

Cree® XLamp® XB-D White LEDs

INFORMATION REQUIRED BY LM-80-08

Cree classifies these LEDs as "LED packages" per Sep 9, 2011 ENERGY STAR guidelines¹.

1. Number of LED light sources tested	See individual data sets on following pages.
2. Description of LED light sources	<p>XLamp XB-D White LEDs (Series: XBDAWT)</p> <p>This LM-80 report is applicable to the following order codes: XBDAWT-xx-xxxx-xxxxxxxxxx</p> <p>All measurements provided are LED package measurements.</p>
3. Description of auxiliary equipment	<p>Instrument Systems ISP-500 Integrating Sphere</p> <p>Instrument Systems CAS-140 Spectrometer</p> <p>Keithley 2420 Sourcemeter</p>
4. Operating cycle	LED packages are driven at constant current.
5. Ambient conditions	<p>LED packages are operated in environmental control chambers. The temperature of the ambient air around the LED packages is actively controlled by air flowing through the chamber.</p> <p>T_A : See individual data sets on following pages RH : < 45% Air flow : 800 CFM</p>
6. Case temperature	See individual data sets on following pages.
7. Drive current of the LED light source during life-time test.	See individual data sets on following pages.
8. Initial luminous flux and forward voltage at photometric measurement current	See individual data sets on following pages.
9. Lumen maintenance data for each individual LED light source	See individual data sets on following pages. Ambient temperature during luminous flux testing set to 25°C ±2°C.
10. Observation of LED light source failures	No failures occurred during testing.
11. LED light source monitoring interval	See individual data sets on following pages.
12. Photometric measurement uncertainty	Cree maintains a tolerance of ±2.0% on flux measurements for LM-80 testing.
13. Chromaticity shift reported over the measurement time	See individual data sets on following pages. Ambient temperature during chromaticity testing set to 25°C ±2°C.
Test Report Authorization	Amber Abare, Components Reliability Laboratory Manager
Sampling method	Cree uses systematic sampling of production LEDs, with checks to ensure that the behavior of early samples are representative of the behavior of later samples.

¹ http://www.energystar.gov/ia/partners/prod_development/new_specs/downloads/luminaires/ENERGY_STAR_Final_Lumen_Maintenance_Guidance.pdf

REVISION HISTORY

Revision	Date	Change
0	Sep 28, 2012	Date of first issue
1	Dec 5, 2012	Added data sets 2-6.

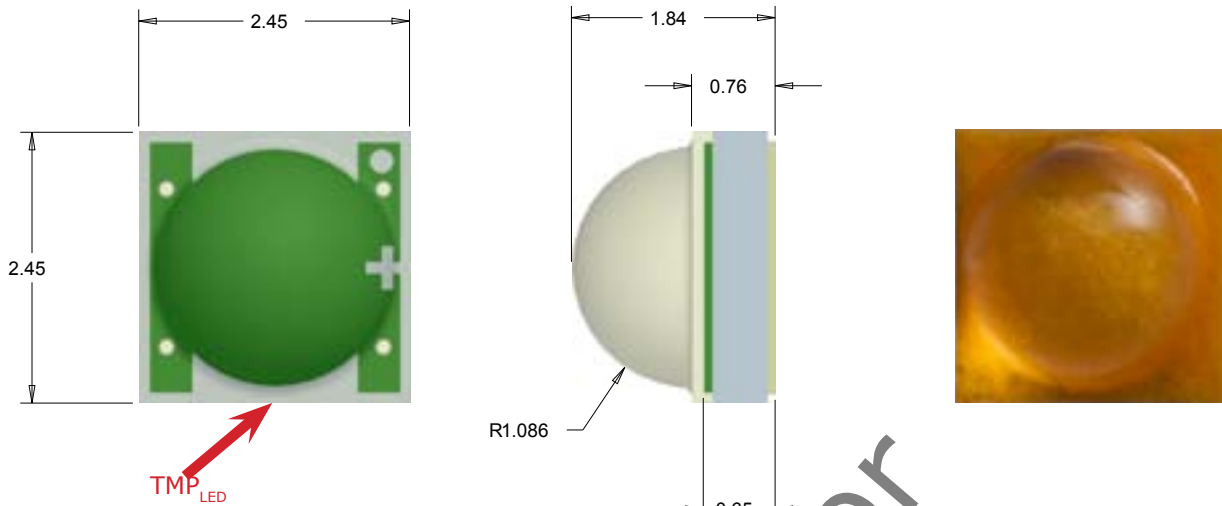
TEST RESULTS SUMMARY

Data Set	Case Temp. [T _s]	Ambient Temp. [T _A]	Drive Current [I _F]	Average Lumen Maintenance at 6,000 hours	Average Chromaticity Shift ($\Delta u'v'$) at 6,000 hours	Reported TM-21 L70 Lifetime
2	55°C	55°C	700 mA	97.7%	0.0007	L70(6k) > 36,300 hrs
1	85°C	85°C	700 mA	97.3%	0.0010	L70(6k) > 36,300 hrs
3	105°C	105°C	700 mA	93.9%	0.0012	L70(6k) > 36,300 hrs
4	55°C	55°C	1000 mA	96.9%	0.0006	L70(6k) > 36,300 hrs
5	85°C	85°C	1000 mA	95.1%	0.0007	L70(6k) > 36,300 hrs
6	105°C	105°C	1000 mA	94.4%	0.0014	L70(6k) > 36,300 hrs

Prepared for
Infinilux

MECHANICAL DIMENSIONS & TEMPERATURE MEASUREMENT POINT

All measurements are $\pm .13$ mm unless otherwise indicated.



The LED temperature measurement point (TMP_{LED}) should be measured on the PCB surface, as close to the LED's thermal pad as possible (shown in the picture above). It is not required to use a solder footprint for the thermal pad that is larger than the LED itself. In testing, Cree has found such a solder pad to have insignificant impact on the resulting temperature measurement.

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DATA SET 2: 55°C; 700 mA

LED Package Series	XLamp XB-D White LEDs (Series: XBDAWT) This LM-80 report is applicable to the following order codes: XBDAWT-xx-xxxx-xxxxxxxxxx
Tested Model Number	XBDAWT-00-0000-00000LAE7
Drive Current [I _F]	700 mA
Testing Initiation Date	December 12, 2011
Case Temperature [T _s]	55°C
Ambient Temperature [T _A]	55°C
Failures observed	None

Lamp #	Initial (0 hrs)				Lumen Maintenance (%)												
	LF (lm)	V _F (V)	Calc. CCT	ANSI Target	168	1008	1512	2016	2520	3024	3528	4032	4536	5040	5544	6048	
1	193.9	3.32	3136	3000	99.2	98.5	99.7	98.5	99.0	98.3	97.8	97.5	97.3	98.2	97.1	98.7	
2	182.5	3.32	3045	3000	100.2	100.7	100.8	100.9	100.5	100.5	99.5	100.5	99.3	100.4	100.0	99.8	
3	189.7	3.32	3100	3000	99.3	99.4	100.3	99.2	99.9	99.3	98.0	98.6	98.4	99.4	97.9	99.2	
4	181.2	3.38	3122	3000	98.7	98.6	98.6	99.4	100.1	99.6	98.2	98.7	98.5	99.5	98.0	99.5	
5	189.7	3.35	3123	3000	99.2	99.5	99.2	100.4	100.3	99.4	98.8	98.7	98.4	99.1	98.8	99.0	
6	182.4	3.36	3180	3000	98.9	98.5	100.5	98.9	100.1	99.8	98.4	98.8	98.7	99.6	98.4	99.4	
7	181.5	3.38	3146	3000	99.4	100.4	100.6	100.1	100.3	99.8	99.8	100.1	100.1	100.3	99.7	99.2	
8	183.1	3.34	3096	3000	99.6	100.0	99.9	100.0	100.7	99.7	98.8	98.6	98.5	98.7	97.6	98.3	
9	183.7	3.33	3217	3000	98.8	99.5	99.8	99.4	100.0	98.4	99.1	98.1	97.9	98.4	97.2	97.0	
10	193.9	3.28	3108	3000	99.0	100.3	100.1	98.9	99.6	99.3	99.0	98.9	98.4	98.7	98.6	97.9	
11	184.7	3.31	3104	3000	99.3	98.9	97.8	97.6	98.0	98.1	97.6	97.2	96.8	97.1	96.3	96.0	
12	198.6	3.28	3133	3000	99.0	99.4	98.9	98.0	98.5	98.4	98.0	98.3	97.2	98.0	98.1	97.2	
13	190.0	3.33	3116	3000	98.9	98.9	98.5	97.8	97.5	97.3	96.9	96.9	96.8	97.3	97.3	96.4	
14	184.4	3.23	2918	3000	99.3	99.8	98.3	96.8	97.5	97.2	96.6	96.8	97.5	97.2	97.3	96.9	
15	196.6	3.31	3178	3000	99.4	99.3	98.1	98.0	99.3	98.6	97.2	97.3	97.3	97.5	96.7	96.4	
16	191.2	3.24	2956	3000	99.0	99.2	99.0	97.8	98.6	98.1	97.2	97.8	98.5	98.6	98.3	97.3	
17	187.8	3.31	3166	3000	99.5	98.5	99.1	98.2	97.8	97.3	97.3	97.6	97.8	97.8	97.4	96.6	
18	190.3	3.31	3150	3000	100.8	100.7	100.9	100.1	99.8	99.5	99.5	100.4	99.4	99.9	99.8	98.5	
19	193.9	3.28	3041	3000	99.7	99.0	99.5	98.9	98.7	98.5	98.5	99.5	99.1	99.0	98.9	97.7	
20	189.0	3.29	3098	3000	100.6	100.4	99.8	99.1	98.6	98.4	98.2	98.5	98.7	98.7	98.4	97.4	
21	198.1	3.28	3111	3000	100.0	99.1	99.9	98.0	98.3	97.8	97.3	98.4	98.0	98.0	97.8	96.6	
22	189.1	3.31	3069	3000	99.0	100.2	99.6	98.8	98.7	98.2	98.4	98.8	98.5	98.6	98.3	97.1	
23	191.7	3.30	3157	3000	99.8	99.4	99.8	98.6	98.9	98.6	97.4	97.6	98.0	97.8	97.6	96.8	
24	197.7	3.27	3060	3000	99.9	99.1	98.9	97.9	97.5	97.1	97.3	98.0	97.2	97.4	97.1	96.6	
25	202.5	3.29	3054	3000	99.1	99.3	99.6	98.5	98.3	97.9	97.4	97.5	97.4	97.1	96.9	96.6	
n	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	
Mean	189.9	3.31			99.4	99.5	99.5	98.8	99.1	98.6	98.1	98.4	98.1	98.5	98.0	97.7	
Median	189.7	3.31			99.3	99.4	99.6	98.8	98.9	98.4	98.0	98.4	98.4	98.6	97.9	97.3	
σ	6.0	0.04			0.55	0.68	0.84	1.00	1.01	0.93	0.89	0.99	0.85	0.99	0.96	1.17	
Min.	181.2	3.23			98.7	98.5	97.8	96.8	97.5	97.1	96.6	96.8	96.8	97.1	96.3	96.0	
Max.	202.5	3.38			100.8	100.7	100.9	100.9	100.7	100.5	99.8	100.5	100.1	100.4	100.0	99.8	

