

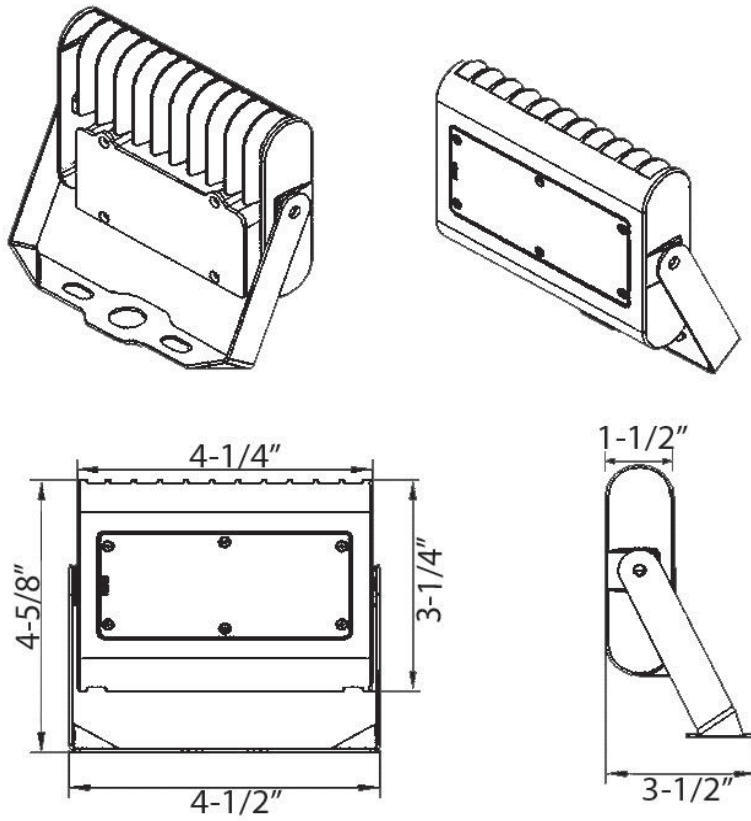


Cat# 71531
15 Watts
Bracket Mount



Model :		71531
OVERALL LAMP PARAMETERS	Input Voltage	100-277VAC 50/60HZ
	Input Current	0.18A Max
	Input Power	15 W
	Power Factor	PF≥ 0.98
	Luminance	1414 LM
	Luminous Efficiency	96.6 LM/W
	CRI	>84
	Beam Angle	120x90°
LED DRIVER	Main Structure	Aluminium Housing + Polycarbonate Lens
	Output Voltage	36-60VDC
	Output Current	0.25A
LED	Driver Efficiency	88%
	LED Manufacturer	Phillips
	LED Type	LUMILED LUXEON 3030 LED
	LED Quantity	18 PCS
	LED Efficacy	120 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 to 131F
SAFETY&EMC	Storage Temperature.Humidity	-40°C—+80°C , 10—90% RH
	Safety Standards	UL1598,UL8750, EN60598, EN61347-2-13, EN62031, EN62471
	Withstand Voltage	I/P-FG: 2121VDC
	Grounding Resistance	≤0.5Ω,OK
OTHERS	Electromagnetic Compatibility	EN55015, EN61000-2-3, EN61000-3-3, EN61547
	Dimension	Pls refer to attached dimensional drawing
	Net Weight	12.5KG
	Gross Weight	14KG
	Packing Size	
Qty / Carton	18PCS	
Volume		

Dimensions :





LM-79-08 Test Report

For

Morris Products Inc.

53 Carey Rd
Queensbury, NY 12804

Brand Name: Morris

LED FLOOD LIGHT

Model: 71531

Laboratory: Leading Testing Laboratories

NVLAP CODE: 200960-0

Tel: +86-571-5668.0806

www.ledtestlab.com

Report No.: HZ15110041a

The laboratory that conducted the testing detailed in this report has been accredited for SSL by NVLAP.

