

Report No.: 202004013

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Lumen Maintenance Test Report

Client : OSRAM**Address** :**Description of the samples under test:**

Sample Name : LW G6SP
Model : LW-50WPerLM-33-140
Ratings : 140mA, 30lm, 80(Ra), 5000K
Manufacturer : OSRAM
Sample Quantity : 16
Sample Tested Date : 2019-06-29 ~ 2020-03-21

Equipment list:

Test Equipments	Model/SN
Photometer _Colorimter	LMS-9000CG/201911002
Digital Power Meter	LS2012/202002005
Power Supply	LSP Series/201903001
Thermometer	TMP-8/202003005
Chamber	MV103/202003002

Lumen Maintenance Life Prediction(Based on TM-21-19)

Test Condition - 55°C Case Temp

Sample Name: LW G6SP
 Model: LW-50WPerLM-33-140
 Ratings: 140mA, 30lm, 80(Ra), 5000K
 Manufacturer: OSRAM

Sample Quantity	16
Number Of Failures	0
DUT supply in the test (V/A)	3.3/0.1401
Test duration (hours)	6000
Test duration used for projection (hour to hour)	1000 - 6000
Tested case temperature (°C)	55
α	2.000E-06
B	0.9578
Calculated L70(6k) (hours)	156757
Reported L70(6k) (hours)	>33000
Calculated L50(6k) (hours)	324993
Reported L50(6k) (hours)	>33000

Photon Flux Maintenance Life Prediction(Based on TM-21-19)

Test Condition - 55°C Case Temp

Sample Name: LW G6SP
 Model: LW-50WPerLM-33-140
 Ratings: 140mA, 30lm, 80(Ra), 5000K
 Manufacturer: OSRAM

Sample Quantity	16
Number Of Failures	0
DUT supply in the test (V/A)	3.3/0.1401
Test duration (hours)	6000
Test duration used for projection (hour to hour)	1000 - 6000
Tested case temperature (°C)	55
α	2.000E-06
B	0.9578
Calculated L70(6k) (hours)	156757
Reported L70(6k) (hours)	>33000
Calculated L50(6k) (hours)	324993
Reported L50(6k) (hours)	>33000

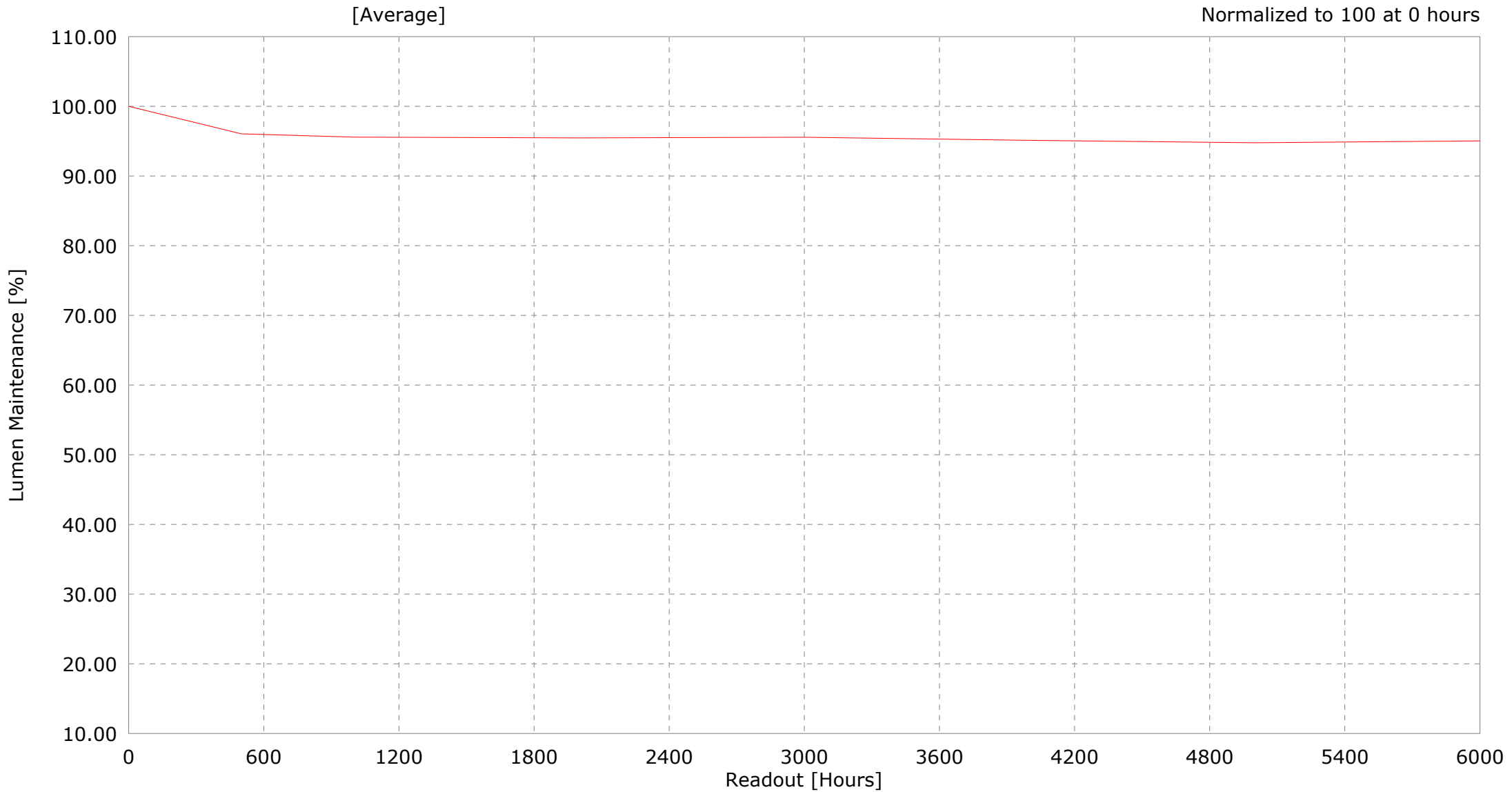
Radiant Flux Maintenance Life Prediction(Based on TM-21-19)

