

Lumileds

IESNA LM-80 Test Report

1. Description of LED light sources tested

LUXEON 5050 with nominal CCT of 2700K (L150-2780502400000).

2a. Package Pictures



Figure 1. Picture of the LUXEON 5050.

2b. Average current density per LED die at max. current tested

200.0 mA/mm²

2c. Average power density per LED die at max. current tested

5.01 W/mm²

2d. Average CRI Ra of LED light sources tested at max. current tested

81.05

2e. Minimum die edge to die edge spacing of LED light sources tested

0.4mm

2f. Total Input Power at max. current tested

5.15 W

3a. Projected L_{70} extrapolations per IESNA TM-21-11 for LUXEON 5050 24V

	If = 60mA	If = 100mA	If = 200mA
Ts = 105°C	109,818	100,281	93,525
Ts = 85°C	122,542	117,711	111,077
Ts = 70°C	149,024	-	-

3b. Reported L_{70} extrapolations per IESNA TM-21-11 for LUXEON 5050 24V

	If = 60mA	If = 100mA	If = 200mA
Ts = 105°C	> 90,000	> 90,000	> 90,000
Ts = 85°C	> 90,000	> 90,000	> 90,000
Ts = 70°C	> 90,000	-	-

4. Applicable LUXEON® Series part number(s)

This Test Report applies to the following LUXEON part numbers*:

Product Family	Part Number	Color
LUXEON 5050	L150-AABB50CCDDDDD	white
LUXEON 3535L HE PLUS	L135-AABBCC35DDDDD	white

For LUXEON 5050: AA designates nominal ANSI CCT (22=2200K, 27=2700K, 30=3000K, 35=3500K, 40=4000K, 57=5700K, 65=6500K), BB designates minimum CRI (70=70CRI, 80=80CRI, 90=90CRI), CC designates voltage (06=6V, 24=24V), DDDDD designates options for detailed product specification.

For LUXEON 3535L HE PLUS: AA designates nominal ANSI CCT (22=2200K, 27=2700K, 30=3000K, 35=3500K, 40=4000K, 50=5000K, 57=5700K, 65=6500K), BB designates minimum CRI (70=70CRI, 80=80CRI, 90=90CRI), CC designates options for lead frame (CA=Round Light Emitting Surface (LES), SA=Square LES), DDDDD designates options for detailed product specification.

Please note LUXEON 5050 6V parts have an equivalent drive current I_f' that can be determined as follows: $I_f' = I_f * 4$ and voltage $V_f' = V_f / 4$. Also note that LUXEON 3535L HE PLUS drive current I_f'' can be determined as follows: $I_f'' = I_f * 2$ and voltage $V_f'' = V_f / 8$.

5. Number of LED light sources tested

20 units.

6. Dates Tests Started

2016/12/12.

7. Date Report First Issued

2017/10/23.

8. Mechanical Drawing

For detailed mechanical drawings, please see the LUXEON 5050 datasheet.

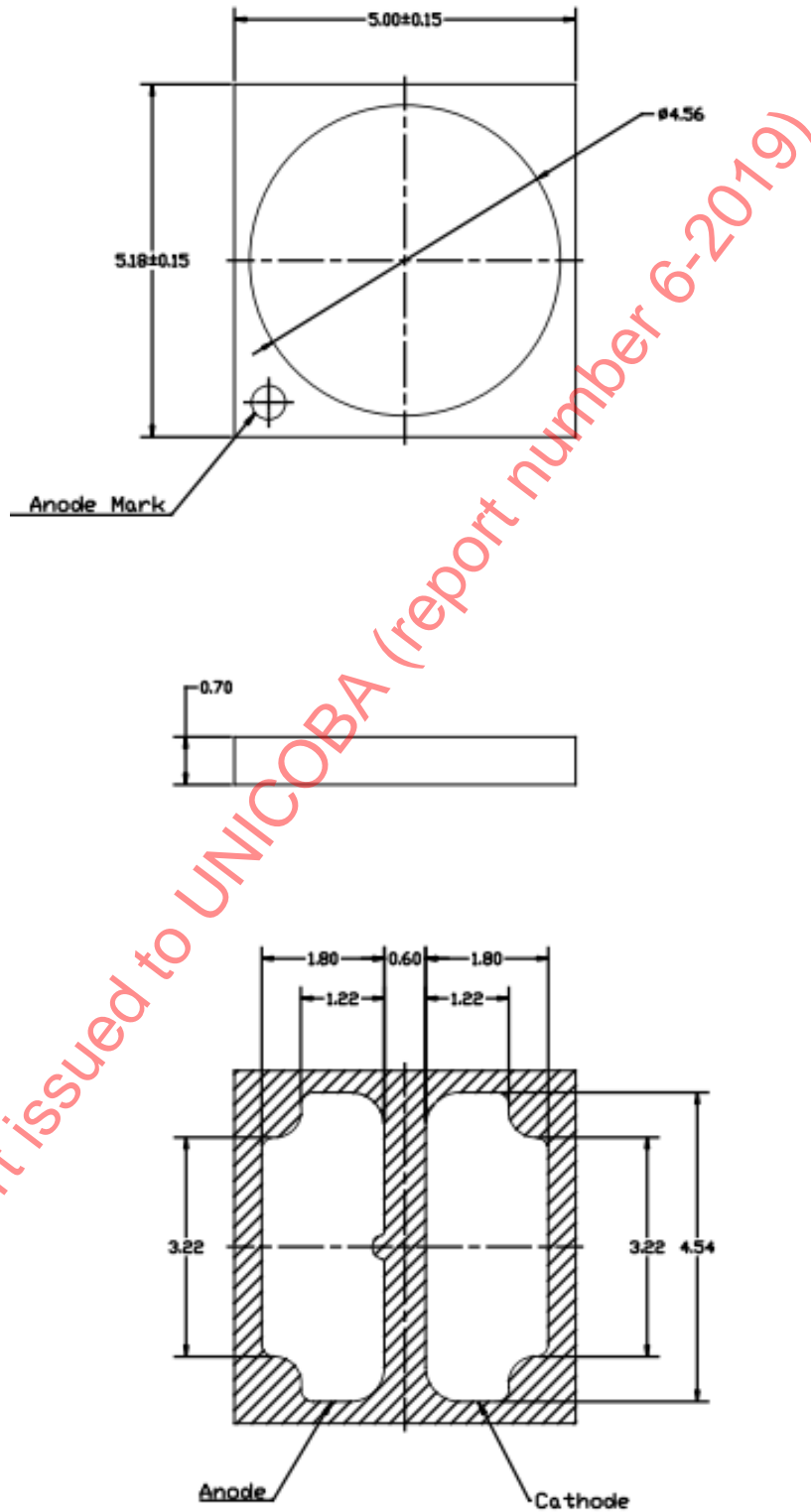


Figure 2. Mechanical drawings for the LUXEON 5050 (all dimensions in millimeters).

9. T_s Measurement Point

The circular pad in the bottom side of LUXEON 5050 corresponds to the recommended temperature measurement point T_s , see Figure 3.

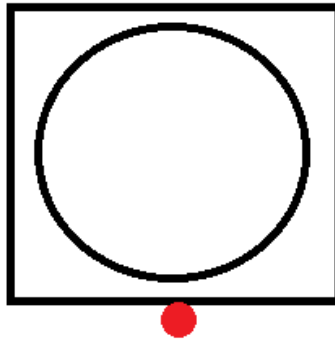


Figure 3. The recommended T_s point is located in the bottom of LUXEON 5050.

For further information on measuring the in-situ T_s , please see LUXEON 5050 Application Brief.

10. Description of auxiliary equipment

Reliability stress boards are mounted in a thermal chamber which provides liquid N₂ cooling and has a controlled air temperature.

11. Operating Cycle

LUXEON 5050 LEDs are driven with a constant direct current (DC).

12. Ambient conditions including airflow, temperature, and relative humidity

Case temperature (T_s): controlled to within -2°C

Surrounding air temperature: controlled to within -5°C of T_s

Humidity: < 65 RH, No forced air flow.

13. Case and ambient temperatures

See Section 3.

14. Drive current of the LED light source during lumen maintenance test

See tables.

15. Initial luminous flux and forward voltage at photometric measurement current

See tables.

16. Lumen maintenance for data for each individual light source along with median value, standard deviation, minimum and maximum lumen maintenance value for all of the light sources

See tables.

17. Observation of LED light source failures including the failure conditions and time of failure

No failures observed.

18. LED light source monitoring interval

Units were tested at 0 and every 1000 hours thereafter.

19. Photometric measurement uncertainty

Long-term measurement uncertainty is based on reproducibility tests done over a period of one year, calculated to $k = 2$ coverage (i.e. 95% coverage)

Uncertainty of light output is $U=1.59\%$. Uncertainty of correlated color temperature is $U=21K$.

20. Chromaticity shift reported over the measurement time

See tables.

21. Sampling Method/Sample size

LED samples for IESNA LM-80 testing consist of units built from a minimum of three manufacturing lots with each manufacturing lot built from different wafer lots built on non-consecutive days. These manufacturing lots are picked to represent a wide parametric distribution. Each Sample is soldered to all of the reliability stress boards for a given set of IESNA LM-80 tests.

LED sample size is indicated in Section 5 of this report.

This report issued to UNICOBA (report number 6-2019)

22. ISO 17025-2005 Accreditation

Lumileds holds certificate LA-2016-0634-E issued by SAC-SINGLAS under scope of accreditation for IESNA LM-80-15 and LM-80-08.



Figure 4. Certificate LA-2016-0634-E.

Notes

Data is for reference only and is not an endorsement to exceed the datasheet operating conditions.

The TM-21 extrapolations are based on the IESNA TM-21-11 technical memorandum. The TM-21 lumen maintenance model is based on the flux data normalized to 1 at 0 hours and the use of an exponential model for flux (time):

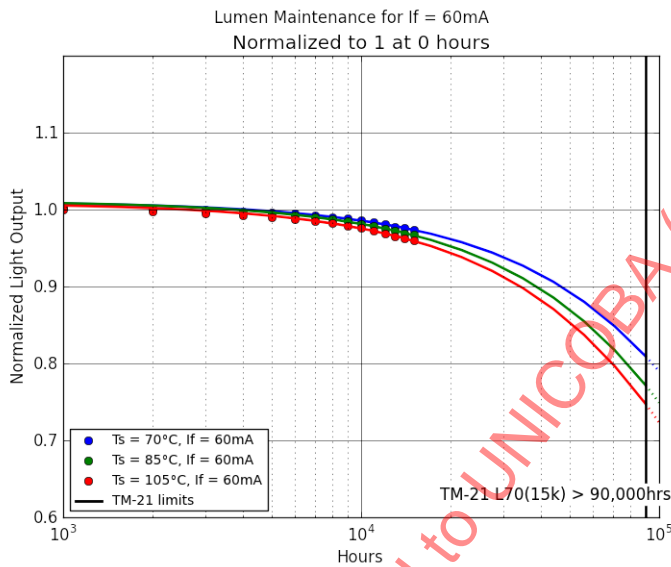
Flux(time) = $B \exp[-\alpha \cdot \text{time}]$, where normally $B \cong 1$, and $\alpha > 0$.

An L70 extrapolation less than 0 means that the model predicts an increasing flux output with time, i.e. $\alpha < 0$ (see graphs). Generally, this means that additional test time is needed to determine the long-term lumen maintenance behavior.

This report issued to UNICOBA (report number 6-2019)

Normalized Flux Statistics for $I_f = 60\text{mA}$

	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	alpha	B		
Ts=Tair=105°C	median =	1.0000	0.9994	0.9968	0.9943	0.9922	0.9893	0.9872	0.9845	0.9819	0.9790	0.9762	0.9733	0.9688	0.9651	0.9613	0.9581			
	average =	1.0000	0.9996	0.9969	0.9945	0.9920	0.9897	0.9873	0.9847	0.9822	0.9791	0.9758	0.9729	0.9691	0.9653	0.9624	0.9596	3.3251e-06	1.0085	
	st dev =	0.0000	0.0013	0.0011	0.0015	0.0014	0.0015	0.0016	0.0015	0.0017	0.0019	0.0019	0.0021	0.0024	0.0033	0.0037	0.0037	TM-21 L70(15k) > 90.0		
	min =	1.0000	0.9977	0.9954	0.9920	0.9897	0.9876	0.9843	0.9816	0.9786	0.9753	0.9726	0.9693	0.9656	0.9599	0.9569	0.9546			
	max =	1.0000	1.0027	0.9996	0.9977	0.9954	0.9931	0.9912	0.9878	0.9855	0.9825	0.9790	0.9772	0.9753	0.9704	0.9680	0.9661			
Ts=Tair=85°C	median =	1.0000	1.0019	1.0004	0.9981	0.9962	0.9943	0.9924	0.9901	0.9875	0.9848	0.9816	0.9788	0.9759	0.9715	0.9682	0.9660			
	average =	1.0000	1.0021	1.0001	0.9981	0.9963	0.9943	0.9922	0.9897	0.9874	0.9848	0.9815	0.9790	0.9756	0.9720	0.9693	0.9671	3.0024e-06	1.0113	
	st dev =	0.0000	0.0005	0.0010	0.0012	0.0012	0.0010	0.0012	0.0014	0.0015	0.0019	0.0023	0.0024	0.0024	0.0033	0.0036	0.0039	TM-21 L70(15k) > 90.0		
	min =	1.0000	1.0012	0.9985	0.9959	0.9940	0.9923	0.9902	0.9870	0.9845	0.9814	0.9776	0.9741	0.9711	0.9656	0.9628	0.9601			
	max =	1.0000	1.0030	1.0015	1.0007	0.9989	0.9965	0.9939	0.9923	0.9901	0.9889	0.9862	0.9831	0.9793	0.9765	0.9750	0.9731			
Ts=Tair=70°C	median =	1.0000	1.0031	1.0015	0.9992	0.9985	0.9964	0.9943	0.9921	0.9904	0.9883	0.9855	0.9828	0.9803	0.9778	0.9755	0.9732			
	average =	1.0000	1.0031	1.0014	0.9995	0.9981	0.9966	0.9945	0.9926	0.9906	0.9885	0.9859	0.9836	0.9808	0.9781	0.9758	0.9738	2.4620e-06	1.0103	
	st dev =	0.0000	0.0004	0.0007	0.0008	0.0011	0.0011	0.0012	0.0015	0.0016	0.0019	0.0023	0.0026	0.0028	0.0033	0.0033	0.0034	TM-21 L70(15k) > 90.0		
	min =	1.0000	1.0023	1.0004	0.9985	0.9958	0.9938	0.9931	0.9903	0.9881	0.9857	0.9826	0.9803	0.9773	0.9725	0.9714	0.9685			
	max =	1.0000	1.0038	1.0030	1.0011	0.9996	0.9981	0.9973	0.9957	0.9943	0.9924	0.9902	0.9889	0.9870	0.9855	0.9836	0.9813			



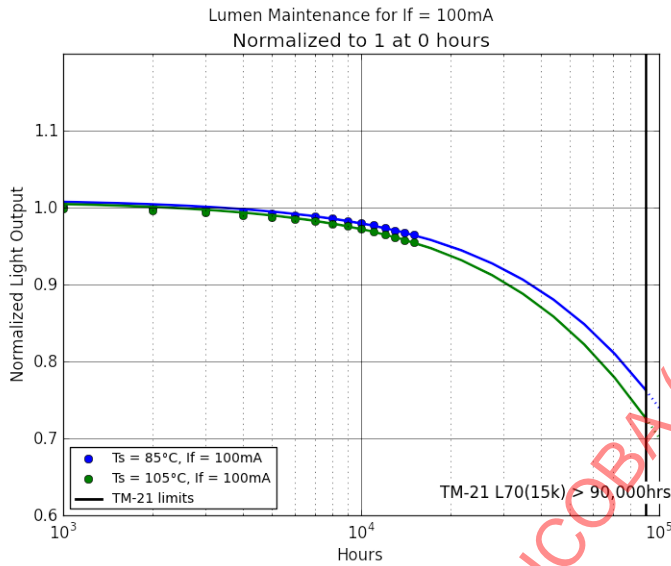
Delta u'v' for $I_f = 60\text{mA}$

	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	
Ts=Tair=105°C	median =	0.0000	0.0003	0.0008	0.0011	0.0014	0.0016	0.0019	0.0022	0.0026	0.0029	0.0032	0.0033	0.0036	0.0038	0.0039	0.0041
	average =	0.0000	0.0004	0.0008	0.0011	0.0014	0.0016	0.0019	0.0022	0.0026	0.0029	0.0032	0.0033	0.0036	0.0038	0.0039	0.0041
	st dev =	0.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001
	min =	0.0000	0.0002	0.0007	0.0010	0.0013	0.0015	0.0018	0.0021	0.0022	0.0027	0.0029	0.0031	0.0034	0.0036	0.0037	0.0038
	max =	0.0000	0.0005	0.0010	0.0013	0.0015	0.0017	0.0021	0.0023	0.0029	0.0033	0.0035	0.0035	0.0038	0.0040	0.0041	0.0043
Ts=Tair=85°C	median =	0.0000	0.0003	0.0007	0.0009	0.0011	0.0014	0.0017	0.0021	0.0024	0.0026	0.0028	0.0031	0.0033	0.0033	0.0034	0.0035
	average =	0.0000	0.0003	0.0007	0.0009	0.0011	0.0014	0.0017	0.0020	0.0024	0.0026	0.0028	0.0030	0.0033	0.0033	0.0034	0.0035
	st dev =	0.0000	0.0001	0.0001	0.0001	0.0001	0.0001	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	0.0006	0.0008	0.0010	0.0013	0.0015	0.0018	0.0020	0.0023	0.0026	0.0027	0.0029	0.0029	0.0031	0.0032
	max =	0.0000	0.0005	0.0009	0.0010	0.0013	0.0015	0.0018	0.0022	0.0027	0.0030	0.0032	0.0033	0.0036	0.0037	0.0036	0.0038
Ts=Tair=70°C	median =	0.0000	0.0002	0.0005	0.0007	0.0009	0.0011	0.0014	0.0018	0.0020	0.0023	0.0026	0.0028	0.0030	0.0031	0.0032	0.0033
	average =	0.0000	0.0003	0.0005	0.0007	0.0009	0.0011	0.0014	0.0018	0.0021	0.0023	0.0026	0.0028	0.0030	0.0031	0.0032	0.0033
	st dev =	0.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
	min =	0.0000	0.0002	0.0003	0.0005	0.0007	0.0010	0.0013	0.0016	0.0018	0.0019	0.0022	0.0025	0.0027	0.0028	0.0028	0.0030
	max =	0.0000	0.0004	0.0006	0.0008	0.0011	0.0013	0.0017	0.0020	0.0026	0.0027	0.0029	0.0032	0.0034	0.0034	0.0034	0.0037

Lumileds IESNA LM-80 test report generated on Thu Jun 13 15:01:24 2019

Normalized Flux Statistics for $I_f = 100\text{mA}$

	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	alpha	B		
Ts=Tair=105°C	median =	1.0000	0.9988	0.9958	0.9932	0.9900	0.9877	0.9849	0.9818	0.9790	0.9755	0.9726	0.9694	0.9648	0.9607	0.9571	0.9546			
	average =	1.0000	0.9986	0.9960	0.9933	0.9902	0.9876	0.9851	0.9823	0.9792	0.9758	0.9725	0.9693	0.9650	0.9610	0.9576	0.9549	3.6375e-06	1.0081	
	st dev =	0.0000	0.0008	0.0009	0.0011	0.0015	0.0015	0.0016	0.0018	0.0020	0.0024	0.0025	0.0024	0.0026	0.0031	0.0034	0.0033	TM-21 L70(15k) > 90.0		
	min =	1.0000	0.9973	0.9946	0.9911	0.9881	0.9856	0.9830	0.9799	0.9756	0.9715	0.9682	0.9650	0.9617	0.9565	0.9522	0.9507			
	max =	1.0000	1.0005	0.9983	0.9962	0.9943	0.9917	0.9888	0.9851	0.9824	0.9798	0.9762	0.9729	0.9694	0.9679	0.9641	0.9607			
Ts=Tair=85°C	median =	1.0000	1.0022	0.9999	0.9970	0.9948	0.9929	0.9902	0.9883	0.9854	0.9825	0.9792	0.9766	0.9734	0.9703	0.9677	0.9658			
	average =	1.0000	1.0021	0.9999	0.9975	0.9951	0.9929	0.9903	0.9882	0.9857	0.9828	0.9797	0.9770	0.9735	0.9699	0.9669	0.9647	3.1193e-06	1.0105	
	st dev =	0.0000	0.0007	0.0013	0.0012	0.0019	0.0013	0.0015	0.0017	0.0019	0.0018	0.0021	0.0022	0.0025	0.0029	0.0029	0.0032	TM-21 L70(15k) > 90.0		
	min =	1.0000	1.0005	0.9969	0.9957	0.9916	0.9901	0.9882	0.9850	0.9827	0.9794	0.9759	0.9732	0.9696	0.9642	0.9614	0.9580			
	max =	1.0000	1.0031	1.0019	0.9998	0.9983	0.9952	0.9931	0.9914	0.9893	0.9857	0.9840	0.9807	0.9781	0.9752	0.9718	0.9702			

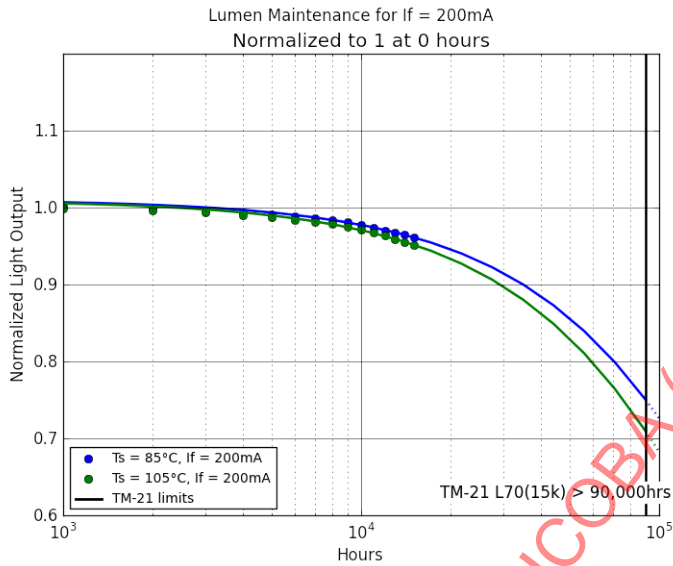


Delta u'v' for $I_f = 100\text{mA}$

	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs		
Ts=Tair=105°C	median =	0.0000	0.0001	0.0007	0.0011	0.0013	0.0016	0.0019	0.0021	0.0027	0.0030	0.0034	0.0036	0.0038	0.0038	0.0040	0.0041	
	average =	0.0000	0.0001	0.0008	0.0011	0.0013	0.0016	0.0019	0.0021	0.0027	0.0030	0.0034	0.0036	0.0038	0.0039	0.0040	0.0041	
	st dev =	0.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002
	min =	0.0000	0.0001	0.0007	0.0009	0.0009	0.0015	0.0017	0.0020	0.0026	0.0028	0.0032	0.0035	0.0036	0.0037	0.0037	0.0037	0.0037
	max =	0.0000	0.0003	0.0010	0.0013	0.0015	0.0018	0.0021	0.0023	0.0029	0.0032	0.0035	0.0038	0.0039	0.0040	0.0042	0.0044	
Ts=Tair=85°C	median =	0.0000	0.0001	0.0005	0.0008	0.0010	0.0014	0.0018	0.0022	0.0025	0.0028	0.0031	0.0033	0.0035	0.0036	0.0037	0.0039	
	average =	0.0000	0.0001	0.0005	0.0008	0.0010	0.0014	0.0018	0.0022	0.0025	0.0028	0.0031	0.0033	0.0035	0.0036	0.0037	0.0038	
	st dev =	0.0000	0.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	
	min =	0.0000	0.0001	0.0004	0.0007	0.0009	0.0012	0.0017	0.0020	0.0022	0.0026	0.0029	0.0030	0.0034	0.0034	0.0035	0.0036	
	max =	0.0000	0.0002	0.0006	0.0009	0.0011	0.0015	0.0019	0.0024	0.0027	0.0030	0.0032	0.0034	0.0037	0.0038	0.0039	0.0040	

Normalized Flux Statistics for $I_f = 200\text{mA}$

	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	alpha	B		
Ts=Tair=105°C	median =	1.0000	0.9989	0.9963	0.9933	0.9896	0.9875	0.9845	0.9818	0.9781	0.9747	0.9707	0.9675	0.9635	0.9598	0.9555	0.9520			
	average =	1.0000	0.9991	0.9960	0.9931	0.9900	0.9872	0.9842	0.9814	0.9782	0.9747	0.9711	0.9675	0.9632	0.9590	0.9551	0.9518	3.9132e-06	1.0094	
	st dev =	0.0000	0.0015	0.0018	0.0023	0.0025	0.0020	0.0019	0.0024	0.0023	0.0022	0.0025	0.0023	0.0024	0.0032	0.0034	0.0045	TM-21 L70(15k) > 90.0		
	min =	1.0000	0.9971	0.9920	0.9876	0.9859	0.9830	0.9802	0.9771	0.9743	0.9708	0.9673	0.9635	0.9584	0.9519	0.9483	0.9421			
	max =	1.0000	1.0017	0.9983	0.9963	0.9941	0.9901	0.9870	0.9858	0.9818	0.9781	0.9750	0.9710	0.9682	0.9648	0.9616	0.9599			
Ts=Tair=85°C	median =	1.0000	1.0009	0.9983	0.9964	0.9939	0.9922	0.9891	0.9868	0.9844	0.9817	0.9785	0.9748	0.9706	0.9673	0.9647	0.9621			
	average =	1.0000	1.0010	0.9982	0.9963	0.9938	0.9918	0.9890	0.9867	0.9839	0.9811	0.9780	0.9744	0.9705	0.9674	0.9644	0.9618	3.3030e-06	1.0103	
	st dev =	0.0000	0.0013	0.0017	0.0016	0.0017	0.0020	0.0017	0.0021	0.0022	0.0022	0.0024	0.0028	0.0036	0.0033	0.0032	0.0036	TM-21 L70(15k) > 90.0		
	min =	1.0000	0.9986	0.9944	0.9932	0.9905	0.9881	0.9855	0.9821	0.9793	0.9768	0.9736	0.9695	0.9630	0.9607	0.9576	0.9553			
	max =	1.0000	1.0030	1.0011	0.9989	0.9965	0.9949	0.9920	0.9917	0.9879	0.9837	0.9814	0.9796	0.9783	0.9739	0.9715	0.9705			



