

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-G1-2F-9W-XXK-WC-[Blank, OCN]-[BAA, Blank]

Representative (Tested) Model:

RP-LBI-G1-2F-9W-XXK-WC

Model Difference:

1. WC represents power adjustable and color tunable, wattage can adjust 6W, 9W and 12W, 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.
 2. This report shall not be reproduced, no limited part or full, without approval of Dongguan New Testing Centre Co., Ltd
 3. This report does not imply product certification, approval, or endorsement by NVLAP, or any agency of the Federal Government.

Product Information:

Client Name:	LIGHT EFFICIENT DESIGN
Brand Name:	REMPHOS OR LIGHT EFFICIENT DESIGN
Model Number:	RP-LBI-G1-2F-9W-XXK-WC
Product Type:	Direct Linear Ambient Luminaires
Rating Input:	100-277Vac, 50/60Hz, 9W
Declared CCT:	2700K/3000K/3500K
Declared Light Output:	1100 lm
LED Manufacturer:	Hongli Zhihui Group Co., Ltd.
LED Model:	HL-AS-PU2835DW-S1-08-PCT-HR3
LED Quantity:	64 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:	191106001-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.:	NTCLR19110159
Remark (If applicable):	N/A

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)
25.3	41.9	Face Down	90	10

Electrical Data:

Voltage (V)	Frequency (Hz)	Current (A)	Wattage (W)	Power Factor
120.0	60	0.07400	8.804	0.9912
277.0	60	0.03510	9.129	0.9401

Output Data:

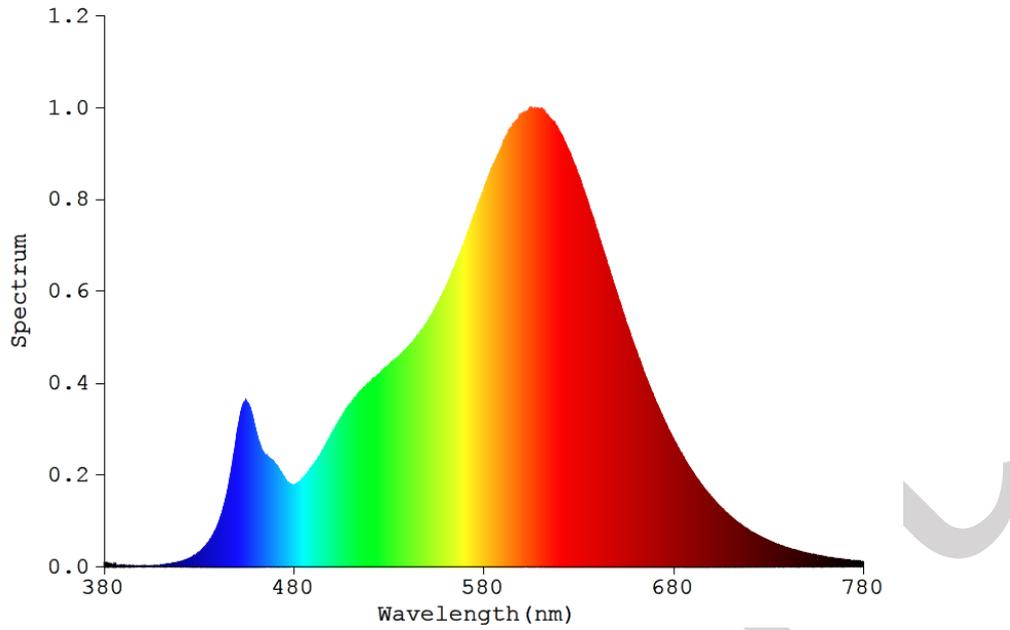
Light Output (lm)	Efficacy (lm/W)
1124.5	127.73
1121.4	122.84

Color Data:

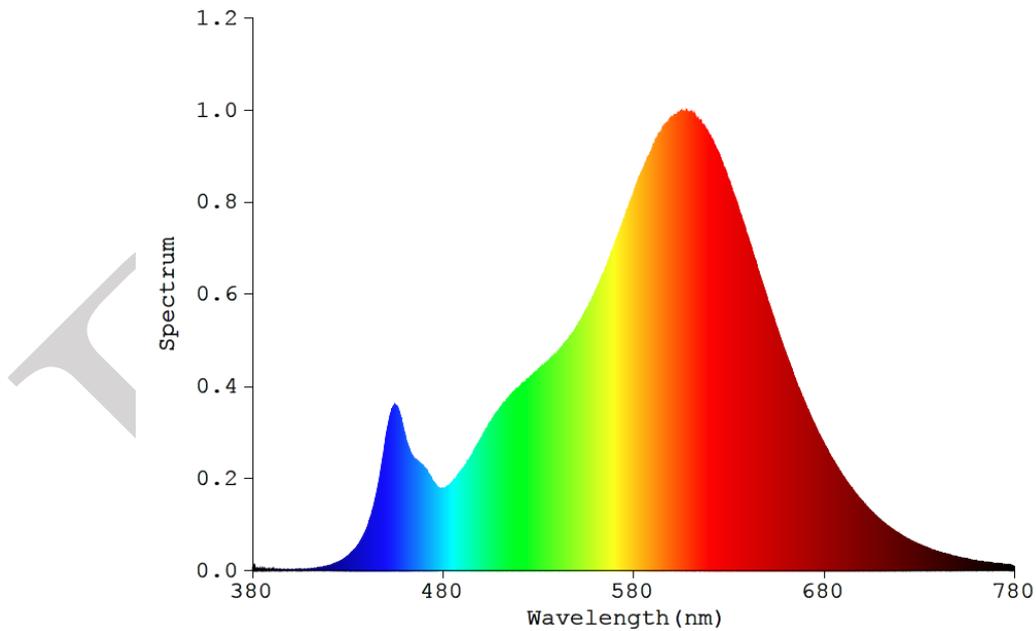
Parameter	Result at 120V	Result at 277V
CCT(K)	2737	2731
Ra	82.6	82.5
R9	6	6
Chromaticity, x	0.4604	0.4608
Chromaticity, y	0.4164	0.4162
Chromaticity, u'	0.2603	0.2606
Chromaticity, v'	0.5296	0.5296
Duv	0.00207	0.00197

