMA2550-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**CMA2550 36-V Pro9****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	1681 mA	CMA3090 48-V Standard @ 105 °C, 2400 mA	3000 K	83	13	12,000 hrs	L90(12k) = 34,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	2160 mA	CMA3090 48-V Standard @ 85 °C, 3300 mA	3000 K	83	13	12,000 hrs	L90(12k) = 30,100 hrs L80(12k) = 61,600 hrs L70(12k) > 66,000 hrs

## XLAMP® CMA3090 STANDARD WHITE LEDS (REV 14)

Revision: 14 (March 10, 2023)

## Description Of LED Light Sources

XLamp CMA3090 White LEDs (Series: CMA3090)

This LM-80 report is applicable to the following order codes:

CMA3090 48-V CMA3090-xxxx-xx0Qxxxxxxxx

CMA3090 72-V CMA3090-xxxx-xx0Rxxxxxxxx

No failures occurred during testing.

## CMA3090 48-V

## Test Summary

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	2400 mA	CMA3090 48-V Standard @ 105 °C, 2400 mA	3000 K	83	13	12,000 hrs	L90(12k) = 34,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	3300 mA	CMA3090 48-V Standard @ 85 °C, 3300 mA	3000 K	83	13	12,000 hrs	L90(12k) = 30,100 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

## CMA3090 72-V

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	1600 mA	CMA3090 48-V Standard @ 105 °C, 2400 mA	3000 K	83	13	12,000 hrs	L90(12k) = 34,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	2200 mA	CMA3090 48-V Standard @ 85 °C, 3300 mA	3000 K	83	13	12,000 hrs	L90(12k) = 30,100 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

## XLAMP® CMA3090 PRO9™ WHITE LEDS (REV 0)

Revision: 0 (May 1, 2023)

## Description Of LED Light Sources

XLamp CMA3090 Pro9 White LEDs (Series: CMA3090 Pro9)

This LM-80 report is applicable to the following order codes:

CMA3090 48-V Pro9 CMA3090-xxxx-xxPQxxxxxxx

CMA3090 72-V Pro9 CMA3090-xxxx-xxPRxxxxxxx

No failures occurred during testing.

## CMA3090 48-V Pro9

## Test Summary

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	1800 mA	CMA3090 48-V Standard @ 105 °C, 2400 mA	3000 K	83	13	12,000 hrs	L90(12k) = 34,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	2700 mA	CMA3090 48-V Standard @ 85 °C, 3300 mA	3000 K	83	13	12,000 hrs	L90(12k) = 30,100 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

## CMA3090 72-V Pro9

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	1200 mA	CMA3090 48-V Standard @ 105 °C, 2400 mA	3000 K	83	13	12,000 hrs	L90(12k) = 34,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1800 mA	CMA3090 48-V Standard @ 85 °C, 3300 mA	3000 K	83	13	12,000 hrs	L90(12k) = 30,100 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs



## XLAMP® CMB1304 STANDARD WHITE LEDS (REV 14)

Revision: 14 (March 10, 2023)

## Description Of LED Light Sources

XLamp® CMA1304 White LEDs (Series: CMB1304)

This LM-80 report is applicable to the following order codes:

CMB1304 9-V CMB1304-xxxx-xx0Cxxxxxxx

CMB1304 18-V CMB1304-xxxx-xx0Fxxxxxxx

CMB1304 36-V CMB1304-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

## CMB1304 9-V

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	536 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	808 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

## CMB1304 18-V

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	268 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	404 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

## CMB1304 36-V

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	134 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	202 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

## XLAMP® CMB1304 PRO9™ WHITE LEDS (REV 0)

Revision: 0 (May 1, 2023)

## Description Of LED Light Sources

XLamp® CMA1304 Po9 White LEDs (Series: CMB1304 Pro9)

This LM-80 report is applicable to the following order codes:

CMB1304 9-V Pro9 CMB1304-xxxx-xxPCxxxxxxx

CMB1304 18-V Pro9 CMB1304-xxxx-xxPFxxxxxxx

CMB1304 36-V Pro9 CMB1304-xxxx-xxPNxxxxxxx

No failures occurred during testing.

## CMB1304 9-V Pro9

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	536 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	808 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

## CMB1304 18-V Pro9

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	268 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	404 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

## CMB1304 36-V Pro9

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	134 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	202 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

## XLAMP® CMB1306 STANDARD WHITE LEDS (REV 14)

Revision: 14 (March 10, 2023)

## Description Of LED Light Sources

XLamp® CMB1306 White LEDs (Series: CMB1306)

This LM-80 report is applicable to the following order codes:

CMB1306 18-V CMB1306-xxxx-xx0Fxxxxxxx

CMB1306 36-V CMB1306-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

## CMB1306 18-V

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	538 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	806 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

## CMB1306 36-V

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	269 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	403 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

## XLAMP® CMB1306 PRO9™ WHITE LEDS (REV 0)

Revision: 0 (May 1, 2023)

## Description Of LED Light Sources

XLamp® CMB1306 Pro9 White LEDs (Series: CMB1306 Pro9)

This LM-80 report is applicable to the following order codes:

CMB1306 18-V Pro9 CMB1306-xxxx-xxPFxxxxxxx

CMB1306 36-V Pro9 CMB1306-xxxx-xxPNxxxxxxx

No failures occurred during testing.

## CMB1306 18-V Pro9

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	538 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	806 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

## CMB1306 36-V Pro9

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	269 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	403 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

## XLAMP® CMB1507 STANDARD WHITE LEDS (REV 14)

Revision: 14 (March 10, 2023)

## Description Of LED Light Sources

XLamp® CMB1507 White LEDs (Series: CMB1507)

This LM-80 report is applicable to the following order codes:

CMB1507 18-V CMB1507-xxxx-xx0Fxxxxxxx

CMB1507 36-V CMB1507-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

## CMB1507 18-V

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	620 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	930 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

## CMB1507 36-V

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	310 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	465 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

## XLAMP® CMB1507 PRO9™ WHITE LEDS (REV 0)

Revision: 0 (May 1, 2023)

## Description Of LED Light Sources

XLamp® CMB1507 Pro9 White LEDs (Series: CMB1507 Pro9)

This LM-80 report is applicable to the following order codes:

CMB1507 18-V Pro9 CMB1507-xxxx-xxPFxxxxxxx

CMB1507 36-V Pro9 CMB1507-xxxx-xxPNxxxxxxx

No failures occurred during testing.

## CMB1507 18-V Pro9

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	620 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	930 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

## CMB1507 36-V Pro9

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	310 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	465 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**XLAMP® CMB1510 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp® CMB1510 White LEDs (Series: CMB1510)

This LM-80 report is applicable to the following order codes:

CMB1510 18-V CMB1510-xxxx-xx0Fxxxxxxx

CMB1510 36-V CMB1510-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

**CMB1510 18-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	930 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1394 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**CMB1510 36-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	465 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	697 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

## XLAMP® CMB1510 PRO9™ WHITE LEDS (REV 0)

Revision: 0 (May 1, 2023)

## Description Of LED Light Sources

XLamp® CMB1510 Pro9 White LEDs (Series: CMB1510 Pro9)

This LM-80 report is applicable to the following order codes:

CMB1510 18-V Pro9 CMB1510-xxxx-xxPFxxxxxxx

CMB1510 36-V Pro9 CMB1510-xxxx-xxPNxxxxxxx

No failures occurred during testing.

## CMB1510 18-V Pro9

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	930 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1394 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

## CMB1510 36-V Pro9

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	465 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	697 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs



**XLAMP® CMB1516 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMB1516 White LEDs (Series: CMB1516)

This LM-80 report is applicable to the following order codes:

CMB1516 36-V CMB1516-xxxx-xx0Nxxxxxxxx

No failures occurred during testing.

**CMB1516 36-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	602 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	889 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**XLAMP® CMB1516 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (May 1, 2023)

**Description Of LED Light Sources**

XLamp CMB1516 Pro9 White LEDs (Series: CMB1516 Pro9)

This LM-80 report is applicable to the following order codes:

CMB1516 36-V Pro9      CMB1516-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**CMB1516 36-V Pro9****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	602 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	889 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**XLAMP® CMB1818 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMB1818 White LEDs (Series: CMB1818)

This LM-80 report is applicable to the following order codes:

CMB1818 36-V CMB1818-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

**CMB1818 36-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	721 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1069 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**XLAMP® CMB1818 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (May 1, 2023)

**Description Of LED Light Sources**

XLamp CMB1818 Pro9 White LEDs (Series: CMB1818 Pro9)

This LM-80 report is applicable to the following order codes:

CMB1818 36-V Pro9      CMB1818-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**CMB1818 36-V Pro9****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	721 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1069 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**XLAMP® CMB1825 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMB1825 White LEDs (Series: CMB1825)

This LM-80 report is applicable to the following order codes:

CMB1825 36-V CMB1825-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

**CMB1825 36-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	831 mA	CMU2287 54-V Standard @ 105 °C, 2200 mA	2700 K	84	13	12,000 hrs	L90(12k) = 37,900 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1133 mA	CMU2287 54-V Standard @ 85 °C, 3000 mA	2700 K	84	13	12,000 hrs	L90(12k) = 33,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

**XLAMP® CMB1825 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (May 1, 2023)

**Description Of LED Light Sources**

XLamp CMB1825 Pro9 White LEDs (Series: CMB1825 Pro9)

This LM-80 report is applicable to the following order codes:

CMB1825 36-V Pro9 CMB1825-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**CMB1825 36-V Pro9****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	555 mA	CMA3090 48-V Standard @ 105 °C, 2400 mA	3000 K	83	13	12,000 hrs	L90(12k) = 34,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	835 mA	CMA3090 48-V Standard @ 85 °C, 3300 mA	3000 K	83	13	12,000 hrs	L90(12k) = 30,100 hrs L80(12k) = 61,600 hrs L70(12k) > 66,000 hrs

**XLAMP® CMB1840 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMB1840 White LEDs (Series: CMB1840)

This LM-80 report is applicable to the following order codes:

CMB1840 36-V CMB1840-xxxx-xx0Nxxxxxxxx

No failures occurred during testing.

**CMB1840 36-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	1108 mA	CMU2287 54-V Standard @ 105 °C, 2200 mA	2700 K	84	13	12,000 hrs	L90(12k) = 37,900 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1511 mA	CMU2287 54-V Standard @ 85 °C, 3000 mA	2700 K	84	13	12,000 hrs	L90(12k) = 33,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

**XLAMP® CMB1840 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (May 1, 2023)

**Description Of LED Light Sources**

XLamp CMB1840 Pro9 White LEDs (Series: CMB1840 Pro9)

This LM-80 report is applicable to the following order codes:

CMB1840 36-V Pro9      CMB1840-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**CMB1840 36-V Pro9****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	740 mA	CMA3090 48-V Standard @ 105 °C, 2400 mA	3000 K	83	13	12,000 hrs	L90(12k) = 34,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1112 mA	CMA3090 48-V Standard @ 85 °C, 3300 mA	3000 K	83	13	12,000 hrs	L90(12k) = 30,100 hrs L80(12k) = 61,600 hrs L70(12k) > 66,000 hrs



**XLAMP® CMB2550 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMB2550 White LEDs (Series: CMB2550)

This LM-80 report is applicable to the following order codes:

CMB2550 36-V CMB2550-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

**CMB2550 36-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	1662 mA	CMU2287 54-V Standard @ 105 °C, 2200 mA	2700 K	84	13	12,000 hrs	L90(12k) = 37,900 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	2266 mA	CMU2287 54-V Standard @ 85 °C, 3000 mA	2700 K	84	13	12,000 hrs	L90(12k) = 33,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

**XLAMP® CMB2550 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (May 1, 2023)

**Description Of LED Light Sources**

XLamp CMB2550 Pro9 White LEDs (Series: CMB2550 Pro9)

This LM-80 report is applicable to the following order codes:

CMB2550 36-V Pro9      CMB2550-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**CMB2550 36-V Pro9****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	1110 mA	CMA3090 48-V Standard @ 105 °C, 2400 mA	3000 K	83	13	12,000 hrs	L90(12k) = 34,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1669 mA	CMA3090 48-V Standard @ 85 °C, 3300 mA	3000 K	83	13	12,000 hrs	L90(12k) = 30,100 hrs L80(12k) = 61,600 hrs L70(12k) > 66,000 hrs

**XLAMP® CMB3090 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMB3090 White LEDs (Series: CMB3090)

This LM-80 report is applicable to the following order codes:

CMB3090 48-V CMB3090-xxxx-xx0Qxxxxxxx

CMB3090 72-V CMB3090-xxxx-xx0Rxxxxxxx

No failures occurred during testing.

**CMB3090 48-V****Test Summary**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	2493 mA	CMA3090 48-V Standard @ 105 °C, 2400 mA	3000 K	83	13	12,000 hrs	L90(12k) = 34,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	3399 mA	CMA3090 48-V Standard @ 85 °C, 3300 mA	3000 K	83	13	12,000 hrs	L90(12k) = 30,100 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

**CMB3090 72-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	1662 mA	CMA3090 48-V Standard @ 105 °C, 2400 mA	3000 K	83	13	12,000 hrs	L90(12k) = 34,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	2200 66	CMA3090 48-V Standard @ 85 °C, 3300 mA	3000 K	83	13	12,000 hrs	L90(12k) = 30,100 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

## XLAMP® CMB3090 PRO9™ WHITE LEDS (REV 0)

Revision: 0 (May 1, 2023)

## Description Of LED Light Sources

XLamp CMB3090 Pro9 White LEDs (Series: CMB3090 Pro9)

This LM-80 report is applicable to the following order codes:

CMB3090 48-V Pro9 CMB3090-xxxx-xxPQxxxxxxx

CMB3090 72-V Pro9 CMB3090-xxxx-xxPRxxxxxxx

No failures occurred during testing.

## CMB3090 48-V Pro9

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	1264 mA	CMU2287 54-V Standard @ 105 °C, 2200 mA	2700 K	84	13	12,000 hrs	L90(12k) = 37,900 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	2100 mA	CMU2287 54-V Standard @ 85 °C, 3000 mA	2700 K	84	13	12,000 hrs	L90(12k) = 33,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

## CMB3090 72-V Pro9

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	2100 mA	CMU2287 54-V Standard @ 105 °C, 2200 mA	2700 K	84	13	12,000 hrs	L90(12k) = 37,900 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1400 mA	CMU2287 54-V Standard @ 85 °C, 3000 mA	2700 K	84	13	12,000 hrs	L90(12k) = 33,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

**XLAMP® CMT1407 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMT1407 White LEDs (Series: CMT1407)

This LM-80 report is applicable to the following order codes:

CMT1407 36-V CMT1407-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

**CMT1407 36-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	280 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	420 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**XLAMP® CMT1412 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMT1412 White LEDs (Series: CMT1412)

This LM-80 report is applicable to the following order codes:

CMT1412 36-V CMT1412-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

**CMT1412 36-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	420 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	630 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**XLAMP® CMT1420 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMT1420 White LEDs (Series: CMT1420)

This LM-80 report is applicable to the following order codes:

CMT1420 36-V CMT1420-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

**CMT1420 36-V****Test Summary**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	700 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1050 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**XLAMP® CMT1922 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMT1922 White LEDs (Series: CMT1922)

This LM-80 report is applicable to the following order codes:

CMT1922 36-V CMT1922-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

**CMT1922 36-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	751 mA	CMU2287 54-V Standard @ 105 °C, 2200 mA	2700 K	84	13	12,000 hrs	L90(12k) = 37,900 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
105 °C	1024 mA	CMU2287 54-V Standard @ 85 °C, 3000 mA	2700 K	84	13	12,000 hrs	L90(12k) = 33,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs



## XLAMP® CMT1925 STANDARD WHITE LEDS (REV 14)

Revision: 14 (March 10, 2023)

## Description Of LED Light Sources

XLamp CMT1925 White LEDs (Series: CMT1925)

This LM-80 report is applicable to the following order codes:

CMT1925 36-V CMT1925-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

## CMT1925 36-V

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	876 mA	CMU2287 54-V Standard @ 105 °C, 2200 mA	2700 K	84	13	12,000 hrs	L90(12k) = 37,900 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1194 mA	CMU2287 54-V Standard @ 85 °C, 3000 mA	2700 K	84	13	12,000 hrs	L90(12k) = 33,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

**XLAMP® CMT1930 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMT1930 White LEDs (Series: CMT1930)

This LM-80 report is applicable to the following order codes:

CMT1930 36-V CMT1930-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

**CMT1930 36-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	1033 mA	CMU2287 54-V Standard @ 105 °C, 2200 mA	2700 K	84	13	12,000 hrs	L90(12k) = 37,900 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1409 mA	CMU2287 54-V Standard @ 85 °C, 3000 mA	2700 K	84	13	12,000 hrs	L90(12k) = 33,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

**XLAMP® CMT1945 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMT1945 White LEDs (Series: CMT1945)

This LM-80 report is applicable to the following order codes:

CMT1945 36-V CMT1945-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

**CMT1945 36-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	1378 mA	CMU2287 54-V Standard @ 105 °C, 2200 mA	2700 K	84	13	12,000 hrs	L90(12k) = 37,900 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1879 mA	CMU2287 54-V Standard @ 85 °C, 3000 mA	2700 K	84	13	12,000 hrs	L90(12k) = 33,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

**XLAMP® CMT2850 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMT2850 White LEDs (Series: CMT2850)

This LM-80 report is applicable to the following order codes:

CMT2850 36-V CMT2850-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

**CMT2850 36-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	2239 mA	CMU2287 54-V Standard @ 105 °C, 2200 mA	2700 K	84	13	12,000 hrs	L90(12k) = 37,900 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	3053 mA	CMU2287 54-V Standard @ 85 °C, 3000 mA	2700 K	84	13	12,000 hrs	L90(12k) = 33,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

**XLAMP® CMT2870 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMT2870 White LEDs (Series: CMT2870)

This LM-80 report is applicable to the following order codes:

CMT2870 54-V CMT2870-xxxx-xx0Pxxxxxxx

No failures occurred during testing.

**CMT2870 54-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	1894 mA	CMU2287 54-V Standard @ 105 °C, 2200 mA	2700 K	84	13	12,000 hrs	L90(12k) = 37,900 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	2583 mA	CMU2287 54-V Standard @ 85 °C, 3000 mA	2700 K	84	13	12,000 hrs	L90(12k) = 33,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

**XLAMP® CMT2890 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMT2890 White LEDs (Series: CMT2890)

This LM-80 report is applicable to the following order codes:

CMT2890 54-V CMT2890-xxxx-xx0Pxxxxxxx

No failures occurred during testing.

**CMT2890 54-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	2185 mA	CMU2287 54-V Standard @ 105 °C, 2200 mA	2700 K	84	13	12,000 hrs	L90(12k) = 37,900 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	2980 mA	CMU2287 54-V Standard @ 85 °C, 3000 mA	2700 K	84	13	12,000 hrs	L90(12k) = 33,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

**XLAMP® CMU1003 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMU1003 White LEDs (Series: CMU1003)

This LM-80 report is applicable to the following order codes:

CMU1003 36-V CMU1003-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

**CMU1003 36-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	137 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	205 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**XLAMP® CMU1003 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (May 1, 2023)

**Description Of LED Light Sources**

XLamp CMU1003 Pro9 White LEDs (Series: CMU1003 Pro9)

This LM-80 report is applicable to the following order codes:

CMU1003 36-V Pro9 CMU1003-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**CMU1003 36-V Pro9****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	137 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	205 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs



**XLAMP® CMU1006 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMU1006 White LEDs (Series: CMU1006)

This LM-80 report is applicable to the following order codes:

CMU1006 36-V CMU1006-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

**CMU1006 36-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	274 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	410 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**XLAMP® CMU1006 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (May 1, 2023)

**Description Of LED Light Sources**

XLamp CMU1006 Pro9 White LEDs (Series: CMU1006 Pro9)

This LM-80 report is applicable to the following order codes:

CMU1006 36-V Pro9 CMU1006-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**CMU1006 36-V Pro9****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	274 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	410 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**XLAMP® CMU1010 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMU1010 White LEDs (Series: CMU1010)

This LM-80 report is applicable to the following order codes:

CMU1010 36-V CMU1010-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

**CMU1010 36-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	410 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	615 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**XLAMP® CMU1010 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (May 1, 2023)

**Description Of LED Light Sources**

XLamp CMU1010 Pro9 White LEDs (Series: CMU1010 Pro9)

This LM-80 report is applicable to the following order codes:

CMU1010 36-V Pro9 CMU1010-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**CMU1010 36-V Pro9****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	410 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	615 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**XLAMP® CMU1013 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMU1013 White LEDs (Series: CMU1013)

This LM-80 report is applicable to the following order codes:

CMU1013 36-V CMU1013-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

**CMU1013 36-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	547 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	821 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**XLAMP® CMU1013 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (May 1, 2023)

**Description Of LED Light Sources**

XLamp CMU1013 Pro9 White LEDs (Series: CMU1013 Pro9)

This LM-80 report is applicable to the following order codes:

CMU1013 36-V Pro9 CMU1013-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**CMU1013 36-V Pro9****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	547 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	821 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**XLAMP® CMU1516 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMU1516 White LEDs (Series: CMU1516)

This LM-80 report is applicable to the following order codes:

CMU1516 36-V CMU1516-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

**CMU1516 36-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	684 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1026 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs

**XLAMP® CMU1516 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (May 1, 2023)

**Description Of LED Light Sources**

XLamp CMU1516 Pro9 White LEDs (Series: CMU1516 Pro9)

This LM-80 report is applicable to the following order codes:

CMU1516 36-V Pro9 CMU1516-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**CMU1516 36-V Pro9****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	684 mA	CMT1420 36-V Standard @ 105 °C, 700 mA	3000 K	83	13	12,000 hrs	L90(12k) > 41,500 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1026 mA	CMT1420 36-V Standard @ 85 °C, 1050 mA	2700 K	85	13	10,000 hrs	L90(10k) = 45,300 hrs L80(10k) > 55,000 hrs L70(10k) > 55,000 hrs



**XLAMP® CMU1519 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMU1519 White LEDs (Series: CMU1519)

This LM-80 report is applicable to the following order codes:

CMU1519 36-V CMU1519-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

**CMU1519 36-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	733 mA	CMU2287 54-V Standard @ 105 °C, 2200 mA	2700 K	84	13	12,000 hrs	L90(12k) = 37,900 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1000 mA	CMU2287 54-V Standard @ 85 °C, 3000 mA	2700 K	84	13	12,000 hrs	L90(12k) = 33,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

**XLAMP® CMU1519 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (May 1, 2023)

**Description Of LED Light Sources**

XLamp CMU1519 Pro9 White LEDs (Series: CMU1519 Pro9)

This LM-80 report is applicable to the following order codes:

CMU1519 36-V Pro9 CMU1519-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**CMU1519 36-V Pro9****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	400 mA	CMU2287 54-V Standard @ 105 °C, 2200 mA	2700 K	84	13	12,000 hrs	L90(12k) = 37,900 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	667 mA	CMU2287 54-V Standard @ 85 °C, 3000 mA	2700 K	84	13	12,000 hrs	L90(12k) = 33,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

**XLAMP® CMU1526 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMU1526 White LEDs (Series: CMU1526)

This LM-80 report is applicable to the following order codes:

CMU1526 36-V CMU1526-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

**CMU1526 36-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	978 mA	CMU2287 54-V Standard @ 105 °C, 2200 mA	2700 K	84	13	12,000 hrs	L90(12k) = 37,900 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1333 mA	CMU2287 54-V Standard @ 85 °C, 3000 mA	2700 K	84	13	12,000 hrs	L90(12k) = 33,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

**XLAMP® CMU1526 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (May 1, 2023)

**Description Of LED Light Sources**

XLamp CMU1526 Pro9 White LEDs (Series: CMU1526 Pro9)

This LM-80 report is applicable to the following order codes:

CMU1526 36-V Pro9 CMU1526-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**CMU1526 36-V Pro9****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	533 mA	CMU2287 54-V Standard @ 105 °C, 2200 mA	2700 K	84	13	12,000 hrs	L90(12k) = 37,900 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	890 mA	CMU2287 54-V Standard @ 85 °C, 3000 mA	2700 K	84	13	12,000 hrs	L90(12k) = 33,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

## XLAMP® CMU1532 STANDARD WHITE LEDS (REV 14)

Revision: 14 (March 10, 2023)

## Description Of LED Light Sources

XLamp CMU1532 White LEDs (Series: CMU1532)

This LM-80 report is applicable to the following order codes:

CMU1532 36-V CMU1532-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

## CMU1532 36-V

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	1222 mA	CMU2287 54-V Standard @ 105 °C, 2200 mA	2700 K	84	13	12,000 hrs	L90(12k) = 37,900 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1667 mA	CMU2287 54-V Standard @ 85 °C, 3000 mA	2700 K	84	13	12,000 hrs	L90(12k) = 33,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

**XLAMP® CMU1532 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (May 1, 2023)

**Description Of LED Light Sources**

XLamp CMU1532 Pro9 White LEDs (Series: CMU1532 Pro9)

This LM-80 report is applicable to the following order codes:

CMU1532 36-V Pro9 CMU1532-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**CMU1532 36-V Pro9****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	667 mA	CMU2287 54-V Standard @ 105 °C, 2200 mA	2700 K	84	13	12,000 hrs	L90(12k) = 37,900 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1112 mA	CMU2287 54-V Standard @ 85 °C, 3000 mA	2700 K	84	13	12,000 hrs	L90(12k) = 33,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

**XLAMP® CMU2236 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMU2236 White LEDs (Series: CMU2236)

This LM-80 report is applicable to the following order codes:

CMU2236 36-V CMU2236-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

**CMU2236 36-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	1344 mA	CMU2287 54-V Standard @ 105 °C, 2200 mA	2700 K	84	13	12,000 hrs	L90(12k) = 37,900 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1833 mA	CMU2287 54-V Standard @ 85 °C, 3000 mA	2700 K	84	13	12,000 hrs	L90(12k) = 33,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

**XLAMP® CMU2236 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (May 1, 2023)

**Description Of LED Light Sources**

XLamp CMU2236 Pro9 White LEDs (Series: CMU2236 Pro9)

This LM-80 report is applicable to the following order codes:

CMU2236 36-V Pro9      CMU2236-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**CMU2236 36-V Pro9****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	733 mA	CMU2287 54-V Standard @ 105 °C, 2200 mA	2700 K	84	13	12,000 hrs	L90(12k) = 37,900 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1223 mA	CMU2287 54-V Standard @ 85 °C, 3000 mA	2700 K	84	13	12,000 hrs	L90(12k) = 33,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs



**XLAMP® CMU2239 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMU2239 White LEDs (Series: CMU2239)

This LM-80 report is applicable to the following order codes:

CMU2239 36-V CMU2239-xxxx-xx0Nxxxxxxx

No failures occurred during testing.

