

# ANSI/IES LM-79-19

## 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

**Test Model: 6GU10DIM/830NF25**

<b>Report Type:</b>	Electrical and Photometric tests including: Luminous Flux, Power Factor, Chromaticity, Luminous Intensity Distribution
<b>Reviewed By:</b>	Hexy He <span style="float: right;"><i>Hexy He</i></span>
<b>Report Number:</b>	KS2230506-24380E-EE
<b>Test Date:</b>	2023-03-22 to 2023-03-24
<b>Report Date:</b>	2023-05-09
<b>Approved by:</b>	Blake Zhang / EE Engineer <span style="float: right;"><i>Blake Zhang</i></span>
<b>Prepared By:</b>	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
<b>Test Facility:</b>	Test facility was located at No.12, Pulong East 1 <sup>st</sup> 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:

One test sample was in good condition and received on 2022-05-10, and used for testing.

Model Tested: 6GU10DIM/830NF25  
Manufacturer: GREEN CREATIVE LTD  
Brand Name: GREEN CREATIVE  
Product Designation: GU10 50W R80  
Burning Time Before Test: 0hour(For New Products)

### Rated Values:

Rated Voltage/Frequency: 120V/60Hz  
Rated Power: 6 W  
Nominal CCT: 3000K  
Nominal Lumen Output: 570 lm

### Note:

- 1、 The applicant Lumileds Holding B.V. declare that their products with model 6GU10DIM/830NF25 are the same to the products in report# KS2230320-13340E-EE and is authorized by original applicant to use their test data.
- 2、 All the data in previous report (KS2230320-13340E-EE) is shared in this report.

## 2. Standards Used

- ANSI/IES LM-79-19: Approved method :Optical and Electrical Measurements of Solid-State Lighting Products
- ANSI C82.77-10-2014: Harmonic Emission Limits – Related Power Quality Requirements for Lighting
- \*IES TM-30-18: IES Method for Evaluating Light Source Color Rendition (This method is not in NVLAP accreditation scope)

### 3. Description of Test Equipment

Device	Manufacture	Model No	Serial No	Calibration date	Calibration due date
1.5m integrating sphere	SENSING	1.5m	NA	2022-11-10	2023-11-09
Digital power meter	EVERFINE	PF9811	G135717CN1361159	2022-11-10	2023-11-09
High-precision rapid spectral radiometer	EVERFINE	HAAS-2000	N/A	2022-11-10	2023-11-09
Precision frequency power supply	ALL Power	APW-105N	970663	2022-11-10	2023-11-09
Standard Light Source	EVERFINE	D204	N/A	2021-10-15	2023-10-14
thermometer	SENSING	NA	NA	2023-03-18	2024-03-17
Programmable Precision DC Power Supply	EVERFINE	WY5015	11060010	2022-11-10	2023-11-09
AC POWER SUPPLY	EVERFINE	VPS1030 PWM	1012017	2022-11-16	2023-11-15
Digital CC&CV DC Power Supply	EVERFINE	WY12010	1009009	2022-11-10	2023-11-09
Digital power meter	YOKOGAWA	WT-210	91j926132	2022-11-10	2023-11-09
full-field speed goniophotometer	EVERFINE	GO-R5000	YG108492N10120001	2022-11-10	2023-11-09
wireless remote thermohygrometer	N/A	433MHz	N/A	2023-03-18	2024-03-17
Standard Light Source	EVERFINE	D908	1012003	2021-10-15	2023-10-14

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

## 4. Test Method

Product was tested with no seasoning. All stabilization and measurements were made in compliance with ANSI/IES LM-79-19. The product was operated at rated voltage or at voltage required by manufacturer. The ambient temperature of the sample was maintained at  $25^{\circ}\text{C}\pm 1.2^{\circ}\text{C}$  during measurement. And relative humidity is maintained between 10% and 65%. The air flow around the SSL product is less than 0.2m/s.

### **Integrating Sphere System**

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

$4\pi$  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  $U=21\text{K}$  ( $K=2$ ), 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  $U=0.17\%$  of rdg, Power  $U=0.48\%$  ( $K=2$ ), at the 95% confidence level.

### **Goniophotometer System**

The goniophotometer system is calibrated by standard light source before measurement.

