

TEST REPORT

For

Astera LED Technology GmbH

Schatzbogen 60, 81829 Munich, Germany

Test Model: AF250

Report Type:	Electrical and Photometric tests including: Luminous Flux, Power Factor, Chromaticity, Luminous Intensity Distribution
Reviewed By:	Hexy He <i>Hexy He</i>
Report Number:	SZ4230517-27145E-10
Test Date:	2023-6-14 to 2023-06-15
Report Date:	2023-09-28
Approved by:	Blake Zhang / EE Engineer <i>Blake Zhang</i>
Prepared By:	Bay Area Compliance Laboratories Corp. (Dongguan). No.12, Pulong East 1 st Road, Tangxia Town, Dongguan, Guangdong, China. Tel: +86-0769-86858888 Fax: +86-0769-86858588



1. Product Description[#]

General Information:

One test sample was in good condition and received on 2023-05-17, and used for testing. All tests were conducted with fully charged batteries

Model Tested: AF250
Manufacturer: Astera LED Technology GmbH
Brand Name: ASTERA
Product Designation: LeoFresnel
Burning Time Before Test: 0hour(For New Products)

Rated Values:

Rated Voltage/Frequency: 100-240VAC,50/60Hz
Rated Power: 250W
Nominal CCT: 1750K-20000K
Nominal Lumen Output: 7118lm

2. Standards Used

- ANSI/IES LM-79-19: Approved method :Optical and Electrical Measurements of Solid-State Lighting Products
- ANSI C82.77-10-2014: Harmonic Emission Limits – Related Power Quality Requirements for Lighting
- IES TM-30-18: IES Method for Evaluating Light Source Color Rendition

3. Description of Test Equipment

Device	Manufacture	Model No	Serial No	Calibration date	Calibration due date
1.5m temperature integrating sphere	SENSING	SPR-600	S09008	2022-11-10	2023-11-09
High-precision rapid spectral analysis system	EVERFINE	HAAS-2000	M112048CA1361125	2022-11-10	2023-11-09
Digital power meter	YOKOGAWA	WT310	13398	2022-11-10	2023-11-09
Programmable Precision DC Power Supply	EVERFINE	WY5015	11060010	2022-11-10	2023-11-09
thermometer	SENSING	NA	NA	2022-11-10	2023-11-09
Standard Light Source	EVERFINE	D204	N/A	2023-05-12	2025-05-11
Precision frequency power supply	ALL Power	APW-105N	970613	2022-11-10	2023-11-09
AC POWER SUPPLY	EVERFINE	VPS1030 PWM	1012017	2022-11-16	2023-11-15
Digital CC&CV DC Power Supply	EVERFINE	WY12010	1009009	2022-11-10	2023-11-09
Digital power meter	YOKOGAWA	WT-210	91j926132	2022-11-10	2023-11-09
full-field speed goniophotometer	EVERFINE	GO-R5000	YG108492N10120001	2022-11-10	2023-11-09

Device	Manufacture	Model No	Serial No	Calibration date	Calibration due date
wireless remote thermohygrometer	N/A	AOK-5017B	N/A	2022-11-10	2023-11-09
Standard Light Source	EVERFINE	D908	1012003	2023-05-12	2025-05-11

Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attested that all calibration has been performed using suitable standards traceable to National Primary Standards and International System of Units (SI).

4. Test Method

The product was operated at rated voltage or at voltage required by manufacturer. The ambient temperature of the sample was maintained at $25^{\circ}\text{C} \pm 1.2^{\circ}\text{C}$ during measurement. And relative humidity is maintained between 10% and 65%. The air flow around the SSL product is less than 0.2m/s.

Integrating Sphere System

The system includes AC power source, digital power meter, DC power supply, Spectroradiometer, and integrating sphere. The integrating sphere system is calibrated by standard spectrum light source before measurement.

4π geometry was used during measurement. The product was operated in its intended orientation in application and was recorded in this report.

The uncertainty of the light output (luminous flux) measurements is $U=2.1\%$ ($K=2$), at the 95% confidence level. The uncertainty of the correlated color temperature measurements is $U=32\text{K}$ ($K=2$), at the 95% confidence level. The uncertainty of the CRI is $U=2.1$ ($K=2$), at the 95% confidence level.

The uncertainty of power meter AC current $U=0.19\%$ of rdg, AC Voltage $U=0.15\%$ of rdg, Power $U=0.20\%$ ($K=2$), at the 95% confidence level.

Goniophotometer System

The goniophotometer system is calibrated by standard light source before measurement.

Type C goniophotometer was used for measuring total luminous flux, luminous intensity distribution, and color spatial uniformity. The product was operated in its intended orientation in application and was recorded in this report. For luminous intensity distribution, The vertical angle (γ) test intervals were set no more than 2.5 degree, The horizontal angle (C plane) test intervals were set no more than 22.5 degree. For color spatial uniformity, The vertical angle (γ) test intervals were set no more than 90 degree, The horizontal angle (C plane) test intervals were set no more than 10 degree.

The uncertainty of the luminous intensity is $U=2.82\%$ ($K=2$), at the 95% confidence level.

Fidelity Index and Gamut Index Calculation

The R_f , R_g was calculated according to IES TM-30-18 by using calculation tools. The calculation was based on the measured SPD from 380nm to 780nm with 1nm intervals. All the colors in this report is for reference only.

5. Test Result

[Integrating Sphere System]

Test orientation: **Downward**

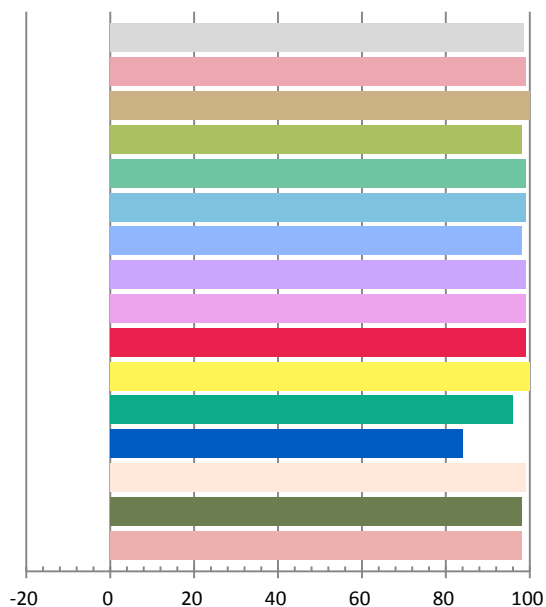
Test CCT and Beam angle: **3200K/60°**

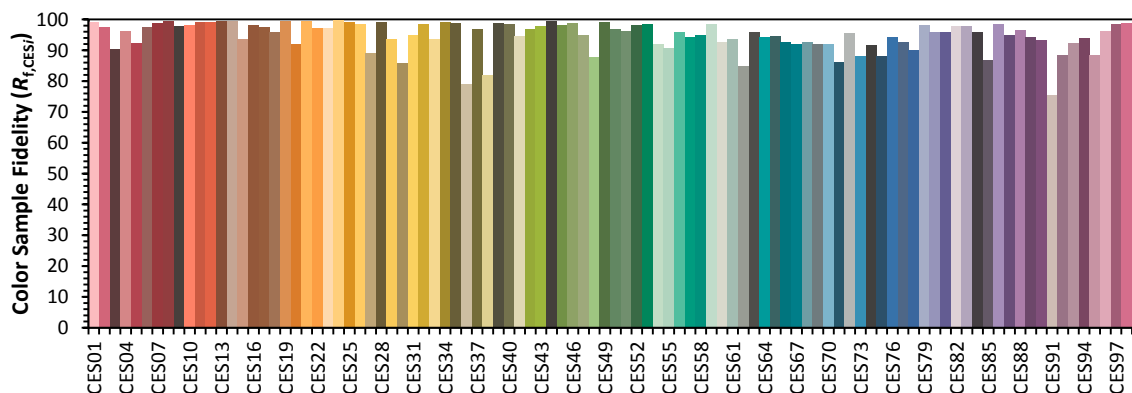
Photometric and Electrical Measurement Result

Luminous Flux(lm)	Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
4960.5	19.394	3164	-0.00038	0.4252	0.3988	0.2453	0.5175

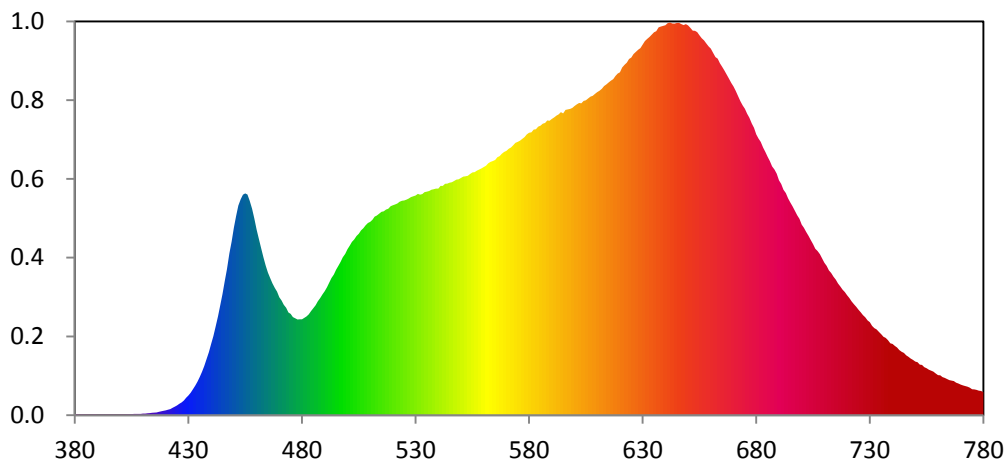
Color Rendering Index

Ra			
98.7			
R1	R2	R3	R4
99	100	98	99
R5	R6	R7	R8
99	98	99	99
R9	R10	R11	R12
99	100	96	84
R13	R14	R15	
99	98	98	





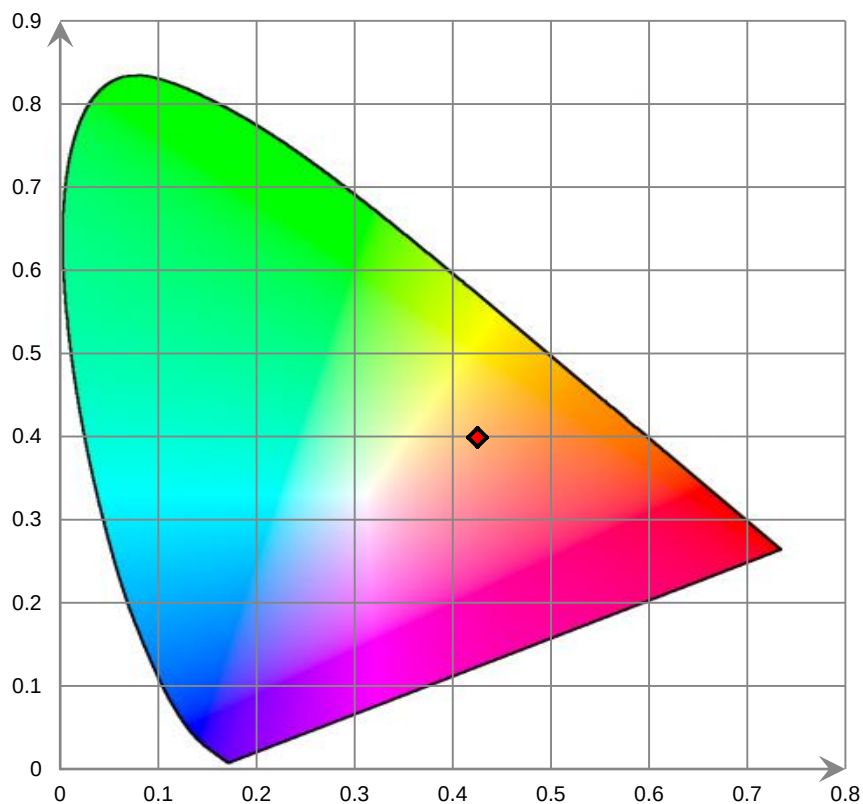
Relative Spectral Power Distribution



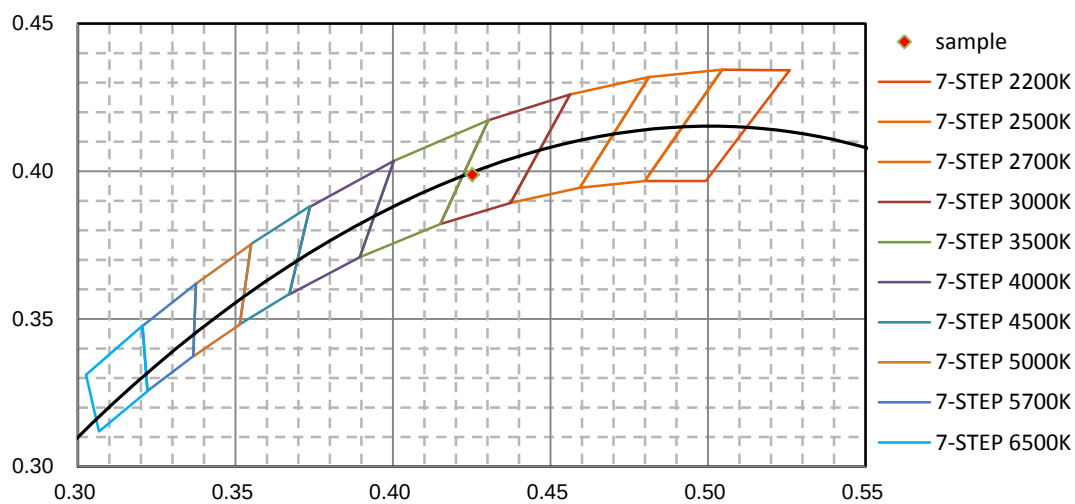
nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	2.776E-01	421	1.462E+00	462	4.470E+01	503	4.694E+01	544	6.185E+01
381	2.697E-01	422	1.635E+00	463	4.214E+01	504	4.787E+01	545	6.211E+01
382	1.820E-01	423	1.959E+00	464	3.996E+01	505	4.845E+01	546	6.220E+01
383	2.294E-01	424	2.237E+00	465	3.809E+01	506	4.935E+01	547	6.257E+01
384	1.877E-01	425	2.605E+00	466	3.662E+01	507	4.992E+01	548	6.289E+01
385	2.237E-01	426	3.007E+00	467	3.520E+01	508	5.069E+01	549	6.298E+01
386	2.021E-01	427	3.416E+00	468	3.399E+01	509	5.133E+01	550	6.339E+01
387	1.763E-01	428	3.931E+00	469	3.299E+01	510	5.164E+01	551	6.371E+01
388	1.935E-01	429	4.632E+00	470	3.151E+01	511	5.219E+01	552	6.381E+01
389	2.503E-01	430	5.256E+00	471	3.065E+01	512	5.303E+01	553	6.392E+01
390	1.188E-01	431	5.953E+00	472	2.949E+01	513	5.333E+01	554	6.442E+01
391	1.719E-01	432	6.940E+00	473	2.869E+01	514	5.385E+01	555	6.483E+01
392	2.184E-01	433	7.876E+00	474	2.745E+01	515	5.434E+01	556	6.494E+01
393	1.694E-01	434	8.955E+00	475	2.703E+01	516	5.446E+01	557	6.533E+01
394	2.030E-01	435	1.023E+01	476	2.618E+01	517	5.490E+01	558	6.559E+01
395	2.102E-01	436	1.158E+01	477	2.586E+01	518	5.512E+01	559	6.589E+01
396	1.683E-01	437	1.312E+01	478	2.554E+01	519	5.581E+01	560	6.625E+01
397	1.960E-01	438	1.502E+01	479	2.559E+01	520	5.608E+01	561	6.663E+01
398	1.483E-01	439	1.683E+01	480	2.558E+01	521	5.628E+01	562	6.727E+01
399	1.777E-01	440	1.901E+01	481	2.597E+01	522	5.655E+01	563	6.766E+01
400	2.115E-01	441	2.111E+01	482	2.637E+01	523	5.701E+01	564	6.789E+01
401	2.139E-01	442	2.361E+01	483	2.690E+01	524	5.728E+01	565	6.818E+01
402	1.867E-01	443	2.643E+01	484	2.784E+01	525	5.735E+01	566	6.889E+01
403	2.416E-01	444	2.937E+01	485	2.861E+01	526	5.756E+01	567	6.920E+01
404	2.484E-01	445	3.235E+01	486	2.934E+01	527	5.785E+01	568	6.984E+01
405	2.354E-01	446	3.577E+01	487	3.043E+01	528	5.823E+01	569	7.030E+01
406	3.142E-01	447	3.903E+01	488	3.122E+01	529	5.846E+01	570	7.059E+01
407	3.371E-01	448	4.320E+01	489	3.226E+01	530	5.869E+01	571	7.117E+01
408	3.315E-01	449	4.631E+01	490	3.313E+01	531	5.910E+01	572	7.152E+01
409	3.373E-01	450	5.005E+01	491	3.416E+01	532	5.889E+01	573	7.209E+01
410	4.103E-01	451	5.317E+01	492	3.538E+01	533	5.905E+01	574	7.273E+01
411	4.282E-01	452	5.597E+01	493	3.663E+01	534	5.959E+01	575	7.299E+01
412	5.175E-01	453	5.770E+01	494	3.755E+01	535	5.970E+01	576	7.336E+01
413	5.592E-01	454	5.888E+01	495	3.883E+01	536	5.989E+01	577	7.381E+01
414	6.399E-01	455	5.922E+01	496	3.985E+01	537	6.022E+01	578	7.429E+01
415	6.919E-01	456	5.894E+01	497	4.093E+01	538	6.034E+01	579	7.499E+01
416	7.272E-01	457	5.728E+01	498	4.216E+01	539	6.054E+01	580	7.545E+01
417	9.025E-01	458	5.513E+01	499	4.310E+01	540	6.052E+01	581	7.556E+01
418	1.030E+00	459	5.252E+01	500	4.433E+01	541	6.124E+01	582	7.627E+01
419	1.155E+00	460	4.962E+01	501	4.527E+01	542	6.126E+01	583	7.638E+01
420	1.282E+00	461	4.714E+01	502	4.630E+01	543	6.180E+01	584	7.705E+01

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
585	7.733E+01	626	9.647E+01	667	9.101E+01	708	4.301E+01	749	1.473E+01
586	7.785E+01	627	9.707E+01	668	8.986E+01	709	4.182E+01	750	1.433E+01
587	7.804E+01	628	9.763E+01	669	8.871E+01	710	4.069E+01	751	1.412E+01
588	7.872E+01	629	9.803E+01	670	8.779E+01	711	3.987E+01	752	1.349E+01
589	7.864E+01	630	9.900E+01	671	8.660E+01	712	3.867E+01	753	1.340E+01
590	7.910E+01	631	9.991E+01	672	8.526E+01	713	3.799E+01	754	1.281E+01
591	7.954E+01	632	1.005E+02	673	8.386E+01	714	3.697E+01	755	1.253E+01
592	8.000E+01	633	1.010E+02	674	8.274E+01	715	3.620E+01	756	1.212E+01
593	8.036E+01	634	1.017E+02	675	8.185E+01	716	3.516E+01	757	1.187E+01
594	8.094E+01	635	1.023E+02	676	8.052E+01	717	3.440E+01	758	1.161E+01
595	8.059E+01	636	1.026E+02	677	7.946E+01	718	3.353E+01	759	1.113E+01
596	8.155E+01	637	1.036E+02	678	7.790E+01	719	3.284E+01	760	1.068E+01
597	8.167E+01	638	1.038E+02	679	7.674E+01	720	3.202E+01	761	1.065E+01
598	8.182E+01	639	1.040E+02	680	7.500E+01	721	3.129E+01	762	1.017E+01
599	8.205E+01	640	1.042E+02	681	7.387E+01	722	3.039E+01	763	9.947E+00
600	8.257E+01	641	1.047E+02	682	7.298E+01	723	2.966E+01	764	9.641E+00
601	8.304E+01	642	1.049E+02	683	7.146E+01	724	2.893E+01	765	9.347E+00
602	8.338E+01	643	1.046E+02	684	7.031E+01	725	2.817E+01	766	9.212E+00
603	8.331E+01	644	1.046E+02	685	6.902E+01	726	2.750E+01	767	9.088E+00
604	8.393E+01	645	1.048E+02	686	6.788E+01	727	2.672E+01	768	8.644E+00
605	8.412E+01	646	1.048E+02	687	6.648E+01	728	2.617E+01	769	8.462E+00
606	8.463E+01	647	1.045E+02	688	6.561E+01	729	2.529E+01	770	8.176E+00
607	8.511E+01	648	1.042E+02	689	6.450E+01	730	2.484E+01	771	7.951E+00
608	8.529E+01	649	1.045E+02	690	6.274E+01	731	2.386E+01	772	7.781E+00
609	8.583E+01	650	1.041E+02	691	6.176E+01	732	2.323E+01	773	7.589E+00
610	8.630E+01	651	1.035E+02	692	6.022E+01	733	2.290E+01	774	7.345E+00
611	8.669E+01	652	1.027E+02	693	5.932E+01	734	2.220E+01	775	6.913E+00
612	8.721E+01	653	1.027E+02	694	5.790E+01	735	2.160E+01	776	6.868E+00
613	8.791E+01	654	1.023E+02	695	5.681E+01	736	2.092E+01	777	6.735E+00
614	8.834E+01	655	1.015E+02	696	5.577E+01	737	2.064E+01	778	6.509E+00
615	8.886E+01	656	1.007E+02	697	5.464E+01	738	2.003E+01	779	6.423E+00
616	8.937E+01	657	1.001E+02	698	5.336E+01	739	1.918E+01	780	6.148E+00
617	8.976E+01	658	9.930E+01	699	5.243E+01	740	1.901E+01		
618	9.061E+01	659	9.852E+01	700	5.090E+01	741	1.850E+01		
619	9.123E+01	660	9.791E+01	701	5.003E+01	742	1.805E+01		
620	9.160E+01	661	9.680E+01	702	4.893E+01	743	1.738E+01		
621	9.286E+01	662	9.565E+01	703	4.787E+01	744	1.691E+01		
622	9.360E+01	663	9.522E+01	704	4.677E+01	745	1.660E+01		
623	9.415E+01	664	9.397E+01	705	4.570E+01	746	1.598E+01		
624	9.513E+01	665	9.306E+01	706	4.445E+01	747	1.561E+01		
625	9.552E+01	666	9.206E+01	707	4.386E+01	748	1.514E+01		

