

IES LM-79-08

MEASUREMENT AND TEST REPORT

For

GREEN CREATIVE LTD

Room 3603, Level 36, Tower 1, Enterprise Square Five, 38 Wang Chiu Road, Kowloon Bay, KL, Hong Kong, China

Test Model:
15.5PAR38/930FL40/277V/SL+SL25D

Report Type:	Electrical and Photometric tests including: Luminous Flux, Chromaticity, Luminous Intensity Distribution, THD
Reviewed By:	Hill Liu Hill Liu
Report Number:	KS2230727-43689E-EE-1
Test Date:	2023-08-05 to 2023-08-08
Report Date:	2023-08-25
Approved by:	Blake Zhang / EE Engineer
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.

Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp.(Shenzhen). This report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, or any agency of the U.S. Government.

1. Product Description#

General Information:

Two test samples were in good condition and received on 2023-07-27. One was tested in integrating sphere and the other was tested in goniophotometer

Model Tested: 15.5PAR38/930FL40/277V/SL+SL25D
Manufacturer: GREEN CREATIVE LTD
Brand Name: GREEN CREATIVE
Product Designation: Directional LED Lamp
Burning Time Before Test: 0hour(For New Products)

Rated Values:

Rated Voltage/Frequency: 120-277V 60Hz
Rated Power: 15.5 W
Nominal CCT: 3000K
Nominal Lumen Output: 1370lm

Family Declaration

The Model	Multiple Models	Differences Items	Details
15.5PAR38/930FL40/277V/SL+SL25D	15.5PAR38/930NF25/277V/SL	Model Number	15.5PAR38/930FL40/277V/SL+SL25D & 15.5PAR38/930NF25/277V/SL are the same product except for the model number.

2. Standards Used

- IES LM-79-08: Approved Method: Electrical & Photometric Measurement 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
2.0m integrating sphere	EVERFINE	R98	11010018	2022-11-10	2023-11-09
spectroradiometer	EVERFINE	HAAS-2000	G112048TS81331121	2022-11-10	2023-11-09
Digital Power Meter	EVERFINE	PF2010A	1011004	2022-11-10	2023-11-09
Digital CC&CV DC Power Supply	EVERFINE	WY305-V1	1101047	2022-11-10	2023-11-09
Standard Light Source	EVERFINE	D204	N/A	2023-05-12	2025-05-11
Special zero-voltage synchronous switching AC	EVERFINE	DPS1010-YF	1011001T	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

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

Statement of Traceability: Bay Area Compliance Laboratories Corp. (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 IES LM-79-08. The product was operated at rated voltage or at voltage required by manufacturer. The ambient temperature of the sample was maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$ during measurement. And relative humidity is less than 65%.

Integrating Sphere System

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

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

The uncertainty of the light output (luminous flux) measurements is $U=2.1\%$ ($K=2$), at the 95% confidence level. The uncertainty of the correlated color temperature measurements is $U=22\text{K}$ ($K=2$), 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 $U=0.19\%$ of rdg, AC Voltage $U=0.18\%$ of rdg, Power $U=0.46\%$ ($K=2$), 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. The vertical angle (γ) test intervals were set no more than 1 degree while data for 5 degree intervals is reported. The horizontal angle (C plane) test intervals were set no more than 22.5 degree.

The uncertainty of the luminous intensity is $U=2.00\%$ ($K=2$), at the 95% confidence level.

Additional Test

The Additional Test item may not be covered by IESNA LM-79-2008. Additional test including power factor, off-state power and THD, was measured by Digital Power Meter after stabilized at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$. Test voltage for THD and power factor test would be equal to rated voltage or, in case of a voltage range, maximum value of that range.

The uncertainty of power meter AC current $U=0.19\%$ of rdg, AC Voltage $U=0.18\%$ of rdg, Power $U=0.46\%$ ($K=2$), at the 95% confidence level.

