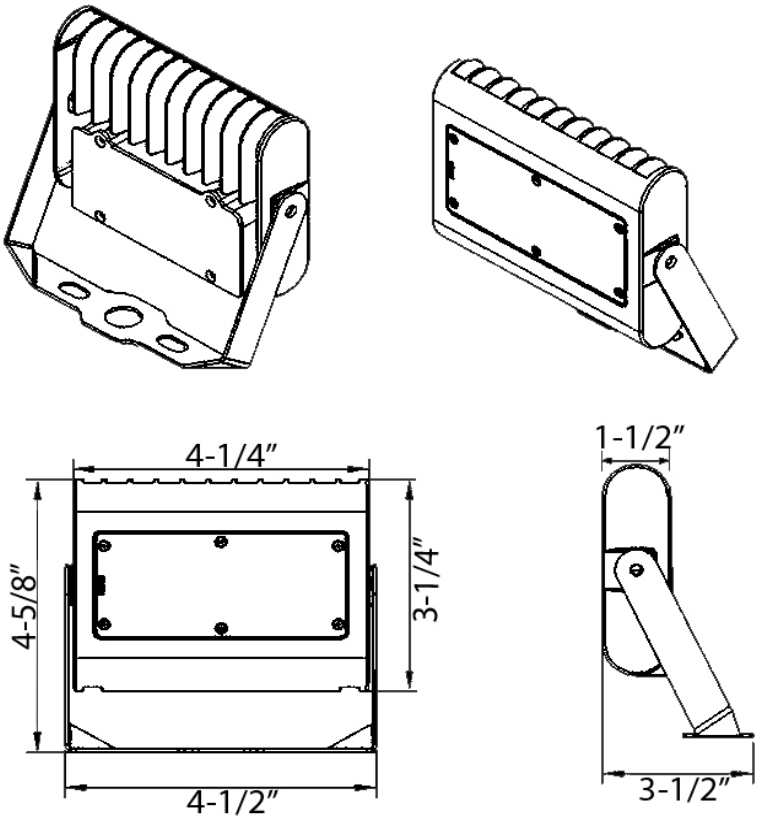
Cat# 71531

RoHS

Model:		71531
OVERALL LAMP PARAMETERS	Input Voltage	100-277VAC 50/60HZ
	Input Current	0.127A Max
	Input Power	14.39 W
	Power Factor	PF≥ 0.93
	Luminance	1663 LM
	Luminous Efficiency	115.57 LM/W
	CRI	>82
	Beam Angle	120x90°
	Main Structure	Aluminium Housing + Polycarbonate Lens
LED DRIVER	Output Voltage	36-60VDC
	Output Current	0.25A
	Driver Efficiency	88%
LED	LED Manufacturer	Phillips
	LED Type	LUMILED LUXEON 3030 LED
	LED Quantity	18 PCS
	LED Efficacy	130 LM/W
	Color Temperature	5000K
Photocell	-	Not Included
LIFESPAN & ENVIRONMENT	Lifespan	50,000+ Hrs.
	Warranty	5 Years
	IP Rating	IP65 Wet Locations
	Operating Temperature	-40F- +131F
	Storage Temperature.Humidity	-40℃—+80℃ , 10—90% RH
SAFETY&EMC	Safety Standards	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 dimensional drawing
	Qty / Carton	18PCS

Dimensions :



LM-79-08 Test Report

For

Morris Products Inc.
53 Carey Rd Queensbury, NY 12804

Architectural Flood and Spot Luminaires

Model name(s): 71531, 71801, 71802, 71803, 71551, 71821, 71552, 71553

Representative (Tested) Model: 71531

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

Test & Report By:

Johnson Sun

Engineer: Johnson Sun

Update: Nov.03, 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	71531	
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	15W	
Rated Initial Lamp Lumen	--	
Declared CCT	3000K,4000K,5000K	
LED Manufacturer	Philips Lumileds	
LED Model	L130-2780003000W21	
Sample Number	GZE161105-AA1(3000K),AA2(5000K)	
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.01,2016
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	2016-11-01	Test Ambient:	25.2 ℃
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	71531		

Electrical Measurement :

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE161105-AA1	120.0	60	0.1258	14.60	0.9672	17.09
	277.0	60	0.0595	15.27	0.9264	19.63
				Pass Criteria	>= 0.9(-3%)	<= 20(+5)

Chromaticity Measurement - Sphere-Spectroradiometer Method :

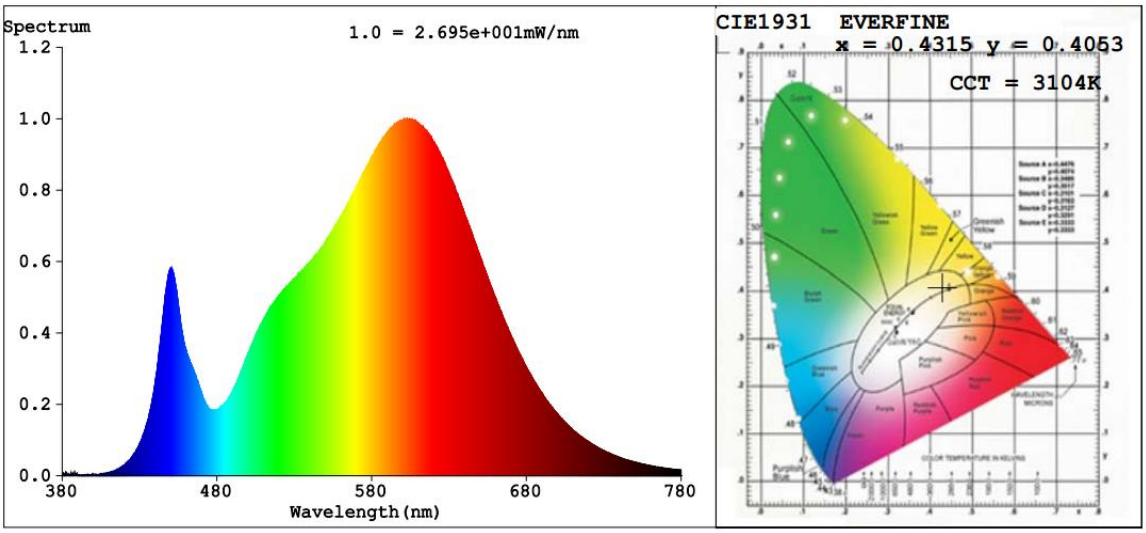
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
CCT (K)	3104
Duv	0.0013
Chromaticity (x, y)	x=0.4315 y=0.4053
Chromaticity (u', v')	u'=0.2465 v'=0.5211
Color Rendering Index (CRI)	83.3
R9	12

Special Color Rendering Indices			
R1	81	R9	12
R2	90	R10	77
R3	97	R11	81
R4	82	R12	68
R5	81	R13	83
R6	87	R14	98
R7	85	R15	74
R8	62	--	--

Photometric Measurement – Goniophotometer Method :

Parameter	Result			
Test Voltage (V)	120.0	277.0	--	
Frequency (Hz)	60	60		
Total Luminous (lm)	1566.4	1570.2	>=1000 (-10%)	
Luminous Efficacy (lm/W)	107.29	102.83	Standard: >= 90(-3%)	Premium: >= 110(-3%)
Zonal lumens in the 0-90 °zone (%)	100	--	>=85(-3)	
Beam Angle (°)	105.4	--	--	
Center Beam Candle Power (cd)	552	--	--	

