



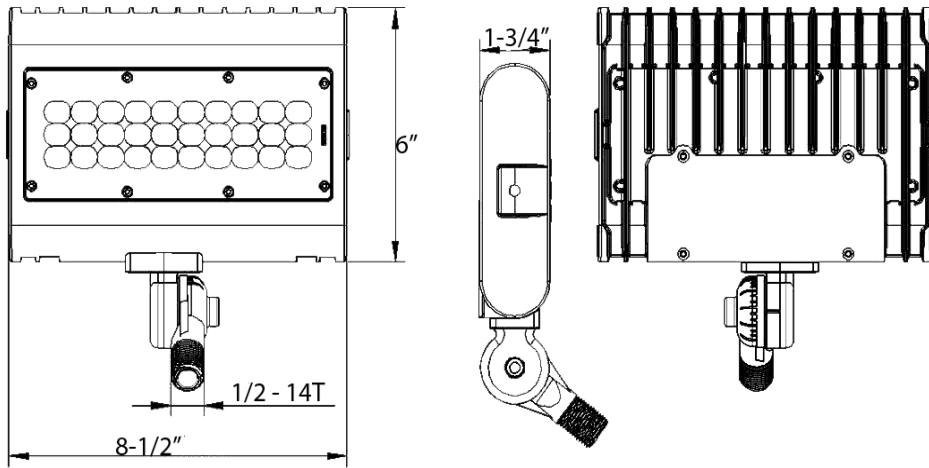
Cat# 71557
 50 Watts
 1/2" Knuckle Mount



Model:		71557
OVERALL LAMP PARAMETERS	Input Voltage	100-277VAC 50/60HZ
	Input Current	0.38A Max
	Input Power	48.92 W
	Power Factor	PF ≥0.92
	Luminance	6179 LM
	Luminous Efficiency	126.31 LM/W
	CRI	82.6
	Beam Angle	90° X 120
	Main Structure	Aluminium + Tempered Glass
LED DRIVER	Output Voltage	24-45VDC
	Output Current	0.7A
	Driver Efficiency	89%
LED	LED Manufacturer	Phillips LUMILED
	LED Type	LUXEON 3030
	LED Quantity	30 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 Norms	UL1598, UL8750, EN60598, EN61347-2-13, EN62031, EN62471
	Withstand Voltage	I/P-FG: 2121VDC
	Grounding Resistance	≤0.5Ω, 0K
	Electromagnetic Compatibility	EN55015, EN61000-2-3, EN61000-3-3, EN61547
OTHERS	Dimension	Pls refer to attached dimensional drawing
	Q' ty / Carton	6 PCS

The above info is for reference only.

Dimension:



LM-79-08 Test Report

For

Morris Products Inc.

53 Carey Rd. Queensbury, NY 12804

Architectural Flood and Spot Luminaires

Model name(s): **71533, 71807, 71808, 71809,
71557, 71823, 71824, 71825,
71582, 71862**

Representative (Tested) Model: 71533

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.

Laboratory: Standard-Tech Co. Ltd Testing Center

NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: Standard-Tech Building, No.6 Guanhong Road, Guangzhou Science City, Guangzhou 510663, China

Tel: 8620-3229 0320

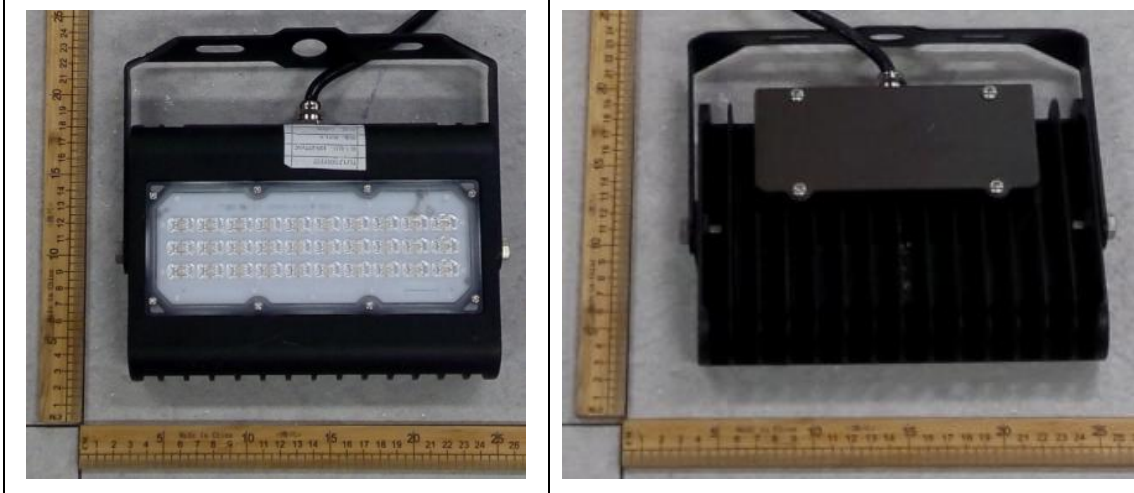
Fax: 8620-32290422

<http://www.standard-tech.com>

1.1 Product Information:

Organization Name	Morris Products Inc.	
Brand Name	MORRIS	
Model Number	71533	
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	50W	
Rated Initial Lamp Lumen	--	
Declared CCT	3000K,4000K,5000K	
LED Manufacturer	Philips Lumileds	
LED Model	L130-2780003000W21	
Sample Number	GZE161105-AC1(3000K),AC2(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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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 °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 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 °C ± 1 °C. 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 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	71533		

Electrical Measurement :

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE161105-	120.0	60	0.4228	49.58	0.9772	15.25
AC1	277.0	60	0.1946	49.63	0.9208	16.46
DLC Pass Criteria					$\geq 0.9(-3\%)$	$\leq 20(+5)$