Delta u'v' for $I_f = 200\text{mA}$

	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	
Ts=Tair=105°C	median =	0.0000	0.0004	0.0010	0.0014	0.0016	0.0020	0.0022	0.0025	0.0027	0.0031	0.0035	0.0037	0.0038	0.0041	0.0042	0.0043
	average =	0.0000	0.0005	0.0010	0.0014	0.0016	0.0019	0.0022	0.0025	0.0028	0.0031	0.0035	0.0037	0.0038	0.0040	0.0041	0.0043
	st dev =	0.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002
	min =	0.0000	0.0002	0.0009	0.0013	0.0015	0.0018	0.0021	0.0022	0.0025	0.0029	0.0033	0.0034	0.0034	0.0033	0.0035	0.0037
	max =	0.0000	0.0008	0.0011	0.0017	0.0018	0.0020	0.0025	0.0027	0.0030	0.0033	0.0038	0.0040	0.0040	0.0042	0.0043	0.0046
Ts=Tair=85°C	median =	0.0000	0.0004	0.0007	0.0009	0.0011	0.0016	0.0018	0.0023	0.0025	0.0028	0.0030	0.0032	0.0035	0.0039	0.0040	0.0042
	average =	0.0000	0.0004	0.0007	0.0009	0.0011	0.0016	0.0018	0.0023	0.0025	0.0028	0.0030	0.0033	0.0036	0.0038	0.0039	0.0042
	st dev =	0.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0003	0.0003
	min =	0.0000	0.0002	0.0005	0.0007	0.0009	0.0014	0.0016	0.0019	0.0023	0.0026	0.0027	0.0030	0.0032	0.0032	0.0033	0.0034
	max =	0.0000	0.0007	0.0009	0.0010	0.0014	0.0017	0.0022	0.0025	0.0028	0.0030	0.0038	0.0038	0.0041	0.0042	0.0043	0.0047

Luminous Flux [lm] data for tested units

$T_s = T_{air} = 70^{\circ}C, I_f = 60mA; T_s \geq 68^{\circ}C$ and $T_{air} \geq 65^{\circ}C$ in compliance with LM-80-15

	CCT (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs
1	2772K	259.100	259.800	259.300	258.800	258.500	258.000	257.300	256.800	256.300	255.700	254.600	254.000	253.500	253.000	252.300	251.600
2	2748K	264.600	265.500	265.400	264.900	264.000	263.700	263.100	262.400	261.900	261.200	260.500	259.700	258.900	257.800	257.300	256.900
3	2763K	258.800	259.400	259.200	258.900	258.600	258.200	257.800	257.100	256.400	256.100	255.200	254.800	254.100	253.500	252.700	251.500
4	2776K	256.400	257.100	256.500	256.300	256.200	255.900	255.700	255.300	254.800	254.400	253.900	253.500	253.000	252.500	252.200	251.100
5	2769K	262.000	263.000	262.200	262.100	261.700	261.400	260.800	260.200	259.800	259.700	259.400	259.100	258.600	258.200	257.500	257.100
6	2760K	261.300	262.100	261.400	260.900	260.200	260.100	259.500	259.100	258.600	257.800	257.200	256.700	255.900	255.400	255.000	254.700
7	2762K	267.300	268.200	267.600	267.200	266.600	266.300	265.600	265.200	264.800	264.200	263.600	262.900	262.000	261.600	261.100	260.900
8	2769K	265.400	266.100	266.000	265.100	265.000	264.600	264.100	263.300	262.800	262.100	261.100	260.500	259.800	258.800	258.000	257.800
9	2762K	260.400	261.100	260.700	260.100	259.500	259.200	258.600	257.900	257.300	256.800	256.200	255.500	254.500	254.200	253.400	252.200
10	2783K	265.000	265.900	265.500	264.700	264.400	263.900	263.400	262.900	262.200	261.800	261.100	260.400	259.800	259.200	258.400	257.400
11	2766K	268.000	268.800	268.500	267.900	267.600	267.500	267.000	266.600	265.900	265.300	264.700	264.200	263.300	262.800	261.800	261.200
12	2769K	262.300	263.200	262.900	262.100	262.000	261.800	261.200	261.100	260.800	260.300	259.600	258.900	258.100	256.800	256.200	255.900
13	2793K	259.700	260.500	260.100	259.500	258.900	258.600	258.000	257.500	257.000	256.500	255.900	255.200	254.600	254.100	253.700	253.300
14	2738K	260.700	261.500	260.800	260.400	260.300	259.700	259.200	258.500	257.900	257.200	256.400	255.800	255.000	254.600	254.100	253.700
15	2750K	265.300	266.100	265.700	265.000	264.700	264.300	263.600	263.200	262.800	262.200	261.800	261.300	260.200	259.900	259.200	258.900
16	2762K	262.900	263.900	263.500	263.000	262.600	262.000	261.500	261.100	260.400	259.900	259.100	258.400	257.700	256.500	255.900	255.300
17	2786K	265.900	266.800	266.300	265.700	265.600	264.900	264.200	264.000	263.300	262.800	261.800	260.900	260.200	258.600	258.300	258.000
18	2760K	257.800	258.700	258.100	257.900	257.700	257.300	256.500	256.200	255.800	255.400	254.700	254.000	253.100	251.600	251.000	250.900
19	2755K	264.600	265.500	265.000	264.800	264.400	263.700	263.300	262.700	262.100	261.600	261.200	260.700	260.100	259.700	259.300	259.200
20	2749K	258.600	259.300	258.800	258.200	257.700	257.000	256.900	256.100	255.700	254.900	254.100	253.700	252.900	252.300	251.700	251.300

Normalized Luminous Flux data for tested units

$T_s = T_{air} = 70^{\circ}C, I_f = 60mA; T_s \geq 68^{\circ}C$ and $T_{air} \geq 65^{\circ}C$ in compliance with LM-80-15

	CCT (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs
1	2772K	1.0000	1.0027	1.0008	0.9988	0.9977	0.9958	0.9931	0.9911	0.9892	0.9869	0.9826	0.9803	0.9784	0.9765	0.9738	0.9711
2	2748K	1.0000	1.0034	1.0030	1.0011	0.9977	0.9966	0.9943	0.9917	0.9898	0.9872	0.9845	0.9815	0.9785	0.9743	0.9724	0.9709
3	2763K	1.0000	1.0023	1.0015	1.0004	0.9992	0.9977	0.9961	0.9934	0.9907	0.9886	0.9861	0.9845	0.9818	0.9795	0.9764	0.9718
4	2776K	1.0000	1.0027	1.0004	0.9996	0.9992	0.9980	0.9973	0.9957	0.9938	0.9922	0.9902	0.9887	0.9867	0.9848	0.9836	0.9793
5	2769K	1.0000	1.0038	1.0008	1.0004	0.9989	0.9977	0.9954	0.9931	0.9916	0.9912	0.9901	0.9889	0.9870	0.9855	0.9828	0.9813
6	2760K	1.0000	1.0031	1.0004	0.9985	0.9958	0.9954	0.9931	0.9916	0.9897	0.9866	0.9843	0.9824	0.9793	0.9774	0.9759	0.9747
7	2762K	1.0000	1.0034	1.0011	0.9996	0.9974	0.9963	0.9936	0.9921	0.9906	0.9884	0.9862	0.9835	0.9802	0.9787	0.9768	0.9761
8	2769K	1.0000	1.0026	1.0023	0.9989	0.9985	0.9970	0.9951	0.9921	0.9902	0.9876	0.9838	0.9815	0.9789	0.9751	0.9721	0.9714
9	2762K	1.0000	1.0027	1.0012	0.9988	0.9965	0.9954	0.9931	0.9904	0.9881	0.9862	0.9839	0.9812	0.9773	0.9762	0.9731	0.9685
10	2783K	1.0000	1.0034	1.0019	0.9989	0.9977	0.9958	0.9940	0.9921	0.9894	0.9879	0.9853	0.9826	0.9804	0.9781	0.9751	0.9713
11	2766K	1.0000	1.0030	1.0019	0.9996	0.9985	0.9981	0.9963	0.9948	0.9922	0.9899	0.9877	0.9858	0.9825	0.9806	0.9769	0.9746
12	2769K	1.0000	1.0034	1.0023	0.9992	0.9989	0.9981	0.9958	0.9954	0.9943	0.9924	0.9897	0.9870	0.9840	0.9790	0.9767	0.9756
13	2793K	1.0000	1.0031	1.0015	0.9992	0.9969	0.9958	0.9935	0.9915	0.9896	0.9877	0.9854	0.9827	0.9804	0.9784	0.9769	0.9754
14	2738K	1.0000	1.0031	1.0004	0.9988	0.9985	0.9962	0.9942	0.9916	0.9893	0.9866	0.9835	0.9812	0.9781	0.9766	0.9747	0.9731
15	2750K	1.0000	1.0030	1.0015	0.9989	0.9977	0.9962	0.9936	0.9921	0.9906	0.9883	0.9868	0.9849	0.9808	0.9796	0.9770	0.9759
16	2762K	1.0000	1.0038	1.0023	1.0004	0.9989	0.9966	0.9947	0.9932	0.9905	0.9886	0.9855	0.9829	0.9802	0.9757	0.9734	0.9711
17	2786K	1.0000	1.0034	1.0015	0.9992	0.9989	0.9962	0.9936	0.9929	0.9902	0.9883	0.9846	0.9812	0.9786	0.9725	0.9714	0.9703
18	2760K	1.0000	1.0035	1.0012	1.0004	0.9996	0.9981	0.9950	0.9938	0.9922	0.9907	0.9880	0.9853	0.9818	0.9760	0.9736	0.9732
19	2755K	1.0000	1.0034	1.0015	1.0008	0.9992	0.9966	0.9951	0.9928	0.9906	0.9887	0.9872	0.9853	0.9830	0.9815	0.9800	0.9796
20	2749K	1.0000	1.0027	1.0008	0.9985	0.9965	0.9938	0.9934	0.9903	0.9888	0.9857	0.9826	0.9811	0.9780	0.9756	0.9733	0.9718

CIE 1976 u' data for tested units

T_s = T_{air} = 70°C; I_f = 60mA; T_s ≥ 68°C and T_{air} ≥ 65°C in compliance with LM-80-15

	CCT (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs
1	2772K	0.2594	0.2592	0.2593	0.2591	0.2592	0.2591	0.2586	0.2585	0.2579	0.2579	0.2579	0.2580	0.2578	0.2581	0.2579	0.2578
2	2748K	0.2604	0.2602	0.2604	0.2602	0.2603	0.2602	0.2597	0.2596	0.2595	0.2593	0.2591	0.2591	0.2589	0.2589	0.2588	0.2586
3	2763K	0.2599	0.2596	0.2598	0.2595	0.2597	0.2595	0.2590	0.2589	0.2582	0.2581	0.2581	0.2580	0.2579	0.2581	0.2580	0.2578
4	2776K	0.2586	0.2584	0.2587	0.2584	0.2585	0.2584	0.2579	0.2578	0.2576	0.2576	0.2575	0.2575	0.2573	0.2574	0.2573	0.2571
5	2769K	0.2596	0.2593	0.2596	0.2593	0.2593	0.2592	0.2588	0.2587	0.2583	0.2582	0.2582	0.2582	0.2580	0.2581	0.2580	0.2577
6	2760K	0.2600	0.2597	0.2600	0.2597	0.2598	0.2597	0.2593	0.2591	0.2587	0.2586	0.2587	0.2586	0.2584	0.2584	0.2584	0.2581
7	2762K	0.2598	0.2595	0.2597	0.2595	0.2596	0.2595	0.2590	0.2589	0.2584	0.2583	0.2583	0.2583	0.2581	0.2581	0.2581	0.2578
8	2769K	0.2594	0.2590	0.2592	0.2590	0.2591	0.2590	0.2586	0.2585	0.2580	0.2579	0.2579	0.2579	0.2577	0.2577	0.2577	0.2574
9	2762K	0.2598	0.2595	0.2597	0.2595	0.2595	0.2595	0.2590	0.2589	0.2582	0.2580	0.2580	0.2580	0.2579	0.2579	0.2581	0.2578
10	2783K	0.2590	0.2586	0.2589	0.2587	0.2587	0.2586	0.2582	0.2581	0.2577	0.2575	0.2575	0.2575	0.2573	0.2575	0.2572	0.2572
11	2766K	0.2598	0.2596	0.2598	0.2595	0.2596	0.2595	0.2591	0.2589	0.2587	0.2584	0.2584	0.2584	0.2582	0.2581	0.2580	0.2581
12	2769K	0.2597	0.2595	0.2597	0.2595	0.2595	0.2594	0.2591	0.2588	0.2585	0.2583	0.2582	0.2582	0.2581	0.2582	0.2580	0.2580
13	2793K	0.2588	0.2585	0.2587	0.2585	0.2585	0.2585	0.2581	0.2579	0.2577	0.2575	0.2574	0.2574	0.2573	0.2574	0.2572	0.2572
14	2738K	0.2608	0.2605	0.2607	0.2605	0.2606	0.2605	0.2601	0.2599	0.2593	0.2595	0.2595	0.2595	0.2593	0.2594	0.2593	0.2592
15	2750K	0.2603	0.2601	0.2603	0.2601	0.2602	0.2600	0.2597	0.2595	0.2593	0.2592	0.2591	0.2591	0.2589	0.2590	0.2589	0.2588
16	2762K	0.2600	0.2598	0.2600	0.2597	0.2598	0.2597	0.2593	0.2592	0.2588	0.2587	0.2586	0.2586	0.2585	0.2586	0.2585	0.2584
17	2786K	0.2589	0.2587	0.2589	0.2587	0.2588	0.2587	0.2582	0.2581	0.2577	0.2575	0.2575	0.2575	0.2573	0.2573	0.2573	0.2573
18	2760K	0.2599	0.2597	0.2599	0.2596	0.2597	0.2596	0.2593	0.2590	0.2586	0.2584	0.2584	0.2584	0.2582	0.2584	0.2583	0.2582
19	2755K	0.2603	0.2601	0.2604	0.2600	0.2601	0.2601	0.2597	0.2595	0.2589	0.2589	0.2590	0.2590	0.2588	0.2590	0.2589	0.2587
20	2749K	0.2604	0.2602	0.2602	0.2600	0.2600	0.2600	0.2595	0.2594	0.2592	0.2590	0.2589	0.2590	0.2588	0.2589	0.2588	0.2586

CIE 1976 v' data for tested units

T_s = T_{air} = 70°C; I_f = 60mA; T_s ≥ 68°C and T_{air} ≥ 65°C in compliance with LM-80-15

	CCT (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs
1	2772K	0.5258	0.5257	0.5254	0.5253	0.5249	0.5246	0.5244	0.5241	0.5244	0.5241	0.5236	0.5234	0.5231	0.5231	0.5231	0.5230
2	2748K	0.5262	0.5262	0.5258	0.5256	0.5254	0.5251	0.5249	0.5246	0.5246	0.5244	0.5241	0.5237	0.5237	0.5236	0.5234	0.5234
3	2763K	0.5253	0.5252	0.5248	0.5246	0.5244	0.5241	0.5239	0.5236	0.5233	0.5233	0.5230	0.5227	0.5225	0.5225	0.5225	0.5223
4	2776K	0.5287	0.5288	0.5283	0.5281	0.5280	0.5277	0.5276	0.5272	0.5271	0.5271	0.5268	0.5264	0.5263	0.5262	0.5262	0.5261
5	2769K	0.5254	0.5254	0.5250	0.5248	0.5245	0.5243	0.5241	0.5238	0.5237	0.5235	0.5234	0.5230	0.5229	0.5227	0.5227	0.5226
6	2760K	0.5254	0.5254	0.5249	0.5248	0.5245	0.5243	0.5241	0.5238	0.5236	0.5235	0.5233	0.5230	0.5228	0.5227	0.5226	0.5226
7	2762K	0.5259	0.5259	0.5255	0.5253	0.5250	0.5248	0.5247	0.5244	0.5240	0.5239	0.5237	0.5234	0.5232	0.5231	0.5230	0.5230
8	2769K	0.5264	0.5263	0.5259	0.5258	0.5255	0.5253	0.5251	0.5249	0.5246	0.5245	0.5243	0.5240	0.5239	0.5237	0.5236	0.5236
9	2762K	0.5259	0.5258	0.5253	0.5253	0.5250	0.5248	0.5246	0.5242	0.5242	0.5239	0.5236	0.5233	0.5232	0.5231	0.5231	0.5230
10	2783K	0.5252	0.5251	0.5247	0.5246	0.5243	0.5241	0.5239	0.5236	0.5236	0.5232	0.5230	0.5227	0.5225	0.5224	0.5224	0.5223
11	2766K	0.5252	0.5252	0.5247	0.5246	0.5243	0.5241	0.5240	0.5236	0.5236	0.5234	0.5230	0.5227	0.5226	0.5224	0.5223	0.5223
12	2769K	0.5250	0.5250	0.5245	0.5244	0.5241	0.5239	0.5238	0.5234	0.5234	0.5231	0.5227	0.5225	0.5224	0.5223	0.5222	0.5221
13	2793K	0.5241	0.5242	0.5237	0.5236	0.5232	0.5231	0.5229	0.5226	0.5227	0.5224	0.5220	0.5218	0.5217	0.5215	0.5215	0.5213
14	2738K	0.5267	0.5267	0.5262	0.5261	0.5258	0.5256	0.5255	0.5252	0.5251	0.5250	0.5246	0.5244	0.5242	0.5240	0.5240	0.5238
15	2750K	0.5262	0.5262	0.5257	0.5257	0.5254	0.5252	0.5250	0.5248	0.5247	0.5246	0.5242	0.5239	0.5238	0.5236	0.5235	0.5234
16	2762K	0.5251	0.5251	0.5247	0.5246	0.5243	0.5241	0.5239	0.5236	0.5236	0.5234	0.5230	0.5228	0.5226	0.5225	0.5224	0.5223
17	2786K	0.5250	0.5250	0.5246	0.5244	0.5242	0.5239	0.5238	0.5235	0.5235	0.5232	0.5228	0.5226	0.5225	0.5223	0.5222	0.5222
18	2760K	0.5259	0.5259	0.5255	0.5253	0.5250	0.5248	0.5247	0.5244	0.5244	0.5241	0.5237	0.5234	0.5233	0.5232	0.5232	0.5231
19	2755K	0.5252	0.5253	0.5249	0.5247	0.5244	0.5242	0.5241	0.5238	0.5237	0.5234	0.5232	0.5229	0.5228	0.5227	0.5226	0.5225
20	2749K	0.5260	0.5260	0.5255	0.5254	0.5250	0.5248	0.5248	0.5244	0.5244	0.5241	0.5238	0.5236	0.5234	0.5232	0.5232	0.5231

Delta u'v' data for tested units

T_s = T_{air} = 70°C; I_f = 60mA; T_s ≥ 68°C and T_{air} ≥ 65°C in compliance with LM-80-15

CC1 (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	
1	2772K	0.0000	0.0002	0.0004	0.0006	0.0009	0.0012	0.0016	0.0019	0.0021	0.0023	0.0027	0.0028	0.0031	0.0030	0.0031	0.0032
2	2748K	0.0000	0.0002	0.0004	0.0006	0.0008	0.0011	0.0015	0.0018	0.0018	0.0021	0.0025	0.0028	0.0029	0.0030	0.0032	0.0033
3	2763K	0.0000	0.0003	0.0005	0.0008	0.0009	0.0013	0.0017	0.0020	0.0026	0.0027	0.0029	0.0032	0.0034	0.0033	0.0034	0.0037
4	2776K	0.0000	0.0002	0.0004	0.0006	0.0007	0.0010	0.0013	0.0017	0.0019	0.0019	0.0022	0.0025	0.0027	0.0028	0.0028	0.0030
5	2769K	0.0000	0.0003	0.0004	0.0007	0.0009	0.0012	0.0015	0.0018	0.0021	0.0024	0.0024	0.0028	0.0030	0.0031	0.0031	0.0034
6	2760K	0.0000	0.0003	0.0005	0.0007	0.0009	0.0011	0.0015	0.0018	0.0022	0.0024	0.0025	0.0028	0.0031	0.0031	0.0032	0.0034
7	2762K	0.0000	0.0003	0.0004	0.0007	0.0009	0.0011	0.0014	0.0017	0.0024	0.0025	0.0027	0.0029	0.0032	0.0033	0.0034	0.0035
8	2769K	0.0000	0.0004	0.0005	0.0007	0.0009	0.0012	0.0015	0.0017	0.0023	0.0024	0.0026	0.0028	0.0030	0.0032	0.0033	0.0034
9	2762K	0.0000	0.0003	0.0006	0.0007	0.0009	0.0011	0.0015	0.0019	0.0023	0.0027	0.0029	0.0032	0.0033	0.0034	0.0033	0.0035
10	2783K	0.0000	0.0004	0.0005	0.0007	0.0009	0.0012	0.0015	0.0018	0.0021	0.0025	0.0027	0.0029	0.0032	0.0032	0.0033	0.0034
11	2766K	0.0000	0.0002	0.0005	0.0007	0.0009	0.0011	0.0014	0.0018	0.0019	0.0023	0.0026	0.0029	0.0031	0.0033	0.0034	0.0034
12	2769K	0.0000	0.0002	0.0005	0.0006	0.0009	0.0011	0.0013	0.0018	0.0020	0.0024	0.0027	0.0029	0.0031	0.0031	0.0033	0.0034
13	2793K	0.0000	0.0003	0.0004	0.0006	0.0009	0.0010	0.0014	0.0017	0.0018	0.0021	0.0025	0.0027	0.0028	0.0030	0.0031	0.0032
14	2738K	0.0000	0.0003	0.0005	0.0007	0.0009	0.0011	0.0014	0.0017	0.0022	0.0021	0.0025	0.0026	0.0029	0.0030	0.0031	0.0033
15	2750K	0.0000	0.0002	0.0005	0.0005	0.0008	0.0010	0.0013	0.0016	0.0018	0.0019	0.0023	0.0026	0.0028	0.0029	0.0030	0.0032
16	2762K	0.0000	0.0002	0.0004	0.0006	0.0008	0.0010	0.0014	0.0017	0.0019	0.0021	0.0025	0.0027	0.0029	0.0030	0.0031	0.0032
17	2786K	0.0000	0.0002	0.0004	0.0006	0.0008	0.0011	0.0014	0.0017	0.0019	0.0023	0.0026	0.0028	0.0030	0.0031	0.0032	0.0032
18	2760K	0.0000	0.0002	0.0004	0.0007	0.0009	0.0011	0.0013	0.0017	0.0020	0.0023	0.0027	0.0029	0.0031	0.0031	0.0031	0.0033
19	2755K	0.0000	0.0002	0.0003	0.0006	0.0008	0.0010	0.0013	0.0016	0.0021	0.0023	0.0024	0.0026	0.0028	0.0028	0.0030	0.0031
20	2749K	0.0000	0.0002	0.0005	0.0007	0.0011	0.0013	0.0015	0.0019	0.0020	0.0024	0.0027	0.0028	0.0031	0.0032	0.0032	0.0034

Forward Voltage [V] data for tested units

T_s = T_{air} = 70°C; I_f = 60mA; T_s ≥ 68°C and T_{air} ≥ 65°C in compliance with LM-80-15

