

TEST REPORT

MEASUREMENT AND TEST REPORT

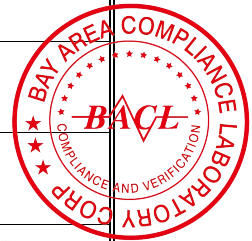
For

Astera LED Technology GmbH

Schatzbogen 60, 81829 Munich, Germany

Test Model: AF80

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:	SZ4230517-27146E-10
Test Date:	2023-05-29 to 2023-06-01
Report Date:	2023-06-16
Approved by:	Blake Zhang / EE Engineer <i>Blake Zhang</i>
Prepared By:	Bay Area Compliance Laboratories Corp. (Shenzhen) 5/F(B-West) -7/F, the 3rd Phase of Wan Li Industrial Building D, Shihua Road, Futian Free Trade Zone Shenzhen, Guangdong, China. Tel: +86-755-33320018 Fax: +86-755-33320008
Test Facility:	Test facility was located at No.12, Pulong East 1 st Road, Tangxia Town, Dongguan, Guangdong, China.



1. Product Description[#]

General Information:

One test sample was in good condition and received on 2023-05-17, and used for testing.

Model Tested: AF80
Manufacturer: Astera LED Technology GmbH
Brand Name: ASTERA
Product Designation: PlutoFresnel
Burning Time Before Test: 0hour(For New Products)

Rated Values:

Rated Voltage/Frequency: DC 24V
Rated Power: 80W
Nominal CCT: 1750K-20000K
Nominal Lumen Output: 2643lm

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 (This method is not in NVLAP accreditation scope)

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	2020-10-20	2023-10-19
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	2023-03-18	2024-03-17
Standard Light Source	EVERFINE	D908	1012003	2020-10-20	2023-10-19

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

4. Test Method

Product was tested with no seasoning. All stabilization and measurements were made in compliance with ANSI/IES LM-79-19. 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.

4 π 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 $U=22\text{K}$ ($K=2$), 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 $U=0.39\%$ of rdg, AC Voltage $U=0.25\%$ of rdg, Power $U=0.42\%$ ($K=2$), 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 $U=2.00\%$ ($K=2$), at the 95% confidence level.

Fidelity Index and Gamut Index Calculation

The R_i , 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: **5500K**

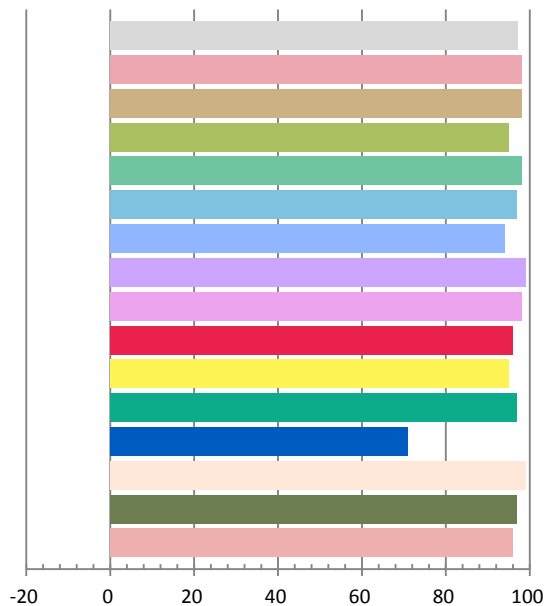
Beam Angle: **15°**

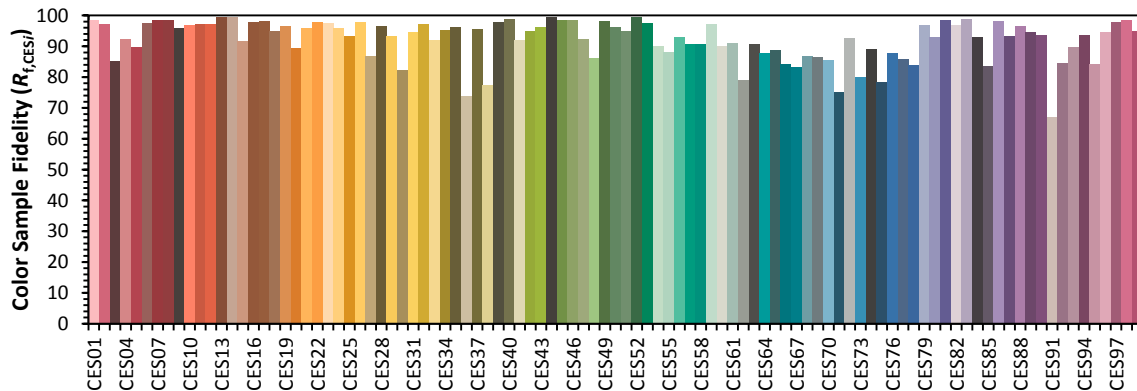
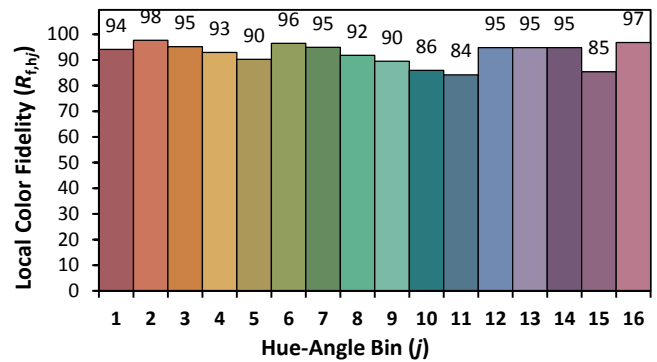
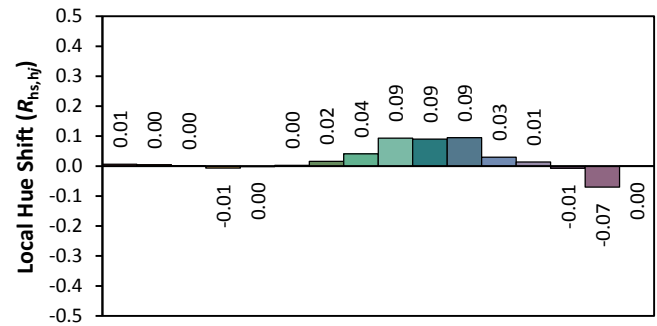
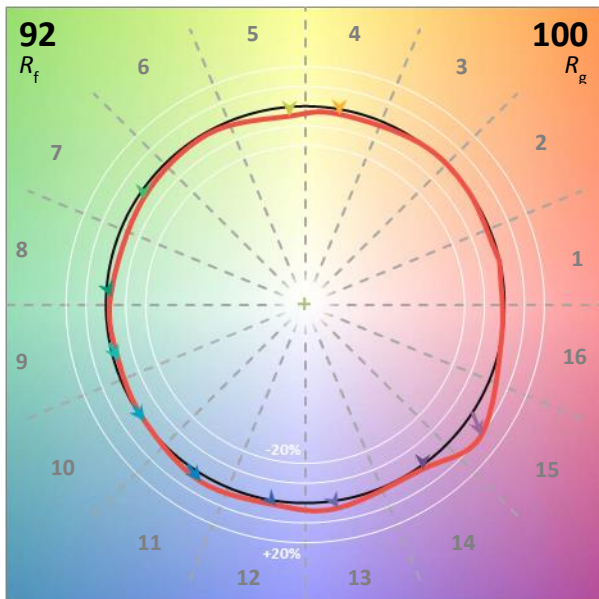
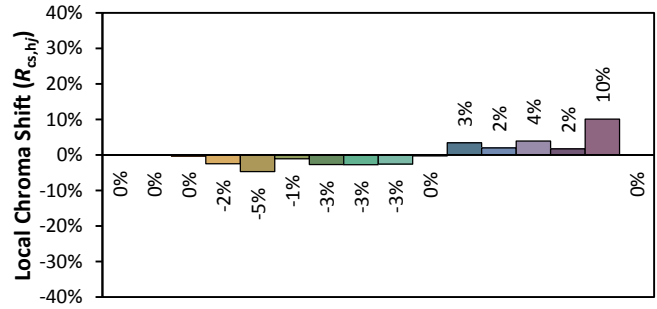
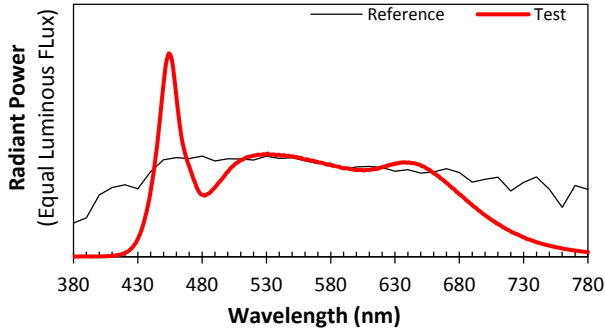
Photometric and Electrical Measurement Result

Luminous Flux(lm)	Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
2428.9	9.0957	5649	0.00194	0.3291	0.3419	0.2043	0.4775

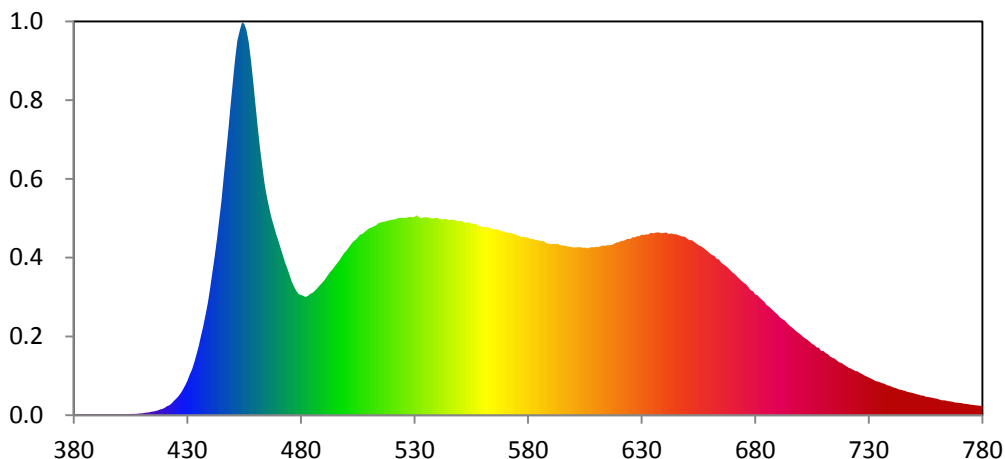
Color Rendering Index

Ra			
97.2			
R1	R2	R3	R4
98	98	95	98
R5	R6	R7	R8
97	94	99	98
R9	R10	R11	R12
96	95	97	71
R13	R14	R15	
99	97	96	





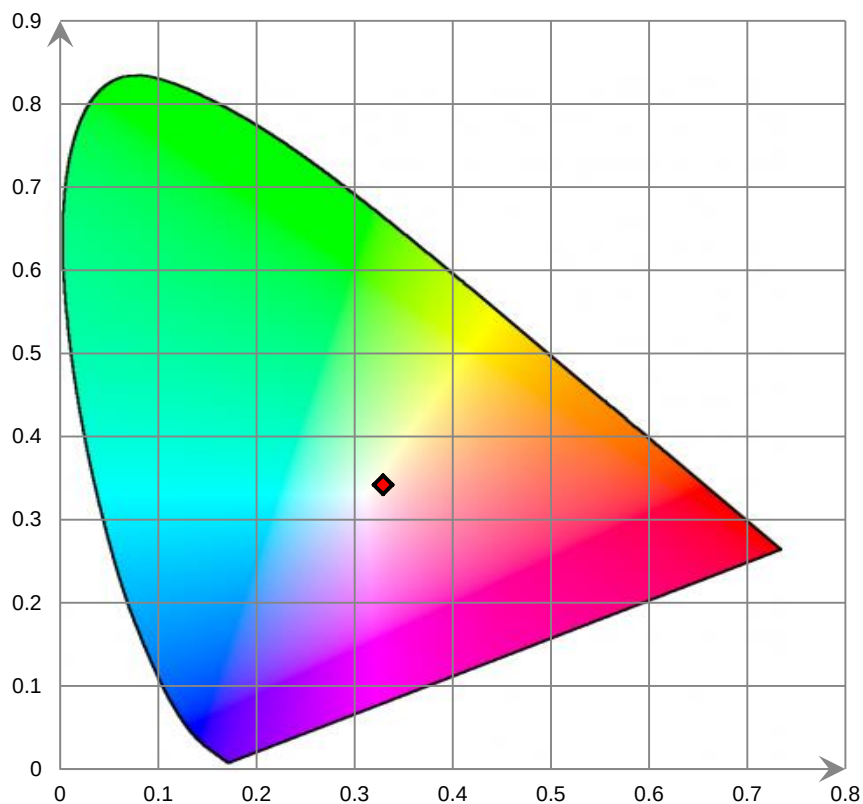
Relative Spectral Power Distribution



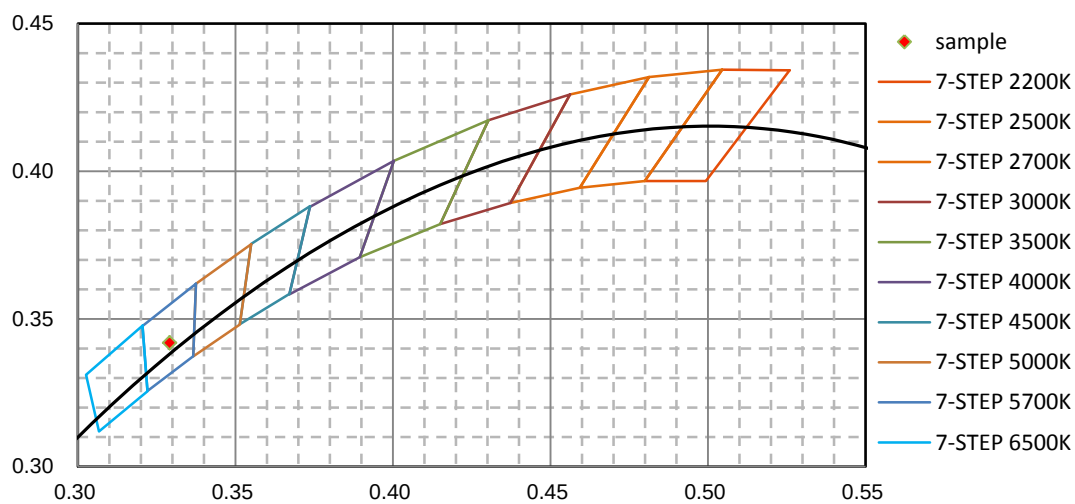
nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	1.052E-01	421	1.629E+00	462	4.862E+01	503	3.161E+01	544	3.575E+01
381	5.472E-02	422	1.802E+00	463	4.512E+01	504	3.194E+01	545	3.552E+01
382	1.063E-01	423	2.114E+00	464	4.207E+01	505	3.239E+01	546	3.560E+01
383	9.244E-02	424	2.580E+00	465	3.975E+01	506	3.288E+01	547	3.561E+01
384	1.150E-01	425	2.970E+00	466	3.781E+01	507	3.303E+01	548	3.548E+01
385	1.286E-01	426	3.410E+00	467	3.604E+01	508	3.335E+01	549	3.539E+01
386	9.461E-02	427	3.999E+00	468	3.448E+01	509	3.373E+01	550	3.538E+01
387	1.287E-01	428	4.663E+00	469	3.302E+01	510	3.405E+01	551	3.532E+01
388	1.205E-01	429	5.405E+00	470	3.182E+01	511	3.416E+01	552	3.507E+01
389	1.554E-01	430	6.255E+00	471	3.048E+01	512	3.441E+01	553	3.514E+01
390	1.230E-01	431	7.339E+00	472	2.917E+01	513	3.458E+01	554	3.510E+01
391	1.770E-01	432	8.345E+00	473	2.775E+01	514	3.494E+01	555	3.489E+01
392	1.178E-01	433	9.624E+00	474	2.670E+01	515	3.511E+01	556	3.486E+01
393	1.296E-01	434	1.106E+01	475	2.548E+01	516	3.520E+01	557	3.485E+01
394	8.203E-02	435	1.261E+01	476	2.427E+01	517	3.528E+01	558	3.458E+01
395	1.238E-01	436	1.444E+01	477	2.339E+01	518	3.541E+01	559	3.440E+01
396	1.305E-01	437	1.618E+01	478	2.259E+01	519	3.551E+01	560	3.427E+01
397	1.618E-01	438	1.840E+01	479	2.204E+01	520	3.564E+01	561	3.425E+01
398	1.450E-01	439	2.050E+01	480	2.190E+01	521	3.564E+01	562	3.431E+01
399	1.504E-01	440	2.311E+01	481	2.175E+01	522	3.577E+01	563	3.406E+01
400	1.212E-01	441	2.599E+01	482	2.154E+01	523	3.594E+01	564	3.398E+01
401	1.373E-01	442	2.879E+01	483	2.173E+01	524	3.597E+01	565	3.386E+01
402	1.563E-01	443	3.214E+01	484	2.210E+01	525	3.593E+01	566	3.386E+01
403	1.714E-01	444	3.565E+01	485	2.226E+01	526	3.593E+01	567	3.379E+01
404	1.466E-01	445	3.908E+01	486	2.260E+01	527	3.602E+01	568	3.354E+01
405	2.117E-01	446	4.341E+01	487	2.302E+01	528	3.616E+01	569	3.351E+01
406	2.350E-01	447	4.754E+01	488	2.351E+01	529	3.604E+01	570	3.336E+01
407	2.255E-01	448	5.201E+01	489	2.399E+01	530	3.614E+01	571	3.323E+01
408	2.617E-01	449	5.654E+01	490	2.442E+01	531	3.639E+01	572	3.321E+01
409	3.165E-01	450	6.072E+01	491	2.498E+01	532	3.603E+01	573	3.312E+01
410	3.159E-01	451	6.487E+01	492	2.559E+01	533	3.590E+01	574	3.298E+01
411	3.931E-01	452	6.820E+01	493	2.615E+01	534	3.601E+01	575	3.279E+01
412	4.497E-01	453	7.005E+01	494	2.662E+01	535	3.606E+01	576	3.267E+01
413	4.796E-01	454	7.155E+01	495	2.719E+01	536	3.603E+01	577	3.245E+01
414	5.927E-01	455	7.130E+01	496	2.771E+01	537	3.587E+01	578	3.251E+01
415	6.532E-01	456	7.016E+01	497	2.826E+01	538	3.581E+01	579	3.239E+01
416	7.421E-01	457	6.803E+01	498	2.888E+01	539	3.591E+01	580	3.236E+01
417	8.815E-01	458	6.448E+01	499	2.955E+01	540	3.596E+01	581	3.207E+01
418	1.038E+00	459	6.057E+01	500	2.996E+01	541	3.571E+01	582	3.211E+01
419	1.144E+00	460	5.640E+01	501	3.056E+01	542	3.565E+01	583	3.195E+01
420	1.350E+00	461	5.235E+01	502	3.111E+01	543	3.575E+01	584	3.189E+01

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
585	3.181E+01	626	3.242E+01	667	2.720E+01	708	1.227E+01	749	4.043E+00
586	3.172E+01	627	3.242E+01	668	2.684E+01	709	1.169E+01	750	3.948E+00
587	3.169E+01	628	3.262E+01	669	2.641E+01	710	1.167E+01	751	3.812E+00
588	3.133E+01	629	3.261E+01	670	2.601E+01	711	1.130E+01	752	3.731E+00
589	3.125E+01	630	3.288E+01	671	2.571E+01	712	1.109E+01	753	3.578E+00
590	3.117E+01	631	3.280E+01	672	2.528E+01	713	1.071E+01	754	3.587E+00
591	3.121E+01	632	3.294E+01	673	2.482E+01	714	1.043E+01	755	3.334E+00
592	3.115E+01	633	3.293E+01	674	2.445E+01	715	1.027E+01	756	3.327E+00
593	3.123E+01	634	3.323E+01	675	2.410E+01	716	9.922E+00	757	3.239E+00
594	3.100E+01	635	3.315E+01	676	2.380E+01	717	9.609E+00	758	3.175E+00
595	3.089E+01	636	3.321E+01	677	2.331E+01	718	9.498E+00	759	3.050E+00
596	3.091E+01	637	3.332E+01	678	2.275E+01	719	9.202E+00	760	3.008E+00
597	3.075E+01	638	3.323E+01	679	2.255E+01	720	8.954E+00	761	2.848E+00
598	3.071E+01	639	3.313E+01	680	2.197E+01	721	8.640E+00	762	2.717E+00
599	3.064E+01	640	3.323E+01	681	2.182E+01	722	8.506E+00	763	2.714E+00
600	3.055E+01	641	3.326E+01	682	2.138E+01	723	8.259E+00	764	2.636E+00
601	3.058E+01	642	3.298E+01	683	2.098E+01	724	8.033E+00	765	2.528E+00
602	3.061E+01	643	3.311E+01	684	2.064E+01	725	7.989E+00	766	2.493E+00
603	3.061E+01	644	3.297E+01	685	2.006E+01	726	7.680E+00	767	2.416E+00
604	3.050E+01	645	3.297E+01	686	1.978E+01	727	7.502E+00	768	2.289E+00
605	3.054E+01	646	3.285E+01	687	1.941E+01	728	7.242E+00	769	2.283E+00
606	3.039E+01	647	3.264E+01	688	1.899E+01	729	7.046E+00	770	2.220E+00
607	3.051E+01	648	3.256E+01	689	1.862E+01	730	6.849E+00	771	2.166E+00
608	3.062E+01	649	3.250E+01	690	1.825E+01	731	6.673E+00	772	2.063E+00
609	3.059E+01	650	3.218E+01	691	1.778E+01	732	6.429E+00	773	2.039E+00
610	3.068E+01	651	3.188E+01	692	1.749E+01	733	6.200E+00	774	1.972E+00
611	3.061E+01	652	3.188E+01	693	1.722E+01	734	6.126E+00	775	1.885E+00
612	3.080E+01	653	3.160E+01	694	1.676E+01	735	5.979E+00	776	1.867E+00
613	3.089E+01	654	3.128E+01	695	1.635E+01	736	5.790E+00	777	1.791E+00
614	3.083E+01	655	3.098E+01	696	1.604E+01	737	5.704E+00	778	1.744E+00
615	3.097E+01	656	3.077E+01	697	1.570E+01	738	5.454E+00	779	1.714E+00
616	3.096E+01	657	3.051E+01	698	1.527E+01	739	5.348E+00	780	1.643E+00
617	3.105E+01	658	3.020E+01	699	1.497E+01	740	5.191E+00		
618	3.126E+01	659	2.984E+01	700	1.468E+01	741	5.013E+00		
619	3.148E+01	660	2.947E+01	701	1.429E+01	742	4.911E+00		
620	3.152E+01	661	2.918E+01	702	1.399E+01	743	4.728E+00		
621	3.173E+01	662	2.901E+01	703	1.368E+01	744	4.616E+00		
622	3.177E+01	663	2.849E+01	704	1.337E+01	745	4.501E+00		
623	3.197E+01	664	2.835E+01	705	1.298E+01	746	4.414E+00		
624	3.214E+01	665	2.779E+01	706	1.278E+01	747	4.225E+00		
625	3.209E+01	666	2.748E+01	707	1.236E+01	748	4.159E+00		

