

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-6W-XXK-WC-[Blank, OCN]-[BAA, Blank]

Representative (Tested) Model:

RP-LBI-G1-2F-6W-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.
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 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-6W-XXK-WC
Product Type:	Direct Linear Ambient Luminaires
Rating Input:	100-277Vac, 50/60Hz, 6W
Declared CCT:	2700K/3000K/3500K
Declared Light Output:	750 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.:	NTCLR19110160
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	40.6	Face Down	90	10

Electrical Data:

Voltage (V)	Frequency (Hz)	Current (A)	Wattage (W)	Power Factor
120.0	60	0.05090	6.011	0.9838
277.0	60	0.02620	6.352	0.8747

Output Data:

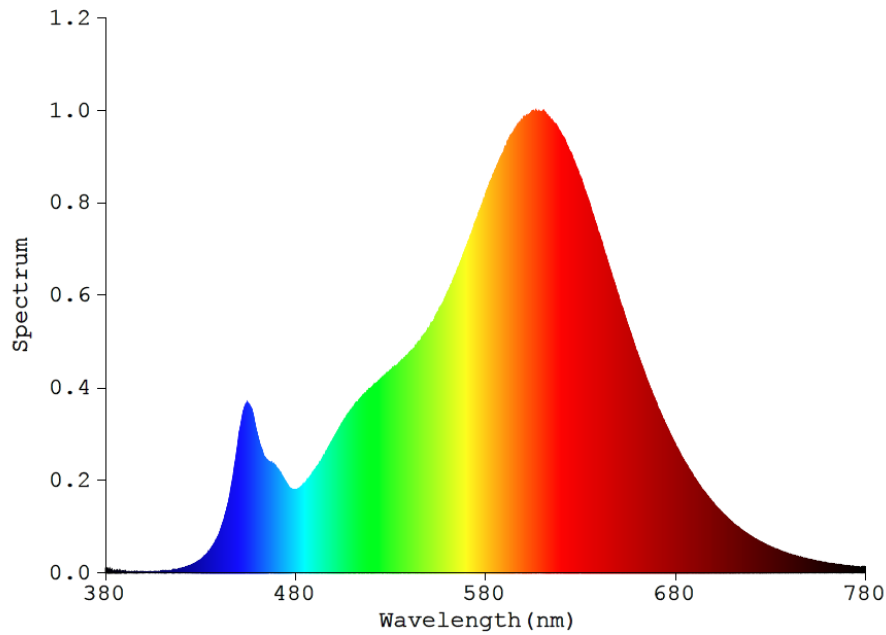
Light Output (lm)	Efficacy (lm/W)
752.2	125.14
753.2	118.58

Color Data:

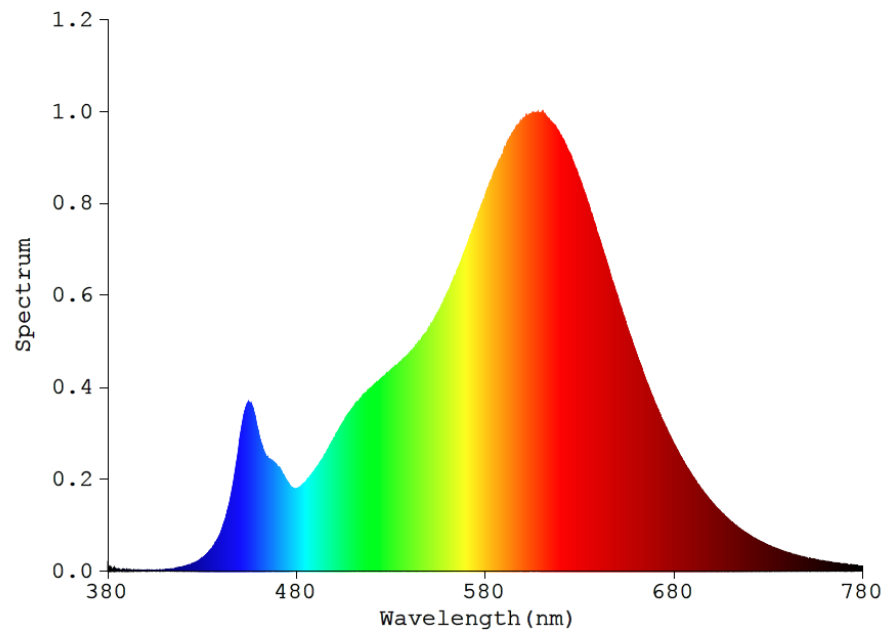
Parameter	Result at 120V	Result at 277V
CCT(K)	2730	2729
Ra	82.9	82.8
R9	7	7
Chromaticity, x	0.4609	0.4609
Chromaticity, y	0.4162	0.4162
Chromaticity, u'	0.2606	0.2607
Chromaticity, v'	0.5296	0.5296
Duv	0.00198	0.00196

