

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

Panel Light

Model Name(s):

642141XX-Y

Representative (Tested) Model:

64214101

Model Difference:

1. Product is Color Tunable product, can be tunable from 3000K, 3500K, 4000K and 5000K;
2. Product is Wattage Tunable product, can be tunable from 20W, 25W, 30W and 35W;
3. XX represent Product Code, can be 00-99;
4. Y represents Function, can be blank for dimming, I for dimming with Motion Sensor, EM for dimming with Emergency, I-EM for dimming with Motion Sensor and Emergency;
5. All is the same construction, except Function and Model design.

Prepared by:

Alan Wang

Engineer: Alan Wang

Date: 2022-03-10

Reviewed by:

Vincent Yuan

Technical Lead: Vincent Yuan

Issue Date: 2022-03-21

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 d not imply product certification, approval, or endorsement by NVLAP, or any agency of the Federal Government.

Laboratory: Dongguan New Testing Centre Co., Ltd

Address: 3F, No. 1 the 1st North Industry Road, Songshan Lake Science & Technology Park, Dongguan, Guangdong, China

Tel: 86-769-22212079

Website: <http://www.ntc-cert.com>

Client Information:

Applicant Name:	ETI Solid State Lighting (Zhuhai) Ltd
Brand Name:	ETI
Manufacturer Name:	ETI Solid State Lighting (Zhuhai) Ltd
Manufacturer Address:	No.1, Zhongzhu Road South, Science & Technology Innovation Coast, High Tech District, Zhuhai City, Guangdong Prov., China 519085

Product Information:

Model Number:	642141XX(XX=00-99)
Product Type:	1x4 Luminaires for Ambient Lighting of Interior Commercial Spaces
Rating Input:	120-277Vac, 50/60Hz, 20W/25W/30W/35W
Declared CCT:	3000K, 3500K, 4000K and 5000K
Declared Light Output:	4375 lm
LED Manufacturer:	LUMILEDS
LED Model:	L128-3080RB35000F1 and L128-5080RB35000F1
LED Driver Model:	JPB-40LRF-054A

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:	2022-01-24
Quantity of Receipt Samples:	1 pc
Sample Number:	220124001-S1
Test Representation:	1. All CCTs conducted IS and Electrical test; 2. The lowest CCT conducted Gonio test.

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:

Test Report Form:	LM-79-08_TRF_V1.5
Issued Date of Test Report:	2022-03-21
Revised Date of Test Report:	N/A
Test Report No.:	NTCLR22030105
Remark (If applicable):	N/A

Test Specification:	
Date of Test	2022-02-16
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 10. THD and PF
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:
1. Photometric and Electrical Measurements – Light Distribution Method: Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at $25\text{ }^{\circ}\text{C} \pm 1^{\circ}\text{C}$, 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.
2. Photometric and Electrical Measurements – Integrating Sphere Method: Photometric parameters were measured using an integrating sphere, as spectroradiometer and software. The ambient temperature condition inside the sphere was measured at $25\text{ }^{\circ}\text{C} \pm 1^{\circ}\text{C}$. 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.
3. THD and PF Measurements: The sample was tested according to the ANSI C82.77, the sample was operated at requirement Voltage and Frequency, and was stabilized before measurement. The Total Harmonic Distortion was calculated from the Digital Power Meter.

Integrating Sphere Test Results:

Test Condition:

Test Ambient (°C)	Test Humidity (%)	Orientation	Stabilization Time (minute)	Test Time (minute)
25.4	41.0	Face Down	90	10

Electrical Data:

CCT Setting	Voltage (V)	Frequency (Hz)	Current (A)	Wattage (W)	Power Factor
3000K	120.0	60	0.2817	33.57	0.9929
3500K	120.0	60	0.2813	33.57	0.9944
4000K	120.0	60	0.2783	33.21	0.9943
5000K	120.0	60	0.2779	33.16	0.9945

Color Data:

CCT Setting	Test CCT (K)	R _a	R ₉	R _r	R _g	R _{cs, h1}	Chromaticity		
							(x, y)	(u', v')	Duv
3000K	2997	83.3	9	86	96	-11%	(0.4380, 0.4058)	(0.2505, 0.5222)	0.0005
3500K	3527	85.3	18	85	96	-11%	(0.4019, 0.3848)	(0.2360, 0.5083)	-0.0019
4000K	3960	85.7	21	85	96	-11%	(0.3806, 0.3724)	(0.2270, 0.4997)	-0.0021
5000K	4940	84.6	17	84	96	-12%	(0.3468, 0.3529)	(0.2121, 0.4855)	-0.0001

Specify Color Rendering:

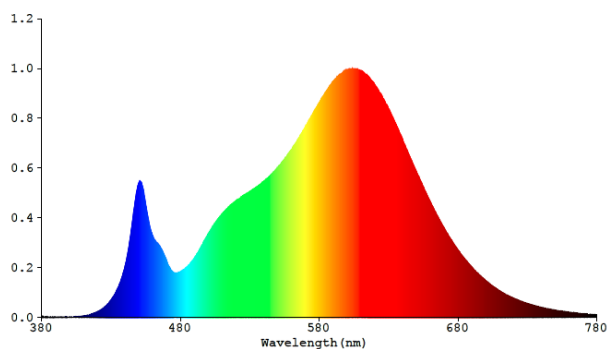
CCT Setting	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
3000K	82	91	97	82	82	90	83	60	9	81	82	73	84	99	74
3500K	85	93	96	84	85	90	85	65	18	83	83	69	87	99	78
4000K	85	93	96	84	85	89	86	68	21	82	84	65	87	98	80
5000K	84	91	94	83	83	85	88	69	17	77	82	57	86	97	79

Output Data:

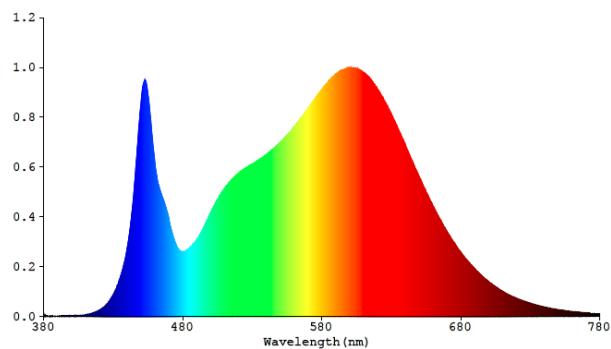
CCT Setting	Luminous (lm)	Efficacy (lm/W)
3000K	4208.4	125.36
3500K	4258.3	126.85
4000K	4278.1	128.82
5000K	4238.7	127.83

Spectrum Diagram:

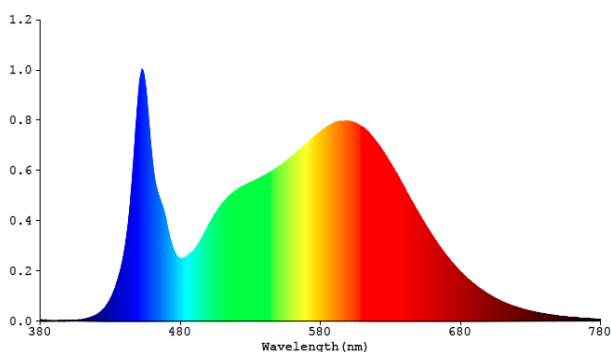
3000K



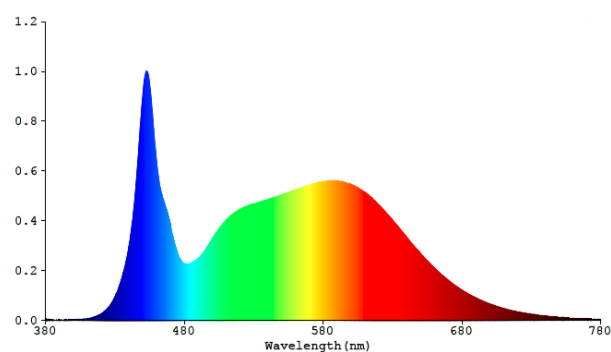
3500K



4000K



5000K



IES TM-30-18 Color Rendition Result (3000K):