Test specifications:

Date of Receipt : Nov. 27, 2015

Date of Test : Dec. 01, 2015

Test item : Total Luminous Flux, Luminous Distribution Intensity, Luminous Efficacy, Correlated Color Temperature, Color Rendering Index, Chromaticity Coordinate, Electrical parameters

Reference Standard : IESNA LM-79-2008 Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products

Reviewed by:

Engineer: April Zou
Dec. 04, 2015

Approved by



Manager: Jim Zhang
Dec. 04, 2015

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

Test Summary

Sample Tested: 71531

Luminous Efficacy (Lumens /Watt)	Total Luminous Flux (Lumens)	Power (Watts)	Power Factor
96.6	1413.5	14.63	0.9810
CCT (K)	CRI	Stabilization Time (Light & Power)	
5243	83.7	60	
IES Classification	Longitudinal Classification	NEMA Type for Flood Fixture	
Type I	Very Short	7 H x 7 V	

Table 1: Executive Data Summary

Sample Photo

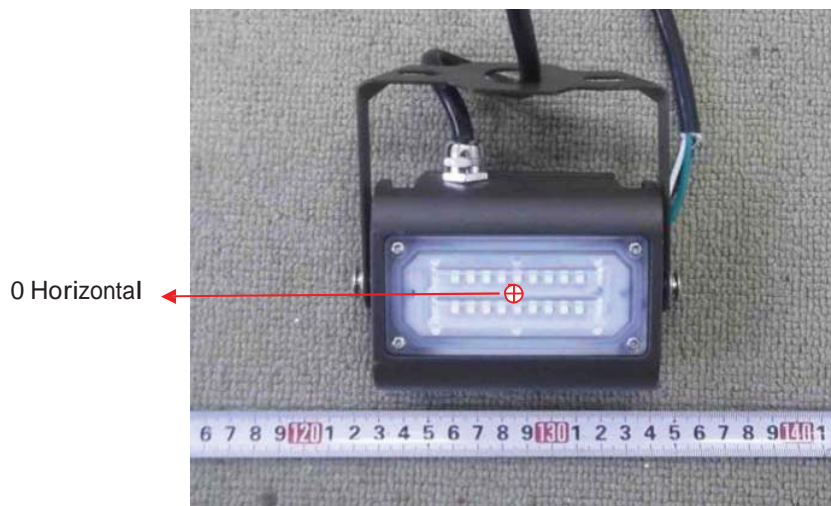


Figure 1- Overview of the sample

Equipment Under Test (EUT)

Name : LED FLOOD LIGHT
 Model : 71531
 Electrical Ratings : 120~277Vac, 50/60Hz, 15W
 Product Description : 5000K, 1 LED bar, Architectural Flood and Spot Luminaires
 Manufacturer : Morris Products Inc.
 Address : 53 Carey Rd Queensbury, NY 12804

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TEST RESULTS

Test ambient temperature was 24.5°C.

Sample orientation was light down. Test was conducted without a dimmer in the circuit.

The stabilization time of the sample was 60 minutes, and the total operating time including stabilization was 85 minutes.

Goniophotometer Method

The photometric distance is 30m.

Luminous data was taken at 0.5°vertical intervals and 5°horizontal intervals.

Parameter	Result		Special Color Rendering Indices	
Test Voltage (V)	120.0	277.0	R1	82
Voltage frequency (Hz)	60	60	R2	89
Test Current (A)	0.124	0.060	R3	93
Power Factor	0.9810	0.8989	R4	83
Test Power (W)	14.63	14.94	R5	83
THD A%	17.41	17.06	R6	85
Luminous Efficacy (lm/W)	96.6		R7	87
Total Luminous Flux (lm)	1413.5		R8	68
Color Rendering Index (CRI)	83.7		R9	10
R9	10		R10	74
Correlated Color Temperature (CCT) (K)	5243		R11	82
Chromaticity (Chroma x, Chroma y)	(0.3389, 0.3513)		R12	63
Chromaticity (Chroma u, Chroma v)	(0.2074, 0.3224)		R13	84
Chromaticity (Chroma u [*] , Chroma v [*])	(0.2074, 0.4836)		R14	97
Duv	0.0024			
Average Beam Angle (°)	104.5			
Center Beam Candle Power (cd)	548			
Spacing Criteria	1.27 (0°-180°) 1.38 (90°-270°)			
Zonal Lumens in the 0°-60°Zone	88.12%			
Zonal Lumens in the 60°-90°Zone	11.73%			
Zonal Lumens in the 90°-120°Zone	0.03%			
Zonal Lumens in the 120°-180°Zone	0.12%			

Table 2: Test data per Goniophotometer Method

Note: According to CIE 1976 (u^{*}, v^{*}) diagram, u^{*} = u / (-2x+12y+3), v^{*} = 3v/2 = 9y/(-2x+12y+3).

