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: 11PAR30SNDIM/927FL40/SL

Report Type:	Electrical and Photometric tests including: Luminous Flux, Chromaticity, Luminous Intensity Distribution, THD
Reviewed By:	Hill Liu
Report Number:	KS2230727-43644E-EE-1
Test Date:	2023-07-28 to 2023-08-11
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 1st Road, Tangxia Town, Dongguan, Guangdong, China.

1. Product Description#

General Information:

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

Model Tested:	11PAR30SNDIM/927FL40/SL
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:	120VAC 60Hz
Rated Power:	11W
Nominal CCT:	2700K
Nominal Lumen Output:	950 lm

Family Declaration

The Model	Multiple Models	Variations	Detail
11PAR30SNDIM/927FL40/SL	11PAR30SNDIM/927FL40/B/SL	Finishing Color	The finishing color of model 11PAR30SNDIM/927FL40/SL is White; The finishing color of model 11PAR30SNDIM/927FL40/B/SL Black.

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	EVERFINE	WY12010	1009009	2022-11-10	2023-11-09

Device	Manufacture	Model No	Serial No	Calibration date	Calibration due date
Power Supply					
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°C±1°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=22K (K=2), at the 95% confidence level. The uncertainty of the CRI is U=2.1(K=2), at the 95% confidence level.

The uncertainty of power meter AC current U=0.39 % of rdg, AC Voltage U=0.25% of rdg, Power U=0.42%) (K=2), at the 95% confidence level. 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°C±1°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

Model: 11PAR30SNDIM/927FL40/SL

[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

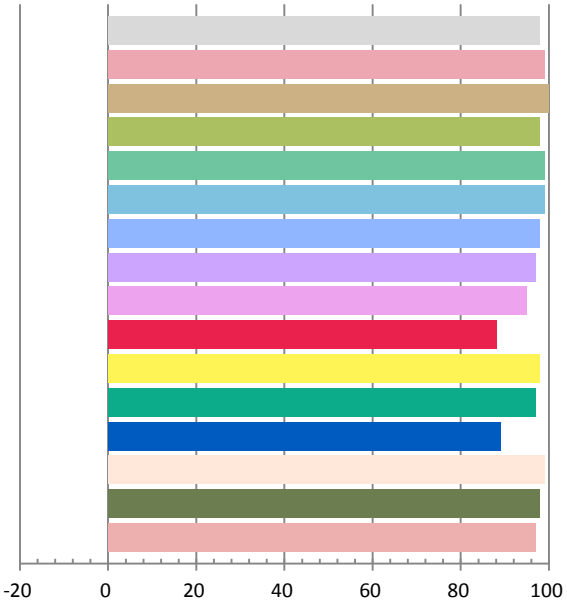
Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Luminous Flux(lm)	Efficacy (lm/W)
120.1	60	0.09056	10.37	0.9537	950.62	91.68

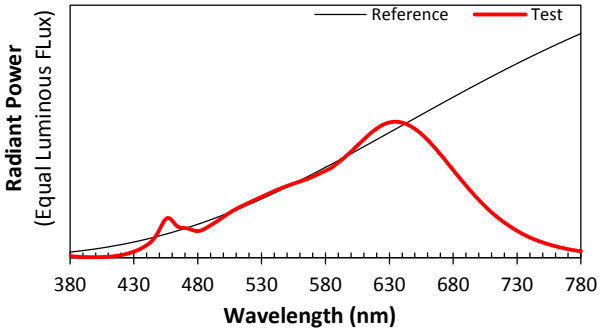
Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
3.6617	2662	0.00093	0.4646	0.4142	0.2640	0.5294

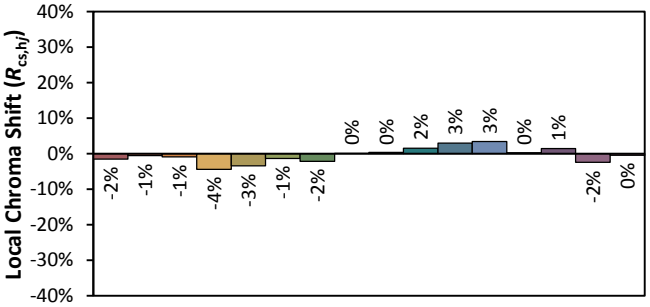
Color Rendering Index

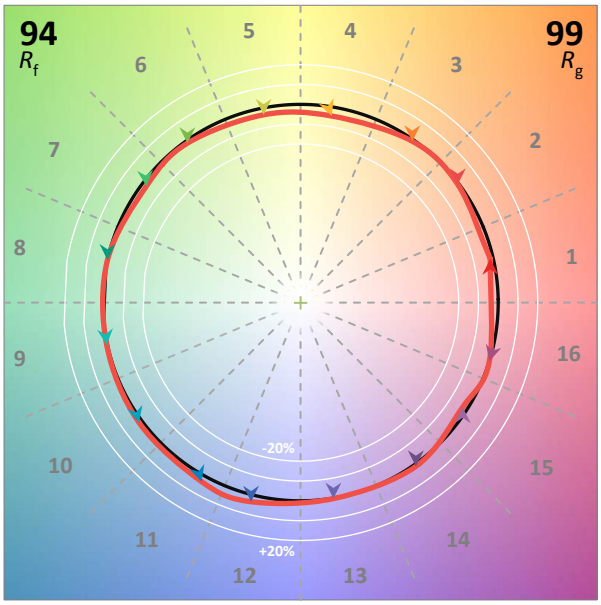
Ra
98.0

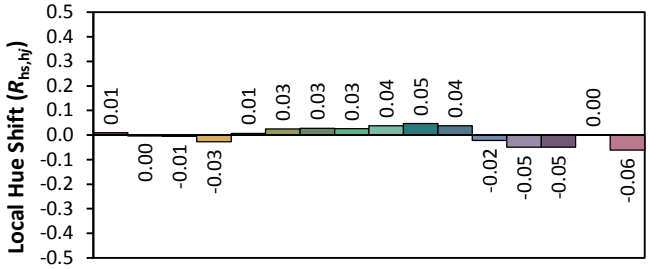
R1	R2	R3	R4
99	100	98	99
R5	R6	R7	R8
99	98	97	95
R9	R10	R11	R12
88	98	97	89
R13	R14	R15	
99	98	97	