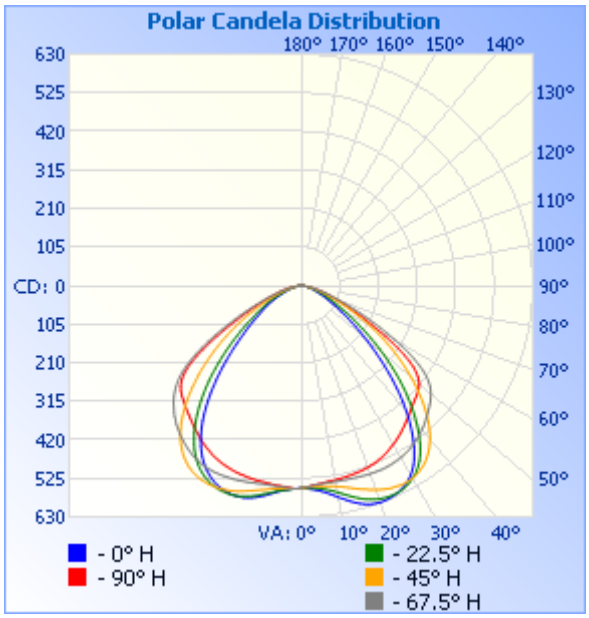
Spectral Power Distribution & Chromaticity Diagram

