

LM-79-08 Test Report

For

LIGHT EFFICIENT DESIGN

188 S. Northwest Highway Cary, IL 60013, USA

Direct Linear Ambient Luminaires

Model Name(s):

RP-LBI-G1-4F-25W-XXK-WC-[Blank, OCN]-[BAA, Blank]

Representative (Tested) Model:

RP-LBI-G1-4F-25W-XXK-WC

Model Difference:

1. WC represents power adjustable and color tunable, wattage can adjust 10W, 15W and 25W, color tunable 2700K, 3000K and 3500K.
2. [Blank, OCN] represent sensor option, OCN represents occupancy sensor and N can be a number 1 to 4 for sensor number, Blank represents without sensor.
3. [BAA, Blank] is for business purpose.
4. All construction is the same, except the function.

Prepare by :

Review by:

Engineer: Derek Lai

Date: 2019-11-19

Technical Lead: Vincent Yuan

Issue Date: 2019-11-

Revised Date: N/A

Note:

1. The results contained in this report pertain only to the tested samples.
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3. This report does 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: 86-769-89874553

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

Product Information:

Client Name:	LIGHT EFFICIENT DESIGN
Brand Name:	REMPHOS OR LIGHT EFFICIENT DESIGN
Model Number:	RP-LBI-G1-4F-25W-XXK-WC
Product Type:	Direct Linear Ambient Luminaires
Rating Input:	100-277Vac, 50/60Hz, 25W
Declared CCT:	2700K/000K/3500K
Declared Light Output:	3100 lm
LED Manufacturer:	Hongli Zhihui Group Co., Ltd.
LED Model:	HL-AS-PU2835DW-S1-08-PCT-HR3
LED Quantity:	112 pcs

Test Information:

Standard Lamp:	Total Spectral Radiant Flux Standard Lamp, trace to NIST. 1. D908S for Gonio 2. D215S for Integrating Sphere
Date of Receipt Samples:	2019-11-06
Quantity of Receipt Samples:	1 pcs
Sample Number:	191106003-S1

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_ntc@163.com

Report Information:

Issued Date of Test Report:	2019-11-
Revised Date of Test Report:	N/A
Test Report No.:	NTCLR19110106
Remark (If applicable):	1. Product tested IS test with all wattage for all CCT, tested Gonio test and PF&iTHD test with the default maximum wattage for 2700K. 2. Tested PF&iTHD test with the default maximum wattage for 2700K.

Test Specification:	
Date of Test	2019-11-08
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. 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

Test Methods:
<p>1. Photometric and Electrical Measurements – Light Distribution Method:</p> <p>Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at $25\text{ }^{\circ}\text{C} \pm 1^{\circ}\text{C}$, 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.</p>
<p>2. Photometric and Electrical Measurements – Integrating Sphere Method:</p> <p>Photometric parameters were measured using an integrating sphere, as spectroradiometer and software. The ambient temperature condition inside the sphere was measured at $25\text{ }^{\circ}\text{C} \pm 1^{\circ}\text{C}$. 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.</p>
<p>3. THD and PF Measurements:</p> <p>The sample was tested according to the ANSI C82.77-2002, 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.</p>

Integrating Sphere Test Results:

Test Condition:

Test Ambient (°C)	Test Humidity (%)	Orientation	Stabilization Time (minute)	Test Time (minute)
25.0	40.8	Face Down	90	10

Electrical Data:

CCT (K)	Voltage (V)	Frequency (Hz)	Current (A)	Wattage (W)	Power Factor
2700	120.0	60	0.2094	25.03	0.9960
	277.0	60	0.08570	24.66	0.9631
3000	120.0	60	0.2056	24.57	0.9959
	277.0	60	0.09090	24.23	0.9618
3500	120.0	60	0.2098	25.07	0.9960
	277.0	60	0.09360	24.95	0.9619

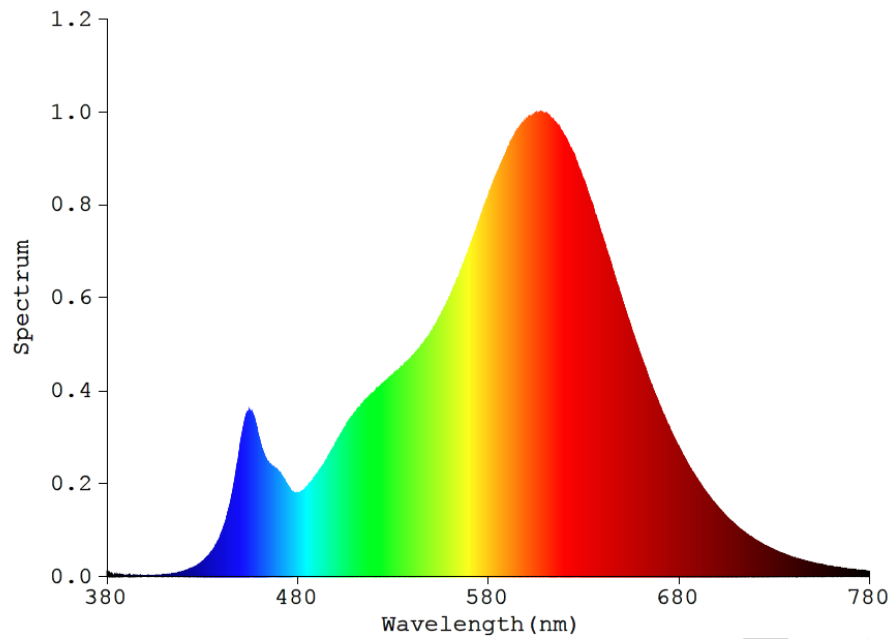
Color Data:

Voltage (V)	CCT (K)	CRI	R9	x	y	u'	v'	Duv
120.0	2726	82.3	5	0.4611	0.4161	0.2608	0.5296	0.00192
277.0	2726	82.4	5	0.4611	0.4162	0.2608	0.5296	0.00194
120.0	3070	83.7	11	0.4305	0.3992	0.2485	0.5185	-0.00107
277.0	3075	83.7	11	0.4303	0.3991	0.2484	0.5184	-0.00105
120.0	3521	83.6	10	0.4022	0.3850	0.2361	0.5084	-0.00186
277.0	3518	83.6	10	0.4024	0.3850	0.2362	0.5084	-0.00189