Type C goniophotometer was used for measuring total luminous flux, luminous intensity distribution, and color spatial uniformity. The product was operated in its intended orientation in application and was recorded in this report. For luminous intensity distribution, The vertical angle ( $\gamma$ ) test intervals were set no more than 2.5 degree, The horizontal angle (C plane) test intervals were set no more than 22.5 degree. For color spatial uniformity, The vertical angle ( $\gamma$ ) test intervals were set no more than 90 degree, The horizontal angle (C plane) test intervals were set no more than 10 degree

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

### **Fidelity Index and Gamut Index Calculation**

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

## 5. Test Result

### [Integrating Sphere System]

The Stabilization time: **30 minutes**

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

Test orientation: **Base Up**

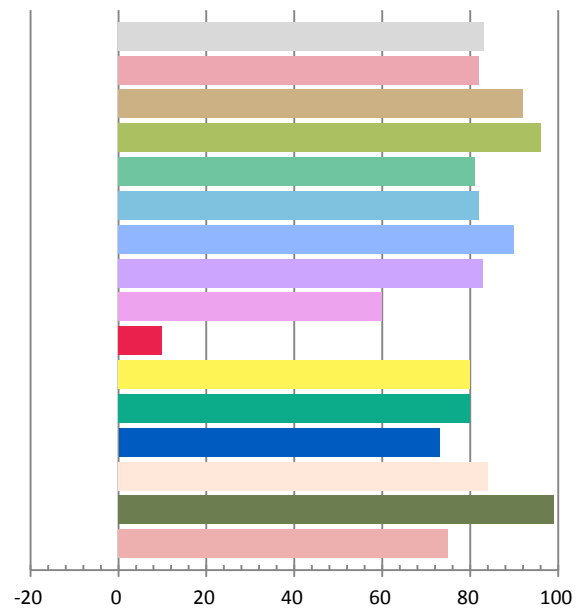
### Photometric and Electrical Measurement Result

