

LM-79-08 Test Report

For

ETI Solid State Lighting (Zhuhai) Ltd

No.1, Zhongzhu Road South, Science & Technology Innovation Coast, High Tech District, Zhuhai City,
Guangdong Prov., China 519085

LED Downlight

Model Name(s):

538421###

Representative (Tested) Model:

538421010

Model Difference:

1. The first and second # represents color tunable from 2700K, 3000K, 3500K, 4000K and 5000K, can be 00-99;
2. The third # represents factory code, can be 0-9;
3. All is the same construction, except model design.

Prepare by:



Engineer: Alan Wang

Date: 2020-09-28

Review by:



Technical Lead: Vincent Yuan

Issue Date: 2020-12-07

Revised Date: N/A

- Note:
1. The results contained in this report pertain only to the tested samples.
 2. This report shall not be reproduced, no limited part or full, without approval of Dongguan New Testing Centre Co., Ltd
 3. This report does not imply product certification, approval, or endorsement by NVLAP, or any agency of the Federal Government.

Client Information:

Applicant Name:	ETI Solid State Lighting (Zhuhai) Ltd
Brand Name:	Commercial Electric, ETI
Factory 1 Name:	ETI Solid State Lighting (Zhuhai) Ltd
Factory 1 Address:	No.1, Zhongzhu Road South, Science & Technology Innovation Coast, High tech District, Zhuhai City, Guangdong Prov., China 519085
Factory 2 Name:	NVC VIETNAM TECHNOLOGY AND LIGHTING COMPANY LIMITED
Factory 2 Address:	Lot CN23-1, Yen Phong Industrial park, Dong Phong commune, Yen Phong district, Bac Ninh province, Vietnam

Product Information:

Model Number:	538421###(###=000-999)
Product Type:	Indoor/Outdoor, LED Downlight
Rating Input:	120Vac, 60Hz, 14.6W
Declared CCT:	2700K/3000K/3500K/4000K/5000K
Declared Light Output:	880 lm
LED Manufacturer:	Samsung Electronics Co., Ltd.
LED Model:	SPMWH1229AQ7SGWXXX and SPMWH1229AQ5SGRXXX
LED Quantity:	SPMWH1229AQ7SGWXXX: 15 pcs SPMWH1229AQ5SGRXXX: 15 pcs

Test Information:

Standard Lamp:	Total Spectral Radiant Flux Standard Lamp, trace to NIST. 1. D908S for Gonio 2. D215S for Integrating Sphere
Date of Receipt Samples:	2020-09-03
Quantity of Receipt Samples:	3 pc
Sample Number:	200903002-S1~S3

Laboratory Information:

Test Laboratory:	Dongguan New Testing Centre Co., Ltd
Laboratory Address:	3F, No. 1 the 1 st North Industry Road, Songshan Lake Science & Technology Park, Dongguan, Guangdong, China
Laboratory Contact Name:	Neil Zhong
Laboratory Contact E-mail:	Neil_zhong@ntc-cert.com

Report Information:

Issued Date of Test Report:	2020-12-07
Revised Date of Test Report:	N/A
Test Report No.:	NTCLR20090134
Remark (If applicable):	1. Test IS test for all CCT and test Gonio for 2700K.

Test Specification:	
Date of Test	2020-09-24
Test Item	1. Total Luminous Flux 2. Luminous Distribution Intensity 3. Luminous Efficacy 4. Correlated Color Temperature 5. Color Rendering Index 6. Chromaticity Coordinate 7. Fidelity Index 8. Gamut Index 9. Local Chroma Shift
Reference Standard	IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products ANSI C78.377-2017 Specifications for the Chromaticity of Solid State Lighting Products CIE 13.3-1995 Method of Measuring and Specifying Color Rendering Properties of Light Sources CIE 15-2004 Technical Report Colorimetry ANSI IES TM-30-18 IES Method for Evaluating Light Source Color Rendition ANSI C78.77-10-2014 Harmonic Emission Limits – Related Power Quality Requirements IES TM-15-11 Luminaire Classification System for Outdoor Luminaires Addendum A for IES TM-15-11 Backlight, Uplight, and Glare (BUG) Ratings

Test Methods:
<p>1. Photometric and Electrical Measurements – Light Distribution Method:</p> <p>Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at 25 °C ± 1°C, measured at a point not more than 1 m from the sample and at the same height as the sample. The sample was operated at required Voltage and Frequency. It was stabilized before measurement was made. Luminous Flux, Luminaire Efficacy and Zonal Lumen were calculated from the software taken at 1° vertical intervals and 15° horizontal intervals.</p>
<p>2. Photometric and Electrical Measurements – Integrating Sphere Method:</p> <p>Photometric parameters were measured using an integrating sphere, as spectroradiometer and software. The ambient temperature condition inside the sphere was measured at 25 °C± 1°C. The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. The sample was operated at require Voltage and Frequency. It was stabilized before measurement was made. Chromaticity Coordinates, Correlated Color Temperature and Color Rendering Index were calculated from the spectral radiant flux measurements taken at least 1 nm intervals over the rage of 380 to 780 nm.</p>

Integrating Sphere Test Results:

Test Condition:

Test Ambient (°C)	Test Humidity (%)	Orientation	Stabilization Time (minute)	Test Time (minute)
25.2	41.0	Face Down	90	10

Electrical Data:

Rated CCT	Voltage (V)	Frequency (Hz)	Current (A)	Wattage (W)	Power Factor
2700K	120.0	60	0.1322	14.37	0.9054
3000K	120.0	60	0.1320	14.36	0.9068
3500K	120.0	60	0.1315	14.40	0.9129
4000K	120.0	60	0.1316	14.39	0.9111
5000K	120.0	60	0.1282	13.85	0.9001

Color Data:

Rated CCT	Test CCT (K)	R _a	R ₉	R _f	R _g	R _{cs, h1}	Chromaticity		
							(x, y)	(u', v')	Duv
2700K	2769	94	64	92	97	-5%	(0.4538, 0.4084)	(0.2596, 0.5256)	-0.0003
3000K	2984	94	65	91	97	-5%	(0.4357, 0.3996)	(0.2517, 0.5194)	-0.0016
3500K	3414	93	61	90	97	-5%	(0.4076, 0.3864)	(0.2390, 0.5098)	-0.0024
4000K	3899	91	52	88	96	-7%	(0.3837, 0.3752)	(0.2279, 0.5014)	-0.0017
5000K	5060	85	11	85	94	-12%	(0.3440, 0.3570)	(0.2086, 0.4871)	0.0032

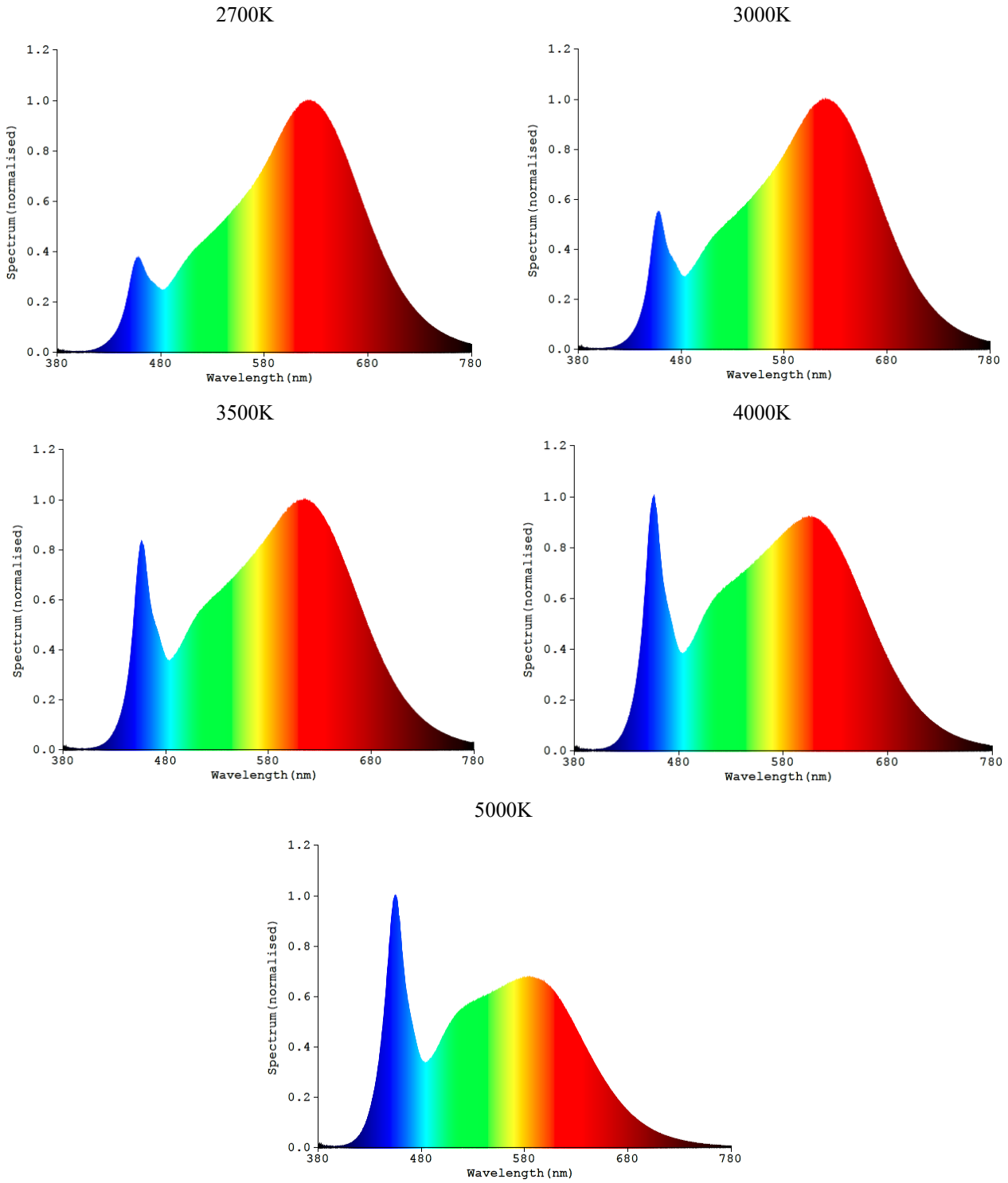
Specify Color Data:

Rated CCT	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
2700K	95	99	97	94	95	97	91	83	64	98	96	86	97	99	91
3000K	95	99	97	93	95	96	90	83	65	98	95	83	97	99	91
3500K	94	99	97	92	94	96	90	82	61	96	92	78	96	99	91
4000K	92	97	97	89	91	94	90	79	52	92	89	72	94	99	88
5000K	83	91	95	83	84	88	87	67	11	79	82	66	85	98	77

Output Data:

Rated CCT (K)	Light output (lm)	Efficacy (lm/W)
2700K	960.0	66.81
3000K	1021.5	71.14
3500K	1140.1	79.17
4000K	1201.8	83.52
5000K	1184.8	85.55

Spectrum Diagram:

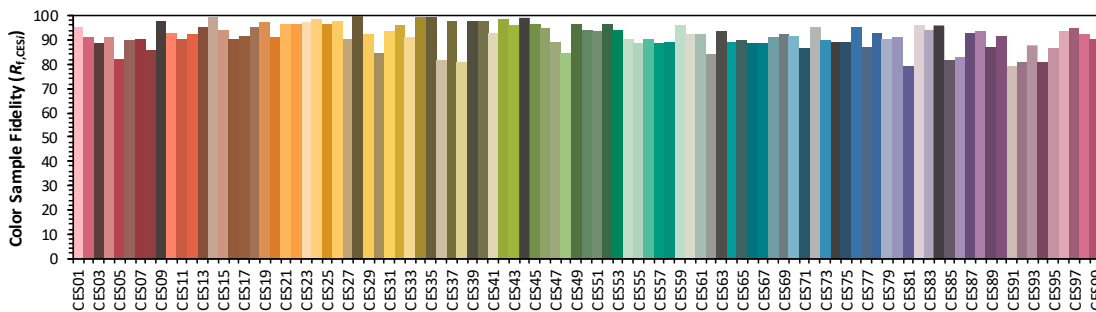
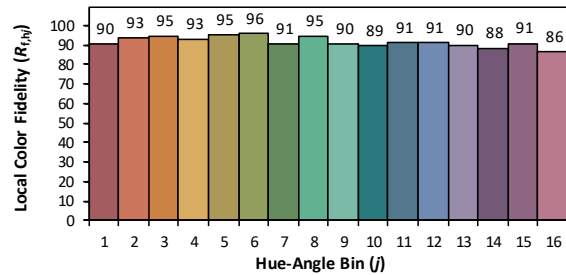
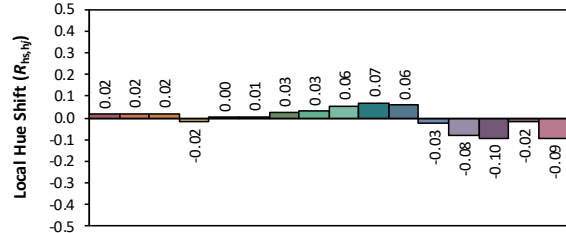
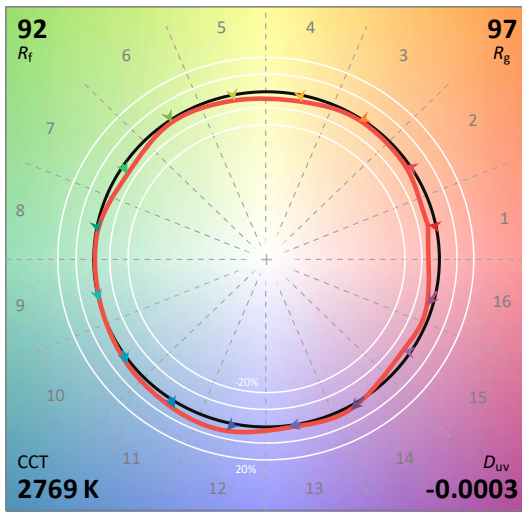
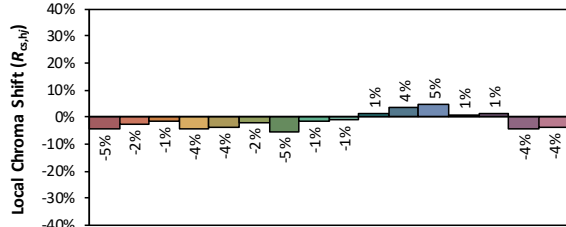
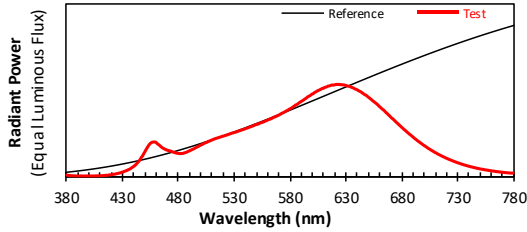


IES TM-30-18 Color Rendition Result for 2700K:

ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1
Date: 2020/9/28

Manufacturer: ETI Solid State Lighting (2)
Model: 538421###_2700K



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.4538
 y 0.4084
 u' 0.2596
 v' 0.5256

CIE 13.3-1995 (CRI)	
R_a	94
R_9	64

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

Spectrum Data for 2700K:

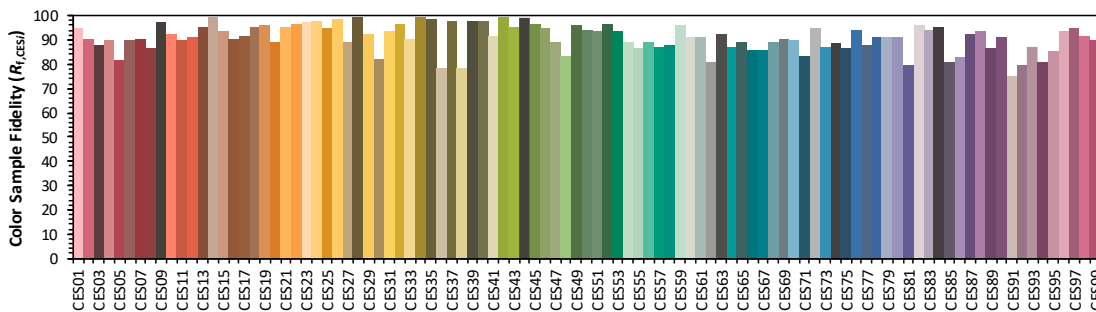
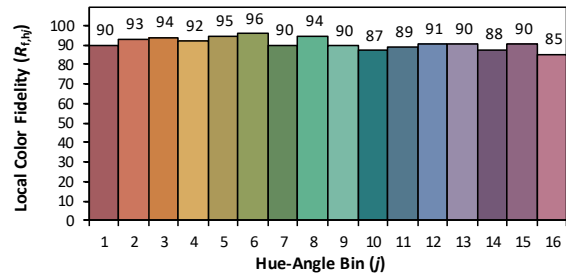
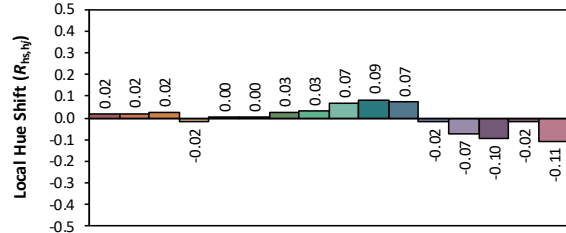
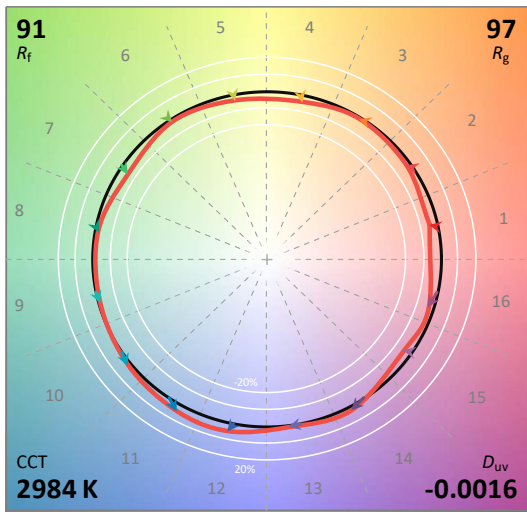
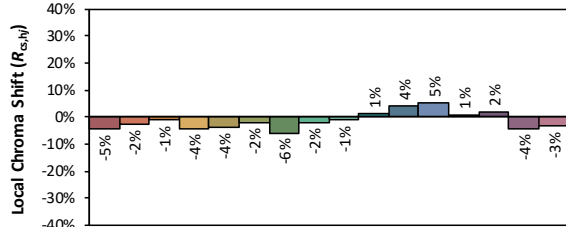
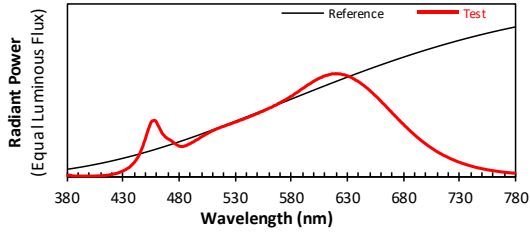
nm	mW	nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	0.0127	447	0.2072	514	0.4127	581	0.7400	648	0.8819	715	0.2264
381	0.0116	448	0.2232	515	0.4165	582	0.7468	649	0.8724	716	0.2198
382	0.0081	449	0.2459	516	0.4202	583	0.7563	650	0.8617	717	0.2148
383	0.0086	450	0.2656	517	0.4250	584	0.7643	651	0.8531	718	0.2088
384	0.0061	451	0.2886	518	0.4275	585	0.7741	652	0.8423	719	0.2027
385	0.0051	452	0.3078	519	0.4333	586	0.7791	653	0.8329	720	0.1969
386	0.0060	453	0.3287	520	0.4357	587	0.7873	654	0.8215	721	0.1918
387	0.0042	454	0.3445	521	0.4394	588	0.7965	655	0.8129	722	0.1861
388	0.0049	455	0.3590	522	0.4443	589	0.8050	656	0.8029	723	0.1809
389	0.0029	456	0.3666	523	0.4469	590	0.8132	657	0.7941	724	0.1767
390	0.0033	457	0.3719	524	0.4517	591	0.8208	658	0.7835	725	0.1717
391	0.0032	458	0.3720	525	0.4558	592	0.8274	659	0.7724	726	0.1664
392	0.0034	459	0.3728	526	0.4597	593	0.8373	660	0.7589	727	0.1617
393	0.0046	460	0.3681	527	0.4642	594	0.8444	661	0.7499	728	0.1569
394	0.0036	461	0.3560	528	0.4692	595	0.8548	662	0.7375	729	0.1527
395	0.0031	462	0.3471	529	0.4712	596	0.8637	663	0.7274	730	0.1477
396	0.0030	463	0.3382	530	0.4765	597	0.8707	664	0.7189	731	0.1447
397	0.0035	464	0.3267	531	0.4790	598	0.8768	665	0.7055	732	0.1397
398	0.0040	465	0.3170	532	0.4823	599	0.8860	666	0.6934	733	0.1360
399	0.0036	466	0.3072	533	0.4872	600	0.8949	667	0.6827	734	0.1311
400	0.0019	467	0.3014	534	0.4916	601	0.8998	668	0.6703	735	0.1278
401	0.0038	468	0.2946	535	0.4962	602	0.9101	669	0.6591	736	0.1239
402	0.0038	469	0.2893	536	0.5000	603	0.9161	670	0.6467	737	0.1207
403	0.0032	470	0.2834	537	0.5048	604	0.9238	671	0.6335	738	0.1172
404	0.0036	471	0.2810	538	0.5080	605	0.9305	672	0.6251	739	0.1136
405	0.0037	472	0.2771	539	0.5123	606	0.9358	673	0.6140	740	0.1100
406	0.0046	473	0.2743	540	0.5178	607	0.9421	674	0.6018	741	0.1067
407	0.0045	474	0.2702	541	0.5215	608	0.9475	675	0.5899	742	0.1037
408	0.0055	475	0.2648	542	0.5264	609	0.9562	676	0.5789	743	0.1008
409	0.0057	476	0.2605	543	0.5294	610	0.9564	677	0.5678	744	0.0976
410	0.0058	477	0.2569	544	0.5351	611	0.9647	678	0.5558	745	0.0950
411	0.0067	478	0.2527	545	0.5402	612	0.9683	679	0.5459	746	0.0917
412	0.0073	479	0.2511	546	0.5443	613	0.9730	680	0.5329	747	0.0893
413	0.0083	480	0.2489	547	0.5480	614	0.9795	681	0.5230	748	0.0865
414	0.0097	481	0.2473	548	0.5542	615	0.9813	682	0.5108	749	0.0840
415	0.0104	482	0.2470	549	0.5588	616	0.9853	683	0.5014	750	0.0815
416	0.0113	483	0.2477	550	0.5644	617	0.9899	684	0.4904	751	0.0783
417	0.0120	484	0.2486	551	0.5652	618	0.9925	685	0.4794	752	0.0771
418	0.0143	485	0.2530	552	0.5713	619	0.9903	686	0.4693	753	0.0749
419	0.0162	486	0.2568	553	0.5772	620	0.9950	687	0.4585	754	0.0724
420	0.0171	487	0.2598	554	0.5814	621	0.9956	688	0.4488	755	0.0703
421	0.0196	488	0.2660	555	0.5858	622	0.9993	689	0.4397	756	0.0680
422	0.0219	489	0.2712	556	0.5900	623	0.9976	690	0.4290	757	0.0666
423	0.0231	490	0.2771	557	0.5945	624	0.9985	691	0.4179	758	0.0639
424	0.0266	491	0.2831	558	0.6007	625	0.9964	692	0.4080	759	0.0624
425	0.0289	492	0.2887	559	0.6052	626	0.9954	693	0.3997	760	0.0605
426	0.0318	493	0.2942	560	0.6111	627	0.9945	694	0.3887	761	0.0579
427	0.0351	494	0.2997	561	0.6176	628	0.9931	695	0.3799	762	0.0570
428	0.0380	495	0.3068	562	0.6199	629	0.9908	696	0.3715	763	0.0552
429	0.0422	496	0.3136	563	0.6261	630	0.9876	697	0.3624	764	0.0529
430	0.0464	497	0.3199	564	0.6306	631	0.9834	698	0.3538	765	0.0514
431	0.0492	498	0.3251	565	0.6392	632	0.9794	699	0.3446	766	0.0504
432	0.0553	499	0.3331	566	0.6439	633	0.9784	700	0.3357	767	0.0486
433	0.0596	500	0.3387	567	0.6474	634	0.9741	701	0.3284	768	0.0471
434	0.0645	501	0.3454	568	0.6540	635	0.9677	702	0.3198	769	0.0457
435	0.0706	502	0.3494	569	0.6600	636	0.9637	703	0.3111	770	0.0444
436	0.0758	503	0.3576	570	0.6651	637	0.9580	704	0.3023	771	0.0430
437	0.0820	504	0.3628	571	0.6723	638	0.9509	705	0.2962	772	0.0414
438	0.0908	505	0.3673	572	0.6795	639	0.9460	706	0.2876	773	0.0403
439	0.0992	506	0.3720	573	0.6863	640	0.9413	707	0.2806	774	0.0391
440	0.1077	507	0.3802	574	0.6916	641	0.9333	708	0.2734	775	0.0377
441	0.1168	508	0.3829	575	0.6982	642	0.9262	709	0.2657	776	0.0370
442	0.1287	509	0.3889	576	0.7053	643	0.9202	710	0.2583	777	0.0359
443	0.1413	510	0.3944	577	0.7119	644	0.9134	711	0.2534	778	0.0348
444	0.1549	511	0.3994	578	0.7181	645	0.9041	712	0.2445	779	0.0346
445	0.1689	512	0.4044	579	0.7263	646	0.8954	713	0.2386	780	0.0342
446	0.1866	513	0.4089	580	0.7333	647	0.8870	714	0.2325	N/A	N/A

IES TM-30-18 Color Rendition Result for 3000K:

ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1
Date: 2020/9/28

Manufacturer: ETI Solid State Lighting (2)
Model: 538421###_3000K



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.4357
 y 0.3996
 u' 0.2517
 v' 0.5194

CIE 13.3-1995 (CRI)
 R_a 94
 R_9 65

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

Spectrum Data for 3000K:

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	0.0104	447	0.2686	514	0.4620	581	0.7818	648	0.8590	715	0.2140
381	0.0104	448	0.2928	515	0.4663	582	0.7874	649	0.8502	716	0.2082
382	0.0091	449	0.3283	516	0.4701	583	0.7976	650	0.8399	717	0.2022
383	0.0134	450	0.3562	517	0.4752	584	0.8048	651	0.8308	718	0.1979
384	0.0088	451	0.3931	518	0.4787	585	0.8122	652	0.8190	719	0.1926
385	0.0058	452	0.4278	519	0.4839	586	0.8176	653	0.8112	720	0.1866
386	0.0051	453	0.4600	520	0.4862	587	0.8255	654	0.7996	721	0.1814
387	0.0047	454	0.4898	521	0.4895	588	0.8344	655	0.7887	722	0.1757
388	0.0033	455	0.5178	522	0.4937	589	0.8428	656	0.7793	723	0.1709
389	0.0045	456	0.5350	523	0.4991	590	0.8494	657	0.7700	724	0.1661
390	0.0034	457	0.5409	524	0.5024	591	0.8567	658	0.7591	725	0.1626
391	0.0047	458	0.5442	525	0.5059	592	0.8626	659	0.7479	726	0.1566
392	0.0037	459	0.5422	526	0.5091	593	0.8715	660	0.7358	727	0.1524
393	0.0033	460	0.5310	527	0.5133	594	0.8792	661	0.7246	728	0.1483
394	0.0039	461	0.5071	528	0.5176	595	0.8867	662	0.7125	729	0.1430
395	0.0029	462	0.4874	529	0.5214	596	0.8939	663	0.7034	730	0.1396
396	0.0034	463	0.4670	530	0.5271	597	0.8990	664	0.6924	731	0.1363
397	0.0033	464	0.4454	531	0.5283	598	0.9056	665	0.6811	732	0.1316
398	0.0042	465	0.4234	532	0.5334	599	0.9139	666	0.6681	733	0.1280
399	0.0038	466	0.4084	533	0.5366	600	0.9215	667	0.6584	734	0.1243
400	0.0033	467	0.3985	534	0.5412	601	0.9259	668	0.6452	735	0.1209
401	0.0036	468	0.3834	535	0.5474	602	0.9344	669	0.6346	736	0.1174
402	0.0034	469	0.3775	536	0.5494	603	0.9384	670	0.6240	737	0.1136
403	0.0032	470	0.3672	537	0.5530	604	0.9466	671	0.6103	738	0.1102
404	0.0033	471	0.3619	538	0.5577	605	0.9506	672	0.6012	739	0.1071
405	0.0042	472	0.3559	539	0.5622	606	0.9558	673	0.5889	740	0.1037
406	0.0045	473	0.3495	540	0.5670	607	0.9603	674	0.5783	741	0.1010
407	0.0045	474	0.3421	541	0.5701	608	0.9639	675	0.5679	742	0.0976
408	0.0058	475	0.3336	542	0.5747	609	0.9722	676	0.5545	743	0.0944
409	0.0060	476	0.3252	543	0.5787	610	0.9745	677	0.5451	744	0.0919
410	0.0061	477	0.3171	544	0.5843	611	0.9786	678	0.5324	745	0.0888
411	0.0074	478	0.3089	545	0.5882	612	0.9815	679	0.5225	746	0.0867
412	0.0077	479	0.3028	546	0.5918	613	0.9833	680	0.5117	747	0.0837
413	0.0087	480	0.2964	547	0.5964	614	0.9878	681	0.5020	748	0.0813
414	0.0094	481	0.2927	548	0.6013	615	0.9900	682	0.4888	749	0.0791
415	0.0108	482	0.2916	549	0.6063	616	0.9929	683	0.4810	750	0.0773
416	0.0120	483	0.2901	550	0.6119	617	0.9971	684	0.4699	751	0.0742
417	0.0132	484	0.2911	551	0.6132	618	0.9964	685	0.4584	752	0.0723
418	0.0149	485	0.2940	552	0.6200	619	0.9960	686	0.4491	753	0.0702
419	0.0169	486	0.2986	553	0.6251	620	0.9987	687	0.4380	754	0.0679
420	0.0186	487	0.3001	554	0.6297	621	0.9955	688	0.4281	755	0.0656
421	0.0212	488	0.3077	555	0.6324	622	0.9983	689	0.4196	756	0.0641
422	0.0237	489	0.3132	556	0.6382	623	0.9948	690	0.4086	757	0.0621
423	0.0257	490	0.3167	557	0.6437	624	0.9962	691	0.3991	758	0.0601
424	0.0286	491	0.3244	558	0.6496	625	0.9928	692	0.3894	759	0.0584
425	0.0315	492	0.3299	559	0.6529	626	0.9904	693	0.3800	760	0.0566
426	0.0344	493	0.3348	560	0.6581	627	0.9877	694	0.3709	761	0.0549
427	0.0389	494	0.3411	561	0.6647	628	0.9874	695	0.3617	762	0.0537
428	0.0427	495	0.3492	562	0.6673	629	0.9821	696	0.3532	763	0.0516
429	0.0474	496	0.3554	563	0.6730	630	0.9788	697	0.3445	764	0.0504
430	0.0521	497	0.3601	564	0.6776	631	0.9756	698	0.3361	765	0.0485
431	0.0568	498	0.3667	565	0.6871	632	0.9694	699	0.3277	766	0.0471
432	0.0636	499	0.3753	566	0.6896	633	0.9659	700	0.3194	767	0.0456
433	0.0678	500	0.3827	567	0.6928	634	0.9613	701	0.3116	768	0.0442
434	0.0755	501	0.3885	568	0.7017	635	0.9558	702	0.3030	769	0.0426
435	0.0827	502	0.3941	569	0.7099	636	0.9483	703	0.2954	770	0.0417
436	0.0884	503	0.4006	570	0.7129	637	0.9432	704	0.2877	771	0.0401
437	0.0992	504	0.4079	571	0.7187	638	0.9345	705	0.2806	772	0.0390
438	0.1098	505	0.4136	572	0.7259	639	0.9302	706	0.2732	773	0.0379
439	0.1205	506	0.4189	573	0.7303	640	0.9245	707	0.2667	774	0.0370
440	0.1319	507	0.4259	574	0.7374	641	0.9160	708	0.2586	775	0.0355
441	0.1455	508	0.4307	575	0.7416	642	0.9092	709	0.2519	776	0.0348
442	0.1608	509	0.4370	576	0.7503	643	0.9008	710	0.2442	777	0.0336
443	0.1759	510	0.4430	577	0.7554	644	0.8926	711	0.2384	778	0.0329
444	0.1954	511	0.4473	578	0.7628	645	0.8858	712	0.2318	779	0.0326
445	0.2152	512	0.4521	579	0.7685	646	0.8757	713	0.2256	780	0.0322
446	0.2396	513	0.4575	580	0.7771	647	0.8672	714	0.2202	N/A	N/A

