Photometric Test Report

Relevant Standards

☑ IES LM-79-2008
☐ ANSI C82.77-10-2014
☐ UL1598-2008

Prepared For

GREEN CREATIVE LTD

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Catalog Number

EXCYL6/WM/L/8CCT3S/DIM010UNV/%/%/#/CC**

Project Number
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Test Date
2024-09-27
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2024-11-30
Revision Date
N/A

Prepared By	Approved By
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1.0 Test List

Sample Received Date: 2024-08-26

Test No.	Test Item	Sample ID	Model Number	Test Conducted By
1	Integrating Sphere Test	7537302-4	EXCYL6/WMDI/L/8CCT3S/DIM010UNV /SP/SP/BK/CC	James Tan
2	Goniophotometer Test	7537302-1	EXCYL6/WMDI/L/8CCT3S/DIM010UNV /VN/VN/BK/CC	James Tan
3	Goniophotometer Test	7537302-2	EXCYL6/WMDI/L/8CCT3S/DIM010UNV /NR/NR/BK/CC	James Tan
4	Goniophotometer Test	7537302-3	EXCYL6/WMDI/L/8CCT3S/DIM010UNV /VN/VN/BK/CC	James Tan
5	Goniophotometer Test	7537302-4	EXCYL6/WMDI/L/8CCT3S/DIM010UNV /SP/SP/BK/CC	James Tan

Remark (if any)

[X] 1. UL test equipment information is recorded on Meter Use in UL's Aurora database.

2.0 Product Description

Luminaire Description: Wall-Mounted Area Luminaires

Model Number: EXCYL6/WMDI/L/8CCT3S/DIM010UNV/SP/SP/BK/CC

Electrical Ratings and CCT: 120-277Vac, 50/60 Hz, 35W, 3000K/3500K/4000K

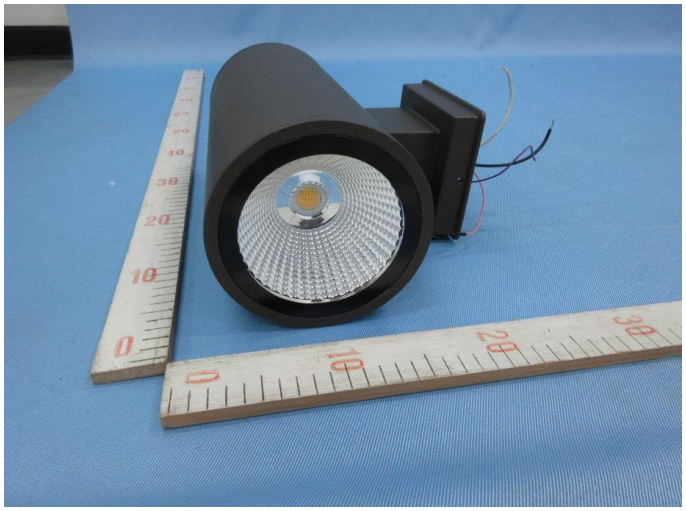
Driver Model Number: BW-998-CSP-35W

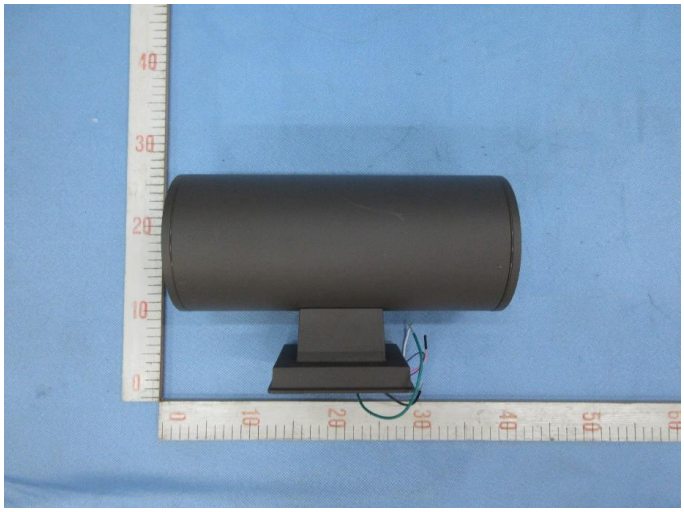
LED Package: BXCP-30E-11M-J19-3-A1 and BXCP-40E-11M-J19-3-A1, Bridgelux Inc.

Family Model and Variation: EXCYL6/WM**/L/8CCT3S/DIM010UNV/%/%/#/CC

% means Optic: SP(15°), VN(25°), NR(40°), MD(60°) or blank;
# means finish color: BZ, BK, SV, WH, RALxxxx;
* means ligting direction : D (direct), I (indirect), DI (direct and indirect);

Photos of Luminaire Characteristics





3.0 LM-79 Measurement and Test Results

3.1 Integrating Sphere Test 3000K

Model No.	EXCYL6/WMDI/L/8CCT3S/DIM010UNV/SP/SP/BK/CC	Sample ID.	7537302-4
Operate time (Min.)	55	Stabilization time (Min.)	50

Test Method

1.The sample was tested according to the IES LM-79-2008, and the product is assume to be brand new without seasoning.
2.Photometric paramters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25º C ± 1.0º C.The reference standard lamp is power 100W omni-directional Incandescent lamp and was calibrated by National Institute of Metrology, China.
3.The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. Coating reflectance of the integrating sphere was 90% to 98%.Photometric measurement conditions was using 4π geometry.The self-absorption factor is applied in the final test result.The sample was operated at rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm.

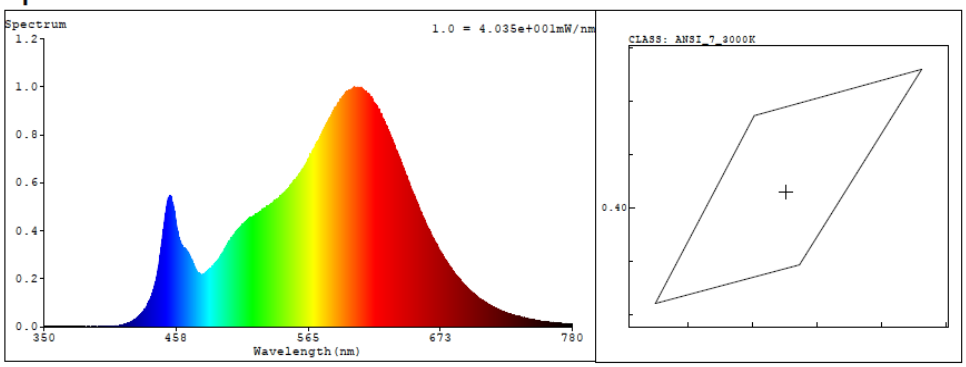
Integrating Sphere Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation
24.8	120	60	0.290	34.66	0.9968	Vertical