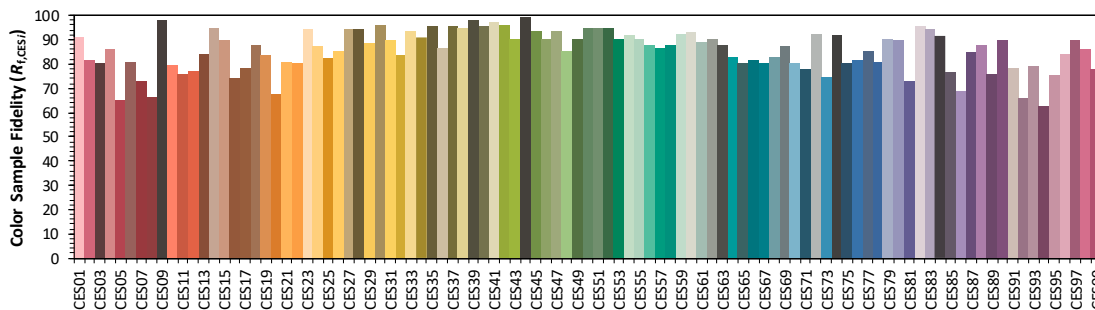
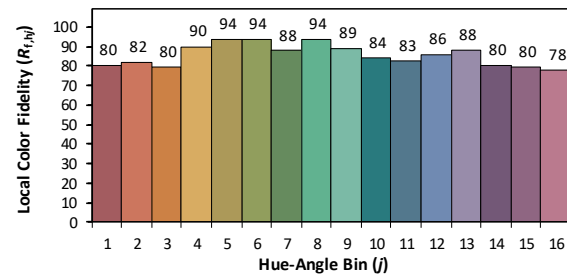
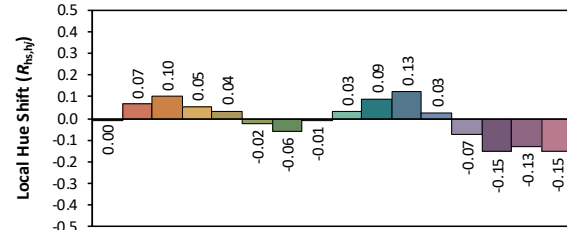
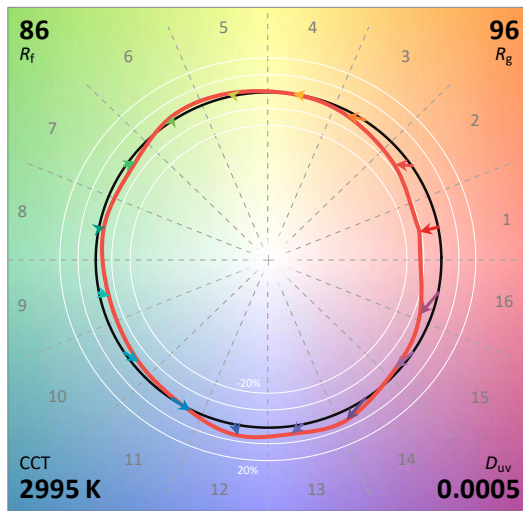
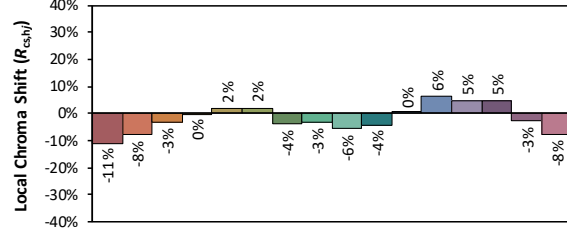
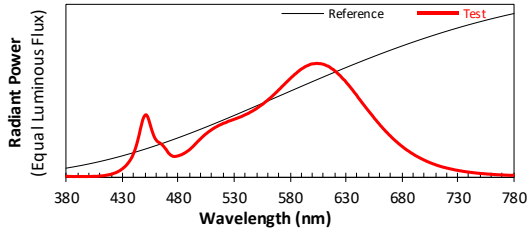
ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Date: 2022/3/10

Manufacturer: ETI Solid State Lighting (2

Model: 642141XX-Y



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

x 0.4380
 y 0.4057
 u' 0.2506
 v' 0.5222

CIE 13.3-1995
(CRI)
 R_a 83
 R_g 9

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

Spectrum Data (3000K):

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	0.0030	447	0.4569	514	0.4398	581	0.8728	648	0.6094	715	0.0905
381	0.0036	448	0.4966	515	0.4450	582	0.8822	649	0.5969	716	0.0876
382	0.0022	449	0.5229	516	0.4504	583	0.8902	650	0.5846	717	0.0847
383	0.0023	450	0.5391	517	0.4555	584	0.9000	651	0.5720	718	0.0822
384	0.0022	451	0.5462	518	0.4597	585	0.9076	652	0.5605	719	0.0802
385	0.0015	452	0.5372	519	0.4637	586	0.9156	653	0.5482	720	0.0772
386	0.0015	453	0.5167	520	0.4694	587	0.9250	654	0.5359	721	0.0750
387	0.0010	454	0.4859	521	0.4730	588	0.9319	655	0.5231	722	0.0729
388	0.0019	455	0.4520	522	0.4755	589	0.9408	656	0.5098	723	0.0706
389	0.0020	456	0.4190	523	0.4793	590	0.9478	657	0.4992	724	0.0686
390	0.0025	457	0.3893	524	0.4848	591	0.9539	658	0.4870	725	0.0658
391	0.0013	458	0.3618	525	0.4896	592	0.9594	659	0.4753	726	0.0642
392	0.0014	459	0.3411	526	0.4925	593	0.9665	660	0.4645	727	0.0618
393	0.0019	460	0.3256	527	0.4955	594	0.9720	661	0.4514	728	0.0595
394	0.0020	461	0.3133	528	0.4994	595	0.9766	662	0.4416	729	0.0578
395	0.0011	462	0.3059	529	0.5025	596	0.9802	663	0.4297	730	0.0563
396	0.0016	463	0.2999	530	0.5065	597	0.9847	664	0.4193	731	0.0544
397	0.0020	464	0.2931	531	0.5097	598	0.9895	665	0.4086	732	0.0526
398	0.0010	465	0.2864	532	0.5137	599	0.9931	666	0.3978	733	0.0513
399	0.0019	466	0.2761	533	0.5173	600	0.9946	667	0.3884	734	0.0492
400	0.0020	467	0.2656	534	0.5212	601	0.9956	668	0.3780	735	0.0474
401	0.0020	468	0.2529	535	0.5251	602	0.9968	669	0.3673	736	0.0459
402	0.0022	469	0.2411	536	0.5280	603	0.9975	670	0.3587	737	0.0445
403	0.0028	470	0.2268	537	0.5330	604	0.9998	671	0.3481	738	0.0433
404	0.0031	471	0.2109	538	0.5372	605	0.9982	672	0.3387	739	0.0417
405	0.0032	472	0.2017	539	0.5423	606	0.9966	673	0.3295	740	0.0406
406	0.0034	473	0.1918	540	0.5469	607	0.9972	674	0.3203	741	0.0396
407	0.0031	474	0.1860	541	0.5512	608	0.9952	675	0.3121	742	0.0378
408	0.0044	475	0.1806	542	0.5557	609	0.9930	676	0.3033	743	0.0371
409	0.0054	476	0.1786	543	0.5596	610	0.9912	677	0.2945	744	0.0358
410	0.0066	477	0.1788	544	0.5667	611	0.9870	678	0.2862	745	0.0344
411	0.0071	478	0.1796	545	0.5724	612	0.9834	679	0.2784	746	0.0333
412	0.0076	479	0.1820	546	0.5767	613	0.9777	680	0.2705	747	0.0323
413	0.0092	480	0.1843	547	0.5828	614	0.9754	681	0.2631	748	0.0310
414	0.0101	481	0.1878	548	0.5885	615	0.9698	682	0.2546	749	0.0305
415	0.0119	482	0.1917	549	0.5948	616	0.9633	683	0.2474	750	0.0292
416	0.0142	483	0.1941	550	0.6001	617	0.9549	684	0.2401	751	0.0283
417	0.0161	484	0.2003	551	0.6083	618	0.9494	685	0.2330	752	0.0275
418	0.0180	485	0.2049	552	0.6144	619	0.9434	686	0.2270	753	0.0267
419	0.0198	486	0.2107	553	0.6225	620	0.9340	687	0.2204	754	0.0262
420	0.0224	487	0.2170	554	0.6292	621	0.9267	688	0.2135	755	0.0248
421	0.0253	488	0.2240	555	0.6355	622	0.9174	689	0.2070	756	0.0244
422	0.0289	489	0.2306	556	0.6425	623	0.9075	690	0.2015	757	0.0230
423	0.0320	490	0.2379	557	0.6509	624	0.8990	691	0.1949	758	0.0230
424	0.0354	491	0.2467	558	0.6595	625	0.8904	692	0.1886	759	0.0223
425	0.0399	492	0.2564	559	0.6665	626	0.8784	693	0.1831	760	0.0213
426	0.0450	493	0.2647	560	0.6741	627	0.8679	694	0.1779	761	0.0212
427	0.0504	494	0.2751	561	0.6842	628	0.8574	695	0.1727	762	0.0199
428	0.0562	495	0.2859	562	0.6916	629	0.8502	696	0.1674	763	0.0195
429	0.0636	496	0.2956	563	0.7002	630	0.8369	697	0.1622	764	0.0190
430	0.0707	497	0.3067	564	0.7091	631	0.8249	698	0.1575	765	0.0179
431	0.0790	498	0.3159	565	0.7184	632	0.8136	699	0.1525	766	0.0175
432	0.0871	499	0.3256	566	0.7279	633	0.8021	700	0.1472	767	0.0171
433	0.0970	500	0.3349	567	0.7370	634	0.7898	701	0.1432	768	0.0165
434	0.1081	501	0.3449	568	0.7467	635	0.7776	702	0.1383	769	0.0160
435	0.1198	502	0.3543	569	0.7557	636	0.7651	703	0.1336	770	0.0159
436	0.1330	503	0.3630	570	0.7665	637	0.7524	704	0.1295	771	0.0152
437	0.1478	504	0.3719	571	0.7748	638	0.7390	705	0.1258	772	0.0146
438	0.1645	505	0.3793	572	0.7851	639	0.7278	706	0.1215	773	0.0142
439	0.1836	506	0.3874	573	0.7964	640	0.7145	707	0.1181	774	0.0136
440	0.2075	507	0.3954	574	0.8051	641	0.6989	708	0.1140	775	0.0135
441	0.2326	508	0.4020	575	0.8147	642	0.6866	709	0.1103	776	0.0127
442	0.2624	509	0.4088	576	0.8250	643	0.6739	710	0.1071	777	0.0124
443	0.2958	510	0.4157	577	0.8348	644	0.6602	711	0.1032	778	0.0121
444	0.3340	511	0.4225	578	0.8439	645	0.6473	712	0.0993	779	0.0124
445	0.3734	512	0.4284	579	0.8537	646	0.6351	713	0.0968	780	0.0124
446	0.4182	513	0.4344	580	0.8628	647	0.6223	714	0.0934	N/A	N/A

