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-15W-XXK-WC-[Blank, OCN]-[BAA, Blank]

Representative (Tested) Model:
RP-LBI-G1-4F-15W-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

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-15W-XXK-WC
Product Type:	Direct Linear Ambient Luminaires
Rating Input:	100-277Vac, 50/60Hz, 15W
Declared CCT:	2700K/000K/3500K
Declared Light Output:	1900 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 1st 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.:	NTCLR19110163
Remark *(If applicable)*:	N/A

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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:

1. Photometric and Electrical Measurements – Light Distribution Method:

Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at 25 °C ± 1°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° horizonal intervals.

2. Photometric and Electrical Measurements – Integrating Sphere Method:

Photometric parameters were measured using an integrating sphere, as spectroradiometer and software. The ambient temperature condition inside the sphere was measured at 25 °C± 1°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.

3. THD and PF Measurements:

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.

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Integrating Sphere Test Results:

Test Condition:

Test Ambient (°C)	Test Humidity (%)	Orientation	Stabilization Time (minute)	Test Time (minute)
25.3	41.5	Face Down	90	10

Electrical Data:

Voltage (V)	Frequency (Hz)	Current (A)	Wattage (W)	Power Factor
120.0	60	0.1237	14.73	0.9927
277.0	60	0.05750	14.60	0.9166

Output Data:

Light Output (lm)	Efficacy (lm/W)
1966.3	133.49
1975.2	135.29

Color Data:

Parameter	Result at 120V	Result at 277V
CCT(K)	2706	2713
Ra	82.8	82.8
R9	7	7
Chromaticity, x	0.4623	0.4618
Chromaticity, y	0.4157	0.4158
Chromaticity, u'	0.2618	0.2614
Chromaticity, v'	0.5297	0.5296
Duv	0.00168	0.00174

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	85	85
R3	94	94	R11	81	81
R4	80	80	R12	76	76
R5	82	82	R13	85	85
R6	93	93	R14	97	97
R7	81	81	R15	73	73
R8	57	57	-	-	-

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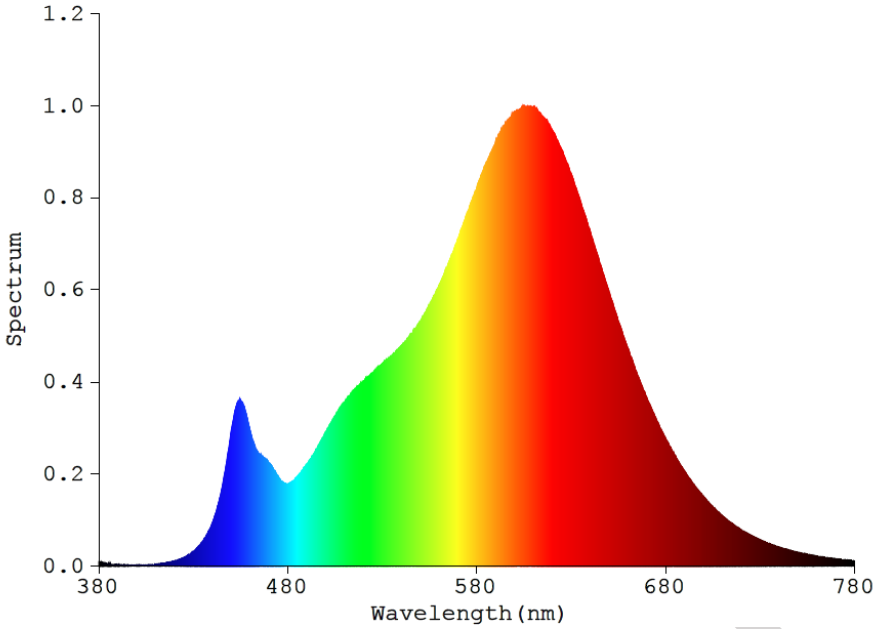
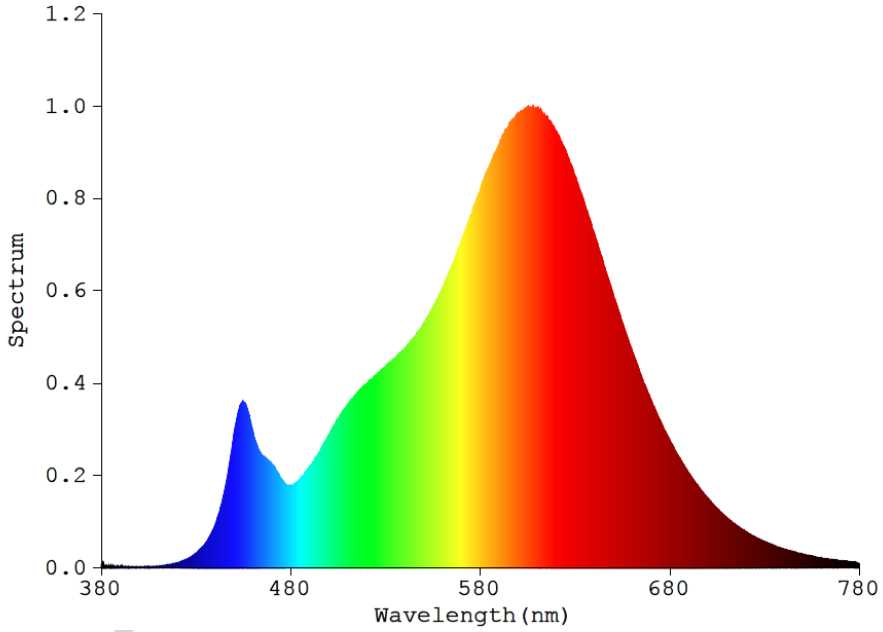
Spectrum Diagram (Result at 120V):



