

## LM-79-08 Test Report

For

### ELEC-TECH INTERNATIONAL CO LTD

No.1 Jinfeng Road, Tangjiawan Town, Xiangzhou District, Zhuhai City, Guangdong  
Province, P.R. China 519085

### LED High Bay Light

Model name(s):

502287##

Representative (Tested) Model:

50228761

**Model Difference:** ##=61-70 intends CCT is 5000K.

Prepare By:



Engineer: Leo Liu

Date: 2018-05-09

Review By:



Technical Lead: Vincent Yuan

Date: 2018-05-10

Note: This report does not imply product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

**Product Information:**

Client Name:	ELEC-TECH INTERNATIONAL CO LTD
Brand Name:	ETI
Model Number:	502287## (##=61-70)
Product type:	High Bay Luminaires for Commercial and Industrial Buildings
Rating Input:	AC120-277V, 50/ 60Hz, 185W
Declared CCT:	5000K
Declared Light output:	24000 lm
LED Manufacturer:	Samsung
LED Model:	SPMWHX228FD5XXXXXX
LED Quantity:	845 pcs
Forward current of LED Chip:	160mA
Driver Manufacturer:	Sosen
Driver Model:	SS-200V-285B
Date of Receipt Samples:	2018-04-20
Quantity of Receipt Samples:	2
Sample Number:	180420002-S1

**Laboratory Information:**

Test Laboratory:	Dongguan New Testing Centre Co., Ltd
Laboratory Address:	3F, No. 1 the 1 <sup>st</sup> 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:	2018-05-10
Revised Date of Test Report:	N/A
Test Report No.:	NTCR18050029
Remark (If applicable)	The product can be field-adjustable, the default wattage is 185W.

<b>Test Specifications:</b>	
Date of Test	2018-04-20
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 C78.377-2008 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

<b>Test Methods</b>
<p><b>1. Photometric and Electrical measurements – Light Distribution Method:</b></p> <p>Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at <math>25^{\circ}\text{C} \pm 1^{\circ}\text{C}</math>, 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 120 Volts AC, 60Hz. It was stabilized before measurement was made. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at <math>1^{\circ}</math> vertical intervals and <math>22.5^{\circ}</math> Vertical intervals.</p>
<p><b>2. Photometric and Electrical Measurements – Integrating Sphere Method:</b></p> <p>Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at <math>25^{\circ}\text{C} \pm 1^{\circ}\text{C}</math>. 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 120 Volts AC, 60Hz. 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 5 nm intervals over the range of 380 to 780 nm.</p>
<p><b>3. THD and PF measurements</b></p> <p>The sample was tested according to the ANSI C82.77-2002, the sample was operated at rated voltage and was stabilized before measurement. The total harmonic distortion were calculated from the digital power meter.</p>

**Integrating Sphere Test Results (Test with Min. wattage)**

**Test Condition:**

Test Ambient	Test Humidity	Orientation	Stabilization Time	Test Time
25.1	40	Face Down	90	25

**Electrical Data:**

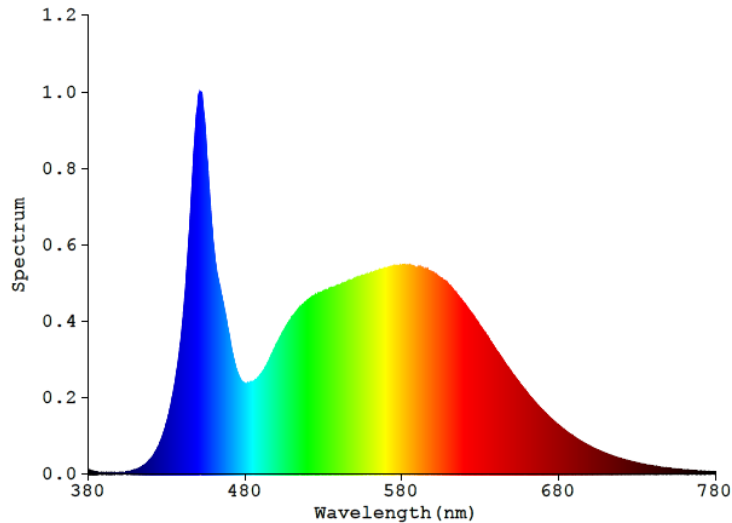
Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
120.0	60	1.188	142.0	0.9959

**Color Data:**

Parameter	Result
CCT (K)	5227
Color Rendering Index (CRI)	84.9
R9	19
Chromaticity, x	0.3389
Chromaticity, y	0.3459
Chromaticity u'	0.2095
Chromaticity v'	0.4809
Duv	-0.00036