IES TM-30-18 Color Rendition Result (3500K):

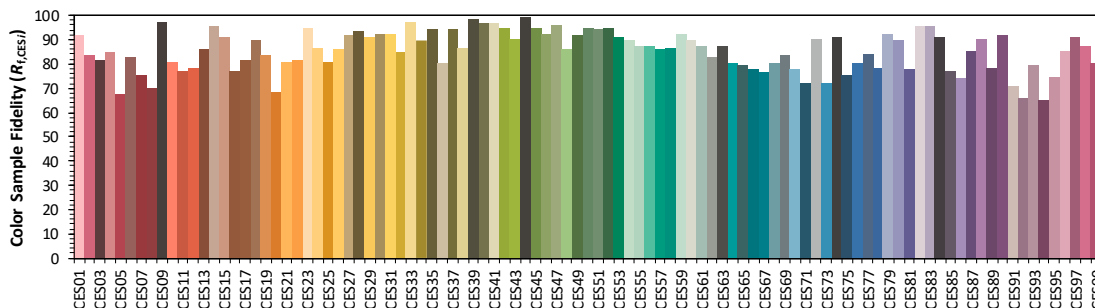
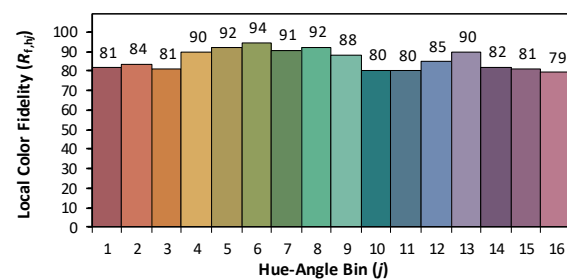
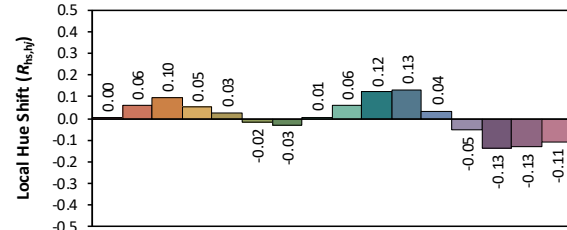
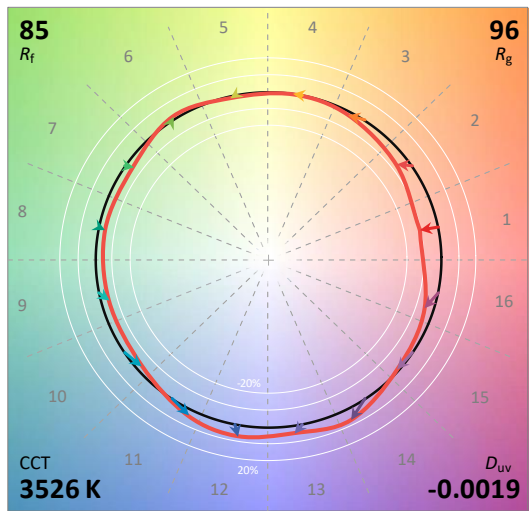
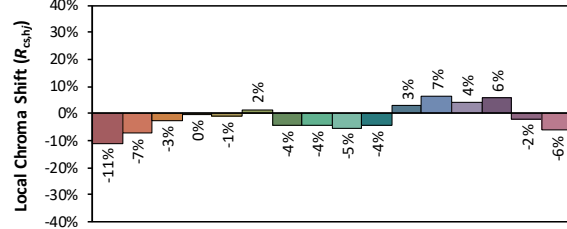
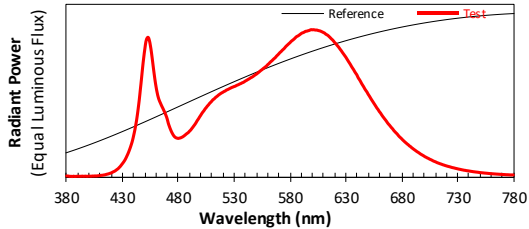
ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: ETI Solid State Lighting (2

Date: 2022/3/10

Model: 642141XX-Y



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

x 0.4019
 y 0.3846
 u' 0.2360
 v' 0.5082

CIE 13.3-1995
(CRI)

R_a 85
 R_g 18

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

Spectrum Data (3500K):

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	0.0047	447	0.6653	514	0.5423	581	0.9192	648	0.5854	715	0.0861
381	0.0041	448	0.7413	515	0.5479	582	0.9254	649	0.5747	716	0.0835
382	0.0030	449	0.8092	516	0.5548	583	0.9313	650	0.5607	717	0.0805
383	0.0015	450	0.8687	517	0.5602	584	0.9379	651	0.5492	718	0.0783
384	0.0021	451	0.9192	518	0.5655	585	0.9457	652	0.5365	719	0.0755
385	0.0002	452	0.9417	519	0.5701	586	0.9526	653	0.5239	720	0.0733
386	0.0029	453	0.9469	520	0.5742	587	0.9562	654	0.5124	721	0.0709
387	0.0013	454	0.9282	521	0.5792	588	0.9612	655	0.5004	722	0.0689
388	0.0014	455	0.8901	522	0.5823	589	0.9669	656	0.4889	723	0.0670
389	0.0021	456	0.8397	523	0.5883	590	0.9727	657	0.4768	724	0.0647
390	0.0026	457	0.7798	524	0.5913	591	0.9772	658	0.4648	725	0.0623
391	0.0022	458	0.7193	525	0.5952	592	0.9796	659	0.4551	726	0.0606
392	0.0022	459	0.6621	526	0.5991	593	0.9838	660	0.4426	727	0.0589
393	0.0022	460	0.6130	527	0.6029	594	0.9881	661	0.4334	728	0.0568
394	0.0032	461	0.5723	528	0.6066	595	0.9891	662	0.4215	729	0.0550
395	0.0021	462	0.5397	529	0.6095	596	0.9915	663	0.4104	730	0.0533
396	0.0026	463	0.5171	530	0.6126	597	0.9935	664	0.4004	731	0.0513
397	0.0031	464	0.4997	531	0.6150	598	0.9968	665	0.3903	732	0.0499
398	0.0020	465	0.4822	532	0.6195	599	0.9995	666	0.3808	733	0.0482
399	0.0024	466	0.4667	533	0.6228	600	0.9984	667	0.3697	734	0.0465
400	0.0035	467	0.4506	534	0.6258	601	0.9992	668	0.3593	735	0.0450
401	0.0028	468	0.4335	535	0.6302	602	0.9980	669	0.3511	736	0.0434
402	0.0027	469	0.4146	536	0.6329	603	0.9965	670	0.3415	737	0.0424
403	0.0040	470	0.3929	537	0.6373	604	0.9968	671	0.3323	738	0.0408
404	0.0036	471	0.3634	538	0.6403	605	0.9944	672	0.3242	739	0.0398
405	0.0044	472	0.3410	539	0.6446	606	0.9924	673	0.3135	740	0.0386
406	0.0045	473	0.3208	540	0.6501	607	0.9906	674	0.3053	741	0.0374
407	0.0043	474	0.3035	541	0.6540	608	0.9872	675	0.2973	742	0.0360
408	0.0058	475	0.2889	542	0.6590	609	0.9838	676	0.2900	743	0.0350
409	0.0063	476	0.2769	543	0.6631	610	0.9798	677	0.2802	744	0.0336
410	0.0070	477	0.2688	544	0.6679	611	0.9761	678	0.2717	745	0.0327
411	0.0087	478	0.2637	545	0.6729	612	0.9692	679	0.2647	746	0.0316
412	0.0092	479	0.2615	546	0.6766	613	0.9648	680	0.2575	747	0.0307
413	0.0109	480	0.2599	547	0.6817	614	0.9600	681	0.2493	748	0.0299
414	0.0118	481	0.2619	548	0.6872	615	0.9529	682	0.2424	749	0.0288
415	0.0139	482	0.2635	549	0.6928	616	0.9456	683	0.2350	750	0.0276
416	0.0161	483	0.2671	550	0.6974	617	0.9374	684	0.2287	751	0.0269
417	0.0180	484	0.2708	551	0.7036	618	0.9307	685	0.2218	752	0.0260
418	0.0202	485	0.2764	552	0.7095	619	0.9222	686	0.2162	753	0.0253
419	0.0231	486	0.2822	553	0.7160	620	0.9122	687	0.2088	754	0.0244
420	0.0256	487	0.2888	554	0.7225	621	0.9049	688	0.2039	755	0.0237
421	0.0298	488	0.2947	555	0.7278	622	0.8950	689	0.1967	756	0.0230
422	0.0335	489	0.3002	556	0.7345	623	0.8860	690	0.1911	757	0.0223
423	0.0372	490	0.3089	557	0.7403	624	0.8765	691	0.1852	758	0.0214
424	0.0423	491	0.3162	558	0.7464	625	0.8655	692	0.1799	759	0.0207
425	0.0483	492	0.3261	559	0.7523	626	0.8557	693	0.1742	760	0.0204
426	0.0537	493	0.3360	560	0.7611	627	0.8443	694	0.1688	761	0.0195
427	0.0616	494	0.3465	561	0.7673	628	0.8338	695	0.1643	762	0.0189
428	0.0694	495	0.3566	562	0.7756	629	0.8231	696	0.1589	763	0.0183
429	0.0792	496	0.3687	563	0.7829	630	0.8124	697	0.1534	764	0.0179
430	0.0890	497	0.3817	564	0.7890	631	0.8002	698	0.1490	765	0.0171
431	0.0994	498	0.3926	565	0.7971	632	0.7879	699	0.1446	766	0.0168
432	0.1108	499	0.4051	566	0.8038	633	0.7758	700	0.1400	767	0.0162
433	0.1249	500	0.4165	567	0.8105	634	0.7643	701	0.1348	768	0.0157
434	0.1411	501	0.4288	568	0.8200	635	0.7506	702	0.1313	769	0.0154
435	0.1578	502	0.4395	569	0.8272	636	0.7386	703	0.1268	770	0.0145
436	0.1769	503	0.4490	570	0.8351	637	0.7272	704	0.1238	771	0.0142
437	0.1979	504	0.4608	571	0.8438	638	0.7137	705	0.1191	772	0.0140
438	0.2212	505	0.4696	572	0.8502	639	0.7020	706	0.1158	773	0.0134
439	0.2472	506	0.4799	573	0.8585	640	0.6905	707	0.1122	774	0.0129
440	0.2800	507	0.4878	574	0.8655	641	0.6737	708	0.1079	775	0.0128
441	0.3154	508	0.4979	575	0.8728	642	0.6619	709	0.1043	776	0.0123
442	0.3564	509	0.5054	576	0.8823	643	0.6499	710	0.1016	777	0.0117
443	0.4034	510	0.5137	577	0.8901	644	0.6354	711	0.0981	778	0.0115
444	0.4596	511	0.5230	578	0.8970	645	0.6228	712	0.0943	779	0.0115
445	0.5217	512	0.5278	579	0.9043	646	0.6109	713	0.0918	780	0.0115
446	0.5930	513	0.5359	580	0.9109	647	0.5969	714	0.0886	N/A	N/A