Fidelity Index and Gamut Index Calculation

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

5. Test Result

[Integrating Sphere System]

The Stabilization time: **30 minutes**

Total operating time for integrating sphere test: **1.0 hour**

Test orientation: **Base up**

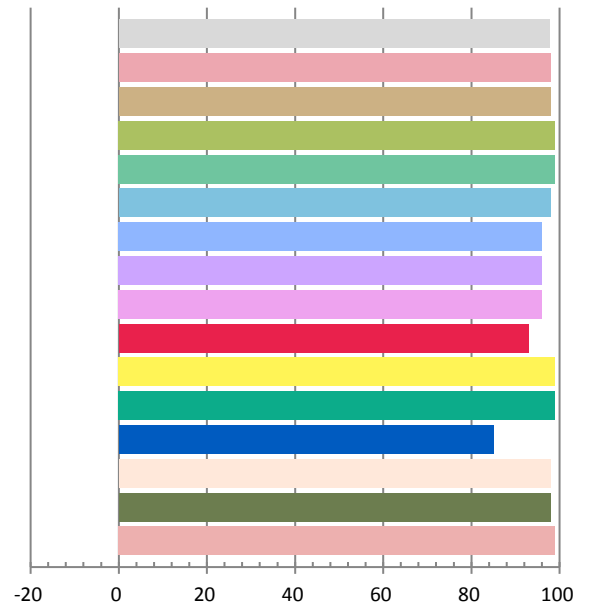
Photometric and Electrical Measurement Result