Spectrum Diagram (Result at 277V):



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Goniophotometer Test Results:

Test Condition:

Test Ambient (°C)	Test Humidity (%)	Orientation	Stabilization Time (minute)	Test Time (minute)
25.3	41.5	Face Down	90	25

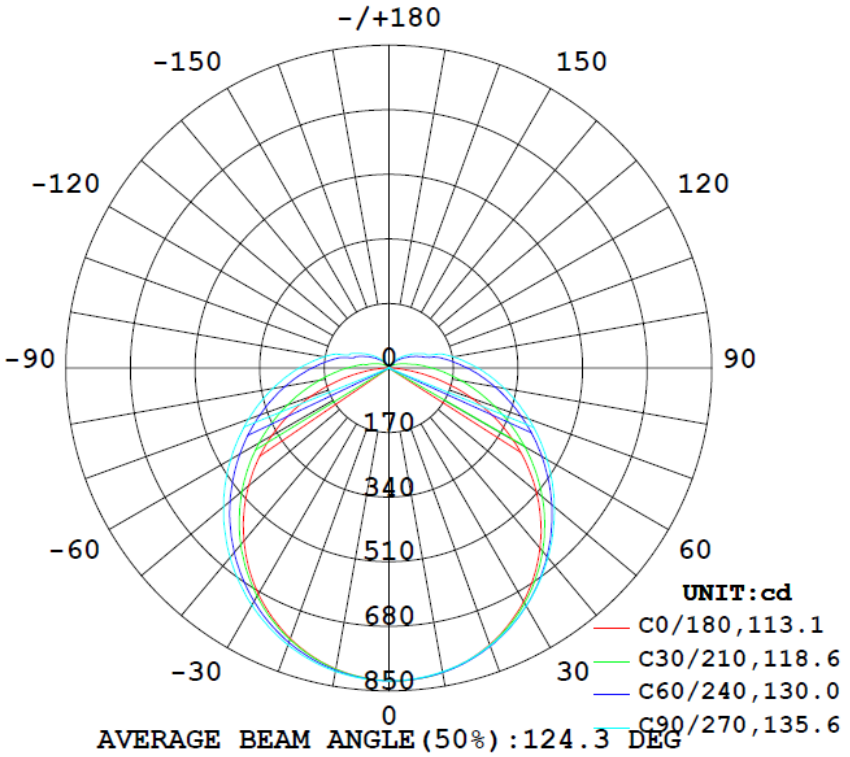
Electrical Data:

Voltage (V)	Frequency (Hz)	Current (A)	Wattage (W)	Power Factor
120.0	60	0.1237	14.73	0.9927
277.0	60	0.05750	14.60	0.9166

Goniophotometer Data:

Parameter	Results at 120V	Results at 277V
Total Luminous (lm)	1966.3	1975.2
Total Luminous per foot (lm/ft)	491.58	493.80
Luminous Efficacy (lm/w)	133.49	135.29
Zonal Lumens Distribution (0-60°)	62.5%	
Beam Angle (°)	124.3	

Luminous Intensity Distribution Diagram (Result at 120V):