CIE 1931 x y Chromaticity Diagram



7-Step Chromaticity Quadrangles



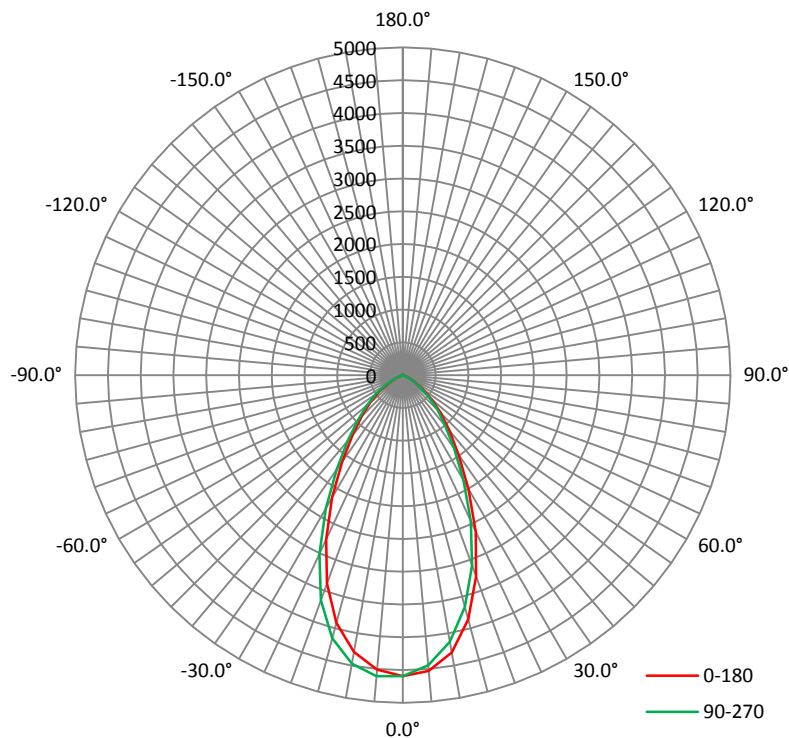
[Goniophotometer System]

Test orientation: **Downward**

Test CCT and Beam angle: **3200K/60°**

Luminous Flux (lm)	I _{max} (cd)	S/MH (C0/180)	S/MH (C90/270)
4963.92	4618	0.84	0.80

Luminous Intensity Distribution



	C0/180	C45/225	C90/270	C135/315	AVG.
Beam Angle (50% I _{max}):	56.4	57.1	56.4	56.8	56.7
Field Angle (10% I _{max}):	107.2	107.8	107.2	107.6	107.5

Luminous Intensity (cd) Distribution Data

$\begin{matrix} C \\ \backslash \\ \gamma \end{matrix}$	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
0°	4593	4593	4593	4593	4593	4593	4593	4593
1°	4589	4595	4601	4605	4606	4607	4604	4599
2°	4578	4590	4602	4612	4616	4616	4611	4599
3°	4562	4580	4598	4613	4618	4617	4610	4594
4°	4539	4563	4588	4608	4617	4615	4605	4584
5°	4510	4541	4572	4598	4611	4608	4594	4568
6°	4476	4513	4551	4581	4596	4594	4579	4548
7°	4438	4481	4524	4558	4575	4573	4555	4521
8°	4395	4444	4492	4528	4548	4548	4527	4483
9°	4345	4400	4454	4492	4513	4515	4490	4440
10°	4290	4350	4407	4449	4470	4475	4445	4388
11°	4230	4294	4356	4397	4424	4426	4395	4327
12°	4159	4233	4294	4341	4369	4369	4335	4258
13°	4085	4162	4228	4280	4305	4303	4266	4180
14°	4004	4082	4159	4209	4234	4232	4188	4095
15°	3914	4001	4081	4132	4157	4153	4100	4003
16°	3823	3912	3997	4047	4067	4064	4004	3901
17°	3723	3821	3903	3957	3976	3967	3900	3794
18°	3613	3716	3808	3856	3875	3866	3793	3681
19°	3499	3607	3700	3752	3771	3757	3674	3563
20°	3381	3491	3588	3639	3654	3641	3550	3438
21°	3262	3375	3471	3524	3534	3518	3425	3316
22°	3139	3254	3353	3401	3408	3390	3300	3188
23°	3016	3129	3231	3276	3274	3255	3168	3055
24°	2894	3006	3106	3150	3143	3121	3036	2926
25°	2767	2877	2976	3020	3010	2983	2905	2787
26°	2641	2747	2845	2889	2874	2847	2774	2655
27°	2517	2617	2714	2758	2737	2712	2647	2522
28°	2396	2491	2583	2627	2604	2581	2515	2391
29°	2277	2367	2460	2499	2475	2452	2384	2269
30°	2156	2247	2337	2369	2346	2323	2260	2148
31°	2040	2128	2219	2243	2222	2198	2136	2033
32°	1926	2012	2101	2120	2098	2079	2018	1918
33°	1821	1902	1989	2003	1982	1962	1911	1810
34°	1716	1797	1881	1893	1869	1849	1803	1703
35°	1615	1692	1779	1787	1764	1744	1700	1605
36°	1516	1597	1683	1686	1663	1645	1604	1512
37°	1429	1506	1585	1589	1567	1550	1509	1426
38°	1343	1420	1495	1496	1477	1459	1422	1345
39°	1262	1336	1408	1411	1388	1371	1340	1266
40°	1188	1261	1327	1331	1306	1293	1264	1193
41°	1119	1185	1252	1253	1229	1218	1190	1122
42°	1052	1116	1180	1180	1157	1147	1119	1055
43°	991	1051	1111	1113	1088	1081	1055	994
44°	935	989	1046	1050	1026	1019	995	936
45°	883	932	985	989	968	962	940	882
46°	835	877	928	931	912	906	885	830
47°	787	828	873	876	860	853	833	781
48°	740	780	821	825	810	800	781	732

Luminous Intensity (cd) Distribution Data

$\begin{matrix} \backslash & C \\ \gamma & \end{matrix}$	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
49°	693	732	771	775	761	749	732	685
50°	648	686	724	728	714	702	685	640
51°	607	642	678	681	669	656	639	596
52°	565	601	633	637	621	613	594	552
53°	523	560	591	594	581	569	548	508
54°	482	518	548	551	541	526	503	463
55°	440	476	505	509	497	482	459	420
56°	400	434	462	465	454	439	416	379
57°	361	393	420	422	413	398	375	341
58°	325	354	379	382	373	360	337	306
59°	290	319	342	345	337	324	303	273
60°	259	285	308	310	303	291	271	243
61°	229	254	275	277	271	261	242	216
62°	203	226	245	247	241	233	216	192
63°	179	201	218	220	215	207	192	170
64°	158	178	194	196	190	184	170	151
65°	137	158	172	174	168	163	150	133
66°	119	140	152	154	147	144	132	117
67°	101	123	134	136	127	127	116	102
68°	83	107	118	120	105	111	102	89
69°	68	93	104	105	88	96	89	79
70°	52	81	91	92	71	84	79	72
71°	37	71	81	80	53	73	71	67
72°	21	65	72	71	36	64	66	65
73°	11	62	65	63	18	55	64	51
74°	8	58	56	58	8	46	48	38
75°	5	55	47	52	6	37	31	24
76°	3	32	38	37	4	26	21	15
77°	2	20	24	25	2	15	12	8
78°	1	11	15	15	1	7	8	4
79°	1	8	7	7	1	4	5	1
80°	0	5	4	4	1	2	1	1
81°	0	1	2	1	0	1	1	1
82°	0	1	1	1	0	0	0	0
83°	0	0	0	0	0	0	0	0
84°	0	0	0	0	0	0	0	0
85°	0	0	0	0	0	0	0	0
86°	0	0	0	0	0	0	0	0
87°	0	0	0	0	0	0	0	0
88°	0	0	0	0	0	0	0	0
89°	0	0	0	0	0	0	0	0
90°	0	0	0	0	0	0	0	0
91°	0	0	0	0	0	0	0	0
92°	0	0	0	0	0	0	0	0
93°	0	0	0	0	0	0	0	0
94°	0	0	0	0	0	0	0	0
95°	0	0	0	0	0	0	0	0
96°	0	0	0	0	0	0	0	0
97°	0	0	0	0	0	0	0	0

Luminous Intensity (cd) Distribution Data

$\begin{matrix} \backslash & C \\ C & \backslash \\ \gamma \end{matrix}$	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
98°	0	0	0	0	0	0	0	0
99°	0	0	0	0	0	0	0	0
100°	0	0	0	0	0	0	0	0
101°	0	0	0	0	0	0	0	0
102°	0	0	0	0	0	0	0	0
103°	0	0	0	0	0	0	0	0
104°	0	0	0	0	0	0	0	0
105°	0	0	0	0	0	0	0	0
106°	0	0	0	0	0	0	0	0
107°	0	0	0	0	0	0	0	0
108°	0	0	0	0	0	0	0	0
109°	0	0	0	0	0	0	0	0
110°	0	0	0	0	0	0	0	0
111°	0	0	0	0	0	0	0	0
112°	0	0	0	0	0	0	0	0
113°	0	0	0	0	0	0	0	0
114°	0	0	0	0	0	0	0	0
115°	0	0	0	0	0	0	0	0
116°	0	0	0	0	0	0	0	0
117°	0	0	0	0	0	0	0	0
118°	0	0	0	0	0	0	0	0
119°	0	0	0	0	0	0	0	0
120°	0	0	0	0	0	0	0	1
121°	1	1	1	1	1	1	1	1
122°	1	1	1	1	1	1	1	1
123°	1	1	1	1	1	1	1	1
124°	1	1	1	1	1	1	1	1
125°	1	1	1	1	1	1	1	1
126°	1	1	1	1	1	1	1	1
127°	1	1	1	1	1	1	1	1
128°	1	1	1	1	1	1	1	1
129°	1	1	1	1	1	1	1	1
130°	1	1	1	1	1	1	1	1
131°	1	1	1	1	1	1	1	1
132°	1	1	1	1	1	1	1	1
133°	1	1	1	1	1	1	1	1
134°	2	2	2	2	2	2	2	2
135°	2	2	2	2	2	2	2	2
136°	2	2	2	2	2	2	2	2
137°	2	2	2	2	2	2	2	2
138°	2	2	2	2	2	2	2	2
139°	2	2	2	2	2	2	2	2
140°	2	3	3	3	3	3	3	3
141°	3	3	3	3	3	3	3	3
142°	3	3	3	3	3	3	3	3
143°	3	3	3	3	3	3	3	3
144°	3	3	4	4	4	4	4	3
145°	3	4	4	4	4	4	4	3
146°	3	4	4	4	4	4	4	4

Luminous Intensity (cd) Distribution Data

$\begin{matrix} C \\ \backslash \\ \gamma \end{matrix}$	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
147°	4	4	4	4	4	4	4	4
148°	4	4	4	5	5	5	4	4
149°	4	4	5	5	5	5	4	4
150°	4	4	5	5	5	5	5	4
151°	4	5	5	5	5	5	5	4
152°	4	5	5	5	5	5	5	5
153°	5	5	5	6	6	5	5	5
154°	5	5	6	6	6	6	5	5
155°	5	5	6	6	6	6	6	5
156°	5	6	6	6	6	6	6	5
157°	5	6	6	6	6	6	6	6
158°	5	6	6	6	6	6	6	6
159°	6	6	6	6	6	6	6	6
160°	6	6	6	7	6	6	6	6
161°	6	6	6	7	7	7	6	6
162°	6	6	6	7	7	7	6	6
163°	6	6	6	7	7	7	6	6
164°	6	6	6	7	7	6	6	6
165°	6	6	6	6	7	6	6	6
166°	6	6	6	6	7	6	6	6
167°	6	6	6	6	6	6	6	6
168°	6	6	6	6	6	6	6	6
169°	6	6	6	6	6	6	6	6
170°	6	6	6	6	6	6	6	6
171°	5	6	6	6	6	6	6	5
172°	5	5	6	6	6	6	5	5
173°	5	5	5	5	5	5	5	5
174°	5	5	5	5	5	5	5	5
175°	5	5	5	5	5	5	5	5
176°	5	5	5	5	5	5	5	5
177°	5	5	5	5	5	5	5	5
178°	5	5	5	5	5	5	5	5
179°	5	4	4	4	4	4	5	5
180°	4	4	4	4	4	4	4	4

Luminous Intensity (cd) Distribution Data (cont.)

$\begin{matrix} C \\ \backslash \\ Y \end{matrix}$	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
0°	4593	4593	4593	4593	4593	4593	4593	4593
1°	4592	4586	4582	4577	4576	4577	4578	4582
2°	4584	4572	4564	4555	4552	4553	4558	4564
3°	4572	4556	4541	4529	4523	4525	4532	4541
4°	4554	4531	4512	4493	4487	4489	4499	4510
5°	4530	4501	4475	4452	4443	4448	4460	4476
6°	4498	4465	4432	4404	4395	4400	4415	4433
7°	4461	4419	4380	4352	4339	4343	4358	4384
8°	4413	4366	4322	4290	4277	4282	4298	4330
9°	4359	4309	4257	4222	4206	4214	4231	4271
10°	4298	4245	4189	4149	4131	4138	4159	4206
11°	4228	4168	4109	4071	4048	4058	4080	4135
12°	4147	4087	4026	3985	3960	3974	3996	4058
13°	4060	4001	3937	3897	3865	3885	3911	3980
14°	3964	3903	3838	3802	3766	3792	3820	3893
15°	3858	3802	3733	3701	3661	3691	3724	3799
16°	3751	3696	3625	3595	3553	3583	3623	3702
17°	3638	3587	3509	3484	3440	3472	3515	3596
18°	3520	3473	3391	3367	3324	3355	3407	3486
19°	3397	3353	3269	3245	3205	3237	3296	3376
20°	3270	3225	3150	3120	3091	3120	3180	3262
21°	3144	3096	3030	2987	2966	2997	3061	3145
22°	3018	2966	2907	2859	2843	2869	2939	3022
23°	2891	2835	2780	2731	2714	2741	2818	2895
24°	2763	2701	2651	2600	2586	2612	2695	2769
25°	2636	2574	2525	2474	2455	2490	2574	2645
26°	2508	2447	2401	2351	2326	2367	2449	2522
27°	2377	2323	2274	2228	2202	2250	2329	2397
28°	2248	2204	2154	2105	2075	2131	2210	2277
29°	2123	2086	2036	1989	1961	2014	2093	2154
30°	2002	1969	1924	1874	1849	1899	1979	2038
31°	1885	1858	1817	1765	1744	1789	1870	1926
32°	1779	1753	1713	1661	1641	1686	1766	1822
33°	1677	1648	1611	1563	1540	1584	1665	1718
34°	1580	1551	1515	1469	1445	1490	1569	1619
35°	1486	1462	1426	1383	1366	1406	1478	1529
36°	1401	1378	1351	1303	1287	1331	1390	1440
37°	1327	1301	1275	1224	1209	1257	1316	1364
38°	1254	1224	1200	1151	1134	1183	1242	1289
39°	1180	1152	1129	1084	1067	1113	1168	1214
40°	1107	1081	1060	1018	1003	1048	1098	1141
41°	1041	1018	996	960	947	986	1035	1075
42°	979	954	938	904	891	930	975	1011
43°	921	897	882	850	841	876	919	953
44°	869	844	829	801	794	825	866	897
45°	821	793	778	751	748	775	816	846
46°	771	745	728	704	703	727	767	797
47°	722	695	681	657	656	680	719	749
48°	675	647	633	612	612	636	672	701

Luminous Intensity (cd) Distribution Data (cont.)

$\begin{matrix} C \\ \backslash \\ Y \end{matrix}$	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
49°	627	599	585	567	568	590	625	655
50°	581	552	540	522	524	545	578	610
51°	536	508	494	477	481	501	532	567
52°	491	463	449	434	437	459	489	523
53°	447	419	405	392	396	417	446	481
54°	404	378	364	352	357	376	404	439
55°	364	339	326	314	320	339	364	398
56°	326	302	290	280	285	303	326	358
57°	292	269	258	248	253	270	291	321
58°	260	240	229	220	224	240	260	287
59°	231	212	202	194	197	212	230	256
60°	204	187	178	172	174	187	203	227
61°	180	164	158	152	154	164	179	201
62°	160	145	138	133	134	145	159	177
63°	139	125	118	114	114	125	139	158
64°	119	110	103	99	97	109	120	139
65°	102	96	90	86	83	95	105	120
66°	83	83	78	75	68	82	91	105
67°	68	73	72	69	54	71	79	92
68°	55	70	71	69	43	67	71	81
69°	39	70	72	70	30	68	70	73
70°	28	70	73	72	22	68	70	68
71°	17	68	73	72	14	67	70	66
72°	6	66	70	69	6	65	69	66
73°	4	56	58	53	3	62	67	65
74°	3	40	40	37	2	44	55	61
75°	2	23	23	21	2	26	39	33
76°	1	7	6	5	1	8	23	23
77°	1	3	3	2	1	4	6	14
78°	1	1	1	1	0	2	3	4
79°	0	1	1	1	0	1	1	2
80°	0	1	1	1	0	1	1	1
81°	0	0	0	0	0	0	1	1
82°	0	0	0	0	0	0	0	0
83°	0	0	0	0	0	0	0	0
84°	0	0	0	0	0	0	0	0
85°	0	0	0	0	0	0	0	0
86°	0	0	0	0	0	0	0	0
87°	0	0	0	0	0	0	0	0
88°	0	0	0	0	0	0	0	0
89°	0	0	0	0	0	0	0	0
90°	0	0	0	0	0	0	0	0
91°	0	0	0	0	0	0	0	0
92°	0	0	0	0	0	0	0	0
93°	0	0	0	0	0	0	0	0
94°	0	0	0	0	0	0	0	0
95°	0	0	0	0	0	0	0	0
96°	0	0	0	0	0	0	0	0
97°	0	0	0	0	0	0	0	0

Luminous Intensity (cd) Distribution Data (cont.)