Test Condition - 55°C Case Temp

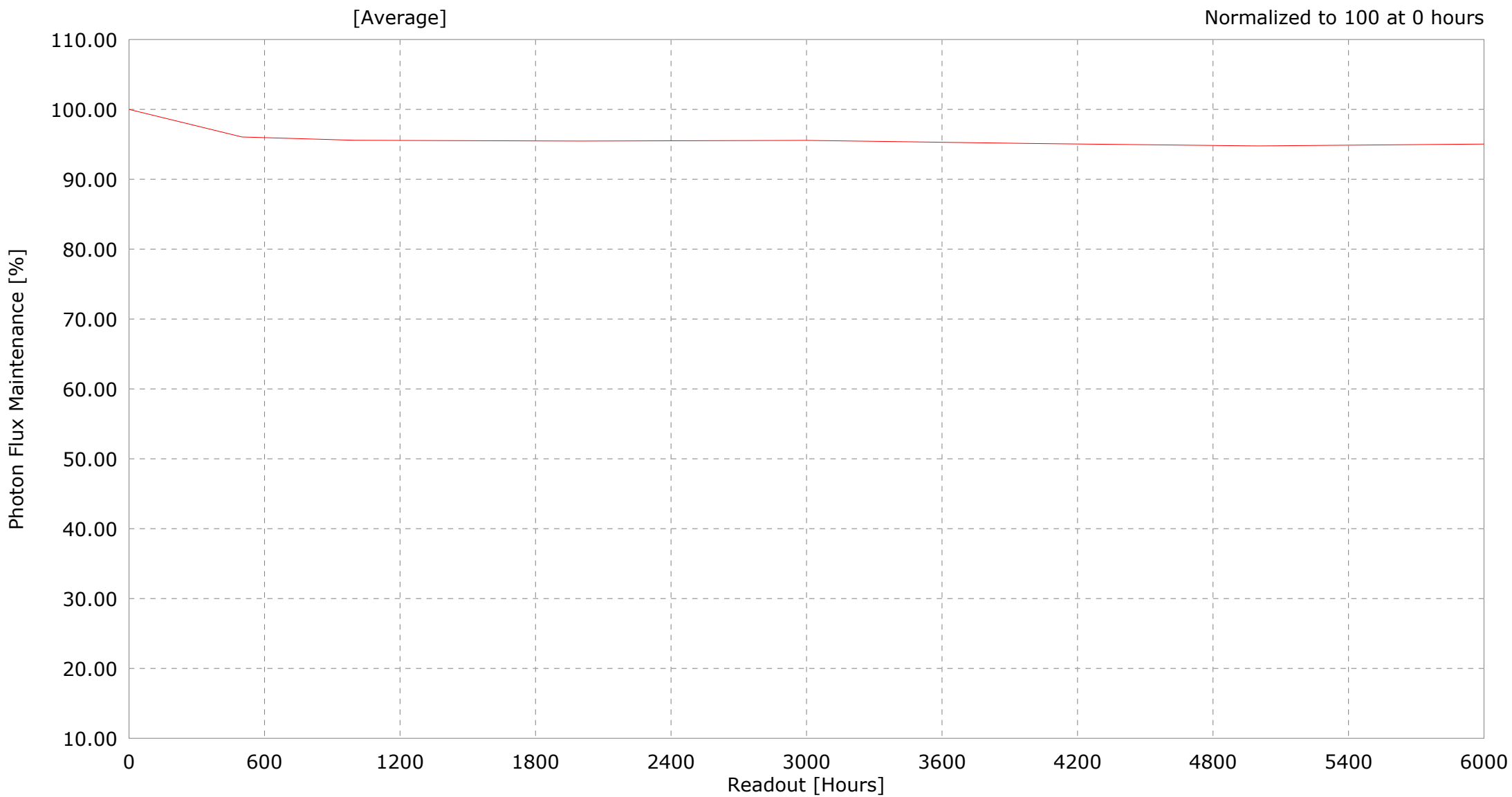
Sample Name: LW G6SP
 Model: LW-50WPerLM-33-140
 Ratings: 140mA, 30lm, 80(Ra), 5000K
 Manufacturer: OSRAM

Sample Quantity	16
Number Of Failures	0
DUT supply in the test (V/A)	3.3/0.1401
Test duration (hours)	6000
Test duration used for projection (hour to hour)	1000 - 6000
Tested case temperature (°C)	55
α	2.000E-06
B	0.9578
Calculated L70(6k) (hours)	156768
Reported L70(6k) (hours)	>33000
Calculated L50(6k) (hours)	325004
Reported L50(6k) (hours)	>33000