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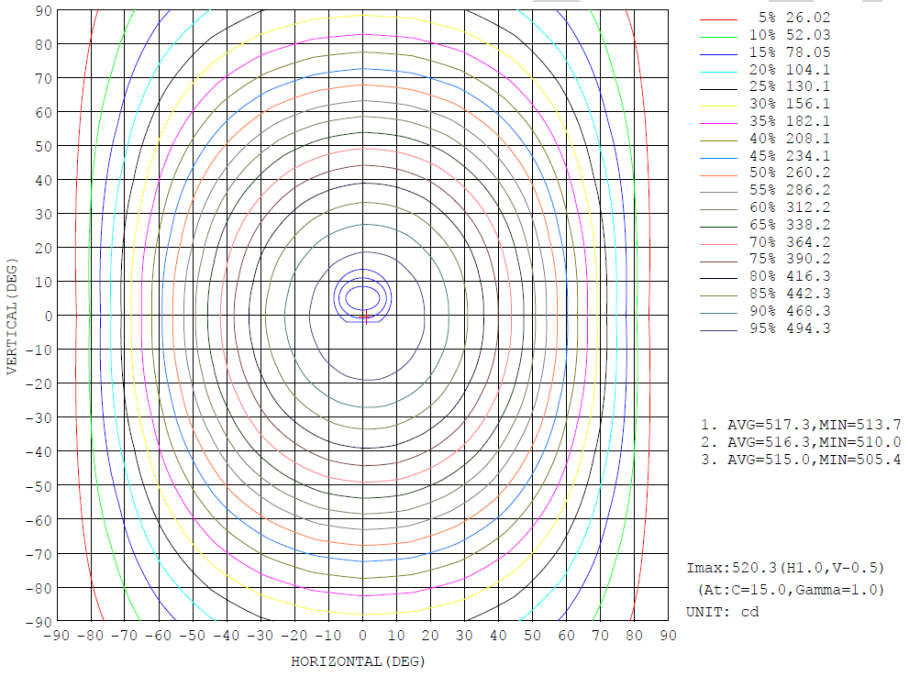
Zonal Flux Diagram (Result at 120V):

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	513.4	514.2	513.1	510.5	508.9	509.7	512.4	513.3	0- 10	49.26	49.26	2.51,2.51
20	488.6	491.8	491.6	484.7	479.9	483.3	490.1	490.3	10- 20	141.6	190.9	9.71,9.71
30	446.7	454.4	457.0	444.7	435.3	443.1	455.5	452.4	20- 30	216.6	407.5	20.7,20.7
40	389.3	404.0	412.0	392.9	376.5	391.7	410.8	402.0	30- 40	265.6	673.1	34.2,34.2
50	318.4	344.1	359.6	332.7	306.0	332.1	359.0	342.2	40- 50	284.1	957.2	48.7,48.7
60	236.3	279.4	303.5	268.6	225.4	268.8	303.6	277.4	50- 60	272.1	1229	62.5,62.5
70	146.3	214.0	247.8	204.7	139.2	206.5	248.3	212.8	60- 70	234.3	1464	74.4,74.4
80	56.89	155.3	195.2	147.7	54.71	150.1	195.2	153.7	70- 80	180.5	1644	83.6,83.6
90	5.124	106.5	148.3	100.7	3.880	103.6	148.7	105.2	80- 90	124.9	1769	90,90
100	3.749	69.91	108.7	65.85	2.788	68.10	109.3	67.89	90-100	82.73	1852	94.2,94.2
110	0.7059	41.11	65.19	39.49	2.391	41.36	68.81	40.18	100-110	50.45	1902	96.7,96.7
120	0.1429	25.55	47.51	24.37	1.931	25.87	48.34	23.30	110-120	30.48	1933	98.3,98.3
130	0.1930	15.59	30.29	15.20	1.538	15.73	30.88	14.10	120-130	17.77	1950	99.2,99.2
140	0.2418	9.200	17.87	9.171	1.194	9.269	17.98	8.258	130-140	9.405	1960	99.7,99.7
150	0.2832	5.222	9.811	5.286	0.9208	5.265	9.422	4.732	140-150	4.346	1964	99.9,99.9
160	0.3323	2.185	4.724	2.214	0.6961	2.469	4.557	2.121	150-160	1.687	1966	100,100
170	0.3794	0.3858	0.3868	0.3751	0.5181	0.5139	0.5249	0.5207	160-170	0.3628	1966	100,100
180	0.4507	0.4533	0.4493	0.4618	0.4516	0.4558	0.4515	0.4604	170-180	0.0428	1966	100,100
DEG	LUMINOUS INTENSITY:cd Less than 35% Percent = 21.2 %									UNIT:lm		

Isocandela Diagram (Result at 120V):



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Luminous Distribution Intensity Data (Result at 120V):