CC1 (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	
1	2772K	22.430	22.460	22.420	22.420	22.420	22.440	22.430	22.440	22.440	22.440	22.430	22.440	22.430	22.470	22.470	22.460
2	2748K	22.390	22.420	22.380	22.380	22.380	22.400	22.390	22.400	22.420	22.410	22.400	22.420	22.410	22.450	22.450	22.430
3	2763K	22.370	22.410	22.360	22.360	22.360	22.370	22.370	22.380	22.380	22.370	22.390	22.390	22.410	22.420	22.420	22.400
4	2776K	22.450	22.480	22.430	22.440	22.440	22.450	22.450	22.460	22.460	22.450	22.440	22.460	22.450	22.480	22.490	22.470
5	2769K	22.420	22.450	22.400	22.410	22.410	22.420	22.410	22.420	22.420	22.410	22.430	22.420	22.450	22.460	22.440	22.440
6	2760K	22.390	22.420	22.380	22.380	22.380	22.390	22.390	22.400	22.410	22.410	22.400	22.420	22.410	22.450	22.450	22.430
7	2762K	22.320	22.360	22.310	22.320	22.320	22.330	22.320	22.340	22.340	22.330	22.330	22.340	22.330	22.370	22.370	22.350
8	2769K	22.490	22.530	22.480	22.490	22.490	22.500	22.490	22.500	22.510	22.500	22.490	22.530	22.500	22.540	22.540	22.520
9	2762K	22.370	22.410	22.370	22.370	22.370	22.380	22.380	22.390	22.400	22.390	22.380	22.390	22.380	22.420	22.430	22.410
10	2783K	22.470	22.500	22.460	22.470	22.470	22.470	22.470	22.490	22.490	22.480	22.470	22.500	22.480	22.510	22.520	22.500
11	2766K	22.670	22.720	22.660	22.670	22.660	22.670	22.670	22.680	22.690	22.680	22.670	22.690	22.680	22.700	22.710	22.700
12	2769K	22.440	22.480	22.430	22.430	22.430	22.440	22.440	22.450	22.480	22.470	22.460	22.480	22.480	22.490	22.510	22.500
13	2793K	22.260	22.300	22.260	22.260	22.260	22.270	22.260	22.280	22.280	22.270	22.260	22.280	22.270	22.280	22.300	22.290
14	2738K	22.480	22.520	22.470	22.480	22.480	22.480	22.480	22.500	22.500	22.500	22.480	22.510	22.500	22.510	22.530	22.520
15	2750K	22.350	22.380	22.340	22.340	22.340	22.350	22.350	22.360	22.360	22.360	22.350	22.370	22.360	22.370	22.390	22.380
16	2762K	22.400	22.440	22.400	22.400	22.400	22.410	22.400	22.420	22.430	22.420	22.410	22.430	22.420	22.440	22.450	22.440
17	2786K	22.370	22.410	22.370	22.370	22.370	22.380	22.370	22.390	22.390	22.390	22.380	22.400	22.400	22.400	22.420	22.410
18	2760K	22.350	22.390	22.350	22.350	22.340	22.360	22.350	22.370	22.370	22.360	22.350	22.370	22.360	22.380	22.400	22.380
19	2755K	22.380	22.430	22.380	22.380	22.370	22.390	22.390	22.400	22.400	22.390	22.380	22.400	22.390	22.410	22.430	22.410
20	2749K	22.290	22.330	22.290	22.290	22.280	22.290	22.300	22.310	22.290	22.280	22.270	22.280	22.280	22.300	22.330	22.300

Luminous Flux [lm] data for tested units

$T_s = T_{air} = 85^\circ\text{C}$, $I_f = 60\text{mA}$; $T_s \geq 83^\circ\text{C}$ and $T_{air} \geq 80^\circ\text{C}$ in compliance with LM-80-15

	CCT (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs
1	2786K	263.900	264.600	264.200	263.800	263.400	262.800	262.300	261.700	261.300	260.700	259.700	258.800	257.900	256.600	255.900	255.200
2	2775K	263.000	263.800	263.100	262.800	262.700	261.700	260.900	260.700	260.000	259.700	258.800	258.200	257.100	255.200	254.400	253.900
3	2741K	269.200	269.600	269.300	268.600	267.900	267.300	266.800	266.100	265.500	264.500	263.300	262.800	262.100	260.900	260.000	258.600
4	2778K	262.900	263.400	263.000	262.300	262.000	261.300	261.100	259.900	259.200	258.500	257.600	256.500	255.300	254.200	253.500	252.400
5	2756K	264.500	265.000	264.400	264.000	263.600	263.300	262.700	261.700	261.200	260.400	259.600	258.900	257.800	257.100	256.000	255.500
6	2774K	268.300	268.700	268.000	267.500	267.000	266.700	265.800	265.000	264.300	263.700	262.700	261.900	261.000	260.100	259.700	259.100
7	2741K	266.000	266.500	265.600	264.900	264.400	264.200	263.400	262.800	262.400	261.500	260.400	259.700	259.000	258.400	257.600	257.400
8	2768K	260.500	261.000	260.400	259.900	259.500	259.100	258.300	257.800	257.100	256.200	255.300	254.900	254.000	252.400	251.600	251.400
9	2753K	264.200	265.000	263.800	263.300	262.900	262.700	262.200	261.600	260.900	259.800	259.200	258.600	257.500	256.300	256.000	255.200
10	2748K	261.800	262.400	262.100	261.500	260.700	260.400	259.800	259.200	258.700	258.000	257.000	256.200	255.300	254.100	253.300	252.900
11	2762K	268.500	269.200	268.900	268.700	267.700	267.200	266.800	266.000	265.200	264.600	263.900	263.400	262.400	262.200	261.700	261.100
12	2771K	259.800	260.300	259.500	259.200	258.800	258.300	258.000	257.300	257.000	256.200	255.700	255.100	254.100	253.700	253.300	252.800
13	2767K	254.500	254.800	254.300	254.100	253.400	252.700	252.000	251.200	250.700	250.300	249.300	248.600	247.700	247.100	246.200	245.700
14	2756K	258.400	258.800	258.200	257.500	257.100	256.400	255.900	255.200	254.400	253.600	252.600	251.700	251.000	249.500	248.800	248.500
15	2771K	263.000	263.500	263.200	262.500	262.100	261.600	261.000	260.600	259.600	259.200	258.300	257.900	256.900	256.100	255.300	255.000
16	2738K	264.000	264.400	264.300	263.900	263.200	262.600	262.000	261.500	260.800	260.100	259.600	258.900	258.200	257.600	256.900	256.500
17	2764K	260.200	260.600	260.000	259.400	259.000	258.500	258.100	257.700	256.800	256.100	255.200	254.700	254.100	252.800	251.700	251.100
18	2751K	260.800	261.400	261.100	260.300	259.900	259.300	258.900	258.100	257.800	257.200	256.500	255.800	255.000	254.400	253.900	253.200
19	2754K	260.600	261.300	261.000	260.400	260.100	259.700	259.000	258.600	258.000	257.700	257.000	256.200	255.200	254.400	253.700	253.100
20	2771K	262.000	262.600	262.100	261.600	261.000	260.500	260.000	259.400	258.800	258.100	257.200	256.800	256.300	255.600	255.100	254.700

Normalized Luminous Flux data for tested units

$T_s = T_{air} = 85^\circ\text{C}$, $I_f = 60\text{mA}$; $T_s \geq 83^\circ\text{C}$ and $T_{air} \geq 80^\circ\text{C}$ in compliance with LM-80-15

	CCT (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs
1	2786K	1.0000	1.0027	1.0011	0.9996	0.9981	0.9958	0.9939	0.9917	0.9901	0.9879	0.9841	0.9807	0.9773	0.9723	0.9697	0.9670
2	2775K	1.0000	1.0030	1.0004	0.9992	0.9989	0.9951	0.9920	0.9913	0.9886	0.9875	0.9840	0.9817	0.9776	0.9703	0.9673	0.9654
3	2741K	1.0000	1.0015	1.0004	0.9978	0.9952	0.9929	0.9911	0.9885	0.9863	0.9825	0.9781	0.9762	0.9736	0.9692	0.9658	0.9606
4	2778K	1.0000	1.0019	1.0004	0.9977	0.9966	0.9939	0.9932	0.9886	0.9859	0.9833	0.9798	0.9757	0.9711	0.9669	0.9642	0.9601
5	2756K	1.0000	1.0019	0.9996	0.9981	0.9966	0.9955	0.9932	0.9894	0.9875	0.9845	0.9815	0.9788	0.9747	0.9720	0.9679	0.9660
6	2774K	1.0000	1.0015	0.9989	0.9970	0.9952	0.9940	0.9907	0.9877	0.9851	0.9829	0.9791	0.9761	0.9728	0.9694	0.9679	0.9657
7	2741K	1.0000	1.0019	0.9985	0.9959	0.9940	0.9932	0.9902	0.9880	0.9865	0.9831	0.9789	0.9763	0.9737	0.9714	0.9684	0.9677
8	2768K	1.0000	1.0019	0.9996	0.9977	0.9962	0.9946	0.9916	0.9896	0.9869	0.9835	0.9800	0.9785	0.9750	0.9689	0.9658	0.9651
9	2753K	1.0000	1.0030	0.9985	0.9966	0.9951	0.9943	0.9924	0.9902	0.9875	0.9833	0.9811	0.9788	0.9746	0.9701	0.9690	0.9659
10	2748K	1.0000	1.0023	1.0011	0.9989	0.9958	0.9947	0.9924	0.9901	0.9882	0.9855	0.9817	0.9786	0.9752	0.9706	0.9675	0.9660
11	2762K	1.0000	1.0026	1.0015	1.0007	0.9970	0.9952	0.9937	0.9907	0.9877	0.9855	0.9829	0.9810	0.9773	0.9765	0.9747	0.9724
12	2771K	1.0000	1.0019	0.9988	0.9977	0.9962	0.9942	0.9931	0.9904	0.9892	0.9861	0.9842	0.9819	0.9781	0.9765	0.9750	0.9731
13	2767K	1.0000	1.0012	0.9992	0.9984	0.9957	0.9929	0.9902	0.9870	0.9851	0.9835	0.9796	0.9768	0.9733	0.9709	0.9674	0.9654
14	2756K	1.0000	1.0015	0.9992	0.9965	0.9950	0.9923	0.9903	0.9876	0.9845	0.9814	0.9776	0.9741	0.9714	0.9656	0.9628	0.9617
15	2771K	1.0000	1.0019	1.0008	0.9981	0.9966	0.9947	0.9924	0.9909	0.9871	0.9856	0.9821	0.9806	0.9768	0.9738	0.9707	0.9696
16	2738K	1.0000	1.0015	1.0011	0.9996	0.9970	0.9947	0.9924	0.9905	0.9879	0.9852	0.9833	0.9807	0.9780	0.9758	0.9731	0.9716
17	2764K	1.0000	1.0015	0.9992	0.9969	0.9954	0.9935	0.9919	0.9904	0.9869	0.9842	0.9808	0.9789	0.9766	0.9716	0.9673	0.9650
18	2751K	1.0000	1.0023	1.0012	0.9981	0.9965	0.9942	0.9927	0.9896	0.9885	0.9862	0.9835	0.9808	0.9778	0.9755	0.9735	0.9709
19	2754K	1.0000	1.0027	1.0015	0.9992	0.9981	0.9965	0.9939	0.9923	0.9900	0.9889	0.9862	0.9831	0.9793	0.9762	0.9735	0.9712
20	2771K	1.0000	1.0023	1.0004	0.9985	0.9962	0.9943	0.9924	0.9901	0.9878	0.9851	0.9817	0.9802	0.9782	0.9756	0.9737	0.9721

CIE 1976 u' data for tested units
 $T_s = T_{air} = 85^\circ\text{C}$; $I_f = 60\text{mA}$; $T_s \geq 83^\circ\text{C}$ and $T_{air} \geq 80^\circ\text{C}$ in compliance with LM-80-15

	CCT (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs
1	2786K	0.2590	0.2587	0.2589	0.2587	0.2587	0.2586	0.2582	0.2581	0.2575	0.2574	0.2574	0.2574	0.2572	0.2570	0.2572	0.2572
2	2775K	0.2592	0.2590	0.2590	0.2589	0.2589	0.2588	0.2584	0.2581	0.2578	0.2577	0.2577	0.2577	0.2575	0.2574	0.2573	0.2573
3	2741K	0.2606	0.2604	0.2605	0.2603	0.2603	0.2602	0.2598	0.2598	0.2592	0.2591	0.2592	0.2591	0.2590	0.2589	0.2589	0.2587
4	2778K	0.2591	0.2588	0.2589	0.2587	0.2588	0.2587	0.2583	0.2581	0.2578	0.2576	0.2576	0.2577	0.2575	0.2574	0.2572	0.2573
5	2756K	0.2602	0.2599	0.2601	0.2599	0.2600	0.2598	0.2595	0.2593	0.2589	0.2588	0.2588	0.2589	0.2586	0.2585	0.2584	0.2583
6	2774K	0.2595	0.2591	0.2593	0.2591	0.2591	0.2590	0.2587	0.2585	0.2580	0.2578	0.2578	0.2579	0.2576	0.2576	0.2575	0.2574
7	2741K	0.2608	0.2605	0.2606	0.2604	0.2605	0.2603	0.2599	0.2597	0.2592	0.2591	0.2592	0.2592	0.2590	0.2589	0.2589	0.2587
8	2768K	0.2597	0.2593	0.2594	0.2592	0.2593	0.2592	0.2588	0.2586	0.2581	0.2580	0.2580	0.2581	0.2578	0.2576	0.2575	0.2576
9	2753K	0.2601	0.2602	0.2600	0.2597	0.2598	0.2597	0.2593	0.2591	0.2586	0.2585	0.2582	0.2583	0.2582	0.2577	0.2578	0.2575
10	2748K	0.2607	0.2603	0.2605	0.2603	0.2604	0.2602	0.2598	0.2596	0.2589	0.2588	0.2589	0.2589	0.2588	0.2587	0.2586	0.2584
11	2762K	0.2598	0.2595	0.2597	0.2594	0.2595	0.2594	0.2590	0.2588	0.2581	0.2580	0.2581	0.2582	0.2580	0.2579	0.2578	0.2578
12	2771K	0.2593	0.2589	0.2591	0.2589	0.2589	0.2588	0.2585	0.2583	0.2579	0.2578	0.2578	0.2579	0.2577	0.2575	0.2573	0.2573
13	2767K	0.2590	0.2588	0.2590	0.2588	0.2588	0.2587	0.2583	0.2581	0.2579	0.2577	0.2577	0.2578	0.2576	0.2575	0.2574	0.2573
14	2756K	0.2602	0.2597	0.2598	0.2597	0.2597	0.2596	0.2592	0.2591	0.2588	0.2586	0.2587	0.2587	0.2584	0.2584	0.2583	0.2583
15	2771K	0.2596	0.2593	0.2593	0.2592	0.2592	0.2591	0.2587	0.2585	0.2582	0.2580	0.2580	0.2580	0.2578	0.2577	0.2577	0.2576
16	2738K	0.2610	0.2607	0.2609	0.2606	0.2606	0.2606	0.2602	0.2600	0.2596	0.2594	0.2594	0.2595	0.2593	0.2592	0.2591	0.2590
17	2764K	0.2597	0.2594	0.2595	0.2593	0.2594	0.2593	0.2589	0.2587	0.2580	0.2578	0.2579	0.2579	0.2577	0.2576	0.2577	0.2576
18	2751K	0.2606	0.2603	0.2605	0.2603	0.2604	0.2602	0.2599	0.2597	0.2592	0.2590	0.2590	0.2591	0.2589	0.2586	0.2588	0.2586
19	2754K	0.2604	0.2602	0.2603	0.2601	0.2601	0.2600	0.2596	0.2594	0.2586	0.2584	0.2585	0.2586	0.2583	0.2582	0.2584	0.2583
20	2771K	0.2598	0.2595	0.2596	0.2594	0.2595	0.2594	0.2590	0.2588	0.2584	0.2582	0.2583	0.2583	0.2581	0.2578	0.2581	0.2578

CIE 1976 v' data for tested units
 $T_s = T_{air} = 85^\circ\text{C}$; $I_f = 60\text{mA}$; $T_s \geq 83^\circ\text{C}$ and $T_{air} \geq 80^\circ\text{C}$ in compliance with LM-80-15

	CCT (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs
1	2786K	0.5245	0.5245	0.5238	0.5238	0.5235	0.5232	0.5232	0.5229	0.5228	0.5225	0.5222	0.5220	0.5218	0.5218	0.5218	0.5217
2	2775K	0.5259	0.5260	0.5252	0.5252	0.5249	0.5246	0.5246	0.5242	0.5243	0.5240	0.5236	0.5234	0.5233	0.5233	0.5232	0.5231
3	2741K	0.5270	0.5270	0.5263	0.5262	0.5259	0.5257	0.5256	0.5254	0.5252	0.5251	0.5248	0.5245	0.5244	0.5244	0.5243	0.5242
4	2778K	0.5258	0.5258	0.5251	0.5250	0.5247	0.5245	0.5245	0.5240	0.5241	0.5238	0.5235	0.5233	0.5231	0.5232	0.5231	0.5230
5	2756K	0.5255	0.5255	0.5248	0.5247	0.5245	0.5242	0.5241	0.5238	0.5237	0.5235	0.5233	0.5230	0.5228	0.5229	0.5228	0.5227
6	2774K	0.5247	0.5247	0.5240	0.5239	0.5236	0.5234	0.5233	0.5229	0.5229	0.5226	0.5224	0.5221	0.5220	0.5220	0.5220	0.5218
7	2741K	0.5259	0.5259	0.5252	0.5251	0.5248	0.5246	0.5245	0.5241	0.5241	0.5239	0.5236	0.5233	0.5232	0.5232	0.5231	0.5230
8	2768K	0.5251	0.5251	0.5243	0.5242	0.5239	0.5237	0.5236	0.5233	0.5232	0.5230	0.5227	0.5225	0.5223	0.5223	0.5222	0.5221
9	2753K	0.5265	0.5266	0.5258	0.5257	0.5254	0.5252	0.5251	0.5247	0.5246	0.5244	0.5243	0.5239	0.5238	0.5238	0.5239	0.5237
10	2748K	0.5249	0.5250	0.5242	0.5241	0.5239	0.5236	0.5235	0.5232	0.5231	0.5228	0.5226	0.5223	0.5222	0.5222	0.5221	0.5221
11	2762K	0.5260	0.5259	0.5252	0.5251	0.5249	0.5246	0.5245	0.5242	0.5240	0.5238	0.5235	0.5233	0.5231	0.5232	0.5231	0.5231
12	2771K	0.5265	0.5265	0.5258	0.5256	0.5254	0.5251	0.5250	0.5247	0.5247	0.5245	0.5242	0.5240	0.5238	0.5238	0.5237	0.5236
13	2767K	0.5288	0.5288	0.5281	0.5280	0.5277	0.5275	0.5274	0.5272	0.5271	0.5269	0.5266	0.5264	0.5263	0.5263	0.5262	0.5261
14	2756K	0.5255	0.5254	0.5247	0.5246	0.5243	0.5241	0.5240	0.5237	0.5236	0.5233	0.5231	0.5228	0.5227	0.5227	0.5226	0.5226
15	2771K	0.5249	0.5248	0.5241	0.5240	0.5238	0.5235	0.5234	0.5230	0.5229	0.5227	0.5224	0.5222	0.5220	0.5221	0.5220	0.5218
16	2738K	0.5257	0.5256	0.5250	0.5248	0.5245	0.5243	0.5241	0.5238	0.5238	0.5236	0.5233	0.5230	0.5229	0.5229	0.5228	0.5227
17	2764K	0.5261	0.5260	0.5255	0.5253	0.5250	0.5247	0.5246	0.5243	0.5241	0.5239	0.5236	0.5234	0.5233	0.5233	0.5232	0.5231
18	2751K	0.5245	0.5245	0.5239	0.5236	0.5234	0.5231	0.5230	0.5227	0.5227	0.5224	0.5222	0.5219	0.5218	0.5218	0.5218	0.5216
19	2754K	0.5249	0.5248	0.5243	0.5239	0.5237	0.5235	0.5234	0.5230	0.5229	0.5227	0.5223	0.5221	0.5220	0.5219	0.5219	0.5219
20	2771K	0.5240	0.5239	0.5234	0.5232	0.5229	0.5226	0.5226	0.5222	0.5222	0.5220	0.5217	0.5215	0.5213	0.5213	0.5213	0.5212

Delta u'v' data for tested units

T_s = T_{air} = 85°C, I_f = 60mA; T_s ≥ 83°C and T_{air} ≥ 80°C in compliance with LM-80-15

CC1 (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	
1	2786K	0.0000	0.0003	0.0007	0.0008	0.0010	0.0014	0.0015	0.0018	0.0023	0.0026	0.0028	0.0030	0.0032	0.0034	0.0032	0.0033
2	2775K	0.0000	0.0002	0.0007	0.0008	0.0010	0.0014	0.0015	0.0020	0.0021	0.0024	0.0027	0.0029	0.0031	0.0032	0.0033	0.0034
3	2741K	0.0000	0.0002	0.0007	0.0009	0.0011	0.0014	0.0016	0.0018	0.0023	0.0024	0.0026	0.0029	0.0031	0.0031	0.0032	0.0034
4	2778K	0.0000	0.0003	0.0007	0.0009	0.0011	0.0014	0.0015	0.0021	0.0021	0.0025	0.0027	0.0029	0.0031	0.0031	0.0033	0.0033
5	2756K	0.0000	0.0003	0.0007	0.0009	0.0010	0.0014	0.0016	0.0019	0.0022	0.0024	0.0026	0.0028	0.0031	0.0031	0.0032	0.0034
6	2774K	0.0000	0.0004	0.0007	0.0009	0.0012	0.0014	0.0016	0.0021	0.0023	0.0027	0.0029	0.0031	0.0033	0.0033	0.0034	0.0036
7	2741K	0.0000	0.0003	0.0007	0.0009	0.0011	0.0014	0.0017	0.0021	0.0024	0.0026	0.0028	0.0031	0.0032	0.0033	0.0034	0.0036
8	2768K	0.0000	0.0004	0.0009	0.0010	0.0013	0.0015	0.0017	0.0021	0.0025	0.0027	0.0029	0.0031	0.0034	0.0035	0.0036	0.0037
9	2753K	0.0000	0.0001	0.0007	0.0009	0.0011	0.0014	0.0016	0.0021	0.0024	0.0026	0.0029	0.0032	0.0033	0.0036	0.0035	0.0038
10	2748K	0.0000	0.0004	0.0007	0.0009	0.0010	0.0014	0.0017	0.0020	0.0025	0.0028	0.0029	0.0032	0.0033	0.0034	0.0035	0.0036
11	2762K	0.0000	0.0003	0.0008	0.0010	0.0011	0.0015	0.0017	0.0021	0.0026	0.0028	0.0030	0.0031	0.0034	0.0034	0.0035	0.0035
12	2771K	0.0000	0.0004	0.0007	0.0010	0.0012	0.0015	0.0017	0.0021	0.0023	0.0025	0.0027	0.0029	0.0031	0.0032	0.0034	0.0035
13	2767K	0.0000	0.0002	0.0007	0.0008	0.0011	0.0013	0.0016	0.0018	0.0020	0.0023	0.0026	0.0027	0.0029	0.0029	0.0031	0.0032
14	2756K	0.0000	0.0005	0.0009	0.0010	0.0013	0.0015	0.0018	0.0021	0.0024	0.0027	0.0028	0.0031	0.0033	0.0033	0.0035	0.0035
15	2771K	0.0000	0.0003	0.0009	0.0010	0.0012	0.0015	0.0017	0.0022	0.0024	0.0027	0.0030	0.0031	0.0034	0.0034	0.0035	0.0037
16	2738K	0.0000	0.0003	0.0007	0.0010	0.0013	0.0015	0.0018	0.0021	0.0024	0.0026	0.0029	0.0031	0.0033	0.0033	0.0035	0.0036
17	2764K	0.0000	0.0003	0.0006	0.0009	0.0011	0.0015	0.0017	0.0021	0.0026	0.0029	0.0031	0.0032	0.0034	0.0035	0.0035	0.0037
18	2751K	0.0000	0.0003	0.0006	0.0009	0.0011	0.0015	0.0017	0.0020	0.0023	0.0026	0.0028	0.0030	0.0032	0.0034	0.0032	0.0035
19	2754K	0.0000	0.0002	0.0006	0.0010	0.0012	0.0015	0.0017	0.0021	0.0027	0.0030	0.0032	0.0033	0.0036	0.0037	0.0036	0.0037
20	2771K	0.0000	0.0003	0.0006	0.0009	0.0011	0.0015	0.0016	0.0021	0.0023	0.0026	0.0027	0.0029	0.0032	0.0034	0.0032	0.0034

Forward Voltage [V] data for tested units

T_s = T_{air} = 85°C, I_f = 60mA; T_s ≥ 83°C and T_{air} ≥ 80°C in compliance with LM-80-15

CC1 (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	
1	2786K	22.370	22.400	22.370	22.370	22.360	22.380	22.380	22.390	22.390	22.390	22.370	22.390	22.390	22.400	22.420	22.410
2	2775K	22.300	22.340	22.300	22.300	22.300	22.310	22.310	22.320	22.330	22.320	22.310	22.320	22.320	22.330	22.350	22.340
3	2741K	22.520	22.560	22.520	22.530	22.520	22.530	22.530	22.540	22.550	22.540	22.530	22.550	22.540	22.540	22.570	22.590
4	2778K	22.290	22.330	22.290	22.290	22.290	22.300	22.310	22.320	22.320	22.310	22.300	22.310	22.310	22.320	22.340	22.330
5	2756K	22.550	22.600	22.550	22.550	22.550	22.560	22.570	22.580	22.590	22.580	22.570	22.590	22.610	22.590	22.830	22.610
6	2774K	22.320	22.360	22.320	22.330	22.320	22.340	22.340	22.350	22.360	22.350	22.350	22.400	22.350	22.370	22.390	22.380
7	2741K	22.380	22.410	22.370	22.380	22.370	22.380	22.390	22.400	22.410	22.400	22.390	22.420	22.400	22.410	22.440	22.420
8	2768K	22.270	22.310	22.270	22.290	22.270	22.280	22.290	22.290	22.290	22.280	22.280	22.290	22.280	22.290	22.320	22.310
9	2753K	22.340	22.390	22.340	22.340	22.330	22.350	22.350	22.360	22.340	22.330	22.310	22.340	22.320	22.330	22.360	22.360
10	2748K	22.330	22.360	22.320	22.340	22.320	22.330	22.340	22.340	22.370	22.350	22.350	22.380	22.350	22.360	22.390	22.380
11	2762K	22.430	22.470	22.420	22.440	22.420	22.430	22.440	22.450	22.470	22.460	22.450	22.490	22.450	22.460	22.500	22.500
12	2771K	22.360	22.400	22.350	22.360	22.350	22.370	22.370	22.380	22.360	22.350	22.340	22.400	22.340	22.350	22.380	22.380
13	2767K	22.430	22.460	22.420	22.430	22.420	22.440	22.440	22.450	22.450	22.440	22.440	22.470	22.440	22.450	22.470	22.470
14	2756K	22.390	22.410	22.380	22.380	22.380	22.390	22.390	22.410	22.410	22.400	22.400	22.420	22.420	22.410	22.430	22.450
15	2771K	22.380	22.410	22.370	22.380	22.380	22.380	22.380	22.400	22.410	22.400	22.390	22.420	22.420	22.400	22.430	22.450
16	2738K	22.410	22.430	22.400	22.400	22.400	22.410	22.410	22.420	22.420	22.420	22.410	22.430	22.460	22.420	22.450	22.460
17	2764K	22.400	22.420	22.390	22.390	22.400	22.400	22.410	22.430	22.420	22.410	22.430	22.420	22.430	22.460	22.460	22.460
18	2751K	22.290	22.320	22.280	22.280	22.280	22.290	22.290	22.300	22.310	22.290	22.280	22.300	22.300	22.290	22.330	22.340
19	2754K	22.330	22.360	22.320	22.320	22.330	22.330	22.340	22.350	22.340	22.340	22.320	22.340	22.340	22.330	22.360	22.380
20	2771K	22.580	22.620	22.570	22.570	22.570	22.580	22.590	22.600	22.610	22.590	22.580	22.600	22.590	22.590	22.620	22.630

