

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-G1-3F-10W-XXK-WC-[Blank, OCN]-[BAA, Blank]

Representative (Tested) Model:

RP-LBI-G1-3F-10W-XXK-WC

Model Difference:

1. WC represents power adjustable and color tunable, wattage can adjust 10W, 12W and 15W, 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-G1-3F-10W-XXK-WC
Product Type:	Direct Linear Ambient Luminaires
Rating Input:	100-277Vac, 50/60Hz, 10W
Declared CCT:	2700K/000K/3500K
Declared Light Output:	1300 lm
LED Manufacturer:	Hongli Zhihui Group Co., Ltd.
LED Model:	HL-AS-PU2835DW-S1-08-PCT-HR3
LED Quantity:	80 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:	191106002-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.:	NTCLR19110162
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)
24.8	41.8	Face Down	90	10

Electrical Data:

Voltage (V)	Frequency (Hz)	Current (A)	Wattage (W)	Power Factor
120.0	60	0.08360	9.924	0.9895
277.0	60	0.04110	10.24	0.8996

Output Data:

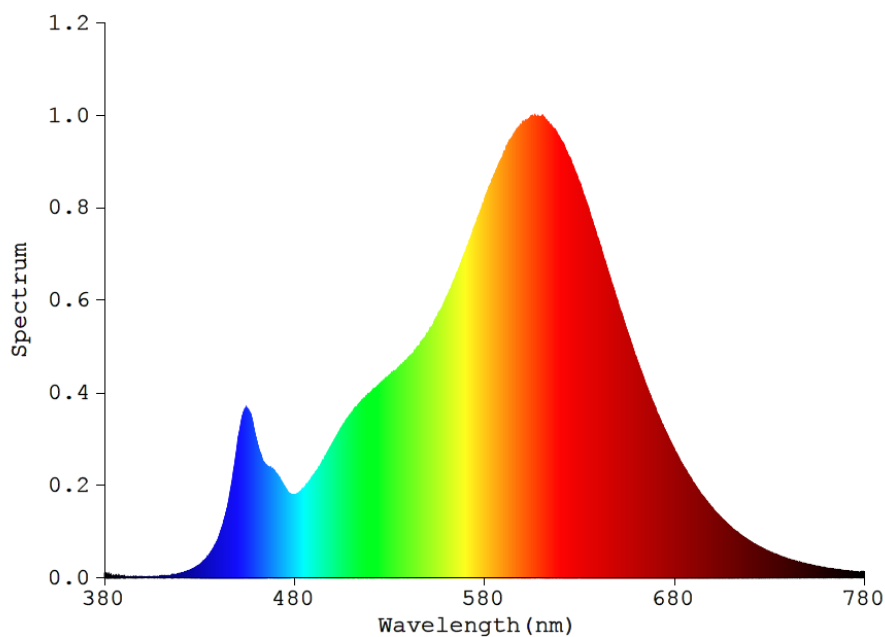
Light Output (lm)	Efficacy (lm/W)
1316.5	132.66
1317.0	128.61

Color Data:

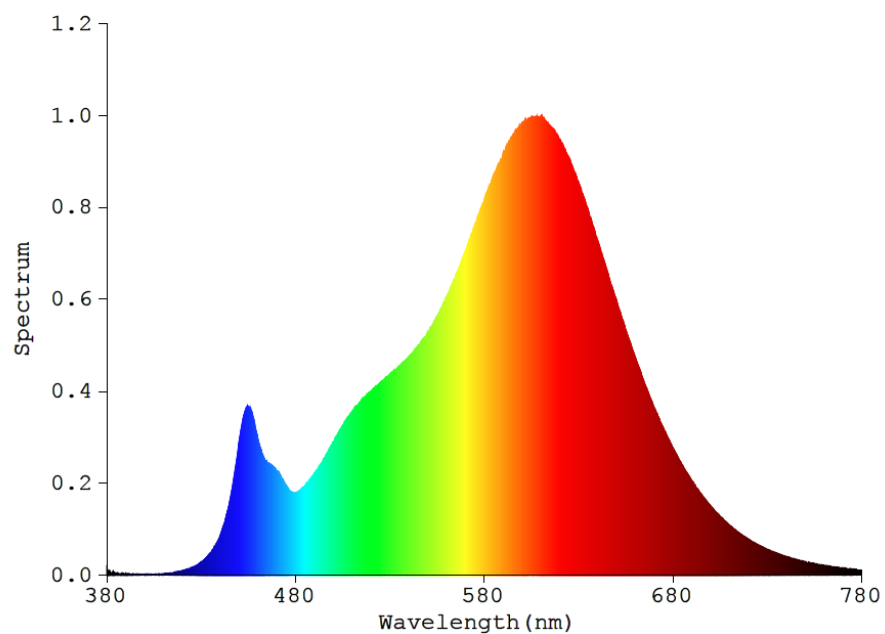
Parameter	Result at 120V	Result at 277V
CCT(K)	2709	2707
Ra	82.9	82.9
R9	8	8
Chromaticity, x	0.4618	0.4620
Chromaticity, y	0.4154	0.4153
Chromaticity, u'	0.2616	0.2617
Chromaticity, v'	0.5294	0.5294
Duv	0.00158	0.00155