**CMU2239 36-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	1467 mA	CMU2287 54-V Standard @ 105 °C, 2200 mA	2700 K	84	13	12,000 hrs	L90(12k) = 37,900 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	2000 mA	CMU2287 54-V Standard @ 85 °C, 3000 mA	2700 K	84	13	12,000 hrs	L90(12k) = 33,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

**XLAMP® CMU2239 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (May 1, 2023)

**Description Of LED Light Sources**

XLamp CMU2239 Pro9 White LEDs (Series: CMU2239 Pro9)

This LM-80 report is applicable to the following order codes:

CMU2239 36-V Pro9 CMU2239-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**CMU2239 36-V Pro9****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	800 mA	CMU2287 54-V Standard @ 105 °C, 2200 mA	2700 K	84	13	12,000 hrs	L90(12k) = 37,900 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1334 mA	CMU2287 54-V Standard @ 85 °C, 3000 mA	2700 K	84	13	12,000 hrs	L90(12k) = 33,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

**XLAMP® CMU2258 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMU2258 White LEDs (Series: CMU2258)

This LM-80 report is applicable to the following order codes:

CMU2258 54-V CMU2258-xxxx-xx0Pxxxxxxx

No failures occurred during testing.

**CMU2258 54-V****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	1467 mA	CMU2287 54-V Standard @ 105 °C, 2200 mA	2700 K	84	13	12,000 hrs	L90(12k) = 37,900 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	2000 mA	CMU2287 54-V Standard @ 85 °C, 3000 mA	2700 K	84	13	12,000 hrs	L90(12k) = 33,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

**XLAMP® CMU2258 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (May 1, 2023)

**Description Of LED Light Sources**

XLamp CMU2258 Pro9 White LEDs (Series: CMU2258 Pro9)

This LM-80 report is applicable to the following order codes:

CMU2258 54-V Pro9      CMU2258-xxxx-xxPPxxxxxxx

No failures occurred during testing.

**CMU2258 54-V Pro9****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	800 mA	CMU2287 54-V Standard @ 105 °C, 2200 mA	2700 K	84	13	12,000 hrs	L90(12k) = 37,900 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	1334 mA	CMU2287 54-V Standard @ 85 °C, 3000 mA	2700 K	84	13	12,000 hrs	L90(12k) = 33,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

**XLAMP® CMU2287 STANDARD WHITE LEDS (REV 14)**

Revision: 14 (March 10, 2023)

**Description Of LED Light Sources**

XLamp CMU2287 White LEDs (Series: CMU2287)

This LM-80 report is applicable to the following order codes:

CMU2287 54-V CMU2287-xxxx-xx0Pxxxxxxx

No failures occurred during testing.

**CMU2287 54-V****Test Summary**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	2200 mA	CMU2287 54-V Standard @ 105 °C, 2200 mA	2700 K	84	13	12,000 hrs	L90(12k) = 37,900 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	3000 mA	CMU2287 54-V Standard @ 85 °C, 3000 mA	2700 K	84	13	12,000 hrs	L90(12k) = 33,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

**XLAMP® CMU2287 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (May 1, 2023)

**Description Of LED Light Sources**

XLamp CMU2287 Pro9 White LEDs (Series: CMU2287 Pro9)

This LM-80 report is applicable to the following order codes:

CMU2287 54-V Pro9 CMU2287-xxxx-xxPPxxxxxxx

No failures occurred during testing.

**CMU2287 54-V Pro9****Results Summary For Tested LED Array**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	1200 mA	CMU2287 54-V Standard @ 105 °C, 2200 mA	2700 K	84	13	12,000 hrs	L90(12k) = 37,900 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs
85 °C	2000 mA	CMU2287 54-V Standard @ 85 °C, 3000 mA	2700 K	84	13	12,000 hrs	L90(12k) = 33,400 hrs L80(12k) > 66,000 hrs L70(12k) > 66,000 hrs

**XLAMP® CXA1304 WHITE LEDS (REV 6)**

Revision: 6 (May 2, 2024)

**Description Of LED Light Sources**

XLamp CXA1304 White LEDs (Series: CXA1304)

This LM-80 report is applicable to the following order codes:

CXA1304 9 V CXA1304-xxxx-xxxCxxxxxxx

CXA1304 18 V CXA1304-xxxx-xxxFxxxxxxx

CXA1304 36 V CXA1304-xxxx-xxNx xxxxxx

No failures occurred during testing.

**Results Summary For Tested LED Array**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXA3050 3050-4+	105 °C	105 °C	1500 mA	3000 K	22	10,080 hrs	L90(10k) = 35,000 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
CXA3050 3050-5	85 °C	85 °C	1700 mA	3000 K	25	10,584 hrs	L90(10k) = 50,600 hrs L80(10k) > 63,500 hrs L70(10k) > 63,500 hrs
CXA3050 3050-6	85 °C	85 °C	2250 mA	3000 K	25	7,056 hrs	L90(7k) = 37,400 hrs L80(7k) > 42,300 hrs L70(7k) > 42,300 hrs
CXA3050 3050-3	55 °C	55 °C	2500 mA	3000 K	25	10,080 hrs	L90(10k) = 55,100 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs

**Scaling For Applicable Products**

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR® September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 product. The tested product is listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Currents			
			Data Set CXA3050 3050-4(+) (105 °C)	Data Set CXA3050 3050-5 (85 °C)	Data Set CXA3050 3050-6 (85 °C)	Data Set CXA3050 3050-3 (55 °C)
CXA1304	9 V	CXA1304-xxxx-xxxCxxxxxxx	460 mA	524 mA	692 mA	768 mA
CXA1304	18 V	CXA1304-xxxx-xxxFxxxxxxx	230 mA	262 mA	346 mA	384 mA
CXA1304	36 V	CXA1304-xxxx-xxNx xxxxxx	115 mA	131 mA	173 mA	192 mA
<b>CXA3050</b>	<b>36 V</b>	<b>CXA3050-xxxx-xxNx xxxxxx</b>	<b>1500 mA</b>	<b>1700 mA</b>	<b>2250 mA</b>	<b>2500 mA</b>

**XLAMP® CXA1507 WHITE LEDS (REV 2)**

Revision: 2 (March 19, 2014)

**Description Of LED Light Sources**

XLamp CXA1507 White LEDs (Series: CXA1507)

This LM-80 report is applicable to the following order codes:

CXA1507 18 V CXA1507-xxxx-xxxFxxxxxxxxx

CXA1507 36-V CXA1507-xxxx-xxxNxxxxxxxxx

No failures occurred during testing.

**Test Summary**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>F</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
1	55 °C	55 °C	200 mA (36 V) 400 mA (18 V)	3000 K	25	6,048 hrs	L95(6k) = 24,700 hrs L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
2	85 °C	85 °C	200 mA (36 V) 400 mA (18 V)	3000 K	25	6,048 hrs	L95(6k) = 26,600 hrs L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
3	105 °C	105 °C	200 mA (36 V) 400 mA (18 V)	3000 K	25	6,048 hrs	L95(6k) = 19,700 hrs L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
3+	105 °C	105 °C	200 mA (36 V) 400 mA (18 V)	3000 K	20	10,080 hrs	L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
4	55 °C	55 °C	375 mA (36 V) 750 mA (18 V)	3000 K	25	6,048 hrs	L90(6k) = 30,200 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
4+	55 °C	55 °C	375 mA (36 V) 750 mA (18 V)	3000 K	24	10,080 hrs	L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
5	85 °C	85 °C	375 mA (36 V) 750 mA (18 V)	3000 K	25	7,056 hrs	L90(7k) = 39,600 hrs L80(7k) > 42,300 hrs L70(7k) > 42,300 hrs
5+	85 °C	85 °C	375 mA (36 V) 750 mA (18 V)	3000 K	20	9,072 hrs	L90(9k) > 54,400 hrs L80(9k) > 54,400 hrs L70(9k) > 54,400 hrs



**XLAMP® CXA1510 WHITE LEDS (REV 6)**

Revision: 6 (May 2, 2024)

**Description Of LED Light Sources**

XLamp CXA1510 White LEDs (Series: CXA1510)

This LM-80 report is applicable to the following order codes:

CXA1510 18 V CXA1510-xxxx-xxxFxxxxxx

CXA1510 36 V CXA1510-xxxx-xxNxxxxxx

No failures occurred during testing.

**Results Summary For Tested LED Array**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>a</sub> ]	Drive Current [I <sub>f</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXA3050 3050-4+	105 °C	105 °C	1500 mA	3000 K	22	10,080 hrs	L90(10k) = 35,000 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
CXA3050 3050-5	85 °C	85 °C	1700 mA	3000 K	25	10,584 hrs	L90(10k) = 50,600 hrs L80(10k) > 63,500 hrs L70(10k) > 63,500 hrs
CXA3050 3050-6	85 °C	85 °C	2250 mA	3000 K	25	7,056 hrs	L90(7k) = 37,400 hrs L80(7k) > 42,300 hrs L70(7k) > 42,300 hrs
CXA3050 3050-3	55 °C	55 °C	2500 mA	3000 K	25	10,080 hrs	L90(10k) = 55,100 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs

**Scaling For Applicable Products**

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 product. The tested product is listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Currents			
			Data Set CXA3050 3050-4(+) (105 °C)	Data Set CXA3050 3050-5 (85 °C)	Data Set CXA3050 3050-6 (85 °C)	Data Set CXA3050 3050-3 (55 °C)
CXA1510	18 V	CXA1510-xxxx-xxxFxxxxxx	468 mA	530 mA	702 mA	780 mA
CXA1510	36 V	CXA1510-xxxx-xxNxxxxxx	234 mA	265 mA	351 mA	390 mA
<b>CXA3050</b>	<b>36 V</b>	<b>CXA3050-xxxx-xxNxxxxxx</b>	<b>1500 mA</b>	<b>1700 mA</b>	<b>2250 mA</b>	<b>2500 mA</b>

**XLAMP® CXA1512 WHITE LEDS (REV 6)**

Revision: 6 (May 2, 2024)

**Description Of LED Light Sources**

XLamp CXA1512 White LEDs (Series: CXA1512)

This LM-80 report is applicable to the following order codes:

CXA1512 18 V CXA1512-xxxx-xxxFxxxxxx

CXA1512 36 V CXA1512-xxxx-xxNxxxxxx

No failures occurred during testing.

**Results Summary For Tested LED Array**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>a</sub> ]	Drive Current [I <sub>f</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXA3050 3050-4+	105 °C	105 °C	1500 mA	3000 K	22	10,080 hrs	L90(10k) = 35,000 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
CXA3050 3050-5	85 °C	85 °C	1700 mA	3000 K	25	10,584 hrs	L90(10k) = 50,600 hrs L80(10k) > 63,500 hrs L70(10k) > 63,500 hrs
CXA3050 3050-6	85 °C	85 °C	2250 mA	3000 K	25	7,056 hrs	L90(7k) = 37,400 hrs L80(7k) > 42,300 hrs L70(7k) > 42,300 hrs
CXA3050 3050-3	55 °C	55 °C	2500 mA	3000 K	25	10,080 hrs	L90(10k) = 55,100 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs

**Scaling For Applicable Products**

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 product. The tested product is listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Currents			
			Data Set CXA3050 3050-4(+) (105 °C)	Data Set CXA3050 3050-5 (85 °C)	Data Set CXA3050 3050-6 (85 °C)	Data Set CXA3050 3050-3 (55 °C)
CXA1512	18 V	CXA1512-xxxx-xxxFxxxxxx	692 mA	784 mA	1038 mA	1154 mA
CXA1512	36 V	CXA1512-xxxx-xxNxxxxxx	346 mA	392 mA	519mA	577 mA
<b>CXA3050</b>	<b>36 V</b>	<b>CXA3050-xxxx-xxNxxxxxx</b>	<b>1500 mA</b>	<b>1700 mA</b>	<b>2250 mA</b>	<b>2500 mA</b>

**XLAMP® CXA1816 WHITE LEDS (REV 6)**

Revision: 6 (May 2, 2024)

**Description Of LED Light Sources**

XLamp CXA1816 White LEDs (Series: CXA1816)

This LM-80 report is applicable to the following order codes:

CXA1816-xxxx-xxxxxxxxxxx

No failures occurred during testing.

**Results Summary For Tested LED Array**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXA3050 3050-4+	105 °C	105 °C	1500 mA	3000 K	22	10,080 hrs	L90(10k) = 35,000 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
CXA3050 3050-5	85 °C	85 °C	1700 mA	3000 K	25	10,584 hrs	L90(10k) = 50,600 hrs L80(10k) > 63,500 hrs L70(10k) > 63,500 hrs
CXA3050 3050-6	85 °C	85 °C	2250 mA	3000 K	25	7,056 hrs	L90(7k) = 37,400 hrs L80(7k) > 42,300 hrs L70(7k) > 42,300 hrs
CXA3050 3050-3	55 °C	55 °C	2500 mA	3000 K	25	10,080 hrs	L90(10k) = 55,100 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs

**Scaling For Applicable Products**

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 product. The tested product is listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Currents			
			Data Set CXA3050 3050-4(+) (105 °C)	Data Set CXA3050 3050-5 (85 °C)	Data Set CXA3050 3050-6 (85 °C)	Data Set CXA3050 3050-3 (55 °C)
CXA1816	36 V	CXA1816-xxxx-xxxNxxxxxxxx	462 mA	523 mA	692 mA	769 mA
<b>CXA3050</b>	<b>36 V</b>	<b>CXA3050-xxxx-xxxNxxxxxxxx</b>	<b>1500 mA</b>	<b>1700 mA</b>	<b>2250 mA</b>	<b>2500 mA</b>

**XLAMP® CXA1820 WHITE LEDS (REV 6)**

Revision: 6 (May 2, 2024)

**Description Of LED Light Sources**

XLamp CXA1820 White LEDs (Series: CXA1820)

This LM-80 report is applicable to the following order codes:

CXA1820-xxxx-xxxxxxxxxxx

No failures occurred during testing.

**Results Summary For Tested LED Array**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXA3050 3050-4+	105 °C	105 °C	1500 mA	3000 K	22	10,080 hrs	L90(10k) = 35,000 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
CXA3050 3050-5	85 °C	85 °C	1700 mA	3000 K	25	10,584 hrs	L90(10k) = 50,600 hrs L80(10k) > 63,500 hrs L70(10k) > 63,500 hrs
CXA3050 3050-6	85 °C	85 °C	2250 mA	3000 K	25	7,056 hrs	L90(7k) = 37,400 hrs L80(7k) > 42,300 hrs L70(7k) > 42,300 hrs
CXA3050 3050-3	55 °C	55 °C	2500 mA	3000 K	25	10,080 hrs	L90(10k) = 55,100 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs

**Scaling For Applicable Products**

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 product. The tested product is listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Currents			
			Data Set CXA3050 3050-4(+) (105 °C)	Data Set CXA3050 3050-5 (85 °C)	Data Set CXA3050 3050-6 (85 °C)	Data Set CXA3050 3050-3 (55 °C)
CXA1820	36 V	CXA1820-xxxx-xxxNxxxxxxxx	577 mA	654 mA	865 mA	962 mA
<b>CXA3050</b>	<b>36 V</b>	<b>CXA3050-xxxx-xxxNxxxxxxxx</b>	<b>1500 mA</b>	<b>1700 mA</b>	<b>2250 mA</b>	<b>2500 mA</b>

**XLAMP® CXA1830 WHITE LEDS (REV 6)**

Revision: 6 (May 2, 2024)

**Description Of LED Light Sources**

XLamp CXA1830 White LEDs (Series: CXA1830)

This LM-80 report is applicable to the following order codes:

CXA1830-xxxx-xxxxxxxxxxx

No failures occurred during testing.

**Results Summary For Tested LED Array**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXA3050 3050-4+	105 °C	105 °C	1500 mA	3000 K	22	10,080 hrs	L90(10k) = 35,000 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
CXA3050 3050-5	85 °C	85 °C	1700 mA	3000 K	25	10,584 hrs	L90(10k) = 50,600 hrs L80(10k) > 63,500 hrs L70(10k) > 63,500 hrs
CXA3050 3050-6	85 °C	85 °C	2250 mA	3000 K	25	7,056 hrs	L90(7k) = 37,400 hrs L80(7k) > 42,300 hrs L70(7k) > 42,300 hrs
CXA3050 3050-3	55 °C	55 °C	2500 mA	3000 K	25	10,080 hrs	L90(10k) = 55,100 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs

**Scaling For Applicable Products**

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 product. The tested product is listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Currents			
			Data Set CXA3050 3050-4(+) (105 °C)	Data Set CXA3050 3050-5 (85 °C)	Data Set CXA3050 3050-6 (85 °C)	Data Set CXA3050 3050-3 (55 °C)
CXA1830	36 V	CXA1830-xxxx-xxxNxxxxxxxx	662 mA	743 mA	977 mA	1087 mA
<b>CXA3050</b>	<b>36 V</b>	<b>CXA3050-xxxx-xxxNxxxxxxxx</b>	<b>1500 mA</b>	<b>1700 mA</b>	<b>2250 mA</b>	<b>2500 mA</b>

**XLAMP® CXA2520 WHITE LEDS (REV 6)**

Revision: 6 (May 2, 2024)

**Description Of LED Light Sources**

XLamp CXA2520 White LEDs (Series: CXA2520)

This LM-80 report is applicable to the following order codes:

CXA2520-xxxx-xxxxxxxxxxx

No failures occurred during testing.

**Results Summary For Tested LED Array**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXA3050 3050-4+	105 °C	105 °C	1500 mA	3000 K	22	10,080 hrs	L90(10k) = 35,000 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
CXA3050 3050-5	85 °C	85 °C	1700 mA	3000 K	25	10,584 hrs	L90(10k) = 50,600 hrs L80(10k) > 63,500 hrs L70(10k) > 63,500 hrs
CXA3050 3050-6	85 °C	85 °C	2250 mA	3000 K	25	7,056 hrs	L90(7k) = 37,400 hrs L80(7k) > 42,300 hrs L70(7k) > 42,300 hrs
CXA3050 3050-3	55 °C	55 °C	2500 mA	3000 K	25	10,080 hrs	L90(10k) = 55,100 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs

**Scaling For Applicable Products**

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 product. The tested product is listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Currents			
			Data Set CXA3050 3050-4(+) (105 °C)	Data Set CXA3050 3050-5 (85 °C)	Data Set CXA3050 3050-6 (85 °C)	Data Set CXA3050 3050-3 (55 °C)
CXA2520	36 V	CXA2520-xxxx-xxxNxxxxxxxx	624 mA	707 mA	936 mA	1040 mA
<b>CXA3050</b>	<b>36 V</b>	<b>CXA3050-xxxx-xxxNxxxxxxxx</b>	<b>1500 mA</b>	<b>1700 mA</b>	<b>2250 mA</b>	<b>2500 mA</b>

**XLAMP® CXA2530 WHITE LEDS (REV 6)**

Revision: 6 (May 2, 2024)

**Description Of LED Light Sources**

XLamp CXA2530 White LEDs (Series: CXA2530)

This LM-80 report is applicable to the following order codes:

CXA2530-xxxx-xxxxxxxxxxx

No failures occurred during testing.

**Results Summary For Tested LED Array**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXA3050 3050-4+	105 °C	105 °C	1500 mA	3000 K	22	10,080 hrs	L90(10k) = 35,000 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
CXA3050 3050-5	85 °C	85 °C	1700 mA	3000 K	25	10,584 hrs	L90(10k) = 50,600 hrs L80(10k) > 63,500 hrs L70(10k) > 63,500 hrs
CXA3050 3050-6	85 °C	85 °C	2250 mA	3000 K	25	7,056 hrs	L90(7k) = 37,400 hrs L80(7k) > 42,300 hrs L70(7k) > 42,300 hrs
CXA3050 3050-3	55 °C	55 °C	2500 mA	3000 K	25	10,080 hrs	L90(10k) = 55,100 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs

**Scaling For Applicable Products**

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 product. The tested product is listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Currents			
			Data Set CXA3050 3050-4(+) (105 °C)	Data Set CXA3050 3050-5 (85 °C)	Data Set CXA3050 3050-6 (85 °C)	Data Set CXA3050 3050-3 (55 °C)
CXA2530	36 V	CXA2530-xxxx-xxxNxxxxxxxx	808 mA	915 mA	1212 mA	1346 mA
<b>CXA3050</b>	<b>36 V</b>	<b>CXA3050-xxxx-xxxNxxxxxxxx</b>	<b>1500 mA</b>	<b>1700 mA</b>	<b>2250 mA</b>	<b>2500 mA</b>

**XLAMP® CXA2540 WHITE LEDS (REV 6)**

Revision: 6 (May 2, 2024)

**Description Of LED Light Sources**

XLamp CXA2540 White LEDs (Series: CXA2540)

This LM-80 report is applicable to the following order codes:

CXA2540-xxxx-xxxxxxxxxxx

No failures occurred during testing.