IES TM-30-18 Color Rendition Result for 3500K:

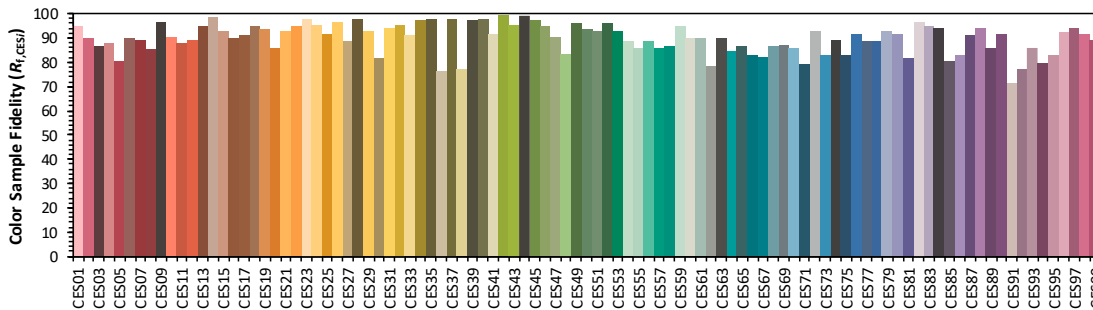
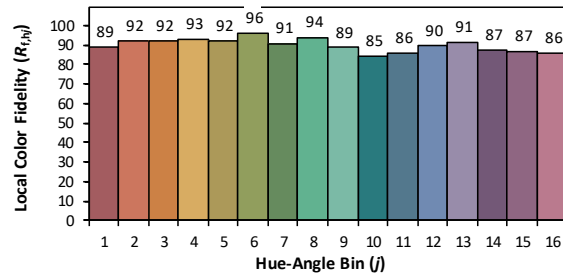
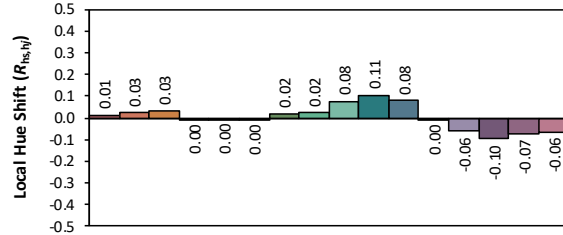
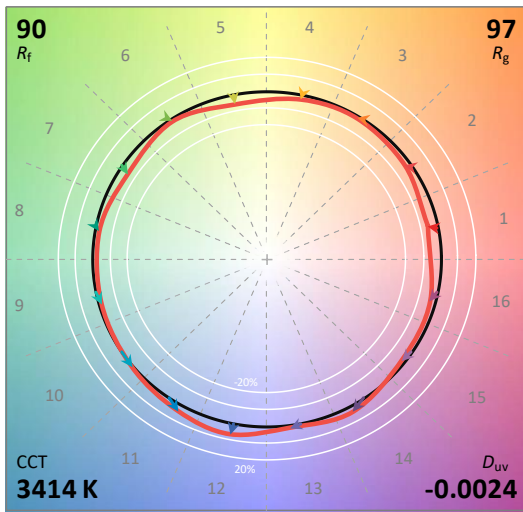
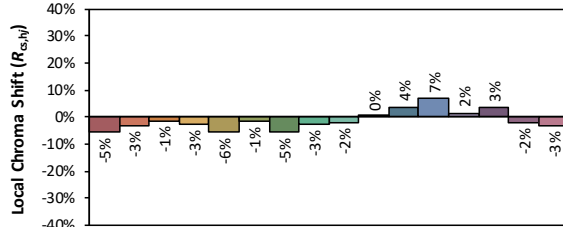
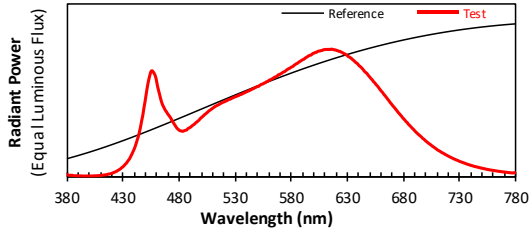
ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: ETI Solid State Lighting (2

Date: 2020/9/28

Model: 538421###_3500K



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.4076
 y 0.3864
 u' 0.2390
 v' 0.5098

CIE 13.3-1995
(CRI)
 R_a 93
 R_9 61

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

Spectrum Data for 3500K:

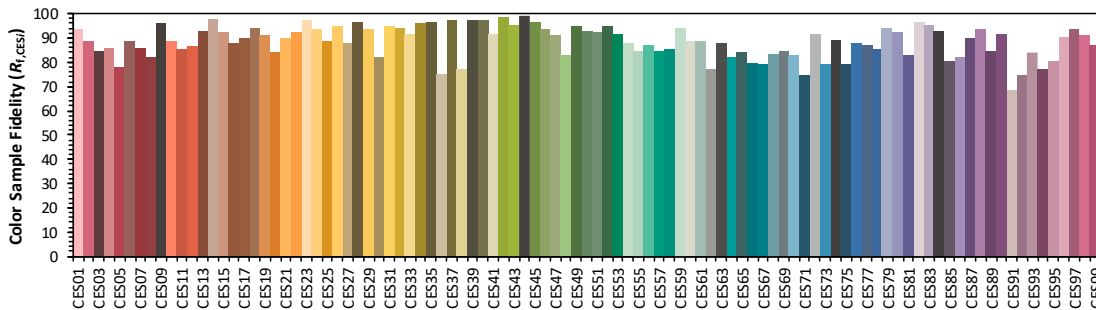
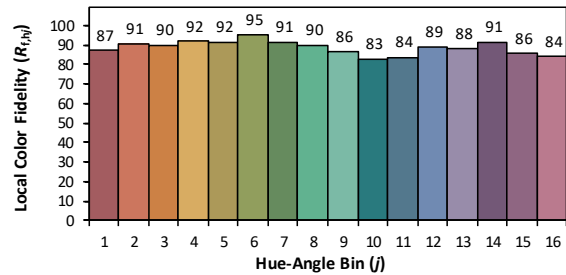
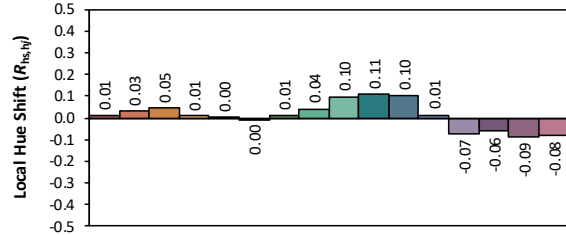
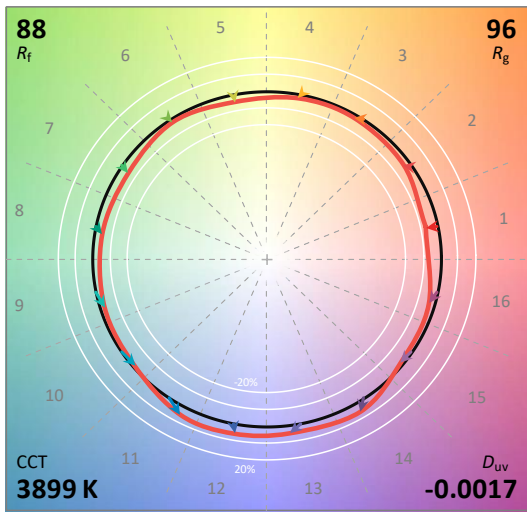
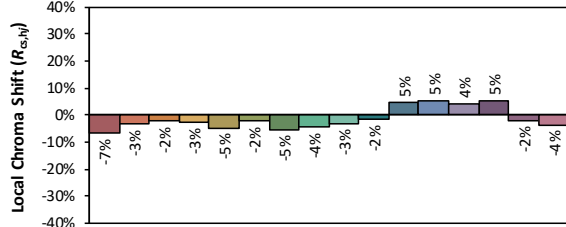
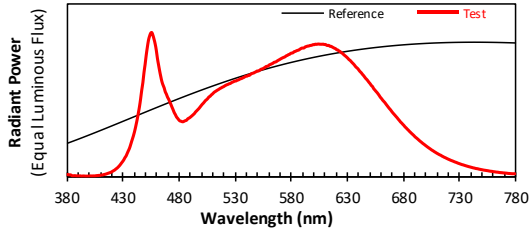
nm	mW	nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	0.0168	447	0.4406	514	0.5565	581	0.8601	648	0.8084	715	0.1879
381	0.0136	448	0.4832	515	0.5612	582	0.8639	649	0.7962	716	0.1834
382	0.0092	449	0.5409	516	0.5650	583	0.8727	650	0.7859	717	0.1785
383	0.0099	450	0.5908	517	0.5712	584	0.8785	651	0.7751	718	0.1729
384	0.0098	451	0.6484	518	0.5755	585	0.8848	652	0.7652	719	0.1682
385	0.0097	452	0.7021	519	0.5806	586	0.8884	653	0.7557	720	0.1633
386	0.0070	453	0.7490	520	0.5835	587	0.8955	654	0.7431	721	0.1591
387	0.0061	454	0.7862	521	0.5876	588	0.9015	655	0.7351	722	0.1541
388	0.0063	455	0.8183	522	0.5913	589	0.9073	656	0.7228	723	0.1503
389	0.0062	456	0.8302	523	0.5962	590	0.9128	657	0.7137	724	0.1457
390	0.0046	457	0.8229	524	0.6001	591	0.9178	658	0.7031	725	0.1416
391	0.0052	458	0.8098	525	0.6054	592	0.9214	659	0.6911	726	0.1372
392	0.0054	459	0.7915	526	0.6067	593	0.9299	660	0.6788	727	0.1334
393	0.0053	460	0.7592	527	0.6127	594	0.9343	661	0.6685	728	0.1297
394	0.0041	461	0.7121	528	0.6161	595	0.9408	662	0.6590	729	0.1263
395	0.0047	462	0.6761	529	0.6199	596	0.9465	663	0.6462	730	0.1220
396	0.0034	463	0.6414	530	0.6247	597	0.9505	664	0.6354	731	0.1179
397	0.0041	464	0.6060	531	0.6265	598	0.9526	665	0.6251	732	0.1151
398	0.0043	465	0.5767	532	0.6311	599	0.9591	666	0.6131	733	0.1117
399	0.0049	466	0.5548	533	0.6337	600	0.9665	667	0.6021	734	0.1090
400	0.0043	467	0.5385	534	0.6379	601	0.9683	668	0.5906	735	0.1054
401	0.0042	468	0.5199	535	0.6434	602	0.9735	669	0.5779	736	0.1025
402	0.0046	469	0.5090	536	0.6450	603	0.9745	670	0.5679	737	0.0985
403	0.0047	470	0.4935	537	0.6496	604	0.9809	671	0.5562	738	0.0958
404	0.0053	471	0.4821	538	0.6539	605	0.9836	672	0.5463	739	0.0933
405	0.0062	472	0.4700	539	0.6580	606	0.9849	673	0.5360	740	0.0903
406	0.0055	473	0.4568	540	0.6629	607	0.9876	674	0.5246	741	0.0871
407	0.0067	474	0.4400	541	0.6659	608	0.9889	675	0.5137	742	0.0852
408	0.0068	475	0.4262	542	0.6704	609	0.9939	676	0.5019	743	0.0822
409	0.0078	476	0.4114	543	0.6739	610	0.9953	677	0.4924	744	0.0796
410	0.0077	477	0.3983	544	0.6785	611	0.9961	678	0.4821	745	0.0775
411	0.0093	478	0.3842	545	0.6829	612	0.9972	679	0.4718	746	0.0756
412	0.0105	479	0.3745	546	0.6880	613	0.9963	680	0.4601	747	0.0732
413	0.0116	480	0.3670	547	0.6907	614	0.9975	681	0.4509	748	0.0708
414	0.0127	481	0.3598	548	0.6971	615	0.9959	682	0.4414	749	0.0693
415	0.0141	482	0.3583	549	0.7000	616	0.9991	683	0.4300	750	0.0663
416	0.0154	483	0.3557	550	0.7061	617	0.9979	684	0.4231	751	0.0652
417	0.0186	484	0.3556	551	0.7061	618	0.9966	685	0.4107	752	0.0628
418	0.0199	485	0.3599	552	0.7127	619	0.9932	686	0.4021	753	0.0611
419	0.0220	486	0.3629	553	0.7189	620	0.9933	687	0.3932	754	0.0587
420	0.0246	487	0.3648	554	0.7238	621	0.9887	688	0.3833	755	0.0572
421	0.0281	488	0.3737	555	0.7256	622	0.9871	689	0.3748	756	0.0549
422	0.0316	489	0.3798	556	0.7318	623	0.9822	690	0.3654	757	0.0538
423	0.0353	490	0.3839	557	0.7344	624	0.9813	691	0.3557	758	0.0519
424	0.0392	491	0.3905	558	0.7416	625	0.9760	692	0.3463	759	0.0503
425	0.0440	492	0.3985	559	0.7453	626	0.9726	693	0.3386	760	0.0492
426	0.0493	493	0.4048	560	0.7501	627	0.9662	694	0.3304	761	0.0474
427	0.0549	494	0.4108	561	0.7568	628	0.9628	695	0.3229	762	0.0466
428	0.0604	495	0.4198	562	0.7596	629	0.9578	696	0.3155	763	0.0447
429	0.0689	496	0.4270	563	0.7646	630	0.9526	697	0.3072	764	0.0438
430	0.0753	497	0.4342	564	0.7689	631	0.9442	698	0.2977	765	0.0417
431	0.0833	498	0.4415	565	0.7757	632	0.9386	699	0.2922	766	0.0407
432	0.0938	499	0.4525	566	0.7802	633	0.9333	700	0.2832	767	0.0399
433	0.1021	500	0.4607	567	0.7831	634	0.9270	701	0.2757	768	0.0385
434	0.1139	501	0.4680	568	0.7902	635	0.9190	702	0.2689	769	0.0371
435	0.1267	502	0.4759	569	0.7975	636	0.9116	703	0.2607	770	0.0364
436	0.1379	503	0.4849	570	0.8008	637	0.9036	704	0.2553	771	0.0352
437	0.1551	504	0.4912	571	0.8053	638	0.8944	705	0.2483	772	0.0340
438	0.1723	505	0.4991	572	0.8108	639	0.8893	706	0.2412	773	0.0330
439	0.1912	506	0.5063	573	0.8173	640	0.8802	707	0.2351	774	0.0320
440	0.2102	507	0.5152	574	0.8212	641	0.8698	708	0.2291	775	0.0308
441	0.2327	508	0.5207	575	0.8258	642	0.8631	709	0.2226	776	0.0300
442	0.2596	509	0.5273	576	0.8333	643	0.8544	710	0.2159	777	0.0289
443	0.2882	510	0.5337	577	0.8400	644	0.8453	711	0.2094	778	0.0283
444	0.3160	511	0.5402	578	0.8449	645	0.8347	712	0.2038	779	0.0296
445	0.3524	512	0.5468	579	0.8488	646	0.8235	713	0.1991	780	0.0305
446	0.3928	513	0.5521	580	0.8554	647	0.8157	714	0.1934	N/A	N/A

IES TM-30-18 Color Rendition Result for 4000K:

ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1
Date: 2020/9/28

Manufacturer: ETI Solid State Lighting (2
Model: 538421###_4000K



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.3837
 y 0.3752
 u' 0.2279
 v' 0.5014

CIE 13.3-1995 (CRI)
 R_a 91
 R_9 52

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

Spectrum Data for 4000K:

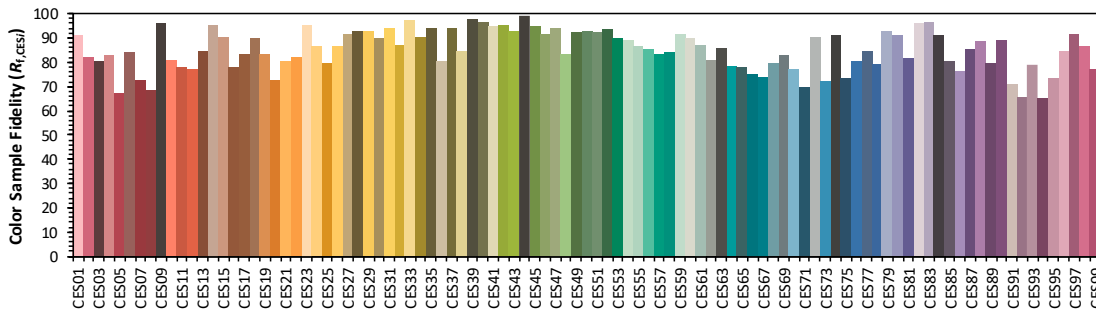
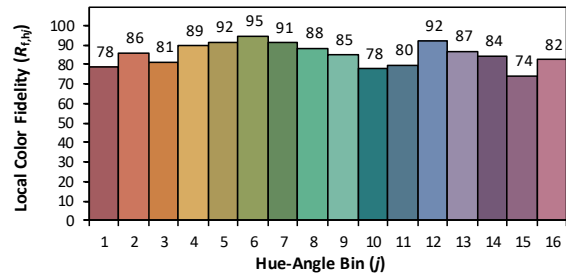
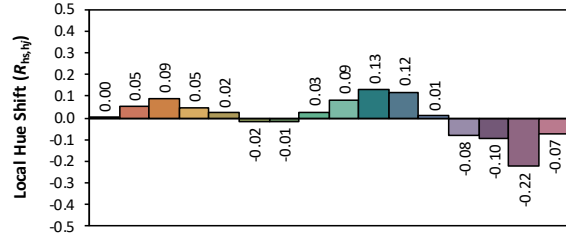
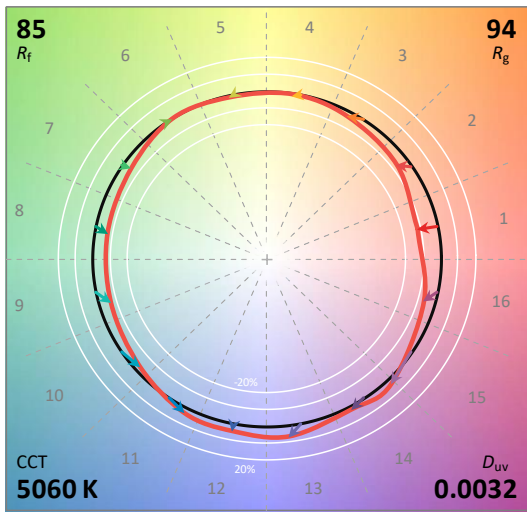
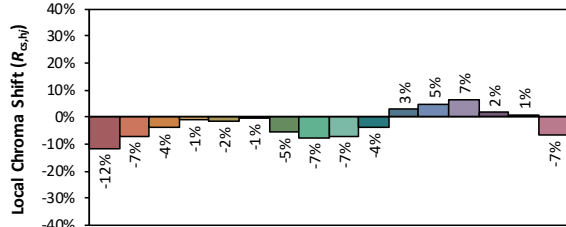
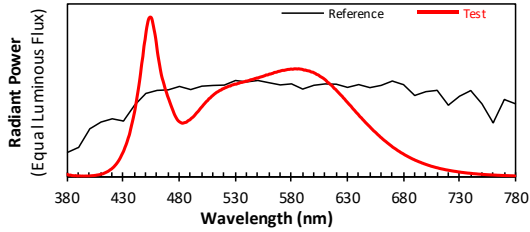
nm	mW	nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	0.0154	447	0.5998	514	0.5967	581	0.8556	648	0.6718	715	0.1435
381	0.0161	448	0.6511	515	0.6013	582	0.8576	649	0.6618	716	0.1398
382	0.0138	449	0.7209	516	0.6060	583	0.8646	650	0.6516	717	0.1353
383	0.0141	450	0.7771	517	0.6113	584	0.8669	651	0.6424	718	0.1322
384	0.0119	451	0.8416	518	0.6150	585	0.8707	652	0.6309	719	0.1282
385	0.0071	452	0.8954	519	0.6199	586	0.8740	653	0.6240	720	0.1244
386	0.0075	453	0.9435	520	0.6230	587	0.8759	654	0.6098	721	0.1208
387	0.0082	454	0.9726	521	0.6284	588	0.8812	655	0.6010	722	0.1174
388	0.0076	455	0.9929	522	0.6327	589	0.8861	656	0.5914	723	0.1139
389	0.0065	456	0.9969	523	0.6366	590	0.8899	657	0.5830	724	0.1111
390	0.0066	457	0.9777	524	0.6393	591	0.8900	658	0.5729	725	0.1080
391	0.0063	458	0.9504	525	0.6434	592	0.8917	659	0.5619	726	0.1046
392	0.0070	459	0.9180	526	0.6453	593	0.8983	660	0.5499	727	0.1016
393	0.0052	460	0.8745	527	0.6505	594	0.9006	661	0.5413	728	0.0990
394	0.0056	461	0.8183	528	0.6546	595	0.9036	662	0.5306	729	0.0954
395	0.0062	462	0.7741	529	0.6577	596	0.9042	663	0.5219	730	0.0926
396	0.0056	463	0.7314	530	0.6625	597	0.9072	664	0.5134	731	0.0898
397	0.0050	464	0.6928	531	0.6623	598	0.9085	665	0.5027	732	0.0870
398	0.0050	465	0.6581	532	0.6666	599	0.9103	666	0.4926	733	0.0843
399	0.0054	466	0.6345	533	0.6693	600	0.9139	667	0.4825	734	0.0824
400	0.0055	467	0.6151	534	0.6726	601	0.9135	668	0.4726	735	0.0798
401	0.0065	468	0.5878	535	0.6778	602	0.9168	669	0.4639	736	0.0773
402	0.0061	469	0.5718	536	0.6791	603	0.9157	670	0.4534	737	0.0749
403	0.0061	470	0.5511	537	0.6834	604	0.9172	671	0.4434	738	0.0726
404	0.0066	471	0.5369	538	0.6865	605	0.9178	672	0.4346	739	0.0703
405	0.0063	472	0.5186	539	0.6914	606	0.9166	673	0.4259	740	0.0684
406	0.0077	473	0.5011	540	0.6953	607	0.9165	674	0.4169	741	0.0663
407	0.0085	474	0.4817	541	0.6960	608	0.9162	675	0.4081	742	0.0642
408	0.0093	475	0.4638	542	0.7009	609	0.9169	676	0.3982	743	0.0619
409	0.0102	476	0.4441	543	0.7012	610	0.9144	677	0.3894	744	0.0605
410	0.0102	477	0.4305	544	0.7076	611	0.9148	678	0.3794	745	0.0580
411	0.0128	478	0.4145	545	0.7128	612	0.9097	679	0.3720	746	0.0569
412	0.0129	479	0.4049	546	0.7160	613	0.9078	680	0.3632	747	0.0556
413	0.0153	480	0.3947	547	0.7179	614	0.9085	681	0.3553	748	0.0534
414	0.0171	481	0.3869	548	0.7226	615	0.9021	682	0.3456	749	0.0519
415	0.0193	482	0.3846	549	0.7263	616	0.9020	683	0.3384	750	0.0501
416	0.0219	483	0.3815	550	0.7316	617	0.8975	684	0.3300	751	0.0487
417	0.0248	484	0.3811	551	0.7310	618	0.8933	685	0.3226	752	0.0470
418	0.0273	485	0.3851	552	0.7355	619	0.8891	686	0.3141	753	0.0458
419	0.0302	486	0.3885	553	0.7410	620	0.8858	687	0.3067	754	0.0446
420	0.0340	487	0.3913	554	0.7451	621	0.8786	688	0.2991	755	0.0434
421	0.0386	488	0.4004	555	0.7468	622	0.8766	689	0.2921	756	0.0422
422	0.0432	489	0.4051	556	0.7520	623	0.8702	690	0.2847	757	0.0406
423	0.0481	490	0.4100	557	0.7563	624	0.8663	691	0.2763	758	0.0392
424	0.0548	491	0.4165	558	0.7625	625	0.8589	692	0.2700	759	0.0383
425	0.0604	492	0.4231	559	0.7640	626	0.8542	693	0.2636	760	0.0374
426	0.0681	493	0.4303	560	0.7676	627	0.8469	694	0.2567	761	0.0356
427	0.0762	494	0.4375	561	0.7742	628	0.8400	695	0.2496	762	0.0349
428	0.0858	495	0.4481	562	0.7771	629	0.8338	696	0.2432	763	0.0334
429	0.0964	496	0.4559	563	0.7813	630	0.8267	697	0.2370	764	0.0326
430	0.1066	497	0.4641	564	0.7844	631	0.8192	698	0.2303	765	0.0319
431	0.1180	498	0.4722	565	0.7909	632	0.8105	699	0.2249	766	0.0304
432	0.1327	499	0.4819	566	0.7930	633	0.8048	700	0.2187	767	0.0295
433	0.1440	500	0.4917	567	0.7958	634	0.7964	701	0.2128	768	0.0289
434	0.1617	501	0.5013	568	0.8014	635	0.7879	702	0.2068	769	0.0281
435	0.1793	502	0.5093	569	0.8061	636	0.7803	703	0.2014	770	0.0271
436	0.1965	503	0.5187	570	0.8104	637	0.7711	704	0.1959	771	0.0266
437	0.2197	504	0.5280	571	0.8152	638	0.7608	705	0.1904	772	0.0257
438	0.2453	505	0.5342	572	0.8195	639	0.7538	706	0.1847	773	0.0251
439	0.2695	506	0.5423	573	0.8234	640	0.7466	707	0.1803	774	0.0238
440	0.2958	507	0.5522	574	0.8265	641	0.7359	708	0.1749	775	0.0233
441	0.3266	508	0.5568	575	0.8302	642	0.7265	709	0.1702	776	0.0227
442	0.3620	509	0.5656	576	0.8364	643	0.7189	710	0.1653	777	0.0220
443	0.3997	510	0.5718	577	0.8394	644	0.7086	711	0.1607	778	0.0215
444	0.4423	511	0.5797	578	0.8447	645	0.7000	712	0.1564	779	0.0215
445	0.4862	512	0.5866	579	0.8471	646	0.6896	713	0.1520	780	0.0215
446	0.5396	513	0.5913	580	0.8535	647	0.6795	714	0.1489	N/A	N/A

IES TM-30-18 Color Rendition Result for 5000K:

ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1
Date: 2020/9/28

Manufacturer: ETI Solid State Lighting (Z)
Model: 538421###_5000K



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.3440
 y 0.3570
 u' 0.2086
 v' 0.4871

CIE 13.3-1995
(CRI)
 R_a 85
 R_9 11

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

Spectrum Data for 5000K:

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	0.0171	447	0.7082	514	0.5294	581	0.6737	648	0.3319	715	0.0502
381	0.0149	448	0.7530	515	0.5326	582	0.6730	649	0.3246	716	0.0488
382	0.0111	449	0.8173	516	0.5375	583	0.6754	650	0.3180	717	0.0472
383	0.0120	450	0.8593	517	0.5416	584	0.6756	651	0.3106	718	0.0456
384	0.0106	451	0.9133	518	0.5439	585	0.6754	652	0.3031	719	0.0443
385	0.0086	452	0.9521	519	0.5501	586	0.6743	653	0.2961	720	0.0431
386	0.0082	453	0.9835	520	0.5517	587	0.6760	654	0.2887	721	0.0418
387	0.0070	454	0.9962	521	0.5559	588	0.6745	655	0.2830	722	0.0406
388	0.0089	455	0.9983	522	0.5584	589	0.6737	656	0.2768	723	0.0393
389	0.0063	456	0.9884	523	0.5616	590	0.6727	657	0.2697	724	0.0380
390	0.0054	457	0.9573	524	0.5646	591	0.6704	658	0.2628	725	0.0369
391	0.0069	458	0.9211	525	0.5684	592	0.6673	659	0.2570	726	0.0357
392	0.0065	459	0.8851	526	0.5680	593	0.6684	660	0.2495	727	0.0349
393	0.0055	460	0.8377	527	0.5725	594	0.6655	661	0.2443	728	0.0339
394	0.0061	461	0.7811	528	0.5754	595	0.6639	662	0.2376	729	0.0324
395	0.0056	462	0.7375	529	0.5768	596	0.6626	663	0.2315	730	0.0315
396	0.0057	463	0.6974	530	0.5803	597	0.6614	664	0.2259	731	0.0307
397	0.0060	464	0.6569	531	0.5796	598	0.6568	665	0.2208	732	0.0294
398	0.0059	465	0.6239	532	0.5817	599	0.6551	666	0.2146	733	0.0286
399	0.0060	466	0.6003	533	0.5846	600	0.6542	667	0.2093	734	0.0279
400	0.0063	467	0.5756	534	0.5861	601	0.6495	668	0.2036	735	0.0269
401	0.0070	468	0.5492	535	0.5898	602	0.6469	669	0.1982	736	0.0260
402	0.0076	469	0.5298	536	0.5905	603	0.6411	670	0.1928	737	0.0252
403	0.0082	470	0.5068	537	0.5917	604	0.6389	671	0.1867	738	0.0243
404	0.0086	471	0.4886	538	0.5943	605	0.6355	672	0.1821	739	0.0239
405	0.0096	472	0.4687	539	0.5953	606	0.6292	673	0.1776	740	0.0232
406	0.0105	473	0.4493	540	0.5991	607	0.6253	674	0.1730	741	0.0225
407	0.0120	474	0.4308	541	0.5986	608	0.6212	675	0.1677	742	0.0218
408	0.0129	475	0.4128	542	0.6014	609	0.6170	676	0.1630	743	0.0206
409	0.0142	476	0.3942	543	0.6029	610	0.6115	677	0.1591	744	0.0204
410	0.0158	477	0.3796	544	0.6069	611	0.6061	678	0.1539	745	0.0198
411	0.0181	478	0.3669	545	0.6079	612	0.5989	679	0.1499	746	0.0193
412	0.0192	479	0.3559	546	0.6097	613	0.5910	680	0.1462	747	0.0184
413	0.0222	480	0.3485	547	0.6117	614	0.5872	681	0.1417	748	0.0179
414	0.0254	481	0.3434	548	0.6147	615	0.5799	682	0.1373	749	0.0174
415	0.0286	482	0.3394	549	0.6164	616	0.5746	683	0.1336	750	0.0171
416	0.0321	483	0.3362	550	0.6188	617	0.5688	684	0.1298	751	0.0165
417	0.0355	484	0.3367	551	0.6187	618	0.5602	685	0.1260	752	0.0159
418	0.0404	485	0.3391	552	0.6224	619	0.5522	686	0.1224	753	0.0155
419	0.0457	486	0.3408	553	0.6244	620	0.5476	687	0.1187	754	0.0150
420	0.0500	487	0.3430	554	0.6264	621	0.5396	688	0.1152	755	0.0145
421	0.0564	488	0.3493	555	0.6281	622	0.5321	689	0.1116	756	0.0141
422	0.0625	489	0.3541	556	0.6309	623	0.5246	690	0.1088	757	0.0137
423	0.0705	490	0.3572	557	0.6332	624	0.5171	691	0.1051	758	0.0133
424	0.0785	491	0.3646	558	0.6373	625	0.5099	692	0.1023	759	0.0130
425	0.0876	492	0.3701	559	0.6372	626	0.5033	693	0.0994	760	0.0125
426	0.0977	493	0.3758	560	0.6391	627	0.4939	694	0.0963	761	0.0123
427	0.1089	494	0.3833	561	0.6432	628	0.4876	695	0.0935	762	0.0118
428	0.1216	495	0.3918	562	0.6429	629	0.4785	696	0.0911	763	0.0117
429	0.1363	496	0.4004	563	0.6460	630	0.4707	697	0.0877	764	0.0110
430	0.1501	497	0.4073	564	0.6473	631	0.4631	698	0.0855	765	0.0107
431	0.1649	498	0.4154	565	0.6517	632	0.4549	699	0.0826	766	0.0106
432	0.1841	499	0.4248	566	0.6536	633	0.4477	700	0.0803	767	0.0102
433	0.2014	500	0.4333	567	0.6541	634	0.4404	701	0.0777	768	0.0098
434	0.2216	501	0.4407	568	0.6566	635	0.4309	702	0.0754	769	0.0095
435	0.2446	502	0.4498	569	0.6598	636	0.4229	703	0.0728	770	0.0095
436	0.2649	503	0.4576	570	0.6601	637	0.4158	704	0.0708	771	0.0092
437	0.2953	504	0.4657	571	0.6628	638	0.4071	705	0.0681	772	0.0086
438	0.3256	505	0.4732	572	0.6648	639	0.3995	706	0.0662	773	0.0085
439	0.3548	506	0.4790	573	0.6663	640	0.3927	707	0.0645	774	0.0083
440	0.3873	507	0.4888	574	0.6658	641	0.3839	708	0.0624	775	0.0081
441	0.4212	508	0.4929	575	0.6678	642	0.3755	709	0.0605	776	0.0079
442	0.4637	509	0.5005	576	0.6693	643	0.3698	710	0.0585	777	0.0076
443	0.5070	510	0.5067	577	0.6712	644	0.3612	711	0.0572	778	0.0075
444	0.5501	511	0.5127	578	0.6721	645	0.3541	712	0.0551	779	0.0071
445	0.5967	512	0.5188	579	0.6722	646	0.3464	713	0.0532	780	0.0068
446	0.6494	513	0.5239	580	0.6743	647	0.3387	714	0.0516	N/A	N/A

Goniophotometer Test Results:

Test Condition:

Test Ambient (°C)	Test Humidity (%)	Orientation	Stabilization Time (minute)	Test Time (minute)
25.0	37.6	Face Down	90	25

Electrical Data:

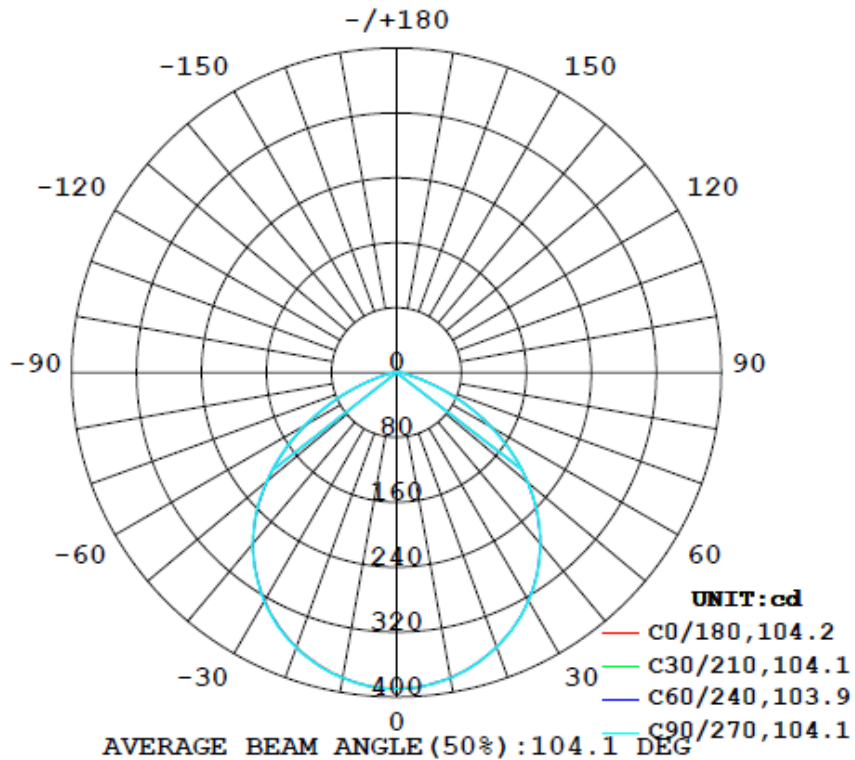
Voltage (V)	Frequency (Hz)	Current (A)	Wattage (W)	Power Factor
120.0	60	0.1322	14.37	0.9054

Goniophotometer Data:

Parameter	Results
Total Luminous (lm)	960.0
Luminous Efficacy (lm/w)	66.81
Zonal Lumens Distribution (0-60°)	86.7%
Beam Angle (°)	104.1

Luminous Intensity Distribution Diagram:

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM

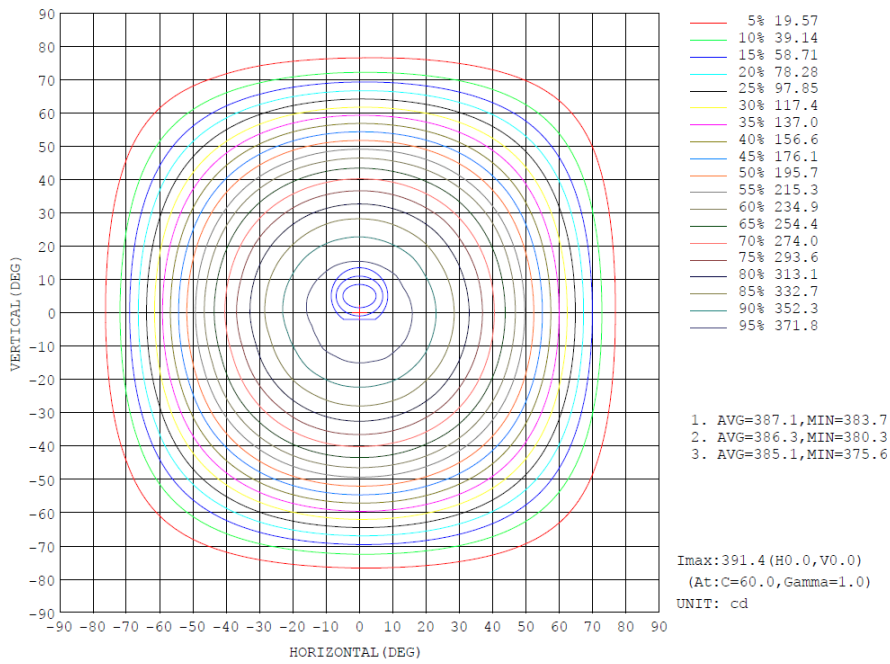


Zonal Flux Diagram:

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	φ zone	φ total	lum, lamp
10	381.5	381.7	382.3	382.2	381.4	381.7	382.1	382.3	0- 10	36.85	36.85	3.84,3.84
20	360.0	359.9	360.2	360.5	359.9	360.4	361.1	361.1	10- 20	105.2	142.1	14.8,14.8
30	324.9	325.0	324.7	324.5	324.6	324.9	326.1	325.9	20- 30	158.8	300.9	31.3,31.3
40	275.6	275.6	275.9	275.2	275.3	274.9	276.0	276.2	30- 40	188.9	489.7	51,51
50	211.8	211.3	211.5	209.9	208.8	208.3	208.7	210.8	40- 50	188.4	678.2	70.6,70.6
60	135.7	135.7	134.3	130.8	129.4	129.2	131.2	133.9	50- 60	153.7	831.9	86.7,86.7
70	57.67	57.59	55.97	52.75	51.35	51.06	53.58	56.52	60- 70	91.61	923.5	96.2,96.2
80	13.51	13.69	13.32	12.53	12.43	10.79	12.89	13.61	70- 80	29.64	953.1	99.3,99.3
90	0.0136	0	0	0.0011	0	0.0003	0	0.0069	80- 90	6.361	959.5	99.9,99.9
100	0	0	0	0	0	0	0	0	90-100	0.0002	959.5	99.9,99.9
110	0	0	0	0	0.0011	0.0031	0.0000	0	100-110	0.0000	959.5	99.9,99.9
120	0	0	0	0	0.0431	0.0430	0.0419	0.0417	110-120	0.0091	959.5	99.9,99.9
130	0.0489	0.0474	0.0486	0.0533	0.1252	0.1243	0.1254	0.1248	120-130	0.0439	959.5	100,100
140	0.1100	0.1097	0.1117	0.1154	0.2147	0.2135	0.2144	0.2145	130-140	0.0969	959.6	100,100
150	0.1542	0.1543	0.1560	0.1583	0.2986	0.2970	0.2985	0.2985	140-150	0.1224	959.7	100,100
160	0.2039	0.2013	0.2042	0.2061	0.3728	0.3720	0.3732	0.3727	150-160	0.1194	959.9	100,100
170	0.2431	0.2409	0.2471	0.2471	0.3653	0.3651	0.3667	0.3666	160-170	0.0847	960.0	100,100
180	0.3214	0.3220	0.3218	0.3210	0.3211	0.3194	0.3222	0.3221	170-180	0.0296	960.0	100,100
DEG	LUMINOUS INTENSITY:cd Less than 35% Percent = 10.1 %									UNIT:lm		

Isocandela Diagram:



Luminous Distribution Intensity Data:

Table--1 UNIT: cd

C (DEG) \ y (DEG)	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270
0	390	390	390	390	390	390	390	390	390	390	390	390	390	390	390	390	390	390	390
5	387	388	388	388	388	388	388	388	387	388	388	388	387	388	388	387	389	388	388
10	381	382	383	382	382	382	382	382	382	382	382	382	381	382	382	382	382	382	382
15	372	373	373	372	373	373	373	373	372	373	373	372	372	373	373	373	373	374	374
20	360	360	360	360	360	360	360	360	360	361	360	360	360	361	361	360	361	362	361
25	344	344	344	344	344	345	344	345	344	344	345	345	344	345	345	345	345	346	346
30	325	325	325	325	325	325	325	325	325	325	325	324	325	326	325	325	325	325	326
35	302	302	302	302	302	302	302	302	302	302	302	301	302	303	302	302	302	302	303
40	276	276	276	276	275	275	276	276	276	275	275	274	275	275	275	275	275	275	276
45	245	245	246	245	245	245	246	246	245	244	245	244	244	245	244	244	244	244	245
50	212	212	212	211	211	211	211	211	211	210	209	209	209	209	209	208	208	209	209
55	175	175	175	175	174	174	174	173	173	171	171	170	170	170	170	170	170	170	171
60	136	136	136	136	135	135	134	133	132	131	130	129	129	129	129	129	129	130	131
65	95.9	96.3	96.2	95.8	95.3	94.8	94.1	93.1	92.2	90.4	89.6	88.6	89.1	89.0	88.5	88.6	89.3	90.1	91.3
70	57.7	57.9	57.8	57.6	57.1	56.7	56.0	55.1	54.0	52.8	51.8	50.9	51.3	51.2	50.9	51.1	51.6	52.5	53.6
75	26.6	26.8	26.8	26.7	26.4	26.1	25.7	25.0	24.4	23.7	23.1	22.6	23.8	23.7	23.4	23.4	24.0	24.5	25.1
80	13.5	13.7	13.8	13.7	13.6	13.5	13.3	13.1	12.8	12.5	12.3	12.1	12.4	12.2	11.0	10.8	11.8	12.4	12.9
85	6.24	6.34	6.59	6.44	6.43	6.29	6.12	5.85	5.61	5.36	5.13	4.96	5.06	4.81	4.80	4.91	4.95	5.22	5.58
90	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02	0.02	0.02	0.02
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.04	0.04	0.04	0.04	0.04
125	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.08	0.08	0.08	0.08	0.08	0.08	0.08
130	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.13	0.12	0.12	0.12	0.12	0.12	0.13
135	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.17	0.17	0.17	0.17	0.17	0.17	0.17
140	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.12	0.12	0.12	0.21	0.21	0.21	0.21	0.21	0.21	0.21
145	0.13	0.13	0.13	0.13	0.13	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.26	0.26	0.26	0.26	0.26	0.26	0.26
150	0.15	0.15	0.15	0.15	0.15	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.30	0.30	0.30	0.30	0.30	0.30	0.30
155	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.34	0.34	0.34	0.34	0.34	0.34	0.34
160	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.21	0.21	0.21	0.21	0.37	0.37	0.37	0.37	0.37	0.37	0.37
165	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.23	0.22	0.22	0.23	0.38	0.38	0.38	0.38	0.38	0.38	0.38
170	0.24	0.24	0.24	0.24	0.24	0.24	0.25	0.25	0.25	0.25	0.25	0.25	0.37	0.37	0.37	0.37	0.37	0.37	0.37
175	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.29	0.29	0.28	0.35	0.35	0.35	0.35	0.35	0.35	0.36
180	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32

Table--2 UNIT: cd

C (DEG) \ y (DEG)	285	300	315	330	345														
0	390	390	390	390	390														
5	388	388	388	388	389														
10	383	382	382	383	383														
15	373	373	373	373	374														
20	361	361	361	361	362														
25	345	345	345	345	346														
30	325	326	326	326	327														
35	303	303	303	303	303														
40	276	276	276	277	277														
45	245	245	246	247	247														
50	209	210	211	212	212														
55	172	173	173	175	175														
60	132	133	134	136	136														
65	92.1	93.3	94.4	95.8	96.5														
70	54.4	55.5	56.5	57.7	58.2														
75	24.8	25.3	26.0	26.7	27.1														
80	13.2	13.4	13.6	13.8	13.9														
85	5.85	6.05	6.27	6.32	6.34														
90	0.01	0.00	0.01	0.01	0.03														
95	0.00	0.00	0.00	0.00	0.00														
100	0.00	0.00	0.00	0.00	0.00														
105	0.00	0.00	0.00	0.00	0.00														
110	0.00	0.00	0.00	0.00	0.00														
115	0.02	0.02	0.02	0.02	0.01														
120	0.04	0.04	0.04	0.04	0.04														
125	0.08	0.08	0.08	0.08	0.08														
130	0.12	0.12	0.12	0.12	0.12														
135	0.17	0.17	0.17	0.17	0.17														
140	0.21	0.21	0.21	0.22	0.21														
145	0.26	0.26	0.26	0.26	0.26														
150	0.30	0.30	0.30	0.30	0.30														
155	0.34	0.34	0.34	0.34	0.34														
160	0.37	0.37	0.37	0.37	0.37														
165	0.38	0.38	0.38	0.38	0.38														
170	0.37	0.37	0.37	0.37	0.37														
175	0.36	0.36	0.35	0.36	0.36														
180	0.32	0.32	0.32	0.32	0.32														

Photo of Sample:



Equipment List:

Equipment ID	Equipment Name	Last Cal.	Due Cal.
NTC-F01-001	Goniophotometer System	2019-11-13	2020-11-12
NTC-F01-006	2.0 meter Integrating Sphere	2019-11-13	2020-11-12
NTC-F01-012	Standard Lamp	2019-11-13	2020-11-12
NTC-F01-013	Standard Lamp	2019-11-13	2020-11-12
NTC-F01-031	Digital Power Meter	2020-08-22	2021-08-21
NTC-F01-019	Temperature & Humidity Meter	2019-11-15	2020-11-14

*****End of Report*****