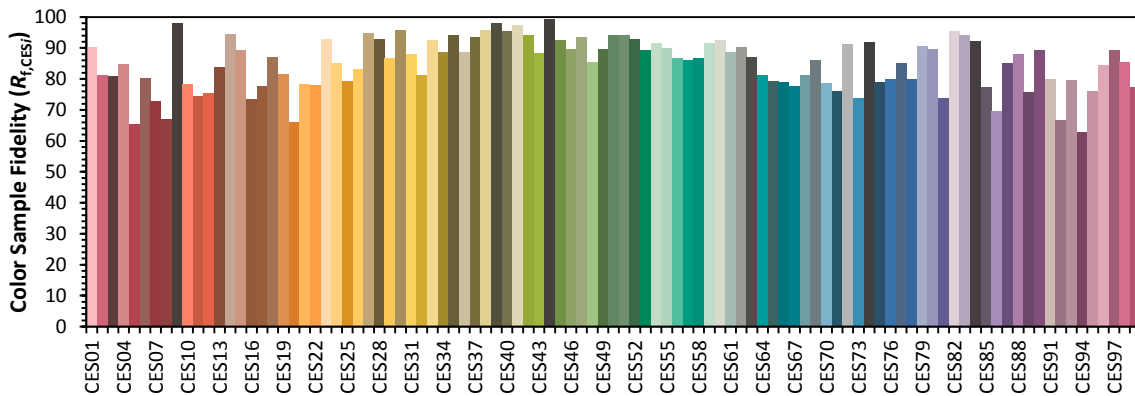
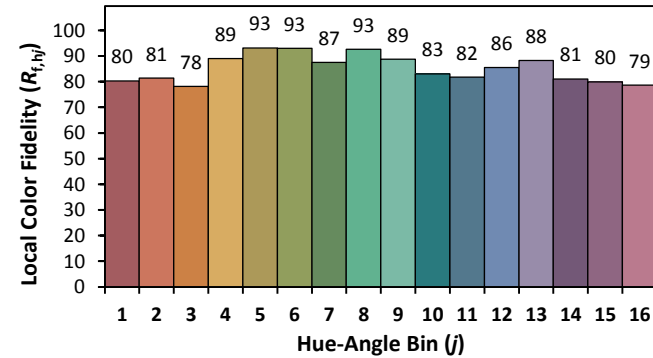
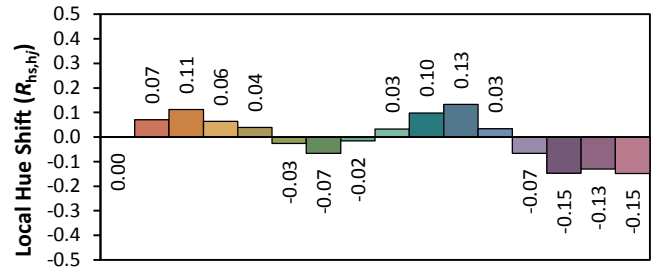
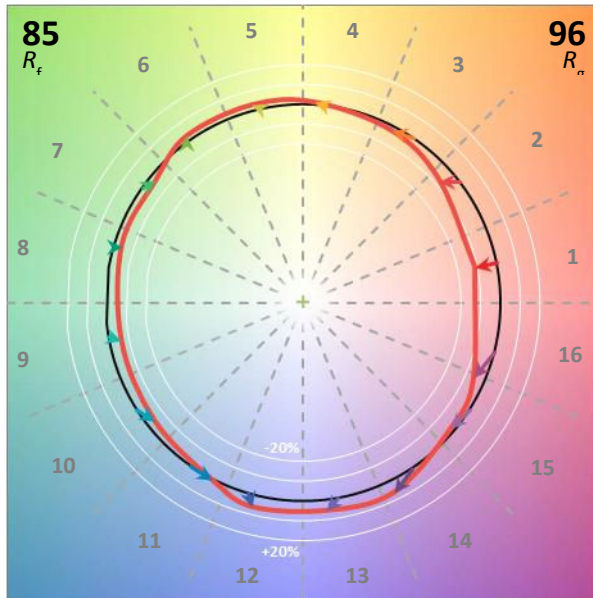
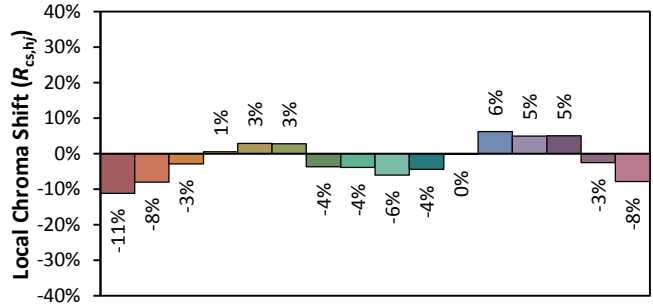
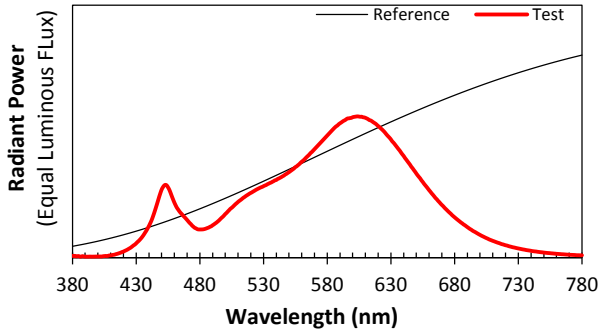
Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Luminous Flux(lm)	Efficacy (lm/W)
120.0	60	0.05838	5.711	0.8148	664.58	116.38

Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
2.0448	2996	-0.000939	0.4359	0.4014	0.2510	0.5202