$\begin{matrix} C \\ \backslash \\ Y \end{matrix}$	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
98°	0	0	0	0	0	0	0	0
99°	0	0	0	0	0	0	0	0
100°	0	0	0	0	0	0	0	0
101°	0	0	0	0	0	0	0	0
102°	0	0	0	0	0	0	0	0
103°	0	0	0	0	0	0	0	0
104°	0	0	0	0	0	0	0	0
105°	0	0	0	0	0	0	0	0
106°	0	0	0	0	0	0	0	0
107°	0	0	0	0	0	0	0	0
108°	0	0	0	0	0	0	0	0
109°	0	0	0	0	0	0	0	0
110°	0	0	0	0	0	0	0	0
111°	0	0	0	0	0	0	0	0
112°	0	0	0	0	0	0	0	0
113°	0	0	0	0	0	0	0	0
114°	0	0	0	0	0	0	0	0
115°	0	0	0	0	0	0	0	0
116°	0	0	0	0	0	0	0	0
117°	0	0	0	0	0	0	0	0
118°	0	0	0	0	0	0	0	0
119°	0	0	0	0	0	0	0	0
120°	0	0	0	0	0	0	0	0
121°	0	0	0	0	0	0	0	0
122°	0	0	0	0	0	0	0	0
123°	0	0	0	0	0	0	0	0
124°	0	0	0	0	0	0	0	0
125°	0	0	0	0	0	0	0	0
126°	0	0	0	0	0	0	0	0
127°	0	0	0	0	0	0	0	0
128°	0	0	0	0	0	0	0	0
129°	0	0	0	1	1	0	0	0
130°	0	0	1	1	1	1	1	0
131°	1	1	1	1	1	1	1	0
132°	1	1	1	1	1	1	1	1
133°	1	1	1	1	1	1	1	1
134°	1	1	1	1	1	1	1	1
135°	1	1	1	1	1	1	1	1
136°	1	1	1	1	1	1	1	1
137°	1	1	1	1	1	1	1	1
138°	1	1	1	1	1	1	1	1
139°	1	1	1	1	1	1	1	1
140°	1	1	1	1	1	1	1	1
141°	1	1	1	1	1	1	1	1
142°	1	1	1	1	1	1	1	1
143°	1	1	1	1	1	1	1	1
144°	1	1	1	1	1	1	1	1
145°	1	1	1	2	2	2	1	1
146°	1	1	1	2	2	2	2	1

Luminous Intensity (cd) Distribution Data (cont.)

$\begin{matrix} C \\ \backslash \\ Y \end{matrix}$	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
147°	1	1	2	2	2	2	2	2
148°	1	1	2	2	2	2	2	2
149°	2	1	2	2	2	2	2	2
150°	2	2	2	2	2	2	2	2
151°	2	2	2	2	2	2	2	2
152°	2	2	2	2	2	2	2	2
153°	2	2	2	2	2	2	2	2
154°	2	2	2	2	2	2	2	2
155°	2	2	2	2	2	2	2	2
156°	2	2	2	2	2	2	2	2
157°	2	2	2	2	2	2	2	2
158°	2	2	2	2	2	3	2	2
159°	2	2	2	2	3	3	2	2
160°	2	2	2	2	3	3	2	3
161°	2	2	2	3	3	3	3	3
162°	3	2	2	3	3	3	3	3
163°	3	3	3	3	3	3	3	3
164°	3	3	3	3	3	3	3	3
165°	3	3	3	3	3	3	3	3
166°	3	3	3	3	3	3	3	3
167°	3	3	3	3	3	3	3	3
168°	3	3	3	3	3	3	3	3
169°	3	3	3	3	3	3	3	3
170°	3	3	3	3	3	3	3	3
171°	3	3	3	3	3	3	3	3
172°	3	3	3	3	3	3	3	3
173°	3	3	3	3	3	3	3	3
174°	3	3	3	3	3	3	3	3
175°	3	3	3	3	3	3	3	3
176°	4	4	3	3	3	3	3	4
177°	4	4	4	4	4	3	4	4
178°	4	4	4	4	4	4	4	4
179°	4	4	4	4	4	4	4	4
180°	4	4	4	4	4	4	4	4

Zonal Lumen Density Measurement

Deg	Flux (lm)	%
0-5	109.0	2.20
5-10	315.7	6.36
10-15	486.9	9.81
15-20	598.8	12.06
20-25	637.6	12.84
25-30	609.1	12.27
30-35	537.9	10.84
35-40	454.3	9.15
40-45	373.4	7.52
45-50	299.5	6.04
50-55	223.3	4.50
55-60	146.8	2.95
60-65	86.3	1.74
65-70	47.1	0.95
70-75	25.9	0.52
75-80	4.9	0.10
80-85	0.3	0.01
85-90	0.1	0.00
90-95	0.0	0.00
95-100	0.0	0.00
100-105	0.1	0.00
105-110	0.1	0.01
110-115	0.1	0.00
115-120	0.1	0.00
120-125	0.2	0.00
125-130	0.3	0.01
130-135	0.4	0.01
135-140	0.6	0.01
140-145	0.7	0.01
145-150	0.8	0.02
150-155	0.9	0.02
155-160	0.9	0.02
160-165	0.7	0.01
165-170	0.5	0.01
170-175	0.3	0.01
175-180	0.1	0.00

Deg	Flux (lm)	%
0-5	109.0	2.20
0-10	424.7	8.56
0-15	911.6	18.37
0-20	1510.5	30.43
0-25	2148.1	43.27
0-30	2757.2	55.54
0-35	3295.0	66.38
0-40	3749.4	75.53
0-45	4122.7	83.05
0-50	4422.3	89.09
0-55	4645.6	93.59
0-60	4792.4	96.54
0-65	4878.7	98.28
0-70	4925.8	99.23
0-75	4951.7	99.75
0-80	4956.6	99.85
0-85	4956.9	99.86
0-90	4957.0	99.86
0-95	4957.0	99.86
0-100	4957.1	99.86
0-105	4957.1	99.86
0-110	4957.2	99.87
0-115	4957.3	99.87
0-120	4957.5	99.87
0-125	4957.7	99.87
0-130	4958.0	99.88
0-135	4958.4	99.89
0-140	4958.9	99.90
0-145	4959.7	99.91
0-150	4960.5	99.93
0-155	4961.4	99.95
0-160	4962.3	99.97
0-165	4963.0	99.98
0-170	4963.5	99.99
0-175	4963.8	100.00
0-180	4963.9	100.00

[Integrating Sphere System]

Test orientation: **Downward**

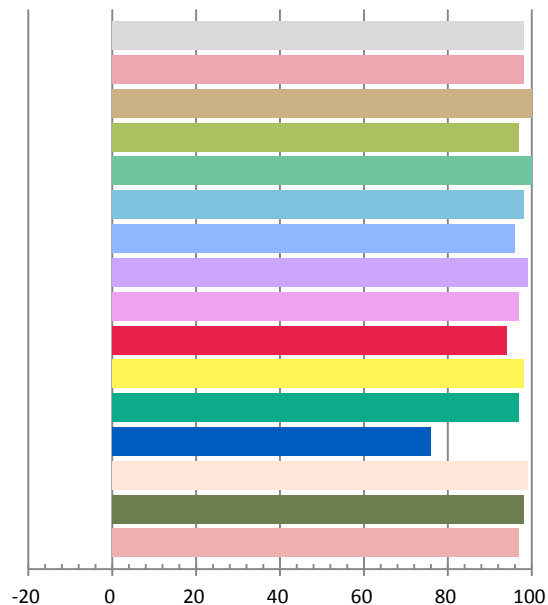
Test CCT and Beam angle: **4000K/60°**

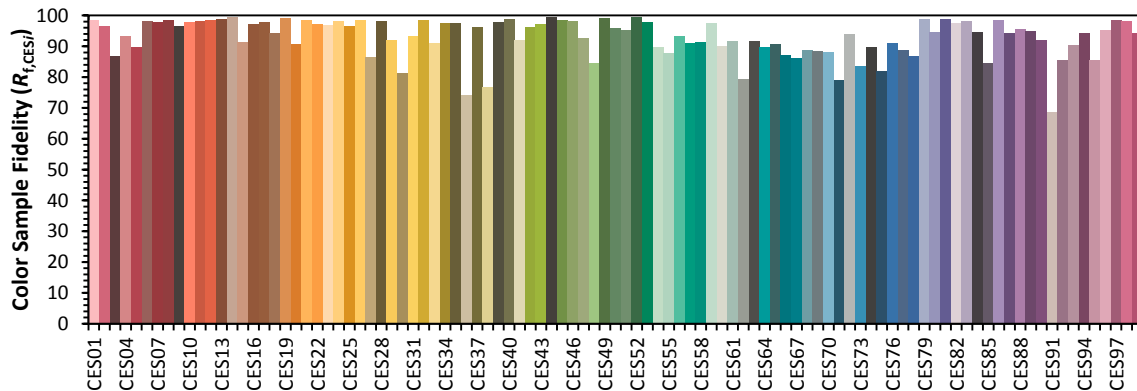
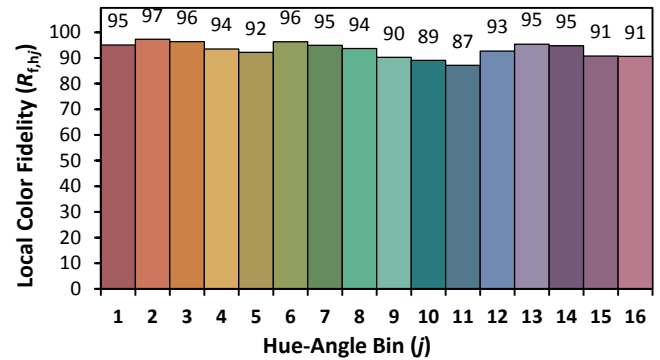
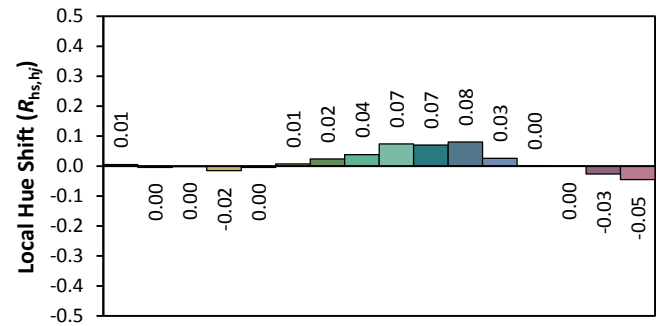
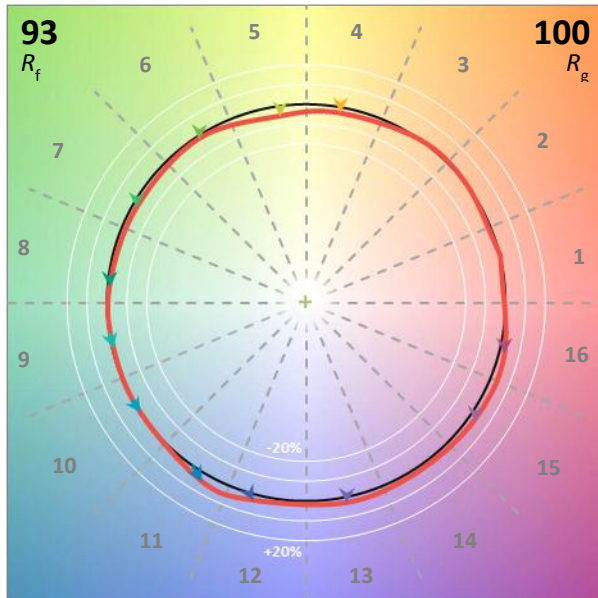
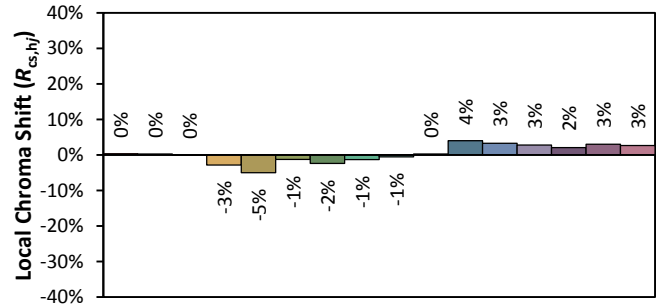
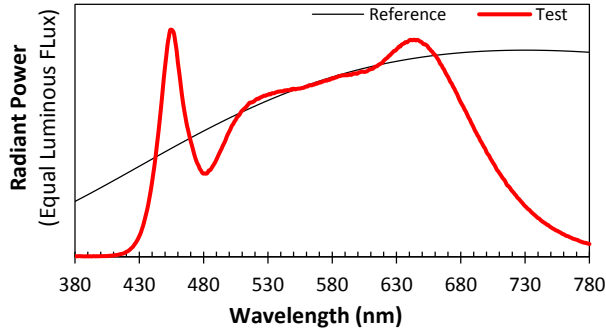
Photometric and Electrical Measurement Result

Luminous Flux(lm)	Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
6378.2	24.364	3968	-0.00107	0.3811	0.3749	0.2263	0.5009

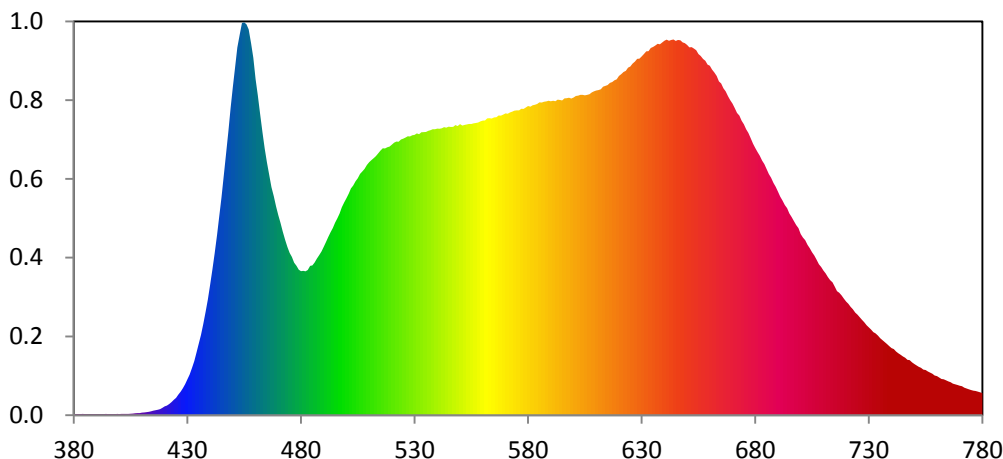
Color Rendering Index

Ra			
98.1			
R1	R2	R3	R4
98	100	97	100
R5	R6	R7	R8
98	96	99	97
R9	R10	R11	R12
94	98	97	76
R13	R14	R15	
99	98	97	





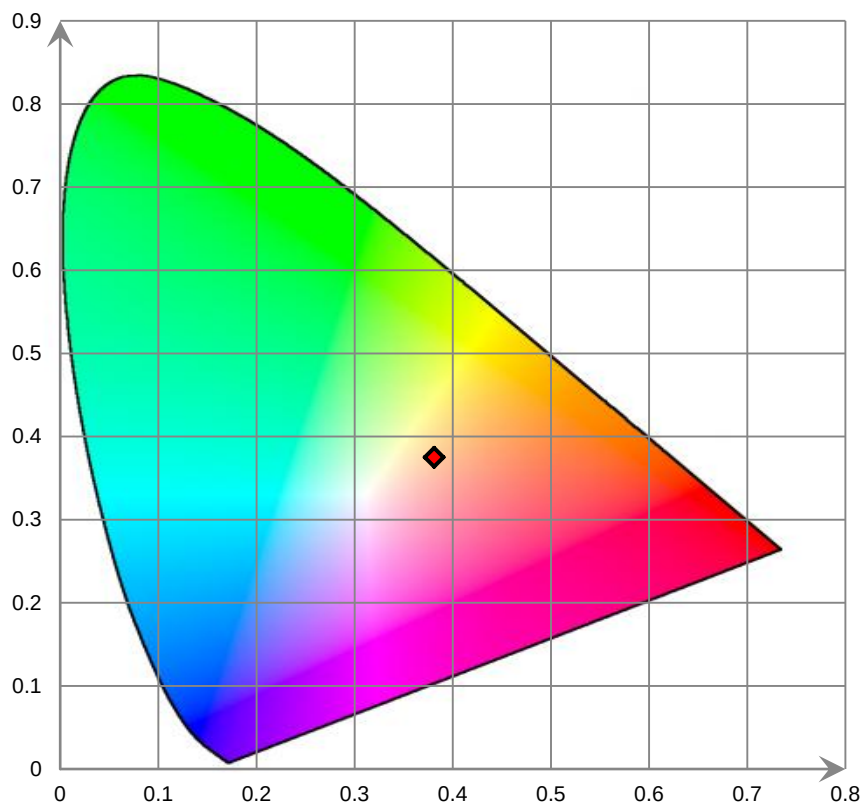
Relative Spectral Power Distribution



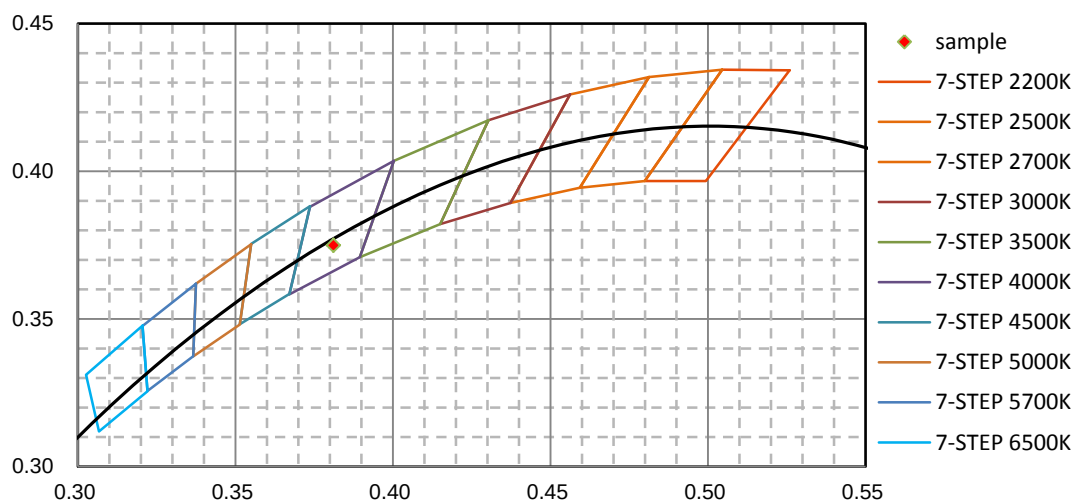
nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	3.508E-01	421	2.865E+00	462	9.029E+01	503	6.873E+01	544	8.605E+01
381	2.545E-01	422	3.340E+00	463	8.471E+01	504	7.002E+01	545	8.635E+01
382	3.205E-01	423	3.922E+00	464	7.982E+01	505	7.092E+01	546	8.624E+01
383	3.241E-01	424	4.590E+00	465	7.567E+01	506	7.224E+01	547	8.628E+01
384	3.624E-01	425	5.153E+00	466	7.198E+01	507	7.290E+01	548	8.680E+01
385	2.850E-01	426	6.126E+00	467	6.827E+01	508	7.371E+01	549	8.655E+01
386	2.895E-01	427	7.030E+00	468	6.550E+01	509	7.489E+01	550	8.710E+01
387	2.052E-01	428	8.091E+00	469	6.250E+01	510	7.571E+01	551	8.670E+01
388	2.542E-01	429	9.290E+00	470	5.984E+01	511	7.631E+01	552	8.686E+01
389	2.911E-01	430	1.073E+01	471	5.751E+01	512	7.693E+01	553	8.701E+01
390	2.180E-01	431	1.216E+01	472	5.492E+01	513	7.752E+01	554	8.713E+01
391	2.483E-01	432	1.418E+01	473	5.242E+01	514	7.837E+01	555	8.713E+01
392	2.881E-01	433	1.620E+01	474	5.032E+01	515	7.919E+01	556	8.732E+01
393	2.047E-01	434	1.875E+01	475	4.856E+01	516	7.987E+01	557	8.744E+01
394	3.486E-01	435	2.142E+01	476	4.735E+01	517	7.984E+01	558	8.759E+01
395	3.066E-01	436	2.405E+01	477	4.563E+01	518	8.018E+01	559	8.794E+01
396	2.667E-01	437	2.722E+01	478	4.465E+01	519	8.038E+01	560	8.818E+01
397	3.235E-01	438	3.095E+01	479	4.351E+01	520	8.099E+01	561	8.822E+01
398	2.300E-01	439	3.465E+01	480	4.309E+01	521	8.157E+01	562	8.883E+01
399	3.553E-01	440	3.900E+01	481	4.318E+01	522	8.190E+01	563	8.888E+01
400	3.190E-01	441	4.353E+01	482	4.306E+01	523	8.182E+01	564	8.877E+01
401	3.906E-01	442	4.833E+01	483	4.341E+01	524	8.249E+01	565	8.910E+01
402	3.656E-01	443	5.381E+01	484	4.468E+01	525	8.274E+01	566	8.918E+01
403	3.884E-01	444	5.951E+01	485	4.482E+01	526	8.307E+01	567	8.972E+01
404	3.611E-01	445	6.514E+01	486	4.570E+01	527	8.344E+01	568	8.964E+01
405	4.036E-01	446	7.154E+01	487	4.683E+01	528	8.339E+01	569	8.991E+01
406	4.835E-01	447	7.796E+01	488	4.782E+01	529	8.374E+01	570	9.029E+01
407	5.386E-01	448	8.490E+01	489	4.899E+01	530	8.391E+01	571	9.023E+01
408	5.899E-01	449	9.195E+01	490	5.037E+01	531	8.431E+01	572	9.060E+01
409	6.192E-01	450	9.822E+01	491	5.183E+01	532	8.408E+01	573	9.083E+01
410	7.446E-01	451	1.041E+02	492	5.331E+01	533	8.466E+01	574	9.111E+01
411	7.939E-01	452	1.100E+02	493	5.469E+01	534	8.469E+01	575	9.124E+01
412	9.190E-01	453	1.139E+02	494	5.600E+01	535	8.476E+01	576	9.123E+01
413	9.919E-01	454	1.174E+02	495	5.762E+01	536	8.512E+01	577	9.169E+01
414	1.151E+00	455	1.176E+02	496	5.889E+01	537	8.530E+01	578	9.164E+01
415	1.321E+00	456	1.170E+02	497	6.032E+01	538	8.557E+01	579	9.209E+01
416	1.474E+00	457	1.155E+02	498	6.218E+01	539	8.556E+01	580	9.250E+01
417	1.633E+00	458	1.113E+02	499	6.366E+01	540	8.575E+01	581	9.231E+01
418	1.813E+00	459	1.069E+02	500	6.495E+01	541	8.569E+01	582	9.278E+01
419	2.203E+00	460	1.006E+02	501	6.628E+01	542	8.585E+01	583	9.289E+01
420	2.612E+00	461	9.571E+01	502	6.786E+01	543	8.620E+01	584	9.313E+01