Test Results

CCT (K)	CRI (Ra)	R9	Rf	Rg	Luminous Flux (lm)	Luminous Efficacy (lm/W)
3000	84	10	86	95	4393.7	126.8

Spectrum



Colorimetric Parameters

Chromaticity Coordinate: x = 0.4352 y = 0.4029 / u' = 0.2500 v' = 0.5207 (duv=-2.26e-04)
CCT= 3020K Prcp WL: Ld=582.8nm Purity=51.6%
Peak WL: Lp=603nm FWHM: =124.7nm Ratio:R=23.1% G=74.0% B=2.9%
Render Index: Ra = 84.0 TM30:Rf=85 Rg=95

R1 =83	R2 =93	R3 =95	R4 =82	R5 =84	R6 =93	R7 =82	
R8 =60	R9 =10	R10=85	R11=83	R12=76	R13=86	R14=98	R15=75

3.0 LM-79 Measurement and Test Results

3.1 Integrating Sphere Test 3500K

Model No.	EXCYL6/WMDI/L/8CCT3S/DIM010UNV/SP/SP/BK/CC	Sample ID.	7537302-4
Operate time (Min.)	55	Stabilization time (Min.)	50

Test Method

1.The sample was tested according to the IES LM-79-2008, and the product is assume to be brand new without seasoning.
2.Photometric paramters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25º C ± 1.0º C.The reference standard lamp is power 100W omni-directional Incandescent lamp and was calibrated by National Institute of Metrology, China.
3.The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. Coating reflectance of the integrating sphere was 90% to 98%.Photometric measurement conditions was using 4π geometry.The self-absorption factor is applied in the final test result.The sample was operated at rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm.

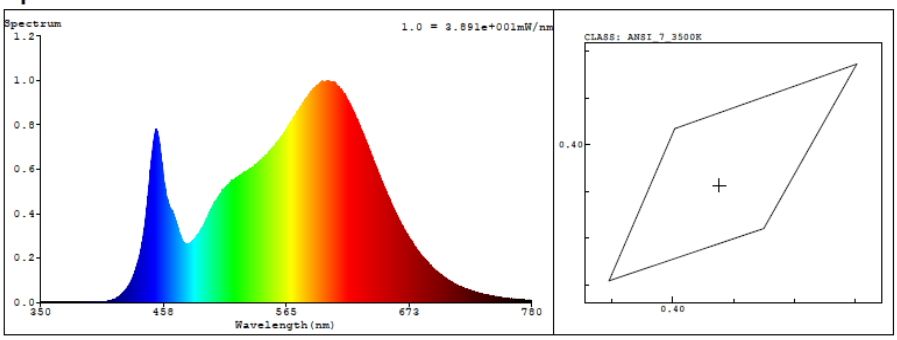
Integrating Sphere Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation
24.8	120	60	0.286	34.2	0.9969	Vertical

Test Results

CCT (K)	CRI (Ra)	R9	Rf	Rg	Luminous Flux (lm)	Luminous Efficacy (lm/W)
3454	84.5	11	85	96	4578.3	133.9

Spectrum



Colorimetric Parameters

Chromaticity Coordinate: x = 0.4077 y = 0.3914 / u' = 0.2370 v' = 0.5119 (duv=-2.35e-04)
CCT= 3454K Prcp WL: Ld=581.1nm Purity=39.8%
Peak WL: Lp=601nm FWHM: =144.3nm Ratio:R=20.7% G=75.9% B=3.3%
Render Index: Ra = 84.5 TM30:Rf=85 Rg=95

R1 =83	R2 =92	R3 =96	R4 =83	R5 =84	R6 =90	R7 =84
R8 =62	R9 =11	R10=82	R11=83	R12=72	R13=86	R14=99	R15=76

3.0 LM-79 Measurement and Test Results

3.1 Integrating Sphere Test 4000K

Model No.	EXCYL6/WMDI/L/8CCT3S/DIM010UNV/SP/SP/BK/CC	Sample ID.	7537302-4
Operate time (Min.)	55	Stabilization time (Min.)	50

Test Method

1.The sample was tested according to the IES LM-79-2008, and the product is assume to be brand new without seasoning.
2.Photometric paramters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25º C ± 1.0º C.The reference standard lamp is power 100W omni-directional Incandescent lamp and was calibrated by National Institute of Metrology, China.
3.The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. Coating reflectance of the integrating sphere was 90% to 98%.Photometric measurement conditions was using 4π geometry.The self-absorption factor is applied in the final test result.The sample was operated at rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm.

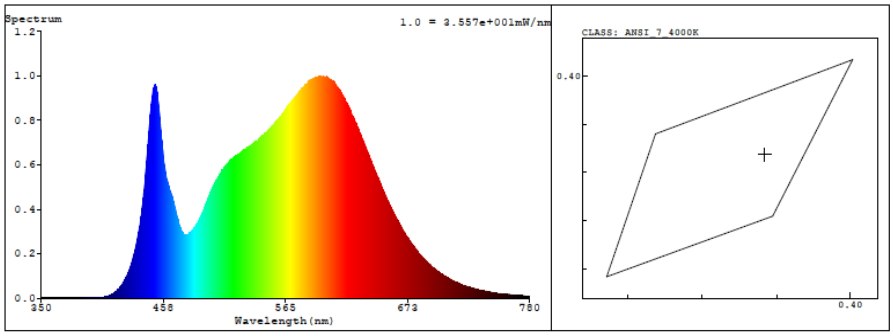
Integrating Sphere Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation
24.8	120	60	0.291	34.78	0.9969	Vertical

Test Results

CCT (K)	CRI (Ra)	R9	Rf	Rg	Luminous Flux (lm)	Luminous Efficacy (lm/W)
3864	83.5	6	85	95	4498.8	129.3

Spectrum



Colorimetric Parameters

Chromaticity Coordinate: x = 0.3884 y = 0.3837 / u' = 0.2275 v' = 0.5058 (duv=9.90e-04)
CCT= 3843K Prcp WL: Ld=579.2nm Purity=31.7%
Peak WL: Lp=596nm FWHM: =148.9nm Ratio:R=18.9% G=77.6% B=3.6%
Render Index: Ra = 83.5 TM30:Rf=85 Rg=95

R1 =82	R2 =90	R3 =96	R4 =83	R5 =82	R6 =87	R7 =85	
R8 =63	R9 =6	R10=77	R11=82	R12=67	R13=84	R14=98	R15=75

3.0 LM-79 Measurement and Test Results

3.2 Goniophotometer Test 3000K

Model No.	EXCYL6/WMDI/L/8CCT3S/DIM010UNV/MD/MD/BK/CC	Sample ID.	7537302-1
Operate time (Min.)	60	Stabilization time (Min.)	50

Test Method

1.The sample was tested according to the IES LM-79-2008, and the product is assume to be brand new without seasoning.
2.Photometric paramters were measured using a type C goniophotometer and software.
3.The ambient temperature shall be maintained at 25° C ± 1.0° C, measured at a point not more than 1 m from the sample and at the same height as the sample. The reference standard lamp is power 400W omni-directional Incandescent lamp and was calibrated by National Institute of Metrology, China.
4.The samples were operated at rated voltage and was stabilized before measurement. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 1° vertical intervals and 22.5° horizontal intervals. Photometric distance was more than five times of the largest dimension of the test SSL product.

