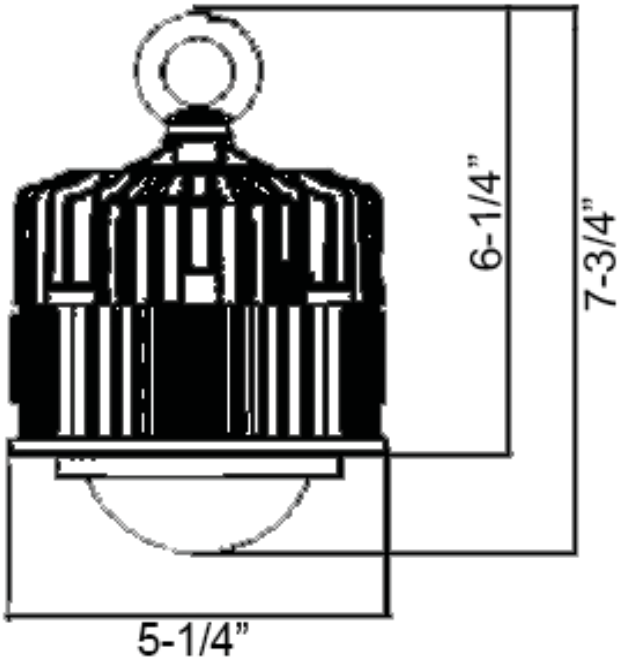
Cat# 71500
Classic Low Bay
50 Watt
Reflectors Sold Separatley

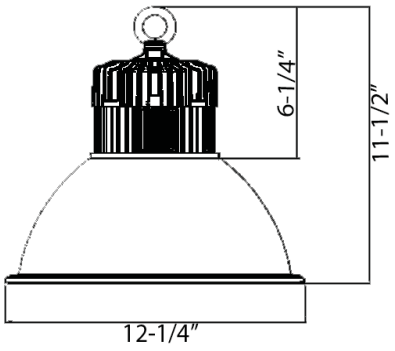
- Integral Cooling Fin Releases Heat Efficiently to Maintain the Life of LEDs & LED Driver
- Corrosion Resistant Die Cast Aluminum Housing with Superior Architectural Bronze Powder Coat Finish, Stainless Steel Hardware & Eye-Hook Mount
- cULus listed for Wet Locations
- DLC Listed When used with Reflector(Sold Separately)
- 5 Year Warranty
- No preheating time, no cooling required before restart
- Note: Reflector (Sold Separtely) must be installed for DLC Eligibility(See MORRIS Cat# 71501 60° Reflector; 71502 120° Reflector; 71503 12" PC Reflector)

	Model :	**71500**
OVERALL LAMP PARAMETERS	Input Voltage	100-277VAC
	Input Current	0.5A @100V / 0.2A @277VAC
	Input Power	50W
	Power Factor	PF≥0.91
	Luminance	5797LM
	Luminous Efficiency	120.65LM/W
	CRI	>82.8
	Beam Angle	120° or 60° (Depending on Reflector)
	Main Structure	Aluminum
LED DRIVER	Driver Manufacturer	TOWIN
	Output Voltage	60-68VDC
	Output Current	0.75A
	Driver Efficiency	90%
LED	LED Brand	3030 1W
	LED Quantity	60PCS
	LED Manufacturer	PHILIPS LumiLED Luxeon 3030
	LED Efficacy	110 LM/W
	Color Temperature	5000K
LIFESPAN & ENVIRONMENT	Lifespan	50000Hrs+
	Warranty	5 Years
	IP Rating	IP65 Wet Locations
	Operating Temperature	-40°F - 131°F
	Storage	-40℃—+80℃ , 10—90% RH
SAFETY&EMC	Safety Norms	UL1598,UL8750, IEC60598, IEC61347-2-13, IEC62031, IEC62471
	Withstand Voltage	I/P-FG: 2121VDC
	Grounding Resistance	25A 100mΩ
	Electromagnetic	EN55015, EN61000-2-3, EN61000-3-3, EN61547
OTHERS	Dimension	Pls refer to attached dimension drawing
	Net Weight	2.2KG
	Gross Weight	2.8KG
	Packing Size	455*330*215mm
	Q'ty / Carton	6PCS
	Volume	-----