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
585	9.361E+01	626	1.052E+02	667	9.694E+01	708	4.513E+01	749	1.577E+01
586	9.358E+01	627	1.058E+02	668	9.545E+01	709	4.435E+01	750	1.533E+01
587	9.383E+01	628	1.066E+02	669	9.425E+01	710	4.331E+01	751	1.487E+01
588	9.389E+01	629	1.067E+02	670	9.323E+01	711	4.243E+01	752	1.448E+01
589	9.409E+01	630	1.074E+02	671	9.187E+01	712	4.134E+01	753	1.415E+01
590	9.396E+01	631	1.081E+02	672	9.045E+01	713	4.043E+01	754	1.366E+01
591	9.410E+01	632	1.089E+02	673	8.964E+01	714	3.973E+01	755	1.348E+01
592	9.397E+01	633	1.089E+02	674	8.811E+01	715	3.844E+01	756	1.305E+01
593	9.442E+01	634	1.099E+02	675	8.706E+01	716	3.711E+01	757	1.274E+01
594	9.433E+01	635	1.102E+02	676	8.558E+01	717	3.663E+01	758	1.237E+01
595	9.419E+01	636	1.106E+02	677	8.445E+01	718	3.589E+01	759	1.186E+01
596	9.481E+01	637	1.112E+02	678	8.283E+01	719	3.487E+01	760	1.169E+01
597	9.484E+01	638	1.110E+02	679	8.126E+01	720	3.398E+01	761	1.125E+01
598	9.504E+01	639	1.115E+02	680	7.995E+01	721	3.330E+01	762	1.084E+01
599	9.475E+01	640	1.121E+02	681	7.878E+01	722	3.239E+01	763	1.074E+01
600	9.504E+01	641	1.124E+02	682	7.768E+01	723	3.170E+01	764	1.043E+01
601	9.554E+01	642	1.121E+02	683	7.618E+01	724	3.068E+01	765	1.010E+01
602	9.562E+01	643	1.123E+02	684	7.512E+01	725	3.008E+01	766	9.837E+00
603	9.589E+01	644	1.124E+02	685	7.365E+01	726	2.932E+01	767	9.436E+00
604	9.588E+01	645	1.120E+02	686	7.216E+01	727	2.852E+01	768	9.231E+00
605	9.572E+01	646	1.123E+02	687	7.108E+01	728	2.781E+01	769	9.062E+00
606	9.589E+01	647	1.122E+02	688	6.950E+01	729	2.692E+01	770	8.819E+00
607	9.605E+01	648	1.116E+02	689	6.831E+01	730	2.627E+01	771	8.664E+00
608	9.657E+01	649	1.114E+02	690	6.692E+01	731	2.563E+01	772	8.202E+00
609	9.691E+01	650	1.108E+02	691	6.539E+01	732	2.484E+01	773	7.996E+00
610	9.717E+01	651	1.101E+02	692	6.427E+01	733	2.445E+01	774	7.758E+00
611	9.731E+01	652	1.101E+02	693	6.289E+01	734	2.379E+01	775	7.493E+00
612	9.757E+01	653	1.097E+02	694	6.196E+01	735	2.304E+01	776	7.293E+00
613	9.832E+01	654	1.092E+02	695	6.039E+01	736	2.246E+01	777	7.226E+00
614	9.854E+01	655	1.081E+02	696	5.932E+01	737	2.187E+01	778	7.016E+00
615	9.876E+01	656	1.075E+02	697	5.814E+01	738	2.130E+01	779	6.837E+00
616	9.946E+01	657	1.066E+02	698	5.689E+01	739	2.066E+01	780	6.616E+00
617	9.971E+01	658	1.061E+02	699	5.595E+01	740	2.007E+01		
618	1.002E+02	659	1.049E+02	700	5.422E+01	741	1.977E+01		
619	1.005E+02	660	1.046E+02	701	5.315E+01	742	1.904E+01		
620	1.015E+02	661	1.035E+02	702	5.237E+01	743	1.854E+01		
621	1.021E+02	662	1.025E+02	703	5.094E+01	744	1.802E+01		
622	1.027E+02	663	1.015E+02	704	4.992E+01	745	1.759E+01		
623	1.031E+02	664	9.990E+01	705	4.873E+01	746	1.719E+01		
624	1.040E+02	665	9.926E+01	706	4.776E+01	747	1.657E+01		
625	1.044E+02	666	9.782E+01	707	4.653E+01	748	1.644E+01		

CIE 1931 x y Chromaticity Diagram



7-Step Chromaticity Quadrangles



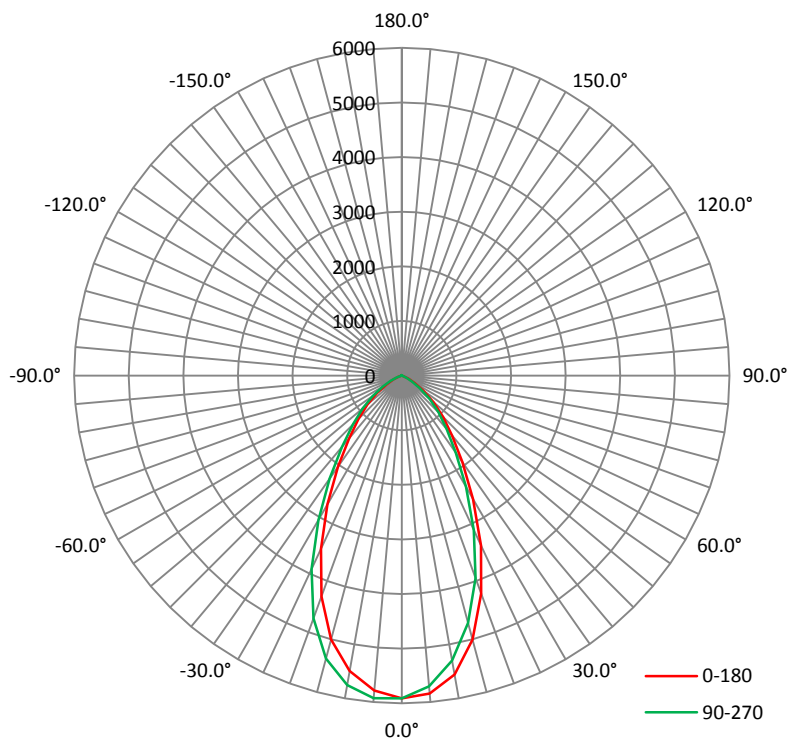
[Goniophotometer System]

Test orientation: **Downward**

Test CCT and Beam angle: **4000K/60°**

Luminous Flux (lm)	I _{max} (cd)	S/MH (C0/180)	S/MH (C90/270)
6379.67	5942	0.84	0.80

Luminous Intensity Distribution



	C0/180	C45/225	C90/270	C135/315	AVG.
Beam Angle (50% I _{max}):	56.3	57.0	56.4	56.6	56.6
Field Angle (10% I _{max}):	107.2	107.8	107.3	107.6	107.5

Luminous Intensity (cd) Distribution Data

$\begin{matrix} C \\ \backslash \\ Y \end{matrix}$	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
0°	5909	5909	5909	5909	5909	5909	5909	5909
1°	5898	5910	5914	5918	5924	5924	5920	5917
2°	5882	5903	5914	5926	5935	5939	5931	5920
3°	5858	5886	5904	5929	5940	5942	5931	5915
4°	5823	5862	5891	5920	5937	5942	5924	5905
5°	5788	5830	5869	5903	5929	5931	5912	5888
6°	5742	5790	5839	5882	5910	5914	5894	5862
7°	5688	5749	5804	5851	5885	5889	5867	5830
8°	5629	5695	5759	5817	5850	5856	5832	5783
9°	5564	5635	5709	5768	5805	5819	5786	5731
10°	5492	5570	5645	5711	5753	5766	5727	5666
11°	5406	5498	5578	5648	5703	5707	5668	5588
12°	5322	5413	5501	5576	5632	5632	5595	5500
13°	5222	5321	5416	5497	5555	5554	5507	5400
14°	5116	5218	5326	5403	5466	5461	5414	5294
15°	5003	5112	5230	5307	5362	5366	5302	5181
16°	4879	4998	5117	5196	5250	5252	5185	5052
17°	4744	4879	5000	5079	5129	5132	5053	4916
18°	4607	4745	4875	4955	5003	5002	4911	4771
19°	4457	4606	4741	4826	4875	4864	4764	4620
20°	4303	4456	4596	4684	4729	4715	4605	4462
21°	4151	4301	4447	4535	4577	4565	4446	4300
22°	3991	4145	4297	4378	4417	4405	4283	4136
23°	3802	3988	4139	4216	4248	4233	4117	3970
24°	3660	3825	3976	4057	4082	4063	3941	3800
25°	3499	3664	3813	3888	3909	3884	3788	3629
26°	3339	3498	3646	3721	3734	3707	3598	3456
27°	3181	3329	3478	3550	3561	3531	3465	3285
28°	3028	3170	3313	3385	3386	3361	3242	3115
29°	2876	3009	3152	3223	3219	3194	3118	2956
30°	2724	2857	2994	3059	3055	3032	2925	2800
31°	2578	2707	2844	2898	2895	2870	2796	2651
32°	2432	2557	2696	2741	2738	2717	2614	2505
33°	2297	2417	2554	2589	2582	2564	2508	2360
34°	2166	2281	2414	2449	2435	2416	2343	2225
35°	2039	2155	2285	2310	2302	2280	2233	2096
36°	1916	2035	2157	2180	2169	2150	2072	1973
37°	1802	1914	2034	2053	2044	2025	1985	1859
38°	1698	1808	1917	1935	1925	1908	1843	1755
39°	1595	1703	1807	1824	1813	1793	1759	1653
40°	1501	1604	1705	1721	1706	1689	1641	1555
41°	1412	1511	1606	1622	1603	1592	1564	1465
42°	1328	1422	1514	1530	1508	1501	1445	1380
43°	1252	1339	1426	1441	1419	1414	1386	1298
44°	1181	1260	1345	1357	1340	1333	1287	1223
45°	1117	1186	1267	1281	1262	1258	1234	1151
46°	1056	1119	1192	1205	1191	1186	1150	1085
47°	994	1056	1122	1136	1124	1117	1097	1021
48°	934	992	1055	1068	1059	1049	1012	958

Luminous Intensity (cd) Distribution Data

$\begin{matrix} C \\ \backslash \\ \gamma \end{matrix}$	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
49°	873	932	992	1005	995	983	965	897
50°	817	867	932	945	933	920	889	839
51°	762	812	872	885	874	861	844	780
52°	708	757	814	828	816	803	774	723
53°	655	704	757	771	760	746	726	666
54°	603	650	700	702	705	689	658	612
55°	552	598	645	656	649	633	605	557
56°	501	546	593	603	597	581	553	502
57°	451	494	541	550	545	529	501	454
58°	406	447	489	498	493	477	447	408
59°	363	401	441	442	444	430	404	364
60°	323	359	396	403	400	387	361	325
61°	286	319	354	363	358	347	324	289
62°	253	284	315	319	320	310	286	257
63°	224	252	281	283	285	277	258	227
64°	196	224	250	255	253	246	226	202
65°	171	199	222	224	223	218	201	179
66°	149	176	196	201	196	193	177	157
67°	125	154	173	179	171	170	157	137
68°	102	134	153	155	142	149	136	119
69°	84	117	134	137	118	130	120	105
70°	64	101	117	120	97	112	106	95
71°	47	89	104	103	72	97	94	88
72°	29	82	93	92	52	85	86	85
73°	12	78	84	82	32	78	82	82
74°	7	75	78	73	12	73	74	64
75°	5	67	74	69	6	56	55	47
76°	3	49	56	53	4	40	37	30
77°	2	31	38	37	3	24	18	12
78°	1	13	19	21	2	11	8	8
79°	1	5	9	10	1	8	6	5
80°	1	4	6	7	1	6	4	2
81°	0	2	4	4	1	3	2	1
82°	0	1	2	2	0	1	1	0
83°	0	0	1	1	0	0	0	0
84°	0	0	0	0	0	0	0	0
85°	0	0	0	0	0	0	0	0
86°	0	0	0	0	0	0	0	0
87°	0	0	0	0	0	0	0	0
88°	0	0	0	0	0	0	0	0
89°	0	0	0	0	0	0	0	0
90°	0	0	0	0	0	0	0	0
91°	0	0	0	0	0	0	0	0
92°	0	0	0	0	0	0	0	0
93°	0	0	0	0	0	0	0	0
94°	0	0	0	0	0	0	0	0
95°	0	0	0	0	0	0	0	0
96°	0	0	0	0	0	0	0	0
97°	0	0	0	0	0	0	0	0

Luminous Intensity (cd) Distribution Data

$\begin{matrix} C \\ \backslash \\ \gamma \end{matrix}$	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
98°	0	0	0	0	0	0	0	0
99°	0	0	0	0	0	0	0	0
100°	0	0	0	0	0	0	0	0
101°	0	0	0	0	0	0	0	0
102°	0	0	0	0	0	0	0	0
103°	0	0	0	0	0	0	0	0
104°	0	0	0	0	0	0	0	0
105°	0	0	0	0	0	0	0	0
106°	0	0	0	0	0	0	0	0
107°	0	0	0	0	0	0	0	0
108°	0	0	0	0	0	0	0	0
109°	0	0	0	0	0	0	0	0
110°	0	0	0	0	0	0	0	0
111°	0	0	0	0	0	0	0	0
112°	0	0	0	0	0	0	0	0
113°	0	0	0	0	0	0	0	0
114°	0	0	0	0	0	0	0	0
115°	0	0	0	0	0	0	0	0
116°	0	0	0	0	0	0	0	0
117°	0	0	0	0	0	0	0	1
118°	1	1	1	0	0	1	1	1
119°	1	1	1	1	1	1	1	1
120°	1	1	1	1	1	1	1	1
121°	1	1	1	1	1	1	1	1
122°	1	1	1	1	1	1	1	1
123°	1	1	1	1	1	1	1	1
124°	1	1	1	1	1	1	1	1
125°	1	1	1	1	1	1	1	1
126°	1	1	1	1	1	1	1	1
127°	1	1	1	1	1	1	1	1
128°	1	1	1	1	1	1	1	1
129°	1	1	1	1	1	1	1	1
130°	1	1	1	1	1	1	1	1
131°	2	2	2	2	2	2	2	2
132°	2	2	2	2	2	2	2	2
133°	2	2	2	2	2	2	2	2
134°	2	2	2	2	2	2	2	2
135°	2	2	2	2	2	2	2	2
136°	2	2	2	2	2	2	2	2
137°	2	3	3	3	3	3	3	3
138°	3	3	3	3	3	3	3	3
139°	3	3	3	3	3	3	3	3
140°	3	3	3	3	3	3	3	3
141°	3	4	4	4	4	4	4	3
142°	4	4	4	4	4	4	4	4
143°	4	4	4	4	4	4	4	4
144°	4	4	5	5	5	5	4	4
145°	4	4	5	5	5	5	5	4
146°	4	5	5	5	5	5	5	5

Luminous Intensity (cd) Distribution Data

$\begin{matrix} C \\ \backslash \\ \gamma \end{matrix}$	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
147°	5	5	5	5	6	6	5	5
148°	5	5	6	6	6	6	5	5
149°	5	5	6	6	6	6	6	5
150°	5	6	6	6	6	6	6	6
151°	5	6	6	6	7	7	6	6
152°	6	6	7	7	7	7	6	6
153°	6	6	7	7	7	7	7	6
154°	6	7	7	7	7	7	7	7
155°	6	7	7	7	8	8	7	7
156°	7	7	8	8	8	8	7	7
157°	7	7	8	8	8	8	8	7
158°	7	7	8	8	8	8	8	7
159°	7	8	8	8	8	8	8	7
160°	7	8	8	8	8	8	8	8
161°	7	8	8	8	8	8	8	8
162°	7	8	8	8	8	8	8	8
163°	8	8	8	8	8	8	8	8
164°	8	8	8	8	8	8	8	8
165°	8	8	8	8	8	8	8	8
166°	7	8	8	8	8	8	8	8
167°	7	8	8	8	8	8	8	8
168°	7	7	8	8	8	8	8	7
169°	7	7	8	8	8	8	7	7
170°	7	7	7	8	8	8	7	7
171°	7	7	7	7	7	7	7	7
172°	7	7	7	7	7	7	7	7
173°	7	7	7	7	7	7	7	7
174°	7	7	7	7	7	7	7	7
175°	7	7	7	7	7	7	7	7
176°	6	6	6	6	6	6	6	6
177°	6	6	6	6	6	6	6	6
178°	6	6	6	6	6	6	6	6
179°	6	6	6	5	6	6	6	6
180°	6	6	5	5	5	6	6	6

Luminous Intensity (cd) Distribution Data (cont.)