Luminous Flux [lm] data for tested units

$T_s = T_{air} = 105^{\circ}C$, $I_f = 60mA$; $T_s \geq 103^{\circ}C$ and $T_{air} \geq 100^{\circ}C$ in compliance with LM-80-15

CCT (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	
1	2765K	262.500	262.600	262.200	261.900	261.000	260.500	260.200	259.300	258.700	257.900	257.000	256.300	255.200	254.300	253.300	252.300
2	2767K	267.100	266.900	266.200	265.600	265.100	264.900	264.100	263.500	262.900	262.100	261.400	261.000	260.500	259.200	258.500	257.800
3	2777K	257.400	257.100	256.300	255.600	255.000	254.400	253.700	253.000	252.300	251.300	250.500	250.000	248.900	248.800	248.300	247.600
4	2757K	262.000	261.700	260.800	259.900	259.300	258.800	258.400	257.900	257.300	256.400	255.300	254.400	253.500	251.600	250.700	250.400
5	2736K	261.300	261.200	260.400	259.600	258.700	258.400	257.700	257.300	256.800	256.000	255.200	254.200	252.900	251.700	250.900	250.200
6	2739K	259.400	259.200	258.600	258.100	257.400	256.500	255.800	255.100	254.500	253.700	253.000	252.000	250.800	249.500	248.700	248.000
7	2795K	259.100	258.800	258.100	257.400	257.000	256.400	256.000	255.000	254.100	253.200	252.200	251.700	250.600	249.000	248.200	247.800
8	2766K	262.200	261.600	261.100	260.600	259.700	259.200	259.000	258.200	257.900	256.900	256.200	255.300	254.300	253.300	252.200	251.300
9	2769K	259.600	259.100	258.800	258.100	257.200	256.900	256.100	255.400	254.600	253.900	253.300	252.700	252.100	251.600	250.700	250.300
10	2745K	266.900	266.300	265.800	264.800	264.500	263.600	262.700	262.000	261.200	260.300	259.600	258.700	257.800	257.300	256.400	255.400
11	2745K	262.900	262.400	261.700	261.300	260.800	260.100	259.200	258.600	258.100	257.500	256.900	256.000	255.100	254.500	254.100	253.400
12	2744K	259.500	259.300	258.800	258.500	257.500	256.600	255.900	255.100	254.500	253.800	252.600	252.000	251.800	251.500	251.200	250.700
13	2749K	268.100	268.200	267.200	266.700	266.100	265.200	264.800	264.000	263.200	262.400	261.700	260.900	259.700	259.300	258.800	258.300
14	2764K	261.900	262.000	261.200	260.500	259.600	259.100	258.500	257.800	257.000	255.900	254.900	254.000	252.900	251.900	251.100	250.700
15	2754K	264.200	264.300	263.500	262.400	261.900	261.500	260.800	260.200	259.100	258.500	257.500	256.800	255.600	253.600	252.900	252.200
16	2770K	266.000	266.100	265.600	264.800	264.300	263.400	262.600	261.700	261.300	260.500	259.700	259.100	258.100	257.300	257.100	256.400
17	2762K	260.800	261.500	260.700	260.100	259.600	259.000	258.100	257.400	256.700	255.800	254.800	253.900	252.700	251.400	250.500	249.900
18	2760K	262.300	262.600	261.700	261.100	260.400	260.100	259.400	258.600	258.100	257.600	256.600	256.000	255.000	253.900	253.000	251.300
19	2751K	261.300	261.200	260.400	259.800	259.300	258.700	258.300	257.800	257.200	256.200	255.100	254.400	253.000	251.900	251.000	249.900
20	2785K	254.400	254.600	253.800	253.100	252.600	251.600	251.300	250.700	250.000	249.500	248.400	247.700	246.700	245.300	244.200	243.300

Normalized Luminous Flux data for tested units

$T_s = T_{air} = 105^{\circ}C$, $I_f = 60mA$; $T_s \geq 103^{\circ}C$ and $T_{air} \geq 100^{\circ}C$ in compliance with LM-80-15

CCT (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	
1	2765K	1.0000	1.0004	0.9989	0.9977	0.9943	0.9924	0.9912	0.9878	0.9855	0.9825	0.9790	0.9764	0.9722	0.9688	0.9650	0.9611
2	2767K	1.0000	0.9993	0.9966	0.9944	0.9925	0.9918	0.9888	0.9865	0.9843	0.9813	0.9787	0.9772	0.9753	0.9704	0.9678	0.9652
3	2777K	1.0000	0.9988	0.9957	0.9930	0.9907	0.9883	0.9856	0.9829	0.9802	0.9763	0.9732	0.9713	0.9670	0.9666	0.9646	0.9619
4	2757K	1.0000	0.9989	0.9954	0.9920	0.9897	0.9878	0.9863	0.9844	0.9821	0.9786	0.9744	0.9710	0.9676	0.9603	0.9569	0.9557
5	2736K	1.0000	0.9996	0.9966	0.9935	0.9900	0.9889	0.9862	0.9847	0.9828	0.9797	0.9767	0.9728	0.9679	0.9633	0.9602	0.9575
6	2739K	1.0000	0.9992	0.9969	0.9950	0.9923	0.9888	0.9861	0.9834	0.9811	0.9780	0.9753	0.9715	0.9668	0.9618	0.9588	0.9561
7	2795K	1.0000	0.9988	0.9961	0.9934	0.9919	0.9896	0.9880	0.9842	0.9807	0.9772	0.9734	0.9714	0.9672	0.9610	0.9579	0.9564
8	2766K	1.0000	0.9977	0.9958	0.9939	0.9905	0.9886	0.9878	0.9847	0.9836	0.9798	0.9771	0.9737	0.9699	0.9661	0.9619	0.9584
9	2769K	1.0000	0.9981	0.9969	0.9942	0.9908	0.9896	0.9865	0.9838	0.9807	0.9780	0.9757	0.9734	0.9711	0.9692	0.9657	0.9642
10	2745K	1.0000	0.9978	0.9959	0.9921	0.9910	0.9876	0.9843	0.9816	0.9786	0.9753	0.9726	0.9693	0.9659	0.9640	0.9607	0.9569
11	2745K	1.0000	0.9981	0.9954	0.9939	0.9920	0.9893	0.9859	0.9836	0.9817	0.9795	0.9772	0.9738	0.9703	0.9680	0.9665	0.9639
12	2744K	1.0000	0.9992	0.9973	0.9961	0.9923	0.9888	0.9861	0.9830	0.9807	0.9780	0.9734	0.9711	0.9703	0.9692	0.9680	0.9661
13	2749K	1.0000	1.0004	0.9966	0.9948	0.9925	0.9892	0.9877	0.9847	0.9817	0.9787	0.9761	0.9731	0.9687	0.9672	0.9653	0.9634
14	2764K	1.0000	1.0004	0.9973	0.9947	0.9912	0.9893	0.9870	0.9843	0.9813	0.9771	0.9733	0.9698	0.9656	0.9618	0.9588	0.9572
15	2754K	1.0000	1.0004	0.9974	0.9932	0.9913	0.9898	0.9871	0.9849	0.9807	0.9784	0.9746	0.9720	0.9674	0.9599	0.9572	0.9546
16	2770K	1.0000	1.0004	0.9985	0.9955	0.9936	0.9902	0.9872	0.9838	0.9823	0.9793	0.9763	0.9741	0.9703	0.9688	0.9665	0.9639
17	2762K	1.0000	1.0027	0.9996	0.9973	0.9954	0.9931	0.9896	0.9870	0.9843	0.9808	0.9770	0.9735	0.9689	0.9640	0.9605	0.9582
18	2760K	1.0000	1.0011	0.9977	0.9954	0.9928	0.9916	0.9889	0.9859	0.9840	0.9821	0.9783	0.9760	0.9722	0.9680	0.9645	0.9581
19	2751K	1.0000	0.9996	0.9966	0.9943	0.9923	0.9900	0.9885	0.9866	0.9843	0.9805	0.9763	0.9736	0.9682	0.9640	0.9606	0.9564
20	2785K	1.0000	1.0008	0.9976	0.9949	0.9929	0.9890	0.9878	0.9855	0.9827	0.9807	0.9764	0.9737	0.9697	0.9642	0.9599	0.9564

CIE 1976 u' data for tested units

$T_s = T_{air} = 105^\circ C, I_f = 60mA; T_s \geq 103^\circ C$ and $T_{air} \geq 100^\circ C$ in compliance with LM-80-15

	CCT (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs
1	2765K	0.2598	0.2595	0.2595	0.2592	0.2593	0.2593	0.2587	0.2587	0.2581	0.2580	0.2580	0.2580	0.2579	0.2578	0.2578	0.2578
2	2767K	0.2595	0.2592	0.2593	0.2591	0.2591	0.2590	0.2585	0.2584	0.2577	0.2576	0.2577	0.2577	0.2575	0.2573	0.2575	0.2574
3	2777K	0.2594	0.2591	0.2591	0.2589	0.2590	0.2589	0.2582	0.2583	0.2579	0.2576	0.2576	0.2576	0.2574	0.2572	0.2571	0.2570
4	2757K	0.2601	0.2599	0.2599	0.2597	0.2597	0.2596	0.2591	0.2590	0.2584	0.2583	0.2582	0.2583	0.2580	0.2580	0.2578	0.2578
5	2736K	0.2609	0.2606	0.2607	0.2605	0.2605	0.2605	0.2599	0.2599	0.2591	0.2590	0.2590	0.2591	0.2589	0.2588	0.2586	0.2584
6	2739K	0.2609	0.2606	0.2606	0.2604	0.2604	0.2603	0.2597	0.2598	0.2592	0.2590	0.2591	0.2592	0.2590	0.2588	0.2587	0.2587
7	2795K	0.2585	0.2582	0.2583	0.2581	0.2582	0.2580	0.2574	0.2575	0.2569	0.2567	0.2567	0.2567	0.2565	0.2563	0.2563	0.2564
8	2766K	0.2600	0.2597	0.2597	0.2595	0.2596	0.2595	0.2589	0.2590	0.2583	0.2581	0.2581	0.2581	0.2580	0.2579	0.2577	0.2577
9	2769K	0.2593	0.2590	0.2590	0.2587	0.2588	0.2587	0.2581	0.2582	0.2579	0.2575	0.2576	0.2577	0.2574	0.2570	0.2569	0.2568
10	2745K	0.2605	0.2602	0.2603	0.2600	0.2601	0.2600	0.2594	0.2594	0.2589	0.2586	0.2586	0.2586	0.2584	0.2583	0.2582	0.2580
11	2745K	0.2605	0.2601	0.2602	0.2600	0.2601	0.2600	0.2594	0.2594	0.2589	0.2589	0.2586	0.2587	0.2585	0.2582	0.2582	0.2581
12	2744K	0.2606	0.2601	0.2603	0.2601	0.2602	0.2601	0.2595	0.2595	0.2593	0.2587	0.2589	0.2590	0.2588	0.2586	0.2587	0.2585
13	2749K	0.2603	0.2600	0.2600	0.2599	0.2599	0.2598	0.2592	0.2592	0.2587	0.2584	0.2585	0.2586	0.2584	0.2584	0.2583	0.2581
14	2764K	0.2598	0.2593	0.2595	0.2593	0.2593	0.2592	0.2587	0.2587	0.2580	0.2576	0.2577	0.2578	0.2576	0.2576	0.2575	0.2572
15	2754K	0.2603	0.2599	0.2600	0.2598	0.2599	0.2598	0.2592	0.2593	0.2587	0.2583	0.2584	0.2585	0.2583	0.2581	0.2581	0.2579
16	2770K	0.2595	0.2592	0.2592	0.2590	0.2591	0.2590	0.2585	0.2585	0.2582	0.2579	0.2580	0.2580	0.2578	0.2576	0.2574	0.2574
17	2762K	0.2600	0.2596	0.2598	0.2595	0.2596	0.2595	0.2589	0.2589	0.2586	0.2583	0.2584	0.2584	0.2582	0.2581	0.2579	0.2578
18	2760K	0.2599	0.2595	0.2597	0.2594	0.2595	0.2594	0.2588	0.2589	0.2585	0.2582	0.2583	0.2584	0.2581	0.2579	0.2579	0.2577
19	2751K	0.2603	0.2598	0.2599	0.2598	0.2598	0.2597	0.2592	0.2592	0.2587	0.2583	0.2585	0.2585	0.2583	0.2582	0.2581	0.2579
20	2785K	0.2583	0.2578	0.2580	0.2578	0.2579	0.2578	0.2572	0.2573	0.2570	0.2565	0.2567	0.2568	0.2564	0.2564	0.2561	0.2560

CIE 1976 v' data for tested units

$T_s = T_{air} = 105^\circ C, I_f = 60mA; T_s \geq 103^\circ C$ and $T_{air} \geq 100^\circ C$ in compliance with LM-80-15

	CCT (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs
1	2765K	0.5254	0.5255	0.5247	0.5244	0.5241	0.5239	0.5240	0.5235	0.5234	0.5232	0.5229	0.5226	0.5225	0.5222	0.5222	0.5221
2	2767K	0.5264	0.5264	0.5256	0.5254	0.5250	0.5248	0.5248	0.5244	0.5242	0.5241	0.5238	0.5235	0.5233	0.5231	0.5231	0.5229
3	2777K	0.5246	0.5246	0.5238	0.5236	0.5233	0.5231	0.5229	0.5226	0.5225	0.5223	0.5220	0.5218	0.5216	0.5214	0.5213	0.5211
4	2757K	0.5257	0.5257	0.5249	0.5247	0.5245	0.5242	0.5242	0.5238	0.5236	0.5235	0.5231	0.5229	0.5228	0.5226	0.5225	0.5223
5	2736K	0.5265	0.5265	0.5257	0.5255	0.5252	0.5250	0.5249	0.5246	0.5242	0.5240	0.5236	0.5235	0.5233	0.5231	0.5232	0.5232
6	2739K	0.5259	0.5260	0.5250	0.5248	0.5245	0.5243	0.5242	0.5239	0.5238	0.5236	0.5232	0.5230	0.5228	0.5226	0.5225	0.5224
7	2795K	0.5250	0.5250	0.5242	0.5240	0.5237	0.5235	0.5234	0.5230	0.5227	0.5226	0.5222	0.5220	0.5219	0.5217	0.5216	0.5215
8	2766K	0.5242	0.5243	0.5234	0.5232	0.5229	0.5227	0.5226	0.5223	0.5221	0.5219	0.5215	0.5213	0.5212	0.5209	0.5209	0.5208
9	2769K	0.5269	0.5269	0.5261	0.5258	0.5256	0.5253	0.5253	0.5249	0.5250	0.5247	0.5243	0.5241	0.5240	0.5237	0.5236	0.5235
10	2745K	0.5264	0.5265	0.5257	0.5254	0.5252	0.5250	0.5249	0.5246	0.5244	0.5242	0.5238	0.5236	0.5235	0.5233	0.5232	0.5231
11	2745K	0.5264	0.5264	0.5257	0.5254	0.5252	0.5249	0.5248	0.5245	0.5243	0.5242	0.5237	0.5235	0.5233	0.5231	0.5230	0.5230
12	2744K	0.5263	0.5263	0.5256	0.5253	0.5251	0.5249	0.5248	0.5245	0.5244	0.5242	0.5238	0.5236	0.5234	0.5233	0.5231	0.5231
13	2749K	0.5265	0.5266	0.5257	0.5255	0.5253	0.5250	0.5250	0.5246	0.5245	0.5243	0.5239	0.5237	0.5236	0.5234	0.5233	0.5233
14	2764K	0.5255	0.5255	0.5248	0.5244	0.5242	0.5240	0.5240	0.5236	0.5235	0.5231	0.5228	0.5226	0.5224	0.5223	0.5222	0.5221
15	2754K	0.5254	0.5255	0.5247	0.5245	0.5242	0.5239	0.5239	0.5236	0.5235	0.5231	0.5228	0.5226	0.5225	0.5223	0.5223	0.5221
16	2770K	0.5257	0.5257	0.5249	0.5247	0.5244	0.5243	0.5241	0.5238	0.5238	0.5234	0.5232	0.5230	0.5228	0.5226	0.5226	0.5224
17	2762K	0.5250	0.5249	0.5242	0.5239	0.5236	0.5235	0.5234	0.5230	0.5231	0.5227	0.5225	0.5222	0.5221	0.5219	0.5219	0.5217
18	2760K	0.5260	0.5260	0.5252	0.5250	0.5247	0.5245	0.5244	0.5241	0.5241	0.5238	0.5235	0.5233	0.5231	0.5229	0.5228	0.5228
19	2751K	0.5261	0.5260	0.5252	0.5250	0.5247	0.5245	0.5244	0.5241	0.5240	0.5237	0.5234	0.5232	0.5231	0.5229	0.5227	0.5227
20	2785K	0.5281	0.5281	0.5274	0.5271	0.5268	0.5267	0.5266	0.5263	0.5263	0.5260	0.5256	0.5254	0.5253	0.5251	0.5250	0.5249

Delta u'v' data for tested units

$T_s = T_{air} = 105^\circ\text{C}$, $I_f = 60\text{mA}$; $T_s \geq 103^\circ\text{C}$ and $T_{air} \geq 100^\circ\text{C}$ in compliance with LM-80-15

	CC1 (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs
1	2765K	0.0000	0.0003	0.0008	0.0012	0.0014	0.0016	0.0018	0.0022	0.0026	0.0028	0.0031	0.0033	0.0035	0.0038	0.0038	0.0039
2	2767K	0.0000	0.0003	0.0008	0.0011	0.0015	0.0017	0.0019	0.0023	0.0028	0.0030	0.0032	0.0034	0.0037	0.0040	0.0039	0.0041
3	2777K	0.0000	0.0003	0.0009	0.0011	0.0014	0.0016	0.0021	0.0023	0.0026	0.0029	0.0032	0.0033	0.0036	0.0039	0.0040	0.0042
4	2757K	0.0000	0.0002	0.0008	0.0011	0.0013	0.0016	0.0018	0.0022	0.0027	0.0028	0.0032	0.0033	0.0036	0.0037	0.0039	0.0041
5	2736K	0.0000	0.0003	0.0008	0.0011	0.0014	0.0016	0.0019	0.0021	0.0029	0.0031	0.0035	0.0035	0.0038	0.0040	0.0040	0.0041
6	2739K	0.0000	0.0003	0.0009	0.0012	0.0015	0.0017	0.0021	0.0023	0.0027	0.0030	0.0032	0.0034	0.0036	0.0039	0.0040	0.0041
7	2795K	0.0000	0.0003	0.0008	0.0011	0.0013	0.0016	0.0019	0.0022	0.0028	0.0030	0.0033	0.0035	0.0037	0.0040	0.0040	0.0041
8	2766K	0.0000	0.0003	0.0009	0.0011	0.0014	0.0016	0.0019	0.0021	0.0027	0.0030	0.0033	0.0035	0.0036	0.0039	0.0040	0.0041
9	2769K	0.0000	0.0003	0.0009	0.0013	0.0014	0.0017	0.0020	0.0023	0.0024	0.0028	0.0031	0.0032	0.0035	0.0039	0.0041	0.0042
10	2745K	0.0000	0.0003	0.0007	0.0011	0.0013	0.0015	0.0019	0.0021	0.0026	0.0029	0.0032	0.0034	0.0036	0.0038	0.0039	0.0041
11	2745K	0.0000	0.0004	0.0008	0.0011	0.0013	0.0016	0.0019	0.0022	0.0026	0.0027	0.0033	0.0034	0.0037	0.0040	0.0041	0.0042
12	2744K	0.0000	0.0005	0.0008	0.0011	0.0013	0.0015	0.0019	0.0021	0.0023	0.0028	0.0030	0.0031	0.0034	0.0036	0.0037	0.0038
13	2749K	0.0000	0.0003	0.0009	0.0011	0.0013	0.0016	0.0019	0.0022	0.0026	0.0029	0.0032	0.0033	0.0035	0.0036	0.0038	0.0039
14	2764K	0.0000	0.0005	0.0008	0.0012	0.0014	0.0016	0.0019	0.0022	0.0027	0.0033	0.0034	0.0035	0.0038	0.0039	0.0040	0.0043
15	2754K	0.0000	0.0004	0.0008	0.0010	0.0013	0.0016	0.0019	0.0021	0.0025	0.0030	0.0032	0.0033	0.0035	0.0038	0.0038	0.0041
16	2770K	0.0000	0.0003	0.0009	0.0011	0.0014	0.0015	0.0019	0.0021	0.0023	0.0028	0.0029	0.0031	0.0034	0.0036	0.0037	0.0039
17	2762K	0.0000	0.0004	0.0008	0.0012	0.0015	0.0016	0.0019	0.0023	0.0024	0.0029	0.0030	0.0032	0.0034	0.0036	0.0037	0.0040
18	2760K	0.0000	0.0004	0.0008	0.0011	0.0014	0.0016	0.0019	0.0021	0.0024	0.0028	0.0030	0.0031	0.0034	0.0037	0.0038	0.0039
19	2751K	0.0000	0.0005	0.0010	0.0012	0.0015	0.0017	0.0020	0.0023	0.0026	0.0031	0.0032	0.0034	0.0036	0.0038	0.0040	0.0042
20	2785K	0.0000	0.0005	0.0008	0.0011	0.0014	0.0015	0.0019	0.0021	0.0022	0.0028	0.0030	0.0031	0.0034	0.0036	0.0038	0.0039

Forward Voltage [V] data for tested units

$T_s = T_{air} = 105^\circ\text{C}$, $I_f = 60\text{mA}$; $T_s \geq 103^\circ\text{C}$ and $T_{air} \geq 100^\circ\text{C}$ in compliance with LM-80-15

	CC1 (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs
1	2765K	22.350	22.390	22.350	22.360	22.350	22.360	22.340	22.370	22.370	22.360	22.350	22.370	22.350	22.360	22.380	22.380
2	2767K	22.350	22.390	22.350	22.380	22.350	22.360	22.340	22.370	22.390	22.390	22.370	22.410	22.410	22.390	22.410	22.400
3	2777K	22.470	22.510	22.480	22.490	22.470	22.480	22.460	22.500	22.500	22.490	22.480	22.500	22.490	22.490	22.520	22.510
4	2757K	22.290	22.330	22.290	22.300	22.290	22.300	22.280	22.310	22.320	22.320	22.300	22.330	22.310	22.320	22.340	22.340
5	2736K	22.410	22.450	22.410	22.420	22.410	22.420	22.400	22.430	22.430	22.420	22.410	22.430	22.790	22.420	22.460	22.440
6	2739K	22.400	22.450	22.400	22.410	22.400	22.410	22.400	22.420	22.430	22.420	22.400	22.430	22.580	22.420	22.450	22.440
7	2795K	22.350	22.390	22.340	22.360	22.340	22.350	22.330	22.370	22.360	22.350	22.340	22.360	22.480	22.350	22.380	22.370
8	2766K	22.290	22.330	22.290	22.290	22.280	22.300	22.280	22.310	22.320	22.320	22.310	22.330	22.430	22.310	22.350	22.350
9	2769K	22.330	22.380	22.330	22.340	22.330	22.340	22.330	22.350	22.330	22.330	22.320	22.350	22.330	22.330	22.360	22.360
10	2745K	22.510	22.540	22.510	22.520	22.500	22.510	22.500	22.530	22.550	22.550	22.530	22.550	22.540	22.540	22.580	22.570
11	2745K	22.620	22.660	22.620	22.710	22.620	22.620	22.610	22.650	22.660	22.540	22.640	22.660	22.650	22.650	22.690	22.680
12	2744K	22.520	22.550	22.520	22.530	22.520	22.520	22.510	22.540	22.540	22.540	22.530	22.540	22.530	22.530	22.570	22.560
13	2749K	22.430	22.470	22.430	22.440	22.440	22.440	22.430	22.450	22.470	22.460	22.460	22.470	22.490	22.470	22.500	22.490
14	2764K	22.350	22.390	22.350	22.350	22.350	22.360	22.350	22.370	22.350	22.350	22.340	22.350	22.350	22.350	22.380	22.370
15	2754K	22.360	22.400	22.360	22.370	22.360	22.370	22.360	22.390	22.410	22.400	22.400	22.410	22.430	22.400	22.430	22.420
16	2770K	22.560	22.590	22.550	22.580	22.550	22.570	22.540	22.580	22.580	22.570	22.570	22.610	22.570	22.580	22.610	22.590
17	2762K	22.390	22.410	22.370	22.390	22.380	22.390	22.370	22.400	22.410	22.400	22.400	22.420	22.400	22.410	22.430	22.420
18	2760K	22.330	22.360	22.320	22.330	22.320	22.340	22.320	22.350	22.360	22.350	22.350	22.360	22.350	22.360	22.390	22.370
19	2751K	22.480	22.510	22.470	22.480	22.470	22.480	22.470	22.500	22.510	22.490	22.490	22.510	22.490	22.510	22.540	22.520
20	2785K	22.430	22.460	22.430	22.450	22.430	22.440	22.430	22.460	22.460	22.440	22.440	22.450	22.440	22.460	22.480	22.460