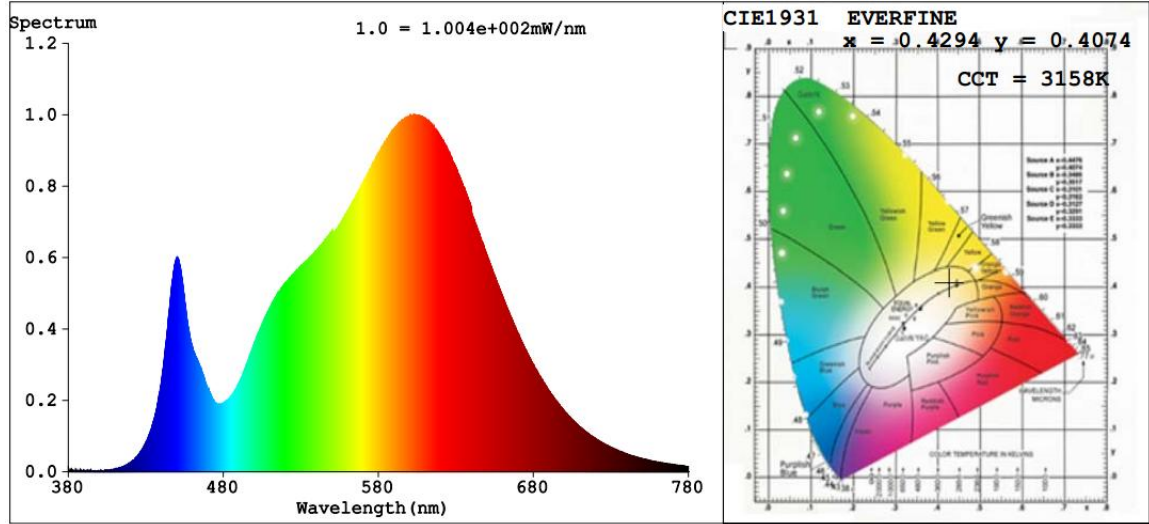
Chromaticity Measurement - Sphere-Spectroradiometer Method :

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	82	R9	14
Frequency (Hz)	60	R2	90	R10	77
CCT (K)	3158	R3	97	R11	83
Duv	0.0025	R4	83	R12	68
Chromaticity (x, y)	x=0.4294 y=0.4074	R5	82	R13	84
Chromaticity (u', v')	u'=0.2443 v'=0.5216	R6	88	R14	98
Color Rendering Index (CRI)	84.0	R7	86	R15	75
R9	14	R8	64	--	--

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)	5882.2	5820.6	$\geq 1000 (-10\%)$	
Luminous Efficacy (lm/W)	118.64	117.28	Standard: $\geq 95(-3\%)$	Premium: $\geq 115(-3\%)$
Zonal lumens in the 0-90 °zone (%)	99.8	--	$\geq 85(-3)$	
Beam Angle (°)	102.1	--	--	
Center Beam Candle Power (cd)	2126	--	--	

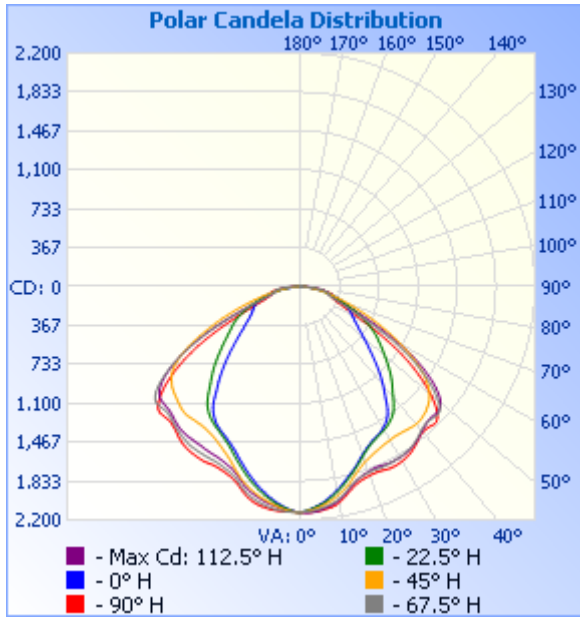
Spectral Power Distribution & Chromaticity Diagram



Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	1,530.8	26%
0-40	2,554.0	43.4%
0-60	4,742.9	80.6%
60-90	1,126.9	19.2%
70-100	459.5	7.8%
90-120	3.6	0.1%
0-90	5,869.8	99.8%
90-180	11.4	0.2%
0-180	5,881.2	100%