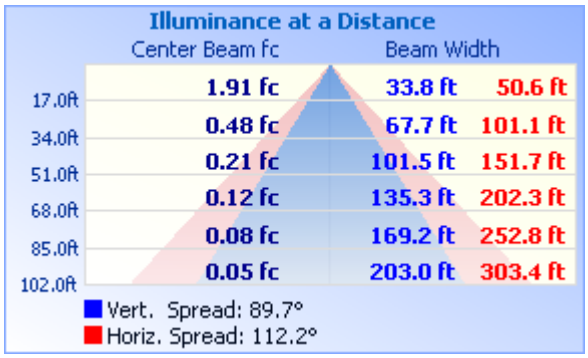


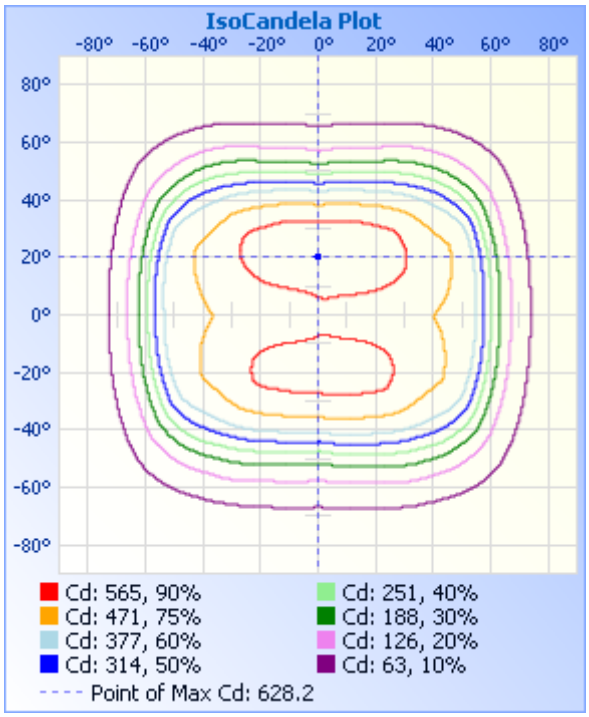
Zonal Lumen Tabulation

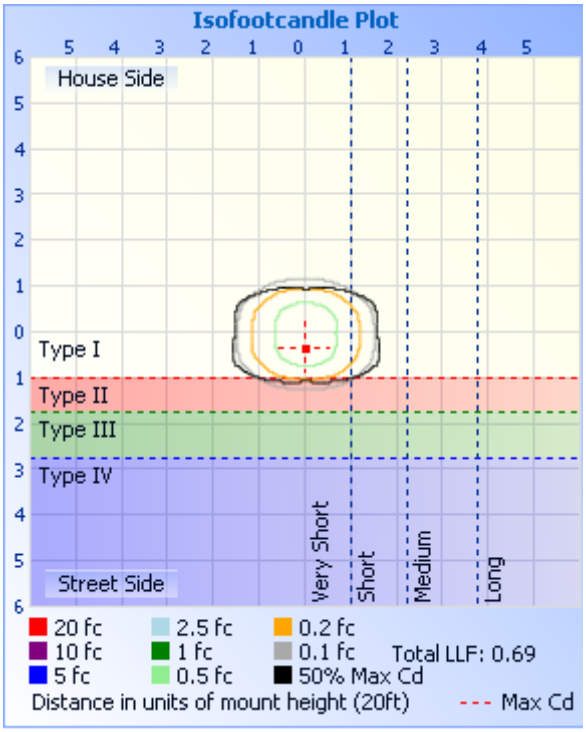
Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	483.3	30.9%
0-40	816.0	52.1%
0-60	1,386.3	88.5%
60-90	179.2	11.4%
70-100	56.1	3.6%
90-120	0.1	0%
0-90	1,565.6	100%
90-180	0.6	0%
0-180	1,566.2	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	53.0	3.4%	90-100	0.1	0%
10-20	162.8	10.4%	100-110	0.0	0%
20-30	267.6	17.1%	110-120	0.0	0%
30-40	332.6	21.2%	120-130	0.1	0%
40-50	324.3	20.7%	130-140	0.1	0%
50-60	246.1	15.7%	140-150	0.2	0%
60-70	123.2	7.9%	150-160	0.1	0%
70-80	46.2	2.9%	160-170	0.0	0%
80-90	9.8	0.6%	170-180	0.0	0%


Polar Candela Distribution
180° 170° 160° 150° 140°
630
525
420
315
210
105
CD: 0
105
210
315
420
525
630
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
34.0ft
51.0ft
68.0ft
85.0ft
102.0ft
1.91 fc 33.8 ft 50.6 ft
0.48 fc 67.7 ft 101.1 ft
0.21 fc 101.5 ft 151.7 ft
0.12 fc 135.3 ft 202.3 ft
0.08 fc 169.2 ft 252.8 ft
0.05 fc 203.0 ft 303.4 ft
Vert. Spread: 89.7°
Horiz. Spread: 112.2°


IsoCandela Plot
-80° -60° -40° -20° 0° 20° 40° 60° 80°
80°
60°
40°
20°
0°
-20°
-40°
-60°
-80°
Cd: 565, 90%
Cd: 471, 75%
Cd: 377, 60%
Cd: 314, 50%
Cd: 251, 40%
Cd: 188, 30%
Cd: 126, 20%
Cd: 63, 10%
Point of Max Cd: 628.2