**Results Summary For Tested LED Array**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXA3050 3050-4+	105 °C	105 °C	1500 mA	3000 K	22	10,080 hrs	L90(10k) = 35,000 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
CXA3050 3050-5	85 °C	85 °C	1700 mA	3000 K	25	10,584 hrs	L90(10k) = 50,600 hrs L80(10k) > 63,500 hrs L70(10k) > 63,500 hrs
CXA3050 3050-6	85 °C	85 °C	2250 mA	3000 K	25	7,056 hrs	L90(7k) = 37,400 hrs L80(7k) > 42,300 hrs L70(7k) > 42,300 hrs
CXA3050 3050-3	55 °C	55 °C	2500 mA	3000 K	25	10,080 hrs	L90(10k) = 55,100 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs

**Scaling For Applicable Products**

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 product. The tested product is listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Currents			
			Data Set CXA3050 3050-4(+) (105 °C)	Data Set CXA3050 3050-5 (85 °C)	Data Set CXA3050 3050-6 (85 °C)	Data Set CXA3050 3050-3 (55 °C)
CXA2540	36 V	CXA2540-xxxx-xxxNxxxxxxxx	1139 mA	1281 mA	1693 mA	1903 mA
<b>CXA3050</b>	<b>36 V</b>	<b>CXA3050-xxxx-xxxNxxxxxxxx</b>	<b>1500 mA</b>	<b>1700 mA</b>	<b>2250 mA</b>	<b>2500 mA</b>



**XLAMP® CXA3050 WHITE LEDS (REV 6)**

Revision: 6 (May 2, 2024)

**Description Of LED Light Sources**

XLamp CXA3050 White LEDs (Series: CXA3050)

This LM-80 report is applicable to the following order codes:

CXA3050-xxxx-xxxxxxxxxxx

No failures occurred during testing.

**Test Summary**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXA3050 3050-4	105 °C	105 °C	1500 mA	3000 K	25	8,064 hrs	L90(8k) = 27,100 hrs L80(8k) > 48,400 hrs L70(8k) > 48,400 hrs
CXA3050 3050-4+	105 °C	105 °C	1500 mA	3000 K	22	10,080 hrs	L90(10k) = 35,000 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
CXA3050 3050-5	85 °C	85 °C	1700 mA	3000 K	25	10,584 hrs	L90(10k) = 50,600 hrs L80(10k) > 63,500 hrs L70(10k) > 63,500 hrs
CXA3050 3050-6	85 °C	85 °C	2250 mA	3000 K	25	7,056 hrs	L90(7k) = 37,400 hrs L80(7k) > 42,300 hrs L70(7k) > 42,300 hrs
CXA3050 3050-3	55 °C	55 °C	2500 mA	3000 K	25	10,080 hrs	L90(10k) = 55,100 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs

**XLAMP® CXA3070 WHITE LEDS (REV 1)**

Revision: 1 (May 5, 2021)

**Description Of LED Light Sources**

XLamp CXA3070 White LEDs (Series: CXA3070)

This LM-80 report is applicable to the following order codes:

CXA3070-xxxx-xxxxxxxxxxx

No failures occurred during testing.

**Results Summary For Tested LED Array**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>F</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXA3590 3590-1	105 °C	105 °C	1050 mA	3000 K	25	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
CXA3590 3590-2	85 °C	85 °C	1400 mA	3000 K	25	6,046 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs

**Scaling For Applicable Products**

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 product. The tested product is listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Currents	
			Data Set CXA3590 3590-1 (105 °C)	Data Set CXA3590 3590-2 (85 °C)
CXA3070	36 V	CXA3070-xxxx-xxxNxxxxxxx	1335 mA	1794 mA
<b>CXA3590</b>	<b>72 V</b>	<b>CXA3590-xxxx-xxxRxxxxxxx</b>	<b>1050 mA</b>	<b>1400 mA</b>

**XLAMP® CXA3590 WHITE LEDS (REV 1)**

Revision: 1 (May 5, 2021)

**Description Of LED Light Sources**

XLamp CXA3590 White LEDs (Series: CXA3590)

This LM-80 report is applicable to the following order codes:

CXA3590 36 V CXA3590-xxxx-xxxNxxxxxxxx

CXA3590 72 V CXA3590-xxxx-xxxRxxxxxxxx

No failures occurred during testing.

**Test Summary**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>a</sub> ]	Drive Current [I <sub>p</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXA3590 3590-1	105 °C	105 °C	1050 mA	3000 K	25	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
CXA3590 3590-2	85 °C	85 °C	1400 mA	3000 K	25	6,046 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs

**Scaling For Applicable Products**

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 product. The tested product is listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Currents	
			Data Set CXA3590 3590-1 (105 °C)	Data Set CXA3590 3590-2 (85 °C)
CXA3590	36 V	CXA3590-xxxx-xxxNxxxxxxxx	2100 mA	2800 mA
<b>CXA3590</b>	<b>72 V</b>	<b>CXA3590-xxxx-xxxRxxxxxxxx</b>	<b>1050 mA</b>	<b>1400 mA</b>

**XLAMP® CXB1304 STANDARD WHITE LEDS (REV 10)**

Revision: 10 (May 2, 2024)

**Description Of LED Light Sources**

XLamp CXB1304 White LEDs (Series: CXB1304)

This LM-80 report is applicable to the following order codes:

CXB1304 9 V CXB1304-xxxx-xxxCxxxxxxx

CXB1304 18 V CXB1304-xxxx-xxxFxxxxxxx

CXB1304 36 V CXB1304-xxxx-xxNx xxxxxx

No failures occurred during testing.

**Results Summary For Tested LED Array**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXB2530 B2530-1	105 °C	105 °C	1200 mA	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs
CXB2530 B2530-2	85 °C	85 °C	1600 mA	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs

**Scaling For Applicable Products**

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 products. The tested products are listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Currents	
			Data Set CXB2530 B2530-1 (105 °C)	Data Set CXB2530 B2530-2 (85 °C)
CXB1304	9 V	CXB1304-xxxx-xxxCxxxxxxx	684 mA	916 mA
CXB1304	18 V	CXB1304-xxxx-xxxFxxxxxxx	342 mA	458 mA
CXB1304	36 V	CXB1304-xxxx-xxNx xxxxxx	171 mA	229 mA
<b>CXB2530</b>	<b>36 V</b>	<b>CXB2530-xxxx-xxNx xxxxxx</b>	<b>1200 mA</b>	<b>1600 mA</b>

**XLAMP® CXB1304 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (January 17, 2023)

**Description Of LED Light Sources**

XLamp CXB1304 Pro9™ White LEDs (Series: CXB1304 Pro9)

This LM-80 report is applicable to the following order codes:

CXB1304 9 V Pro9 CXB1304-xxxx-xxPCxxxxxxx

CXB1304 18 V Pro9 CXB1304-xxxx-xxPFxxxxxxx

CXB1304 36 V Pro9 CXB1304-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**Results Summary For Tested LED Array**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXB2530 B2530-1	105 °C	105 °C	1200 mA	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs
CXB2530 B2530-2	85 °C	85 °C	1600 mA	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs

**Scaling For Applicable Products**

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR® September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 products. The tested products are listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Currents	
			Data Set CXB2530 B2530-1 (105 °C)	Data Set CXB2530 B2530-2 (85 °C)
CXB1304 Pro9	9 V	CXB1304-xxxx-xxPCxxxxxxx	628 mA	916 mA
CXB1304 Pro9	18 V	CXB1304-xxxx-xxPFxxxxxxx	314 mA	458 mA
CXB1304 Pro9	36 V	CXB1304-xxxx-xxPNxxxxxxx	157 mA	229 mA
<b>CXB2530</b>	<b>36 V</b>	<b>CXB2530-xxxx-xxNxxxxxxx</b>	<b>1200 mA</b>	<b>1600 mA</b>

**XLAMP® CXB1310 STANDARD WHITE LEDs (REV 7)**

Revision: 7 (May 4, 2021)

**Description Of LED Light Sources**

XLamp CXB1310 White LEDs (Series: CXB1310)

This LM-80 report is applicable to the following order codes:

CXB1310 18 V CXB1310-xxxx-xxxFxxxxxxxxx

CXB1310 36 V CXB1310-xxxx-xxxNxxxxxxxxx

No failures occurred during testing.

**Test Summary**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>a</sub> ]	Drive Current [I <sub>F</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXB1310 B1310-2	105 °C	105 °C	900 mA (18 V) 450 mA (36 V)	3000K	10	10,080 hrs	L90(10k) > 55,400 hrs L80(10k) > 55,400 hrs L70(10k) > 55,400 hrs
CXB1310 B1310-4	85 °C	85 °C	1400 mA (18 V) 700 mA (36 V)	3000K	10	12,096 hrs	L90(12k) > 66,500 hrs L80(12k) > 66,500 hrs L70(12k) > 66,500 hrs

**XLAMP® CXB1507 STANDARD WHITE LEDs (REV 10)**

Revision: 10 (May 2, 2024)

**Description Of LED Light Sources**

XLamp CXB1507 White LEDs (Series: CXB1507)

This LM-80 report is applicable to the following order codes:

CXB1507 18 V CXB1507-xxxx-xxxFxxxxxxx

CXB1507 36 V CXB1507-xxxx-xxxNxxxxxxx

No failures occurred during testing.

**Results Summary For Tested LED Arrays**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>a</sub> ]	Drive Current [I <sub>F</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXB2530 B2530-1	105 °C	105 °C	1200 mA	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs
CXB3050 B3050-2	85 °C	85 °C	1600 mA	3000 K	10	10,080 hrs	L90(10k) > 55,400 hrs L80(10k) > 55,400 hrs L70(10k) > 55,400 hrs

**Scaling For Applicable Products**

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 product. The tested products are listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Currents	
			Data Set CXB2530 B2530-1 (105 °C)	Data Set CXB3050 B3050-2 (85 °C)
CXB1507	18 V	CXB1507-xxxx-xxxFxxxxxxx	686 mA	750 mA
CXB1507	36 V	CXB1507-xxxx-xxxNxxxxxxx	343 mA	375 mA
<b>CXB2530</b>	<b>36 V</b>	<b>CXB2530-xxxx-xxxNxxxxxxx</b>	<b>1200 mA</b>	
<b>CXB3050</b>	<b>36 V</b>	<b>CXB3050-xxxx-xxxNxxxxxxx</b>		<b>2500 mA</b>

**XLAMP® CXB1507 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (January 17, 2023)

**Description Of LED Light Sources**

XLamp CXB1507 Pro9 White LEDs (Series: CXB1507 Pro9)

This LM-80 report is applicable to the following order codes:

CXB1507 18 V Pro9 CXB1507-xxxx-xxPFxxxxxxx

CXB1507 36 V Pro9 CXB1507-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**Results Summary For Tested LED Arrays**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>F</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXB2530 B2530-1	105 °C	105 °C	1200 mA	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs
CXB2530 B3050-2	85 °C	85 °C	2500 mA	3000 K	10	10,080 hrs	L90(10k) > 55,400 hrs L80(10k) > 55,400 hrs L70(10k) > 55,400 hrs

**Scaling For Applicable Products**

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 product. The tested products are listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Currents	
			Data Set CXB2530 B2530-1 (105 °C)	Data Set CXB2530 B3050-2 (85 °C)
CXB1507 Pro9	18 V	CXB1507-xxxx-xxPFxxxxxxx	628 mA	750 mA
CXB1507 Pro9	36 V	CXB1507-xxxx-xxPNxxxxxxx	314 mA	375 mA
<b>CXB2530</b>	<b>36 V</b>	<b>CXB2530-xxxx-xxxNxxxxxxx</b>	<b>1200 mA</b>	
<b>CXB3050</b>	<b>36 V</b>	<b>CXB3050-xxxx-xxxNxxxxxxx</b>		<b>2500 mA</b>



## XLAMP® CXB1512 STANDARD WHITE LEDs (REV 10)

Revision: 10 (May 2, 2024)

## Description Of LED Light Sources

XLamp CXB1512 White LEDs (Series: CXB1512)

This LM-80 report is applicable to the following order codes:

CXB1512 18 V CXB1512-xxxx-xxxFxxxxxxx

CXB1512 36 V CXB1512-xxxx-xxxNxxxxxxx

No failures occurred during testing.

## Results Summary For Tested LED Array

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>F</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXB3050 B3050-1	105 °C	105 °C	1500 mA	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs
CXB3050 B3050-2	85 °C	85 °C	2500 mA	3000 K	10	10,080 hrs	L90(10k) > 55,400 hrs L80(10k) > 55,400 hrs L70(10k) > 55,400 hrs

## Scaling For Applicable Products

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 product. The tested product is listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Currents	
			Data Set CXB3050 B3050-1 (105 °C)	Data Set CXB3050 B3050-2 (85 °C)
CXB1512	18 V	CXB1512-xxxx-xxxFxxxxxxx	900 mA	1200 mA
CXB1512	36 V	CXB1512-xxxx-xxxNxxxxxxx	450 mA	600 mA
<b>CXB3050</b>	<b>36 V</b>	<b>CXB3050-xxxx-xxxNxxxxxxx</b>	<b>1500 mA</b>	<b>2500 mA</b>

**XLAMP® CXB1512 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (January 17, 2023)

**Description Of LED Light Sources**

XLamp CXB1512 Pro9 White LEDs (Series: CXB1512 Pro9)

This LM-80 report is applicable to the following order codes:

CXB1512 18 V Pro9 CXB1512-xxxx-xxPFxxxxxxx

CXB1512 36 V Pro9 CXB1512-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**Results Summary For Tested LED Arrays**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>F</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXB3050 B3050-1	105 °C	105 °C	1500 mA	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs
CXB3050 B3050-2	85 °C	85 °C	2500 mA	3000 K	10	10,080 hrs	L90(10k) > 55,400 hrs L80(10k) > 55,400 hrs L70(10k) > 55,400 hrs

**Scaling For Applicable Products**

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 product. The tested products are listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Currents	
			Data Set CXB3050 B3050-1 (105 °C)	Data Set CXB3050 B3050-2 (85 °C)
CXB1512 Pro9	18 V	CXB1512-xxxx-xxPFxxxxxxx	900 mA	1200 mA
CXB1512 Pro9	36 V	CXB1512-xxxx-xxPNxxxxxxx	450 mA	600 mA
<b>CXB3050</b>	<b>36 V</b>	<b>CXB3050-xxxx-xxxNxxxxxxx</b>	<b>1500 mA</b>	<b>2500 mA</b>

**XLAMP® CXB1520 STANDARD WHITE LEDs (REV 7)**

Revision: 7 (May 4, 2021)

**Description Of LED Light Sources**

XLamp CXB1520 White LEDs (Series: CXB1520)

This LM-80 report is applicable to the following order codes:

CXB1520-xxxx-xxxxxxxxxxx

No failures occurred during testing.

**Test Summary**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXB1520 B1520-1	85 °C	85 °C	900 mA	3000 K	20	10,080 hrs	L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
CXB1520 B1520-2	105 °C	105 °C	900 mA	3000 K	20	10,080 hrs	L90(10k) = 44,900 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
CXB1520 B1520-3	85 °C	85 °C	1200 mA	3000 K	15	8,064 hrs	L90(8k) > 44,400 hrs L80(8k) > 44,400 hrs L70(8k) > 44,400 hrs
CXB1520 B1520-4	85 °C	85 °C	1400 mA	2700 K & 3000 K	15	8,064 hrs	L90(8k) > 44,400 hrs L80(8k) > 44,400 hrs L70(8k) > 44,400 hrs

**XLAMP® CXB1816 STANDARD WHITE LEDs (REV 10)**

Revision: 10 (May 2, 2024)

**Description Of LED Light Sources**

XLamp CXB1816 White LEDs (Series: CXB1816)

This LM-80 report is applicable to the following order codes:

CXB1816-xxxx-xxxNxxxxxx

No failures occurred during testing.

**Results Summary For Tested LED Array**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXB2530 B2530-1	105 °C	105 °C	1200 mA	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs
CXB2530 B2530-2	85 °C	85 °C	1600 mA	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs

**Scaling For Applicable Products**

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 products. The tested products are listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Currents	
			Data Set CXB2530 B2530-1 (105 °C)	Data Set CXB2530 B2530-2 (85 °C)
CXB1816	36 V	CXB1816-xxxx-xxxNxxxxxx	673 mA	900 mA
<b>CXB2530</b>	<b>36V</b>	<b>CXB2530-xxxx-xxxNxxxxxx</b>	<b>1200 mA</b>	<b>1600 mA</b>

**XLAMP® CXB1816 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (January 17, 2023)

**Description Of LED Light Sources**

XLamp CXB1816 Pro9 White LEDs (Series: CXB1816 Pro9)

This LM-80 report is applicable to the following order codes:

CXB1816-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**Results Summary For Tested LED Array**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>F</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXB2530 B2530-1	105 °C	105 °C	1200 mA	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs
CXB2530 B2530-2	85 °C	85 °C	1600 mA	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs

**Scaling For Applicable Products**

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 products. The tested products are listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Currents	
			Data Set CXB2530 B2530-1 (105 °C)	Data Set CXB2530 B2530-2 (85 °C)
CXB1816 Pro9	36 V	CXB1816-xxxx-xxPNxxxxxxx	618 mA	900 mA
<b>CXB2530</b>	<b>36V</b>	<b>CXB2530-xxxx-xxNxxxxxxx</b>	<b>1200 mA</b>	<b>1600 mA</b>

**XLAMP® CXB1820 STANDARD WHITE LEDS (REV 10)**

Revision: 10 (May 2, 2024)

**Description Of LED Light Sources**

XLamp CXB1820 White LEDs (Series: CXB1820)

This LM-80 report is applicable to the following order codes:

CXB1820-xxxx-xxxNxxxxxxx

No failures occurred during testing.

**Results Summary For Tested LED Arrays**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXB2530 B2530-1	105 °C	105 °C	1200 mA	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs
CXB3070 B3070-1	105 °C	105 °C	2250 mA	3000 K	10	10,080 hrs	L90(10k) > 55,400 hrs L80(10k) > 55,400 hrs L70(10k) > 55,400 hrs
CXB3050 B3050-2	85 °C	85 °C	2500 mA	3000 K	10	10,080 hrs	L90(10k) > 55,400 hrs L80(10k) > 55,400 hrs L70(10k) > 55,400 hrs

**Scaling For Applicable Products**

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 product. The tested products are listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Currents		
			Data Set CXB2530 2530-1 (105 °C)	Data Set CXB3050 B3050-2 (85 °C)	Data Set CXB3070 B3070-1 (105 °C)
CXB1820	36 V	CXB1820-xxxx-xxxNxxxxxxx	681 mA	1044 mA	727 mA
<b>CXB2530</b>	<b>36 V</b>	<b>CXB2530-xxxx-xxxNxxxxxxx</b>	<b>1200 mA</b>		
<b>CXB3050</b>	<b>36 V</b>	<b>CXB3050-xxxx-xxxNxxxxxxx</b>		<b>2500 mA</b>	
<b>CXB3070</b>	<b>36 V</b>	<b>CXB3070-xxxx-xxxNxxxxxxx</b>			<b>2250 mA</b>

**XLAMP® CXB1820 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (January 17, 2023)

**Description Of LED Light Sources**

XLamp CXB1820 Pro9 White LEDs (Series: CXB1820 Pro9)

This LM-80 report is applicable to the following order codes:

CXB1820-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**Results Summary For Tested LED Arrays**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXB3070 B3070-1	105 °C	105 °C	2250 mA	3000 K	10	10,080 hrs	L90(10k) > 55,400 hrs L80(10k) > 55,400 hrs L70(10k) > 55,400 hrs
CXB3050 B3050-2	85 °C	85 °C	2500 mA	3000 K	10	10,080 hrs	L90(10k) > 55,400 hrs L80(10k) > 55,400 hrs L70(10k) > 55,400 hrs

**Scaling For Applicable Products**

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 product. The tested products are listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Currents	
			Data Set CXB3050 B3050-2 (85 °C)	Data Set CXB3070 B3070-1 (105 °C)
CXB1820 Pro9	36 V	CXB1820-xxxx-xxxNxxxxxxx	1044 mA	626 mA
<b>CXB3050</b>	<b>36 V</b>	<b>CXB3050-xxxx-xxxNxxxxxxx</b>	<b>2500 mA</b>	
<b>CXB3070</b>	<b>36 V</b>	<b>CXB3070-xxxx-xxxNxxxxxxx</b>		<b>2250 mA</b>

## XLAMP® CXB1830 STANDARD WHITE LEDS (REV 10)

Revision: 10 (May 2, 2024)

## Description Of LED Light Sources

XLamp CXB1830 White LEDs (Series: CXB1830)

This LM-80 report is applicable to the following order codes:

CXB1830-xxxx-xxxNxxxxxxx

No failures occurred during testing.

## Results Summary For Tested LED Arrays

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXB2530 B2530-1	105 °C	105 °C	1200 mA	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs
CXB3070 B3070-1	105 °C	105 °C	2250 mA	3000 K	10	10,080 hrs	L90(10k) > 55,400 hrs L80(10k) > 55,400 hrs L70(10k) > 55,400 hrs
CXB3070 B3070-2	85 °C	85 °C	2800 mA	3000 K	10	10,080 hrs	L90(10k) > 55,400 hrs L80(10k) > 55,400 hrs L70(10k) > 55,400 hrs

## Scaling For Applicable Products

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 product. The tested products are listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Currents		
			Data Set CXB2530 2530-1 (105 °C)	Data Set CXB3070 B3070-1 (105 °C)	Data Set CXB3070 B3070-2 (85 °C)
CXB1830	36 V	CXB1830-xxxx-xxxNxxxxxxx	707 mA	984 mA	1227 mA
<b>CXB2530</b>	<b>36 V</b>	<b>CXB2530-xxxx-xxxNxxxxxxx</b>	<b>1200 mA</b>		
<b>CXB3070</b>	<b>36 V</b>	<b>CXB3070-xxxx-xxxNxxxxxxx</b>		<b>2250 mA</b>	<b>2800 mA</b>



**XLAMP® CXB1830 PRO9™ WHITE LEDS (REV 9)**

Revision: 0 (January 17, 2023)

**Description Of LED Light Sources**

XLamp CXB1830 Pro9 White LEDs (Series: CXB1830 Pro9)

This LM-80 report is applicable to the following order codes:

CXB1830-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**Results Summary For Tested LED Arrays**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXB2530 B2530-1	105 °C	105 °C	1200 mA	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs
CXB3070 B3070-2	85 °C	85 °C	2800 mA	3000 K	10	10,080 hrs	L90(10k) > 55,400 hrs L80(10k) > 55,400 hrs L70(10k) > 55,400 hrs

**Scaling For Applicable Products**

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 product. The tested products are listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Currents	
			Data Set CXB2530 2530-1 (105 °C)	Data Set CXB3070 B3070-2 (85 °C)
CXB1830 Pro9	36 V	CXB1830-xxxx-xxxNxxxxxxx	698 mA	1144 mA
<b>CXB2530</b>	<b>36 V</b>	<b>CXB2530-xxxx-xxxNxxxxxxx</b>	<b>1200 mA</b>	
<b>CXB3070</b>	<b>36 V</b>	<b>CXB3070-xxxx-xxxNxxxxxxx</b>		<b>2800 mA</b>

**XLAMP® CXB2530 STANDARD WHITE LEDs (REV 10)**

Revision: 10 (May 2, 2024)

**Description Of LED Light Sources**

XLamp CXB2530 White LEDs (Series: CXB2530)

This LM-80 report is applicable to the following order codes:

CXB2530-xxxx-xxxNxxxxxxx

No failures occurred during testing.