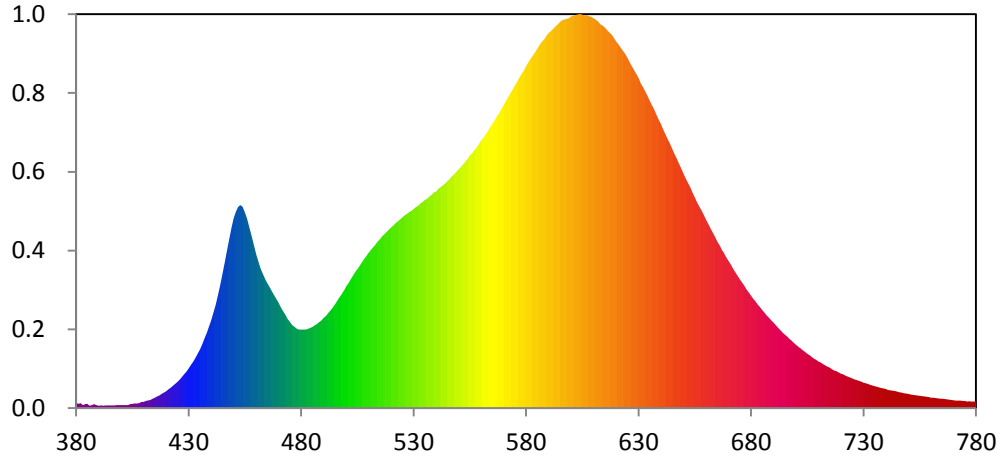
### Color Rendering Index

<b>Ra</b>			
83.1			
<b>R1</b>	<b>R2</b>	<b>R3</b>	<b>R4</b>
82	92	96	81
<b>R5</b>	<b>R6</b>	<b>R7</b>	<b>R8</b>
82	90	83	60
<b>R9</b>	<b>R10</b>	<b>R11</b>	<b>R12</b>
10	80	80	73
<b>R13</b>	<b>R14</b>	<b>R15</b>	
84	99	75	