Special Color Rendering					
	Result at 120V	Result at 277V		Result at 120V	Result at 277V
R1	81	81	R9	6	6
R2	92	92	R10	84	84
R3	94	94	R11	81	80
R4	80	80	R12	75	75
R5	82	82	R13	84	84
R6	93	93	R14	97	97
R7	81	81	R15	72	72
R8	57	56	-	-	-

Spectrum Diagram (Result at 120V):



Spectrum Diagram (Result at 277V):



Goniophotometer Test Results:

Test Condition:

Test Ambient (°C)	Test Humidity (%)	Orientation	Stabilization Time (minute)	Test Time (minute)
25.3	41.9	Face Down	90	25

Electrical Data:

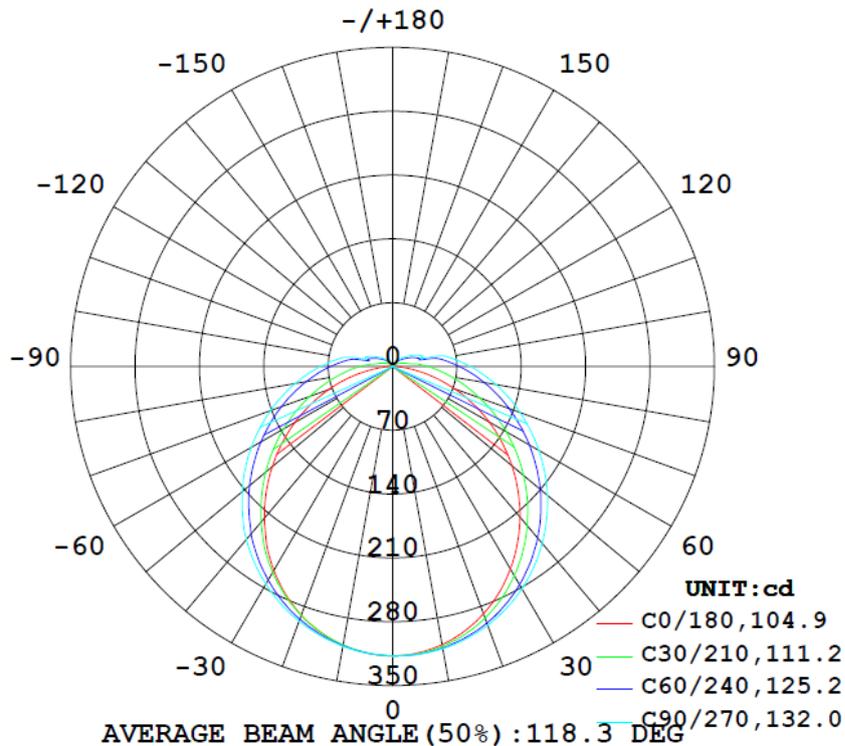
Voltage (V)	Frequency (Hz)	Current (A)	Wattage (W)	Power Factor
120.0	60	0.07400	8.804	0.9912
277.0	60	0.03510	9.129	0.9401

Goniophotometer Data:

Parameter	Results at 120V	Results at 277V
Total Luminous (lm)	1124.5	1121.4
Total Luminous per foot (lm/ft)	562.25	560.70
Luminous Efficacy (lm/w)	127.73	122.84
Zonal Lumens Distribution (0-60°)	64.4%	
Beam Angle (°)	118.3	

Luminous Intensity Distribution Diagram (Result at 120V):