$\begin{matrix} C \\ \backslash \\ Y \end{matrix}$	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
0°	5909	5909	5909	5909	5909	5909	5909	5909
1°	5912	5903	5894	5888	5887	5884	5886	5890
2°	5903	5891	5874	5869	5855	5854	5855	5865
3°	5893	5871	5847	5829	5818	5825	5817	5832
4°	5874	5842	5808	5786	5767	5776	5774	5792
5°	5845	5805	5765	5730	5711	5720	5719	5743
6°	5805	5759	5711	5671	5645	5655	5661	5687
7°	5760	5706	5645	5596	5573	5581	5586	5620
8°	5705	5638	5570	5518	5493	5500	5506	5548
9°	5634	5563	5485	5431	5401	5411	5415	5469
10°	5559	5483	5399	5339	5300	5312	5321	5382
11°	5472	5388	5297	5234	5194	5204	5215	5289
12°	5369	5281	5185	5127	5078	5093	5106	5189
13°	5259	5172	5073	5008	4953	4974	4990	5085
14°	5137	5046	4944	4889	4825	4853	4874	4973
15°	5005	4914	4808	4755	4690	4719	4749	4850
16°	4866	4777	4667	4622	4547	4584	4615	4720
17°	4725	4636	4517	4471	4398	4435	4475	4586
18°	4570	4490	4365	4321	4248	4283	4336	4449
19°	4415	4337	4207	4161	4096	4128	4191	4302
20°	4249	4174	4051	3999	3946	3975	4038	4155
21°	4084	4006	3897	3831	3786	3816	3887	4001
22°	3923	3837	3739	3661	3626	3651	3728	3845
23°	3760	3666	3574	3494	3458	3486	3569	3679
24°	3595	3494	3409	3329	3286	3318	3410	3518
25°	3430	3328	3247	3164	3120	3162	3255	3358
26°	3266	3162	3081	3006	2957	3004	3097	3197
27°	3095	3005	2925	2847	2799	2853	2942	3043
28°	2930	2856	2768	2692	2638	2701	2793	2884
29°	2766	2700	2614	2544	2491	2548	2641	2728
30°	2608	2548	2474	2395	2347	2402	2499	2581
31°	2459	2404	2332	2256	2216	2264	2360	2438
32°	2319	2268	2200	2122	2085	2127	2229	2301
33°	2187	2134	2067	1995	1954	2002	2098	2173
34°	2058	2009	1944	1875	1832	1881	1975	2047
35°	1935	1889	1829	1762	1720	1774	1860	1932
36°	1823	1779	1724	1649	1614	1669	1751	1819
37°	1717	1673	1620	1547	1516	1570	1644	1713
38°	1617	1572	1526	1456	1426	1479	1545	1612
39°	1520	1476	1434	1371	1351	1394	1453	1518
40°	1430	1388	1358	1299	1276	1322	1370	1430
41°	1354	1312	1282	1227	1202	1250	1298	1355
42°	1278	1236	1206	1155	1132	1178	1227	1281
43°	1202	1160	1133	1086	1068	1108	1157	1206
44°	1133	1092	1066	1024	1009	1045	1092	1136
45°	1070	1027	999	960	948	981	1027	1072
46°	1008	965	937	901	891	920	967	1009
47°	944	901	876	840	832	862	907	946
48°	882	838	814	783	776	804	845	886

Luminous Intensity (cd) Distribution Data (cont.)

$\begin{matrix} C \\ \backslash \\ Y \end{matrix}$	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
49°	820	778	754	723	719	745	785	827
50°	762	718	694	667	664	687	726	769
51°	704	660	636	610	607	632	669	715
52°	643	603	578	554	553	577	613	659
53°	587	546	522	500	499	524	558	606
54°	531	493	469	449	450	472	505	552
55°	479	442	420	401	402	424	455	499
56°	430	395	375	357	359	379	408	450
57°	386	353	333	317	318	338	364	403
58°	343	315	296	280	282	300	324	361
59°	305	280	261	248	247	265	287	321
60°	270	246	230	217	218	233	253	285
61°	238	217	202	191	190	204	223	252
62°	210	190	177	167	167	179	195	222
63°	184	167	156	148	144	159	172	196
64°	160	148	136	128	121	139	152	173
65°	136	129	116	109	103	119	133	153
66°	112	110	101	95	84	102	113	134
67°	92	96	92	89	67	89	99	115
68°	75	89	91	88	53	86	91	102
69°	54	89	93	90	37	87	90	93
70°	35	89	94	92	27	88	90	88
71°	25	88	93	92	17	86	90	86
72°	15	86	90	88	7	83	88	85
73°	6	77	74	64	4	76	84	82
74°	4	34	26	44	3	33	58	72
75°	3	24	18	25	2	24	41	32
76°	2	14	11	6	1	14	24	23
77°	1	4	3	3	1	4	7	14
78°	1	2	2	2	1	2	3	5
79°	1	1	1	1	0	1	2	2
80°	0	1	1	1	0	1	1	2
81°	0	0	0	0	0	0	1	1
82°	0	0	0	0	0	0	0	0
83°	0	0	0	0	0	0	0	0
84°	0	0	0	0	0	0	0	0
85°	0	0	0	0	0	0	0	0
86°	0	0	0	0	0	0	0	0
87°	0	0	0	0	0	0	0	0
88°	0	0	0	0	0	0	0	0
89°	0	0	0	0	0	0	0	0
90°	0	0	0	0	0	0	0	0
91°	0	0	0	0	0	0	0	0
92°	0	0	0	0	0	0	0	0
93°	0	0	0	0	0	0	0	0
94°	0	0	0	0	0	0	0	0
95°	0	0	0	0	0	0	0	0
96°	0	0	0	0	0	0	0	0
97°	0	0	0	0	0	0	0	0

Luminous Intensity (cd) Distribution Data (cont.)

$\begin{matrix} \text{C} \\ \backslash \\ \text{Y} \end{matrix}$	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
98°	0	0	0	0	0	0	0	0
99°	0	0	0	0	0	0	0	0
100°	0	0	0	0	0	0	0	0
101°	0	0	0	0	0	0	0	0
102°	0	0	0	0	0	0	0	0
103°	0	0	0	0	0	0	0	0
104°	0	0	0	0	0	0	0	0
105°	0	0	0	0	0	0	0	0
106°	0	0	0	0	0	0	0	0
107°	0	0	0	0	0	0	0	0
108°	0	0	0	0	0	0	0	0
109°	0	0	0	0	0	0	0	0
110°	0	0	0	0	0	0	0	0
111°	0	0	0	0	0	0	0	0
112°	0	0	0	0	0	0	0	0
113°	0	0	0	0	0	0	0	0
114°	0	0	0	0	0	0	0	0
115°	0	0	0	0	0	0	0	0
116°	0	0	0	0	0	0	0	0
117°	0	0	0	0	0	0	0	0
118°	0	0	0	0	0	0	0	0
119°	0	0	0	0	0	0	0	0
120°	0	0	0	0	0	0	0	0
121°	0	0	0	0	0	0	0	0
122°	0	0	0	0	0	0	0	0
123°	0	0	0	0	0	0	0	0
124°	0	0	0	0	0	0	0	0
125°	0	0	0	0	1	0	0	0
126°	0	0	1	1	1	1	0	0
127°	0	1	1	1	1	1	1	0
128°	1	1	1	1	1	1	1	1
129°	1	1	1	1	1	1	1	1
130°	1	1	1	1	1	1	1	1
131°	1	1	1	1	1	1	1	1
132°	1	1	1	1	1	1	1	1
133°	1	1	1	1	1	1	1	1
134°	1	1	1	1	1	1	1	1
135°	1	1	1	1	1	1	1	1
136°	1	1	1	1	1	1	1	1
137°	1	1	1	1	1	1	1	1
138°	1	1	1	1	1	1	1	1
139°	1	1	1	1	1	1	1	1
140°	1	1	1	1	1	1	1	1
141°	1	1	1	2	2	2	1	1
142°	1	1	2	2	2	2	2	2
143°	2	1	2	2	2	2	2	2
144°	2	2	2	2	2	2	2	2
145°	2	2	2	2	2	2	2	2
146°	2	2	2	2	2	2	2	2

Luminous Intensity (cd) Distribution Data (cont.)

$\begin{matrix} C \\ \backslash \\ Y \end{matrix}$	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
147°	2	2	2	2	2	2	2	2
148°	2	2	2	2	2	2	2	2
149°	2	2	2	2	2	2	2	2
150°	2	2	2	2	2	2	2	2
151°	2	2	2	2	3	2	2	2
152°	2	2	2	2	3	3	2	2
153°	2	2	2	3	3	3	3	3
154°	2	2	3	3	3	3	3	3
155°	2	2	3	3	3	3	3	3
156°	3	2	3	3	3	3	3	3
157°	3	3	3	3	3	3	3	3
158°	3	3	3	3	3	3	3	3
159°	3	3	3	3	3	3	3	3
160°	3	3	3	3	3	3	3	3
161°	3	3	3	3	3	3	3	3
162°	3	3	3	3	3	3	3	3
163°	3	3	3	3	3	3	3	4
164°	3	3	3	3	3	3	3	4
165°	4	3	3	3	3	4	4	4
166°	4	4	3	3	4	4	4	4
167°	4	4	3	3	4	4	4	4
168°	4	4	3	3	4	4	4	4
169°	4	4	3	3	4	4	4	4
170°	4	4	4	3	4	4	4	4
171°	4	4	4	4	4	4	4	4
172°	4	4	4	4	4	4	4	4
173°	4	4	4	4	4	4	4	4
174°	4	4	4	4	4	4	4	4
175°	4	4	4	4	4	4	4	4
176°	5	5	4	4	4	4	4	5
177°	5	5	5	4	5	4	5	5
178°	5	5	5	5	5	5	5	5
179°	5	5	5	5	5	5	5	5
180°	6	6	6	5	5	5	5	5

Zonal Lumen Density Measurement

Deg	Flux (lm)	%
0-5	140.2	2.20
5-10	405.9	6.36
10-15	625.9	9.81
15-20	769.6	12.06
20-25	819.1	12.84
25-30	782.3	12.27
30-35	691.0	10.83
35-40	581.9	9.12
40-45	479.9	7.52
45-50	385.3	6.04
50-55	287.0	4.50
55-60	189.3	2.97
60-65	111.6	1.74
65-70	61.1	0.96
70-75	33.4	0.53
75-80	6.8	0.10
80-85	0.4	0.01
85-90	0.1	0.00
90-95	0.0	0.00
95-100	0.1	0.00
100-105	0.1	0.00
105-110	0.1	0.01
110-115	0.1	0.00
115-120	0.2	0.00
120-125	0.3	0.00
125-130	0.4	0.01
130-135	0.5	0.01
135-140	0.7	0.01
140-145	0.9	0.01
145-150	1.1	0.02
150-155	1.1	0.02
155-160	1.1	0.02
160-165	0.9	0.01
165-170	0.7	0.01
170-175	0.4	0.01
175-180	0.1	0.00

Deg	Flux (lm)	%
0-5	140.2	2.20
0-10	546.1	8.56
0-15	1172.0	18.37
0-20	1941.6	30.43
0-25	2760.7	43.27
0-30	3543.0	55.54
0-35	4234.0	66.37
0-40	4815.9	75.49
0-45	5295.8	83.01
0-50	5681.1	89.05
0-55	5968.1	93.55
0-60	6157.4	96.52
0-65	6269.0	98.26
0-70	6330.1	99.22
0-75	6363.5	99.75
0-80	6370.3	99.85
0-85	6370.7	99.86
0-90	6370.8	99.86
0-95	6370.8	99.86
0-100	6370.9	99.86
0-105	6371.0	99.86
0-110	6371.1	99.87
0-115	6371.2	99.87
0-120	6371.4	99.87
0-125	6371.7	99.87
0-130	6372.1	99.88
0-135	6372.6	99.89
0-140	6373.3	99.90
0-145	6374.2	99.91
0-150	6375.3	99.93
0-155	6376.4	99.95
0-160	6377.6	99.97
0-165	6378.5	99.98
0-170	6379.2	99.99
0-175	6379.5	100.00
0-180	6379.7	100.00

[Integrating Sphere System]

Test orientation: **Downward**

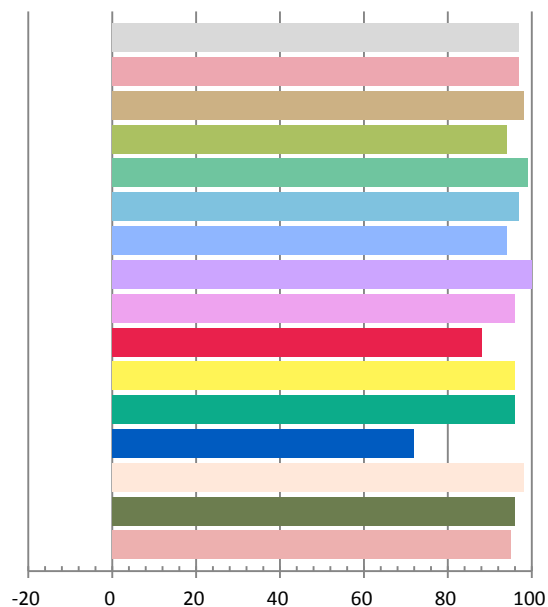
Test CCT and Beam angle: **5500K/60°**

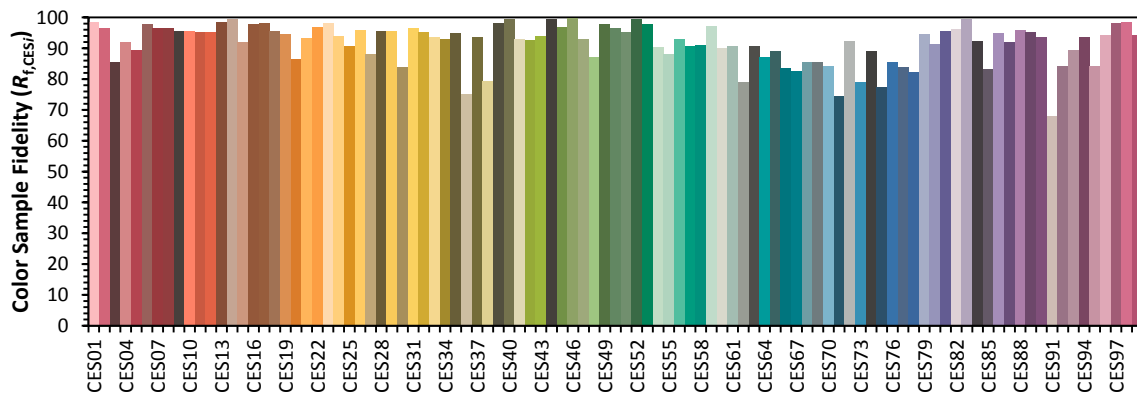
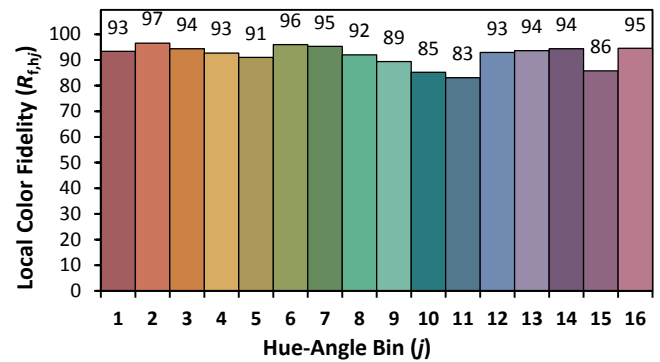
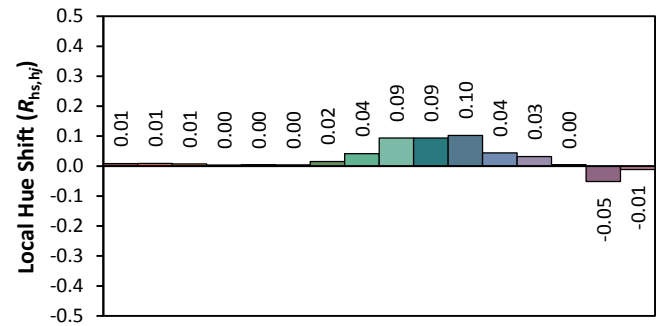
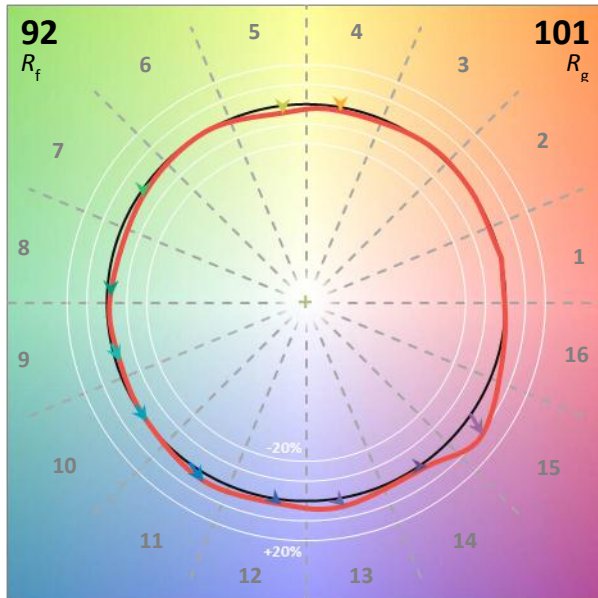
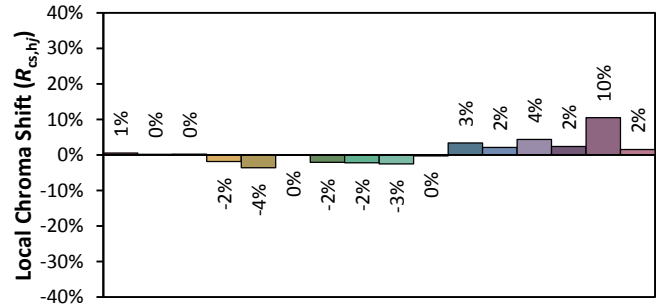
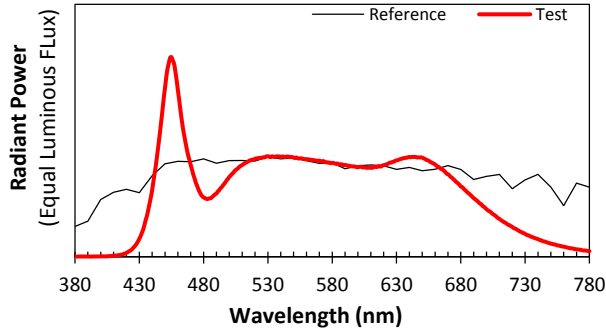
Photometric and Electrical Measurement Result

Luminous Flux(lm)	Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
7118.6	27.355	5440	-0.00152	0.3338	0.3393	0.2085	0.4768