Goniophotometer Test Conditions

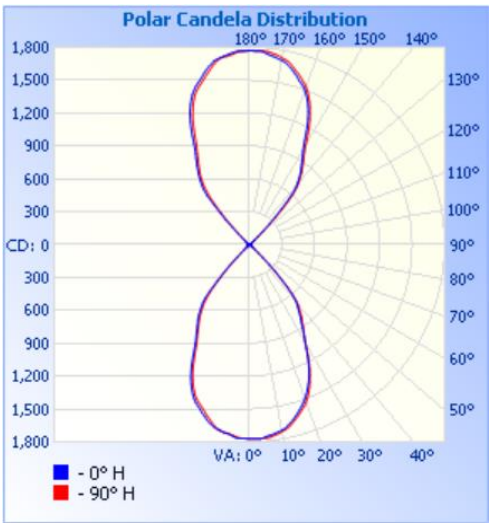
Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation
25	120.05	60	0.282	33.77	0.9964	Face down and up

Test Result

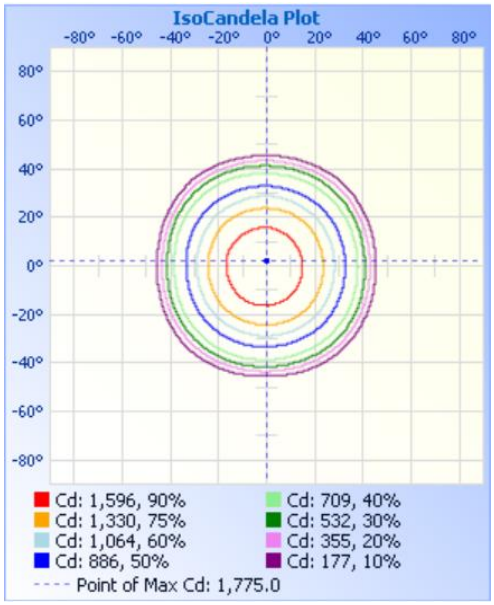
Field Angle (10%)		Beam Angle (50%)		Flux (lm)	Luminous Efficacy (lm/W)
Horizontal Spread	Vertical Spread	Horizontal Spread	Vertical Spread		
90.8	91	65.8	66.3	3882.6	115.0

3.2 Goniophotometer Test (Cont'd)

Light Distribution Curve



IsoCandela Plot



3.2 Goniophotometer Test (Cont'd)

Zonal Lumen Summary

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	1,199.4	30.9%
0-40	1,711.4	44.1%
0-60	1,920.8	49.5%
60-90	21.2	0.5%
70-100	10.0	0.3%
90-120	21.2	0.5%
0-90	1,942.0	50%
90-180	1,940.5	50%
0-180	3,882.6	100%

Lumens Per Zone

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	166.4	4.3%	90-100	1.6	0%
10-20	454.2	11.7%	100-110	6.9	0.2%
20-30	578.7	14.9%	110-120	12.8	0.3%
30-40	512.0	13.2%	120-130	19.9	0.5%
40-50	189.5	4.9%	130-140	189.0	4.9%
50-60	20.0	0.5%	140-150	511.8	13.2%
60-70	12.8	0.3%	150-160	578.3	14.9%
70-80	6.9	0.2%	160-170	453.9	11.7%
80-90	1.6	0.0%	170-180	166.3	4.3%

3.2 Goniophotometer Test (Cont'd)

Intensity Data(cd)