Spectral Power Distribution

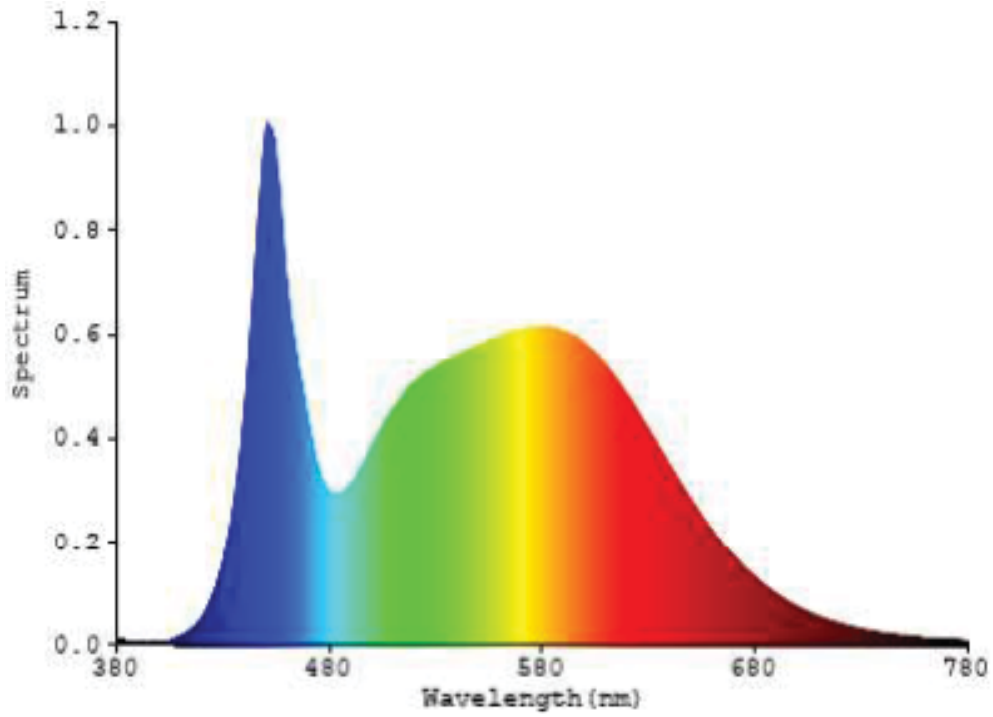


Chart 1: Spectral Power Distribution

IESNA Luminaire Flux Distribution Table

Zone	Lumens	Luminaire %
FL - Front-Low (0-30)	226.5	16.0
FM - Front-Medium (30-60)	399.2	28.2
FH - Front-High (60-80)	82.1	5.8
FVH - Front-Very High (80-90)	3.9	0.3
Total Forward Light	711.7	50.3

BL - Back-Low (0-30)	228.4	16.2
BM - Back-Medium (30-60)	391.6	27.7
BH - Back-High (60-80)	76.9	5.4
BVH - Back-Very High (80-90)	3.0	0.2
Total Back Light	699.9	49.5

UL - Uplight-Low (90-100)	0.1	0.0
UH - Uplight-High (100-180)	2.0	0.1
Total Up Light	2.1	0.1