DATA SET 2: 55°C; 700 mA

LED Package Series	XLamp XB-D White LEDs (Series: XBDAWT) This LM-80 report is applicable to the following order codes: XBDAWT-xx-xxxx-xxxxxxxxxx
Tested Model Number	XBDAWT-00-0000-00000LAE7
Drive Current [I _F]	700 mA
Testing Initiation Date	December 12, 2011
Case Temperature [T _s]	55°C
Ambient Temperature [T _A]	55°C
Failures observed	None

Lamp #	Initial (0 hrs)				Chromaticity Shift (Δu'v')											
	CCx	CCy	Calc. CCT	ANSI Target	168	1008	1512	2016	2520	3024	3528	4032	4536	5040	5544	6048
1	0.4236	0.3908	3136	3000	0.0004	0.0005	0.0007	0.0007	0.0008	0.0008	0.0009	0.0009	0.0011	0.0010	0.0011	0.0011
2	0.4329	0.4004	3045	3000	0.0004	0.0006	0.0007	0.0006	0.0007	0.0008	0.0009	0.0010	0.0010	0.0010	0.0010	0.0011
3	0.4315	0.4041	3100	3000	0.0003	0.0007	0.0009	0.0009	0.0009	0.0010	0.0009	0.0010	0.0012	0.0011	0.0012	0.0012
4	0.4257	0.3940	3122	3000	0.0005	0.0008	0.0006	0.0010	0.0010	0.0011	0.0009	0.0011	0.0011	0.0011	0.0011	0.0011
5	0.4263	0.3955	3123	3000	0.0004	0.0007	0.0009	0.0009	0.0009	0.0010	0.0009	0.0010	0.0011	0.0011	0.0012	0.0012
6	0.4211	0.3904	3180	3000	0.0005	0.0006	0.0009	0.0009	0.0009	0.0010	0.0011	0.0011	0.0012	0.0011	0.0011	0.0011
7	0.4279	0.4019	3146	3000	0.0003	0.0004	0.0004	0.0005	0.0005	0.0005	0.0006	0.0006	0.0007	0.0006	0.0009	0.0009
8	0.4336	0.4081	3096	3000	0.0002	0.0003	0.0005	0.0005	0.0005	0.0005	0.0006	0.0007	0.0007	0.0008	0.0009	0.0009
9	0.4214	0.3954	3217	3000	0.0003	0.0005	0.0006	0.0005	0.0006	0.0007	0.0007	0.0008	0.0008	0.0008	0.0009	0.0009
10	0.4273	0.3958	3108	3000	0.0003	0.0003	0.0004	0.0003	0.0004	0.0004	0.0005	0.0007	0.0003	0.0005	0.0005	0.0006
11	0.4263	0.3931	3104	3000	0.0002	0.0002	0.0002	0.0003	0.0004	0.0003	0.0004	0.0007	0.0004	0.0004	0.0005	0.0006
12	0.4261	0.3962	3133	3000	0.0002	0.0004	0.0004	0.0004	0.0004	0.0004	0.0006	0.0007	0.0004	0.0004	0.0005	0.0007
13	0.4258	0.3935	3116	3000	0.0002	0.0003	0.0003	0.0003	0.0003	0.0004	0.0006	0.0007	0.0004	0.0005	0.0004	0.0006
14	0.4462	0.4122	2918	3000	0.0003	0.0004	0.0004	0.0004	0.0005	0.0006	0.0006	0.0007	0.0007	0.0007	0.0007	0.0009
15	0.4205	0.3887	3178	3000	0.0002	0.0004	0.0003	0.0004	0.0004	0.0004	0.0005	0.0007	0.0005	0.0004	0.0005	0.0005
16	0.4418	0.4081	2956	3000	0.0004	0.0004	0.0003	0.0004	0.0005	0.0005	0.0005	0.0007	0.0006	0.0006	0.0007	0.0007
17	0.4236	0.3945	3166	3000	0.0003	0.0001	0.0002	0.0003	0.0002	0.0004	0.0003	0.0004	0.0003	0.0004	0.0004	0.0005
18	0.4236	0.3926	3150	3000	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0003	0.0003	0.0003	0.0002	0.0002	0.0002
19	0.4340	0.4023	3041	3000	0.0004	0.0003	0.0004	0.0004	0.0004	0.0004	0.0006	0.0005	0.0005	0.0005	0.0005	0.0005
20	0.4279	0.3960	3098	3000	0.0004	0.0005	0.0003	0.0004	0.0004	0.0004	0.0007	0.0006	0.0005	0.0005	0.0007	0.0005
21	0.4288	0.3995	3111	3000	0.0003	0.0004	0.0002	0.0003	0.0003	0.0003	0.0005	0.0003	0.0004	0.0004	0.0004	0.0004
22	0.4302	0.3975	3069	3000	0.0002	0.0003	0.0003	0.0003	0.0004	0.0004	0.0005	0.0005	0.0004	0.0005	0.0004	0.0005
23	0.4239	0.3940	3157	3000	0.0003	0.0004	0.0004	0.0005	0.0004	0.0005	0.0006	0.0006	0.0005	0.0006	0.0006	0.0008
24	0.4342	0.4050	3060	3000	0.0005	0.0003	0.0003	0.0004	0.0004	0.0004	0.0005	0.0005	0.0006	0.0005	0.0006	0.0006
25	0.4323	0.4003	3054	3000	0.0003	0.0002	0.0002	0.0002	0.0003	0.0003	0.0004	0.0004	0.0004	0.0004	0.0005	0.0005
n	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Mean					0.0003	0.0004	0.0004	0.0005	0.0005	0.0006	0.0006	0.0007	0.0006	0.0007	0.0007	0.0007
Median					0.0003	0.0004	0.0004	0.0004	0.0004	0.0004	0.0006	0.0007	0.0005	0.0005	0.0006	0.0007
σ					0.0001	0.0002	0.0002	0.0002	0.0002	0.0003	0.0002	0.0002	0.0003	0.0003	0.0003	0.0003
Min.					0.0002	0.0001	0.0002	0.0002	0.0002	0.0003	0.0003	0.0003	0.0002	0.0002	0.0002	0.0002
Max.					0.0005	0.0008	0.0009	0.0010	0.0010	0.0011	0.0011	0.0011	0.0012	0.0011	0.0012	0.0012

DATA SET 2: 55°C; 700 mA

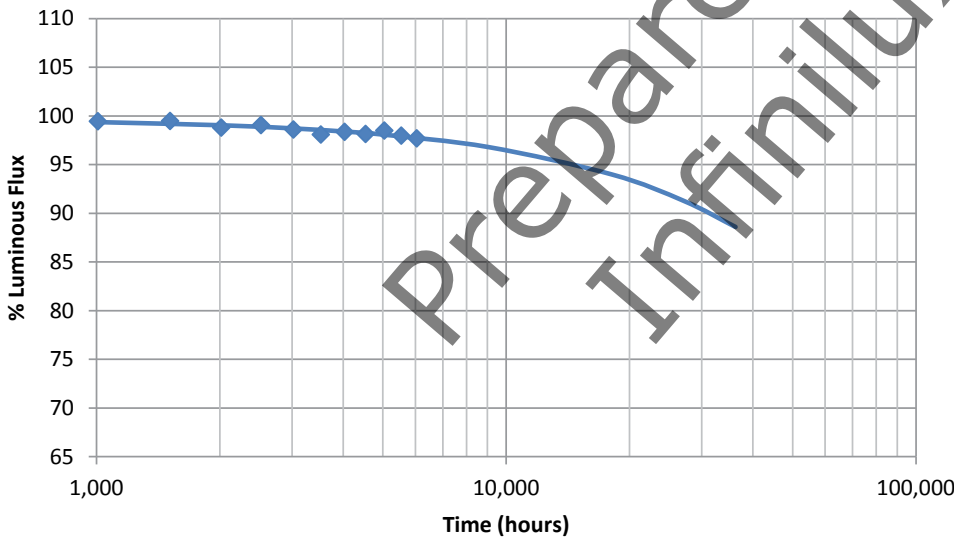
LED Package Series	XLamp XB-D White LEDs (Series: XBDAWT) This LM-80 report is applicable to the following order codes: XBDAWT-xx-xxxx-xxxxxxxxxx
Tested Model Number	XBDAWT-00-0000-00000LAE7
Drive Current [I _F]	700 mA
Testing Initiation Date	December 12, 2011
Case Temperature [T _s]	55°C
Ambient Temperature [T _A]	55°C
Failures observed	None

Projection Generated By Cree's Internal TM-21 Calculator:

Test duration	6,048 hours
Test duration used for projection	t=1,008 to t=6,048
α	3.249E-06
β	9.969E-01
Calculated Lifetime	L70(6k) = 109,000 hours
Reported Lifetime	L70(6k) > 36,300 hours

LM-80 Data For The Official TM-21 Calculator*

Time (hours)	Lumen Maintenance
0	100.0000%
168	99.4340%
1008	99.4510%
1512	99.4810%
2016	98.8010%
2520	99.0570%
3024	98.6040%
3528	98.0880%
4032	98.3630%
4536	98.1480%
5040	98.4960%
5544	97.9790%
6048	97.6940%



* <http://www.energystar.gov/TM-21calculator>

Suggestion for exporting the LM-80 data:

1. Copy above table from PDF & paste into Microsoft Word.
2. Copy table out of Word & paste into Microsoft Excel (Match destination formatting)

DATA SET 1: 85°C; 700 mA

LED Package Series	XLamp XB-D White LEDs (Series: XBDAWT) This LM-80 report is applicable to the following order codes: XBDAWT-xx-xxxx-xxxxxxxxxx
Tested Model Number	XBDAWT-00-0000-00000LAE7
Drive Current [I _F]	700 mA
Testing Initiation Date	November 4, 2011
Case Temperature [T _S]	85°C
Ambient Temperature [T _A]	85°C
Failures observed	None