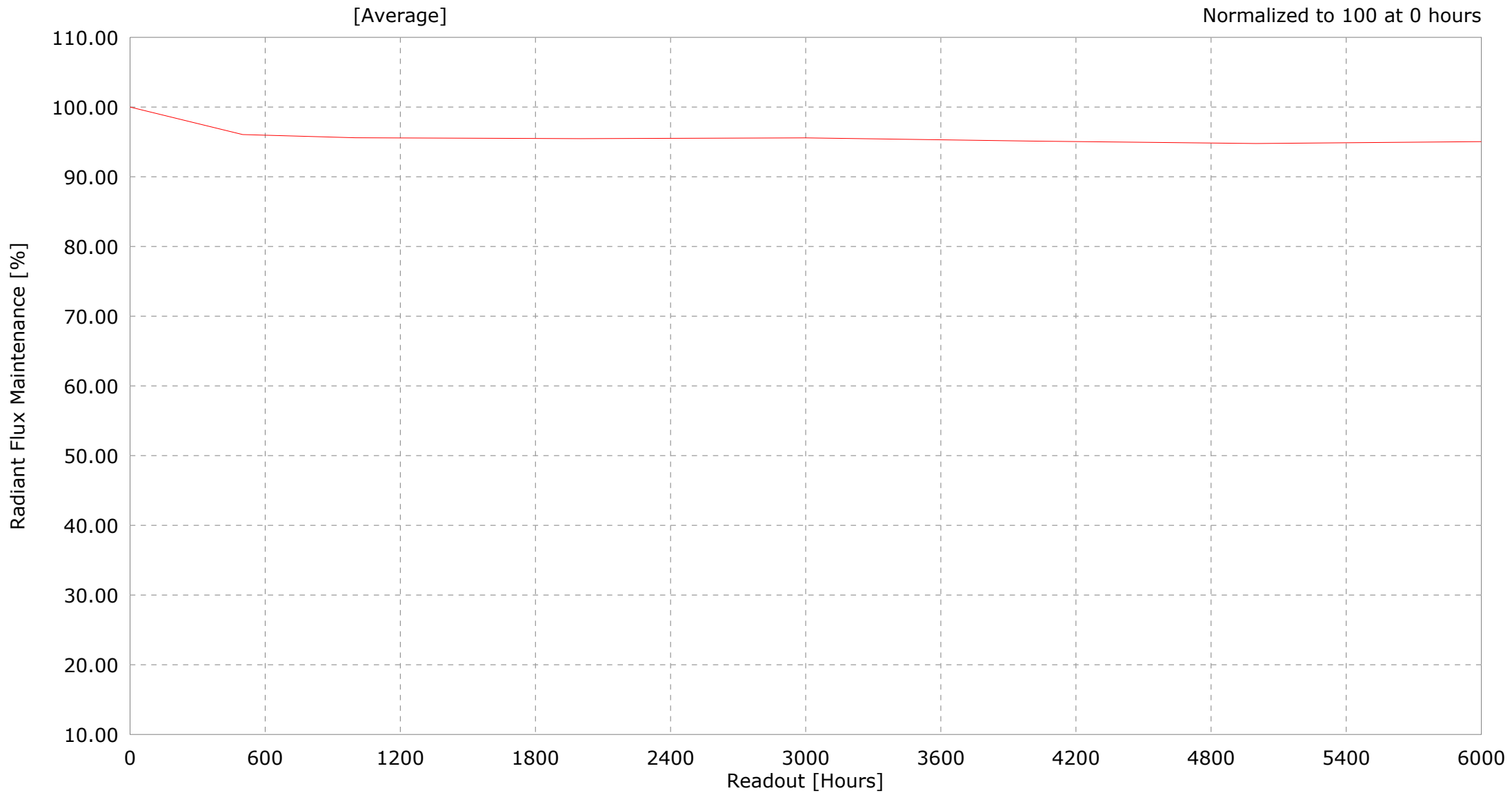
Lumen Maintenance Graph [%]



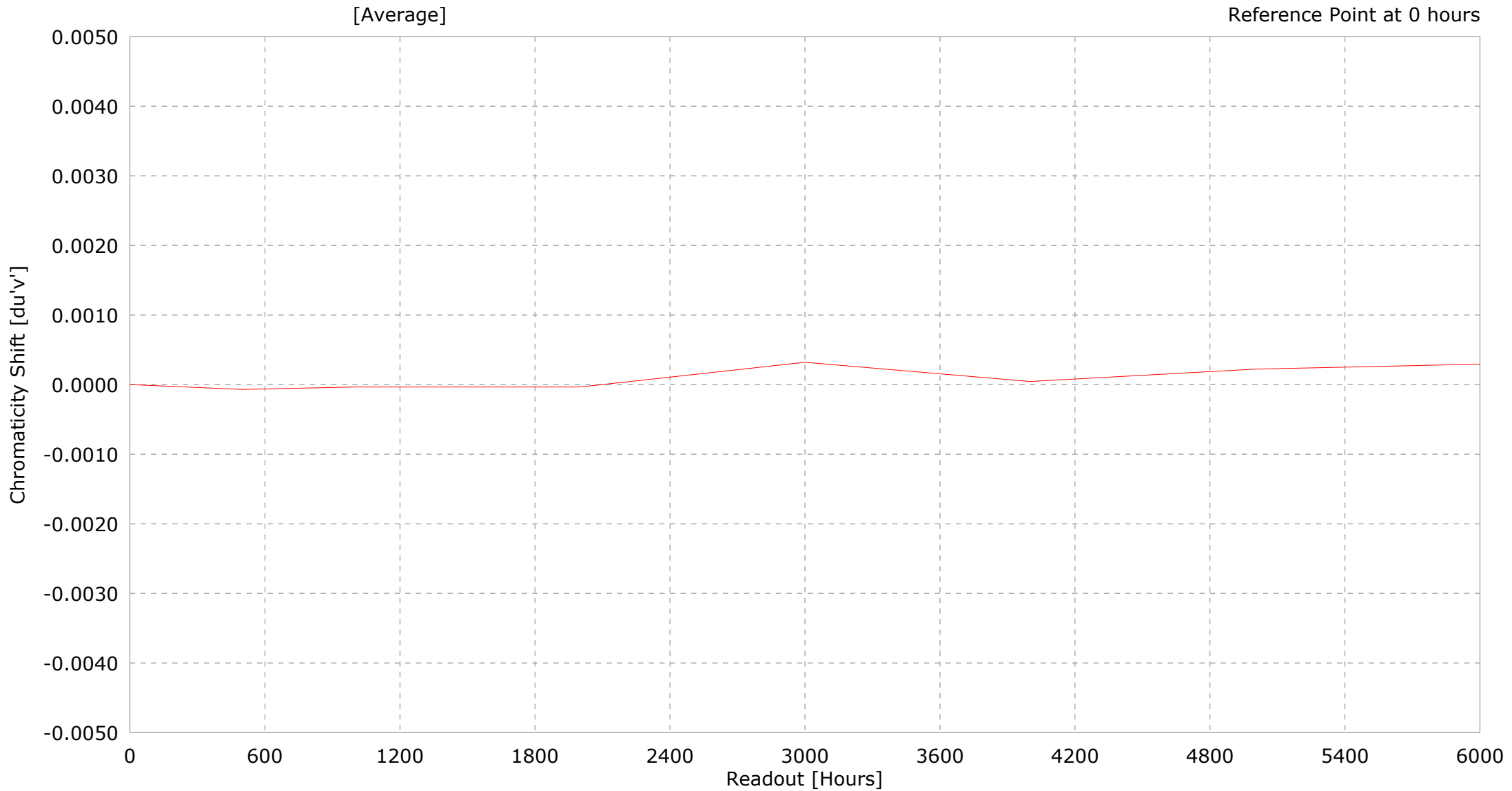
Photon Flux Maintenance Graph [%]