Luminous Flux [lm] data for tested units

T_s = T_{air} = 85°C, I_f = 100mA; T_s ≥ 83°C and T_{air} ≥ 80°C in compliance with LM-80-15

	CCT (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs
1	2783K	401.200	402.100	401.300	400.200	398.800	398.100	397.400	397.200	396.100	394.900	394.200	393.200	391.900	390.400	389.100	387.900
2	2775K	419.400	419.800	419.000	418.100	417.500	416.300	415.100	414.300	412.400	411.200	409.600	408.400	406.900	404.400	403.200	401.800
3	2786K	425.900	426.400	426.200	425.100	424.700	423.400	422.000	421.000	419.700	418.400	417.500	416.400	414.600	413.600	412.300	411.100
4	2776K	417.100	418.300	417.800	416.800	415.500	414.500	414.100	413.500	412.000	410.600	409.200	408.100	406.500	405.800	404.400	403.300
5	2762K	414.900	415.400	414.700	413.500	412.700	411.900	410.900	410.200	409.800	408.900	407.600	406.700	405.100	403.800	402.800	401.900
6	2763K	418.000	419.200	418.800	417.300	416.700	415.200	414.000	413.000	411.900	410.500	409.200	407.500	406.200	406.000	405.200	404.500
7	2783K	419.800	420.700	420.500	419.500	418.700	417.800	416.900	415.900	415.000	413.800	413.100	411.700	410.600	408.400	406.800	405.800
8	2768K	419.000	420.000	419.300	418.700	418.300	416.700	416.100	415.200	414.500	412.900	411.500	410.700	409.800	408.600	407.200	406.500
9	2770K	419.500	420.400	419.300	418.200	417.000	416.000	415.000	414.100	412.700	411.400	410.200	409.100	408.000	407.300	406.400	405.500
10	2775K	414.300	415.200	414.000	413.000	411.600	410.700	409.600	408.100	407.700	406.600	405.100	403.200	401.700	400.900	399.200	398.700
11	2786K	411.200	412.100	411.300	410.000	408.800	408.000	407.000	406.500	405.800	404.800	403.900	402.400	401.000	399.100	397.800	396.000
12	2786K	416.400	417.500	416.000	414.800	413.400	412.800	411.800	411.100	410.200	408.900	407.400	406.300	405.300	403.200	401.700	399.600
13	2791K	427.700	428.400	426.900	426.300	424.500	423.800	422.700	422.100	420.900	420.000	418.600	417.400	416.200	414.000	413.100	412.600
14	2766K	422.600	423.400	423.000	422.500	421.300	420.100	418.100	416.800	415.300	413.900	412.400	411.900	410.100	408.500	407.700	406.700
15	2800K	412.900	414.100	412.600	411.400	410.500	410.100	408.500	407.100	406.400	405.200	404.000	403.200	402.000	400.000	398.500	397.200
16	2764K	422.100	422.900	422.700	421.200	420.900	419.700	418.400	417.100	415.700	414.200	413.100	411.600	409.900	407.600	406.300	405.800
17	2781K	424.800	425.500	424.300	423.400	422.400	421.800	421.000	420.000	418.900	417.600	416.100	414.900	413.000	411.900	410.600	410.500
18	2769K	415.000	416.100	414.600	413.500	412.900	412.000	410.900	410.700	409.900	408.400	407.000	406.000	404.200	403.100	401.800	401.100
19	2785K	414.400	414.600	413.100	412.600	410.900	410.300	409.500	408.800	408.000	407.400	406.000	405.000	403.500	400.700	399.200	398.200
20	2798K	419.300	420.600	419.400	418.900	417.900	416.600	415.500	414.500	413.400	412.000	410.400	409.300	407.300	406.700	405.900	405.500

Normalized Luminous Flux data for tested units

T_s = T_{air} = 85°C, I_f = 100mA; T_s ≥ 83°C and T_{air} ≥ 80°C in compliance with LM-80-15

	CCT (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs
1	2783K	1.0000	1.0022	1.0002	0.9975	0.9940	0.9923	0.9905	0.9900	0.9873	0.9843	0.9826	0.9801	0.9768	0.9731	0.9698	0.9668
2	2775K	1.0000	1.0010	0.9990	0.9969	0.9955	0.9926	0.9897	0.9878	0.9833	0.9804	0.9766	0.9738	0.9702	0.9642	0.9614	0.9580
3	2786K	1.0000	1.0012	1.0007	0.9981	0.9972	0.9941	0.9908	0.9885	0.9854	0.9824	0.9803	0.9777	0.9735	0.9711	0.9681	0.9653
4	2776K	1.0000	1.0029	1.0017	0.9993	0.9962	0.9938	0.9928	0.9914	0.9878	0.9844	0.9811	0.9784	0.9746	0.9729	0.9696	0.9669
5	2762K	1.0000	1.0012	0.9995	0.9966	0.9947	0.9928	0.9904	0.9887	0.9877	0.9855	0.9824	0.9802	0.9764	0.9732	0.9708	0.9687
6	2763K	1.0000	1.0029	1.0019	0.9983	0.9969	0.9933	0.9904	0.9880	0.9854	0.9821	0.9789	0.9749	0.9718	0.9713	0.9694	0.9677
7	2783K	1.0000	1.0021	1.0017	0.9993	0.9974	0.9952	0.9931	0.9907	0.9886	0.9857	0.9840	0.9807	0.9781	0.9728	0.9690	0.9667
8	2768K	1.0000	1.0024	1.0007	0.9993	0.9983	0.9945	0.9931	0.9909	0.9893	0.9854	0.9821	0.9802	0.9780	0.9752	0.9718	0.9702
9	2770K	1.0000	1.0021	0.9995	0.9969	0.9940	0.9917	0.9893	0.9871	0.9838	0.9807	0.9778	0.9752	0.9726	0.9709	0.9688	0.9666
10	2775K	1.0000	1.0022	0.9993	0.9969	0.9935	0.9913	0.9887	0.9850	0.9841	0.9814	0.9778	0.9732	0.9696	0.9677	0.9636	0.9623
11	2786K	1.0000	1.0022	1.0002	0.9971	0.9942	0.9922	0.9898	0.9886	0.9869	0.9844	0.9822	0.9786	0.9752	0.9706	0.9674	0.9630
12	2786K	1.0000	1.0026	0.9990	0.9962	0.9928	0.9914	0.9890	0.9873	0.9851	0.9820	0.9784	0.9757	0.9733	0.9683	0.9647	0.9597
13	2791K	1.0000	1.0016	0.9981	0.9967	0.9925	0.9909	0.9883	0.9869	0.9841	0.9820	0.9787	0.9759	0.9731	0.9680	0.9659	0.9647
14	2766K	1.0000	1.0019	1.0009	0.9998	0.9969	0.9941	0.9894	0.9863	0.9827	0.9794	0.9759	0.9747	0.9704	0.9666	0.9647	0.9624
15	2800K	1.0000	1.0029	0.9993	0.9964	0.9942	0.9932	0.9893	0.9860	0.9843	0.9814	0.9784	0.9765	0.9736	0.9688	0.9651	0.9620
16	2764K	1.0000	1.0019	1.0014	0.9979	0.9972	0.9943	0.9912	0.9882	0.9848	0.9813	0.9787	0.9751	0.9711	0.9656	0.9626	0.9614
17	2781K	1.0000	1.0016	0.9988	0.9967	0.9944	0.9929	0.9911	0.9887	0.9861	0.9831	0.9795	0.9767	0.9722	0.9696	0.9666	0.9663
18	2769K	1.0000	1.0027	0.9990	0.9964	0.9949	0.9928	0.9901	0.9896	0.9877	0.9841	0.9807	0.9783	0.9740	0.9713	0.9682	0.9665
19	2785K	1.0000	1.0005	0.9969	0.9957	0.9916	0.9901	0.9882	0.9865	0.9846	0.9831	0.9797	0.9773	0.9737	0.9669	0.9633	0.9609
20	2798K	1.0000	1.0031	1.0002	0.9990	0.9967	0.9936	0.9909	0.9886	0.9859	0.9826	0.9788	0.9762	0.9714	0.9699	0.9680	0.9671

CIE 1976 u' data for tested units

$T_s = T_{air} = 85^\circ\text{C}$; $I_f = 100\text{mA}$; $T_s \geq 83^\circ\text{C}$ and $T_{air} \geq 80^\circ\text{C}$ in compliance with LM-80-15

CCT (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	
1	2783K	0.2583	0.2583	0.2583	0.2581	0.2582	0.2580	0.2573	0.2573	0.2573	0.2570	0.2570	0.2571	0.2568	0.2567	0.2565	0.2563
2	2775K	0.2594	0.2594	0.2594	0.2592	0.2593	0.2591	0.2584	0.2583	0.2583	0.2581	0.2582	0.2582	0.2579	0.2578	0.2577	0.2575
3	2786K	0.2588	0.2588	0.2587	0.2586	0.2587	0.2584	0.2578	0.2577	0.2576	0.2574	0.2575	0.2575	0.2572	0.2570	0.2570	0.2572
4	2776K	0.2593	0.2593	0.2592	0.2590	0.2592	0.2589	0.2583	0.2582	0.2581	0.2578	0.2579	0.2579	0.2577	0.2576	0.2575	0.2576
5	2762K	0.2599	0.2599	0.2598	0.2597	0.2598	0.2595	0.2589	0.2588	0.2589	0.2585	0.2586	0.2586	0.2583	0.2583	0.2581	0.2582
6	2763K	0.2597	0.2596	0.2596	0.2594	0.2595	0.2593	0.2586	0.2586	0.2586	0.2583	0.2583	0.2584	0.2581	0.2580	0.2579	0.2578
7	2783K	0.2590	0.2590	0.2589	0.2587	0.2589	0.2587	0.2579	0.2579	0.2578	0.2575	0.2576	0.2577	0.2574	0.2573	0.2572	0.2571
8	2768K	0.2594	0.2594	0.2593	0.2591	0.2592	0.2590	0.2583	0.2581	0.2582	0.2579	0.2580	0.2580	0.2578	0.2576	0.2575	0.2571
9	2770K	0.2596	0.2596	0.2596	0.2594	0.2595	0.2593	0.2587	0.2585	0.2584	0.2581	0.2583	0.2583	0.2580	0.2579	0.2578	0.2576
10	2775K	0.2592	0.2592	0.2591	0.2589	0.2591	0.2588	0.2581	0.2579	0.2580	0.2577	0.2578	0.2578	0.2576	0.2575	0.2573	0.2572
11	2786K	0.2588	0.2588	0.2587	0.2585	0.2587	0.2584	0.2578	0.2578	0.2577	0.2574	0.2575	0.2575	0.2572	0.2572	0.2571	0.2569
12	2786K	0.2591	0.2591	0.2590	0.2588	0.2590	0.2588	0.2581	0.2581	0.2579	0.2577	0.2578	0.2578	0.2576	0.2575	0.2575	0.2574
13	2791K	0.2586	0.2586	0.2585	0.2583	0.2585	0.2583	0.2576	0.2577	0.2576	0.2573	0.2574	0.2574	0.2571	0.2570	0.2569	0.2569
14	2766K	0.2595	0.2594	0.2593	0.2592	0.2593	0.2591	0.2585	0.2582	0.2581	0.2579	0.2581	0.2581	0.2579	0.2577	0.2576	0.2576
15	2800K	0.2583	0.2583	0.2582	0.2581	0.2582	0.2580	0.2574	0.2574	0.2573	0.2570	0.2571	0.2571	0.2568	0.2567	0.2565	0.2565
16	2764K	0.2598	0.2598	0.2597	0.2596	0.2596	0.2594	0.2588	0.2587	0.2586	0.2584	0.2585	0.2585	0.2582	0.2581	0.2581	0.2580
17	2781K	0.2588	0.2588	0.2587	0.2586	0.2587	0.2585	0.2578	0.2579	0.2578	0.2576	0.2576	0.2576	0.2573	0.2573	0.2572	0.2572
18	2769K	0.2595	0.2594	0.2594	0.2593	0.2593	0.2591	0.2584	0.2585	0.2584	0.2581	0.2583	0.2582	0.2579	0.2579	0.2579	0.2577
19	2785K	0.2588	0.2588	0.2588	0.2585	0.2587	0.2585	0.2578	0.2578	0.2577	0.2575	0.2575	0.2575	0.2573	0.2572	0.2571	0.2569
20	2798K	0.2584	0.2584	0.2583	0.2582	0.2583	0.2580	0.2574	0.2573	0.2572	0.2570	0.2571	0.2571	0.2569	0.2567	0.2567	0.2566

CIE 1976 v' data for tested units

$T_s = T_{air} = 85^\circ\text{C}$; $I_f = 100\text{mA}$; $T_s \geq 83^\circ\text{C}$ and $T_{air} \geq 80^\circ\text{C}$ in compliance with LM-80-15

CCT (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	
1	2783K	0.5285	0.5286	0.5281	0.5278	0.5274	0.5271	0.5271	0.5267	0.5265	0.5262	0.5259	0.5257	0.5255	0.5255	0.5255	0.5254
2	2775K	0.5251	0.5253	0.5246	0.5243	0.5241	0.5237	0.5237	0.5232	0.5229	0.5227	0.5225	0.5221	0.5220	0.5220	0.5219	0.5219
3	2786K	0.5254	0.5256	0.5249	0.5246	0.5244	0.5240	0.5240	0.5234	0.5232	0.5229	0.5227	0.5224	0.5223	0.5222	0.5220	0.5220
4	2776K	0.5254	0.5255	0.5249	0.5245	0.5244	0.5240	0.5239	0.5234	0.5230	0.5228	0.5225	0.5223	0.5222	0.5222	0.5220	0.5219
5	2762K	0.5256	0.5257	0.5250	0.5248	0.5246	0.5242	0.5241	0.5236	0.5234	0.5231	0.5227	0.5225	0.5224	0.5224	0.5223	0.5221
6	2763K	0.5263	0.5263	0.5258	0.5254	0.5253	0.5249	0.5248	0.5243	0.5240	0.5238	0.5234	0.5232	0.5231	0.5231	0.5230	0.5228
7	2783K	0.5252	0.5253	0.5247	0.5244	0.5243	0.5240	0.5237	0.5232	0.5230	0.5227	0.5224	0.5222	0.5220	0.5220	0.5219	0.5217
8	2768K	0.5266	0.5267	0.5260	0.5257	0.5256	0.5253	0.5251	0.5247	0.5244	0.5241	0.5238	0.5235	0.5234	0.5233	0.5234	0.5234
9	2770K	0.5252	0.5253	0.5247	0.5244	0.5243	0.5239	0.5237	0.5234	0.5230	0.5227	0.5224	0.5222	0.5221	0.5220	0.5218	0.5217
10	2775K	0.5260	0.5261	0.5254	0.5251	0.5249	0.5246	0.5244	0.5240	0.5236	0.5234	0.5231	0.5229	0.5227	0.5227	0.5226	0.5225
11	2786K	0.5255	0.5256	0.5249	0.5246	0.5244	0.5241	0.5239	0.5236	0.5232	0.5230	0.5227	0.5224	0.5223	0.5222	0.5222	0.5220
12	2786K	0.5241	0.5243	0.5237	0.5234	0.5232	0.5229	0.5227	0.5224	0.5220	0.5218	0.5214	0.5212	0.5211	0.5210	0.5209	0.5209
13	2791K	0.5254	0.5255	0.5249	0.5246	0.5244	0.5241	0.5239	0.5236	0.5232	0.5231	0.5226	0.5224	0.5223	0.5222	0.5221	0.5221
14	2766K	0.5265	0.5266	0.5259	0.5257	0.5254	0.5251	0.5250	0.5245	0.5242	0.5241	0.5237	0.5234	0.5232	0.5232	0.5231	0.5230
15	2800K	0.5248	0.5250	0.5243	0.5241	0.5238	0.5236	0.5234	0.5230	0.5227	0.5226	0.5222	0.5219	0.5218	0.5217	0.5216	0.5214
16	2764K	0.5255	0.5257	0.5250	0.5248	0.5245	0.5242	0.5240	0.5236	0.5233	0.5232	0.5228	0.5225	0.5223	0.5223	0.5222	0.5222
17	2781K	0.5265	0.5266	0.5259	0.5257	0.5254	0.5252	0.5250	0.5247	0.5243	0.5242	0.5238	0.5235	0.5234	0.5233	0.5232	0.5231
18	2769K	0.5259	0.5260	0.5254	0.5252	0.5248	0.5246	0.5244	0.5240	0.5237	0.5236	0.5232	0.5229	0.5228	0.5227	0.5226	0.5226
19	2785K	0.5258	0.5259	0.5253	0.5250	0.5248	0.5245	0.5243	0.5240	0.5236	0.5234	0.5230	0.5228	0.5227	0.5226	0.5225	0.5224
20	2798K	0.5249	0.5250	0.5243	0.5241	0.5239	0.5236	0.5234	0.5230	0.5227	0.5226	0.5221	0.5219	0.5217	0.5217	0.5216	0.5216

Delta u'v' data for tested units

$T_s = T_{air} = 85^{\circ}\text{C}$; $I_f = 100\text{mA}$; $T_s \geq 83^{\circ}\text{C}$ and $T_{air} \geq 80^{\circ}\text{C}$ in compliance with LM-80-15

CC1 (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	
1	2783K	0.0000	0.0001	0.0004	0.0007	0.0011	0.0014	0.0017	0.0021	0.0022	0.0026	0.0029	0.0030	0.0034	0.0034	0.0035	0.0037
2	2775K	0.0000	0.0002	0.0005	0.0008	0.0010	0.0014	0.0017	0.0022	0.0025	0.0027	0.0029	0.0032	0.0034	0.0035	0.0036	0.0037
3	2786K	0.0000	0.0002	0.0005	0.0008	0.0010	0.0015	0.0017	0.0023	0.0025	0.0029	0.0030	0.0033	0.0035	0.0037	0.0038	0.0038
4	2776K	0.0000	0.0001	0.0005	0.0009	0.0010	0.0015	0.0018	0.0023	0.0027	0.0030	0.0032	0.0034	0.0036	0.0036	0.0038	0.0039
5	2762K	0.0000	0.0001	0.0006	0.0008	0.0010	0.0015	0.0018	0.0023	0.0024	0.0029	0.0032	0.0034	0.0036	0.0036	0.0038	0.0039
6	2763K	0.0000	0.0001	0.0005	0.0009	0.0010	0.0015	0.0019	0.0023	0.0025	0.0029	0.0032	0.0034	0.0036	0.0036	0.0038	0.0040
7	2783K	0.0000	0.0001	0.0005	0.0009	0.0009	0.0012	0.0019	0.0023	0.0025	0.0029	0.0031	0.0033	0.0036	0.0036	0.0038	0.0040
8	2768K	0.0000	0.0001	0.0006	0.0009	0.0010	0.0014	0.0019	0.0023	0.0025	0.0029	0.0031	0.0034	0.0036	0.0038	0.0037	0.0039
9	2770K	0.0000	0.0001	0.0005	0.0008	0.0009	0.0013	0.0017	0.0021	0.0025	0.0029	0.0031	0.0033	0.0035	0.0036	0.0038	0.0040
10	2775K	0.0000	0.0001	0.0006	0.0009	0.0011	0.0015	0.0019	0.0024	0.0027	0.0030	0.0032	0.0034	0.0037	0.0037	0.0039	0.0040
11	2786K	0.0000	0.0001	0.0006	0.0009	0.0011	0.0015	0.0019	0.0021	0.0025	0.0029	0.0031	0.0034	0.0036	0.0037	0.0037	0.0040
12	2786K	0.0000	0.0002	0.0004	0.0008	0.0009	0.0012	0.0017	0.0020	0.0024	0.0027	0.0030	0.0032	0.0034	0.0035	0.0036	0.0036
13	2791K	0.0000	0.0001	0.0005	0.0009	0.0010	0.0013	0.0018	0.0020	0.0024	0.0026	0.0030	0.0032	0.0034	0.0036	0.0037	0.0037
14	2766K	0.0000	0.0001	0.0006	0.0009	0.0011	0.0015	0.0018	0.0024	0.0027	0.0029	0.0031	0.0034	0.0037	0.0038	0.0039	0.0040
15	2800K	0.0000	0.0002	0.0005	0.0007	0.0010	0.0012	0.0017	0.0020	0.0023	0.0026	0.0029	0.0031	0.0034	0.0035	0.0037	0.0038
16	2764K	0.0000	0.0002	0.0005	0.0007	0.0010	0.0014	0.0018	0.0022	0.0025	0.0027	0.0030	0.0033	0.0036	0.0036	0.0037	0.0038
17	2781K	0.0000	0.0001	0.0006	0.0008	0.0011	0.0013	0.0018	0.0020	0.0024	0.0026	0.0030	0.0032	0.0034	0.0035	0.0037	0.0038
18	2769K	0.0000	0.0001	0.0005	0.0007	0.0011	0.0014	0.0019	0.0021	0.0025	0.0027	0.0030	0.0033	0.0035	0.0036	0.0037	0.0038
19	2785K	0.0000	0.0001	0.0005	0.0009	0.0010	0.0013	0.0018	0.0021	0.0025	0.0027	0.0031	0.0033	0.0034	0.0036	0.0037	0.0039
20	2798K	0.0000	0.0001	0.0006	0.0008	0.0010	0.0014	0.0018	0.0022	0.0025	0.0027	0.0031	0.0033	0.0035	0.0036	0.0037	0.0038

Forward Voltage [V] data for tested units

$T_s = T_{air} = 85^{\circ}\text{C}$; $I_f = 100\text{mA}$; $T_s \geq 83^{\circ}\text{C}$ and $T_{air} \geq 80^{\circ}\text{C}$ in compliance with LM-80-15

CC1 (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	
1	2783K	23.280	23.350	23.300	23.320	23.310	23.310	23.280	23.330	23.320	23.300	23.310	23.320	23.310	23.360	23.360	23.350
2	2775K	23.340	23.390	23.330	23.340	23.330	23.330	23.320	23.350	23.340	23.330	23.330	23.340	23.330	23.350	23.380	23.360
3	2786K	23.350	23.400	23.340	23.350	23.350	23.330	23.360	23.350	23.340	23.340	23.370	23.340	23.350	23.400	23.370	
4	2776K	23.000	23.060	23.000	23.000	23.000	22.990	23.020	23.010	22.990	23.000	23.150	23.000	23.010	23.120	23.050	
5	2762K	23.040	23.090	23.040	23.060	23.040	23.040	23.030	23.050	23.050	23.040	23.030	23.040	23.040	23.050	23.220	23.090
6	2763K	23.200	23.250	23.210	23.200	23.210	23.200	23.210	23.210	23.200	23.200	23.210	23.200	23.210	23.210	23.270	23.250
7	2783K	23.120	23.160	23.120	23.150	23.130	23.130	23.110	23.130	23.130	23.110	23.120	23.130	23.120	23.130	23.210	23.160
8	2768K	23.210	23.250	23.210	23.220	23.220	23.220	23.200	23.220	23.220	23.200	23.210	23.220	23.210	23.220	23.260	23.250
9	2770K	23.160	23.200	23.150	23.200	23.160	23.160	23.150	23.160	23.160	23.150	23.160	23.160	23.150	23.170	23.220	23.190
10	2775K	23.050	23.090	23.040	23.040	23.050	23.050	23.030	23.050	23.050	23.040	23.040	23.050	23.040	23.050	23.110	23.080
11	2786K	23.190	23.230	23.190	23.190	23.190	23.180	23.200	23.200	23.180	23.190	23.230	23.200	23.200	23.260	23.220	
12	2786K	23.140	23.190	23.150	23.140	23.150	23.140	23.160	23.150	23.140	23.140	23.150	23.150	23.160	23.210	23.180	
13	2791K	23.440	23.490	23.440	23.440	23.440	23.450	23.430	23.460	23.450	23.450	23.440	23.450	23.440	23.460	23.500	23.480
14	2766K	23.530	23.580	23.540	23.540	23.530	23.540	23.520	23.540	23.540	23.530	23.540	23.540	23.530	23.550	23.590	23.570
15	2800K	23.050	23.110	23.040	23.080	23.050	23.060	23.040	23.060	23.070	23.050	23.050	23.060	23.060	23.060	23.110	23.090
16	2764K	23.350	23.400	23.340	23.360	23.350	23.350	23.340	23.350	23.360	23.350	23.350	23.350	23.340	23.360	23.410	23.390
17	2781K	23.360	23.410	23.350	23.370	23.350	23.350	23.340	23.360	23.360	23.350	23.360	23.360	23.350	23.360	23.410	23.400
18	2769K	23.150	23.190	23.140	23.160	23.150	23.150	23.130	23.150	23.160	23.140	23.160	23.160	23.150	23.150	23.210	23.190
19	2785K	23.190	23.230	23.190	23.200	23.190	23.190	23.180	23.200	23.200	23.190	23.190	23.200	23.190	23.200	23.250	23.230
20	2798K	23.180	23.230	23.170	23.200	23.180	23.180	23.190	23.190	23.180	23.180	23.180	23.200	23.180	23.190	23.240	23.230

Luminous Flux [lm] data for tested units

T_s = T_{air} = 105°C, I_f = 100mA; T_s ≥ 103°C and T_{air} ≥ 100°C in compliance with LM-80-15