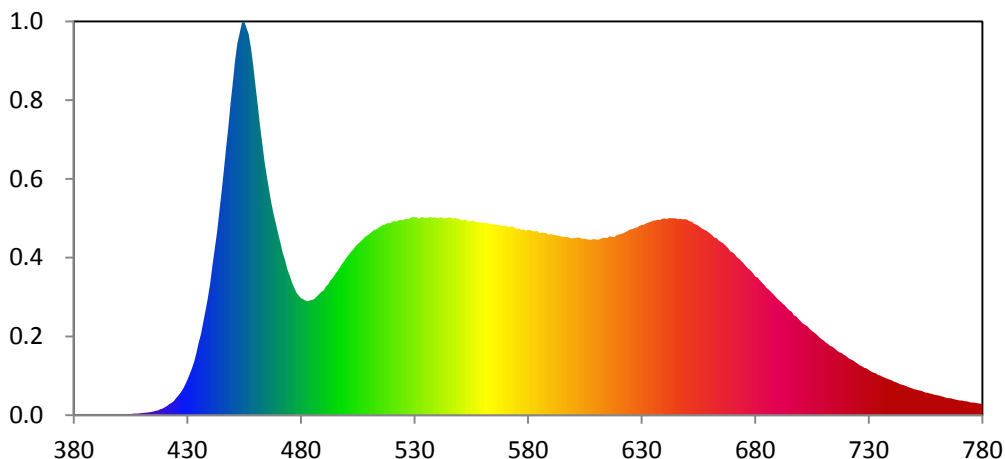
Color Rendering Index

Ra			
96.9			
R1	R2	R3	R4
97	98	94	99
R5	R6	R7	R8
97	94	100	96
R9	R10	R11	R12
88	96	96	72
R13	R14	R15	
98	96	95	





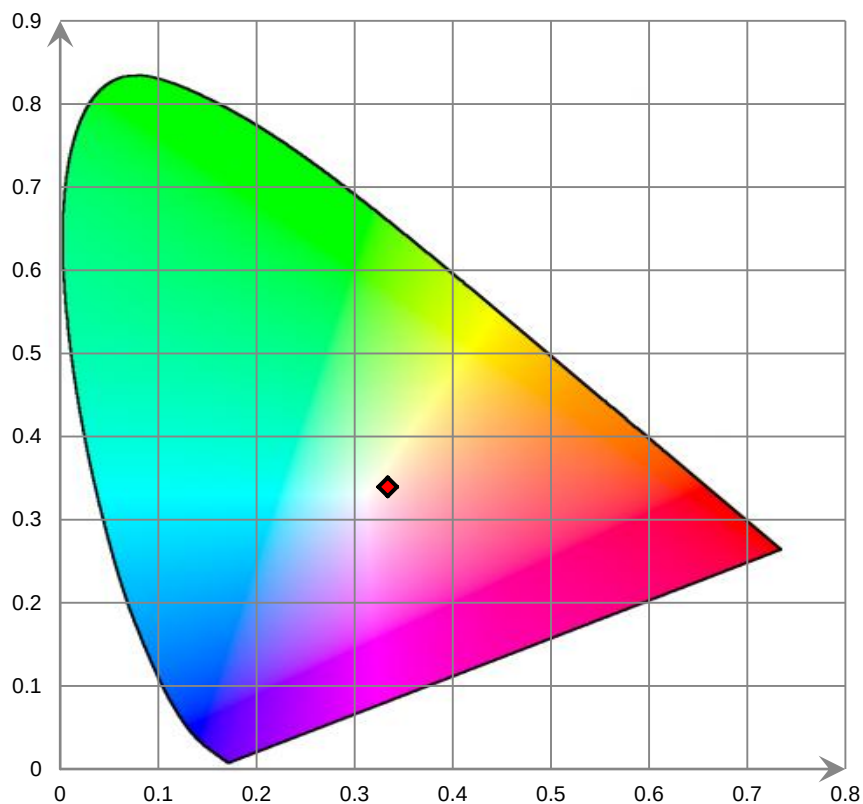
Relative Spectral Power Distribution



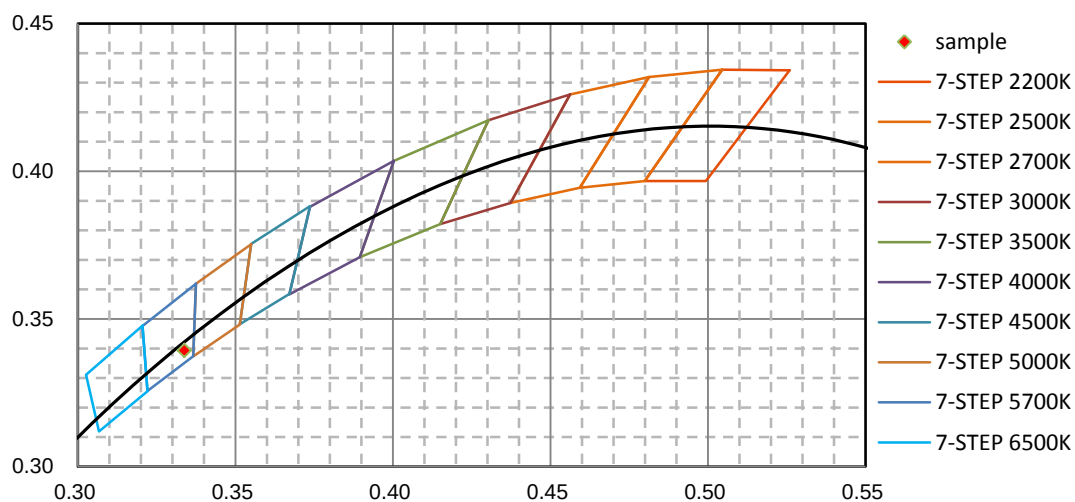
nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	4.492E-01	421	4.778E+00	462	1.514E+02	503	8.664E+01	544	1.032E+02
381	2.683E-01	422	5.740E+00	463	1.414E+02	504	8.838E+01	545	1.035E+02
382	2.403E-01	423	6.396E+00	464	1.323E+02	505	8.968E+01	546	1.034E+02
383	3.266E-01	424	7.385E+00	465	1.248E+02	506	9.058E+01	547	1.028E+02
384	3.327E-01	425	8.832E+00	466	1.177E+02	507	9.172E+01	548	1.032E+02
385	3.504E-01	426	1.021E+01	467	1.109E+02	508	9.304E+01	549	1.028E+02
386	2.695E-01	427	1.184E+01	468	1.047E+02	509	9.392E+01	550	1.025E+02
387	3.484E-01	428	1.361E+01	469	9.992E+01	510	9.467E+01	551	1.019E+02
388	3.127E-01	429	1.594E+01	470	9.472E+01	511	9.568E+01	552	1.025E+02
389	3.799E-01	430	1.849E+01	471	9.002E+01	512	9.670E+01	553	1.019E+02
390	2.905E-01	431	2.133E+01	472	8.488E+01	513	9.712E+01	554	1.014E+02
391	4.393E-01	432	2.462E+01	473	8.092E+01	514	9.800E+01	555	1.016E+02
392	1.341E-01	433	2.820E+01	474	7.630E+01	515	9.871E+01	556	1.017E+02
393	3.045E-01	434	3.278E+01	475	7.321E+01	516	9.959E+01	557	1.012E+02
394	2.938E-01	435	3.806E+01	476	6.954E+01	517	9.971E+01	558	1.010E+02
395	4.360E-01	436	4.248E+01	477	6.680E+01	518	1.004E+02	559	1.007E+02
396	2.781E-01	437	4.867E+01	478	6.410E+01	519	1.004E+02	560	1.008E+02
397	4.014E-01	438	5.501E+01	479	6.253E+01	520	1.010E+02	561	1.005E+02
398	3.750E-01	439	6.147E+01	480	6.125E+01	521	1.017E+02	562	1.005E+02
399	3.969E-01	440	6.876E+01	481	6.069E+01	522	1.013E+02	563	1.003E+02
400	4.471E-01	441	7.803E+01	482	5.995E+01	523	1.020E+02	564	9.988E+01
401	5.367E-01	442	8.653E+01	483	5.959E+01	524	1.021E+02	565	9.987E+01
402	4.808E-01	443	9.556E+01	484	6.015E+01	525	1.022E+02	566	9.965E+01
403	4.738E-01	444	1.060E+02	485	6.039E+01	526	1.027E+02	567	9.946E+01
404	4.777E-01	445	1.165E+02	486	6.086E+01	527	1.026E+02	568	9.921E+01
405	5.231E-01	446	1.275E+02	487	6.224E+01	528	1.030E+02	569	9.897E+01
406	7.151E-01	447	1.393E+02	488	6.327E+01	529	1.037E+02	570	9.930E+01
407	7.873E-01	448	1.509E+02	489	6.465E+01	530	1.037E+02	571	9.867E+01
408	7.823E-01	449	1.635E+02	490	6.530E+01	531	1.035E+02	572	9.855E+01
409	9.858E-01	450	1.743E+02	491	6.738E+01	532	1.028E+02	573	9.885E+01
410	1.030E+00	451	1.857E+02	492	6.851E+01	533	1.037E+02	574	9.810E+01
411	1.217E+00	452	1.945E+02	493	7.059E+01	534	1.035E+02	575	9.747E+01
412	1.349E+00	453	2.001E+02	494	7.181E+01	535	1.032E+02	576	9.765E+01
413	1.496E+00	454	2.055E+02	495	7.366E+01	536	1.033E+02	577	9.707E+01
414	1.635E+00	455	2.061E+02	496	7.524E+01	537	1.038E+02	578	9.725E+01
415	1.942E+00	456	2.027E+02	497	7.699E+01	538	1.034E+02	579	9.665E+01
416	2.208E+00	457	1.995E+02	498	7.904E+01	539	1.036E+02	580	9.695E+01
417	2.539E+00	458	1.919E+02	499	8.059E+01	540	1.030E+02	581	9.688E+01
418	3.070E+00	459	1.826E+02	500	8.249E+01	541	1.035E+02	582	9.628E+01
419	3.415E+00	460	1.721E+02	501	8.379E+01	542	1.034E+02	583	9.614E+01
420	4.099E+00	461	1.621E+02	502	8.546E+01	543	1.030E+02	584	9.634E+01

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
585	9.540E+01	626	9.741E+01	667	8.873E+01	708	4.095E+01	749	1.407E+01
586	9.553E+01	627	9.794E+01	668	8.741E+01	709	3.990E+01	750	1.358E+01
587	9.544E+01	628	9.823E+01	669	8.577E+01	710	3.919E+01	751	1.334E+01
588	9.519E+01	629	9.909E+01	670	8.523E+01	711	3.807E+01	752	1.297E+01
589	9.448E+01	630	9.953E+01	671	8.413E+01	712	3.732E+01	753	1.280E+01
590	9.477E+01	631	9.976E+01	672	8.267E+01	713	3.622E+01	754	1.232E+01
591	9.450E+01	632	1.004E+02	673	8.174E+01	714	3.570E+01	755	1.182E+01
592	9.422E+01	633	1.008E+02	674	8.045E+01	715	3.480E+01	756	1.169E+01
593	9.394E+01	634	1.012E+02	675	7.928E+01	716	3.384E+01	757	1.130E+01
594	9.376E+01	635	1.017E+02	676	7.777E+01	717	3.292E+01	758	1.104E+01
595	9.341E+01	636	1.019E+02	677	7.670E+01	718	3.254E+01	759	1.066E+01
596	9.328E+01	637	1.022E+02	678	7.562E+01	719	3.159E+01	760	1.047E+01
597	9.330E+01	638	1.022E+02	679	7.428E+01	720	3.096E+01	761	1.022E+01
598	9.306E+01	639	1.028E+02	680	7.251E+01	721	2.980E+01	762	9.839E+00
599	9.254E+01	640	1.030E+02	681	7.208E+01	722	2.918E+01	763	9.560E+00
600	9.261E+01	641	1.027E+02	682	7.066E+01	723	2.870E+01	764	9.152E+00
601	9.274E+01	642	1.031E+02	683	6.924E+01	724	2.777E+01	765	8.826E+00
602	9.303E+01	643	1.031E+02	684	6.812E+01	725	2.700E+01	766	8.833E+00
603	9.268E+01	644	1.031E+02	685	6.658E+01	726	2.613E+01	767	8.540E+00
604	9.221E+01	645	1.030E+02	686	6.567E+01	727	2.563E+01	768	8.161E+00
605	9.235E+01	646	1.025E+02	687	6.446E+01	728	2.476E+01	769	7.982E+00
606	9.205E+01	647	1.027E+02	688	6.325E+01	729	2.444E+01	770	7.640E+00
607	9.190E+01	648	1.025E+02	689	6.186E+01	730	2.361E+01	771	7.705E+00
608	9.186E+01	649	1.026E+02	690	6.060E+01	731	2.282E+01	772	7.339E+00
609	9.229E+01	650	1.024E+02	691	5.957E+01	732	2.228E+01	773	7.277E+00
610	9.186E+01	651	1.016E+02	692	5.845E+01	733	2.203E+01	774	6.917E+00
611	9.187E+01	652	1.012E+02	693	5.745E+01	734	2.104E+01	775	6.569E+00
612	9.237E+01	653	1.002E+02	694	5.606E+01	735	2.075E+01	776	6.595E+00
613	9.286E+01	654	9.972E+01	695	5.484E+01	736	2.005E+01	777	6.419E+00
614	9.276E+01	655	9.915E+01	696	5.416E+01	737	1.962E+01	778	6.210E+00
615	9.276E+01	656	9.817E+01	697	5.233E+01	738	1.911E+01	779	6.015E+00
616	9.372E+01	657	9.743E+01	698	5.171E+01	739	1.866E+01	780	5.806E+00
617	9.328E+01	658	9.682E+01	699	5.039E+01	740	1.824E+01		
618	9.322E+01	659	9.612E+01	700	4.916E+01	741	1.753E+01		
619	9.419E+01	660	9.524E+01	701	4.799E+01	742	1.727E+01		
620	9.456E+01	661	9.423E+01	702	4.719E+01	743	1.665E+01		
621	9.485E+01	662	9.299E+01	703	4.649E+01	744	1.609E+01		
622	9.533E+01	663	9.263E+01	704	4.509E+01	745	1.586E+01		
623	9.587E+01	664	9.128E+01	705	4.404E+01	746	1.540E+01		
624	9.651E+01	665	9.058E+01	706	4.322E+01	747	1.486E+01		
625	9.721E+01	666	8.981E+01	707	4.231E+01	748	1.445E+01		

CIE 1931 x y Chromaticity Diagram



7-Step Chromaticity Quadrangles



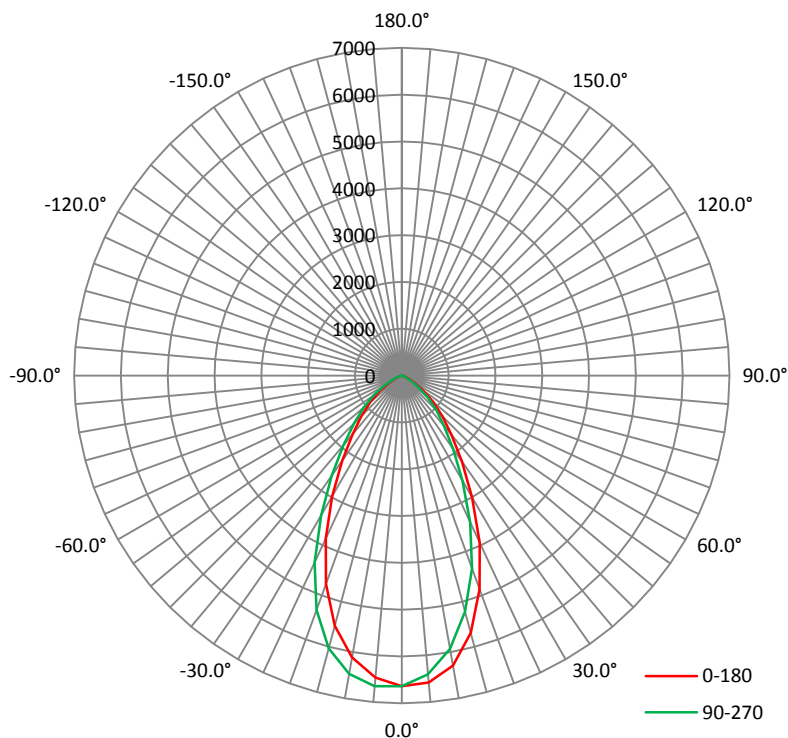
[Goniophotometer System]

Test orientation: **Downward**

Test CCT and Beam angle: **5500K/60°**

Luminous Flux (lm)	I _{max} (cd)	S/MH (C0/180)	S/MH (C90/270)
7120.61	6679	0.86	0.79

Luminous Intensity Distribution



	C0/180	C45/225	C90/270	C135/315	AVG.
Beam Angle (50% I _{max}):	56.2	56.8	56.3	56.6	56.5
Field Angle (10% I _{max}):	106.4	107.1	106.7	107.0	106.8

Luminous Intensity (cd) Distribution Data

$\begin{matrix} C \\ \backslash \\ Y \end{matrix}$	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
0°	6636	6636	6636	6636	6636	6636	6636	6636
1°	6617	6630	6640	6647	6641	6654	6655	6650
2°	6592	6616	6635	6653	6667	6671	6668	6660
3°	6564	6594	6622	6652	6667	6678	6679	6664
4°	6519	6560	6602	6644	6657	6675	6673	6656
5°	6476	6522	6576	6629	6662	6669	6661	6642
6°	6415	6477	6544	6603	6640	6655	6654	6617
7°	6353	6422	6496	6569	6600	6634	6625	6588
8°	6283	6364	6445	6523	6578	6598	6586	6545
9°	6200	6289	6382	6468	6529	6558	6545	6488
10°	6113	6212	6308	6403	6470	6503	6481	6421
11°	6019	6120	6224	6328	6407	6436	6418	6340
12°	5904	6022	6136	6249	6330	6362	6343	6247
13°	5788	5911	6043	6154	6242	6273	6243	6141
14°	5672	5796	5942	6055	6145	6176	6148	6027
15°	5531	5677	5820	5941	6031	6067	6016	5899
16°	5388	5545	5694	5821	5907	5946	5892	5757
17°	5233	5397	5559	5690	5775	5818	5749	5612
18°	5066	5241	5413	5550	5637	5673	5603	5453
19°	4901	5080	5261	5398	5486	5520	5434	5292
20°	4732	4910	5098	5242	5325	5355	5263	5114
21°	4554	4721	4929	5070	5156	5192	5085	4940
22°	4376	4550	4755	4897	4975	5008	4912	4759
23°	4196	4367	4583	4718	4784	4828	4713	4576
24°	4014	4186	4380	4537	4600	4627	4537	4387
25°	3838	4000	4211	4349	4407	4436	4341	4188
26°	3661	3815	4022	4167	4210	4231	4163	3991
27°	3484	3642	3830	3979	4011	4047	3967	3793
28°	3313	3461	3662	3791	3826	3852	3782	3603
29°	3138	3292	3479	3607	3635	3668	3591	3425
30°	2972	3116	3306	3420	3448	3477	3408	3253
31°	2813	2950	3134	3242	3272	3300	3219	3074
32°	2657	2793	2976	3069	3093	3119	3054	2907
33°	2505	2640	2816	2909	2923	2951	2890	2740
34°	2355	2491	2671	2747	2763	2780	2734	2580
35°	2215	2353	2524	2594	2611	2629	2571	2423
36°	2086	2221	2388	2447	2458	2474	2431	2290
37°	1966	2096	2253	2307	2324	2329	2294	2159
38°	1846	1974	2124	2177	2191	2190	2162	2039
39°	1737	1868	2004	2051	2064	2065	2034	1916
40°	1634	1756	1888	1931	1942	1945	1917	1807
41°	1539	1653	1779	1821	1826	1831	1802	1700
42°	1450	1556	1676	1716	1716	1725	1700	1601
43°	1365	1466	1578	1619	1615	1627	1602	1505
44°	1290	1379	1483	1524	1523	1534	1507	1417
45°	1220	1301	1397	1436	1434	1447	1425	1332
46°	1152	1226	1314	1352	1352	1363	1345	1258
47°	1080	1153	1237	1270	1274	1282	1264	1183
48°	1010	1083	1161	1195	1199	1203	1186	1108

Luminous Intensity (cd) Distribution Data

$\begin{matrix} \backslash & C \\ C & / \end{matrix}$ γ	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
49°	943	1015	1091	1121	1126	1126	1113	1038
50°	877	949	1023	1052	1055	1052	1041	971
51°	813	885	955	983	986	983	971	901
52°	752	821	888	917	921	916	901	836
53°	690	757	823	851	854	849	832	769
54°	629	694	756	785	787	782	762	700
55°	573	632	691	720	724	718	695	635
56°	518	576	630	656	660	653	631	579
57°	462	520	574	598	603	597	574	523
58°	412	465	519	541	546	540	517	466
59°	366	415	463	484	489	483	461	416
60°	324	369	412	434	439	434	412	370
61°	285	328	367	387	391	387	368	329
62°	252	291	327	345	348	346	327	292
63°	222	257	290	305	310	308	291	258
64°	193	228	258	272	274	273	258	229
65°	167	202	228	241	242	242	228	202
66°	143	178	201	213	211	214	200	178
67°	118	155	177	188	184	188	176	155
68°	96	134	156	165	153	165	154	135
69°	76	117	136	144	127	144	134	118
70°	57	102	119	125	105	125	118	105
71°	38	91	106	109	78	108	105	96
72°	18	86	95	96	56	94	96	91
73°	9	82	86	86	35	85	92	89
74°	7	78	80	78	14	81	87	87
75°	5	61	74	72	7	67	66	54
76°	3	44	55	55	5	50	49	36
77°	2	27	36	38	3	33	31	19
78°	1	11	17	20	2	16	13	8
79°	1	7	7	9	1	6	10	6
80°	1	5	5	7	1	4	7	4
81°	1	2	2	4	1	3	4	3
82°	0	1	1	2	1	1	1	1
83°	0	0	0	1	0	1	0	0
84°	0	0	0	0	0	0	0	0
85°	0	0	0	0	0	0	0	0
86°	0	0	0	0	0	0	0	0
87°	0	0	0	0	0	0	0	0
88°	0	0	0	0	0	0	0	0
89°	0	0	0	0	0	0	0	0
90°	0	0	0	0	0	0	0	0
91°	0	0	0	0	0	0	0	0
92°	0	0	0	0	0	0	0	0
93°	0	0	0	0	0	0	0	0
94°	0	0	0	0	0	0	0	0
95°	0	0	0	0	0	0	0	0
96°	0	0	0	0	0	0	0	0
97°	0	0	0	0	0	0	0	0