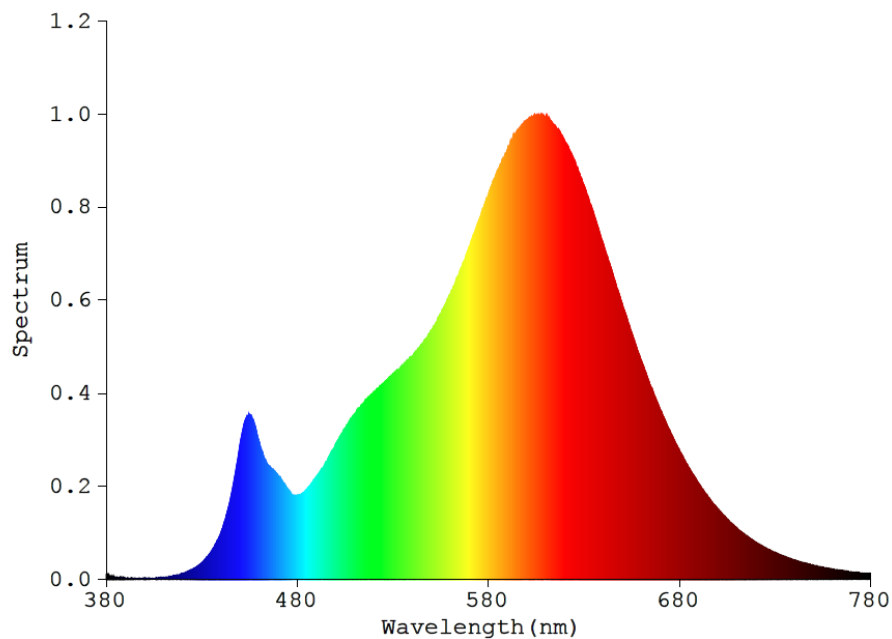
Output Data:

CCT (K)	Voltage (V)	Light output (lm)	Efficacy (lm/W)
2700	120.0	3114.7	124.44
	277.0	3115.9	126.35
3000	120.0	3344.5	136.12
	277.0	3341.0	137.89
3500	120.0	3314.7	132.22
	277.0	3331.3	133.52

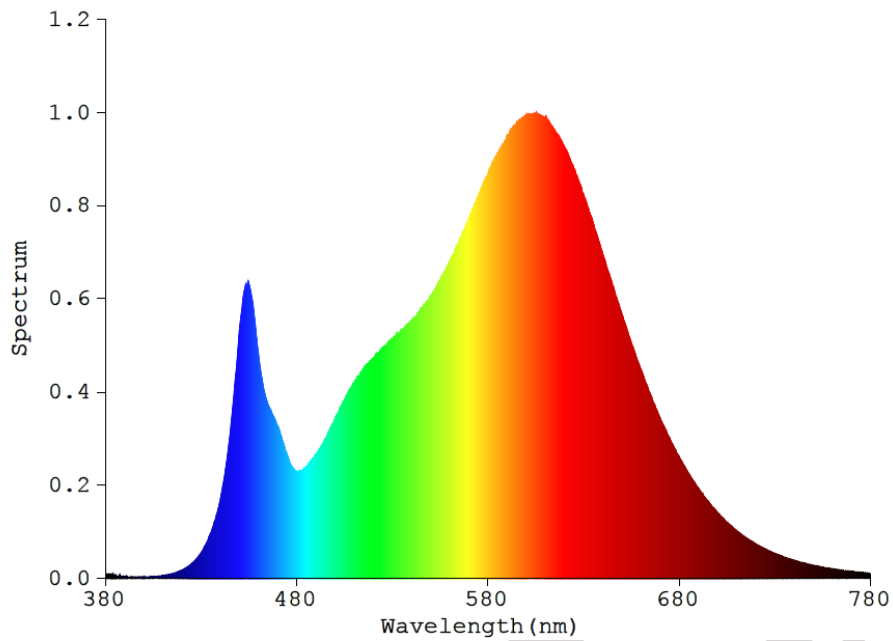
Spectrum Diagram (2700K for 120V):



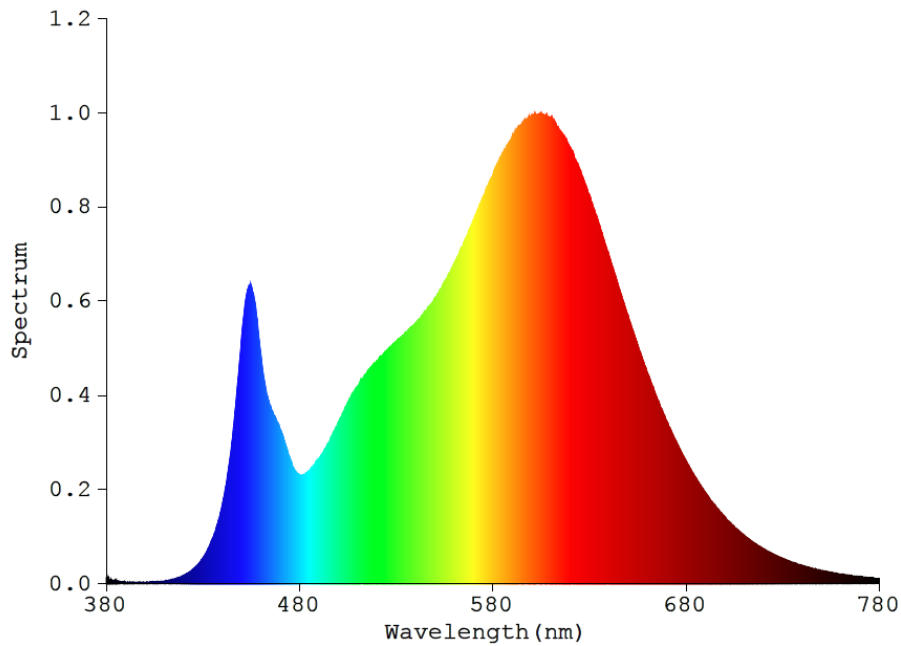
Spectrum Diagram (2700K for 277V):



