



Catalog Number	71606
UPC Number	60198671606
Description	LED Ultra Thin Canopy Fixture 70W Voltage: 120/208/240/277



Features

Integral Cooling Fin Releases the Heat Efficiently to Maintain the Life of LEDs and LED Driver
Corrosion Die Cast Aluminum Housing
Prismatic Polycarbonate Lens
Superior Architectural Bronze Powder Coat Finish
Cree CXA LED COB
Stainless Steel Hardware
4 Threaded Apertures - (1) Back, (3) Sides
50,000+ Hour Life Expectancy
cULus Listed for Wet Locations

General

Material:	Diecast Aluminum Housing
Lens:	Prismatic Polycarbonate Lens
Finish:	Bronze Powdercoat
Lamp Type:	LED COB
Photocell:	Optional
Color Temperature:	4000K

Dimension Information

Length:	9-1/2"
Width:	9-1/2"
Height:	3"

See Dimensional Drawing below:

Specifications

Color Temperature:	4000K
Lumens:	5703
Temperature Rating:	-40°F to 131°F
Voltage Rating:	120/208/240/277
Wattage Rating:	70W
Light Pattern:	158° Beam Angle
CRI:	≥83

Packaging

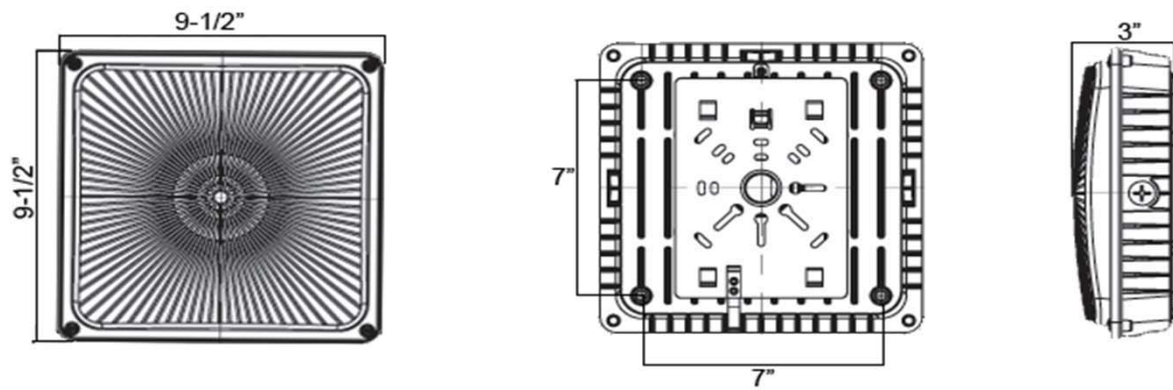
Box Qty	1
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Certifications

cULus	Yes
DLC	Yes
IP65(Nema 4X)	Yes
Warranty	5 Year

Dimensions:

71606



www.morrisproducts.com

Morris Products 53 Carey Road, Queensbury, NY 12804

IES LM-79-08

MEASUREMENT AND TEST REPORT

For

Morris Products Inc.

53 Carey Rd Queensbury, NY 12804

Test Model: 71606

Report Type:	Electrical and Photometric tests including: Luminous Flux, Color, Luminous Intensity Distribution, THD, Power Factor, Off-state Power
Test Engineer:	Daniel Duan <i>Daniel Duan</i>
Report Number:	RSZ150420522-10
Test Date:	2015-04-27 to 2015-04-28
Report Date:	2015-05-06
Reviewed By:	Jeanne Han/Safety Manager <i>Jeanne Han</i>
Prepared By:	Bay Area Compliance Laboratories Corp. (Shenzhen) 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China Tel: +86-755-33320018 Fax: +86-755-33320008
Test Facility:	Test facility was located at Pu Long Cun 69, Puxinghu Industrial Area, Tangxia Town, Dongguan, Guangdong, P.R.China.
Accreditation:	The NVLAP Lab Code is 200707-0.

STATEMENT: This test may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (Shenzhen). The test data was only valid for the test sample(s). This report **must not** be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Federal Government. This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

1. Product Description

General Information:

One sample was received on 2015-04-20 and used for testing. Sample No.: RSZ150420522-S01

Model: 71606

Model Tested: 71606

Manufacturer: Morris Products Inc.