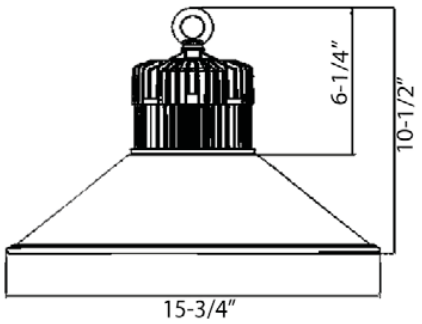
Dimensional Line Art

Cat# 71500

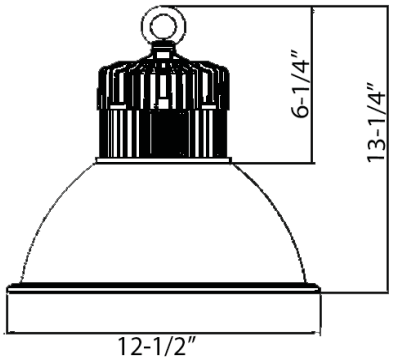




71501 60° Aluminum Reflector



71502 120° Aluminum Reflector



71503 12" PolyCarbonate Reflector

Quality Assured

NVLAP LAB CODE 0096o-D

LM-79-08 Test Report

For

Morris Products Inc.

53 Carey Rd
Queensbury, NY 12804

Brand Name: Morris

LED HIGH BAY LIGHT Model:

71500 (Fixture) with 71501(60° Reflector)

Laboratory: Leading Testing Laboratories

NVLAP CODE: 200960-0
No.180S, DongLiu road, BinJiang District, Hangzhou, China
Tel: +86-571-56680806 www.ledtestlab.com

ReportNo.: HZI5ll004lk

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

Reviewed by:

Engineer: April Zou
Dec. 09, 2015

Approved by:

Manager: Jim Zhang
Dec. 09, 2015

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

Test Summary

Sample Tested: 71500(Fixture) with 71501(60° Reflector)

Luminous Efficacy (Lumens /Watt)	Total Luminous Flux (Lumens)	Power (Watts)	Power Factor
98.0	4249.0	43.34	0.9758
CCT (K)	CRI	Stabilization Time (Light & Power)	BUG (Back, Up, Glare) Rating
5166	83.5	60	B3-U1-G0

Table 1: Executive Data Summary

Test specifications:	
Date of Receipt	: Nov. 30, 2015
Date of Test	: Dec. 07, 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

TABLE OF CONTENT

Sample Photos


Figure 1- Overview of the sample

Equipment Under Test (EUT)	
Name	: LED HIGH BAY LIGHT
Model	: 71500(Fixture) with 71501(60° Reflector)
Electrical Ratings	: 120~277VAC, 50/60Hz, 50W
Product Description	: 5000K, High-Bay Luminaires for Commercial Buildings
Manufacturer	: Morris Products Inc.
Address	: 53 Carey Rd Queensbury, NY 12804

TEST RESULTS

Test ambient temperature was 24.5℃.

Base 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.

Parameter	Result	
Test Voltage (V)	120.0	277.0
Voltage frequency (Hz)	60	60
Test Current (A)	0.370	0.198
Power Factor	0.9758	0.9018
Test Power (W)	43.34	49.54
THD A%	20.08	18.67
Luminous Efficacy (lm/W)	98.0	
Total Luminous Flux (lm)	4249.0	
Color Rendering Index (CRI)	83.5	
R9	6	
Correlated Color Temperature (CCT) (K)	5166	
Chromaticity (Chroma x, Chroma y)	(0.3409, 0.3534)	
Chromaticity (Chroma u, Chroma v)	(0.2079, 0.3233)	
Chromaticity (Chroma u , Chroma v)	(0.2079, 0.4850)	
Duv	0.0027	
Average Beam Angle (°)	63.0	
Center Beam Candle Power (cd)	3691	
Spacing Criteria	0.87 (0°-180°)/ 0.85(90°-270°)	
Zonal Lumens in the 0°-60°Zone	97.82%	
Zonal Lumens in the 60°-90°Zone	2.10%	
Zonal Lumens in the 90°-120°Zone	0.01%	
Zonal Lumens in the 120°-180°Zone	0.07%	

Special Color Rendering Indices	
R1	81
R2	89
R3	94
R4	83
R5	83
R6	85
R7	87
R8	66
R9	6
R10	75
R11	82
R12	65
R13	84
R14	97

Table 2: Test data per Goniophotometer Method

Note: According to CIE 1976 (u ,v) diagram, u = u = 4x/(-2x+12y+3), v = 3v/2 = 9y/(-2x+12y+3).