Lamp #	Initial (0 hrs)				Lumen Maintenance (%)											
	LF (lm)	V _F (V)	Calc. CCT	ANSI Target	168	1008	1512	2016	2520	3024	3528	4032	4536	5040	5544	6048
1	187.3	3.45	3031	3000	99.8	98.3	101.0	101.6	100.1	99.3	98.3	97.2	96.5	98.2	96.8	97.3
2	189.5	3.33	3050	3000	98.9	98.0	99.5	99.7	99.0	97.8	97.7	97.0	96.4	97.0	97.6	96.8
3	186.7	3.33	2916	3000	98.5	97.5	97.9	98.5	98.2	98.0	97.4	97.2	96.3	97.1	96.5	96.8
4	177.6	3.32	3160	3000	98.8	99.3	99.7	100.6	99.4	99.5	98.9	98.7	97.4	97.7	98.9	97.1
5	180.2	3.30	3046	3000	99.2	100.2	101.6	101.3	101.9	101.1	98.5	98.3	97.9	99.9	98.4	99.5
6	191.8	3.28	3016	3000	100.3	100.4	101.7	100.3	100.2	99.6	99.4	98.5	98.7	99.1	98.4	99.1
7	187.5	3.31	3157	3000	99.7	101.1	101.2	101.7	101.9	101.1	99.0	97.6	96.6	99.2	98.0	98.8
8	183.3	3.28	3161	3000	99.8	102.1	101.5	101.1	100.5	100.0	100.5	97.8	97.1	99.8	99.9	98.3
9	192.7	3.27	3152	3000	99.8	100.4	100.2	99.2	98.9	98.5	98.2	97.6	98.4	98.3	98.0	97.9
10	184.0	3.30	2963	3000	99.4	100.8	101.5	102.0	101.7	101.1	101.4	98.7	98.2	100.0	100.0	99.3
11	187.5	3.31	3072	3000	100.5	100.3	98.6	97.1	97.0	97.8	97.5	98.8	96.4	97.4	98.7	97.7
12	188.2	3.30	3078	3000	100.2	100.2	99.1	98.4	97.9	96.6	97.8	98.3	97.3	97.3	97.3	97.6
13	192.1	3.30	3192	3000	99.5	100.1	98.7	97.0	97.3	96.9	96.9	98.8	96.6	97.4	98.6	98.0
14	192.3	3.29	3140	3000	99.6	100.2	99.9	98.6	98.5	98.0	98.4	98.9	97.8	98.2	98.1	98.0
15	180.3	3.23	2944	3000	99.9	100.9	99.4	99.1	98.4	96.4	97.8	99.4	97.9	98.4	99.0	99.3
16	196.3	3.23	3220	3000	99.5	101.0	100.1	98.9	98.8	98.8	98.7	99.2	98.3	98.5	98.3	98.5
17	190.5	3.25	2993	3000	99.0	100.1	100.3	99.3	97.9	96.9	97.2	98.5	97.4	97.7	98.0	98.7
18	190.8	3.31	3130	3000	99.1	98.9	98.5	97.8	97.2	96.7	95.4	95.1	96.4	97.0	96.4	96.3
19	199.9	3.28	3131	3000	97.5	97.0	94.2	93.6	94.5	93.8	93.6	93.8	93.8	94.7	94.3	94.8
20	184.9	3.29	3104	3000	100.0	97.9	98.7	98.1	97.0	96.3	94.9	95.4	95.8	96.6	95.8	95.7
21	196.5	3.27	3196	3000	99.4	99.2	98.1	98.1	96.8	96.4	95.9	95.9	96.4	97.0	96.5	96.7
22	196.5	3.29	3098	3000	97.4	97.3	96.8	95.0	95.4	95.0	94.6	94.2	94.9	95.3	94.9	95.2
23	199.3	3.29	3163	3000	97.4	97.6	96.7	93.9	95.2	94.6	94.4	94.3	94.4	95.0	94.6	94.5
24	186.1	3.32	3136	3000	99.4	99.7	98.6	98.4	96.5	96.2	96.1	96.1	96.1	95.8	95.2	94.9
25	196.7	3.25	3139	3000	99.2	98.6	98.0	96.4	95.7	95.2	95.2	95.1	95.9	96.0	95.6	95.8
n	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Mean	189.5	3.30			99.3	99.5	99.3	98.6	98.2	97.6	97.3	97.2	96.8	97.5	97.4	97.3
Median	189.5	3.29			99.4	100.1	99.4	98.6	98.2	97.8	97.7	97.6	96.6	97.4	98.0	97.6
σ	6.0	0.04			0.84	1.38	1.78	2.27	2.06	2.04	1.95	1.73	1.23	1.48	1.62	1.52
Min.	177.6	3.23			97.4	97.0	94.2	93.6	94.5	93.8	93.6	93.8	93.8	94.7	94.3	94.5
Max.	199.9	3.45			100.5	102.1	101.7	102.0	101.9	101.1	101.4	99.4	98.7	100.0	100.0	99.5

DATA SET 1: 85°C; 700 mA

LED Package Series	XLamp XB-D White LEDs (Series: XBDAWT)
	This LM-80 report is applicable to the following order codes: XBDAWT-xx-xxxx-xxxxxxxxxx
Tested Model Number	XBDAWT-00-0000-00000LAE7
Drive Current [I _F]	700 mA
Testing Initiation Date	November 4, 2011
Case Temperature [T _s]	85°C
Ambient Temperature [T _A]	85°C
Failures observed	None

Lamp #	Initial (0 hrs)				Chromaticity Shift (Δu'v')											
	CCx	CCy	Calc. CCT	ANSI Target	168	1008	1512	2016	2520	3024	3528	4032	4536	5040	5544	6048
1	0.4347	0.4026	3031	3000	0.0008	0.0011	0.0011	0.0011	0.0011	0.0012	0.0011	0.0012	0.0011	0.0013	0.0009	0.0011
2	0.4299	0.3945	3050	3000	0.0016	0.0019	0.0016	0.0016	0.0015	0.0015	0.0013	0.0015	0.0016	0.0015	0.0018	0.0014
3	0.4428	0.4052	2916	3000	0.0012	0.0014	0.0016	0.0015	0.0017	0.0017	0.0016	0.0017	0.0018	0.0017	0.0021	0.0018
4	0.4272	0.4018	3160	3000	0.0009	0.0009	0.0012	0.0013	0.0013	0.0013	0.0014	0.0013	0.0013	0.0014	0.0015	0.0013
5	0.4298	0.3939	3046	3000	0.0005	0.0010	0.0010	0.0010	0.0011	0.0011	0.0009	0.0009	0.0010	0.0013	0.0011	0.0011
6	0.4349	0.4012	3016	3000	0.0005	0.0010	0.0011	0.0011	0.0012	0.0011	0.0011	0.0012	0.0010	0.0013	0.0012	0.0012
7	0.4192	0.3835	3157	3000	0.0007	0.0012	0.0012	0.0013	0.0014	0.0014	0.0013	0.0013	0.0012	0.0015	0.0015	0.0015
8	0.4208	0.3874	3161	3000	0.0005	0.0008	0.0010	0.0011	0.0010	0.0010	0.0012	0.0011	0.0012	0.0014	0.0014	0.0012
9	0.4211	0.3871	3152	3000	0.0007	0.0010	0.0011	0.0012	0.0012	0.0012	0.0011	0.0013	0.0014	0.0014	0.0013	0.0013
10	0.4369	0.3990	2963	3000	0.0007	0.0009	0.0010	0.0012	0.0011	0.0011	0.0013	0.0013	0.0014	0.0014	0.0014	0.0013
11	0.4303	0.3982	3072	3000	0.0004	0.0005	0.0003	0.0004	0.0005	0.0005	0.0006	0.0006	0.0006	0.0006	0.0007	0.0006
12	0.4290	0.3961	3078	3000	0.0007	0.0009	0.0008	0.0007	0.0009	0.0008	0.0009	0.0008	0.0007	0.0007	0.0009	0.0008
13	0.4204	0.3902	3192	3000	0.0003	0.0005	0.0004	0.0006	0.0005	0.0006	0.0006	0.0006	0.0006	0.0006	0.0005	0.0004
14	0.4250	0.3946	3140	3000	0.0003	0.0006	0.0007	0.0006	0.0007	0.0008	0.0007	0.0007	0.0007	0.0008	0.0007	0.0007
15	0.4447	0.4124	2944	3000	0.0005	0.0005	0.0004	0.0006	0.0008	0.0007	0.0008	0.0008	0.0008	0.0009	0.0010	0.0010
16	0.4181	0.3881	3220	3000	0.0005	0.0006	0.0007	0.0006	0.0008	0.0007	0.0009	0.0008	0.0007	0.0008	0.0008	0.0008
17	0.4363	0.4014	2993	3000	0.0003	0.0003	0.0004	0.0002	0.0003	0.0002	0.0003	0.0003	0.0002	0.0002	0.0002	0.0002
18	0.4246	0.3926	3130	3000	0.0004	0.0006	0.0008	0.0006	0.0006	0.0005	0.0007	0.0005	0.0006	0.0007	0.0008	0.0008
19	0.4247	0.3928	3131	3000	0.0002	0.0005	0.0005	0.0006	0.0008	0.0007	0.0008	0.0008	0.0008	0.0010	0.0009	0.0008
20	0.4281	0.3972	3104	3000	0.0005	0.0003	0.0007	0.0006	0.0006	0.0008	0.0009	0.0004	0.0007	0.0010	0.0009	0.0009
21	0.4194	0.3882	3196	3000	0.0005	0.0006	0.0006	0.0007	0.0009	0.0008	0.0009	0.0007	0.0009	0.0009	0.0010	0.0009
22	0.4287	0.3977	3098	3000	0.0002	0.0004	0.0004	0.0004	0.0006	0.0007	0.0008	0.0006	0.0008	0.0009	0.0009	0.0008
23	0.4225	0.3915	3163	3000	0.0002	0.0006	0.0006	0.0005	0.0008	0.0007	0.0009	0.0007	0.0008	0.0011	0.0010	0.0009
24	0.4233	0.3902	3136	3000	0.0003	0.0007	0.0008	0.0008	0.0008	0.0008	0.0010	0.0008	0.0009	0.0011	0.0012	0.0011
25	0.4251	0.3946	3139	3000	0.0001	0.0004	0.0004	0.0004	0.0003	0.0003	0.0003	0.0004	0.0002	0.0001	0.0002	0.0003
n	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Mean					0.0005	0.0008	0.0008	0.0008	0.0009	0.0009	0.0009	0.0009	0.0009	0.0010	0.0010	0.0010
Median					0.0005	0.0006	0.0008	0.0007	0.0008	0.0008	0.0009	0.0008	0.0008	0.0010	0.0010	0.0009
σ					0.0003	0.0004	0.0004	0.0004	0.0004	0.0004	0.0003	0.0004	0.0004	0.0004	0.0004	0.0004
Min.					0.0001	0.0003	0.0003	0.0002	0.0003	0.0002	0.0003	0.0003	0.0002	0.0001	0.0002	0.0002
Max.					0.0016	0.0019	0.0016	0.0016	0.0017	0.0017	0.0016	0.0017	0.0018	0.0017	0.0021	0.0018

DATA SET 3: 105°C; 700 mA

LED Package Series	XLamp XB-D White LEDs (Series: XBDAAWT) This LM-80 report is applicable to the following order codes: XBDAAWT-xx-xxxx-xxxxxxxxxx
Tested Model Number	XBDAAWT-00-0000-00000LAE7
Drive Current [I _F]	700 mA
Testing Initiation Date	December 27, 2011
Case Temperature [T _S]	105°C
Ambient Temperature [T _A]	105°C
Failures observed	None