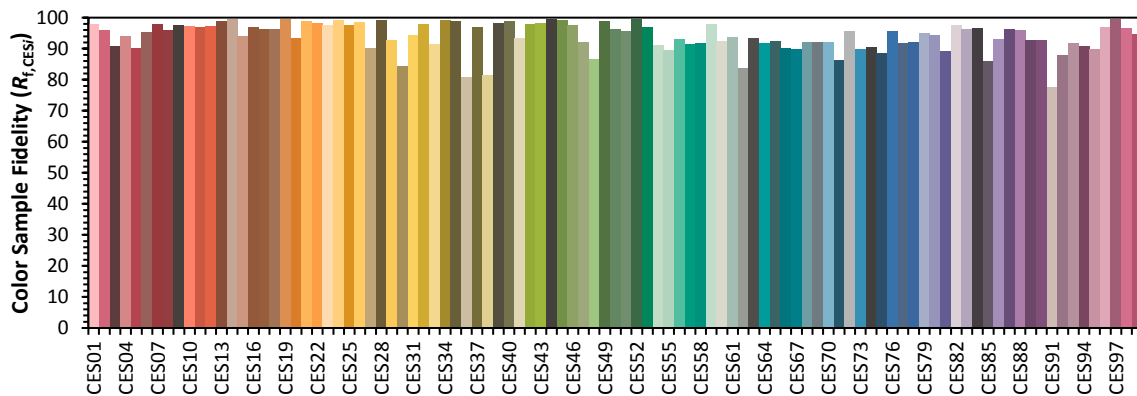
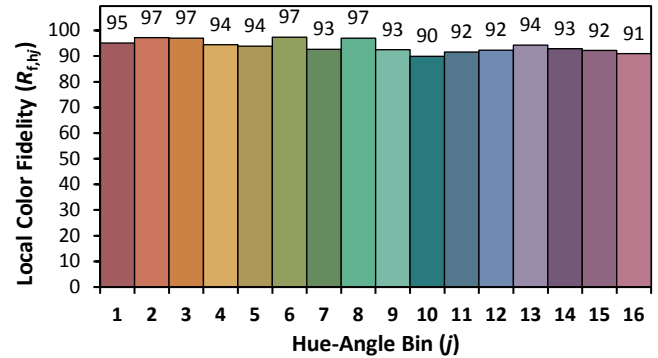
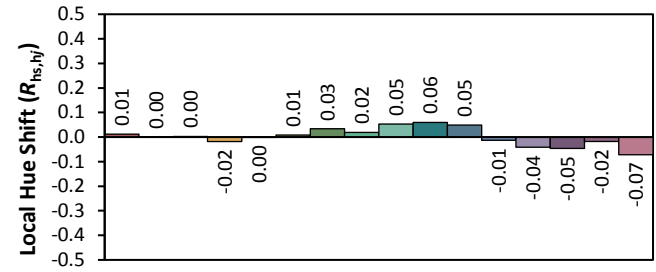
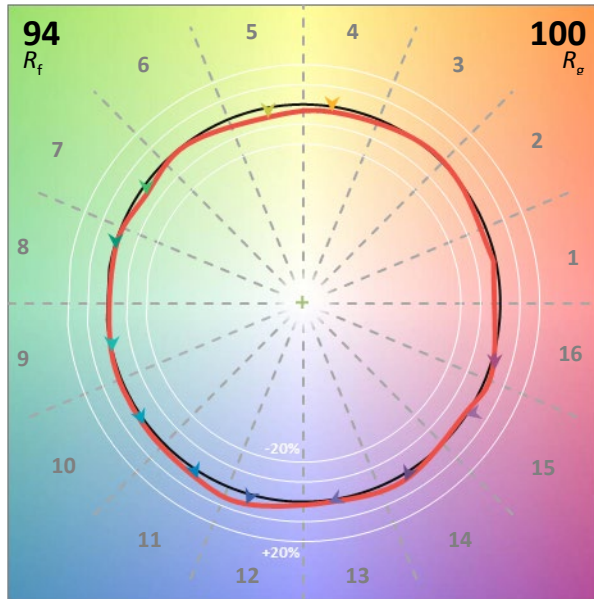
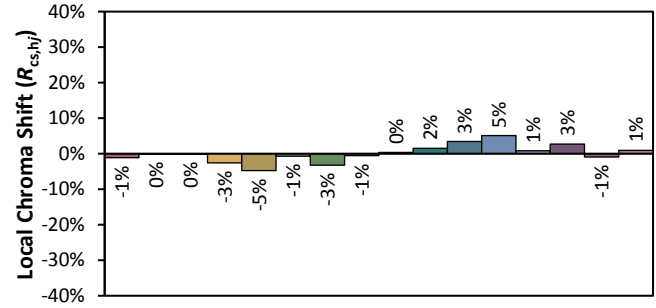
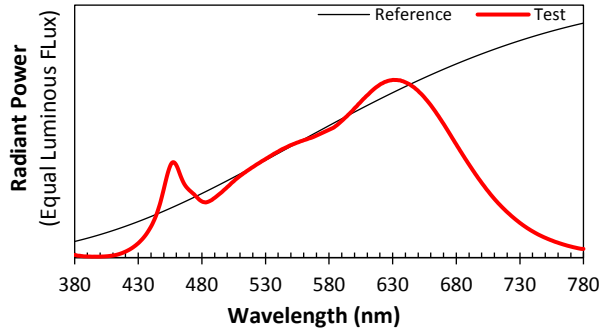
Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Luminous Flux(lm)	Efficacy (lm/W)
120.0	60	0.1291	15.39	0.993	1372.9	89.22

Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
5.1752	3098	-0.00187	0.4276	0.3961	0.2479	0.5168

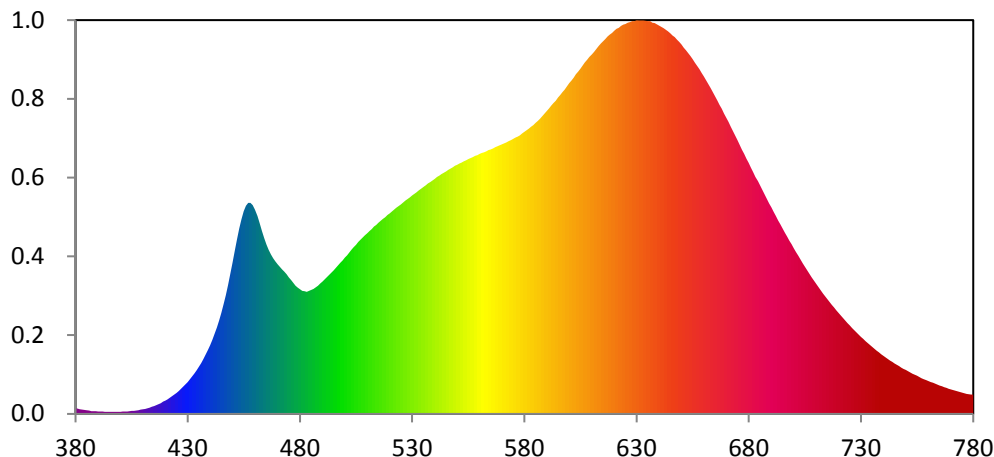
Color Rendering Index

Ra			
97.7			
R1	R2	R3	R4
98	98	99	99
R5	R6	R7	R8
98	96	96	96
R9	R10	R11	R12
93	99	99	85
R13	R14	R15	
98	98	99	





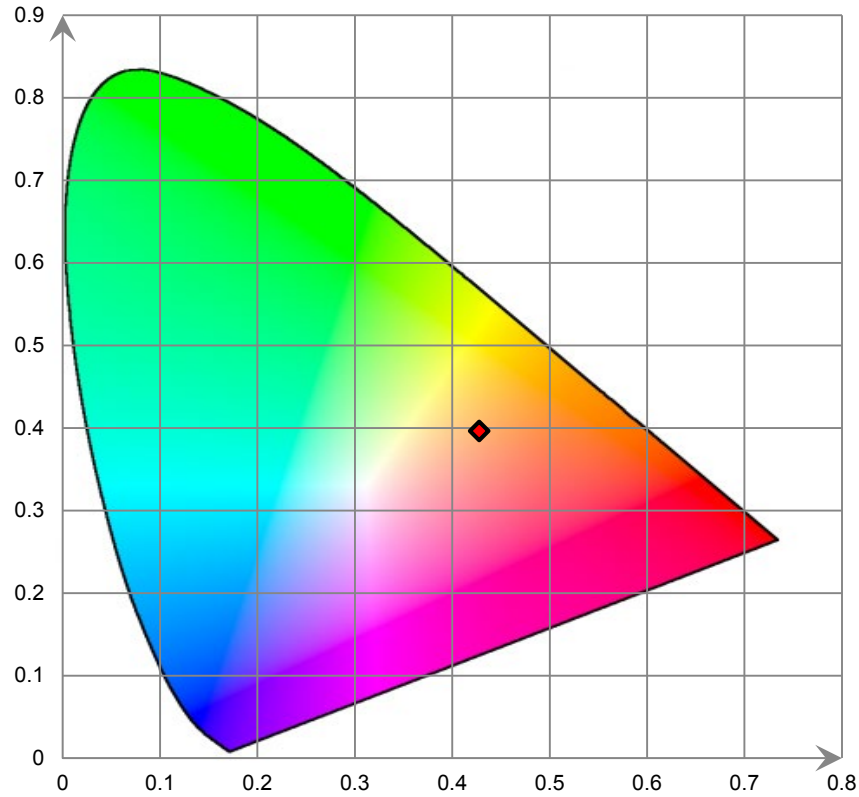
Relative Spectral Power Distribution



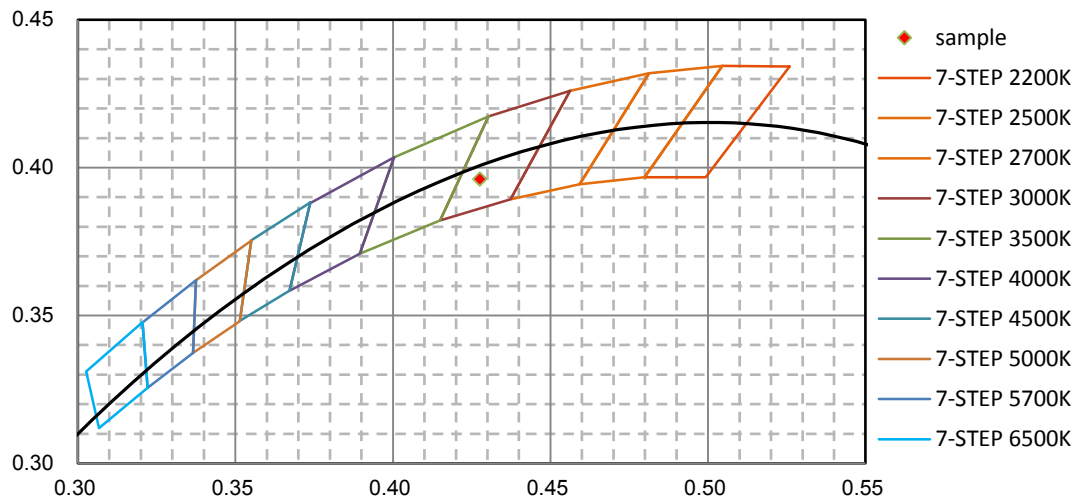
nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	4.305E-01	421	1.057E+00	462	1.370E+01	503	1.181E+01	544	1.734E+01
381	3.886E-01	422	1.163E+00	463	1.315E+01	504	1.199E+01	545	1.743E+01
382	3.239E-01	423	1.269E+00	464	1.264E+01	505	1.215E+01	546	1.753E+01
383	3.005E-01	424	1.390E+00	465	1.218E+01	506	1.235E+01	547	1.762E+01
384	2.981E-01	425	1.518E+00	466	1.178E+01	507	1.252E+01	548	1.773E+01
385	2.575E-01	426	1.655E+00	467	1.146E+01	508	1.268E+01	549	1.783E+01
386	2.359E-01	427	1.805E+00	468	1.119E+01	509	1.284E+01	550	1.792E+01
387	2.016E-01	428	1.956E+00	469	1.097E+01	510	1.300E+01	551	1.799E+01
388	1.914E-01	429	2.130E+00	470	1.076E+01	511	1.315E+01	552	1.808E+01
389	1.906E-01	430	2.297E+00	471	1.058E+01	512	1.329E+01	553	1.815E+01
390	1.775E-01	431	2.491E+00	472	1.040E+01	513	1.346E+01	554	1.824E+01
391	1.721E-01	432	2.700E+00	473	1.022E+01	514	1.357E+01	555	1.832E+01
392	1.680E-01	433	2.908E+00	474	1.005E+01	515	1.374E+01	556	1.838E+01
393	1.543E-01	434	3.140E+00	475	9.810E+00	516	1.387E+01	557	1.847E+01
394	1.457E-01	435	3.387E+00	476	9.622E+00	517	1.401E+01	558	1.855E+01
395	1.546E-01	436	3.653E+00	477	9.420E+00	518	1.414E+01	559	1.860E+01
396	1.540E-01	437	3.947E+00	478	9.220E+00	519	1.429E+01	560	1.869E+01