Table--1 UNIT: cd

γ (DEG) \ C (DEG)	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270
0	520	520	520	520	520	520	520	520	520	520	520	520	520	520	520	520	520	520	520
5	519	519	519	519	519	519	519	518	518	517	517	517	517	517	517	517	517	518	518
10	513	514	514	514	514	514	513	512	511	510	509	509	509	508	509	510	511	511	512
15	503	504	504	505	505	505	504	503	501	499	497	497	496	496	497	498	500	501	503
20	489	490	490	492	492	493	492	490	487	485	481	480	480	480	481	483	486	488	490
25	470	471	472	475	476	477	476	474	470	466	462	460	459	459	462	465	469	472	474
30	447	449	451	454	456	458	457	455	449	445	439	436	435	435	439	443	448	452	455
35	420	423	425	431	434	437	436	433	426	420	412	408	407	408	413	419	426	430	434
40	389	393	397	404	409	413	412	408	401	393	383	378	376	377	384	392	400	406	411
45	355	360	366	375	382	387	386	382	373	364	352	345	343	344	353	363	373	381	386
50	318	324	332	344	353	359	360	355	345	333	318	309	306	309	320	332	345	354	359
55	279	285	297	312	324	331	332	327	315	301	283	271	267	271	285	301	316	326	332
60	236	245	260	279	293	303	304	298	285	269	247	231	225	232	250	269	287	298	304
65	192	203	223	247	263	274	276	270	256	236	212	191	183	192	214	237	257	269	276
70	146	161	187	214	234	246	248	242	227	205	177	150	139	152	180	207	228	242	248
75	100	120	153	184	206	218	221	214	199	175	144	111	95.7	114	147	177	200	215	221
80	56.9	83.7	122	155	179	192	195	189	173	148	114	76.1	54.7	79.0	117	150	174	190	195
85	21.3	53.7	94.5	129	154	167	171	164	148	123	87.2	47.4	21.3	50.9	91.5	126	150	166	171
90	5.12	32.7	72.1	107	131	144	148	142	126	101	65.8	27.7	3.88	31.2	70.1	104	128	143	149
95	4.55	20.0	54.4	86.7	110	123	128	121	106	81.8	49.2	16.2	2.94	18.4	53.2	84.3	108	123	128
100	3.75	12.8	37.1	69.9	91.5	105	109	103	88.2	65.8	32.7	10.4	2.79	12.2	35.4	68.1	90.6	104	109
105	2.02	8.52	28.4	50.5	69.6	86.9	90.8	85.3	66.1	47.2	25.7	7.63	2.61	9.14	28.3	50.0	65.4	83.5	90.0
110	0.71	5.93	21.3	41.1	56.9	64.1	65.2	62.6	54.8	39.5	19.3	6.08	2.39	6.84	21.9	41.4	56.9	65.7	68.8
115	0.15	4.27	16.1	32.6	46.5	55.2	57.8	54.4	45.1	30.9	15.1	5.07	2.16	5.70	17.1	32.9	46.6	55.4	58.7
120	0.14	3.32	12.4	25.5	37.3	45.1	47.5	44.2	36.0	24.4	11.9	4.37	1.93	4.78	13.4	25.9	37.6	45.4	48.3
125	0.17	2.74	9.79	20.1	29.6	36.2	38.2	35.6	28.7	19.4	9.72	3.79	1.72	4.07	10.2	20.2	30.0	36.5	39.0
130	0.19	2.32	7.66	15.6	23.1	28.7	30.3	28.2	22.6	15.2	7.81	3.29	1.54	3.51	8.17	15.7	23.6	28.8	30.9
135	0.22	1.69	6.03	12.0	17.8	22.3	23.5	22.0	17.5	11.9	6.28	2.40	1.36	3.00	6.57	11.3	18.5	22.3	23.9
140	0.24	0.43	4.77	9.20	13.4	17.1	17.9	16.8	13.3	9.17	5.04	1.15	1.19	1.77	5.19	9.27	13.2	16.6	18.0
145	0.27	0.32	3.78	6.97	10.2	12.7	13.2	12.6	10.2	7.01	4.02	0.87	1.05	1.01	4.16	7.08	10.1	11.8	13.0
150	0.28	0.31	2.87	5.22	7.50	9.24	9.81	9.16	7.54	5.29	3.03	0.73	0.92	0.88	3.21	5.27	7.47	8.89	9.42
155	0.31	0.32	1.07	3.87	5.38	6.54	6.92	6.49	5.40	3.91	1.30	0.61	0.81	0.78	1.85	3.90	5.34	6.33	6.68
160	0.33	0.34	0.35	2.19	3.72	4.48	4.72	4.47	3.68	2.21	0.44	0.49	0.70	0.67	0.61	2.47	3.65	4.34	4.56
165	0.35	0.35	0.36	0.37	1.11	2.37	2.71	2.40	1.19	0.36	0.35	0.37	0.56	0.55	0.52	0.53	1.58	2.56	2.75
170	0.38	0.38	0.39	0.39	0.39	0.39	0.39	0.37	0.37	0.38	0.38	0.38	0.52	0.52	0.51	0.51	0.52	0.53	0.52
175	0.41	0.41	0.42	0.42	0.42	0.42	0.41	0.41	0.41	0.41	0.41	0.41	0.50	0.50	0.50	0.50	0.49	0.49	0.49
180	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.46	0.46	0.46	0.46	0.45	0.45	0.45	0.46	0.45	0.45	0.45