**Test Summary**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXB2530 B2530-1	105 °C	105 °C	1200 mA	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs
CXB2530 B2530-2	85 °C	85 °C	1600 mA	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs

**XLAMP® CXB2530 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (January 17, 2023)

**Description Of LED Light Sources**

XLamp CXB2530 Pro9 White LEDs (Series: CXB2530 Pro9)

This LM-80 report is applicable to the following order codes:

CXB2530-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**Results Summary For Tested LED Array**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXB2530 B2530-1	105 °C	105 °C	1200 mA	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs
CXB2530 B2530-2	85 °C	85 °C	1600 mA	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs

**Scaling For Applicable Products**

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 products. The tested products are listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Currents	
			Data Set CXB2530 2530-1 (105 °C)	Data Set CXB2530 B2530-2 (85 °C)
CXB2530 Pro9	36 V	CXB2530-xxxx-xxPNxxxxxxx	1100 mA	1600 mA
<b>CXB2530</b>	<b>36 V</b>	<b>CXB2530-xxxx-xxPNxxxxxxx</b>	<b>1200 mA</b>	<b>1600 mA</b>

**XLAMP® CXB2540 STANDARD WHITE LEDS (REV 10)**

Revision: 10 (May 2, 2024)

**Description Of LED Light Sources**

XLamp CXB2540 White LEDs (Series: CXB2540)

This LM-80 report is applicable to the following order codes:

CXB2540-xxxx-xxxNxxxxxxx

No failures occurred during testing.

**Results Summary For Tested LED Arrays**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXB3050 B3050-1	105 °C	105 °C	1500 mA	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs
CXB3070 B3070-1	105 °C	105 °C	2250 mA	3000 K	10	10,080 hrs	L90(10k) > 55,400 hrs L80(10k) > 55,400 hrs L70(10k) > 55,400 hrs
CXB3050 B3050-2	85 °C	85 °C	2800 mA	3000 K	10	10,080 hrs	L90(10k) > 55,400 hrs L80(10k) > 55,400 hrs L70(10k) > 55,400 hrs

**Scaling For Applicable Products**

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 product. The tested products are listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Currents		
			Data Set CXB3050 B3050-1 (105 °C)	Data Set CXB3050 B3050-2 (85 °C)	Data Set CXB3070 B3070-1 (105 °C)
CXB2540	36 V	CXB2540-xxxx-xxxNxxxxxxx	1146 mA	1923 mA	1262 mA
<b>CXB3050</b>	<b>36V</b>	<b>CXB3050-xxxx-xxxNxxxxxxx</b>	<b>1500 mA</b>	<b>2500 mA</b>	
<b>CXB3070</b>	<b>36 V</b>	<b>CXB3070-xxxx-xxxNxxxxxxx</b>			<b>2250 mA</b>

**XLAMP® CXB2540 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (January 17, 2023)

**Description Of LED Light Sources**

XLamp CXB2540 Pro9 White LEDs (Series: CXB2540 Pro9)

This LM-80 report is applicable to the following order codes:

CXB2540-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**Results Summary For Tested LED Arrays**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXB3050 B3050-1	105 °C	105 °C	1500 mA	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs
CXB3050 B3050-2	85 °C	85 °C	2500 mA	3000 K	10	10,080 hrs	L90(10k) > 55,400 hrs L80(10k) > 55,400 hrs L70(10k) > 55,400 hrs

**Scaling For Applicable Products**

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 product. The tested products are listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Currents	
			Data Set CXB3050 B3050-1 (105 °C)	Data Set CXB3050 B3050-2 (85 °C)
CXB2540 Pro9	36 V	CXB2540-xxxx-xxPNxxxxxxx	1146 mA	1923 mA
<b>CXB3050</b>	<b>36V</b>	<b>CXB3050-xxxx-xxxNxxxxxxx</b>	<b>1500 mA</b>	<b>2500 mA</b>

## XLAMP® CXB3050 STANDARD WHITE LEDS (REV 10)

Revision: 10 (May 2, 2024)

## Description Of LED Light Sources

XLamp CXB3050 White LEDs (Series: CXB3050)

This LM-80 report is applicable to the following order codes:

CXB3050-xxxx-xxxNxxxxxxx

No failures occurred during testing.

## Test Summary

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>F</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXB3050 B3050-1	105 °C	105 °C	1500 mA	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs
CXB3050 B3050-2	85 °C	85 °C	2500 mA	3000 K	10	10,080 hrs	L90(10k) > 55,400 hrs L80(10k) > 55,400 hrs L70(10k) > 55,400 hrs

## Results Summary For Tested LED Array

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>F</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXB3070 B3070-1	105 °C	105 °C	2250 mA	3000 K	10	10,080 hrs	L90(10k) > 55,400 hrs L80(10k) > 55,400 hrs L70(10k) > 55,400 hrs

## Scaling For Applicable Products

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 product. The tested product is listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Current
			Data Set CXB3070 B3070-1 (105 °C)
CXB3050	36 V	CXB3050-xxxx-xxxNxxxxxxx	1641 mA
<b>CXB3070</b>	<b>36 V</b>	<b>CXB3070-xxxx-xxxNxxxxxxx</b>	<b>2250 mA</b>

**XLAMP® CXB3050 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (January 17, 2023)

**Description Of LED Light Sources**

XLamp CXB3050 Pro9 White LEDs (Series: CXB3050 Pro9)

This LM-80 report is applicable to the following order codes:

CXB3050-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**Results Summary For Tested LED Array**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>F</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXB3050 B3050-1	105 °C	105 °C	1500 mA	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs
CXB3050 B3050-2	85 °C	85 °C	2500 mA	3000 K	10	10,080 hrs	L90(10k) > 55,400 hrs L80(10k) > 55,400 hrs L70(10k) > 55,400 hrs

**Scaling For Applicable Products**

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 product. The tested product is listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Current	
			Data Set CXB3050 B3050-1 (105 °C)	Data Set B3050-2 (85 °C)
CXB3050 Pro9	36 V	CXB3050-xxxx-xxPNxxxxxxx	1500 mA	2500mA
<b>CXB3050</b>	<b>36 V</b>	<b>CXB3050-xxxx-xxxNxxxxxxx</b>	<b>1500 mA</b>	<b>2500 mA</b>

## XLAMP® CXB3070 STANDARD WHITE LEDS (REV 10)

Revision: 10 (May 2, 2024)

## Description Of LED Light Sources

XLamp CXB3070 White LEDs (Series: CXB3070)

This LM-80 report is applicable to the following order codes:

CXB3070-xxxx-xxxNxxxxxxx

No failures occurred during testing.

## Test Summary

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>F</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXB3070 B3070-1	105 °C	105 °C	2250 mA	3000 K	10	10,080 hrs	L90(10k) > 55,400 hrs L80(10k) > 55,400 hrs L70(10k) > 55,400 hrs
CXB3070 B3070-2	85 °C	85 °C	2800 mA	3000 K	10	10,080 hrs	L90(10k) > 55,400 hrs L80(10k) > 55,400 hrs L70(10k) > 55,400 hrs

## Results Summary For Tested LED Array

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>F</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXB3590 B3590-1	105 °C	105 °C	2100 mA (36 V) 1050 mA (72 V)	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs
CXB3590 B3590-2	85 °C	85 °C	2800 mA (36 V) 1400 mA (72 V)	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs

## Scaling For Applicable Products

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 product. The tested product is listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Currents	
			Data Set CXB3590 B3590-1 (105 °C)	Data Set CXB3590 B3590-2 (85 °C)
CXB3070	36 V	CXB3070-xxxx-xxxNxxxxxxx	1321 mA	1764 mA
<b>CXB3590</b>	<b>72 V</b>	<b>CXB3590-xxxx-xxxRxxxxxxx</b>	<b>1050 mA</b>	<b>1400 mA</b>



**XLAMP® CXB3070 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (January 17, 2023)

**Description Of LED Light Sources**

XLamp CXB3070 Pro9 White LEDs (Series: CXB3070 Pro9)

This LM-80 report is applicable to the following order codes:

CXB3070-xxxx-xxPNxxxxxxx

No failures occurred during testing.

**Results Summary For Tested LED Array**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXB3590 B3590-1	105 °C	105 °C	2100 mA (36 V) 1050 mA (72 V)	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs
CXB3070 B3070-1	105 °C	105 °C	2250 mA	3000 K	10	10,080 hrs	L90(10k) > 55,400 hrs L80(10k) > 55,400 hrs L70(10k) > 55,400 hrs
CXB3590 B3590-2	85 °C	85 °C	2800 mA (36 V) 1400 mA (72 V)	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs
CXB3070 B3070-2	85 °C	85 °C	2800 mA	3000 K	10	10,080 hrs	L90(10k) > 55,400 hrs L80(10k) > 55,400 hrs L70(10k) > 55,400 hrs

**Scaling For Applicable Products**

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 product. The tested product is listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Currents			
			Data Set CXB3590 B3590-1 (105 °C)	Data Set CXB3070 B3070-1 (105 °C)	Data Set CXB3590 B3590-2 (85 °C)	Data Set CXB3070 B3070-12 (85 °C)
CXB3070	36 V	CXB3070-xxxx-xxPNxxxxxxx	1321 mA	1600 mA	1764 mA	2600 mA
<b>CXB3070</b>	<b>36 V</b>			<b>2250 mA</b>		<b>2800 mA</b>
CXB3590	72 V	CXB3590-xxxx-xxRxxxxxxx	1050 mA		1400 mA	

**XLAMP® CXB3590 STANDARD WHITE LEDs (REV 10)**

Revision: 10 (May 2, 2024)

**Description Of LED Light Sources**

XLamp CXB3590 White LEDs (Series: CXB3590)

This LM-80 report is applicable to the following order codes:

CXB3590 36 V CXB3590-xxxx-xxxNxxxxxxxx

CXB3590 72 V CXB3590-xxxx-xxxRxxxxxxxx

No failures occurred during testing.

**Test Summary**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>a</sub> ]	Drive Current [I <sub>F</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXB3590 B3590-1	105 °C	105 °C	2100 mA (36 V) 1050 mA (72 V)	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs
CXB3590 B3590-2	85 °C	85 °C	2800 mA (36 V) 1400 mA (72 V)	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs

**XLAMP® CXB3590 PRO9™ WHITE LEDS (REV 0)**

Revision: 0 (January 17, 2023)

**Description Of LED Light Sources**

XLamp CXB3590 Pro9 White LEDs (Series: CXB3590 Pro9)

This LM-80 report is applicable to the following order codes:

CXB3590 Pro9 36 V CXB3590-xxxx-xxPNxxxxxxx

CXB3590 Pro9 72 V CXB3590-xxxx-xxPRxxxxxxx

No failures occurred during testing.

**Results Summary For Tested LED Array**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>F</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
CXB3590 B3590-1	105 °C	105 °C	2100 mA (36 V) 1050 mA (72 V)	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs
CXB3590 B3590-2	85 °C	85 °C	2800 mA (36 V) 1400 mA (72 V)	3000 K	10	11,088 hrs	L90(11k) > 61,000 hrs L80(11k) > 61,000 hrs L70(11k) > 61,000 hrs

**Scaling For Applicable Products**

The data sets cited below meet all the criteria for one LM-80 data set to apply to a range of LED arrays, as defined in the ENERGY STAR September 9, 2011 guidelines, Section 3.7.d. The table below defines the current values that apply to each product when scaled from the tested LM-80 product. The tested product is listed in bold text below.

Product Name	Voltage Class	Product Order Code	Applicable Currents	
			Data Set CXB3590 B3590-1 (105 °C)	Data Set CXB3590 B3590-2 (85 °C)
CXB3090 Pro9	36 V	CXB3070-xxxx-xxPNxxxxxxx	2100 mA	2800 mA
CXB3090 Pro9	72 V	CXB3070-xxxx-xxPRxxxxxxx	1050 mA	1400 mA
<b>CXB3590</b>	<b>36 V</b>	<b>CXB3590-xxxx-xxPNxxxxxxx</b>	<b>2100 mA</b>	<b>2800 mA</b>
<b>CXB3590</b>	<b>72 V</b>	<b>CXB3590-xxxx-xxPRxxxxxxx</b>	<b>1050 mA</b>	<b>1400 mA</b>

**XLAMP® MHB-A WHITE LEDS (REV 15)**

Revision: 15 (May 4, 2021)

**Description Of LED Light Sources**

XLamp MHB-A White LEDs (Series: MHBAWT)

This LM-80 report is applicable to the following order codes:

MHB-A 9 V: MHBAWT-xxxx-xxxCxxxxxxxx

MHB-A 18 V: MHBAWT-xxxx-xxxFxxxxxxxx

MHB-A 36 V: MHBAWT-xxxx-xxNxxxxxxxxx

No failures occurred during testing.

**Test Summary**

Data Set	Case Temp. [TS]	Ambient Temp. [TA]	Drive Current [IF]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
MHBA-2	105 °C	105 °C	320 mA (9 V) 160 mA (18 V) 80 mA (36 V)	3000 K	25	10,080 hrs	L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
MHBA-2+	105 °C	105 °C	320 mA (9 V) 160 mA (18 V) 80 mA (36 V)	3000 K	20	14,112 hrs	L90(14k) > 84,700 hrs L80(14k) > 84,700 hrs L70(14k) > 84,700 hrs
MHBA-3	85 °C	85 °C	500 mA (9 V) 250 mA (18 V) 125 mA (36 V)	3000 K	24	10,080 hrs	L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
MHBA-3+	85 °C	85 °C	500 mA (9 V) 250 mA (18 V) 125 mA (36 V)	3000 K	21	14,112 hrs	L90(14k) > 84,700 hrs L80(14k) > 84,700 hrs L70(14k) > 84,700 hrs
MHBA-1	105 °C	105 °C	500 mA (9 V) 250 mA (18 V) 125 mA (36 V)	3000 K	23	8,568 hrs	L90(9k) = 30,200 hrs L80(9k) > 51,400 hrs L70(9k) > 51,400 hrs
MHBA-4	85 °C	85 °C	700 mA (9 V) 350 mA (18 V) 175 mA (36 V)	3000 K	20	8,568 hrs	L90(9k) = 21,400 hrs L80(9k) > 51,400 hrs L70(9k) > 51,400 hrs

## XLAMP® MHB-B WHITE LEDS (REV 15)

Revision: 15 (May 4, 2021)

## Description Of LED Light Sources

XLamp MHB-B White LEDs (Series: MHBBWT)

This LM-80 report is applicable to the following order codes:

MHB-B 9 V: MHBBWT-xxxx-xxxCxxxxxxxx

MHB-B 18 V: MHBBWT-xxxx-xxxFxxxxxxxx

MHB-B 36 V: MHBBWT-xxxx-xxNxxxxxxxx

No failures occurred during testing.

## Test Summary

Data Set	Case Temp. [TS]	Ambient Temp. [TA]	Drive Current [IF]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
MHBB-2	105 °C	105 °C	320 mA (9 V) 160 mA (18 V) 80 mA (36 V)	3000 K	20	10,080 hrs	L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
MHBB-3	85 °C	85 °C	500 mA (9 V) 250 mA (18 V) 125 mA (36 V)	3000 K	20	10,080 hrs	L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
MHBB-1	105 °C	105 °C	500 mA (9 V) 250 mA (18 V) 125 mA (36 V)	3000 K	20	10,080 hrs	L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
MHBB-5	105 °C	105 °C	600 mA (9 V) 390 mA (18 V) 150 mA (36 V)	3000 K	20	10,080 hrs	L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
MHBB-4	85 °C	85 °C	700 mA (9 V) 350 mA (18 V) 175 mA (36 V)	3000 K	20	10,080 hrs	L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs

**XLAMP® MHD-E WHITE LEDS (REV 15)**

Revision: 15 (May 4, 2021)

**Description Of LED Light Sources**

XLamp MHD-E White LEDs (Series: MHDEWT)

This LM-80 report is applicable to the following order codes:

MHD-E 9 V: MHDEWT-xxxx-xxxCxxxxxxxx

MHD-E 18 V: MHDEWT-xxxx-xxxFxxxxxxxx

MHD-E 36 V: MHDEWT-xxxx-xxNxxxxxxxxx

No failures occurred during testing.

**Test Summary**

Data Set	Case Temp. [TS]	Ambient Temp. [TA]	Drive Current [IF]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
MHDE-1	105 °C	105 °C	600 mA (9 V) 300 mA (18 V) 150 mA (36 V)	3000 K	20	11,592 hrs	L90(12k) > 69,600 hrs L80(12k) > 69,600 hrs L70(12k) > 69,600 hrs
MHDE-2	85 °C	85 °C	1000 mA (9 V) 500 mA (18 V) 250 mA (36 V)	3000 K	20	11,592 hrs	L90(12k) > 69,600 hrs L80(12k) > 69,600 hrs L70(12k) > 69,600 hrs

**XLAMP® MHD-G WHITE LEDS (REV 15)**

Revision: 15 (May 4, 2021)

**Description Of LED Light Sources**

XLamp MHD-G White LEDs (Series: MHDGWT)

This LM-80 report is applicable to the following order codes:

MHD-G 18 V: MHDGWT-xxxx-xxxFxxxxxxx

MHD-G 36 V: MHDGWT-xxxx-xxxNxxxxxxx

No failures occurred during testing.

**Test Summary**

Data Set	Case Temp. [TS]	Ambient Temp. [TA]	Drive Current [IF]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
MHDG-1	105 °C	105 °C	400 mA (18 V) 200 mA (36 V)	3000 K	22	9,576 hrs	L90(10k) > 57,500 hrs L80(10k) > 57,500 hrs L70(10k) > 57,500 hrs
MHDG-1+	105 °C	105 °C	400 mA (18 V) 200 mA (36 V)	3000K	18	12,096 hrs	L90(12k) = 44,900 hrs L80(12k) > 66,500 hrs L70(12k) > 66,500 hrs
MHDG-4	85 °C	85 °C	500 mA (18 V) 250 mA (36 V)	3000K	25	11,592 hrs	L90(6k) > 69,600 hrs L80(6k) > 69,600 hrs L70(6k) > 69,600 hrs
MHDG-5	105 °C	105 °C	500 mA (18 V) 250 mA (36 V)	3000K	25	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
MHDG-2	105 °C	105 °C	700 mA (18 V) 350 mA (36 V)	3000 K	20	6,048 hrs	L90(6k) = 11,500 hrs L80(6k) = 28,400 hrs L70(6k) > 36,300 hrs
MHDG-3	85 °C	85 °C	800 mA (18 V) 400 mA (36 V)	3000 K	20	8,568 hrs	L90(9k) = 24,600 hrs L80(9k) = 51,400 hrs L70(9k) > 51,400 hrs

## XLAMP® MK-R WHITE LEDS (REV 3)

Revision: 3 (May 5, 2021)

## Description Of LED Light Sources

XLamp MK-R White LEDs (Series: MKRAWT)

This LM-80 report is applicable to the following order codes:

MK-R 6 V: MKRAWT-xx-xxxx-xBxxxxxxxxxx

MK-R 12 V: MKRAWT-xx-xxxx-xDxxxxxxxxxx

No failures occurred during testing.

## Test Summary

Data Set	Case Temp. [TS]	Ambient Temp. [TA]	Drive Current [IF]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
3	125 °C	125 °C	700 mA (6 V) 350 mA (12 V)	3000 K	25	11,088 hrs	L90(11k) > 66,500 hrs L80(11k) > 66,500 hrs L70(11k) > 66,500 hrs
8	105 °C	105 °C	1000 mA (6 V) 500 mA (12 V)	3000 K	25	13,104 hrs	L90(13k) = 34,800 hrs L80(13k) = 75,600 hrs L70(13k) > 78,600 hrs
9	85 °C	85 °C	1400 mA (6 V) 700 mA (12 V)	3000 K	25	13,104 hrs	L90(13k) = 36,400 hrs L80(13k) > 78,600 hrs L70(13k) > 78,600 hrs
4	105 °C	105 °C	1400 mA (6 V) 700 mA (12 V)	3000 K	25	10,080 hrs	L90(10k) = 26,900 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
5	85 °C	85 °C	2000 mA (6 V) 1000 mA (12 V)	3000 K	25	11,088 hrs	L90(11k) = 30,500 hrs L80(11k) = 62,200 hrs L70(11k) > 66,500 hrs
6	55 °C	55 °C	2500 mA (6 V) 1250 mA (12 V)	3000 K	25	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
6+	55 °C	55 °C	2500 mA (6 V) 1250 mA (12 V)	3000 K	21	7,056 hrs	L90(7k) > 42,300 hrs L80(7k) > 42,300 hrs L70(7k) > 42,300 hrs
7	85 °C	85 °C	2500 mA (6 V) 1250 mA (12 V)	3000 K	25	6,048 hrs	L90(6k) = 33,900 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
7+	85 °C	85 °C	2500 mA (6 V) 1250 mA (12 V)	3000 K	22	8,064 hrs	L90(8k) = 19,800 hrs L80(8k) = 42,600 hrs L70(8k) > 48,400 hrs



**XLAMP® ML-B WHITE LEDS (REV 1)**

Revision: 1 (May 1, 2012)

**Description Of LED Light Sources**

XLamp ML-B White LEDs (Series: MLBAWT)

This LM-80 report is applicable to the following order codes:

MLBAWT-xx-xxxx-xxxxxx

No failures occurred during testing.

**Test Summary**

Data Set	Case Temp. [TS]	Ambient Temp. [TA]	Drive Current [IF]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
1	45 °C	45 °C	80 mA	2700 K	25	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
2	55 °C	55 °C	80 mA	2700 K	25	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
3	85 °C	85 °C	80 mA	2700 K	25	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
4	85 °C	85 °C	175 mA	2700 K	25	8,064 hrs	L90(8k) = 12,300 hrs L80(8k) = 23,600 hrs L70(8k) = 36,300 hrs

**XLAMP® ML-C & ML-E WHITE LEDS (REV 1)**

Revision: 1 (March 19, 2012)

**Description Of LED Light Sources**

XLamp ML-C White LEDs (Parallel (MLCAWT) &amp; Series (MLCSWT) Configurations)

XLamp ML-E White LEDs (Parallel (MLEAWT) &amp; Series (MLESWT) Configurations)

This LM-80 report is applicable to the following order codes:

ML-C Parallel: MLCAWT-xx-xxxx-xxxxxx

ML-C Series: MLCSWT-xx-xxxx-xxxxxx

ML-E Parallel: MLEAWT-xx-xxxx-xxxxxx

ML-E Series : MLESWT-xx-xxxx-xxxxxx

No failures occurred during testing.

**Test Summary**

Data Set	Case Temp. [TS]	Ambient Temp. [TA]	Drive Current [IF]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
1	45 °C	45 °C	116 mA (MLCAWT) 58 mA (MLCSWT) 175 mA (MLEAWT) 58 mA (MLESWT)	2700 K	26	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
2	55 °C	55 °C	116 mA (MLCAWT) 58 mA (MLCSWT) 175 mA (MLEAWT) 58 mA (MLESWT)	2700 K	26	6,048 hrs	L90(6k) = 25,600 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
3	85 °C	85 °C	116 mA (MLCAWT) 58 mA (MLCSWT) 175 mA (MLEAWT) 58 mA (MLESWT)	2700 K	26	6,048 hrs	L90(6k) = 13,600 hrs L80(6k) = 27,200 hrs L70(6k) > 36,300 hrs

**XLAMP® ML-E WHITE LEDS (REV 2)**

Revision: 2 (May 5, 2021)

**Description Of LED Light Sources**

XLamp ML-E White LEDs (Series: MLEAWT)

This LM-80 report is applicable to the following order codes:

MLEAWT-xx-xxxx-xxxxxx

No failures occurred during testing.

