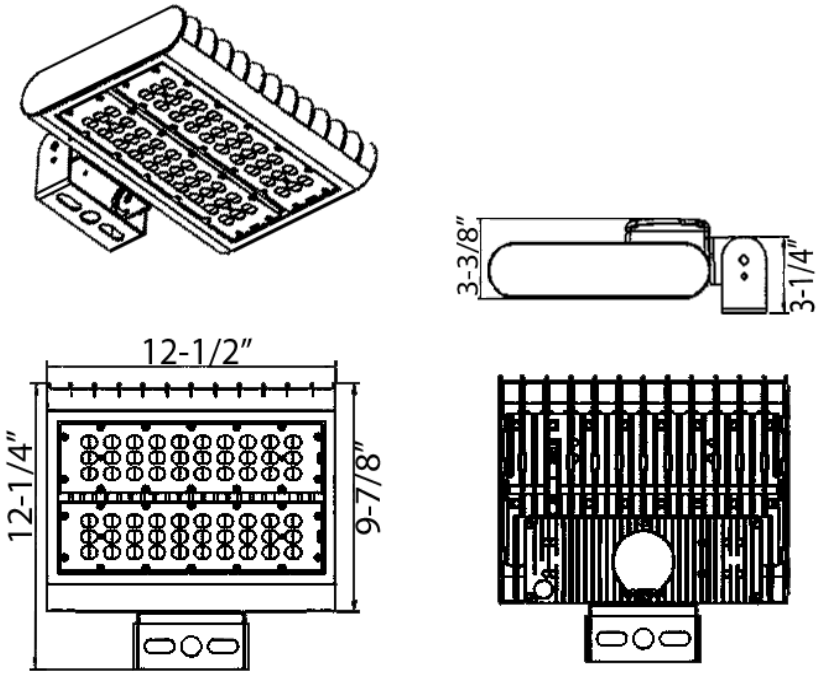
Cat# 71543
150 Watts
Trunion Mount

RoHS

QPL ID #
PF9T16AA

Model:		71543
OVERALL LAMP PARAMETERS	Input Voltage	100-277VAC 50/60HZ
	Input Current	1.8A Max
	Input Power	150W
	Power Factor	PF≥ 0.93
	Luminance	18752 LM
	Luminous Efficiency	123 LM/W
	CRI	82.3
	Beam Angle	120 x 90°
	Main Structure	Aluminium + PC Lens
LED DRIVER	Output Voltage	36-60VDC
	Output Current	4.4A
	Driver Efficiency	88%
LED	LED Manufacturer	Philips
	LED Type	3030 LED
	LED Quantity	36 PCS
	LED Efficacy	130 LM/W
	Color Temperature	5000K
Photocell	-	Not Included
LIFESPAN & ENVIRONMENT	Lifespan	50000+ Hrs.
	Warranty	5 Years
	IP Rating	IP65 Wet Locations
	Operating Temperature	-40F — +131F
	Storage Temperature.Humidity	-40℃—+80℃ , 10—90% RH
SAFETY&EMC	Safety Norms	UL1598,UL8750, EN60598, EN61347-2-13, EN62031, EN62471
	Withstand Voltage	I/P-FG: 2121VDC
	Grounding Resistance	≤0.5Ω,OK
	Electromagnetic Compatibility	EN55015, EN61000-2-3, EN61000-3-3, EN61547
OTHERS	Dimension	Pls refer to attached diamension drawing
	Q'ty / Carton	1PCS
	Volume	
	EPA Rating	1.16 ft^2

Dimensions:



NVLAP LAB CODE 201011-0

LM-79-08 Test Report

For

Morris Products Inc.