Table--2 UNIT: cd

γ (DEG) \ C (DEG)	285	300	315	330	345
0	520	520	520	520	520
5	518	519	519	519	519
10	513	513	513	514	514
15	504	504	504	504	504
20	491	491	490	490	489
25	475	475	473	472	471
30	456	455	452	451	448
35	434	433	429	426	422
40	410	408	402	397	392
45	385	381	373	366	358
50	358	353	342	332	322
55	330	323	310	297	284
60	301	293	277	261	244
65	273	263	245	223	201
70	245	233	213	187	159
75	218	205	182	152	118
80	192	178	154	121	80.7
85	167	153	128	93.2	50.4
90	145	130	105	70.6	29.8
95	124	110	85.1	52.9	17.7
100	105	91.4	67.9	36.7	10.6
105	83.5	66.8	50.4	27.3	6.30
110	66.4	56.8	40.2	19.1	3.89
115	55.5	46.5	31.3	12.9	3.32
120	45.4	37.3	23.3	11.2	2.77
125	36.4	29.2	17.9	8.70	2.24
130	28.6	22.2	14.1	6.70	1.93
135	21.5	17.2	10.9	5.35	1.23
140	16.2	13.1	8.26	4.31	0.43
145	11.6	9.47	6.30	3.44	0.45
150	8.70	7.01	4.73	2.62	0.47
155	6.20	5.02	3.47	1.04	0.50
160	4.25	3.47	2.12	0.54	0.53
165	2.42	1.28	0.54	0.53	0.53
170	0.54	0.53	0.52	0.52	0.52
175	0.50	0.50	0.50	0.49	0.50
180	0.46	0.46	0.46	0.46	0.46

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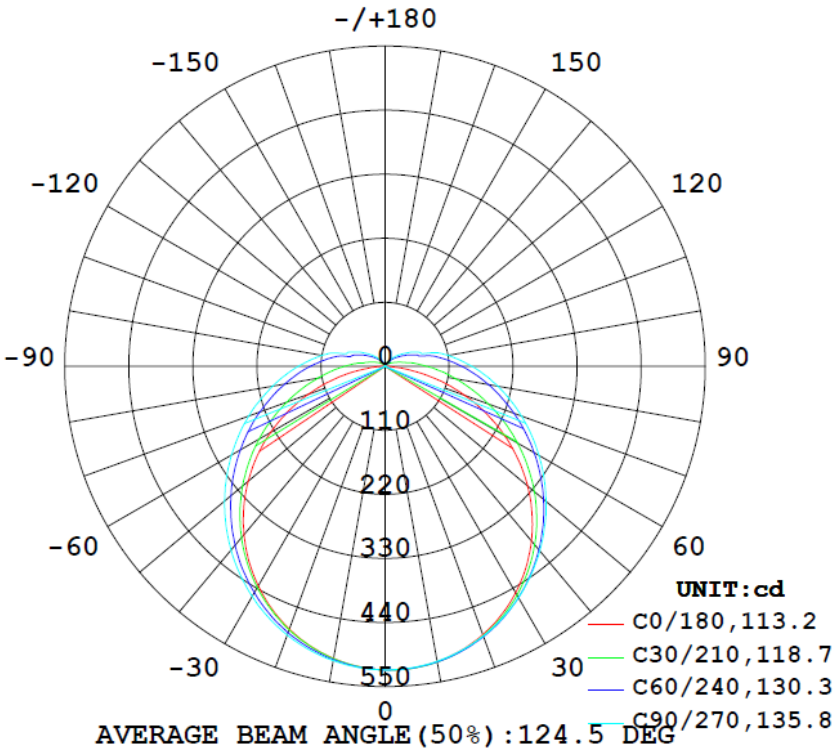
Luminous Intensity Distribution Diagram (Result at 277V):

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



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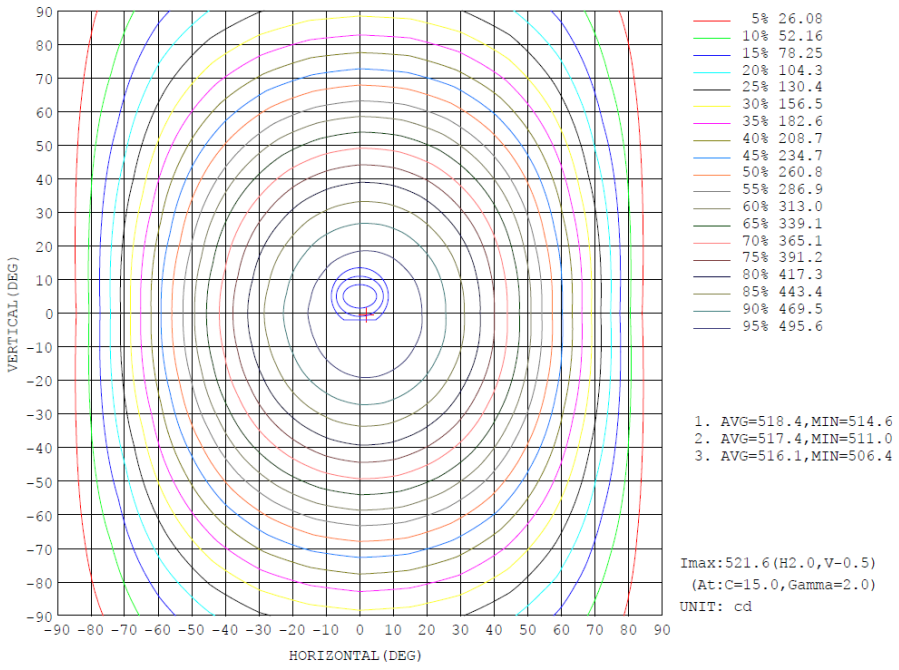
Zonal Flux Diagram (Result at 277V):