Special Color Rendering					
	Result at 120V	Result at 277V		Result at 120V	Result at 277V
R1	82	82	R9	7	7
R2	93	93	R10	84	84
R3	94	84	R11	81	81
R4	81	80	R12	76	76
R5	82	82	R13	84	84
R6	93	93	R14	97	97
R7	81	81	R15	73	73
R8	57	57	-	-	-

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	40.6	Face Down	90	25

Electrical Data:

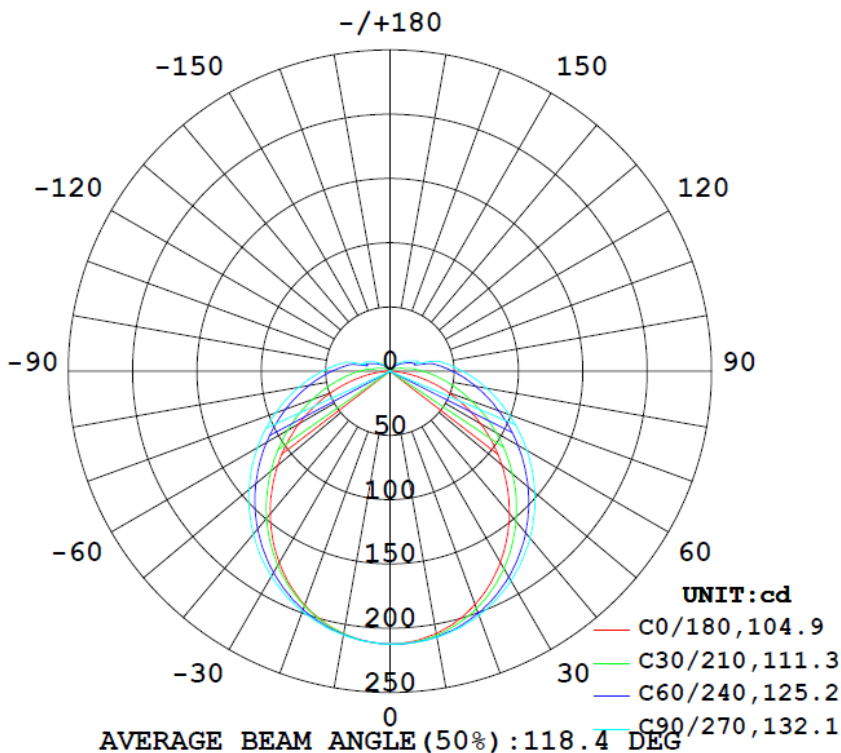
Voltage (V)	Frequency (Hz)	Current (A)	Wattage (W)	Power Factor
120.0	60	0.05090	6.011	0.9838
277.0	60	0.02620	6.352	0.8747

Goniophotometer Data:

Parameter	Results at 120V	Results at 277V
Total Luminous (lm)	752.2	753.2
Total Luminous per foot (lm/ft)	376.1	376.6
Luminous Efficacy (lm/w)	125.14	118.58
Zonal Lumens Distribution (0-60°)	64.4%	
Beam Angle (°)	118.4	

Luminous Intensity Distribution Diagram (Result at 120V):

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM

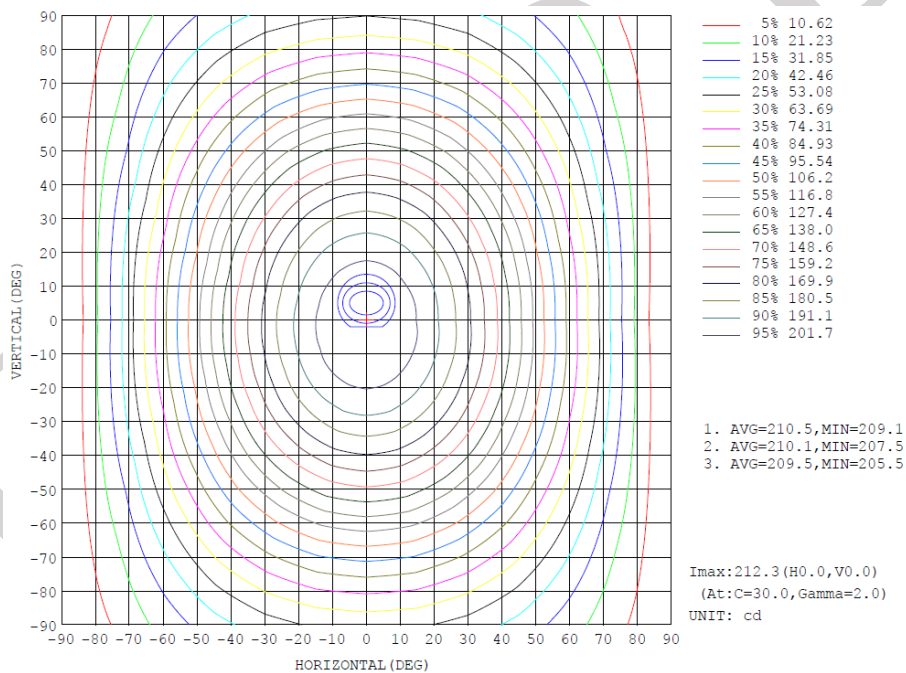


Zonal Flux Diagram (Result at 120V):