**Relative Spectral Power Distribution**

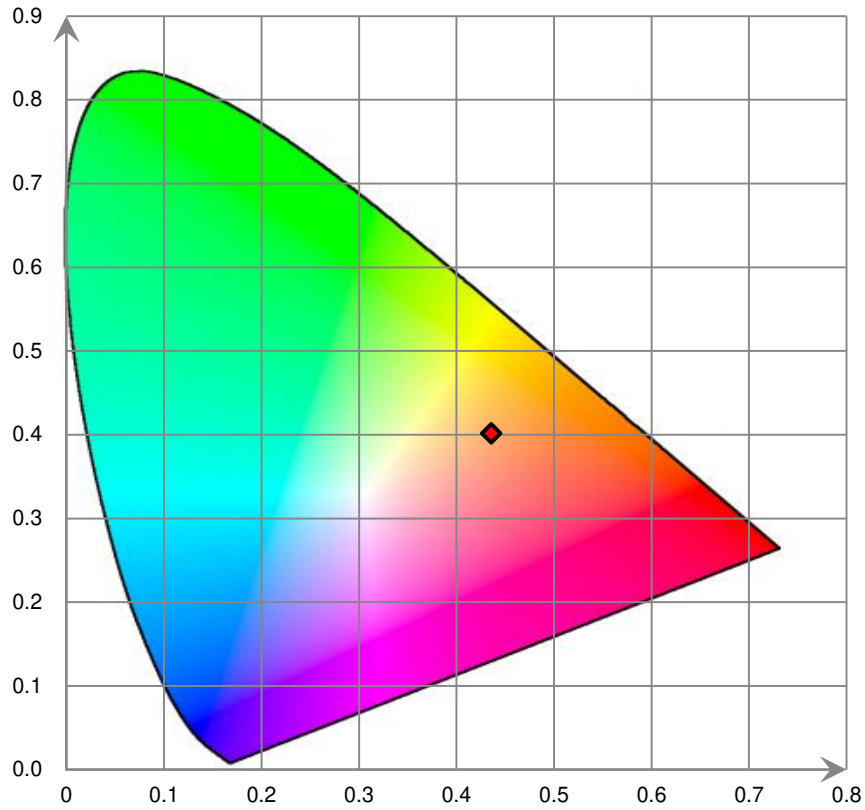


nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	1.720E-01	421	6.386E-01	462	4.797E+00	503	4.568E+00	544	7.751E+00
381	1.398E-01	422	6.943E-01	463	4.622E+00	504	4.698E+00	545	7.833E+00
382	1.677E-01	423	7.557E-01	464	4.441E+00	505	4.792E+00	546	7.898E+00
383	1.025E-01	424	8.290E-01	465	4.294E+00	506	4.901E+00	547	7.997E+00
384	1.342E-01	425	9.009E-01	466	4.165E+00	507	5.026E+00	548	8.062E+00
385	1.395E-01	426	9.797E-01	467	4.021E+00	508	5.143E+00	549	8.149E+00
386	7.887E-02	427	1.075E+00	468	3.894E+00	509	5.246E+00	550	8.230E+00
387	1.015E-01	428	1.173E+00	469	3.758E+00	510	5.359E+00	551	8.320E+00
388	1.356E-01	429	1.254E+00	470	3.623E+00	511	5.458E+00	552	8.407E+00
389	9.905E-02	430	1.367E+00	471	3.474E+00	512	5.546E+00	553	8.499E+00
390	8.207E-02	431	1.491E+00	472	3.332E+00	513	5.640E+00	554	8.592E+00
391	8.853E-02	432	1.602E+00	473	3.214E+00	514	5.745E+00	555	8.714E+00
392	8.151E-02	433	1.732E+00	474	3.074E+00	515	5.824E+00	556	8.787E+00
393	8.980E-02	434	1.872E+00	475	2.968E+00	516	5.917E+00	557	8.895E+00
394	9.154E-02	435	2.027E+00	476	2.863E+00	517	5.999E+00	558	8.992E+00
395	8.627E-02	436	2.203E+00	477	2.810E+00	518	6.075E+00	559	9.124E+00
396	8.799E-02	437	2.397E+00	478	2.736E+00	519	6.158E+00	560	9.234E+00
397	9.103E-02	438	2.587E+00	479	2.709E+00	520	6.227E+00	561	9.331E+00
398	9.457E-02	439	2.806E+00	480	2.705E+00	521	6.293E+00	562	9.442E+00
399	9.815E-02	440	3.030E+00	481	2.706E+00	522	6.370E+00	563	9.573E+00
400	9.995E-02	441	3.288E+00	482	2.711E+00	523	6.441E+00	564	9.698E+00
401	1.008E-01	442	3.559E+00	483	2.726E+00	524	6.519E+00	565	9.811E+00
402	1.028E-01	443	3.885E+00	484	2.758E+00	525	6.584E+00	566	9.932E+00
403	1.004E-01	444	4.235E+00	485	2.800E+00	526	6.646E+00	567	1.008E+01
404	1.273E-01	445	4.614E+00	486	2.849E+00	527	6.709E+00	568	1.018E+01
405	1.407E-01	446	5.008E+00	487	2.893E+00	528	6.766E+00	569	1.033E+01
406	1.536E-01	447	5.410E+00	488	2.964E+00	529	6.811E+00	570	1.045E+01
407	1.484E-01	448	5.817E+00	489	3.015E+00	530	6.875E+00	571	1.060E+01
408	1.678E-01	449	6.196E+00	490	3.109E+00	531	6.936E+00	572	1.073E+01
409	2.043E-01	450	6.541E+00	491	3.185E+00	532	6.982E+00	573	1.087E+01
410	2.104E-01	451	6.773E+00	492	3.278E+00	533	7.060E+00	574	1.099E+01
411	2.378E-01	452	6.935E+00	493	3.364E+00	534	7.117E+00	575	1.113E+01
412	2.589E-01	453	7.003E+00	494	3.469E+00	535	7.182E+00	576	1.126E+01
413	2.784E-01	454	6.949E+00	495	3.574E+00	536	7.230E+00	577	1.141E+01
414	3.212E-01	455	6.768E+00	496	3.696E+00	537	7.302E+00	578	1.153E+01
415	3.525E-01	456	6.542E+00	497	3.820E+00	538	7.363E+00	579	1.165E+01
416	3.928E-01	457	6.242E+00	498	3.927E+00	539	7.443E+00	580	1.180E+01
417	4.349E-01	458	5.909E+00	499	4.054E+00	540	7.472E+00	581	1.193E+01
418	4.801E-01	459	5.596E+00	500	4.193E+00	541	7.568E+00	582	1.206E+01
419	5.346E-01	460	5.295E+00	501	4.305E+00	542	7.618E+00	583	1.217E+01
420	5.756E-01	461	5.035E+00	502	4.442E+00	543	7.688E+00	584	1.228E+01