CCT (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	
1	2773K	415.600	414.800	413.900	413.200	411.500	410.700	409.800	408.800	407.900	406.500	405.000	404.300	402.900	401.800	400.600	398.800
2	2764K	414.700	414.400	412.900	411.600	410.100	409.200	408.000	406.600	405.100	403.300	401.700	400.200	398.800	398.400	397.400	397.300
3	2773K	419.500	419.600	418.400	416.500	415.000	414.500	413.300	411.800	411.100	410.600	409.000	407.700	405.800	402.900	402.000	401.000
4	2765K	421.600	421.200	419.900	418.800	417.700	416.300	414.600	413.300	411.300	409.600	408.200	407.300	406.000	405.000	403.300	401.400
5	2791K	415.100	414.700	413.200	412.000	410.600	409.600	408.600	407.000	405.800	403.900	402.400	401.100	399.200	399.000	397.800	396.800
6	2766K	414.700	414.000	412.900	412.000	410.500	409.600	408.200	406.700	405.900	404.000	402.000	400.500	399.000	397.000	395.800	394.700
7	2780K	420.300	419.800	418.700	417.400	416.300	414.900	413.900	412.700	411.300	409.700	408.600	407.300	404.600	402.400	400.700	399.600
8	2794K	416.200	415.700	415.000	413.900	412.200	411.300	410.800	410.000	408.500	406.900	405.400	404.100	402.100	399.100	398.100	397.100
9	2777K	425.000	424.600	423.400	422.300	421.100	420.100	418.900	417.800	416.200	414.600	413.200	411.500	409.900	408.100	406.400	405.300
10	2783K	418.300	417.500	416.800	415.300	414.300	413.200	412.000	410.900	409.400	408.300	407.100	405.200	403.100	400.400	398.900	397.900
11	2773K	412.500	411.400	410.900	409.500	407.600	406.600	405.500	404.200	403.300	402.200	401.100	400.200	398.100	395.900	394.600	392.400
12	2761K	419.700	419.200	417.900	417.100	415.800	414.200	412.900	411.900	411.300	409.400	408.300	407.200	405.200	403.200	401.400	400.100
13	2777K	414.700	413.600	412.800	411.500	409.900	408.800	407.800	406.600	405.100	403.700	402.400	401.100	399.000	397.400	395.400	395.000
14	2772K	422.600	422.000	420.400	419.400	417.700	416.500	415.800	414.300	412.700	411.600	409.900	408.900	406.800	404.200	402.400	401.800
15	2787K	414.500	413.500	412.300	411.300	410.000	409.400	408.700	407.900	406.400	405.300	404.100	402.600	400.600	398.700	396.900	395.900
16	2783K	418.000	417.000	416.000	415.300	413.700	413.100	412.300	411.700	410.600	409.400	407.400	406.000	405.100	402.900	402.100	401.100
17	2781K	426.700	426.200	424.400	422.900	422.100	420.700	419.600	418.800	417.300	415.700	414.600	413.300	411.500	410.400	409.300	408.600
18	2773K	420.600	420.100	418.700	417.900	417.300	415.900	414.500	414.100	413.200	412.100	410.600	409.200	407.200	405.400	404.200	403.300
19	2787K	417.600	417.100	416.400	415.500	414.600	413.300	412.600	411.300	410.000	408.700	407.600	406.100	404.300	404.200	402.600	401.200
20	2760K	419.600	419.800	418.900	418.000	417.200	416.100	414.900	413.000	411.200	409.800	408.400	406.900	405.800	404.400	403.000	401.200

Normalized Luminous Flux data for tested units

T_s = T_{air} = 105°C, I_f = 100mA; T_s ≥ 103°C and T_{air} ≥ 100°C in compliance with LM-80-15

CCT (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	
1	2773K	1.0000	0.9981	0.9959	0.9942	0.9901	0.9882	0.9860	0.9836	0.9815	0.9781	0.9745	0.9728	0.9694	0.9668	0.9639	0.9596
2	2764K	1.0000	0.9993	0.9957	0.9925	0.9889	0.9867	0.9838	0.9805	0.9769	0.9725	0.9687	0.9650	0.9617	0.9607	0.9583	0.9580
3	2773K	1.0000	1.0002	0.9974	0.9928	0.9893	0.9881	0.9852	0.9816	0.9800	0.9788	0.9750	0.9719	0.9673	0.9604	0.9583	0.9559
4	2765K	1.0000	0.9991	0.9960	0.9934	0.9907	0.9874	0.9834	0.9803	0.9756	0.9715	0.9682	0.9661	0.9630	0.9606	0.9566	0.9521
5	2791K	1.0000	0.9990	0.9954	0.9925	0.9892	0.9868	0.9843	0.9805	0.9776	0.9730	0.9694	0.9663	0.9617	0.9612	0.9583	0.9559
6	2766K	1.0000	0.9983	0.9957	0.9935	0.9899	0.9877	0.9843	0.9807	0.9788	0.9742	0.9694	0.9658	0.9621	0.9573	0.9544	0.9518
7	2780K	1.0000	0.9988	0.9962	0.9931	0.9905	0.9872	0.9848	0.9819	0.9786	0.9748	0.9722	0.9691	0.9626	0.9574	0.9534	0.9507
8	2794K	1.0000	0.9988	0.9971	0.9945	0.9904	0.9882	0.9870	0.9851	0.9815	0.9777	0.9741	0.9709	0.9661	0.9589	0.9565	0.9541
9	2777K	1.0000	0.9991	0.9962	0.9936	0.9908	0.9885	0.9856	0.9831	0.9793	0.9755	0.9722	0.9682	0.9645	0.9602	0.9562	0.9536
10	2783K	1.0000	0.9981	0.9964	0.9928	0.9904	0.9878	0.9849	0.9823	0.9787	0.9761	0.9732	0.9687	0.9637	0.9572	0.9536	0.9512
11	2773K	1.0000	0.9973	0.9961	0.9927	0.9881	0.9857	0.9830	0.9799	0.9777	0.9750	0.9724	0.9702	0.9651	0.9598	0.9566	0.9513
12	2761K	1.0000	0.9988	0.9957	0.9938	0.9907	0.9869	0.9838	0.9814	0.9800	0.9755	0.9728	0.9702	0.9655	0.9607	0.9564	0.9533
13	2777K	1.0000	0.9973	0.9954	0.9923	0.9884	0.9858	0.9834	0.9805	0.9769	0.9735	0.9703	0.9672	0.9621	0.9583	0.9535	0.9525
14	2772K	1.0000	0.9986	0.9948	0.9924	0.9884	0.9856	0.9839	0.9804	0.9766	0.9740	0.9699	0.9676	0.9626	0.9565	0.9522	0.9508
15	2787K	1.0000	0.9976	0.9947	0.9923	0.9891	0.9877	0.9860	0.9841	0.9805	0.9778	0.9749	0.9713	0.9665	0.9619	0.9575	0.9551
16	2783K	1.0000	0.9976	0.9952	0.9935	0.9897	0.9883	0.9864	0.9849	0.9823	0.9794	0.9746	0.9713	0.9691	0.9639	0.9620	0.9596
17	2781K	1.0000	0.9988	0.9946	0.9911	0.9892	0.9859	0.9834	0.9815	0.9780	0.9742	0.9716	0.9686	0.9644	0.9618	0.9592	0.9576
18	2773K	1.0000	0.9988	0.9955	0.9936	0.9922	0.9888	0.9855	0.9845	0.9824	0.9798	0.9762	0.9729	0.9681	0.9639	0.9610	0.9589
19	2787K	1.0000	0.9988	0.9971	0.9950	0.9928	0.9897	0.9880	0.9849	0.9818	0.9787	0.9761	0.9725	0.9682	0.9679	0.9641	0.9607
20	2760K	1.0000	1.0005	0.9983	0.9962	0.9943	0.9917	0.9888	0.9843	0.9800	0.9766	0.9733	0.9697	0.9671	0.9638	0.9604	0.9561

CIE 1976 u' data for tested units

$T_s = T_{air} = 105^\circ\text{C}$; $I_f = 100\text{mA}$; $T_s \geq 103^\circ\text{C}$ and $T_{air} \geq 100^\circ\text{C}$ in compliance with LM-80-15

	CCT (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs
1	2773K	0.2594	0.2593	0.2592	0.2590	0.2592	0.2589	0.2582	0.2581	0.2579	0.2578	0.2579	0.2579	0.2577	0.2575	0.2575	0.2574
2	2764K	0.2596	0.2596	0.2594	0.2593	0.2595	0.2592	0.2585	0.2584	0.2582	0.2581	0.2581	0.2582	0.2579	0.2580	0.2578	0.2576
3	2773K	0.2595	0.2594	0.2593	0.2592	0.2593	0.2591	0.2584	0.2584	0.2583	0.2579	0.2581	0.2581	0.2579	0.2579	0.2579	0.2578
4	2765K	0.2597	0.2596	0.2596	0.2593	0.2595	0.2592	0.2587	0.2585	0.2584	0.2581	0.2582	0.2582	0.2580	0.2580	0.2579	0.2576
5	2791K	0.2586	0.2586	0.2585	0.2583	0.2584	0.2582	0.2577	0.2574	0.2574	0.2572	0.2573	0.2573	0.2571	0.2570	0.2570	0.2569
6	2766K	0.2597	0.2597	0.2596	0.2594	0.2594	0.2593	0.2587	0.2588	0.2586	0.2583	0.2584	0.2584	0.2582	0.2581	0.2580	0.2580
7	2780K	0.2591	0.2590	0.2589	0.2587	0.2588	0.2586	0.2581	0.2580	0.2578	0.2576	0.2576	0.2576	0.2575	0.2574	0.2573	0.2572
8	2794K	0.2584	0.2582	0.2582	0.2580	0.2581	0.2579	0.2573	0.2573	0.2571	0.2569	0.2569	0.2570	0.2568	0.2568	0.2567	0.2567
9	2777K	0.2589	0.2590	0.2588	0.2587	0.2587	0.2585	0.2579	0.2579	0.2577	0.2575	0.2576	0.2576	0.2574	0.2574	0.2574	0.2573
10	2783K	0.2590	0.2590	0.2589	0.2587	0.2588	0.2586	0.2580	0.2580	0.2578	0.2576	0.2577	0.2577	0.2575	0.2575	0.2574	0.2573
11	2773K	0.2595	0.2595	0.2594	0.2592	0.2592	0.2591	0.2585	0.2586	0.2584	0.2581	0.2582	0.2582	0.2580	0.2581	0.2579	0.2578
12	2761K	0.2598	0.2597	0.2596	0.2594	0.2595	0.2593	0.2587	0.2588	0.2585	0.2583	0.2583	0.2584	0.2582	0.2582	0.2579	0.2580
13	2777K	0.2592	0.2592	0.2590	0.2589	0.2589	0.2587	0.2581	0.2582	0.2580	0.2577	0.2577	0.2578	0.2576	0.2577	0.2572	0.2565
14	2772K	0.2593	0.2593	0.2592	0.2589	0.2591	0.2589	0.2583	0.2584	0.2582	0.2579	0.2578	0.2579	0.2578	0.2577	0.2579	0.2582
15	2787K	0.2588	0.2588	0.2586	0.2584	0.2585	0.2583	0.2578	0.2578	0.2576	0.2573	0.2573	0.2572	0.2571	0.2571	0.2570	0.2567
16	2783K	0.2588	0.2588	0.2587	0.2584	0.2586	0.2583	0.2577	0.2579	0.2577	0.2574	0.2572	0.2574	0.2572	0.2572	0.2570	0.2568
17	2781K	0.2590	0.2589	0.2588	0.2587	0.2588	0.2586	0.2580	0.2581	0.2578	0.2576	0.2575	0.2576	0.2574	0.2574	0.2573	0.2571
18	2773K	0.2595	0.2594	0.2594	0.2591	0.2592	0.2589	0.2583	0.2583	0.2582	0.2578	0.2578	0.2578	0.2577	0.2578	0.2577	0.2574
19	2787K	0.2589	0.2588	0.2588	0.2586	0.2586	0.2584	0.2578	0.2579	0.2577	0.2574	0.2574	0.2574	0.2572	0.2572	0.2570	0.2567
20	2760K	0.2599	0.2598	0.2598	0.2596	0.2597	0.2594	0.2588	0.2588	0.2586	0.2584	0.2584	0.2584	0.2583	0.2583	0.2581	0.2576

CIE 1976 v' data for tested units

$T_s = T_{air} = 105^\circ\text{C}$; $I_f = 100\text{mA}$; $T_s \geq 103^\circ\text{C}$ and $T_{air} \geq 100^\circ\text{C}$ in compliance with LM-80-15

	CCT (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs
1	2773K	0.5254	0.5255	0.5247	0.5245	0.5244	0.5240	0.5239	0.5236	0.5230	0.5230	0.5225	0.5222	0.5221	0.5222	0.5221	0.5220
2	2764K	0.5266	0.5267	0.5259	0.5257	0.5257	0.5252	0.5251	0.5248	0.5242	0.5242	0.5238	0.5234	0.5233	0.5232	0.5231	0.5232
3	2773K	0.5251	0.5253	0.5244	0.5242	0.5239	0.5237	0.5236	0.5233	0.5227	0.5226	0.5222	0.5219	0.5217	0.5216	0.5215	0.5215
4	2765K	0.5259	0.5261	0.5252	0.5249	0.5247	0.5244	0.5244	0.5241	0.5235	0.5233	0.5230	0.5227	0.5225	0.5224	0.5222	0.5221
5	2791K	0.5253	0.5254	0.5246	0.5243	0.5241	0.5238	0.5238	0.5234	0.5229	0.5227	0.5223	0.5220	0.5219	0.5218	0.5216	0.5216
6	2766K	0.5255	0.5256	0.5247	0.5245	0.5241	0.5239	0.5239	0.5236	0.5230	0.5228	0.5224	0.5222	0.5220	0.5219	0.5218	0.5217
7	2780K	0.5254	0.5255	0.5246	0.5244	0.5240	0.5238	0.5238	0.5235	0.5229	0.5227	0.5223	0.5221	0.5220	0.5218	0.5218	0.5216
8	2794K	0.5257	0.5259	0.5250	0.5247	0.5245	0.5243	0.5242	0.5239	0.5233	0.5232	0.5227	0.5225	0.5223	0.5223	0.5222	0.5221
9	2777K	0.5270	0.5272	0.5263	0.5261	0.5258	0.5256	0.5256	0.5252	0.5247	0.5245	0.5241	0.5238	0.5237	0.5236	0.5235	0.5235
10	2783K	0.5251	0.5252	0.5244	0.5241	0.5238	0.5236	0.5235	0.5233	0.5226	0.5225	0.5221	0.5218	0.5217	0.5216	0.5215	0.5215
11	2773K	0.5251	0.5252	0.5243	0.5241	0.5238	0.5236	0.5235	0.5232	0.5227	0.5224	0.5221	0.5218	0.5217	0.5216	0.5214	0.5214
12	2761K	0.5262	0.5262	0.5252	0.5250	0.5247	0.5245	0.5244	0.5241	0.5236	0.5234	0.5230	0.5227	0.5226	0.5225	0.5224	0.5222
13	2777K	0.5256	0.5257	0.5248	0.5245	0.5243	0.5240	0.5240	0.5237	0.5232	0.5230	0.5226	0.5223	0.5222	0.5221	0.5223	0.5227
14	2772K	0.5261	0.5262	0.5253	0.5250	0.5248	0.5245	0.5245	0.5243	0.5237	0.5235	0.5231	0.5228	0.5227	0.5226	0.5227	0.5226
15	2787K	0.5253	0.5255	0.5246	0.5243	0.5240	0.5238	0.5238	0.5235	0.5229	0.5227	0.5223	0.5220	0.5218	0.5218	0.5217	0.5216
16	2783K	0.5262	0.5263	0.5254	0.5251	0.5249	0.5246	0.5246	0.5243	0.5238	0.5235	0.5231	0.5228	0.5227	0.5227	0.5226	0.5225
17	2781K	0.5257	0.5258	0.5249	0.5247	0.5244	0.5242	0.5242	0.5239	0.5233	0.5231	0.5226	0.5224	0.5223	0.5222	0.5222	0.5221
18	2773K	0.5249	0.5251	0.5242	0.5239	0.5236	0.5234	0.5233	0.5230	0.5226	0.5223	0.5218	0.5216	0.5214	0.5213	0.5213	0.5212
19	2787K	0.5249	0.5250	0.5242	0.5239	0.5236	0.5234	0.5233	0.5230	0.5225	0.5222	0.5218	0.5216	0.5214	0.5213	0.5211	0.5211
20	2760K	0.5259	0.5259	0.5251	0.5248	0.5246	0.5244	0.5244	0.5240	0.5235	0.5233	0.5228	0.5226	0.5224	0.5223	0.5222	0.5222

Delta u'v' data for tested units

$T_s = T_{air} = 105^{\circ}\text{C}$, $I_f = 100\text{mA}$; $T_s \geq 103^{\circ}\text{C}$ and $T_{air} \geq 100^{\circ}\text{C}$ in compliance with LM-80-15

	CC1 (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs
1	2773K	0.0000	0.0001	0.0007	0.0010	0.0010	0.0015	0.0019	0.0022	0.0028	0.0029	0.0033	0.0035	0.0037	0.0037	0.0038	0.0039
2	2764K	0.0000	0.0001	0.0007	0.0009	0.0009	0.0015	0.0019	0.0022	0.0028	0.0028	0.0032	0.0035	0.0037	0.0038	0.0039	0.0039
3	2773K	0.0000	0.0002	0.0007	0.0009	0.0012	0.0015	0.0019	0.0021	0.0027	0.0030	0.0032	0.0035	0.0038	0.0038	0.0039	0.0040
4	2765K	0.0000	0.0002	0.0007	0.0011	0.0012	0.0016	0.0018	0.0022	0.0027	0.0031	0.0033	0.0035	0.0038	0.0039	0.0041	0.0043
5	2791K	0.0000	0.0001	0.0007	0.0010	0.0012	0.0016	0.0017	0.0022	0.0027	0.0030	0.0033	0.0035	0.0037	0.0038	0.0040	0.0041
6	2766K	0.0000	0.0001	0.0008	0.0010	0.0014	0.0016	0.0019	0.0021	0.0027	0.0030	0.0034	0.0035	0.0038	0.0039	0.0041	0.0042
7	2780K	0.0000	0.0001	0.0008	0.0011	0.0014	0.0017	0.0019	0.0022	0.0028	0.0031	0.0034	0.0036	0.0038	0.0040	0.0040	0.0042
8	2794K	0.0000	0.0003	0.0007	0.0011	0.0012	0.0015	0.0019	0.0021	0.0027	0.0029	0.0034	0.0035	0.0038	0.0038	0.0039	0.0040
9	2777K	0.0000	0.0002	0.0007	0.0009	0.0012	0.0015	0.0017	0.0021	0.0026	0.0029	0.0032	0.0035	0.0036	0.0037	0.0038	0.0038
10	2783K	0.0000	0.0001	0.0007	0.0010	0.0013	0.0016	0.0019	0.0021	0.0028	0.0030	0.0033	0.0035	0.0037	0.0038	0.0039	0.0040
11	2773K	0.0000	0.0001	0.0008	0.0010	0.0013	0.0016	0.0019	0.0021	0.0026	0.0030	0.0033	0.0035	0.0037	0.0038	0.0040	0.0041
12	2761K	0.0000	0.0001	0.0010	0.0013	0.0015	0.0018	0.0021	0.0023	0.0029	0.0032	0.0035	0.0038	0.0039	0.0040	0.0042	0.0044
13	2777K	0.0000	0.0001	0.0008	0.0011	0.0013	0.0017	0.0019	0.0021	0.0027	0.0030	0.0034	0.0036	0.0038	0.0038	0.0039	0.0040
14	2772K	0.0000	0.0001	0.0008	0.0012	0.0013	0.0016	0.0019	0.0020	0.0026	0.0030	0.0034	0.0036	0.0037	0.0038	0.0037	0.0037
15	2787K	0.0000	0.0002	0.0007	0.0011	0.0013	0.0016	0.0018	0.0021	0.0027	0.0030	0.0034	0.0037	0.0039	0.0039	0.0040	0.0043
16	2783K	0.0000	0.0001	0.0008	0.0012	0.0013	0.0017	0.0019	0.0021	0.0026	0.0030	0.0035	0.0037	0.0038	0.0038	0.0040	0.0042
17	2781K	0.0000	0.0001	0.0008	0.0010	0.0013	0.0016	0.0018	0.0020	0.0027	0.0030	0.0034	0.0036	0.0038	0.0038	0.0039	0.0041
18	2773K	0.0000	0.0002	0.0007	0.0011	0.0013	0.0016	0.0020	0.0022	0.0026	0.0031	0.0035	0.0037	0.0039	0.0040	0.0040	0.0043
19	2787K	0.0000	0.0001	0.0007	0.0010	0.0013	0.0016	0.0019	0.0021	0.0027	0.0031	0.0034	0.0036	0.0039	0.0040	0.0042	0.0044
20	2760K	0.0000	0.0001	0.0008	0.0011	0.0013	0.0016	0.0019	0.0022	0.0027	0.0030	0.0034	0.0036	0.0038	0.0039	0.0041	0.0044

Forward Voltage [V] data for tested units

$T_s = T_{air} = 105^{\circ}\text{C}$, $I_f = 100\text{mA}$; $T_s \geq 103^{\circ}\text{C}$ and $T_{air} \geq 100^{\circ}\text{C}$ in compliance with LM-80-15

	CC1 (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs
1	2773K	23.130	23.180	23.140	23.150	23.150	23.150	23.150	23.150	23.150	23.140	23.140	23.160	23.150	23.150	23.200	23.190
2	2764K	23.210	23.260	23.210	23.230	23.220	23.220	23.220	23.230	23.230	23.220	23.220	23.240	23.220	23.230	23.280	23.260
3	2773K	23.410	23.470	23.410	23.420	23.410	23.420	23.410	23.420	23.420	23.410	23.410	23.420	23.410	23.420	23.480	23.460
4	2765K	23.180	23.230	23.170	23.190	23.180	23.180	23.170	23.190	23.190	23.170	23.180	23.190	23.180	23.180	23.230	23.220
5	2791K	23.060	23.110	23.050	23.060	23.060	23.050	23.060	23.060	23.070	23.050	23.050	23.060	23.050	23.050	23.110	23.090
6	2766K	23.120	23.170	23.120	23.130	23.120	23.120	23.130	23.130	23.130	23.120	23.130	23.140	23.130	23.120	23.180	23.170
7	2780K	23.130	23.180	23.130	23.140	23.130	23.130	23.130	23.140	23.140	23.130	23.130	23.150	23.150	23.140	23.180	23.180
8	2794K	23.130	23.190	23.130	23.160	23.130	23.130	23.140	23.140	23.140	23.130	23.130	23.150	23.130	23.140	23.190	23.180
9	2777K	23.360	23.410	23.360	23.370	23.360	23.360	23.360	23.360	23.370	23.360	23.360	23.370	23.360	23.370	23.410	23.400
10	2783K	23.370	23.430	23.370	23.370	23.360	23.380	23.360	23.380	23.380	23.370	23.370	23.380	23.370	23.390	23.420	23.420
11	2773K	23.200	23.250	23.200	23.200	23.200	23.200	23.200	23.200	23.220	23.200	23.200	23.210	23.200	23.230	23.250	23.240
12	2761K	23.190	23.240	23.190	23.190	23.190	23.200	23.190	23.200	23.210	23.200	23.190	23.200	23.190	23.220	23.250	23.240
13	2777K	23.180	23.240	23.180	23.180	23.180	23.180	23.180	23.190	23.200	23.180	23.180	23.190	23.180	23.210	23.250	23.240
14	2772K	23.190	23.240	23.190	23.190	23.190	23.190	23.190	23.200	23.200	23.190	23.190	23.210	23.190	23.210	23.250	23.230
15	2787K	23.220	23.260	23.210	23.210	23.210	23.210	23.210	23.220	23.220	23.210	23.210	23.220	23.210	23.230	23.290	23.250
16	2783K	23.240	23.290	23.230	23.250	23.240	23.240	23.240	23.250	23.250	23.230	23.230	23.250	23.240	23.260	23.400	23.280
17	2781K	23.100	23.140	23.090	23.100	23.100	23.100	23.100	23.110	23.120	23.100	23.100	23.110	23.100	23.130	23.200	23.160
18	2773K	23.260	23.300	23.250	23.250	23.250	23.250	23.250	23.260	23.270	23.250	23.250	23.270	23.250	23.270	23.350	23.290
19	2787K	23.200	23.230	23.190	23.200	23.190	23.190	23.180	23.200	23.210	23.190	23.190	23.200	23.190	23.210	23.300	23.230
20	2760K	23.280	23.320	23.270	23.280	23.280	23.280	23.280	23.290	23.300	23.280	23.280	23.290	23.290	23.280	23.350	23.310

Luminous Flux [lm] data for tested units

$T_s = T_{air} = 85^{\circ}C$; $I_f = 200mA$; $T_s \geq 83^{\circ}C$ and $T_{air} \geq 80^{\circ}C$ in compliance with LM-80-15