Quality Assured

Spectral Power Distribution

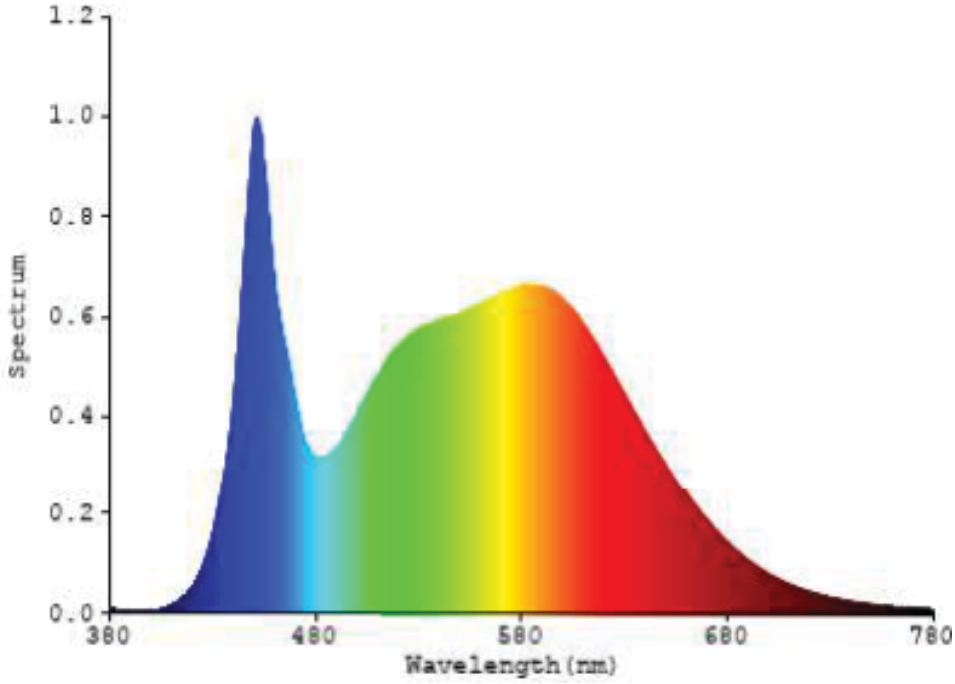


Chart 1: Spectral Power Distribution

Zonal Lumen Tabulation

γ(°)	Lumens	% Total
0- 10	339.546	7.99%
10- 20	840.794	19.79%
20- 30	1025.836	24.14%
30- 40	1050.523	24.72%
40- 50	757.685	17.83%
50- 60	142.119	3.34%
60- 70	62.146	1.46%
70- 80	25.041	0.59%
80- 90	2.068	0.05%
90-100	0.058	0.00%
100-110	0.093	0.00%
110-120	0.169	0.00%
120-130	0.315	0.01%
130-140	0.514	0.01%
140-150	0.692	0.02%
150-160	0.692	0.02%
160-170	0.493	0.01%
170-180	0.184	0.00%
Total	4249.0	100%

γ(°)	Lumens	% Total
0- 60	4156.503	97.82%
60- 90	89.255	2.10%
0-90	4245.758	99.92%
90- 180	3.21	0.08%
0- 180	4249.0	100%