Special Color Rendering			
R1	84	R9	19
R2	90	R10	74
R3	92	R11	84
R4	85	R12	64
R5	85	R13	85
R6	85	R14	96
R7	88	R15	80
R8	71	-	-

**Spectrum Diagram:**



**Goniophotometer Test Results (Test with Min. Wattage):**

**Test Condition:**

Test Ambient	Test Humidity	Orientation	Stabilization Time	Test Time
25.1	43	Face Down	90	25

**Electrical Data:**

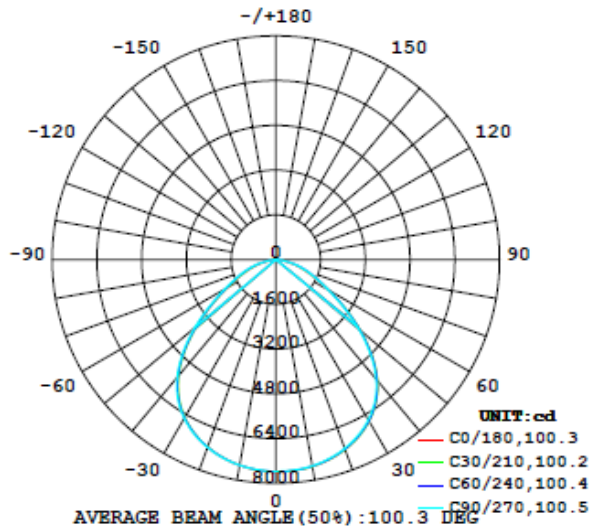
Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
120.0	60	1.188	142.0	0.9959

**Goniophotometer Data:**

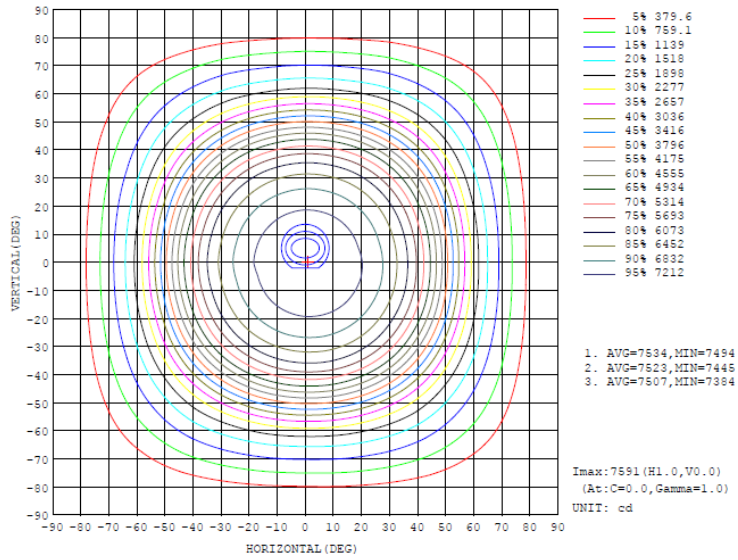
Parameter	Result
Total Luminous (lm)	18446.2
Total Luminous per foot (lm/ft)	N/A
Luminous Efficacy (lm/w)	129.9
Zonal Lumens Distribution (20-50°)	57.7%
Beam Angle (°)	100.4

**Luminous Intensity Distribution Diagram:**

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



**Isocandela Diagram:**



**Zonal Flux Diagram:**

ZONAL FLUX DIAGRAM:

y	C0	C45	C90	C135	C180	C225	C270	C315	y	● none	● total	lum, lamp
10	7512	7503	7495	7455	7470	7461	7470	7476	0- 10	718.2	718.2	2.89, 9.89
20	7226	7222	7184	7194	7142	7127	7155	7181	10- 20	2076	2795	15.1, 15.1
30	6671	6666	6607	6538	6530	6516	6563	6613	20- 30	3188	5982	32.4, 32.4
40	5641	5644	5563	5462	5435	5423	5508	5587	30- 40	3325	9808	53.2, 53.2
50	3926	3945	3858	3747	3709	3696	3806	3898	40- 50	3626	12443	72.9, 72.9
60	2145	2211	2154	2089	2019	2054	2127	2191	50- 60	2611	16054	87.87
70	1049	1162	1154	1096	994.1	1069	1151	1188	60- 70	1546	17600	95.4, 95.4
80	281.0	368.3	361.0	308.4	232.8	288.4	364.2	337.6	70- 80	747.7	18348	99.5, 99.5
90	0.0408	0.0012	0.1029	0.0386	0.0744	0.0562	0.0188	0.1166	80- 90	90.87	18438	100, 100
100	0.2712	0.4989	0.8264	0.5618	0.2742	0.4621	0.8511	0.4075	90-100	0.2472	18428	100, 100
110	0.6891	0.9657	1.342	1.026	0.7289	0.7928	1.170	0.7288	100-110	0.7664	18429	100, 100
120	0.8586	1.409	1.641	1.453	0.9722	1.312	1.859	1.182	110-120	1.116	18440	100, 100
130	1.111	1.864	2.212	1.872	1.068	1.562	1.846	1.499	120-130	1.285	18442	100, 100
140	0.9013	2.275	2.586	2.275	1.461	2.422	2.250	2.213	130-140	1.461	18443	100, 100
150	1.957	2.289	2.493	2.133	1.304	2.481	2.750	2.529	140-150	1.347	18444	100, 100
160	1.832	1.975	2.174	2.593	1.927	2.346	2.319	2.164	150-160	1.080	18445	100, 100
170	1.167	2.104	1.910	2.270	1.617	1.923	1.669	2.210	160-170	0.6206	18446	100, 100
180	1.879	1.503	1.785	1.554	1.869	1.802	1.783	1.657	170-180	0.1332	18446	100, 100
DEG	LUMINOUS INTENSITY:cd Less than 25% Percent = 9.5 %									UNIT:lm		