53 Carey Rd. Queensbury, NY 12804

Architectural Flood and Spot Luminaires

Model name(s): 71543, 71833, 71834,
71563A, 71842, 71843,
71575A, 71853, 71854
71585, 71868, 71869, 71870

Representative (Tested) Model: 71543

Model Different: All construction and rating are the same, except CCT

Test & Report By:

Johnson Sun

Engineer: Johnson Sun

Update: Nov.16, 2016

Review By:

Tommy Liang

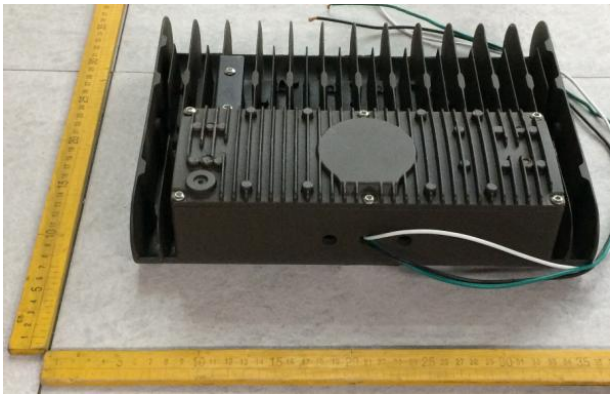
Manager: Tommy Liang

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

1.1 Product Information:

Organization Name	Morris Products Inc.	
Brand Name	MORRIS	
Model Number	71543	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Architectural Flood and Spot Luminaires	
Rated Voltage / Frequency	100 -277Vac, 50/60 Hz	
Nominal Power	150W	
Rated Initial Lamp Lumen	--	
Declared CCT	4000K,5000K,5700K	
LED Manufacturer	Philips Lumileds	
LED Model	L130-2780003000W21	
Sample Number	GZE161105-AJ1(4000K),AJ2(5700K)	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s

Photo



1.2 Test Specifications:

Date of Receipt	: Oct.31,2016
Date of Test	: Nov.03,2016
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. Electrical Parameters
Reference Standard	1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products 2. ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products 3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources 4. CIE 15-2004 Technical Report Colorimetry 5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source 6. IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems
Reference Work Instruction	QD25

1.3 Test Methods

1) Photometric and Light Distribution Measurement – Goniophotometer 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 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 1 °vertical intervals and 22.5 °horizontal intervals.

2) Chromaticity Measurement – Sphere-Spectroradiometer Method:

Chromaticity parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25 ºC ±1 ºC. 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 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral power distribution taken at 5 nm intervals over the range of 380 to 780 nm.

3) Electrical Measurements:

Electrical parameters were measured using power meters incorporated in goniophotometer or sphere-spectroradiometer system. The ambient temperature surrounding the sample was maintained at 25 ºC ±1 ºC. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Voltage, frequency, current, power, power factor and total harmonic distortion were measured by and read from the power meter.

2.1 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction QD25)

Test date	2016-11-03	Test Ambient:	25.2 ℃
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	71543		

Electrical Measurement :

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE161105-AJ1	120.0	60	1.283	153.2	0.9953	5.68
	277.0	60	0.5742	147.4	0.9267	6.41
				DLC Pass Criteria	>= 0.9(-3%)	<= 20(+5)

Chromaticity Measurement - Sphere-Spectroradiometer Method :

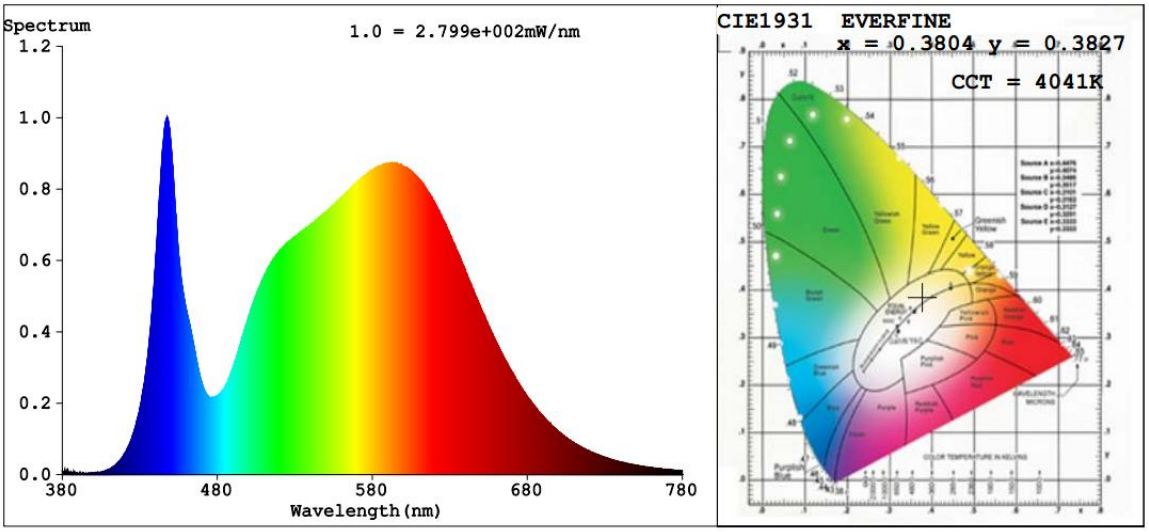
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
CCT (K)	4041
Duv	0.0028
Chromaticity (x, y)	x=0.3804 y=0.3827
Chromaticity (u', v')	u'=0.2228 v'=0.5042
Color Rendering Index (CRI)	82.3
R9	9