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM

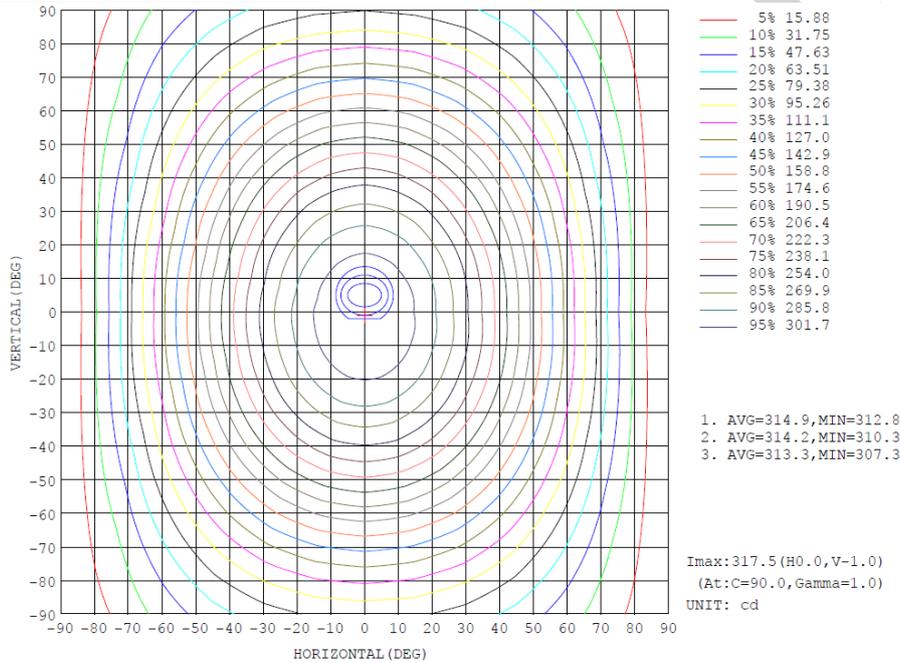


Zonal Flux Diagram (Result at 120V):

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	φ zone	φ total	lum, lamp
10	309.7	312.7	314.2	312.5	310.5	310.2	311.5	310.5	0- 10	30.01	30.01	2.67,2.67
20	288.7	296.9	302.0	296.3	290.3	292.5	297.4	292.9	10- 20	85.89	115.9	10.3,10.3
30	256.3	271.1	281.3	270.1	258.3	265.2	275.7	265.6	20- 30	130.2	246.1	21.9,21.9
40	215.5	237.2	253.1	235.7	216.9	230.9	247.5	231.2	30- 40	157.4	403.5	35.9,35.9
50	169.6	198.1	219.8	196.5	171.1	192.1	213.6	192.2	40- 50	165.3	568.8	50.6,50.6
60	121.1	157.9	183.6	156.2	122.7	152.1	177.6	152.0	50- 60	155.3	724.1	64.4,64.4
70	71.78	119.5	147.5	117.8	73.98	114.0	141.3	113.6	60- 70	131.3	855.5	76.1,76.1
80	27.20	85.73	114.1	84.26	29.03	80.22	107.6	79.54	70- 80	99.53	955.0	84.9,84.9
90	3.719	58.53	84.68	57.27	3.339	53.74	78.71	52.90	80- 90	68.12	1023	91,91
100	2.936	35.10	61.28	33.26	2.628	28.56	55.97	28.48	90-100	44.61	1068	95,95
110	0.8554	20.79	34.57	21.48	2.348	19.58	31.13	17.78	100-110	24.17	1092	97.1,97.1
120	0.0563	13.24	24.72	13.74	2.021	12.26	22.02	11.09	110-120	15.15	1107	98.4,98.4
130	0.0752	8.116	16.00	8.738	1.693	7.965	14.38	5.923	120-130	9.041	1116	99.3,99.3
140	0.1022	4.863	9.796	5.434	1.380	4.969	8.613	3.846	130-140	4.911	1121	99.7,99.7
150	0.1290	2.750	5.330	3.189	1.074	3.000	4.481	2.341	140-150	2.339	1123	99.9,99.9
160	0.1573	1.292	2.513	1.740	0.7779	1.343	2.295	0.8204	150-160	0.9394	1124	100,100
170	0.1754	0.1776	0.1782	0.2160	0.4442	0.3162	0.2626	0.2752	160-170	0.2061	1125	100,100
180	0.2159	0.2126	0.2089	0.2118	0.2157	0.2136	0.2103	0.2139	170-180	0.0218	1125	100,100
DEG	LUMINOUS INTENSITY:cd Less than 35% Percent = 20.1 %									UNIT:lm		

Isocandela Diagram (Result at 120V):



Luminous Distribution Intensity Data (Result at 120V):