**Luminous Distribution Intensity Data:**

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	7591	7583	7580	7580	7576	7570	7567	7567	7563	7561	7560	7557	7559	7583	7580	7580	7576	7570	7567
5	7577	7572	7571	7566	7561	7555	7553	7545	7536	7535	7530	7521	7554	7551	7547	7541	7546	7543	7539
10	7512	7513	7509	7503	7501	7493	7485	7475	7465	7455	7448	7440	7470	7464	7463	7461	7464	7463	7470
15	7398	7405	7397	7394	7383	7374	7362	7348	7338	7325	7314	7304	7339	7325	7327	7325	7331	7331	7339
20	7226	7235	7226	7222	7212	7197	7184	7169	7152	7134	7121	7111	7142	7128	7127	7127	7140	7141	7155
25	6990	7002	6989	6984	6971	6956	6936	6918	6893	6879	6861	6850	6880	6860	6867	6866	6875	6886	6900
30	6671	6684	6674	6666	6653	6634	6607	6586	6557	6538	6515	6503	6530	6507	6512	6516	6537	6548	6563
35	6235	6252	6241	6233	6221	6198	6165	6140	6104	6081	6052	6036	6067	6031	6043	6053	6078	6091	6115
40	5641	5670	5652	5644	5628	5604	5563	5532	5492	5462	5427	5409	5435	5395	5408	5423	5454	5480	5508
45	4859	4892	4876	4870	4847	4826	4778	4743	4700	4664	4625	4605	4628	4582	4600	4614	4650	4680	4721
50	3936	3972	3950	3945	3926	3904	3858	3825	3782	3747	3709	3687	3709	3662	3683	3696	3735	3763	3806
55	2980	3022	3016	3012	2996	2976	2937	2911	2875	2846	2813	2779	2790	2750	2783	2801	2831	2853	2896
60	2145	2186	2195	2211	2195	2184	2154	2137	2108	2089	2044	2017	2019	1982	2032	2054	2077	2096	2127
65	1513	1556	1569	1614	1604	1603	1575	1573	1546	1534	1471	1435	1429	1408	1457	1494	1536	1539	1568
70	1049	1088	1114	1163	1179	1178	1154	1150	1129	1096	1036	1002	994	983	1029	1069	1124	1128	1151
75	658	698	717	761	779	784	760	757	731	699	647	616	611	600	646	680	730	743	762
80	281	316	328	368	382	385	361	359	337	308	262	239	233	226	263	288	336	346	364
85	19.2	29.6	50.8	63.1	63.4	63.0	57.1	48.6	48.4	41.8	16.6	19.9	19.4	14.3	27.2	37.4	64.4	50.0	48.3
90	0.04	0.00	0.06	0.00	0.09	0.03	0.10	0.04	0.04	0.04	0.05	0.03	0.07	0.06	0.06	0.06	0.03	0.03	0.02
95	0.10	0.07	0.18	0.14	0.14	0.21	0.29	0.26	0.18	0.23	0.29	0.11	0.15	0.13	0.18	0.23	0.25	0.24	0.38
100	0.27	0.28	0.42	0.50	0.58	0.72	0.84	0.74	0.61	0.56	0.48	0.36	0.27	0.32	0.34	0.46	0.58	0.70	0.85
105	0.49	0.52	0.65	0.73	0.83	0.97	1.15	1.04	0.88	0.76	0.70	0.61	0.51	0.52	0.52	0.63	0.75	0.98	1.02
110	0.69	0.77	0.86	0.97	1.04	1.20	1.34	1.25	1.10	1.03	0.89	0.83	0.74	0.72	0.70	0.79	0.96	1.22	1.17
115	0.84	0.99	1.08	1.19	1.25	1.43	1.50	1.45	1.32	1.25	1.11	1.01	0.95	0.92	0.87	1.06	1.22	1.40	1.35
120	0.86	1.07	1.28	1.41	1.51	1.67	1.64	1.68	1.56	1.45	1.29	1.06	0.97	0.93	0.88	1.31	1.50	1.54	1.56
125	0.88	0.97	1.29	1.73	1.80	1.89	1.88	1.89	1.83	1.78	1.20	1.13	0.89	0.75	0.99	1.46	1.74	1.77	1.74
130	1.11	1.36	1.66	1.86	2.12	2.12	2.21	2.13	2.11	1.87	1.61	1.37	1.07	1.00	1.46	1.56	2.02	2.05	1.85
135	1.27	1.48	1.79	1.99	2.22	2.45	2.44	2.42	2.21	1.99	1.83	1.54	1.36	1.58	1.82	1.95	2.19	2.31	2.23
140	0.90	1.59	1.54	2.28	2.25	2.43	2.59	2.46	2.24	2.28	1.63	1.67	1.46	1.88	1.69	2.42	2.42	2.23	2.25
145	1.08	1.67	1.90	2.59	2.52	2.51	2.39	2.49	2.53	2.57	1.72	1.46	1.11	1.75	1.72	2.42	2.65	2.49	2.51
150	1.96	2.38	2.49	2.39	2.71	2.22	2.49	2.53	2.71	2.13	2.06	1.64	1.30	2.12	2.14	2.48	2.89	3.01	2.76
155	2.07	2.56	2.53	2.33	1.90	2.18	2.63	2.80	2.51	2.53	2.14	1.89	1.05	2.12	2.35	2.59	2.82	2.76	2.56
160	1.83	2.30	2.02	1.97	2.02	2.15	2.17	2.44	2.53	2.59	2.23	2.06	1.93	2.10	2.52	2.35	2.51	2.67	2.32
165	1.51	1.94	1.91	1.89	2.29	2.53	2.12	2.65	2.61	2.44	2.39	2.31	2.10	2.57	2.68	2.49	2.20	2.45	1.92
170	1.17	1.67	1.77	2.10	2.09	1.94	1.91	2.09	2.24	2.27	2.06	1.67	1.62	1.77	1.85	1.92	2.04	2.21	1.67
175	0.89	1.14	1.45	1.43	1.42	1.43	1.55	1.80	1.82	1.73	1.58	1.51	1.42	1.16	1.35	1.49	1.67	1.51	1.22
180	1.88	1.74	1.55	1.50	1.41	1.60	1.78	1.51	1.56	1.56	1.71	1.74	1.87	1.74	1.55	1.50	1.41	1.60	1.78