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	360
0	1771	1771	1771	1771	1771	1771	1771	1771	1771	1771	1771	1771	1771	1771	1771	1771	1771
1	1773	1771	1768	1770	1771	1771	1768	1768	1770	1766	1766	1768	1767	1765	1770	1770	1770
2	1770	1769	1769	1769	1770	1768	1766	1765	1767	1766	1767	1765	1767	1766	1769	1767	1770
3	**1775**	1773	1771	1770	1772	1774	1773	1771	1771	1766	1768	1768	1766	1767	1769	1772	1771
4	1769	1773	1773	1773	1772	**1775**	1773	1770	1768	1759	1763	1759	1757	1757	1762	1767	1767
5	1758	1768	1770	1771	1770	1771	1768	1760	1754	1752	1746	1747	1745	1746	1750	1755	1758
6	1750	1757	1763	1763	1768	1762	1757	1750	1742	1743	1738	1735	1738	1735	1743	1746	1752
7	1745	1749	1753	1758	1759	1756	1750	1741	1733	1728	1724	1725	1732	1731	1740	1739	1742
8	1736	1741	1748	1753	1752	1749	1741	1736	1726	1724	1720	1723	1730	1729	1732	1730	1736
9	1726	1732	1737	1742	1744	1739	1733	1723	1715	1716	1713	1718	1723	1722	1727	1727	1726
10	1721	1723	1728	1728	1730	1728	1716	1713	1708	1708	1709	1707	1707	1705	1715	1714	1719
11	1709	1725	1717	1722	1721	1717	1711	1704	1699	1699	1686	1687	1685	1685	1688	1698	1711
12	1689	1697	1709	1707	1708	1702	1697	1688	1682	1675	1666	1667	1661	1663	1672	1678	1687
13	1668	1686	1683	1691	1691	1682	1675	1671	1661	1658	1648	1638	1635	1637	1643	1655	1667
14	1652	1646	1669	1674	1668	1663	1655	1651	1641	1630	1621	1612	1609	1609	1621	1630	1645
15	1624	1637	1642	1648	1646	1642	1635	1624	1615	1609	1596	1586	1584	1583	1594	1608	1620
16	1601	1609	1619	1627	1625	1623	1610	1605	1594	1575	1567	1563	1559	1557	1567	1579	1592
17	1577	1583	1597	1604	1601	1595	1591	1586	1566	1554	1546	1539	1535	1534	1545	1555	1569
18	1553	1557	1568	1584	1579	1574	1568	1558	1546	1531	1523	1517	1514	1516	1524	1533	1547
19	1523	1539	1548	1555	1556	1546	1544	1532	1524	1508	1499	1494	1491	1491	1505	1512	1526
20	1495	1511	1522	1530	1528	1522	1515	1508	1496	1486	1475	1463	1463	1469	1474	1486	1498
25	1299	1314	1326	1330	1320	1315	1299	1292	1275	1261	1248	1236	1231	1239	1254	1277	1298
30	1025	1019	1041	1040	1028	1022	1010	997	986	975	972	963	963	963	971	986	1005
35	825	841	848	862	847	845	841	836	830	810	808	800	798	800	810	821	829
40	658	674	689	685	676	667	659	652	637	617	586	574	565	564	589	631	660
45	257	239	273	257	261	247	221	196	168	164	143	147	153	164	177	201	217
50	46	43	45	43	42	40	39	38	37	37	35	32	32	33	36	38	40
55	23	21	23	22	22	22	20	20	20	19	19	18	19	19	20	20	21
60	16	16	16	16	16	16	15	16	15	15	16	15	16	15	16	16	16
65	13	14	13	14	14	13	13	13	12	13	12	13	13	13	13	13	13
70	10	10	10	10	10	10	10	9	10	10	9	9	9	10	9	10	10
75	7	7	7	6	6	7	7	6	7	7	6	7	6	6	7	6	7
80	4	3	4	4	3	3	3	4	3	3	3	3	3	3	4	3	3
85	2	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
95	1	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1
100	3	4	3	3	3	4	4	3	3	3	4	3	3	3	3	3	3
105	7	6	7	7	6	6	7	7	7	6	7	6	6	7	6	7	7
110	10	9	10	10	10	10	10	10	10	10	9	10	9	9	9	10	10
115	12	13	13	13	14	14	13	14	13	13	13	13	13	13	12	13	12
120	15	16	15	16	16	16	16	16	16	16	16	15	16	15	16	15	15
125	20	20	20	22	22	22	23	21	21	20	20	19	19	18	19	19	20
130	37	38	39	40	42	43	45	43	40	38	36	33	32	32	35	37	37
135	168	196	221	247	261	257	273	239	217	201	177	164	153	147	143	164	168
140	637	652	659	667	676	685	689	674	660	631	589	564	565	574	586	617	637
145	830	836	841	845	847	862	848	841	829	821	810	800	798	800	808	810	830
150	986	997	1010	1022	1028	1040	1041	1019	1005	986	971	963	963	963	972	975	986
155	1275	1292	1299	1315	1320	1330	1326	1314	1298	1277	1254	1239	1231	1236	1248	1261	1275
160	1496	1508	1515	1522	1528	1530	1522	1511	1498	1486	1474	1469	1463	1463	1475	1486	1496
165	1615	1624	1635	1642	1646	1648	1642	1637	1620	1608	1594	1583	1584	1586	1596	1609	1615
170	1708	1713	1716	1728	1730	1728	1728	1723	1719	1714	1715	1705	1707	1707	1709	1708	1708
175	1754	1760	1768	1771	1770	1771	1770	1768	1758	1755	1750	1746	1745	1747	1746	1752	1754
180	1771	1771	1771	1771	1771	1771	1771	1771	1771	1771	1771	1771	1771	1771	1771	1771	1771

3.0 LM-79 Measurement and Test Results

3.3 Goniophotometer Test 3000K

Model No.	EXCYL6/WMDI/L/8CCT3S/DIM010UNV/NR/NR/BK/CC	Sample ID.	7537302-2
Operate time (Min.)	60	Stabilization time (Min.)	50

Test Method

1.The sample was tested according to the IES LM-79-2008, and the product is assume to be brand new without seasoning.
2.Photometric paramters were measured using a type C goniophotometer and software.
3.The ambient temperature shall be maintained at 25° C ± 1.0° C, measured at a point not more than 1 m from the sample and at the same height as the sample. The reference standard lamp is power 400W omni-directional Incandescent lamp and was calibrated by National Institute of Metrology, China.
4.The samples were operated at rated voltage and was stabilized before measurement. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 1° vertical intervals and 22.5° horizontal intervals. Photometric distance was more than five times of the largest dimension of the test SSL product.

Goniophotometer Test Conditions

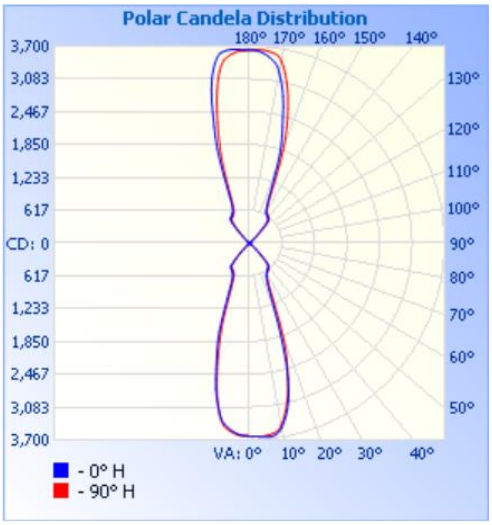
Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation
25	120.04	60	0.282	33.76	0.9964	Face down and up

Test Result

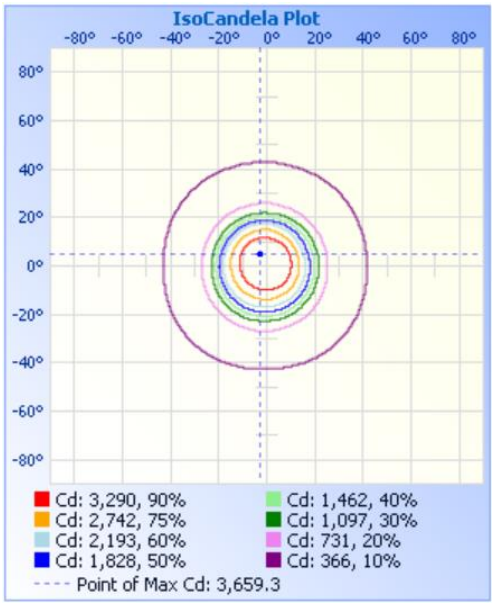
Field Angle (10%)		Beam Angle (50%)		Flux (lm)	Luminous Efficacy (lm/W)
Horizontal Spread	Vertical Spread	Horizontal Spread	Vertical Spread		
84.4	85.5	36.3	37.5	4010.3	118.8