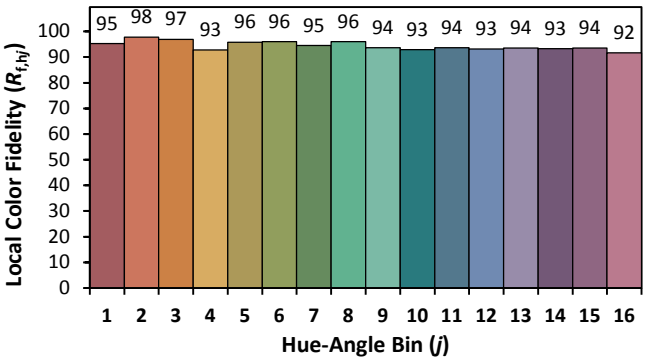


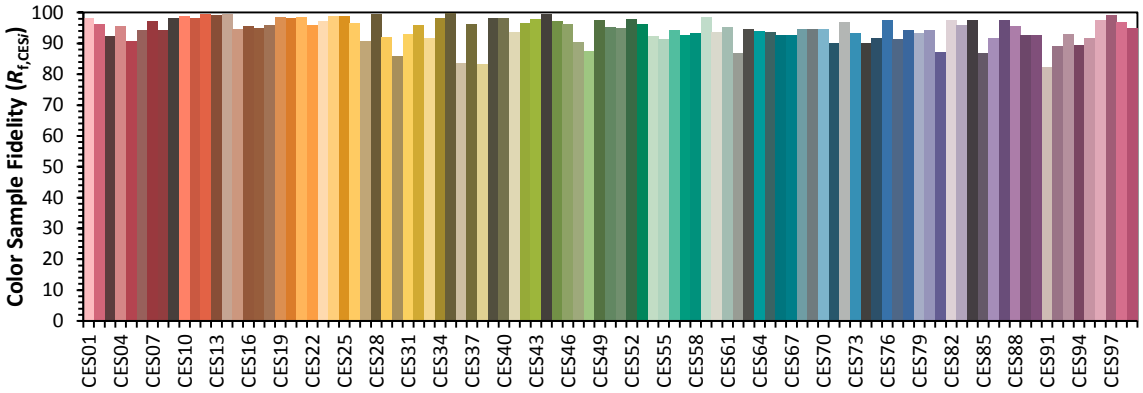

Reference
Test
Radiant Power
(Equal Luminous FLux)
380 430 480 530 580 630 680 730 780
Wavelength (nm)


Local Chroma Shift ($R_{cs,hj}$)
40% 30% 20% 10% 0% -10% -20% -30% -40%
-2% -1% -1% -4% -3% -1% -2% 0% 0% 2% 3% 3% 0% 1% -2% 0%

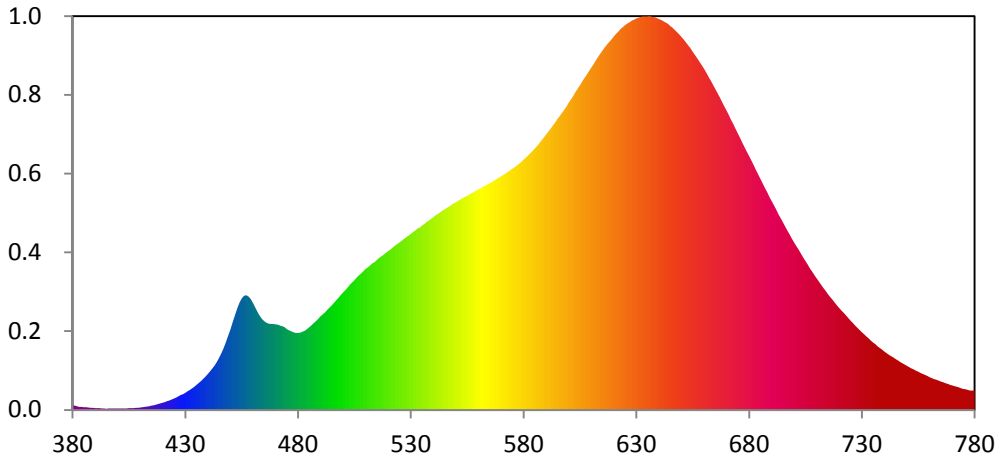

94
R_f
99
R_g
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
-20%
+20%


Local Hue Shift ($R_{hs,hj}$)
0.5 0.4 0.3 0.2 0.1 0.0 -0.1 -0.2 -0.3 -0.4 -0.5
0.01 0.00 -0.01 -0.03 0.01 0.03 0.03 0.03 0.04 0.05 0.04 -0.02 -0.05 -0.05 0.00 -0.06


Local Color Fidelity ($R_{f,hj}$)
100 90 80 70 60 50 40 30 20 10 0
95 98 97 93 96 96 95 96 94 93 94 93 94 93 94 92
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Hue-Angle Bin (j)


Color Sample Fidelity ($R_{f,CESi}$)
100 90 80 70 60 50 40 30 20 10 0
CES01 CES04 CES07 CES10 CES13 CES16 CES19 CES22 CES25 CES28 CES31 CES34 CES37 CES40 CES43 CES46 CES49 CES52 CES55 CES58 CES61 CES64 CES67 CES70 CES73 CES76 CES79 CES82 CES85 CES88 CES91 CES94 CES97