IES TM-30-18 Color Rendition Result (4000K):

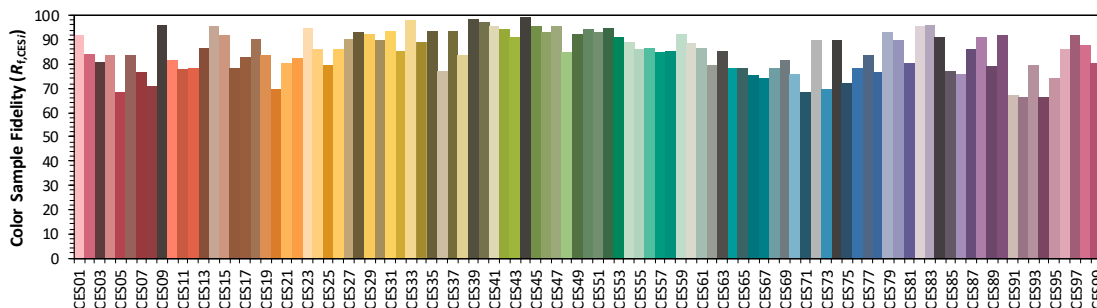
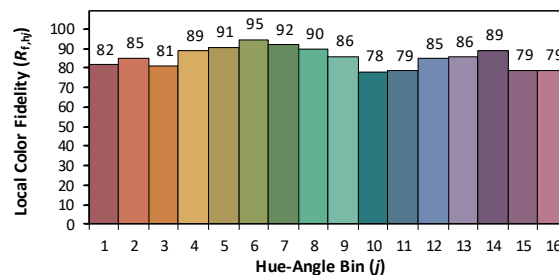
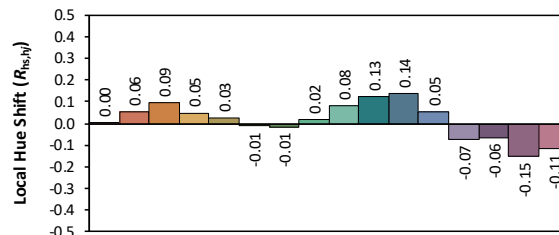
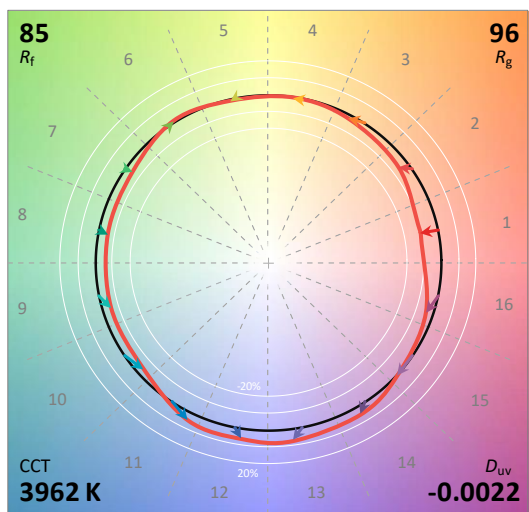
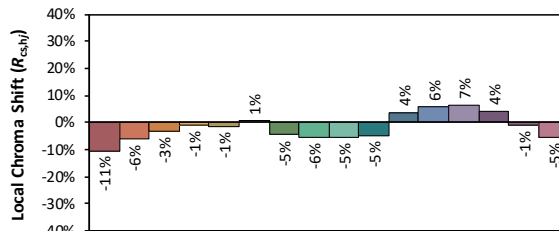
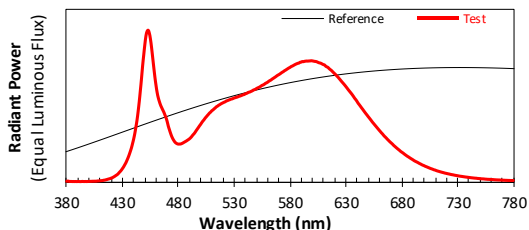
ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: ETI Solid State Lighting (2

Date: 2022/3/10

Model: 642141XX-Y



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

x 0.3806
 y 0.3723
 u' 0.2270
 v' 0.4996

CIE 13.3-1995
(CRI)
 R_a 86
 R_g 21

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

Spectrum Data (4000K):