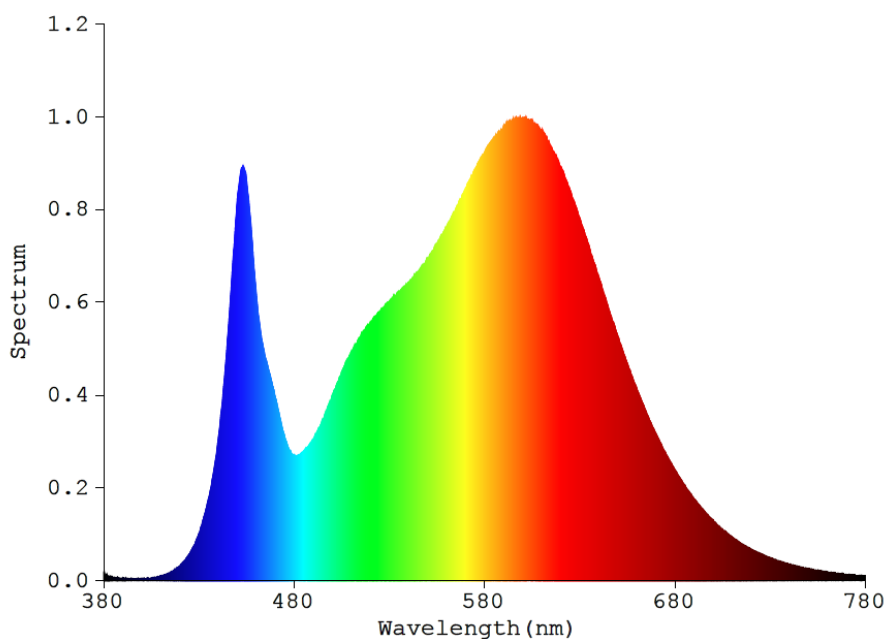
Spectrum Diagram (3000K for 120V):



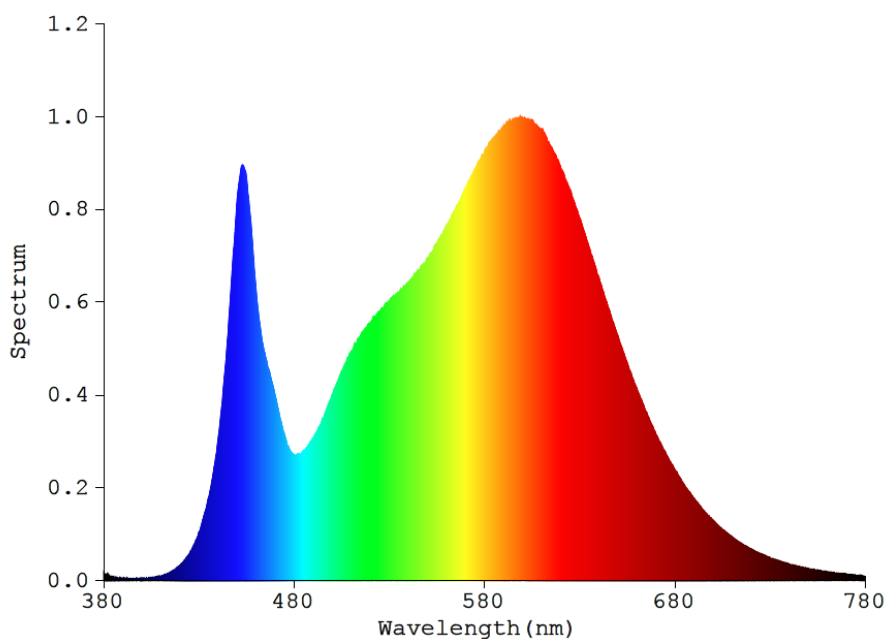
Spectrum Diagram (3000K for 277V):



Spectrum Diagram (3500K for 120V):



Spectrum Diagram (3500K for 277V):



Goniophotometer Test Results:

Test Condition:

Test Ambient (°C)	Test Humidity (%)	Orientation	Stabilization Time (minute)	Test Time (minute)
25.0	40.8	Face Down	90	25

Electrical Data:

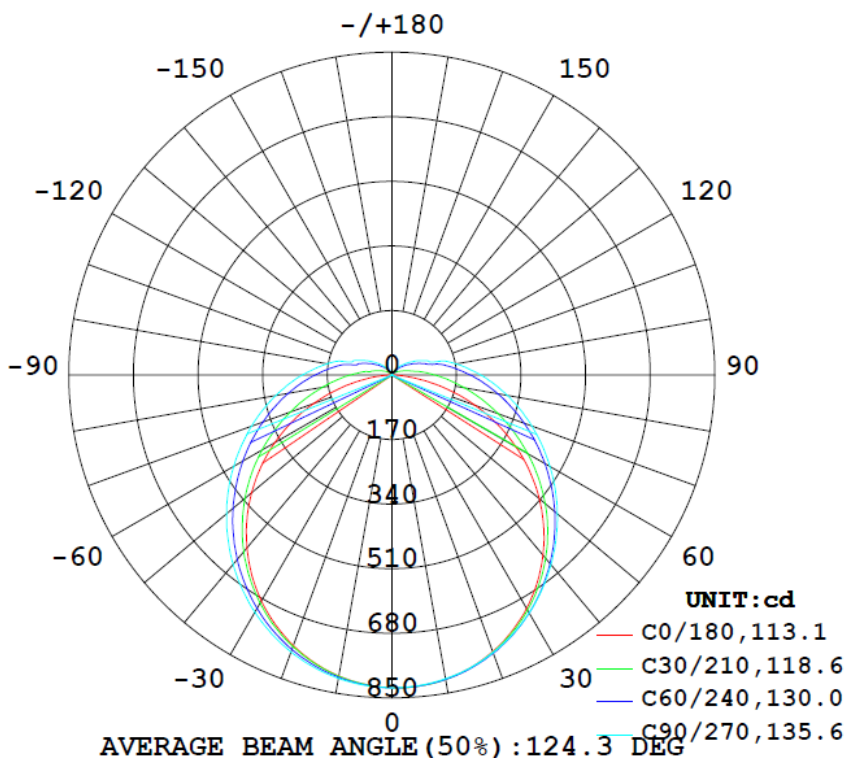
Voltage (V)	Frequency (Hz)	Current (A)	Wattage (W)	Power Factor
120.0	60	0.2094	25.03	0.9960
277.0	60	0.08570	24.66	0.9631

Goniophotometer Data:

Parameter	Results at 120V	Results at 277V
Total Luminous (lm)	3114.7	3115.9
Total Luminous per foot (lm/ft)	778.68	778.98
Luminous Efficacy (lm/w)	124.44	126.35
Zonal Lumens Distribution (0-60°)	62.5%	
Beam Angle (°)	124.3	