Lamp #	Initial (0 hrs)				Lumen Maintenance (%)											
	LF (lm)	V _F (V)	Calc. CCT	ANSI Target	168	1008	1512	2016	2520	3024	3528	4032	4536	5040	5544	6048
1	196.5	3.28	3125	3000	98.4	95.9	95.1	94.9	95.2	94.2	93.7	94.5	94.4	94.2	93.8	92.8
2	187.9	3.29	3114	3000	99.0	97.5	97.1	95.9	96.0	95.7	95.1	95.7	95.6	95.3	95.0	94.0
3	186.2	3.29	3051	3000	100.0	99.2	99.2	97.1	97.7	96.8	96.0	96.2	96.9	96.2	95.5	94.5
4	185.1	3.32	3030	3000	99.5	97.9	98.0	97.0	97.2	96.4	96.3	96.3	96.1	95.7	95.3	94.3
5	194.3	3.28	3097	3000	99.8	97.4	97.1	95.2	95.6	95.1	94.3	94.3	95.0	94.2	93.8	92.7
6	197.6	3.31	3124	3000	99.5	96.1	95.9	94.8	94.8	93.9	93.9	94.2	94.2	94.0	93.8	92.8
7	198.1	3.29	3176	3000	98.8	96.8	96.4	95.3	95.1	94.9	94.7	94.9	94.9	94.5	94.5	93.4
8	185.9	3.32	3074	3000	99.7	99.5	99.6	97.8	98.0	97.8	96.4	96.4	97.0	96.0	95.4	94.3
9	193.7	3.24	2992	3000	99.6	99.5	98.8	98.0	97.8	97.2	97.0	97.3	97.1	96.7	96.5	95.4
10	195.2	3.26	3072	3000	99.7	99.1	99.2	97.3	97.6	97.6	95.9	96.3	96.6	95.8	95.3	94.4
11	188.5	3.32	3040	3000	100.2	98.7	97.8	97.0	97.7	96.6	96.3	96.7	95.5	96.7	94.7	94.4
12	188.1	3.30	2965	3000	99.9	97.3	97.0	96.6	96.4	95.3	95.8	96.1	95.1	95.2	94.1	93.7
13	190.6	3.31	3012	3000	100.0	96.7	97.1	96.8	96.8	95.7	96.3	96.3	95.3	95.5	94.7	94.1
14	202.9	3.38	3189	3000	100.7	98.6	98.1	97.9	97.7	96.8	97.4	96.9	96.0	96.0	95.9	95.2
15	195.1	3.37	3216	3000	100.3	98.6	97.4	97.1	97.1	96.0	96.6	96.8	95.1	95.9	95.0	94.3
16	193.2	3.40	3061	3000	99.8	98.9	98.3	97.9	97.6	96.6	95.8	96.5	95.5	95.5	94.4	94.3
17	200.5	3.38	3169	3000	100.1	97.7	97.4	97.0	96.9	96.4	95.1	96.2	94.4	95.3	94.5	93.7
18	204.3	3.39	3192	3000	99.8	98.0	98.0	97.4	98.0	96.1	96.0	95.9	95.3	96.0	94.6	94.0
19	189.4	3.30	3111	3000	99.3	97.0	96.5	96.1	96.2	95.3	94.6	94.9	94.3	94.1	93.4	92.9
20	185.9	3.30	3070	3000	100.2	97.7	96.7	96.2	97.1	95.5	94.8	95.2	94.4	95.3	94.1	93.4
21	195.6	3.37	3196	3000	100.1	97.9	97.7	97.3	97.2	96.1	96.7	96.8	96.0	95.9	95.0	94.1
22	199.6	3.35	3133	3000	99.9	98.3	97.8	97.1	97.1	95.9	96.5	96.6	95.7	95.8	94.9	94.0
23	197.7	3.38	3226	3000	99.8	98.6	97.7	97.2	97.9	96.4	94.9	95.8	94.0	95.8	94.7	93.6
24	205.4	3.37	3159	3000	100.3	97.0	96.6	95.8	95.8	94.9	95.7	95.5	94.1	95.2	94.2	93.6
25	201.9	3.35	3093	3000	99.7	99.0	98.4	97.9	98.2	96.9	95.6	96.1	95.0	95.9	94.9	94.2
n	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Mean	194.4	3.33			99.8	98.0	97.5	96.7	96.9	96.0	95.7	95.9	95.3	95.5	94.7	93.9
Median	195.1	3.32			99.8	97.9	97.7	97.0	97.1	96.1	95.8	96.2	95.3	95.7	94.7	94.0
σ	6.2	0.04			0.49	1.02	1.07	0.97	1.01	0.97	0.96	0.85	0.92	0.76	0.72	0.69
Min.	185.1	3.24			98.4	95.9	95.1	94.8	94.8	93.9	93.7	94.2	94.0	94.0	93.4	92.7
Max.	205.4	3.40			100.7	99.5	99.6	98.0	98.2	97.8	97.4	97.3	97.1	96.7	96.5	95.4

DATA SET 3: 105°C; 700 mA

LED Package Series	XLamp XB-D White LEDs (Series: XBDAWT) This LM-80 report is applicable to the following order codes: XBDAWT-xx-xxxx-xxxxxxxxxx
Tested Model Number	XBDAWT-00-0000-00000LAE7
Drive Current [I _F]	700 mA
Testing Initiation Date	December 27, 2011
Case Temperature [T _s]	105°C
Ambient Temperature [T _A]	105°C
Failures observed	None

Lamp #	Initial (0 hrs)				Chromaticity Shift (Δu'v')											
	CCx	CCy	Calc. CCT	ANSI Target	168	1008	1512	2016	2520	3024	3528	4032	4536	5040	5544	6048
1	0.4263	0.3956	3125	3000	0.0002	0.0008	0.0009	0.0009	0.0010	0.0011	0.0011	0.0014	0.0012	0.0014	0.0015	0.0016
2	0.4257	0.3929	3114	3000	0.0005	0.0007	0.0009	0.0009	0.0010	0.0012	0.0011	0.0012	0.0012	0.0012	0.0013	0.0014
3	0.4288	0.3925	3051	3000	0.0004	0.0006	0.0009	0.0009	0.0009	0.0011	0.0012	0.0012	0.0012	0.0013	0.0014	0.0014
4	0.4311	0.3949	3030	3000	0.0006	0.0008	0.0009	0.0010	0.0012	0.0012	0.0012	0.0011	0.0011	0.0012	0.0014	0.0013
5	0.4274	0.3948	3097	3000	0.0005	0.0004	0.0006	0.0005	0.0007	0.0008	0.0008	0.0010	0.0009	0.0012	0.0012	0.0012
6	0.4242	0.3909	3124	3000	0.0004	0.0005	0.0007	0.0006	0.0008	0.0009	0.0009	0.0011	0.0011	0.0012	0.0012	0.0013
7	0.4200	0.3872	3176	3000	0.0003	0.0003	0.0006	0.0005	0.0006	0.0008	0.0007	0.0009	0.0009	0.0009	0.0010	0.0010
8	0.4283	0.3940	3074	3000	0.0006	0.0009	0.0010	0.0010	0.0011	0.0012	0.0012	0.0013	0.0014	0.0014	0.0014	0.0014
9	0.4388	0.4065	2992	3000	0.0006	0.0006	0.0007	0.0006	0.0006	0.0007	0.0007	0.0008	0.0008	0.0008	0.0009	0.0009
10	0.4321	0.4019	3072	3000	0.0005	0.0004	0.0004	0.0004	0.0005	0.0005	0.0006	0.0007	0.0006	0.0008	0.0009	0.0009
11	0.4359	0.4061	3040	3000	0.0003	0.0008	0.0008	0.0010	0.0009	0.0009	0.0013	0.0011	0.0010	0.0010	0.0013	0.0013
12	0.4436	0.4128	2965	3000	0.0004	0.0007	0.0010	0.0010	0.0012	0.0012	0.0013	0.0013	0.0013	0.0013	0.0013	0.0014
13	0.4392	0.4097	3012	3000	0.0003	0.0008	0.0010	0.0010	0.0011	0.0011	0.0012	0.0012	0.0013	0.0013	0.0013	0.0014
14	0.4191	0.3868	3189	3000	0.0002	0.0002	0.0004	0.0008	0.0003	0.0004	0.0005	0.0005	0.0004	0.0005	0.0006	0.0006
15	0.4188	0.3893	3216	3000	0.0004	0.0004	0.0004	0.0004	0.0006	0.0006	0.0008	0.0008	0.0007	0.0007	0.0009	0.0008
16	0.4294	0.3948	3061	3000	0.0003	0.0006	0.0006	0.0006	0.0006	0.0007	0.0011	0.0010	0.0008	0.0007	0.0010	0.0010
17	0.4230	0.3934	3169	3000	0.0003	0.0006	0.0008	0.0008	0.0009	0.0009	0.0009	0.0009	0.0008	0.0008	0.0010	0.0009
18	0.4211	0.3918	3192	3000	0.0003	0.0005	0.0006	0.0006	0.0005	0.0006	0.0010	0.0009	0.0007	0.0008	0.0010	0.0011
19	0.4289	0.3997	3111	3000	0.0004	0.0007	0.0006	0.0007	0.0008	0.0009	0.0009	0.0010	0.0010	0.0009	0.0011	0.0011
20	0.4334	0.4046	3070	3000	0.0003	0.0007	0.0006	0.0007	0.0008	0.0009	0.0013	0.0011	0.0008	0.0010	0.0013	0.0012
21	0.4205	0.3910	3196	3000	0.0003	0.0007	0.0008	0.0009	0.0010	0.0011	0.0012	0.0012	0.0013	0.0013	0.0015	0.0015
22	0.4246	0.3926	3133	3000	0.0003	0.0005	0.0007	0.0007	0.0008	0.0008	0.0009	0.0008	0.0009	0.0009	0.0011	0.0011
23	0.4188	0.3905	3226	3000	0.0003	0.0006	0.0006	0.0006	0.0007	0.0008	0.0012	0.0010	0.0010	0.0008	0.0012	0.0011
24	0.4214	0.3885	3159	3000	0.0003	0.0007	0.0008	0.0006	0.0008	0.0009	0.0009	0.0009	0.0009	0.0010	0.0012	0.0012
25	0.4283	0.3961	3093	3000	0.0003	0.0004	0.0006	0.0006	0.0006	0.0007	0.0011	0.0009	0.0009	0.0008	0.0012	0.0011
n	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Mean					0.0004	0.0006	0.0007	0.0007	0.0008	0.0009	0.0010	0.0010	0.0010	0.0010	0.0012	0.0012
Median					0.0003	0.0006	0.0007	0.0007	0.0008	0.0009	0.0011	0.0010	0.0009	0.0010	0.0012	0.0012
σ					0.0001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0003	0.0002	0.0002
Min.					0.0002	0.0002	0.0004	0.0003	0.0003	0.0004	0.0005	0.0005	0.0004	0.0005	0.0006	0.0006
Max.					0.0006	0.0009	0.0010	0.0010	0.0012	0.0012	0.0013	0.0014	0.0014	0.0014	0.0015	0.0016