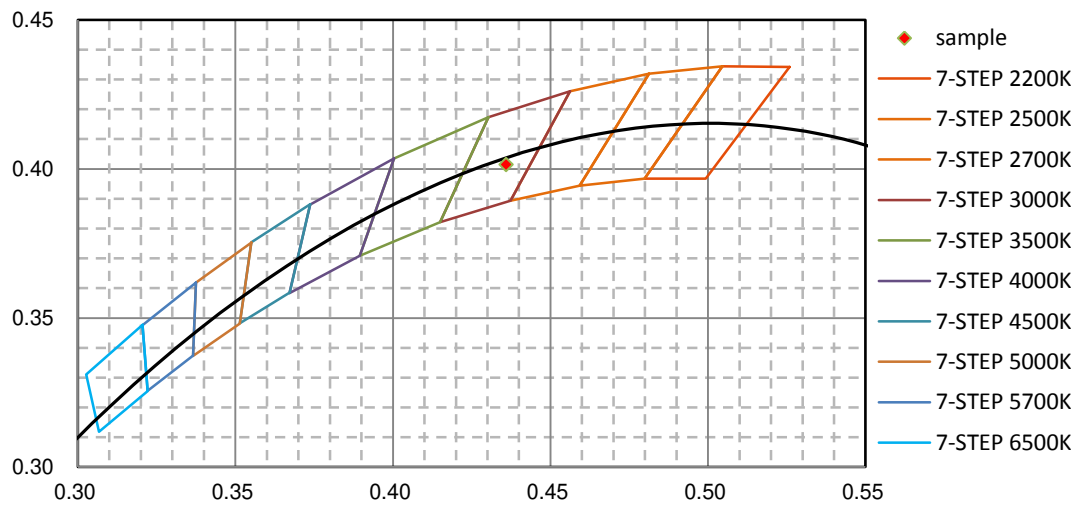
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585	1.241E+01	626	1.194E+01	667	5.464E+00	708	1.704E+00	749	4.977E-01
586	1.253E+01	627	1.179E+01	668	5.339E+00	709	1.656E+00	750	4.814E-01
587	1.264E+01	628	1.166E+01	669	5.196E+00	710	1.605E+00	751	4.650E-01
588	1.272E+01	629	1.153E+01	670	5.067E+00	711	1.565E+00	752	4.535E-01
589	1.284E+01	630	1.138E+01	671	4.951E+00	712	1.516E+00	753	4.389E-01
590	1.293E+01	631	1.120E+01	672	4.811E+00	713	1.470E+00	754	4.314E-01
591	1.301E+01	632	1.107E+01	673	4.688E+00	714	1.425E+00	755	4.191E-01
592	1.310E+01	633	1.092E+01	674	4.568E+00	715	1.390E+00	756	4.041E-01
593	1.318E+01	634	1.076E+01	675	4.444E+00	716	1.340E+00	757	3.963E-01
594	1.324E+01	635	1.060E+01	676	4.329E+00	717	1.293E+00	758	3.827E-01
595	1.333E+01	636	1.044E+01	677	4.221E+00	718	1.264E+00	759	3.743E-01
596	1.340E+01	637	1.029E+01	678	4.091E+00	719	1.224E+00	760	3.577E-01
597	1.341E+01	638	1.011E+01	679	3.983E+00	720	1.184E+00	761	3.528E-01
598	1.344E+01	639	9.941E+00	680	3.878E+00	721	1.159E+00	762	3.389E-01
599	1.346E+01	640	9.788E+00	681	3.773E+00	722	1.119E+00	763	3.333E-01
600	1.352E+01	641	9.599E+00	682	3.675E+00	723	1.078E+00	764	3.197E-01
601	1.355E+01	642	9.441E+00	683	3.573E+00	724	1.052E+00	765	3.154E-01
602	1.357E+01	643	9.275E+00	684	3.477E+00	725	1.015E+00	766	3.062E-01
603	1.359E+01	644	9.110E+00	685	3.376E+00	726	9.843E-01	767	2.969E-01
604	1.360E+01	645	8.945E+00	686	3.293E+00	727	9.612E-01	768	2.841E-01
605	1.358E+01	646	8.757E+00	687	3.192E+00	728	9.313E-01	769	2.797E-01
606	1.356E+01	647	8.606E+00	688	3.117E+00	729	9.011E-01	770	2.686E-01
607	1.357E+01	648	8.429E+00	689	3.024E+00	730	8.750E-01	771	2.585E-01
608	1.352E+01	649	8.266E+00	690	2.934E+00	731	8.517E-01	772	2.573E-01
609	1.350E+01	650	8.086E+00	691	2.847E+00	732	8.252E-01	773	2.500E-01
610	1.346E+01	651	7.922E+00	692	2.758E+00	733	7.981E-01	774	2.464E-01
611	1.340E+01	652	7.768E+00	693	2.687E+00	734	7.765E-01	775	2.368E-01
612	1.334E+01	653	7.621E+00	694	2.599E+00	735	7.552E-01	776	2.242E-01
613	1.325E+01	654	7.432E+00	695	2.526E+00	736	7.280E-01	777	2.253E-01
614	1.321E+01	655	7.285E+00	696	2.465E+00	737	7.075E-01	778	2.207E-01
615	1.314E+01	656	7.108E+00	697	2.389E+00	738	6.876E-01	779	2.163E-01
616	1.305E+01	657	6.958E+00	698	2.318E+00	739	6.701E-01	780	2.167E-01
617	1.297E+01	658	6.807E+00	699	2.245E+00	740	6.467E-01		
618	1.289E+01	659	6.653E+00	700	2.179E+00	741	6.223E-01		
619	1.278E+01	660	6.490E+00	701	2.110E+00	742	6.072E-01		
620	1.267E+01	661	6.344E+00	702	2.051E+00	743	5.913E-01		
621	1.257E+01	662	6.182E+00	703	1.991E+00	744	5.801E-01		
622	1.245E+01	663	6.043E+00	704	1.929E+00	745	5.575E-01		
623	1.234E+01	664	5.895E+00	705	1.870E+00	746	5.412E-01		
624	1.222E+01	665	5.736E+00	706	1.818E+00	747	5.251E-01		
625	1.209E+01	666	5.616E+00	707	1.754E+00	748	5.118E-01		