Table--2 UNIT: cd

C (DEG)	285	300	315	330	345
0	7567	7563	7561	7560	7557
5	7543	7544	7541	7541	7539
10	7470	7473	7476	7479	7476
15	7342	7353	7357	7365	7365
20	7162	7171	7181	7188	7192
25	6908	6929	6939	6951	6958
30	6576	6597	6613	6630	6639
35	6134	6161	6176	6200	6212
40	5532	5566	5587	5610	5623
45	4748	4787	4812	4841	4848
50	3833	3874	3898	3927	3933
55	2921	2956	2979	3000	2989
60	2145	2175	2191	2186	2160
65	1573	1600	1589	1571	1530
70	1154	1173	1138	1109	1068
75	764	771	735	711	675
80	366	374	338	322	296
85	56.7	58.8	53.5	33.0	20.3
90	0.03	0.04	0.12	0.05	0.13
95	0.22	0.21	0.19	0.19	0.14
100	0.68	0.56	0.41	0.33	0.28
105	0.96	0.73	0.58	0.45	0.47
110	1.14	0.92	0.74	0.61	0.68
115	1.32	1.17	0.95	0.75	0.86
120	1.50	1.37	1.18	0.88	0.91
125	1.64	1.57	1.41	0.98	0.69
130	1.81	1.88	1.44	1.35	0.98
135	2.06	2.03	1.82	1.64	1.51
140	1.97	2.24	2.21	1.49	1.76
145	2.35	2.34	2.43	2.00	1.72
150	2.60	2.79	2.53	2.47	2.37
155	1.98	1.87	2.40	2.73	2.60
160	2.15	2.06	2.16	2.63	2.38
165	2.40	2.27	1.92	2.16	2.12
170	1.88	2.13	2.21	1.91	1.23
175	1.08	1.18	1.32	1.15	1.02
180	1.51	1.56	1.56	1.71	1.73