Luminous Intensity Distribution Diagram (Result at 120V):

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM

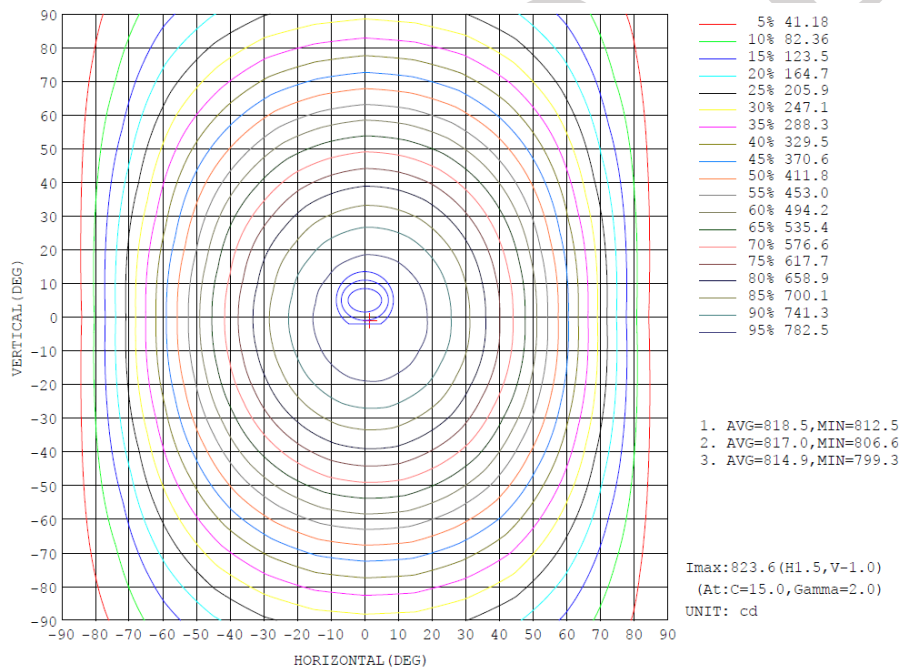


Zonal Flux Diagram (Result at 120V):

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	813.5	814.4	811.8	807.1	804.4	805.8	810.8	813.0	0~ 10	77.95	77.95	2.5,2.5
20	774.9	779.7	777.7	766.0	758.0	763.6	775.9	777.0	10~ 20	224.2	302.1	9.7,9.7
30	709.3	720.9	722.9	702.3	686.8	699.4	721.1	717.7	20~ 30	342.8	644.9	20.7,20.7
40	618.8	641.7	651.5	620.1	593.7	617.6	650.3	638.1	30~ 40	420.4	1065	34.2,34.2
50	506.6	547.2	568.5	524.9	482.2	523.3	568.3	543.7	40~ 50	449.7	1515	48.6,48.6
60	376.4	444.4	480.1	423.6	356.3	423.5	480.7	441.1	50~ 60	430.7	1946	62.5,62.5
70	233.1	342.1	391.8	323.9	219.4	325.1	393.2	338.5	60~ 70	371.3	2317	74.4,74.4
80	91.32	248.7	308.6	233.3	86.30	236.1	310.6	244.9	70~ 80	286.2	2603	83.6,83.6
90	9.792	170.1	234.4	158.7	6.130	163.0	236.5	167.6	80~ 90	198.2	2801	89.9,89.9
100	6.121	111.7	171.8	103.9	4.417	107.6	173.4	109.0	90~100	131.2	2933	94.2,94.2
110	1.217	65.90	105.0	62.40	3.801	65.23	109.4	64.24	100~110	80.20	3013	96.7,96.7
120	0.2956	41.00	75.25	38.62	3.087	40.85	76.87	36.99	110~120	48.41	3061	98.3,98.3
130	0.3739	24.70	48.10	23.76	2.470	24.93	49.14	22.69	120~130	28.22	3090	99.2,99.2
140	0.4504	14.72	28.43	14.49	1.935	14.37	28.35	12.97	130~140	14.93	3104	99.7,99.7
150	0.5172	8.377	15.27	8.386	1.515	8.299	15.01	7.575	140~150	6.901	3111	99.9,99.9
160	0.5946	3.586	7.511	3.504	1.168	3.932	7.282	3.472	150~160	2.690	3114	100,100
170	0.6703	0.6811	0.6774	0.6597	0.8864	0.8760	0.9002	0.8959	160~170	0.5924	3115	100,100
180	0.7836	0.7854	0.7795	0.7997	0.7871	0.7883	0.7827	0.7997	170~180	0.0743	3115	100,100
DEG	LUMINOUS INTENSITY:cd Less than 35% Percent = 21.2 %									UNIT:lm		

Isocandela Diagram (Result at 120V):



Luminous Distribution Intensity Data (Result at 120V):