CIE 1931 x y Chromaticity Diagram



7-Step Chromaticity Quadrangles



Test orientation: **Downward**

Test CCT: **5500K**

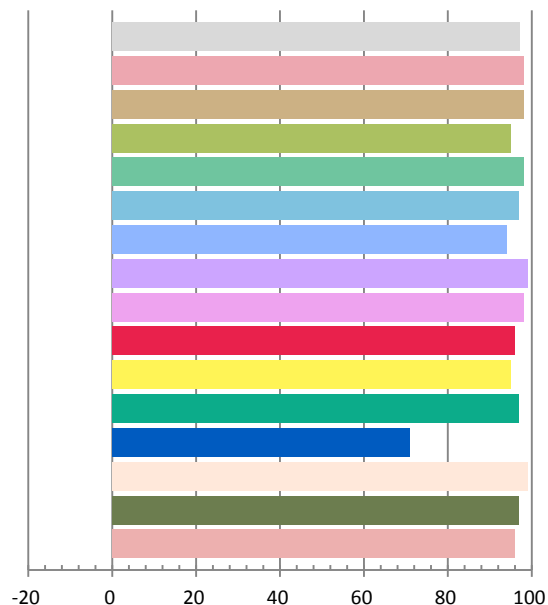
Beam Angle: **35°**

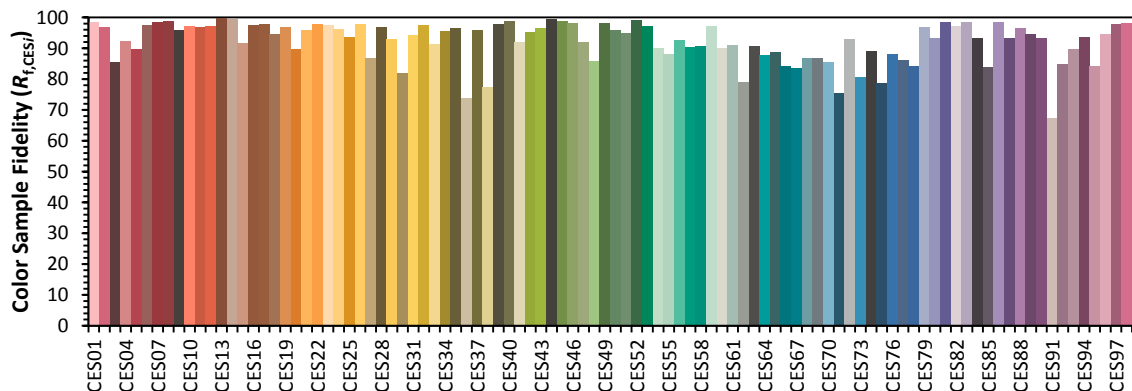
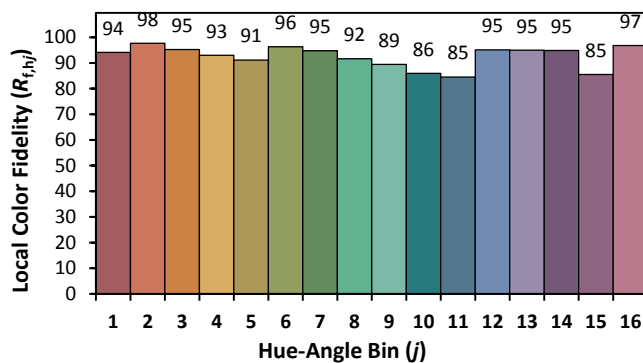
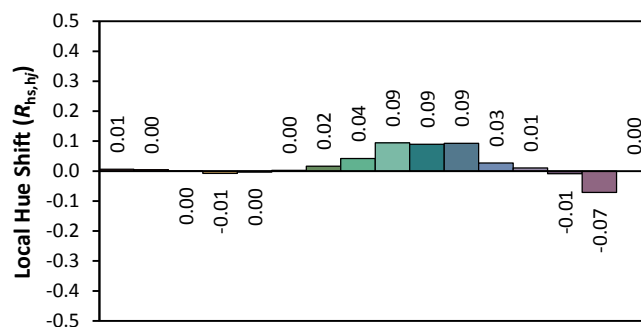
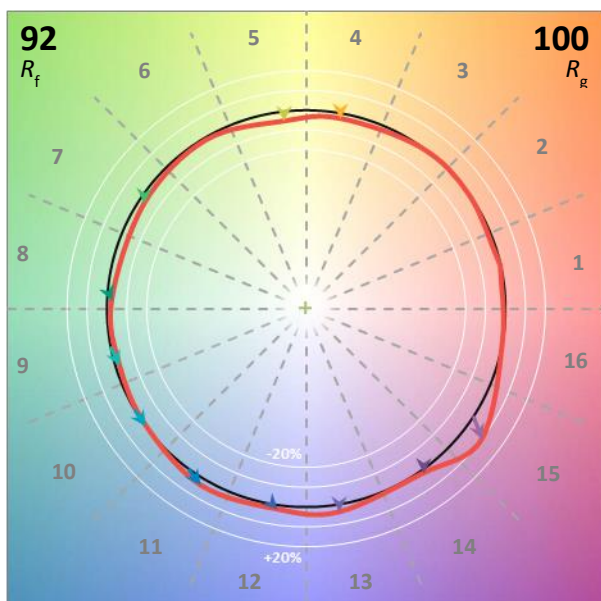
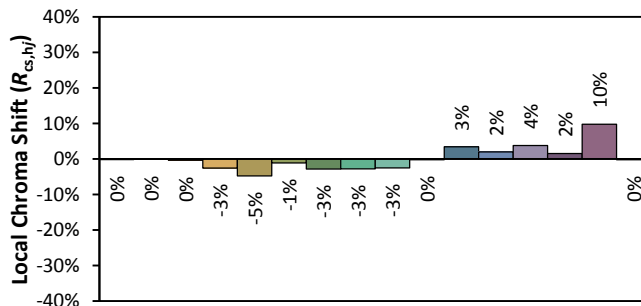
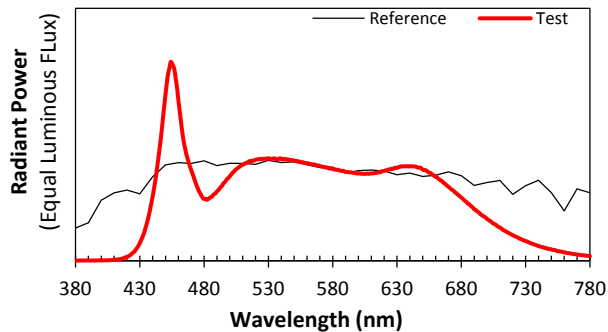
Photometric and Electrical Measurement Result

Luminous Flux(lm)	Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
2676.2	10.01	5590	0.00213	0.3304	0.3434	0.2046	0.4784

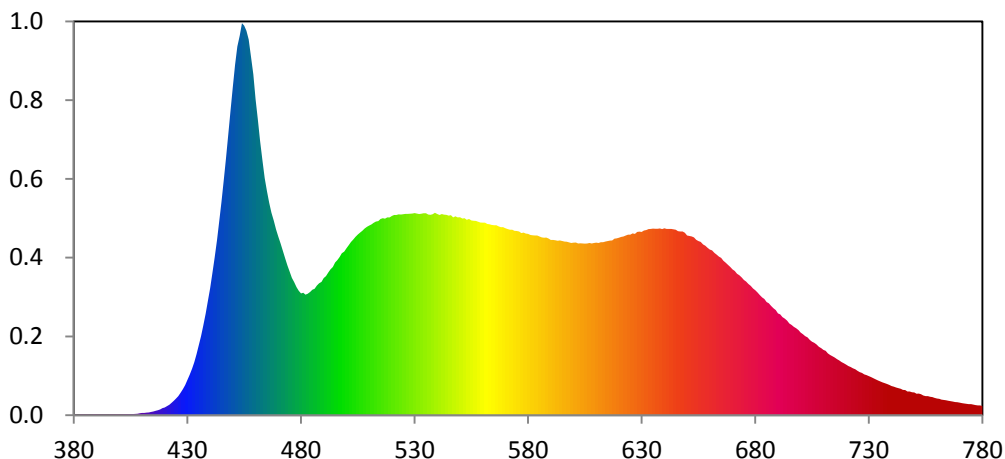
Color Rendering Index

Ra			
97.2			
R1	R2	R3	R4
98	98	95	98
R5	R6	R7	R8
97	94	99	98
R9	R10	R11	R12
96	95	97	71
R13	R14	R15	
99	97	96	





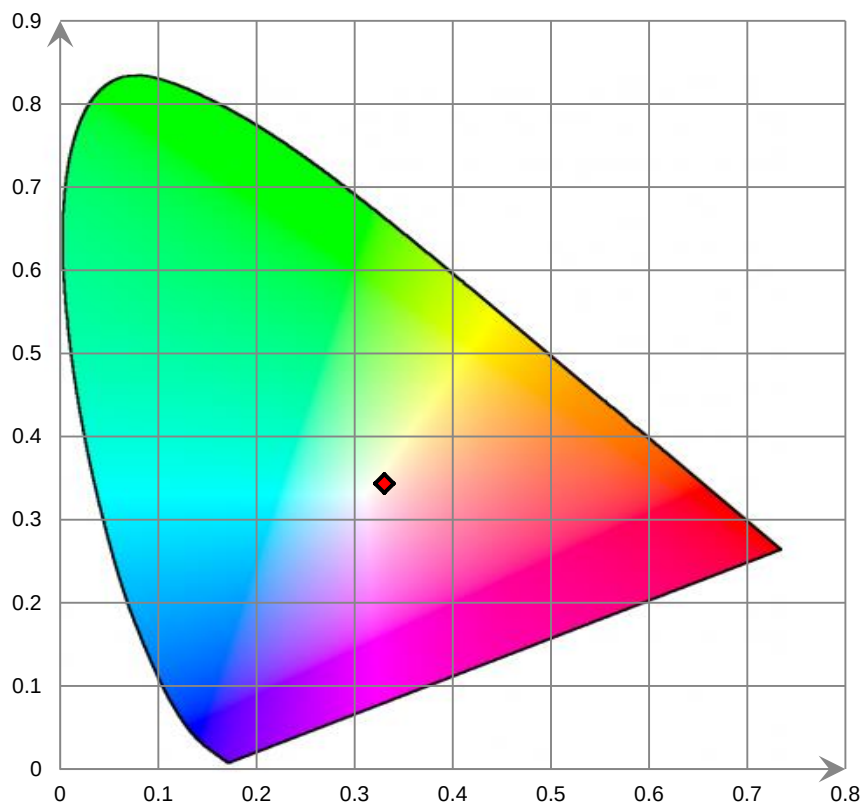
Relative Spectral Power Distribution



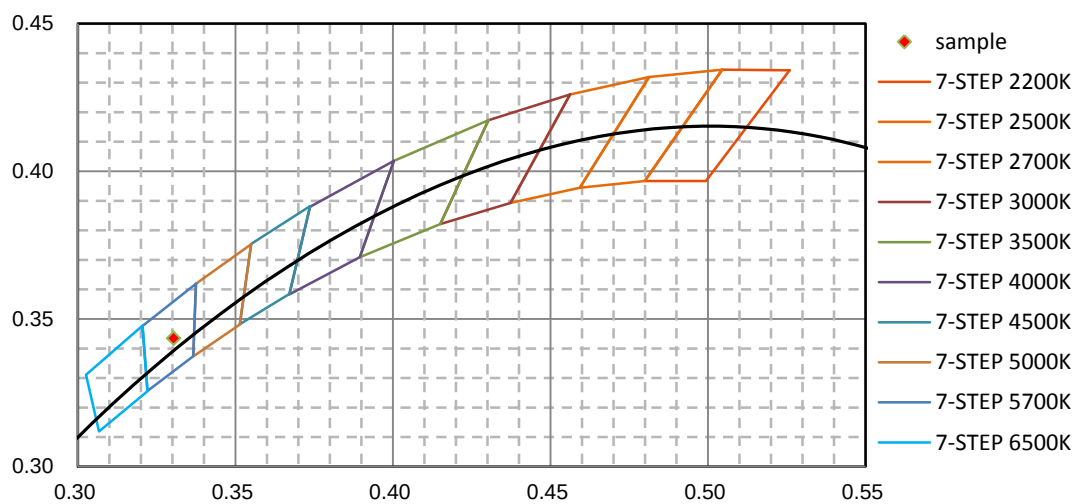
nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	5.305E-03	421	1.773E+00	462	5.403E+01	503	3.453E+01	544	3.941E+01
381	1.189E-01	422	2.026E+00	463	5.011E+01	504	3.511E+01	545	3.924E+01
382	5.830E-02	423	2.406E+00	464	4.666E+01	505	3.555E+01	546	3.933E+01
383	1.514E-01	424	2.838E+00	465	4.409E+01	506	3.590E+01	547	3.889E+01
384	1.383E-01	425	3.280E+00	466	4.179E+01	507	3.627E+01	548	3.912E+01
385	1.331E-01	426	3.728E+00	467	3.985E+01	508	3.670E+01	549	3.889E+01
386	1.622E-01	427	4.446E+00	468	3.823E+01	509	3.704E+01	550	3.895E+01
387	8.470E-02	428	5.112E+00	469	3.656E+01	510	3.728E+01	551	3.868E+01
388	1.289E-01	429	5.901E+00	470	3.514E+01	511	3.752E+01	552	3.873E+01
389	1.819E-01	430	6.932E+00	471	3.379E+01	512	3.782E+01	553	3.843E+01
390	1.415E-01	431	7.945E+00	472	3.238E+01	513	3.808E+01	554	3.858E+01
391	1.485E-01	432	9.123E+00	473	3.083E+01	514	3.817E+01	555	3.830E+01
392	1.160E-01	433	1.042E+01	474	2.946E+01	515	3.858E+01	556	3.824E+01
393	1.161E-01	434	1.200E+01	475	2.821E+01	516	3.875E+01	557	3.821E+01
394	1.488E-01	435	1.374E+01	476	2.701E+01	517	3.865E+01	558	3.806E+01
395	8.355E-02	436	1.553E+01	477	2.617E+01	518	3.891E+01	559	3.789E+01
396	1.393E-01	437	1.758E+01	478	2.517E+01	519	3.889E+01	560	3.787E+01
397	1.651E-01	438	1.994E+01	479	2.444E+01	520	3.920E+01	561	3.785E+01
398	1.531E-01	439	2.247E+01	480	2.397E+01	521	3.936E+01	562	3.760E+01
399	1.813E-01	440	2.497E+01	481	2.408E+01	522	3.937E+01	563	3.754E+01
400	1.491E-01	441	2.791E+01	482	2.368E+01	523	3.951E+01	564	3.743E+01
401	1.539E-01	442	3.092E+01	483	2.387E+01	524	3.947E+01	565	3.735E+01
402	1.873E-01	443	3.445E+01	484	2.424E+01	525	3.952E+01	566	3.735E+01
403	2.026E-01	444	3.819E+01	485	2.466E+01	526	3.958E+01	567	3.712E+01
404	2.284E-01	445	4.199E+01	486	2.486E+01	527	3.959E+01	568	3.699E+01
405	2.007E-01	446	4.618E+01	487	2.550E+01	528	3.962E+01	569	3.698E+01
406	2.197E-01	447	5.048E+01	488	2.595E+01	529	3.965E+01	570	3.678E+01
407	2.594E-01	448	5.543E+01	489	2.621E+01	530	3.977E+01	571	3.662E+01
408	2.833E-01	449	6.008E+01	490	2.699E+01	531	3.966E+01	572	3.649E+01
409	3.627E-01	450	6.464E+01	491	2.736E+01	532	3.956E+01	573	3.647E+01
410	4.181E-01	451	6.897E+01	492	2.803E+01	533	3.963E+01	574	3.626E+01
411	4.524E-01	452	7.253E+01	493	2.866E+01	534	3.973E+01	575	3.624E+01
412	5.057E-01	453	7.467E+01	494	2.913E+01	535	3.971E+01	576	3.613E+01
413	5.270E-01	454	7.713E+01	495	3.002E+01	536	3.947E+01	577	3.582E+01
414	6.347E-01	455	7.662E+01	496	3.050E+01	537	3.941E+01	578	3.591E+01
415	7.192E-01	456	7.559E+01	497	3.110E+01	538	3.953E+01	579	3.571E+01
416	8.281E-01	457	7.389E+01	498	3.186E+01	539	3.982E+01	580	3.565E+01
417	9.677E-01	458	7.038E+01	499	3.217E+01	540	3.956E+01	581	3.545E+01
418	1.130E+00	459	6.703E+01	500	3.282E+01	541	3.936E+01	582	3.538E+01
419	1.389E+00	460	6.217E+01	501	3.343E+01	542	3.957E+01	583	3.534E+01
420	1.517E+00	461	5.824E+01	502	3.405E+01	543	3.945E+01	584	3.534E+01

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
585	3.516E+01	626	3.574E+01	667	3.000E+01	708	1.342E+01	749	4.513E+00
586	3.497E+01	627	3.565E+01	668	2.957E+01	709	1.317E+01	750	4.461E+00
587	3.491E+01	628	3.605E+01	669	2.915E+01	710	1.285E+01	751	4.209E+00
588	3.492E+01	629	3.612E+01	670	2.868E+01	711	1.265E+01	752	4.254E+00
589	3.474E+01	630	3.603E+01	671	2.836E+01	712	1.213E+01	753	4.123E+00
590	3.447E+01	631	3.631E+01	672	2.781E+01	713	1.182E+01	754	3.874E+00
591	3.448E+01	632	3.642E+01	673	2.751E+01	714	1.159E+01	755	3.732E+00
592	3.441E+01	633	3.662E+01	674	2.711E+01	715	1.132E+01	756	3.741E+00
593	3.431E+01	634	3.663E+01	675	2.659E+01	716	1.100E+01	757	3.611E+00
594	3.435E+01	635	3.668E+01	676	2.627E+01	717	1.077E+01	758	3.542E+00
595	3.425E+01	636	3.667E+01	677	2.579E+01	718	1.046E+01	759	3.375E+00
596	3.415E+01	637	3.667E+01	678	2.543E+01	719	1.018E+01	760	3.261E+00
597	3.411E+01	638	3.672E+01	679	2.491E+01	720	9.950E+00	761	3.214E+00
598	3.400E+01	639	3.660E+01	680	2.457E+01	721	9.671E+00	762	3.051E+00
599	3.386E+01	640	3.676E+01	681	2.414E+01	722	9.479E+00	763	2.984E+00
600	3.392E+01	641	3.665E+01	682	2.362E+01	723	9.208E+00	764	2.932E+00
601	3.397E+01	642	3.663E+01	683	2.318E+01	724	9.025E+00	765	2.829E+00
602	3.376E+01	643	3.663E+01	684	2.283E+01	725	8.707E+00	766	2.740E+00
603	3.379E+01	644	3.656E+01	685	2.224E+01	726	8.473E+00	767	2.656E+00
604	3.376E+01	645	3.649E+01	686	2.199E+01	727	8.291E+00	768	2.591E+00
605	3.373E+01	646	3.619E+01	687	2.148E+01	728	8.038E+00	769	2.531E+00
606	3.376E+01	647	3.614E+01	688	2.102E+01	729	7.850E+00	770	2.467E+00
607	3.386E+01	648	3.613E+01	689	2.068E+01	730	7.690E+00	771	2.358E+00
608	3.377E+01	649	3.589E+01	690	2.002E+01	731	7.493E+00	772	2.285E+00
609	3.387E+01	650	3.535E+01	691	1.981E+01	732	7.254E+00	773	2.226E+00
610	3.393E+01	651	3.524E+01	692	1.930E+01	733	7.038E+00	774	2.174E+00
611	3.388E+01	652	3.517E+01	693	1.898E+01	734	6.831E+00	775	2.158E+00
612	3.402E+01	653	3.497E+01	694	1.859E+01	735	6.638E+00	776	2.084E+00
613	3.403E+01	654	3.448E+01	695	1.802E+01	736	6.445E+00	777	1.967E+00
614	3.414E+01	655	3.426E+01	696	1.773E+01	737	6.293E+00	778	1.920E+00
615	3.424E+01	656	3.409E+01	697	1.736E+01	738	6.144E+00	779	1.907E+00
616	3.435E+01	657	3.359E+01	698	1.710E+01	739	5.923E+00	780	1.773E+00
617	3.437E+01	658	3.332E+01	699	1.673E+01	740	5.732E+00		
618	3.472E+01	659	3.293E+01	700	1.624E+01	741	5.611E+00		
619	3.478E+01	660	3.256E+01	701	1.592E+01	742	5.428E+00		
620	3.490E+01	661	3.242E+01	702	1.555E+01	743	5.319E+00		
621	3.505E+01	662	3.191E+01	703	1.528E+01	744	5.191E+00		
622	3.517E+01	663	3.156E+01	704	1.478E+01	745	4.969E+00		
623	3.535E+01	664	3.119E+01	705	1.443E+01	746	4.946E+00		
624	3.552E+01	665	3.095E+01	706	1.421E+01	747	4.661E+00		
625	3.551E+01	666	3.036E+01	707	1.390E+01	748	4.666E+00		

CIE 1931 x y Chromaticity Diagram



7-Step Chromaticity Quadrangles



Test orientation: **Downward**

Test CCT: **3200K**

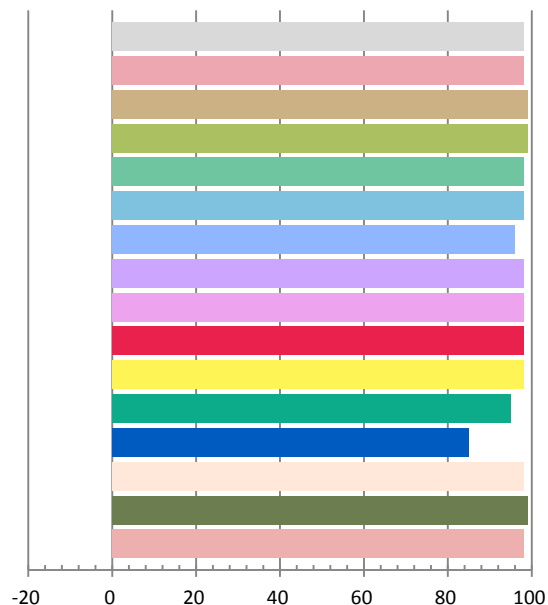
Beam Angle: **60°**

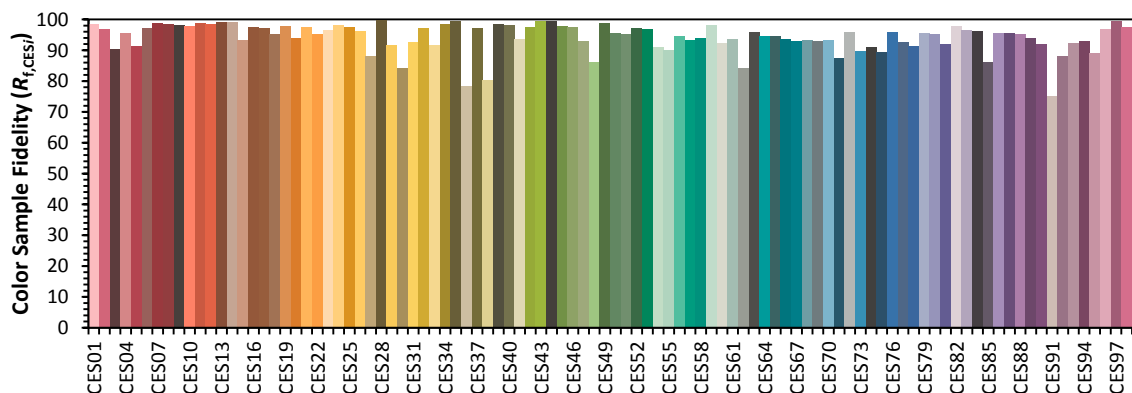
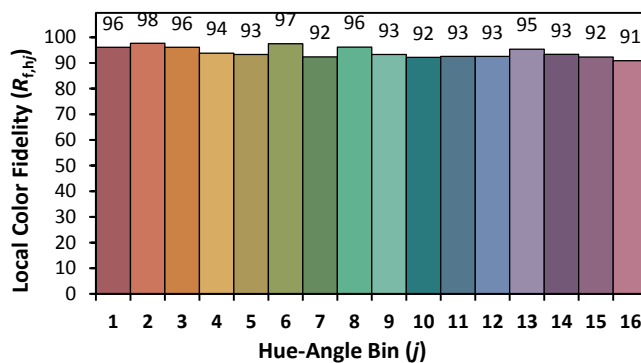
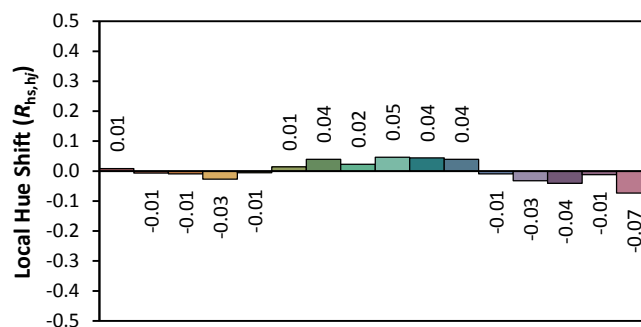
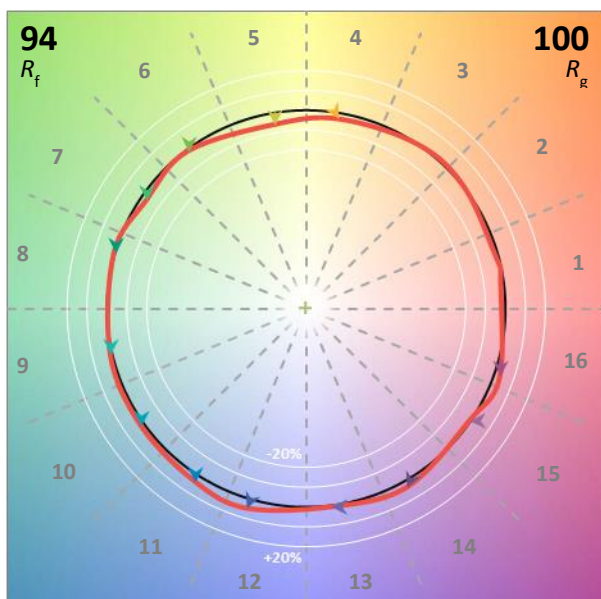
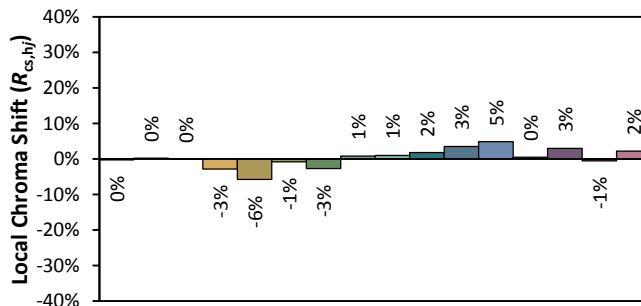
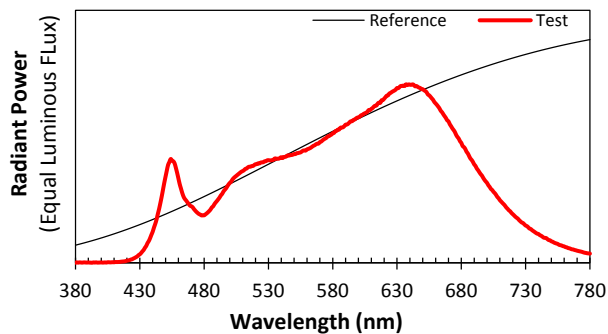
Photometric and Electrical Measurement Result