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	207.3	209.0	210.3	209.0	207.2	207.6	208.4	207.7	0~ 10	20.07	20.07	2.67,2.67
20	193.3	198.7	202.1	198.2	193.7	195.6	199.0	195.8	10~ 20	57.44	77.51	10.3,10.3
30	171.6	181.2	188.2	180.7	172.1	177.4	184.3	177.6	20~ 30	87.03	164.5	21.9,21.9
40	144.4	158.6	169.4	157.8	144.7	154.4	165.4	154.6	30~ 40	105.3	269.8	35.9,35.9
50	113.6	132.7	147.0	131.7	114.1	128.4	143.1	128.4	40~ 50	110.6	380.4	50.6,50.6
60	81.28	105.8	122.7	104.7	81.71	101.6	119.0	101.4	50~ 60	104.0	484.4	64.4,64.4
70	48.50	80.04	98.68	79.02	48.98	76.01	94.65	75.71	60~ 70	87.87	572.2	76.1,76.1
80	18.53	57.40	76.21	56.46	19.20	53.75	71.96	53.17	70~ 80	66.58	638.8	84.9,84.9
90	2.459	39.10	56.80	38.35	2.122	35.94	52.69	35.39	80~ 90	45.59	684.4	91,91
100	1.939	23.47	41.08	22.70	1.725	19.10	37.38	18.96	90~100	29.85	714.3	95,95
110	0.5507	13.95	23.09	14.47	1.535	13.03	20.60	11.80	100~110	16.20	730.5	97.1,97.1
120	0.0000	8.841	16.49	9.195	1.315	8.384	14.87	7.497	110~120	10.14	740.6	98.5,98.5
130	0.0106	5.406	10.78	5.828	1.095	5.311	9.604	3.963	120~130	6.043	746.6	99.3,99.3
140	0.0286	3.226	6.555	3.612	0.8841	3.294	5.722	2.540	130~140	3.280	749.9	99.7,99.7
150	0.0449	1.806	3.546	2.104	0.6781	1.976	2.962	1.531	140~150	1.546	751.5	99.9,99.9
160	0.0653	0.8278	1.651	1.133	0.4804	0.8648	1.497	0.5063	150~160	0.6122	752.1	100,100
170	0.0777	0.0792	0.0807	0.1042	0.2537	0.1728	0.1354	0.1460	160~170	0.1270	752.2	100,100
180	0.1046	0.1026	0.0983	0.1029	0.1050	0.1040	0.0994	0.1040	170~180	0.0108	752.2	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
γ (DEG)	212	212	212	212	212	212	212	212	212	212	212	212	212	212	212	212	212	212	212
5	211	211	212	212	212	212	212	212	212	211	211	211	211	211	211	211	211	211	211
10	207	208	209	209	210	210	210	209	209	208	208	207	207	207	207	208	208	208	208
15	201	202	203	205	206	207	207	205	204	203	202	201	201	202	202	203	204	204	204
20	193	195	196	199	200	202	202	202	200	198	196	194	194	193	194	196	197	198	199
25	183	185	188	190	193	195	196	195	193	190	187	185	184	183	185	187	190	191	192
30	172	174	177	181	185	187	188	187	184	181	176	173	172	172	174	177	181	183	184
35	159	162	165	170	175	178	179	178	174	170	164	160	159	159	162	166	171	174	175
40	144	148	152	159	164	168	169	168	163	158	151	147	145	145	149	154	160	164	165
45	129	133	139	146	152	157	159	157	152	145	137	132	130	130	135	142	148	153	155
50	114	118	124	133	140	145	147	145	139	132	123	116	114	115	121	128	136	141	143
55	97.7	102	110	119	127	133	135	133	127	118	108	101	98.1	99.1	106	115	124	129	131