397	1.520E-01	438	4.261E+00	479	9.072E+00	520	1.441E+01	561	1.875E+01
398	1.495E-01	439	4.595E+00	480	8.951E+00	521	1.454E+01	562	1.881E+01
399	1.532E-01	440	4.942E+00	481	8.855E+00	522	1.468E+01	563	1.888E+01
400	1.576E-01	441	5.322E+00	482	8.825E+00	523	1.482E+01	564	1.897E+01
401	1.683E-01	442	5.757E+00	483	8.786E+00	524	1.494E+01	565	1.902E+01
402	1.771E-01	443	6.205E+00	484	8.834E+00	525	1.506E+01	566	1.908E+01
403	1.813E-01	444	6.705E+00	485	8.901E+00	526	1.519E+01	567	1.916E+01
404	1.963E-01	445	7.257E+00	486	8.991E+00	527	1.533E+01	568	1.924E+01
405	2.100E-01	446	7.881E+00	487	9.096E+00	528	1.545E+01	569	1.930E+01
406	2.267E-01	447	8.522E+00	488	9.204E+00	529	1.556E+01	570	1.937E+01
407	2.497E-01	448	9.266E+00	489	9.374E+00	530	1.569E+01	571	1.945E+01
408	2.738E-01	449	1.006E+01	490	9.509E+00	531	1.582E+01	572	1.951E+01
409	2.993E-01	450	1.087E+01	491	9.665E+00	532	1.593E+01	573	1.961E+01
410	3.306E-01	451	1.172E+01	492	9.830E+00	533	1.607E+01	574	1.969E+01
411	3.660E-01	452	1.254E+01	493	9.997E+00	534	1.618E+01	575	1.977E+01
412	4.045E-01	453	1.332E+01	494	1.016E+01	535	1.631E+01	576	1.987E+01
413	4.495E-01	454	1.399E+01	495	1.032E+01	536	1.644E+01	577	1.994E+01
414	5.065E-01	455	1.456E+01	496	1.049E+01	537	1.657E+01	578	2.003E+01
415	5.667E-01	456	1.497E+01	497	1.069E+01	538	1.666E+01	579	2.016E+01
416	6.342E-01	457	1.517E+01	498	1.087E+01	539	1.679E+01	580	2.028E+01
417	7.039E-01	458	1.517E+01	499	1.104E+01	540	1.688E+01	581	2.038E+01
418	7.822E-01	459	1.500E+01	500	1.124E+01	541	1.702E+01	582	2.051E+01
419	8.740E-01	460	1.468E+01	501	1.141E+01	542	1.713E+01	583	2.064E+01
420	9.600E-01	461	1.424E+01	502	1.160E+01	543	1.725E+01	584	2.076E+01