Special Color Rendering Indices			
R1	80	R9	9
R2	87	R10	69
R3	92	R11	82
R4	83	R12	61
R5	81	R13	81
R6	82	R14	96
R7	87	R15	74
R8	66	--	--

Photometric Measurement – Goniophotometer Method :

Parameter	Result		DLC V4.0 Pass Criteria	
Test Voltage (V)	120.0	277.0	--	
Frequency (Hz)	60	60		
Total Luminous (lm)	18486	17982	>=1000 (-10%)	
Luminous Efficacy (lm/W)	120.67	121.99	Standard: >= 100(-3%)	Premium: >= 120(-3%)
Zonal lumens in the 0-90 °zone (%)	99.7	--	>=85(-3)	
Beam Angle ( )	106.6	--	--	
Center Beam Candle Power (cd)	6290	--	--	

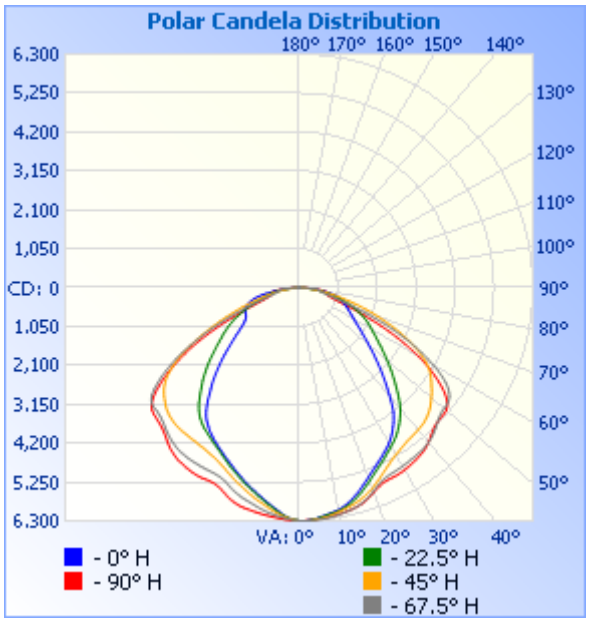
Spectral Power Distribution & Chromaticity Diagram