Table--1

UNIT: cd

C (DEG)	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270
Y (DEG)	0	823	823	823	823	823	823	823	823	823	823	823	823	823	823	823	823	823	823
5	822	822	822	822	821	821	820	820	819	818	818	818	817	817	817	818	819	819	820
10	813	814	813	814	813	813	812	811	809	807	805	805	804	803	805	806	808	809	811
15	798	799	798	800	800	800	798	796	792	790	786	785	784	783	786	787	791	793	796
20	775	777	777	780	779	780	778	775	770	766	761	759	758	757	761	764	769	772	776
25	745	748	749	753	754	756	753	750	743	737	730	727	725	724	730	734	742	746	751
30	709	713	714	721	723	726	723	719	711	702	693	688	687	686	694	699	709	715	721
35	667	672	674	684	687	692	689	684	674	663	652	645	643	643	652	660	673	681	687
40	619	625	629	642	648	654	652	646	634	620	605	596	594	594	607	618	633	642	650
45	565	573	580	596	605	613	611	605	590	574	555	544	540	542	557	572	591	602	610
50	507	516	527	547	559	570	569	562	545	525	502	487	482	485	505	523	546	559	568
55	443	455	471	496	512	525	525	517	498	475	447	428	421	426	450	474	500	515	525
60	376	391	413	444	465	480	480	472	451	424	391	366	356	364	395	424	453	470	481
65	306	325	355	393	417	434	436	427	404	373	334	302	289	301	339	374	407	426	437
70	233	259	298	342	370	390	392	383	359	324	279	238	219	239	285	325	362	382	393
75	160	193	243	294	325	347	349	340	315	277	227	176	151	178	233	279	318	340	351
80	91.3	135	194	249	283	305	309	299	273	233	179	120	86.3	124	186	236	277	300	311
85	34.3	86.7	151	207	243	266	270	261	235	193	138	74.8	32.7	79.6	145	197	239	262	272
90	9.79	52.9	115	170	207	229	234	225	200	159	105	43.7	6.13	48.9	111	163	203	226	236
95	7.38	32.5	86.5	139	174	196	202	192	168	129	77.9	25.3	4.65	28.8	84.3	133	172	194	203
100	6.12	20.6	59.3	112	146	166	172	163	140	104	51.8	16.4	4.42	19.3	55.9	108	144	165	173
105	3.32	13.8	45.3	80.8	110	138	144	135	105	74.8	40.7	12.1	4.14	14.1	44.9	79.0	104	132	143
110	1.22	9.63	34.1	65.9	90.3	102	105	99.3	86.9	62.4	30.6	9.62	3.80	11.0	34.5	65.2	90.3	103	109
115	0.32	6.93	25.8	52.3	73.8	87.9	91.6	86.4	71.6	48.9	24.0	8.05	3.44	8.98	26.9	52.0	74.1	87.6	93.2
120	0.30	5.37	19.8	41.0	59.2	71.8	75.3	70.2	57.1	38.6	19.0	6.94	3.09	7.55	21.2	40.9	59.9	71.8	76.9
125	0.33	4.44	15.3	31.9	46.9	57.8	60.6	56.6	45.7	30.3	15.1	6.03	2.76	6.44	16.1	31.9	47.7	57.8	62.0
130	0.37	3.77	11.9	24.7	36.7	45.7	48.1	44.8	36.0	23.8	12.1	5.25	2.47	5.57	13.0	24.9	37.6	45.6	49.1
135	0.41	2.80	9.62	19.2	28.3	35.5	37.4	34.8	28.0	18.7	9.97	3.82	2.20	4.76	10.4	18.1	29.1	35.4	37.9
140	0.45	0.78	7.61	14.7	21.4	27.0	28.4	26.5	21.4	14.5	8.02	1.87	1.93	2.83	8.24	14.4	21.4	26.4	28.4
145	0.49	0.57	6.04	11.2	15.9	20.2	21.1	20.0	16.0	11.1	6.40	1.45	1.71	1.65	6.67	11.0	16.1	18.9	20.6
150	0.52	0.56	4.60	8.38	11.6	14.7	15.3	14.6	11.7	8.39	4.85	1.21	1.52	1.45	5.14	8.30	11.9	13.8	15.0
155	0.56	0.58	1.70	6.21	8.53	10.4	10.9	10.4	8.61	6.22	2.11	1.02	1.34	1.29	3.04	6.22	8.55	10.0	10.6
160	0.59	0.61	0.62	3.59	5.92	7.18	7.51	7.14	5.89	3.50	0.76	0.83	1.17	1.12	1.04	3.93	5.88	6.89	7.28
165	0.62	0.62	0.64	0.66	1.70	3.87	4.30	3.89	1.99	0.63	0.63	0.65	0.96	0.93	0.90	0.91	2.67	4.07	4.45
170	0.67	0.67	0.68	0.68	0.68	0.68	0.66	0.65	0.66	0.67	0.66	0.89	0.89	0.89	0.88	0.89	0.91	0.90	0.90
175	0.71	0.72	0.73	0.73	0.73	0.72	0.71	0.71	0.71	0.72	0.72	0.86	0.86	0.86	0.86	0.84	0.84	0.84	0.84
180	0.78	0.78	0.78	0.79	0.78	0.78	0.78	0.79	0.79	0.80	0.79	0.79	0.79	0.78	0.79	0.79	0.78	0.78	0.78