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	0.0034	447	0.6786	514	0.4934	581	0.7582	648	0.4487	715	0.0653
381	0.0051	448	0.7627	515	0.4976	582	0.7615	649	0.4395	716	0.0633
382	0.0035	449	0.8344	516	0.5034	583	0.7654	650	0.4297	717	0.0613
383	0.0024	450	0.9036	517	0.5076	584	0.7697	651	0.4206	718	0.0593
384	0.0026	451	0.9602	518	0.5124	585	0.7735	652	0.4111	719	0.0572
385	0.0020	452	0.9898	519	0.5165	586	0.7768	653	0.4014	720	0.0557
386	0.0022	453	0.9975	520	0.5202	587	0.7798	654	0.3916	721	0.0540
387	0.0019	454	0.9790	521	0.5238	588	0.7813	655	0.3830	722	0.0523
388	0.0023	455	0.9407	522	0.5269	589	0.7865	656	0.3740	723	0.0508
389	0.0017	456	0.8852	523	0.5320	590	0.7877	657	0.3653	724	0.0489
390	0.0022	457	0.8194	524	0.5343	591	0.7914	658	0.3564	725	0.0474
391	0.0021	458	0.7538	525	0.5378	592	0.7906	659	0.3477	726	0.0462
392	0.0017	459	0.6900	526	0.5403	593	0.7928	660	0.3389	727	0.0446
393	0.0018	460	0.6355	527	0.5439	594	0.7940	661	0.3304	728	0.0429
394	0.0029	461	0.5885	528	0.5455	595	0.7947	662	0.3218	729	0.0418
395	0.0021	462	0.5539	529	0.5482	596	0.7944	663	0.3141	730	0.0403
396	0.0020	463	0.5288	530	0.5518	597	0.7953	664	0.3049	731	0.0389
397	0.0024	464	0.5066	531	0.5539	598	0.7956	665	0.2973	732	0.0376
398	0.0019	465	0.4899	532	0.5562	599	0.7967	666	0.2903	733	0.0365
399	0.0025	466	0.4738	533	0.5584	600	0.7958	667	0.2821	734	0.0356
400	0.0029	467	0.4588	534	0.5619	601	0.7944	668	0.2748	735	0.0344
401	0.0031	468	0.4403	535	0.5640	602	0.7928	669	0.2672	736	0.0333
402	0.0033	469	0.4210	536	0.5667	603	0.7919	670	0.2601	737	0.0321
403	0.0039	470	0.3973	537	0.5697	604	0.7901	671	0.2537	738	0.0312
404	0.0039	471	0.3670	538	0.5729	605	0.7865	672	0.2468	739	0.0304
405	0.0041	472	0.3434	539	0.5746	606	0.7835	673	0.2390	740	0.0292
406	0.0042	473	0.3206	540	0.5791	607	0.7817	674	0.2328	741	0.0284
407	0.0048	474	0.3005	541	0.5817	608	0.7790	675	0.2262	742	0.0273
408	0.0060	475	0.2844	542	0.5853	609	0.7747	676	0.2199	743	0.0265
409	0.0060	476	0.2719	543	0.5894	610	0.7713	677	0.2138	744	0.0257
410	0.0071	477	0.2612	544	0.5911	611	0.7687	678	0.2080	745	0.0248
411	0.0080	478	0.2548	545	0.5948	612	0.7611	679	0.2013	746	0.0241
412	0.0083	479	0.2505	546	0.5979	613	0.7566	680	0.1960	747	0.0237
413	0.0104	480	0.2485	547	0.6030	614	0.7529	681	0.1910	748	0.0224
414	0.0114	481	0.2487	548	0.6060	615	0.7456	682	0.1854	749	0.0220
415	0.0133	482	0.2491	549	0.6089	616	0.7392	683	0.1795	750	0.0212
416	0.0153	483	0.2517	550	0.6138	617	0.7336	684	0.1743	751	0.0204
417	0.0176	484	0.2553	551	0.6179	618	0.7263	685	0.1690	752	0.0197
418	0.0196	485	0.2596	552	0.6210	619	0.7187	686	0.1645	753	0.0195
419	0.0217	486	0.2639	553	0.6248	620	0.7117	687	0.1596	754	0.0188
420	0.0249	487	0.2681	554	0.6298	621	0.7046	688	0.1547	755	0.0178
421	0.0277	488	0.2730	555	0.6346	622	0.6964	689	0.1501	756	0.0175
422	0.0320	489	0.2779	556	0.6378	623	0.6892	690	0.1457	757	0.0166
423	0.0363	490	0.2833	557	0.6421	624	0.6802	691	0.1405	758	0.0165
424	0.0415	491	0.2902	558	0.6478	625	0.6715	692	0.1363	759	0.0160
425	0.0463	492	0.2984	559	0.6515	626	0.6623	693	0.1325	760	0.0153
426	0.0524	493	0.3081	560	0.6559	627	0.6540	694	0.1291	761	0.0152
427	0.0610	494	0.3160	561	0.6616	628	0.6456	695	0.1250	762	0.0147
428	0.0686	495	0.3257	562	0.6663	629	0.6369	696	0.1208	763	0.0140
429	0.0774	496	0.3371	563	0.6703	630	0.6276	697	0.1173	764	0.0135
430	0.0880	497	0.3475	564	0.6760	631	0.6182	698	0.1131	765	0.0130
431	0.0989	498	0.3581	565	0.6807	632	0.6083	699	0.1096	766	0.0127
432	0.1122	499	0.3688	566	0.6858	633	0.5990	700	0.1067	767	0.0124
433	0.1252	500	0.3786	567	0.6905	634	0.5899	701	0.1029	768	0.0122
434	0.1417	501	0.3899	568	0.6962	635	0.5808	702	0.0999	769	0.0116
435	0.1590	502	0.4000	569	0.7013	636	0.5710	703	0.0970	770	0.0113
436	0.1785	503	0.4086	570	0.7053	637	0.5604	704	0.0938	771	0.0108
437	0.2004	504	0.4191	571	0.7101	638	0.5494	705	0.0908	772	0.0106
438	0.2236	505	0.4275	572	0.7154	639	0.5404	706	0.0876	773	0.0101
439	0.2519	506	0.4364	573	0.7208	640	0.5298	707	0.0852	774	0.0099
440	0.2821	507	0.4445	574	0.7248	641	0.5178	708	0.0824	775	0.0095
441	0.3177	508	0.4532	575	0.7306	642	0.5082	709	0.0792	776	0.0093
442	0.3605	509	0.4593	576	0.7347	643	0.4984	710	0.0775	777	0.0091
443	0.4060	510	0.4680	577	0.7397	644	0.4882	711	0.0743	778	0.0087
444	0.4632	511	0.4729	578	0.7444	645	0.4786	712	0.0718	779	0.0088
445	0.5284	512	0.4801	579	0.7492	646	0.4685	713	0.0697	780	0.0088
446	0.6013	513	0.4860	580	0.7528	647	0.4584	714	0.0675	N/A	N/A

IES TM-30-18 Color Rendition Result (5000K):

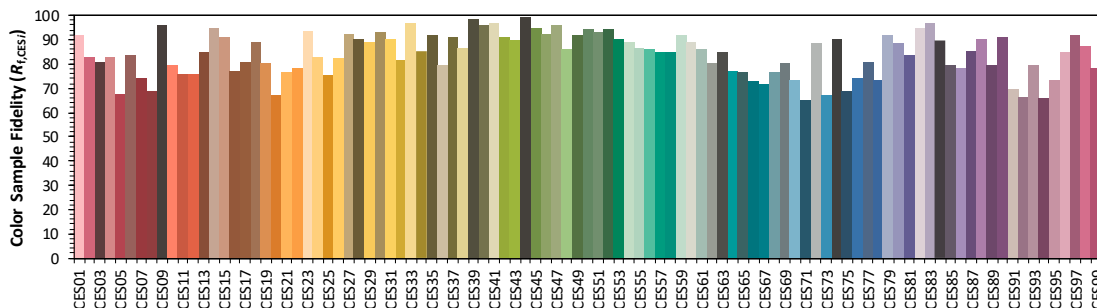
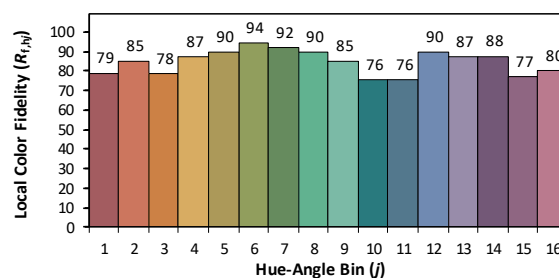
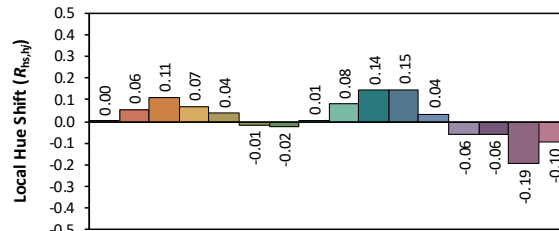
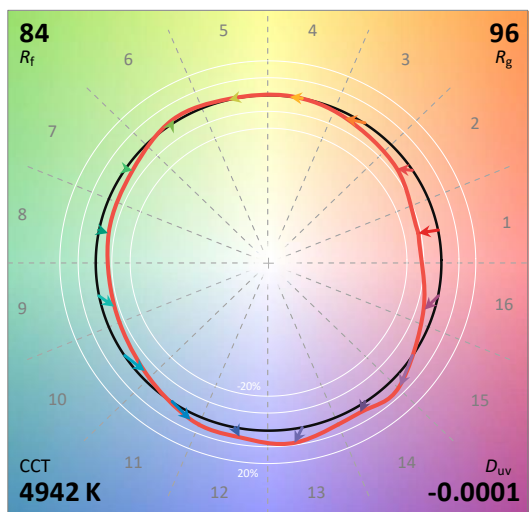
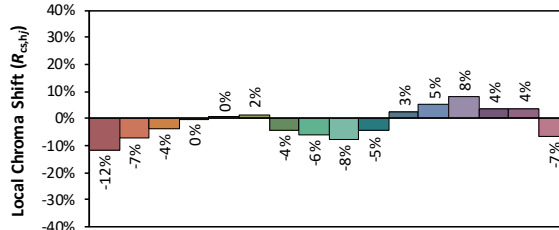
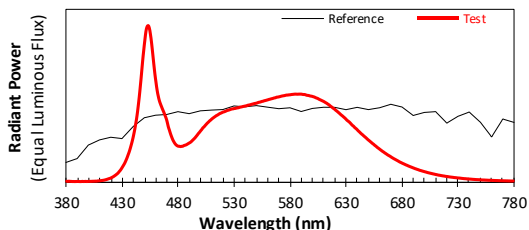
ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: ETI Solid State Lighting (2

Date: 2022/3/10

Model: 642141XX-Y



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

x 0.3467
 y 0.3527
 u' 0.2121
 v' 0.4854

CIE 13.3-1995
(CRI)
 R_a 85
 R_g 17

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

Spectrum Data (5000K):