Special Color Rendering					
	Result at 120V	Result at 277V		Result at 120V	Result at 277V
R1	82	82	R9	8	8
R2	93	93	R10	85	85
R3	94	94	R11	81	81
R4	80	80	R12	77	77
R5	82	82	R13	85	85
R6	93	94	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)
24.8	41.8	Face Down	90	25

Electrical Data:

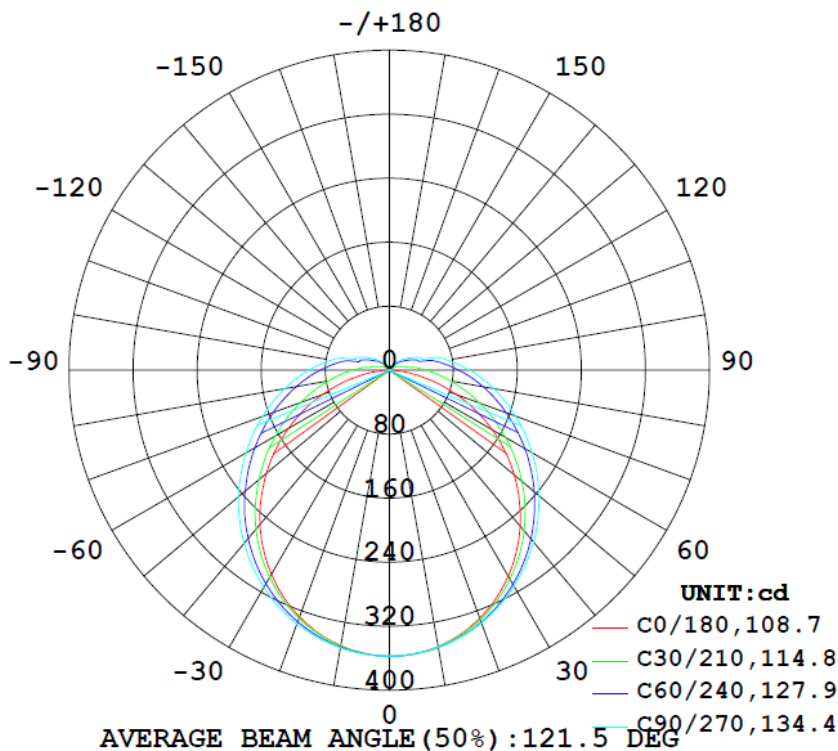
Voltage (V)	Frequency (Hz)	Current (A)	Wattage (W)	Power Factor
120.0	60	0.08360	9.924	0.9895
277.0	60	0.04110	10.24	0.8996

Goniophotometer Data:

Parameter	Results at 120V	Results at 277V
Total Luminous (lm)	1316.5	1317.0
Total Luminous per foot (lm/ft)	438.53	439.00
Luminous Efficacy (lm/w)	132.66	128.61
Zonal Lumens Distribution (0-60°)	62.9%	
Beam Angle (°)	121.5	

Luminous Intensity Distribution Diagram (Result at 120V):