DATA SET 4: 55°C; 1000 mA

LED Package Series	XLamp XB-D White LEDs (Series: XBDAAWT) This LM-80 report is applicable to the following order codes: XBDAAWT-xx-xxxx-xxxxxxxxxx
Tested Model Number	XBDAAWT-00-0000-00000LAE7
Drive Current [I _F]	1000 mA
Testing Initiation Date	January 18, 2012
Case Temperature [T _S]	55°C
Ambient Temperature [T _A]	55°C
Failures observed	None

Lamp #	Initial (0 hrs)				Lumen Maintenance (%)											
	LF (lm)	V _F (V)	Calc. CCT	ANSI Target	168	1008	1512	2016	2520	3024	3528	4032	4536	5040	5544	6048
1	248.6	3.42	3163	3000	99.7	99.4	97.7	98.4	98.2	97.7	97.5	97.4	97.8	97.5	96.9	96.8
2	246.1	3.38	3059	3000	99.1	99.4	99.0	98.1	97.7	98.0	98.8	97.6	98.1	97.8	97.9	97.2
3	247.0	3.37	3075	3000	99.1	98.7	98.3	98.0	97.1	97.5	97.1	97.4	97.4	97.2	96.8	96.2
4	262.9	3.51	3205	3000	99.8	99.3	98.2	98.6	97.7	98.3	98.6	98.4	98.3	98.1	97.6	96.7
5	261.2	3.50	3102	3000	100.7	100.3	99.5	99.3	98.4	98.8	99.5	99.1	98.8	98.8	98.0	97.4
6	259.7	3.56	3151	3000	100.9	99.7	100.3	99.9	98.5	97.0	98.9	97.7	98.2	98.1	97.7	97.3
7	268.9	3.50	3067	3000	98.9	99.1	98.6	98.4	97.7	98.0	98.8	98.3	97.8	98.3	97.4	96.7
8	257.5	3.53	3065	3000	99.4	98.1	98.8	98.6	97.6	97.7	97.6	97.3	97.9	97.7	97.2	96.8
9	245.8	3.55	3089	3000	99.1	98.1	98.8	98.8	98.1	97.5	98.4	98.2	98.2	98.3	97.7	97.0
10	248.0	3.46	3057	3000	100.5	100.0	99.5	99.3	98.5	98.5	99.5	99.3	98.6	97.7	97.5	97.0
11	229.1	3.49	3025	3000	100.4	100.1	99.2	99.1	98.1	98.5	99.1	99.3	98.8	98.6	98.1	97.2
12	262.9	3.49	3117	3000	100.6	99.7	99.5	99.5	98.6	98.9	99.5	99.8	99.2	98.8	98.3	97.6
13	228.0	3.48	3092	3000	100.1	100.7	99.7	99.7	98.5	99.2	99.5	100.4	99.5	99.8	99.3	98.4
14	256.1	3.55	3142	3000	101.0	99.6	100.2	100.5	99.9	98.0	99.0	99.5	99.5	98.2	98.0	97.5
15	261.2	3.47	3205	3000	100.2	100.2	100.0	99.3	99.1	99.3	99.4	99.3	99.4	99.3	98.8	98.1
16	257.3	3.62	3056	3000	100.4	99.1	99.5	99.4	98.4	98.8	98.3	98.5	98.6	98.4	97.3	96.4
17	257.9	3.37	3188	3000	100.4	98.6	99.2	99.2	98.2	98.1	98.2	98.3	98.0	98.5	97.5	97.1
18	259.4	3.38	3109	3000	100.8	98.9	99.3	97.8	97.5	97.9	98.2	98.7	97.8	97.8	97.3	96.6
19	254.6	3.39	3178	3000	99.5	98.1	98.4	98.1	97.3	97.5	98.1	98.5	97.5	97.2	97.0	96.2
20	253.4	3.38	2932	3000	99.5	98.4	99.3	99.0	98.5	97.9	98.1	98.6	98.2	97.4	97.4	96.7
21	255.9	3.36	3119	3000	99.8	98.8	98.5	98.1	97.2	97.5	97.7	98.4	97.6	97.5	97.0	96.2
22	257.8	3.36	3119	3000	99.1	98.3	98.3	97.4	97.4	97.6	98.3	98.4	97.6	97.4	96.9	96.1
23	241.1	3.41	3096	3000	100.6	99.6	99.9	99.9	99.1	98.3	98.6	99.0	98.7	98.4	97.5	96.8
24	218.9	3.56	3131	3000	99.8	98.5	98.6	98.0	97.5	97.9	97.8	98.5	97.7	97.6	97.3	96.7
25	243.7	3.54	3192	3000	99.5	98.9	100.3	99.0	98.5	98.2	98.0	98.3	98.2	97.6	96.7	96.5
n	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Mean	251.3	3.46			100.0	99.2	99.1	98.9	98.1	98.1	98.5	98.6	98.3	98.1	97.6	96.9
Median	255.9	3.48			99.8	99.1	99.2	99.0	98.2	98.0	98.4	98.5	98.2	98.1	97.5	96.8
σ	12.0	0.08			0.65	0.74	0.73	0.78	0.67	0.57	0.70	0.76	0.63	0.65	0.62	0.58
Min.	218.9	3.36			98.9	98.1	97.7	97.4	97.1	97.0	97.1	97.3	97.4	97.2	96.7	96.1
Max.	268.9	3.62			101.0	100.7	100.3	100.5	99.9	99.3	99.5	100.4	99.5	99.8	99.3	98.4

DATA SET 4: 55°C; 1000 mA

LED Package Series	XLamp XB-D White LEDs (Series: XBDAWT) This LM-80 report is applicable to the following order codes: XBDAWT-xx-xxxx-xxxxxxxxxx
Tested Model Number	XBDAWT-00-0000-00000LAE7
Drive Current [I _F]	1000 mA
Testing Initiation Date	January 18, 2012
Case Temperature [T _s]	55°C
Ambient Temperature [T _A]	55°C
Failures observed	None

Lamp #	Initial (0 hrs)				Chromaticity Shift (Δu'v')											
	CCx	CCy	Calc. CCT	ANSI Target	168	1008	1512	2016	2520	3024	3528	4032	4536	5040	5544	6048
1	0.4254	0.3981	3163	3000	0.0001	0.0002	0.0002	0.0003	0.0004	0.0006	0.0006	0.0006	0.0005	0.0005	0.0006	0.0005
2	0.4341	0.4048	3059	3000	0.0001	0.0004	0.0005	0.0005	0.0006	0.0007	0.0006	0.0007	0.0006	0.0005	0.0006	0.0005
3	0.4339	0.4061	3075	3000	0.0001	0.0004	0.0004	0.0004	0.0005	0.0006	0.0005	0.0004	0.0005	0.0005	0.0006	0.0005
4	0.4183	0.3868	3205	3000	0.0001	0.0006	0.0005	0.0004	0.0006	0.0006	0.0007	0.0005	0.0006	0.0007	0.0007	0.0007
5	0.4278	0.3963	3102	3000	0.0002	0.0002	0.0001	0.0002	0.0003	0.0004	0.0003	0.0003	0.0004	0.0004	0.0005	0.0006
6	0.4213	0.3875	3151	3000	0.0002	0.0004	0.0001	0.0003	0.0001	0.0003	0.0003	0.0003	0.0002	0.0002	0.0003	0.0002
7	0.4286	0.3938	3067	3000	0.0002	0.0004	0.0004	0.0004	0.0006	0.0006	0.0006	0.0005	0.0005	0.0005	0.0006	0.0005
8	0.4283	0.3931	3065	3000	0.0003	0.0004	0.0003	0.0004	0.0004	0.0005	0.0005	0.0005	0.0005	0.0005	0.0006	0.0007
9	0.4324	0.4048	3089	3000	0.0001	0.0005	0.0004	0.0005	0.0005	0.0007	0.0007	0.0008	0.0007	0.0006	0.0008	0.0007
10	0.4351	0.4066	3057	3000	0.0001	0.0002	0.0003	0.0003	0.0004	0.0004	0.0005	0.0005	0.0004	0.0003	0.0005	0.0004
11	0.4344	0.4012	3025	3000	0.0001	0.0003	0.0002	0.0003	0.0004	0.0005	0.0003	0.0004	0.0004	0.0004	0.0004	0.0003
12	0.4244	0.3906	3117	3000	0.0002	0.0002	0.0002	0.0003	0.0004	0.0005	0.0004	0.0005	0.0006	0.0005	0.0007	0.0007
13	0.4266	0.3924	3092	3000	0.0002	0.0004	0.0002	0.0002	0.0003	0.0003	0.0003	0.0004	0.0004	0.0005	0.0005	0.0005
14	0.4239	0.3922	3142	3000	0.0001	0.0005	0.0002	0.0002	0.0003	0.0004	0.0003	0.0004	0.0005	0.0003	0.0007	0.0007
15	0.4184	0.3870	3205	3000	0.0002	0.0004	0.0003	0.0003	0.0004	0.0004	0.0004	0.0004	0.0003	0.0003	0.0005	0.0005
16	0.4302	0.3959	3056	3000	0.0002	0.0004	0.0001	0.0003	0.0002	0.0004	0.0004	0.0005	0.0005	0.0004	0.0006	0.0007
17	0.4223	0.3941	3188	3000	0.0003	0.0005	0.0004	0.0004	0.0007	0.0008	0.0007	0.0008	0.0008	0.0007	0.0008	0.0008
18	0.4261	0.3933	3109	3000	0.0003	0.0003	0.0004	0.0004	0.0004	0.0004	0.0004	0.0006	0.0005	0.0004	0.0006	0.0005
19	0.4217	0.3915	3178	3000	0.0003	0.0004	0.0005	0.0005	0.0007	0.0008	0.0007	0.0008	0.0007	0.0006	0.0009	0.0007
20	0.4402	0.4020	2932	3000	0.0004	0.0004	0.0003	0.0004	0.0004	0.0006	0.0004	0.0006	0.0004	0.0005	0.0005	0.0005
21	0.4250	0.3920	3119	3000	0.0004	0.0004	0.0003	0.0004	0.0004	0.0006	0.0005	0.0006	0.0005	0.0005	0.0006	0.0005
22	0.4273	0.3971	3119	3000	0.0003	0.0004	0.0003	0.0006	0.0005	0.0006	0.0006	0.0007	0.0006	0.0005	0.0007	0.0007
23	0.4274	0.3947	3096	3000	0.0004	0.0006	0.0003	0.0006	0.0007	0.0009	0.0009	0.0011	0.0010	0.0009	0.0011	0.0010
24	0.4242	0.3916	3131	3000	0.0003	0.0003	0.0004	0.0003	0.0004	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
25	0.4191	0.3871	3192	3000	0.0003	0.0003	0.0003	0.0003	0.0004	0.0005	0.0004	0.0004	0.0005	0.0004	0.0005	0.0004
n	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Mean					0.0002	0.0004	0.0003	0.0004	0.0004	0.0005	0.0005	0.0006	0.0005	0.0005	0.0006	0.0006
Median					0.0002	0.0004	0.0003	0.0004	0.0004	0.0005	0.0005	0.0005	0.0005	0.0005	0.0006	0.0005
σ					0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
Min.					0.0001	0.0002	0.0001	0.0002	0.0001	0.0003	0.0003	0.0003	0.0002	0.0002	0.0003	0.0002
Max.					0.0004	0.0006	0.0005	0.0006	0.0007	0.0009	0.0009	0.0011	0.0010	0.0009	0.0011	0.0010