**CIE 1931 x y Chromaticity Diagram**



**7-Step Chromaticity Quadrangles**



**[Goniophotometer System]**

The Stabilization time: **30 minutes**

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

Test orientation: **Base Up**

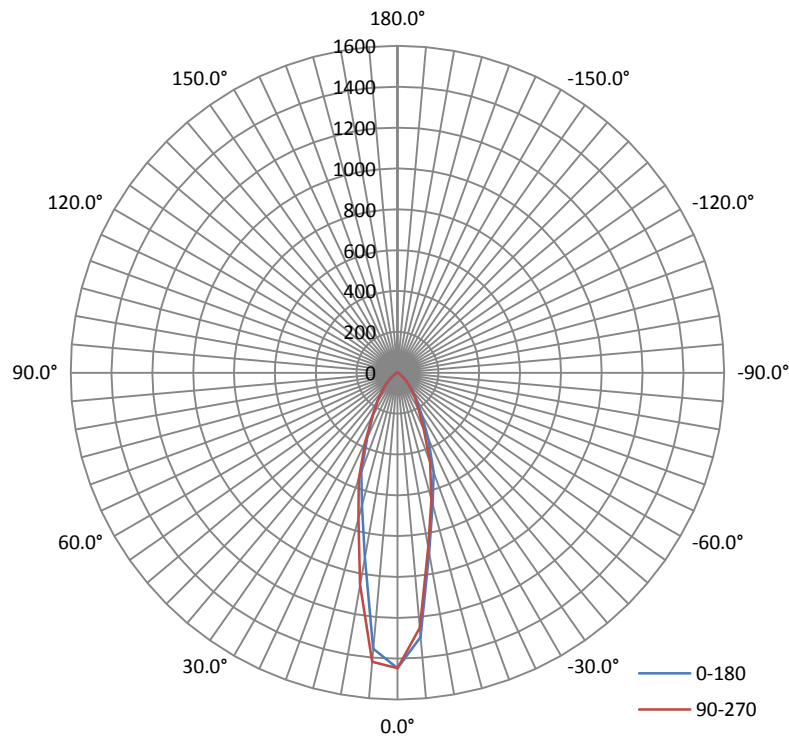
**Electrical Measurement**

Input Voltage (V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.0	60	0.0584	5.713	0.8149

**Photometric Measurement**

Luminous Flux (lm)	Efficacy (lm/W)	I <sub>max</sub> (cd)	S/MH (C0/180)	S/MH (C90/270)
667.325	116.81	1448.0	0.43	0.42

**Luminous Intensity Distribution**



	C0/180	C45/225	C90/270	C135/315	AVG.
Beam Angle (50% I <sub>max</sub> ):	27.1	26.2	28.2	27.5	27.3
Field Angle (10% I <sub>max</sub> ):	74.3	74.9	72.8	72.8	73.7