**Integrating Sphere Test Results (Test with Max. wattage)**

**Test Condition:**

Test Ambient	Test Humidity	Orientation	Stabilization Time	Test Time
25.1	40	Face Down	90	25

**Electrical Data:**

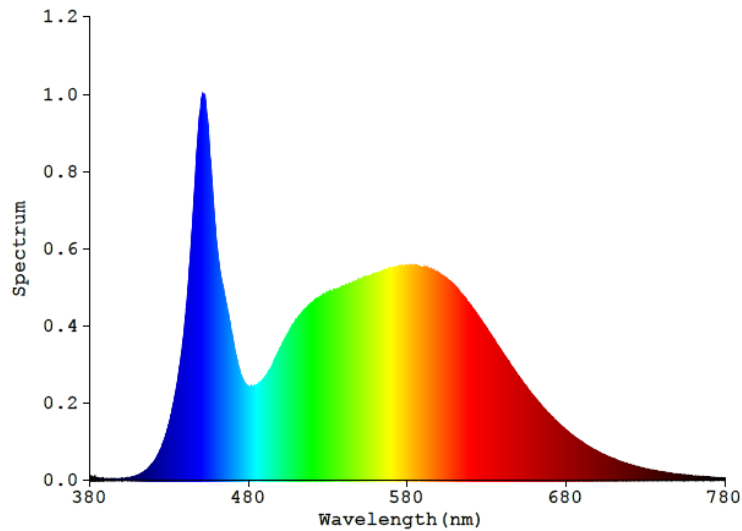
Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
120.0	60	1.543	184.8	0.9977

**Color Data:**

Parameter	Result
CCT (K)	5213
Color Rendering Index (CRI)	85.0
R9	19
Chromaticity, x	0.3393
Chromaticity, y	0.3468
Chromaticity u'	0.2094
Chromaticity v'	0.4814
Duv	-0.00008

Special Color Rendering			
R1	84	R9	19
R2	90	R10	75
R3	92	R11	85
R4	85	R12	64
R5	85	R13	86
R6	85	R14	96
R7	88	R15	80
R8	71	-	-

**Spectrum Diagram:**



**Goniophotometer Test Results (Test with Max. Wattage):**

**Test Condition:**

Test Ambient	Test Humidity	Orientation	Stabilization Time	Test Time
25.1	43	Face Down	90	25

**Electrical Data:**

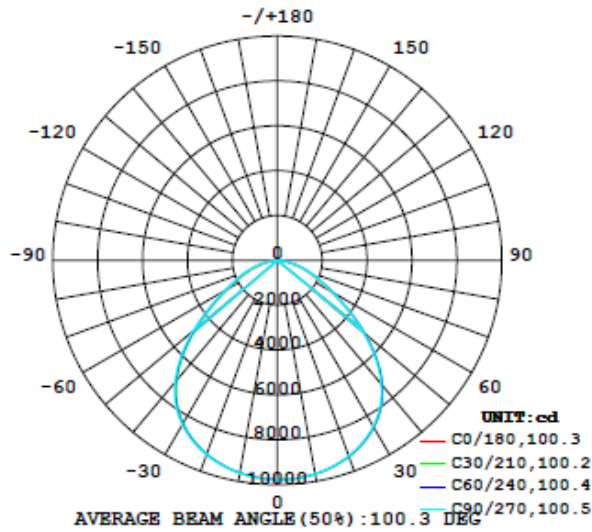
Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
120.0	60	1.543	184.8	0.9977

**Goniophotometer Data:**

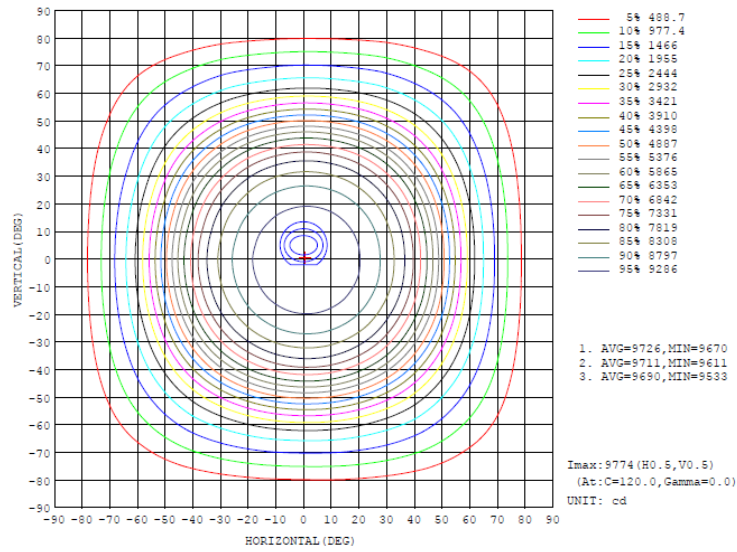
Parameter	Result
Total Luminous (lm)	23800.5
Total Luminous per foot (lm/ft)	N/A
Luminous Efficacy (lm/w)	128.81
Zonal Lumens Distribution (20-50°)	57.7%
Beam Angle (°)	100.4