Luminous Flux(lm)	Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
2232.1	8.5136	3168	-0.00024	0.4251	0.3991	0.2451	0.5176

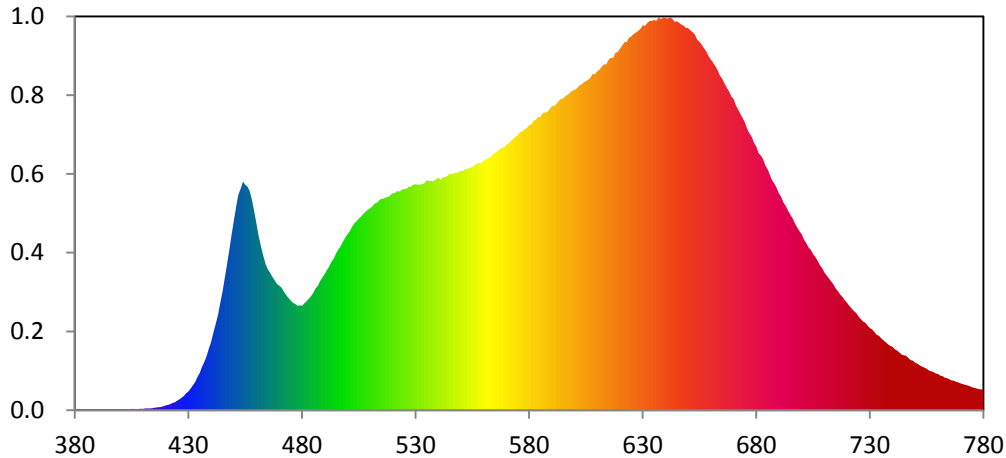
Color Rendering Index

Ra			
98.1			
R1	R2	R3	R4
98	99	99	98
R5	R6	R7	R8
98	96	98	98
R9	R10	R11	R12
98	98	95	85
R13	R14	R15	
98	99	98	





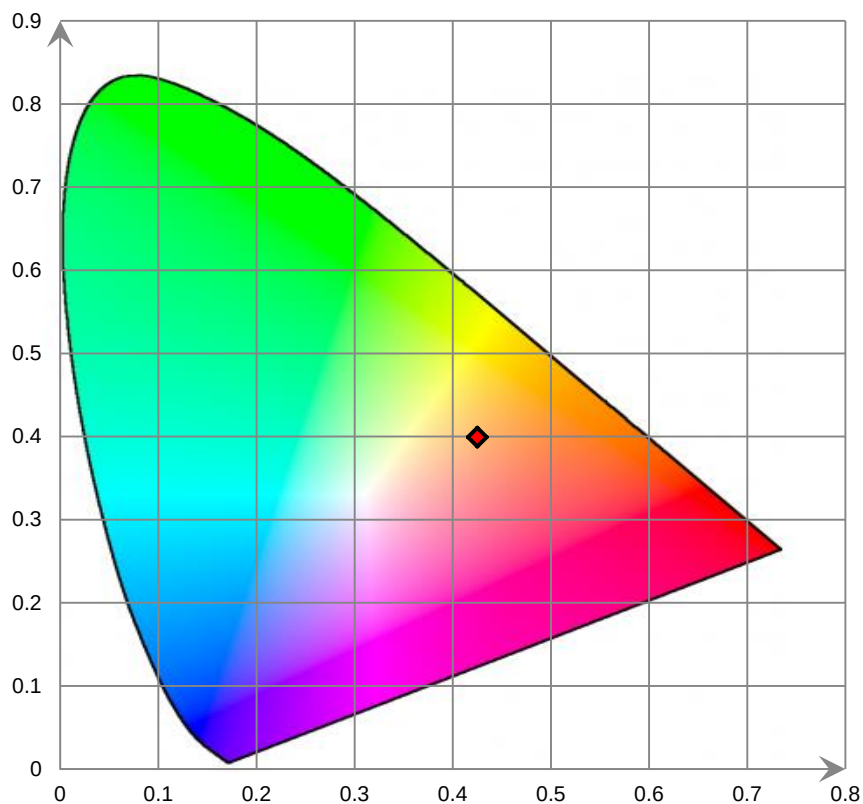
Relative Spectral Power Distribution



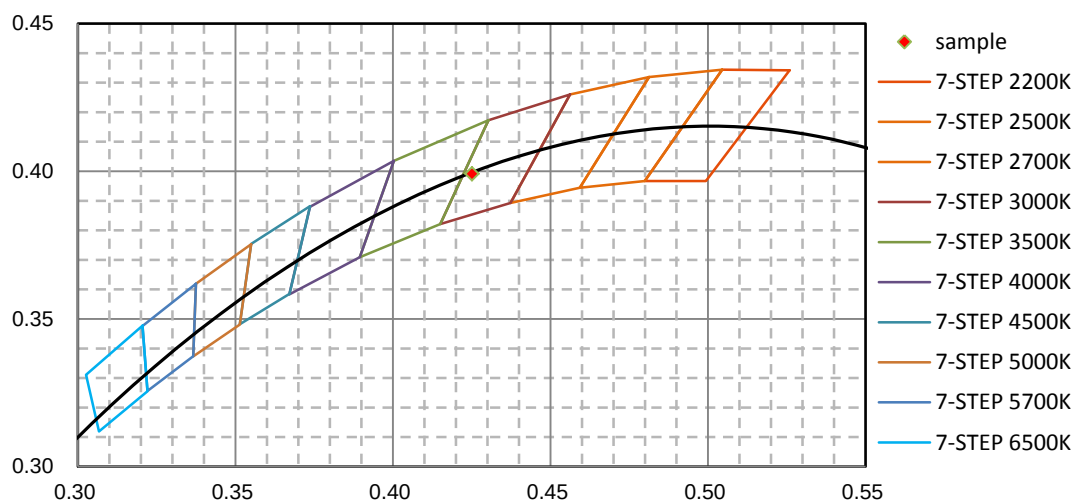
nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	1.755E-02	421	6.190E-01	462	1.924E+01	503	2.194E+01	544	2.756E+01
381	1.193E-01	422	7.066E-01	463	1.809E+01	504	2.224E+01	545	2.782E+01
382	4.116E-02	423	8.402E-01	464	1.714E+01	505	2.251E+01	546	2.776E+01
383	1.117E-01	424	9.278E-01	465	1.654E+01	506	2.279E+01	547	2.788E+01
384	9.294E-02	425	1.112E+00	466	1.614E+01	507	2.306E+01	548	2.791E+01
385	5.207E-02	426	1.265E+00	467	1.568E+01	508	2.334E+01	549	2.800E+01
386	8.688E-02	427	1.467E+00	468	1.525E+01	509	2.359E+01	550	2.816E+01
387	1.137E-01	428	1.663E+00	469	1.481E+01	510	2.376E+01	551	2.815E+01
388	7.684E-02	429	1.990E+00	470	1.465E+01	511	2.397E+01	552	2.838E+01
389	6.945E-02	430	2.206E+00	471	1.442E+01	512	2.431E+01	553	2.841E+01
390	9.254E-02	431	2.534E+00	472	1.396E+01	513	2.440E+01	554	2.851E+01
391	6.495E-02	432	2.957E+00	473	1.356E+01	514	2.471E+01	555	2.859E+01
392	3.850E-02	433	3.338E+00	474	1.320E+01	515	2.487E+01	556	2.882E+01
393	2.603E-02	434	3.905E+00	475	1.290E+01	516	2.488E+01	557	2.904E+01
394	1.126E-01	435	4.377E+00	476	1.264E+01	517	2.505E+01	558	2.909E+01
395	7.050E-02	436	5.102E+00	477	1.249E+01	518	2.508E+01	559	2.905E+01
396	1.216E-01	437	5.646E+00	478	1.226E+01	519	2.532E+01	560	2.937E+01
397	5.907E-02	438	6.383E+00	479	1.233E+01	520	2.553E+01	561	2.949E+01
398	6.420E-02	439	7.245E+00	480	1.229E+01	521	2.554E+01	562	2.963E+01
399	7.926E-02	440	8.033E+00	481	1.254E+01	522	2.578E+01	563	2.981E+01
400	9.756E-02	441	9.107E+00	482	1.279E+01	523	2.571E+01	564	3.006E+01
401	6.025E-02	442	1.008E+01	483	1.309E+01	524	2.595E+01	565	3.029E+01
402	7.342E-02	443	1.119E+01	484	1.342E+01	525	2.601E+01	566	3.044E+01
403	1.023E-01	444	1.262E+01	485	1.381E+01	526	2.603E+01	567	3.069E+01
404	7.129E-02	445	1.393E+01	486	1.434E+01	527	2.629E+01	568	3.084E+01
405	1.466E-01	446	1.550E+01	487	1.463E+01	528	2.630E+01	569	3.086E+01
406	1.464E-01	447	1.712E+01	488	1.518E+01	529	2.652E+01	570	3.126E+01
407	1.161E-01	448	1.888E+01	489	1.563E+01	530	2.657E+01	571	3.138E+01
408	1.356E-01	449	2.066E+01	490	1.602E+01	531	2.652E+01	572	3.168E+01
409	1.591E-01	450	2.228E+01	491	1.646E+01	532	2.653E+01	573	3.194E+01
410	1.448E-01	451	2.389E+01	492	1.690E+01	533	2.660E+01	574	3.215E+01
411	2.041E-01	452	2.536E+01	493	1.745E+01	534	2.671E+01	575	3.234E+01
412	2.029E-01	453	2.608E+01	494	1.784E+01	535	2.704E+01	576	3.272E+01
413	2.063E-01	454	2.687E+01	495	1.844E+01	536	2.695E+01	577	3.279E+01
414	2.255E-01	455	2.651E+01	496	1.887E+01	537	2.696E+01	578	3.303E+01
415	2.725E-01	456	2.629E+01	497	1.926E+01	538	2.696E+01	579	3.320E+01
416	3.214E-01	457	2.579E+01	498	1.978E+01	539	2.715E+01	580	3.355E+01
417	3.520E-01	458	2.465E+01	499	2.029E+01	540	2.735E+01	581	3.362E+01
418	3.815E-01	459	2.331E+01	500	2.069E+01	541	2.711E+01	582	3.407E+01
419	4.595E-01	460	2.186E+01	501	2.102E+01	542	2.739E+01	583	3.417E+01
420	5.616E-01	461	2.039E+01	502	2.154E+01	543	2.743E+01	584	3.448E+01

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
585	3.450E+01	626	4.424E+01	667	3.796E+01	708	1.706E+01	749	5.820E+00
586	3.498E+01	627	4.443E+01	668	3.749E+01	709	1.670E+01	750	5.564E+00
587	3.502E+01	628	4.461E+01	669	3.690E+01	710	1.620E+01	751	5.453E+00
588	3.509E+01	629	4.485E+01	670	3.662E+01	711	1.586E+01	752	5.257E+00
589	3.538E+01	630	4.526E+01	671	3.590E+01	712	1.549E+01	753	5.109E+00
590	3.577E+01	631	4.522E+01	672	3.539E+01	713	1.516E+01	754	4.995E+00
591	3.580E+01	632	4.553E+01	673	3.483E+01	714	1.477E+01	755	4.880E+00
592	3.600E+01	633	4.579E+01	674	3.437E+01	715	1.431E+01	756	4.661E+00
593	3.635E+01	634	4.578E+01	675	3.385E+01	716	1.398E+01	757	4.570E+00
594	3.664E+01	635	4.590E+01	676	3.311E+01	717	1.359E+01	758	4.478E+00
595	3.664E+01	636	4.577E+01	677	3.258E+01	718	1.333E+01	759	4.324E+00
596	3.697E+01	637	4.621E+01	678	3.215E+01	719	1.291E+01	760	4.252E+00
597	3.709E+01	638	4.600E+01	679	3.146E+01	720	1.260E+01	761	4.063E+00
598	3.735E+01	639	4.619E+01	680	3.104E+01	721	1.228E+01	762	4.005E+00
599	3.757E+01	640	4.613E+01	681	3.025E+01	722	1.194E+01	763	3.820E+00
600	3.768E+01	641	4.607E+01	682	2.997E+01	723	1.167E+01	764	3.762E+00
601	3.785E+01	642	4.619E+01	683	2.951E+01	724	1.142E+01	765	3.629E+00
602	3.818E+01	643	4.608E+01	684	2.879E+01	725	1.103E+01	766	3.498E+00
603	3.830E+01	644	4.569E+01	685	2.834E+01	726	1.073E+01	767	3.458E+00
604	3.855E+01	645	4.577E+01	686	2.769E+01	727	1.043E+01	768	3.326E+00
605	3.872E+01	646	4.559E+01	687	2.703E+01	728	1.029E+01	769	3.251E+00
606	3.887E+01	647	4.537E+01	688	2.664E+01	729	9.956E+00	770	3.144E+00
607	3.912E+01	648	4.526E+01	689	2.613E+01	730	9.654E+00	771	3.057E+00
608	3.956E+01	649	4.498E+01	690	2.549E+01	731	9.500E+00	772	2.980E+00
609	3.953E+01	650	4.495E+01	691	2.509E+01	732	9.200E+00	773	2.904E+00
610	3.985E+01	651	4.468E+01	692	2.443E+01	733	8.869E+00	774	2.816E+00
611	4.007E+01	652	4.446E+01	693	2.399E+01	734	8.752E+00	775	2.694E+00
612	4.043E+01	653	4.415E+01	694	2.347E+01	735	8.449E+00	776	2.604E+00
613	4.068E+01	654	4.358E+01	695	2.298E+01	736	8.218E+00	777	2.546E+00
614	4.070E+01	655	4.336E+01	696	2.258E+01	737	7.988E+00	778	2.469E+00
615	4.123E+01	656	4.300E+01	697	2.200E+01	738	7.748E+00	779	2.438E+00
616	4.147E+01	657	4.258E+01	698	2.149E+01	739	7.550E+00	780	2.388E+00
617	4.142E+01	658	4.221E+01	699	2.106E+01	740	7.455E+00		
618	4.208E+01	659	4.164E+01	700	2.068E+01	741	7.176E+00		
619	4.213E+01	660	4.127E+01	701	2.008E+01	742	7.016E+00		
620	4.249E+01	661	4.088E+01	702	1.967E+01	743	6.795E+00		
621	4.287E+01	662	4.045E+01	703	1.913E+01	744	6.531E+00		
622	4.328E+01	663	3.998E+01	704	1.885E+01	745	6.453E+00		
623	4.333E+01	664	3.936E+01	705	1.838E+01	746	6.399E+00		
624	4.382E+01	665	3.899E+01	706	1.804E+01	747	6.119E+00		
625	4.398E+01	666	3.845E+01	707	1.759E+01	748	5.888E+00		

CIE 1931 x y Chromaticity Diagram



7-Step Chromaticity Quadrangles



Test orientation: **Downward**

Test CCT: **4000K**

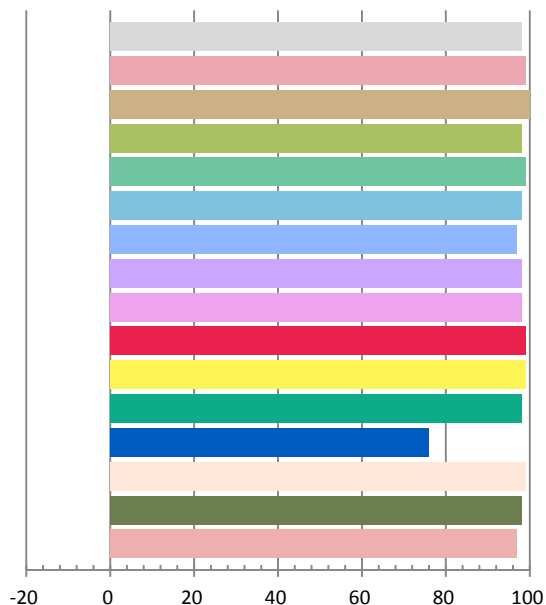
Beam Angle: **60°**

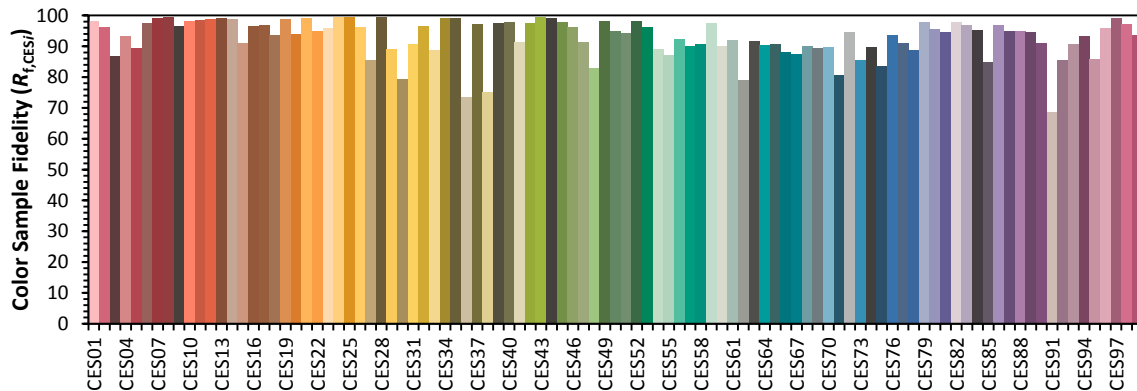
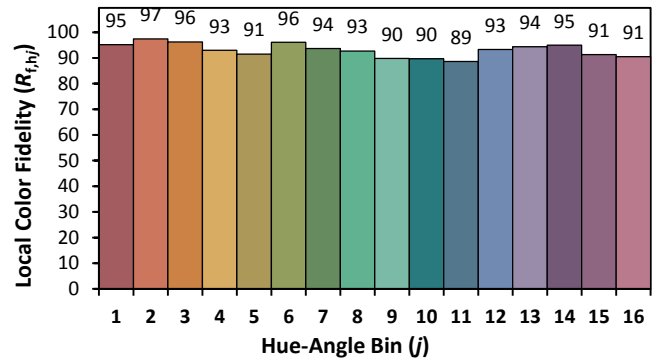
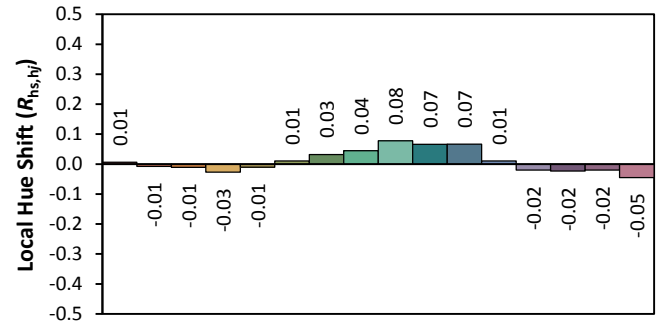
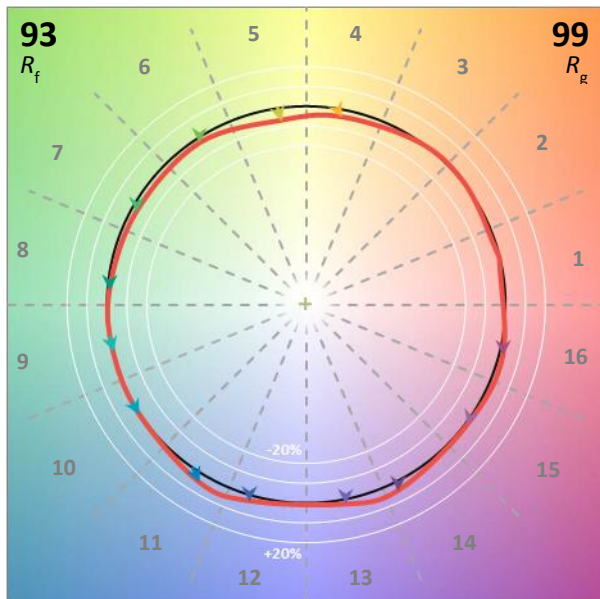
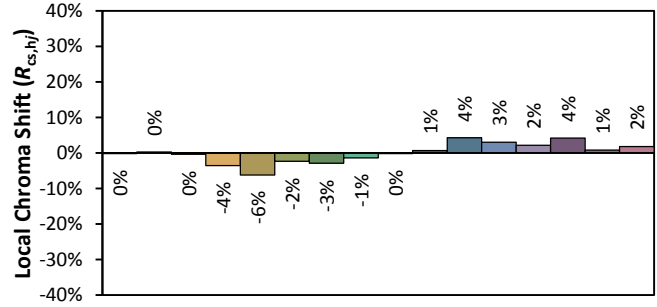
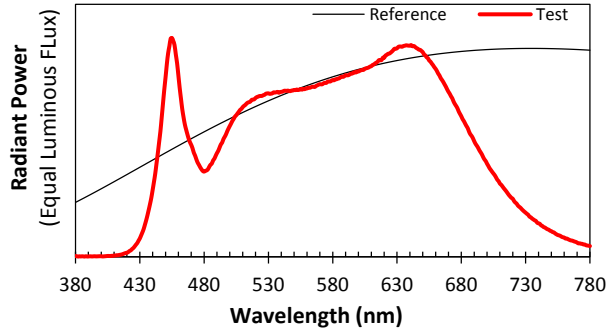
Photometric and Electrical Measurement Result

Luminous Flux(lm)	Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
2639	9.7772	3946	0.00100	0.3836	0.3809	0.2255	0.5038