**Test Summary**

Data Set	Case Temp. [TS]	Ambient Temp. [TA]	Drive Current [IF]	Average Lumen Maintenance at 6,000 Hours	(Average Chromaticity Shift ( $\Delta u'v'$ ) at 6,000 Hours	Reported TM-21 L70 Lifetimes
P2	55 °C	55 °C	175 mA	99.8%	0.0014	L70(6k) > 36,300 hrs
P3	85 °C	85 °C	175 mA	99.2%	0.0016	L70(7k) > 39,300 hrs
P3+	85 °C	85 °C	175 mA	99.2%	0.0016	L70(11k) = 44,300 hrs
P1	105 °C	105 °C	175 mA	94.1%	0.0024	L70(6k) = 28,300 hrs
P4	55 °C	55 °C	350 mA	98.7%	0.0010	L70(6k) > 36,300 hrs
P5	85 °C	85 °C	350 mA	94.1%	0.0023	L70(6k) = 28,900 hrs

## XLAMP® MT-G2 EASYWHITE® LEDS (REV 4)

Revision: 4 (June 11, 2021)

## Description Of LED Light Sources

XLamp MT-G2 EasyWhite LEDs (Series: MTGBEZ)

This LM-80 report is applicable to the following order codes:

MT-G2 6 V: MTGBEZ-xx-xxxx-xBxxxxxxxx

MT-G2 9V: MTGBEZ-xx-xxxx-xCxxxxxxxx

MT-G2 36 V: MTGBZW-xx-xxxx-xNxxxxxxxx

No failures occurred during testing.

## Test Summary

Data Set	Case Temp. [TS]	Ambient Temp. [TA]	Drive Current [IF]	Average Lumen Maintenance at 6,000 Hours	(Average Chromaticity Shift ( $\Delta u'v'$ ) at 6,000 Hours	Reported TM-21 Lifetimes
1	85 °C	85 °C	3000 mA (6 V) 2000 mA (9 V) 500 mA (36 V)	94.5%	0.0020	L70(6k) > 36,300 hrs
1+	85 °C	85 °C	3000 mA (6 V) 2000 mA (9 V) 500 mA (36 V)	94.3%	0.0020	L90(13k) = 22,300 hrs L80(13k) = 59,200 hrs L70(13k) > 72,100 hrs
2	105 °C	105 °C	3000 mA (6 V) 2000 mA (9 V) 500 mA (36 V)	90.2%	0.0034	L70(6k) = 26,000 hrs
2+	105 °C	105 °C	3000 mA (6 V) 2000 mA (9 V) 500 mA (36 V)	90.2%	0.0034	L70(7k) = 27,700 hrs

**XLAMP® MX-3 WHITE LEDS (REV 0)**

Revision: 0 (March 29, 2011)

**Description Of LED Light Sources**

XLamp MX-3 White LEDs (Series: MX3AWT)

This LM-80 report is applicable to the following order codes:

MX-3 Parallel: MX3AWT-xx-xxxx-xxxxxx

No failures occurred during testing.

**Test Summary**

Data Set	Case Temp. [TS]	Ambient Temp. [TA]	Drive Current [IF]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
1	45 °C	45 °C	400 mA	2700 K	25	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
2	55 °C	55 °C	400 mA	2700 K	25	6,048 hrs	L90(6k) = 21,700 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
3	85 °C	85 °C	400 mA	2700 K	25	6,048 hrs	L90(6k) = 16,600 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs

**XLAMP® MX-6 WHITE LEDS (REV 2)**

Revision: 2 (September 2, 2011)

**Description Of LED Light Sources**

XLamp MX-6 White LEDs (Series: MX6AWT)

This LM-80 report is applicable to the following order codes:

MX-6 Parallel: MX6AWT-xx-xxxx-xxxxxx

No failures occurred during testing.

**Test Summary**

Data Set	Case Temp. [TS]	Ambient Temp. [TA]	Drive Current [IF]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
1	45 °C	45 °C	350 mA	2700 K	26	6,048 hrs	L90(6k) = 15,700 hrs L80(6k) = 29,400 hrs L70(6k) > 36,300 hrs
2	55 °C	55 °C	350 mA	2700 K	28	6,048 hrs	L90(6k) = 27,900 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
3	85 °C	85 °C	350 mA	3000 K	30	6,048 hrs	L90(6k) = 12,100 hrs L80(6k) = 23,100 hrs L70(6k) = 35,600 hrs
4	45 °C	45 °C	600 mA	2700 K	25	6,048 hrs	L90(6k) = 28,400 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
5	55 °C	55 °C	600 mA	2700 K	25	6,048 hrs	L90(6k) = 19,500 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
6	85 °C	85 °C	600 mA	2700 K	25	6,048 hrs	L90(6k) = 11,100 hrs L80(6k) = 22,000 hrs L70(6k) = 34,400 hrs

**XLAMP® XB-D WHITE LEDS (REV 2)**

Revision: 2 (October 10, 2013)

**Description Of LED Light Sources**

XLamp XB-D White LEDs (Series: XBDAWT)

This LM-80 report is applicable to the following order codes:

XBDAWT-xx-xxxx-xxxxxxxxxx

No failures occurred during testing.

**Test Summary**

Data Set	Case Temp. [TS]	Ambient Temp. [TA]	Drive Current [IF]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
7	85 °C	85 °C	500 mA	3000 K	25	10,080 hrs	L95(10k) = 29,400 hrs L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
3	105 °C	105 °C	700 mA	3000 K	25	10,080 hrs	L90(10k) = 56,000 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
4	55 °C	55 °C	1000 mA	3000 K	25	10,080 hrs	L90(10k) = 45,000 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
5	85 °C	85 °C	1000 mA	3000 K	24	10,080 hrs	L90(10k) = 33,400 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
6	105 °C	105 °C	1000 mA	3000 K	25	6,048 hrs	L90(6k) = 12,800 hrs L80(6k) = 29,100 hrs L70(6k) > 36,300 hrs

**XLAMP® XB-D PC AMBER LEDS (REV 0)**

Revision: 0 (December 13, 2021)

**Description Of LED Light Sources**

XLamp XB-D PC Amber LEDs (Series: XBDBPA)

This LM-80 report is applicable to the following order codes:

XBDPCA-xx-xxxx-xxxxxxxxxx

No failures occurred during testing.

**Test Summary**

Nominal Case & Ambient Temp.	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
85 °C	700 mA	XB-D PC Amber @ 85 °C, 700 mA	N/A	N/A	20	6,048 hrs	L90(6k) = 13,100 hrs L80(6k) = 34,700 hrs L70(6k) > 36,300 hrs
85 °C	1000 mA	XB-D PC Amber @ 85 °C, 1000 mA	N/A	N/A	20	6,048 hrs	L90(6k) = 9,020 hrs L80(6k) = 22,200 hrs L70(6k) > 36,300 hrs



**XLAMP® XB-H WHITE LEDS (REV 2)**

Revision: 2 (May 5, 2021)

**Description Of LED Light Sources**

XLamp XB-H White LEDs (Series: XBHAWT)

This LM-80 report is applicable to the following order codes:

XBHAWT-xx-xxxx-xxxxxxxxxx

No failures occurred during testing.

**Test Summary**

Data Set	Case Temp. [TS]	Ambient Temp. [TA]	Drive Current [IF]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
1	105 °C	105 °C	700 mA	3000 K	25	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
4	85 °C	85 °C	1000 mA	3000 K	25	6,048 hrs	L90(6k) = 35,900 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
2	105 °C	105 °C	1000 mA	3000 K	25	6,048 hrs	L90(6k) = 35,100 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
3	85 °C	85 °C	1500 mA	3000 K	25	6,048 hrs	L90(6k) = 28,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs

**XLAMP® XD16 PREMIUM WHITE LEDS (REV 0)**

Revision: 0 (July 12, 2023)

**Description Of LED Light Sources**

XLamp XD16 Premium White LEDs (Series: XD16AWT)

This LM-80 report is applicable to the following order codes:

XD16AWT-Px-xxxx-xxxxxxxxxx

No failures occurred during testing.

**Test Summary**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
85 °C	500 mA	XD16 Premium 2700 K @ 85 °C, 500 mA	2700 K	84	20	3,024 hrs	N/A
105 °C	500 mA	XD16 Premium 2700 K @ 105 °C, 500 mA	2700 K	84	20	3,024 hrs	N/A
85 °C	1000 mA	XD16 Premium 2700 K @ 85 °C, 1000 mA	2700 K	83	20	3,024 hrs	N/A
105 °C	1000 mA	XD16 Premium 2700 K @ 105 °C, 1000 mA	2700 K	83	20	3,024 hrs	N/A
85 °C	1500 mA	XD16 Premium 2700 K @ 85 °C, 1500 mA	2700 K	82	20	3,024 hrs	N/A

Cree LED classifies these LED packages as “successors to previously tested subcomponents” (Section 5) per Sep 28, 2017 ENERGY STAR guidelines. The XLamp XD16 Premium White LED is a successor to the previously tested XLamp XD16 Standard White LED.

**XLAMP® XD16 STANDARD WHITE LEDS (REV 6)**

Revision: 6 (October 5, 2023)

**Description Of LED Light Sources**

XLamp XD16 Standard White LEDs (Series: XD16AWT)

This LM-80 report is applicable to the following order codes:

XD16AWT-Hx-xxxx-xxxxxxxxxx

No failures occurred during testing.

**Test Summary (4000 K)**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
85 °C	500 mA	XD16 4000 K @ 85 °C, 500 mA	4000 K	71	20	10,080 hrs	L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
105 °C	500 mA	XD16 4000 K @ 105 °C, 500 mA	4000 K	71	20	24,192 hrs	L90(24k) > 145,000 hrs L80(24k) > 145,000 hrs L70(24k) > 145,000 hrs
85 °C	1000 mA	XD16 4000 K @ 85 °C, 1000 mA	4000 K	71	20	10,080 hrs	L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
105 °C	1000 mA	XD16 4000 K @ 105 °C, 1000 mA	4000 K	71	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
85 °C	1500 mA	XD16 4000 K @ 85 °C, 1500 mA	4000 K	71	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs

**Test Summary (2700 K)**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
85 °C	500 mA	XD16 2700 K @ 85 °C, 500 mA	2700 K	83	20	12,096 hrs	L90(12k) > 72,600 hrs L80(12k) > 72,600 hrs L70(12k) > 72,600 hrs
105 °C	500 mA	XD16 2700 K @ 105 °C, 500 mA	2700 K	83	20	24,192 hrs	L90(24k) = 134,000 hrs L80(24k) > 145,000 hrs L70(24k) > 145,000 hrs
85 °C	1000 mA	XD16 2700 K @ 85 °C, 1000 mA	2700 K	82	20	11,592 hrs	L90(12k) > 69,600 hrs L80(12k) > 69,600 hrs L70(12k) > 69,600 hrs
105 °C	1000 mA	XD16 2700 K @ 105 °C, 1000 mA	2700 K	82	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
85 °C	1500 mA	XD16 2700 K @ 85 °C, 1500 mA	2700 K	81	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs

**XLAMP® XE-G WHITE & COLOR LEDS (REV 3)**

Revision: 3 (June 14, 2024)

**Description Of LED Light Sources**

XLamp XE-G White LEDs (Series: XEGAWT)  
 XLamp XE-G Royal Blue LEDs (Series: XEGARY)  
 XLamp XE-G Blue LEDs (Series: XEGABL)  
 XLamp XE-G Phosphor-Converted Blue LEDs (Series: XEGAPB)  
 XLamp XE-G Cyan LEDs (Series: XEGACY)  
 XLamp XE-G Phosphor-Converted Cyan LEDs (Series: XEGAPC)  
 XLamp XE-G Green LEDs (Series: XEGAGR)  
 XLamp XE-G Phosphor-Converted Mint LEDs (Series: XEGAPM)  
 XLamp XE-G Phosphor-Converted Lime LEDs (Series: XEGAPL)  
 XLamp XE-G Phosphor-Converted Yellow LEDs (Series: XEGAPY)  
 XLamp XE-G Phosphor-Converted Amber LEDs (Series: XEGAPA)  
 XLamp XE-G Phosphor-Converted Red-Orange LEDs (Series: XEGAPO)  
 XLamp XE-G Phosphor-Converted Red LEDs (Series: XEGAPR)  
 XLamp XE-G Red LEDs (Series: XEGARD)

This LM-80 report is applicable to the following order codes:

XEGAWT-Hx-xxxx-xxx-xxxxxxxxxxx  
 XEGARY-Hx-xxxx-xxx-xxxxxxxxxxx  
 XEGABL-Hx-xxxx-xxx-xxxxxxxxxxx  
 XEGAPB-Hx-xxxx-xxx-xxxxxxxxxxx  
 XEGACY-Hx-xxxx-xxx-xxxxxxxxxxx  
 XEGAPC-Hx-xxxx-xxx-xxxxxxxxxxx  
 XEGAGR-Hx-xxxx-xxx-xxxxxxxxxxx  
 XEGAPM-Hx-xxxx-xxx-xxxxxxxxxxx  
 XEGAPL-Hx-xxxx-xxx-xxxxxxxxxxx  
 XEGAPY-Hx-xxxx-xxx-xxxxxxxxxxx  
 XEGAPA-Hx-xxxx-xxx-xxxxxxxxxxx  
 XEGAPRO-Hx-xxxx-xxx-xxxxxxxxxxx  
 XEGAPR-Hx-xxxx-xxx-xxxxxxxxxxx  
 XEGARD-Hx-xxxx-xxx-xxxxxxxxxxx

No failures occurred during testing.

## XLAMP® XE-G WHITE &amp; COLOR LEDS (REV 3) - CONTINUED

## Test Summary

Color	Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
White	105 °C	1000 mA	XE-G White @ 105 °C, 1000 mA	2700 K	83	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
	125 °C	1000 mA	XE-G White @ 125 °C, 1000 mA	2700 K	83	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
	85 °C	1500 mA	XE-G White @ 85 °C, 1500 mA	2700 K	82	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
	105 °C	1500 mA	XE-G White @ 105 °C, 1500 mA	2700 K	82	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
	125 °C	1500 mA	XE-G White @ 125 °C, 1500 mA	2700 K	82	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
	105 °C	2000 mA	XE-G White @ 105 °C, 2000 mA	2700 K	81	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
Royal Blue	105 °C	1000 mA	XE-G Royal Blue @ 105 °C, 1000 mA	N/A	N/A	20	6,048 hrs	R90(6k) > 36,300 hrs R80(6k) > 36,300 hrs R70(6k) > 36,300 hrs
	125 °C	1000 mA	XE-G Royal Blue @ 125 °C, 1000 mA	N/A	N/A	20	6,048 hrs	R90(6k) > 36,300 hrs R80(6k) > 36,300 hrs R70(6k) > 36,300 hrs
	85 °C	1500 mA	XE-G Royal Blue @ 85 °C, 1500 mA	N/A	N/A	20	6,048 hrs	R90(6k) > 36,300 hrs R80(6k) > 36,300 hrs R70(6k) > 36,300 hrs
	105 °C	1500 mA	XE-G Royal Blue @ 105 °C, 1500 mA	N/A	N/A	20	6,048 hrs	R90(6k) > 36,300 hrs R80(6k) > 36,300 hrs R70(6k) > 36,300 hrs
	85 °C	2000 mA	XE-G Royal Blue @ 85 °C, 2000 mA	N/A	N/A	20	6,048 hrs	R90(6k) > 36,300 hrs R80(6k) > 36,300 hrs R70(6k) > 36,300 hrs
	105 °C	2000 mA	XE-G Royal Blue @ 105 °C, 2000 mA	N/A	N/A	20	6,048 hrs	R90(6k) > 36,300 hrs R80(6k) > 36,300 hrs R70(6k) > 36,300 hrs
Blue	85 °C	1000 mA	XE-G Blue @ 85 °C, 1000 mA	N/A	N/A	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
	105 °C	1000 mA	XE-G Blue @ 105 °C, 1000 mA	N/A	N/A	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
PC Blue	105 °C	700 mA	XE-G PC Blue @ 105 °C, 700 mA	N/A	N/A	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
	85 °C	1000 mA	XE-G PC Blue @ 85 °C, 1000 mA	N/A	N/A	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
	105 °C	1000 mA	XE-G PC Blue @ 105 °C, 1000 mA	N/A	N/A	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs

## XLAMP® XE-G WHITE &amp; COLOR LEDS (REV 3) - CONTINUED

Color	Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
Cyan	85 °C	2000 mA	XE-G Cyan @ 85 °C, 2000 mA	N/A	N/A	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
	105 °C	2000 mA	XE-G Cyan @ 105 °C, 2000 mA	N/A	N/A	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
PC Cyan	105 °C	700 mA	XE-G PC Cyan @ 105 °C, 700 mA	N/A	N/A	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
	85 °C	1000 mA	XE-G PC Cyan @ 85 °C, 1000 mA	N/A	N/A	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
	105 °C	1000 mA	XE-G PC Cyan @ 105 °C, 1000 mA	N/A	N/A	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
Green	85 °C	1000 mA	XE-G Green @ 85 °C, 1000 mA	N/A	N/A	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
	105 °C	1000 mA	XE-G Green @ 105 °C, 1000 mA	N/A	N/A	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
	125 °C	1000 mA	XE-G Green @ 125 °C, 1000 mA	N/A	N/A	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
	85 °C	2000 mA	XE-G Green @ 85 °C, 2000 mA	N/A	N/A	20	6,048 hrs	L90(6k) = 27,200 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
	105 °C	2000 mA	XE-G Green @ 105 °C, 2000 mA	N/A	N/A	20	6,048 hrs	L90(6k) = 19,100 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
PC Mint	105 °C	700 mA	XE-G PC Mint @ 105 °C, 700 mA	N/A	N/A	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
	85 °C	1000 mA	XE-G PC Mint @ 85 °C, 1000 mA	N/A	N/A	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
	105 °C	1000 mA	XE-G PC Mint @ 105 °C, 1000 mA	N/A	N/A	17	6,048 hrs	L90(6k) > 33,300 hrs L80(6k) > 33,300 hrs L70(6k) > 33,300 hrs
PC Lime	105 °C	700 mA	XE-G PC Lime @ 105 °C, 700 mA	N/A	N/A	18	6,048 hrs	L90(6k) > 33,300 hrs L80(6k) > 33,300 hrs L70(6k) > 33,300 hrs
	85 °C	1000 mA	XE-G PC Lime @ 85 °C, 1000 mA	N/A	N/A	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
	105 °C	1000 mA	XE-G PC Lime @ 105 °C, 1000 mA	N/A	N/A	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
PC Yellow	85 °C	1000 mA	XE-G PC Yellow @ 85 °C, 1000 mA	N/A	N/A	12	6,048 hrs	L90(6k) > 33,300 hrs L80(6k) > 33,300 hrs L70(6k) > 33,300 hrs
	105 °C	1000 mA	XE-G PC Yellow @ 105 °C, 1000 mA	N/A	N/A	12	6,048 hrs	L90(6k) > 33,300 hrs L80(6k) > 33,300 hrs L70(6k) > 33,300 hrs

## XLAMP® XE-G WHITE &amp; COLOR LEDS (REV 3) - CONTINUED

Color	Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
PC Amber	85 °C	1000 mA	XE-G PC Amber @ 85 °C, 1000 mA	N/A	N/A	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
	105 °C	1000 mA	XE-G PC Amber @ 105 °C, 1000 mA	N/A	N/A	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
PC Red-Orange	85 °C	1000 mA	XE-G PC Red-Orange @ 85 °C, 1000 mA	N/A	N/A	12	6,048 hrs	L90(6k) > 33,300 hrs L80(6k) > 33,300 hrs L70(6k) > 33,300 hrs
	105 °C	1000 mA	XE-G PC Red-Orange @ 105 °C, 1000 mA	N/A	N/A	12	6,048 hrs	L90(6k) = 24,400 hrs L80(6k) > 33,300 hrs L70(6k) > 33,300 hrs
PC Red	85 °C	1000 mA	XE-G PC Red @ 85 °C, 1000 mA	N/A	N/A	12	6,048 hrs	L90(6k) > 33,300 hrs L80(6k) > 33,300 hrs L70(6k) > 33,300 hrs
	105 °C	1000 mA	XE-G PC Red @ 105 °C, 1000 mA	N/A	N/A	12	6,048 hrs	L90(6k) = 21,300 hrs L80(6k) > 33,300 hrs L70(6k) > 33,300 hrs
Red	85 °C	2000 mA	XE-G Red @ 85 °C, 2000 mA	N/A	N/A	20	6,048 hrs	L90(6k) = 12,100 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
	105 °C	2000 mA	XE-G Red @ 105 °C, 2000 mA	N/A	N/A	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs

## XLAMP® XH-B WHITE LEDS (REV 4)

Revision: 4 (May 5, 2021)

## Description Of LED Light Sources

XLamp XH-B White LEDs (Series: XHBAWT)

This LM-80 report is applicable to the following order codes:

XHBAWT-xx-xxxx-xxxxxxxxxx

No failures occurred during testing.

## Test Summary

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
1	85 °C	85 °C	80 mA	3000 K	25	14,112 hrs	L90(14k) = 70,100 hrs L80(14k) > 84,700 hrs L70(14k) > 84,700 hrs
2	105 °C	105 °C	80 mA	3000 K	25	6,552 hrs	L90(7k) > 39,300 hrs L80(7k) > 39,300 hrs L70(7k) > 39,300 hrs
2+	105 °C	105 °C	80 mA	3000 K	24	14,112 hrs	L90(14k) = 45,100 hrs L80(14k) > 84,700 hrs L70(14k) > 84,700 hrs
4	85 °C	85 °C	125 mA	3000 K	25	23,184 hrs	L90(23k) > 139,000 hrs L80(23k) > 139,000 hrs L70(23k) > 139,000 hrs
5	105 °C	105 °C	125 mA	3000 K	25	23,184 hrs	L90(23k) = 44,100 hrs L80(23k) = 119,000 hrs L70(23k) > 139,000 hrs



## XLAMP® XH-G WHITE LEDS (REV 4)

Revision: 4 (May 5, 2021)

## Description Of LED Light Sources

XLamp XH-G White LEDs (Series: XHGAWT)

This LM-80 report is applicable to the following order codes:

XHGAWT-xx-xxxx-xxxxxxxxxx

No failures occurred during testing.

## Test Summary

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
1	85 °C	85 °C	80 mA	3000 K	25	14,616 hrs	L90(15k) = 77,500 hrs L80(15k) > 87,700 hrs L70(15k) > 87,700 hrs
2	105 °C	105 °C	80 mA	3000 K	15	14,112 hrs	L90(14k) > 77,600 hrs L80(14k) > 77,600 hrs L70(14k) > 77,600 hrs
3	85 °C	85 °C	175 mA	3000 K	25	14,112 hrs	L90(14k) = 56,600 hrs L80(14k) > 84,700 hrs L70(14k) > 84,700 hrs
4	105 °C	105 °C	175 mA	3000 K	25	14,112 hrs	L90(14k) = 30,500 hrs L80(14k) = 66,000 hrs L70(14k) > 84,700 hrs
5	85 °C	85 °C	350 mA	3000 K	25	6,552 hrs	L90(7k) = 24,300 hrs L80(7k) > 39,300 hrs L70(7k) > 39,300 hrs

## XLAMP® XHP35.2 WHITE LEDS (REV 4)

Revision: 4 (June 14, 2024)

## Description Of LED Light Sources

XLamp XHP35.2 White LEDs (Series: XHP35B)

This LM-80 report is applicable to the following order codes:

High Density (3-V/6-V) XHP35B-0x-xxxx-xAxxxxxxx

High Density (12-V) XHP35B-0x-xxxx-xDxxxxxxx

High Intensity (3-V/6-V) XHP35B-Hx-xxxx-xAxxxxxxx

High Intensity (12-V) XHP35B-Hx-xxxx-xDxxxxxxx

No failures occurred during testing.