	CCT (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs
1	2842K	711.300	713.400	711.600	710.100	708.800	707.200	705.000	702.500	700.400	698.600	696.100	694.200	692.300	689.500	686.400	683.300
2	2798K	733.400	732.400	729.300	728.400	726.600	724.700	722.800	720.300	718.200	716.400	714.300	711.000	706.300	704.600	702.300	700.600
3	2826K	716.700	718.800	716.300	713.900	713.100	711.300	710.000	708.600	706.100	704.200	702.100	699.900	696.600	692.900	690.700	688.000
4	2821K	729.900	730.500	728.400	727.300	726.900	725.200	723.700	721.300	719.400	717.700	715.700	714.400	710.700	706.800	705.000	703.500
5	2832K	743.800	743.600	741.600	740.600	738.800	738.100	735.900	734.600	732.600	729.900	727.400	724.400	720.800	717.800	716.500	712.700
6	2813K	732.200	733.100	730.800	730.100	727.300	724.200	723.400	721.800	719.000	716.000	713.100	711.000	707.900	704.500	703.400	701.700
7	2826K	730.300	731.000	728.300	727.700	725.000	723.800	722.800	721.600	719.200	717.500	715.000	712.400	709.600	708.700	706.400	703.100
8	2792K	743.900	744.000	743.000	741.200	739.800	738.000	735.600	733.700	731.800	729.100	727.100	724.300	722.600	719.900	718.700	716.700
9	2822K	716.000	715.700	713.800	712.600	711.400	710.200	707.700	706.700	705.200	703.700	701.600	699.400	698.600	697.200	695.600	694.900
10	2826K	729.100	730.500	728.300	727.000	725.200	724.000	721.200	719.500	716.800	714.800	713.300	710.600	709.500	705.600	704.800	703.500
11	2803K	728.300	728.100	726.000	725.400	723.900	722.200	720.600	717.700	715.700	713.000	710.900	707.400	703.900	702.200	700.000	696.600
12	2832K	745.500	746.000	743.300	740.700	738.400	736.900	735.500	733.600	731.000	728.500	725.800	722.900	720.900	719.500	716.800	716.000
13	2817K	722.100	723.200	720.100	718.600	716.100	714.000	713.100	712.000	710.600	709.600	707.700	704.500	700.700	700.000	697.800	696.200
14	2827K	705.900	706.400	705.400	702.500	701.500	699.400	696.400	694.900	692.200	691.100	689.100	686.600	682.500	681.200	678.200	676.900
15	2823K	713.500	714.900	712.900	710.900	707.400	706.600	705.500	703.600	701.700	699.200	695.800	693.700	691.700	690.000	688.300	685.500
16	2835K	701.900	703.500	702.700	701.100	698.500	698.300	696.300	696.100	693.400	690.400	687.500	684.800	680.900	679.100	675.900	675.300
17	2833K	729.300	729.600	726.500	725.700	724.300	723.800	721.300	721.000	718.500	717.300	714.500	711.400	708.100	707.100	704.000	703.500
18	2812K	729.000	731.100	728.300	727.900	726.000	725.000	721.700	719.300	718.600	716.700	714.700	712.000	708.900	705.000	703.300	701.400
19	2812K	723.900	723.200	722.800	722.000	720.600	719.300	716.600	715.900	714.600	712.100	710.400	709.100	708.200	705.000	701.900	700.100
20	2810K	734.800	735.900	735.400	733.700	731.200	729.300	726.400	723.500	722.400	720.600	718.400	714.900	711.300	710.200	708.400	707.100

Normalized Luminous Flux data for tested units

$T_s = T_{air} = 85^{\circ}C$; $I_f = 200mA$; $T_s \geq 83^{\circ}C$ and $T_{air} \geq 80^{\circ}C$ in compliance with LM-80-15

	CCT (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs
1	2842K	1.0000	1.0030	1.0004	0.9983	0.9965	0.9942	0.9911	0.9876	0.9847	0.9821	0.9786	0.9760	0.9733	0.9694	0.9650	0.9606
2	2798K	1.0000	0.9986	0.9944	0.9932	0.9907	0.9881	0.9855	0.9821	0.9793	0.9768	0.9740	0.9695	0.9630	0.9607	0.9576	0.9553
3	2826K	1.0000	1.0029	0.9994	0.9961	0.9950	0.9925	0.9907	0.9887	0.9852	0.9826	0.9796	0.9766	0.9720	0.9668	0.9637	0.9600
4	2821K	1.0000	1.0008	0.9979	0.9964	0.9959	0.9936	0.9915	0.9882	0.9856	0.9833	0.9805	0.9788	0.9737	0.9684	0.9659	0.9638
5	2832K	1.0000	0.9997	0.9970	0.9957	0.9933	0.9923	0.9894	0.9876	0.9849	0.9813	0.9780	0.9739	0.9691	0.9650	0.9633	0.9582
6	2813K	1.0000	1.0012	0.9981	0.9971	0.9933	0.9891	0.9880	0.9858	0.9820	0.9779	0.9739	0.9710	0.9668	0.9622	0.9607	0.9583
7	2826K	1.0000	1.0010	0.9973	0.9964	0.9927	0.9911	0.9897	0.9881	0.9848	0.9825	0.9790	0.9755	0.9717	0.9704	0.9673	0.9628
8	2792K	1.0000	1.0001	0.9988	0.9964	0.9945	0.9921	0.9888	0.9863	0.9837	0.9801	0.9774	0.9737	0.9714	0.9677	0.9661	0.9634
9	2822K	1.0000	0.9996	0.9969	0.9953	0.9936	0.9919	0.9884	0.9870	0.9849	0.9828	0.9799	0.9768	0.9757	0.9737	0.9715	0.9705
10	2826K	1.0000	1.0019	0.9989	0.9971	0.9947	0.9930	0.9892	0.9868	0.9831	0.9804	0.9783	0.9746	0.9731	0.9678	0.9667	0.9649
11	2803K	1.0000	0.9997	0.9968	0.9960	0.9940	0.9916	0.9894	0.9854	0.9827	0.9790	0.9761	0.9713	0.9665	0.9642	0.9611	0.9565
12	2832K	1.0000	1.0007	0.9970	0.9936	0.9905	0.9885	0.9866	0.9840	0.9805	0.9772	0.9736	0.9697	0.9670	0.9651	0.9615	0.9604
13	2817K	1.0000	1.0015	0.9972	0.9952	0.9917	0.9888	0.9875	0.9860	0.9841	0.9827	0.9801	0.9756	0.9704	0.9694	0.9663	0.9641
14	2827K	1.0000	1.0007	0.9993	0.9952	0.9938	0.9908	0.9865	0.9844	0.9806	0.9790	0.9762	0.9727	0.9669	0.9650	0.9608	0.9589
15	2823K	1.0000	1.0020	0.9992	0.9964	0.9915	0.9903	0.9888	0.9861	0.9835	0.9800	0.9752	0.9722	0.9694	0.9671	0.9647	0.9608
16	2835K	1.0000	1.0023	1.0011	0.9989	0.9952	0.9949	0.9920	0.9917	0.9879	0.9836	0.9795	0.9749	0.9701	0.9675	0.9630	0.9621
17	2833K	1.0000	1.0004	0.9962	0.9951	0.9931	0.9925	0.9890	0.9886	0.9852	0.9835	0.9797	0.9755	0.9709	0.9696	0.9653	0.9646
18	2812K	1.0000	1.0029	0.9990	0.9985	0.9959	0.9945	0.9900	0.9867	0.9857	0.9831	0.9804	0.9767	0.9724	0.9671	0.9647	0.9621
19	2812K	1.0000	0.9990	0.9985	0.9974	0.9954	0.9936	0.9899	0.9889	0.9872	0.9837	0.9814	0.9796	0.9783	0.9739	0.9696	0.9671
20	2810K	1.0000	1.0015	1.0008	0.9985	0.9951	0.9925	0.9886	0.9846	0.9831	0.9807	0.9777	0.9729	0.9680	0.9665	0.9641	0.9623

CIE 1976 u' data for tested units

$T_s = T_{air} = 85^\circ\text{C}$; $I_f = 200\text{mA}$; $T_s \geq 83^\circ\text{C}$ and $T_{air} \geq 80^\circ\text{C}$ in compliance with LM-80-15

	CCT (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs
1	2842K	0.2568	0.2561	0.2564	0.2564	0.2564	0.2561	0.2557	0.2555	0.2554	0.2551	0.2548	0.2550	0.2548	0.2547	0.2546	0.2546
2	2798K	0.2583	0.2577	0.2580	0.2580	0.2579	0.2578	0.2572	0.2570	0.2572	0.2567	0.2565	0.2566	0.2563	0.2563	0.2564	0.2561
3	2826K	0.2574	0.2569	0.2572	0.2571	0.2570	0.2569	0.2563	0.2562	0.2562	0.2558	0.2558	0.2559	0.2556	0.2554	0.2553	0.2553
4	2821K	0.2575	0.2570	0.2571	0.2570	0.2569	0.2568	0.2562	0.2561	0.2561	0.2557	0.2558	0.2559	0.2556	0.2555	0.2554	0.2554
5	2832K	0.2571	0.2567	0.2570	0.2568	0.2568	0.2566	0.2560	0.2559	0.2560	0.2556	0.2556	0.2557	0.2554	0.2558	0.2555	0.2558
6	2813K	0.2577	0.2573	0.2575	0.2574	0.2573	0.2572	0.2562	0.2563	0.2564	0.2561	0.2560	0.2561	0.2559	0.2557	0.2556	0.2557
7	2826K	0.2572	0.2568	0.2571	0.2568	0.2568	0.2567	0.2560	0.2559	0.2559	0.2556	0.2557	0.2558	0.2555	0.2556	0.2554	0.2554
8	2792K	0.2585	0.2581	0.2585	0.2583	0.2583	0.2581	0.2576	0.2574	0.2574	0.2570	0.2570	0.2571	0.2569	0.2569	0.2568	0.2568
9	2822K	0.2575	0.2571	0.2573	0.2571	0.2571	0.2570	0.2564	0.2563	0.2563	0.2558	0.2559	0.2560	0.2557	0.2555	0.2553	0.2552
10	2826K	0.2574	0.2570	0.2572	0.2570	0.2570	0.2569	0.2563	0.2562	0.2563	0.2557	0.2557	0.2558	0.2556	0.2553	0.2551	0.2549
11	2803K	0.2580	0.2577	0.2579	0.2577	0.2577	0.2576	0.2571	0.2569	0.2570	0.2565	0.2566	0.2565	0.2562	0.2560	0.2559	0.2559
12	2832K	0.2572	0.2569	0.2569	0.2568	0.2568	0.2567	0.2561	0.2559	0.2560	0.2556	0.2556	0.2557	0.2555	0.2556	0.2555	0.2552
13	2817K	0.2577	0.2573	0.2575	0.2573	0.2573	0.2572	0.2566	0.2564	0.2565	0.2561	0.2559	0.2560	0.2558	0.2556	0.2556	0.2555
14	2827K	0.2574	0.2571	0.2573	0.2571	0.2571	0.2569	0.2564	0.2562	0.2563	0.2559	0.2558	0.2559	0.2557	0.2554	0.2552	0.2552
15	2823K	0.2576	0.2573	0.2574	0.2573	0.2573	0.2571	0.2567	0.2565	0.2566	0.2561	0.2561	0.2561	0.2559	0.2557	0.2556	0.2556
16	2835K	0.2562	0.2560	0.2561	0.2559	0.2559	0.2558	0.2553	0.2550	0.2551	0.2546	0.2546	0.2547	0.2545	0.2543	0.2543	0.2542
17	2833K	0.2570	0.2566	0.2568	0.2566	0.2567	0.2565	0.2560	0.2559	0.2559	0.2554	0.2554	0.2555	0.2553	0.2550	0.2549	0.2549
18	2812K	0.2578	0.2573	0.2575	0.2573	0.2574	0.2572	0.2568	0.2565	0.2565	0.2561	0.2560	0.2560	0.2558	0.2555	0.2555	0.2552
19	2812K	0.2576	0.2572	0.2575	0.2573	0.2574	0.2572	0.2567	0.2565	0.2565	0.2561	0.2560	0.2561	0.2559	0.2555	0.2554	0.2553
20	2810K	0.2580	0.2577	0.2578	0.2576	0.2577	0.2575	0.2570	0.2568	0.2567	0.2563	0.2564	0.2564	0.2562	0.2558	0.2557	0.2556

CIE 1976 v' data for tested units

$T_s = T_{air} = 85^\circ\text{C}$; $I_f = 200\text{mA}$; $T_s \geq 83^\circ\text{C}$ and $T_{air} \geq 80^\circ\text{C}$ in compliance with LM-80-15

	CCT (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs
1	2842K	0.5232	0.5230	0.5228	0.5225	0.5222	0.5219	0.5218	0.5214	0.5210	0.5208	0.5200	0.5199	0.5199	0.5200	0.5199	0.5197
2	2798K	0.5252	0.5249	0.5243	0.5244	0.5239	0.5236	0.5234	0.5232	0.5229	0.5228	0.5222	0.5218	0.5216	0.5219	0.5218	0.5217
3	2826K	0.5237	0.5236	0.5230	0.5229	0.5225	0.5221	0.5220	0.5217	0.5214	0.5213	0.5211	0.5207	0.5204	0.5204	0.5202	0.5201
4	2821K	0.5242	0.5241	0.5234	0.5234	0.5231	0.5227	0.5224	0.5222	0.5218	0.5219	0.5217	0.5212	0.5210	0.5208	0.5207	0.5205
5	2832K	0.5238	0.5237	0.5231	0.5230	0.5229	0.5223	0.5221	0.5217	0.5215	0.5215	0.5213	0.5210	0.5207	0.5209	0.5209	0.5207
6	2813K	0.5249	0.5249	0.5243	0.5241	0.5238	0.5234	0.5233	0.5229	0.5226	0.5226	0.5224	0.5220	0.5218	0.5215	0.5215	0.5213
7	2826K	0.5246	0.5245	0.5239	0.5237	0.5235	0.5231	0.5231	0.5225	0.5223	0.5224	0.5221	0.5218	0.5215	0.5215	0.5214	0.5211
8	2792K	0.5256	0.5255	0.5250	0.5248	0.5246	0.5242	0.5243	0.5237	0.5234	0.5233	0.5231	0.5229	0.5226	0.5224	0.5224	0.5220
9	2822K	0.5239	0.5237	0.5232	0.5230	0.5228	0.5224	0.5224	0.5218	0.5217	0.5214	0.5213	0.5210	0.5208	0.5205	0.5204	0.5202
10	2826K	0.5237	0.5235	0.5229	0.5229	0.5227	0.5222	0.5223	0.5217	0.5215	0.5213	0.5212	0.5209	0.5207	0.5203	0.5202	0.5199
11	2803K	0.5256	0.5255	0.5248	0.5248	0.5246	0.5242	0.5242	0.5236	0.5235	0.5233	0.5233	0.5228	0.5225	0.5223	0.5221	0.5219
12	2832K	0.5234	0.5233	0.5227	0.5226	0.5223	0.5219	0.5220	0.5215	0.5212	0.5212	0.5208	0.5207	0.5205	0.5204	0.5203	0.5202
13	2817K	0.5241	0.5240	0.5235	0.5233	0.5230	0.5226	0.5226	0.5222	0.5219	0.5218	0.5216	0.5212	0.5210	0.5208	0.5206	0.5205
14	2827K	0.5234	0.5232	0.5228	0.5226	0.5223	0.5219	0.5219	0.5214	0.5212	0.5211	0.5209	0.5205	0.5203	0.5200	0.5198	0.5197
15	2823K	0.5233	0.5233	0.5227	0.5226	0.5223	0.5218	0.5219	0.5214	0.5211	0.5211	0.5208	0.5205	0.5203	0.5202	0.5201	0.5198
16	2835K	0.5272	0.5272	0.5267	0.5266	0.5263	0.5259	0.5259	0.5254	0.5251	0.5251	0.5249	0.5245	0.5245	0.5241	0.5240	0.5238
17	2833K	0.5241	0.5239	0.5235	0.5233	0.5231	0.5226	0.5227	0.5225	0.5219	0.5218	0.5216	0.5212	0.5212	0.5208	0.5207	0.5204
18	2812K	0.5246	0.5245	0.5239	0.5237	0.5234	0.5230	0.5231	0.5229	0.5223	0.5223	0.5220	0.5216	0.5215	0.5211	0.5210	0.5207
19	2812K	0.5256	0.5255	0.5250	0.5249	0.5246	0.5241	0.5242	0.5241	0.5234	0.5234	0.5232	0.5228	0.5228	0.5223	0.5221	0.5219
20	2810K	0.5242	0.5241	0.5236	0.5235	0.5232	0.5228	0.5228	0.5226	0.5220	0.5220	0.5219	0.5214	0.5214	0.5208	0.5207	0.5204

Delta u'v' data for tested units

$T_s = T_{air} = 85^\circ\text{C}$, $I_f = 200\text{mA}$; $T_s \geq 83^\circ\text{C}$ and $T_{air} \geq 80^\circ\text{C}$ in compliance with LM-80-15

CC1 (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	
1	2842K	0.0000	0.0007	0.0006	0.0008	0.0011	0.0015	0.0018	0.0022	0.0026	0.0029	0.0038	0.0038	0.0039	0.0038	0.0040	0.0041
2	2798K	0.0000	0.0007	0.0009	0.0009	0.0014	0.0017	0.0021	0.0024	0.0025	0.0029	0.0035	0.0038	0.0041	0.0039	0.0039	0.0041
3	2826K	0.0000	0.0005	0.0007	0.0009	0.0013	0.0017	0.0020	0.0023	0.0026	0.0029	0.0031	0.0034	0.0038	0.0039	0.0041	0.0042
4	2821K	0.0000	0.0005	0.0009	0.0009	0.0013	0.0017	0.0022	0.0024	0.0028	0.0029	0.0030	0.0034	0.0037	0.0039	0.0041	0.0043
5	2832K	0.0000	0.0004	0.0007	0.0009	0.0009	0.0016	0.0020	0.0024	0.0025	0.0027	0.0029	0.0031	0.0035	0.0032	0.0033	0.0034
6	2813K	0.0000	0.0004	0.0006	0.0009	0.0012	0.0016	0.0022	0.0024	0.0026	0.0028	0.0030	0.0033	0.0036	0.0039	0.0040	0.0041
7	2826K	0.0000	0.0004	0.0007	0.0010	0.0012	0.0016	0.0019	0.0025	0.0026	0.0027	0.0029	0.0031	0.0035	0.0035	0.0037	0.0039
8	2792K	0.0000	0.0004	0.0006	0.0008	0.0010	0.0015	0.0016	0.0022	0.0025	0.0027	0.0029	0.0030	0.0034	0.0036	0.0036	0.0040
9	2822K	0.0000	0.0004	0.0007	0.0010	0.0012	0.0016	0.0019	0.0024	0.0025	0.0030	0.0031	0.0033	0.0036	0.0039	0.0041	0.0044
10	2826K	0.0000	0.0004	0.0008	0.0009	0.0011	0.0016	0.0018	0.0023	0.0025	0.0029	0.0030	0.0032	0.0035	0.0040	0.0042	0.0045
11	2803K	0.0000	0.0003	0.0008	0.0009	0.0010	0.0015	0.0017	0.0023	0.0023	0.0027	0.0027	0.0032	0.0036	0.0039	0.0041	0.0043
12	2832K	0.0000	0.0003	0.0008	0.0009	0.0012	0.0016	0.0018	0.0023	0.0025	0.0027	0.0031	0.0031	0.0034	0.0034	0.0035	0.0038
13	2817K	0.0000	0.0004	0.0006	0.0009	0.0012	0.0016	0.0019	0.0023	0.0025	0.0028	0.0031	0.0034	0.0036	0.0039	0.0041	0.0042
14	2827K	0.0000	0.0004	0.0006	0.0009	0.0011	0.0016	0.0018	0.0023	0.0025	0.0027	0.0030	0.0033	0.0035	0.0039	0.0042	0.0043
15	2823K	0.0000	0.0003	0.0006	0.0008	0.0010	0.0016	0.0017	0.0022	0.0024	0.0027	0.0029	0.0032	0.0034	0.0036	0.0038	0.0040
16	2835K	0.0000	0.0002	0.0005	0.0007	0.0009	0.0014	0.0016	0.0022	0.0024	0.0026	0.0028	0.0031	0.0032	0.0036	0.0037	0.0039
17	2833K	0.0000	0.0004	0.0006	0.0009	0.0010	0.0016	0.0017	0.0019	0.0025	0.0028	0.0030	0.0033	0.0034	0.0039	0.0040	0.0043
18	2812K	0.0000	0.0005	0.0008	0.0010	0.0013	0.0017	0.0018	0.0021	0.0026	0.0029	0.0032	0.0035	0.0037	0.0042	0.0043	0.0047
19	2812K	0.0000	0.0004	0.0006	0.0008	0.0010	0.0016	0.0017	0.0019	0.0025	0.0027	0.0029	0.0032	0.0033	0.0039	0.0041	0.0044
20	2810K	0.0000	0.0003	0.0006	0.0008	0.0010	0.0015	0.0017	0.0020	0.0026	0.0028	0.0028	0.0032	0.0033	0.0040	0.0042	0.0045

Forward Voltage [V] data for tested units

$T_s = T_{air} = 85^\circ\text{C}$, $I_f = 200\text{mA}$; $T_s \geq 83^\circ\text{C}$ and $T_{air} \geq 80^\circ\text{C}$ in compliance with LM-80-15

CC1 (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	
1	2842K	24.970	25.000	24.980	24.980	24.980	24.980	24.970	24.980	24.990	24.970	24.960	25.000	24.990	24.990	25.070	24.990
2	2798K	24.670	24.660	24.640	24.650	24.650	24.640	24.650	24.640	24.660	24.630	24.630	24.690	24.660	24.810	24.740	24.730
3	2826K	24.890	24.910	24.880	24.900	24.870	24.870	24.870	24.870	24.880	24.860	24.870	24.890	24.890	24.980	24.960	24.970
4	2821K	24.980	25.000	24.980	25.000	24.980	24.970	24.970	24.970	24.980	24.960	25.000	24.990	24.970	24.990	25.060	24.990
5	2832K	25.660	25.690	25.660	25.680	25.680	25.650	25.650	25.630	25.660	25.640	25.670	25.680	25.650	24.990	25.740	25.690
6	2813K	25.050	25.070	25.050	25.060	25.050	25.040	25.030	25.030	25.050	25.030	25.060	25.070	25.040	24.990	25.140	24.990
7	2826K	25.330	25.350	25.330	25.340	25.320	25.320	25.310	25.300	25.320	25.310	25.350	25.360	25.330	24.990	25.420	24.990
8	2792K	25.310	25.320	25.320	25.310	25.310	25.300	25.290	25.280	25.310	25.280	25.290	25.340	25.300	24.990	25.410	24.990
9	2822K	24.990	25.000	24.990	24.990	24.990	24.980	24.970	24.970	25.000	24.950	24.990	25.010	24.990	24.990	25.070	24.990
10	2826K	24.930	24.950	24.930	24.940	24.930	24.930	24.920	24.920	24.950	24.910	24.940	24.950	24.940	24.940	25.010	24.990
11	2803K	24.990	25.010	24.980	25.000	25.000	24.990	24.990	24.980	25.010	24.980	25.020	25.020	24.990	24.990	25.070	24.990
12	2832K	25.380	25.400	25.390	25.390	25.370	25.370	25.370	25.370	25.400	25.370	25.380	25.430	25.400	24.990	25.470	24.990
13	2817K	25.000	25.020	25.010	25.010	25.000	24.990	24.980	24.990	25.010	24.990	25.000	25.020	24.990	24.990	25.080	24.990
14	2827K	24.930	24.950	24.950	24.940	24.930	24.920	24.920	24.920	24.950	24.940	24.940	24.940	24.930	24.950	25.010	24.990
15	2823K	25.250	25.260	25.240	25.240	25.230	25.220	25.240	25.230	25.250	25.230	25.240	25.260	25.240	24.990	25.310	24.990
16	2835K	25.130	25.180	25.170	25.160	25.160	25.150	25.160	25.150	25.170	25.140	25.170	25.170	25.170	24.990	25.270	24.990
17	2833K	25.100	25.130	25.110	25.110	25.100	25.090	25.110	25.140	25.130	25.090	25.110	25.110	25.110	24.990	25.220	24.990
18	2812K	24.700	24.740	24.710	24.730	24.700	24.690	24.710	24.740	24.720	24.700	24.720	24.720	24.710	24.710	24.800	24.780
19	2812K	24.840	24.860	24.860	24.870	24.850	24.830	24.850	24.880	24.860	24.840	24.860	24.880	24.860	24.870	24.970	24.930
20	2810K	24.910	24.930	24.930	24.930	24.930	24.910	24.920	24.950	24.930	24.910	24.940	24.950	24.930	24.950	25.050	24.990

Luminous Flux [lm] data for tested units

$T_s = T_{air} = 105^{\circ}C, I_f = 200mA; T_s \geq 103^{\circ}C$ and $T_{air} \geq 100^{\circ}C$ in compliance with LM-80-15