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	514.9	515.7	514.2	511.0	509.3	510.2	513.3	515.0	0- 10	49.36	49.36	2.5,2.5
20	490.5	493.8	492.9	484.9	480.4	483.6	491.2	492.4	10- 20	142.0	191.3	9.69,9.69
30	448.9	456.7	458.4	444.7	435.6	443.3	456.5	455.0	20- 30	217.2	408.5	20.7,20.7
40	391.2	406.5	413.5	392.7	377.1	391.7	411.8	404.7	30- 40	266.4	674.9	34.2,34.2
50	319.8	346.6	361.1	332.7	307.0	332.2	359.9	344.8	40- 50	285.1	960.0	48.6,48.6
60	236.8	281.5	305.3	268.8	227.1	269.1	304.6	279.8	50- 60	273.2	1233	62.4,62.4
70	145.8	215.9	249.3	204.9	140.7	206.9	249.1	214.8	60- 70	235.5	1469	74.4,74.4
80	55.63	156.8	196.7	147.9	56.46	150.6	196.1	155.3	70- 80	181.5	1650	83.5,83.5
90	4.457	107.7	149.5	101.1	4.658	104.2	149.5	106.3	80- 90	125.8	1776	89.9,89.9
100	3.297	70.66	109.7	66.21	3.309	68.60	109.8	68.63	90-100	83.37	1859	94.1,94.1
110	0.6330	41.63	65.89	39.83	2.835	41.75	69.40	40.70	100-110	50.94	1910	96.7,96.7
120	0.1495	25.90	48.09	24.65	2.293	26.17	48.65	23.65	110-120	30.85	1941	98.3,98.3
130	0.1996	15.80	30.68	15.40	1.817	15.94	31.05	14.24	120-130	17.99	1959	99.2,99.2
140	0.2492	9.318	18.12	9.308	1.392	9.405	18.07	8.341	130-140	9.528	1969	99.7,99.7
150	0.2896	5.293	9.897	5.369	1.046	5.339	9.449	4.779	140-150	4.403	1973	99.9,99.9
160	0.3391	2.211	4.795	2.217	0.7589	2.491	4.567	2.160	150-160	1.710	1975	100,100
170	0.3865	0.3941	0.3953	0.3827	0.5263	0.5217	0.5315	0.5300	160-170	0.3676	1975	100,100
180	0.4606	0.4599	0.4570	0.4723	0.4609	0.4637	0.4604	0.4713	170-180	0.0436	1975	100,100
DEG	LUMINOUS INTENSITY:cd Less than 35% Percent = 21.2 %									UNIT:lm		

Isocandela Diagram (Result at 277V):



Laboratory: Dongguan New Testing Centre Co., Ltd
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Luminous Distribution Intensity Data (Result at 277V):