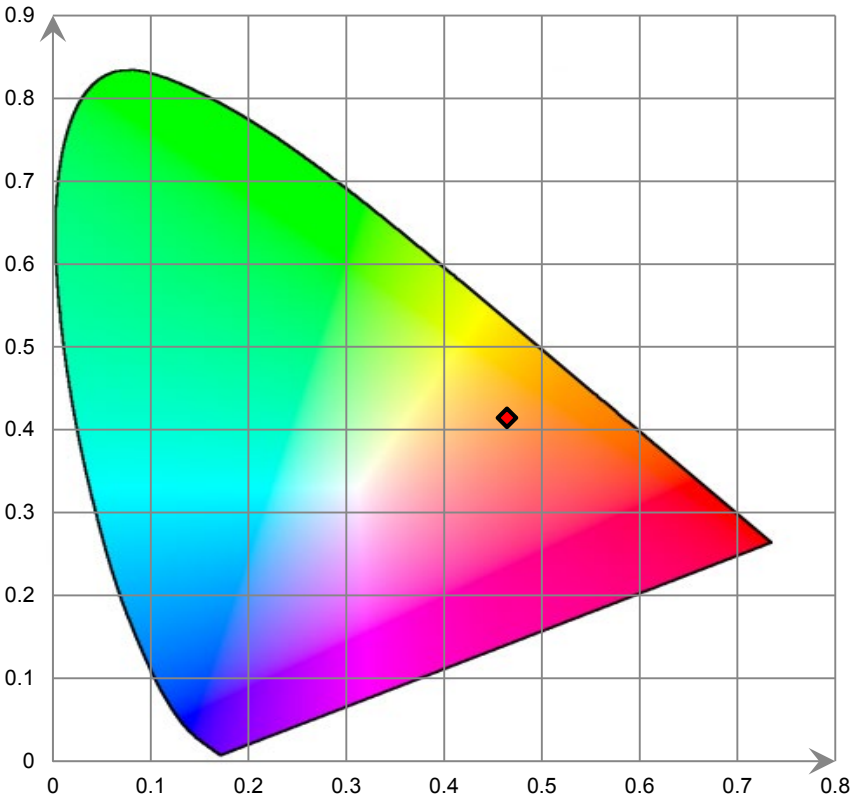
Relative Spectral Power Distribution



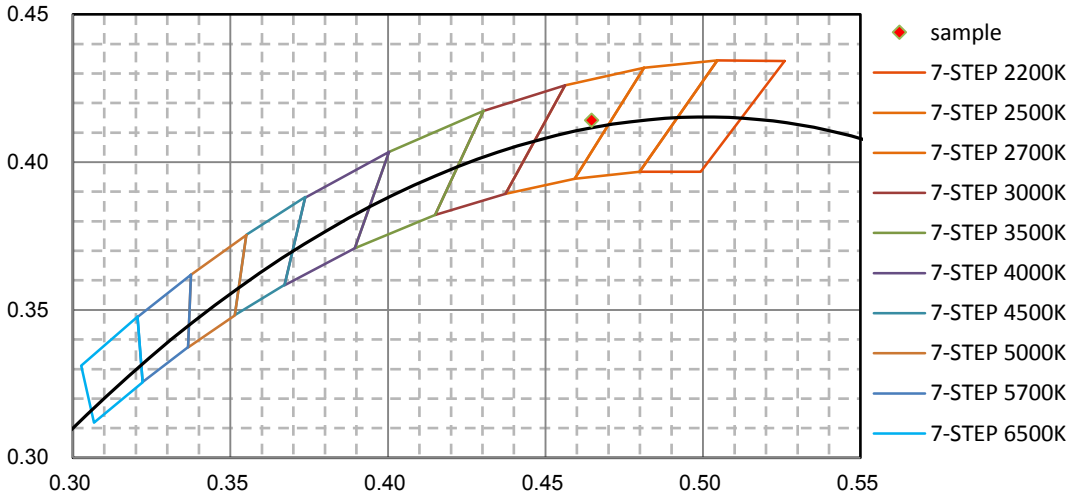
nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	2.657E-01	421	4.434E-01	462	5.601E+00	503	7.156E+00	544	1.136E+01
381	2.522E-01	422	4.956E-01	463	5.376E+00	504	7.281E+00	545	1.145E+01
382	2.186E-01	423	5.419E-01	464	5.199E+00	505	7.417E+00	546	1.153E+01
383	1.724E-01	424	5.960E-01	465	5.063E+00	506	7.558E+00	547	1.161E+01
384	1.673E-01	425	6.512E-01	466	4.985E+00	507	7.684E+00	548	1.170E+01
385	1.555E-01	426	7.090E-01	467	4.930E+00	508	7.795E+00	549	1.178E+01
386	1.555E-01	427	7.708E-01	468	4.912E+00	509	7.925E+00	550	1.185E+01
387	1.395E-01	428	8.398E-01	469	4.911E+00	510	8.039E+00	551	1.194E+01
388	1.122E-01	429	9.074E-01	470	4.891E+00	511	8.136E+00	552	1.201E+01
389	1.132E-01	430	9.837E-01	471	4.870E+00	512	8.254E+00	553	1.208E+01
390	1.077E-01	431	1.063E+00	472	4.820E+00	513	8.370E+00	554	1.216E+01
391	9.672E-02	432	1.149E+00	473	4.769E+00	514	8.456E+00	555	1.224E+01
392	9.106E-02	433	1.241E+00	474	4.716E+00	515	8.574E+00	556	1.230E+01
393	8.741E-02	434	1.330E+00	475	4.621E+00	516	8.681E+00	557	1.237E+01
394	8.064E-02	435	1.431E+00	476	4.546E+00	517	8.769E+00	558	1.245E+01
395	7.264E-02	436	1.544E+00	477	4.480E+00	518	8.868E+00	559	1.252E+01
396	7.512E-02	437	1.660E+00	478	4.430E+00	519	8.974E+00	560	1.259E+01
397	7.549E-02	438	1.787E+00	479	4.392E+00	520	9.070E+00	561	1.266E+01
398	7.912E-02	439	1.908E+00	480	4.389E+00	521	9.166E+00	562	1.274E+01
399	7.632E-02	440	2.049E+00	481	4.403E+00	522	9.267E+00	563	1.280E+01
400	7.525E-02	441	2.195E+00	482	4.464E+00	523	9.380E+00	564	1.287E+01
401	7.988E-02	442	2.359E+00	483	4.520E+00	524	9.471E+00	565	1.294E+01
402	8.105E-02	443	2.532E+00	484	4.613E+00	525	9.556E+00	566	1.301E+01
403	8.768E-02	444	2.740E+00	485	4.722E+00	526	9.656E+00	567	1.310E+01
404	8.413E-02	445	2.968E+00	486	4.840E+00	527	9.765E+00	568	1.318E+01
405	9.530E-02	446	3.226E+00	487	4.958E+00	528	9.857E+00	569	1.325E+01
406	1.017E-01	447	3.510E+00	488	5.075E+00	529	9.943E+00	570	1.334E+01
407	1.054E-01	448	3.837E+00	489	5.205E+00	530	1.005E+01	571	1.341E+01
408	1.169E-01	449	4.212E+00	490	5.335E+00	531	1.015E+01	572	1.349E+01
409	1.263E-01	450	4.607E+00	491	5.461E+00	532	1.025E+01	573	1.359E+01
410	1.384E-01	451	5.024E+00	492	5.589E+00	533	1.034E+01	574	1.368E+01
411	1.554E-01	452	5.415E+00	493	5.722E+00	534	1.043E+01	575	1.376E+01
412	1.748E-01	453	5.806E+00	494	5.856E+00	535	1.054E+01	576	1.386E+01
413	1.893E-01	454	6.123E+00	495	5.987E+00	536	1.063E+01	577	1.396E+01
414	2.101E-01	455	6.370E+00	496	6.124E+00	537	1.073E+01	578	1.405E+01
415	2.414E-01	456	6.517E+00	497	6.274E+00	538	1.081E+01	579	1.417E+01
416	2.650E-01	457	6.547E+00	498	6.423E+00	539	1.091E+01	580	1.429E+01
417	2.986E-01	458	6.478E+00	499	6.559E+00	540	1.100E+01	581	1.441E+01
418	3.343E-01	459	6.329E+00	500	6.713E+00	541	1.112E+01	582	1.454E+01
419	3.659E-01	460	6.105E+00	501	6.845E+00	542	1.119E+01	583	1.466E+01
420	4.039E-01	461	5.860E+00	502	6.995E+00	543	1.128E+01	584	1.478E+01

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
585	1.493E+01	626	2.206E+01	667	1.784E+01	708	7.874E+00	749	2.585E+00
586	1.506E+01	627	2.214E+01	668	1.759E+01	709	7.682E+00	750	2.512E+00
587	1.523E+01	628	2.222E+01	669	1.733E+01	710	7.500E+00	751	2.443E+00
588	1.539E+01	629	2.229E+01	670	1.709E+01	711	7.314E+00	752	2.370E+00
589	1.556E+01	630	2.235E+01	671	1.683E+01	712	7.131E+00	753	2.309E+00
590	1.572E+01	631	2.239E+01	672	1.657E+01	713	6.952E+00	754	2.242E+00
591	1.589E+01	632	2.243E+01	673	1.632E+01	714	6.784E+00	755	2.177E+00
592	1.605E+01	633	2.245E+01	674	1.606E+01	715	6.610E+00	756	2.114E+00
593	1.623E+01	634	2.246E+01	675	1.578E+01	716	6.447E+00	757	2.049E+00
594	1.640E+01	635	2.246E+01	676	1.553E+01	717	6.292E+00	758	1.997E+00
595	1.659E+01	636	2.248E+01	677	1.526E+01	718	6.122E+00	759	1.937E+00
596	1.677E+01	637	2.244E+01	678	1.500E+01	719	5.961E+00	760	1.881E+00
597	1.696E+01	638	2.242E+01	679	1.474E+01	720	5.815E+00	761	1.826E+00
598	1.714E+01	639	2.237E+01	680	1.448E+01	721	5.664E+00	762	1.770E+00
599	1.733E+01	640	2.231E+01	681	1.422E+01	722	5.521E+00	763	1.722E+00
600	1.755E+01	641	2.226E+01	682	1.396E+01	723	5.373E+00	764	1.673E+00
601	1.773E+01	642	2.219E+01	683	1.370E+01	724	5.226E+00	765	1.622E+00
602	1.794E+01	643	2.212E+01	684	1.344E+01	725	5.089E+00	766	1.576E+00
603	1.815E+01	644	2.203E+01	685	1.319E+01	726	4.959E+00	767	1.531E+00
604	1.835E+01	645	2.192E+01	686	1.293E+01	727	4.815E+00	768	1.482E+00
605	1.854E+01	646	2.181E+01	687	1.267E+01	728	4.684E+00	769	1.439E+00
606	1.874E+01	647	2.170E+01	688	1.242E+01	729	4.553E+00	770	1.397E+00
607	1.895E+01	648	2.156E+01	689	1.216E+01	730	4.433E+00	771	1.358E+00
608	1.914E+01	649	2.143E+01	690	1.192E+01	731	4.311E+00	772	1.317E+00
609	1.933E+01	650	2.129E+01	691	1.168E+01	732	4.190E+00	773	1.280E+00
610	1.953E+01	651	2.114E+01	692	1.144E+01	733	4.081E+00	774	1.239E+00
611	1.973E+01	652	2.098E+01	693	1.118E+01	734	3.961E+00	775	1.205E+00
612	1.993E+01	653	2.082E+01	694	1.095E+01	735	3.851E+00	776	1.171E+00
613	2.014E+01	654	2.065E+01	695	1.071E+01	736	3.747E+00	777	1.139E+00
614	2.032E+01	655	2.045E+01	696	1.048E+01	737	3.633E+00	778	1.106E+00
615	2.050E+01	656	2.026E+01	697	1.024E+01	738	3.534E+00	779	1.097E+00
616	2.068E+01	657	2.008E+01	698	1.001E+01	739	3.442E+00	780	1.099E+00
617	2.087E+01	658	1.988E+01	699	9.786E+00	740	3.339E+00		
618	2.102E+01	659	1.967E+01	700	9.562E+00	741	3.242E+00		
619	2.117E+01	660	1.946E+01	701	9.331E+00	742	3.149E+00		
620	2.132E+01	661	1.924E+01	702	9.124E+00	743	3.064E+00		
621	2.148E+01	662	1.901E+01	703	8.905E+00	744	2.980E+00		
622	2.160E+01	663	1.878E+01	704	8.692E+00	745	2.895E+00		
623	2.174E+01	664	1.855E+01	705	8.488E+00	746	2.815E+00		
624	2.186E+01	665	1.832E+01	706	8.282E+00	747	2.734E+00		
625	2.197E+01	666	1.808E+01	707	8.070E+00	748	2.659E+00		