## Results Summary For Tested LED Array

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
85 °C	1796 mA (3-V) 898 mA (6-V) 449 mA (12-V)	XHP50.2 6-V @ 85 °C, 1400 mA	3000 K	82	25	24,192 hrs	L90(24k) = 98,500 hrs L80(24k) > 145,000 hrs L70(24k) > 145,000 hrs
105 °C	1796 mA (3-V) 898 mA (6-V) 449 mA (12-V)	XHP50.2 6-V @ 105 °C, 1400 mA	3000 K	82	25	24,192 hrs	L90(24k) = 56,600 hrs L80(24k) = 121,000 hrs L70(24k) > 145,000 hrs
125 °C	1796 mA (3-V) 898 mA (6-V) 449 mA (12-V)	XHP50.2 6-V @ 125 °C, 1400 mA	3000 K	82	25	7,560 hrs	L90(8k) = 12,500 hrs L80(8k) = 35,200 hrs L70(8k) > 45,400 hrs
85 °C	2696 mA (3-V) 1348 mA (6-V) 674 mA (12-V)	XHP50.2 6-V @ 85 °C, 2100 mA	3000 K	81	25	18,144 hrs	L90(18k) > 109,000 hrs L80(18k) > 109,000 hrs L70(18k) > 109,000 hrs
105 °C	2696 mA (3-V) 1348 mA (6-V) 674 mA (12-V)	XHP50.2 6-V @ 105 °C, 2100 mA	3000 K	82	25	18,144 hrs	L90(18k) = 41,900 hrs L80(18k) = 89,100 hrs L70(18k) > 109,000 hrs
85 °C	3852 mA (3-V) 1926 mA (6-V) 963 mA (12-V)	XHP50.2 12-V @ 85 °C, 1500 mA	3000 K	81	25	18,144 hrs	L90(18k) > 109,000 hrs L80(18k) > 109,000 hrs L70(18k) > 109,000 hrs

**XLAMP® XHP50.2 WHITE LEDs (REV 4)**

Revision: 4 (May 3, 2021)

**Description Of LED Light Sources**

XLamp XHP50.2 White LEDs (Series: XHP50B)

This LM-80 report is applicable to the following order codes:

XHP50B-xx-xxxx-xxxxxxxxxx

No failures occurred during testing.

**Test Summary**

Data Set	Nominal Case & Ambient Temperature	Drive Current	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
1	85 °C	1400 mA (6-V) 700 mA (12-V)	3000 K	82	25	24,192 hrs	L90(24k) = 98,500 hrs L80(24k) > 145,000 hrs L70(24k) > 145,000 hrs
2	105 °C	1400 mA (6-V) 700 mA (12-V)	3000 K	82	25	24,192 hrs	L90(24k) = 56,600 hrs L80(24k) = 121,000 hrs L70(24k) > 145,000 hrs
3	125 °C	1400 mA (6-V) 700 mA (12-V)	3000 K	82	25	7,560 hrs	L90(8k) = 12,500 hrs L80(8k) = 35,200 hrs L70(8k) > 45,400 hrs
4	85 °C	2100 mA (6-V) 1050 mA (12-V)	3000 K	81	25	18,144 hrs	L90(18k) > 109,000 hrs L80(18k) > 109,000 hrs L70(18k) > 109,000 hrs
5	105 °C	2100 mA (6-V) 1050 mA (12-V)	3000 K	82	25	18,144 hrs	L90(18k) = 41,900 hrs L80(18k) = 89,100 hrs L70(18k) > 109,000 hrs
6	85 °C	3000 mA (6-V) 1500 mA (12-V)	3000 K	81	25	18,144 hrs	L90(18k) > 109,000 hrs L80(18k) > 109,000 hrs L70(18k) > 109,000 hrs

## XLAMP® XHP50.3 WHITE LEDs (REV 2)

Revision: 2 (June 14, 2024)

## Description Of LED Light Sources

XLamp XHP50.3 White LEDs (Series: XHP50D)

This LM-80 report is applicable to the following order codes:

High Density (3-V) XHP50D-0x-xxxx-xAxxxxxxx

High Density (6-V/12-V) XHP50D-0x-xxxx-xDxxxxxxx

High Intensity (3-V) XHP50D-Hx-xxxx-xAxxxxxxx

High Intensity (6-V/12-V) XHP50D-Hx-xxxx-xDxxxxxxx

No failures occurred during testing.

## Test Summary

Nominal Case & Ambient Temp.	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
85 °C	2800 mA (3-V) 1400 mA (6-V) 700 mA (12-V)	XHP50.3 6-V @ 85 °C, 1400 mA	2700 K	84	20	14,112 hrs	L90(14k) > 84,700 hrs L80(14k) > 84,700 hrs L70(14k) > 84,700 hrs
105 °C	2800 mA (3-V) 1400 mA (6-V) 700 mA (12-V)	XHP50.3 6-V @ 105 °C, 1400 mA	2700 K	84	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
125 °C	2800 mA (3-V) 1400 mA (6-V) 700 mA (12-V)	XHP50.3 6-V @ 125 °C, 1400 mA	2700 K	84	20	6,048 hrs	L90(6k) = 21,200 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
85 °C	4200 mA (3-V) 2100 mA (6-V) 1050 mA (12-V)	XHP50.3 6-V @ 85 °C, 2100 mA	2700 K	83	20	10,080 hrs	L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
105 °C	4200 mA (3-V) 2100 mA (6-V) 1050 mA (12-V)	XHP50.3 6-V @ 105 °C, 2100 mA	2700 K	83	20	6,048 hrs	L90(6k) = 35,000 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
85 °C	6000 mA (3-V) 3000 mA (6-V) 1500 mA (12-V)	XHP50.3 6-V @ 85 °C, 3000 mA	2700 K	83	20	6,048 hrs	L90(6k) = 33,100 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs

**XLAMP® XHP70.2 WHITE LEDS (REV 3)**

Revision: 3 (May 3, 2021)

**Description Of LED Light Sources**

XLamp XHP70 White LEDs (Series: XHP70B)

This LM-80 report is applicable to the following order codes:

XHP70B-xx-xxxx-xxxxxxxxxx

No failures occurred during testing.

**Test Summary**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
85 °C	2100 mA (6 V) 1050 mA (12 V)	XHP70.2 6-V @ 85 °C, 2100 mA	3000 K	83	20	11,592 hrs	L90(12k) > 69,600 hrs L80(12k) > 69,600 hrs L70(12k) > 69,600 hrs
105 °C	2100 mA (6 V) 1050 mA (12 V)	XHP70.2 6-V @ 105 °C, 2100 mA	3000 K	83	20	12,096 hrs	L90(12k) > 72,600 hrs L80(12k) > 72,600 hrs L70(12k) > 72,600 hrs
125 °C	2100 mA (6 V) 1050 mA (12 V)	XHP70.2 12-V @ 125 °C, 1050 mA	3000 K	83	20	12,096 hrs	L90(12k) = 21,400 hrs L80(12k) = 56,100 hrs L70(12k) > 72,600 hrs
85 °C	3000 mA (6 V) 1500 mA (12 V)	XHP70.2 12-V @ 85 °C, 1500 mA	3000 K	82	20	12,096 hrs	L90(12k) > 72,600 hrs L80(12k) > 72,600 hrs L70(12k) > 72,600 hrs
105 °C	3000 mA (6 V) 1500 mA (12 V)	XHP70.2 12-V @ 105 °C, 1500 mA	3000 K	82	20	12,096 hrs	L90(12k) > 72,600 hrs L80(12k) > 72,600 hrs L70(12k) > 72,600 hrs
85 °C	4200 mA (6 V) 2100 mA (12 V)	XHP70.2 12-V @ 85 °C, 2100 mA	3000 K	82	20	12,096 hrs	L90(12k) > 72,600 hrs L80(12k) > 72,600 hrs L70(12k) > 72,600 hrs
85 °C	4800 mA (6 V) 2400 mA (12 V)	XHP70.2 12-V @ 85 °C, 2400 mA	3000 K	82	20	11,592 hrs	L90(12k) > 69,600 hrs L80(12k) > 69,600 hrs L70(12k) > 69,600 hrs

**XLAMP® XHP70.3 WHITE LEDs (REV 2)**

Revision: 2 (June 14, 2024)

**Description Of LED Light Sources**

XLamp XHP70 White LEDs (Series: XHP70D)

This LM-80 report is applicable to the following order codes:

High Density (3-V) XHP70D-0x-xxxx-xAxxxxxxx

High Density (6-V/12-V) XHP70D-0x-xxxx-xDxxxxxxx

High Intensity (3-V) XHP70D-Hx-xxxx-xAxxxxxxx

High Intensity (6-V/12-V) XHP70D-Hx-xxxx-xDxxxxxxx

No failures occurred during testing.

**Test Summary**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	4200 mA (3 V) 2100 mA (6 V) 1050 mA (12 V)	XHP70.3 12-V @ 105 °C, 1050 mA	2700 K	83	20	10,080 hrs	L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
125 °C	4200 mA (3 V) 2100 mA (6 V) 1050 mA (12 V)	XHP70.3 12-V @ 125 °C, 1050 mA	2700 K	83	20	10,080 hrs	L90(10k) = 16,000 hrs L80(10k) = 46,500 hrs L70(10k) > 60,500 hrs
85 °C	6000 mA (3 V) 3000 mA (6 V) 1500 mA (12 V)	XHP70.3 12-V @ 85 °C, 1500 mA	2700 K	82	20	10,080 hrs	L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
105 °C	6000 mA (3 V) 3000 mA (6 V) 1500 mA (12 V)	XHP70.3 12-V @ 105 °C, 1500 mA	2700 K	82	20	10,080 hrs	L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
85 °C	8400 mA (3 V) 4200 mA (6 V) 2100 mA (12 V)	XHP70.3 12-V @ 85 °C, 2100 mA	2700 K	83	20	10,080 hrs	L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
85 °C	8400 mA (3 V) 4800 mA (6 V) 2400 mA (12 V)	XHP70.3 12-V @ 85 °C, 2400 mA	2700 K	82	20	10,080 hrs	L90(10k) = 31,100 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
85 °C	12,000 mA (3 V) 6000 mA (6 V) 3000 mA (12 V)	XHP70.3 12-V @ 85 °C, 3000 mA	2700 K	81	20	8,064 hrs	L90(8k) = 26,400 hrs L80(8k) > 48,400 hrs L70(8k) > 48,400 hrs

## XLAMP® XM-L® COLOR GEN 2 LEDs (REV 0)

Revision: 0 (September 5, 2023)

## Description Of LED Light Sources

XLamp XM-L® Color Gen 2 LEDs (Series: XMLDCL)

This LM-80 report is applicable to the following order codes:

XMLDCL-0x-xxxx-xxxxxxxxxx

XMLDCL-Hx-xxxx-xxxxxxxxxx

No failures occurred during testing.

## Test Summary

Nominal Case & Ambient Temp.	Drive Current	Tested Product & Data Set	Sample Count	Test Duration	Die Color	ANSI CCT Target	Mean CRI	Reported TM-21 Lifetimes
85 °C	700 mA	XM-L Color Gen 2 @ 85 °C, 700 mA per die	20	6,048 hrs	Blue	N/A	N/A	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
					Green	N/A	N/A	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
					Red	N/A	N/A	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
					White	3000 K	71	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
105 °C	700 mA	XM-L Color Gen 2 @ 105 °C, 700 mA per die	20	6,048 hrs	Blue	N/A	N/A	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
					Green	N/A	N/A	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
					Red	N/A	N/A	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
					White	3000 K	72	L90(6k) = 31,600 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
85 °C	1000 mA	XM-L Color Gen 2 @ 85 °C, 1000 mA per die	20	6,048 hrs	Blue	N/A	N/A	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
					Green	N/A	N/A	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
					Red	N/A	N/A	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
					White	3000 K	71	L90(6k) = 35,900 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs

## XLAMP® XM-L® COLOR GEN 2 LEDS (REV 0) - CONTINUED

Nominal Case & Ambient Temp.	Drive Current	Tested Product & Data Set	Sample Count	Test Duration	Die Color	ANSI CCT Target	Mean CRI	Reported TM-21 Lifetimes
105 °C	1000 mA	XM-L Color Gen 2 @ 105 °C, 1000 mA per die	20	6,048 hrs	Blue	N/A	N/A	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
					Green	N/A	N/A	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
					Red	N/A	N/A	L90(6k) = 16,400 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
					White	3000 K	71	L90(6k) = 29,400 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs



## XLAMP® XM-L2 WHITE LEDS (REV 5)

Revision: 5 (June 11, 2021)

## Description Of LED Light Sources

XLamp XM-L2 White LEDs (Series: XMLBWT)

This LM-80 report is applicable to the following order codes:

XMLBWT-xx-xxxx-xxxxxxxxxx

No failures occurred during testing.

## Test Summary

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
1	85 °C	85 °C	1500 mA	2700 K	25	7,560 hrs	L95(8k) > 45,400 hrs L90(8k) > 45,400 hrs L80(8k) > 45,400 hrs L70(8k) > 45,400 hrs
1+	85 °C	85 °C	1500 mA	2700 K	23	12,096 hrs	L95(12k) = 30,100 hrs L90(12k) = 60,900 hrs L80(12k) > 72,600 hrs L70(12k) > 72,600 hrs
2	105 °C	105 °C	1500 mA	2700 K	25	8,568 hrs	L95(9k) = 19,600 hrs L90(9k) = 43,900 hrs L80(9k) > 51,400 hrs L70(9k) > 51,400 hrs
8	55 °C	55 °C	2100 mA	2700 K	25	9,072 hrs	L95(9k) > 54,400 hrs L90(9k) > 54,400 hrs L80(9k) > 54,400 hrs L70(9k) > 54,400 hrs
8+	55 °C	55 °C	2100 mA	2700 K	17	12,096 hrs	L95(12k) > 66,500 hrs L90(12k) > 66,500 hrs L80(12k) > 66,500 hrs L70(12k) > 66,500 hrs
10	105 °C	105 °C	2100 mA	3000 K	25	6,048 hrs	L95(6k) = 14,900 hrs L90(6k) > 36,600 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
9	55 °C	55 °C	3000 mA	2700 K	25	6,048 hrs	L95(6k) = 16,800 hrs L90(6k) = 35,600 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
11	85 °C	85 °C	3000 mA	3000 K	25	6,048 hrs	L95(6k) = 7,950 hrs L90(6k) = 17,100 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs

## XLAMP® XM-L3 WHITE LEDS (REV 2)

Revision: 2 (July 26, 2021)

## Description Of LED Light Sources

XLamp XM-L3 White LEDs (Series: XMLDWT)

This LM-80 report is applicable to the following order codes:

XMLDWT-xx-xxxx-xxxxxxxxxx

No failures occurred during testing.

## Test Summary

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
85 °C	1500 mA	XM-L3 White @ 85 °C, 1500 mA	2700 K	71	20	8,064 hrs	L90(8k) > 48,400 hrs L80(8k) > 48,400 hrs L70(8k) > 48,400 hrs
105 °C	1500 mA	XM-L3 White @ 105 °C, 1500 mA	2700 K	71	20	8,064 hrs	L90(8k) > 48,400 hrs L80(8k) > 48,400 hrs L70(8k) > 48,400 hrs
105 °C	2100 mA	XM-L3 White @ 105 °C, 2100 mA	2700 K	71	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
85 °C	2400 mA	XM-L3 White @ 85 °C, 2400 mA	2700 K	71	20	6,048 hrs	L90(6k) = 22,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
105 °C	2400 mA	XM-L3 White @ 105 °C, 2400 mA	2700 K	71	20	6,048 hrs	L90(6k) = 14,500 hrs L80(6k) = 32,400 hrs L70(6k) > 36,300 hrs
85 °C	3000 mA	XM-L3 White @ 85 °C, 3000 mA	2700 K	71	20	6,048 hrs	L90(6k) = 14,700 hrs L80(6k) = 28,500 hrs L70(6k) > 36,300 hrs

**XLAMP® XP-E PHOTO RED LEDS (REV 3)**

Revision: 3 (May 3, 2021)

**Description Of LED Light Sources**

XLamp XP-E Photo Red LEDs (Series: XPEPHR, XPEEPR)

This LM-80 report is applicable to the following order codes:

XPEPHR-xx-xxxx-xxxxx

XPEEPR-xx-xxxx-xxxxx

No failures occurred during testing.

**Test Summary**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>a</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
660-1	85 °C	85 °C	700 mA	N/A	15	12,096 hrs	R95(12k) > 66,500 hrs R90(12k) > 66,500 hrs R80(12k) > 66,500 hrs R70(12k) > 66,500 hrs
660-2	105 °C	105 °C	700 mA	N/A	15	12,096 hrs	R95(12k) > 66,500 hrs R90(12k) > 66,500 hrs R80(12k) > 66,500 hrs R70(12k) > 66,500 hrs
660-3	85 °C	85 °C	1000 mA	N/A	15	12,096 hrs	R95(12k) > 66,500 hrs R90(12k) > 66,500 hrs R80(12k) > 66,500 hrs R70(12k) > 66,500 hrs
660-4	105 °C	105 °C	1000 mA	N/A	15	12,096 hrs	R95(12k) > 66,500 hrs R90(12k) > 66,500 hrs R80(12k) > 66,500 hrs R70(12k) > 66,500 hrs

**XLAMP® XP-E WHITE LEDS (REV 3)**

Revision: 3 (November 9, 2011)

**Description Of LED Light Sources**

XLamp XP-E White LEDs (Series: XPEWHT)

This LM-80 report is applicable to the following order codes:

XPEWHT-xx-xxxx-xxxxx

No failures occurred during testing.

**Test Summary**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
8	55 °C	55 °C	350 mA	2700 K	25	10,080 hrs	L90(10k) = 56,800 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
9	85 °C	85 °C	350 mA	2700 K	25	10,080 hrs	L90(10k) = 39,700 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
10	105 °C	105 °C	350 mA	2700 K	25	6,048 hrs	L90(6k) = 19,400 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
5	45 °C	45 °C	700 mA	2700 K	25	10,080 hrs	L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
6	55 °C	55 °C	700 mA	2700 K	25	10,080 hrs	L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
7	85 °C	85 °C	700 mA	2700 K	25	10,080 hrs	L90(10k) = 28,300 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs

## XLAMP® XP-E2 COLOR LEDS (REV 6)

Revision: 6 (June 28, 2022)

## Description Of LED Light Sources

XLamp XP-E2 Red LEDs (Series: XPEBRD)

XLamp XP-E2 Red-Orange LEDs (Series: XPEBRO)

XLamp XP-E2 Amber LEDs (Series: XPEBAM)

XLamp XP-E2 Green LEDs (Series: XPEBGR)

XLamp XP-E2 Blue LEDs (Series: XPEBBL)

This LM-80 report is applicable to the following order codes:

XPEBRD-xx-xxxx-xxxxx

XPEBRO-xx-xxxx-xxxxx

XPEBAM-xx-xxxx-xxxxx

XPEBGR-xx-xxxx-xxxxx

XPEBBL-xx-xxxx-xxxxx

No failures occurred during testing.

## Test Summary

LED Color	Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>F</sub> ]	Sample Count	Test Duration	Reported TM-21 Lifetimes
Red, Red-Orange	R3	85 °C	85 °C	1000 mA	20	17,136 hrs	L90(17k) = 68,900 hrs L80(17k) > 103,000 hrs L70(17k) > 103,000 hrs
	R2	105 °C	105 °C	1000 mA	25	12,096 hrs	L90(12k) = 55,700 hrs L80(12k) > 72,600 hrs L70(12k) > 72,600 hrs
Amber	A1	85 °C	85 °C	1000 mA	14	12,096 hrs	L90(12k) > 66,500 hrs L80(12k) > 66,500 hrs L70(12k) > 66,500 hrs
	A2	105 °C	105 °C	1000 mA	13	6,048 hrs	L90(6k) > 33,300 hrs L80(6k) > 33,300 hrs L70(6k) > 33,300 hrs
Green	G2	105 °C	105 °C	500 mA	20	8,568 hrs	L90(9k) > 51,400 hrs L80(9k) > 51,400 hrs L70(9k) > 51,400 hrs
	G3	85 °C	85 °C	1000 mA	20	12,096 hrs	L90(12k) > 72,600 hrs L80(12k) > 72,600 hrs L70(12k) > 72,600 hrs
	G4	105 °C	105 °C	1000 mA	20	12,096 hrs	L90(12k) > 72,600 hrs L80(12k) > 72,600 hrs L70(12k) > 72,600 hrs
Blue	B2	105 °C	105 °C	500 mA	20	7,560 hrs	L90(8k) > 45,400 hrs L80(8k) > 45,400 hrs L70(8k) > 45,400 hrs
	B3	85 °C	85 °C	1000 mA	20	8,568 hrs	L90(9k) > 51,400 hrs L80(9k) > 51,400 hrs L70(9k) > 51,400 hrs

**XLAMP® XP-E2 FAR RED LEDS (REV 2)**

Revision: 2 (May 1, 2024)

**Description Of LED Light Sources**

XLamp XP-G3 Far Red (S Line) LEDs (Series: XPEBFR)

XLamp XP-E2 Far Red (Standard) LEDs (Series: XPEBFR)

XLamp XP-E2 Far Red (Horizon70) LEDs (Series: XPEBFR)

XLamp XP-E2 Far Red (Horizon90) LEDs (Series: XPEBFR)

This LM-80 report is applicable to the following order codes:

XP-E2 Far Red (S Line) XPEBFR-xS-xxxx-xxxxx

XP-E2 Far Red (Standard) XPEBFR-x1-xxxx-xxxxx

XP-E2 Far Red (Horizon70) XPEBFR-xW-xxxx-xxxxx

XP-E2 Far Red (Horizon90) XPEBFR-xF-xxxx-xxxxx

No failures occurred during testing.

**XP-E2 Far Red S Line, Standard, Horizon70, Horizon90****Test Summary**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	PF <sub>m</sub> Lifetimes	PF <sub>FR</sub> Lifetimes
85 °C	1000 mA	XP-E2 Far Red @ 85 °C, 1000 mA	N/A	N/A	20	6,048hrs	Q90(6k) > 36,300 hrs Q80(6k) > 36,300 hrs Q70(6k) > 36,300 hrs	<25% flux in PFF range
105 °C	1000 mA	XP-E2 Far Red @ 105 °C, 1000 mA	N/A	N/A	20	6,048 hrs	Q90(6k) > 36,300 hrs Q80(6k) > 36,300 hrs Q70(6k) > 36,300 hrs	<25% flux in PFF range

**XLAMP® XP-E2 PC AMBER LEDS (REV 2)**

Revision: 2 (May 4, 2021)

**Description Of LED Light Sources**

XLamp XP-E2 PC Amber LEDs (Series: XPEBPA)

This LM-80 report is applicable to the following order codes:

XPEBPA-xx-xxxx-xxxxx

No failures occurred during testing.

**Test Summary**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
85 °C	350 mA	XP-E2 PC Amber @ 85 °C, 350 mA	N/A	N/A	20	12,096 hrs	L90(12k) > 72,600 hrs L80(12k) > 72,600 hrs L70(12k) > 72,600 hrs
105 °C	350 mA	XP-E2 PC Amber @ 105 °C, 350 mA	N/A	N/A	20	12,096 hrs	L90(12k) = 70,400 hrs L80(12k) > 72,600 hrs L70(12k) > 72,600 hrs
85 °C	1000 mA	XP-E2 PC Amber @ 85 °C, 1000 mA	N/A	N/A	20	12,096 hrs	L90(12k) = 33,200 hrs L80(12k) > 72,600 hrs L70(12k) > 72,600 hrs
105 °C	1000 mA	XP-E2 PC Amber @ 105 °C, 1000 mA	N/A	N/A	20	10,080 hrs	L90(10k) = 17,100 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs

**XLAMP® XP-E2 PHOTO RED LEDs (REV 2)**

Revision: 2 (April 29, 2021)

**Description Of LED Light Sources**

XLamp XP-E2 Photo Red LEDs (Series: XPEBPR)

This LM-80 report is applicable to the following order codes:

XPEBPR-xx-xxxx-xxxxx

No failures occurred during testing.

**Test Summary**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	PF <sub>M</sub> Lifetimes	PF <sub>FR</sub> Lifetimes
85 °C	1000 mA	XP-E2 Photo Red @ 85 °C, 1000 mA	N/A	N/A	20	10,080 hrs	Q90(7k) > 60,500 hrs Q80(7k) > 60,500 hrs Q70(7k) > 60,500 hrs	<25% flux in PF <sub>FR</sub> range
105 °C	1000 mA	XP-E2 Photo Red @ 105 °C, 1000 mA	N/A	N/A	20	10,080 hrs	Q90(7k) = 60,500 hrs Q80(7k) > 60,500 hrs Q70(7k) > 60,500 hrs	<25% flux in PF <sub>FR</sub> range



## XLAMP® XP-E2 WHITE LEDS (REV 2)

Revision: 2 (May 5, 2021)

## Description Of LED Light Sources

XLamp XP-E2 White LEDs (Series: XPEBWT)

This LM-80 report is applicable to the following order codes:

XPEBWT-xx-xxxx-xxxxx

No failures occurred during testing.