3.3 Goniophotometer Test (Cont'd)

Light Distribution Curve



IsoCandela Plot



3.3 Goniophotometer Test (Cont'd)

Zonal Lumen Summary

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	1,440.6	35.9%
0-40	1,812.8	45.2%
0-60	1,994.8	49.7%
60-90	11.3	0.3%
70-100	4.9	0.1%
90-120	11.3	0.3%
0-90	2,006.1	50%
90-180	2,004.1	50%
0-180	4,010.3	100%

Lumens Per Zone

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	338.3	8.4%	90-100	1.2	0%
10-20	699.0	17.4%	100-110	2.4	0.1%
20-30	403.3	10.1%	110-120	7.6	0.2%
30-40	372.2	9.3%	120-130	18.6	0.5%
40-50	163.4	4.1%	130-140	162.5	4.1%
50-60	18.6	0.5%	140-150	372.1	9.3%
60-70	7.6	0.2%	150-160	403.2	10.1%
70-80	2.4	0.1%	160-170	698.4	17.4%
80-90	1.2	0.0%	170-180	338.1	8.4%

3.3 Goniophotometer Test (Cont'd)

Intensity Data(cd)

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	360
0	3629	3629	3629	3629	3629	3629	3629	3629	3629	3629	3629	3629	3629	3629	3629	3629	3629
1	3634	3637	3636	3639	3638	3636	3633	3627	3624	3619	3617	3617	3617	3620	3624	3629	3635
2	3632	3632	3636	3638	3636	3632	3631	3631	3623	3617	3617	3616	3614	3619	3626	3628	3634
3	3649	3648	3650	3646	3641	3635	3624	3618	3607	3607	3611	3618	3619	3626	3631	3636	3644
4	3650	3651	3655	3649	3638	3621	3603	3588	3583	3586	3589	3593	3605	3620	3637	3646	3650
5	3651	3654	3654	3649	3630	3604	3570	3561	3556	3551	3556	3565	3579	3602	3632	3643	3654
6	3659	3656	3659	3642	3619	3585	3548	3522	3520	3521	3516	3528	3553	3572	3609	3638	3655
7	3652	3659	3651	3634	3606	3566	3519	3488	3478	3473	3481	3492	3515	3537	3578	3620	3644
8	3631	3659	3644	3618	3586	3539	3488	3449	3433	3428	3441	3442	3475	3506	3552	3601	3631
9	3590	3628	3625	3590	3554	3490	3433	3390	3369	3353	3359	3367	3395	3448	3507	3560	3609
10	3521	3552	3568	3524	3474	3394	3333	3280	3252	3231	3236	3238	3278	3334	3408	3474	3539
11	3426	3459	3484	3429	3374	3284	3226	3164	3117	3096	3092	3095	3126	3201	3279	3367	3440
12	3315	3366	3369	3324	3255	3165	3085	3025	2979	2969	2931	2922	2949	3017	3115	3227	3315
13	3197	3248	3241	3203	3119	3048	2942	2863	2826	2763	2751	2732	2762	2818	2908	3043	3173
14	3043	3075	3093	3058	2980	2897	2795	2704	2643	2555	2555	2530	2549	2584	2687	2845	2980
15	2863	2855	2910	2893	2817	2748	2630	2542	2441	2379	2358	2327	2340	2351	2468	2626	2759
16	2649	2674	2709	2719	2637	2575	2454	2371	2264	2199	2180	2128	2138	2134	2254	2408	2518
17	2400	2501	2499	2527	2464	2398	2285	2199	2104	2013	1988	1936	1943	1932	2039	2194	2289
18	2106	2279	2296	2333	2284	2229	2116	2027	1942	1847	1797	1763	1756	1740	1843	1988	2090
19	1807	1997	2087	2109	2086	2012	1943	1848	1757	1659	1584	1556	1557	1564	1637	1755	1879
20	1523	1707	1834	1849	1852	1774	1739	1634	1528	1440	1352	1322	1307	1356	1415	1486	1619
25	786	810	831	857	858	864	853	833	799	769	744	723	716	719	732	751	776
30	648	654	659	665	664	662	656	652	641	630	627	616	612	614	624	633	644
35	600	609	617	619	610	611	613	608	599	582	581	581	577	578	584	590	603
40	552	562	573	581	574	564	556	543	530	516	479	465	454	452	481	511	547
45	261	210	245	250	251	261	211	185	150	136	122	116	122	128	138	168	186
50	35	33	34	36	36	37	31	29	29	29	30	27	28	28	28	29	30
55	21	23	22	23	23	24	21	19	19	19	19	18	18	19	19	20	21
60	14	16	15	16	15	15	13	12	12	13	12	11	12	12	12	14	14
65	8	8	9	8	8	8	8	8	7	7	6	6	6	7	7	7	8
70	4	4	4	4	4	4	4	4	3	4	3	3	3	3	4	3	4
75	3	3	2	3	2	3	2	2	2	2	2	2	2	2	2	2	3
80	2	2	2	2	2	2	2	1	1	1	2	1	1	2	2	3	2
85	1	1	2	1	1	1	1	1	2	1	1	1	1	1	1	2	1
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
95	2	1	1	1	1	1	2	1	1	2	1	1	1	1	1	1	2
100	1	1	2	2	2	2	2	2	2	3	2	2	1	1	2	1	1
105	2	2	2	3	2	3	2	3	3	2	2	2	2	2	2	2	2
110	3	4	4	4	4	4	4	4	4	3	4	3	3	3	3	4	3
115	7	8	8	8	8	8	9	8	8	7	7	7	6	6	6	7	7
120	12	12	13	15	15	16	15	16	14	14	12	12	12	11	12	13	12
125	19	19	21	24	23	23	22	23	21	20	19	19	18	18	19	19	19
130	29	29	31	37	36	36	34	33	30	29	28	28	28	27	30	29	29
135	150	185	211	261	251	250	245	210	186	168	138	128	122	116	122	136	150
140	530	543	556	564	574	581	573	562	547	511	481	452	454	465	479	516	530
145	599	608	613	611	610	619	617	609	603	590	584	578	577	581	581	582	599
150	641	652	656	662	664	665	659	654	644	633	624	614	612	616	627	630	641
155	799	833	853	864	858	857	831	810	776	751	732	719	716	723	744	769	799
160	1528	1634	1739	1774	1852	1849	1834	1707	1619	1486	1415	1356	1307	1322	1352	1440	1528
165	2441	2542	2630	2748	2817	2893	2910	2855	2759	2626	2468	2351	2340	2327	2358	2379	2441
170	3252	3280	3333	3394	3474	3524	3568	3552	3539	3474	3408	3334	3278	3238	3236	3231	3252
175	3556	3561	3570	3604	3630	3649	3654	3654	3654	3643	3632	3602	3579	3565	3556	3551	3556
180	3629	3629	3629	3629	3629	3629	3629	3629	3629	3629	3629	3629	3629	3629	3629	3629	3629