Table--1 UNIT: cd

γ (DEG) \ C (DEG)	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270
0	521	521	521	521	521	521	521	521	521	521	521	521	521	521	521	521	521	521	521
5	520	521	521	521	520	520	520	519	519	518	518	517	518	517	518	518	518	519	519
10	515	516	516	516	515	515	514	513	512	511	510	509	509	509	510	510	511	512	513
15	505	506	506	507	506	506	505	504	502	500	498	497	497	496	497	499	501	502	504
20	491	492	493	494	494	494	493	491	488	485	482	480	480	480	482	484	487	489	491
25	472	474	475	477	478	479	477	474	470	466	462	460	460	459	462	465	469	473	475
30	449	452	453	457	458	460	458	455	450	445	439	436	436	435	439	443	449	453	456
35	422	426	428	433	436	438	437	433	427	420	413	408	408	407	413	419	426	431	435
40	391	396	400	407	411	414	413	409	401	393	383	378	377	377	384	392	401	408	412
45	357	363	368	378	384	388	388	383	374	363	352	345	343	344	353	363	374	382	387
50	320	326	335	347	355	361	361	356	345	333	318	309	307	308	319	332	346	355	360
55	280	288	299	314	326	333	333	327	316	301	283	271	268	271	285	301	317	327	332
60	237	247	263	282	295	304	305	299	286	269	248	232	227	232	250	269	287	299	305
65	192	204	226	249	265	276	277	270	256	237	212	191	184	192	214	238	258	271	277
70	146	162	189	216	236	247	249	243	227	205	177	151	141	152	180	207	229	243	249
75	101	121	155	185	207	219	222	215	200	175	144	112	97.4	114	147	178	201	216	222
80	55.6	84.3	124	157	180	193	197	189	174	148	114	76.7	56.5	79.4	118	151	175	191	196
85	20.0	54.0	96.5	131	155	168	172	165	149	123	87.8	48.0	22.8	51.4	91.9	126	151	167	172
90	4.46	32.8	72.9	108	132	145	150	142	127	101	66.5	28.2	4.66	31.7	70.5	104	129	144	149
95	4.00	19.9	54.9	87.6	111	124	129	122	107	82.2	49.8	16.8	3.51	18.9	53.6	84.8	109	124	129
100	3.30	12.6	37.5	70.7	92.5	106	110	103	88.8	66.2	33.1	10.9	3.31	12.7	35.8	68.6	91.1	105	110
105	1.82	8.47	28.7	51.2	70.4	87.6	91.8	85.5	66.8	47.6	26.1	8.09	3.09	9.60	28.7	50.4	65.8	84.2	90.3
110	0.63	5.94	21.6	41.6	57.5	64.9	65.9	63.2	55.3	39.8	19.7	6.50	2.84	7.24	22.1	41.8	57.3	66.2	69.4
115	0.15	4.30	16.4	33.0	47.0	55.8	58.5	54.7	45.5	31.2	15.5	5.46	2.56	6.07	17.5	33.3	47.0	55.8	59.1
120	0.15	3.36	12.6	25.9	37.8	45.6	48.1	44.5	36.3	24.7	12.2	4.71	2.29	5.11	13.7	26.2	37.9	45.8	48.7
125	0.17	2.78	9.94	20.3	29.9	36.6	38.7	35.8	29.0	19.6	10.00	4.09	2.04	4.37	10.5	20.4	30.2	36.8	39.2
130	0.20	2.36	7.79	15.8	23.4	29.0	30.7	28.3	22.9	15.4	8.05	3.56	1.82	3.77	8.38	15.9	23.7	29.1	31.1
135	0.23	1.73	6.13	12.2	18.0	22.4	23.8	22.0	17.7	12.0	6.49	2.62	1.60	3.22	6.75	11.4	18.6	22.5	24.0
140	0.25	0.44	4.84	9.32	13.6	17.2	18.1	16.9	13.5	9.31	5.21	1.33	1.39	1.96	5.35	9.41	13.3	16.8	18.1
145	0.27	0.32	3.84	7.06	10.2	12.8	13.4	12.6	10.3	7.12	4.16	1.03	1.21	1.16	4.28	7.18	10.2	11.9	13.0
150	0.29	0.31	2.92	5.29	7.58	9.32	9.90	9.20	7.62	5.37	3.14	0.84	1.05	0.99	3.30	5.34	7.52	8.96	9.45
155	0.32	0.33	1.10	3.91	5.44	6.59	7.02	6.53	5.46	3.96	1.38	0.69	0.90	0.86	1.91	3.95	5.38	6.39	6.70
160	0.34	0.35	0.36	2.21	3.76	4.52	4.79	4.49	3.72	2.22	0.47	0.54	0.76	0.71	0.65	2.49	3.68	4.38	4.57
165	0.35	0.36	0.37	0.38	1.12	2.37	2.77	2.38	1.23	0.37	0.36	0.39	0.59	0.56	0.53	0.54	1.60	2.60	2.74
170	0.39	0.39	0.39	0.39	0.40	0.39	0.40	0.38	0.38	0.38	0.39	0.38	0.53	0.53	0.52	0.52	0.53	0.54	0.53
175	0.42	0.42	0.42	0.43	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.51	0.51	0.51	0.51	0.50	0.50	0.50
180	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.47	0.47	0.47	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46

Table--2 UNIT: cd

γ (DEG) \ C (DEG)	285	300	315	330	345
0	521	521	521	521	521
5	520	520	520	521	521
10	514	515	515	516	515
15	505	506	506	506	506
20	492	493	492	492	492
25	477	477	475	475	473
30	458	457	455	453	451
35	436	435	431	428	424
40	413	410	405	400	394
45	387	383	376	369	361
50	360	355	345	335	325
55	332	325	313	299	286
60	303	295	280	263	245
65	275	265	247	225	203
70	247	236	215	188	160
75	219	206	184	153	119
80	193	179	155	121	81.0
85	169	154	129	93.7	50.4
90	146	131	106	71.0	29.6
95	125	111	86.0	53.1	17.3
100	106	92.2	68.6	36.9	10.2
105	84.8	67.5	51.0	27.4	6.22
110	67.3	57.4	40.7	19.0	3.93
115	56.2	47.0	31.7	13.1	3.34
120	46.0	37.6	23.6	11.2	2.79
125	36.9	29.5	18.1	8.75	2.26
130	29.0	22.2	14.2	6.74	1.95
135	21.8	17.3	10.9	5.39	1.23
140	16.4	13.1	8.34	4.34	0.43
145	11.8	9.54	6.37	3.47	0.45
150	8.80	7.06	4.78	2.64	0.48
155	6.27	5.06	3.51	1.04	0.51
160	4.31	3.50	2.16	0.55	0.53
165	2.49	1.27	0.55	0.54	0.54
170	0.55	0.54	0.53	0.53	0.52
175	0.50	0.51	0.51	0.51	0.51
180	0.47	0.47	0.47	0.47	0.46