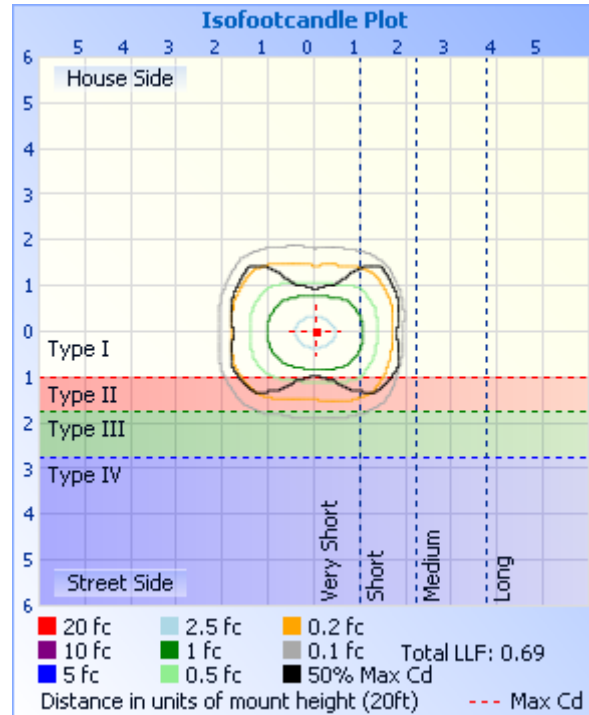
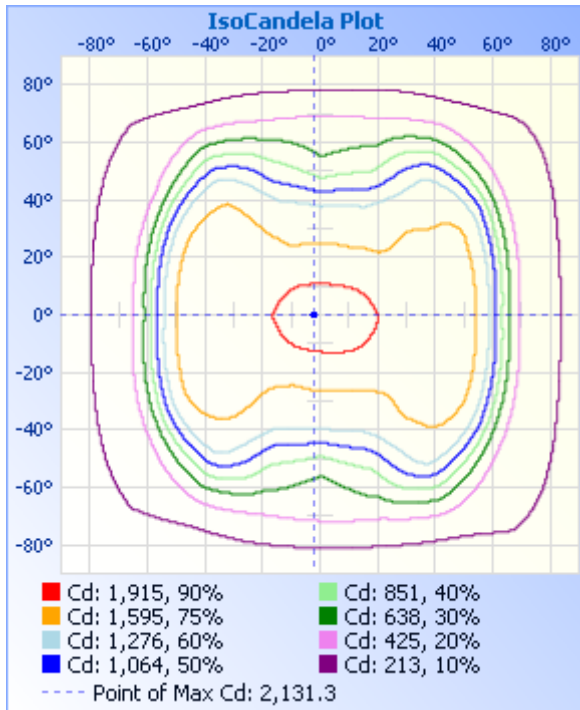
Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	197.1	3.4%	90-100	2.4	0%
10-20	535.8	9.1%	100-110	0.3	0%
20-30	797.9	13.6%	110-120	1.0	0%
30-40	1,023.2	17.4%	120-130	1.6	0%
40-50	1,132.8	19.3%	130-140	1.8	0%
50-60	1,056.1	18.0%	140-150	1.7	0%
60-70	669.8	11.4%	150-160	1.4	0%
70-80	335.3	5.7%	160-170	0.9	0%
80-90	121.9	2.1%	170-180	0.3	0%



Illuminance at a Distance

	Center Beam fc	Beam Width	
17.0ft	7.36 fc	32.7 ft	55.9 ft
34.0ft	1.84 fc	65.4 ft	111.8 ft
51.0ft	0.82 fc	98.1 ft	167.8 ft
68.0ft	0.46 fc	130.8 ft	223.7 ft
85.0ft	0.29 fc	163.5 ft	279.6 ft
102.0ft	0.20 fc	196.2 ft	335.5 ft

■ Vert. Spread: 87.8°
■ Horiz. Spread: 117.4°



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C (DEG) \ γ (DEG)	0	23	45	68	90	113	135	158	180	203	225	248	270	293	315	338
0	2126	2126	2126	2126	2126	2126	2126	2126	2126	2126	2126	2126	2126	2126	2126	2126
5	2126	2101	2078	2066	2059	2065	2082	2101	2119	2114	2094	2077	2072	2081	2097	2121
10	2105	2049	1995	1956	1946	1962	1997	2036	2064	2044	2007	1979	1970	1993	2033	2083
15	2029	1970	1889	1832	1816	1830	1873	1915	1945	1922	1891	1856	1847	1878	1946	2006
20	1915	1850	1768	1708	1687	1699	1758	1862	1893	1855	1771	1722	1715	1750	1825	1886
25	1875	1795	1659	1606	1596	1609	1701	1864	1901	1853	1686	1605	1610	1632	1712	1839
30	1883	1779	1589	1550	1540	1559	1670	1855	1899	1858	1634	1540	1542	1560	1640	1831
35	1867	1769	1562	1464	1418	1492	1670	1828	1851	1833	1637	1464	1443	1493	1610	1823
40	1814	1760	1559	1278	1195	1345	1688	1763	1786	1774	1635	1308	1224	1366	1616	1788
45	1770	1716	1508	1105	974	1195	1660	1752	1800	1737	1594	1136	1007	1188	1604	1739
50	1759	1699	1431	928	785	1034	1576	1690	1602	1713	1520	966	804	1021	1559	1746
55	1516	1612	1349	781	648	891	1386	1382	1230	1465	1388	820	650	867	1487	1645
60	1123	1314	1156	666	561	745	1080	953	754	1060	1117	706	551	750	1313	1321
65	655	877	854	554	496	575	758	519	428	608	784	575	498	632	996	868
70	382	478	555	429	417	408	479	324	319	358	495	437	448	482	675	468
75	295	300	333	311	304	283	291	266	303	268	298	316	356	338	411	300
80	281	232	196	206	172	182	162	227	215	222	172	212	232	228	239	250
85	164	171	101	89.7	54.8	64.2	60.6	110	75.1	122	74.2	99.0	96.8	128	121	195
90	34.0	62.6	23.1	20.4	1.80	0.35	0.24	2.64	3.33	5.27	6.82	24.0	27.0	36.8	34.3	81.0
95	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.21	0.05	0.00	0.00	0.00	0.00	0.00
105	0.00	0.00	0.16	0.00	0.00	0.00	0.37	0.42	0.63	0.64	0.37	0.00	0.05	0.11	0.27	0.16
110	0.37	0.63	0.63	0.00	0.00	0.42	1.11	1.32	1.11	1.06	0.69	0.27	0.27	0.22	0.74	0.74
115	1.31	1.47	1.11	0.27	0.47	0.37	1.32	1.63	1.74	1.69	0.95	0.43	0.37	0.53	1.06	1.22
120	1.79	1.74	1.64	0.43	0.48	0.53	2.06	2.32	2.16	2.06	1.43	0.64	0.59	0.75	1.38	1.48
125	2.48	2.31	1.85	1.17	1.17	1.27	2.11	2.75	2.53	2.27	1.59	1.07	1.50	1.17	1.59	1.74
130	3.00	2.63	1.96	1.60	3.04	1.85	2.11	3.06	2.85	2.21	1.74	1.55	2.09	1.81	1.74	2.11
135	3.11	2.74	2.01	2.13	5.11	2.33	2.11	3.01	2.85	2.21	1.74	1.77	2.13	2.02	1.74	2.33
140	3.11	2.85	2.01	2.40	2.09	2.71	2.11	2.90	2.90	2.48	1.74	2.19	2.51	2.07	1.85	2.43
145	3.11	2.37	2.01	2.40	5.83	2.81	2.17	2.48	2.95	2.53	1.90	2.30	2.57	2.23	2.12	2.43
150	3.06	2.27	2.80	3.20	5.72	3.76	2.22	2.48	2.95	2.79	2.38	2.67	2.94	2.60	2.80	2.54
155	2.79	2.32	3.07	3.85	5.35	4.09	2.75	2.75	2.74	2.85	2.59	2.83	2.94	2.76	2.80	2.54
160	2.42	2.58	3.12	3.84	4.88	4.09	2.91	2.96	2.48	2.85	2.85	2.88	2.73	2.66	2.96	2.64
165	2.42	2.74	3.12	3.90	4.33	3.98	3.12	2.96	2.95	2.80	2.96	3.10	3.15	3.13	3.17	2.85
170	2.90	2.95	3.70	3.85	3.96	3.82	3.75	3.01	3.16	3.16	3.44	3.85	4.07	4.04	3.91	3.75
175	3.00	3.27	3.75	3.90	4.22	3.88	3.86	3.12	3.16	3.11	0.20	3.90	3.96	4.30	3.86	3.91
180	2.85	3.53	3.75	4.06	4.44	3.88	4.07	3.22	3.00	3.00	3.54	3.90	3.85	4.36	3.86	3.85