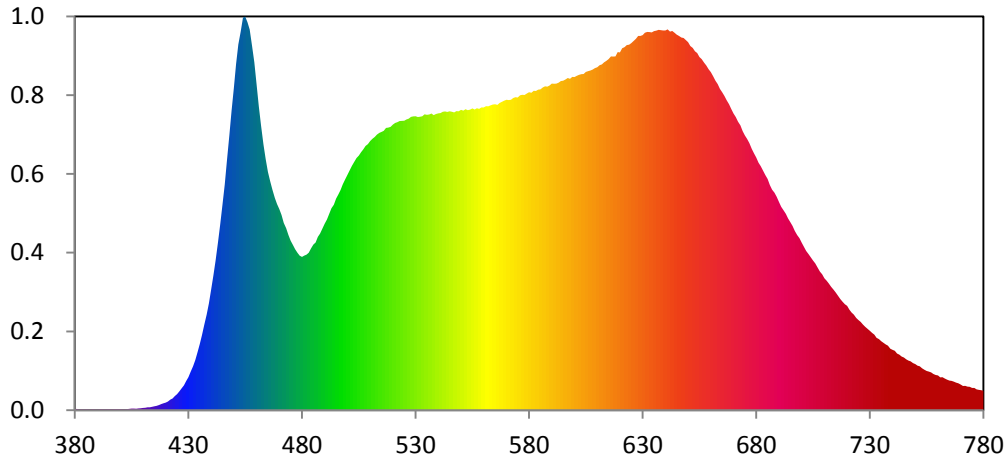
Color Rendering Index

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





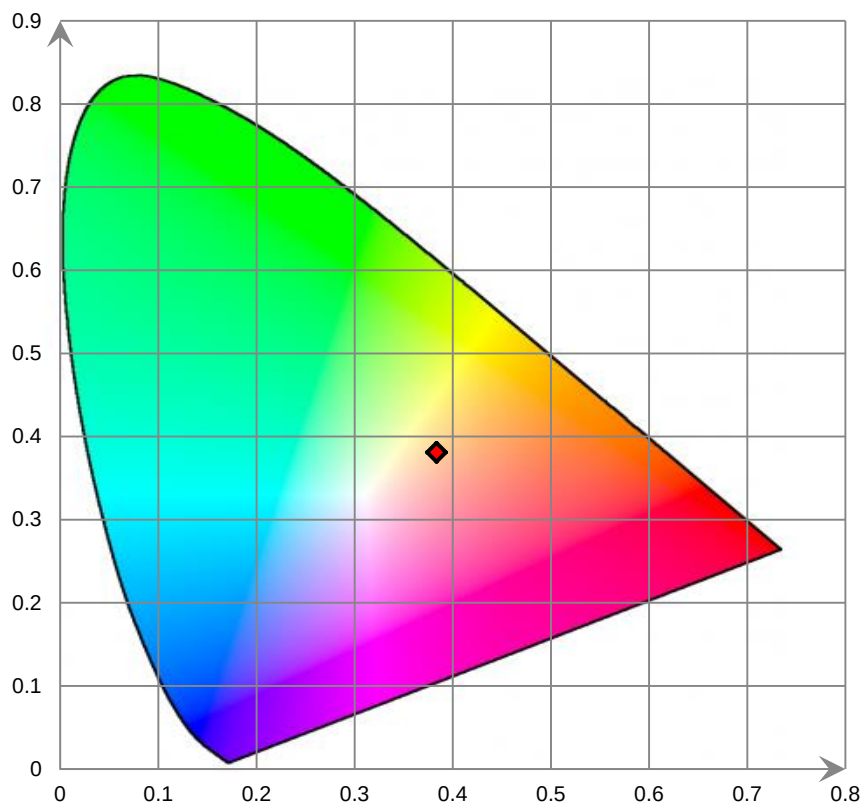
Relative Spectral Power Distribution



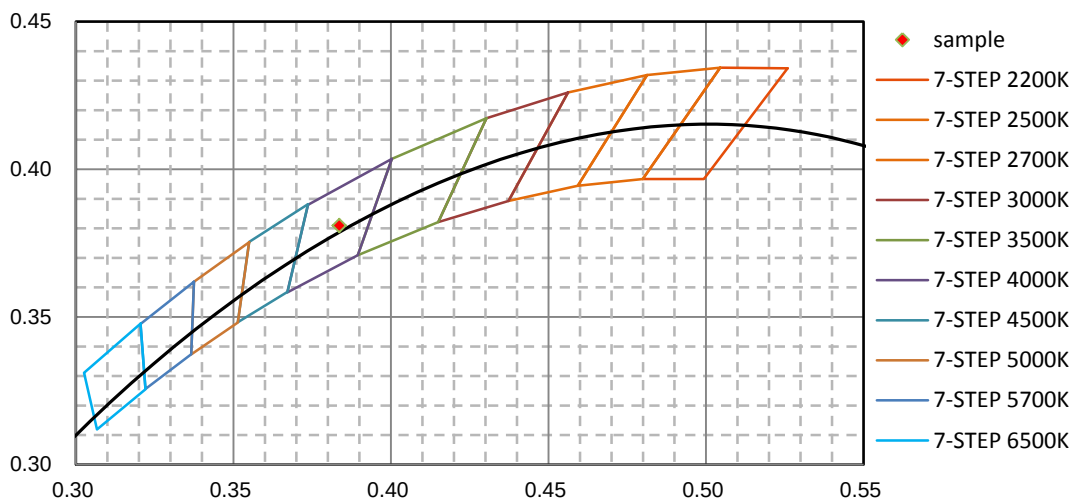
nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	1.637E-01	421	1.017E+00	462	3.391E+01	503	2.956E+01	544	3.554E+01
381	1.276E-01	422	1.254E+00	463	3.166E+01	504	3.005E+01	545	3.561E+01
382	5.730E-02	423	1.391E+00	464	2.991E+01	505	3.034E+01	546	3.555E+01
383	1.086E-01	424	1.668E+00	465	2.839E+01	506	3.072E+01	547	3.549E+01
384	8.036E-02	425	1.898E+00	466	2.728E+01	507	3.108E+01	548	3.563E+01
385	1.106E-01	426	2.232E+00	467	2.626E+01	508	3.148E+01	549	3.562E+01
386	1.001E-01	427	2.599E+00	468	2.530E+01	509	3.170E+01	550	3.577E+01
387	4.969E-02	428	2.941E+00	469	2.455E+01	510	3.207E+01	551	3.569E+01
388	1.266E-01	429	3.458E+00	470	2.397E+01	511	3.233E+01	552	3.585E+01
389	7.000E-02	430	3.930E+00	471	2.325E+01	512	3.254E+01	553	3.574E+01
390	7.651E-02	431	4.571E+00	472	2.231E+01	513	3.283E+01	554	3.580E+01
391	1.103E-01	432	5.221E+00	473	2.167E+01	514	3.304E+01	555	3.595E+01
392	1.023E-01	433	5.963E+00	474	2.087E+01	515	3.314E+01	556	3.581E+01
393	8.294E-02	434	6.905E+00	475	2.018E+01	516	3.328E+01	557	3.598E+01
394	1.106E-01	435	7.875E+00	476	1.970E+01	517	3.363E+01	558	3.589E+01
395	1.224E-01	436	8.948E+00	477	1.917E+01	518	3.368E+01	559	3.607E+01
396	9.291E-02	437	1.015E+01	478	1.874E+01	519	3.376E+01	560	3.607E+01
397	1.059E-01	438	1.138E+01	479	1.839E+01	520	3.403E+01	561	3.622E+01
398	1.221E-01	439	1.272E+01	480	1.826E+01	521	3.422E+01	562	3.621E+01
399	1.294E-01	440	1.435E+01	481	1.841E+01	522	3.432E+01	563	3.631E+01
400	1.198E-01	441	1.603E+01	482	1.852E+01	523	3.444E+01	564	3.642E+01
401	8.553E-02	442	1.784E+01	483	1.877E+01	524	3.446E+01	565	3.645E+01
402	9.881E-02	443	2.002E+01	484	1.929E+01	525	3.448E+01	566	3.638E+01
403	1.274E-01	444	2.218E+01	485	1.973E+01	526	3.463E+01	567	3.660E+01
404	1.534E-01	445	2.450E+01	486	1.999E+01	527	3.472E+01	568	3.674E+01
405	1.818E-01	446	2.686E+01	487	2.065E+01	528	3.494E+01	569	3.688E+01
406	1.823E-01	447	2.977E+01	488	2.103E+01	529	3.500E+01	570	3.699E+01
407	1.701E-01	448	3.277E+01	489	2.165E+01	530	3.502E+01	571	3.695E+01
408	2.069E-01	449	3.573E+01	490	2.223E+01	531	3.492E+01	572	3.699E+01
409	2.187E-01	450	3.837E+01	491	2.272E+01	532	3.496E+01	573	3.719E+01
410	2.711E-01	451	4.125E+01	492	2.339E+01	533	3.501E+01	574	3.728E+01
411	2.872E-01	452	4.358E+01	493	2.406E+01	534	3.524E+01	575	3.725E+01
412	3.397E-01	453	4.513E+01	494	2.447E+01	535	3.520E+01	576	3.752E+01
413	3.443E-01	454	4.675E+01	495	2.520E+01	536	3.524E+01	577	3.758E+01
414	4.007E-01	455	4.689E+01	496	2.570E+01	537	3.534E+01	578	3.755E+01
415	4.509E-01	456	4.624E+01	497	2.623E+01	538	3.515E+01	579	3.773E+01
416	5.125E-01	457	4.536E+01	498	2.691E+01	539	3.528E+01	580	3.788E+01
417	6.122E-01	458	4.336E+01	499	2.751E+01	540	3.535E+01	581	3.781E+01
418	7.187E-01	459	4.144E+01	500	2.805E+01	541	3.539E+01	582	3.804E+01
419	8.140E-01	460	3.883E+01	501	2.857E+01	542	3.555E+01	583	3.804E+01
420	8.905E-01	461	3.620E+01	502	2.912E+01	543	3.559E+01	584	3.819E+01

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
585	3.823E+01	626	4.398E+01	667	3.693E+01	708	1.651E+01	749	5.592E+00
586	3.845E+01	627	4.426E+01	668	3.644E+01	709	1.619E+01	750	5.490E+00
587	3.859E+01	628	4.458E+01	669	3.587E+01	710	1.569E+01	751	5.304E+00
588	3.855E+01	629	4.458E+01	670	3.535E+01	711	1.543E+01	752	5.225E+00
589	3.869E+01	630	4.468E+01	671	3.492E+01	712	1.508E+01	753	5.000E+00
590	3.891E+01	631	4.497E+01	672	3.438E+01	713	1.470E+01	754	4.821E+00
591	3.889E+01	632	4.506E+01	673	3.394E+01	714	1.436E+01	755	4.676E+00
592	3.890E+01	633	4.505E+01	674	3.325E+01	715	1.401E+01	756	4.592E+00
593	3.903E+01	634	4.501E+01	675	3.273E+01	716	1.362E+01	757	4.486E+00
594	3.922E+01	635	4.517E+01	676	3.230E+01	717	1.324E+01	758	4.302E+00
595	3.925E+01	636	4.522E+01	677	3.181E+01	718	1.292E+01	759	4.194E+00
596	3.940E+01	637	4.531E+01	678	3.113E+01	719	1.262E+01	760	4.123E+00
597	3.957E+01	638	4.528E+01	679	3.060E+01	720	1.244E+01	761	3.910E+00
598	3.949E+01	639	4.524E+01	680	3.010E+01	721	1.196E+01	762	3.922E+00
599	3.972E+01	640	4.524E+01	681	2.950E+01	722	1.163E+01	763	3.773E+00
600	3.970E+01	641	4.537E+01	682	2.907E+01	723	1.139E+01	764	3.642E+00
601	3.985E+01	642	4.511E+01	683	2.852E+01	724	1.098E+01	765	3.527E+00
602	3.997E+01	643	4.518E+01	684	2.801E+01	725	1.073E+01	766	3.478E+00
603	4.003E+01	644	4.498E+01	685	2.755E+01	726	1.051E+01	767	3.388E+00
604	4.006E+01	645	4.475E+01	686	2.683E+01	727	1.020E+01	768	3.267E+00
605	4.030E+01	646	4.460E+01	687	2.626E+01	728	9.931E+00	769	3.196E+00
606	4.039E+01	647	4.439E+01	688	2.590E+01	729	9.680E+00	770	3.053E+00
607	4.047E+01	648	4.433E+01	689	2.541E+01	730	9.456E+00	771	2.881E+00
608	4.058E+01	649	4.410E+01	690	2.479E+01	731	9.209E+00	772	2.893E+00
609	4.076E+01	650	4.385E+01	691	2.424E+01	732	8.996E+00	773	2.804E+00
610	4.084E+01	651	4.339E+01	692	2.382E+01	733	8.611E+00	774	2.779E+00
611	4.110E+01	652	4.315E+01	693	2.338E+01	734	8.468E+00	775	2.638E+00
612	4.121E+01	653	4.276E+01	694	2.284E+01	735	8.208E+00	776	2.642E+00
613	4.145E+01	654	4.255E+01	695	2.240E+01	736	8.018E+00	777	2.474E+00
614	4.161E+01	655	4.207E+01	696	2.194E+01	737	7.824E+00	778	2.421E+00
615	4.182E+01	656	4.182E+01	697	2.135E+01	738	7.678E+00	779	2.375E+00
616	4.216E+01	657	4.141E+01	698	2.086E+01	739	7.311E+00	780	2.301E+00
617	4.213E+01	658	4.106E+01	699	2.050E+01	740	7.177E+00		
618	4.215E+01	659	4.063E+01	700	1.995E+01	741	7.073E+00		
619	4.267E+01	660	4.028E+01	701	1.947E+01	742	6.750E+00		
620	4.263E+01	661	3.981E+01	702	1.897E+01	743	6.608E+00		
621	4.312E+01	662	3.926E+01	703	1.859E+01	744	6.378E+00		
622	4.326E+01	663	3.885E+01	704	1.820E+01	745	6.267E+00		
623	4.350E+01	664	3.828E+01	705	1.783E+01	746	6.068E+00		
624	4.354E+01	665	3.788E+01	706	1.747E+01	747	5.907E+00		
625	4.374E+01	666	3.743E+01	707	1.700E+01	748	5.805E+00		

CIE 1931 x y Chromaticity Diagram



7-Step Chromaticity Quadrangles



Test orientation: **Downward**

Test CCT: **5500K**

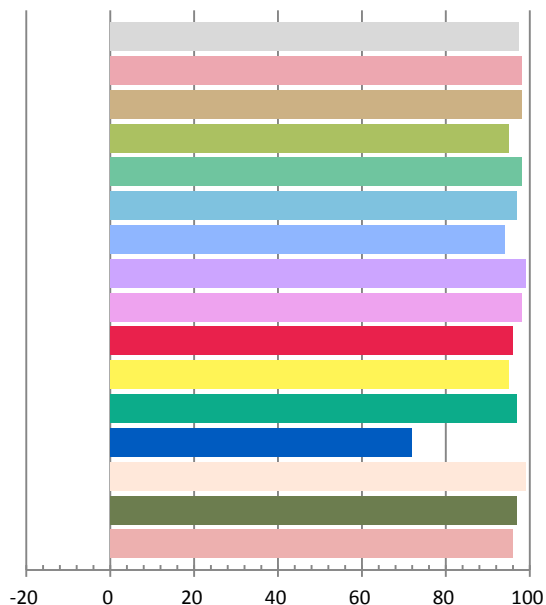
Beam Angle: **60°**

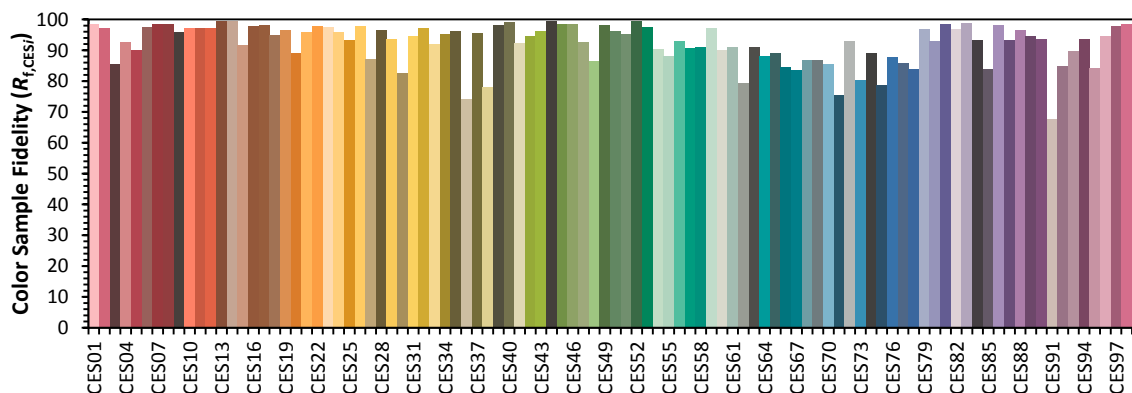
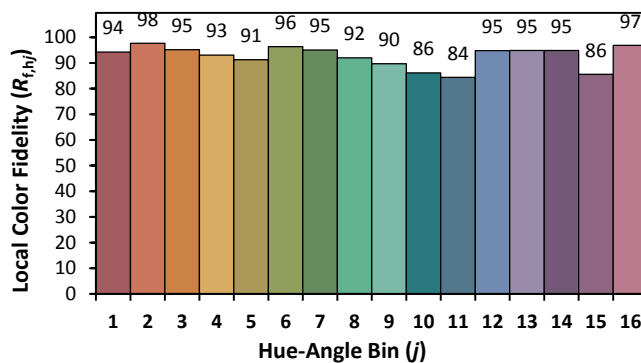
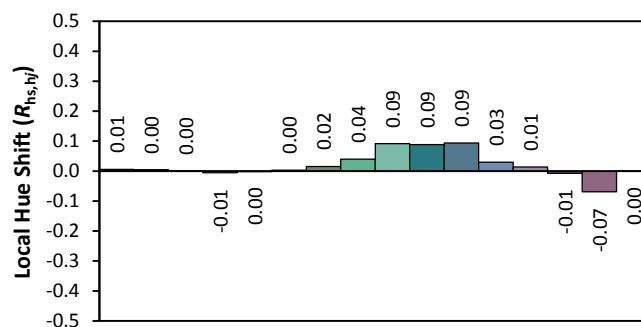
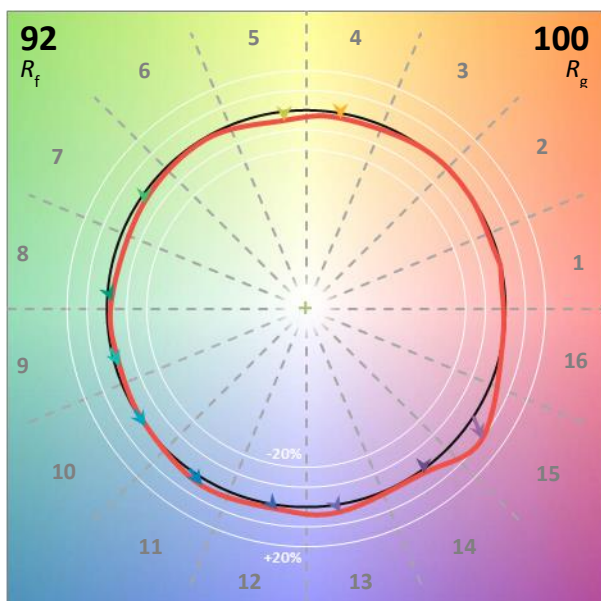
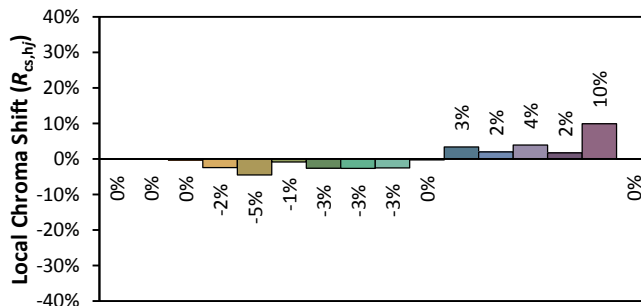
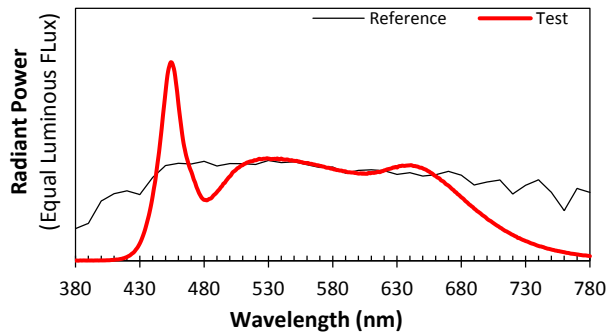
Photometric and Electrical Measurement Result

Luminous Flux(lm)	Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
2842.5	10.639	5552	0.00192	0.3312	0.3438	0.2050	0.4787