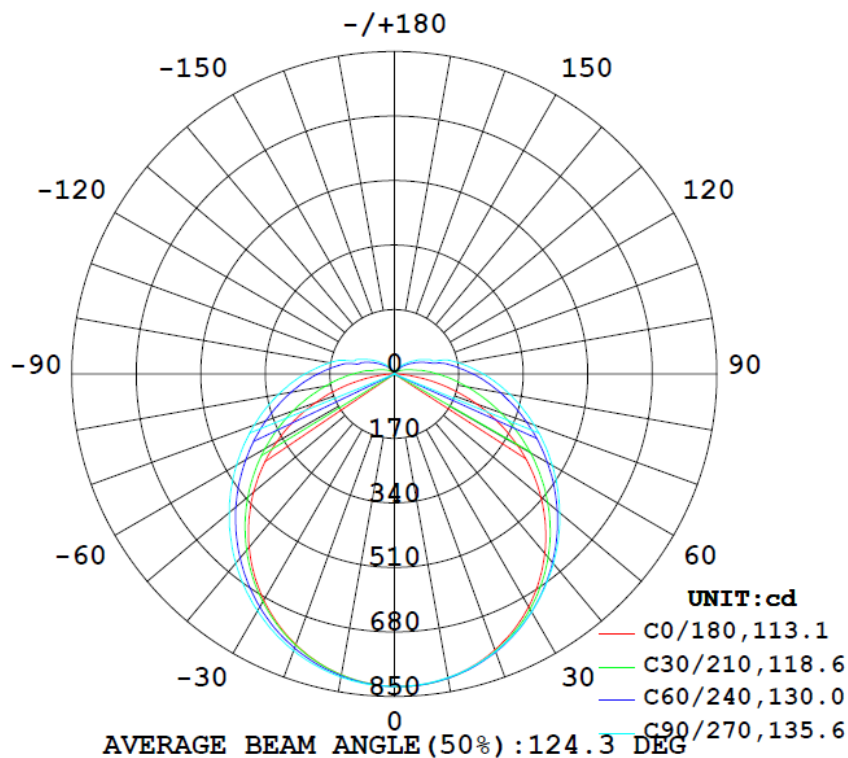
Table--2

UNIT: cd

C (DEG)	285	300	315	330	345														
Y (DEG)	0	823	823	823	823														
5	820	821	821	822	822														
10	812	813	813	813	813														
15	797	798	798	798	798														
20	777	778	777	777	775														
25	752	752	750	749	746														
30	722	721	718	715	711														
35	688	686	680	675	669														
40	650	647	638	630	622														
45	609	604	592	581	569														
50	566	559	544	528	513														
55	522	512	493	472	451														
60	477	465	441	414	387														
65	432	417	389	356	321														
70	387	371	339	298	254														
75	345	326	290	243	189														
80	303	283	245	192	129														
85	265	243	204	148	80.7														
90	229	206	168	112	47.8														
95	196	174	136	84.2	28.4														
100	167	145	109	58.6	15.9														
105	133	106	80.5	43.5	9.89														
110	106	90.3	64.2	28.4	6.26														
115	88.1	73.9	49.7	21.6	5.42														
120	72.0	59.1	37.0	17.8	4.46														
125	57.7	46.0	28.9	13.9	3.62														
130	45.3	34.9	22.7	10.7	3.13														
135	34.1	27.0	17.4	8.55	2.00														
140	25.9	20.7	13.0	6.88	0.75														
145	18.6	15.1	10.1	5.51	0.78														
150	13.5	11.1	7.58	4.20	0.81														
155	9.84	7.99	5.59	1.71	0.86														
160	6.76	5.54	3.47	0.92	0.90														
165	3.86	2.06	0.93	0.91	0.90														
170	0.92	0.91	0.90	0.89	0.88														
175	0.85	0.86	0.86	0.85	0.85														
180	0.79	0.80	0.80	0.80	0.79														

Luminous Intensity Distribution Diagram (Result at 277V):

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM

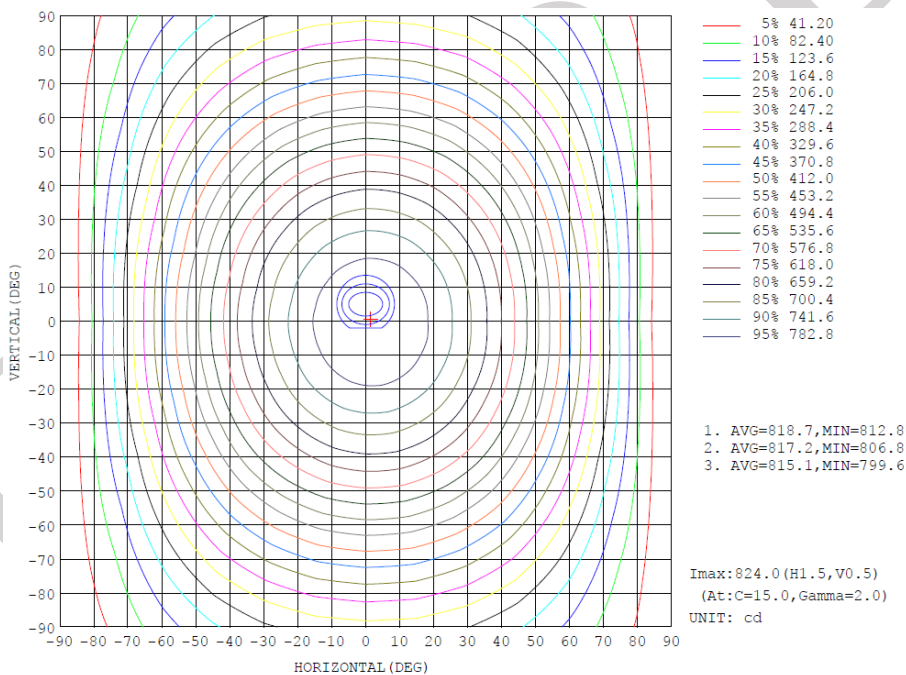


Zonal Flux Diagram (Result at 277V):

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	812.9	814.4	812.1	807.4	805.0	806.2	811.0	813.1	0~ 10	77.97	77.97	2.5,2.5
20	774.0	779.7	778.2	766.3	759.2	764.1	776.1	777.0	10~ 20	224.2	302.2	9.7,9.7
30	708.1	720.8	723.6	702.9	688.3	700.2	721.2	717.6	20~ 30	343.0	645.2	20.7,20.7
40	617.0	641.2	652.0	620.6	595.7	618.5	650.4	638.0	30~ 40	420.6	1066	34.2,34.2
50	504.4	546.6	569.1	525.4	484.6	524.2	568.4	543.5	40~ 50	449.8	1516	48.6,48.6
60	373.9	443.8	480.6	424.1	358.7	424.3	480.7	440.8	50~ 60	430.9	1946	62.5,62.5
70	230.7	341.5	392.2	324.3	221.8	325.9	393.1	338.4	60~ 70	371.4	2318	74.4,74.4
80	89.31	248.2	309.1	233.7	88.47	236.8	310.4	244.7	70~ 80	286.3	2604	83.6,83.6
90	9.565	169.7	234.8	159.1	6.446	163.4	236.5	167.5	80~ 90	198.3	2802	89.9,89.9
100	6.045	111.5	172.1	104.1	4.429	108.1	173.3	108.8	90~100	131.3	2934	94.2,94.2
110	1.169	65.69	105.2	62.51	3.821	65.47	109.4	64.22	100~110	80.25	3014	96.7,96.7
120	0.2986	40.86	75.45	38.68	3.103	41.01	76.79	36.94	110~120	48.44	3062	98.3,98.3
130	0.3770	24.61	48.19	23.82	2.485	25.02	49.10	22.66	120~130	28.24	3091	99.2,99.2
140	0.4535	14.67	28.51	14.53	1.946	14.42	28.32	12.95	130~140	14.94	3106	99.7,99.7
150	0.5183	8.348	15.33	8.403	1.523	8.346	14.98	7.570	140~150	6.905	3113	99.9,99.9
160	0.5967	3.524	7.538	3.535	1.175	3.975	7.271	3.447	150~160	2.691	3115	100,100
170	0.6724	0.6803	0.6787	0.6615	0.8882	0.8791	0.9007	0.8954	160~170	0.5929	3116	100,100
180	0.7861	0.7853	0.7808	0.8005	0.7867	0.7892	0.7825	0.7998	170~180	0.0744	3116	100,100
DEG	LUMINOUS INTENSITY:cd Less than 35% Percent = 21.2 %									UNIT:lm		

Isocandela Diagram (Result at 277V):



Luminous Distribution Intensity Data (Result at 277V):