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM

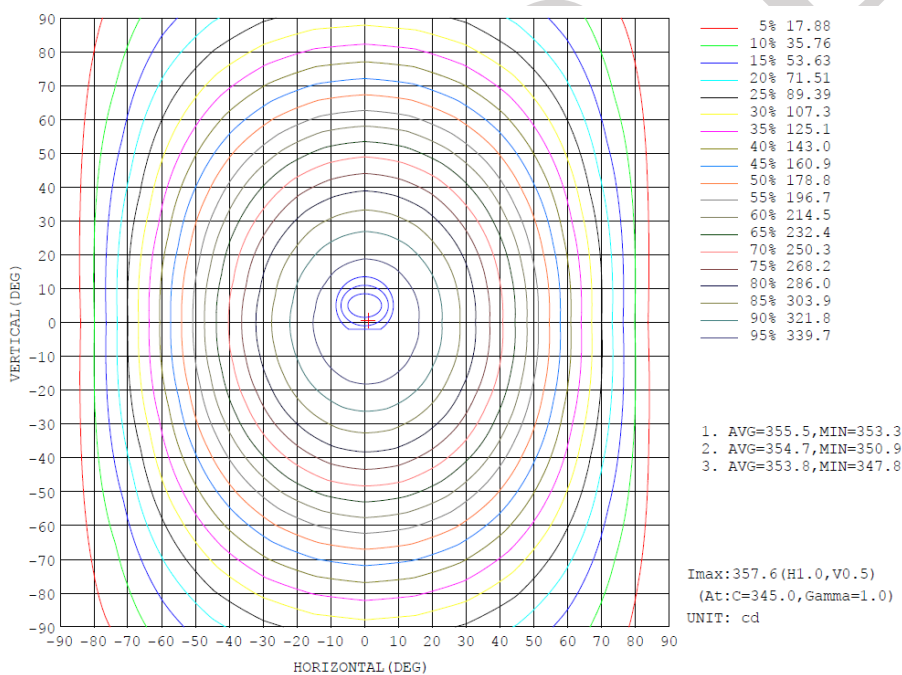


Zonal Flux Diagram (Result at 120V):