Table 3: Zonal Lumen Data

Illuminance Plots

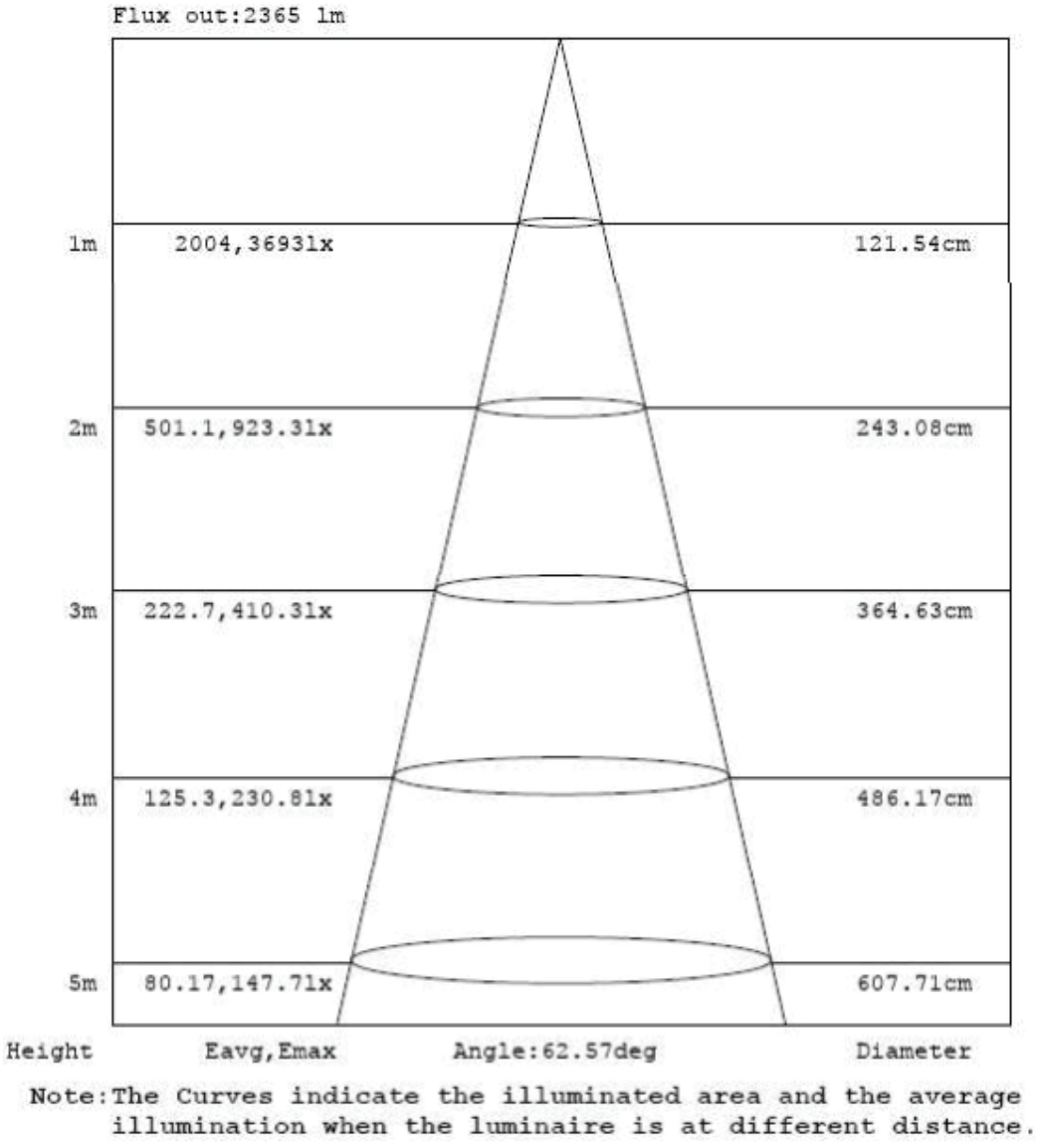