**Luminous Intensity Distribution Diagram:**

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



**Isocandela Diagram:**



**Zonal Flux Diagram:**

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	lum, lamp
10	9674	9674	9661	9628	9624	9617	9642	9664	0- 10	927.0	927.0	3.89,3.89
20	9306	9310	9273	9225	9199	9188	9236	9280	10- 20	2680	2607	15.2,15.2
30	8588	8594	8529	8449	8411	8397	8475	8548	20- 30	4114	7721	22.4,22.4
40	7264	7278	7192	7058	6998	6980	7108	7218	30- 40	4926	12656	59.2,59.2
50	5071	5093	4983	4846	4774	4758	4911	5040	40- 50	4691	17348	72.9,72.9
60	2762	2857	2784	2702	2584	2641	2745	2832	50- 60	3370	20718	87.87
70	1381	1502	1490	1417	1278	1372	1488	1468	60- 70	1993	22711	95.4,95.4
80	362.5	477.5	467.5	399.6	290.4	368.7	468.5	497.4	70- 80	964.7	22675	99.5,99.5
90	0.1241	0.0202	0.1872	0.0812	0.1220	0.1022	0.0542	0.1189	80- 90	114.5	23790	100,100
100	0.2222	0.6760	1.109	0.7522	0.2736	0.6279	1.132	0.5570	90-100	0.2523	23790	100,100
110	0.7752	1.275	1.775	1.252	0.8127	1.065	1.550	0.9923	100-110	1.014	23791	100,100
120	1.021	1.843	2.120	1.776	1.152	1.738	2.020	1.513	110-120	1.457	23793	100,100
130	1.402	2.432	2.894	2.428	1.398	2.125	2.364	1.919	120-130	1.674	23794	100,100
140	1.320	2.969	2.345	2.648	1.880	2.277	2.982	2.919	130-140	1.910	23796	100,100
150	2.290	3.103	2.262	2.686	1.826	2.342	3.660	3.325	140-150	1.754	23798	100,100
160	2.252	2.572	2.691	2.341	2.672	2.225	3.100	2.960	150-160	1.413	23800	100,100
170	1.581	2.797	2.402	2.918	2.202	2.572	2.317	2.806	160-170	0.8203	23800	100,100
180	2.875	1.896	2.269	1.915	2.277	1.898	2.268	1.916	170-180	0.2011	23801	100,100
DEG	LUMINOUS INTENSITY:cd Less than 35% Percent = 9.5 %								UNIT:lm			