CIE 1931 x y Chromaticity Diagram



7-Step Chromaticity Quadrangles



Model: 11PAR30SNDIM/927FL40/B/SL

[Integrating Sphere System]

The Stabilization time: **30 minutes**

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

Test orientation: **Base Up**

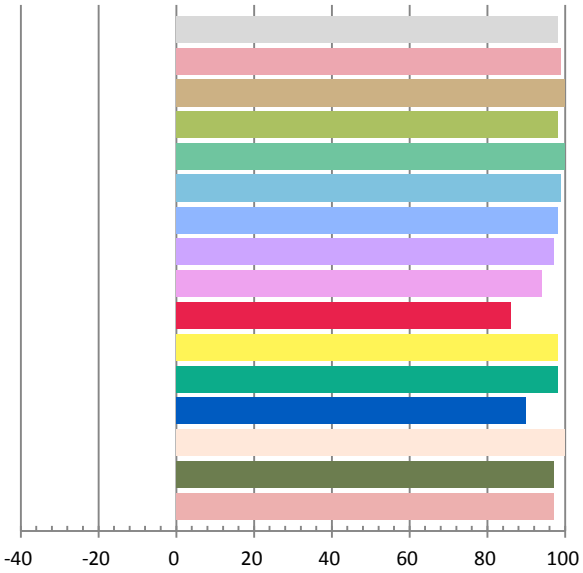
Photometric and Electrical Measurement Result

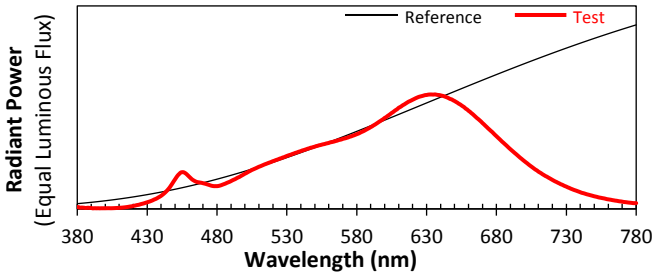
Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Luminous Flux(lm)	Efficacy (lm/W)
120.0	60	0.09117	10.5	0.9601	957.23	91.13

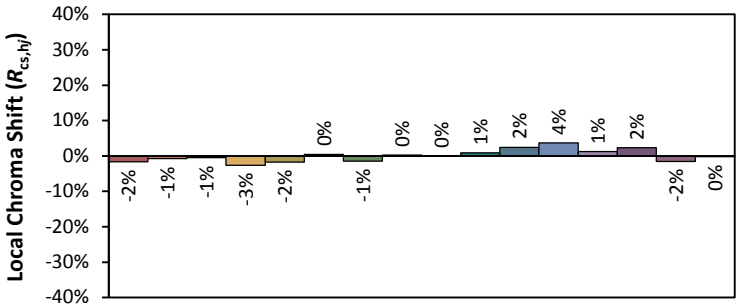
Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
3.658	2713	0.0000721	0.4589	0.4106	0.2619	0.5272

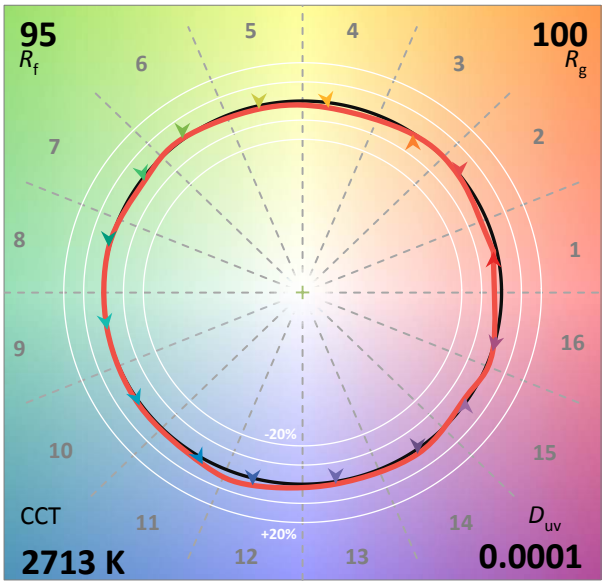
Color Rendering Index

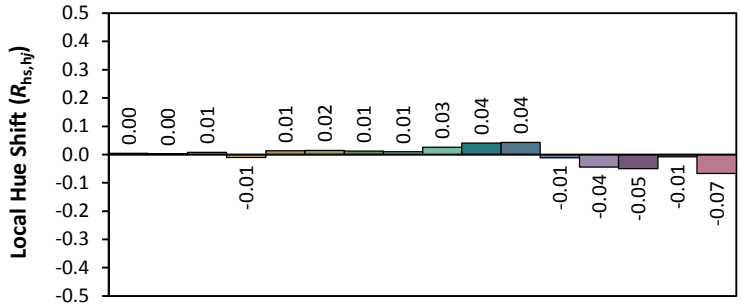
Ra			
98.1			
R1	R2	R3	R4
99	100	98	100
R5	R6	R7	R8
99	98	97	94
R9	R10	R11	R12
86	98	98	90
R13	R14	R15	
100	97	97	