Chart 2: Beam Angle

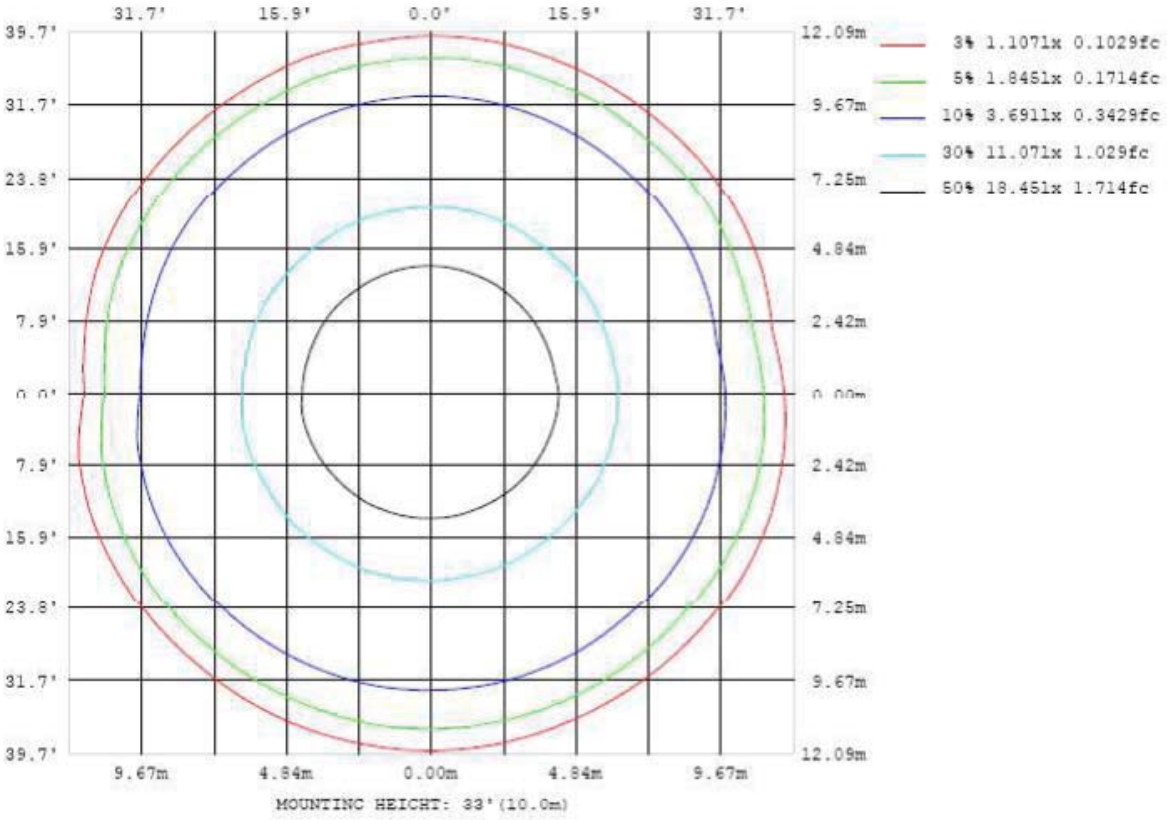


Chart 3: Illuminance Plot (Footcandles)