60	81.3	86.8	95.3	106	115	121	123	121	114	105	93.7	85.1	81.7	83.3	91.8	102	111	117	119
65	64.8	71.1	81.1	92.6	102	109	111	108	101	91.6	79.6	69.5	65.2	67.8	77.7	88.5	98.4	104	107
70	48.5	55.9	67.5	80.0	90.0	96.6	98.7	96.3	89.3	79.0	66.1	54.3	49.0	52.8	64.3	76.0	86.3	92.3	94.7
75	32.8	41.7	54.9	68.2	78.5	85.2	87.1	84.9	77.7	67.2	53.5	40.0	33.3	38.9	51.9	64.4	74.7	80.8	83.0
80	18.5	29.0	43.6	57.4	67.7	74.3	76.2	74.0	67.0	56.5	42.3	27.4	19.2	26.7	41.0	53.7	64.0	69.9	72.0
85	7.68	19.0	33.9	47.6	57.8	64.2	66.1	64.0	57.2	46.8	32.7	17.6	7.78	17.0	31.5	44.2	54.2	59.8	61.9
90	2.46	12.0	26.0	39.1	48.9	55.0	56.8	54.8	48.3	38.4	24.9	10.8	2.12	10.7	23.9	35.9	45.4	50.7	52.7
95	2.26	7.71	19.7	31.8	41.0	46.8	48.5	46.6	40.5	31.2	18.8	6.86	1.79	6.89	18.2	29.0	37.7	42.7	44.5
100	1.94	5.02	12.9	23.5	34.1	39.5	41.1	39.3	33.7	22.7	12.6	4.51	1.73	4.57	12.2	19.1	31.1	35.8	37.4
105	1.32	3.56	10.0	17.0	19.7	23.1	25.2	22.5	19.3	17.4	10.3	3.51	1.63	3.55	9.78	15.8	18.1	19.6	21.6
110	0.55	2.48	7.52	13.9	18.9	22.2	23.1	22.3	19.2	14.5	7.98	2.89	1.54	2.93	7.56	13.0	17.6	19.9	20.6
115	0.12	1.70	5.64	11.2	15.7	19.1	19.8	19.1	15.9	11.5	6.28	2.45	1.43	2.48	5.93	10.4	14.5	16.8	18.0
120	0.00	1.24	4.33	8.84	12.8	15.9	16.5	15.9	13.0	9.20	5.08	2.15	1.31	2.18	4.81	8.38	11.8	13.9	14.9
125	0.00	0.95	3.33	6.95	10.5	12.9	13.4	12.9	10.7	7.36	4.14	1.90	1.20	1.91	3.90	6.69	9.55	11.2	12.0
130	0.01	0.77	2.59	5.41	8.25	10.3	10.8	10.3	8.57	5.83	3.40	1.69	1.10	1.71	3.20	5.31	7.64	9.09	9.60
135	0.02	0.63	2.02	4.20	6.40	8.00	8.55	8.06	6.75	4.61	2.78	1.45	0.99	1.35	2.66	4.01	6.04	7.12	7.52
140	0.03	0.29	1.59	3.23	4.88	6.12	6.55	6.18	5.23	3.61	2.26	0.99	0.88	0.87	2.20	3.29	4.43	5.27	5.72
145	0.04	0.09	1.28	2.44	3.65	4.57	4.89	4.62	3.99	2.78	1.83	0.69	0.78	0.75	1.78	2.55	3.41	3.76	3.91
150	0.04	0.07	0.95	1.81	2.67	3.31	3.55	3.35	2.94	2.10	1.45	0.58	0.68	0.65	1.42	1.98	2.62	2.83	2.96
155	0.06	0.07	0.52	1.28	1.89	2.33	2.48	2.34	2.07	1.57	0.92	0.47	0.58	0.55	0.68	1.53	1.94	2.10	2.20
160	0.07	0.07	0.09	0.83	1.23	1.55	1.65	1.56	1.37	1.13	0.34	0.37	0.48	0.46	0.41	0.86	1.34	1.42	1.50
165	0.07	0.08	0.08	0.09	0.54	0.89	0.95	0.92	0.60	0.19	0.24	0.28	0.38	0.36	0.32	0.26	0.29	0.60	0.70
170	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.10	0.14	0.17	0.25	0.24	0.21	0.17	0.14	0.14	0.14
175	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.13	0.13	0.13	0.13	0.12	0.13	0.12
180	0.10	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.11	0.10	0.10	0.10	0.10	0.10	0.10