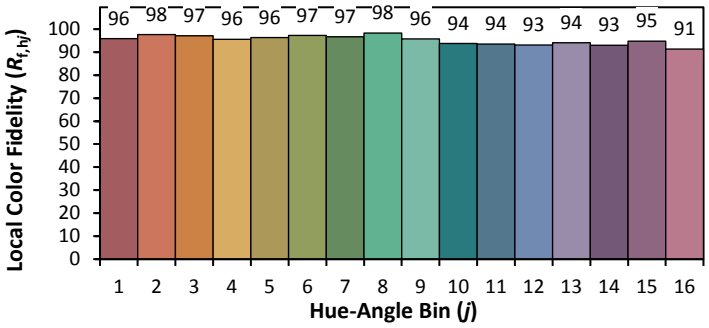


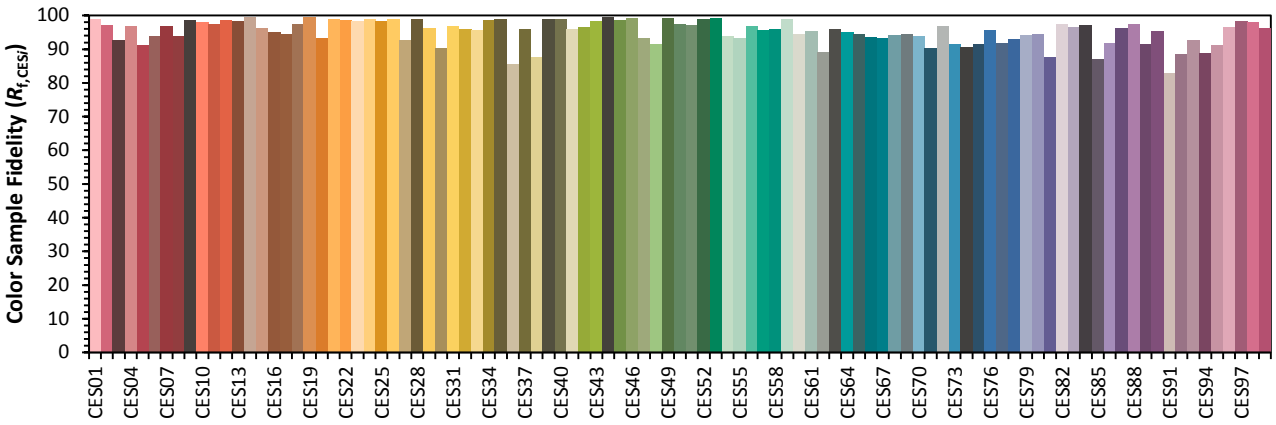

Reference
Test
Radiant Power
(Equal Luminous Flux)
380 430 480 530 580 630 680 730 780
Wavelength (nm)


Local Chroma Shift ($R_{cs,hj}$)
40% 30% 20% 10% 0% -10% -20% -30% -40%
-2% -1% -1% -3% -2% 0% -1% 0% 0% 1% 2% 4% 1% 2% -2% 0%

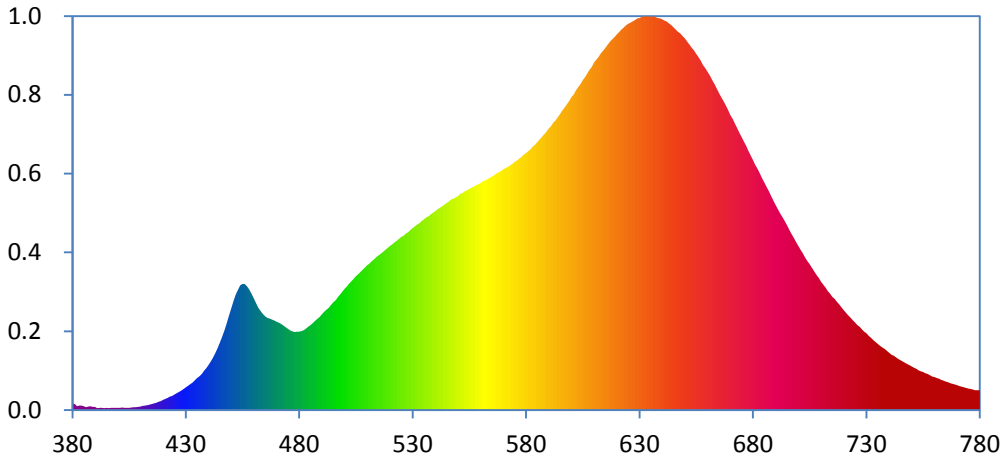

95
R_f
100
R_g
CCT
2713 K
D_{uv}
0.0001
-20%
+20%
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16


Local Hue Shift ($R_{hs,hj}$)
0.5 0.4 0.3 0.2 0.1 0.0 -0.1 -0.2 -0.3 -0.4 -0.5
0.00 0.00 0.01 -0.01 0.01 0.02 0.01 0.01 0.03 0.04 0.04 -0.01 -0.04 -0.05 -0.01 -0.07


Local Color Fidelity ($R_{f,hj}$)
100 90 80 70 60 50 40 30 20 10 0
96 98 97 96 96 97 97 98 96 94 94 93 94 93 95 91
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Hue-Angle Bin (j)


Color Sample Fidelity ($R_{f,CESi}$)
100 90 80 70 60 50 40 30 20 10 0
CES01 CES04 CES07 CES10 CES13 CES16 CES19 CES22 CES25 CES28 CES31 CES34 CES37 CES40 CES43 CES46 CES49 CES52 CES55 CES58 CES61 CES64 CES67 CES70 CES73 CES76 CES79 CES82 CES85 CES88 CES91 CES94 CES97