Table--1 UNIT: cd

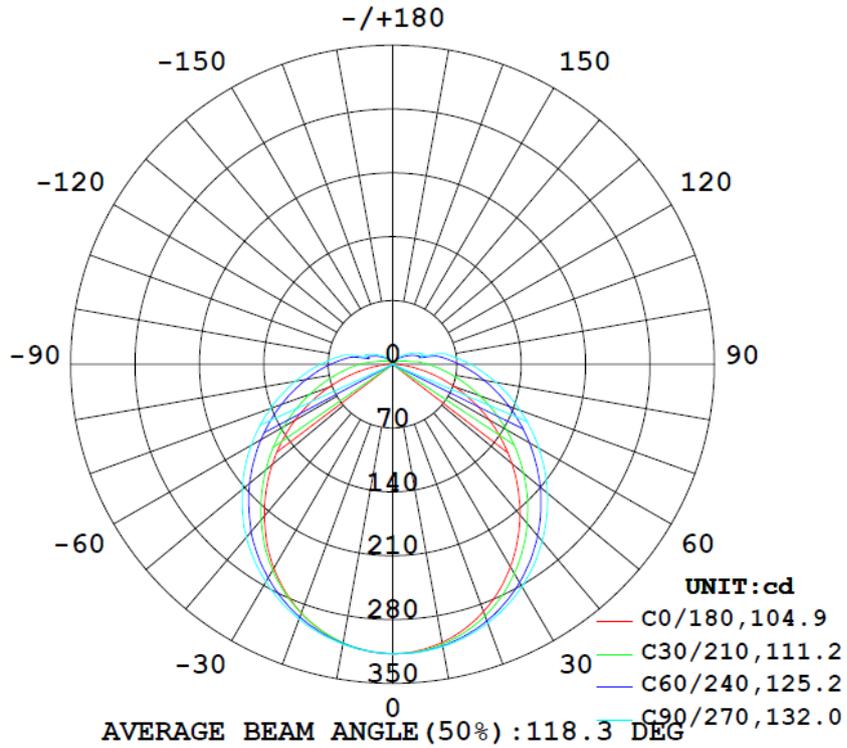
C (DEG)		0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270
0	0	317	317	317	317	317	317	317	317	317	317	317	317	317	317	317	317	317	317	317
5	0	315	316	316	316	317	317	317	317	317	316	316	316	316	315	315	315	315	315	315
10	0	310	311	312	313	313	314	314	314	313	312	311	311	310	310	310	310	311	311	312
15	0	301	303	304	306	308	309	309	309	307	306	303	302	302	301	302	303	304	305	305
20	0	289	292	294	297	299	302	302	301	299	296	293	291	290	289	291	292	295	297	297
25	0	274	277	280	285	289	292	293	292	288	284	280	276	276	274	277	280	284	286	287
30	0	256	261	265	271	276	280	281	280	275	270	264	259	258	257	261	265	271	274	276
35	0	237	242	247	255	262	267	268	266	261	254	246	241	239	238	243	249	256	260	262
40	0	216	221	228	237	245	252	253	251	244	236	226	219	217	217	222	231	240	245	248
45	0	193	199	207	218	228	235	237	234	227	216	206	197	194	195	202	212	221	228	231
50	0	170	176	186	198	210	217	220	216	208	196	184	174	171	172	180	192	203	211	214
55	0	146	153	164	178	191	199	202	198	190	176	162	151	147	148	159	172	184	193	196
60	0	121	130	143	158	172	180	184	180	171	156	141	127	123	125	137	152	165	175	178
65	0	96.3	106	121	138	153	162	165	162	152	137	119	104	98.2	101	116	133	147	156	159
70	0	71.8	83.5	101	120	135	144	147	144	134	118	98.8	81.1	74.0	78.9	96.0	114	129	138	141
75	0	48.4	62.2	81.9	102	118	127	130	127	117	100	79.8	59.8	50.5	58.1	77.6	96.1	111	121	124
80	0	27.2	43.4	65.1	85.7	101	111	114	111	100	84.3	63.2	41.1	29.0	40.0	61.2	80.2	95.4	105	108
85	0	10.8	28.2	50.6	71.2	86.3	95.9	98.5	95.6	85.4	69.9	48.9	26.2	12.1	25.6	47.2	66.1	80.8	89.4	92.5
90	0	3.72	17.9	38.8	58.5	73.0	82.1	84.7	81.8	72.2	57.3	37.2	16.2	3.34	15.8	35.8	53.7	67.7	75.8	78.7
95	0	3.42	11.5	29.5	47.7	61.3	69.9	72.3	69.7	60.6	46.6	28.2	10.3	2.72	10.1	27.0	43.4	56.4	64.0	66.6
100	0	2.94	7.55	19.3	35.1	51.0	59.0	61.3	58.8	50.4	33.3	19.0	6.78	2.63	6.86	18.3	28.6	46.5	53.5	56.0
105	0	2.00	5.37	14.7	25.2	29.7	34.6	37.3	33.9	28.9	25.7	15.2	5.29	2.49	5.35	14.6	23.7	26.8	29.5	32.4
110	0	0.86	3.76	11.1	20.8	28.3	33.2	34.6	33.4	28.8	21.5	11.7	4.36	2.35	4.42	11.3	19.6	26.0	29.9	31.1
115	0	0.22	2.60	8.45	16.8	23.7	28.3	29.7	28.4	23.9	17.3	9.41	3.70	2.19	3.76	8.90	15.5	21.6	25.3	26.6
120	0	0.06	1.90	6.50	13.2	19.2	23.5	24.7	23.5	19.5	13.7	7.62	3.26	2.02	3.31	7.22	12.3	17.7	20.9	22.0
125	0	0.06	1.48	5.01	10.4	15.4	19.2	20.1	19.3	15.8	11.0	6.22	2.90	1.85	2.91	5.86	10.0	14.3	16.8	18.0
130	0	0.08	1.20	3.91	8.12	12.1	15.3	16.0	15.4	12.6	8.74	5.13	2.58	1.69	2.61	4.83	7.96	11.4	13.3	14.4
135	0	0.09	1.00	3.07	6.31	9.59	12.0	12.5	12.1	10.1	6.92	4.19	2.22	1.54	2.08	4.02	6.03	9.05	10.6	11.3
140	0	0.10	0.49	2.43	4.86	7.33	9.18	9.80	9.27	7.84	5.43	3.42	1.53	1.38	1.36	3.34	4.97	6.66	7.91	8.61
145	0	0.12	0.19	1.96	3.69	5.50	6.86	7.33	6.94	6.00	4.21	2.77	1.10	1.23	1.17	2.72	3.85	5.13	5.67	5.89
150	0	0.13	0.17	1.47	2.75	4.03	5.00	5.33	5.05	4.44	3.19	2.21	0.92	1.07	1.02	2.17	3.00	3.96	4.28	4.48
155	0	0.15	0.16	0.84	1.97	2.87	3.52	3.75	3.55	3.13	2.40	1.43	0.76	0.93	0.88	1.08	2.33	2.95	3.20	3.34
160	0	0.16	0.17	0.19	1.29	1.90	2.37	2.51	2.38	2.10	1.74	0.56	0.61	0.78	0.74	0.67	1.34	2.05	2.18	2.30
165	0	0.16	0.17	0.18	0.19	0.87	1.38	1.47	1.43	0.94	0.34	0.42	0.47	0.62	0.59	0.54	0.44	0.49	0.97	1.11
170	0	0.18	0.17	0.18	0.18	0.18	0.18	0.17	0.17	0.22	0.27	0.31	0.44	0.41	0.37	0.32	0.27	0.27	0.26	0.26
175	0	0.20	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.20	0.26	0.26	0.25	0.25	0.24	0.25	0.24
180	0	0.22	0.22	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.22	0.22	0.22	0.21	0.21	0.21	0.21	0.21