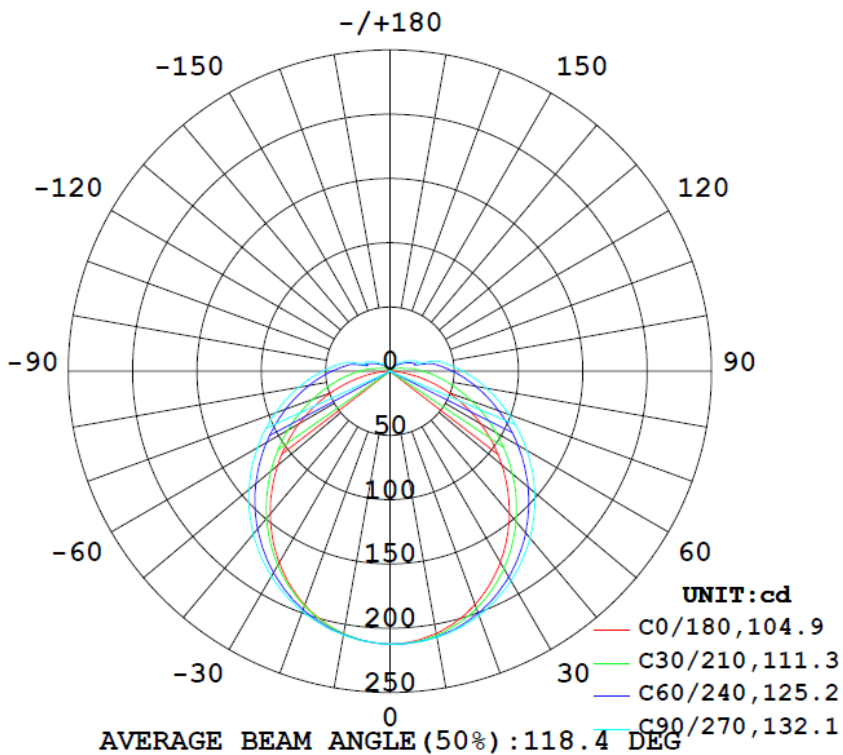
Table--2

UNIT: cd

C (DEG)	285	300	315	330	345														
γ (DEG)	212	212	212	212	212														
5	211	211	211	211	211														
10	208	208	208	207	207														
15	204	203	202	202	202														
20	198	197	196	195	194														
25	191	190	188	185	184														
30	183	181	178	175	173														
35	174	171	167	163	160														
40	164	160	155	149	146														
45	153	148	142	136	131														
50	141	136	128	121	116														
55	129	123	115	107	100														
60	117	111	101	92.0	84.2														
65	104	98.2	88.3	77.7	68.5														
70	92.2	85.9	75.7	64.2	53.3														
75	80.6	74.3	64.0	51.6	39.0														
80	69.7	63.6	53.2	40.5	26.5														
85	59.6	53.8	43.7	31.0	16.6														
90	50.6	45.0	35.4	23.3	10.2														
95	42.6	37.3	28.4	17.6	6.55														
100	35.6	30.6	19.0	11.1	4.28														
105	20.1	18.8	14.6	8.50	2.10														
110	19.6	17.0	11.8	6.32	1.72														
115	16.7	14.0	9.59	4.61	0.88														
120	13.7	11.3	7.50	2.47	0.96														
125	11.0	9.04	5.37	2.54	0.76														
130	8.90	7.05	3.96	2.02	0.59														
135	6.94	4.89	3.38	1.67	0.28														
140	4.95	3.83	2.54	1.35	0.13														
145	3.59	2.97	1.98	1.09	0.13														
150	2.84	2.21	1.53	0.73	0.14														
155	1.99	1.62	1.12	0.18	0.14														
160	1.40	1.11	0.51	0.16	0.15														
165	0.55	0.19	0.16	0.15	0.15														
170	0.14	0.14	0.15	0.14	0.14														
175	0.13	0.13	0.13	0.13	0.13														
180	0.10	0.10	0.10	0.10	0.11														

Luminous Intensity Distribution Diagram (Result at 277V):

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM

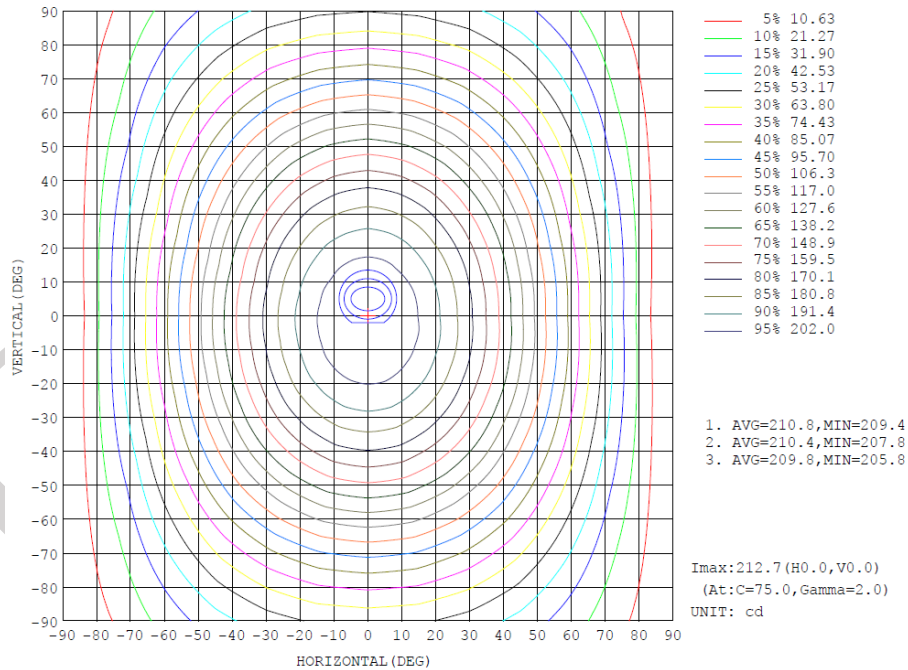


Zonal Flux Diagram (Result at 277V):