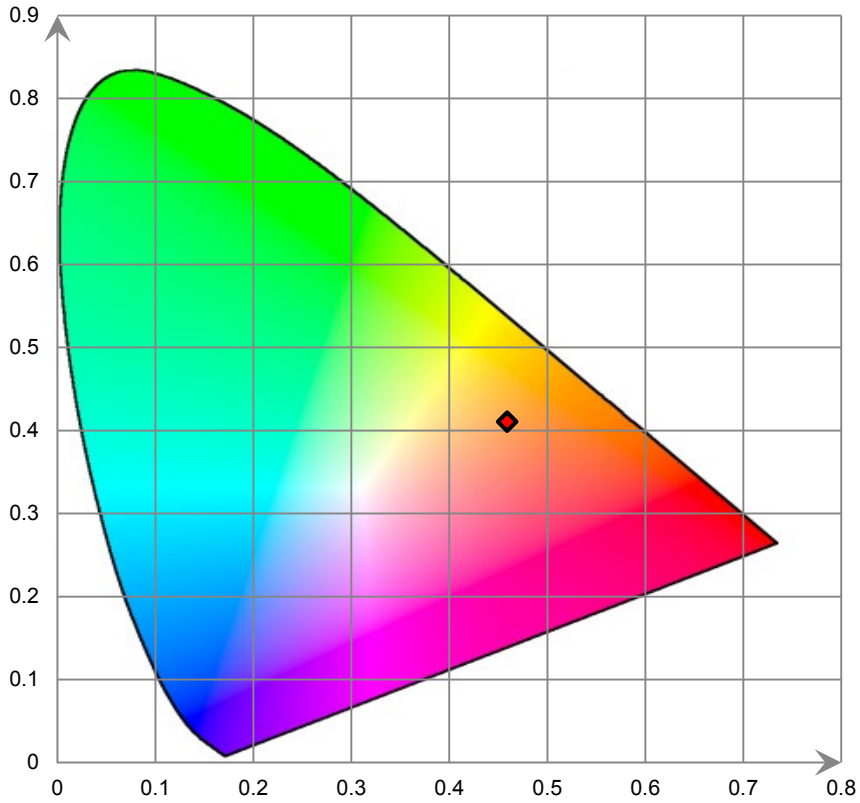
Relative Spectral Power Distribution



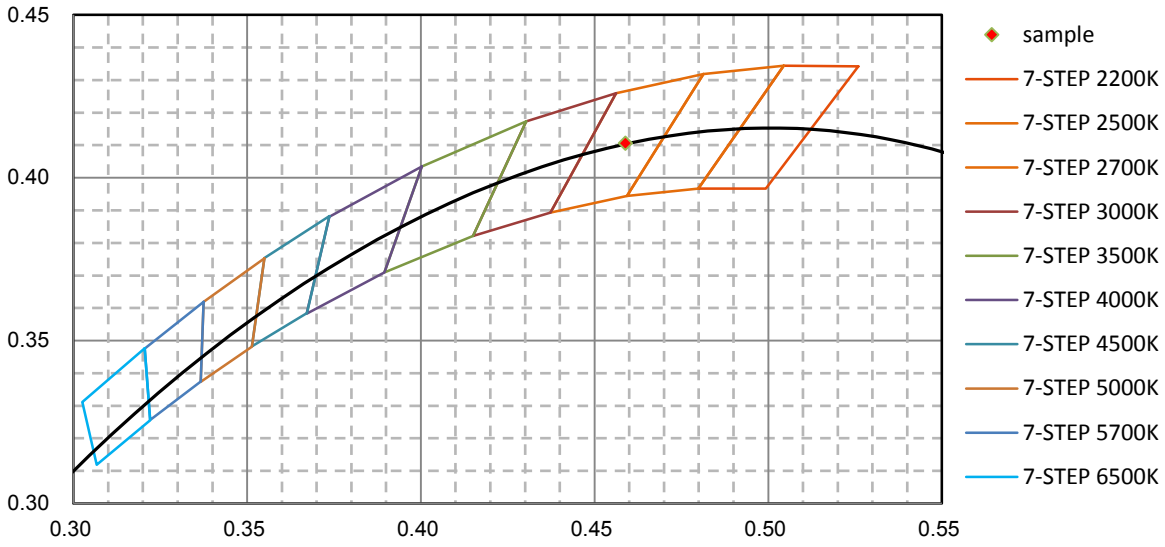
nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	3.584E-01	421	6.188E-01	462	5.737E+00	503	7.241E+00	544	1.154E+01
381	3.364E-01	422	6.843E-01	463	5.549E+00	504	7.379E+00	545	1.164E+01
382	2.210E-01	423	7.477E-01	464	5.394E+00	505	7.528E+00	546	1.171E+01
383	2.556E-01	424	7.890E-01	465	5.263E+00	506	7.644E+00	547	1.182E+01
384	2.410E-01	425	8.745E-01	466	5.171E+00	507	7.764E+00	548	1.187E+01
385	2.155E-01	426	9.508E-01	467	5.134E+00	508	7.884E+00	549	1.196E+01
386	1.657E-01	427	1.019E+00	468	5.081E+00	509	8.014E+00	550	1.203E+01
387	2.011E-01	428	1.094E+00	469	5.035E+00	510	8.142E+00	551	1.214E+01
388	2.190E-01	429	1.187E+00	470	4.964E+00	511	8.238E+00	552	1.219E+01
389	1.736E-01	430	1.270E+00	471	4.898E+00	512	8.355E+00	553	1.229E+01
390	1.789E-01	431	1.361E+00	472	4.830E+00	513	8.472E+00	554	1.234E+01
391	1.063E-01	432	1.445E+00	473	4.738E+00	514	8.591E+00	555	1.242E+01
392	1.232E-01	433	1.551E+00	474	4.660E+00	515	8.692E+00	556	1.249E+01
393	1.227E-01	434	1.662E+00	475	4.566E+00	516	8.792E+00	557	1.254E+01
394	1.131E-01	435	1.804E+00	476	4.481E+00	517	8.905E+00	558	1.263E+01
395	1.250E-01	436	1.906E+00	477	4.425E+00	518	8.996E+00	559	1.269E+01
396	1.061E-01	437	2.038E+00	478	4.393E+00	519	9.104E+00	560	1.275E+01
397	1.204E-01	438	2.202E+00	479	4.400E+00	520	9.221E+00	561	1.286E+01
398	1.188E-01	439	2.354E+00	480	4.397E+00	521	9.303E+00	562	1.291E+01
399	1.216E-01	440	2.525E+00	481	4.431E+00	522	9.422E+00	563	1.297E+01
400	1.217E-01	441	2.732E+00	482	4.495E+00	523	9.509E+00	564	1.304E+01
401	1.278E-01	442	2.952E+00	483	4.580E+00	524	9.608E+00	565	1.313E+01
402	1.326E-01	443	3.197E+00	484	4.687E+00	525	9.726E+00	566	1.319E+01
403	1.300E-01	444	3.466E+00	485	4.787E+00	526	9.799E+00	567	1.330E+01
404	1.203E-01	445	3.770E+00	486	4.888E+00	527	9.928E+00	568	1.336E+01
405	1.284E-01	446	4.098E+00	487	5.019E+00	528	9.996E+00	569	1.342E+01
406	1.387E-01	447	4.491E+00	488	5.129E+00	529	1.012E+01	570	1.353E+01
407	1.525E-01	448	4.894E+00	489	5.236E+00	530	1.023E+01	571	1.360E+01
408	1.668E-01	449	5.320E+00	490	5.367E+00	531	1.033E+01	572	1.366E+01
409	1.853E-01	450	5.720E+00	491	5.515E+00	532	1.042E+01	573	1.375E+01
410	2.011E-01	451	6.127E+00	492	5.642E+00	533	1.050E+01	574	1.383E+01
411	2.265E-01	452	6.494E+00	493	5.757E+00	534	1.062E+01	575	1.395E+01
412	2.407E-01	453	6.760E+00	494	5.914E+00	535	1.070E+01	576	1.402E+01
413	2.677E-01	454	7.013E+00	495	6.055E+00	536	1.082E+01	577	1.413E+01
414	2.960E-01	455	7.087E+00	496	6.172E+00	537	1.089E+01	578	1.422E+01
415	3.330E-01	456	7.084E+00	497	6.339E+00	538	1.100E+01	579	1.433E+01
416	3.691E-01	457	6.957E+00	498	6.491E+00	539	1.109E+01	580	1.444E+01
417	4.186E-01	458	6.767E+00	499	6.642E+00	540	1.117E+01	581	1.454E+01
418	4.663E-01	459	6.512E+00	500	6.806E+00	541	1.129E+01	582	1.466E+01
419	5.016E-01	460	6.247E+00	501	6.931E+00	542	1.136E+01	583	1.481E+01
420	5.675E-01	461	5.992E+00	502	7.093E+00	543	1.145E+01	584	1.493E+01