DATA SET 4: 55°C; 1000 mA

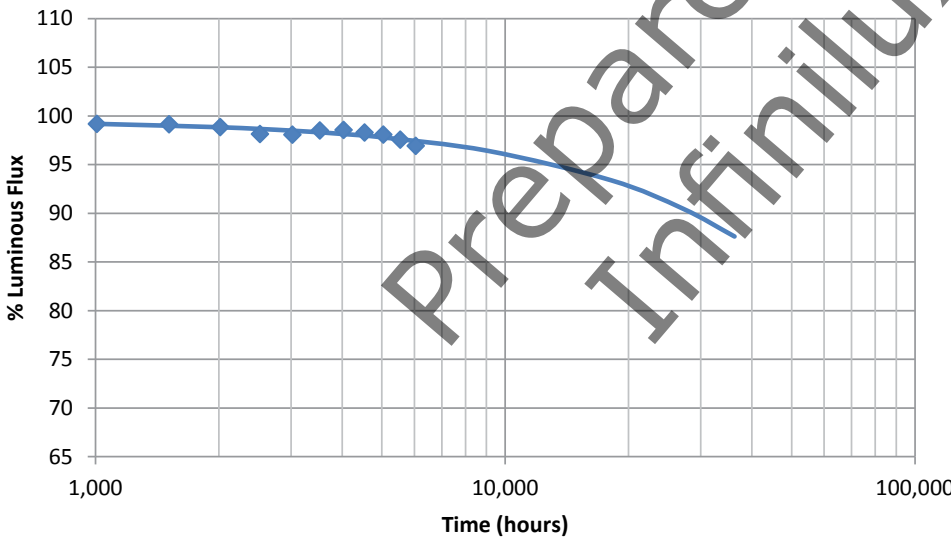
LED Package Series	XLamp XB-D White LEDs (Series: XBDAWT)
	This LM-80 report is applicable to the following order codes: XBDAWT-xx-xxxx-xxxxxxxxxx
Tested Model Number	XBDAWT-00-0000-00000LAE7
Drive Current [I _F]	1000 mA
Testing Initiation Date	January 18, 2012
Case Temperature [T _S]	55°C
Ambient Temperature [T _A]	55°C
Failures observed	None

Projection Generated By Cree's Internal TM-21 Calculator:

Test duration	6,048 hours
Test duration used for projection	t=1,008 to t=6,048
α	3.511E-06
β	9.952E-01
Calculated Lifetime	L70(6k) = 100,000 hours
Reported Lifetime	L70(6k) > 36,300 hours

LM-80 Data For The Official TM-21 Calculator*

Time (hours)	Lumen Maintenance
0	100.0000%
168	99.9520%
1008	99.1820%
1512	99.1390%
2016	98.8510%
2520	98.1400%
3024	98.0750%
3528	98.5050%
4032	98.5590%
4536	98.2950%
5040	98.0810%
5544	97.5620%
6048	96.9240%



* <http://www.energystar.gov/TM-21calculator>

Suggestion for exporting the LM-80 data:

1. Copy above table from PDF & paste into Microsoft Word.
2. Copy table out of Word & paste into Microsoft Excel (Match destination formatting)

DATA SET 5: 85°C; 1000 mA

LED Package Series	XLamp XB-D White LEDs (Series: XBDAWT) This LM-80 report is applicable to the following order codes: XBDAWT-xx-xxxx-xxxxxxxxxx
Tested Model Number	XBDAWT-00-0000-00000LAE7
Drive Current [I _F]	1000 mA
Testing Initiation Date	January 13, 2012
Case Temperature [T _S]	85°C
Ambient Temperature [T _A]	85°C
Failures observed	None

Lamp #	Initial (0 hrs)				Lumen Maintenance (%)											
	LF (lm)	V _F (V)	Calc. CCT	ANSI Target	168	1008	1512	2016	2520	3024	3528	4032	4536	5040	5544	6048
1	238.7	3.46	3082	3000	99.9	100.0	98.7	97.8	97.7	97.9	96.9	98.4	96.2	96.5	97.4	95.9
2	233.9	3.43	3073	3000	99.8	100.2	99.0	98.3	97.6	98.4	96.9	98.3	96.7	96.9	97.5	96.3
3	242.1	3.38	3114	3000	100.0	98.6	98.5	98.0	96.7	96.8	97.2	97.8	96.1	96.7	96.8	96.0
4	241.2	3.40	3057	3000	100.0	99.7	98.7	97.6	97.6	98.0	96.8	97.8	96.5	96.3	96.7	95.7
5	258.1	3.56	3101	3000	99.7	97.6	97.7	97.0	96.8	95.9	95.4	95.8	95.0	95.1	95.1	94.3
6	262.7	3.49	3117	3000	99.6	98.6	98.5	98.1	97.5	96.7	97.3	97.5	95.7	95.7	96.5	95.8
7	243.1	3.54	3077	3000	101.8	100.7	99.9	99.2	99.9	99.0	96.0	98.7	96.9	97.5	97.8	96.8
8	257.6	3.47	3225	3000	101.6	99.9	99.6	99.3	98.7	97.7	98.4	99.0	97.4	97.6	98.0	97.4
9	247.0	3.40	3085	3000	99.9	98.1	97.3	97.6	96.5	96.0	94.8	95.7	94.1	94.9	95.9	93.8
10	251.1	3.37	3060	3000	100.4	99.0	98.5	98.4	97.8	96.7	97.9	97.3	96.6	97.3	96.8	95.3
11	218.4	3.51	3102	3000	101.5	99.6	98.7	98.6	97.4	96.4	94.7	96.2	95.0	94.9	96.7	94.6
12	247.6	3.39	3212	3000	101.2	98.7	98.6	98.2	97.2	96.2	97.4	97.0	96.2	96.8	96.4	95.3
13	243.4	3.44	3148	3000	100.6	96.8	97.1	96.7	96.7	95.3	94.9	94.9	94.9	95.1	94.9	93.7
14	254.9	3.51	3115	3000	101.5	98.6	98.6	98.4	98.1	96.9	97.9	97.6	96.7	97.2	96.9	95.7
15	256.7	3.48	3052	3000	100.6	100.3	99.9	99.4	99.2	98.0	99.0	98.5	97.8	98.5	98.0	96.7
16	260.0	3.52	3056	3000	101.1	99.8	99.3	99.1	98.5	96.8	96.1	96.9	96.1	97.4	96.8	95.4
17	259.9	3.44	3063	3000	101.6	99.8	99.3	98.5	96.2	95.8	97.9	97.5	96.9	97.4	96.9	95.8
18	267.5	3.54	3216	3000	101.2	100.0	99.2	98.8	98.7	97.4	96.1	96.4	96.0	96.3	96.3	95.1
19	264.5	3.47	2997	3000	99.3	96.3	95.6	95.5	95.9	95.2	94.7	93.7	94.0	93.8	93.4	93.5
20	261.6	3.42	3051	3000	99.1	98.6	96.8	96.9	96.2	96.8	94.8	94.2	94.2	93.9	93.2	92.6
21	259.1	3.42	2983	3000	99.4	97.9	96.8	97.0	95.9	96.3	96.5	96.1	96.1	95.9	95.2	94.8
22	259.8	3.41	2990	3000	98.9	98.6	96.8	97.3	96.5	96.6	96.5	96.8	96.7	96.3	95.8	95.4
23	260.3	3.43	2966	3000	97.7	97.3	96.3	96.6	95.8	95.2	95.1	94.9	95.2	95.0	94.0	93.5
24	254.9	3.36	3013	3000	98.7	97.8	96.0	96.1	95.1	94.9	96.2	96.1	96.4	95.8	95.1	95.4
25	244.5	3.39	2993	3000	99.1	96.8	96.5	96.6	94.8	94.9	94.7	94.9	95.5	95.1	93.8	93.7
n	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Mean	251.5	3.45			100.2	98.8	98.1	97.8	97.2	96.6	96.4	96.7	96.0	96.2	96.1	95.1
Median	254.9	3.44			100.0	98.6	98.5	98.0	97.4	96.7	96.5	96.9	96.1	96.3	96.5	95.4
σ	11.4	0.06			1.08	1.22	1.29	1.05	1.27	1.12	1.28	1.46	1.01	1.21	1.40	1.18
Min.	218.4	3.36			97.7	96.3	95.6	95.5	94.8	94.9	94.7	93.7	94.0	93.8	93.2	92.6
Max.	267.5	3.56			101.8	100.7	99.9	99.4	99.9	99.0	99.0	99.0	97.8	98.5	98.0	97.4

DATA SET 5: 85°C; 1000 mA

LED Package Series	XLamp XB-D White LEDs (Series: XBDAWT)
	This LM-80 report is applicable to the following order codes: XBDAWT-xx-xxxx-xxxxxxxxxx
Tested Model Number	XBDAWT-00-0000-00000LAE7
Drive Current [I _F]	1000 mA
Testing Initiation Date	January 13, 2012
Case Temperature [T _s]	85°C
Ambient Temperature [T _A]	85°C
Failures observed	None