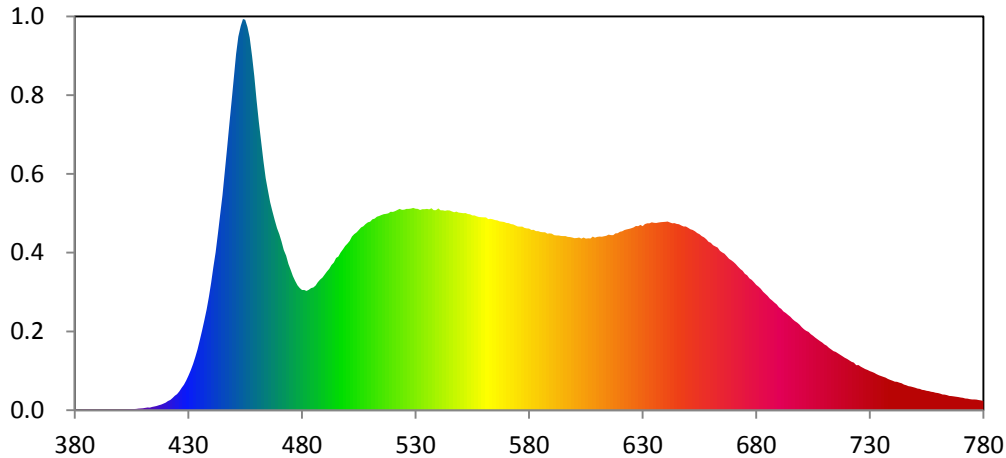
Color Rendering Index

Ra			
97.3			
R1	R2	R3	R4
98	98	95	98
R5	R6	R7	R8
97	94	99	98
R9	R10	R11	R12
96	95	97	72
R13	R14	R15	
99	97	96	





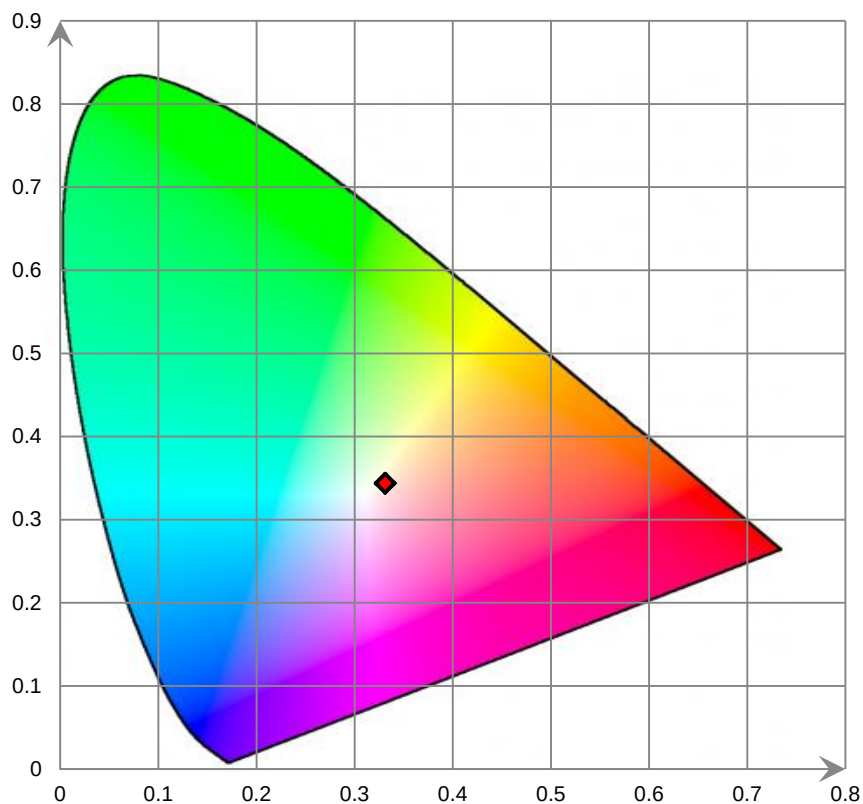
Relative Spectral Power Distribution



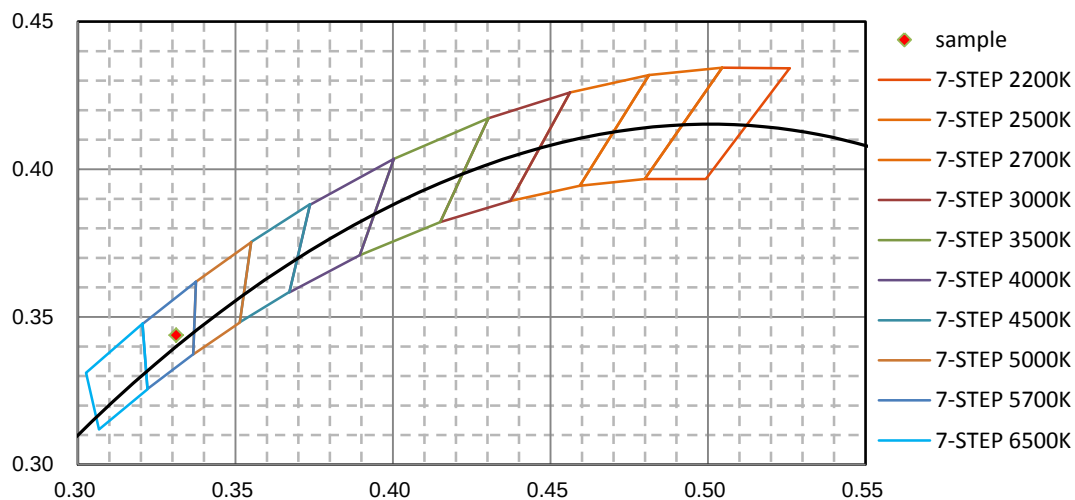
nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	1.094E-01	421	1.883E+00	462	5.615E+01	503	3.678E+01	544	4.176E+01
381	1.284E-01	422	2.136E+00	463	5.203E+01	504	3.714E+01	545	4.174E+01
382	5.863E-02	423	2.526E+00	464	4.847E+01	505	3.763E+01	546	4.152E+01
383	1.178E-01	424	2.995E+00	465	4.592E+01	506	3.818E+01	547	4.135E+01
384	1.616E-01	425	3.352E+00	466	4.344E+01	507	3.841E+01	548	4.150E+01
385	1.159E-01	426	3.914E+00	467	4.157E+01	508	3.888E+01	549	4.128E+01
386	1.679E-01	427	4.658E+00	468	3.965E+01	509	3.927E+01	550	4.122E+01
387	1.499E-01	428	5.306E+00	469	3.803E+01	510	3.940E+01	551	4.114E+01
388	1.377E-01	429	6.186E+00	470	3.678E+01	511	3.989E+01	552	4.120E+01
389	1.201E-01	430	7.167E+00	471	3.523E+01	512	4.002E+01	553	4.100E+01
390	1.467E-01	431	8.296E+00	472	3.348E+01	513	4.042E+01	554	4.093E+01
391	1.292E-01	432	9.631E+00	473	3.226E+01	514	4.060E+01	555	4.070E+01
392	1.398E-01	433	1.111E+01	474	3.056E+01	515	4.079E+01	556	4.068E+01
393	1.403E-01	434	1.271E+01	475	2.931E+01	516	4.097E+01	557	4.048E+01
394	1.080E-01	435	1.461E+01	476	2.800E+01	517	4.104E+01	558	4.036E+01
395	1.584E-01	436	1.660E+01	477	2.701E+01	518	4.111E+01	559	4.032E+01
396	1.568E-01	437	1.867E+01	478	2.609E+01	519	4.147E+01	560	4.030E+01
397	1.763E-01	438	2.106E+01	479	2.552E+01	520	4.142E+01	561	4.029E+01
398	1.319E-01	439	2.367E+01	480	2.511E+01	521	4.158E+01	562	3.993E+01
399	1.723E-01	440	2.663E+01	481	2.510E+01	522	4.182E+01	563	3.999E+01
400	1.739E-01	441	2.991E+01	482	2.491E+01	523	4.206E+01	564	3.989E+01
401	1.622E-01	442	3.296E+01	483	2.516E+01	524	4.186E+01	565	3.972E+01
402	1.735E-01	443	3.703E+01	484	2.550E+01	525	4.190E+01	566	3.966E+01
403	1.786E-01	444	4.102E+01	485	2.565E+01	526	4.207E+01	567	3.945E+01
404	2.186E-01	445	4.493E+01	486	2.605E+01	527	4.206E+01	568	3.940E+01
405	2.367E-01	446	4.973E+01	487	2.676E+01	528	4.212E+01	569	3.932E+01
406	2.311E-01	447	5.451E+01	488	2.727E+01	529	4.227E+01	570	3.911E+01
407	2.702E-01	448	5.981E+01	489	2.772E+01	530	4.210E+01	571	3.908E+01
408	3.408E-01	449	6.460E+01	490	2.835E+01	531	4.206E+01	572	3.888E+01
409	3.499E-01	450	6.951E+01	491	2.899E+01	532	4.183E+01	573	3.881E+01
410	4.032E-01	451	7.443E+01	492	2.953E+01	533	4.199E+01	574	3.860E+01
411	4.787E-01	452	7.807E+01	493	3.031E+01	534	4.198E+01	575	3.840E+01
412	5.532E-01	453	8.027E+01	494	3.085E+01	535	4.205E+01	576	3.834E+01
413	5.344E-01	454	8.177E+01	495	3.180E+01	536	4.195E+01	577	3.834E+01
414	6.596E-01	455	8.158E+01	496	3.209E+01	537	4.219E+01	578	3.809E+01
415	7.595E-01	456	8.009E+01	497	3.292E+01	538	4.180E+01	579	3.797E+01
416	8.510E-01	457	7.788E+01	498	3.358E+01	539	4.180E+01	580	3.794E+01
417	1.021E+00	458	7.395E+01	499	3.429E+01	540	4.215E+01	581	3.765E+01
418	1.157E+00	459	6.974E+01	500	3.479E+01	541	4.176E+01	582	3.768E+01
419	1.376E+00	460	6.475E+01	501	3.537E+01	542	4.176E+01	583	3.740E+01
420	1.580E+00	461	6.028E+01	502	3.628E+01	543	4.166E+01	584	3.742E+01

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
585	3.725E+01	626	3.818E+01	667	3.218E+01	708	1.444E+01	749	4.818E+00
586	3.719E+01	627	3.847E+01	668	3.163E+01	709	1.415E+01	750	4.655E+00
587	3.718E+01	628	3.844E+01	669	3.132E+01	710	1.372E+01	751	4.520E+00
588	3.688E+01	629	3.870E+01	670	3.097E+01	711	1.347E+01	752	4.434E+00
589	3.693E+01	630	3.844E+01	671	3.052E+01	712	1.305E+01	753	4.234E+00
590	3.686E+01	631	3.887E+01	672	2.998E+01	713	1.272E+01	754	4.190E+00
591	3.659E+01	632	3.905E+01	673	2.948E+01	714	1.235E+01	755	4.037E+00
592	3.649E+01	633	3.904E+01	674	2.912E+01	715	1.216E+01	756	3.985E+00
593	3.650E+01	634	3.924E+01	675	2.847E+01	716	1.186E+01	757	3.846E+00
594	3.642E+01	635	3.915E+01	676	2.820E+01	717	1.156E+01	758	3.763E+00
595	3.637E+01	636	3.912E+01	677	2.755E+01	718	1.126E+01	759	3.641E+00
596	3.638E+01	637	3.923E+01	678	2.721E+01	719	1.091E+01	760	3.566E+00
597	3.621E+01	638	3.927E+01	679	2.670E+01	720	1.069E+01	761	3.422E+00
598	3.618E+01	639	3.932E+01	680	2.619E+01	721	1.040E+01	762	3.283E+00
599	3.607E+01	640	3.936E+01	681	2.581E+01	722	1.011E+01	763	3.253E+00
600	3.595E+01	641	3.942E+01	682	2.536E+01	723	9.917E+00	764	3.137E+00
601	3.598E+01	642	3.923E+01	683	2.472E+01	724	9.387E+00	765	2.981E+00
602	3.607E+01	643	3.905E+01	684	2.431E+01	725	9.407E+00	766	2.929E+00
603	3.584E+01	644	3.907E+01	685	2.386E+01	726	9.090E+00	767	2.866E+00
604	3.607E+01	645	3.891E+01	686	2.329E+01	727	8.830E+00	768	2.807E+00
605	3.586E+01	646	3.884E+01	687	2.293E+01	728	8.579E+00	769	2.721E+00
606	3.591E+01	647	3.858E+01	688	2.246E+01	729	8.398E+00	770	2.640E+00
607	3.586E+01	648	3.837E+01	689	2.211E+01	730	8.143E+00	771	2.570E+00
608	3.626E+01	649	3.837E+01	690	2.151E+01	731	7.993E+00	772	2.446E+00
609	3.606E+01	650	3.810E+01	691	2.116E+01	732	7.776E+00	773	2.396E+00
610	3.619E+01	651	3.783E+01	692	2.061E+01	733	7.523E+00	774	2.305E+00
611	3.628E+01	652	3.766E+01	693	2.028E+01	734	7.275E+00	775	2.235E+00
612	3.623E+01	653	3.738E+01	694	1.989E+01	735	7.104E+00	776	2.238E+00
613	3.634E+01	654	3.701E+01	695	1.952E+01	736	6.956E+00	777	2.209E+00
614	3.643E+01	655	3.678E+01	696	1.900E+01	737	6.762E+00	778	2.102E+00
615	3.669E+01	656	3.637E+01	697	1.862E+01	738	6.527E+00	779	2.032E+00
616	3.657E+01	657	3.609E+01	698	1.828E+01	739	6.306E+00	780	1.910E+00
617	3.658E+01	658	3.569E+01	699	1.787E+01	740	6.135E+00		
618	3.693E+01	659	3.518E+01	700	1.733E+01	741	5.961E+00		
619	3.697E+01	660	3.497E+01	701	1.691E+01	742	5.914E+00		
620	3.727E+01	661	3.448E+01	702	1.660E+01	743	5.741E+00		
621	3.738E+01	662	3.419E+01	703	1.633E+01	744	5.606E+00		
622	3.764E+01	663	3.396E+01	704	1.590E+01	745	5.356E+00		
623	3.777E+01	664	3.330E+01	705	1.553E+01	746	5.208E+00		
624	3.788E+01	665	3.296E+01	706	1.515E+01	747	5.011E+00		
625	3.800E+01	666	3.270E+01	707	1.479E+01	748	4.941E+00		

CIE 1931 x y Chromaticity Diagram



7-Step Chromaticity Quadrangles



[Goniophotometer System]

Test orientation: **Downward**

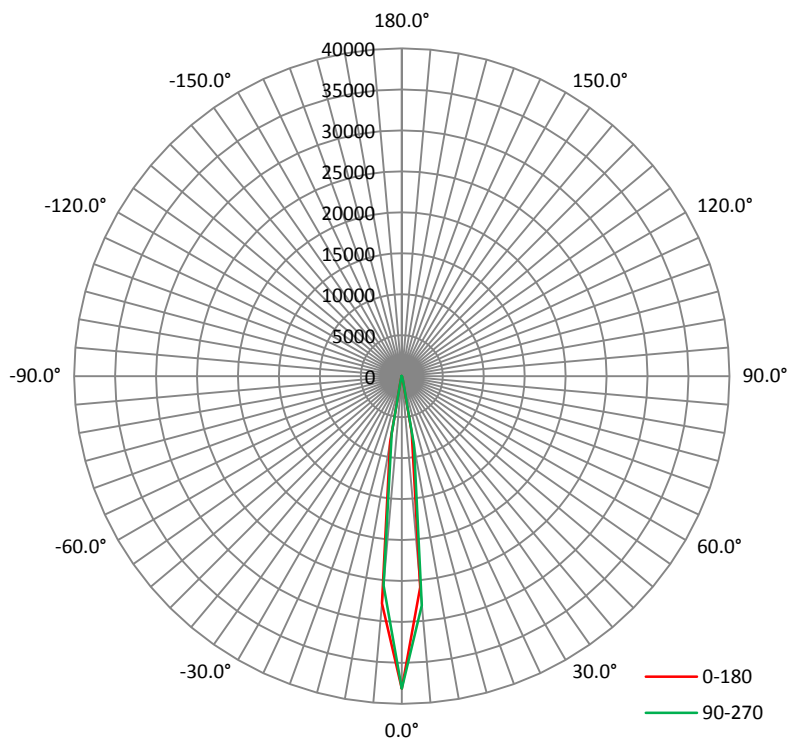
Test CCT: **5500K**

Beam Angle: **15°**

Photometric Measurement

Luminous Flux (lm)	I_{max} (cd)	S/MH (C0/180)	S/MH (C90/270)
2430.83	38147	0.23	0.24

Luminous Intensity Distribution



	C0/180	C45/225	C90/270	C135/315	AVG.
Beam Angle (50% I_{max}):	13.7	13.9	13.8	14.0	13.9
Field Angle (10% I_{max}):	23.5	23.5	23.6	23.8	23.6

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°	38147	38147	38147	38147	38147	38147	38147	38147
1°	37893	37707	37332	37431	37417	37470	37586	37758
2°	36737	36289	35825	35655	35597	35766	36055	36393
3°	34612	33953	33352	32909	32849	33115	33573	34024
4°	31547	30778	29775	29491	29382	29822	30383	30868
5°	27854	27161	26212	25671	25625	26178	26832	27271
6°	23773	23146	22352	21673	21470	22225	22956	23380
7°	19556	18960	18106	17560	17353	18108	18950	19299
8°	15311	14697	14094	13618	13453	14215	14968	15222
9°	11415	10889	10496	10141	10068	10575	11301	11425
10°	8188	7643	7306	7054	7095	7464	7982	8101
11°	6085	5644	5365	5175	5191	5473	5876	6007
12°	3985	3649	3427	3295	3290	3482	3773	3917
13°	1885	1655	1489	1416	1390	1492	1670	1827
14°	985	871	779	760	712	751	815	942
15°	562	660	598	585	448	578	625	712
16°	418	460	427	419	358	416	448	495
17°	281	260	257	253	273	254	272	279
18°	221	201	195	193	188	197	213	215
19°	179	159	154	150	148	156	170	169
20°	149	130	123	120	119	128	138	137
21°	126	108	101	98	99	105	114	113
22°	107	91	84	82	83	89	96	94
23°	92	78	72	71	71	76	82	80
24°	80	68	63	63	63	66	71	70
25°	69	61	57	56	56	59	63	63
26°	62	54	50	49	50	53	57	56
27°	54	47	45	44	45	48	50	49
28°	47	43	41	40	40	42	44	44
29°	42	39	37	37	37	38	40	40
30°	38	35	34	34	34	35	36	36
31°	35	32	32	31	31	32	33	33
32°	32	30	30	29	29	30	31	30
33°	30	28	28	28	28	28	29	28
34°	29	27	27	26	26	27	27	27
35°	27	25	26	25	25	26	26	26
36°	26	25	25	25	25	25	25	25
37°	25	24	24	24	24	24	24	24
38°	25	23	24	23	23	23	24	23
39°	24	22	23	23	23	23	23	23
40°	23	22	23	23	23	22	22	22
41°	23	22	23	22	22	22	22	22
42°	22	21	22	22	22	22	22	21
43°	22	21	22	21	21	21	21	21
44°	21	20	21	21	21	21	21	21
45°	21	20	21	21	21	21	21	20
46°	21	20	21	20	20	20	20	20
47°	20	19	20	20	20	20	20	20
48°	20	19	20	20	20	20	20	20

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°	19	19	19	19	19	19	19	19
50°	19	18	19	19	19	19	19	19
51°	19	18	19	18	18	19	19	18
52°	18	17	18	18	18	18	18	18
53°	18	17	18	18	18	18	18	18
54°	17	17	17	17	17	18	18	17
55°	17	16	17	17	17	17	17	17
56°	16	16	16	16	17	17	17	17
57°	16	15	16	16	17	17	17	17
58°	22	22	22	26	27	32	31	31
59°	25	38	36	36	33	38	35	33
60°	15	20	24	26	24	25	25	20
61°	12	14	19	20	19	19	19	15
62°	14	15	18	19	18	17	17	13
63°	16	26	23	25	27	25	24	21
64°	12	22	24	21	21	21	20	19
65°	8	13	15	15	15	15	15	14
66°	7	9	11	11	11	12	12	10
67°	6	7	9	9	9	10	10	8
68°	6	6	8	8	8	9	9	7
69°	5	5	6	7	7	8	8	6
70°	5	4	6	6	6	7	7	6
71°	4	4	5	5	5	6	6	5
72°	3	3	4	4	4	5	5	5
73°	2	3	3	3	4	4	4	4
74°	2	2	2	3	3	4	4	3
75°	1	1	2	2	3	3	3	3
76°	1	1	2	2	2	3	3	2
77°	1	1	2	2	2	3	3	2
78°	1	1	1	1	2	3	3	1
79°	0	0	1	1	1	2	2	1
80°	0	0	0	1	1	2	1	0
81°	0	0	0	0	0	1	0	0
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

$\begin{matrix} \text{C} \\ \backslash \\ \text{Y} \end{matrix}$	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°	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	0	0	0	0
134°	0	0	0	0	0	0	0	0
135°	0	0	0	0	0	0	0	0
136°	0	0	0	0	0	0	0	0
137°	0	0	0	0	0	0	0	0
138°	1	1	1	1	1	1	1	1
139°	1	1	1	1	1	1	1	1
140°	1	1	2	2	2	2	2	1
141°	2	2	2	2	2	2	2	2
142°	3	2	3	3	3	3	3	2
143°	3	3	4	4	4	4	3	3
144°	4	3	4	4	4	4	4	3
145°	4	4	5	5	5	5	5	4
146°	4	4	6	6	6	6	6	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°	5	5	6	6	6	6	6	5
148°	5	5	7	7	7	7	7	5
149°	5	6	7	8	8	8	7	5
150°	5	6	8	8	8	8	8	6
151°	6	7	8	9	9	9	8	6
152°	6	7	9	9	9	9	8	7
153°	7	7	9	10	10	10	9	7
154°	7	8	9	10	10	10	9	8
155°	7	8	9	10	10	10	9	8
156°	7	8	10	10	11	10	9	8
157°	8	8	10	10	11	10	10	8
158°	8	8	10	10	11	10	10	9
159°	8	8	10	10	10	10	10	9
160°	8	8	10	10	10	10	10	9
161°	8	8	10	10	10	10	10	9
162°	8	8	9	10	9	10	10	8
163°	8	8	9	9	9	9	9	8
164°	8	8	9	9	9	9	9	8
165°	7	8	8	9	8	9	9	8
166°	7	7	8	8	8	8	8	8
167°	7	7	7	7	7	8	8	7
168°	6	6	7	7	7	7	7	7
169°	6	6	6	6	6	6	7	6
170°	5	5	5	6	5	6	6	6
171°	5	5	5	5	5	5	5	5
172°	5	4	4	4	4	4	5	5
173°	4	4	4	4	4	4	4	4
174°	3	3	3	3	3	3	4	4
175°	3	3	3	3	3	3	3	3
176°	2	2	2	2	2	2	3	3
177°	2	2	2	2	2	2	2	2
178°	1	1	1	1	1	1	2	2
179°	1	1	1	1	1	1	1	1
180°	1	1	1	1	1	1	1	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°
0°	38147	38147	38147	38147	38147	38147	38147	38147
1°	37531	37713	37733	37982	38026	37991	37859	37690
2°	35827	36219	36426	36865	36980	36886	36647	36317
3°	33123	33737	34371	34747	34899	34736	34420	33927
4°	29688	30437	31124	31741	31836	31677	31238	30604
5°	25858	26718	27521	28094	28090	27975	27522	26766
6°	21810	22716	23727	24151	24088	24007	23461	22602
7°	17614	18631	19687	20017	19862	19840	19307	18423
8°	13809	14967	15879	16137	16074	16067	15622	14798
9°	10012	11302	12071	12256	12286	12294	11937	11173
10°	6985	7657	8285	8400	8517	8541	8271	7567
11°	4490	4931	5519	5654	5800	5780	5579	5002
12°	3247	2892	3339	3502	3667	3595	3455	3035
13°	2005	1882	2411	2530	2636	2600	2503	2206
14°	766	874	1483	1558	1606	1604	1551	1376
15°	469	528	568	600	590	620	610	556
16°	332	363	392	391	386	408	412	386
17°	251	268	288	284	284	303	309	290
18°	194	205	221	218	222	239	243	228
19°	158	171	183	182	188	192	197	186
20°	123	138	146	146	154	164	169	160
21°	102	105	110	110	120	137	142	134
22°	86	88	92	92	102	109	114	108
23°	74	75	78	78	88	93	98	92
24°	65	66	67	68	77	80	85	80
25°	58	58	60	60	67	70	75	71
26°	52	52	53	54	59	62	66	63
27°	46	47	48	48	52	56	59	56
28°	42	43	44	44	47	50	53	50
29°	38	39	40	40	42	45	48	45
30°	35	36	37	37	38	41	43	41
31°	32	33	34	34	35	37	39	37
32°	30	31	32	31	33	34	36	34
33°	28	29	30	29	31	32	34	32
34°	27	27	28	28	29	30	32	30
35°	26	26	27	26	28	29	30	29
36°	25	25	26	25	27	28	29	28
37°	24	25	25	25	26	27	28	27
38°	23	24	25	24	25	26	27	26
39°	23	23	24	23	25	25	26	25
40°	22	23	24	23	24	25	25	24
41°	22	22	23	23	24	24	24	24
42°	22	22	23	22	23	24	24	23
43°	21	22	22	22	23	23	23	23
44°	21	21	22	21	22	23	23	22
45°	21	21	22	21	22	22	22	22
46°	20	21	21	21	22	22	22	21
47°	20	20	21	20	21	21	21	21
48°	20	20	21	20	21	21	21	21

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°	19	20	20	20	20	20	20	20
50°	19	19	20	19	20	20	20	20
51°	19	19	19	19	19	20	19	19
52°	18	18	19	18	19	19	19	19
53°	18	18	18	18	19	19	18	18
54°	17	17	18	18	18	18	18	18
55°	17	17	17	17	18	18	17	17
56°	16	17	17	17	17	17	17	17
57°	18	18	18	17	18	18	18	17
58°	34	36	32	30	32	33	33	29
59°	21	35	37	37	36	40	37	28
60°	14	21	28	26	26	26	25	17
61°	12	15	21	19	19	21	20	14
62°	13	15	18	20	20	20	19	17
63°	11	20	27	26	21	21	23	20
64°	10	17	22	23	21	21	21	16
65°	8	13	18	18	17	17	17	13
66°	7	10	14	14	13	13	13	9
67°	7	7	10	9	9	9	9	7
68°	6	6	8	8	8	8	8	6
69°	6	5	7	7	7	7	7	5
70°	5	5	6	6	6	6	6	5
71°	5	4	5	5	5	5	5	4
72°	4	4	4	4	4	4	4	3
73°	3	3	3	3	3	3	3	3
74°	2	2	3	3	3	3	3	2
75°	2	2	2	2	2	2	2	1
76°	1	1	2	2	2	2	2	1
77°	1	1	2	2	2	2	2	1
78°	1	1	1	2	1	2	1	1
79°	0	0	1	1	1	1	1	0
80°	0	0	1	1	1	1	0	0
81°	0	0	0	0	0	0	0	0
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.)