Radiant Flux Maintenance Graph [%]



Chromaticity Shift Graph [du'v']



Lumen Maintenance Table [%]

Model : LW-50WPerLM-33-140
 Actual Temperature : Ta = 55.0°C, Ts = 65.0°C
 Number Of Failures : 0

Ratings : 140mA, 30lm, 80(Ra), 5000K
 Humidity : R.H. = 60%
 Drive Voltage : U = 3.3V, I = 0.1401A

No.	0H	500H	1000H	2000H	3000H	4000H	5000H	6000H
1	100.00	95.00	94.40	94.70	94.70	94.30	94.00	94.30
2	100.00	96.70	96.00	96.00	96.00	95.60	95.10	95.60
3	100.00	95.40	94.70	94.90	94.60	94.10	93.60	94.10
4	100.00	97.00	96.70	96.50	96.70	96.40	96.10	96.40
5	100.00	95.90	95.30	95.30	95.30	94.80	94.50	94.80
6	100.00	96.80	96.40	96.60	96.30	95.90	95.40	95.80
7	100.00	96.20	95.80	95.40	96.10	94.90	94.80	95.10
8	100.00	96.20	95.70	95.50	95.60	95.20	94.80	95.10
9	100.00	96.80	96.40	96.60	96.40	96.00	95.70	96.00
10	100.00	94.80	94.20	93.60	93.90	93.40	93.00	93.00
11	100.00	95.00	94.60	94.60	95.00	94.60	94.30	94.70
12	100.00	97.00	96.70	96.10	96.50	96.10	95.90	96.20
13	100.00	95.60	94.90	94.50	94.60	93.90	93.30	93.30
14	100.00	95.70	95.30	95.30	95.30	95.00	94.70	95.00
15	100.00	96.90	96.50	96.60	96.30	96.00	95.70	95.90
16	100.00	95.80	95.60	95.20	95.60	95.50	95.20	95.30
Median	100.00	96.05	95.65	95.35	95.60	95.10	94.80	95.10
Average	100.00	96.05	95.58	95.46	95.56	95.11	94.76	95.04
Std. deviation	0.0000	0.7626	0.8404	0.8874	0.8269	0.8838	0.9316	0.9874
Min.	100.00	94.80	94.20	93.60	93.90	93.40	93.00	93.00
Max.	100.00	97.00	96.70	96.60	96.70	96.40	96.10	96.40

Photon Flux Maintenance Table [%]

Model : LW-50WPerLM-33-140
 Actual Temperature : Ta = 55.0°C, Ts = 65.0°C
 Number Of Failures : 0

Ratings : 140mA, 30lm, 80(Ra), 5000K
 Humidity : R.H. = 60%
 Drive Voltage : U = 3.3V, I = 0.1401A

No.	0H	500H	1000H	2000H	3000H	4000H	5000H	6000H
1	100.00	95.00	94.40	94.70	94.70	94.30	94.00	94.30
2	100.00	96.70	96.00	96.00	96.00	95.60	95.10	95.60
3	100.00	95.40	94.70	94.90	94.60	94.10	93.60	94.10
4	100.00	97.00	96.70	96.50	96.70	96.40	96.10	96.40
5	100.00	95.90	95.30	95.30	95.30	94.80	94.50	94.80
6	100.00	96.80	96.40	96.60	96.30	95.90	95.40	95.80
7	100.00	96.20	95.80	95.40	96.10	94.90	94.80	95.10
8	100.00	96.20	95.70	95.50	95.60	95.20	94.80	95.10
9	100.00	96.80	96.40	96.60	96.40	96.00	95.70	96.00
10	100.00	94.80	94.20	93.60	93.90	93.40	93.00	93.00
11	100.00	95.00	94.60	94.60	95.00	94.60	94.30	94.70
12	100.00	97.00	96.70	96.10	96.50	96.10	95.90	96.20
13	100.00	95.60	94.90	94.50	94.60	93.90	93.30	93.30
14	100.00	95.70	95.30	95.30	95.30	95.00	94.70	95.00
15	100.00	96.90	96.50	96.60	96.30	96.00	95.70	95.90
16	100.00	95.80	95.60	95.20	95.60	95.50	95.20	95.30
Median	100.00	96.05	95.65	95.35	95.60	95.10	94.80	95.10
Average	100.00	96.05	95.58	95.46	95.56	95.11	94.76	95.04
Std. deviation	0.0000	0.7625	0.8403	0.8874	0.8270	0.8843	0.9319	0.9874
Min.	100.00	94.80	94.20	93.60	93.90	93.40	93.00	93.00
Max.	100.00	97.00	96.70	96.60	96.70	96.40	96.10	96.40

Radiant Flux Maintenance Table [%]

Model : LW-50WPerLM-33-140
 Actual Temperature : Ta = 55.0°C, Ts = 65.0°C
 Number Of Failures : 0

Ratings : 140mA, 30lm, 80(Ra), 5000K
 Humidity : R.H. = 60%
 Drive Voltage : U = 3.3V, I = 0.1401A