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
585	2.092E+01	626	2.812E+01	667	2.222E+01	708	9.819E+00	749	3.240E+00
586	2.106E+01	627	2.817E+01	668	2.192E+01	709	9.579E+00	750	3.153E+00
587	2.123E+01	628	2.822E+01	669	2.160E+01	710	9.342E+00	751	3.066E+00
588	2.141E+01	629	2.824E+01	670	2.130E+01	711	9.111E+00	752	2.976E+00
589	2.159E+01	630	2.829E+01	671	2.098E+01	712	8.892E+00	753	2.896E+00
590	2.177E+01	631	2.829E+01	672	2.065E+01	713	8.663E+00	754	2.811E+00
591	2.195E+01	632	2.828E+01	673	2.033E+01	714	8.461E+00	755	2.739E+00
592	2.215E+01	633	2.828E+01	674	2.000E+01	715	8.247E+00	756	2.658E+00
593	2.234E+01	634	2.826E+01	675	1.967E+01	716	8.039E+00	757	2.576E+00
594	2.251E+01	635	2.823E+01	676	1.934E+01	717	7.837E+00	758	2.500E+00
595	2.273E+01	636	2.823E+01	677	1.900E+01	718	7.641E+00	759	2.438E+00
596	2.291E+01	637	2.813E+01	678	1.868E+01	719	7.439E+00	760	2.370E+00
597	2.312E+01	638	2.809E+01	679	1.834E+01	720	7.252E+00	761	2.297E+00
598	2.331E+01	639	2.800E+01	680	1.803E+01	721	7.068E+00	762	2.234E+00
599	2.353E+01	640	2.791E+01	681	1.769E+01	722	6.891E+00	763	2.168E+00
600	2.377E+01	641	2.782E+01	682	1.738E+01	723	6.699E+00	764	2.105E+00
601	2.397E+01	642	2.772E+01	683	1.704E+01	724	6.524E+00	765	2.044E+00
602	2.416E+01	643	2.762E+01	684	1.673E+01	725	6.354E+00	766	1.986E+00
603	2.442E+01	644	2.750E+01	685	1.640E+01	726	6.184E+00	767	1.924E+00
604	2.460E+01	645	2.735E+01	686	1.609E+01	727	6.015E+00	768	1.870E+00
605	2.482E+01	646	2.721E+01	687	1.576E+01	728	5.856E+00	769	1.818E+00
606	2.504E+01	647	2.708E+01	688	1.546E+01	729	5.696E+00	770	1.767E+00
607	2.526E+01	648	2.689E+01	689	1.514E+01	730	5.533E+00	771	1.716E+00
608	2.544E+01	649	2.673E+01	690	1.484E+01	731	5.389E+00	772	1.661E+00
609	2.566E+01	650	2.655E+01	691	1.453E+01	732	5.235E+00	773	1.619E+00
610	2.584E+01	651	2.633E+01	692	1.423E+01	733	5.094E+00	774	1.572E+00
611	2.602E+01	652	2.615E+01	693	1.392E+01	734	4.952E+00	775	1.526E+00
612	2.623E+01	653	2.595E+01	694	1.363E+01	735	4.817E+00	776	1.481E+00
613	2.643E+01	654	2.573E+01	695	1.332E+01	736	4.677E+00	777	1.443E+00
614	2.661E+01	655	2.550E+01	696	1.304E+01	737	4.554E+00	778	1.404E+00
615	2.679E+01	656	2.525E+01	697	1.274E+01	738	4.423E+00	779	1.390E+00
616	2.696E+01	657	2.502E+01	698	1.246E+01	739	4.299E+00	780	1.392E+00
617	2.712E+01	658	2.477E+01	699	1.219E+01	740	4.183E+00		
618	2.726E+01	659	2.452E+01	700	1.190E+01	741	4.066E+00		
619	2.740E+01	660	2.426E+01	701	1.163E+01	742	3.948E+00		
620	2.755E+01	661	2.398E+01	702	1.137E+01	743	3.839E+00		
621	2.768E+01	662	2.370E+01	703	1.109E+01	744	3.727E+00		
622	2.776E+01	663	2.342E+01	704	1.082E+01	745	3.624E+00		
623	2.788E+01	664	2.313E+01	705	1.058E+01	746	3.526E+00		
624	2.798E+01	665	2.282E+01	706	1.032E+01	747	3.430E+00		
625	2.803E+01	666	2.254E+01	707	1.006E+01	748	3.334E+00		