$\begin{matrix} \diagup C \\ \diagdown \end{matrix}$ Y	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	0	0	0	0
134°	0	0	0	0	0	0	0	0
135°	0	0	0	0	0	0	0	0
136°	0	0	0	0	0	0	0	0
137°	0	0	0	0	0	0	0	0
138°	0	0	0	0	0	0	0	0
139°	0	0	0	0	0	0	0	0
140°	0	0	0	0	0	0	0	0
141°	0	0	0	0	0	0	0	0
142°	0	0	0	0	0	0	0	0
143°	1	0	1	1	1	1	1	0
144°	1	0	1	1	1	1	1	1
145°	1	1	1	1	1	1	1	1
146°	1	1	1	1	1	1	1	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	1	1	1	1	1	1
148°	1	1	1	2	2	2	2	1
149°	1	1	2	2	2	2	2	1
150°	1	1	2	2	2	2	2	2
151°	1	1	2	2	2	2	2	2
152°	1	1	2	2	2	2	2	2
153°	1	1	2	2	3	3	2	2
154°	1	1	2	3	3	3	3	2
155°	1	1	2	3	3	3	3	2
156°	1	1	2	2	3	3	3	2
157°	1	1	2	2	2	2	2	2
158°	1	1	2	2	2	2	2	2
159°	1	1	2	2	2	2	2	2
160°	1	1	1	1	2	2	2	2
161°	1	1	1	1	1	1	1	1
162°	1	1	1	1	1	1	1	1
163°	1	1	1	1	1	1	1	1
164°	1	1	1	1	1	1	1	1
165°	1	1	1	1	1	1	1	1
166°	1	1	1	1	1	1	1	1
167°	1	1	1	1	1	1	1	1
168°	1	1	1	1	1	1	1	1
169°	1	1	1	1	1	1	1	1
170°	1	1	1	1	1	1	1	1
171°	1	1	1	1	1	1	1	1
172°	1	1	1	0	1	1	1	1
173°	1	1	0	0	0	0	0	0
174°	0	0	0	0	0	0	0	0
175°	0	0	0	0	0	0	0	0
176°	0	0	0	0	0	0	0	0
177°	0	0	0	0	0	0	0	1
178°	0	0	0	0	0	1	1	1
179°	1	1	1	0	1	1	1	1
180°	1	1	1	1	1	1	1	1

Zonal Lumen Density Measurement

Deg	Flux (lm)	%
0-5	774.2	31.85
5-10	1147.9	47.22
10-15	357.4	14.70
15-20	45.5	1.87
20-25	19.1	0.79
25-30	12.1	0.50
30-35	9.1	0.37
35-40	8.2	0.34
40-45	8.2	0.34
45-50	8.2	0.33
50-55	7.9	0.33
55-60	10.9	0.44
60-65	9.2	0.38
65-70	4.4	0.18
70-75	1.9	0.08
75-80	0.8	0.03
80-85	0.1	0.01
85-90	0.0	0.00
90-95	0.0	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	0.0	0.00
125-130	0.0	0.00
130-135	0.0	0.00
135-140	0.1	0.01
140-145	0.6	0.02
145-150	1.1	0.05
150-155	1.3	0.05
155-160	1.2	0.05
160-165	0.8	0.03
165-170	0.5	0.02
170-175	0.2	0.01
175-180	0.0	0.00

Deg	Flux (lm)	%
0-5	774.2	31.85
0-10	1922.0	79.07
0-15	2279.4	93.77
0-20	2325.0	95.64
0-25	2344.1	96.43
0-30	2356.2	96.93
0-35	2365.2	97.30
0-40	2373.5	97.64
0-45	2381.6	97.98
0-50	2389.8	98.31
0-55	2397.7	98.64
0-60	2408.5	99.08
0-65	2417.8	99.46
0-70	2422.1	99.64
0-75	2424.1	99.72
0-80	2424.8	99.75
0-85	2424.9	99.76
0-90	2425.0	99.76
0-95	2425.0	99.76
0-100	2425.0	99.76
0-105	2425.0	99.76
0-110	2425.0	99.76
0-115	2425.0	99.76
0-120	2425.0	99.76
0-125	2425.0	99.76
0-130	2425.1	99.76
0-135	2425.1	99.76
0-140	2425.2	99.77
0-145	2425.8	99.79
0-150	2426.9	99.84
0-155	2428.2	99.89
0-160	2429.3	99.94
0-165	2430.2	99.97
0-170	2430.6	99.99
0-175	2430.8	100.00
0-180	2430.8	100.00

Test orientation: **Downward**

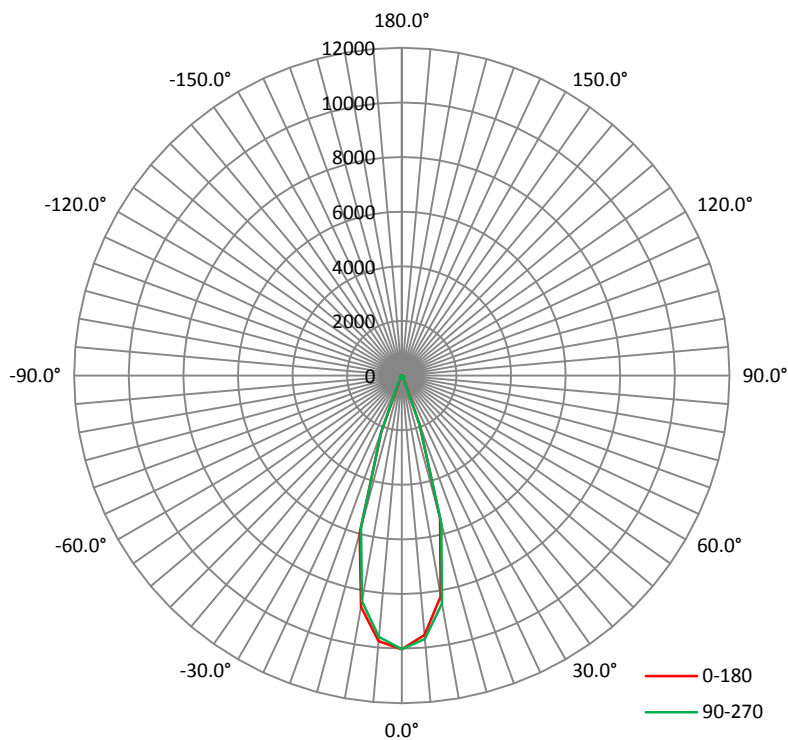
Test CCT: **5500K**

Beam Angle: **35°**

Photometric Measurement

Luminous Flux (lm)	I _{max} (cd)	S/MH (C0/180)	S/MH (C90/270)
2679.47	10039	0.47	0.47

Luminous Intensity Distribution



	C0/180	C45/225	C90/270	C135/315	AVG.
Beam Angle (50% I _{max}):	31.9	32.4	31.9	32.2	32.1
Field Angle (10% I _{max}):	43.5	43.7	43.6	43.9	43.7

Luminous Intensity (cd) Distribution Data

$\begin{matrix} \backslash & C \\ \gamma & \end{matrix}$	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
0°	10023	10023	10023	10023	10023	10023	10023	10023
1°	10039	10033	10007	9992	9978	9971	9967	9970
2°	10016	10012	9964	9937	9910	9901	9891	9889
3°	9970	9965	9903	9859	9830	9822	9814	9805
4°	9887	9875	9811	9755	9735	9725	9718	9702
5°	9766	9746	9677	9623	9608	9604	9601	9573
6°	9606	9569	9511	9460	9453	9455	9453	9419
7°	9414	9393	9326	9277	9267	9286	9291	9248
8°	9192	9196	9110	9052	9037	9075	9073	9035
9°	8923	8923	8843	8783	8753	8793	8798	8765
10°	8598	8591	8515	8445	8394	8447	8457	8423
11°	8202	8195	8126	8041	7975	8016	8048	8013
12°	7745	7726	7665	7576	7488	7548	7591	7551
13°	7214	7215	7162	7071	6961	7042	7070	7028
14°	6621	6635	6597	6517	6389	6467	6505	6451
15°	5964	5995	5985	5899	5772	5848	5886	5819
16°	5264	5318	5320	5228	5122	5187	5231	5147
17°	4513	4586	4597	4519	4429	4482	4538	4454
18°	3723	3796	3831	3772	3691	3735	3805	3710
19°	2917	2988	3042	3007	2943	2993	3059	2962
20°	2172	2218	2283	2281	2229	2287	2338	2237
21°	1509	1561	1594	1603	1590	1635	1672	1594
22°	981	1026	1044	1060	1054	1101	1123	1053
23°	580	624	644	649	654	679	688	650
24°	386	458	477	483	482	496	503	481
25°	198	298	317	322	315	320	325	316
26°	134	139	156	162	149	144	147	151
27°	103	102	116	120	110	108	109	113
28°	83	80	91	93	86	86	87	90
29°	70	66	73	74	70	70	72	74
30°	62	57	62	63	60	61	63	64
31°	53	49	52	53	51	52	53	55
32°	45	41	42	42	41	43	44	45
33°	40	37	37	37	36	38	39	40
34°	36	33	33	33	33	34	35	36
35°	33	30	30	30	30	31	32	32
36°	31	28	27	27	27	28	29	30
37°	28	26	25	25	25	26	27	27
38°	26	24	23	23	23	24	25	25
39°	25	23	22	22	22	23	23	24
40°	23	21	21	21	21	22	22	23
41°	22	20	20	20	20	20	21	21
42°	21	19	19	19	19	20	20	20
43°	20	19	19	19	18	19	19	20
44°	20	18	18	18	18	18	19	19
45°	19	18	17	17	17	17	18	18
46°	19	17	17	17	17	17	17	18
47°	18	17	17	16	16	16	17	17
48°	18	16	16	16	16	16	17	17

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°	17	16	16	16	16	16	16	17
50°	17	16	16	15	15	16	16	16
51°	17	16	15	15	15	15	16	16
52°	17	16	15	15	15	15	16	16
53°	17	16	15	15	15	15	15	16
54°	17	16	15	15	15	15	15	16
55°	16	16	15	14	14	15	15	16
56°	16	15	15	14	14	15	15	16
57°	16	15	14	14	14	14	15	16
58°	20	16	15	14	16	19	24	29
59°	41	41	36	37	40	45	51	55
60°	29	76	92	90	90	97	101	79
61°	12	69	112	116	110	118	119	65
62°	13	45	85	90	86	84	82	38
63°	17	34	53	56	51	52	51	28
64°	12	44	57	54	52	52	48	39
65°	7	50	66	61	55	58	52	44
66°	6	33	60	57	48	54	52	28
67°	6	12	43	42	36	42	40	14
68°	5	9	28	27	24	26	27	10
69°	5	6	15	16	14	14	16	7
70°	4	4	8	8	8	8	9	4
71°	4	3	5	6	6	6	7	4
72°	4	3	4	4	4	5	5	3
73°	3	3	3	2	3	3	3	3
74°	3	2	2	2	2	3	3	3
75°	2	2	2	2	2	3	3	2
76°	2	2	2	2	2	3	3	2
77°	2	1	2	2	2	2	2	1
78°	2	1	1	2	1	2	2	1
79°	2	1	1	1	1	2	1	1
80°	1	1	1	1	1	1	1	1
81°	1	1	0	0	0	1	1	1
82°	1	1	0	0	0	0	0	1
83°	1	1	0	0	0	0	0	1
84°	1	1	0	0	0	0	0	1
85°	1	1	0	0	0	0	0	1
86°	1	1	0	0	0	0	0	1
87°	1	1	0	0	0	0	0	1
88°	1	1	0	0	0	0	0	1
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

$\gamma \backslash C$	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°	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°	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	2	2	2	2	2	1
139°	2	2	2	2	2	2	2	2
140°	2	2	2	2	2	2	2	2
141°	2	2	3	3	3	3	3	2
142°	3	3	3	3	3	3	3	3
143°	3	3	3	4	4	4	3	3
144°	3	3	4	4	4	4	4	3
145°	3	4	4	4	5	4	4	4
146°	4	4	5	5	5	5	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	5	5	5	5	5	4
148°	4	5	5	6	6	6	5	4
149°	4	5	6	6	6	6	5	5
150°	4	5	6	6	6	6	6	5
151°	5	6	6	7	7	7	6	5
152°	5	6	7	7	7	7	7	6
153°	6	6	7	7	8	7	7	6
154°	6	7	8	8	8	8	7	6
155°	6	7	8	8	8	8	8	7
156°	6	7	8	8	8	8	8	7
157°	6	7	8	9	9	9	8	7
158°	7	8	8	9	9	9	8	8
159°	7	8	8	9	9	9	8	8
160°	7	8	8	9	9	9	8	8
161°	7	8	8	9	9	9	8	8
162°	7	8	8	9	9	9	8	7
163°	7	8	8	9	9	9	8	7
164°	7	7	8	9	9	8	8	7
165°	7	7	8	8	8	8	8	7
166°	7	7	8	8	8	8	8	7
167°	6	7	7	8	8	8	7	7
168°	6	6	7	7	8	7	7	7
169°	6	6	7	7	7	7	7	6
170°	6	6	6	7	7	6	6	6
171°	5	6	6	6	6	6	6	6
172°	5	5	6	6	6	6	6	5
173°	5	5	5	5	5	5	5	5
174°	5	5	5	5	5	5	5	5
175°	4	5	5	5	5	5	5	5
176°	4	4	4	4	4	4	4	4
177°	4	4	4	4	4	4	4	4
178°	4	4	3	3	4	4	4	4
179°	3	3	3	3	3	3	3	3
180°	3	3	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°
0°	10023	10023	10023	10023	10023	10023	10023	10023
1°	9962	9966	9985	9998	10013	10021	10023	10021
2°	9880	9894	9922	9951	9977	9992	9992	9990
3°	9790	9830	9849	9887	9917	9931	9934	9923
4°	9676	9673	9753	9792	9822	9815	9817	9808
5°	9534	9574	9615	9661	9684	9664	9655	9654
6°	9362	9395	9451	9508	9523	9492	9467	9478
7°	9161	9192	9267	9328	9333	9301	9268	9273
8°	8907	8952	9036	9114	9108	9085	9042	9042
9°	8592	8661	8749	8836	8833	8822	8765	8763
10°	8210	8314	8394	8485	8480	8482	8425	8409
11°	7760	7873	7977	8061	8046	8074	8019	7996
12°	7250	7381	7489	7562	7541	7588	7541	7508
13°	6686	6817	6949	7011	6970	7028	6981	6952
14°	6067	6180	6337	6362	6317	6371	6347	6329
15°	5406	5489	5655	5666	5599	5653	5656	5628
16°	4706	4781	4961	4908	4852	4882	4904	4883
17°	3982	4048	4170	4122	4061	4085	4123	4107
18°	3218	3267	3405	3311	3260	3266	3299	3285
19°	2466	2506	2588	2523	2460	2460	2512	2509
20°	1904	1927	1998	1946	1891	1897	1943	1934
21°	1342	1349	1408	1369	1322	1334	1373	1359
22°	784	775	823	795	756	775	808	788
23°	469	468	486	476	445	462	475	467
24°	287	290	296	277	256	267	279	276
25°	225	229	233	215	183	209	220	218
26°	163	168	170	153	110	152	161	159
27°	101	108	107	92	88	94	102	102
28°	81	85	85	74	72	79	86	85
29°	67	69	69	61	60	67	74	73
30°	56	58	57	51	52	58	64	63
31°	48	49	48	44	45	51	56	55
32°	42	43	42	38	40	45	50	49
33°	37	38	37	34	36	41	45	44
34°	34	34	33	31	33	37	41	40
35°	31	31	30	29	30	34	37	36
36°	28	29	28	27	28	31	34	33
37°	26	27	26	25	26	29	32	31
38°	25	25	24	23	24	27	29	28
39°	23	23	23	22	23	25	27	27
40°	22	22	22	21	22	24	26	25
41°	21	21	21	20	21	23	24	24
42°	20	20	20	19	20	22	23	23
43°	19	19	19	18	19	21	22	22
44°	19	19	18	18	18	20	21	21
45°	18	18	18	17	18	19	20	20
46°	18	18	17	17	17	19	20	20
47°	17	17	17	16	17	18	19	19
48°	17	17	16	16	16	18	19	19

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°	17	16	16	16	16	17	18	18
50°	17	16	16	15	16	17	18	18
51°	16	16	16	15	16	17	18	18
52°	16	16	15	15	15	16	17	18
53°	16	16	15	15	15	16	17	18
54°	16	15	15	15	15	16	16	18
55°	16	15	15	15	15	15	16	17
56°	16	15	15	15	15	15	16	17
57°	17	18	18	18	19	18	19	18
58°	41	43	43	44	45	48	46	42
59°	53	78	84	94	97	100	95	72
60°	31	84	121	118	121	111	113	67
61°	11	58	97	94	87	84	87	48
62°	13	35	58	59	55	58	58	32
63°	25	39	51	52	52	51	50	35
64°	19	48	54	59	61	55	51	44
65°	12	49	54	58	58	53	47	34
66°	6	34	45	47	45	40	39	24
67°	5	19	32	31	29	29	28	14
68°	5	4	23	22	21	21	21	4
69°	4	4	15	14	13	14	14	4
70°	4	3	6	6	6	6	6	4
71°	4	3	4	4	3	4	4	3
72°	4	3	3	2	2	2	3	3
73°	3	3	2	2	2	2	2	3
74°	3	2	2	2	2	2	2	2
75°	2	2	2	2	2	2	2	2
76°	2	1	2	2	2	2	2	1
77°	2	1	2	2	1	1	1	1
78°	1	1	1	1	1	1	1	1
79°	1	1	1	1	0	1	1	1
80°	1	1	1	0	0	0	1	1
81°	1	1	0	0	0	0	0	1
82°	1	1	0	0	0	0	0	1
83°	1	1	0	0	0	0	0	1
84°	1	1	0	0	0	0	0	1
85°	1	1	0	0	0	0	0	1
86°	1	1	0	0	0	0	0	1
87°	1	1	0	0	0	0	0	1
88°	1	1	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	0	0	0	0
134°	0	0	0	0	0	0	0	0
135°	0	0	0	0	0	0	0	0
136°	0	0	0	0	0	0	0	0
137°	0	0	0	0	0	0	0	0
138°	0	0	0	0	0	0	0	0
139°	0	0	0	1	1	1	0	0
140°	1	0	1	1	1	1	1	0
141°	1	0	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	1	1	1	1	1
146°	1	1	1	1	1	1	1	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	1	1	1	1	1	1
148°	1	1	1	1	2	1	1	1
149°	1	1	1	2	2	2	2	1
150°	1	1	1	2	2	2	2	1
151°	1	1	2	2	2	2	2	2
152°	1	1	2	2	2	2	2	2
153°	1	1	2	2	2	2	2	2
154°	1	1	2	2	2	2	2	2
155°	1	1	2	2	2	2	2	2
156°	1	1	2	2	2	2	2	2
157°	1	1	2	2	2	2	2	2
158°	2	2	2	2	2	2	2	2
159°	2	2	2	2	2	2	2	2
160°	2	2	2	2	2	2	2	2
161°	2	2	2	2	2	2	2	2
162°	2	2	2	2	2	2	2	2
163°	2	2	2	2	2	2	2	2
164°	2	2	2	2	2	2	2	2
165°	2	2	2	2	2	2	2	2
166°	2	2	2	2	2	2	2	2
167°	2	2	2	2	2	2	2	2
168°	2	2	1	2	2	2	2	2
169°	2	2	1	2	2	2	2	2
170°	2	2	1	2	2	2	2	2
171°	2	1	1	2	2	2	2	2
172°	2	2	1	1	2	2	2	2
173°	2	2	1	1	2	2	2	2
174°	2	2	1	1	2	2	2	2
175°	2	2	2	2	2	2	2	2
176°	2	2	2	2	2	2	2	2
177°	2	2	2	2	2	2	2	2
178°	2	2	2	2	2	2	2	3
179°	3	3	3	2	2	3	3	3
180°	3	3	3	3	3	3	3	3

Zonal Lumen Density Measurement

Deg	Flux (lm)	%
0-5	234.9	8.77
5-10	648.9	24.21
10-15	846.1	31.58
15-20	630.2	23.52
20-25	182.5	6.81
25-30	28.2	1.05
30-35	12.5	0.47
35-40	8.7	0.33
40-45	7.4	0.27
45-50	6.9	0.26
50-55	6.9	0.26
55-60	16.7	0.62
60-65	28.6	1.07
65-70	12.1	0.45
70-75	1.8	0.06
75-80	0.8	0.03
80-85	0.3	0.01
85-90	0.2	0.01
90-95	0.0	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	0.0	0.00
125-130	0.0	0.00
130-135	0.1	0.01
135-140	0.3	0.01
140-145	0.7	0.03
145-150	0.9	0.03
150-155	1.0	0.04
155-160	1.0	0.04
160-165	0.8	0.03
165-170	0.5	0.02
170-175	0.3	0.01
175-180	0.1	0.00

Deg	Flux (lm)	%
0-5	234.9	8.77
0-10	883.8	32.98
0-15	1729.9	64.56
0-20	2360.1	88.08
0-25	2542.6	94.89
0-30	2570.8	95.94
0-35	2583.3	96.41
0-40	2592.0	96.74
0-45	2599.4	97.01
0-50	2606.3	97.27
0-55	2613.2	97.53
0-60	2629.9	98.15
0-65	2658.5	99.22
0-70	2670.6	99.67
0-75	2672.3	99.73
0-80	2673.1	99.76
0-85	2673.4	99.77
0-90	2673.6	99.78
0-95	2673.6	99.78
0-100	2673.6	99.78
0-105	2673.6	99.78
0-110	2673.6	99.78
0-115	2673.7	99.78
0-120	2673.7	99.78
0-125	2673.7	99.78
0-130	2673.7	99.78
0-135	2673.8	99.79
0-140	2674.2	99.80
0-145	2674.8	99.83
0-150	2675.7	99.86
0-155	2676.8	99.90
0-160	2677.8	99.94
0-165	2678.6	99.97
0-170	2679.1	99.99
0-175	2679.4	100.00
0-180	2679.5	100.00

Test orientation: **Downward**

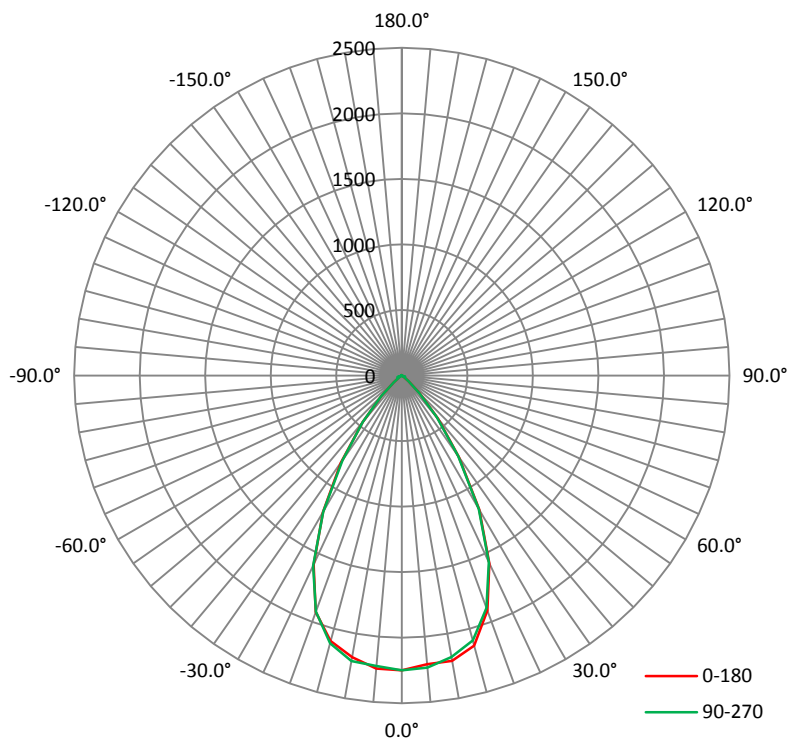
Test CCT: **3200K**

Beam Angle: **60°**

Photometric Measurement

Luminous Flux (lm)	I _{max} (cd)	S/MH (C0/180)	S/MH (C90/270)
2232.86	2260	0.91	0.91

Luminous Intensity Distribution



	C0/180	C45/225	C90/270	C135/315	AVG.
Beam Angle (50% I _{max}):	61.6	61.9	61.4	62.2	61.8
Field Angle (10% I _{max}):	89.0	89.3	89.0	89.6	89.2