3.0 LM-79 Measurement and Test Results

3.4 Goniophotometer Test 3000K

Model No.	EXCYL6/WMDI/L/8CCT3S/DIM010UNV/VN/VN/BK/CC	Sample ID.	7537302-3
Operate time (Min.)	60	Stabilization time (Min.)	50

Test Method

1.The sample was tested according to the IES LM-79-2008, and the product is assume to be brand new without seasoning.
2.Photometric paramters were measured using a type C goniophotometer and software.
3.The ambient temperature shall be maintained at 25° C ± 1.0° C, measured at a point not more than 1 m from the sample and at the same height as the sample. The reference standard lamp is power 400W omni-directional Incandescent lamp and was calibrated by National Institute of Metrology, China.
4.The samples were operated at rated voltage and was stabilized before measurement. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 1° vertical intervals and 22.5° horizontal intervals. Photometric distance was more than five times of the largest dimension of the test SSL product.

Goniophotometer Test Conditions

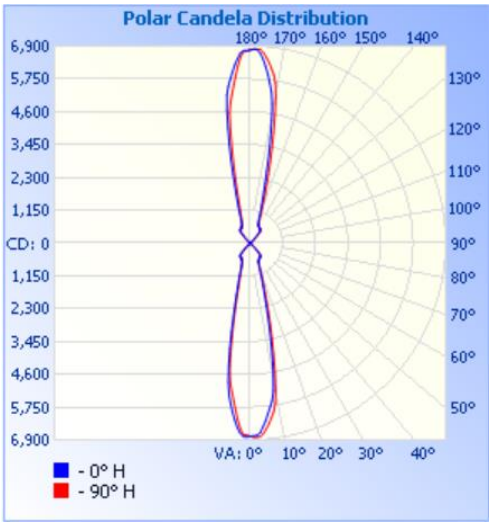
Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation
25	120.04	60	0.282	33.74	0.9963	Face down and up

Test Result

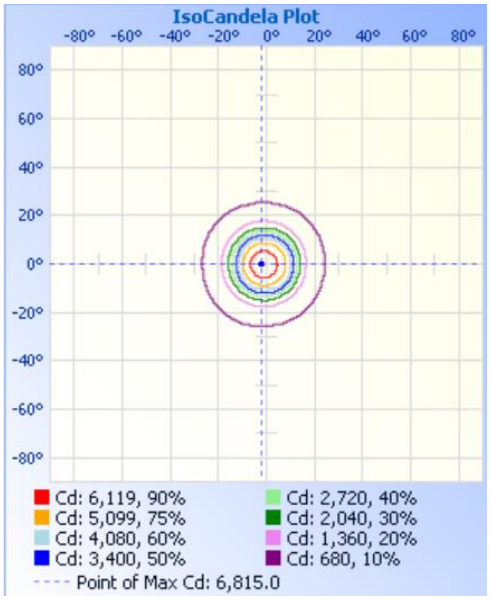
Field Angle (10%)		Beam Angle (50%)		Flux (lm)	Luminous Efficacy (lm/W)
Horizontal Spread	Vertical Spread	Horizontal Spread	Vertical Spread		
51.1	n/a	24.2	n/a	4072.2	120.7

3.4 Goniophotometer Test (Cont'd)

Light Distribution Curve



IsoCandela Plot



3.4 Goniophotometer Test (Cont'd)

Zonal Lumen Summary

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	1,474.9	36.2%
0-40	1,846.2	45.3%
0-60	2,029.7	49.8%
60-90	6.9	0.2%
70-100	3.3	0.1%
90-120	6.9	0.2%
0-90	2,036.6	50%
90-180	2,035.6	50%
0-180	4,072.2	100%

Lumens Per Zone

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	546.1	13.4%	90-100	0.7	0%
10-20	596.4	14.6%	100-110	1.9	0%
20-30	332.3	8.2%	110-120	4.3	0.1%
30-40	371.4	9.1%	120-130	16.7	0.4%
40-50	166.8	4.1%	130-140	166.7	4.1%
50-60	16.7	0.4%	140-150	371.2	9.1%
60-70	4.3	0.1%	150-160	332.2	8.2%
70-80	1.9	0.0%	160-170	596.1	14.6%
80-90	0.7	0.0%	170-180	545.8	13.4%

3.4 Goniophotometer Test (Cont'd)

Intensity Data(cd)