Luminous Intensity (cd) Distribution Data

$\begin{matrix} C \\ \backslash \\ \gamma \end{matrix}$	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
98°	0	0	0	0	0	0	0	0
99°	0	0	0	0	0	0	0	0
100°	0	0	0	0	0	0	0	0
101°	0	0	0	0	0	0	0	0
102°	0	0	0	0	0	0	0	0
103°	0	0	0	0	0	0	0	0
104°	0	0	0	0	0	0	0	0
105°	0	0	0	0	0	0	0	0
106°	0	0	0	0	0	0	0	0
107°	0	0	0	0	0	0	0	0
108°	0	0	0	0	0	0	0	0
109°	0	0	0	0	0	0	0	0
110°	0	0	0	0	0	0	0	0
111°	0	0	0	0	0	0	0	0
112°	0	0	0	0	0	0	0	0
113°	0	0	0	0	0	0	0	0
114°	0	0	0	0	0	0	0	0
115°	0	0	0	0	0	0	0	0
116°	1	1	0	0	0	0	0	1
117°	1	1	1	1	0	1	1	1
118°	1	1	1	1	1	1	1	1
119°	1	1	1	1	1	1	1	1
120°	1	1	1	1	1	1	1	1
121°	1	1	1	1	1	1	1	1
122°	1	1	1	1	1	1	1	1
123°	1	1	1	1	1	1	1	1
124°	1	1	1	1	1	1	1	1
125°	1	1	1	1	1	1	1	1
126°	1	1	1	1	1	1	1	1
127°	1	1	1	1	1	1	1	1
128°	1	1	1	1	1	1	1	1
129°	2	1	1	1	1	1	1	1
130°	2	2	2	2	2	2	2	2
131°	2	2	2	2	2	2	2	2
132°	2	2	2	2	2	2	2	2
133°	2	2	2	2	2	2	2	2
134°	2	2	2	2	2	2	2	2
135°	2	2	2	2	2	2	2	2
136°	3	3	3	3	3	3	3	3
137°	3	3	3	3	3	3	3	3
138°	3	3	3	3	3	3	3	3
139°	3	3	3	4	4	3	3	3
140°	4	4	4	4	4	4	4	3
141°	4	4	4	4	4	4	4	4
142°	4	4	4	5	5	4	4	4
143°	4	5	5	5	5	5	5	4
144°	5	5	5	5	5	5	5	5
145°	5	5	5	6	6	6	5	5
146°	5	5	6	6	6	6	6	5

Luminous Intensity (cd) Distribution Data

$\begin{matrix} C \\ \backslash \\ Y \end{matrix}$	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
147°	5	6	6	6	6	6	6	5
148°	5	6	6	6	7	6	6	6
149°	6	6	7	7	7	7	6	6
150°	6	6	7	7	7	7	7	6
151°	6	7	7	7	7	7	7	6
152°	7	7	7	8	8	8	7	7
153°	7	7	8	8	8	8	7	7
154°	7	8	8	8	8	8	8	7
155°	7	8	8	8	9	8	8	8
156°	7	8	9	9	9	9	8	8
157°	8	8	9	9	9	9	8	8
158°	8	8	9	9	9	9	9	8
159°	8	9	9	9	9	9	9	8
160°	8	9	9	9	9	9	9	8
161°	8	9	9	10	9	9	9	8
162°	8	9	9	10	9	9	9	8
163°	8	9	9	10	10	9	9	8
164°	9	9	9	9	10	9	9	9
165°	8	9	9	9	10	9	9	9
166°	8	9	9	9	9	9	9	9
167°	8	9	9	9	9	9	9	8
168°	8	8	9	9	9	9	9	8
169°	8	8	9	9	9	9	8	8
170°	8	8	8	9	9	8	8	8
171°	8	8	8	8	8	8	8	8
172°	8	8	8	8	8	8	8	8
173°	8	8	8	8	8	8	8	8
174°	8	8	8	8	8	8	8	8
175°	7	7	7	7	8	7	7	7
176°	7	7	7	7	7	7	7	7
177°	7	7	7	7	7	7	7	7
178°	7	7	7	7	7	7	7	7
179°	6	6	6	6	6	7	7	7
180°	6	6	6	6	6	6	6	6

Luminous Intensity (cd) Distribution Data (cont.)

$\begin{matrix} C \\ \backslash \\ Y \end{matrix}$	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
0°	6636	6636	6636	6636	6636	6636	6636	6636
1°	6643	6632	6622	6615	6601	6608	6600	6610
2°	6632	6622	6602	6585	6558	6562	6567	6576
3°	6629	6602	6570	6545	6527	6513	6529	6533
4°	6609	6572	6533	6495	6469	6460	6468	6480
5°	6583	6540	6482	6435	6407	6392	6400	6419
6°	6549	6497	6425	6366	6332	6311	6330	6349
7°	6500	6436	6354	6287	6247	6227	6232	6268
8°	6443	6367	6269	6195	6149	6124	6140	6180
9°	6372	6288	6183	6095	6040	6017	6037	6088
10°	6289	6196	6084	5990	5928	5906	5919	5986
11°	6193	6094	5974	5875	5804	5784	5804	5876
12°	6087	5968	5854	5748	5668	5667	5682	5761
13°	5963	5829	5718	5621	5532	5533	5542	5637
14°	5826	5691	5574	5483	5382	5389	5408	5501
15°	5691	5548	5425	5336	5221	5234	5261	5357
16°	5534	5402	5260	5181	5063	5075	5098	5207
17°	5378	5247	5095	5013	4893	4905	4947	5052
18°	5206	5079	4926	4841	4728	4736	4786	4893
19°	5032	4903	4755	4657	4557	4559	4616	4723
20°	4856	4728	4579	4473	4389	4380	4445	4554
21°	4673	4539	4407	4287	4205	4197	4265	4367
22°	4489	4353	4225	4100	4022	4012	4090	4186
23°	4310	4160	4041	3910	3829	3826	3915	4007
24°	4122	3973	3858	3721	3639	3644	3734	3821
25°	3938	3788	3672	3538	3452	3466	3559	3642
26°	3746	3602	3489	3362	3270	3295	3388	3465
27°	3552	3427	3309	3182	3083	3123	3208	3279
28°	3368	3250	3132	3006	2911	2949	3039	3112
29°	3178	3076	2967	2835	2747	2785	2875	2950
30°	3001	2906	2800	2665	2592	2620	2717	2789
31°	2828	2741	2642	2512	2436	2469	2561	2632
32°	2668	2580	2484	2365	2287	2323	2411	2487
33°	2516	2428	2338	2227	2150	2188	2273	2341
34°	2369	2287	2202	2091	2019	2061	2141	2208
35°	2232	2155	2069	1963	1904	1942	2013	2082
36°	2101	2025	1950	1840	1798	1823	1894	1958
37°	1977	1903	1833	1725	1682	1717	1781	1842
38°	1861	1788	1724	1621	1581	1616	1676	1734
39°	1753	1681	1622	1527	1484	1522	1579	1630
40°	1647	1580	1521	1438	1406	1434	1488	1537
41°	1546	1486	1432	1360	1333	1360	1402	1449
42°	1452	1398	1356	1289	1260	1286	1329	1375
43°	1368	1322	1280	1217	1187	1212	1256	1301
44°	1298	1246	1204	1142	1125	1139	1183	1226
45°	1229	1171	1129	1071	1051	1066	1110	1156
46°	1160	1100	1059	998	988	999	1042	1084
47°	1084	1027	986	929	915	931	972	1015
48°	1010	955	916	866	855	865	903	946

Luminous Intensity (cd) Distribution Data (cont.)

$\begin{matrix} C \\ \backslash \\ Y \end{matrix}$	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
49°	940	883	846	797	785	797	836	881
50°	870	812	778	730	724	733	768	818
51°	802	744	710	665	655	670	704	754
52°	733	676	642	601	596	609	642	691
53°	666	611	578	540	534	549	580	630
54°	601	550	517	485	481	492	521	568
55°	541	492	462	430	427	440	467	511
56°	485	440	410	381	380	392	417	458
57°	433	390	363	338	335	347	370	408
58°	386	346	322	298	297	307	328	364
59°	341	306	284	263	259	270	289	322
60°	300	269	249	232	228	236	253	285
61°	264	235	218	202	197	207	223	251
62°	232	206	190	176	173	181	195	221
63°	203	180	166	156	148	160	171	194
64°	176	160	145	135	124	139	151	170
65°	152	139	124	114	105	118	131	151
66°	127	119	107	99	85	102	112	132
67°	103	103	95	90	67	90	98	113
68°	85	93	92	89	53	89	93	101
69°	67	92	95	93	36	92	94	93
70°	46	95	98	96	26	92	95	90
71°	36	94	99	98	17	92	95	89
72°	26	91	98	95	7	88	93	89
73°	15	89	94	76	5	74	88	85
74°	5	62	48	53	3	52	44	55
75°	4	43	34	30	2	30	31	42
76°	3	25	19	7	2	8	18	29
77°	2	7	5	4	1	4	5	16
78°	1	3	2	2	1	2	3	3
79°	1	2	2	1	0	2	2	2
80°	1	1	1	1	0	1	1	2
81°	0	1	0	0	0	0	1	1
82°	0	0	0	0	0	0	0	0
83°	0	0	0	0	0	0	0	0
84°	0	0	0	0	0	0	0	0
85°	0	0	0	0	0	0	0	0
86°	0	0	0	0	0	0	0	0
87°	0	0	0	0	0	0	0	0
88°	0	0	0	0	0	0	0	0
89°	0	0	0	0	0	0	0	0
90°	0	0	0	0	0	0	0	0
91°	0	0	0	0	0	0	0	0
92°	0	0	0	0	0	0	0	0
93°	0	0	0	0	0	0	0	0
94°	0	0	0	0	0	0	0	0
95°	0	0	0	0	0	0	0	0
96°	0	0	0	0	0	0	0	0
97°	0	0	0	0	0	0	0	0

Luminous Intensity (cd) Distribution Data (cont.)

$\begin{matrix} C \\ \backslash \\ Y \end{matrix}$	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
98°	0	0	0	0	0	0	0	0
99°	0	0	0	0	0	0	0	0
100°	0	0	0	0	0	0	0	0
101°	0	0	0	0	0	0	0	0
102°	0	0	0	0	0	0	0	0
103°	0	0	0	0	0	0	0	0
104°	0	0	0	0	0	0	0	0
105°	0	0	0	0	0	0	0	0
106°	0	0	0	0	0	0	0	0
107°	0	0	0	0	0	0	0	0
108°	0	0	0	0	0	0	0	0
109°	0	0	0	0	0	0	0	0
110°	0	0	0	0	0	0	0	0
111°	0	0	0	0	0	0	0	0
112°	0	0	0	0	0	0	0	0
113°	0	0	0	0	0	0	0	0
114°	0	0	0	0	0	0	0	0
115°	0	0	0	0	0	0	0	0
116°	0	0	0	0	0	0	0	0
117°	0	0	0	0	0	0	0	0
118°	0	0	0	0	0	0	0	0
119°	0	0	0	0	0	0	0	0
120°	0	0	0	0	0	0	0	0
121°	0	0	0	0	0	0	0	0
122°	0	0	0	0	0	0	0	0
123°	0	0	0	0	0	0	0	0
124°	0	0	0	1	1	1	0	0
125°	0	0	1	1	1	1	1	0
126°	0	1	1	1	1	1	1	1
127°	1	1	1	1	1	1	1	1
128°	1	1	1	1	1	1	1	1
129°	1	1	1	1	1	1	1	1
130°	1	1	1	1	1	1	1	1
131°	1	1	1	1	1	1	1	1
132°	1	1	1	1	1	1	1	1
133°	1	1	1	1	1	1	1	1
134°	1	1	1	1	1	1	1	1
135°	1	1	1	1	1	1	1	1
136°	1	1	1	1	1	1	1	1
137°	1	1	1	1	1	1	1	1
138°	1	1	1	1	1	1	1	1
139°	1	1	1	1	2	2	1	1
140°	1	1	1	2	2	2	2	1
141°	1	1	2	2	2	2	2	2
142°	2	1	2	2	2	2	2	2
143°	2	2	2	2	2	2	2	2
144°	2	2	2	2	2	2	2	2
145°	2	2	2	2	2	2	2	2
146°	2	2	2	2	2	2	2	2

Luminous Intensity (cd) Distribution Data (cont.)

$\begin{matrix} C \\ \backslash \\ Y \end{matrix}$	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
147°	2	2	2	2	2	2	2	2
148°	2	2	2	3	3	3	2	2
149°	2	2	2	3	3	3	3	2
150°	2	2	2	3	3	3	3	3
151°	2	2	3	3	3	3	3	3
152°	2	2	3	3	3	3	3	3
153°	3	2	3	3	3	3	3	3
154°	3	2	3	3	3	3	3	3
155°	3	3	3	3	3	3	3	3
156°	3	3	3	3	3	3	3	3
157°	3	3	3	3	4	4	3	3
158°	3	3	3	3	4	4	4	4
159°	3	3	3	3	4	4	4	4
160°	3	3	4	4	4	4	4	4
161°	4	3	4	4	4	4	4	4
162°	4	4	4	4	4	4	4	4
163°	4	4	4	4	4	4	4	4
164°	4	4	4	4	4	4	4	4
165°	4	4	4	4	4	4	4	4
166°	4	4	4	4	4	4	4	4
167°	4	4	4	4	4	4	4	4
168°	4	4	4	4	4	4	4	4
169°	4	4	4	4	4	4	4	4
170°	4	4	4	4	4	4	4	4
171°	4	4	4	4	4	4	4	4
172°	4	4	4	4	4	4	4	4
173°	4	4	4	4	4	4	4	4
174°	5	5	4	4	5	4	5	5
175°	5	5	5	5	5	5	5	5
176°	5	5	5	5	5	5	5	5
177°	5	5	5	5	5	5	5	5
178°	6	6	6	5	5	5	6	6
179°	6	6	6	6	6	6	6	6
180°	6	6	6	6	6	6	6	6

Zonal Lumen Density Measurement

Deg	Flux (lm)	%	Deg	Flux (lm)	%
0-5	157.4	2.21	0-5	157.4	2.21
5-10	455.6	6.40	0-10	613.0	8.61
10-15	701.9	9.86	0-15	1314.9	18.47
15-20	862.2	12.10	0-20	2177.1	30.57
20-25	917.0	12.88	0-25	3094.1	43.45
25-30	875.7	12.30	0-30	3969.8	55.75
30-35	773.6	10.87	0-35	4743.4	66.62
35-40	652.2	9.15	0-40	5395.6	75.77
40-45	537.5	7.55	0-45	5933.1	83.32
45-50	430.0	6.04	0-50	6363.1	89.36
50-55	315.9	4.44	0-55	6679.0	93.80
55-60	204.4	2.87	0-60	6883.4	96.67
60-65	118.6	1.66	0-65	7002.0	98.33
65-70	64.3	0.91	0-70	7066.3	99.24
70-75	36.2	0.51	0-75	7102.5	99.75
75-80	7.6	0.10	0-80	7110.1	99.85
80-85	0.5	0.01	0-85	7110.6	99.86
85-90	0.1	0.00	0-90	7110.7	99.86
90-95	0.1	0.00	0-95	7110.7	99.86
95-100	0.1	0.00	0-100	7110.8	99.86
100-105	0.1	0.00	0-105	7110.9	99.86
105-110	0.1	0.00	0-110	7111.0	99.86
110-115	0.2	0.01	0-115	7111.1	99.87
115-120	0.2	0.00	0-120	7111.4	99.87
120-125	0.3	0.00	0-125	7111.6	99.87
125-130	0.4	0.01	0-130	7112.1	99.88
130-135	0.6	0.01	0-135	7112.6	99.89
135-140	0.8	0.01	0-140	7113.4	99.90
140-145	1.0	0.01	0-145	7114.5	99.91
145-150	1.2	0.02	0-150	7115.7	99.93
150-155	1.3	0.02	0-155	7117.0	99.95
155-160	1.2	0.02	0-160	7118.2	99.97
160-165	1.0	0.01	0-165	7119.3	99.98
165-170	0.8	0.01	0-170	7120.0	99.99
170-175	0.4	0.01	0-175	7120.5	100.00
175-180	0.1	0.00	0-180	7120.6	100.00

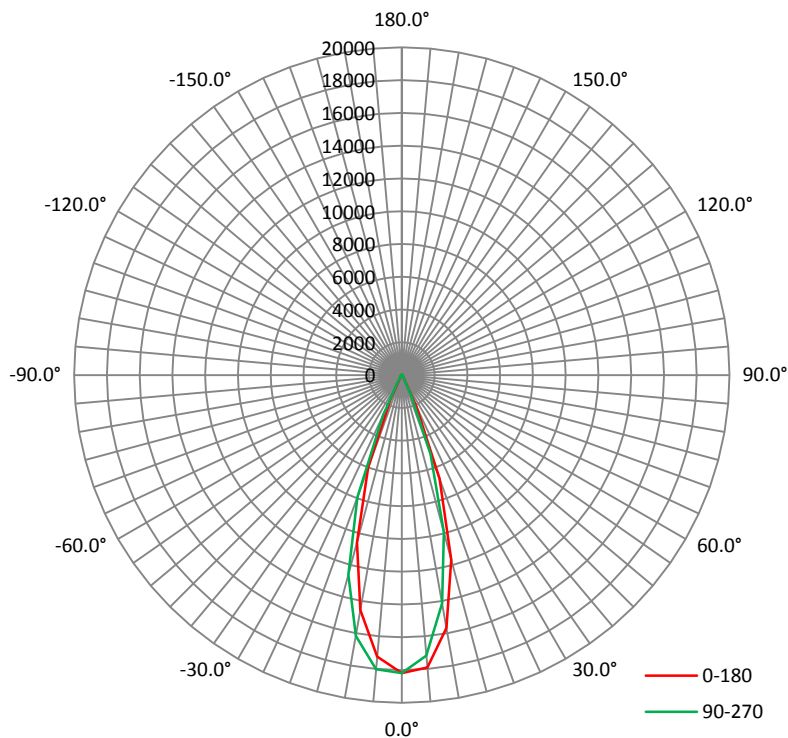
[Goniophotometer System]

Test orientation: **Downward**

Test CCT and Beam angle: **5500K/35°**

Luminous Flux (lm)	I _{max} (cd)	S/MH (C0/180)	S/MH (C90/270)
6080.45	18349	0.55	0.51

Luminous Intensity Distribution



	C0/180	C45/225	C90/270	C135/315	AVG.
Beam Angle (50% I _{max}):	34.3	35.0	34.7	34.8	34.7
Field Angle (10% I _{max}):	50.2	50.8	50.2	50.7	50.5

Luminous Intensity (cd) Distribution Data

$\begin{matrix} C \\ \backslash \\ Y \end{matrix}$	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
0°	18181	18181	18181	18181	18181	18181	18181	18181
1°	18094	18119	18150	18186	18226	18260	18269	18269
2°	17973	18032	18107	18171	18255	18311	18332	18324
3°	17796	17892	18005	18117	18231	18316	18349	18338
4°	17550	17682	17847	18010	18154	18265	18311	18287
5°	17242	17408	17628	17837	18020	18145	18192	18149
6°	16849	17051	17326	17585	17803	17930	17987	17922
7°	16386	16629	16981	17272	17503	17644	17707	17619
8°	15791	16143	16553	16873	17101	17304	17350	17239
9°	15248	15577	16048	16404	16669	16880	16929	16776
10°	14562	14954	15488	15866	16163	16372	16434	16243
11°	13794	14261	14847	15258	15526	15789	15857	15615
12°	13071	13527	14152	14579	14899	15126	15202	14920
13°	12216	12752	13397	13851	14148	14410	14463	14147
14°	11443	11962	12619	13094	13418	13662	13687	13348
15°	10576	11137	11819	12290	12606	12847	12860	12496
16°	9722	10303	10966	11444	11752	11999	11994	11624
17°	8826	9436	10112	10579	10861	11127	11080	10719
18°	7901	8538	9202	9664	9949	10172	10120	9754
19°	6953	7591	8268	8702	8966	9179	9125	8758
20°	5987	6602	7276	7702	7912	8152	8116	7723
21°	5020	5624	6257	6652	6853	7082	7054	6674
22°	4054	4646	5279	5629	5784	5994	5993	5632
23°	3127	3668	4302	4607	4715	4906	4933	4591
24°	2319	2793	3326	3585	3646	3817	3873	3550
25°	1625	2020	2475	2673	2709	2867	2920	2651
26°	1103	1392	1742	1898	1935	2058	2118	1883
27°	729	914	1159	1276	1295	1404	1461	1291
28°	573	584	734	811	830	919	956	852
29°	423	440	575	630	644	587	608	564
30°	272	296	419	451	460	433	482	420
31°	229	243	262	272	276	283	361	279
32°	199	209	222	229	231	236	240	231
33°	174	183	195	201	202	205	206	201
34°	155	162	172	177	179	181	182	177
35°	139	145	153	158	161	162	162	158
36°	126	132	139	143	145	146	146	142
37°	115	120	127	130	132	133	132	128
38°	106	111	116	120	121	122	120	117
39°	98	102	107	110	112	112	111	107
40°	92	95	99	102	104	104	103	100
41°	86	89	93	95	97	97	96	93
42°	82	84	87	90	91	91	90	87
43°	77	79	83	85	86	86	85	82
44°	74	75	79	80	82	81	80	78
45°	71	72	75	76	78	78	76	74
46°	68	69	72	73	75	74	73	71
47°	65	67	69	70	72	71	70	68
48°	63	64	67	68	69	69	68	65