No.	0H	500H	1000H	2000H	3000H	4000H	5000H	6000H
1	100.00	95.00	94.40	94.64	94.64	94.29	94.05	94.29
2	100.00	96.67	95.95	95.95	95.95	95.60	95.12	95.60
3	100.00	95.36	94.64	94.88	94.64	94.05	93.57	94.05
4	100.00	97.02	96.67	96.55	96.67	96.43	96.07	96.43
5	100.00	95.95	95.36	95.36	95.36	94.76	94.52	94.76
6	100.00	96.79	96.43	96.55	96.31	95.95	95.36	95.83
7	100.00	96.19	95.83	95.36	96.07	94.88	94.76	95.12
8	100.00	96.19	95.71	95.48	95.60	95.24	94.76	95.12
9	100.00	96.79	96.43	96.55	96.43	95.95	95.71	95.95
10	100.00	94.76	94.17	93.57	93.93	93.45	92.98	92.98
11	100.00	95.00	94.64	94.64	95.00	94.64	94.29	94.64
12	100.00	97.02	96.67	96.07	96.55	96.07	95.95	96.19
13	100.00	95.60	94.88	94.52	94.64	93.93	93.33	93.33
14	100.00	95.71	95.36	95.36	95.36	95.00	94.64	95.00
15	100.00	96.90	96.55	96.55	96.31	95.95	95.71	95.95
16	100.00	95.83	95.60	95.24	95.60	95.48	95.24	95.36
Median	100.00	96.07	95.65	95.36	95.60	95.12	94.76	95.12
Average	100.00	96.05	95.58	95.45	95.57	95.10	94.75	95.04
Std. deviation	0.0000	0.7681	0.8439	0.8772	0.8196	0.8768	0.9348	0.9977
Min.	100.00	94.76	94.17	93.57	93.93	93.45	92.98	92.98
Max.	100.00	97.02	96.67	96.55	96.67	96.43	96.07	96.43

Chromaticity Shift Table [du'v']

Model : LW-50WPerLM-33-140
 Actual Temperature : Ta = 55.0°C, Ts = 65.0°C
 Number Of Failures : 0

Ratings : 140mA, 30lm, 80(Ra), 5000K
 Humidity : R.H. = 60%
 Drive Voltage : U = 3.3V, I = 0.1401A

No.	0H	500H	1000H	2000H	3000H	4000H	5000H	6000H
1	0.00000	-0.00028	-0.00014	-0.00028	0.00064	0.00000	0.00042	0.00057
2	0.00000	-0.00028	-0.00028	-0.00014	0.00113	0.00014	0.00057	0.00071
3	0.00000	-0.00014	0.00000	0.00000	0.00014	0.00014	0.00057	0.00071
4	0.00000	-0.00014	0.00000	-0.00014	0.00113	0.00000	0.00057	0.00071
5	0.00000	-0.00014	0.00000	0.00014	0.00184	0.00014	0.00071	0.00099
6	0.00000	-0.00014	-0.00014	-0.00014	0.00022	0.00028	0.00071	0.00099
7	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
8	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
9	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
10	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
11	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
12	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
13	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
14	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
15	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
16	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Median	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average	0.00000	-0.00007	-0.00004	-0.00004	0.00032	0.00004	0.00022	0.00029
Std. deviation	0.000000	0.000103	0.000082	0.000097	0.000565	0.000085	0.000301	0.000402
Min.	0.00000	-0.00028	-0.00028	-0.00028	0.00000	0.00000	0.00000	0.00000
Max.	0.00000	0.00000	0.00000	0.00014	0.00184	0.00028	0.00071	0.00099

Luminous Flux Table [lm]

Model : LW-50WPerLM-33-140
 Actual Temperature : Ta = 55.0°C, Ts = 65.0°C
 Number Of Failures : 0

Ratings : 140mA, 30lm, 80(Ra), 5000K
 Humidity : R.H. = 60%
 Drive Voltage : U = 3.3V, I = 0.1401A

No.	0H	500H	1000H	2000H	3000H	4000H	5000H	6000H
1	28.580	27.151	26.980	27.065	27.065	26.951	26.865	26.951
2	28.580	27.637	27.437	27.437	27.437	27.322	27.180	27.322
3	28.580	27.265	27.065	27.122	27.037	26.894	26.751	26.894
4	28.580	27.723	27.637	27.580	27.637	27.551	27.465	27.551
5	28.580	27.408	27.237	27.237	27.237	27.094	27.008	27.094
6	28.580	27.665	27.551	27.608	27.523	27.408	27.265	27.380
7	28.580	27.494	27.380	27.265	27.465	27.122	27.094	27.180
8	28.580	27.494	27.351	27.294	27.322	27.208	27.094	27.180
9	28.580	27.665	27.551	27.608	27.551	27.437	27.351	27.437
10	28.580	27.094	26.922	26.751	26.837	26.694	26.579	26.579
11	28.580	27.151	27.037	27.037	27.151	27.037	26.951	27.065
12	28.580	27.723	27.637	27.465	27.580	27.465	27.408	27.494
13	28.580	27.322	27.122	27.008	27.037	26.837	26.665	26.665
14	28.580	27.351	27.237	27.237	27.237	27.151	27.065	27.151
15	28.580	27.694	27.580	27.608	27.523	27.437	27.351	27.408
16	28.580	27.380	27.322	27.208	27.322	27.294	27.208	27.237
Median	28.580	27.451	27.337	27.251	27.322	27.180	27.094	27.180
Average	28.580	27.451	27.315	27.283	27.310	27.181	27.081	27.162
Std. deviation	0.00001	0.21794	0.24018	0.25362	0.23634	0.25259	0.26626	0.28219
Min.	28.580	27.094	26.922	26.751	26.837	26.694	26.579	26.579
Max.	28.580	27.723	27.637	27.608	27.637	27.551	27.465	27.551

Photon Flux Table [umol/s]

Model : LW-50WPerLM-33-140
 Actual Temperature : Ta = 55.0°C, Ts = 65.0°C
 Number Of Failures : 0

Ratings : 140mA, 30lm, 80(Ra), 5000K
 Humidity : R.H. = 60%
 Drive Voltage : U = 3.3V, I = 0.1401A