Brand Name: Morris

Product Designation: Parking Garage Luminaires

Burning Time Before Test: 0 hour(For New Products)

Rated Values:

Rated Voltage/Frequency: 100-277VAC 60Hz

Rated Power: 70W

Nominal CCT: 4000K

2. Standards Used

- IESNA LM-79-08: Approved Method: Electrical & Photometric Measurement of Solid-state Lighting Products
- ANSI C82.77-2002: Harmonic Emission Limits – Related Power Quality Requirements for Lighting

3. Description of Test Equipment

Device	Manufacture	Model No	Serial No	Test Range	Calibration date	Calibration due date
Integrating Sphere	SENSING	SPR-600	S09008	1.5 meter	2015-03-16	2016-03-16
Spectral photometer	SENSING	SPR3000	90902027	380nm~800nm	2015-03-16	2016-03-16
Power Meter	YOKOGAWA	WT-210	91J926132	15/30/60/150/300/600 V	2015-03-05	2016-03-05
AC Power Supply	ALL Power	APW-105N	970613	0V-300V 50-400Hz	2015-03-05	2016-03-05
Standard Light Source	EVERFINE	D204	LSD090808	N/A	2014-08-05	2015-08-05
Thermal Meter	SENSING	N/A	N/A	25℃,45℃,55℃	2015-03-05	2016-03-05
DC Power Supply	ITECH	IT6154	0061 0417 6471 0010 19	0~60V	2015-03-05	2016-03-05
AC Power Supply	EVERFINE	VPS1060 PWM	1101006	0-150V, 0-300V	2015-03-12	2016-03-12
DC Power Supply	EVERFINE	WY12010	1009009	30V/5A	2015-03-05	2016-03-05
Power Meter	YOKOGAWA	WT-210	91KB35700	15/30/60/150/300/600 V	2015-03-05	2016-03-05
Goniophotometer	EVERFINE	GO-R5000	YG108492N10120001	1600mm,3000W/10A	2015-03-04	2016-03-04
Thermal Meter	Victor	VC230	EE091	0~40℃0~90%	2013-04-01	2016-03-31
Standard Light Source	EVERFINE	D908	1012004	N/A	2014-07-31	2015-07-31

Statement of Traceability: Bay Area Compliance Laboratories Corp. (Shenzhen) attested that all calibration has been performed using suitable standards traceable to National Primary Standards and International System of Units (SI).

4. Test Method

Product was tested with no seasoning. All stabilization and measurements were made in compliance with IES LM-79-08. The product was operated at rated voltage or at voltage required by manufacturer. The ambient temperature of the sample was maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$ during measurement. And relative humidity is less than 65%.

Integrating Sphere System

The system includes AC power source, digital power meter, DC power supply, spectrophotometer, and integrating sphere. The integrating sphere system is calibrated by standard light source before measurement. The system and standard light source has been calibrated regularly and traceable to the National Primary Standards.

4 π geometry was used during measurement. The product was operated in its intended orientation in application and was recorded in this report.

The uncertainty of the light output (luminous flux) measurements is $U=1.64\%$ ($K=2$), at the 95% confidence level. The uncertainty of the correlated color temperature measurements is $U=21\text{K}$ ($K=2$), at the 95% confidence level. The uncertainty of the CRI is $U=1.6$ ($K=2$), at the 95% confidence level.

Goniophotometer System

The goniophotometer system is calibrated by standard light source before measurement. The standard light source has been calibrated regularly and traceable to the National Primary Standards.

Type C goniophotometer was used for measuring total luminous flux, luminous intensity distribution, and color spatial uniformity. The product was operated in its intended orientation in application and was recorded in this report.

The uncertainty of the luminous intensity is $U=2.82\%$ ($K=2$), at the 95% confidence level.

Additional Test

The Additional Test item may not be covered by IESNA LM-79-2008. Additional test including power factor, off-state power and THD, was measured by Digital Power Meter after stabilized at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$. Test voltage for THD and power factor test would be equal to rated voltage or, in case of a voltage range, maximum value of that range.

The uncertainty of power meter AC current $U=0.19\%$ of rdg, AC Voltage $U=0.15\%$ of rdg, Power $U=0.20\%$ ($K=2$), at the 95% confidence level.