## Test Summary

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>F</sub> ]	Average Lumen Maintenance at 6,000 Hours	Average Chromaticity Shift ( $\Delta u'v'$ ) at 6,000 Hours	Reported TM-21 Lifetimes
3	85°C	85°C	350 mA	98.2%	0.0016	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
3+	85°C	85°C	350 mA	97.9%	0.0016	L90(9k) > 49,900 hrs L80(9k) > 49,900 hrs L70(9k) > 49,900 hrs
1	105°C	105°C	350 mA	98.0%	0.0014	L90(9k) > 54,400 hrs L80(9k) > 54,400 hrs L70(9k) > 54,400 hrs
4	55°C	55°C	700 mA	97.8%	0.0017	L90(9k) > 51,400 hrs L80(9k) > 51,400 hrs L70(9k) > 51,400 hrs
4+	55°C	55°C	700 mA	97.8%	0.0017	L90(7k) = 47,400 hrs L80(7k) > 55,400 hrs L70(7k) > 55,400 hrs
2	85°C	85°C	700 mA	97.3%	0.0012	L90(10k) = 18,000 hrs L80(10k) = 36,100 hrs L70(10k) = 56,600 hrs
5	105°C	105°C	700 mA	96.1%	0.0018	L90(8k) = 18,800 hrs L80(8k) = 39,700 hrs L70(8k) > 48,400 hrs

**XLAMP® XP-G WHITE LEDS (REV 7)**

Revision: 7 (March 18, 2014)

**Description Of LED Light Sources**

XLamp XP-G White LEDs (Series: XPGWHT)

This LM-80 report is applicable to the following order codes:

XPGWHT-xx-xxxx-xxxxx

No failures occurred during testing.

**Test Summary**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
17	55 °C	55 °C	1000 mA	3000 K	25	6,048 hrs	L95(6k) > 36,300 hrs L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
13	85 °C	85 °C	1000 mA	3000 K	25	13,608 hrs	L95(14k) > 81,600 hrs L90(14k) > 81,600 hrs L80(14k) > 81,600 hrs L70(14k) > 81,600 hrs
14	105 °C	105 °C	1000 mA	3000 K	25	12,096 hrs	L95(12k) > 72,600 hrs L90(12k) > 72,600 hrs L80(12k) > 72,600 hrs L70(12k) > 72,600 hrs
15	55 °C	55 °C	1500 mA	3000 K	25	12,096 hrs	L95(12k) > 72,600 hrs L90(12k) > 72,600 hrs L80(12k) > 72,600 hrs L70(12k) > 72,600 hrs
16	85 °C	85 °C	1500 mA	3000 K	25	12,096 hrs	L95(12k) > 72,600 hrs L90(12k) > 72,600 hrs L80(12k) > 72,600 hrs L70(12k) > 72,600 hrs

**XLAMP® XP-G2 HIGH-EFFICACY WHITE LEDS (REV 4)**

Revision: 4 (April 30, 2021)

**Description Of LED Light Sources**

XLamp XP-G2 High-Efficacy LEDs (Series: XPGBWT)

This LM-80 report is applicable to the following order codes:

XPGBWT-xE-xxxx-xxxxx

No failures occurred during testing.

**Test Summary**

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
85 °C	1050 mA	XP-G2 High Efficacy @ 85 °C, 1050 mA	4000 K	71	20	9,576 hrs	L90(10k) > 57,500 hrs L80(10k) > 57,500 hrs L70(10k) > 57,500 hrs
105 °C	1050 mA	XP-G2 High Efficacy @ 105 °C, 1050 mA	4000 K	71	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
85 °C	2000 mA	XP-G2 High Efficacy @ 85 °C, 2000 mA	4000 K	71	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
85 °C	1050 mA	XP-G2 High Efficacy @ 85 °C, 1050 mA	2700 K	72	20	10,080 hrs	L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
105 °C	1050 mA	XP-G2 High Efficacy @ 105 °C, 1050 mA	2700 K	72	20	10,080 hrs	L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
85 °C	1500 mA	XP-G2 High Efficacy @ 85 °C, 1500 mA	2700 K	71	20	7,056 hrs	L90(7k) > 42,300 hrs L80(7k) > 42,300 hrs L70(7k) > 42,300 hrs
105 °C	1500 mA	XP-G2 High Efficacy @ 105 °C, 1500 mA	2700 K	71	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
85 °C	2000 mA	XP-G2 High Efficacy @ 85 °C, 2000 mA	2700 K	71	20	6,048 hrs	L90(6k) = 33,600 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs

## XLAMP® XP-G2 WHITE LEDS (REV 10)

Revision: 10 (June 12, 2021)

## Description Of LED Light Sources

XLamp XP-G2 White LEDs (Series: XPGBWT)

This LM-80 report is applicable to the following order codes:

XPGBWT-x1-xxxx-xxxxx

XPGBWT-x3-xxxx-xxxxx

No failures occurred during testing.

## Test Summary

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>F</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
11	125 °C	125 °C	350 mA	3000 K	25	9,072 hrs	L90(9k) > 54,400 hrs L80(9k) > 54,400 hrs L70(9k) > 54,400 hrs
9	85 °C	85 °C	500 mA	3000 K	25	10,584 hrs	L90(11k) > 63,500 hrs L80(11k) > 63,500 hrs L70(11k) > 63,500 hrs
9+	85 °C	85 °C	500 mA	3000 K	20	13,608 hrs	L90(14k) > 81,600 hrs L80(14k) > 81,600 hrs L70(14k) > 81,600 hrs
10	105 °C	105 °C	500 mA	3000 K	25	11,088 hrs	L90(11k) > 66,500 hrs L80(11k) > 66,500 hrs L70(11k) > 66,500 hrs
10+	105 °C	105 °C	500 mA	3000 K	19	14,112 hrs	L90(14k) > 77,600 hrs L80(14k) > 77,600 hrs L70(14k) > 77,600 hrs
15	105 °C	105 °C	700 mA	3000 K	20	8,568 hrs	L90(8.5k) > 51,400 hrs L80(8.5k) > 51,400 hrs L70(8.5k) > 51,400 hrs
3	55 °C	55 °C	1000 mA	3000 K	25	9,072 hrs	L90(9k) > 54,400 hrs L80(9k) > 54,400 hrs L70(9k) > 54,400 hrs
3+	55 °C	55 °C	1000 mA	3000 K	20	10,080 hrs	L90(10k) > 49,700 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
16	85 °C	85 °C	1000 mA	4000 K	20	8,568 hrs	L90(8.5k) > 51,400 hrs L80(8.5k) > 51,400 hrs L70(8.5k) > 51,400 hrs
17	85 °C	85 °C	1000 mA	3000 K	20	9,072 hrs	L90(9k) > 54,400 hrs L80(9k) > 54,400 hrs L70(9k) > 54,400 hrs
18	105 °C	105 °C	1000 mA	3000 K	20	8,568 hrs	L90(8.5k) > 51,400 hrs L80(8.5k) > 51,400 hrs L70(8.5k) > 51,400 hrs
13	55 °C	55 °C	1500 mA	3000 K	25	7,560 hrs	L90(7.5k) > 36,400 hrs L80(7.5k) > 45,400 hrs L70(7.5k) > 45,400 hrs
7	85 °C	85 °C	1500 mA	3000 K	25	6,048 hrs	L90(6k) > 24,500 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs

**XLAMP® XP-G3 HORTICULTURE LEDS (REV 7)**

Revision: 7 (May 1, 2024)

**Description Of LED Light Sources**

XLamp XP-G3 Photo Red (S Line) LEDs (Series: XPGDPR)  
 XLamp XP-G3 Photo Red (Standard) LEDs (Series: XPGDPR)  
 XLamp XP-G3 Photo Red (Horizon70) LEDs (Series: XPGDPR)  
 XLamp XP-G3 Photo Red (Horizon90) LEDs (Series: XPGDPR)  
 XLamp XP-G3 Royal Blue (S Line) LEDs (Series: XPGDRY)  
 XLamp XP-G3 Royal Blue (Standard) LEDs (Series: XPGDRY)  
 XLamp XP-G3 Royal Blue (Horizon70) LEDs (Series: XPGDRY)  
 XLamp XP-G3 Royal Blue (Horizon90) LEDs (Series: XPGDRY)  
 XLamp XP-G3 White (S Line) LEDs (Series: XPGDWT)  
 XLamp XP-G3 White (Standard) LEDs (Series: XPGDWT)  
 XLamp XP-G3 White (Horizon70) LEDs (Series: XPGDWT)  
 XLamp XP-G3 White (Horizon90) LEDs (Series: XPGDWT)

This LM-80 report is applicable to the following order codes:

XP-G3 Photo Red (S Line)	XPGDPR-xS-xxxx-xxxxx
XP-G3 Photo Red (Standard)	XPGDPR-x1-xxxx-xxxxx
XP-G3 Photo Red (Horizon70)	XPGDPR-xW-xxxx-xxxxx
XP-G3 Photo Red (Horizon90)	XPGDPR-xF-xxxx-xxxxx
XP-G3 Royal Blue (S Line)	XPGDRY-xS-xxxx-xxxxx
XP-G3 Royal Blue (Standard)	XPGDRY-x1-xxxx-xxxxx
XP-G3 Royal Blue (Horizon70)	XPGDRY-xW-xxxx-xxxxx
XP-G3 Royal Blue (Horizon90)	XPGDRY-xF-xxxx-xxxxx
XP-G3 White (S Line)	XPGDWT-xS-xxxx-xxxxx
XP-G3 White (Standard)	XPGDWT-x1-xxxx-xxxxx
XP-G3 White (Standard)	XPGDWT-x3-xxxx-xxxxx
XP-G3 White (Horizon70)	XPGDWT-xW-xxxx-xxxxx
XP-G3 White (Horizon90)	XPGDWT-xF-xxxx-xxxxx

No failures occurred during testing.

## XLAMP® XP-G3 HORTICULTURE LEDs (REV 7) - CONTINUED

## XP-G3 Photo Red S Line, Horizon70, Horizon90

## Test Summary

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	PFM <sub>P</sub> Lifetimes	PF <sub>FR</sub> Lifetimes
85 °C	1000 mA	XP-G3 Photo Red (S Line) @ 85 °C, 1000 mA	N/A	N/A	20	15,120 hrs	Q90(15k) = 79,300 hrs Q80(15k) > 90,700 hrs Q70(15k) > 90,700 hrs	<25% flux in PF <sub>FR</sub> range
105 °C	1000 mA	XP-G3 Photo Red (S Line) @ 105 °C, 1000 mA	N/A	N/A	20	15,120 hrs	Q90(15k) > 90,700 hrs Q80(15k) > 90,700 hrs Q70(15k) > 90,700 hrs	<25% flux in PF <sub>FR</sub> range
85 °C	1500 mA	XP-G3 Photo Red (S Line) @ 85 °C, 1500 mA	N/A	N/A	20	10,080 hrs	Q90(10k) > 60,500 hrs Q80(10k) > 60,500 hrs Q70(10k) > 60,500 hrs	<25% flux in PF <sub>FR</sub> range
105 °C	1500 mA	XP-G3 Photo Red (S Line) @ 105 °C, 1500 mA	N/A	N/A	20	10,080 hrs	Q90(10k) = 56,800 hrs Q80(10k) > 60,500 hrs Q70(10k) > 60,500 hrs	<25% flux in PF <sub>FR</sub> range

## XP-G3 Photo Red Standard

## Test Summary

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	PFM <sub>P</sub> Lifetimes	PF <sub>FR</sub> Lifetimes
85 °C	1000 mA	XP-G3 Photo Red (Standard) @ 85 °C, 1000 mA	N/A	N/A	20	15,120 hrs	Q90(15k) > 90,700 hrs Q80(15k) > 90,700 hrs Q70(15k) > 90,700 hrs	<25% flux in PF <sub>FR</sub> range
105 °C	1000 mA	XP-G3 Photo Red (Standard) @ 105 °C, 1000 mA	N/A	N/A	20	15,120 hrs	Q90(15k) > 90,700 hrs Q80(15k) > 90,700 hrs Q70(15k) > 90,700 hrs	<25% flux in PF <sub>FR</sub> range
85 °C	1500 mA	XP-G3 Photo Red (Standard) @ 85 °C, 1500 mA	N/A	N/A	20	6,048 hrs	Q90(6k) > 36,300 hrs Q80(6k) > 36,300 hrs Q70(6k) > 36,300 hrs	<25% flux in PF <sub>FR</sub> range
105 °C	1500 mA	XP-G3 Photo Red (Standard) @ 105 °C, 1500 mA	N/A	N/A	20	6,048 hrs	Q90(6k) > 36,300 hrs Q80(6k) > 36,300 hrs Q70(6k) > 36,300 hrs	<25% flux in PF <sub>FR</sub> range

## XP-G3 Royal Blue S Line, Standard, Horizon70, Horizon90

## Test Summary

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	PFM <sub>P</sub> Lifetimes	PF <sub>FR</sub> Lifetimes
105 °C	500 mA	XP-G3 Royal Blue @ 105 °C, 500 mA	N/A	N/A	20	18,144 hrs	Q90(18k) = 68,500 hrs Q80(18k) > 109,000 hrs Q70(18k) > 109,000 hrs	<25% flux in PF <sub>FR</sub> range
125 °C	500 mA	XP-G3 Royal Blue @ 125 °C, 500 mA	N/A	N/A	20	18,144 hrs	Q90(18k) = 27,000 hrs Q80(18k) = 57,400 hrs Q70(18k) = 91,900 hrs	<25% flux in PF <sub>FR</sub> range
85 °C	1000 mA	XP-G3 Royal Blue @ 85 °C, 1000 mA	N/A	N/A	20	18,144 hrs	Q90(18k) > 109,000 hrs Q80(18k) > 109,000 hrs Q70(18k) > 109,000 hrs	<25% flux in PF <sub>FR</sub> range
105 °C	1000 mA	XP-G3 Royal Blue @ 105 °C, 1000 mA	N/A	N/A	20	18,144 hrs	Q90(18k) = 36,100 hrs Q80(18k) = 69,100 hrs Q70(18k) = 106,000 hrs	<25% flux in PF <sub>FR</sub> range

## XLAMP® XP-G3 HORTICULTURE LEDS (REV 7) - CONTINUED

## XP-G3 White S Line, Standard, Horizon70, Horizon90

## Test Summary

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	PFM <sub>P</sub> Lifetimes	PF <sub>FR</sub> Lifetimes
105 °C	500 mA	XP-G3 White (S Line) @ 105 °C, 500 mA	3000 K	71	20	6,048 hrs	Q90(6k) > 36,300 hrs Q80(6k) > 36,300 hrs Q70(6k) > 36,300 hrs	<25% flux in PF <sub>FR</sub> range
125 °C	500 mA	XP-G3 White (S Line) @ 125 °C, 500 mA	3000 K	70	20	6,048 hrs	Q90(6k) > 36,300 hrs Q80(6k) > 36,300 hrs Q70(6k) > 36,300 hrs	<25% flux in PF <sub>FR</sub> range
85 °C	1000 mA	XP-G3 White (S Line) @ 85 °C, 1000 mA	3000 K	71	20	6,048 hrs	Q90(6k) > 36,300 hrs Q80(6k) > 36,300 hrs Q70(6k) > 36,300 hrs	<25% flux in PF <sub>FR</sub> range
105 °C	1000 mA	XP-G3 White (S Line) @ 105 °C, 1000 mA	3000 K	71	20	6,048 hrs	Q90(6k) > 36,300 hrs Q80(6k) > 36,300 hrs Q70(6k) > 36,300 hrs	<25% flux in PF <sub>FR</sub> range

## XLAMP® XP-G3 ROYAL BLUE LEDS (REV 1)

Revision: 1 (August 1, 2018)

## Description Of LED Light Sources

XLamp XP-G3 Royal Blue LEDs (Series: XPGDRY)

This LM-80 report is applicable to the following order codes:

XPGDRY-xx-xxxx-xxxxx

No failures occurred during testing.

## Test Summary

LED Color	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>F</sub> ]	Sample Count	Test Duration	Reported TM-21 Lifetimes
Royal Blue	85 °C	85 °C	350 mA	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
	105 °C	105 °C	700 mA	20	6,048 hrs	L90(6k) = 30,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
	85 °C	85 °C	700 mA	20	10,080 hrs	L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
	105 °C	105 °C	700 mA	20	6,048 hrs	L90(6k) = 26,400 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
	85 °C	85 °C	1500 mA	16	10,080 hrs	L90(10k) > 55,400 hrs L80(10k) > 55,400 hrs L70(10k) > 55,400 hrs
	105 °C	105 °C	2000 mA	16	6,048 hrs	L90(6k) = 27,700 hrs L80(6k) > 33,300 hrs L70(6k) > 33,300 hrs



## XLAMP® XP-G3 WHITE S LINE LEDs (REV 7)

Revision: 7 (April 20, 2023)

## Description Of LED Light Sources

XLamp XP-G3 White - S Line LEDs (Series: XPGDWT)

This LM-80 report is applicable to the following order codes:

XPGDWT-xS-xxxx-xxxxx

No failures occurred during testing.

## Test Summary

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
85 °C	500 mA	XP-G3 S Line @ 85 °C, 500 mA	3000 K	70	25	10,080 hrs	L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
105 °C	500 mA	XP-G3 S Line @ 105 °C, 500 mA	3000 K	71	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
125 °C	500 mA	XP-G3 S Line @ 125 °C, 500 mA	3000 K	71	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
55 °C	700 mA	XP-G3 S Line @ 55 °C, 700 mA	3000 K	74	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
105 °C	700 mA	XP-G3 S Line @ 105 °C, 700 mA	3000 K	70	25	10,080 hrs	L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
85 °C	1000 mA	XP-G3 S Line @ 85 °C, 1000 mA	3000 K	81	25	20,160 hrs	L90(20k) = 121,000 hrs L80(20k) > 121,000 hrs L70(20k) > 121,000 hrs
105 °C	1000 mA	XP-G3 S Line @ 105 °C, 1000 mA	3000 K	81	25	10,080 hrs	L90(10k) = 51,200 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
85 °C	1500 mA	XP-G3 S Line @ 85 °C, 1500 mA	3000 K	81	25	10,080 hrs	L90(10k) = 23,800 hrs L80(10k) = 44,700 hrs L70(10k) > 60,500 hrs

## XLAMP® XP-G3 STANDARD WHITE LEDS (REV 17)

Revision: 17 (April 16, 2024)

## Description Of LED Light Sources

XLamp XP-G3 Standard White LEDs (Series: XPGDWT)

This LM-80 report is applicable to the following order codes:

XPGDWT-x1-xxxx-xxxxx

XPGDWT-x3-xxxx-xxxxx

No failures occurred during testing.

## Test Summary

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>F</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
17	85 °C	85 °C	350 mA	2700 K	20	18,144 hrs	L90(18k) > 109,000 hrs L80(18k) > 109,000 hrs L70(18k) > 109,000 hrs
3	85 °C	85 °C	350 mA	3000 K	25	15,120 hrs	L90(15k) > 90,700 hrs L80(15k) > 90,700 hrs L70(15k) > 90,700 hrs
4	105 °C	105 °C	350 mA	3000 K	25	15,120 hrs	L90(15k) > 90,700 hrs L80(15k) > 90,700 hrs L70(15k) > 90,700 hrs
5	120 °C	120 °C	350 mA	3000 K	25	8,568 hrs	L90(9k) > 51,400 hrs L80(9k) > 51,400 hrs L70(9k) > 51,400 hrs
6	85 °C	85 °C	700 mA	3000 K	25	24,192 hrs	L90(24k) > 145,000 hrs L80(24k) > 145,000 hrs L70(24k) > 145,000 hrs
16	85 °C	85 °C	700 mA	2700 K	20	18,144 hrs	L90(18k) > 109,000 hrs L80(18k) > 109,000 hrs L70(18k) > 109,000 hrs
7	105 °C	105 °C	700 mA	3000 K	25	17,136 hrs	L90(17k) > 103,000 hrs L80(17k) > 103,000 hrs L70(17k) > 103,000 hrs
8	120 °C	120 °C	700 mA	3000 K	25	8,568 hrs	L90(9k) = 39,600 hrs L80(9k) > 51,400 hrs L70(9k) > 51,400 hrs
9	85 °C	85 °C	1050 mA	3000 K	25	15,120 hrs	L90(15k) > 90,700 hrs L80(15k) > 90,700 hrs L70(15k) > 90,700 hrs
15	105 °C	105 °C	1050 mA	3000 K	25	12,096 hrs	L90(12k) > 72,600 hrs L80(12k) > 72,600 hrs L70(12k) > 72,600 hrs
11	85 °C	85 °C	1500 mA	3000 K	25	24,192 hrs	L90(24k) > 145,000 hrs L80(24k) > 145,000 hrs L70(24k) > 145,000 hrs
14	105 °C	105 °C	1500 mA	3000 K	23	10,080 hrs	L90(10k) = 27,900 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
12	120 °C	120 °C	1500 mA	3000 K	20	6,048 hrs	L90(6k) = 7,830 hrs L80(6k) = 20,800 hrs L70(6k) = 35,500 hrs

## XLAMP® XP-G3 STANDARD WHITE LEDS (REV 17) - CONTINUED

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
13	85 °C	85 °C	2000 mA	3000 K	25	6,048 hrs	L90(6k) = 17,500 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs

**XLAMP® XP-G4 STANDARD WHITE LEDS (REV 2)**

Revision: 2 (April 16, 2024)

**Description Of LED Light Sources**

XLamp XP-G4 Standard White LEDs (Series: XPGewT)

This LM-80 report is applicable to the following order codes:

XPGewT-xx-xxxx-x0xxxxxx

No failures occurred during testing.

**Test Summary**

Nominal Case & Ambient Temp.	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes of XP-G3 Standard White LEDs, the Previously Tested LEDs <i>See note below</i>
85 °C	700 mA	XP-G4 Standard @ 85 °C, 700 mA	2700 K	86	20	3,024 hrs	L90(24k) > 145,000 hrs L80(24k) > 145,000 hrs L70(24k) > 145,000 hrs
105 °C	700 mA	XP-G4 Standard @ 105 °C, 700 mA	2700 K	86	20	3,024 hrs	L90(17k) > 103,000 hrs L80(17k) > 103,000 hrs L70(17k) > 103,000 hrs
125 °C	700 mA	XP-G4 Standard @ 125 °C, 700 mA	2700 K	86	20	6,048 hrs	L90(9k) = 39,600 hrs L80(9k) > 51,400 hrs L70(9k) > 51,400 hrs
85 °C	1050 mA	XP-G4 Standard @ 85 °C, 1050 mA	2700 K	85	20	6,048 hrs	L90(15k) > 90,700 hrs L80(15k) > 90,700 hrs L70(15k) > 90,700 hrs
105 °C	1050 mA	XP-G4 Standard @ 105 °C, 1050 mA	2700 K	86	20	3,024 hrs	L90(12k) > 72,600 hrs L80(12k) > 72,600 hrs L70(12k) > 72,600 hrs
85 °C	1500 mA	XP-G4 Standard @ 85 °C, 1500 mA	2700 K	85	20	6,048 hrs	L90(24k) > 145,000 hrs L80(24k) > 145,000 hrs L70(24k) > 145,000 hrs
105 °C	1500 mA	XP-G4 Standard @ 105 °C, 1500 mA	2700 K	85	20	3,024 hrs	L90(10k) = 27,900 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs

Cree LED classifies these LED packages as “successors to previously tested subcomponents” (Section 5) per the guidelines in the Sep 28, 2017 ENERGY STAR Requirements for the Use of LM-80 Data document. The XLamp XP-G4 Standard White LED is a successor to the previously tested XLamp XP-G3 Standard White LED, which has an LM-80 report with Cree LED document number CLD-AP216. This report must be submitted together with CLD-AP216.