Table--2 UNIT: cd

C (DEG)		285	300	315	330	345														
0	0	317	317	317	317	317														
5	0	315	315	315	315	315														
10	0	311	311	311	310	310														
15	0	305	304	303	302	301														
20	0	296	295	293	291	290														
25	0	286	284	280	277	275														
30	0	274	271	266	261	258														
35	0	260	256	249	244	239														
40	0	245	240	231	223	218														
45	0	228	221	212	202	196														
50	0	211	203	192	181	173														
55	0	193	184	172	159	150														
60	0	174	165	152	137	126														
65	0	156	146	132	116	103														
70	0	138	128	114	95.8	79.7														
75	0	121	111	95.5	77.1	58.4														
80	0	104	94.9	79.5	60.5	39.7														
85	0	89.0	80.3	65.3	46.3	25.0														
90	0	75.5	67.1	52.9	34.8	15.1														
95	0	63.6	55.8	42.5	26.0	9.77														
100	0	53.1	45.8	28.5	16.7	6.45														
105	0	29.9	27.7	21.9	12.7	3.21														
110	0	29.3	25.1	17.8	9.48	2.63														
115	0	25.0	20.9	14.1	6.97	1.37														
120	0	20.5	17.0	11.1	3.64	1.48														
125	0	16.5	13.5	8.13	3.85	1.20														
130	0	13.0	10.6	5.92	3.07	0.93														
135	0	10.4	7.33	5.10	2.55	0.48														
140	0	7.42	5.75	3.85	2.07	0.25														
145	0	5.40	4.49	3.01	1.68	0.26														
150	0	4.28	3.36	2.34	1.15	0.26														
155	0	3.02	2.47	1.73	0.33	0.28														
160	0	2.13	1.71	0.82	0.30	0.29														
165	0	0.88	0.34	0.30	0.29	0.29														
170	0	0.27	0.27	0.28	0.27	0.27														
175	0	0.25	0.24	0.24	0.25	0.25														
180	0	0.21	0.21	0.21	0.21	0.22														

Luminous Intensity Distribution Diagram (Result at 277V):