	CCT (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs
1	2802K	713.900	712.500	711.800	711.000	709.700	706.400	704.300	702.900	700.600	698.000	695.600	692.400	691.200	687.800	686.500	685.300
2	2834K	737.300	735.400	734.500	732.600	731.400	728.700	725.500	721.700	719.200	715.800	713.200	711.000	706.600	701.800	699.200	694.600
3	2815K	737.000	736.700	733.700	731.000	728.700	726.800	725.600	724.500	723.600	720.700	718.400	715.600	712.000	707.700	703.500	700.500
4	2821K	744.600	743.700	742.500	740.800	739.700	737.200	734.700	734.000	730.200	728.200	725.600	722.700	719.000	718.400	715.900	713.600
5	2788K	721.600	721.800	720.100	718.700	716.700	713.800	712.200	709.100	705.900	704.300	702.700	699.700	696.100	692.600	688.800	685.600
6	2834K	714.000	712.800	711.700	708.700	706.700	704.700	701.300	699.500	698.700	696.100	693.000	691.300	686.500	682.900	680.800	678.400
7	2822K	707.600	706.100	705.000	703.000	700.600	699.700	697.100	694.600	691.200	690.400	687.800	684.300	681.500	679.200	677.300	674.800
8	2821K	723.600	723.000	719.200	716.900	715.700	713.300	711.000	709.200	706.700	703.900	700.300	697.200	694.700	689.900	686.800	682.700
9	2813K	712.600	710.500	709.600	707.300	704.900	704.300	700.900	698.300	695.900	692.500	690.800	690.600	687.400	685.700	682.100	680.100
10	2802K	749.900	748.700	746.200	743.600	740.300	739.500	737.500	734.400	731.600	729.900	727.700	724.400	722.400	720.400	717.700	716.100
11	2822K	713.800	713.400	711.400	709.400	705.600	703.800	702.400	702.200	700.200	697.000	694.300	692.100	686.800	683.000	679.900	678.000
12	2816K	723.800	721.700	718.000	714.800	713.700	711.500	709.600	707.200	705.200	703.800	701.100	699.400	697.500	694.200	691.700	689.100
13	2812K	747.100	746.000	742.600	740.700	737.300	735.400	733.800	731.000	729.800	727.800	724.300	720.800	716.500	715.100	712.600	711.000
14	2816K	735.000	736.200	733.000	731.800	729.000	726.200	724.600	721.700	718.600	715.500	712.800	710.300	708.300	705.700	702.200	702.000
15	2824K	738.900	738.800	736.100	733.000	729.800	728.500	727.700	727.000	724.500	722.700	720.400	717.000	713.200	709.600	706.900	704.100
16	2819K	752.300	753.600	751.000	748.400	745.300	743.800	741.700	739.800	737.300	733.700	731.400	728.600	724.800	724.100	720.700	717.700
17	2818K	757.600	755.400	751.800	749.500	746.900	745.800	742.600	741.100	738.600	736.300	733.100	730.600	728.200	723.900	720.400	715.300
18	2828K	720.200	721.100	719.000	717.500	715.100	712.400	709.500	707.400	705.400	702.400	699.400	697.100	694.000	691.300	688.300	685.100
19	2809K	710.800	710.100	707.800	705.900	703.300	701.100	700.200	697.100	696.100	692.600	690.100	686.600	684.000	680.000	677.400	676.600
20	2808K	742.100	742.700	740.700	738.700	736.600	733.900	730.600	728.800	725.800	722.400	719.300	717.500	715.200	711.400	709.600	708.500

Normalized Luminous Flux data for tested units

$T_s = T_{air} = 105^{\circ}C, I_f = 200mA; T_s \geq 103^{\circ}C$ and $T_{air} \geq 100^{\circ}C$ in compliance with LM-80-15

	CCT (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs
1	2802K	1.0000	0.9980	0.9971	0.9959	0.9941	0.9895	0.9866	0.9846	0.9814	0.9777	0.9744	0.9699	0.9682	0.9634	0.9616	0.9599
2	2834K	1.0000	0.9974	0.9962	0.9936	0.9920	0.9883	0.9840	0.9788	0.9755	0.9708	0.9673	0.9643	0.9584	0.9519	0.9483	0.9421
3	2815K	1.0000	0.9996	0.9955	0.9919	0.9887	0.9862	0.9845	0.9830	0.9818	0.9779	0.9748	0.9710	0.9661	0.9602	0.9545	0.9505
4	2821K	1.0000	0.9988	0.9972	0.9949	0.9934	0.9901	0.9867	0.9858	0.9807	0.9780	0.9745	0.9706	0.9656	0.9648	0.9615	0.9584
5	2788K	1.0000	1.0003	0.9979	0.9960	0.9932	0.9892	0.9870	0.9827	0.9782	0.9760	0.9738	0.9697	0.9647	0.9598	0.9545	0.9501
6	2834K	1.0000	0.9983	0.9968	0.9926	0.9898	0.9870	0.9822	0.9797	0.9786	0.9749	0.9706	0.9682	0.9615	0.9564	0.9535	0.9501
7	2822K	1.0000	0.9979	0.9963	0.9935	0.9901	0.9888	0.9852	0.9816	0.9768	0.9757	0.9720	0.9671	0.9631	0.9599	0.9572	0.9536
8	2821K	1.0000	0.9992	0.9939	0.9907	0.9891	0.9858	0.9826	0.9801	0.9766	0.9728	0.9678	0.9635	0.9601	0.9534	0.9491	0.9435
9	2813K	1.0000	0.9971	0.9958	0.9926	0.9892	0.9884	0.9836	0.9799	0.9766	0.9718	0.9694	0.9691	0.9646	0.9623	0.9572	0.9544
10	2802K	1.0000	0.9984	0.9951	0.9916	0.9872	0.9861	0.9835	0.9793	0.9756	0.9733	0.9704	0.9660	0.9633	0.9607	0.9571	0.9549
11	2822K	1.0000	0.9994	0.9966	0.9938	0.9885	0.9860	0.9840	0.9837	0.9809	0.9765	0.9727	0.9696	0.9622	0.9569	0.9525	0.9498
12	2816K	1.0000	0.9971	0.9920	0.9876	0.9860	0.9830	0.9804	0.9771	0.9743	0.9724	0.9686	0.9663	0.9637	0.9591	0.9557	0.9521
13	2812K	1.0000	0.9985	0.9940	0.9914	0.9869	0.9843	0.9822	0.9785	0.9768	0.9742	0.9695	0.9648	0.9590	0.9572	0.9538	0.9517
14	2816K	1.0000	1.0016	0.9973	0.9956	0.9918	0.9880	0.9859	0.9819	0.9777	0.9735	0.9698	0.9664	0.9637	0.9601	0.9554	0.9551
15	2824K	1.0000	0.9999	0.9962	0.9920	0.9877	0.9859	0.9848	0.9839	0.9805	0.9781	0.9750	0.9704	0.9652	0.9603	0.9567	0.9529
16	2819K	1.0000	1.0017	0.9983	0.9948	0.9907	0.9887	0.9859	0.9834	0.9801	0.9753	0.9722	0.9685	0.9634	0.9625	0.9580	0.9540
17	2818K	1.0000	0.9971	0.9923	0.9893	0.9859	0.9844	0.9802	0.9782	0.9749	0.9719	0.9677	0.9644	0.9612	0.9555	0.9509	0.9442
18	2828K	1.0000	1.0012	0.9983	0.9963	0.9929	0.9892	0.9851	0.9822	0.9795	0.9753	0.9711	0.9679	0.9636	0.9599	0.9557	0.9513
19	2809K	1.0000	0.9990	0.9958	0.9931	0.9894	0.9864	0.9851	0.9807	0.9793	0.9744	0.9709	0.9660	0.9623	0.9567	0.9530	0.9519
20	2808K	1.0000	1.0008	0.9981	0.9954	0.9926	0.9890	0.9845	0.9821	0.9780	0.9735	0.9693	0.9669	0.9638	0.9586	0.9562	0.9547

CIE 1976 u' data for tested units

$T_s = T_{air} = 105^{\circ}\text{C}$, $I_f = 200\text{mA}$; $T_s \geq 103^{\circ}\text{C}$ and $T_{air} \geq 100^{\circ}\text{C}$ in compliance with LM-80-15

	CCT (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs
1	2802K	0.2582	0.2579	0.2580	0.2577	0.2577	0.2576	0.2571	0.2570	0.2570	0.2565	0.2563	0.2566	0.2563	0.2565	0.2563	0.2563
2	2834K	0.2569	0.2565	0.2567	0.2564	0.2564	0.2563	0.2558	0.2555	0.2556	0.2551	0.2550	0.2552	0.2550	0.2556	0.2554	0.2553
3	2815K	0.2577	0.2572	0.2575	0.2571	0.2572	0.2571	0.2566	0.2563	0.2564	0.2559	0.2558	0.2559	0.2556	0.2561	0.2560	0.2559
4	2821K	0.2576	0.2570	0.2573	0.2570	0.2571	0.2570	0.2565	0.2562	0.2562	0.2557	0.2555	0.2557	0.2555	0.2558	0.2560	0.2558
5	2788K	0.2587	0.2582	0.2584	0.2581	0.2581	0.2580	0.2575	0.2572	0.2573	0.2569	0.2567	0.2569	0.2567	0.2570	0.2568	0.2568
6	2834K	0.2570	0.2563	0.2566	0.2562	0.2563	0.2562	0.2557	0.2555	0.2556	0.2552	0.2551	0.2552	0.2550	0.2553	0.2553	0.2551
7	2822K	0.2573	0.2568	0.2571	0.2568	0.2568	0.2567	0.2562	0.2560	0.2561	0.2556	0.2556	0.2557	0.2556	0.2555	0.2556	0.2552
8	2821K	0.2568	0.2565	0.2566	0.2563	0.2564	0.2563	0.2557	0.2556	0.2556	0.2552	0.2551	0.2551	0.2551	0.2553	0.2552	0.2551
9	2813K	0.2576	0.2572	0.2573	0.2570	0.2571	0.2569	0.2564	0.2563	0.2563	0.2558	0.2557	0.2559	0.2556	0.2558	0.2558	0.2555
10	2802K	0.2582	0.2578	0.2579	0.2576	0.2576	0.2576	0.2571	0.2570	0.2569	0.2565	0.2563	0.2565	0.2564	0.2564	0.2564	0.2561
11	2822K	0.2573	0.2569	0.2570	0.2567	0.2568	0.2566	0.2561	0.2560	0.2560	0.2556	0.2554	0.2556	0.2555	0.2555	0.2553	0.2553
12	2816K	0.2575	0.2570	0.2572	0.2569	0.2570	0.2569	0.2563	0.2562	0.2562	0.2558	0.2557	0.2558	0.2556	0.2556	0.2554	0.2552
13	2812K	0.2577	0.2574	0.2574	0.2572	0.2572	0.2571	0.2565	0.2566	0.2565	0.2560	0.2559	0.2560	0.2558	0.2560	0.2559	0.2558
14	2816K	0.2577	0.2573	0.2574	0.2571	0.2571	0.2570	0.2565	0.2565	0.2566	0.2560	0.2559	0.2560	0.2562	0.2559	0.2558	0.2555
15	2824K	0.2573	0.2570	0.2571	0.2567	0.2567	0.2567	0.2561	0.2562	0.2561	0.2556	0.2556	0.2556	0.2556	0.2555	0.2554	0.2554
16	2819K	0.2575	0.2572	0.2573	0.2570	0.2570	0.2570	0.2564	0.2563	0.2563	0.2558	0.2557	0.2557	0.2558	0.2558	0.2556	0.2554
17	2818K	0.2576	0.2572	0.2574	0.2570	0.2570	0.2569	0.2564	0.2564	0.2564	0.2560	0.2557	0.2557	0.2558	0.2558	0.2556	0.2556
18	2828K	0.2570	0.2568	0.2570	0.2565	0.2566	0.2565	0.2559	0.2559	0.2558	0.2554	0.2553	0.2554	0.2553	0.2553	0.2552	0.2551
19	2809K	0.2580	0.2573	0.2576	0.2572	0.2573	0.2572	0.2566	0.2566	0.2564	0.2561	0.2560	0.2560	0.2561	0.2564	0.2563	0.2563
20	2808K	0.2579	0.2574	0.2577	0.2573	0.2574	0.2573	0.2567	0.2567	0.2566	0.2563	0.2561	0.2562	0.2561	0.2561	0.2560	0.2559

CIE 1976 v' data for tested units

$T_s = T_{air} = 105^{\circ}\text{C}$, $I_f = 200\text{mA}$; $T_s \geq 103^{\circ}\text{C}$ and $T_{air} \geq 100^{\circ}\text{C}$ in compliance with LM-80-15

	CCT (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs
1	2802K	0.5249	0.5248	0.5240	0.5237	0.5235	0.5231	0.5230	0.5231	0.5226	0.5225	0.5221	0.5219	0.5218	0.5215	0.5214	0.5213
2	2834K	0.5243	0.5242	0.5234	0.5231	0.5228	0.5225	0.5224	0.5221	0.5219	0.5217	0.5214	0.5211	0.5211	0.5213	0.5211	0.5210
3	2815K	0.5246	0.5243	0.5236	0.5233	0.5231	0.5227	0.5228	0.5224	0.5222	0.5220	0.5214	0.5213	0.5213	0.5212	0.5210	0.5210
4	2821K	0.5237	0.5234	0.5226	0.5223	0.5222	0.5218	0.5219	0.5215	0.5212	0.5210	0.5205	0.5204	0.5204	0.5202	0.5201	0.5199
5	2788K	0.5255	0.5252	0.5245	0.5241	0.5239	0.5236	0.5236	0.5233	0.5229	0.5229	0.5224	0.5221	0.5223	0.5219	0.5218	0.5217
6	2834K	0.5239	0.5237	0.5230	0.5225	0.5224	0.5221	0.5220	0.5217	0.5214	0.5213	0.5208	0.5206	0.5207	0.5203	0.5202	0.5202
7	2822K	0.5250	0.5248	0.5241	0.5237	0.5236	0.5232	0.5231	0.5228	0.5226	0.5225	0.5221	0.5218	0.5219	0.5213	0.5212	0.5211
8	2821K	0.5274	0.5274	0.5264	0.5262	0.5260	0.5257	0.5256	0.5255	0.5251	0.5250	0.5246	0.5241	0.5244	0.5242	0.5241	0.5240
9	2813K	0.5254	0.5253	0.5244	0.5241	0.5239	0.5236	0.5235	0.5233	0.5229	0.5229	0.5225	0.5221	0.5221	0.5218	0.5217	0.5216
10	2802K	0.5248	0.5248	0.5238	0.5235	0.5232	0.5229	0.5229	0.5226	0.5223	0.5223	0.5219	0.5216	0.5214	0.5211	0.5210	0.5209
11	2822K	0.5249	0.5248	0.5239	0.5235	0.5232	0.5230	0.5229	0.5226	0.5223	0.5224	0.5218	0.5216	0.5215	0.5212	0.5211	0.5209
12	2816K	0.5253	0.5251	0.5243	0.5239	0.5237	0.5234	0.5234	0.5231	0.5227	0.5227	0.5223	0.5222	0.5220	0.5216	0.5215	0.5213
13	2812K	0.5251	0.5249	0.5241	0.5237	0.5236	0.5232	0.5232	0.5230	0.5228	0.5225	0.5221	0.5218	0.5216	0.5214	0.5214	0.5212
14	2816K	0.5242	0.5241	0.5233	0.5229	0.5226	0.5224	0.5223	0.5221	0.5219	0.5216	0.5213	0.5211	0.5211	0.5204	0.5203	0.5203
15	2824K	0.5245	0.5243	0.5236	0.5232	0.5230	0.5227	0.5225	0.5224	0.5221	0.5218	0.5216	0.5213	0.5212	0.5208	0.5207	0.5208
16	2819K	0.5246	0.5245	0.5237	0.5233	0.5231	0.5228	0.5227	0.5224	0.5222	0.5220	0.5217	0.5214	0.5213	0.5209	0.5208	0.5207
17	2818K	0.5243	0.5241	0.5234	0.5229	0.5227	0.5224	0.5223	0.5221	0.5218	0.5216	0.5212	0.5209	0.5209	0.5206	0.5205	0.5204
18	2828K	0.5250	0.5249	0.5241	0.5238	0.5234	0.5233	0.5231	0.5229	0.5226	0.5225	0.5221	0.5218	0.5217	0.5213	0.5212	0.5211
19	2809K	0.5243	0.5240	0.5233	0.5228	0.5227	0.5225	0.5222	0.5220	0.5218	0.5216	0.5212	0.5208	0.5208	0.5208	0.5207	0.5206
20	2808K	0.5251	0.5249	0.5241	0.5238	0.5237	0.5232	0.5230	0.5230	0.5228	0.5225	0.5221	0.5217	0.5217	0.5213	0.5212	0.5211

Delta u'v' data for tested units

$T_s = T_{air} = 105^{\circ}\text{C}$, $I_f = 200\text{mA}$; $T_s \geq 103^{\circ}\text{C}$ and $T_{air} \geq 100^{\circ}\text{C}$ in compliance with LM-80-15

	CC1 (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs
1	2802K	0.0000	0.0003	0.0009	0.0013	0.0015	0.0019	0.0022	0.0022	0.0026	0.0029	0.0034	0.0034	0.0036	0.0038	0.0040	0.0041
2	2834K	0.0000	0.0004	0.0009	0.0013	0.0016	0.0019	0.0022	0.0026	0.0027	0.0032	0.0035	0.0036	0.0037	0.0033	0.0035	0.0037
3	2815K	0.0000	0.0006	0.0010	0.0014	0.0016	0.0020	0.0021	0.0026	0.0027	0.0032	0.0037	0.0038	0.0039	0.0038	0.0040	0.0040
4	2821K	0.0000	0.0007	0.0011	0.0015	0.0016	0.0020	0.0021	0.0026	0.0029	0.0033	0.0038	0.0038	0.0039	0.0039	0.0039	0.0042
5	2788K	0.0000	0.0006	0.0010	0.0015	0.0017	0.0020	0.0022	0.0027	0.0030	0.0032	0.0037	0.0038	0.0038	0.0040	0.0042	0.0042
6	2834K	0.0000	0.0007	0.0010	0.0016	0.0017	0.0020	0.0023	0.0027	0.0029	0.0032	0.0036	0.0038	0.0038	0.0040	0.0041	0.0042
7	2822K	0.0000	0.0005	0.0009	0.0014	0.0015	0.0019	0.0022	0.0026	0.0027	0.0030	0.0034	0.0036	0.0035	0.0041	0.0042	0.0044
8	2821K	0.0000	0.0003	0.0010	0.0013	0.0015	0.0018	0.0021	0.0022	0.0026	0.0029	0.0033	0.0037	0.0034	0.0035	0.0037	0.0038
9	2813K	0.0000	0.0004	0.0010	0.0014	0.0016	0.0019	0.0022	0.0025	0.0028	0.0031	0.0035	0.0037	0.0039	0.0040	0.0041	0.0043
10	2802K	0.0000	0.0004	0.0010	0.0014	0.0017	0.0020	0.0022	0.0025	0.0028	0.0030	0.0035	0.0036	0.0038	0.0041	0.0042	0.0044
11	2822K	0.0000	0.0004	0.0010	0.0015	0.0018	0.0020	0.0023	0.0026	0.0029	0.0030	0.0036	0.0037	0.0038	0.0041	0.0043	0.0045
12	2816K	0.0000	0.0005	0.0010	0.0015	0.0017	0.0020	0.0022	0.0026	0.0029	0.0031	0.0035	0.0035	0.0038	0.0042	0.0043	0.0046
13	2812K	0.0000	0.0004	0.0010	0.0015	0.0016	0.0020	0.0022	0.0024	0.0026	0.0031	0.0035	0.0037	0.0040	0.0041	0.0041	0.0043
14	2816K	0.0000	0.0004	0.0009	0.0014	0.0017	0.0019	0.0022	0.0024	0.0025	0.0031	0.0034	0.0035	0.0034	0.0042	0.0043	0.0045
15	2824K	0.0000	0.0004	0.0009	0.0014	0.0016	0.0019	0.0023	0.0024	0.0027	0.0032	0.0034	0.0036	0.0037	0.0041	0.0042	0.0042
16	2819K	0.0000	0.0003	0.0009	0.0014	0.0016	0.0019	0.0022	0.0025	0.0027	0.0031	0.0034	0.0037	0.0037	0.0041	0.0042	0.0044
17	2818K	0.0000	0.0004	0.0009	0.0015	0.0017	0.0020	0.0023	0.0025	0.0028	0.0031	0.0036	0.0039	0.0038	0.0041	0.0043	0.0044
18	2828K	0.0000	0.0002	0.0009	0.0013	0.0016	0.0018	0.0022	0.0024	0.0027	0.0030	0.0034	0.0036	0.0037	0.0041	0.0042	0.0043
19	2809K	0.0000	0.0008	0.0011	0.0017	0.0017	0.0020	0.0025	0.0027	0.0030	0.0033	0.0037	0.0040	0.0040	0.0038	0.0040	0.0041
20	2808K	0.0000	0.0005	0.0010	0.0014	0.0015	0.0020	0.0024	0.0024	0.0026	0.0031	0.0035	0.0038	0.0038	0.0042	0.0043	0.0045

Forward Voltage [V] data for tested units

$T_s = T_{air} = 105^{\circ}\text{C}$, $I_f = 200\text{mA}$; $T_s \geq 103^{\circ}\text{C}$ and $T_{air} \geq 100^{\circ}\text{C}$ in compliance with LM-80-15

	CC1 (t=0)	0hrs	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs
1	2802K	24.860	24.870	24.860	24.880	24.870	24.860	24.860	24.870	24.870	24.860	24.880	24.900	24.880	24.960	24.950	24.960
2	2834K	25.270	25.270	25.260	25.290	25.280	25.260	25.260	25.260	25.270	25.260	25.270	25.300	25.280	24.990	25.350	24.990
3	2815K	25.210	25.220	25.200	25.210	25.210	25.200	25.220	25.200	25.220	25.190	25.200	25.220	25.230	24.990	25.300	24.990
4	2821K	24.980	24.990	24.970	24.990	24.990	24.970	24.990	24.980	24.990	24.960	24.970	25.000	24.990	24.990	25.080	24.990
5	2788K	25.130	25.150	25.130	25.140	25.130	25.120	25.140	25.130	25.120	25.120	25.120	25.140	25.140	24.990	25.220	24.990
6	2834K	25.210	25.230	25.220	25.220	25.220	25.210	25.220	25.220	25.220	25.210	25.220	25.250	25.240	24.990	25.340	24.990
7	2822K	24.830	24.850	24.840	24.840	24.860	24.830	24.840	24.840	24.850	24.840	24.850	24.850	24.860	24.890	24.940	24.920
8	2821K	25.150	25.170	25.140	25.160	25.180	25.150	25.160	25.160	25.150	25.150	25.160	25.150	25.180	24.990	25.250	24.990
9	2813K	24.950	24.970	24.950	24.960	24.980	24.940	24.950	24.960	24.950	24.950	24.970	24.970	24.970	24.990	25.110	24.990
10	2802K	24.910	24.940	24.890	24.910	24.890	24.880	24.900	24.890	24.890	24.890	24.910	24.920	24.910	24.980	24.990	24.980
11	2822K	24.870	24.890	24.870	24.890	24.870	24.860	24.880	24.880	24.870	24.870	24.870	24.910	24.890	24.950	24.970	24.960
12	2816K	24.630	24.630	24.620	24.630	24.620	24.620	24.630	24.630	24.620	24.630	24.630	24.660	24.640	24.700	24.730	24.700
13	2812K	25.250	25.250	25.240	25.260	25.240	25.230	25.240	25.260	25.260	25.230	25.240	25.260	25.260	24.990	25.560	24.990
14	2816K	24.990	25.000	25.000	25.030	24.990	24.990	25.000	25.010	25.020	24.980	25.000	25.030	25.020	24.990	25.140	24.990
15	2824K	24.970	24.990	24.990	24.990	24.970	24.970	24.970	24.980	24.980	24.950	24.970	25.000	24.990	24.990	25.090	24.990
16	2819K	24.660	24.680	24.680	24.670	24.650	24.660	24.660	24.670	24.670	24.630	24.660	24.690	24.680	24.700	24.810	24.740
17	2818K	25.050	25.060	25.050	25.080	25.040	25.040	25.040	25.050	25.050	25.030	25.040	25.180	25.070	24.990	25.170	24.990
18	2828K	24.670	24.610	24.610	24.620	24.590	24.600	24.590	24.600	24.600	24.580	24.600	24.630	24.620	24.610	24.710	24.680
19	2809K	25.370	25.390	25.380	25.370	25.380	25.380	25.370	25.370	25.410	25.380	25.390	25.410	25.420	24.990	25.470	24.990
20	2808K	24.980	24.990	24.980	24.990	25.000	24.970	24.970	24.980	25.000	24.970	24.980	25.000	25.000	24.990	25.080	24.990

Note

All data for the 100mA and 70°C condition are extrapolated from data measured at 100mA and 85°C.

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Company Information

Lumileds is a leading provider of power LEDs for everyday lighting applications. The company's records for light output, efficacy and thermal management are direct results of the ongoing commitment to advancing solid-state lighting technology and enabling lighting solutions that are more environmentally friendly, help reduce CO₂ emissions and reduce the need for power plant expansion. Lumileds LUXEON LEDs are enabling never before possible applications in outdoor lighting, shop lighting, home lighting, digital imaging, display and automotive lighting.

Lumileds is a fully integrated supplier, producing core LED material in all three base colors, (red, green, blue) and white. Lumileds has R & D centers in San Jose, California and in the Netherlands, and production capabilities in San Jose, Singapore and Penang, Malaysia. Founded in 1999, Lumileds is the high flux LED technology leader and is dedicated to bridging the gap between solid-state technology and the lighting world. More information about the company's LUXEON LED products and solid-state lighting technologies can be found at www.lumileds.com.

Appendix: Additional Projected Extrapolations per IESNA TM-21-11

Projected L_{75} extrapolations per IESNA TM-21-11

	If = 60mA	If = 100mA	If = 200mA
Ts = 105°C	89,069	81,314	75,895
Ts = 85°C	99,562	95,592	90,189
Ts = 70°C	121,001	-	-

Projected L_{80} extrapolations per IESNA TM-21-11

	If = 60mA	If = 100mA	If = 200mA
Ts = 105°C	69,660	63,571	59,402
Ts = 85°C	78,066	74,902	70,649
Ts = 70°C	94,787	-	-

Projected L_{85} extrapolations per IESNA TM-21-11

	If = 60mA	If = 100mA	If = 200mA
Ts = 105°C	51,428	46,905	43,910
Ts = 85°C	57,874	55,466	52,295
Ts = 70°C	70,163	-	-

Projected L_{90} extrapolations per IESNA TM-21-11

	If = 60mA	If = 100mA	If = 200mA
Ts = 105°C	34,238	31,191	29,303
Ts = 85°C	38,836	37,142	34,990
Ts = 70°C	46,947	-	-

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