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	lum, lamp
10	350.6	351.6	351.7	350.3	349.5	350.5	352.3	351.7	0~ 10	33.81	33.81	2.57,2.57
20	330.1	333.9	336.2	331.3	328.1	332.0	337.4	334.2	10~ 20	96.92	130.7	9.93,9.93
30	297.1	305.7	311.8	302.1	294.7	303.2	313.4	305.9	20~ 30	147.4	278.1	21.1,21.1
40	254.1	269.3	280.2	264.9	251.6	266.3	282.3	269.1	30~ 40	179.4	457.5	34.8,34.8
50	203.7	226.5	244.1	221.7	200.6	224.3	246.3	226.6	40~ 50	190.1	647.6	49.2,49.2
60	148.1	182.5	205.7	177.8	146.0	180.5	206.9	181.9	50~ 60	180.4	828.0	62.9,62.9
70	89.56	139.7	167.8	135.2	89.00	138.3	168.6	138.6	60~ 70	154.6	982.6	74.6,74.6
80	34.48	101.5	132.4	97.46	34.99	100.2	132.7	99.64	70~ 80	119.0	1102	83.7,83.7
90	3.512	70.20	100.7	66.84	3.039	69.17	100.8	67.86	80~ 90	82.94	1185	90,90
100	2.607	46.71	73.95	44.19	2.160	45.89	73.98	43.94	90~100	55.37	1240	94.2,94.2
110	0.8692	26.92	42.11	26.32	1.904	27.58	44.58	25.46	100~110	33.36	1273	96.7,96.7
120	0.0644	17.35	31.93	16.63	1.589	17.43	32.01	15.90	110~120	20.30	1294	98.3,98.3
130	0.0958	10.65	20.58	10.44	1.296	10.69	20.81	9.865	120~130	12.02	1306	99.2,99.2
140	0.1259	6.312	12.26	6.368	1.030	6.557	12.45	5.682	130~140	6.467	1312	99.7,99.7
150	0.1535	3.563	6.779	3.693	0.7915	3.805	6.590	3.251	140~150	3.037	1315	99.9,99.9
160	0.1875	1.733	3.216	1.707	0.5841	1.255	3.148	0.7447	150~160	1.168	1316	100,100
170	0.2133	0.2150	0.2189	0.2149	0.3405	0.3198	0.3097	0.3167	160~170	0.2354	1316	100,100
180	0.2650	0.2607	0.2609	0.2689	0.2660	0.2621	0.2616	0.2693	170~180	0.0251	1317	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	357	357	357	357	357	357	357	357	357	357	357	357	357	357	357	357	357	357
5	356	356	356	356	356	356	356	356	356	355	355	355	355	355	355	355	355	356	356
10	351	351	351	352	352	352	352	352	351	350	350	349	350	349	350	350	351	352	352
15	342	343	343	344	345	345	345	345	343	342	341	340	340	340	342	343	344	345	346
20	330	331	332	334	335	336	336	335	333	331	329	328	328	328	330	332	335	336	337
25	315	317	318	321	323	325	325	324	321	318	314	313	313	313	316	319	323	325	326
30	297	299	302	306	309	312	312	310	306	302	297	295	295	295	299	303	308	312	313
35	277	279	283	288	293	296	297	295	290	284	278	275	274	275	280	286	292	296	299
40	254	257	262	269	275	280	280	278	272	265	257	252	252	252	259	266	274	280	282
45	230	233	240	249	256	262	263	260	253	244	234	228	226	229	237	246	256	262	265
50	204	208	216	226	236	243	244	241	233	222	211	202	201	204	213	224	235	243	246