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BUG Rating: B2-U1-G1

IESNA Luminaire Flux Distribution Table:

Zone	Lumens	Luminaire %
FL - Front-Low(0-30)	762.03	13.0
FM - Front-Medium(30-60)	1602.9	27.2
FH - Front-High(60-80)	493.31	8.4
FVH - Front-Very High(80-90)	58.09	1.0
Total Forward Light	2922.1	49.7

BL - Back-Low(0-30)	768.87	13.1
BM - Back-Medium(30-60)	1610.2	27.4
BH - Back-High(60-80)	511.69	8.7
BVH - Back-Very High(80-90)	63.768	1.1
Total Back Light	2960.2	50.3

UL - Uplight-Low(90-100)	2.4035	0.0
UH - Uplight-High(100-180)	9.0258	0.2
Total Up Light	11.429	0.2

BUG(Back,Up,Glare) Rating	B2-U1-G1
----------------------------------	-----------------

Zone	Downward Lumens	Upward Lumens	Total Lumens
House Side	2954.6	5.6089	2960.2
Street Side	2916.3	5.8204	2922.1

2.2 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction QD25)

Test date	2016-11-01	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	71533		

Electrical Measurement :

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE161105-	120.0	60	0.4168	48.92	0.9781	15.33
AC2	277.0	60	0.1918	48.97	0.9217	16.54
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

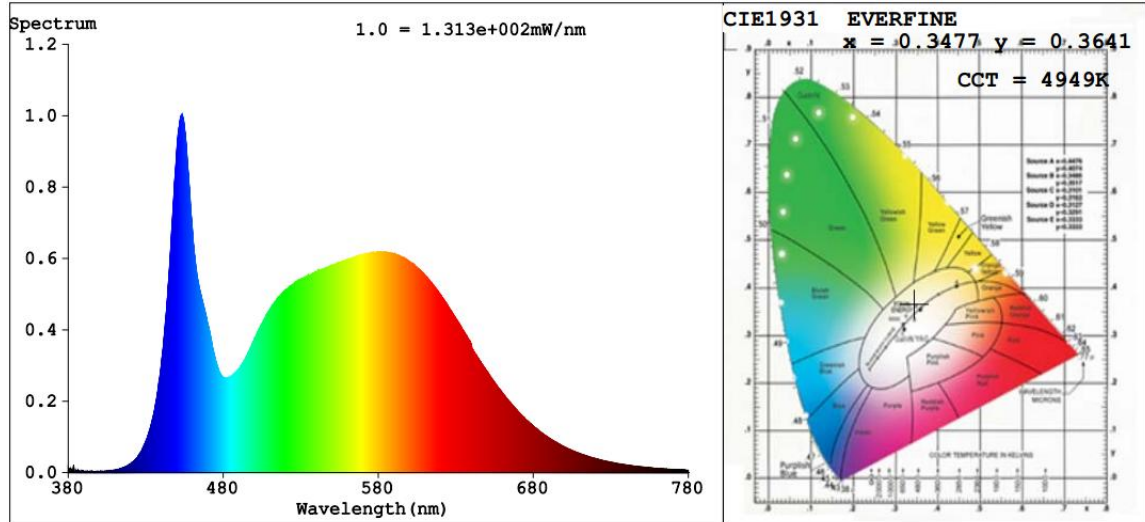
Chromaticity Measurement - Sphere-Spectroradiometer Method :

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	80	R9	6
Frequency (Hz)	60	R2	89	R10	73.
CCT (K)	4949	R3	95	R11	78
Duv	0.0051	R4	80	R12	54
Chromaticity (x, y)	x=0.3477 y=0.3641	R5	80	R13	83
Chromaticity (u', v')	u'=0.2084 v'=0.4910	R6	84	R14	97
Color Rendering Index (CRI)	82.6	R7	88	R15	74
R9	6	R8	66	--	--

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)	6179	6114	>=2000 (-10%)	
Luminous Efficacy (lm/W)	126.31	124.85	Standard: >= 95(-3%)	Premium: >= 115(-3%)