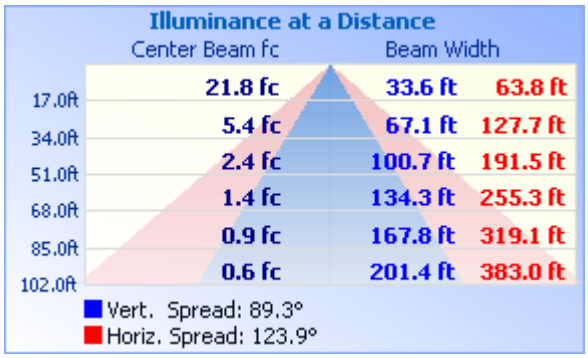


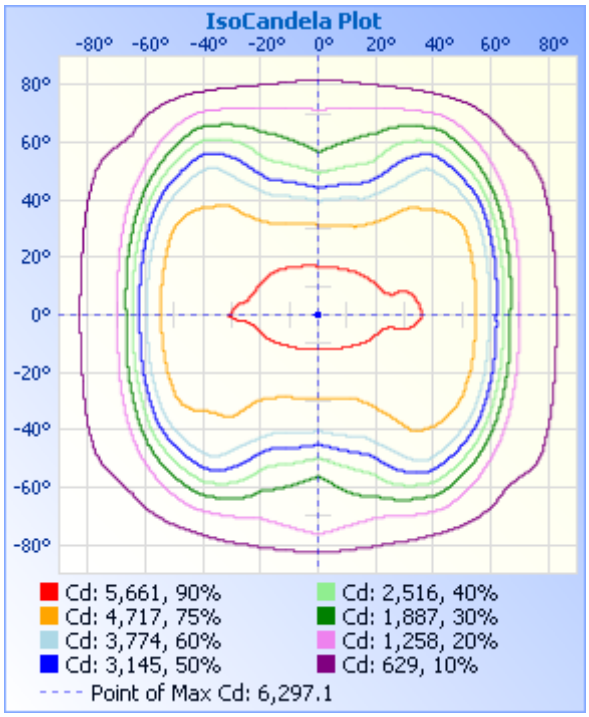
Zonal Lumen Tabulation

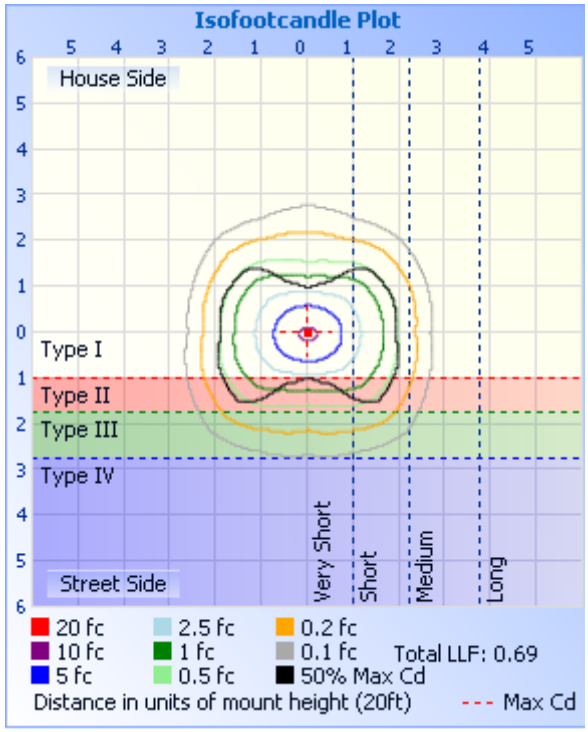
Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	4,696.5	25.4%
0-40	7,835.6	42.4%
0-60	14,610.9	79%
60-90	3,826.1	20.7%
70-100	1,479.3	8%
90-120	13.6	0.1%
0-90	18,437.0	99.7%
90-180	47.3	0.3%
0-180	18,484.3	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	586.7	3.2%	90-100	2.9	0%
10-20	1,643.3	8.9%	100-110	4.3	0%
20-30	2,466.5	13.3%	110-120	6.3	0%
30-40	3,139.0	17.0%	120-130	8.3	0%
40-50	3,445.3	18.6%	130-140	8.3	0%
50-60	3,330.0	18.0%	140-150	7.0	0%
60-70	2,349.7	12.7%	150-160	5.5	0%
70-80	1,125.6	6.1%	160-170	3.3	0%
80-90	350.8	1.9%	170-180	1.3	0%


Polar Candela Distribution
180° 170° 160° 150° 140°
6,300
5,250
4,200
3,150
2,100
1,050
CD: 0
1,050
2,100
3,150
4,200
5,250
6,300
130°
120°
110°
100°
90°
80°
70°
60°
50°
VA: 0° 10° 20° 30° 40°
- 0° H
- 90° H
- 22.5° H
- 45° H
- 67.5° H