55	176	182	192	205	216	223	225	221	213	200	187	176	174	178	189	202	215	223	226
60	148	155	168	183	195	203	206	201	192	178	162	150	146	151	165	180	194	204	207
65	119	128	143	161	175	184	187	182	172	156	138	123	118	124	141	159	174	184	188
70	89.6	101	120	140	155	165	168	163	152	135	115	96.0	89.0	97.9	118	138	154	165	169
75	60.9	75.4	98.0	120	137	146	150	145	134	116	93.0	70.8	61.1	73.1	96.7	119	136	147	150
80	34.5	52.6	78.0	102	119	129	132	128	116	97.5	73.5	48.3	35.0	51.1	77.4	100	118	129	133
85	13.1	34.2	60.9	84.9	102	113	116	111	99.4	81.2	56.8	30.2	13.9	33.3	60.6	83.7	102	113	116
90	3.51	21.6	46.9	70.2	87.2	97.6	101	96.3	84.7	66.8	43.2	18.1	3.04	20.8	46.6	69.2	86.7	97.1	101
95	3.12	13.7	35.7	57.5	73.7	83.8	86.6	82.7	71.6	54.6	32.6	11.1	2.30	13.1	35.6	56.7	73.4	83.2	86.7
100	2.61	8.90	23.4	46.7	61.8	71.3	73.9	70.3	59.9	44.2	20.8	7.15	2.16	8.78	22.7	45.9	61.5	70.7	74.0
105	1.72	6.07	18.3	32.2	45.9	59.1	62.1	58.2	43.3	30.7	16.7	5.28	2.04	6.43	18.9	32.7	41.7	55.3	60.1
110	0.87	4.29	13.9	26.9	37.3	41.4	42.1	40.8	36.5	26.3	12.7	4.26	1.90	5.07	14.8	27.6	37.6	43.0	44.6
115	0.16	3.07	10.8	21.7	30.9	36.8	38.6	36.4	30.3	20.9	10.4	3.64	1.75	4.18	11.7	22.1	31.0	36.6	38.5
120	0.06	2.37	8.50	17.3	25.0	30.3	31.9	29.8	24.2	16.6	8.33	3.17	1.59	3.57	9.25	17.4	25.2	30.2	32.0
125	0.08	1.93	6.62	13.7	20.0	24.5	25.8	24.1	19.5	13.2	6.72	2.77	1.44	3.04	7.20	13.7	20.4	24.4	25.9
130	0.10	1.64	5.19	10.7	15.7	19.7	20.6	19.4	15.5	10.4	5.44	2.43	1.30	2.63	5.86	10.7	16.2	19.3	20.8
135	0.11	1.39	4.09	8.25	12.1	15.4	16.1	15.2	12.1	8.20	4.42	1.99	1.16	2.00	4.74	8.27	12.6	15.0	16.3
140	0.13	0.68	3.23	6.31	9.45	11.8	12.3	11.6	9.50	6.37	3.58	1.09	1.03	1.02	3.82	6.56	9.37	11.1	12.4
145	0.14	0.20	2.55	4.77	7.05	8.78	9.35	8.69	7.18	4.89	2.87	0.79	0.91	0.87	3.00	5.01	7.17	8.47	9.02
150	0.15	0.18	1.87	3.56	5.15	6.37	6.78	6.31	5.29	3.69	2.26	0.65	0.79	0.75	2.38	3.81	5.31	6.21	6.59
155	0.17	0.18	1.09	2.62	3.67	4.48	4.76	4.46	3.75	2.73	1.28	0.53	0.68	0.65	0.80	2.81	3.79	4.40	4.65
160	0.19	0.19	0.21	1.73	2.49	3.04	3.22	3.04	2.46	1.71	0.39	0.43	0.58	0.56	0.50	1.25	2.51	2.99	3.15
165	0.19	0.20	0.21	0.22	1.10	1.83	1.94	1.84	1.11	0.23	0.28	0.31	0.47	0.44	0.40	0.34	0.37	1.16	1.35
170	0.21	0.21	0.22	0.22	0.22	0.22	0.22	0.21	0.22	0.21	0.22	0.22	0.34	0.33	0.32	0.32	0.31	0.31	0.31
175	0.24	0.24	0.24	0.24	0.23	0.24	0.23	0.24	0.24	0.24	0.24	0.24	0.30	0.31	0.30	0.30	0.29	0.29	0.29
180	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.27	0.27	0.27	0.27	0.27	0.26	0.26	0.26	0.26	0.26	0.26