Luminous Intensity Distribution Plots

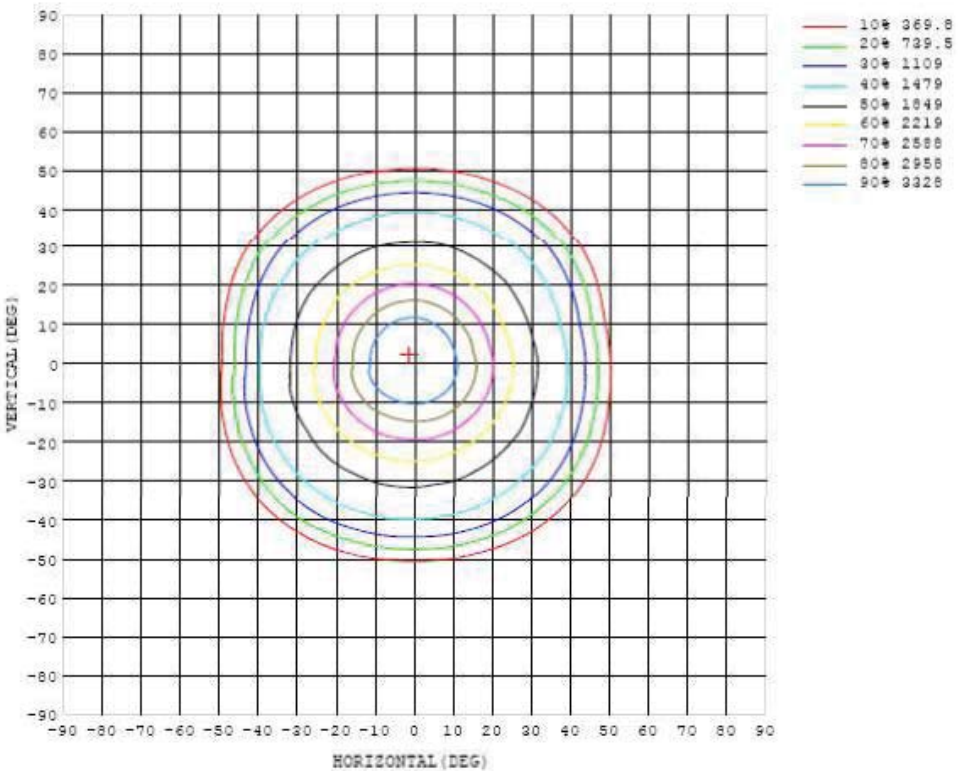


Chart 4: Isocandela Plot

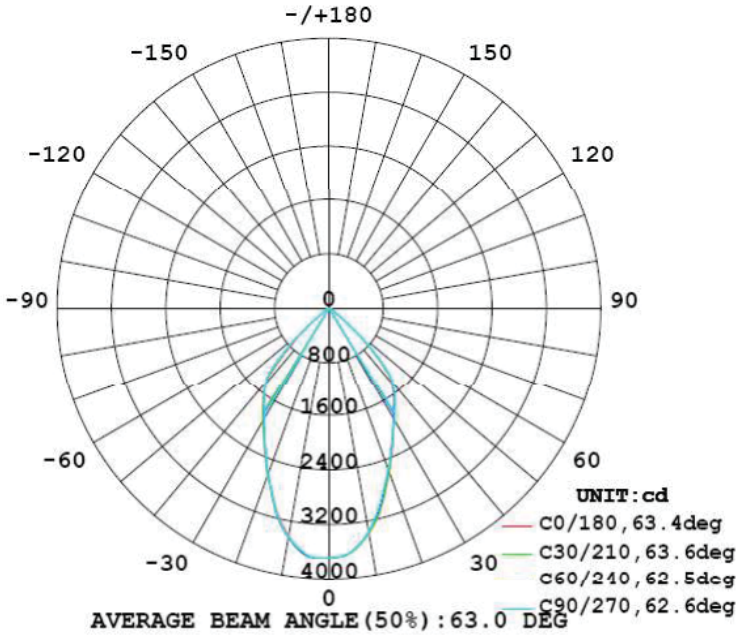


Chart 5: Polar Candela Distribution

Luminous Intensity Data

Table--1 UNIT: cd

γ (DEG) \ C (DEG)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
0	3691	3691	3691	3691	3691	3691	3691	3691	3691	3691	3691	3691	3691	3691	3691	3691	3691	3691	3691
5	3626	3639	3632	3630	3628	3623	3620	3615	3615	3618	3620	3625	3632	3639	3646	3653	3665	3665	3664
10	3382	3381	3377	3380	3374	3361	3357	3358	3357	3351	3355	3362	3378	3393	3417	3435	3452	3451	3418
15	3018	3023	3018	3012	3003	2989	2976	2965	2947	2938	2942	2954	2976	3015	3049	3067	3093	3103	3036
20	2599	2596	2589	2582	2568	2563	2560	2553	2556	2543	2546	2569	2594	2601	2623	2644	2665	2671	2626
25	2236	2227	2226	2210	2207	2198	2194	2197	2201	2218	2228	2228	2248	2251	2268	2276	2296	2301	2256
30	1929	1924	1921	1921	1914	1909	1907	1922	1915	1930	1933	1945	1940	1959	1965	1968	1986	1979	1948
35	1669	1671	1672	1678	1679	1679	1672	1688	1680	1689	1696	1702	1718	1715	1724	1731	1734	1737	1696
40	1427	1443	1447	1453	1440	1444	1458	1459	1460	1472	1484	1477	1482	1485	1497	1501	1504	1497	1462
45	960	978	1024	1037	1044	1016	1052	1040	1043	1040	1060	1063	1063	1076	1075	1087	1071	1021	890
50	367	429	450	455	440	439	421	424	428	436	441	444	455	450	471	456	468	438	304
55	127	128	128	127	125	123	122	121	119	118	117	117	119	121	123	125	126	122	114
60	95.6	95.5	94.6	93.4	91.9	90.8	90.0	89.1	88.2	87.5	86.8	86.2	85.8	85.4	85.6	86.3	87.4	88.6	83.8
65	68.9	68.9	68.4	67.6	66.7	66.0	65.5	65.0	64.3	63.7	63.1	62.5	61.8	61.3	61.1	61.3	61.9	62.6	58.6
70	45.4	45.4	45.1	44.8	44.3	44.0	43.9	43.7	43.3	42.8	42.3	41.8	41.0	40.4	40.0	39.8	40.0	40.2	36.8
75	26.2	26.2	26.0	25.9	25.9	25.9	26.0	26.0	25.8	25.5	25.1	24.7	24.0	23.4	22.8	22.5	22.4	22.5	19.7
80	9.86	9.78	9.89	10.2	10.5	10.9	11.2	11.4	11.3	11.1	11.0	10.7	10.2	9.64	9.04	8.61	8.36	8.28	6.07