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	360
0	6769	6769	6769	6769	6769	6769	6769	6769	6769	6769	6769	6769	6769	6769	6769	6769	6769
1	6755	6761	6777	6788	6804	6811	6809	6808	6792	6775	6755	6738	6730	6720	6723	6735	6744
2	6749	6762	6776	6796	6803	6811	6815	6802	6789	6767	6743	6727	6717	6710	6714	6722	6745
3	6654	6720	6783	6797	6795	6793	6774	6731	6672	6620	6572	6547	6522	6525	6550	6599	6667
4	6457	6555	6642	6695	6697	6671	6623	6546	6475	6383	6305	6243	6214	6253	6318	6384	6470
5	6248	6380	6477	6542	6536	6506	6440	6338	6225	6082	6002	5913	5882	5936	6031	6124	6258
6	6014	6166	6289	6355	6364	6302	6206	6080	5959	5733	5655	5592	5557	5622	5724	5853	6010
7	5782	5957	6087	6159	6160	6097	5984	5816	5659	5394	5314	5279	5258	5341	5456	5594	5769
8	5568	5750	5895	5963	5968	5881	5749	5572	5366	5122	5013	4988	4981	5067	5193	5345	5547
9	5241	5410	5591	5684	5674	5604	5435	5227	4943	4801	4633	4589	4609	4689	4826	5030	5248
10	4692	4909	5090	5197	5199	5095	4876	4637	4364	4231	4040	3966	4001	4085	4244	4484	4713
11	4087	4366	4521	4606	4585	4479	4241	3994	3758	3580	3422	3336	3349	3449	3609	3846	4105
12	3519	3779	3947	4012	3980	3855	3632	3411	3168	2926	2811	2766	2781	2876	3051	3271	3536
13	2988	3198	3375	3491	3425	3307	3095	2874	2611	2398	2294	2259	2276	2395	2547	2760	3002
14	2503	2690	2865	2998	2926	2802	2629	2406	2183	1996	1914	1877	1890	1995	2130	2315	2506
15	2099	2272	2406	2550	2498	2383	2220	2013	1854	1703	1623	1581	1598	1682	1805	1944	2096
16	1795	1925	2033	2163	2115	2018	1880	1706	1597	1432	1396	1353	1357	1446	1536	1650	1790
17	1555	1672	1757	1854	1798	1714	1607	1471	1384	1251	1213	1183	1184	1258	1336	1422	1545
18	1356	1447	1518	1598	1544	1480	1390	1284	1211	1107	1074	1062	1061	1116	1180	1240	1343
19	1187	1262	1323	1364	1341	1292	1218	1137	1065	991	971	958	963	1003	1049	1107	1180
20	1037	1095	1145	1161	1166	1125	1068	1001	935	897	876	868	876	902	938	984	1038
25	693	704	713	722	722	718	705	697	682	672	663	654	652	660	668	681	692
30	633	642	648	656	651	646	646	642	633	619	616	604	598	602	611	621	633
35	602	612	620	617	616	614	615	608	599	582	581	574	569	571	578	589	603
40	553	571	579	589	582	571	563	549	531	516	476	468	461	452	483	513	553
45	203	214	261	281	263	245	216	189	149	121	106	108	120	130	154	181	202
50	36	37	43	48	42	38	36	36	31	31	30	27	28	30	34	34	35
55	18	19	20	22	21	21	19	19	17	15	15	14	14	16	16	17	18
60	9	9	9	11	10	10	9	9	8	7	6	6	6	7	7	7	8
65	4	5	4	4	5	5	5	4	4	4	3	3	4	3	4	4	4
70	2	3	2	3	3	3	3	2	2	2	3	2	2	3	3	3	2
75	2	2	2	2	2	2	1	2	1	1	2	2	1	2	2	2	2
80	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
85	1	1	1	0	1	1	1	0	1	1	1	0	1	1	0	1	1
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
95	1	0	1	1	1	0	1	1	1	1	0	1	1	0	1	1	1
100	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
105	1	2	1	2	2	2	2	2	2	2	2	2	1	2	2	1	1
110	2	2	3	3	3	3	2	3	2	3	3	3	2	2	3	2	2
115	4	4	5	5	5	4	4	5	4	4	4	3	4	3	3	4	4
120	8	9	9	10	10	11	9	9	8	7	7	7	6	6	6	7	8
125	17	19	19	21	21	22	20	19	18	17	16	16	14	14	15	15	17
130	31	36	36	38	42	48	43	37	35	34	34	30	28	27	30	31	31
135	149	189	216	245	263	281	261	214	202	181	154	130	120	108	106	121	149
140	531	549	563	571	582	589	579	571	553	513	483	452	461	468	476	516	531
145	599	608	615	614	616	617	620	612	603	589	578	571	569	574	581	582	599
150	633	642	646	646	651	656	648	642	633	621	611	602	598	604	616	619	633
155	682	697	705	718	722	722	713	704	692	681	668	660	652	654	663	672	682
160	935	1001	1068	1125	1166	1161	1145	1095	1038	984	938	902	876	868	876	897	935
165	1854	2013	2220	2383	2498	2550	2406	2272	2096	1944	1805	1682	1598	1581	1623	1703	1854
170	4364	4637	4876	5095	5199	5197	5090	4909	4713	4484	4244	4085	4001	3966	4040	4231	4364
175	6225	6338	6440	6506	6536	6542	6477	6380	6258	6124	6031	5936	5882	5913	6002	6082	6225
180	6769	6769	6769	6769	6769	6769	6769	6769	6769	6769	6769	6769	6769	6769	6769	6769	6769

3.0 LM-79 Measurement and Test Results

3.5 Goniophotometer Test 3000K

Model No.	EXCYL6/WMDI/L/8CCT3S/DIM010UNV/SP/SP/BK/CC	Sample ID.	7537302-4
Operate time (Min.)	60	Stabilization time (Min.)	50

Test Method

1.The sample was tested according to the IES LM-79-2008, and the product is assume to be brand new without seasoning.
2.Photometric paramters were measured using a type C goniophotometer and software.
3.The ambient temperature shall be maintained at 25° C ± 1.0° C, measured at a point not more than 1 m from the sample and at the same height as the sample. The reference standard lamp is power 400W omni-directional Incandescent lamp and was calibrated by National Institute of Metrology, China.
4.The samples were operated at rated voltage and was stabilized before measurement. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 1° vertical intervals and 22.5° horizontal intervals. Photometric distance was more than five times of the largest dimension of the test SSL product.

Goniophotometer Test Conditions

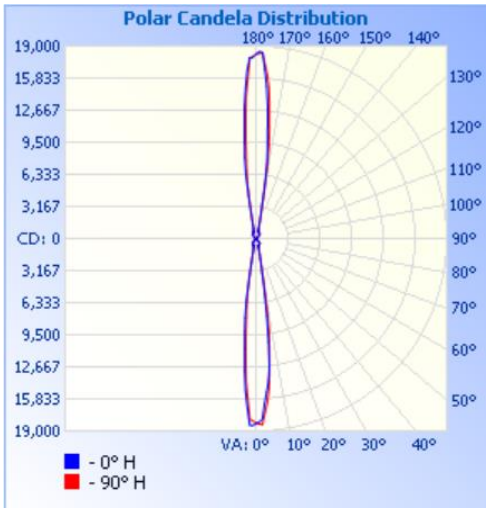
Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation
25	120.04	60	0.282	33.76	0.9962	Face down and up

Test Result

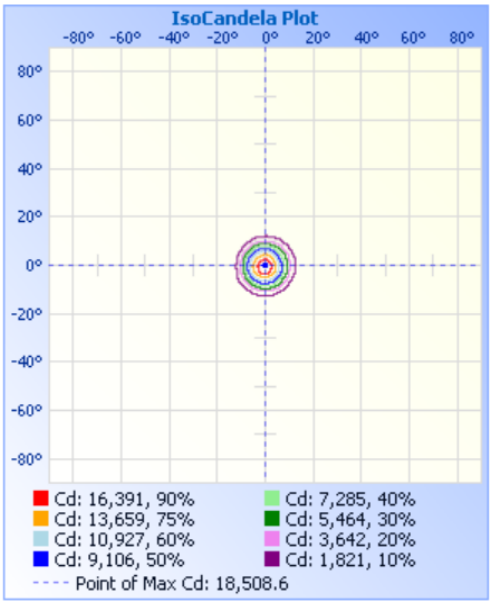
Field Angle (10%)		Beam Angle (50%)		Flux (lm)	Luminous Efficacy (lm/W)
Horizontal Spread	Vertical Spread	Horizontal Spread	Vertical Spread		
24.7	24.7	14.5	14.6	4350.6	128.9