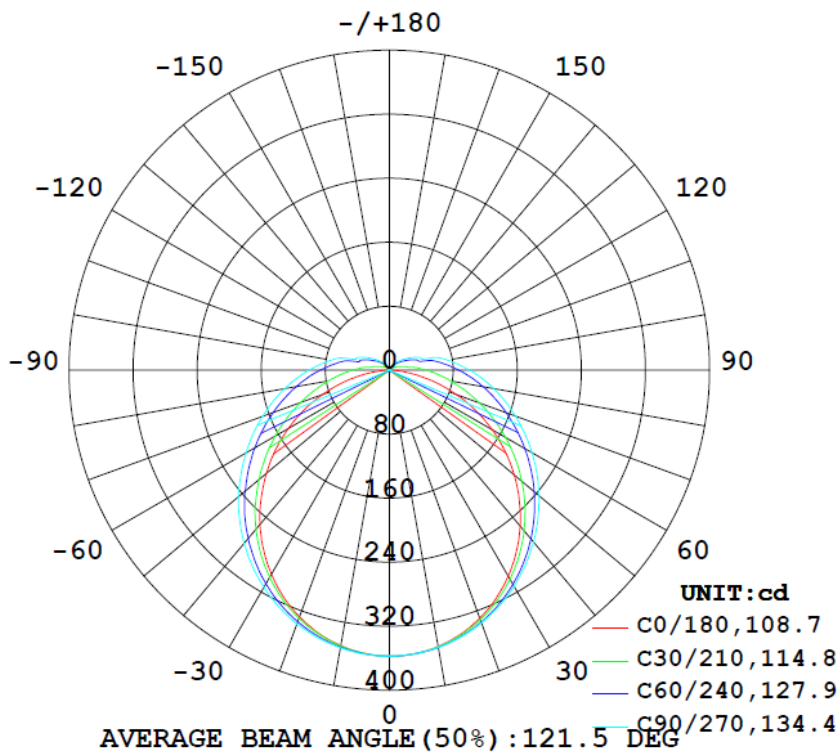
Table--2

UNIT: cd

C (DEG)	285	300	315	330	345														
Y (DEG)	0	357	357	357	357														
5	356	356	356	356	356														
10	352	352	352	352	351														
15	346	345	344	344	343														
20	337	336	334	333	331														
25	326	324	321	319	316														
30	312	310	306	302	299														
35	297	294	288	284	279														
40	280	276	269	263	257														
45	262	257	248	240	233														
50	243	237	227	216	208														
55	224	216	204	191	181														
60	204	195	182	167	154														
65	185	175	160	142	127														
70	165	155	139	118	99.1														
75	147	136	118	96.2	73.1														
80	129	118	99.6	76.1	49.9														
85	113	101	82.6	58.9	31.3														
90	96.7	86.0	67.9	44.6	18.7														
95	82.8	72.4	55.2	33.5	11.4														
100	70.2	60.5	43.9	22.3	7.54														
105	54.3	41.6	31.6	17.1	5.11														
110	42.9	36.3	25.5	13.0	3.55														
115	36.2	30.1	20.3	9.81	2.46														
120	29.8	24.2	15.9	7.55	1.85														
125	24.0	19.5	12.4	5.86	1.52														
130	19.0	15.3	9.86	4.55	1.11														
135	14.7	11.9	7.50	3.63	0.24														
140	11.2	8.91	5.68	2.88	0.22														
145	8.29	6.62	4.34	2.30	0.27														
150	6.06	4.87	3.25	1.34	0.29														
155	4.29	3.48	2.38	0.32	0.31														
160	2.93	2.38	0.74	0.33	0.33														
165	0.98	0.34	0.33	0.33	0.33														
170	0.32	0.32	0.32	0.31	0.31														
175	0.29	0.29	0.30	0.29	0.30														
180	0.26	0.27	0.27	0.27	0.27														

Luminous Intensity Distribution Diagram (Result at 277V):

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM

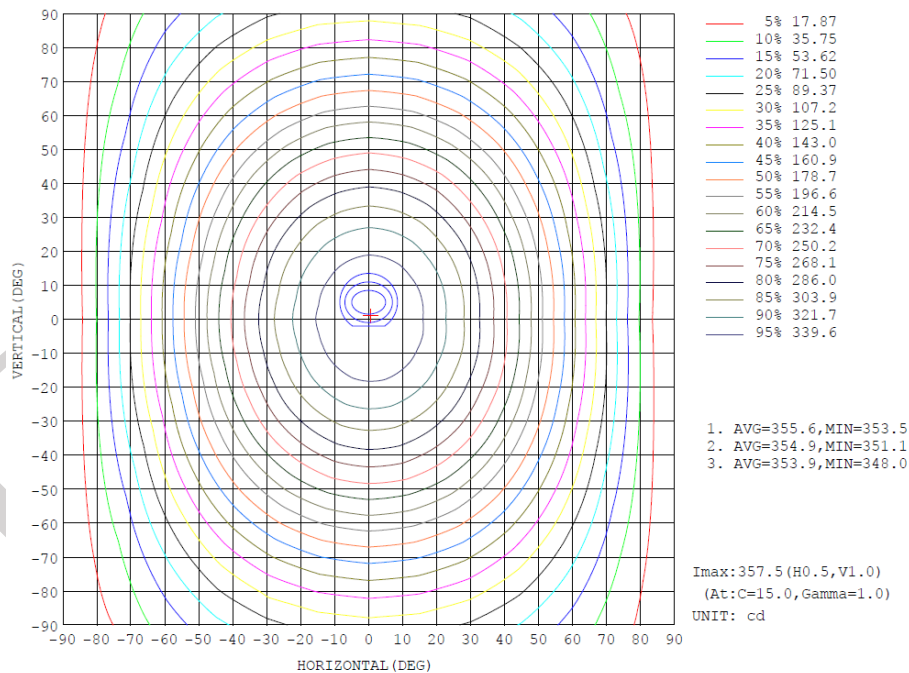


Zonal Flux Diagram (Result at 277V):