Illuminance at a Distance
Center Beam fc
Beam Width
17.0ft 21.8 fc 33.6 ft 63.8 ft
34.0ft 5.4 fc 67.1 ft 127.7 ft
51.0ft 2.4 fc 100.7 ft 191.5 ft
68.0ft 1.4 fc 134.3 ft 255.3 ft
85.0ft 0.9 fc 167.8 ft 319.1 ft
102.0ft 0.6 fc 201.4 ft 383.0 ft
Vert. Spread: 89.3°
Horiz. Spread: 123.9°


IsoCandela Plot
-80° -60° -40° -20° 0° 20° 40° 60° 80°
80°
60°
40°
20°
0°
-20°
-40°
-60°
-80°
Cd: 5,661, 90%
Cd: 4,717, 75%
Cd: 3,774, 60%
Cd: 3,145, 50%
Cd: 2,516, 40%
Cd: 1,887, 30%
Cd: 1,258, 20%
Cd: 629, 10%
Point of Max Cd: 6,297.1


Isofootcandle Plot
5 4 3 2 1 0 1 2 3 4 5
House Side
Type I
Type II
Type III
Type IV
Street Side
Very Short
Short
Medium
Long
20 fc
10 fc
5 fc
2.5 fc
1 fc
0.5 fc
0.2 fc
0.1 fc
50% Max Cd
Total LLF: 0.69
Distance in units of mount height (20ft)
Max Cd