85	0.66	0.58	0.53	0.51	0.51	0.52	0.53	0.54	0.59	0.58	0.59	0.60	0.60	0.54	0.50	0.48	0.45	0.46	0.19
90	0.06	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.08	0.08	0.08	0.04
95	0.07	0.06	0.07	0.07	0.07	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.07	0.08	0.03
100	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.08	0.09	0.08	0.08	0.09	0.09	0.09	0.10	0.10	0.09	0.09	0.05
105	0.10	0.10	0.11	0.12	0.12	0.12	0.12	0.12	0.11	0.11	0.11	0.12	0.12	0.12	0.13	0.15	0.12	0.12	0.06
110	0.13	0.13	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.16	0.16	0.16	0.15	0.15	0.09
115	0.17	0.17	0.18	0.18	0.19	0.19	0.19	0.20	0.20	0.20	0.20	0.19	0.19	0.19	0.19	0.19	0.18	0.18	0.13
120	0.23	0.23	0.24	0.25	0.25	0.25	0.26	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.24	0.23	0.23	0.23
125	0.31	0.31	0.31	0.32	0.33	0.34	0.34	0.34	0.34	0.34	0.34	0.33	0.33	0.32	0.32	0.31	0.30	0.30	0.34
130	0.43	0.43	0.43	0.43	0.45	0.46	0.47	0.47	0.47	0.47	0.47	0.47	0.46	0.45	0.44	0.43	0.42	0.41	0.47
135	0.60	0.62	0.62	0.64	0.67	0.68	0.68	0.68	0.69	0.69	0.68	0.68	0.68	0.66	0.63	0.62	0.60	0.58	0.61
140	0.83	0.85	0.86	0.89	0.91	0.94	0.94	0.94	0.95	0.94	0.94	0.92	0.91	0.91	0.89	0.86	0.86	0.83	0.79
145	1.10	1.11	1.14	1.15	1.19	1.21	1.23	1.24	1.24	1.22	1.22	1.19	1.22	1.20	1.17	1.13	1.12	1.10	1.00
150	1.36	1.37	1.42	1.44	1.48	1.49	1.51	1.51	1.49	1.47	1.53	1.50	1.50	1.48	1.46	1.44	1.39	1.36	1.17
155	1.60	1.61	1.67	1.74	1.74	1.73	1.73	1.74	1.75	1.75	1.77	1.74	1.73	1.73	1.73	1.69	1.62	1.60	1.31
160	1.82	1.80	1.81	1.86	1.90	1.91	1.88	1.90	1.89	1.88	1.89	1.90	1.87	1.88	1.88	1.86	1.83	1.81	1.47
165	1.89	1.87	1.88	1.91	1.96	1.98	1.99	2.00	1.98	1.98	1.97	2.00	1.97	1.95	1.95	1.93	1.91	1.90	1.59
170	2.02	2.01	2.03	2.04	2.05	2.06	2.07	2.07	2.06	2.05	2.07	2.09	2.05	2.03	2.03	2.02	2.01	2.00	1.74
175	2.06	2.06	2.07	2.07	2.06	2.05	2.06	2.07	2.06	2.04	2.02	2.06	2.03	2.00	2.01	2.02	2.01	2.01	1.99
180	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98