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	350.5	351.8	351.9	350.4	350.0	350.7	352.4	351.8	0- 10	33.82	33.82	2.57,2.57
20	329.6	334.1	336.2	331.5	328.7	332.2	337.5	334.2	10- 20	96.95	130.8	9.93,9.93
30	296.4	305.8	311.8	302.2	295.5	303.3	313.6	306.0	20- 30	147.5	278.2	21.1,21.1
40	253.2	269.3	280.3	265.0	252.7	266.5	282.4	269.1	30- 40	179.4	457.7	34.8,34.8
50	202.6	226.5	244.1	221.9	201.9	224.4	246.4	226.6	40- 50	190.2	647.9	49.2,49.2
60	146.9	182.5	205.7	177.8	147.3	180.7	206.9	181.9	50- 60	180.5	828.3	62.9,62.9
70	88.35	139.7	167.8	135.2	90.27	138.4	168.7	138.6	60- 70	154.6	982.9	74.6,74.6
80	33.39	101.5	132.4	97.51	36.08	100.4	132.8	99.65	70- 80	119.1	1102	83.7,83.7
90	3.450	70.23	100.6	66.88	3.239	69.22	100.8	67.91	80- 90	82.98	1185	90,90
100	2.581	46.73	73.94	44.22	2.159	45.90	73.99	43.92	90-100	55.40	1240	94.2,94.2
110	0.8357	26.92	42.12	26.32	1.905	27.62	44.58	25.45	100-110	33.38	1274	96.7,96.7
120	0.0636	17.34	31.95	16.63	1.593	17.45	32.02	15.90	110-120	20.31	1294	98.3,98.3
130	0.0957	10.65	20.58	10.44	1.300	10.73	20.82	9.862	120-130	12.03	1306	99.2,99.2
140	0.1283	6.311	12.26	6.374	1.034	6.563	12.46	5.678	130-140	6.469	1313	99.7,99.7
150	0.1531	3.564	6.779	3.695	0.7960	3.808	6.593	3.251	140-150	3.038	1316	99.9,99.9
160	0.1878	1.729	3.216	1.714	0.5880	1.258	3.150	0.7398	150-160	1.168	1317	100,100
170	0.2121	0.2157	0.2199	0.2153	0.3460	0.3197	0.3103	0.3154	160-170	0.2355	1317	100,100
180	0.2659	0.2613	0.2620	0.2687	0.2666	0.2624	0.2612	0.2684	170-180	0.0251	1317	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
γ (DEG)	0	357	357	357	357	357	357	357	357	357	357	357	357	357	357	357	357	357	357
5	356	356	356	356	356	356	356	356	356	355	355	355	355	355	355	355	356	356	356
10	350	351	351	352	352	352	352	352	351	350	350	349	350	349	350	351	351	352	352
15	342	343	343	344	345	346	345	345	343	342	341	340	341	340	342	343	344	345	346
20	330	331	332	334	335	337	336	336	333	332	329	328	329	328	330	332	335	336	337
25	314	317	318	321	323	325	325	324	321	318	315	313	314	313	316	319	323	325	327
30	296	299	302	306	309	312	312	310	306	302	297	295	296	295	299	303	308	312	314
35	276	280	283	289	293	297	297	295	290	284	278	274	275	275	280	286	292	296	299
40	253	258	262	269	275	280	280	278	272	265	257	252	253	252	259	267	274	280	282
45	229	233	240	249	256	262	263	260	253	244	235	228	228	229	237	246	256	262	265
50	203	208	216	227	236	243	244	241	233	222	211	202	202	204	213	224	235	243	246
55	175	182	192	205	216	223	225	221	212	200	187	176	175	178	189	203	215	223	226
60	147	155	168	182	195	203	206	201	192	178	162	150	147	151	165	181	194	204	207
65	118	128	144	161	175	184	187	182	172	156	138	123	119	124	141	159	174	184	188
70	88.4	101	120	140	155	165	168	163	152	135	115	96.0	90.3	97.9	118	138	154	165	169
75	59.8	75.5	98.1	120	137	147	150	145	133	116	93.0	70.8	62.3	73.1	96.6	119	136	147	150
80	33.4	52.7	78.1	102	119	129	132	128	116	97.5	73.5	48.2	36.1	51.1	77.3	100	118	129	133
85	12.4	34.2	61.1	84.9	102	113	116	111	99.3	81.2	56.8	30.1	14.6	33.3	60.5	83.7	102	113	116
90	3.45	21.6	46.9	70.2	87.1	97.7	101	96.4	84.6	66.9	43.1	18.1	3.24	20.8	46.6	69.2	86.8	97.1	101
95	3.11	13.7	35.7	57.5	73.8	83.9	86.6	82.7	71.5	54.6	32.5	11.0	2.30	13.1	35.6	56.7	73.4	83.2	86.8
100	2.58	8.92	23.4	46.7	61.8	71.3	73.9	70.3	59.8	44.2	20.8	7.16	2.16	8.78	22.7	45.9	61.5	70.7	74.0
105	1.68	6.08	18.4	32.2	45.8	59.2	62.2	58.2	43.2	30.6	16.7	5.27	2.05	6.44	18.9	32.7	41.7	55.2	60.1
110	0.84	4.29	13.9	26.9	37.4	41.4	42.1	40.8	36.4	26.3	12.7	4.26	1.90	5.07	14.7	27.6	37.6	43.0	44.6
115	0.14	3.08	10.8	21.8	30.9	36.8	38.6	36.5	30.3	20.9	10.4	3.64	1.75	4.18	11.7	22.1	31.0	36.6	38.6
120	0.06	2.37	8.52	17.3	25.0	30.3	32.0	29.8	24.2	16.6	8.34	3.16	1.59	3.58	9.24	17.5	25.2	30.2	32.0
125	0.08	1.94	6.63	13.6	20.0	24.5	25.8	24.1	19.4	13.2	6.73	2.77	1.44	3.04	7.16	13.7	20.3	24.4	26.0
130	0.10	1.64	5.20	10.7	15.7	19.7	20.6	19.4	15.4	10.4	5.44	2.42	1.30	2.64	5.85	10.7	16.2	19.3	20.8
135	0.11	1.39	4.09	8.24	12.1	15.4	16.1	15.2	12.0	8.21	4.42	1.99	1.17	2.00	4.73	8.27	12.6	15.0	16.3
140	0.13	0.68	3.23	6.31	9.45	11.8	12.3	11.6	9.49	6.37	3.57	1.09	1.03	1.02	3.81	6.56	9.37	11.2	12.5
145	0.14	0.20	2.55	4.77	7.05	8.79	9.35	8.69	7.17	4.89	2.87	0.79	0.91	0.86	3.00	5.01	7.19	8.46	9.02
150	0.15	0.18	1.88	3.56	5.15	6.37	6.78	6.31	5.28	3.70	2.26	0.64	0.80	0.75	2.37	3.81	5.32	6.20	6.59
155	0.17	0.18	1.09	2.62	3.67	4.49	4.76	4.46	3.75	2.73	1.28	0.53	0.69	0.65	0.79	2.81	3.79	4.40	4.65
160	0.19	0.19	0.21	1.73	2.49	3.05	3.22	3.04	2.45	1.71	0.39	0.42	0.59	0.56	0.50	1.26	2.52	2.99	3.15
165	0.19	0.20	0.21	0.22	1.09	1.83	1.95	1.84	1.10	0.23	0.28	0.31	0.47	0.44	0.40	0.34	0.37	1.15	1.36
170	0.21	0.21	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.35	0.33	0.32	0.32	0.31	0.31	0.31
175	0.24	0.24	0.24	0.24	0.23	0.24	0.23	0.24	0.24	0.24	0.24	0.24	0.31	0.31	0.30	0.30	0.29	0.29	0.29
180	0.27	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.27	0.27	0.27	0.27	0.27	0.26	0.26	0.26	0.26	0.26	0.26