Table--1
UNIT: cd

C (DEG)	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270
0	823	823	823	823	823	823	823	823	823	823	823	823	823	823	823	823	823	823	823
5	822	822	822	822	822	822	821	820	819	819	818	818	818	817	818	818	819	819	820
10	813	814	814	814	814	814	812	811	809	807	806	805	805	804	805	806	808	809	811
15	797	799	799	800	800	800	798	796	793	790	786	785	785	784	786	788	791	794	796
20	774	777	778	780	780	781	778	775	771	766	761	759	759	758	761	764	769	773	776
25	744	748	750	753	754	756	753	749	743	737	730	727	727	725	730	735	741	746	751
30	708	713	716	721	724	726	724	719	711	703	693	688	688	687	693	700	709	716	721
35	665	671	676	683	688	692	690	684	674	664	652	645	645	644	652	661	673	681	688
40	617	624	631	641	649	654	652	646	634	621	606	597	596	595	606	619	633	643	650
45	563	572	581	595	606	613	612	605	591	574	556	544	542	543	557	573	590	602	610
50	504	515	528	547	560	570	569	562	545	525	503	487	485	487	504	524	545	560	568
55	441	454	472	496	513	525	525	517	498	475	447	428	423	427	450	475	499	515	525
60	374	390	414	444	466	480	481	472	451	424	391	366	359	366	394	424	452	471	481
65	303	324	356	392	418	434	436	427	404	373	334	302	292	302	338	374	406	426	437
70	231	257	299	341	371	390	392	383	359	324	279	238	222	240	284	326	361	383	393
75	158	192	244	293	326	346	350	340	315	278	227	176	153	180	232	280	318	340	351
80	89.3	134	195	248	284	305	309	299	273	234	180	120	88.5	125	185	237	277	300	310
85	32.7	86.0	152	206	244	266	271	261	235	194	139	74.7	34.2	80.4	144	198	238	262	272
90	9.57	52.5	116	170	208	229	235	225	200	159	105	43.7	6.45	49.3	111	163	203	227	237
95	7.36	32.1	86.9	138	175	196	202	192	168	129	78.0	25.3	4.67	29.1	84.0	134	171	195	203
100	6.04	20.4	59.5	111	146	166	172	163	140	104	51.9	16.4	4.43	19.4	55.9	108	143	165	173
105	3.23	13.7	45.5	80.8	111	138	145	135	105	74.9	40.8	12.1	4.15	14.2	44.7	79.1	103	133	143
110	1.17	9.56	34.3	65.7	90.7	102	105	99.3	86.9	62.5	30.7	9.64	3.82	10.7	34.4	65.5	90.1	103	109
115	0.31	6.88	25.9	52.1	74.1	87.8	91.8	86.3	71.5	49.0	24.1	8.06	3.46	9.00	26.8	52.2	73.9	87.8	93.2
120	0.30	5.35	19.9	40.9	59.4	71.7	75.4	70.3	57.1	38.7	19.0	6.95	3.10	7.57	21.2	41.0	59.6	72.0	76.8
125	0.34	4.42	15.4	31.8	47.2	57.7	60.7	56.5	45.7	30.4	15.2	6.04	2.78	6.46	16.1	32.0	47.5	57.9	62.0
130	0.38	3.76	12.0	24.6	36.9	45.7	48.2	44.8	36.0	23.8	12.1	5.25	2.49	5.58	12.9	25.0	37.4	45.8	49.1
135	0.42	2.75	9.67	19.2	28.4	35.4	37.5	34.8	28.0	18.8	9.99	3.83	2.21	4.78	10.4	18.0	29.0	35.5	37.9
140	0.45	0.76	7.64	14.7	21.5	26.9	28.5	26.5	21.3	14.5	8.03	1.87	1.95	2.86	8.22	14.4	21.3	26.5	28.3
145	0.49	0.57	6.07	11.1	16.0	20.2	21.2	20.0	16.0	11.1	6.41	1.45	1.72	1.66	6.65	11.1	16.0	19.0	20.6
150	0.52	0.56	4.63	8.35	11.7	14.7	15.3	14.6	11.7	8.40	4.87	1.21	1.52	1.46	5.12	8.35	11.9	13.9	15.0
155	0.56	0.58	1.76	6.19	8.59	10.4	10.9	10.3	8.61	6.24	2.14	1.02	1.34	1.29	2.99	6.25	8.50	10.1	10.6
160	0.60	0.61	0.62	3.52	5.96	7.16	7.54	7.13	5.88	3.53	0.76	0.83	1.18	1.12	1.04	3.98	5.84	6.92	7.27
165	0.62	0.62	0.64	0.66	1.81	3.82	4.34	3.86	1.97	0.64	0.63	0.65	0.97	0.93	0.90	0.91	2.57	4.12	4.42
170	0.67	0.67	0.68	0.68	0.68	0.68	0.68	0.66	0.65	0.66	0.67	0.66	0.89	0.89	0.89	0.88	0.89	0.91	0.90
175	0.72	0.72	0.73	0.73	0.73	0.73	0.71	0.71	0.71	0.72	0.72	0.72	0.86	0.86	0.86	0.86	0.84	0.84	0.84
180	0.79	0.78	0.78	0.79	0.78	0.78	0.79	0.80	0.80	0.80	0.79	0.79	0.79	0.79	0.79	0.79	0.78	0.78	0.78