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM

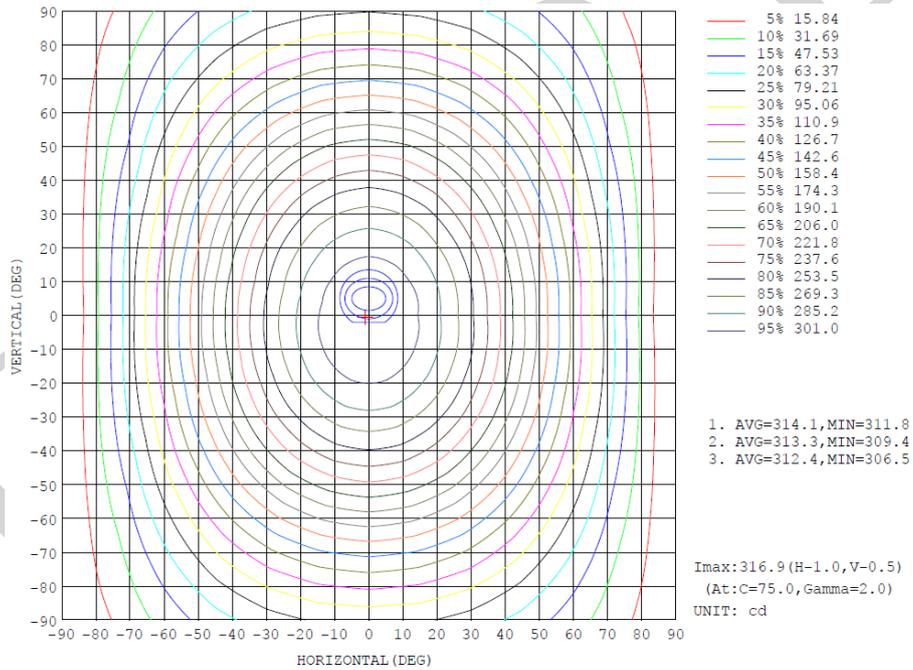


Zonal Flux Diagram (Result at 277V):