BUG (Back, Up, Glare) Rating	B1-U1-G0
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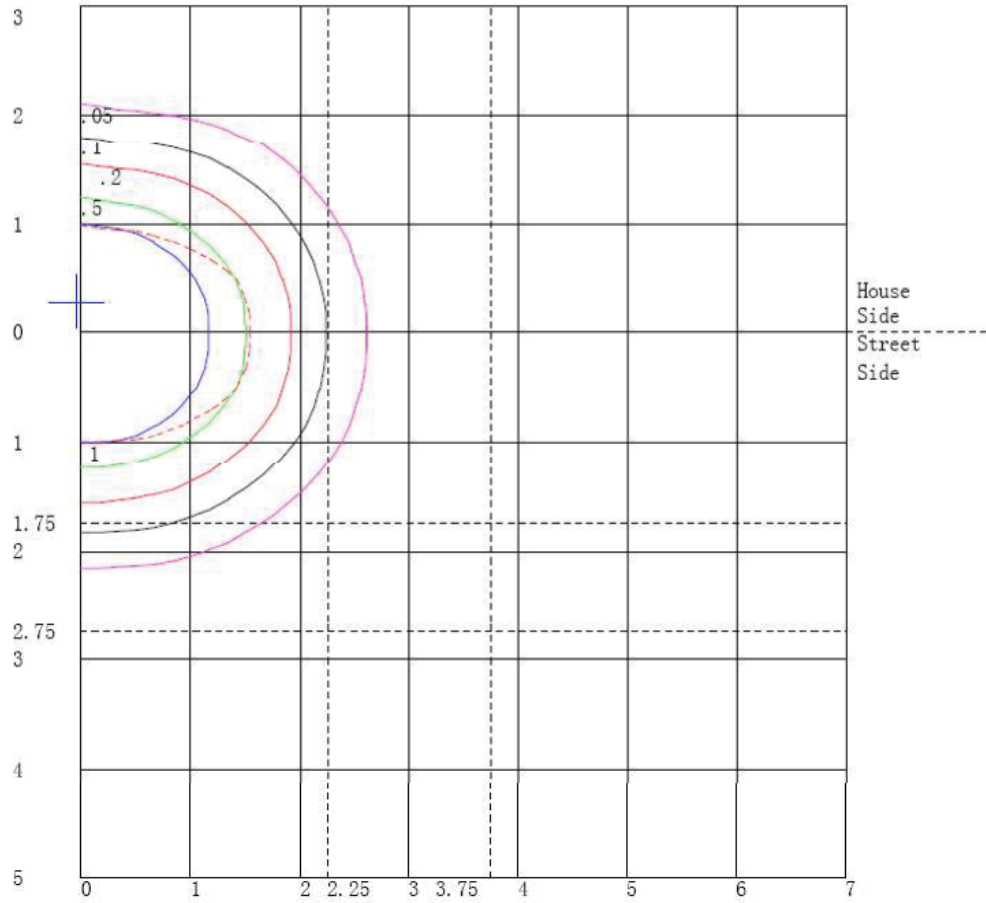
Table 3: Flux Distribution Data

Zone	Downward Lumens	Upward Lumens	Total Lumens
House Side	699.9	0	699.9
Street Side	711.7	0	711.7

Table 4: Flux Distribution Table

Note: The Flux in this table might be a little different from the total flux in Table 2 due to rounding.

Isoilluminance Plots of Horizontal Illuminance



Distance In Units Of Mounting Height
 Values Based On 10 Foot Mounting Height
 1/2 Maximum Candela Trace Shown As Dashed Curve
 (+) = Maximum Candela Point

Chart 2: Illuminance Plot (Footcandles)

Luminous Intensity Distribution Plots

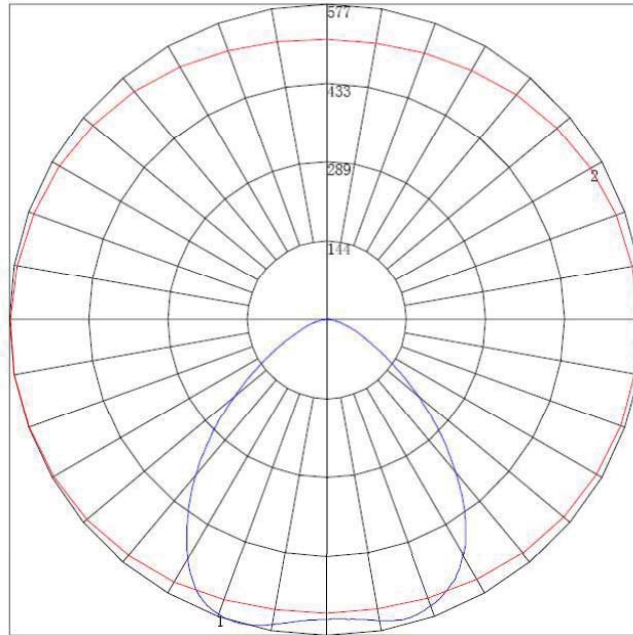


Chart 3: Maximum Plane and Cone Plots of Candela

Maximum Candela = 577.45 Located At Horizontal Angle = 190, Vertical Angle = 16.5

1 - Vertical Plane Through Horizontal Angles (190 - 10) (Through Max. Cd.)