Luminous Intensity (cd) Distribution Data

$\begin{matrix} \diagup C \\ \diagdown \end{matrix}$ Y	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
0°	2249	2249	2249	2249	2249	2249	2249	2249
1°	2247	2253	2252	2253	2251	2249	2245	2248
2°	2253	2252	2253	2252	2245	2239	2235	2234
3°	2247	2256	2255	2249	2236	2230	2219	2223
4°	2246	2256	2251	2242	2231	2220	2213	2211
5°	2243	2254	2247	2231	2224	2212	2207	2202
6°	2242	2248	2232	2221	2223	2212	2204	2202
7°	2230	2241	2225	2216	2225	2212	2203	2207
8°	2217	2231	2222	2205	2220	2213	2202	2211
9°	2203	2222	2219	2195	2219	2210	2200	2217
10°	2182	2207	2210	2181	2212	2199	2197	2213
11°	2162	2187	2198	2172	2207	2182	2180	2202
12°	2151	2177	2180	2165	2194	2162	2168	2186
13°	2124	2159	2159	2155	2177	2146	2157	2167
14°	2110	2138	2128	2147	2148	2131	2145	2146
15°	2098	2113	2103	2126	2115	2100	2126	2117
16°	2086	2085	2072	2098	2086	2065	2105	2087
17°	2064	2059	2041	2067	2057	2029	2078	2054
18°	2027	2015	2010	2044	2021	1995	2034	2022
19°	1972	1967	1970	2011	1974	1962	1987	1977
20°	1919	1909	1921	1960	1916	1914	1930	1921
21°	1869	1847	1874	1901	1859	1862	1866	1859
22°	1809	1786	1818	1835	1794	1801	1797	1794
23°	1741	1723	1747	1750	1728	1734	1730	1730
24°	1672	1661	1679	1664	1666	1653	1658	1662
25°	1590	1594	1603	1593	1601	1575	1586	1591
26°	1515	1525	1526	1523	1528	1507	1520	1525
27°	1435	1444	1453	1450	1451	1433	1454	1453
28°	1355	1370	1378	1372	1370	1362	1382	1385
29°	1277	1292	1300	1293	1288	1283	1306	1313
30°	1200	1211	1218	1208	1199	1214	1226	1230
31°	1125	1129	1140	1131	1111	1133	1150	1151
32°	1046	1053	1062	1047	1026	1054	1066	1064
33°	967	971	988	968	947	978	992	978
34°	887	894	909	886	868	901	912	890
35°	809	820	830	809	790	821	831	810
36°	734	745	753	735	718	742	755	732
37°	660	670	680	665	649	663	679	660
38°	594	604	614	601	587	598	613	597
39°	529	538	548	537	525	532	547	533
40°	463	473	482	473	463	467	481	470
41°	406	414	424	418	407	415	424	413
42°	353	360	370	367	356	366	372	363
43°	304	313	319	317	307	320	323	314
44°	260	268	273	270	263	276	279	269
45°	220	229	229	226	223	236	238	227
46°	184	193	192	187	186	195	200	188
47°	152	160	159	154	152	160	166	153
48°	124	131	130	125	122	130	136	124

Luminous Intensity (cd) Distribution Data

C Y	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
49°	99	105	106	100	98	105	110	99
50°	80	85	86	80	78	85	88	79
51°	63	67	68	64	62	68	70	62
52°	52	55	57	53	50	56	58	50
53°	42	44	45	42	38	43	46	38
54°	31	32	33	31	30	31	34	30
55°	25	25	26	24	23	24	26	23
56°	20	20	20	18	18	18	20	18
57°	16	16	16	14	14	14	15	14
58°	13	13	12	12	11	11	12	11
59°	11	11	10	9	9	9	9	9
60°	10	10	9	8	8	8	8	8
61°	9	9	8	7	7	7	7	7
62°	8	8	7	7	6	7	7	7
63°	7	7	6	6	6	6	7	7
64°	6	7	6	6	6	6	6	6
65°	5	7	6	6	7	8	13	7
66°	5	7	8	13	15	16	20	7
67°	4	9	17	20	23	24	28	7
68°	3	5	25	27	32	32	41	8
69°	3	3	33	38	39	42	52	5
70°	2	3	37	39	37	47	52	2
71°	2	2	22	25	23	32	32	1
72°	2	2	3	6	4	11	10	1
73°	2	2	2	4	3	7	7	1
74°	2	2	2	1	1	4	4	1
75°	2	2	1	1	1	1	1	1
76°	1	1	1	1	1	1	1	1
77°	1	1	1	1	1	1	1	0
78°	1	1	1	1	1	1	1	0
79°	1	1	1	1	0	1	1	0
80°	1	1	0	0	0	0	0	0
81°	1	1	0	0	0	0	0	0
82°	1	1	0	0	0	0	0	0
83°	1	1	0	0	0	0	0	0
84°	1	1	0	0	0	0	0	0
85°	1	1	0	0	0	0	0	0
86°	1	1	0	0	0	0	0	0
87°	1	1	0	0	0	0	0	0
88°	1	1	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

$\gamma \backslash C$	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°	0	0	0	0	0	0	0	0
129°	0	0	1	1	1	1	1	0
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	2	2	2	2	1	1
142°	1	2	2	2	2	2	2	1
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

$\begin{matrix} C \\ \backslash \\ \gamma \end{matrix}$	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
147°	2	2	2	2	2	2	2	2
148°	2	2	2	2	2	2	2	2
149°	2	2	2	3	3	3	2	2
150°	2	2	3	3	3	3	2	2
151°	2	2	3	3	3	3	3	2
152°	2	3	3	3	3	3	3	2
153°	2	3	3	3	3	3	3	3
154°	3	3	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	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	3
164°	3	3	3	3	4	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°	3	3	3	3	3	3	3	3
177°	3	3	3	3	3	3	3	3
178°	3	3	3	3	3	3	3	3
179°	3	2	2	2	2	2	3	3
180°	2	2	2	2	2	2	3	3

Luminous Intensity (cd) Distribution Data (cont.)

$\begin{matrix} C \\ \backslash \\ \gamma \end{matrix}$	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
0°	2249	2249	2249	2249	2249	2249	2249	2249
1°	2244	2245	2248	2253	2246	2248	2245	2244
2°	2239	2239	2250	2260	2248	2241	2234	2239
3°	2223	2236	2250	2255	2251	2236	2226	2230
4°	2217	2232	2250	2250	2244	2236	2220	2225
5°	2211	2229	2242	2242	2236	2235	2225	2230
6°	2217	2228	2241	2234	2230	2228	2232	2229
7°	2220	2231	2236	2212	2214	2215	2233	2226
8°	2221	2228	2233	2199	2203	2200	2223	2217
9°	2221	2220	2222	2184	2192	2181	2203	2196
10°	2210	2202	2204	2173	2181	2166	2183	2173
11°	2208	2184	2185	2164	2170	2156	2165	2160
12°	2198	2162	2175	2156	2157	2141	2146	2156
13°	2186	2147	2161	2148	2137	2126	2117	2142
14°	2158	2124	2143	2133	2111	2103	2091	2112
15°	2133	2103	2107	2116	2092	2079	2067	2084
16°	2098	2078	2072	2079	2066	2056	2046	2051
17°	2057	2050	2039	2042	2027	2035	2018	2014
18°	2015	2006	1999	1992	1985	1994	1987	1977
19°	1957	1970	1958	1950	1932	1959	1946	1936
20°	1908	1908	1905	1895	1888	1912	1909	1889
21°	1844	1844	1840	1835	1831	1858	1857	1843
22°	1787	1775	1776	1780	1774	1803	1805	1787
23°	1717	1698	1708	1711	1715	1735	1733	1725
24°	1644	1624	1634	1642	1639	1661	1656	1655
25°	1580	1547	1562	1572	1572	1585	1573	1581
26°	1503	1474	1493	1495	1492	1500	1499	1502
27°	1415	1405	1420	1415	1414	1419	1426	1417
28°	1337	1330	1343	1336	1334	1341	1351	1337
29°	1259	1254	1266	1256	1254	1263	1276	1257
30°	1181	1178	1189	1177	1175	1185	1201	1178
31°	1087	1095	1103	1097	1088	1104	1114	1099
32°	1001	1013	1018	1018	1002	1021	1027	1016
33°	916	929	939	933	917	934	944	937
34°	836	844	864	851	831	853	858	854
35°	760	762	785	769	749	774	775	776
36°	689	688	710	691	674	694	696	701
37°	618	615	635	618	603	616	621	625
38°	550	550	567	547	537	543	552	553
39°	489	489	501	483	476	477	488	488
40°	431	432	441	424	415	418	430	429
41°	377	378	382	372	363	364	374	372
42°	325	326	328	322	312	314	324	323
43°	278	279	280	277	267	271	277	277
44°	233	236	235	235	227	231	236	237
45°	194	196	198	196	190	195	199	200
46°	164	166	168	166	161	166	170	171
47°	134	136	139	136	132	136	140	141
48°	104	106	109	106	103	108	111	112

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°
49°	83	85	89	85	83	86	89	90
50°	67	68	71	68	66	69	71	72
51°	53	54	57	55	52	54	56	58
52°	41	43	45	43	41	43	45	46
53°	32	34	36	34	33	34	35	36
54°	25	26	28	27	26	26	28	29
55°	20	20	22	21	21	21	22	23
56°	17	17	19	17	17	17	18	18
57°	13	14	15	14	14	14	14	16
58°	10	10	12	11	11	12	12	13
59°	8	9	9	9	9	10	10	11
60°	7	8	8	8	8	8	9	10
61°	6	7	7	7	7	8	8	9
62°	6	7	6	6	6	7	8	9
63°	5	8	6	6	7	7	7	8
64°	5	9	7	6	8	7	7	8
65°	5	13	10	7	9	7	8	8
66°	3	19	17	14	13	13	13	8
67°	2	13	30	25	21	22	21	7
68°	2	8	44	38	35	33	35	4
69°	2	2	49	41	40	37	39	3
70°	1	2	33	28	27	25	27	2
71°	1	2	17	14	14	13	14	2
72°	1	1	2	2	2	2	2	2
73°	1	1	1	1	1	1	2	2
74°	1	1	1	1	1	1	1	1
75°	1	1	1	1	1	1	1	1
76°	1	1	1	1	1	1	1	1
77°	0	0	1	1	1	1	1	1
78°	0	0	1	1	0	1	1	1
79°	0	0	0	0	0	0	0	1
80°	0	0	0	0	0	0	0	1
81°	0	0	0	0	0	0	0	1
82°	0	0	0	0	0	0	0	1
83°	0	0	0	0	0	0	0	1
84°	0	0	0	0	0	0	0	1
85°	0	0	0	0	0	0	0	1
86°	0	0	0	0	0	0	0	1
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	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	0	0	0	0
134°	0	0	0	0	0	0	0	0
135°	0	0	0	0	0	0	0	0
136°	0	0	0	0	0	0	0	0
137°	0	0	0	0	0	0	0	0
138°	0	0	0	0	0	0	0	0
139°	0	0	0	0	0	0	0	0
140°	0	0	0	0	0	0	0	0
141°	0	0	0	1	1	1	1	0
142°	0	0	1	1	1	1	1	1
143°	1	0	1	1	1	1	1	1
144°	1	1	1	1	1	1	1	1
145°	1	1	1	1	1	1	1	1
146°	1	1	1	1	1	1	1	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	1	1	1	1	1	1
148°	1	1	1	1	1	1	1	1
149°	1	1	1	1	1	1	1	1
150°	1	1	1	1	1	1	1	1
151°	1	1	1	1	1	1	1	1
152°	1	1	1	1	1	1	1	1
153°	1	1	1	1	1	1	1	1
154°	1	1	1	1	1	1	1	1
155°	1	1	1	1	1	1	1	1
156°	1	1	1	1	1	1	1	1
157°	1	1	1	1	1	1	1	1
158°	1	1	1	1	1	1	1	1
159°	1	1	1	1	1	1	1	1
160°	1	1	1	1	1	1	1	1
161°	1	1	1	1	1	1	1	1
162°	1	1	1	1	1	1	1	1
163°	1	1	1	1	1	1	1	1
164°	1	1	1	1	1	1	1	2
165°	1	1	1	1	1	2	2	2
166°	2	2	1	1	1	2	2	2
167°	2	2	1	1	2	2	2	2
168°	2	2	1	1	2	2	2	2
169°	2	2	2	2	2	2	2	2
170°	2	2	2	2	2	2	2	2
171°	2	2	2	2	2	2	2	2
172°	2	2	2	2	2	2	2	2
173°	2	2	2	2	2	2	2	2
174°	2	2	2	2	2	2	2	2
175°	2	2	2	2	2	2	2	2
176°	2	2	2	2	2	2	2	2
177°	2	2	2	2	2	2	2	2
178°	2	2	2	2	2	2	2	2
179°	2	2	2	2	2	2	2	2
180°	2	2	2	2	2	2	2	3

Zonal Lumen Density Measurement

Deg	Flux (lm)	%
0-5	53.5	2.40
5-10	158.4	7.09
10-15	255.4	11.44
15-20	332.4	14.88
20-25	367.1	16.44
25-30	351.1	15.73
30-35	291.3	13.05
35-40	203.6	9.11
40-45	118.9	5.33
45-50	54.7	2.45
50-55	19.5	0.87
55-60	6.4	0.29
60-65	3.5	0.16
65-70	9.6	0.43
70-75	3.4	0.15
75-80	0.4	0.01
80-85	0.2	0.01
85-90	0.1	0.01
90-95	0.0	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	0.2	0.01
135-140	0.3	0.01
140-145	0.4	0.02
145-150	0.4	0.02
150-155	0.5	0.02
155-160	0.5	0.02
160-165	0.4	0.02
165-170	0.3	0.01
170-175	0.2	0.01
175-180	0.1	0.00

Deg	Flux (lm)	%
0-5	53.5	2.40
0-10	211.9	9.49
0-15	467.3	20.93
0-20	799.7	35.81
0-25	1166.8	52.25
0-30	1517.9	67.98
0-35	1809.2	81.03
0-40	2012.8	90.14
0-45	2131.7	95.47
0-50	2186.4	97.92
0-55	2205.9	98.79
0-60	2212.3	99.08
0-65	2215.8	99.24
0-70	2225.4	99.67
0-75	2228.8	99.82
0-80	2229.2	99.83
0-85	2229.4	99.84
0-90	2229.5	99.85
0-95	2229.5	99.85
0-100	2229.5	99.85
0-105	2229.5	99.85
0-110	2229.5	99.85
0-115	2229.5	99.85
0-120	2229.6	99.85
0-125	2229.7	99.86
0-130	2229.8	99.86
0-135	2230.0	99.87
0-140	2230.3	99.88
0-145	2230.6	99.90
0-150	2231.1	99.92
0-155	2231.5	99.94
0-160	2232.0	99.96
0-165	2232.4	99.98
0-170	2232.6	99.99
0-175	2232.8	100.00
0-180	2232.9	100.00

Test orientation: **Downward**

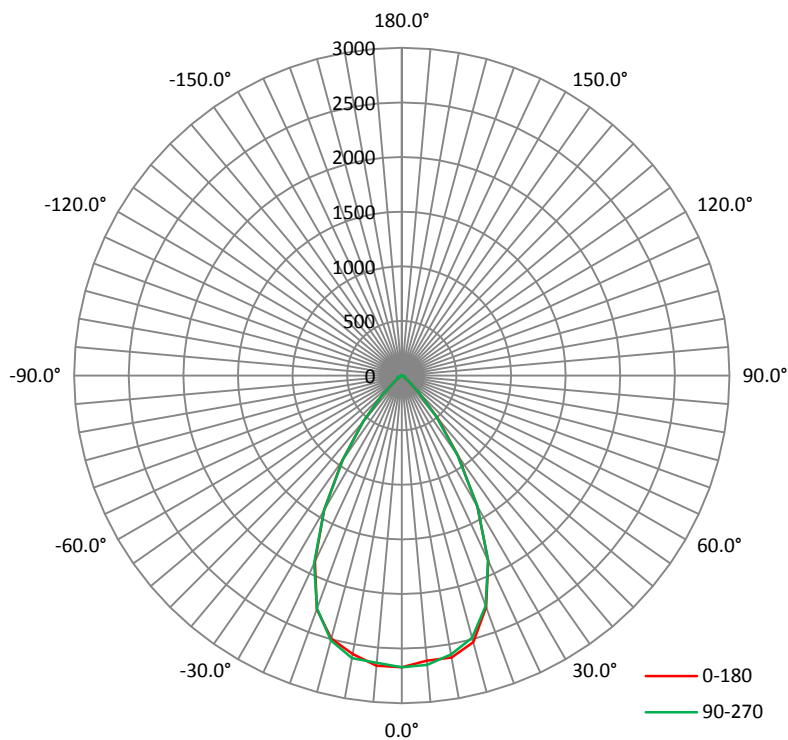
Test CCT: **4000K**

Beam Angle: **60°**

Photometric Measurement

Luminous Flux (lm)	I _{max} (cd)	S/MH (C0/180)	S/MH (C90/270)
2643.49	2679	0.91	0.91

Luminous Intensity Distribution



	C0/180	C45/225	C90/270	C135/315	AVG.
Beam Angle (50% I _{max}):	61.4	61.8	61.3	62.0	61.6
Field Angle (10% I _{max}):	89.0	89.2	88.9	89.5	89.2

Luminous Intensity (cd) Distribution Data

$\begin{matrix} \diagup C \\ \diagdown \end{matrix}$ Y	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
0°	2671	2671	2671	2671	2671	2671	2671	2671
1°	2670	2673	2652	2671	2671	2669	2666	2670
2°	2674	2675	2667	2670	2668	2660	2654	2653
3°	2670	2679	2672	2668	2655	2646	2638	2639
4°	2666	2676	2652	2660	2651	2635	2628	2624
5°	2666	2676	2652	2644	2641	2626	2619	2616
6°	2661	2669	2645	2635	2636	2625	2619	2616
7°	2644	2661	2624	2624	2638	2625	2615	2620
8°	2631	2651	2634	2617	2636	2627	2612	2624
9°	2609	2636	2635	2601	2638	2622	2612	2629
10°	2588	2616	2623	2588	2627	2608	2604	2628
11°	2568	2594	2602	2580	2620	2588	2587	2610
12°	2552	2583	2575	2570	2606	2569	2575	2593
13°	2529	2561	2555	2557	2578	2543	2556	2571
14°	2509	2541	2524	2545	2546	2523	2543	2543
15°	2494	2509	2497	2521	2510	2487	2522	2512
16°	2483	2480	2451	2489	2474	2451	2495	2477
17°	2449	2439	2421	2458	2445	2403	2460	2436
18°	2400	2388	2377	2428	2396	2364	2414	2395
19°	2338	2328	2335	2383	2341	2324	2355	2341
20°	2276	2265	2277	2320	2270	2267	2289	2276
21°	2215	2191	2215	2247	2201	2203	2215	2204
22°	2142	2120	2147	2166	2125	2136	2131	2128
23°	2062	2045	2066	2071	2049	2049	2052	2051
24°	1978	1969	1983	1978	1974	1959	1966	1970
25°	1881	1886	1897	1893	1899	1863	1882	1887
26°	1794	1801	1809	1808	1812	1779	1803	1809
27°	1699	1713	1722	1724	1721	1698	1727	1723
28°	1604	1622	1628	1625	1623	1612	1640	1643
29°	1506	1529	1535	1534	1528	1522	1553	1557
30°	1420	1438	1439	1435	1423	1435	1456	1457
31°	1328	1338	1348	1340	1316	1342	1361	1364
32°	1234	1244	1254	1243	1219	1252	1263	1258
33°	1142	1145	1166	1146	1120	1161	1174	1159
34°	1045	1056	1072	1047	1026	1065	1079	1055
35°	951	969	975	957	936	968	985	957
36°	867	878	887	870	853	877	892	867
37°	777	792	800	785	768	783	802	780
38°	694	708	715	704	688	696	718	699
39°	622	626	635	628	619	628	640	629
40°	550	557	566	561	550	559	573	559
41°	478	487	497	493	480	491	506	488
42°	415	425	436	432	419	433	439	429
43°	357	369	375	373	363	378	383	372
44°	306	316	319	317	310	326	330	317
45°	259	270	269	266	264	278	282	267
46°	216	227	224	219	219	230	236	222
47°	178	188	186	180	178	189	195	180
48°	145	154	152	146	144	153	160	146

Luminous Intensity (cd) Distribution Data

C Y	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
49°	117	123	124	118	115	124	129	117
50°	94	99	100	94	92	100	104	93
51°	74	79	80	74	73	79	82	74
52°	61	62	63	62	60	62	65	61
53°	49	50	52	49	47	49	53	48
54°	36	38	41	36	35	37	42	35
55°	29	30	30	28	27	28	31	27
56°	23	23	24	22	21	21	23	21
57°	19	19	18	17	16	16	18	17
58°	16	16	15	14	13	13	14	13
59°	13	13	12	11	11	11	11	11
60°	12	11	10	10	9	9	10	10
61°	10	10	9	8	8	8	9	9
62°	10	9	8	8	8	8	8	8
63°	9	9	8	7	7	7	8	7
64°	8	8	7	12	13	7	8	7
65°	7	8	7	17	19	10	11	9
66°	6	8	10	22	25	16	18	19
67°	4	11	14	27	31	27	32	23
68°	4	6	24	32	37	38	48	9
69°	3	5	40	45	46	50	61	7
70°	3	3	45	48	44	57	62	4
71°	2	3	27	31	28	39	39	2
72°	2	2	5	9	7	14	13	1
73°	2	2	3	5	4	10	9	1
74°	2	2	2	2	1	6	5	1
75°	2	2	1	1	1	1	1	1
76°	1	2	1	1	1	1	1	1
77°	1	1	1	1	1	1	1	1
78°	1	1	1	1	1	1	1	1
79°	1	1	1	1	1	1	1	0
80°	1	1	1	0	0	0	0	0
81°	1	1	0	0	0	0	0	0
82°	1	1	0	0	0	0	0	0
83°	1	1	0	0	0	0	0	0
84°	1	1	0	0	0	0	0	0
85°	1	1	0	0	0	0	0	0
86°	1	1	0	0	0	0	0	0
87°	1	1	0	0	0	0	0	0
88°	1	1	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

$\begin{matrix} \text{C} \\ \backslash \\ \gamma \end{matrix}$	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	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	1	1	1	0	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	2	2	2	2	2	1
140°	1	2	2	2	2	2	2	2
141°	2	2	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	2	2	2	2	2
145°	2	2	2	2	3	2	2	2
146°	2	2	3	3	3	3	2	2

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°	2	2	3	3	3	3	3	2
148°	2	3	3	3	3	3	3	2
149°	2	3	3	3	3	3	3	3
150°	3	3	3	3	3	3	3	3
151°	3	3	3	3	3	3	3	3
152°	3	3	3	3	3	3	3	3
153°	3	3	3	3	4	3	3	3
154°	3	3	3	4	4	4	3	3
155°	3	3	4	4	4	4	3	3
156°	3	3	4	4	4	4	4	3
157°	3	4	4	4	4	4	4	4
158°	3	4	4	4	4	4	4	4
159°	3	4	4	4	4	4	4	4
160°	4	4	4	4	4	4	4	4
161°	4	4	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	3	4	4	4	4	4	4
172°	3	3	4	4	4	4	4	4
173°	3	3	3	3	3	3	4	4
174°	3	3	3	3	3	3	3	3
175°	3	3	3	3	3	3	3	3
176°	3	3	3	3	3	3	3	3
177°	3	3	3	3	3	3	3	3
178°	3	3	3	3	3	3	3	3
179°	3	3	3	3	3	3	3	3
180°	3	3	3	3	3	3	3	3

Luminous Intensity (cd) Distribution Data (cont.)