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
585	1.505E+01	626	2.177E+01	667	1.736E+01	708	7.580E+00	749	2.511E+00
586	1.520E+01	627	2.184E+01	668	1.712E+01	709	7.424E+00	750	2.433E+00
587	1.535E+01	628	2.192E+01	669	1.688E+01	710	7.207E+00	751	2.376E+00
588	1.550E+01	629	2.200E+01	670	1.660E+01	711	7.045E+00	752	2.312E+00
589	1.564E+01	630	2.202E+01	671	1.636E+01	712	6.884E+00	753	2.230E+00
590	1.581E+01	631	2.208E+01	672	1.609E+01	713	6.689E+00	754	2.176E+00
591	1.595E+01	632	2.211E+01	673	1.584E+01	714	6.534E+00	755	2.128E+00
592	1.614E+01	633	2.212E+01	674	1.557E+01	715	6.360E+00	756	2.069E+00
593	1.629E+01	634	2.211E+01	675	1.533E+01	716	6.238E+00	757	2.025E+00
594	1.647E+01	635	2.210E+01	676	1.508E+01	717	6.072E+00	758	1.960E+00
595	1.665E+01	636	2.213E+01	677	1.485E+01	718	5.922E+00	759	1.884E+00
596	1.684E+01	637	2.208E+01	678	1.457E+01	719	5.767E+00	760	1.841E+00
597	1.701E+01	638	2.203E+01	679	1.430E+01	720	5.608E+00	761	1.797E+00
598	1.719E+01	639	2.201E+01	680	1.405E+01	721	5.457E+00	762	1.754E+00
599	1.736E+01	640	2.195E+01	681	1.379E+01	722	5.311E+00	763	1.692E+00
600	1.759E+01	641	2.188E+01	682	1.354E+01	723	5.192E+00	764	1.650E+00
601	1.773E+01	642	2.182E+01	683	1.328E+01	724	5.044E+00	765	1.598E+00
602	1.795E+01	643	2.172E+01	684	1.301E+01	725	4.923E+00	766	1.569E+00
603	1.813E+01	644	2.162E+01	685	1.278E+01	726	4.770E+00	767	1.515E+00
604	1.833E+01	645	2.151E+01	686	1.253E+01	727	4.672E+00	768	1.464E+00
605	1.854E+01	646	2.137E+01	687	1.229E+01	728	4.533E+00	769	1.441E+00
606	1.871E+01	647	2.124E+01	688	1.203E+01	729	4.404E+00	770	1.392E+00
607	1.893E+01	648	2.116E+01	689	1.177E+01	730	4.305E+00	771	1.341E+00
608	1.912E+01	649	2.099E+01	690	1.153E+01	731	4.164E+00	772	1.311E+00
609	1.929E+01	650	2.086E+01	691	1.129E+01	732	4.065E+00	773	1.281E+00
610	1.954E+01	651	2.069E+01	692	1.106E+01	733	3.932E+00	774	1.238E+00
611	1.968E+01	652	2.054E+01	693	1.082E+01	734	3.826E+00	775	1.206E+00
612	1.985E+01	653	2.034E+01	694	1.060E+01	735	3.715E+00	776	1.180E+00
613	2.005E+01	654	2.020E+01	695	1.036E+01	736	3.614E+00	777	1.148E+00
614	2.019E+01	655	2.000E+01	696	1.012E+01	737	3.528E+00	778	1.110E+00
615	2.037E+01	656	1.982E+01	697	9.884E+00	738	3.423E+00	779	1.112E+00
616	2.054E+01	657	1.964E+01	698	9.671E+00	739	3.326E+00	780	1.114E+00
617	2.071E+01	658	1.938E+01	699	9.441E+00	740	3.220E+00		
618	2.083E+01	659	1.922E+01	700	9.226E+00	741	3.113E+00		
619	2.096E+01	660	1.897E+01	701	9.012E+00	742	3.047E+00		
620	2.110E+01	661	1.878E+01	702	8.812E+00	743	2.972E+00		
621	2.123E+01	662	1.853E+01	703	8.581E+00	744	2.881E+00		
622	2.137E+01	663	1.832E+01	704	8.375E+00	745	2.799E+00		
623	2.149E+01	664	1.807E+01	705	8.178E+00	746	2.734E+00		
624	2.161E+01	665	1.782E+01	706	7.979E+00	747	2.655E+00		
625	2.170E+01	666	1.757E+01	707	7.773E+00	748	2.587E+00		

CIE 1931 x y Chromaticity Diagram



7-Step Chromaticity Quadrangles



Model: 11PAR30SNDIM/927FL40/SL

[Goniophotometer System]

The Stabilization time: **30 minutes**

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

Test orientation: **Base Up**

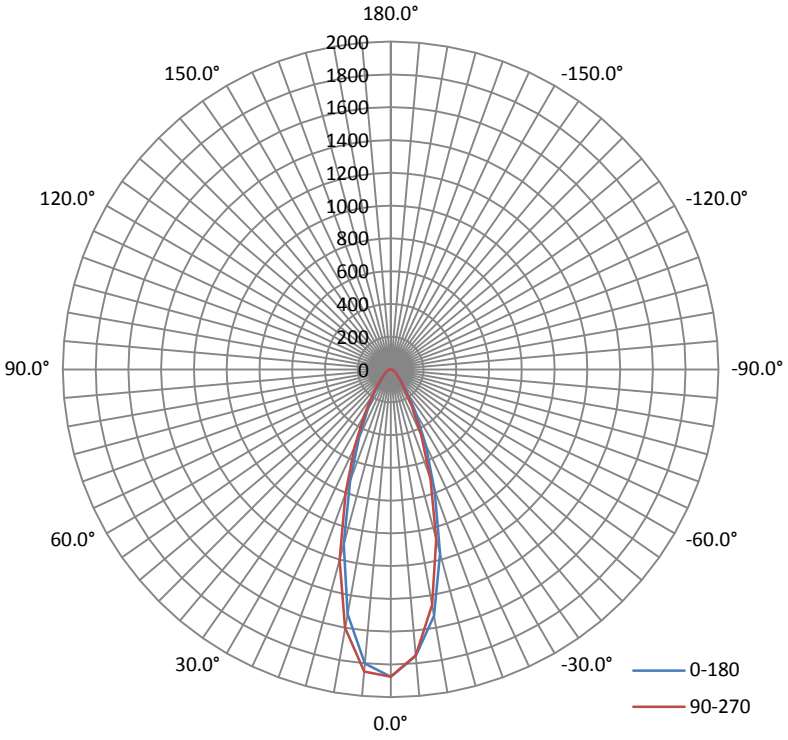
Electrical Measurement

Input Voltage (V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.10	60	0.0905	10.370	0.9536

Photometric Measurement

Luminous Flux (lm)	Efficacy (lm/W)	I_{max} (cd)	S/MH (C0/180)	S/MH (C90/270)
950.882	91.70	1893.0	0.58	0.55

Luminous Intensity Distribution



	C0/180	C45/225	C90/270	C135/315	AVG.
Beam Angle (50% I_{max}):	34.7	34.5	34.6	34.9	34.7
Field Angle (10% I_{max}):	68.9	68.4	68.5	68.9	68.7

Luminous Intensity (cd) Distribution Data

C / γ	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
0.0°	1875	1875	1875	1875	1875	1875	1875	1875
5.0°	1801	1816	1838	1843	1851	1848	1824	1786
10.0°	1515	1544	1573	1588	1600	1602	1579	1545
15.0°	1102	1131	1168	1189	1203	1194	1180	1153
20.0°	723	742	767	787	800	810	793	775
25.0°	457	473	492	507	519	523	512	498
30.0°	281	291	305	314	323	324	317	304
35.0°	171	175	181	189	195	195	193	185
40.0°	106	109	113	119	122	122	119	116
45.0°	69	72	74	77	79	79	78	76
50.0°	51	51	53	54	55	55	55	54
55.0°	41	42	43	43	43	44	43	43
60.0°	32	33	35	35	35	35	34	34
65.0°	24	25	26	26	26	26	26	25
70.0°	18	18	19	19	19	19	19	19
75.0°	13	13	14	14	14	13	13	13
80.0°	8	8	9	9	9	9	8	8
85.0°	4	4	4	5	5	5	4	4
90.0°	1	1	1	1	2	1	1	1
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°	1	1	1	1	1	1	1	1
150.0°	2	2	2	2	2	2	2	2
155.0°	2	2	2	2	2	2	2	2
160.0°	2	2	2	2	2	2	2	2
165.0°	2	2	2	2	2	2	2	2
170.0°	2	2	2	2	2	2	2	2
175.0°	2	2	2	2	2	2	2	2
180.0°	1	1	1	1	1	1	1	1

Luminous Intensity (cd) Distribution Data (cont.)