CIE 1931 x y Chromaticity Diagram



7-Step Chromaticity Quadrangles



The Stabilization time: **30 minutes**

Total operating time for luminous intensity distribution: **1.0 hour**

Test orientation: **Base up**

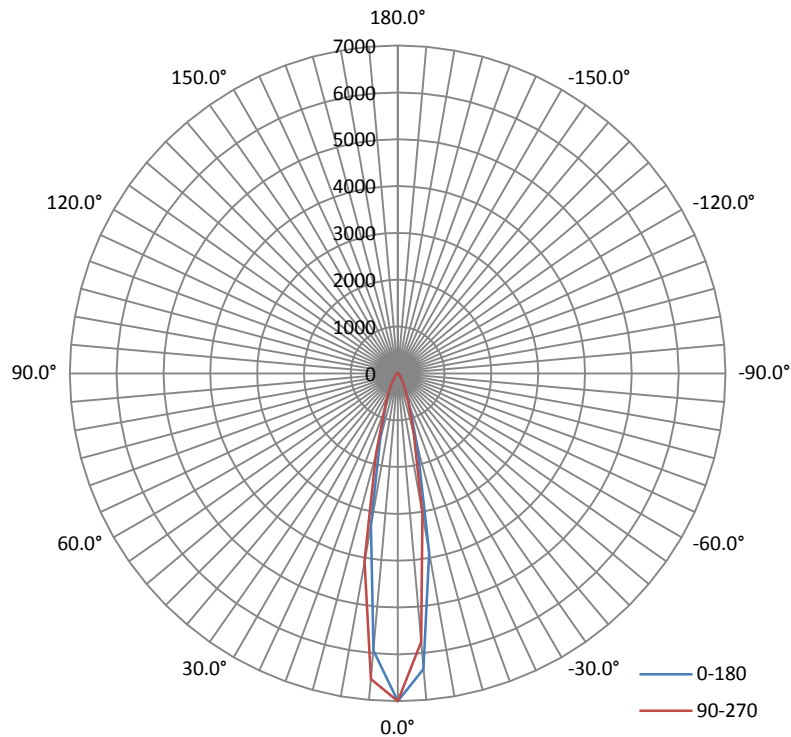
Electrical Measurement

Input Voltage (V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.01	60	0.1294	15.400	0.9917

Photometric Measurement

Luminous Flux (lm)	Efficacy (lm/W)	I _{max} (cd)	S/MH (C0/180)	S/MH (C90/270)
1376.05	89.35	7069.0	0.36	0.32

Luminous Intensity Distribution



	C0/180	C45/225	C90/270	C135/315	AVG.
Beam Angle (50% I _{max}):	20.3	20.1	20.0	20.2	20.2
Field Angle (10% I _{max}):	41.3	40.8	40.8	41.3	41.1

Luminous Intensity (cd) Distribution Data

C y	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
0.0°	7000	7000	7000	7000	7000	7000	7000	7000
5.0°	5943	6149	6334	6469	6551	6543	6514	6398
10.0°	3287	3498	3732	3926	4065	4118	4058	3905
15.0°	1449	1546	1653	1718	1775	1805	1759	1663
20.0°	741	768	802	826	836	843	819	779
25.0°	425	439	450	464	476	476	472	447
30.0°	249	254	254	261	271	274	277	264
35.0°	148	147	149	152	158	168	169	160
40.0°	98	95	97	101	106	110	106	101
45.0°	64	65	67	68	68	69	70	68
50.0°	44	44	46	46	47	47	48	46
55.0°	33	33	33	33	34	34	34	34
60.0°	25	26	26	26	26	26	27	26
65.0°	19	19	19	20	20	20	20	20
70.0°	14	14	14	15	15	15	15	15
75.0°	9	9	9	10	10	10	10	10
80.0°	4	5	5	5	6	6	6	5
85.0°	1	1	2	2	2	2	2	2
90.0°	0	0	0	0	0	0	0	0
95.0°	0	0	0	0	0	0	0	0
100.0°	0	0	0	0	0	0	0	0
105.0°	0	0	0	0	0	0	0	0
110.0°	0	0	0	0	0	0	0	0
115.0°	0	0	0	0	0	0	0	0
120.0°	0	0	0	0	0	0	0	0
125.0°	0	0	0	0	0	0	0	0
130.0°	0	0	0	0	0	0	0	0
135.0°	0	0	0	0	0	0	0	0
140.0°	1	1	1	1	1	1	1	1
145.0°	2	2	2	2	2	2	2	2
150.0°	3	3	3	3	3	3	3	3
155.0°	4	4	4	4	4	4	4	4
160.0°	5	5	5	5	5	5	5	5
165.0°	5	5	5	5	5	5	4	4
170.0°	4	4	4	4	4	4	4	4
175.0°	3	3	3	3	3	3	3	3
180.0°	2	2	2	2	2	2	2	2

Luminous Intensity (cd) Distribution Data (cont.)