Table--2

UNIT: cd

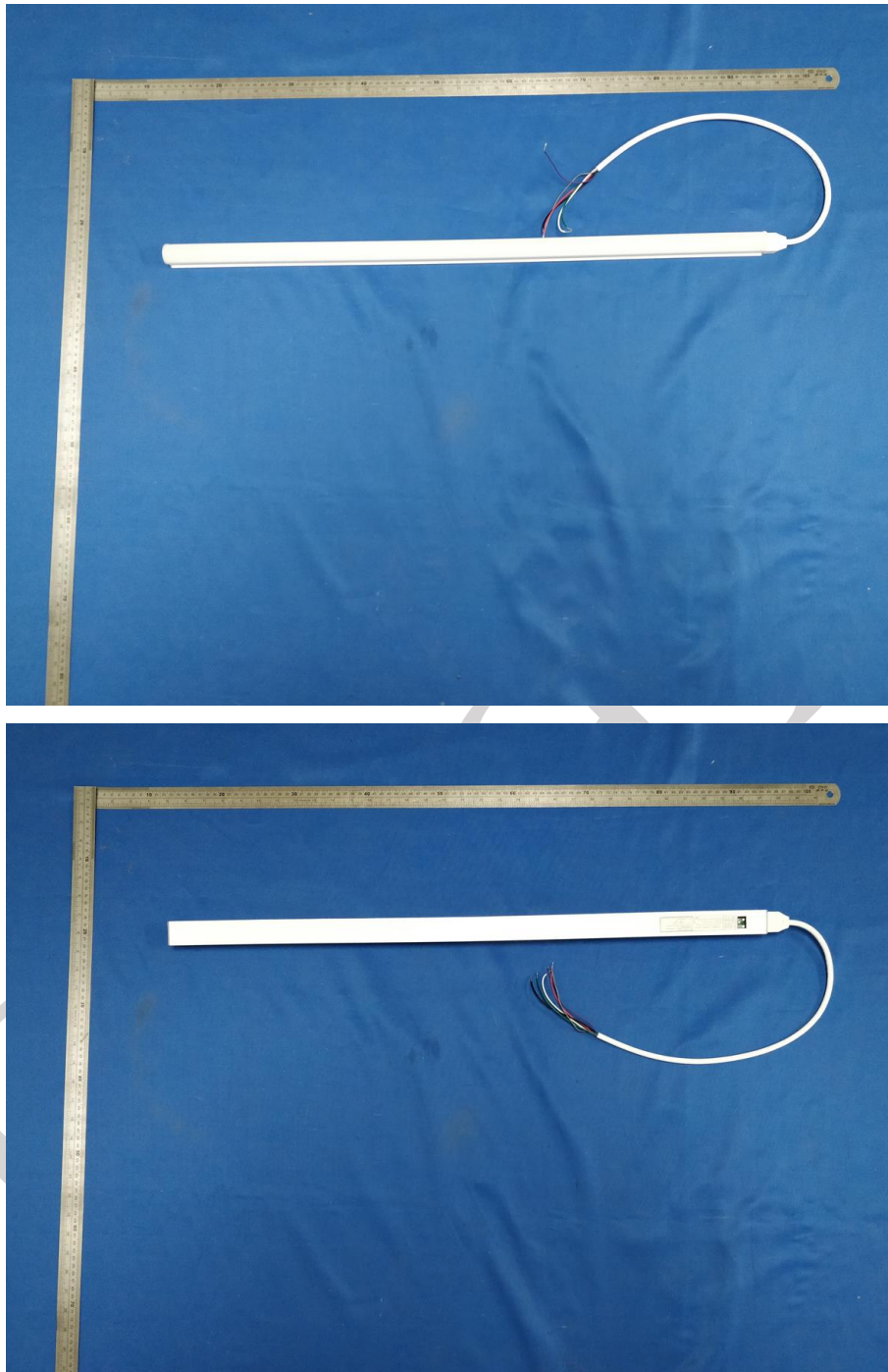
C (DEG)	285	300	315	330	345														
γ (DEG)	0	357	357	357	357														
5	356	356	356	356	356														
10	352	352	352	352	351														
15	346	346	344	344	343														
20	337	336	334	333	331														
25	326	324	321	319	317														
30	313	310	306	303	299														
35	297	294	289	284	279														
40	281	276	269	263	257														
45	262	257	248	240	233														
50	244	237	227	216	208														
55	224	216	204	191	181														
60	204	195	182	167	154														
65	185	175	160	142	127														
70	165	155	139	118	99.2														
75	147	136	118	96.2	73.2														
80	129	118	99.7	76.2	50.0														
85	113	101	82.7	58.9	31.4														
90	96.7	86.1	67.9	44.6	18.7														
95	82.8	72.6	55.3	33.6	11.4														
100	70.2	60.6	43.9	22.4	7.56														
105	54.4	41.7	31.6	17.1	5.12														
110	43.0	36.4	25.4	13.0	3.55														
115	36.2	30.1	20.2	9.81	2.47														
120	29.8	24.3	15.9	7.55	1.85														
125	24.0	19.5	12.4	5.86	1.52														
130	19.0	15.4	9.86	4.55	1.11														
135	14.7	11.9	7.50	3.64	0.24														
140	11.2	8.92	5.68	2.88	0.22														
145	8.30	6.63	4.34	2.30	0.27														
150	6.06	4.87	3.25	1.34	0.29														
155	4.29	3.48	2.38	0.32	0.31														
160	2.93	2.38	0.74	0.33	0.33														
165	0.99	0.34	0.33	0.33	0.33														
170	0.32	0.32	0.32	0.31	0.31														
175	0.29	0.29	0.30	0.29	0.29														
180	0.26	0.27	0.27	0.27	0.27														

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	0.04110	10.24	0.8996	18.21

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