## Luminous Distribution Intensity Data:

Table--1 UNIT: cd

C (DEG) y (DEG)	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270
0	9771	9768	9769	9768	9770	9771	9774	9774	9775	9774	9772	9771	9771	9768	9769	9768	9770	9771	9774
5	9754	9754	9753	9752	9751	9750	9749	9745	9742	9738	9732	9729	9729	9722	9724	9724	9729	9733	9740
10	9674	9678	9675	9674	9670	9667	9661	9654	9645	9638	9628	9623	9624	9613	9617	9617	9626	9631	9642
15	9527	9535	9530	9529	9522	9515	9505	9494	9480	9469	9455	9447	9449	9434	9440	9441	9453	9461	9476
20	9306	9318	9311	9310	9297	9289	9273	9259	9240	9225	9208	9197	9199	9180	9189	9188	9205	9216	9236
25	9000	9016	9005	9005	8990	8978	8955	8934	8909	8892	8871	8859	8861	8837	8848	8848	8872	8885	8911
30	8588	8610	8594	8594	8575	8560	8529	8502	8470	8449	8424	8409	8411	8381	8394	8397	8429	8447	8475
35	8028	8055	8036	8037	8014	7995	7957	7924	7883	7856	7824	7806	7809	7767	7788	7793	7835	7859	7892
40	7264	7300	7274	7278	7253	7228	7183	7142	7090	7058	7017	6994	6998	6948	6973	6980	7032	7066	7108
45	6257	6303	6271	6280	6248	6224	6170	6125	6070	6031	5984	5953	5958	5898	5933	5941	6002	6038	6093
50	5071	5119	5083	5093	5057	5039	4983	4940	4885	4846	4799	4769	4774	4715	4749	4758	4819	4856	4911
55	3840	3896	3881	3891	3859	3841	3796	3762	3713	3681	3639	3593	3590	3539	3592	3602	3654	3686	3735
60	2763	2817	2823	2857	2830	2818	2784	2761	2724	2702	2646	2593	2584	2550	2606	2641	2681	2708	2745
65	1947	2002	2019	2086	2068	2072	2036	2034	1996	1983	1902	1856	1840	1811	1885	1922	1983	1986	2025
70	1351	1403	1431	1502	1519	1519	1490	1486	1457	1417	1340	1293	1278	1262	1327	1373	1450	1456	1485
75	846	899	922	982	1004	1011	984	977	950	904	836	798	785	770	834	874	943	959	983
80	363	409	420	478	493	498	467	464	434	400	339	308	298	290	341	369	434	446	469
85	24.8	38.0	65.0	45.0	82.4	39.8	63.6	62.4	63.1	38.3	21.3	25.6	24.7	18.5	24.3	46.9	50.9	44.8	61.6
90	0.12	0.00	0.04	0.02	0.14	0.07	0.19	0.08	0.13	0.08	0.10	0.07	0.13	0.10	0.11	0.10	0.07	0.07	0.05
95	0.15	0.12	0.26	0.21	0.21	0.30	0.41	0.37	0.26	0.32	0.40	0.17	0.23	0.20	0.26	0.32	0.35	0.34	0.51
100	0.33	0.38	0.57	0.68	0.78	0.95	1.11	0.99	0.82	0.75	0.65	0.50	0.37	0.44	0.47	0.63	0.78	0.94	1.13
105	0.55	0.70	0.87	0.97	1.10	1.28	1.51	1.37	1.16	1.01	0.94	0.83	0.63	0.70	0.70	0.84	1.00	1.30	1.34
110	0.78	1.02	1.15	1.27	1.37	1.58	1.78	1.64	1.45	1.35	1.17	1.11	0.81	0.96	0.93	1.07	1.28	1.61	1.55
115	0.97	1.30	1.43	1.57	1.65	1.88	1.97	1.90	1.74	1.63	1.46	1.36	1.00	1.22	1.15	1.39	1.61	1.85	1.80
120	1.02	1.41	1.68	1.84	1.98	2.18	2.13	2.21	2.05	1.78	1.74	1.40	1.15	1.24	1.17	1.74	1.97	2.02	2.02
125	1.04	1.27	1.70	2.27	2.36	2.47	2.45	2.46	2.40	2.14	1.64	1.50	0.95	0.97	1.28	2.12	2.29	2.30	2.22
130	1.40	1.78	2.17	2.43	2.77	2.77	2.89	2.75	2.74	2.43	2.24	1.82	1.40	1.35	1.75	2.12	2.64	2.68	2.36
135	1.70	1.94	2.34	2.60	2.90	3.20	3.17	3.12	2.79	2.46	2.42	2.13	1.79	2.12	2.30	2.69	2.86	3.07	2.81
140	1.33	2.08	2.02	2.97	2.93	3.17	3.35	3.17	2.80	2.65	2.14	2.30	1.88	2.40	2.14	3.28	3.14	2.96	2.98
145	1.37	2.19	2.50	3.37	3.28	3.32	3.18	3.19	2.91	3.01	2.29	2.06	1.51	2.29	2.33	3.28	3.47	3.26	3.40
150	2.29	3.07	3.26	3.10	3.52	2.95	3.26	3.12	3.16	2.69	2.79	2.34	1.83	2.76	2.93	3.34	3.82	3.92	3.66
155	2.51	3.15	3.25	3.03	2.48	2.82	3.34	3.44	3.12	3.19	2.93	2.75	1.58	2.73	3.11	3.59	3.78	3.58	3.32
160	2.25	2.82	2.55	2.57	2.69	2.77	2.69	3.01	3.18	3.34	3.09	2.96	2.67	2.79	3.30	3.23	3.44	3.55	3.10
165	1.94	2.43	2.46	2.43	3.00	3.32	2.75	3.37	3.26	3.13	3.22	3.28	2.93	3.47	3.55	3.34	3.01	3.35	2.69
170	1.53	2.15	2.37	2.80	2.77	2.50	2.40	2.62	2.84	2.92	2.69	2.29	2.20	2.37	2.46	2.57	2.77	3.01	2.32
175	1.17	1.51	1.94	1.87	1.85	1.79	1.89	2.21	2.26	2.16	2.05	2.01	1.87	1.47	1.86	2.09	2.24	2.12	1.73
180	2.38	2.19	1.96	1.90	1.77	2.02	2.27	1.92	1.97	1.91	2.17	2.20	2.38	2.19	1.96	1.90	1.77	2.02	2.27