C Y	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
0.0°	7000	7000	7000	7000	7000	7000	7000	7000
5.0°	6340	6169	6004	5848	5755	5729	5800	5935
10.0°	3886	3617	3367	3162	3041	3033	3106	3272
15.0°	1662	1530	1421	1341	1343	1359	1354	1423
20.0°	779	721	685	665	660	678	705	744
25.0°	430	403	385	375	381	390	413	431
30.0°	252	238	227	221	226	232	246	258
35.0°	155	145	140	140	143	146	150	154
40.0°	97	92	92	90	90	97	99	100
45.0°	67	63	63	61	61	61	65	65
50.0°	46	44	43	42	43	43	44	44
55.0°	34	33	32	32	32	32	33	33
60.0°	26	26	25	25	25	25	25	25
65.0°	20	19	19	19	19	19	19	19
70.0°	15	14	14	14	14	14	14	14
75.0°	10	9	9	9	9	9	9	9
80.0°	5	5	5	4	4	4	4	5
85.0°	2	2	1	1	1	1	1	1
90.0°	0	0	0	0	0	0	0	0
95.0°	0	0	0	0	0	0	0	0
100.0°	0	0	0	0	0	0	0	0
105.0°	0	0	0	0	0	0	0	0
110.0°	0	0	0	0	0	0	0	0
115.0°	0	0	0	0	0	0	0	0
120.0°	0	0	0	0	0	0	0	0
125.0°	0	0	0	0	0	0	0	0
130.0°	0	0	0	0	0	0	0	0
135.0°	0	0	0	0	0	0	0	0
140.0°	0	0	0	0	0	0	0	0
145.0°	1	1	1	1	1	1	1	1
150.0°	1	1	1	1	1	1	1	1
155.0°	1	1	1	1	1	1	1	1
160.0°	1	1	1	1	1	1	1	1
165.0°	1	1	1	1	1	1	1	1
170.0°	1	1	1	1	1	1	1	1
175.0°	1	1	1	1	1	1	1	1
180.0°	2	2	2	2	2	2	2	2

Zonal Lumen Density Measurement

Deg	Flux (lm)	%
0-5	157.9	11.48
5-10	343.3	24.94
10-15	280.9	20.42
15-20	177.3	12.88
20-25	118.7	8.63
25-30	83.2	6.04
30-35	57.5	4.18
35-40	40.8	2.96
40-45	29.7	2.16
45-50	21.9	1.59
50-55	16.7	1.21
55-60	13.5	0.99
60-65	10.9	0.79
65-70	8.5	0.62
70-75	6.1	0.44
75-80	3.8	0.28
80-85	1.7	0.12
85-90	0.4	0.03
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	0.2	0.01
140-145	0.3	0.03
145-150	0.5	0.03
150-155	0.6	0.05
155-160	0.6	0.04
160-165	0.5	0.03
165-170	0.3	0.03
170-175	0.2	0.01
175-180	0.0	0.00

Deg	Flux (lm)	%
0-5	157.9	11.48
0-10	501.2	36.42
0-15	782.1	56.84
0-20	959.4	69.72
0-25	1078.1	78.35
0-30	1161.3	84.39
0-35	1218.7	88.57
0-40	1259.5	91.53
0-45	1289.2	93.69
0-50	1311.1	95.28
0-55	1327.8	96.49
0-60	1341.3	97.48
0-65	1352.2	98.27
0-70	1360.7	98.89
0-75	1366.9	99.33
0-80	1370.6	99.61
0-85	1372.3	99.73
0-90	1372.7	99.76
0-95	1372.7	99.76
0-100	1372.7	99.76
0-105	1372.7	99.76
0-110	1372.7	99.76
0-115	1372.7	99.76
0-120	1372.7	99.76
0-125	1372.8	99.76
0-130	1372.8	99.76
0-135	1372.9	99.77
0-140	1373.0	99.78
0-145	1373.4	99.81
0-150	1373.9	99.84
0-155	1374.5	99.89
0-160	1375.1	99.93
0-165	1375.5	99.96
0-170	1375.8	99.99
0-175	1376.0	100.00
0-180	1376.0	100.00

[Additional Test]

Test Item	Test Voltage (V)	Frequency (Hz)	Test Result
Total Harmonic Distortion:	120.0	60	11.16%

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. This report includes some test methods are not in NVLAP accreditation scope marked *.
3. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
4. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.
5. 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.
6. This report cannot be reproduced except in full, without prior written approval of the Company.
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*****END OF REPORT*****