Lamp #	Initial (0 hrs)				Chromaticity Shift (Δu'v')											
	CCx	CCy	Calc. CCT	ANSI Target	168	1008	1512	2016	2520	3024	3528	4032	4536	5040	5544	6048
1	0.4324	0.4038	3082	3000	0.0005	0.0008	0.0009	0.0007	0.0008	0.0009	0.0009	0.0009	0.0011	0.0010	0.0009	0.0008
2	0.4333	0.4047	3073	3000	0.0003	0.0005	0.0005	0.0005	0.0005	0.0006	0.0008	0.0005	0.0007	0.0007	0.0007	0.0009
3	0.4289	0.4000	3114	3000	0.0003	0.0008	0.0006	0.0006	0.0008	0.0008	0.0008	0.0008	0.0008	0.0009	0.0009	0.0011
4	0.4339	0.4040	3057	3000	0.0004	0.0005	0.0004	0.0004	0.0004	0.0005	0.0008	0.0006	0.0007	0.0008	0.0007	0.0008
5	0.4277	0.3959	3101	3000	0.0002	0.0005	0.0005	0.0004	0.0004	0.0005	0.0006	0.0005	0.0006	0.0005	0.0006	0.0007
6	0.4237	0.3889	3117	3000	0.0002	0.0004	0.0004	0.0003	0.0003	0.0003	0.0004	0.0003	0.0005	0.0004	0.0006	0.0006
7	0.4306	0.3994	3077	3000	0.0003	0.0003	0.0003	0.0004	0.0003	0.0003	0.0005	0.0004	0.0006	0.0006	0.0006	0.0006
8	0.4187	0.3902	3225	3000	0.0003	0.0003	0.0005	0.0004	0.0005	0.0006	0.0005	0.0006	0.0005	0.0006	0.0006	0.0008
9	0.4304	0.3999	3085	3000	0.0007	0.0005	0.0006	0.0006	0.0006	0.0006	0.0008	0.0007	0.0007	0.0005	0.0006	0.0007
10	0.4335	0.4035	3060	3000	0.0001	0.0006	0.0006	0.0006	0.0007	0.0007	0.0008	0.0007	0.0007	0.0008	0.0008	0.0007
11	0.4293	0.3995	3102	3000	0.0002	0.0004	0.0006	0.0008	0.0004	0.0005	0.0008	0.0006	0.0006	0.0006	0.0007	0.0007
12	0.4220	0.3962	3212	3000	0.0004	0.0007	0.0007	0.0006	0.0007	0.0009	0.0010	0.0008	0.0009	0.0009	0.0009	0.0009
13	0.4265	0.3989	3148	3000	0.0000	0.0004	0.0004	0.0003	0.0004	0.0005	0.0008	0.0006	0.0007	0.0007	0.0007	0.0004
14	0.4268	0.3955	3115	3000	0.0002	0.0004	0.0003	0.0008	0.0004	0.0004	0.0005	0.0004	0.0005	0.0004	0.0006	0.0006
15	0.4322	0.3999	3052	3000	0.0002	0.0001	0.0002	0.0002	0.0001	0.0002	0.0001	0.0002	0.0001	0.0001	0.0001	0.0003
16	0.4313	0.3983	3056	3000	0.0003	0.0004	0.0004	0.0003	0.0002	0.0003	0.0008	0.0006	0.0007	0.0007	0.0007	0.0006
17	0.4297	0.3958	3063	3000	0.0005	0.0006	0.0006	0.0004	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0006	0.0007
18	0.4185	0.3885	3216	3000	0.0004	0.0005	0.0006	0.0004	0.0004	0.0004	0.0008	0.0007	0.0008	0.0005	0.0007	0.0008
19	0.4338	0.3966	2997	3000	0.0004	0.0007	0.0006	0.0007	0.0008	0.0011	0.0009	0.0009	0.0011	0.0007	0.0008	0.0009
20	0.4258	0.3861	3051	3000	0.0003	0.0003	0.0004	0.0004	0.0005	0.0007	0.0007	0.0007	0.0008	0.0008	0.0007	0.0007
21	0.4335	0.3945	2983	3000	0.0003	0.0004	0.0004	0.0005	0.0004	0.0005	0.0005	0.0006	0.0007	0.0008	0.0008	0.0007
22	0.4313	0.3907	2990	3000	0.0003	0.0003	0.0004	0.0005	0.0005	0.0006	0.0007	0.0007	0.0007	0.0007	0.0008	0.0008
23	0.4370	0.3995	2966	3000	0.0005	0.0004	0.0005	0.0005	0.0005	0.0007	0.0005	0.0006	0.0007	0.0008	0.0007	0.0006
24	0.4301	0.3908	3013	3000	0.0003	0.0004	0.0005	0.0005	0.0005	0.0007	0.0006	0.0006	0.0007	0.0008	0.0008	0.0008
25	0.4300	0.3883	2993	3000	0.0004	0.0004	0.0004	0.0005	0.0005	0.0006	0.0007	0.0006	0.0007	0.0008	0.0007	0.0008
n	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Mean					0.0003	0.0005	0.0005	0.0005	0.0005	0.0006	0.0007	0.0006	0.0007	0.0007	0.0007	0.0007
Median					0.0003	0.0004	0.0005	0.0004	0.0005	0.0006	0.0007	0.0006	0.0007	0.0007	0.0007	0.0007
σ					0.0001	0.0002	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
Min.					0.0000	0.0001	0.0002	0.0002	0.0001	0.0002	0.0001	0.0002	0.0001	0.0001	0.0001	0.0003
Max.					0.0007	0.0008	0.0009	0.0007	0.0008	0.0011	0.0010	0.0009	0.0011	0.0010	0.0009	0.0011

DATA SET 5: 85°C; 1000 mA

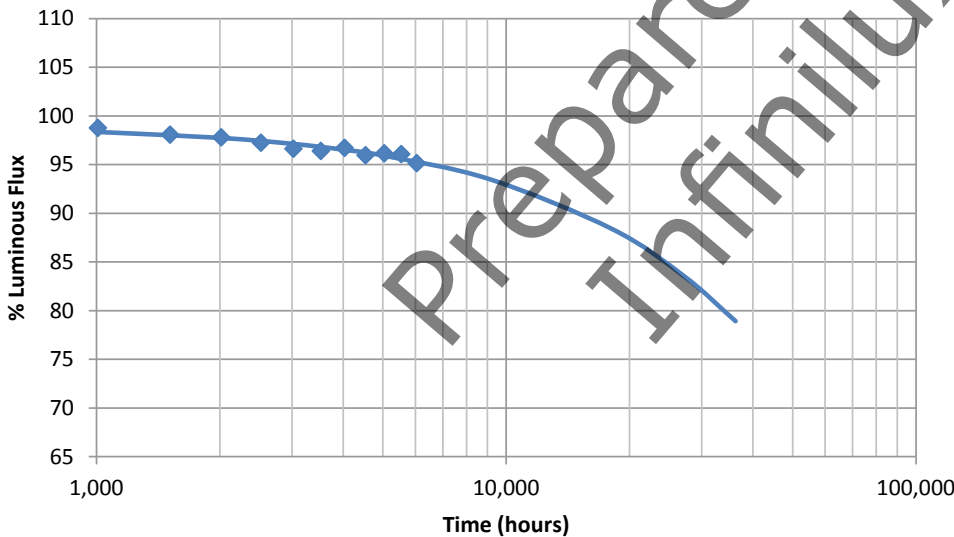
LED Package Series	XLamp XB-D White LEDs (Series: XBDAWT) This LM-80 report is applicable to the following order codes: XBDAWT-xx-xxxx-xxxxxxxxxx
Tested Model Number	XBDAWT-00-0000-00000LAE7
Drive Current [I _F]	1000 mA
Testing Initiation Date	January 13, 2012
Case Temperature [T _s]	85°C
Ambient Temperature [T _A]	85°C
Failures observed	None

Projection Generated By Cree's Internal TM-21 Calculator:

Test duration	6,048 hours
Test duration used for projection	t=1,008 to t=6,048
α	6.234E-06
β	9.896E-01
Calculated Lifetime	L70(6k) = 55,500 hours
Reported Lifetime	L70(6k) > 36,300 hours

LM-80 Data For The Official TM-21 Calculator*

Time (hours)	Lumen Maintenance
0	100.0000%
168	100.1710%
1008	98.7680%
1512	98.0760%
2016	97.8020%
2520	97.2490%
3024	96.6280%
3528	96.3990%
4032	96.7220%
4536	95.9630%
5040	96.1610%
5544	96.0780%
6048	95.1460%



* <http://www.energystar.gov/TM-21calculator>

Suggestion for exporting the LM-80 data:

1. Copy above table from PDF & paste into Microsoft Word.
2. Copy table out of Word & paste into Microsoft Excel (Match destination formatting)

DATA SET 6: 105°C; 1000 mA

LED Package Series	XLamp XB-D White LEDs (Series: XBDAWT) This LM-80 report is applicable to the following order codes: XBDAWT-xx-xxxx-xxxxxxxxxx
Tested Model Number	XBDAWT-00-0000-00000LAE7
Drive Current [I _F]	1000 mA
Testing Initiation Date	December 27, 2011
Case Temperature [T _S]	105°C
Ambient Temperature [T _A]	105°C
Failures observed	None

Lamp #	Initial (0 hrs)				Lumen Maintenance (%)											
	LF (lm)	V _F (V)	Calc. CCT	ANSI Target	168	1008	1512	2016	2520	3024	3528	4032	4536	5040	5544	6048
1	245.0	3.41	3028	3000	101.2	98.8	98.9	97.6	95.8	95.7	95.6	96.7	97.2	96.5	94.7	94.0
2	242.7	3.38	3019	3000	100.9	96.2	96.9	95.9	95.6	95.0	94.7	94.0	94.9	94.7	94.2	93.3
3	236.3	3.46	2985	3000	101.2	98.8	98.3	97.1	95.7	95.6	95.5	96.5	97.4	96.1	95.4	93.7
4	243.8	3.37	3041	3000	101.2	97.3	96.8	95.8	95.5	94.6	95.0	94.7	94.9	94.9	94.5	93.4
5	244.1	3.38	3125	3000	101.5	99.2	98.5	97.6	96.3	96.2	95.6	96.0	96.8	95.4	95.0	93.5
6	258.6	3.50	3069	3000	100.4	98.0	97.5	96.4	95.6	94.8	95.2	94.4	94.5	94.5	94.0	92.9
7	267.9	3.47	3070	3000	100.8	98.7	98.2	97.6	97.2	95.8	96.6	96.8	96.1	96.0	95.5	94.3
8	241.2	3.40	3021	3000	100.8	100.3	99.4	96.5	95.8	96.5	95.8	97.2	96.2	97.3	96.1	95.5
9	251.2	3.39	2986	3000	100.0	97.5	96.8	95.8	95.1	94.5	94.8	95.1	94.1	94.5	93.8	93.0
10	249.2	3.41	2973	3000	99.7	96.8	96.2	95.3	94.6	94.1	94.3	94.6	94.0	94.2	93.5	92.9
11	234.9	3.37	3031	3000	102.5	100.8	100.4	97.8	97.7	97.2	95.3	97.9	96.4	98.3	96.9	96.3
12	262.4	3.50	3209	3000	99.5	97.9	97.4	96.4	95.8	95.1	95.6	95.6	95.1	95.2	94.1	93.4
13	259.2	3.47	3086	3000	99.7	97.8	98.6	96.5	97.0	96.2	96.5	96.6	95.9	96.3	95.3	94.5
14	225.3	3.54	3088	3000	100.8	100.2	100.0	99.3	99.2	99.0	97.4	99.4	98.1	99.5	98.3	97.5
15	268.7	3.47	3110	3000	99.8	97.2	96.1	95.1	95.3	94.4	93.8	94.1	93.5	93.8	93.0	92.5
16	258.3	3.52	3211	3000	100.0	98.8	98.3	97.3	96.8	95.5	94.6	94.7	94.1	94.9	93.5	92.7
17	245.4	3.43	3075	3000	99.4	98.6	97.5	96.9	97.8	97.0	95.6	97.5	95.5	96.4	96.6	96.6
18	249.2	3.40	3053	3000	99.4	97.9	97.5	97.3	97.1	96.0	96.5	95.9	94.9	95.6	95.6	94.8
19	239.3	3.45	3107	3000	101.4	98.3	98.2	97.3	96.8	95.8	96.7	95.6	95.0	95.5	95.2	94.4
20	238.1	3.43	3069	3000	99.8	98.2	97.9	97.0	97.8	97.0	95.8	96.2	94.9	94.9	95.8	96.0
21	255.1	3.51	3112	3000	99.3	98.4	97.8	97.2	96.9	95.7	96.3	95.8	94.7	95.2	95.0	93.8
22	252.4	3.50	3161	3000	99.0	97.8	97.5	97.3	96.9	95.7	95.8	95.3	94.5	94.5	95.0	94.1
23	253.8	3.50	3075	3000	100.3	99.7	99.3	98.6	98.4	97.7	97.1	97.1	96.5	96.0	96.3	96.7
24	259.3	3.51	3138	3000	99.0	98.3	98.1	98.0	97.3	96.2	96.6	95.5	94.9	95.4	95.6	94.4
25	267.3	3.54	3085	3000	100.3	98.4	98.1	97.8	98.0	97.3	95.1	95.3	94.3	94.8	94.9	95.0
n	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Mean	250.0	3.45			100.3	98.4	98.0	97.0	96.6	95.9	95.7	95.9	95.4	95.6	95.1	94.4
Median	249.2	3.46			100.3	98.3	98.1	97.2	96.8	95.8	95.6	95.8	94.9	95.4	95.0	94.1
σ	11.2	0.06			0.89	1.07	1.07	1.00	1.14	1.15	0.88	1.29	1.19	1.29	1.19	1.38
Min.	225.3	3.37			99.0	96.2	96.1	95.1	94.6	94.1	93.8	94.0	93.5	93.8	93.0	92.5
Max.	268.7	3.54			102.5	100.8	100.4	99.3	99.2	99.0	97.4	99.4	98.1	99.5	98.3	97.5