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	0.05750	14.60	0.9166	12.37

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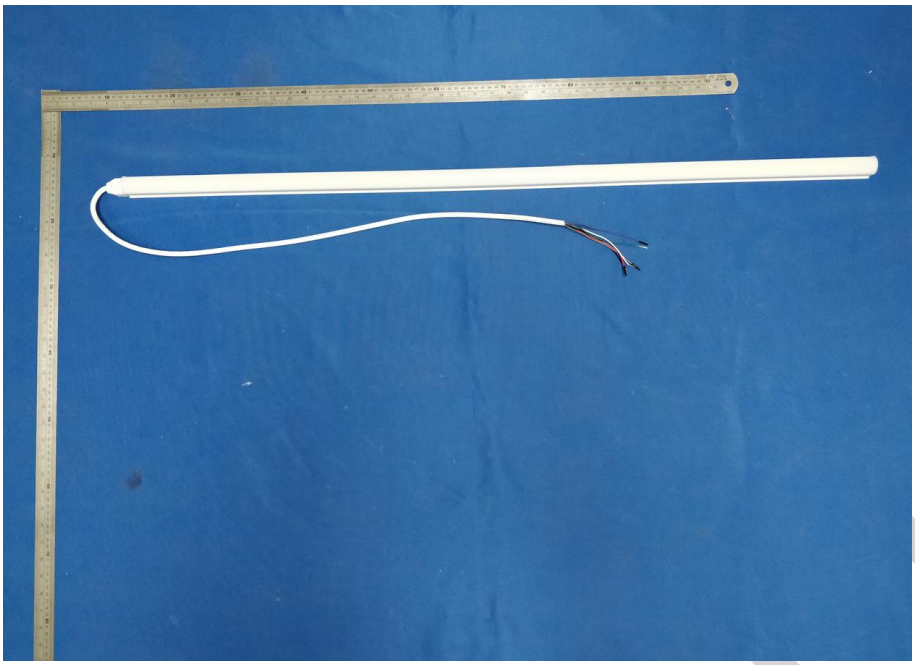
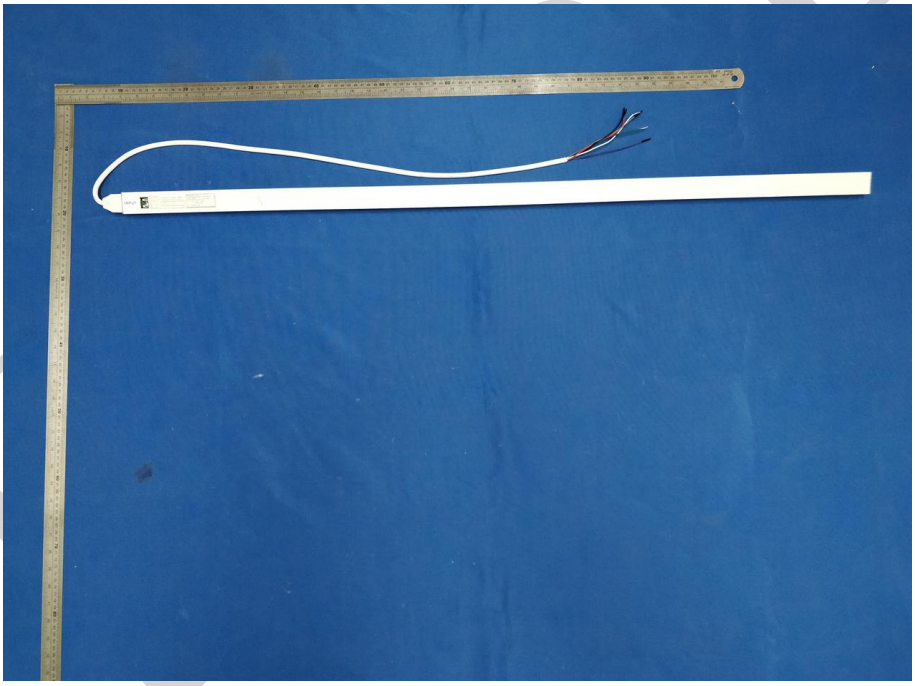
Photo of Sample:





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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************

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