No.	0H	500H	1000H	2000H	3000H	4000H	5000H	6000H
1	0.3740	0.3553	0.3531	0.3542	0.3542	0.3527	0.3516	0.3527
2	0.3740	0.3617	0.3590	0.3590	0.3590	0.3575	0.3557	0.3575
3	0.3740	0.3568	0.3542	0.3549	0.3538	0.3519	0.3501	0.3519
4	0.3740	0.3628	0.3617	0.3609	0.3617	0.3605	0.3594	0.3605
5	0.3740	0.3587	0.3564	0.3564	0.3564	0.3546	0.3534	0.3546
6	0.3740	0.3620	0.3605	0.3613	0.3602	0.3587	0.3568	0.3583
7	0.3740	0.3598	0.3583	0.3568	0.3594	0.3549	0.3546	0.3557
8	0.3740	0.3598	0.3579	0.3572	0.3575	0.3561	0.3546	0.3557
9	0.3740	0.3620	0.3605	0.3613	0.3605	0.3590	0.3579	0.3590
10	0.3740	0.3546	0.3523	0.3501	0.3512	0.3493	0.3478	0.3478
11	0.3740	0.3553	0.3538	0.3538	0.3553	0.3538	0.3527	0.3542
12	0.3740	0.3628	0.3617	0.3594	0.3609	0.3594	0.3587	0.3598
13	0.3740	0.3575	0.3549	0.3534	0.3538	0.3512	0.3489	0.3489
14	0.3740	0.3579	0.3564	0.3564	0.3564	0.3553	0.3542	0.3553
15	0.3740	0.3624	0.3609	0.3613	0.3602	0.3590	0.3579	0.3587
16	0.3740	0.3583	0.3575	0.3561	0.3575	0.3572	0.3561	0.3564
Median	0.3740	0.3592	0.3577	0.3566	0.3575	0.3557	0.3546	0.3557
Average	0.3740	0.3592	0.3575	0.3570	0.3574	0.3557	0.3544	0.3554
Std. deviation	0.00000	0.00285	0.00314	0.00332	0.00309	0.00331	0.00349	0.00369
Min.	0.3740	0.3546	0.3523	0.3501	0.3512	0.3493	0.3478	0.3478
Max.	0.3740	0.3628	0.3617	0.3613	0.3617	0.3605	0.3594	0.3605

Efficiency Table [lm/W]

Model : LW-50WPerLM-33-140
 Actual Temperature : Ta = 55.0°C, Ts = 65.0°C
 Number Of Failures : 0

Ratings : 140mA, 30lm, 80(Ra), 5000K
 Humidity : R.H. = 60%
 Drive Voltage : U = 3.3V, I = 0.1401A

No.	0H	500H	1000H	2000H	3000H	4000H	5000H	6000H
1	61.86	58.77	58.40	58.58	58.58	58.34	58.15	58.34
2	61.86	59.82	59.39	59.39	59.39	59.14	58.83	59.14
3	61.86	59.02	58.58	58.71	58.52	58.21	57.90	58.21
4	61.86	60.01	59.82	59.70	59.82	59.63	59.45	59.63
5	61.86	59.32	58.95	58.95	58.95	58.65	58.46	58.65
6	61.86	59.88	59.63	59.76	59.57	59.32	59.02	59.26
7	61.86	59.51	59.26	59.02	59.45	58.71	58.65	58.83
8	61.86	59.51	59.20	59.08	59.14	58.89	58.65	58.83
9	61.86	59.88	59.63	59.76	59.63	59.39	59.20	59.39
10	61.86	58.65	58.27	57.90	58.09	57.78	57.53	57.53
11	61.86	58.77	58.52	58.52	58.77	58.52	58.34	58.58
12	61.86	60.01	59.82	59.45	59.70	59.45	59.32	59.51
13	61.86	59.14	58.71	58.46	58.52	58.09	57.72	57.72
14	61.86	59.20	58.95	58.95	58.95	58.77	58.58	58.77
15	61.86	59.94	59.70	59.76	59.57	59.39	59.20	59.32
16	61.86	59.26	59.14	58.89	59.14	59.08	58.89	58.95
Median	61.86	59.42	59.17	58.98	59.14	58.83	58.65	58.83
Average	61.86	59.42	59.12	59.05	59.11	58.83	58.62	58.79
Std. deviation	0.0000	0.4717	0.5199	0.5490	0.5116	0.5467	0.5763	0.6108
Min.	61.86	58.65	58.27	57.90	58.09	57.78	57.53	57.53
Max.	61.86	60.01	59.82	59.76	59.82	59.63	59.45	59.63

Correlated Color Temperature Table [K]

Model : LW-50WPerLM-33-140
 Actual Temperature : Ta = 55.0°C, Ts = 65.0°C
 Number Of Failures : 0

Ratings : 140mA, 30lm, 80(Ra), 5000K
 Humidity : R.H. = 60%
 Drive Voltage : U = 3.3V, I = 0.1401A

No.	0H	500H	1000H	2000H	3000H	4000H	5000H	6000H
1	5174	5192	5184	5192	5136	5174	5150	5142
2	5174	5192	5192	5184	5108	5166	5142	5132
3	5184	5192	5184	5184	5174	5174	5150	5142
4	5184	5192	5184	5192	5116	5184	5150	5142
5	5184	5192	5184	5174	5076	5174	5142	5124
6	5184	5192	5192	5192	5172	5166	5142	5124
7	5174	5174	5174	5174	5174	5174	5174	5174
8	5174	5174	5174	5174	5174	5174	5174	5174
9	5184	5184	5184	5184	5184	5184	5184	5184
10	5184	5184	5184	5184	5184	5184	5184	5184
11	5184	5184	5184	5184	5184	5184	5184	5184
12	5184	5184	5184	5184	5184	5184	5184	5184
13	5174	5174	5174	5174	5174	5174	5174	5174
14	5174	5174	5174	5174	5174	5174	5174	5174
15	5184	5184	5184	5184	5184	5184	5184	5184
16	5184	5184	5184	5184	5184	5184	5184	5184
Median	5184	5184	5184	5184	5174	5174	5174	5174
Average	5180	5185	5183	5182	5161	5177	5167	5163
Std. deviation	5.00000	7.21110	5.72713	6.58154	33.48806	6.56125	17.64653	23.74272
Min.	5174	5174	5174	5174	5076	5166	5142	5124
Max.	5184	5192	5192	5192	5184	5184	5184	5184

Coordinate - x Table

Model : LW-50WPerLM-33-140
 Actual Temperature : Ta = 55.0°C, Ts = 65.0°C
 Number Of Failures : 0

Ratings : 140mA, 30lm, 80(Ra), 5000K
 Humidity : R.H. = 60%
 Drive Voltage : U = 3.3V, I = 0.1401A