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	23	45	68	90	113	135	158	180	203	225	248	270	293	315	338
0	552	552	552	552	552	552	552	552	552	552	552	552	552	552	552	552
5	549	551	556	559	560	554	548	543	542	543	548	553	559	559	555	551
10	545	552	566	580	585	571	555	541	537	542	557	571	580	576	564	550
15	542	556	584	607	614	598	572	542	533	546	574	590	597	594	579	554
20	536	562	605	625	628	618	591	546	526	551	586	596	597	600	592	558
25	527	565	618	626	622	622	604	546	517	552	588	583	578	590	596	560
30	511	563	618	609	596	606	605	540	499	547	576	551	537	561	587	554
35	491	554	598	565	535	563	587	529	479	531	545	495	471	508	560	539
40	470	535	555	489	444	488	544	511	457	506	491	417	383	432	510	517
45	450	510	486	394	338	395	477	487	438	472	417	328	287	343	437	489
50	427	475	398	292	236	295	392	460	419	431	330	240	205	254	351	448
55	365	414	303	201	155	202	302	406	359	364	243	168	145	179	262	381
60	243	301	209	131	101	131	212	293	242	257	166	118	104	124	181	270
65	147	181	132	85.8	68.0	86.2	133	178	147	157	107	80.9	70.5	85.9	114	165
70	88.0	103	77.6	53.3	44.1	53.8	78.0	101	88.1	89.5	64.2	51.0	45.9	53.9	68.9	94.7
75	53.1	56.5	44.9	33.9	29.3	33.9	44.0	54.8	51.3	48.3	37.1	31.8	29.5	33.6	39.7	52.2
80	28.8	28.8	23.8	18.9	17.0	18.7	22.5	27.1	26.6	23.4	18.9	16.7	15.9	17.9	20.7	26.3
85	11.0	10.8	9.33	8.03	7.14	7.62	8.16	9.17	9.19	7.32	5.91	5.41	5.39	6.13	7.07	9.29
90	0.38	0.91	1.13	1.22	1.16	0.78	0.77	0.40	0.11	0.27	0.56	0.16	0.51	0.38	0.65	0.52
95	0.00	0.00	0.00	0.25	0.48	0.25	0.00	0.00	0.00	0.01	0.01	0.05	0.27	0.02	0.01	0.01
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.04	0.06	0.04	0.02	0.01
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.05	0.08	0.04	0.02	0.01
110	0.00	0.01	0.00	0.00	0.01	0.01	0.00	0.01	0.01	0.02	0.02	0.06	0.09	0.05	0.03	0.02
115	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.06	0.10	0.06	0.03	0.02
120	0.01	0.02	0.03	0.01	0.01	0.01	0.05	0.02	0.01	0.02	0.04	0.04	0.06	0.04	0.04	0.02
125	0.01	0.02	0.13	0.01	0.01	0.03	0.11	0.02	0.02	0.03	0.05	0.04	0.03	0.05	0.04	0.02
130	0.02	0.03	0.14	0.41	0.90	0.92	0.12	0.03	0.02	0.03	0.05	0.10	0.11	0.06	0.05	0.03
135	0.02	0.04	0.12	0.02	1.35	0.29	0.13	0.04	0.02	0.03	0.05	0.07	0.04	0.06	0.05	0.03
140	0.02	0.05	0.13	1.22	1.15	0.76	0.13	0.05	0.03	0.03	0.05	0.08	0.14	0.07	0.05	0.03
145	0.03	0.05	0.06	1.31	0.96	1.38	0.09	0.05	0.03	0.03	0.04	0.10	0.17	0.11	0.04	0.03
150	0.03	0.05	0.05	1.37	0.82	1.37	0.05	0.05	0.03	0.03	0.03	0.11	0.12	0.13	0.03	0.03
155	0.03	0.02	0.12	1.19	0.71	1.22	0.13	0.03	0.03	0.03	0.04	0.04	0.09	0.07	0.05	0.03
160	0.03	0.02	0.26	0.77	0.56	0.90	0.33	0.02	0.03	0.03	0.04	0.08	0.05	0.04	0.07	0.04
165	0.04	0.03	0.02	0.40	0.35	0.58	0.02	0.02	0.06	0.06	0.06	0.07	0.07	0.07	0.06	0.05
170	0.03	0.04	0.12	0.02	0.02	0.02	0.15	0.04	0.06	0.06	0.08	0.06	0.06	0.05	0.05	0.06
175	0.02	0.04	0.06	0.07	0.08	0.11	0.10	0.04	0.02	0.02	0.03	0.03	0.03	0.02	0.03	0.02
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01

BUG Rating: B1-U1-G0

IESNA Luminaire Flux Distribution Table:

Zone	Lumens	Luminaire %
FL - Front-Low(0-30)	244.68	15.6
FM - Front-Medium(30-60)	471.75	30.1
FH - Front-High(60-80)	88.36	5.6
FVH - Front-Very High(80-90)	5.3894	0.3
Total Forward Light	810.67	51.8

