Samsung LM561B Plus (80 CRI) - LED Chip Technical Summary

Manufacturer: Samsung Electronics Co., Ltd.

LED Series: Series 5630 – Middle Power LED – 0.3W

Color Rendering: 80 CRI
Ability of a light source to faithfully reveal the colors of various objects.

R9 Value: 14 (typical)
Ability of a light source to show object colors naturally. R9 values further take into consideration how we perceive the saturation of warmer hues

Color Consistency: 3-Step MacAdam (for standard CCTs 3000K, 3500K, 4000K)
This is an elliptical region on the CIE chromaticity diagram that contains all the colors that are indistinguishable to the average human eye, from the color at the center of the ellipse. The contour of the ellipse therefore represents the just noticeable differences of chromaticity.

L70: > 72,000 Hours
Lumen Maintenance is a measurement used to evaluate the decrease in light output of a chip that occurs over time. LED chip life is defined as when the chip produces 70% of the initial lumens (L70). This measurement lets you know how long you can depend on an LED to provide an acceptable level of intensity as the day you installed it. For example, an LED with a life of 25,000 hours means that at 25,000 hours of use, the LED chip will be producing 70% of the light output that it was producing when it was brand new.

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LM80					
Life Test Condition			**Summary of Result**		
Test Condition	Current (mA)	Case Temperature	Test Duration (h)	Average Lumen Maintenance (%)	Maximum Chromaticity Shift (△u'v')
1	150	54.9˚C	12000	97.0	0.001 9
2	150	85.2˚C	12000	95.4	0.002 8
3	150	105.0˚C	12000	90.1	0.004 1

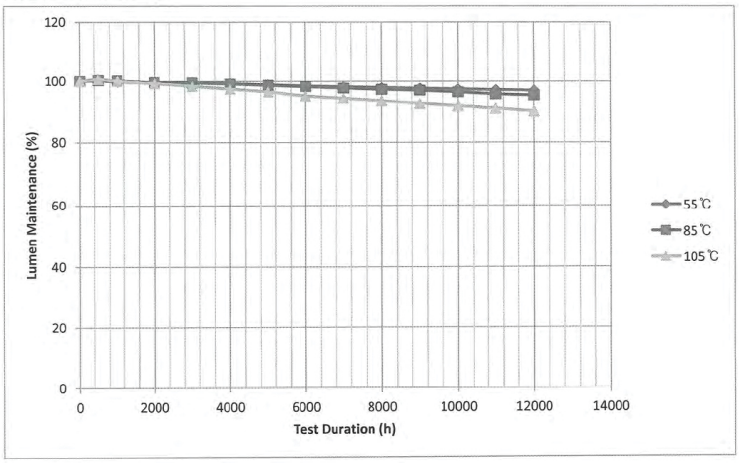
TM-21-11 Report Projecting Long Term Lumen Maintenance of LM561B Plus Light Source

Table 1: Report at each LM-80 Test Condition

Description of LED Light Source Tested
(manufacturer, model, catalog number)

Test Condition 1 55˚C Case Temp		**Test Condition 2** 85˚C Case Temp		**Test Condition 3** 105˚C Case Temp	
Sample Size	20	Sample Size	20	Sample Size	20
Number of failures	0	Number of failures	0	Number of failures	0
DUT drive current used in the test (mA)	150	DUT drive current used in the test (mA)	150	DUT drive current used in the test (mA)	150
Test duration (hours)	12,000	Test duration (hours)	12,000	Test duration (hours)	12,000
Test duration used for projection (hour to hour)	6,000 - 12,000	Test duration used for projection (hour to hour)	6,000 - 12,000	Test duration used for projection (hour to hour)	6,000 - 12,000
Tested case temperature (˚C)	55	Tested case temperature (˚C)	85	Tested case temperature (˚C)	105
α	2.485E-06	α	5.016E-06	α	9.213E-06
B	1.000	B	1.014	B	1.007
Reported L70 (12K) (hours)	>72000	Reported L70 (12K) (hours)	>72000	Reported L70 (12K) (hours)	39.000

Samsung LM-80 Test Report No: SLED-16-021-R01, Issue Date: 11/04/2017



Spectral Distribution of LM561B Plus LED at CCT: 3500K (80 CRI)