Table--2
UNIT: cd

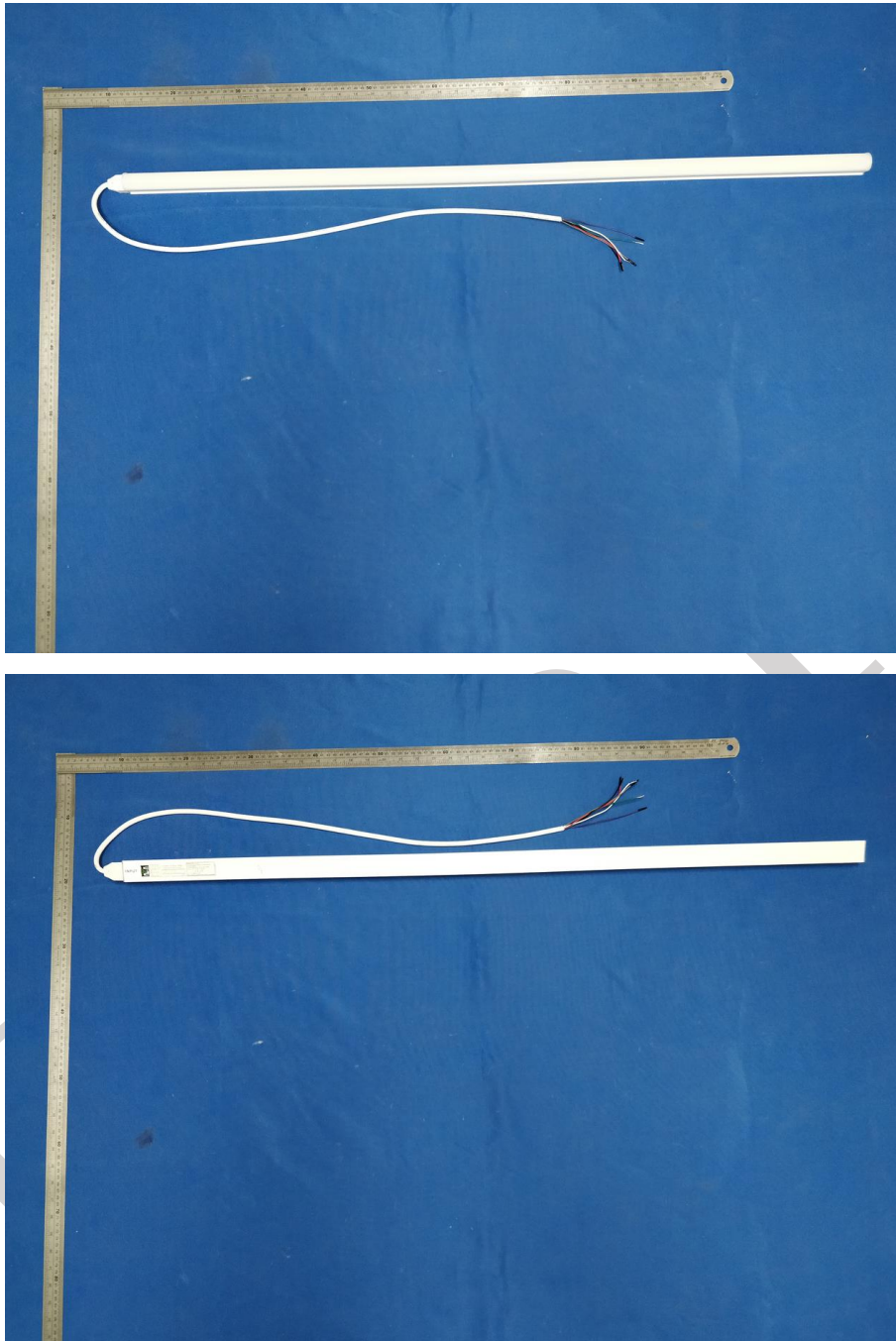
C (DEG)	285	300	315	330	345														
0	823	823	823	823	823														
5	821	821	822	822	822														
10	812	813	813	814	814														
15	797	798	798	799	799														
20	777	778	777	777	776														
25	752	752	750	749	747														
30	722	722	718	715	711														
35	688	686	680	675	669														
40	650	647	638	630	622														
45	610	604	592	581	570														
50	567	559	544	528	513														
55	522	513	493	472	452														
60	477	465	441	414	388														
65	432	417	389	355	321														
70	388	371	338	298	254														
75	345	326	290	243	189														
80	304	283	245	192	130														
85	265	244	204	148	81.6														
90	229	207	167	112	47.9														
95	196	174	136	84.2	28.5														
100	167	145	109	58.6	16.0														
105	133	106	80.5	43.5	9.92														
110	107	90.4	64.2	28.5	6.28														
115	88.2	74.1	49.7	21.5	5.44														
120	72.1	59.2	36.9	17.8	4.47														
125	57.8	46.1	28.9	13.9	3.63														
130	45.4	35.0	22.7	10.7	3.13														
135	34.2	27.1	17.4	8.56	2.02														
140	25.9	20.7	12.9	6.88	0.75														
145	18.7	15.1	10.1	5.51	0.78														
150	13.6	11.2	7.57	4.20	0.81														
155	9.86	8.01	5.58	1.71	0.86														
160	6.78	5.56	3.45	0.92	0.90														
165	3.89	2.09	0.93	0.91	0.91														
170	0.92	0.91	0.90	0.89	0.88														
175	0.85	0.86	0.86	0.85	0.86														
180	0.79	0.80	0.80	0.80	0.79														

THD and PF Measurement Test Results (Test for 2700K):

Electrical Measurement:

Voltage (V)	Frequency (Hz)	Current (A)	Wattage (W)	Power Factor	iTHD(%)
277.0	60	0.08570	24.66	0.9631	9.58

Photo of Sample:



Annex (Results at 120V):

ANSI CCT Quadrangle (omit any outside product range)/Worst- Case Value	Voltage (V)	Actual CCT (K)	Power Consumption (W)	Lumen Output (lm)	Efficacy (lm/W)	Input Control Signal Applied
2700K	120.0	2726	25.03	3114.7	124.44	Set Switch 0% to 2700K
	277.0	2726	24.66	3115.9	126.35	Set Switch 0% to 2700K
3000K	120.0	3070	24.57	3344.5	136.12	Set Switch 50% to 3000K
	277.0	3075	24.23	3341.0	137.89	Set Switch 50% to 3000K
3500K	120.0	3521	25.07	3314.7	132.22	Set Switch 100% to 3500K
	277.0	3518	24.95	3331.3	133.52	Set Switch 100% to 3500K
Lowest Efficacy	120.0	124.44 lm/W (@2700K)				
	277.0	126.35m/W (@2700K)				
Maximum Power	120.0	25.07W				
	277.0	24.95W				

Equipment List:

Equipment ID	Equipment Name	Last Cal.	Due Cal.
NTC-F01-001	Goniophotometer System	2018-11-16	2019-11-15
NTC-F01-006	2.0 meter Integrating Sphere	2018-11-16	2019-11-15
NTC-F01-012	Standard Lamp	2018-11-13	2019-11-12
NTC-F01-013	Standard Lamp	2018-11-13	2019-11-12
NTC-F01-031	Digital Power Meter	2019-08-22	2020-08-21
NTC-F01-019	Temperature & Humidity Meter	2018-11-12	2019-11-11

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

DRAFT