C / γ	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
0.0°	1875	1875	1875	1875	1875	1875	1875	1875
5.0°	1754	1732	1720	1727	1750	1770	1785	1809
10.0°	1526	1494	1475	1454	1459	1471	1494	1524
15.0°	1162	1125	1099	1078	1074	1080	1098	1128
20.0°	787	761	739	717	709	706	720	747
25.0°	507	487	469	450	442	440	448	466
30.0°	306	292	280	267	261	263	268	280
35.0°	186	178	169	162	159	161	164	171
40.0°	115	111	105	102	100	101	103	105
45.0°	75	73	70	68	68	69	69	70
50.0°	54	53	52	51	51	51	51	51
55.0°	43	42	42	41	41	41	41	41
60.0°	33	33	32	32	32	32	32	32
65.0°	25	24	24	24	24	24	24	24
70.0°	18	18	18	17	17	17	18	18
75.0°	13	13	12	12	12	12	12	13
80.0°	8	8	8	8	7	7	7	8
85.0°	4	4	4	3	3	3	4	4
90.0°	1	1	1	1	1	1	1	1
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°	0	0	0	0	0	0	0	0
150.0°	0	0	0	0	0	0	0	0
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°	1	1	1	1	1	1	1	1

Zonal Lumen Density Measurement

Deg	Flux (lm)	%
0-5	43.9	4.61
5-10	118.5	12.47
10-15	157.3	16.54
15-20	153.1	16.10
20-25	127.2	13.38
25-30	95.5	10.04
30-35	67.4	7.08
35-40	46.8	4.93
40-45	33.2	3.49
45-50	24.9	2.62
50-55	20.4	2.14
55-60	17.6	1.85
60-65	14.0	1.47
65-70	10.8	1.14
70-75	8.1	0.85
75-80	5.5	0.58
80-85	3.2	0.34
85-90	1.3	0.14
90-95	0.3	0.03
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	0.01
130-135	0.1	0.01
135-140	0.1	0.01
140-145	0.2	0.02
145-150	0.3	0.03
150-155	0.3	0.03
155-160	0.3	0.03
160-165	0.3	0.03
165-170	0.2	0.02
170-175	0.1	0.01
175-180	0.0	0.00

Deg	Flux (lm)	%
0-5	43.9	4.61
0-10	162.4	17.08
0-15	319.7	33.62
0-20	472.8	49.72
0-25	600.0	63.10
0-30	695.4	73.14
0-35	762.8	80.22
0-40	809.7	85.15
0-45	842.8	88.64
0-50	867.7	91.26
0-55	888.1	93.40
0-60	905.7	95.25
0-65	919.7	96.72
0-70	930.5	97.86
0-75	938.6	98.71
0-80	944.1	99.29
0-85	947.4	99.63
0-90	948.7	99.77
0-95	948.9	99.80
0-100	949.0	99.80
0-105	949.0	99.80
0-110	949.0	99.80
0-115	949.0	99.80
0-120	949.0	99.80
0-125	949.0	99.80
0-130	949.1	99.81
0-135	949.1	99.82
0-140	949.3	99.83
0-145	949.5	99.85
0-150	949.7	99.88
0-155	950.0	99.91
0-160	950.3	99.94
0-165	950.6	99.97
0-170	950.7	99.99
0-175	950.8	100.00
0-180	950.9	100.00

[Additional Test]

Model: 11PAR30SNDIM/927FL40/SL

Test Item	Test Voltage (V)	Frequency (Hz)	Test Result
Total Harmonic Distortion:	120.0	60	16.89%

Model: 11PAR30SNDIM/927FL40/B/SL

Test Item	Test Voltage (V)	Frequency (Hz)	Test Result
Total Harmonic Distortion:	120.0	60	17.07%

6. Product Photo

Photo for 11PAR30SNDIM/927FL40/SL

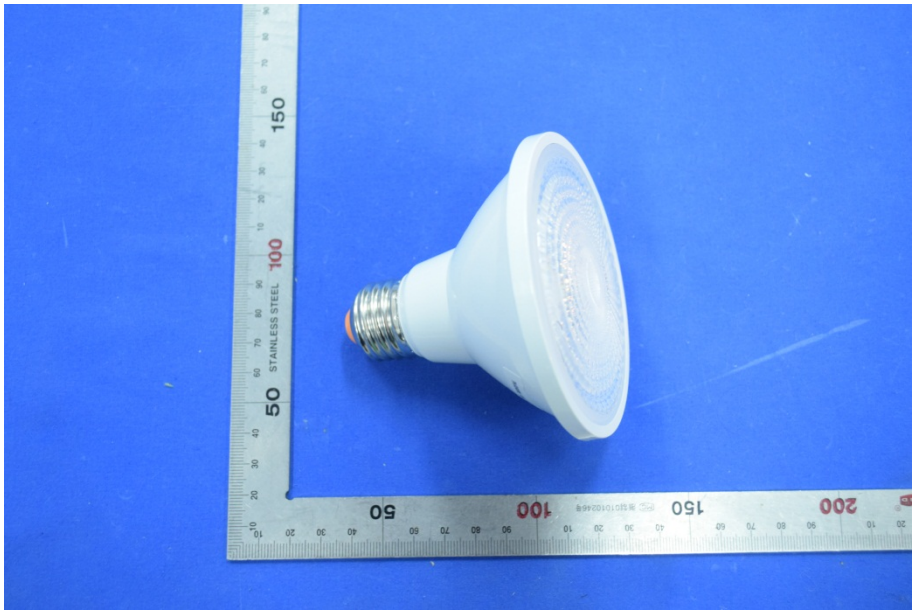
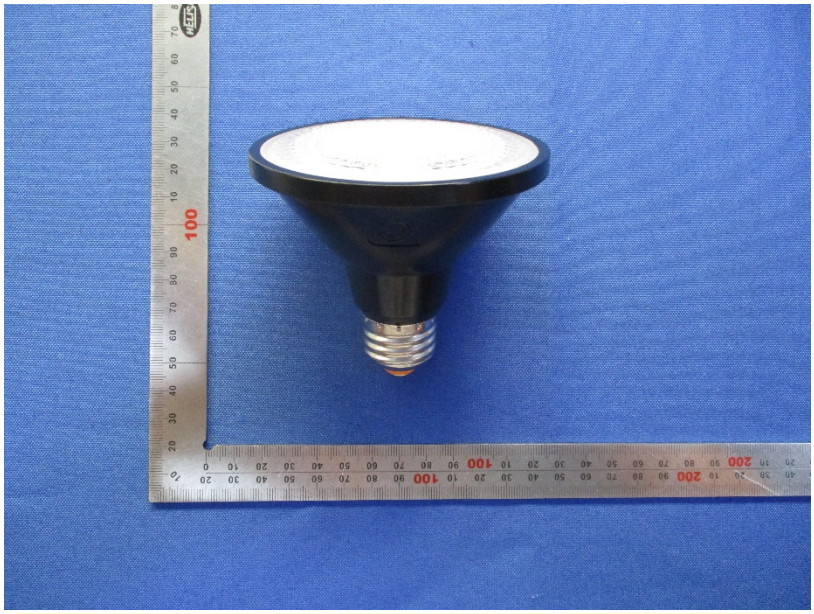


Photo for 11PAR30SNDIM/927FL40/B/SL



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