2 - Horizontal Cone Through Vertical Angle (16.5) (Through Max. Cd.)

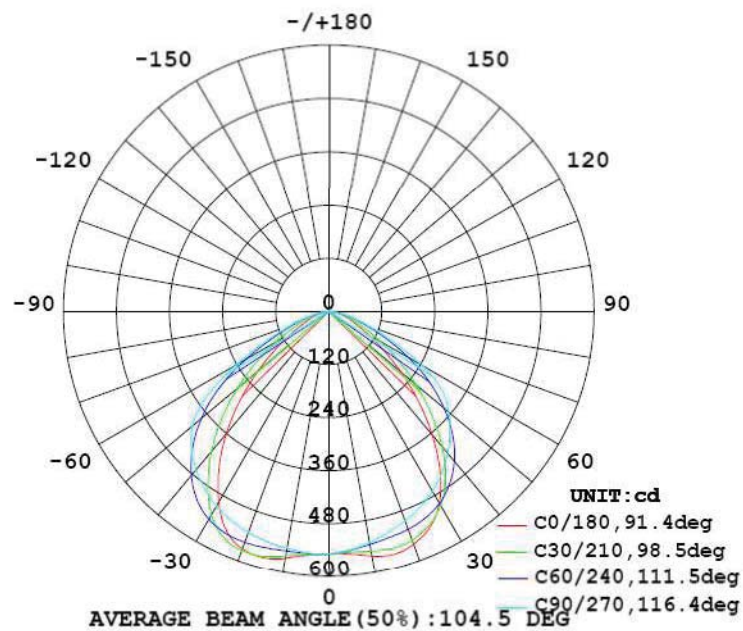


Chart 4: Polar Candela Distribution

Luminous Intensity Data

Table--1 UNIT: cd

C (DEG) \ y (DEG)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
0	548	548	548	548	548	548	548	548	548	548	548	548	548	548	548	548	548	548	548
5	551	550	548	547	545	543	542	541	541	541	542	543	545	547	549	551	553	554	553
10	561	559	555	550	544	539	535	532	530	531	532	535	540	545	551	558	563	567	567
15	569	566	561	555	547	538	529	522	518	518	520	527	535	546	555	563	568	573	576
20	560	558	554	551	545	535	524	513	506	504	508	518	532	543	552	557	562	566	571
25	539	537	535	534	532	526	516	502	491	488	493	507	522	533	539	539	538	538	548
30	500	499	501	506	509	508	501	487	473	469	475	491	506	512	509	500	491	486	498
35	438	439	447	461	474	479	476	466	451	446	453	468	479	476	462	445	430	421	433
40	364	365	378	399	421	437	442	438	425	418	426	439	440	425	404	381	361	349	361
45	286	290	305	328	355	380	397	402	394	387	394	402	391	365	339	313	288	272	284
50	213	217	234	258	283	312	341	358	359	354	359	358	333	301	271	243	218	200	209
55	149	154	170	190	215	242	277	306	315	312	316	306	277	236	206	178	155	137	144
60	100	104	116	133	153	177	208	236	244	242	243	233	204	173	146	123	103	88.8	93.4
65	67.6	70.1	77.8	89.5	103	120	139	157	162	160	160	153	134	116	97.3	79.7	65.6	58.1	60.5
70	45.9	47.5	51.7	58.3	65.6	75.1	85.5	95.1	98.4	97.6	97.2	91.5	81.1	71.9	60.6	50.3	42.3	38.0	39.7
75	30.1	31.0	33.3	36.5	40.3	44.9	49.5	54.0	56.2	55.8	55.2	51.8	46.3	41.8	36.0	30.0	26.1	23.9	25.3
80	17.3	17.8	18.7	20.1	21.7	23.5	25.0	25.4	25.1	25.2	25.4	24.2	22.9	21.0	18.3	15.7	13.9	12.8	14.2
85	1.71	3.65	5.02	4.39	7.55	7.49	6.98	6.63	6.19	6.40	6.17	6.31	5.87	5.18	3.20	1.74	0.12	0.08	0.09
90	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.05