DATA SET 6: 105°C; 1000 mA

LED Package Series	XLamp XB-D White LEDs (Series: XBDAWT) This LM-80 report is applicable to the following order codes: XBDAWT-xx-xxxx-xxxxxxxxxx
Tested Model Number	XBDAWT-00-0000-00000LAE7
Drive Current [I _F]	1000 mA
Testing Initiation Date	December 27, 2011
Case Temperature [T _s]	105°C
Ambient Temperature [T _A]	105°C
Failures observed	None

Lamp #	Initial (0 hrs)				Chromaticity Shift (Δu'v')											
	CCx	CCy	Calc. CCT	ANSI Target	168	1008	1512	2016	2520	3024	3528	4032	4536	5040	5544	6048
1	0.4383	0.4097	3028	3000	0.0006	0.0009	0.0010	0.0011	0.0012	0.0013	0.0014	0.0013	0.0012	0.0012	0.0013	0.0016
2	0.4414	0.4151	3019	3000	0.0007	0.0008	0.0005	0.0008	0.0010	0.0010	0.0010	0.0013	0.0011	0.0010	0.0012	0.0013
3	0.4405	0.4091	2985	3000	0.0005	0.0009	0.0010	0.0011	0.0013	0.0014	0.0013	0.0014	0.0012	0.0013	0.0015	0.0014
4	0.4370	0.4086	3041	3000	0.0006	0.0012	0.0013	0.0014	0.0015	0.0017	0.0016	0.0016	0.0014	0.0016	0.0017	0.0018
5	0.4292	0.4021	3125	3000	0.0007	0.0009	0.0012	0.0012	0.0014	0.0014	0.0013	0.0014	0.0012	0.0014	0.0016	0.0017
6	0.4291	0.3951	3069	3000	0.0008	0.0009	0.0011	0.0012	0.0012	0.0013	0.0013	0.0014	0.0012	0.0014	0.0015	0.0018
7	0.4301	0.3973	3070	3000	0.0007	0.0008	0.0009	0.0009	0.0010	0.0012	0.0010	0.0011	0.0011	0.0011	0.0014	0.0016
8	0.4387	0.4098	3021	3000	0.0006	0.0007	0.0009	0.0007	0.0010	0.0010	0.0012	0.0012	0.0013	0.0012	0.0013	0.0012
9	0.4407	0.4096	2986	3000	0.0007	0.0006	0.0008	0.0008	0.0008	0.0009	0.0010	0.0010	0.0011	0.0010	0.0011	0.0011
10	0.4417	0.4100	2973	3000	0.0007	0.0009	0.0009	0.0009	0.0011	0.0012	0.0012	0.0012	0.0012	0.0013	0.0013	0.0014
11	0.4397	0.4132	3031	3000	0.0004	0.0006	0.0008	0.0007	0.0010	0.0010	0.0012	0.0012	0.0013	0.0012	0.0015	0.0014
12	0.4189	0.3886	3209	3000	0.0006	0.0007	0.0008	0.0008	0.0009	0.0009	0.0010	0.0010	0.0009	0.0011	0.0012	0.0013
13	0.4275	0.3937	3086	3000	0.0005	0.0005	0.0007	0.0004	0.0007	0.0007	0.0006	0.0008	0.0008	0.0009	0.0010	0.0013
14	0.4273	0.3934	3088	3000	0.0009	0.0007	0.0010	0.0010	0.0010	0.0010	0.0013	0.0014	0.0014	0.0013	0.0015	0.0014
15	0.4245	0.3898	3110	3000	0.0005	0.0009	0.0011	0.0009	0.0011	0.0011	0.0010	0.0011	0.0010	0.0011	0.0012	0.0012
16	0.4195	0.3902	3211	3000	0.0006	0.0006	0.0008	0.0008	0.0008	0.0007	0.0012	0.0013	0.0015	0.0014	0.0015	0.0016
17	0.4330	0.4044	3075	3000	0.0006	0.0008	0.0010	0.0011	0.0011	0.0012	0.0014	0.0010	0.0013	0.0013	0.0014	0.0014
18	0.4352	0.4063	3053	3000	0.0005	0.0008	0.0008	0.0010	0.0010	0.0011	0.0010	0.0010	0.0011	0.0012	0.0013	0.0014
19	0.4320	0.4060	3107	3000	0.0003	0.0003	0.0005	0.0005	0.0006	0.0008	0.0009	0.0008	0.0010	0.0010	0.0011	0.0012
20	0.4317	0.4006	3069	3000	0.0005	0.0009	0.0010	0.0011	0.0009	0.0011	0.0013	0.0011	0.0014	0.0013	0.0016	0.0015
21	0.4250	0.3913	3112	3000	0.0005	0.0004	0.0004	0.0004	0.0005	0.0007	0.0006	0.0007	0.0008	0.0009	0.0011	0.0012
22	0.4205	0.3868	3161	3000	0.0005	0.0010	0.0009	0.0009	0.0010	0.0011	0.0011	0.0012	0.0014	0.0012	0.0014	0.0014
23	0.4269	0.3910	3075	3000	0.0004	0.0007	0.0007	0.0007	0.0006	0.0007	0.0009	0.0009	0.0010	0.0010	0.0010	0.0010
24	0.4234	0.3907	3138	3000	0.0005	0.0007	0.0009	0.0009	0.0008	0.0010	0.0010	0.0011	0.0013	0.0012	0.0013	0.0015
25	0.4269	0.3922	3085	3000	0.0003	0.0005	0.0007	0.0008	0.0006	0.0007	0.0011	0.0011	0.0012	0.0011	0.0011	0.0013
n	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Mean					0.0006	0.0008	0.0009	0.0009	0.0010	0.0010	0.0011	0.0011	0.0012	0.0012	0.0013	0.0014
Median					0.0006	0.0008	0.0009	0.0009	0.0010	0.0010	0.0011	0.0011	0.0012	0.0012	0.0013	0.0014
σ					0.0001	0.0002	0.0002	0.0002	0.0003	0.0003	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
Min.					0.0003	0.0003	0.0004	0.0004	0.0005	0.0007	0.0006	0.0007	0.0008	0.0009	0.0010	0.0010
Max.					0.0009	0.0012	0.0013	0.0014	0.0015	0.0017	0.0016	0.0016	0.0015	0.0016	0.0017	0.0018

DATA SET 6: 105°C; 1000 mA

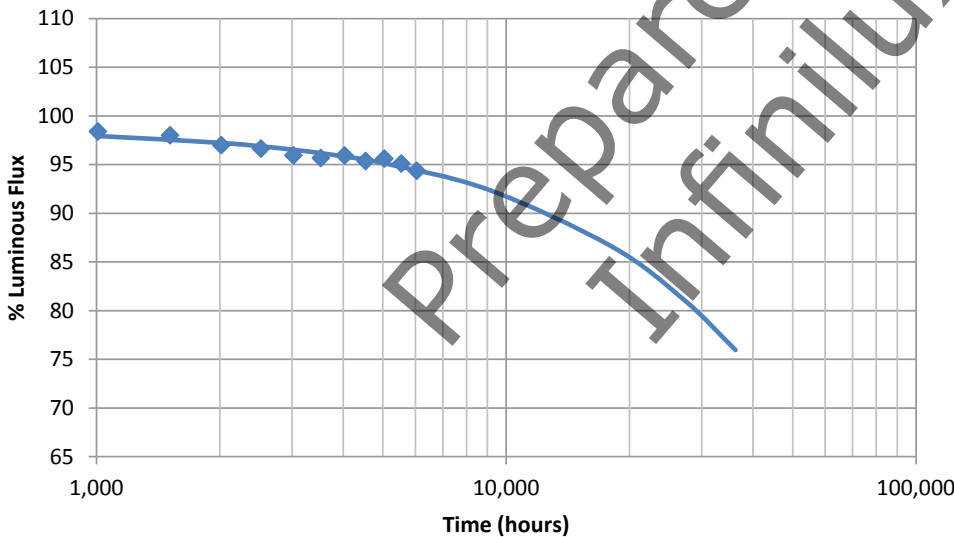
LED Package Series	XLamp XB-D White LEDs (Series: XBDAWT)
	This LM-80 report is applicable to the following order codes: XBDAWT-xx-xxxx-xxxxxxxxxx
Tested Model Number	XBDAWT-00-0000-00000LAE7
Drive Current [I _F]	1000 mA
Testing Initiation Date	December 27, 2011
Case Temperature [T _s]	105°C
Ambient Temperature [T _A]	105°C
Failures observed	None

Projection Generated By Cree's Internal TM-21 Calculator:

Test duration	6,048 hours
Test duration used for projection	t=1,008 to t=6,048
α	7.202E-06
β	9.866E-01
Calculated Lifetime	L70(6k) = 47,600 hours
Reported Lifetime	L70(6k) > 36,300 hours

LM-80 Data For The Official TM-21 Calculator*

Time (hours)	Lumen Maintenance
0	100.0000%
168	100.3180%
1008	98.4040%
1512	98.0090%
2016	97.0020%
2520	96.6460%
3024	95.9480%
3528	95.6730%
4032	95.9380%
4536	95.3700%
5040	95.6160%
5544	95.1130%
6048	94.3670%



* <http://www.energystar.gov/TM-21calculator>

Suggestion for exporting the LM-80 data:

1. Copy above table from PDF & paste into Microsoft Word.
2. Copy table out of Word & paste into Microsoft Excel (Match destination formatting)