Luminous Intensity (cd) Distribution Data

C \ Y	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
0.0°	1447	1447	1447	1447	1447	1447	1447	1447
5.0°	1356	1381	1396	1412	1421	1413	1397	1375
10.0°	918	948	977	1012	1052	1050	1002	948
15.0°	674	660	678	717	738	722	713	705
20.0°	518	543	550	548	556	557	550	540
25.0°	346	379	382	376	375	392	379	367
30.0°	238	261	263	249	246	256	250	242
35.0°	168	177	180	176	171	172	170	172
40.0°	117	122	124	126	120	118	116	123
45.0°	75	77	80	84	79	75	72	79
50.0°	43	43	46	51	48	41	41	46
55.0°	25	24	26	30	28	22	23	28
60.0°	15	15	15	18	16	14	14	16
65.0°	10	10	10	11	10	9	9	10
70.0°	7	7	7	8	7	7	7	7
75.0°	5	5	5	5	5	5	5	5
80.0°	3	3	3	3	3	3	3	3
85.0°	1	1	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°	1	1	1	1	1	1	1	1

Luminous Intensity (cd) Distribution Data (cont.)

C \ Y	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
0.0°	1447	1447	1447	1447	1447	1447	1447	1447
5.0°	1300	1274	1255	1253	1253	1265	1269	1282
10.0°	893	855	841	857	869	868	873	880
15.0°	664	640	643	647	645	632	644	664
20.0°	518	522	498	473	466	476	483	491
25.0°	355	362	336	311	305	319	319	317
30.0°	240	249	235	216	208	215	216	215
35.0°	168	170	166	160	149	150	152	157
40.0°	117	116	113	111	103	101	100	109
45.0°	77	73	71	71	66	59	59	68
50.0°	45	40	40	43	38	30	32	40
55.0°	25	24	23	26	22	18	19	24
60.0°	14	14	13	15	13	11	12	14
65.0°	9	9	9	9	8	8	8	9
70.0°	7	6	6	7	6	6	6	7
75.0°	5	4	4	4	4	4	4	4
80.0°	3	3	2	2	2	2	2	3
85.0°	1	1	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°	0	0	0	0	0	0	0	0
150.0°	0	0	0	0	0	0	0	0
155.0°	0	0	0	0	0	0	0	0
160.0°	0	0	0	0	0	0	0	0
165.0°	0	0	0	0	0	0	0	0
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	33.5	5.01
5-10	79.5	11.92
10-15	92.3	13.83
15-20	97.6	14.62
20-25	90.2	13.52
25-30	73.0	10.93
30-35	58.5	8.77
35-40	46.4	6.95
40-45	34.3	5.14
45-50	22.7	3.40
50-55	13.8	2.08
55-60	8.7	1.29
60-65	5.6	0.84
65-70	4.0	0.60
70-75	2.9	0.44
75-80	1.9	0.29
80-85	1.0	0.15
85-90	0.3	0.04
90-95	0.0	0.01
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	0.0	0.01
135-140	0.1	0.01
140-145	0.1	0.01
145-150	0.2	0.03
150-155	0.2	0.02
155-160	0.2	0.03
160-165	0.1	0.02
165-170	0.1	0.02
170-175	0.1	0.01
175-180	0.0	0.00

Deg	Flux (lm)	%
0-5	33.5	5.01
0-10	112.9	16.93
0-15	205.3	30.76
0-20	302.8	45.38
0-25	393.0	58.90
0-30	466.0	69.83
0-35	524.5	78.60
0-40	570.9	85.55
0-45	605.2	90.69
0-50	627.9	94.09
0-55	641.7	96.17
0-60	650.4	97.46
0-65	656.0	98.30
0-70	660.0	98.90
0-75	662.9	99.34
0-80	664.8	99.63
0-85	665.9	99.78
0-90	666.1	99.82
0-95	666.2	99.83
0-100	666.2	99.83
0-105	666.2	99.83
0-110	666.2	99.83
0-115	666.2	99.83
0-120	666.2	99.83
0-125	666.2	99.83
0-130	666.2	99.84
0-135	666.3	99.85
0-140	666.4	99.86
0-145	666.5	99.87
0-150	666.6	99.90
0-155	666.8	99.92
0-160	667.0	99.95
0-165	667.1	99.97
0-170	667.2	99.99
0-175	667.3	100.00
0-180	667.3	100.00

## 6. Product Photo



## Directions

1. The information marked "superscript #" is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report.
2. 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\*\*\*\*\*