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	lum, lamp
10	207.3	209.5	210.6	209.1	207.6	207.9	208.6	207.9	0~ 10	20.10	20.10	2.67,2.67
20	193.5	198.9	202.3	198.5	193.8	195.9	199.1	196.1	10~ 20	57.52	77.61	10.3,10.3
30	172.0	181.4	188.2	180.9	172.4	177.7	184.5	177.9	20~ 30	87.14	164.8	21.9,21.9
40	144.7	158.8	169.5	158.1	145.0	154.6	165.5	154.8	30~ 40	105.4	270.1	35.9,35.9
50	113.9	133.0	147.2	131.9	114.3	128.6	143.3	128.6	40~ 50	110.8	380.9	50.6,50.6
60	81.35	106.0	122.8	104.8	81.74	101.7	119.3	101.6	50~ 60	104.1	485.0	64.4,64.4
70	48.62	80.15	98.69	79.04	48.99	76.17	94.89	75.81	60~ 70	87.98	573.0	76.1,76.1
80	18.54	57.51	76.29	56.52	19.21	53.82	72.11	53.27	70~ 80	66.67	639.7	84.9,84.9
90	2.465	39.19	56.78	38.38	2.124	36.00	52.75	35.40	80~ 90	45.66	685.3	91,91
100	1.942	23.51	41.08	22.73	1.724	19.11	37.44	19.04	90~100	29.89	715.2	95,95
110	0.5531	13.96	23.13	14.49	1.536	13.04	20.66	11.82	100~110	16.22	731.4	97.1,97.1
120	0.0000	8.862	16.49	9.206	1.317	8.389	14.90	7.511	110~120	10.16	741.6	98.5,98.5
130	0.0109	5.414	10.79	5.841	1.096	5.322	9.630	3.971	120~130	6.052	747.7	99.3,99.3
140	0.0283	3.231	6.553	3.616	0.8859	3.301	5.736	2.546	130~140	3.284	750.9	99.7,99.7
150	0.0469	1.810	3.545	2.108	0.6790	1.979	2.970	1.535	140~150	1.548	752.5	99.9,99.9
160	0.0657	0.8270	1.651	1.133	0.4809	0.8642	1.502	0.5083	150~160	0.6131	753.1	100,100
170	0.0795	0.0799	0.0806	0.1050	0.2536	0.1732	0.1358	0.1464	160~170	0.1273	753.2	100,100
180	0.1053	0.1033	0.0994	0.1029	0.1049	0.1054	0.1011	0.1050	170~180	0.0109	753.2	100,100
DEG	LUMINOUS INTENSITY:cd Less than 35% Percent = 20.0 %									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
γ (DEG)	0	212	212	212	212	212	212	212	212	212	212	212	212	212	212	212	212	212	212
5	211	211	212	212	212	212	212	212	212	212	211	212	211	211	211	211	211	211	211
10	207	208	209	209	210	211	211	210	210	209	208	208	208	207	207	208	208	208	209
15	201	203	204	205	206	207	207	206	205	203	202	202	201	202	202	204	204	205	
20	193	195	197	199	201	202	202	202	200	199	196	195	194	193	195	196	198	198	199
25	184	186	188	191	193	196	196	195	193	191	187	185	184	183	185	187	190	192	192
30	172	174	177	181	185	188	188	188	184	181	177	174	172	172	175	178	181	183	185
35	159	162	165	171	175	179	179	178	175	170	165	161	159	159	162	167	171	174	176
40	145	148	153	159	164	168	170	168	164	158	151	147	145	145	149	155	160	164	166
45	130	134	139	146	153	157	159	157	152	145	138	132	130	130	135	142	149	153	155
50	114	118	124	133	140	146	147	145	139	132	123	117	114	115	121	129	136	141	143