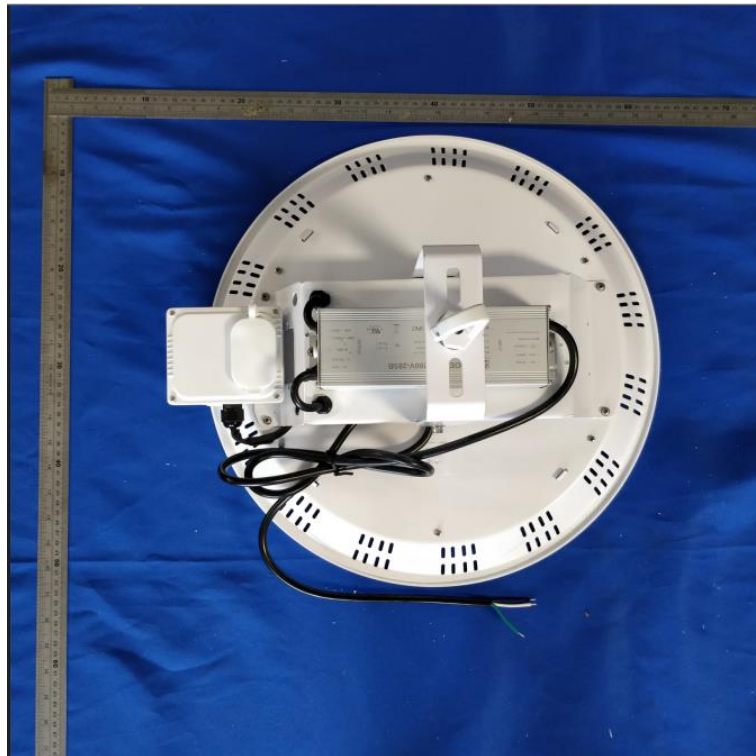
Table--2 UNIT: cd

C (DEG) y (DEG)	285	300	315	330	345														
0	9774	9775	9774	9772	9771														
5	9743	9748	9750	9753	9753														
10	9649	9659	9664	9670	9674														
15	9487	9500	9509	9520	9527														
20	9250	9269	9280	9296	9305														
25	8926	8950	8966	8987	9000														
30	8497	8528	8548	8572	8589														
35	7920	7958	7983	8013	8032														
40	7142	7189	7218	7253	7272														
45	6131	6185	6217	6253	6272														
50	4952	5006	5040	5075	5089														
55	3772	3824	3852	3879	3870														
60	2773	2813	2833	2825	2798														
65	2032	2073	2054	2031	1980														
70	1490	1516	1469	1433	1381														
75	988	999	947	919	874														
80	471	486	437	414	383														
85	65.2	77.7	50.3	43.4	41.5														
90	0.14	0.08	0.12	0.09	0.10														
95	0.32	0.30	0.27	0.28	0.22														
100	0.91	0.75	0.56	0.46	0.40														
105	1.27	0.97	0.79	0.62	0.63														
110	1.55	1.21	0.98	0.83	0.91														
115	1.78	1.55	1.19	1.01	1.14														
120	1.95	1.85	1.51	1.15	1.19														
125	2.19	2.12	1.86	1.19	0.92														
130	2.54	2.49	1.92	1.62	1.30														
135	2.82	2.68	2.39	2.06	1.98														
140	2.71	2.95	2.92	1.86	2.15														
145	3.12	3.12	3.19	2.52	2.15														
150	3.50	3.82	3.33	3.15	3.01														
155	2.74	2.70	3.23	3.46	3.27														
160	3.04	2.91	2.96	3.25	2.97														
165	3.26	2.99	2.62	2.79	2.71														
170	2.49	2.75	2.81	2.32	1.65														
175	1.52	1.58	1.74	1.54	1.38														
180	1.92	1.97	1.92	2.17	2.20														

## THD and PF Measurement Test Result:

### Electrical Measurement:

Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	iTHD
277.0	60	0.5610	138.34	0.8892	14.82
277.0	60	0.7064	182.0	0.9294	10.20



**Equipment List:**

Equipment ID	Equipment Name	Last Cal.	Due Cal.
NTC-F01-001	Goniophotometer System	2017-11-18	2018-11-17
NTC-F01-006	2.0 meter Integrating Sphere	2017-11-18	2018-11-17
NTC-F01-013	Standard Lamp	2017-11-18	2018-11-17
NTC-F01-031	Digital Power Meter	2017-11-18	2018-11-17
NTC-F01-019	Temperature & Humidity Meter	2017-11-23	2018-11-22

**\*\*\*\*\*END OF DATASHEET\*\*\*\*\***