95	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.13	0.09	0.06	0.08	0.05	0.04	0.04	0.04	0.03	0.03	0.03	0.06
100	0.03	0.03	0.04	0.05	0.06	0.13	0.13	0.12	0.09	0.07	0.08	0.11	0.11	0.06	0.05	0.05	0.04	0.04	0.08
105	0.08	0.09	0.11	0.12	0.14	0.14	0.13	0.12	0.10	0.09	0.09	0.10	0.11	0.08	0.11	0.08	0.06	0.06	0.11
110	0.31	0.28	0.23	0.14	0.16	0.15	0.14	0.13	0.12	0.12	0.11	0.11	0.11	0.13	0.13	0.12	0.12	0.14	0.18
115	1.03	0.86	0.62	0.19	0.19	0.18	0.16	0.16	0.15	0.15	0.14	0.14	0.14	0.15	0.14	0.14	0.16	0.25	0.30
120	0.17	0.13	1.50	0.25	0.24	0.22	0.19	0.18	0.18	0.18	0.18	0.18	0.17	0.17	0.17	0.18	0.22	0.13	0.36
125	1.43	3.57	1.31	0.32	0.30	0.26	0.23	0.21	0.21	0.21	0.21	0.21	0.20	0.20	0.21	0.21	0.23	0.36	0.34
130	1.37	3.61	0.47	0.37	0.35	0.31	0.27	0.26	0.25	0.25	0.25	0.24	0.24	0.24	0.24	0.24	0.24	0.37	0.40
135	0.23	0.24	1.57	0.32	0.40	0.35	0.31	0.30	0.28	0.29	0.28	0.27	0.26	0.26	0.27	0.25	0.24	0.25	0.41
140	0.97	3.03	2.05	0.37	0.37	0.39	0.35	0.32	0.31	0.31	0.30	0.30	0.29	0.29	0.27	0.29	0.37	0.41	0.43
145	0.92	2.62	2.09	0.70	0.35	0.36	0.39	0.36	0.35	0.34	0.33	0.33	0.32	0.30	0.31	0.30	0.40	0.40	0.45
150	0.85	2.06	2.02	1.09	0.33	0.34	0.35	0.36	0.35	0.35	0.34	0.33	0.32	0.33	0.33	0.35	0.41	0.40	0.47
155	0.37	0.37	0.36	0.37	0.63	0.42	0.37	0.36	0.35	0.34	0.35	0.35	0.34	0.35	0.36	0.40	0.42	0.40	0.48
160	0.61	1.01	1.28	1.12	0.79	0.53	0.41	0.38	0.37	0.35	0.36	0.37	0.36	0.37	0.39	0.40	0.40	0.41	0.50
165	0.55	0.62	0.83	0.82	0.74	0.61	0.50	0.44	0.41	0.41	0.41	0.43	0.41	0.39	0.40	0.40	0.42	0.42	0.47
170	0.49	0.53	0.57	0.61	0.59	0.53	0.49	0.47	0.47	0.46	0.44	0.45	0.43	0.40	0.40	0.39	0.40	0.41	0.46
175	0.51	0.52	0.52	0.52	0.52	0.52	0.51	0.51	0.49	0.47	0.48	0.47	0.47	0.46	0.46	0.46	0.46	0.47	0.48
180	0.46	0.46	0.46	0.47	0.45	0.45	0.45	0.43	0.43	0.43	0.41	0.42	0.42	0.45	0.44	0.45	0.45	0.44	0.46