No.	0H	500H	1000H	2000H	3000H	4000H	5000H	6000H
1	0.34082	0.34036	0.34059	0.34036	0.34185	0.34082	0.34150	0.34172
2	0.34082	0.34036	0.34036	0.34059	0.34263	0.34104	0.34172	0.34195
3	0.34059	0.34036	0.34059	0.34059	0.34082	0.34082	0.34150	0.34172
4	0.34059	0.34036	0.34059	0.34036	0.34241	0.34059	0.34150	0.34172
5	0.34059	0.34036	0.34059	0.34082	0.34354	0.34082	0.34172	0.34218
6	0.34059	0.34036	0.34036	0.34036	0.34092	0.34104	0.34172	0.34218
7	0.34082	0.34082	0.34082	0.34082	0.34082	0.34082	0.34082	0.34082
8	0.34082	0.34082	0.34082	0.34082	0.34082	0.34082	0.34082	0.34082
9	0.34059	0.34059	0.34059	0.34059	0.34059	0.34059	0.34059	0.34059
10	0.34059	0.34059	0.34059	0.34059	0.34059	0.34059	0.34059	0.34059
11	0.34059	0.34059	0.34059	0.34059	0.34059	0.34059	0.34059	0.34059
12	0.34059	0.34059	0.34059	0.34059	0.34059	0.34059	0.34059	0.34059
13	0.34082	0.34082	0.34082	0.34082	0.34082	0.34082	0.34082	0.34082
14	0.34082	0.34082	0.34082	0.34082	0.34082	0.34082	0.34082	0.34082
15	0.34059	0.34059	0.34059	0.34059	0.34059	0.34059	0.34059	0.34059
16	0.34059	0.34059	0.34059	0.34059	0.34059	0.34059	0.34059	0.34059
Median	0.34059	0.34059	0.34059	0.34059	0.34082	0.34082	0.34082	0.34082
Average	0.34068	0.34056	0.34062	0.34062	0.34119	0.34075	0.34103	0.34114
Std. deviation	0.000113	0.000183	0.000140	0.000163	0.000911	0.000160	0.000479	0.000636
Min.	0.34059	0.34036	0.34036	0.34036	0.34059	0.34059	0.34059	0.34059
Max.	0.34082	0.34082	0.34082	0.34082	0.34354	0.34104	0.34172	0.34218

Coordinate - y Table

Model : LW-50WPerLM-33-140
 Actual Temperature : Ta = 55.0°C, Ts = 65.0°C
 Number Of Failures : 0

Ratings : 140mA, 30lm, 80(Ra), 5000K
 Humidity : R.H. = 60%
 Drive Voltage : U = 3.3V, I = 0.1401A

No.	0H	500H	1000H	2000H	3000H	4000H	5000H	6000H
1	0.35483	0.35455	0.35469	0.35455	0.35534	0.35483	0.35524	0.35538
2	0.35483	0.35455	0.35455	0.35469	0.35593	0.35497	0.35538	0.35552
3	0.35469	0.35455	0.35469	0.35469	0.35483	0.35483	0.35524	0.35538
4	0.35469	0.35455	0.35469	0.35455	0.35579	0.35469	0.35524	0.35538
5	0.35469	0.35455	0.35469	0.35483	0.35649	0.35483	0.35538	0.35566
6	0.35469	0.35455	0.35455	0.35455	0.35500	0.35497	0.35538	0.35566
7	0.35483	0.35483	0.35483	0.35483	0.35483	0.35483	0.35483	0.35483
8	0.35483	0.35483	0.35483	0.35483	0.35483	0.35483	0.35483	0.35483
9	0.35469	0.35469	0.35469	0.35469	0.35469	0.35469	0.35469	0.35469
10	0.35469	0.35469	0.35469	0.35469	0.35469	0.35469	0.35469	0.35469
11	0.35469	0.35469	0.35469	0.35469	0.35469	0.35469	0.35469	0.35469
12	0.35469	0.35469	0.35469	0.35469	0.35469	0.35469	0.35469	0.35469
13	0.35483	0.35483	0.35483	0.35483	0.35483	0.35483	0.35483	0.35483
14	0.35483	0.35483	0.35483	0.35483	0.35483	0.35483	0.35483	0.35483
15	0.35469	0.35469	0.35469	0.35469	0.35469	0.35469	0.35469	0.35469
16	0.35469	0.35469	0.35469	0.35469	0.35469	0.35469	0.35469	0.35469
Median	0.35469	0.35469	0.35469	0.35469	0.35483	0.35483	0.35483	0.35483
Average	0.35474	0.35467	0.35471	0.35471	0.35505	0.35478	0.35496	0.35503
Std. deviation	0.000069	0.000111	0.000085	0.000099	0.000548	0.000097	0.000291	0.000387
Min.	0.35469	0.35455	0.35455	0.35455	0.35469	0.35469	0.35469	0.35469
Max.	0.35483	0.35483	0.35483	0.35483	0.35649	0.35497	0.35538	0.35566

Coordinate - u Table'

Model : LW-50WPerLM-33-140
 Actual Temperature : Ta = 55.0°C, Ts = 65.0°C
 Number Of Failures : 0

Ratings : 140mA, 30lm, 80(Ra), 5000K
 Humidity : R.H. = 60%
 Drive Voltage : U = 3.3V, I = 0.1401A