γ (DEG) \ C (DEG)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5
0	6290	6290	6290	6290	6290	6290	6290	6290	6290	6290	6290	6290	6290	6290	6290	6290
5	6248	6262	6243	6239	6229	6239	6260	6283	6262	6222	6163	6100	6076	6097	6141	6197
10	6184	6179	6109	6097	6093	6117	6145	6219	6208	6072	5905	5794	5758	5793	5894	6051
15	6106	6033	5926	5852	5816	5890	5995	6106	6112	5856	5639	5514	5467	5506	5643	5875
20	5894	5836	5676	5499	5448	5547	5762	5851	5877	5637	5386	5228	5172	5221	5394	5642
25	5749	5621	5387	5179	5131	5229	5453	5619	5712	5453	5150	4968	4902	4952	5170	5507
30	5754	5619	5199	4897	4843	4951	5209	5567	5679	5412	4967	4716	4656	4731	5052	5498
35	5681	5609	5109	4592	4434	4654	5071	5513	5594	5378	4861	4458	4350	4526	5005	5474
40	5493	5532	5047	4136	3776	4235	4998	5436	5431	5262	4825	4077	3762	4210	4987	5363
45	5271	5320	4870	3542	3084	3663	4886	5239	5214	5046	4720	3527	3106	3705	4919	5169
50	5169	5137	4584	3009	2487	3123	4648	5084	5168	4923	4484	2970	2446	3196	4727	5074
55	4609	4934	4279	2560	2036	2641	4343	4938	4704	4756	4155	2449	1934	2687	4397	4769
60	3553	4145	3848	2212	1713	2263	3909	4178	3735	3960	3570	2047	1663	2275	3700	3819
65	2214	2989	3077	1917	1488	1943	3146	3016	2428	2804	2661	1715	1597	1840	2711	2575
70	1146	1694	2165	1545	1312	1563	2249	1708	1254	1614	1770	1363	1512	1367	1784	1387
75	782	869	1317	1116	1136	1124	1399	873	802	846	1055	1038	1317	977	1060	765
80	746	575	664	716	828	725	733	588	750	559	564	716	888	662	567	560
85	443	470	221	273	336	284	268	503	482	434	191	257	295	233	196	474
90	3.93	3.96	3.61	3.61	4.18	3.67	3.87	4.44	3.86	3.38	2.52	2.52	2.90	2.53	2.48	3.12
95	2.61	2.63	2.63	2.41	2.69	2.37	2.65	2.63	2.07	2.51	2.69	2.34	2.13	2.18	2.48	2.49
100	2.99	3.50	3.23	2.45	2.60	2.32	3.13	3.07	2.46	3.12	3.57	2.64	2.15	2.53	3.47	3.24
105	5.00	5.51	4.82	2.85	2.63	2.96	4.67	4.94	4.14	4.93	4.62	2.97	2.42	2.98	4.74	4.79
110	7.40	7.43	6.08	3.73	3.62	4.13	6.33	7.24	5.94	6.35	5.32	3.73	3.19	3.47	5.56	6.54
115	8.98	9.08	7.46	4.30	4.33	4.57	7.43	9.11	7.20	7.99	6.36	3.82	3.46	3.91	6.22	7.69
120	10.3	10.1	8.77	6.03	6.42	5.34	9.08	10.4	8.56	8.70	7.26	4.79	4.13	4.75	6.77	8.18
125	12.0	11.7	9.17	9.00	22.6	7.49	9.25	11.9	9.59	9.58	7.57	6.21	5.88	5.85	7.05	8.78
130	13.2	12.1	9.07	10.4	26.1	9.20	9.40	12.5	10.8	9.69	8.22	7.19	6.91	7.00	7.51	9.02
135	12.8	11.4	9.04	12.0	18.8	11.0	9.28	11.8	10.8	9.74	7.84	8.29	7.86	8.20	7.37	9.19
140	12.4	10.8	9.16	12.1	22.2	11.8	9.16	11.8	11.0	10.3	7.79	9.39	8.73	8.59	6.88	9.67
145	12.2	9.74	9.65	13.4	25.4	12.4	8.15	11.0	11.0	10.4	8.17	10.2	9.07	9.42	7.99	9.77
150	12.0	9.81	11.4	13.7	22.7	13.4	9.73	10.9	10.9	10.7	10.0	10.8	10.5	10.5	10.5	9.87
155	10.6	10.1	12.8	14.5	19.4	13.8	11.2	11.4	10.5	11.0	10.5	11.2	10.7	10.5	10.7	10.00
160	10.3	10.3	12.5	14.3	12.7	13.4	11.8	11.4	9.91	10.8	10.8	11.7	12.6	11.3	11.0	10.4
165	10.5	10.6	12.6	11.9	11.5	11.6	12.0	10.8	10.8	10.3	11.1	11.7	11.9	12.1	11.3	11.0
170	11.5	11.8	14.5	13.7	13.3	13.5	14.1	11.0	12.3	12.3	13.0	14.4	14.7	14.2	13.4	14.1
175	11.9	13.1	15.0	14.2	15.0	13.8	14.9	11.8	12.5	12.6	13.5	14.8	14.8	15.1	13.7	14.7
180	11.1	12.8	13.7	13.5	14.8	14.0	14.3	11.8	11.5	11.4	12.8	13.8	13.5	14.4	13.4	14.1

BUG Rating: B3-U2-G2

IESNA Luminaire Flux Distribution Table:

Zone	Lumens	Luminaire %
FL - Front-Low(0-30)	2392.2	12.9
FM - Front-Medium(30-60)	5005	27.1
FH - Front-High(60-80)	1806.3	9.8
FVH - Front-Very High(80-90)	182.93	1.0
Total Forward Light	9413	50.9

BL - Back-Low(0-30)	2304.5	12.5
BM - Back-Medium(30-60)	4911.2	26.6
BH - Back-High(60-80)	1668.7	9.0
BVH - Back-Very High(80-90)	167.81	0.9
Total Back Light	9073.1	49.1

UL - Uplight-Low(90-100)	2.9105	0.0
UH - Uplight-High(100-180)	44.39	0.2
Total Up Light	47.3	0.3

BUG(Back,Up,Glare) Rating	B3-U2-G2

Zone	Downward Lumens	Upward Lumens	Total Lumens
House Side	9052.3	20.87	9073.1
Street Side	9386.5	26.43	9413

2.2 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction QD25)

Test date	2016-11-03	Test Ambient:	25.2 ºC
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	71543		

Electrical Measurement :

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE161105-AJ2	120	60	1.274	152.1	0.9959	5.75
	277	60	0.5699	146.2	0.9269	6.48
				DLC Pass Criteria	>= 0.9(-3%)	<= 20(+5)