Spectral Power Distribution & Chromaticity Diagram



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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 *******

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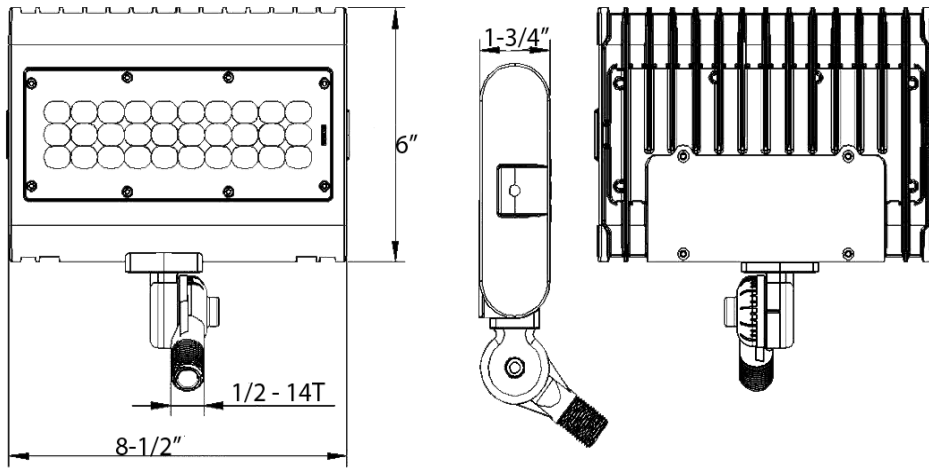
Cat# 71557
 50 Watts
 1/2" Knuckle Mount



Model:		71557
OVERALL LAMP PARAMETERS	Input Voltage	100-277VAC 50/60HZ
	Input Current	0.38A Max
	Input Power	48.92 W
	Power Factor	PF ≥0.92
	Luminance	6179 LM
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	Driver Efficiency	89%
LED	LED Manufacturer	Phillips LUMILED
	LED Type	LUXEON 3030
	LED Quantity	30 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 Norms	UL1598,UL8750, EN60598, EN61347-2-13, EN62031, EN62471
	Withstand Voltage	I/P-FG: 2121VDC
	Grounding Resistance	≤0.5Ω, 0K
	Electromagnetic Compatibility	EN55015, EN61000-2-3, EN61000-3-3, EN61547
OTHERS	Dimension	Pls refer to attached dimensional drawing
	Q' ty / Carton	6 PCS

The above info is for reference only.

Dimension:



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For

Morris Products Inc.

53 Carey Rd. Queensbury, NY 12804

Architectural Flood and Spot Luminaires

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71557, 71823, 71824, 71825,
71582, 71862**

Representative (Tested) Model: 71533

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

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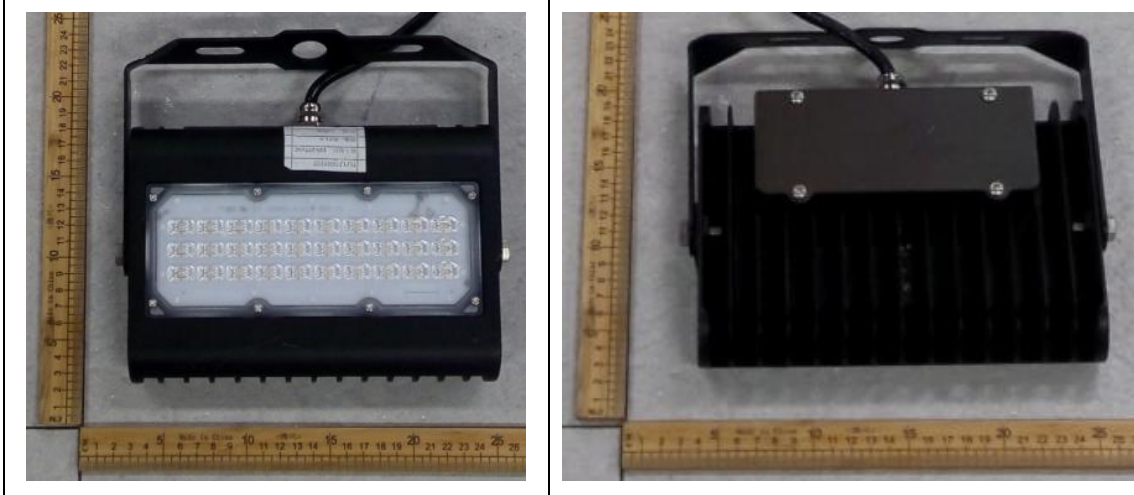
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<http://www.standard-tech.com>

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Organization Name	Morris Products Inc.	
Brand Name	MORRIS	
Model Number	71533	
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	50W	
Rated Initial Lamp Lumen	--	
Declared CCT	3000K,4000K,5000K	
LED Manufacturer	Philips Lumileds	
LED Model	L130-2780003000W21	
Sample Number	GZE161105-AC1(3000K),AC2(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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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

<p>1) Photometric and Light Distribution Measurement – Goniophotometer Method:</p> <p>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.</p>
<p>2) Chromaticity Measurement – Sphere-Spectroradiometer Method:</p> <p>Chromaticity parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained 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 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.</p>
<p>3) Electrical Measurements:</p> <p>Electrical parameters were measured using power meters incorporated in goniophotometer or sphere-spectroradiometer system. The ambient temperature surrounding the sample was maintained at 25 °C ± 1 °C. 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.</p>

2.1 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction QD25)

Test date	2016-11-01	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	71533		

Electrical Measurement :

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE161105-	120.0	60	0.4228	49.58	0.9772	15.25
AC1	277.0	60	0.1946	49.63	0.9208	16.46
DLC Pass Criteria					$\geq 0.9(-3\%)$	$\leq 20(+5)$