BL - Back-Low(0-30)	238.61	15.2
BM - Back-Medium(30-60)	431.49	27.5
BH - Back-High(60-80)	81.048	5.2
BVH - Back-Very High(80-90)	4.4456	0.3
Total Back Light	755.75	48.2

UL - Uplight-Low(90-100)	0.07651	0.0
UH - Uplight-High(100-180)	0.56347	0.0
Total Up Light	0.63998	0.0

BUG(Back,Up,Glare) Rating	B1-U1-G0

Zone	Downward Lumens	Upward Lumens	Total Lumens
House Side	755.6	0.14776	755.75
Street Side	810.18	0.49222	810.67

2.2 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction QD25)

Test date	2016-11-01	Test Ambient:	25.2 ºC
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	71531		

Electrical Measurement :

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE161105-AA2	120.0	60	0.1238	14.39	0.9687	17.12
	277.0	60	0.0586	15.05	0.9279	19.67
					>= 0.9(-3%)	<= 20(+5)

Chromaticity Measurement - Sphere-Spectroradiometer Method :

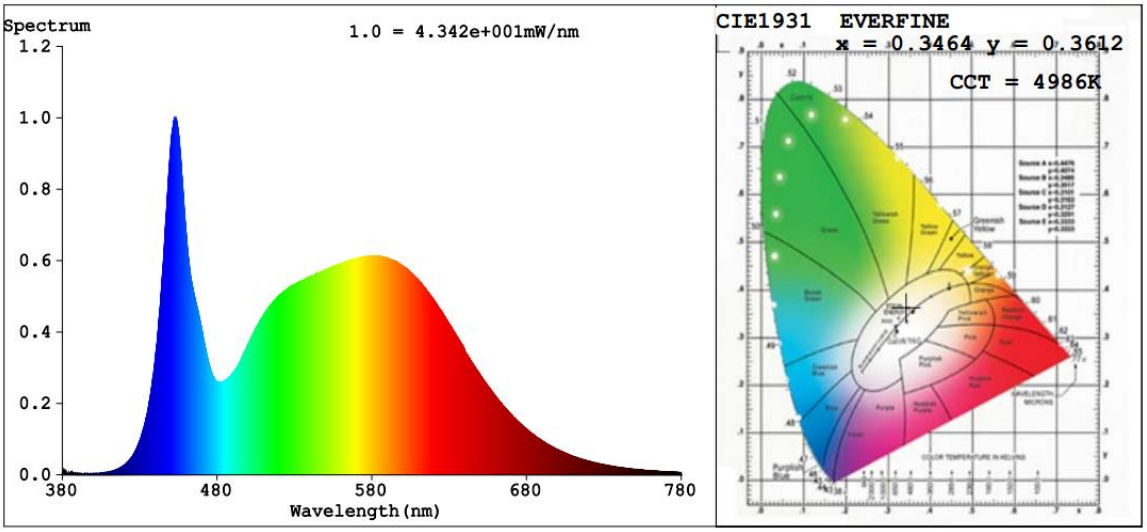
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
CCT (K)	4986
Duv	0.0042
Chromaticity (x, y)	x=0.3464 y=0.3612
Chromaticity (u', v')	u'=0.2086 v'=0.4895
Color Rendering Index (CRI)	82.5
R9	6

Special Color Rendering Indices			
R1	80	R9	6
R2	89	R10	73
R3	94	R11	78
R4	80	R12	54
R5	80	R13	83
R6	83	R14	97
R7	88	R15	74
R8	66	--	--

Photometric Measurement – Sphere-Spectroradiometer Method :

Parameter	Result			
Test Voltage (V)	120.0	277.0	--	
Frequency (Hz)	60	60		
Total Luminous (lm)	1663	1667	>=2000 (-10%)	
Luminous Efficacy (lm/W)	115.57	110.76	Standard: >= 90(-3%)	Premium: >= 110(-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 ********