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	φ zone	φ total	lum, lamp
10	309.1	311.8	313.4	311.6	309.4	309.4	310.6	309.6	0- 10	29.93	29.93	2.67,2.67
20	288.4	296.1	301.1	295.5	288.9	291.7	296.6	292.0	10- 20	85.65	115.6	10.3,10.3
30	256.3	270.3	280.5	269.4	256.9	264.6	274.9	264.8	20- 30	129.8	245.4	21.9,21.9
40	215.8	236.5	252.4	235.0	215.5	230.3	246.9	230.5	30- 40	157.0	402.3	35.9,35.9
50	169.9	197.4	219.1	195.9	169.8	191.6	212.9	191.6	40- 50	164.9	567.2	50.6,50.6
60	121.6	157.4	183.1	155.8	121.5	151.6	177.0	151.5	50- 60	154.9	722.1	64.4,64.4
70	72.45	119.1	147.2	117.5	72.88	113.7	140.9	113.2	60- 70	131.0	853.1	76.1,76.1
80	27.78	85.41	113.8	84.01	28.27	80.03	107.2	79.32	70- 80	99.25	952.3	84.9,84.9
90	3.727	58.30	84.46	57.11	3.186	53.63	78.44	52.74	80- 90	67.94	1020	91,91
100	2.949	34.83	61.13	33.23	2.615	28.63	55.75	28.41	90-100	44.49	1065	95,95
110	0.8893	20.70	34.49	21.41	2.333	19.53	31.03	17.73	100-110	24.10	1089	97.1,97.1
120	0.0553	13.19	24.66	13.71	2.007	12.24	21.94	11.05	110-120	15.11	1104	98.4,98.4
130	0.0736	8.083	15.97	8.712	1.682	7.949	14.33	5.890	120-130	9.016	1113	99.3,99.3
140	0.1009	4.848	9.775	5.421	1.369	4.957	8.574	3.833	130-140	4.897	1118	99.7,99.7
150	0.1254	2.736	5.318	3.180	1.066	2.995	4.460	2.333	140-150	2.332	1120	99.9,99.9
160	0.1551	1.279	2.508	1.736	0.7707	1.347	2.285	0.8141	150-160	0.9364	1121	100,100
170	0.1757	0.1762	0.1779	0.2157	0.4344	0.3147	0.2621	0.2745	160-170	0.2052	1121	100,100
180	0.2140	0.2116	0.2060	0.2116	0.2158	0.2123	0.2092	0.2141	170-180	0.0217	1121	100,100
DEG	LUMINOUS INTENSITY:cd Less than 35% Percent = 20.1 %										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	316	316	316	316	316	316	316	316	316	316	316	316	316	316	316	316	316	316	316
5	315	315	315	316	316	316	316	316	316	315	315	315	315	314	314	314	314	314	315
10	309	310	311	312	313	313	313	313	312	312	310	310	309	309	309	309	310	310	311
15	300	302	303	305	307	308	308	308	307	305	303	301	301	300	301	302	303	304	305
20	288	291	293	296	299	301	301	301	298	295	292	290	289	288	290	292	294	296	297
25	274	277	280	284	288	291	292	291	287	284	279	275	274	273	276	279	283	285	287
30	256	260	264	270	275	280	280	279	275	269	263	259	257	256	260	265	270	273	275
35	237	242	247	254	261	266	267	266	260	253	245	240	237	237	242	248	255	259	262
40	216	220	227	236	245	251	252	250	244	235	226	218	216	216	222	230	239	244	247
45	193	198	207	217	227	234	236	233	226	216	205	196	193	194	201	211	221	228	230
50	170	176	186	197	209	216	219	216	208	196	184	173	170	171	180	192	202	211	213
55	146	153	164	177	190	198	201	198	189	176	162	150	146	148	158	172	184	192	195
60	122	129	142	157	171	180	183	179	170	156	140	127	121	124	137	152	165	174	177
65	96.9	106	121	138	153	162	165	161	151	136	119	103	97.1	101	116	132	146	156	159
70	72.4	83.4	101	119	134	144	147	143	133	118	98.5	80.8	72.9	78.6	95.7	114	128	138	141
75	49.1	62.1	81.8	102	117	127	130	126	116	100	79.6	59.6	49.5	57.9	77.3	95.9	111	121	124
80	27.8	43.3	65.0	85.4	101	111	114	110	99.9	84.0	63.0	41.0	28.3	39.8	61.0	80.0	95.1	104	107
85	11.3	28.1	50.6	71.0	86.1	95.6	98.3	95.2	85.1	69.7	48.7	26.1	11.6	25.5	47.0	65.9	80.6	89.1	92.1
90	3.73	17.8	38.7	58.3	72.8	81.9	84.5	81.5	72.0	57.1	37.1	16.1	3.19	15.7	35.7	53.6	67.5	75.7	78.4
95	3.42	11.5	29.4	47.5	61.1	69.7	72.1	69.4	60.4	46.5	28.1	10.2	2.71	10.1	26.9	43.3	56.2	63.8	66.4
100	2.95	7.53	19.3	34.8	50.9	58.8	61.1	58.6	50.3	33.2	18.9	6.76	2.61	6.82	18.2	28.6	46.3	53.4	55.8
105	2.03	5.36	14.7	25.1	29.6	34.5	37.4	33.7	28.8	25.6	15.1	5.27	2.48	5.32	14.6	23.6	26.7	29.3	32.2
110	0.89	3.76	11.1	20.7	28.2	33.1	34.5	33.2	28.7	21.4	11.6	4.35	2.33	4.40	11.3	19.5	25.9	29.8	31.0
115	0.24	2.59	8.44	16.7	23.6	28.2	29.6	28.2	23.8	17.2	9.37	3.69	2.17	3.74	8.86	15.5	21.5	25.3	26.5
120	0.06	1.90	6.49	13.2	19.2	23.4	24.7	23.4	19.5	13.7	7.59	3.25	2.01	3.29	7.19	12.2	17.6	20.8	21.9
125	0.06	1.47	5.00	10.4	15.3	19.2	20.0	19.2	15.7	11.0	6.20	2.88	1.84	2.90	5.84	9.99	14.2	16.8	18.0
130	0.07	1.20	3.90	8.08	12.0	15.3	16.0	15.4	12.5	8.71	5.10	2.57	1.68	2.60	4.81	7.95	11.4	13.3	14.3
135	0.09	1.00	3.06	6.28	9.57	11.9	12.5	12.0	10.1	6.90	4.18	2.21	1.52	2.06	4.01	6.01	9.02	10.6	11.2
140	0.10	0.49	2.42	4.85	7.32	9.15	9.78	9.23	7.82	5.42	3.41	1.52	1.37	1.35	3.32	4.96	6.65	7.88	8.57
145	0.11	0.19	1.96	3.68	5.49	6.84	7.32	6.92	5.98	4.20	2.76	1.09	1.22	1.17	2.71	3.84	5.11	5.65	5.86
150	0.13	0.17	1.47	2.74	4.02	4.98	5.32	5.03	4.43	3.18	2.20	0.91	1.07	1.01	2.16	2.99	3.95	4.27	4.46
155	0.14	0.16	0.84	1.96	2.86	3.51	3.74	3.53	3.12	2.39	1.43	0.76	0.92	0.87	1.07	2.33	2.94	3.19	3.33
160	0.16	0.17	0.19	1.28	1.89	2.36	2.51	2.37	2.10	1.74	0.56	0.61	0.77	0.73	0.67	1.35	2.05	2.18	2.28
165	0.16	0.17	0.18	0.19	0.87	1.37	1.47	1.42	0.94	0.34	0.42	0.47	0.62	0.59	0.53	0.44	0.49	0.96	1.11
170	0.18	0.17	0.18	0.18	0.18	0.18	0.18	0.17	0.17	0.22	0.27	0.31	0.43	0.41	0.37	0.31	0.26	0.26	0.26
175	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.20	0.25	0.25	0.25	0.25	0.24	0.25	0.24
180	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.22	0.22	0.21	0.21	0.21	0.21	0.21