Table 5: Luminous Intensity Data

Table--2 UNIT: cd

C (DEG) \ γ (DEG)	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350		
0	548	548	548	548	548	548	548	548	548	548	548	548	548	548	548	548	548		
5	554	553	553	552	551	549	549	548	548	547	548	548	548	549	549	550	550		
10	567	565	561	557	553	550	546	544	543	543	545	546	549	552	555	558	559		
15	577	576	573	567	561	553	546	541	538	539	543	548	554	560	565	568	569		
20	574	575	575	572	565	555	544	535	531	533	540	550	559	565	567	567	565		
25	552	558	564	566	562	553	539	526	521	525	535	547	556	558	556	552	548		
30	505	516	531	542	547	542	529	514	508	513	526	538	542	539	532	523	514		
35	441	456	477	499	514	520	511	496	489	496	510	518	515	505	489	472	458		
40	370	389	413	440	466	484	486	473	466	473	485	484	472	451	426	403	386		
45	294	316	343	372	405	436	452	446	440	445	450	438	413	383	354	329	309		
50	221	243	270	301	337	376	406	407	402	406	403	378	342	307	280	255	235		
55	155	175	200	229	264	304	338	343	339	343	336	304	265	233	207	187	169		
60	102	118	138	162	188	216	242	245	242	247	245	220	190	165	145	129	115		
65	65.3	74.9	89.7	107	122	136	152	156	154	158	157	142	125	110	97.0	85.5	77.0		
70	42.2	47.3	55.5	65.3	73.3	80.2	88.9	92.3	92.1	93.8	93.2	85.1	77.3	69.5	62.0	55.5	51.2		
75	26.6	29.0	32.8	37.6	41.2	44.2	48.2	50.2	50.5	51.3	51.2	47.9	44.9	41.7	38.3	35.6	33.6		
80	14.6	15.5	17.0	18.7	19.1	19.1	20.0	20.4	20.8	21.5	22.0	22.2	22.8	22.0	21.0	20.1	19.7		
85	0.11	0.17	0.34	1.70	3.38	2.84	2.41	2.41	2.65	3.07	3.81	4.75	5.98	6.68	4.76	2.90	2.04		
90	0.00	0.00	0.00	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00		
95	0.06	0.07	0.08	0.09	0.10	0.11	0.11	0.12	0.12	0.13	0.13	0.10	0.09	0.08	0.07	0.06	0.06		
100	0.08	0.09	0.10	0.11	0.12	0.15	0.15	0.16	0.16	0.16	0.16	0.16	0.14	0.11	0.10	0.08	0.07		
105	0.10	0.12	0.13	0.15	0.16	0.17	0.18	0.19	0.19	0.19	0.19	0.18	0.18	0.16	0.14	0.13	0.12		
110	0.13	0.15	0.14	0.16	0.17	0.18	0.19	0.20	0.20	0.20	0.19	0.19	0.19	0.19	0.17	0.25	0.29		
115	0.15	0.19	0.15	0.16	0.17	0.18	0.19	0.19	0.19	0.19	0.19	0.19	0.20	0.22	0.21	0.64	0.89		
120	0.14	0.24	0.16	0.16	0.16	0.17	0.18	0.18	0.19	0.18	0.18	0.19	0.22	0.26	0.26	1.60	1.67		
125	0.34	0.24	0.18	0.17	0.17	0.18	0.18	0.19	0.19	0.18	0.19	0.20	0.24	0.29	0.31	1.04	3.53		
130	0.34	0.28	0.21	0.20	0.19	0.20	0.20	0.21	0.21	0.21	0.22	0.23	0.28	0.33	0.36	0.86	3.62		
135	0.24	0.22	0.24	0.24	0.24	0.24	0.24	0.25	0.26	0.25	0.26	0.28	0.33	0.39	0.30	0.24	0.21		
140	0.41	0.29	0.29	0.28	0.29	0.28	0.29	0.29	0.29	0.29	0.30	0.33	0.38	0.35	0.40	2.35	3.10		
145	0.44	0.42	0.32	0.32	0.32	0.33	0.33	0.33	0.34	0.34	0.36	0.39	0.38	0.35	0.86	2.35	2.73		
150	0.44	0.45	0.36	0.36	0.36	0.35	0.36	0.37	0.37	0.37	0.39	0.37	0.36	0.37	1.29	2.22	2.21		
155	0.44	0.46	0.45	0.40	0.38	0.38	0.38	0.38	0.39	0.39	0.40	0.42	0.46	0.56	0.40	0.41	0.58		
160	0.47	0.47	0.47	0.45	0.43	0.41	0.42	0.42	0.41	0.42	0.43	0.47	0.58	0.83	1.20	1.36	0.93		
165	0.47	0.46	0.47	0.45	0.44	0.45	0.47	0.47	0.47	0.48	0.49	0.54	0.62	0.74	0.87	0.95	0.82		
170	0.47	0.48	0.47	0.46	0.47	0.48	0.51	0.52	0.53	0.53	0.54	0.55	0.57	0.64	0.68	0.68	0.61		
175	0.48	0.49	0.49	0.48	0.48	0.50	0.51	0.48	0.51	0.50	0.54	0.53	0.53	0.54	0.55	0.52	0.52		
180	0.46	0.47	0.46	0.46	0.46	0.45	0.44	0.44	0.43	0.44	0.42	0.43	0.43	0.44	0.44	0.45	0.45		