55	97.8	103	110	119	128	133	135	133	127	118	108	101	98.1	99.2	106	115	124	129	131
60	81.4	86.9	95.3	106	115	121	123	121	114	105	93.8	85.3	81.7	83.4	91.8	102	111	117	119
65	64.9	71.2	81.1	92.9	102	109	111	109	101	91.7	79.6	69.6	65.3	67.9	77.7	88.5	98.5	105	107
70	48.6	56.0	67.5	80.2	90.1	96.8	98.7	96.5	89.3	79.0	66.0	54.4	49.0	52.9	64.4	76.2	86.4	92.5	94.9
75	32.9	41.7	54.9	68.3	78.5	85.3	87.3	85.0	77.8	67.3	53.5	40.1	33.3	38.9	52.0	64.5	74.8	80.9	83.2
80	18.5	29.0	43.7	57.5	67.8	74.4	76.3	74.1	67.1	56.5	42.3	27.5	19.2	26.7	41.0	53.8	64.0	70.0	72.1
85	7.68	19.0	33.9	47.7	57.9	64.3	66.2	64.1	57.2	46.8	32.7	17.7	7.79	17.1	31.6	44.3	54.2	60.0	62.0
90	2.47	12.0	26.0	39.2	48.9	55.1	56.8	54.8	48.4	38.4	24.9	10.8	2.12	10.7	23.9	36.0	45.5	50.9	52.7
95	2.26	7.72	19.7	31.9	41.0	46.9	48.5	46.7	40.6	31.2	18.8	6.87	1.79	6.89	18.2	29.0	37.8	42.9	44.6
100	1.94	5.03	12.9	23.5	34.2	39.6	41.1	39.3	33.8	22.7	12.6	4.52	1.72	4.57	12.3	19.1	31.1	35.9	37.4
105	1.33	3.57	10.0	17.0	19.8	23.1	25.1	22.6	19.3	17.4	10.3	3.51	1.64	3.56	9.78	15.8	18.2	19.6	21.6
110	0.55	2.49	7.52	14.0	18.9	22.2	23.1	22.3	19.2	14.5	7.98	2.90	1.54	2.93	7.56	13.0	17.6	19.9	20.7
115	0.12	1.70	5.64	11.2	15.8	19.2	19.8	19.2	15.9	11.6	6.28	2.45	1.43	2.48	5.94	10.5	14.6	16.9	18.0
120	0.00	1.24	4.33	8.86	12.8	15.9	16.5	15.9	13.0	9.21	5.08	2.15	1.32	2.18	4.81	8.39	11.8	13.9	14.9
125	0.00	0.95	3.33	6.97	10.5	12.9	13.4	12.9	10.7	7.37	4.14	1.91	1.20	1.91	3.90	6.69	9.57	11.2	12.1
130	0.01	0.77	2.59	5.41	8.25	10.2	10.8	10.3	8.58	5.84	3.40	1.69	1.10	1.71	3.20	5.32	7.65	9.12	9.63
135	0.02	0.63	2.02	4.20	6.41	8.01	8.55	8.08	6.75	4.62	2.78	1.45	0.99	1.36	2.67	4.01	6.05	7.14	7.54
140	0.03	0.29	1.60	3.23	4.89	6.12	6.55	6.19	5.23	3.62	2.26	0.99	0.89	0.87	2.20	3.30	4.44	5.30	5.74
145	0.04	0.09	1.28	2.44	3.66	4.57	4.90	4.62	3.99	2.79	1.82	0.70	0.78	0.75	1.79	2.55	3.41	3.77	3.92
150	0.05	0.07	0.95	1.81	2.67	3.32	3.55	3.36	2.95	2.11	1.45	0.58	0.68	0.65	1.42	1.98	2.63	2.85	2.97
155	0.06	0.07	0.52	1.28	1.89	2.33	2.48	2.34	2.07	1.57	0.92	0.47	0.58	0.55	0.68	1.53	1.95	2.11	2.20
160	0.07	0.07	0.09	0.83	1.23	1.55	1.65	1.56	1.38	1.13	0.34	0.37	0.48	0.46	0.41	0.86	1.34	1.43	1.50
165	0.07	0.08	0.08	0.09	0.54	0.89	0.95	0.92	0.60	0.19	0.24	0.28	0.38	0.36	0.32	0.26	0.30	0.61	0.71
170	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.10	0.14	0.17	0.25	0.24	0.21	0.17	0.14	0.14	0.14
175	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.13	0.13	0.13	0.13	0.12	0.13	0.12
180	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.11	0.10	0.11	0.10	0.10	0.10	0.10