Luminous Intensity (cd) Distribution Data

$\begin{matrix} C \\ \backslash \\ \gamma \end{matrix}$	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
49°	61	62	64	66	67	66	65	63
50°	59	60	62	63	65	64	63	61
51°	57	58	60	61	63	62	61	59
52°	55	57	58	59	60	60	59	57
53°	53	55	57	58	58	59	58	56
54°	52	55	56	57	57	58	57	55
55°	51	55	57	58	56	58	57	55
56°	50	55	57	58	55	58	57	55
57°	48	55	57	58	54	58	57	55
58°	48	56	57	58	53	59	58	56
59°	50	61	61	62	53	61	61	58
60°	51	120	121	124	74	121	118	118
61°	72	180	182	188	81	181	178	179
62°	66	240	242	252	88	242	238	240
63°	52	235	247	245	72	237	228	241
64°	65	203	218	223	66	212	207	209
65°	39	163	179	186	70	186	184	183
66°	25	130	143	148	35	152	154	154
67°	23	102	112	118	26	122	127	123
68°	20	84	90	96	24	101	102	100
69°	18	74	81	87	20	87	89	91
70°	16	68	74	79	18	79	81	81
71°	15	60	68	72	16	75	74	73
72°	13	53	61	63	15	67	64	60
73°	12	46	53	52	13	52	50	52
74°	11	40	46	41	12	36	36	44
75°	9	22	25	29	10	20	23	24
76°	6	10	11	11	7	11	11	11
77°	5	9	9	9	5	9	9	9
78°	3	8	8	8	3	8	8	8
79°	2	7	7	7	2	7	7	7
80°	2	4	5	5	2	5	5	5
81°	1	2	3	3	1	3	3	3
82°	1	1	1	1	1	1	1	1
83°	1	1	1	1	1	1	1	1
84°	1	1	1	1	1	1	1	1
85°	1	1	0	1	1	0	0	0
86°	0	0	0	0	0	0	0	0
87°	0	0	0	0	0	0	0	0
88°	0	0	0	0	0	0	0	0
89°	0	0	0	0	0	0	0	0
90°	0	0	0	0	0	0	0	0
91°	0	0	0	0	0	0	0	0
92°	0	0	0	0	0	0	0	0
93°	0	0	0	0	0	0	0	0
94°	0	0	0	0	0	0	0	0
95°	0	0	0	0	0	0	0	0
96°	0	0	0	0	0	0	0	0
97°	0	0	0	0	0	0	0	0

Luminous Intensity (cd) Distribution Data

$\begin{matrix} \backslash & C \\ \gamma & \end{matrix}$	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
98°	0	0	0	0	0	0	0	0
99°	0	0	0	0	0	0	0	0
100°	0	0	0	0	0	0	0	0
101°	0	0	0	0	0	0	0	0
102°	0	0	0	0	0	0	0	0
103°	0	0	0	0	0	0	0	0
104°	0	0	0	0	0	0	0	0
105°	0	0	0	0	0	0	0	0
106°	0	0	0	0	0	0	0	0
107°	0	0	0	0	0	0	0	0
108°	0	0	0	0	0	0	0	0
109°	0	0	0	0	0	0	0	0
110°	0	0	0	0	0	0	0	0
111°	0	0	0	0	0	0	0	0
112°	0	0	0	0	0	0	0	0
113°	0	0	0	0	0	0	0	0
114°	0	0	0	0	0	0	0	0
115°	0	0	0	0	0	0	0	0
116°	0	0	0	0	0	0	0	0
117°	0	0	0	0	0	0	0	0
118°	0	0	0	0	0	0	0	0
119°	0	0	0	0	0	0	0	0
120°	0	0	0	0	0	0	0	0
121°	0	0	0	0	0	0	0	0
122°	0	0	0	0	0	0	0	0
123°	0	0	0	0	0	0	0	0
124°	0	0	0	0	0	0	0	0
125°	0	0	0	0	0	0	0	0
126°	0	0	0	0	0	0	0	0
127°	0	0	0	0	0	0	0	0
128°	1	0	0	0	0	0	0	0
129°	1	1	1	1	1	1	1	1
130°	1	1	1	1	1	1	1	1
131°	1	1	1	1	1	1	1	1
132°	1	1	1	1	1	1	1	1
133°	2	2	1	1	1	1	1	1
134°	2	2	2	2	2	2	2	2
135°	2	2	2	2	2	2	2	2
136°	3	3	3	2	2	2	2	2
137°	3	3	3	3	3	3	3	3
138°	4	3	4	3	3	3	3	3
139°	4	4	4	4	4	4	4	4
140°	5	5	5	5	5	5	4	4
141°	5	5	6	6	5	5	5	5
142°	6	6	6	6	6	6	6	5
143°	7	7	7	7	7	7	7	6
144°	7	7	8	8	8	8	7	7
145°	8	8	9	9	9	9	8	7
146°	8	9	9	10	10	9	9	8

Luminous Intensity (cd) Distribution Data

$\begin{matrix} C \\ \backslash \\ \gamma \end{matrix}$	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
147°	8	9	10	10	10	10	9	8
148°	9	10	11	11	11	11	10	9
149°	9	10	11	12	12	11	11	9
150°	10	11	12	13	13	12	11	10
151°	10	12	13	13	13	13	12	10
152°	11	12	14	14	14	14	13	11
153°	12	13	14	15	15	14	13	12
154°	12	14	15	16	16	15	14	12
155°	13	14	16	16	16	16	15	13
156°	13	15	16	17	17	16	15	14
157°	13	15	17	17	17	17	16	14
158°	14	16	17	18	18	17	16	15
159°	14	16	17	18	18	18	17	15
160°	14	16	17	18	18	18	17	15
161°	14	16	17	18	18	18	17	15
162°	14	16	17	18	18	18	17	15
163°	14	16	17	18	18	18	17	15
164°	14	15	17	18	18	18	17	15
165°	14	15	17	18	18	17	16	15
166°	14	15	16	17	17	17	16	15
167°	14	15	16	17	17	16	16	14
168°	13	14	15	16	16	16	15	14
169°	13	14	15	16	16	15	14	13
170°	12	13	14	15	15	14	14	13
171°	12	13	14	14	14	14	13	12
172°	12	12	13	13	13	13	13	12
173°	11	12	12	13	13	12	12	11
174°	11	11	12	12	12	12	11	11
175°	10	11	11	11	11	11	11	10
176°	10	10	10	10	11	10	10	10
177°	9	9	9	10	10	10	10	9
178°	8	8	9	9	9	9	9	9
179°	8	8	8	8	8	8	8	8
180°	7	7	7	7	7	8	8	8

Luminous Intensity (cd) Distribution Data (cont.)

$\begin{matrix} C \\ \backslash \\ Y \end{matrix}$	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
0°	18181	18181	18181	18181	18181	18181	18181	18181
1°	18247	18221	18175	18141	18109	18080	18069	18062
2°	18269	18205	18132	18049	17986	17929	17895	17895
3°	18238	18145	18035	17914	17813	17732	17681	17681
4°	18121	17993	17850	17692	17544	17441	17386	17390
5°	17915	17768	17592	17373	17189	17060	17004	17023
6°	17633	17455	17220	16968	16737	16591	16552	16575
7°	17269	17063	16790	16467	16217	16051	16027	16070
8°	16817	16579	16261	15901	15593	15433	15418	15483
9°	16275	16017	15652	15240	14892	14727	14734	14822
10°	15670	15370	14962	14516	14143	13983	13998	14100
11°	14959	14631	14197	13721	13313	13159	13185	13298
12°	14201	13836	13360	12884	12482	12336	12372	12496
13°	13358	12975	12524	12047	11651	11512	11558	11693
14°	12516	12113	11687	11198	10793	10659	10706	10862
15°	11672	11250	10804	10323	9921	9800	9880	10009
16°	10751	10335	9890	9409	9025	8917	9010	9150
17°	9814	9397	8959	8477	8094	8009	8107	8262
18°	8814	8410	7992	7495	7116	7049	7169	7317
19°	7778	7390	6987	6486	6103	6051	6196	6346
20°	6726	6356	5976	5469	5102	5072	5236	5368
21°	5648	5310	4948	4468	4113	4107	4281	4422
22°	4607	4308	3992	3535	3203	3215	3392	3506
23°	3605	3362	3107	2691	2397	2400	2556	2671
24°	2712	2520	2302	1956	1861	1863	1986	2078
25°	2104	1945	1776	1441	1326	1325	1417	1484
26°	1497	1371	1250	927	792	790	849	893
27°	896	802	729	608	527	529	566	595
28°	585	528	486	415	371	375	398	412
29°	397	373	351	312	288	294	310	313
30°	294	291	281	257	242	246	257	256
31°	242	242	238	220	208	211	219	219
32°	208	207	204	191	182	184	189	189
33°	182	181	178	168	161	162	166	166
34°	162	160	161	152	145	146	150	151
35°	147	144	143	137	129	129	135	135
36°	133	128	125	121	118	118	119	120
37°	119	116	114	111	108	108	109	109
38°	109	106	105	102	99	99	100	101
39°	101	98	96	94	93	92	93	93
40°	94	91	89	87	87	86	86	87
41°	88	85	83	82	81	80	81	82
42°	83	80	79	77	77	76	77	78
43°	79	76	74	73	73	72	73	73
44°	75	72	71	69	70	69	69	70
45°	71	69	67	66	67	66	66	67
46°	68	66	65	64	65	63	64	65
47°	66	64	62	62	62	61	61	62
48°	64	62	60	60	60	59	59	60

Luminous Intensity (cd) Distribution Data (cont.)

$\begin{matrix} C \\ \backslash \\ Y \end{matrix}$	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
49°	61	60	58	58	59	58	58	58
50°	59	58	57	56	57	56	56	56
51°	57	56	55	55	55	55	54	55
52°	56	55	54	53	54	53	53	53
53°	54	53	53	53	52	52	52	52
54°	53	53	52	52	51	52	52	52
55°	52	52	52	52	50	51	51	51
56°	51	52	52	51	49	51	51	51
57°	49	56	61	54	48	54	53	64
58°	48	61	70	57	48	58	56	76
59°	50	67	81	99	78	107	99	90
60°	57	129	163	186	100	194	187	168
61°	71	217	241	236	87	224	230	226
62°	75	241	246	228	89	216	222	230
63°	46	225	217	202	78	189	198	205
64°	55	190	182	174	76	160	167	171
65°	45	160	154	145	55	130	136	137
66°	25	131	126	117	23	101	105	104
67°	23	101	98	91	21	80	80	79
68°	21	82	82	77	19	68	69	67
69°	18	78	74	71	16	61	65	64
70°	16	73	65	65	15	56	59	62
71°	15	70	60	58	14	51	57	60
72°	14	59	52	51	12	47	51	50
73°	12	48	46	44	11	42	42	41
74°	11	38	38	32	10	31	31	30
75°	9	28	28	20	8	19	20	19
76°	7	18	18	8	5	8	9	9
77°	5	8	8	7	4	7	8	8
78°	3	7	7	7	3	6	7	7
79°	2	6	6	5	2	5	5	6
80°	2	4	4	3	1	3	3	3
81°	1	2	2	2	1	1	2	2
82°	1	1	1	1	1	1	1	1
83°	1	1	1	1	1	1	1	1
84°	1	1	0	1	1	1	1	1
85°	1	0	0	0	0	0	0	1
86°	0	0	0	0	0	0	0	0
87°	0	0	0	0	0	0	0	0
88°	0	0	0	0	0	0	0	0
89°	0	0	0	0	0	0	0	0
90°	0	0	0	0	0	0	0	0
91°	0	0	0	0	0	0	0	0
92°	0	0	0	0	0	0	0	0
93°	0	0	0	0	0	0	0	0
94°	0	0	0	0	0	0	0	0
95°	0	0	0	0	0	0	0	0
96°	0	0	0	0	0	0	0	0
97°	0	0	0	0	0	0	0	0

Luminous Intensity (cd) Distribution Data (cont.)

$\begin{matrix} C \\ \backslash \\ Y \end{matrix}$	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
98°	0	0	0	0	0	0	0	0
99°	0	0	0	0	0	0	0	0
100°	0	0	0	0	0	0	0	0
101°	0	0	0	0	0	0	0	0
102°	0	0	0	0	0	0	0	0
103°	0	0	0	0	0	0	0	0
104°	0	0	0	0	0	0	0	0
105°	0	0	0	0	0	0	0	0
106°	0	0	0	0	0	0	0	0
107°	0	0	0	0	0	0	0	0
108°	0	0	0	0	0	0	0	0
109°	0	0	0	0	0	0	0	0
110°	0	0	0	0	0	0	0	0
111°	0	0	0	0	0	0	0	0
112°	0	0	0	0	0	0	0	0
113°	0	0	0	0	0	0	0	0
114°	0	0	0	0	0	0	0	0
115°	0	0	0	0	0	0	0	0
116°	0	0	0	0	0	0	0	0
117°	0	0	0	0	0	0	0	0
118°	0	0	0	0	0	0	0	0
119°	0	0	0	0	0	0	0	0
120°	0	0	0	0	0	0	0	0
121°	0	0	0	0	0	0	0	0
122°	0	0	0	0	0	0	0	0
123°	0	0	0	0	0	0	0	0
124°	0	0	0	0	0	0	0	0
125°	0	0	0	0	0	0	0	0
126°	0	0	0	0	0	0	0	0
127°	0	0	0	0	0	0	0	0
128°	0	0	0	0	0	0	0	0
129°	0	0	0	0	0	0	0	0
130°	0	0	0	0	0	0	0	0
131°	0	0	0	0	0	0	0	0
132°	0	0	0	0	0	0	0	0
133°	0	0	0	0	1	1	1	0
134°	0	0	1	1	1	1	1	0
135°	1	1	1	1	1	1	1	1
136°	1	1	1	1	1	1	1	1
137°	1	1	1	1	1	1	1	1
138°	1	1	1	1	1	1	1	1
139°	1	1	1	1	1	1	1	1
140°	1	1	1	2	2	2	2	1
141°	1	1	2	2	2	2	2	2
142°	2	2	2	2	2	2	2	2
143°	2	2	2	2	2	2	2	2
144°	2	2	2	3	3	3	3	2
145°	2	2	2	3	3	3	3	2
146°	2	2	3	3	3	3	3	3

Luminous Intensity (cd) Distribution Data (cont.)

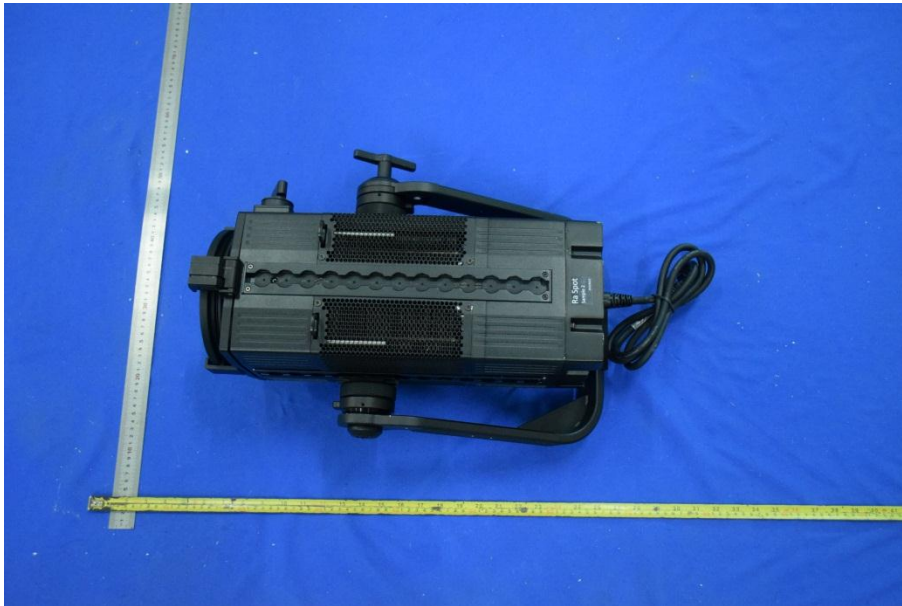
$\begin{matrix} C \\ \backslash \\ Y \end{matrix}$	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
147°	2	2	3	3	3	3	3	3
148°	2	2	3	3	3	3	3	3
149°	2	2	3	3	4	4	3	3
150°	2	2	3	3	4	4	4	3
151°	3	2	3	4	4	4	4	3
152°	3	2	3	4	4	4	4	4
153°	3	3	4	4	4	4	4	4
154°	3	3	4	4	4	4	4	4
155°	3	3	4	5	5	5	4	4
156°	3	3	4	5	5	5	5	4
157°	3	3	4	5	5	5	5	4
158°	4	3	4	5	5	5	5	5
159°	4	4	4	5	5	5	5	5
160°	4	4	4	5	5	5	5	5
161°	4	4	4	5	5	5	5	5
162°	4	4	4	5	5	5	5	5
163°	4	4	4	5	5	5	5	5
164°	4	4	4	5	5	5	5	5
165°	4	4	4	4	5	5	5	5
166°	4	4	4	4	5	5	5	5
167°	4	4	4	4	5	5	5	5
168°	4	4	4	4	5	5	5	4
169°	4	4	4	4	5	5	5	4
170°	4	4	4	4	4	5	5	4
171°	4	4	4	4	4	5	5	4
172°	4	4	4	4	4	5	4	4
173°	4	4	4	4	4	4	4	4
174°	4	4	4	4	4	4	4	4
175°	4	4	4	4	5	4	5	4
176°	5	5	5	4	5	5	5	5
177°	5	5	5	5	5	5	5	5
178°	6	6	6	6	6	6	6	6
179°	6	6	7	6	6	7	7	7
180°	7	7	7	7	7	8	8	8

Zonal Lumen Density Measurement

Deg	Flux (lm)	%
0-5	428.4	7.05
5-10	1173.8	19.30
10-15	1561.6	25.68
15-20	1462.5	24.06
20-25	854.0	14.04
25-30	226.2	3.72
30-35	61.1	1.01
35-40	38.7	0.63
40-45	30.1	0.50
45-50	26.2	0.43
50-55	24.2	0.40
55-60	30.4	0.49
60-65	82.1	1.35
65-70	41.8	0.69
70-75	21.4	0.35
75-80	4.3	0.08
80-85	0.7	0.01
85-90	0.2	0.00
90-95	0.1	0.00
95-100	0.0	0.00
100-105	0.0	0.00
105-110	0.0	0.00
110-115	0.0	0.00
115-120	0.0	0.00
120-125	0.1	0.01
125-130	0.1	0.00
130-135	0.3	0.00
135-140	0.8	0.02
140-145	1.4	0.02
145-150	1.9	0.03
150-155	2.1	0.03
155-160	2.1	0.04
160-165	1.7	0.03
165-170	1.2	0.02
170-175	0.6	0.01
175-180	0.2	0.00

Deg	Flux (lm)	%
0-5	428.4	7.05
0-10	1602.2	26.35
0-15	3163.8	52.03
0-20	4626.3	76.09
0-25	5480.3	90.13
0-30	5706.5	93.85
0-35	5767.6	94.86
0-40	5806.3	95.49
0-45	5836.4	95.99
0-50	5862.6	96.42
0-55	5886.8	96.82
0-60	5917.2	97.31
0-65	5999.3	98.66
0-70	6041.1	99.35
0-75	6062.5	99.70
0-80	6066.8	99.78
0-85	6067.5	99.79
0-90	6067.7	99.79
0-95	6067.8	99.79
0-100	6067.8	99.79
0-105	6067.9	99.79
0-110	6067.9	99.79
0-115	6067.9	99.79
0-120	6068.0	99.79
0-125	6068.0	99.80
0-130	6068.2	99.80
0-135	6068.5	99.80
0-140	6069.3	99.82
0-145	6070.7	99.84
0-150	6072.5	99.87
0-155	6074.6	99.90
0-160	6076.8	99.94
0-165	6078.5	99.97
0-170	6079.7	99.99
0-175	6080.3	100.00
0-180	6080.5	100.00

6. Product Photo



Directions

1. The information marked “superscript #” is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report.
2. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
3. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.
4. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor $K=2$ with the 95% confidence interval.
5. This report cannot be reproduced except in full, without prior written approval of the Company.
6. This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

*****END OF REPORT*****