Table 6: Luminous Intensity Data

EQUIPMENT LIST

Test Equipment	Model	Equipment No.	Calibration Date	Calibration Due date
Goniophotometer system	GO-R5000	HZTE011-01	Jul. 17, 2015	Jul. 16, 2016
Digital Power Meter	PF2010A	HZTE028-01	Jul. 17, 2015	Jul. 16, 2016
AC Power Supply	PCR 500L	HZTE001-08	Jul. 17, 2015	Jul. 16, 2016
DC Power Supply	WY12010	HZTE004-03	Jul. 17, 2015	Jul. 16, 2016
Temperature Meter	TES1310	HZTE017-01	Jul. 17, 2015	Jul. 16, 2016
Standard Source	D908	HZTE012-01	Jul. 23, 2015	Jul. 22, 2016
Standard source	SCL-1400	HZTE012-02	Oct. 21, 2015	Oct. 20, 2016

Table 7: Test Equipment List

TEST METHODS

Seasoning of SSL Product

For the purpose of rating new SSL products, SSL products shall be tested with no seasoning. Therefore, no seasoning was performed.

Goniophotometer Method

Photometric and Electrical Measurements

An EVERFINE Type C Model GO-R5000 Goniophotometer was used to measure the intensity at each angle of distribution for each sample. The photometric distance is 2.475m for near-field measurement or 30m for far-field measurement. Bandwidth of spectroradiometer is 380nm-780nm.

Ambient temperature was measured at the same height of the sample mounted on the Goniophotometer equipment. Each SSL unit was operated on the client provided driver at the rated input voltage in its designated orientation.

The stabilization time typically ranges from 30 min (small integrated LED lamps) to 2 or more hours for large SSL luminaires). It can be judged that stability is reached when the variation (maximum – minimum) of at least 3 readings of the light output and electrical power over a period of 30 min, taken 15 minutes apart, is less than 0.5 %.

Electrical measurements including voltage, current, and power were measured using the Everfine Digital Power Meter.

Some graphics were created with Photometric Plus software.

The standard reference of the Goniophotometer system is halogen incandescent lamp, the intensity distribution type is omni-directional, and is traceable to the National Institute of Metrology P.R. China.

The uncertainty of goniophotometer system reported in this document is expanded uncertainty is 1.8% with a coverage factor k=2.

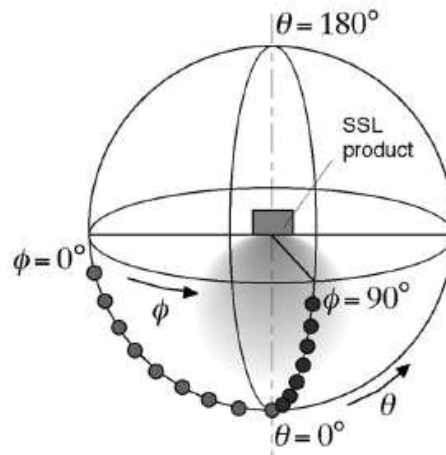
Color Characteristics Measurements

The color characteristics of SSL products include chromaticity coordinates, correlated color temperature, and color rendering index. These characteristics of SSL products may be spatially non-uniform, and thus, in order that they can be specified accurately, the color quantities shall be measured as values that are spatially average, weighted to intensity, over the angular range where light is intentionally emitted from the SSL product. The color characteristics measurements are using gonio-spectroradiometer.

Color Spatial Uniformity

The characteristics of SSL products may be spatially non-uniform, the chromaticity coordinate shall be measured at two vertical planes ($C=0^\circ/180^\circ$ and $C=90^\circ/270^\circ$) and at 10° or less intervals for vertical angle until the light output dropped to below 10% of the peak intensity. The average weighted chromaticity coordinate was calculated from these points. The data was then analyzed to check for delta color differences of the u' , v' chromaticity coordinates. The spatial non-uniformity of chromaticity, $\Delta u'v'$, is determined as the maximum deviation (distance on the CIE (u' , v') diagram) among all measured points from the spatially averaged chromaticity coordinate.

The geometry for the chromaticity measurement using gonio-spectroradiometer is shown as following.



*** End of Report ***

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