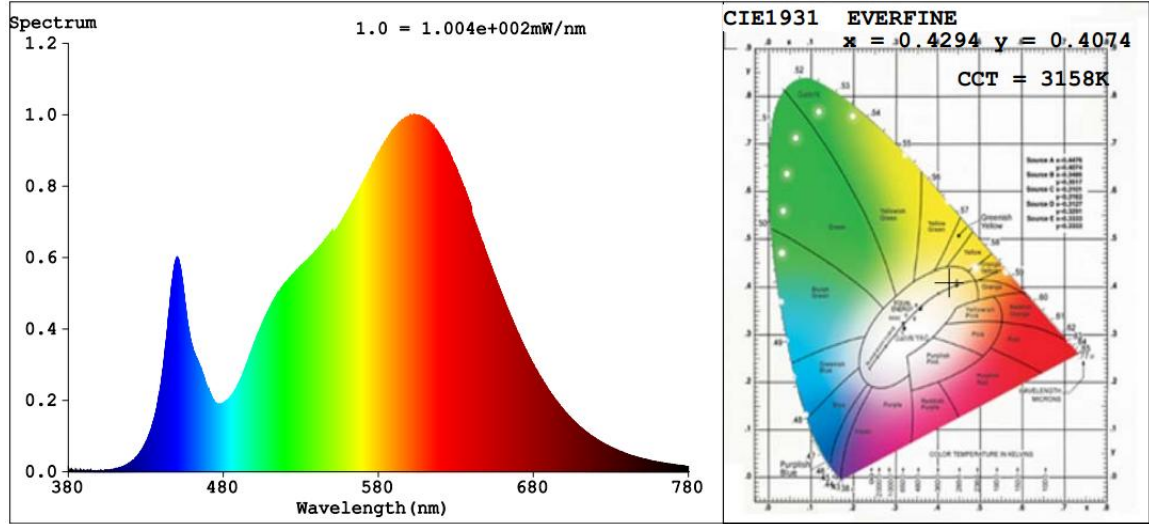
Chromaticity Measurement - Sphere-Spectroradiometer Method :

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	82	R9	14
Frequency (Hz)	60	R2	90	R10	77
CCT (K)	3158	R3	97	R11	83
Duv	0.0025	R4	83	R12	68
Chromaticity (x, y)	x=0.4294 y=0.4074	R5	82	R13	84
Chromaticity (u', v')	u'=0.2443 v'=0.5216	R6	88	R14	98
Color Rendering Index (CRI)	84.0	R7	86	R15	75
R9	14	R8	64	--	--

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)	5882.2	5820.6	$\geq 1000 (-10\%)$	
Luminous Efficacy (lm/W)	118.64	117.28	Standard: $\geq 95(-3\%)$	Premium: $\geq 115(-3\%)$
Zonal lumens in the 0-90 °zone (%)	99.8	--	$\geq 85(-3)$	
Beam Angle (°)	102.1	--	--	
Center Beam Candle Power (cd)	2126	--	--	

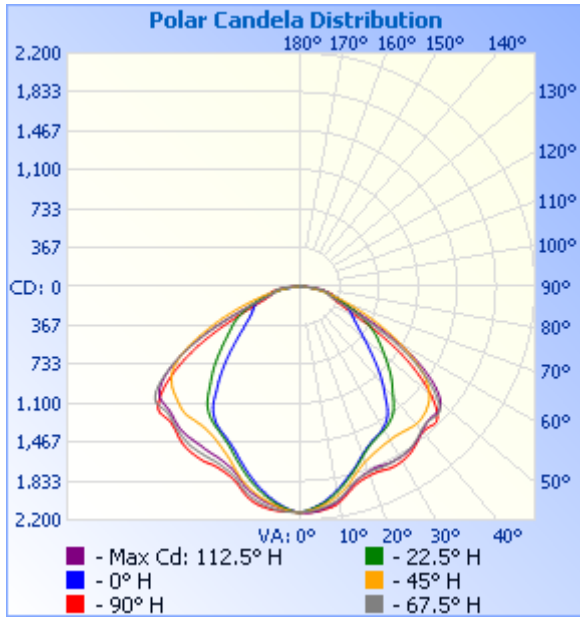
Spectral Power Distribution & Chromaticity Diagram



Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	1,530.8	26%
0-40	2,554.0	43.4%
0-60	4,742.9	80.6%
60-90	1,126.9	19.2%
70-100	459.5	7.8%
90-120	3.6	0.1%
0-90	5,869.8	99.8%
90-180	11.4	0.2%
0-180	5,881.2	100%