Table--2 UNIT: cd

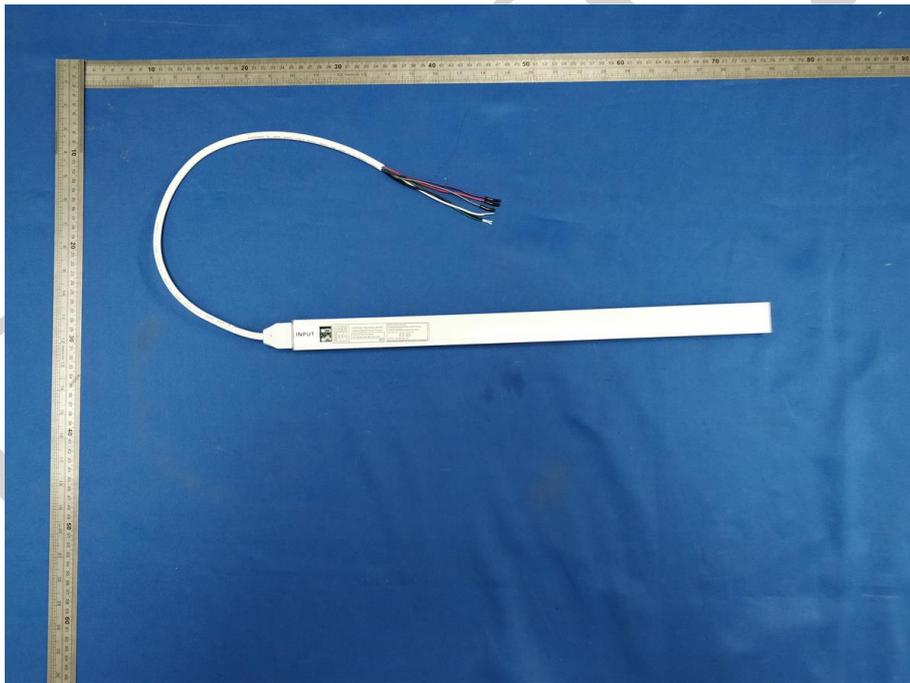
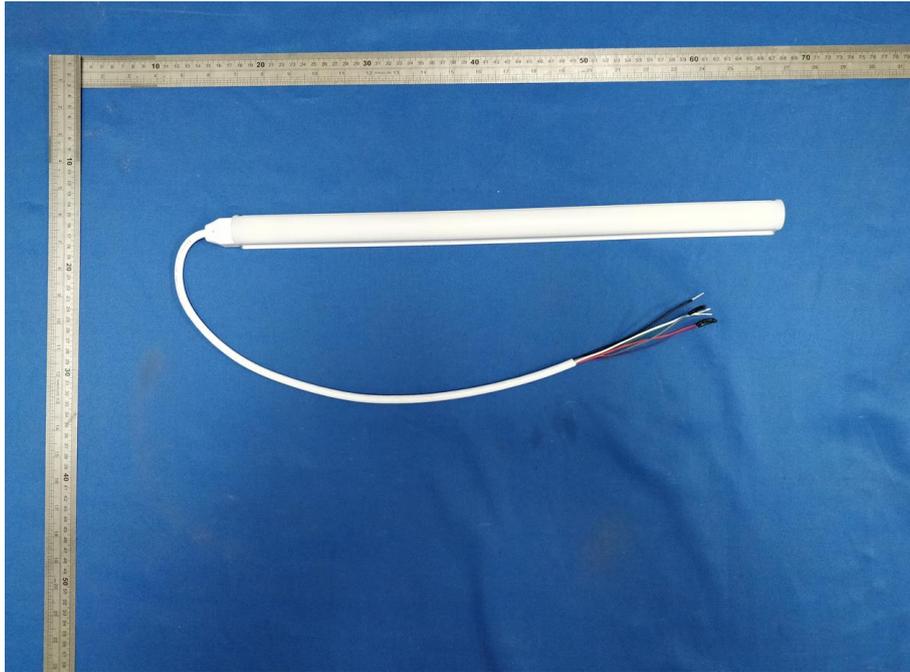
C (DEG)	285	300	315	330	345														
0	316	316	316	316	316														
5	314	315	314	315	315														
10	310	310	310	309	309														
15	304	303	302	301	301														
20	296	294	292	290	289														
25	285	283	280	277	274														
30	273	270	265	261	257														
35	259	255	248	243	238														
40	244	239	230	223	218														
45	228	221	212	202	196														
50	210	202	192	180	173														
55	192	184	172	159	149														
60	174	165	151	137	126														
65	156	146	132	116	102														
70	138	128	113	95.6	79.5														
75	120	111	95.2	77.0	58.2														
80	104	94.6	79.3	60.4	39.6														
85	88.8	80.0	65.1	46.2	24.9														
90	75.3	66.9	52.7	34.8	15.1														
95	63.4	55.6	42.4	26.0	9.75														
100	53.0	45.7	28.4	16.6	6.44														
105	30.0	27.7	21.8	12.7	3.21														
110	29.3	25.0	17.7	9.47	2.62														
115	24.9	20.9	14.1	6.96	1.37														
120	20.5	16.9	11.1	3.60	1.47														
125	16.4	13.5	8.12	3.84	1.19														
130	13.0	10.6	5.89	3.07	0.93														
135	10.3	7.31	5.08	2.54	0.47														
140	7.40	5.73	3.83	2.07	0.25														
145	5.39	4.48	3.00	1.67	0.25														
150	4.27	3.35	2.33	1.15	0.26														
155	3.01	2.47	1.72	0.33	0.27														
160	2.13	1.70	0.81	0.30	0.29														
165	0.89	0.34	0.30	0.29	0.29														
170	0.27	0.27	0.27	0.27	0.27														
175	0.24	0.24	0.24	0.25	0.25														
180	0.21	0.21	0.21	0.21	0.22														

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	0.03510	9.129	0.9401	14.17

Photo of Sample:



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