Table 4: 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	3691	3691	3691	3691	3691	3691	3691	3691	3691	3691	3691	3691	3691	3691	3691	3691	3691		
5	3669	3672	3674	3674	3674	3672	3666	3661	3654	3648	3640	3629	3622	3622	3621	3619	3617		
10	3432	3439	3444	3439	3435	3441	3437	3435	3432	3418	3405	3384	3376	3369	3362	3363	3356		
15	3056	3068	3075	3069	3069	3068	3067	3054	3056	3047	3026	3022	3011	2999	2990	2990	2970		
20	2632	2645	2649	2634	2631	2621	2614	2617	2612	2592	2587	2580	2568	2559	2554	2553	2554		
25	2259	2247	2251	2265	2250	2228	2230	2230	2222	2217	2203	2198	2184	2185	2186	2180	2185		
30	1952	1944	1946	1929	1928	1920	1913	1905	1899	1905	1895	1882	1880	1883	1872	1879	1885		
35	1699	1698	1679	1679	1678	1663	1667	1657	1660	1666	1653	1644	1634	1634	1631	1635	1633		
40	1475	1456	1444	1444	1444	1441	1445	1446	1453	1449	1440	1436	1430	1427	1423	1411	1395		
45	915	966	1008	1016	1021	1031	1040	1030	1022	1029	1014	1009	991	996	976	943	884		
50	349	419	437	429	421	423	442	416	429	427	413	404	401	413	396	375	310		
55	116	122	123	122	121	119	119	119	118	118	119	118	118	118	119	119	119		
60	84.3	84.1	83.7	83.4	83.3	83.4	83.6	84.0	84.4	84.8	85.4	85.8	86.2	86.8	87.5	88.6	89.5		
65	58.9	59.0	58.9	58.7	58.8	59.1	59.4	59.6	60.1	60.7	61.5	61.7	61.8	62.2	62.6	63.4	63.8		
70	37.1	37.2	37.2	37.2	37.3	37.6	38.1	38.4	38.8	39.4	39.9	40.2	40.4	40.6	40.9	41.2	41.5		
75	19.9	20.0	20.2	20.4	20.6	21.0	21.4	21.8	22.1	22.5	22.8	22.9	23.0	23.0	22.9	22.9	23.0		
80	6.24	6.54	6.80	7.25	7.68	8.13	8.53	8.75	8.90	9.05	9.12	8.98	8.71	8.33	7.83	7.48	7.25		
85	0.21	0.19	0.19	0.18	0.20	0.19	0.18	0.17	0.16	0.19	0.19	0.23	0.25	0.21	0.20	0.19	0.21		
90	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03		
95	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.03	0.03		
100	0.04	0.04	0.03	0.04	0.04	0.04	0.04	0.06	0.04	0.04	0.07	0.06	0.04	0.03	0.03	0.03	0.03		
105	0.06	0.04	0.04	0.05	0.05	0.05	0.05	0.06	0.06	0.10	0.07	0.08	0.05	0.05	0.04	0.04	0.04		
110	0.08	0.07	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.10	0.10	0.09	0.09	0.08	0.08	0.08		
115	0.14	0.13	0.14	0.14	0.14	0.14	0.14	0.15	0.16	0.16	0.16	0.16	0.15	0.15	0.14	0.14	0.14		
120	0.24	0.24	0.24	0.24	0.25	0.25	0.25	0.24	0.25	0.25	0.25	0.25	0.25	0.25	0.24	0.24	0.24		
125	0.36	0.36	0.37	0.38	0.39	0.39	0.38	0.38	0.37	0.38	0.38	0.39	0.38	0.37	0.36	0.36	0.36		
130	0.50	0.49	0.51	0.52	0.54	0.55	0.55	0.55	0.52	0.54	0.54	0.54	0.53	0.51	0.49	0.49	0.51		
135	0.65	0.64	0.66	0.69	0.69	0.71	0.71	0.73	0.69	0.72	0.71	0.71	0.69	0.67	0.64	0.65	0.66		
140	0.83	0.83	0.84	0.86	0.87	0.89	0.89	0.90	0.87	0.89	0.89	0.90	0.87	0.83	0.82	0.83	0.82		
145	1.02	1.05	1.06	1.05	1.08	1.08	1.08	1.08	1.06	1.09	1.08	1.08	1.06	1.02	0.99	1.03	1.02		
150	1.20	1.23	1.25	1.23	1.24	1.22	1.21	1.22	1.17	1.22	1.21	1.22	1.21	1.19	1.19	1.17	1.18		
155	1.33	1.35	1.38	1.36	1.33	1.30	1.31	1.31	1.25	1.31	1.32	1.33	1.32	1.33	1.34	1.31	1.32		
160	1.47	1.47	1.48	1.48	1.43	1.43	1.43	1.37	1.34	1.41	1.43	1.44	1.46	1.45	1.42	1.41	1.46		
165	1.57	1.59	1.58	1.59	1.57	1.59	1.57	1.53	1.52	1.54	1.59	1.59	1.57	1.56	1.53	1.52	1.58		
170	1.66	1.67	1.67	1.68	1.63	1.62	1.62	1.63	1.60	1.61	1.64	1.62	1.62	1.62	1.61	1.60	1.73		
175	1.96	1.97	1.96	1.96	1.93	1.90	1.91	1.88	1.83	1.84	1.89	1.87	1.88	1.89	1.90	1.91	2.00		
180	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98		

Table 5: 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 6: 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 expended uncertainty is 1.94% with a coverage factor k=2.

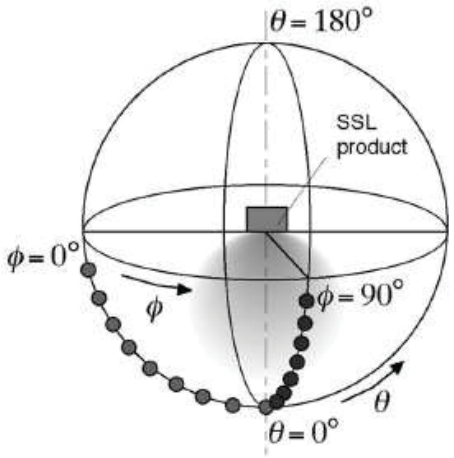
Color Characteristics Measurements

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°/180° and C=90°/270°) and at 10° or less intervals for vertical angle until the light output dropped to below 10% of the peak intensity. The averaged 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, Δ 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 ***