$\begin{array}{c} \backslash \\ C \\ / \\ \gamma \end{array}$	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
0°	2671	2671	2671	2671	2671	2671	2671	2671
1°	2663	2666	2652	2670	2671	2666	2667	2666
2°	2653	2660	2650	2676	2668	2662	2651	2659
3°	2640	2651	2668	2673	2674	2654	2643	2648
4°	2625	2648	2655	2672	2668	2651	2637	2644
5°	2620	2646	2648	2661	2659	2651	2640	2649
6°	2625	2645	2655	2648	2649	2644	2651	2648
7°	2631	2645	2635	2625	2631	2632	2652	2645
8°	2633	2635	2640	2606	2616	2611	2641	2634
9°	2635	2631	2632	2588	2604	2591	2617	2611
10°	2622	2609	2592	2579	2593	2573	2594	2582
11°	2617	2589	2589	2566	2578	2562	2572	2565
12°	2605	2563	2571	2558	2563	2545	2553	2564
13°	2588	2545	2542	2546	2540	2522	2517	2547
14°	2556	2523	2535	2529	2510	2489	2487	2515
15°	2527	2492	2489	2506	2485	2463	2458	2477
16°	2484	2462	2435	2464	2454	2436	2435	2440
17°	2440	2425	2413	2423	2411	2412	2402	2399
18°	2387	2381	2360	2364	2361	2365	2360	2346
19°	2321	2332	2304	2307	2300	2321	2317	2298
20°	2256	2262	2252	2245	2244	2270	2269	2243
21°	2183	2190	2170	2179	2174	2202	2208	2189
22°	2110	2104	2088	2106	2106	2134	2146	2122
23°	2037	2012	2023	2032	2036	2058	2058	2046
24°	1948	1925	1931	1947	1948	1970	1963	1966
25°	1870	1834	1846	1862	1869	1878	1867	1878
26°	1780	1747	1768	1770	1768	1779	1778	1778
27°	1674	1664	1682	1676	1676	1677	1689	1672
28°	1578	1570	1586	1580	1581	1587	1593	1576
29°	1482	1474	1496	1484	1481	1489	1501	1482
30°	1383	1382	1399	1391	1384	1394	1406	1389
31°	1284	1291	1301	1299	1288	1300	1311	1297
32°	1185	1199	1204	1206	1191	1205	1216	1204
33°	1085	1098	1111	1105	1089	1104	1115	1108
34°	991	997	1020	1007	985	1007	1015	1010
35°	898	901	928	909	886	911	917	916
36°	812	811	839	818	798	818	823	826
37°	729	728	752	731	715	726	734	738
38°	653	652	668	648	636	641	652	653
39°	580	578	591	571	563	564	577	577
40°	510	511	520	501	491	492	507	507
41°	446	446	451	439	428	428	442	439
42°	385	385	387	380	369	370	382	380
43°	328	329	330	326	316	319	328	327
44°	276	278	277	277	268	271	278	279
45°	229	231	232	232	224	228	234	236
46°	188	191	194	191	185	190	195	197
47°	155	160	164	161	153	160	165	166
48°	122	130	134	131	121	131	135	136

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°	98	100	104	101	97	101	105	106
50°	78	81	84	81	78	81	84	85
51°	62	64	67	64	62	64	66	68
52°	49	51	53	51	49	50	53	54
53°	38	40	42	40	39	40	42	43
54°	30	31	33	31	31	31	33	34
55°	24	24	26	24	24	24	26	27
56°	18	19	20	19	19	20	21	22
57°	16	15	16	16	15	16	17	18
58°	13	12	13	13	13	13	14	15
59°	10	10	11	11	11	11	12	14
60°	8	9	9	9	9	10	11	12
61°	8	8	8	8	8	9	10	11
62°	7	8	8	7	8	8	9	10
63°	6	8	7	7	7	8	9	10
64°	6	10	8	7	7	8	9	10
65°	6	15	12	8	10	8	9	9
66°	4	21	20	16	15	15	16	9
67°	3	15	34	30	25	26	25	8
68°	2	9	51	45	41	39	42	4
69°	2	3	58	48	47	45	47	3
70°	2	2	39	33	32	30	32	3
71°	1	2	20	17	17	16	17	2
72°	1	1	2	2	2	2	2	2
73°	1	1	2	2	1	2	2	2
74°	1	1	1	1	1	1	1	2
75°	1	1	1	1	1	1	1	2
76°	1	1	1	1	1	1	1	1
77°	1	1	1	1	1	1	1	1
78°	1	1	1	1	0	1	1	1
79°	1	1	0	0	0	0	0	1
80°	1	0	0	0	0	0	0	1
81°	1	0	0	0	0	0	0	1
82°	0	0	0	0	0	0	0	1
83°	0	0	0	0	0	0	0	1
84°	0	0	0	0	0	0	0	1
85°	0	0	0	0	0	0	0	1
86°	0	0	0	0	0	0	0	1
87°	0	0	0	0	0	0	0	1
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	0	0	0	0
134°	0	0	0	0	0	0	0	0
135°	0	0	0	0	0	0	0	0
136°	0	0	0	0	0	0	0	0
137°	0	0	0	0	0	0	0	0
138°	0	0	0	0	0	0	0	0
139°	0	0	0	1	1	1	1	0
140°	0	0	1	1	1	1	1	1
141°	1	0	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	1	1	1	1	1
146°	1	1	1	1	1	1	1	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	1	1	1	1	1	1
148°	1	1	1	1	1	1	1	1
149°	1	1	1	1	1	1	1	1
150°	1	1	1	1	1	1	1	1
151°	1	1	1	1	1	1	1	1
152°	1	1	1	1	1	1	1	1
153°	1	1	1	1	1	1	1	1
154°	1	1	1	1	1	1	1	1
155°	1	1	1	1	1	1	1	1
156°	1	1	1	1	1	1	1	1
157°	1	1	1	1	1	2	1	1
158°	1	1	1	1	2	2	2	2
159°	1	1	1	1	2	2	2	2
160°	2	1	1	2	2	2	2	2
161°	2	2	2	2	2	2	2	2
162°	2	2	2	2	2	2	2	2
163°	2	2	2	2	2	2	2	2
164°	2	2	2	2	2	2	2	2
165°	2	2	2	2	2	2	2	2
166°	2	2	2	2	2	2	2	2
167°	2	2	2	2	2	2	2	2
168°	2	2	2	2	2	2	2	2
169°	2	2	2	2	2	2	2	2
170°	2	2	2	2	2	2	2	2
171°	2	2	2	2	2	2	2	2
172°	2	2	2	2	2	2	2	2
173°	2	2	2	2	2	2	2	2
174°	2	2	2	2	2	2	2	2
175°	2	2	2	2	2	2	2	2
176°	3	3	2	2	2	2	2	3
177°	3	3	3	2	2	2	3	3
178°	3	3	3	3	3	3	3	3
179°	3	3	3	3	3	3	3	3
180°	3	3	3	3	3	3	3	3

Zonal Lumen Density Measurement

Deg	Flux (lm)	%
0-5	63.5	2.40
5-10	187.9	7.11
10-15	302.9	11.46
15-20	394.1	14.91
20-25	435.1	16.46
25-30	415.5	15.72
30-35	344.5	13.03
35-40	240.1	9.08
40-45	140.3	5.31
45-50	64.3	2.43
50-55	22.9	0.87
55-60	7.5	0.28
60-65	4.2	0.16
65-70	11.6	0.44
70-75	4.2	0.16
75-80	0.4	0.01
80-85	0.2	0.01
85-90	0.1	0.01
90-95	0.0	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	0.1	0.00
120-125	0.1	0.01
125-130	0.2	0.00
130-135	0.2	0.01
135-140	0.3	0.01
140-145	0.4	0.02
145-150	0.5	0.02
150-155	0.5	0.02
155-160	0.5	0.02
160-165	0.5	0.02
165-170	0.3	0.01
170-175	0.2	0.01
175-180	0.1	0.00

Deg	Flux (lm)	%
0-5	63.5	2.40
0-10	251.4	9.51
0-15	554.3	20.97
0-20	948.5	35.88
0-25	1383.5	52.34
0-30	1799.1	68.06
0-35	2143.5	81.09
0-40	2383.7	90.17
0-45	2524.0	95.48
0-50	2588.3	97.91
0-55	2611.2	98.78
0-60	2618.7	99.06
0-65	2622.9	99.22
0-70	2634.5	99.66
0-75	2638.7	99.82
0-80	2639.1	99.83
0-85	2639.3	99.84
0-90	2639.5	99.85
0-95	2639.5	99.85
0-100	2639.5	99.85
0-105	2639.5	99.85
0-110	2639.5	99.85
0-115	2639.6	99.85
0-120	2639.6	99.85
0-125	2639.7	99.86
0-130	2639.8	99.86
0-135	2640.1	99.87
0-140	2640.4	99.88
0-145	2640.8	99.90
0-150	2641.4	99.92
0-155	2641.9	99.94
0-160	2642.4	99.96
0-165	2642.9	99.98
0-170	2643.2	99.99
0-175	2643.4	100.00
0-180	2643.5	100.00

Test orientation: **Downward**

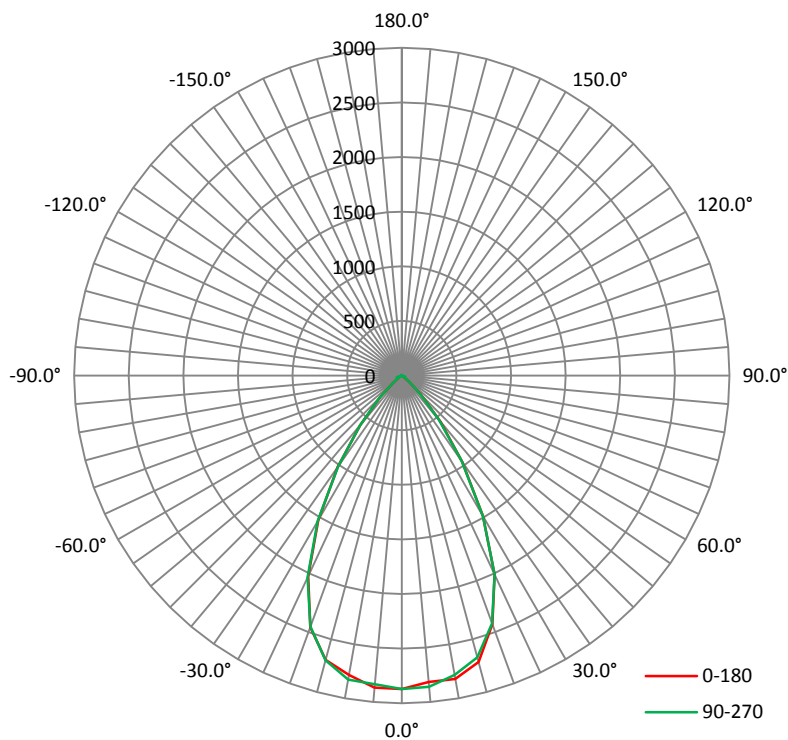
Test CCT: **5500K**

Beam Angle: **60°**

Photometric Measurement

Luminous Flux (lm)	I _{max} (cd)	S/MH (C0/180)	S/MH (C90/270)
2847.72	2880	0.91	0.91

Luminous Intensity Distribution



	C0/180	C45/225	C90/270	C135/315	AVG.
Beam Angle (50% I _{max}):	61.4	61.8	61.3	62.1	61.7
Field Angle (10% I _{max}):	89.0	89.3	89.0	89.6	89.2

Luminous Intensity (cd) Distribution Data

$\begin{matrix} \text{C} \\ \swarrow \\ \text{Y} \end{matrix}$	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
0°	2870	2870	2870	2870	2870	2870	2870	2870
1°	2874	2870	2870	2868	2872	2871	2871	2867
2°	2871	2874	2870	2871	2871	2861	2857	2854
3°	2871	2877	2875	2869	2859	2847	2843	2842
4°	2866	2879	2867	2857	2847	2837	2830	2821
5°	2868	2880	2858	2842	2837	2826	2819	2817
6°	2864	2864	2845	2832	2832	2827	2819	2817
7°	2850	2861	2841	2824	2831	2821	2816	2820
8°	2826	2846	2843	2809	2833	2828	2811	2820
9°	2808	2838	2829	2801	2831	2817	2812	2828
10°	2784	2815	2826	2789	2827	2806	2802	2824
11°	2766	2789	2805	2775	2812	2785	2784	2807
12°	2750	2774	2779	2767	2797	2757	2766	2788
13°	2729	2761	2749	2755	2768	2735	2752	2760
14°	2711	2730	2715	2735	2738	2710	2732	2733
15°	2695	2703	2683	2708	2699	2674	2710	2696
16°	2673	2673	2645	2675	2660	2630	2681	2661
17°	2638	2625	2616	2653	2624	2587	2645	2620
18°	2582	2575	2566	2617	2574	2550	2591	2572
19°	2512	2509	2522	2567	2518	2497	2531	2519
20°	2451	2432	2463	2501	2447	2439	2458	2441
21°	2390	2363	2390	2420	2370	2371	2378	2370
22°	2305	2281	2319	2332	2284	2297	2300	2287
23°	2219	2198	2228	2230	2210	2201	2208	2204
24°	2126	2120	2141	2135	2126	2114	2122	2120
25°	2027	2031	2042	2044	2041	2009	2032	2029
26°	1930	1935	1957	1950	1951	1920	1951	1944
27°	1831	1845	1858	1859	1859	1836	1861	1856
28°	1727	1739	1753	1758	1753	1738	1772	1771
29°	1629	1649	1659	1655	1653	1651	1672	1679
30°	1530	1545	1549	1552	1541	1552	1573	1577
31°	1431	1446	1452	1452	1423	1452	1468	1471
32°	1331	1339	1361	1342	1318	1358	1369	1358
33°	1230	1235	1248	1241	1211	1257	1270	1249
34°	1126	1141	1159	1137	1116	1151	1169	1141
35°	1024	1045	1057	1037	1017	1048	1065	1033
36°	931	949	956	941	926	945	969	937
37°	838	854	866	852	833	846	871	845
38°	748	765	773	761	745	755	781	756
39°	666	680	689	679	665	670	693	676
40°	593	606	616	609	595	603	621	606
41°	520	532	544	539	526	537	549	535
42°	447	459	471	469	456	471	477	465
43°	386	398	407	405	394	411	416	403
44°	328	342	345	345	338	354	358	344
45°	279	292	292	289	288	302	306	289
46°	233	245	243	238	238	250	257	240
47°	191	203	201	196	195	206	212	196
48°	156	165	165	159	157	167	174	159

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°
49°	125	133	134	128	126	135	141	127
50°	101	107	109	102	101	109	114	102
51°	80	85	87	81	80	87	91	81
52°	63	67	69	65	63	68	71	64
53°	52	55	57	53	52	53	59	52
54°	42	44	45	42	41	43	46	41
55°	32	32	33	31	30	33	34	30
56°	25	25	26	24	23	23	26	24
57°	21	21	20	19	18	18	20	19
58°	17	17	16	15	14	15	15	15
59°	15	14	13	12	12	12	13	12
60°	13	13	11	11	10	10	11	11
61°	12	11	10	9	9	9	10	10
62°	11	10	9	9	8	9	9	9
63°	10	10	9	8	8	8	8	8
64°	9	9	8	8	8	8	8	8
65°	8	9	8	8	9	10	11	9
66°	7	9	10	10	14	16	18	18
67°	5	12	14	19	26	27	32	25
68°	4	7	24	33	38	39	49	11
69°	4	6	41	47	49	52	63	8
70°	3	4	53	55	51	63	70	5
71°	3	3	35	39	35	48	47	2
72°	2	3	11	16	13	22	20	2
73°	2	2	7	11	9	15	14	1
74°	2	2	5	6	5	8	8	1
75°	2	2	2	2	1	2	2	1
76°	2	2	1	1	1	1	1	1
77°	1	1	1	1	1	1	1	1
78°	1	1	1	1	1	1	1	1
79°	1	1	1	1	1	1	1	1
80°	1	1	1	1	0	1	0	1
81°	1	1	1	0	0	0	0	1
82°	1	1	1	0	0	0	0	0
83°	1	1	0	0	0	0	0	0
84°	1	1	0	0	0	0	0	0
85°	1	1	0	0	0	0	0	0
86°	1	1	0	0	0	0	0	0
87°	1	1	0	0	0	0	0	0
88°	1	1	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

$\gamma \backslash C$	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	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	2	2	2	2	1	1
139°	1	2	2	2	2	2	2	2
140°	2	2	2	2	2	2	2	2
141°	2	2	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	2	2
145°	2	2	3	3	3	3	2	2
146°	2	2	3	3	3	3	3	2

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°	2	3	3	3	3	3	3	2
148°	2	3	3	3	3	3	3	3
149°	3	3	3	3	3	3	3	3
150°	3	3	3	3	3	3	3	3
151°	3	3	3	3	3	3	3	3
152°	3	3	3	4	4	4	3	3
153°	3	3	4	4	4	4	3	3
154°	3	3	4	4	4	4	4	3
155°	3	4	4	4	4	4	4	4
156°	3	4	4	4	4	4	4	4
157°	4	4	4	4	4	4	4	4
158°	4	4	4	4	4	4	4	4
159°	4	4	4	4	4	4	4	4
160°	4	4	4	4	4	4	4	4
161°	4	4	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°	4	4	4	4	4	4	4	4
175°	4	4	4	4	4	4	4	4
176°	4	3	3	3	3	3	4	4
177°	3	3	3	3	3	3	3	4
178°	3	3	3	3	3	3	3	3
179°	3	3	3	3	3	3	3	3
180°	3	3	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°
0°	2870	2870	2870	2870	2870	2870	2870	2870
1°	2865	2867	2865	2870	2870	2867	2868	2865
2°	2857	2859	2864	2871	2868	2862	2854	2862
3°	2836	2849	2868	2875	2873	2852	2843	2851
4°	2825	2848	2864	2870	2870	2846	2845	2846
5°	2816	2842	2861	2863	2861	2852	2845	2851
6°	2823	2839	2858	2847	2847	2841	2853	2848
7°	2829	2839	2849	2819	2826	2832	2857	2850
8°	2828	2828	2845	2801	2813	2810	2844	2836
9°	2829	2819	2828	2781	2797	2792	2819	2812
10°	2820	2797	2807	2771	2783	2772	2802	2780
11°	2810	2780	2785	2755	2770	2762	2772	2768
12°	2796	2750	2763	2751	2757	2744	2749	2761
13°	2778	2733	2747	2733	2732	2718	2714	2744
14°	2745	2705	2722	2712	2696	2683	2687	2711
15°	2715	2675	2679	2691	2671	2653	2649	2671
16°	2668	2639	2632	2644	2641	2627	2630	2634
17°	2619	2596	2590	2599	2591	2601	2597	2583
18°	2562	2559	2541	2538	2538	2550	2549	2531
19°	2493	2502	2488	2478	2479	2501	2503	2482
20°	2422	2429	2423	2410	2415	2446	2446	2419
21°	2350	2351	2342	2340	2341	2375	2382	2356
22°	2268	2259	2262	2262	2265	2299	2309	2282
23°	2184	2157	2173	2182	2193	2216	2214	2201
24°	2093	2068	2082	2096	2098	2122	2119	2112
25°	2010	1973	1997	2002	2009	2024	2018	2025
26°	1911	1879	1905	1900	1899	1912	1916	1914
27°	1801	1788	1814	1799	1798	1811	1819	1799
28°	1699	1686	1710	1700	1698	1710	1715	1697
29°	1596	1584	1612	1595	1593	1600	1614	1596
30°	1485	1481	1499	1482	1486	1489	1516	1489
31°	1380	1381	1398	1384	1381	1390	1410	1388
32°	1275	1280	1298	1286	1276	1291	1305	1287
33°	1170	1179	1197	1188	1171	1192	1200	1186
34°	1071	1073	1099	1083	1061	1085	1092	1089
35°	966	969	998	978	954	980	987	985
36°	875	872	904	878	859	881	886	891
37°	785	782	810	786	770	784	790	794
38°	703	699	719	696	683	690	702	703
39°	623	620	637	615	604	607	621	622
40°	549	547	559	539	528	530	546	544
41°	480	479	485	471	461	461	476	473
42°	414	414	416	407	397	399	411	410
43°	352	353	355	351	341	343	352	352
44°	296	298	298	297	288	292	299	301
45°	246	248	249	249	241	246	252	254
46°	201	204	207	205	199	204	211	212
47°	169	172	176	173	167	172	178	179
48°	137	139	144	140	136	140	145	147

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°	106	107	112	108	104	109	113	114
50°	84	86	90	87	84	87	90	92
51°	67	69	72	69	66	69	72	73
52°	52	54	57	55	53	54	57	58
53°	41	43	45	43	42	43	45	46
54°	32	33	36	34	33	34	36	36
55°	26	26	28	26	26	26	29	29
56°	20	20	22	21	21	21	23	24
57°	17	16	17	17	17	17	19	19
58°	15	13	14	14	14	15	16	16
59°	12	12	12	12	12	13	14	15
60°	9	10	10	10	10	11	12	13
61°	8	9	9	9	9	10	11	12
62°	8	8	9	8	8	9	10	11
63°	7	8	8	8	8	9	10	11
64°	7	11	9	8	8	8	10	11
65°	6	15	13	9	11	9	10	10
66°	4	22	20	16	16	16	16	10
67°	3	16	34	31	25	27	27	9
68°	3	9	53	47	42	41	44	5
69°	2	3	64	55	51	50	53	4
70°	2	3	44	37	35	34	36	3
71°	2	2	23	20	18	18	19	3
72°	1	2	2	2	2	2	3	2
73°	1	1	2	2	2	2	2	2
74°	1	1	2	1	1	1	2	2
75°	1	1	1	1	1	1	1	2
76°	1	1	1	1	1	1	1	1
77°	1	1	1	1	1	1	1	1
78°	1	1	1	1	1	1	1	1
79°	1	1	0	0	0	0	1	1
80°	1	1	0	0	0	0	0	1
81°	1	1	0	0	0	0	0	1
82°	1	1	0	0	0	0	0	1
83°	1	0	0	0	0	0	0	1
84°	1	0	0	0	0	0	0	1
85°	0	0	0	0	0	0	0	1
86°	0	0	0	0	0	0	0	1
87°	0	0	0	0	0	0	0	1
88°	0	0	0	0	0	0	0	1
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	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	0	0	0	0
134°	0	0	0	0	0	0	0	0
135°	0	0	0	0	0	0	0	0
136°	0	0	0	0	0	0	0	0
137°	0	0	0	0	0	0	0	0
138°	0	0	0	1	1	1	1	0
139°	0	0	1	1	1	1	1	1
140°	1	0	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	1	1	1	1	1
146°	1	1	1	1	1	1	1	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	1	1	1	1	1	1
148°	1	1	1	1	1	1	1	1
149°	1	1	1	1	1	1	1	1
150°	1	1	1	1	1	1	1	1
151°	1	1	1	1	1	1	1	1
152°	1	1	1	1	1	1	1	1
153°	1	1	1	1	1	1	1	1
154°	1	1	1	1	1	1	1	1
155°	1	1	1	1	1	1	1	1
156°	1	1	1	1	2	2	2	2
157°	1	1	1	2	2	2	2	2
158°	1	1	2	2	2	2	2	2
159°	2	2	2	2	2	2	2	2
160°	2	2	2	2	2	2	2	2
161°	2	2	2	2	2	2	2	2
162°	2	2	2	2	2	2	2	2
163°	2	2	2	2	2	2	2	2
164°	2	2	2	2	2	2	2	2
165°	2	2	2	2	2	2	2	2
166°	2	2	2	2	2	2	2	2
167°	2	2	2	2	2	2	2	2
168°	2	2	2	2	2	2	2	2
169°	2	2	2	2	2	2	2	2
170°	2	2	2	2	2	2	2	2
171°	2	2	2	2	2	2	2	2
172°	2	2	2	2	2	2	2	2
173°	2	2	2	2	2	2	2	2
174°	2	2	2	2	2	2	2	2
175°	3	3	2	2	2	2	3	3
176°	3	3	3	2	2	3	3	3
177°	3	3	3	3	3	3	3	3
178°	3	3	3	3	3	3	3	3
179°	3	3	3	3	3	3	3	3
180°	3	3	3	3	3	3	3	3

Zonal Lumen Density Measurement

Deg	Flux (lm)	%
0-5	68.3	2.40
5-10	202.2	7.10
10-15	325.9	11.44
15-20	424.2	14.90
20-25	468.3	16.44
25-30	447.6	15.72
30-35	371.0	13.03
35-40	259.0	9.09
40-45	151.7	5.33
45-50	69.6	2.44
50-55	24.9	0.88
55-60	8.2	0.29
60-65	4.5	0.15
65-70	11.9	0.42
70-75	5.2	0.19
75-80	0.5	0.01
80-85	0.3	0.01
85-90	0.1	0.01
90-95	0.0	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	0.1	0.00
120-125	0.1	0.01
125-130	0.2	0.00
130-135	0.3	0.01
135-140	0.4	0.01
140-145	0.5	0.02
145-150	0.6	0.02
150-155	0.6	0.02
155-160	0.6	0.02
160-165	0.5	0.02
165-170	0.4	0.01
170-175	0.2	0.01
175-180	0.1	0.00

Deg	Flux (lm)	%
0-5	68.3	2.40
0-10	270.5	9.50
0-15	596.4	20.94
0-20	1020.5	35.84
0-25	1488.9	52.28
0-30	1936.4	68.00
0-35	2307.5	81.03
0-40	2566.5	90.12
0-45	2718.1	95.45
0-50	2787.7	97.89
0-55	2812.6	98.77
0-60	2820.8	99.06
0-65	2825.3	99.21
0-70	2837.3	99.63
0-75	2842.5	99.82
0-80	2843.0	99.83
0-85	2843.2	99.84
0-90	2843.4	99.85
0-95	2843.4	99.85
0-100	2843.4	99.85
0-105	2843.4	99.85
0-110	2843.4	99.85
0-115	2843.5	99.85
0-120	2843.5	99.85
0-125	2843.6	99.86
0-130	2843.8	99.86
0-135	2844.0	99.87
0-140	2844.4	99.88
0-145	2844.9	99.90
0-150	2845.4	99.92
0-155	2846.0	99.94
0-160	2846.6	99.96
0-165	2847.1	99.98
0-170	2847.4	99.99
0-175	2847.6	100.00
0-180	2847.7	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.
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*****END OF REPORT*****