Chromaticity Measurement - Sphere-Spectroradiometer Method :

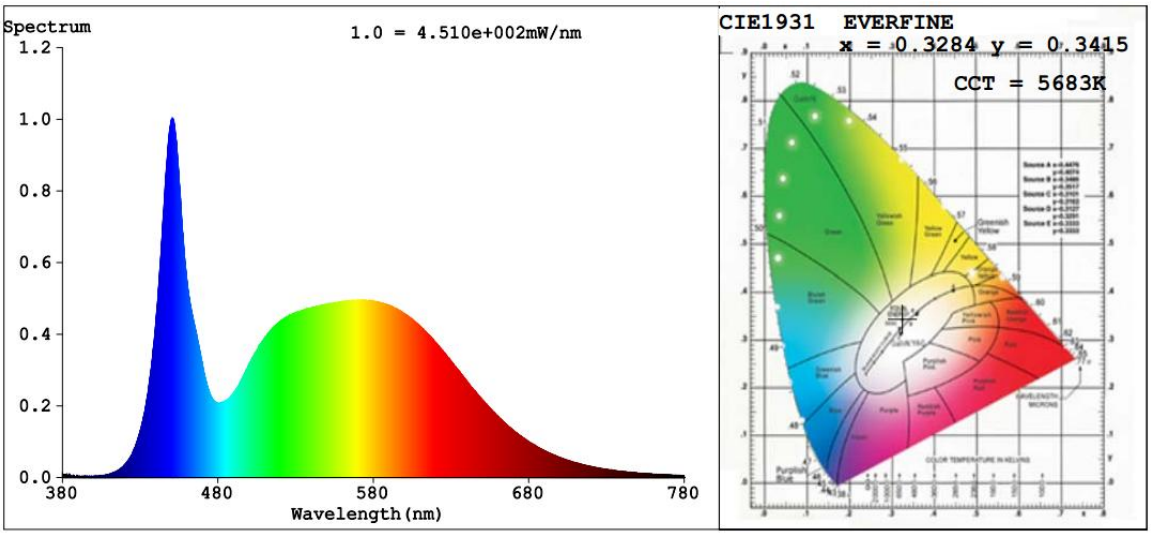
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
CCT (K)	5683
Duv	0.0021
Chromaticity (x, y)	x=0.3284 y=0.3415
Chromaticity (u', v')	u'=0.2039 v'=0.4772
Color Rendering Index (CRI)	83.0
R9	11

Special Color Rendering Indices			
R1	82	R9	11
R2	87	R10	69
R3	90	R11	83
R4	84	R12	59
R5	82	R13	3
R6	82	R14	95
R7	88	R15	77
R8	70	--	--

Photometric Measurement – Sphere-Spectroradiometer Method :

Parameter	Result		DLC V4.0 Pass Criteria	
Test Voltage (V)	120.0	277.0	--	
Frequency (Hz)	60	60		
Total Luminous (lm)	19018	18499	>=1000 (-10%)	
Luminous Efficacy (lm/W)	125.04	126.53	Standard: >= 100(-3%)	Premium: >= 120(-3%)

Spectral Power Distribution & Chromaticity Diagram



3. Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-336	2 meter Integrating Sphere	2016-07-01	2017-06-30
ST-R-331	Spectral analysis system HAAS-2000	2016-07-01	2017-06-30
D204	Standard Lamp	2016-07-01	2017-06-30
PF2010	Power Meter for Integrating Sphere	2016-07-01	2017-06-30
EE-09	Goniophotometer system	2016-07-01	2017-06-30
D908S	Standard Lamp	2016-07-01	2017-06-30
PF210	Power Meter for Goniophotometer	2016-07-01	2017-06-30
ST-R-181A	Temperature Tester	2016-07-01	2017-06-30
Uncertainty: Photometric Measurement (Sphere):1.74% Chromaticity Measurement(Sphere):14.3K Photometric Measurement(Goniophotometer):1.62%			

******** END OF REPORT ********