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	0.0039	447	0.6894	514	0.4227	581	0.5575	648	0.2820	715	0.0408
381	0.0031	448	0.7695	515	0.4264	582	0.5585	649	0.2752	716	0.0395
382	0.0042	449	0.8399	516	0.4310	583	0.5591	650	0.2687	717	0.0382
383	0.0032	450	0.9044	517	0.4357	584	0.5601	651	0.2630	718	0.0373
384	0.0030	451	0.9615	518	0.4388	585	0.5604	652	0.2569	719	0.0359
385	0.0022	452	0.9906	519	0.4420	586	0.5600	653	0.2509	720	0.0347
386	0.0024	453	0.9982	520	0.4456	587	0.5598	654	0.2447	721	0.0340
387	0.0019	454	0.9829	521	0.4475	588	0.5604	655	0.2396	722	0.0327
388	0.0022	455	0.9433	522	0.4502	589	0.5604	656	0.2329	723	0.0315
389	0.0024	456	0.8893	523	0.4535	590	0.5604	657	0.2279	724	0.0306
390	0.0027	457	0.8230	524	0.4565	591	0.5591	658	0.2211	725	0.0297
391	0.0022	458	0.7550	525	0.4581	592	0.5579	659	0.2161	726	0.0289
392	0.0020	459	0.6897	526	0.4608	593	0.5580	660	0.2107	727	0.0277
393	0.0019	460	0.6354	527	0.4633	594	0.5560	661	0.2051	728	0.0271
394	0.0032	461	0.5853	528	0.4657	595	0.5532	662	0.1998	729	0.0263
395	0.0022	462	0.5481	529	0.4663	596	0.5523	663	0.1944	730	0.0252
396	0.0025	463	0.5189	530	0.4684	597	0.5510	664	0.1899	731	0.0247
397	0.0031	464	0.4977	531	0.4691	598	0.5486	665	0.1844	732	0.0241
398	0.0022	465	0.4794	532	0.4712	599	0.5475	666	0.1800	733	0.0232
399	0.0028	466	0.4613	533	0.4725	600	0.5459	667	0.1748	734	0.0222
400	0.0033	467	0.4448	534	0.4738	601	0.5435	668	0.1702	735	0.0215
401	0.0030	468	0.4261	535	0.4764	602	0.5414	669	0.1662	736	0.0206
402	0.0033	469	0.4078	536	0.4780	603	0.5376	670	0.1618	737	0.0203
403	0.0038	470	0.3834	537	0.4795	604	0.5349	671	0.1569	738	0.0195
404	0.0039	471	0.3524	538	0.4816	605	0.5322	672	0.1526	739	0.0187
405	0.0042	472	0.3305	539	0.4829	606	0.5277	673	0.1482	740	0.0182
406	0.0046	473	0.3071	540	0.4847	607	0.5245	674	0.1445	741	0.0178
407	0.0046	474	0.2876	541	0.4858	608	0.5210	675	0.1405	742	0.0173
408	0.0061	475	0.2696	542	0.4888	609	0.5176	676	0.1366	743	0.0167
409	0.0063	476	0.2561	543	0.4904	610	0.5142	677	0.1326	744	0.0160
410	0.0071	477	0.2445	544	0.4918	611	0.5101	678	0.1283	745	0.0156
411	0.0084	478	0.2364	545	0.4939	612	0.5056	679	0.1247	746	0.0150
412	0.0092	479	0.2308	546	0.4960	613	0.5016	680	0.1214	747	0.0145
413	0.0104	480	0.2277	547	0.4978	614	0.4961	681	0.1177	748	0.0142
414	0.0119	481	0.2271	548	0.4999	615	0.4918	682	0.1147	749	0.0138
415	0.0138	482	0.2255	549	0.5014	616	0.4852	683	0.1113	750	0.0134
416	0.0159	483	0.2270	550	0.5027	617	0.4801	684	0.1080	751	0.0130
417	0.0184	484	0.2277	551	0.5055	618	0.4745	685	0.1052	752	0.0123
418	0.0208	485	0.2318	552	0.5080	619	0.4690	686	0.1017	753	0.0120
419	0.0230	486	0.2340	553	0.5093	620	0.4641	687	0.0989	754	0.0119
420	0.0264	487	0.2366	554	0.5115	621	0.4573	688	0.0960	755	0.0113
421	0.0301	488	0.2406	555	0.5140	622	0.4521	689	0.0933	756	0.0111
422	0.0342	489	0.2450	556	0.5153	623	0.4458	690	0.0903	757	0.0107
423	0.0392	490	0.2492	557	0.5182	624	0.4398	691	0.0876	758	0.0102
424	0.0443	491	0.2536	558	0.5196	625	0.4331	692	0.0846	759	0.0102
425	0.0502	492	0.2600	559	0.5217	626	0.4266	693	0.0824	760	0.0097
426	0.0564	493	0.2673	560	0.5237	627	0.4213	694	0.0797	761	0.0094
427	0.0653	494	0.2742	561	0.5261	628	0.4148	695	0.0775	762	0.0093
428	0.0735	495	0.2817	562	0.5278	629	0.4087	696	0.0745	763	0.0088
429	0.0839	496	0.2905	563	0.5299	630	0.4017	697	0.0725	764	0.0086
430	0.0955	497	0.2994	564	0.5318	631	0.3941	698	0.0704	765	0.0083
431	0.1073	498	0.3091	565	0.5337	632	0.3884	699	0.0682	766	0.0082
432	0.1199	499	0.3170	566	0.5362	633	0.3828	700	0.0662	767	0.0078
433	0.1356	500	0.3264	567	0.5372	634	0.3759	701	0.0641	768	0.0076
434	0.1525	501	0.3347	568	0.5407	635	0.3678	702	0.0623	769	0.0073
435	0.1721	502	0.3449	569	0.5414	636	0.3606	703	0.0600	770	0.0071
436	0.1917	503	0.3513	570	0.5430	637	0.3551	704	0.0582	771	0.0070
437	0.2152	504	0.3596	571	0.5445	638	0.3470	705	0.0564	772	0.0067
438	0.2410	505	0.3676	572	0.5468	639	0.3413	706	0.0547	773	0.0066
439	0.2684	506	0.3755	573	0.5485	640	0.3348	707	0.0531	774	0.0063
440	0.3005	507	0.3819	574	0.5498	641	0.3269	708	0.0513	775	0.0063
441	0.3366	508	0.3893	575	0.5509	642	0.3204	709	0.0498	776	0.0058
442	0.3775	509	0.3949	576	0.5528	643	0.3135	710	0.0480	777	0.0059
443	0.4231	510	0.4018	577	0.5543	644	0.3065	711	0.0466	778	0.0054
444	0.4796	511	0.4072	578	0.5545	645	0.3009	712	0.0450	779	0.0056
445	0.5427	512	0.4126	579	0.5558	646	0.2942	713	0.0432	780	0.0056
446	0.6132	513	0.4175	580	0.5561	647	0.2880	714	0.0422	N/A	N/A

Goniophotometer Test Results:

Test Condition:

Test Ambient (°C)	Test Humidity (%)	Orientation	Stabilization Time (minute)	Test Time (minute)
25.0	45.6	Face Down	90	25

Electrical Data:

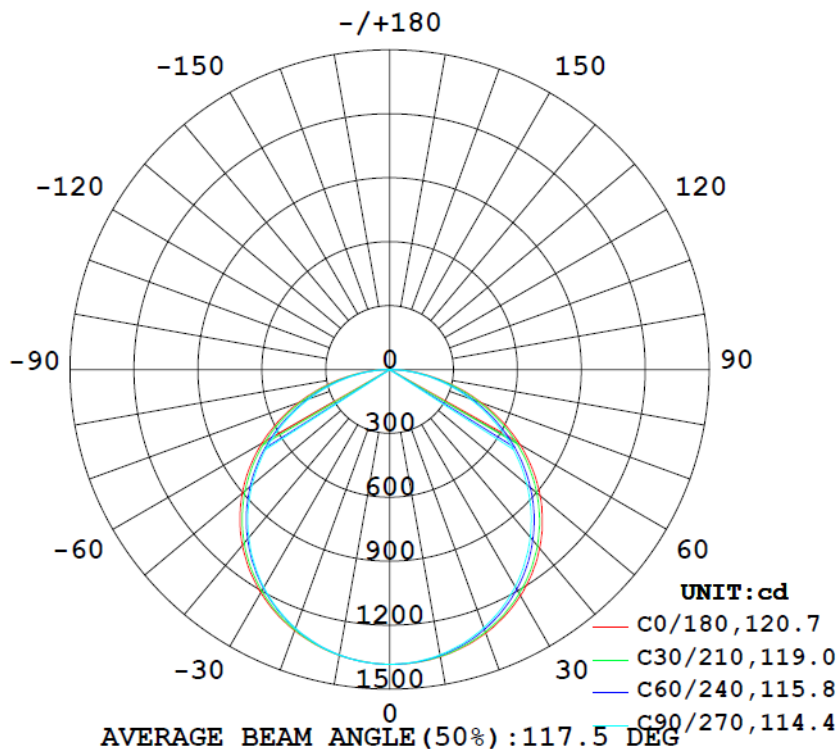
Voltage (V)	Frequency (Hz)	Current (A)	Wattage (W)	Power Factor
120.0	60	0.2817	33.57	0.9929

Goniophotometer Data:

Parameter	Results	
Total Luminous (lm)	4208.4	
Luminous Efficacy (lm/W)	125.36	
Zonal Lumens Distribution (0-60°)	76.9%	
Beam Angle (°)	117.5	
Spacing Criterion	0-180°	90-270°
	1.32	1.28
UGR	Viewed Crosswise	Viewed Endwise
	21.9	21.1

Luminous Intensity Distribution Diagram:

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM

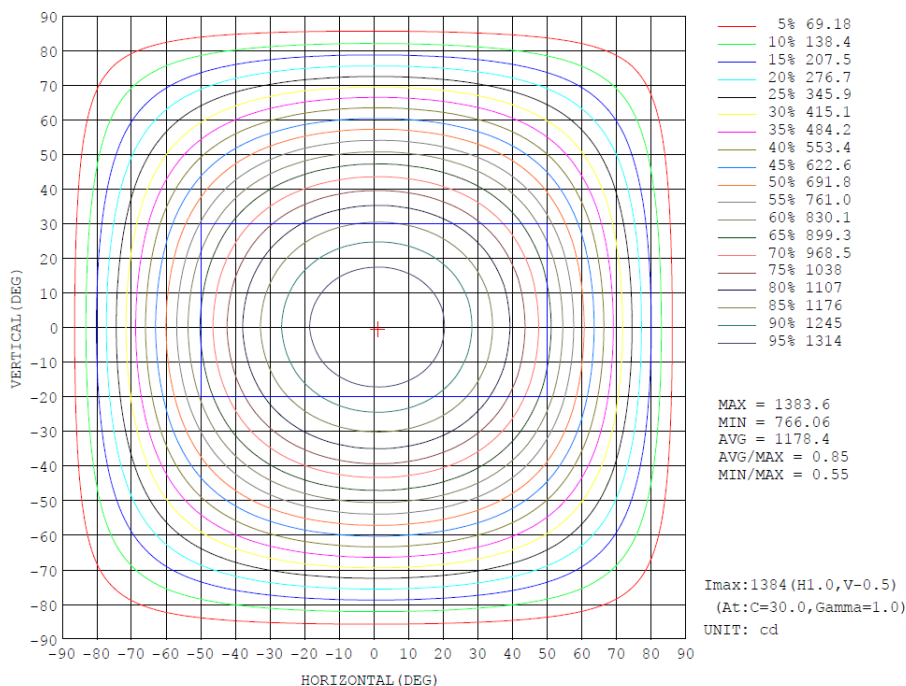


Zonal Flux Diagram:

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	zone	total	%lum, lamp
10	1368	1364	1359	1359	1362	1361	1361	1366	0- 10	131.0	131.0	3.11,3.11
20	1317	1305	1290	1294	1304	1296	1293	1306	10- 20	277.5	508.5	12.1,12.1
30	1226	1204	1178	1190	1210	1193	1181	1207	20- 30	578.5	1087	25.8,25.8
40	1095	1062	1026	1046	1076	1050	1029	1065	30- 40	708.5	1795	42.7,42.7
50	922.0	881.4	841.3	866.8	903.8	870.1	844.1	885.1	40- 50	748.9	2544	60.5,60.5
60	707.5	667.2	628.8	655.4	693.3	658.3	630.5	670.6	50- 60	691.4	3236	76.9,76.9
70	460.5	430.0	401.6	423.2	454.6	425.5	402.4	431.9	60- 70	541.8	3778	89.8,89.8
80	207.7	193.8	181.2	192.9	210.9	193.5	179.8	193.7	70- 80	327.2	4105	97.5,97.5
90	7.632	8.335	0.3479	10.21	3.731	1.950	0.4456	0.5694	80- 90	99.14	4204	99.9,99.9
100	0.2527	0.2455	0.2481	0.2591	0.4631	0.4647	0.4560	0.4596	90-100	0.8181	4205	99.9,99.9
110	0.3314	0.3092	0.3213	0.3585	0.5273	0.5424	0.5401	0.5395	100-110	0.4228	4205	99.9,99.9
120	0.4639	0.3994	0.4381	0.4861	0.6387	0.6478	0.6391	0.6393	110-120	0.4747	4206	99.9,99.9
130	0.5937	0.5154	0.5651	0.6170	0.8266	0.9030	0.8922	0.8214	120-130	0.5635	4206	99.9,99.9
140	0.7040	0.6757	0.6925	0.7364	0.9383	1.059	1.085	1.002	130-140	0.6174	4207	100,100
150	0.8144	0.7735	0.7962	0.8051	1.081	1.179	1.229	1.192	140-150	0.5810	4207	100,100
160	1.007	0.9356	0.8327	0.9591	1.264	1.321	1.290	1.308	150-160	0.4857	4208	100,100
170	1.192	1.146	1.001	1.117	1.338	1.379	1.332	1.345	160-170	0.3354	4208	100,100
180	1.296	1.276	1.178	1.210	1.299	1.296	1.245	1.208	170-180	0.1190	4208	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Isocandela Diagram:



Uncorrected UGR Table:

UGR Table - Uncorrected

Reflectances											
Ceiling Cavity		70	70	50	50	30	70	70	50	50	30
Walls		50	30	50	30	30	50	30	50	30	30
Floor Cavity		20	20	20	20	20	20	20	20	20	20
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	12.2	13.8	12.5	14.2	14.5	11.5	13.2	11.9	13.5	13.8
	3H	14.1	15.7	14.5	16.0	16.3	13.4	14.9	13.8	15.2	15.6
	4H	14.9	16.3	15.3	16.7	17.1	14.1	15.6	14.5	15.9	16.3
	6H	15.5	16.8	15.9	17.2	17.6	14.7	16.0	15.1	16.4	16.8
	8H	15.7	17.0	16.1	17.4	17.7	14.9	16.1	15.3	16.5	16.9
	12H	15.8	17.0	16.2	17.4	17.9	15.0	16.2	15.4	16.6	17.0
4H	2H	12.8	14.2	13.2	14.6	14.9	12.3	13.7	12.7	14.0	14.4
	3H	15.0	16.2	15.4	16.6	17.0	14.4	15.6	14.8	16.0	16.4
	4H	15.9	17.0	16.3	17.4	17.8	15.2	16.3	15.6	16.7	17.1
	6H	16.6	17.6	17.1	18.0	18.5	15.9	16.9	16.3	17.3	17.7
	8H	16.9	17.8	17.3	18.2	18.7	16.1	17.0	16.6	17.5	17.9
	12H	17.1	17.9	17.6	18.4	18.8	16.3	17.1	16.8	17.6	18.1
8H	4H	16.2	17.1	16.7	17.5	18.0	15.6	16.5	16.1	16.9	17.4
	6H	17.1	17.8	17.6	18.3	18.8	16.4	17.2	16.9	17.7	18.1
	8H	17.4	18.1	17.9	18.6	19.1	16.7	17.4	17.2	17.9	18.4
	12H	17.7	18.3	18.2	18.8	19.3	17.0	17.6	17.5	18.1	18.7
12H	4H	16.2	17.0	16.7	17.5	18.0	15.7	16.5	16.1	16.9	17.4
	6H	17.1	17.8	17.7	18.3	18.8	16.5	17.2	17.0	17.7	18.2
	8H	17.5	18.1	18.0	18.6	19.2	16.9	17.5	17.4	18.0	18.5

Maximum UGR = 19.3

Corrected UGR Table:

UGR Table - Uncorrected

Reflectances											
Ceiling Cavity		70	70	50	50	30	70	70	50	50	30
Walls		50	30	50	30	30	50	30	50	30	30
Floor Cavity		20	20	20	20	20	20	20	20	20	20
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	12.2	13.8	12.5	14.2	14.5	11.5	13.2	11.9	13.5	13.8
	3H	14.1	15.7	14.5	16.0	16.3	13.4	14.9	13.8	15.2	15.6
	4H	14.9	16.3	15.3	16.7	17.1	14.1	15.6	14.5	15.9	16.3
	6H	15.5	16.8	15.9	17.2	17.6	14.7	16.0	15.1	16.4	16.8
	8H	15.7	17.0	16.1	17.4	17.7	14.9	16.1	15.3	16.5	16.9
	12H	15.8	17.0	16.2	17.4	17.9	15.0	16.2	15.4	16.6	17.0
4H	2H	12.8	14.2	13.2	14.6	14.9	12.3	13.7	12.7	14.0	14.4
	3H	15.0	16.2	15.4	16.6	17.0	14.4	15.6	14.8	16.0	16.4
	4H	15.9	17.0	16.3	17.4	17.8	15.2	16.3	15.6	16.7	17.1
	6H	16.6	17.6	17.1	18.0	18.5	15.9	16.9	16.3	17.3	17.7
	8H	16.9	17.8	17.3	18.2	18.7	16.1	17.0	16.6	17.5	17.9
	12H	17.1	17.9	17.6	18.4	18.8	16.3	17.1	16.8	17.6	18.1
8H	4H	16.2	17.1	16.7	17.5	18.0	15.6	16.5	16.1	16.9	17.4
	6H	17.1	17.8	17.6	18.3	18.8	16.4	17.2	16.9	17.7	18.1
	8H	17.4	18.1	17.9	18.6	19.1	16.7	17.4	17.2	17.9	18.4
	12H	17.7	18.3	18.2	18.8	19.3	17.0	17.6	17.5	18.1	18.7
12H	4H	16.2	17.0	16.7	17.5	18.0	15.7	16.5	16.1	16.9	17.4
	6H	17.1	17.8	17.7	18.3	18.8	16.5	17.2	17.0	17.7	18.2
	8H	17.5	18.1	18.0	18.6	19.2	16.9	17.5	17.4	18.0	18.5

Maximum UGR = 19.3

Luminous Distribution Intensity Data:

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270
0	1383	1383	1384	1384	1384	1384	1383	1383	1383	1383	1383	1383	1383	1383	1384	1384	1384	1384	1383
5	1380	1380	1380	1379	1379	1378	1377	1377	1376	1376	1376	1376	1377	1377	1377	1377	1377	1378	1377
10	1368	1368	1367	1364	1363	1361	1359	1359	1359	1359	1360	1360	1362	1361	1361	1361	1360	1360	1361
15	1347	1347	1343	1340	1336	1333	1331	1329	1330	1332	1333	1335	1338	1337	1336	1334	1332	1332	1332
20	1317	1315	1311	1305	1298	1294	1290	1289	1291	1294	1298	1301	1304	1303	1300	1296	1294	1292	1293
25	1277	1275	1268	1259	1250	1243	1239	1239	1242	1247	1253	1257	1261	1260	1255	1250	1245	1242	1242
30	1226	1223	1215	1204	1192	1183	1178	1178	1182	1190	1198	1204	1210	1207	1201	1193	1185	1181	1181
35	1166	1162	1152	1138	1124	1113	1107	1107	1113	1123	1133	1142	1148	1145	1136	1126	1116	1110	1110
40	1095	1091	1079	1062	1045	1033	1026	1028	1035	1046	1059	1069	1076	1072	1063	1050	1038	1031	1029
45	1014	1009	995	976	958	944	938	939	948	961	976	987	995	990	979	964	951	942	941
50	922	916	902	881	862	848	841	843	852	867	883	895	904	899	886	870	855	846	844
55	819	814	798	778	759	744	738	740	750	765	781	794	803	798	785	768	752	743	740
60	707	702	687	667	648	635	629	631	640	655	672	684	693	688	675	658	643	633	630
65	587	582	568	550	533	521	516	518	527	541	556	568	577	572	559	543	529	520	517
70	461	456	445	430	416	406	402	404	411	423	436	446	455	450	439	425	413	405	402
75	333	330	321	310	299	292	289	290	297	306	316	324	332	328	319	308	298	291	289
80	208	206	201	194	187	183	181	182	187	193	200	205	211	208	201	193	186	182	180
85	92.9	92.0	90.1	87.2	84.5	82.8	82.3	83.2	85.6	88.9	92.3	94.2	98.4	96.6	92.8	88.4	84.6	81.6	80.2
90	7.63	8.04	8.29	8.33	8.42	8.41	0.35	9.22	9.62	10.2	11.0	11.2	3.73	3.66	3.06	1.95	1.26	0.70	0.45
95	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.22	0.21	0.21	0.39	0.39	0.39	0.40	0.39	0.39	0.39
100	0.25	0.25	0.25	0.25	0.25	0.24	0.25	0.25	0.26	0.26	0.26	0.25	0.46	0.46	0.47	0.46	0.46	0.46	0.46
105	0.29	0.29	0.28	0.28	0.28	0.28	0.29	0.29	0.30	0.31	0.30	0.30	0.51	0.51	0.52	0.52	0.52	0.51	0.51
110	0.33	0.32	0.31	0.31	0.32	0.32	0.32	0.34	0.36	0.36	0.36	0.35	0.53	0.53	0.53	0.54	0.54	0.53	0.54
115	0.39	0.37	0.35	0.34	0.36	0.36	0.37	0.40	0.42	0.42	0.41	0.40	0.55	0.55	0.56	0.57	0.57	0.57	0.57
120	0.46	0.43	0.41	0.40	0.41	0.42	0.44	0.46	0.48	0.49	0.48	0.47	0.64	0.64	0.64	0.65	0.63	0.63	0.64
125	0.53	0.50	0.47	0.47	0.48	0.48	0.50	0.53	0.55	0.56	0.55	0.55	0.75	0.76	0.76	0.78	0.75	0.74	0.74
130	0.59	0.57	0.55	0.52	0.56	0.54	0.57	0.60	0.62	0.62	0.63	0.62	0.83	0.86	0.88	0.90	0.91	0.90	0.89
135	0.66	0.64	0.63	0.57	0.60	0.63	0.65	0.67	0.68	0.67	0.68	0.69	0.88	0.92	0.96	0.99	1.02	1.03	1.03
140	0.70	0.71	0.69	0.68	0.65	0.68	0.69	0.71	0.73	0.74	0.71	0.74	0.94	0.98	1.00	1.06	1.08	1.09	1.09
145	0.76	0.78	0.74	0.72	0.74	0.75	0.75	0.77	0.79	0.77	0.75	0.78	1.00	1.05	1.06	1.12	1.16	1.15	1.15
150	0.81	0.84	0.81	0.77	0.76	0.80	0.80	0.81	0.81	0.81	0.78	0.81	1.08	1.13	1.10	1.18	1.20	1.24	1.23
155	0.88	0.92	0.94	0.84	0.83	0.86	0.84	0.86	0.87	0.86	0.90	0.86	1.14	1.15	1.22	1.22	1.25	1.28	1.26
160	1.01	1.01	1.01	0.94	0.88	0.88	0.83	0.91	0.92	0.96	0.97	0.97	1.26	1.25	1.29	1.32	1.30	1.32	1.29
165	1.09	1.11	1.11	1.06	0.99	0.97	0.92	0.98	1.04	1.06	1.06	1.08	1.29	1.29	1.32	1.37	1.39	1.37	1.34
170	1.19	1.20	1.18	1.15	1.04	1.05	1.00	1.04	1.10	1.12	1.13	1.16	1.34	1.34	1.34	1.38	1.42	1.41	1.33
175	1.27	1.29	1.27	1.25	1.14	1.10	1.07	1.11	1.17	1.17	1.19	1.23	1.35	1.35	1.36	1.36	1.36	1.36	1.30
180	1.30	1.31	1.29	1.28	1.24	1.25	1.18	1.24	1.21	1.21	1.23	1.25	1.30	1.30	1.31	1.30	1.28	1.24	1.24

Table--2

UNIT: cd

C (DEG) γ (DEG)	285	300	315	330	345														
0	1383	1383	1383	1383	1383														
5	1378	1379	1380	1380	1380														
10	1362	1364	1366	1368	1368														
15	1334	1338	1341	1345	1347														
20	1296	1301	1306	1313	1317														
25	1246	1253	1262	1270	1276														
30	1186	1195	1207	1218	1226														
35	1116	1127	1141	1155	1165														
40	1036	1048	1065	1082	1094														
45	948	961	980	999	1012														
50	851	866	885	905	920														
55	747	762	782	803	817														
60	637	651	671	691	706														
65	523	535	553	572	586														
70	407	417	432	448	461														
75	292	300	311	324	333														
80	181	186	194	202	209														
85	80.8	82.8	86.1	90.0	93.5														
90	0.39	0.48	0.57	0.82	1.08														
95	0.39	0.39	0.39	0.39	0.39														
100	0.46	0.46	0.46	0.46	0.46														
105	0.51	0.52	0.52	0.52	0.51														
110	0.54	0.54	0.54	0.54	0.54														
115	0.57	0.57	0.57	0.56	0.56														
120	0.63	0.64	0.64	0.63	0.65														
125	0.74	0.73	0.72	0.72	0.74														
130	0.87	0.86	0.82	0.82	0.83														
135	0.99	0.93	0.90	0.91	0.90														
140	1.04	1.02	1.00	0.99	0.99														
145	1.12	1.13	1.10	1.07	1.07														
150	1.23	1.21	1.19	1.16	1.16														
155	1.28	1.27	1.25	1.28	1.22														
160	1.30	1.34	1.31	1.37	1.32														
165	1.34	1.37	1.36	1.40	1.35														
170	1.36	1.37	1.34	1.39	1.35														
175	1.29	1.33	1.29	1.35	1.33														
180	1.23	1.22	1.21	1.23	1.24														

THD and PF Measurement Test Results:

Electrical Measurement:

CCT Setting	Voltage (V)	Frequency (Hz)	Current (A)	Wattage (W)	Power Factor	iTHD(%)
3000K	120.0	60	0.2818	33.57	0.9929	6.68
	277.0	60	0.1317	33.26	0.9120	13.21
3500K	120.0	60	0.2937	35.05	0.9944	6.21
	277.0	60	0.1379	33.57	0.9122	13.04
4000K	120.0	60	0.2904	33.21	0.9943	5.96
	277.0	60	0.1351	34.11	0.9116	12.98
5000K	120.0	60	0.2945	33.16	0.9945	6.51
	277.0	60	0.1374	34.69	0.9116	12.56

Annex:

ANSI CCT Quadrangle (omit any outside product range)/Worst-Case Value	Actual CCT (K)	Power Consumption (W)	Lumen Output (lm)	Efficacy (lm/W)	Input Control Signal Applied
3000K	2997	33.57	4208.4	125.36	Set Switch 0% to 3000K
3500K	3527	33.57	4258.3	126.85	Set Switch 33% to 3500K
4000K	3960	33.21	4278.1	128.82	Set Switch 66% to 4000K
5000K	4940	33.16	4238.7	127.83	Set Switch 100% to 5000K
Lowest Efficacy	125.36 lm/W (@3000K)				
Maximum Power	33.57 W				

Photo of Sample:



Equipment List:

Equipment ID	Equipment Name	Last Cal.	Due Cal.
NTC-F01-001	Goniophotometer System	2021-11-10	2022-11-09
NTC-F01-006	2.0 meter Integrating Sphere	2021-11-10	2022-11-09
NTC-F01-012	Standard Lamp	2021-11-10	2022-11-09
NTC-F01-013	Standard Lamp	2021-11-10	2022-11-09
NTC-F01-031	Digital Power Meter	2021-08-22	2022-08-21
NTC-F01-020	Temperature & Humidity Meter	2021-11-15	2022-11-14

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