Table--2

UNIT: cd

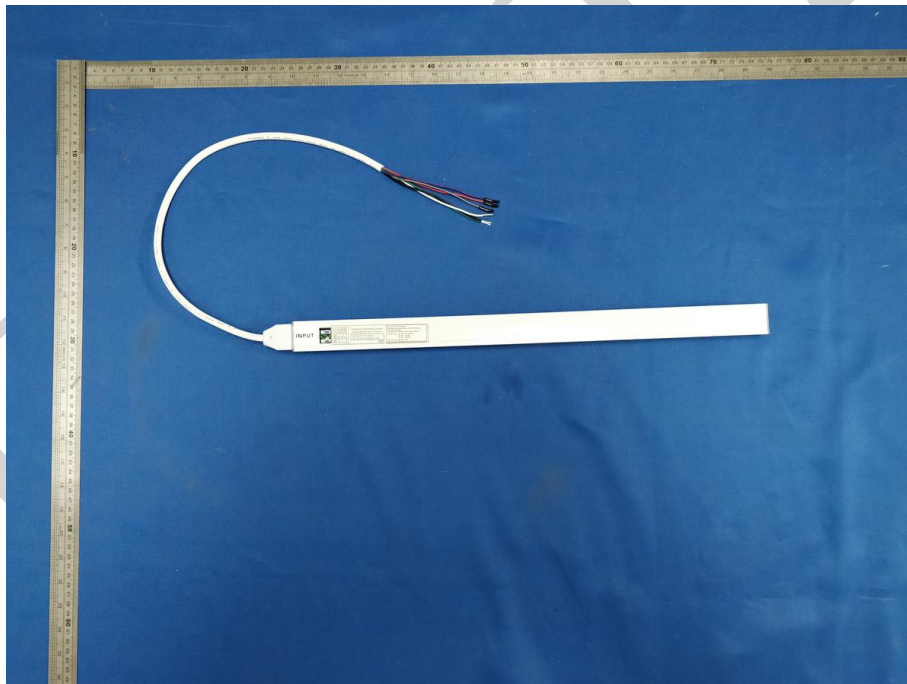
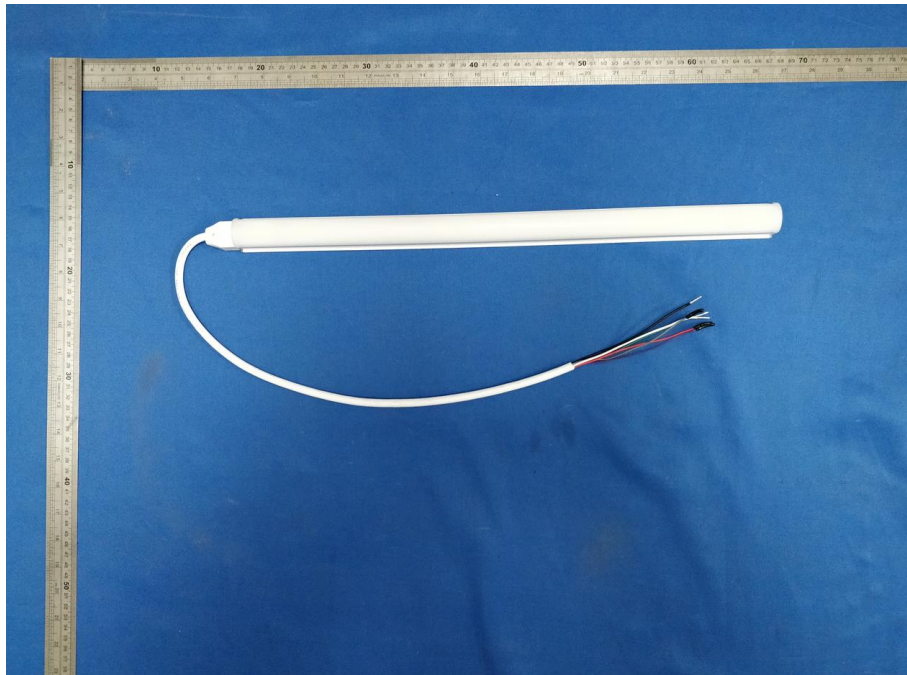
C (DEG)	285	300	315	330	345														
γ (DEG)	0	212	212	212	212	212													
5	211	211	211	211	211	211													
10	209	208	208	208	208	208													
15	204	203	203	202	202	202													
20	199	197	196	195	194	194													
25	192	190	188	186	184	184													
30	184	181	178	175	173	173													
35	174	171	167	163	160	160													
40	164	160	155	150	146	146													
45	153	148	142	136	131	131													
50	141	136	129	121	116	116													
55	129	123	115	107	100	100													
60	117	111	102	92.2	84.4	84.4													
65	104	98.3	88.4	77.9	68.8	68.8													
70	92.3	86.0	75.8	64.4	53.5	53.5													
75	80.7	74.5	64.0	51.8	39.2	39.2													
80	69.8	63.6	53.3	40.5	26.6	26.6													
85	59.8	53.8	43.8	31.0	16.7	16.7													
90	50.6	45.0	35.4	23.3	10.3	10.3													
95	42.6	37.4	28.4	17.6	6.57	6.57													
100	35.6	30.6	19.0	11.2	4.29	4.29													
105	20.1	18.8	14.6	8.52	2.09	2.09													
110	19.6	17.0	11.8	6.34	1.73	1.73													
115	16.7	14.1	9.60	4.63	0.88	0.88													
120	13.7	11.4	7.51	2.47	0.96	0.96													
125	11.1	9.05	5.37	2.55	0.76	0.76													
130	8.92	7.06	3.97	2.03	0.59	0.59													
135	6.94	4.89	3.39	1.68	0.28	0.28													
140	4.95	3.83	2.55	1.35	0.13	0.13													
145	3.59	2.98	1.99	1.09	0.13	0.13													
150	2.84	2.22	1.54	0.74	0.14	0.14													
155	1.99	1.62	1.12	0.18	0.14	0.14													
160	1.40	1.11	0.51	0.17	0.15	0.15													
165	0.56	0.19	0.16	0.16	0.15	0.15													
170	0.14	0.14	0.15	0.14	0.14	0.14													
175	0.13	0.12	0.13	0.13	0.13	0.13													
180	0.10	0.10	0.11	0.10	0.11	0.11													

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	0.02620	6.352	0.8747	18.36

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