3.5 Goniophotometer Test (Cont'd)

Light Distribution Curve



IsoCandela Plot



3.5 Goniophotometer Test (Cont'd)

Zonal Lumen Summary

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	1,619.6	37.2%
0-40	1,991.6	45.8%
0-60	2,172.3	49.9%
60-90	4.2	0.1%
70-100	1.9	0%
90-120	4.2	0.1%
0-90	2,176.5	50%
90-180	2,174.1	50%
0-180	4,350.6	100%

Lumens Per Zone

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	965.4	22.2%	90-100	0.4	0%
10-20	347.0	8.0%	100-110	1.2	0%
20-30	307.3	7.1%	110-120	2.6	0.1%
30-40	372.0	8.6%	120-130	7.6	0.2%
40-50	173.0	4.0%	130-140	172.5	4%
50-60	7.7	0.2%	140-150	371.8	8.5%
60-70	2.6	0.1%	150-160	307.1	7.1%
70-80	1.2	0.0%	160-170	346.3	8%
80-90	0.4	0.0%	170-180	964.5	22.2%

3.5 Goniophotometer Test (Cont'd)

Intensity Data(cd)

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	360
0	18212	18212	18212	18212	18212	18212	18212	18212	18212	18212	18212	18212	18212	18212	18212	18212	18212
1	18096	18019	18107	18225	18298	18449	18494	**18509**	18457	18370	18224	18258	17970	17904	17894	17846	17900
2	17860	17974	18153	18290	18384	18450	18490	18481	18401	18302	18115	18028	17871	17808	17807	17807	17860
3	16309	16814	17132	17344	17163	17180	17271	17165	16687	16305	16139	15880	15745	15505	15501	16022	16675
4	15180	14970	15359	16035	16188	16076	16227	15972	15083	14489	14293	14311	14130	14182	14285	14681	14915
5	14114	13633	14068	14360	14888	14798	14530	13800	13133	12553	12132	12013	11767	12049	12351	12754	13194
6	12737	11742	12110	12270	12929	12666	12135	11462	10936	10666	10139	10101	9591	9731	10024	10512	11083
7	10170	10125	10389	10457	11029	10495	10090	9659	9234	9005	8485	8596	7902	7941	8225	8845	9406
8	7672	8696	8916	8958	9251	8788	8471	8265	7930	7664	7185	7163	6693	6783	6977	7505	8102
9	5489	6952	7171	7262	6925	7002	6705	6453	6166	5869	5510	4983	5326	5472	5694	6031	6516
10	3796	4459	4645	4764	4562	4751	4425	4089	4007	3730	3579	3193	3544	3703	3874	4055	4290
11	2711	2741	2867	2953	2891	2972	2799	2624	2472	2341	2273	2216	2371	2473	2523	2598	2673
12	2048	1839	1915	2042	2095	2108	1990	1854	1712	1627	1596	1626	1726	1821	1856	1849	1825
13	1598	1340	1384	1462	1577	1587	1494	1357	1259	1228	1213	1265	1334	1415	1418	1393	1345
14	1245	1082	1106	1138	1255	1276	1197	1095	1028	1014	1011	1063	1101	1170	1153	1119	1083
15	1010	942	950	973	1058	1078	1021	950	904	893	886	930	952	1002	984	958	945
16	881	854	867	872	937	943	910	863	835	820	822	851	863	891	879	858	858
17	808	805	813	816	862	857	837	812	791	776	777	797	803	819	815	804	804
18	767	775	781	782	808	802	795	779	764	751	749	758	764	773	774	768	772
19	742	751	756	760	767	766	763	755	744	733	729	729	736	740	745	744	748
20	725	733	739	742	742	743	739	735	726	714	711	704	713	717	722	725	729
25	668	672	677	680	676	675	672	670	662	656	649	643	641	647	651	659	666
30	631	636	642	644	646	639	639	634	626	621	615	611	601	607	614	620	629
35	602	608	614	617	606	608	610	604	596	589	585	574	574	577	584	593	602
40	558	567	575	579	569	558	550	541	540	536	509	502	492	492	502	533	553
45	246	222	241	233	253	231	209	184	162	180	151	190	162	168	184	195	211
50	42	31	36	28	37	30	25	25	25	20	20	31	22	22	26	21	29
55	8	7	7	6	7	7	6	7	6	6	6	7	7	7	7	7	7
60	5	5	4	3	5	5	5	4	4	4	4	4	4	5	5	4	4
65	2	3	2	2	2	3	3	2	2	2	2	2	3	3	3	2	3
70	2	1	1	2	1	2	1	1	2	1	2	1	2	2	1	1	1
75	1	1	1	1	1	1	1	2	1	1	2	1	1	1	2	2	1
80	1	1	0	1	1	1	1	1	0	1	1	1	0	1	1	1	1
85	0	1	0	0	1	1	1	0	0	0	0	0	1	1	0	0	0
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
95	0	0	1	1	1	0	0	1	0	0	0	1	1	0	0	0	0
100	0	1	1	1	1	1	0	1	1	1	1	1	0	1	1	1	0
105	1	2	1	1	1	1	1	1	1	2	2	1	1	1	2	1	1
110	2	1	1	2	1	2	1	1	1	1	1	2	2	1	2	1	2
115	2	2	3	3	2	2	2	3	3	2	3	3	3	2	2	2	2
120	4	4	5	5	5	3	4	5	4	4	5	5	4	4	4	4	4
125	6	7	6	7	7	6	7	7	7	7	7	7	7	7	6	6	6
130	25	25	25	30	37	28	36	31	29	21	26	22	22	31	20	20	25
135	162	184	209	231	253	233	241	222	211	195	184	168	162	190	151	180	162
140	540	541	550	558	569	579	575	567	553	533	502	492	492	502	509	536	540
145	596	604	610	608	606	617	614	608	602	593	584	577	574	574	585	589	596
150	626	634	639	639	646	644	642	636	629	620	614	607	601	611	615	621	626
155	662	670	672	675	676	680	677	672	666	659	651	647	641	643	649	656	662
160	726	735	739	743	742	742	739	733	729	725	722	717	713	704	711	714	726
165	904	950	1021	1078	1058	973	950	942	945	958	984	1002	952	930	886	893	904
170	4007	4089	4425	4751	4562	4764	4645	4459	4290	4055	3874	3703	3544	3193	3579	3730	4007
175	13133	13800	14530	14798	14888	14360	14068	13633	13194	12754	12351	12049	11767	12013	12132	12553	13133
180	18212	18212	18212	18212	18212	18212	18212	18212	18212	18212	18212	18212	18212	18212	18212	18212	18212

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