No.	0H	500H	1000H	2000H	3000H	4000H	5000H	6000H
1	0.20730	0.20710	0.20720	0.20710	0.20780	0.20730	0.20760	0.20770
2	0.20730	0.20710	0.20710	0.20720	0.20810	0.20740	0.20770	0.20780
3	0.20720	0.20710	0.20720	0.20720	0.20730	0.20730	0.20760	0.20770
4	0.20720	0.20710	0.20720	0.20710	0.20800	0.20720	0.20760	0.20770
5	0.20720	0.20710	0.20720	0.20730	0.20850	0.20730	0.20770	0.20790
6	0.20720	0.20710	0.20710	0.20710	0.20730	0.20740	0.20770	0.20790
7	0.20730	0.20730	0.20730	0.20730	0.20730	0.20730	0.20730	0.20730
8	0.20730	0.20730	0.20730	0.20730	0.20730	0.20730	0.20730	0.20730
9	0.20720	0.20720	0.20720	0.20720	0.20720	0.20720	0.20720	0.20720
10	0.20720	0.20720	0.20720	0.20720	0.20720	0.20720	0.20720	0.20720
11	0.20720	0.20720	0.20720	0.20720	0.20720	0.20720	0.20720	0.20720
12	0.20720	0.20720	0.20720	0.20720	0.20720	0.20720	0.20720	0.20720
13	0.20730	0.20730	0.20730	0.20730	0.20730	0.20730	0.20730	0.20730
14	0.20730	0.20730	0.20730	0.20730	0.20730	0.20730	0.20730	0.20730
15	0.20720	0.20720	0.20720	0.20720	0.20720	0.20720	0.20720	0.20720
16	0.20720	0.20720	0.20720	0.20720	0.20720	0.20720	0.20720	0.20720
Median	0.20720	0.20720	0.20720	0.20720	0.20730	0.20730	0.20730	0.20730
Average	0.20724	0.20719	0.20721	0.20721	0.20746	0.20727	0.20739	0.20744
Std. deviation	0.000050	0.000081	0.000062	0.000072	0.000405	0.000070	0.000211	0.000280
Min.	0.20720	0.20710	0.20710	0.20710	0.20720	0.20720	0.20720	0.20720
Max.	0.20730	0.20730	0.20730	0.20730	0.20850	0.20740	0.20770	0.20790

Coordinate - v Table'

Model : LW-50WPerLM-33-140
 Actual Temperature : Ta = 55.0°C, Ts = 65.0°C
 Number Of Failures : 0

Ratings : 140mA, 30lm, 80(Ra), 5000K
 Humidity : R.H. = 60%
 Drive Voltage : U = 3.3V, I = 0.1401A

No.	0H	500H	1000H	2000H	3000H	4000H	5000H	6000H
1	0.48560	0.48540	0.48550	0.48540	0.48600	0.48560	0.48590	0.48600
2	0.48560	0.48540	0.48540	0.48550	0.48640	0.48570	0.48600	0.48610
3	0.48550	0.48540	0.48550	0.48550	0.48560	0.48560	0.48590	0.48600
4	0.48550	0.48540	0.48550	0.48540	0.48630	0.48550	0.48590	0.48600
5	0.48550	0.48540	0.48550	0.48560	0.48680	0.48560	0.48600	0.48620
6	0.48550	0.48540	0.48540	0.48540	0.48570	0.48570	0.48600	0.48620
7	0.48560	0.48560	0.48560	0.48560	0.48560	0.48560	0.48560	0.48560
8	0.48560	0.48560	0.48560	0.48560	0.48560	0.48560	0.48560	0.48560
9	0.48550	0.48550	0.48550	0.48550	0.48550	0.48550	0.48550	0.48550
10	0.48550	0.48550	0.48550	0.48550	0.48550	0.48550	0.48550	0.48550
11	0.48550	0.48550	0.48550	0.48550	0.48550	0.48550	0.48550	0.48550
12	0.48550	0.48550	0.48550	0.48550	0.48550	0.48550	0.48550	0.48550
13	0.48560	0.48560	0.48560	0.48560	0.48560	0.48560	0.48560	0.48560
14	0.48560	0.48560	0.48560	0.48560	0.48560	0.48560	0.48560	0.48560
15	0.48550	0.48550	0.48550	0.48550	0.48550	0.48550	0.48550	0.48550
16	0.48550	0.48550	0.48550	0.48550	0.48550	0.48550	0.48550	0.48550
Median	0.48550	0.48550	0.48550	0.48550	0.48560	0.48560	0.48560	0.48560
Average	0.48554	0.48549	0.48551	0.48551	0.48576	0.48557	0.48569	0.48574
Std. deviation	0.000050	0.000081	0.000062	0.000072	0.000398	0.000070	0.000211	0.000280
Min.	0.48550	0.48540	0.48540	0.48540	0.48550	0.48550	0.48550	0.48550
Max.	0.48560	0.48560	0.48560	0.48560	0.48680	0.48570	0.48600	0.48620

Dominant Wavelength Table [nm]

Model : LW-50WPerLM-33-140
 Actual Temperature : Ta = 55.0°C, Ts = 65.0°C
 Number Of Failures : 0

Ratings : 140mA, 30lm, 80(Ra), 5000K
 Humidity : R.H. = 60%
 Drive Voltage : U = 3.3V, I = 0.1401A

No.	0H	500H	1000H	2000H	3000H	4000H	5000H	6000H
1	566.5	583.6	566.3	583.6	567.4	566.5	567.1	567.3
2	566.5	583.6	583.6	566.3	585.8	566.7	567.3	567.5
3	566.3	583.6	566.3	566.3	566.5	566.5	567.1	567.3
4	566.3	583.6	566.3	583.6	567.9	566.3	567.1	567.3
5	566.3	583.6	566.3	566.5	568.7	566.5	567.3	567.7
6	566.3	583.6	583.6	583.6	566.5	566.7	567.3	567.7
7	566.5	566.5	566.5	566.5	566.5	566.5	566.5	566.5
8	566.5	566.5	566.5	566.5	566.5	566.5	566.5	566.5
9	566.3	566.3	566.3	566.3	566.3	566.3	566.3	566.3
10	566.3	566.3	566.3	566.3	566.3	566.3	566.3	566.3
11	566.3	566.3	566.3	566.3	566.3	566.3	566.3	566.3
12	566.3	566.3	566.3	566.3	566.3	566.3	566.3	566.3
13	566.5	566.5	566.5	566.5	566.5	566.5	566.5	566.5
14	566.5	566.5	566.5	566.5	566.5	566.5	566.5	566.5
15	566.3	566.3	566.3	566.3	566.3	566.3	566.3	566.3
16	566.3	566.3	566.3	566.3	566.3	566.3	566.3	566.3
Median	508.5	508.5	508.5	508.5	508.5	508.5	508.5	508.5
Average	508.5	508.5	508.5	508.5	508.5	508.5	508.5	508.6
Std. deviation	0.00000	0.00000	0.00000	0.00000	0.09661	0.03416	0.05000	0.08140
Min.	508.5	508.5	508.5	508.5	508.5	508.5	508.5	508.5
Max.	508.5	508.5	508.5	508.5	508.8	508.6	508.6	508.7