Note: Cree LED’s interpretation of Section 5 of the Sep 28, 2017 ENERGY STAR guidelines is that XP-G4 Standard White LEDs can continue to be considered a successor to the XP-G3 Standard White LED, even after publishing 6,000 hours of LM-80 data, since these XP-G4 Standard White LED LM-80 sets still meet the successor criteria.

## XLAMP® XP-P WHITE LEDS (REV 1)

Revision: 1 (December 6, 2023)

## Description Of LED Light Sources

XLamp XP-P White LEDs (Series: XPPAWT)

This LM-80 report is applicable to the following order codes:

XPPAWT-Hx-xxxx-xxxxxxxxxx

No failures occurred during testing.

## Test Summary

Nominal Case & Ambient Temp.	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
125 °C	1000 mA	XP-P White (6500 K) @ 125 °C, 1000 mA	6500 K	66	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
85 °C	1500 mA	XP-P White (6500 K) @ 85 °C, 1500 mA	6500 K	66	20	6,048 hrs	L90(6k) = 24,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
105 °C	1500 mA	XP-P White (6500 K) @ 105 °C, 1500 mA	6500 K	66	20	6,048 hrs	L90(6k) = 18,800 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
85 °C	2000 mA	XP-P White (6500 K) @ 85 °C, 2000 mA	6500 K	66	20	6,048 hrs	L90(6k) = 36,100 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
105 °C	2000 mA	XP-P White (6500 K) @ 105 °C, 2000 mA	6500 K	67	20	6,048 hrs	L90(6k) = 10,600 hrs L80(6k) = 23,100 hrs L70(6k) > 36,300 hrs
85 °C	2500 mA	XP-P White (6500 K) @ 85 °C, 2500 mA	6500 K	67	20	6,048 hrs	L90(6k) = 13,800 hrs L80(6k) = 26,200 hrs L70(6k) > 36,300 hrs
85 °C	1000 mA	XP-P White (2700 K) @ 85 °C, 1000 mA	2700 K	69	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
105 °C	1000 mA	XP-P White (2700 K) @ 105 °C, 1000 mA	2700 K	69	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
125 °C	1000 mA	XP-P White (2700 K) @ 125 °C, 1000 mA	2700 K	69	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
85 °C	1500 mA	XP-P White (2700 K) @ 85 °C, 1500 mA	2700 K	69	20	6,048 hrs	L90(6k) = 23,000 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
85 °C	2000 mA	XP-P White (2700 K) @ 85 °C, 2000 mA	2700 K	69	20	6,048 hrs	L90(6k) = 7,900 hrs L80(6k) = 20,500 hrs L70(6k) = 34,700 hrs

**XLAMP® XP-L WHITE LEDS (REV 9)**

Revision: 9 (May 5, 2021)

**Description Of LED Light Sources**

XLamp XP-L White LEDs (Series: XPLAWT)

This LM-80 report is applicable to the following order codes:

XPLAWT-xx-xxxx-xxxxx

No failures occurred during testing.

**Test Summary**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
6	105 °C	105 °C	1050 mA	3000 K	20	12,096 hrs	L90(12k) > 72,600 hrs L80(12k) > 72,600 hrs L70(12k) > 72,600 hrs
5	85 °C	85 °C	1500 mA	3000 K	20	18,144 hrs	L90(18k) > 109,000 hrs L80(18k) > 109,000 hrs L70(18k) > 109,000 hrs
3	105 °C	105 °C	1500 mA	3000 K	25	11,592 hrs	L90(12k) = 66,600 hrs L80(12k) > 69,600 hrs L70(12k) > 69,600 hrs
4	85 °C	85 °C	2100 mA	3000 K	25	10,080 hrs	L90(10k) = 42,100 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
1	105 °C	105 °C	2100 mA	3000 K	25	6,048 hrs	L90(6k) = 24,000 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
2	85 °C	85 °C	3000 mA	3000 K	25	6,048 hrs	L90(6k) = 16,300 hrs L80(6k) = 35,800 hrs L70(6k) > 36,300 hrs

## XLAMP® XP-L COLOR LEDS (REV 0)

Revision: 0 (June 14, 2024)

## Description Of LED Light Sources

XLamp XP-L Color LEDs (Series: XPLDCL)

This LM-80 report is applicable to the following order codes:

High Density: XPLDCL-0x-xxxx-xxxxxxxxxx

High Intensity: XPLDCL-Hx-xxxx-xxxxxxxxxx

No failures occurred during testing.

## Test Summary

Tested Product & Data Set	Nominal Case & Ambient Temperature	Sample Count	Test Duration	Die Color	Drive Current	ANSI CCT Target	Mean CRI	Reported TM-21 Lifetimes
XM-L Color Gen2 @ 85 °C, 700 mA per die	85 °C	20	6,048 hrs	Blue	335 mA	N/A	N/A	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
				Green	304 mA	N/A	N/A	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
				Red	312 mA	N/A	N/A	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
				White	336 mA	3000 K	71	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
XM-L Color Gen2 @ 105 °C, 700 mA per die	105 °C	20	6,048 hrs	Blue	335 mA	N/A	N/A	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
				Green	304 mA	N/A	N/A	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
				Red	311 mA	N/A	N/A	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
				White	336 mA	3000 K	72	L90(6k) = 31,600 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
XM-L Color Gen2 @ 85 °C, 1000 mA per die	85 °C	20	6,048 hrs	Blue	483 mA	N/A	N/A	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
				Green	444 mA	N/A	N/A	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
				Red	461 mA	N/A	N/A	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
				White	483 mA	3000 K	71	L90(6k) = 35,900 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs

## XLAMP® XP-L COLOR LEDS (REV 0) - CONTINUED

Tested Product & Data Set	Nominal Case & Ambient Temperature	Sample Count	Test Duration	Die Color	Drive Current	ANSI CCT Target	Mean CRI	Reported TM-21 Lifetimes
XM-L Color Gen2 @ 105 °C, 1000 mA per die	105 °C	20	6,048 hrs	Blue	483 mA	N/A	N/A	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
				Green	444 mA	N/A	N/A	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
				Red	458 mA	N/A	N/A	L90(6k) = 16,400 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
				White	483 mA	3000 K	71	L90(6k) = 29,400 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs



**XLAMP® XP-L2 WHITE LEDS (REV 9)**

Revision: 9 (December 13, 2021)

**Description Of LED Light Sources**

XLamp XP-L2 White LEDs (Series: XPLBWT)

This LM-80 report is applicable to the following order codes:

XPLBWT-xx-xxxx-xxxxx

No failures occurred during testing.

**Test Summary**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
9	85 °C	85 °C	700 mA	2700 K	20	17,640 hrs	L90(18k) > 106,000 hrs L80(18k) > 106,000 hrs L70(18k) > 106,000 hrs
10	85 °C	85 °C	1050 mA	2700 K	20	17,640 hrs	L90(18k) > 106,000 hrs L80(18k) > 106,000 hrs L70(18k) > 106,000 hrs
7	105 °C	105 °C	1050 mA	3000 K	25	24,192 hrs	L90(24k) = 71,700 hrs L80(24k) > 145,000 hrs L70(24k) > 145,000 hrs
4	85 °C	85 °C	1500 mA	3000 K	25	24,192 hrs	L90(24k) > 145,000 hrs L80(24k) > 145,000 hrs L70(24k) > 145,000 hrs
5	105 °C	105 °C	1500 mA	3000 K	25	24,192 hrs	L90(24k) > 145,000 hrs L80(24k) > 145,000 hrs L70(24k) > 145,000 hrs
2	85 °C	85 °C	2100 mA	3000 K	25	24,192 hrs	L90(24k) > 145,000 hrs L80(24k) > 145,000 hrs L70(24k) > 145,000 hrs
8	105 °C	105 °C	2100 mA	3000 K	20	10,080 hrs	L90(10k) = 55,600 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
6	85 °C	85 °C	3000 mA	3000 K	20	10,080 hrs	L90(10k) = 33,100 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs

## XLAMP® XQ-A COLOR LEDS (REV 1)

Revision: 1 (May 3, 2021)

## Description Of LED Light Sources

XLamp XQ-A Red LEDs (Series: XQARED)

XLamp XQ-A Red-Orange LEDs (Series: XQARDO)

XLamp XQ-A Phosphor-Converted Amber LEDs (Series: XQAAPA)

XLamp XQ-A Green LEDs (Series: XQAGRN)

XLamp XQ-A Blue LEDs (Series: XQABLU)

XLamp XQ-A Royal Blue LEDs (Series: XQAROY)

This LM-80 report is applicable to the following order codes:

XQARED-xx-xxxx-xxxxxxxxxx

XQARDO-xx-xxxx-xxxxxxxxxx

XQAAPA-xx-xxxx-xxxxxxxxxx

XQAGRN-xx-xxxx-xxxxxxxxxx

XQABLU-xx-xxxx-xxxxxxxxxx

XQAROY-xx-xxxx-xxxxxxxxxx

No failures occurred during testing.

## Test Summary

LED Color	Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>F</sub> ]	Sample Count	Test Duration	Reported TM-21 Lifetimes
Red, Red-Orange	R1	105 °C	105 °C	250 mA	20	6,048 hrs	L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
Phosphor-Converted Amber	PCA1	105 °C	105 °C	250 mA	20	6,048 hrs	L90(6k) = 28,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
Green	G1	85 °C	85 °C	250 mA	20	6,048 hrs	L90(6k) = 5,400 hrs L80(6k) = 19,100 hrs L70(6k) = 34,500 hrs
	G2	105 °C	105 °C	250 mA	20	6,048 hrs	L90(6k) = 990 hrs L80(6k) = 9,490 hrs L70(6k) = 20,400 hrs
Blue	B1	85 °C	85 °C	250 mA	10	6,048 hrs	L90(6k) > 33,300 hrs L80(6k) > 33,300 hrs L70(6k) > 33,300 hrs
	B2	105 °C	105 °C	250 mA	10	6,048 hrs	L90(6k) = 24,800 hrs L80(6k) > 33,300 hrs L70(6k) > 33,300 hrs
Royal Blue	RB1	85 °C	85 °C	250 mA	10	6,048 hrs	L90(6k) > 33,300 hrs L80(6k) > 33,300 hrs L70(6k) > 33,300 hrs
	RB2	105 °C	105 °C	250 mA	10	6,048 hrs	L90(6k) = 19,200 hrs L80(6k) > 33,300 hrs L70(6k) > 33,300 hrs

**XLAMP® XQ-A WHITE LEDS (REV 2)**

Revision: 2 (May 3, 2021)

**Description Of LED Light Sources**

XLamp XQ-A White LEDs (Series: XQAAWT)

This LM-80 report is applicable to the following order codes:

XQAAWT-xx-xxxx-xxxxxxxxxx

No failures occurred during testing.

**Test Summary**

Nominal Case & Ambient Temp.	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
85 °C	175 mA	XQ-A White @ 85 °C, 175 mA	3000 K	82	20	10,080 hrs	L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
105 °C	175 mA	XQ-A White @ 105 °C, 175 mA	3000 K	83	20	10,080 hrs	L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
85 °C	300 mA	XQ-A White @ 85 °C, 300 mA	3000 K	81	20	10,080 hrs	L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
105 °C	300 mA	XQ-A White @ 105 °C, 300 mA	3000 K	81	20	10,080 hrs	L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs

## XLAMP® XQ-E COLOR LEDS (REV 3)

Revision: 3 (May 3, 2021)

## Description Of LED Light Sources

XLamp XQ-E Red LEDs (Series: XQERED)

XLamp XQ-E Red-Orange LEDs (Series: XQERDO)

XLamp XQ-E Phosphor-Converted Amber LEDs (Series: XQEAPA)

XLamp XQ-E Green LEDs (Series: XQEGRN)

XLamp XQ-E Blue LEDs (Series: XQEBLU)

XLamp XQ-E Royal Blue LEDs (Series: XQEROY)

This LM-80 report is applicable to the following order codes:

XQERED-0x-xxxx-xxxxxxxxxx	XQERED-Hx-xxxx-xxxxxxxxxx
XQERDO-0x-xxxx-xxxxxxxxxx	XQERDO-Hx-xxxx-xxxxxxxxxx
XQEAPA-0x-xxxx-xxxxxxxxxx	XQEAPA-Hx-xxxx-xxxxxxxxxx
XQEGRN-0x-xxxx-xxxxxxxxxx	XQEGRN-Hx-xxxx-xxxxxxxxxx
XQEBLU-0x-xxxx-xxxxxxxxxx	XQEBLU-Hx-xxxx-xxxxxxxxxx
XQEROY-0x-xxxx-xxxxxxxxxx	XQEROY-Hx-xxxx-xxxxxxxxxx

No failures occurred during testing.

## Test Summary

LED Color	Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>F</sub> ]	Sample Count	Test Duration	Reported TM-21 Lifetimes
Red, Red-Orange	R1	85 °C	85 °C	1000 mA	25	18,144 hrs	L90(18k) > 109,000 hrs L80(18k) > 109,000 hrs L70(18k) > 109,000 hrs
	R2	105 °C	105 °C	1000 mA	25	18,144 hrs	L90(18k) > 109,000 hrs L80(18k) > 109,000 hrs L70(18k) > 109,000 hrs
Phosphor-Converted Amber	PCA1	105 °C	105 °C	700 mA	20	9,576 hrs	L90(10k) = 10,500 hrs L80(10k) = 29,400 hrs L70(10k) = 50,800 hrs
	PCA2	85 °C	85 °C	1000 mA	20	9,072 hrs	L90(9k) = 10,600 hrs L80(9k) = 33,000 hrs L70(9k) = 54,400 hrs
	PCA3	105 °C	105 °C	1000 mA	20	6,048 hrs	L90(6k) = 9,490 hrs L80(6k) = 19,000 hrs L70(6k) = 29,800 hrs

## XLAMP® XQ-E COLOR LEDS (REV 3) - CONTINUED

LED Color	Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>F</sub> ]	Sample Count	Test Duration	Reported TM-21 Lifetimes
Green	G1	85 °C	85 °C	500 mA	20	12,096 hrs	L90(12k) > 72,600 hrs L80(12k) > 72,600 hrs L70(12k) > 72,600 hrs
	G2	105 °C	105 °C	500 mA	20	12,096 hrs	L90(12k) > 72,600 hrs L80(12k) > 72,600 hrs L70(12k) > 72,600 hrs
	G3	85 °C	85 °C	1000 mA	20	7,560 hrs	L90(8k) > 45,400 hrs L80(8k) > 45,400 hrs L70(8k) > 45,400 hrs
	G4	105 °C	105 °C	1000 mA	20	6,048 hrs	L90(6k) = 22,500 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
Blue	B1	85 °C	85 °C	500 mA	20	12,096 hrs	L90(12k) > 72,600 hrs L80(12k) > 72,600 hrs L70(12k) > 72,600 hrs
	B2	105 °C	105 °C	500 mA	20	12,096 hrs	L90(12k) > 72,600 hrs L80(12k) > 72,600 hrs L70(12k) > 72,600 hrs
	B3	85 °C	85 °C	1000 mA	20	7,560 hrs	L90(8k) > 45,400 hrs L80(8k) > 45,400 hrs L70(8k) > 45,400 hrs
	B4	105 °C	105 °C	1000 mA	20	7,560 hrs	L90(8k) > 45,400 hrs L80(8k) > 45,400 hrs L70(8k) > 45,400 hrs
Royal Blue	RB1	85 °C	85 °C	1000 mA	17	11,592 hrs	L90(12k) > 63,800 hrs L80(12k) > 63,800 hrs L70(12k) > 63,800 hrs
	RB2	105 °C	105 °C	1000 mA	19	11,592 hrs	L90(12k) > 63,800 hrs L80(12k) > 63,800 hrs L70(12k) > 63,800 hrs

## XLAMP® XQ-E PHOTO RED LEDS (REV 1)

Revision: 1 (April 29, 2021)

## Description Of LED Light Sources

XLamp XQ-E Photo Red LEDs (Series: XQEPHR, XQEEPR)

This LM-80 report is applicable to the following order codes:

XQEPHR-xx-xxxx-xxxxxxxxxx

XQEEPR-xx-xxxx-xxxxxxxxxx

No failures occurred during testing.

## Test Summary

Nominal Case & Ambient Temperature	Drive Current	Tested Product & Data Set	ANSI CCT Target	Mean CRI	Sample Count	Test Duration	Reported TM-21 Lifetimes
105 °C	700 mA	XQ-E HE Photo Red @ 105 °C, 700 mA	N/A	N/A	20	6,048 hrs	R90(6k) > 36,300 hrs R80(6k) > 36,300 hrs R70(6k) > 36,300 hrs
85 °C	1000 mA	XQ-E HE Photo Red @ 85 °C, 1000 mA	N/A	N/A	20	6,048 hrs	R90(6k) > 36,300 hrs R80(6k) > 36,300 hrs R70(6k) > 36,300 hrs
105 °C	1000 mA	XQ-E HE Photo Red @ 105 °C, 1000 mA	N/A	N/A	20	6,048 hrs	R90(6k) > 36,300 hrs R80(6k) > 36,300 hrs R70(6k) > 36,300 hrs

**XLAMP® XQ-E WHITE LEDS (REV 1)**

Revision: 1 (May 4, 2021)

**Description Of LED Light Sources**

XLamp XQ-E White LEDs (Series: XQEAWT)

This LM-80 report is applicable to the following order codes:

XQEAWT-xx-xxxx-xxxxxxxxxx

No failures occurred during testing.

**Test Summary**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
1	85 °C	85 °C	500 mA	3000 K	25	8,568 hrs	L90(9k) = 28,300 hrs L80(9k) > 51,400 hrs L70(9k) > 51,400 hrs
2	105 °C	105 °C	500 mA	3000 K	25	8,568 hrs	L90(9k) = 25,500 hrs L80(9k) > 51,400 hrs L70(9k) > 51,400 hrs
3	85 °C	85 °C	700 mA	3000 K	25	6,048 hrs	L90(6k) = 24,700 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs
4	105 °C	105 °C	700 mA	3000 K	25	6,048 hrs	L90(6k) = 19,900 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs

**XLAMP® XR-E WHITE LEDS (REV 1)**

Revision: 1 (September 20, 2010)

**Description Of LED Light Sources**

XLamp XR-E White LEDs (Series: XREWHT)

This LM-80 report is applicable to the following order codes:

XREWHT-xx-xxxx-xxxxx

No failures occurred during testing.

**Test Summary**

Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>r</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
1	25 °C	25 °C	350 mA	6200 K	30	9,072 hrs	L90(9k) = 28,500 hrs L80(9k) > 54,400 hrs L70(9k) > 54,400 hrs
2	25 °C	25 °C	350 mA	2700 K	30	9,072 hrs	L90(9k) > 54,400 hrs L80(9k) > 54,400 hrs L70(9k) > 54,400 hrs
5	45 °C	45 °C	350 mA	6000 K	19	6,846 hrs	L90(7k) = 26,600 hrs L80(7k) > 37,700 hrs L70(7k) > 37,700 hrs
7	55 °C	55 °C	350 mA	6500 K	30	11,088 hrs	L90(11k) = 12,400 hrs L80(11k) = 22,400 hrs L70(11k) = 33,700 hrs
8	55 °C	55 °C	350 mA	2700 K	29	10,080 hrs	L90(10k) = 13,000 hrs L80(10k) = 23,500 hrs L70(10k) = 35,500 hrs
11	85 °C	85 °C	350 mA	6000 K	30	7,560 hrs	L90(8k) = 10,000 hrs L80(8k) = 19,300 hrs L70(8k) = 29,900 hrs
12	85 °C	85 °C	350 mA	3000 K	30	8,544 hrs	L90(9k) = 11,500 hrs L80(9k) = 20,500 hrs L70(9k) = 30,800 hrs
3	25 °C	25 °C	700 mA	6200 K	30	9,072 hrs	L90(9k) = 29,400 hrs L80(9k) > 54,400 hrs L70(9k) > 54,400 hrs
4	25 °C	25 °C	700 mA	2700 K	30	9,072 hrs	L90(9k) > 54,400 hrs L80(9k) > 54,400 hrs L70(9k) > 54,400 hrs
6	45 °C	45 °C	1000 mA	6500 K	20	14,616 hrs	L90(15k) = 19,100 hrs L80(15k) = 37,900 hrs L70(15k) = 59,200 hrs
9	55 °C	55 °C	1000 mA	6200 K	29	11,592 hrs	L90(12k) = 17,100 hrs L80(12k) = 37,500 hrs L70(12k) = 60,600 hrs
10	55 °C	55 °C	1000 mA	4500 K	30	10,080 hrs	L90(10k) = 12,600 hrs L80(10k) = 24,800 hrs L70(10k) = 38,700 hrs
13	85 °C	85 °C	1000 mA	6500 K	30	6,048 hrs	L90(6k) = 12,900 hrs L80(6k) = 26,500 hrs L70(6k) > 36,300 hrs



## XLAMP® XT-E WHITE &amp; ROYAL BLUE LEDS (REV 13)

Revision: 13 (December 8, 2023)

## Description Of LED Light Sources

XLamp XT-E White LEDs (Series: XTEAWT)

XLamp XT-E Royal Blue LEDs (Series: XTEARY)

This LM-80 report is applicable to the following order codes:

XT-E White (Standard) XTEAWT-0x-xxxx-xxxxxxxxxx

XT-E White (High Efficacy) XTEAWT-Ex-xxxx-xxxxxxxxxx

XT-E Royal Blue XTEARYxx-xxxx-xxxxxxxxxx

No failures occurred during testing.

## Test Summary

LED Color	Data Set	Case Temp. [T <sub>s</sub> ]	Ambient Temp. [T <sub>A</sub> ]	Drive Current [I <sub>F</sub> ]	ANSI CCT Target	Sample Count	Test Duration	Reported TM-21 Lifetimes
White	8	85 °C	85 °C	500 mA	3000 K	20	18,144 hrs	L90(18k) > 109,000 hrs L80(18k) > 109,000 hrs L70(18k) > 109,000 hrs
	9	105 °C	105 °C	500 mA	3000 K	20	18,144 hrs	L90(18k) > 109,000 hrs L80(18k) > 109,000 hrs L70(18k) > 109,000 hrs
	12	85 °C	85 °C	1000 mA	3000 K	20	24,192 hrs	L90(24k) = 94,700 hrs L80(24k) > 145,000 hrs L70(24k) > 145,000 hrs
	11	105 °C	105 °C	1000 mA	3000 K	20	10,080 hrs	L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
	5	55 °C	55 °C	1250 mA	3000 K	25	10,080 hrs	L90(10k) = 46,100 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs
	6	85 °C	85 °C	1250 mA	3000 K	25	9,072 hrs	L90(9k) = 19,300 hrs L80(9k) = 41,400 hrs L70(9k) > 54,400 hrs
Royal Blue	R1	85 °C	85 °C	700 mA	N/A	10	6,048 hrs	R90(6k) > 33,300 hrs R80(6k) > 33,300 hrs R70(6k) > 33,300 hrs
	R2	105 °C	105 °C	700 mA	N/A	10	6,048 hrs	R90(6k) > 33,300 hrs R80(6k) > 33,300 hrs R70(6k) > 33,300 hrs
	R3	85 °C	85 °C	1050 mA	N/A	10	6,048 hrs	R90(6k) > 33,300 hrs R80(6k) > 33,300 hrs R70(6k) > 33,300 hrs
	R4	105 °C	105 °C	1050 mA	N/A	10	6,048 hrs	R90(6k) > 33,300 hrs R80(6k) > 33,300 hrs R70(6k) > 33,300 hrs