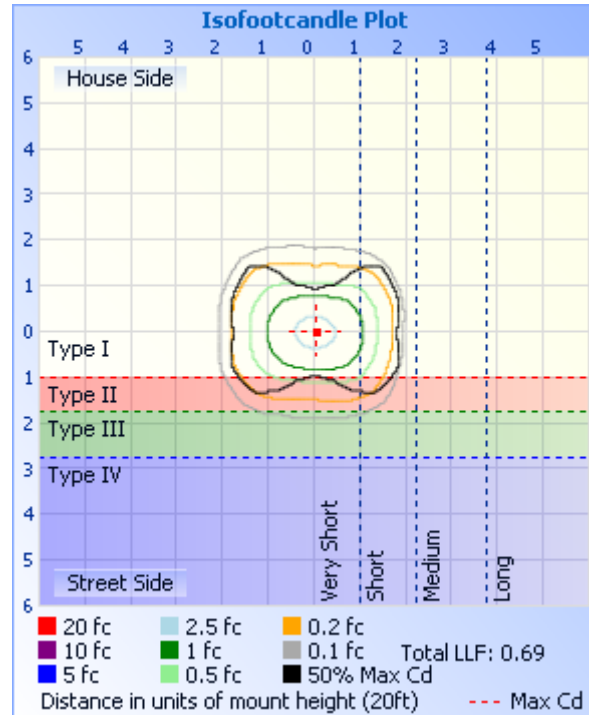
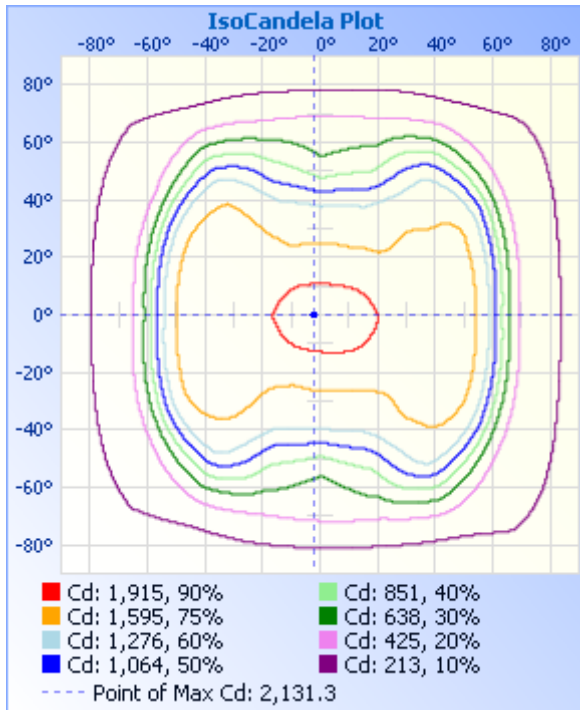
Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	197.1	3.4%	90-100	2.4	0%
10-20	535.8	9.1%	100-110	0.3	0%
20-30	797.9	13.6%	110-120	1.0	0%
30-40	1,023.2	17.4%	120-130	1.6	0%
40-50	1,132.8	19.3%	130-140	1.8	0%
50-60	1,056.1	18.0%	140-150	1.7	0%
60-70	669.8	11.4%	150-160	1.4	0%
70-80	335.3	5.7%	160-170	0.9	0%
80-90	121.9	2.1%	170-180	0.3	0%



Illuminance at a Distance

Center Beam fc	Beam Width	
17.0ft	7.36 fc	32.7 ft 55.9 ft
34.0ft	1.84 fc	65.4 ft 111.8 ft
51.0ft	0.82 fc	98.1 ft 167.8 ft
68.0ft	0.46 fc	130.8 ft 223.7 ft
85.0ft	0.29 fc	163.5 ft 279.6 ft
102.0ft	0.20 fc	196.2 ft 335.5 ft

■ Vert. Spread: 87.8°
■ Horiz. Spread: 117.4°



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C (DEG) \ γ (DEG)	0	23	45	68	90	113	135	158	180	203	225	248	270	293	315	338
0	2126	2126	2126	2126	2126	2126	2126	2126	2126	2126	2126	2126	2126	2126	2126	2126
5	2126	2101	2078	2066	2059	2065	2082	2101	2119	2114	2094	2077	2072	2081	2097	2121
10	2105	2049	1995	1956	1946	1962	1997	2036	2064	2044	2007	1979	1970	1993	2033	2083
15	2029	1970	1889	1832	1816	1830	1873	1915	1945	1922	1891	1856	1847	1878	1946	2006
20	1915	1850	1768	1708	1687	1699	1758	1862	1893	1855	1771	1722	1715	1750	1825	1886
25	1875	1795	1659	1606	1596	1609	1701	1864	1901	1853	1686	1605	1610	1632	1712	1839
30	1883	1779	1589	1550	1540	1559	1670	1855	1899	1858	1634	1540	1542	1560	1640	1831
35	1867	1769	1562	1464	1418	1492	1670	1828	1851	1833	1637	1464	1443	1493	1610	1823
40	1814	1760	1559	1278	1195	1345	1688	1763	1786	1774	1635	1308	1224	1366	1616	1788
45	1770	1716	1508	1105	974	1195	1660	1752	1800	1737	1594	1136	1007	1188	1604	1739
50	1759	1699	1431	928	785	1034	1576	1690	1602	1713	1520	966	804	1021	1559	1746
55	1516	1612	1349	781	648	891	1386	1382	1230	1465	1388	820	650	867	1487	1645
60	1123	1314	1156	666	561	745	1080	953	754	1060	1117	706	551	750	1313	1321
65	655	877	854	554	496	575	758	519	428	608	784	575	498	632	996	868
70	382	478	555	429	417	408	479	324	319	358	495	437	448	482	675	468
75	295	300	333	311	304	283	291	266	303	268	298	316	356	338	411	300
80	281	232	196	206	172	182	162	227	215	222	172	212	232	228	239	250
85	164	171	101	89.7	54.8	64.2	60.6	110	75.1	122	74.2	99.0	96.8	128	121	195
90	34.0	62.6	23.1	20.4	1.80	0.35	0.24	2.64	3.33	5.27	6.82	24.0	27.0	36.8	34.3	81.0
95	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.21	0.05	0.00	0.00	0.00	0.00	0.00
105	0.00	0.00	0.16	0.00	0.00	0.00	0.37	0.42	0.63	0.64	0.37	0.00	0.05	0.11	0.27	0.16
110	0.37	0.63	0.63	0.00	0.00	0.42	1.11	1.32	1.11	1.06	0.69	0.27	0.27	0.22	0.74	0.74
115	1.31	1.47	1.11	0.27	0.47	0.37	1.32	1.63	1.74	1.69	0.95	0.43	0.37	0.53	1.06	1.22
120	1.79	1.74	1.64	0.43	0.48	0.53	2.06	2.32	2.16	2.06	1.43	0.64	0.59	0.75	1.38	1.48
125	2.48	2.31	1.85	1.17	1.17	1.27	2.11	2.75	2.53	2.27	1.59	1.07	1.50	1.17	1.59	1.74
130	3.00	2.63	1.96	1.60	3.04	1.85	2.11	3.06	2.85	2.21	1.74	1.55	2.09	1.81	1.74	2.11
135	3.11	2.74	2.01	2.13	5.11	2.33	2.11	3.01	2.85	2.21	1.74	1.77	2.13	2.02	1.74	2.33
140	3.11	2.85	2.01	2.40	2.09	2.71	2.11	2.90	2.90	2.48	1.74	2.19	2.51	2.07	1.85	2.43
145	3.11	2.37	2.01	2.40	5.83	2.81	2.17	2.48	2.95	2.53	1.90	2.30	2.57	2.23	2.12	2.43
150	3.06	2.27	2.80	3.20	5.72	3.76	2.22	2.48	2.95	2.79	2.38	2.67	2.94	2.60	2.80	2.54
155	2.79	2.32	3.07	3.85	5.35	4.09	2.75	2.75	2.74	2.85	2.59	2.83	2.94	2.76	2.80	2.54
160	2.42	2.58	3.12	3.84	4.88	4.09	2.91	2.96	2.48	2.85	2.85	2.88	2.73	2.66	2.96	2.64
165	2.42	2.74	3.12	3.90	4.33	3.98	3.12	2.96	2.95	2.80	2.96	3.10	3.15	3.13	3.17	2.85
170	2.90	2.95	3.70	3.85	3.96	3.82	3.75	3.01	3.16	3.16	3.44	3.85	4.07	4.04	3.91	3.75
175	3.00	3.27	3.75	3.90	4.22	3.88	3.86	3.12	3.16	3.11	0.20	3.90	3.96	4.30	3.86	3.91
180	2.85	3.53	3.75	4.06	4.44	3.88	4.07	3.22	3.00	3.00	3.54	3.90	3.85	4.36	3.86	3.85

BUG Rating: B2-U1-G1

IESNA Luminaire Flux Distribution Table:

Zone	Lumens	Luminaire %
FL - Front-Low(0-30)	762.03	13.0
FM - Front-Medium(30-60)	1602.9	27.2
FH - Front-High(60-80)	493.31	8.4
FVH - Front-Very High(80-90)	58.09	1.0
Total Forward Light	2922.1	49.7

BL - Back-Low(0-30)	768.87	13.1
BM - Back-Medium(30-60)	1610.2	27.4
BH - Back-High(60-80)	511.69	8.7
BVH - Back-Very High(80-90)	63.768	1.1
Total Back Light	2960.2	50.3

UL - Uplight-Low(90-100)	2.4035	0.0
UH - Uplight-High(100-180)	9.0258	0.2
Total Up Light	11.429	0.2

BUG(Back,Up,Glare) Rating	B2-U1-G1
----------------------------------	-----------------

Zone	Downward Lumens	Upward Lumens	Total Lumens
House Side	2954.6	5.6089	2960.2
Street Side	2916.3	5.8204	2922.1

2.2 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction QD25)

Test date	2016-11-01	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	71533		

Electrical Measurement :

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE161105-	120.0	60	0.4168	48.92	0.9781	15.33
AC2	277.0	60	0.1918	48.97	0.9217	16.54
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

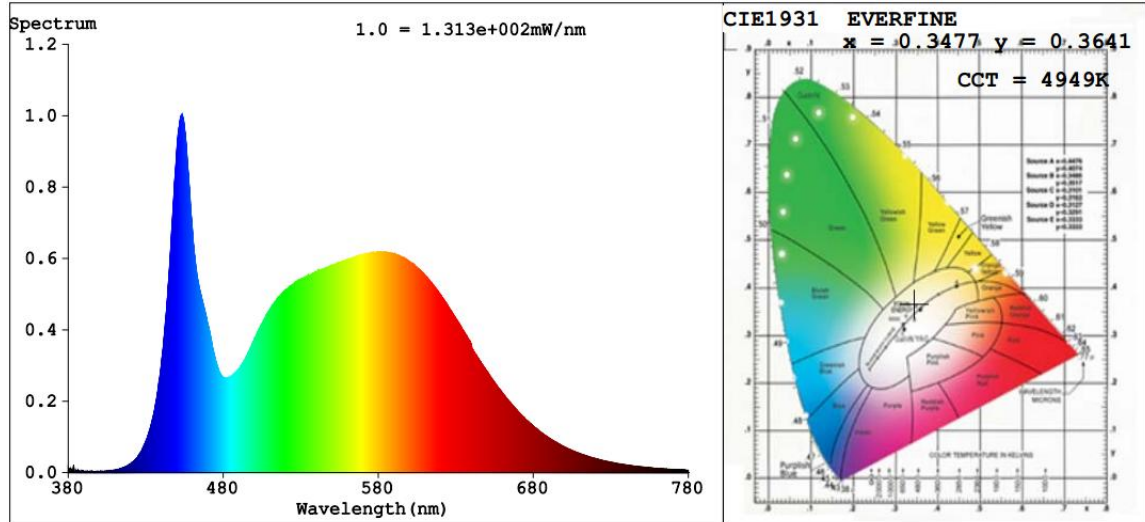
Chromaticity Measurement - Sphere-Spectroradiometer Method :

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	80	R9	6
Frequency (Hz)	60	R2	89	R10	73.
CCT (K)	4949	R3	95	R11	78
Duv	0.0051	R4	80	R12	54
Chromaticity (x, y)	x=0.3477 y=0.3641	R5	80	R13	83
Chromaticity (u', v')	u'=0.2084 v'=0.4910	R6	84	R14	97
Color Rendering Index (CRI)	82.6	R7	88	R15	74
R9	6	R8	66	--	--

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)	6179	6114	>=2000 (-10%)	
Luminous Efficacy (lm/W)	126.31	124.85	Standard: >= 95(-3%)	Premium: >= 115(-3%)

Spectral Power Distribution & Chromaticity Diagram



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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 *******

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