5. Test Result

[Integrating Sphere System]

Total operating time for integrating sphere test: **1.5 hours**

Test orientation: **Downward**

Electrical Measurement

Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
120.03	60.0	0.6054	71.44	0.983

Photometric Measurement

Luminous Flux (lm)	Radiant Flux (W)	Efficacy (lm/W)	CCT (K)	Duv
5703.348	15.026	79.834	4108	3.60E-04

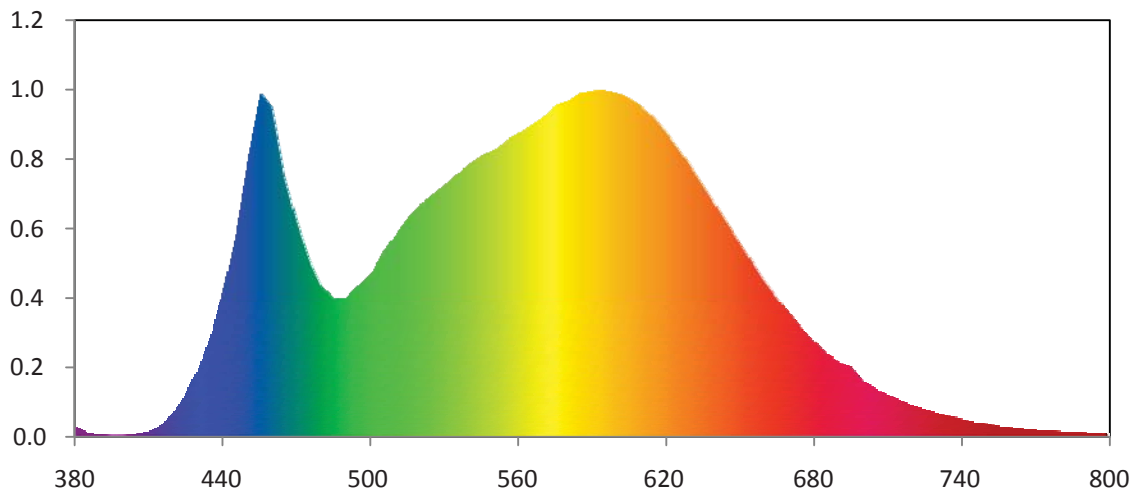
Chromaticity Coordinate

x	y	u	v	u'	v'
0.3761	0.3748	0.2230	0.3334	0.2230	0.5000

Color Rendering Index

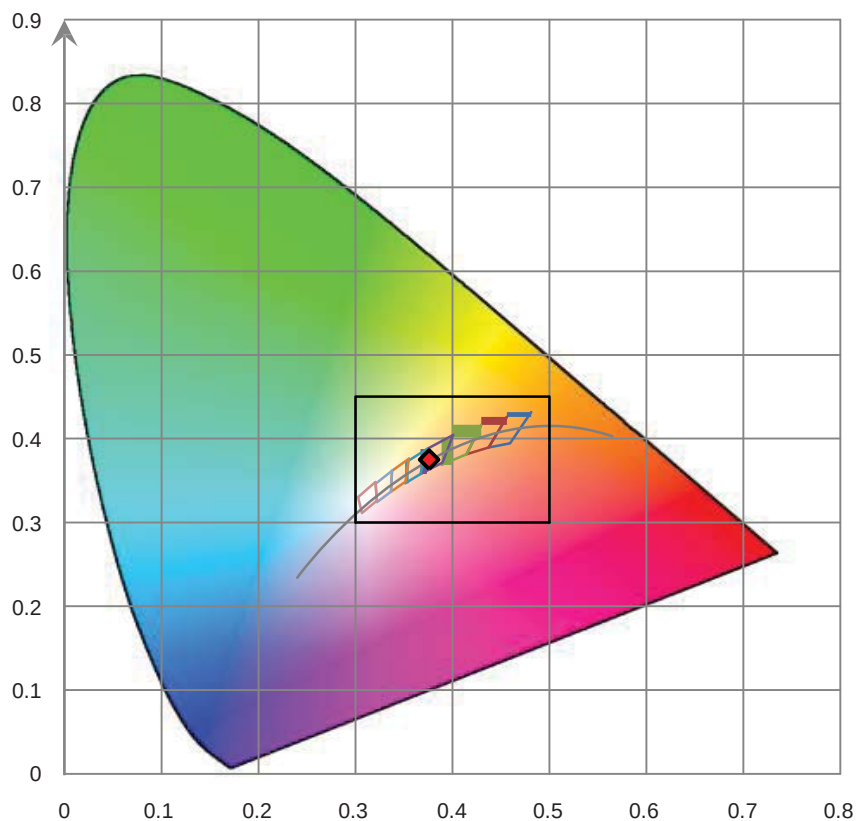
Ra			
85.0			
R1	R2	R3	R4
84	92	96	82
R5	R6	R7	R8
83	88	87	68
R9	R10	R11	R12
20	80	80	65
R13	R14	R15	
87	98	79	

Relative Spectral Power Distribution

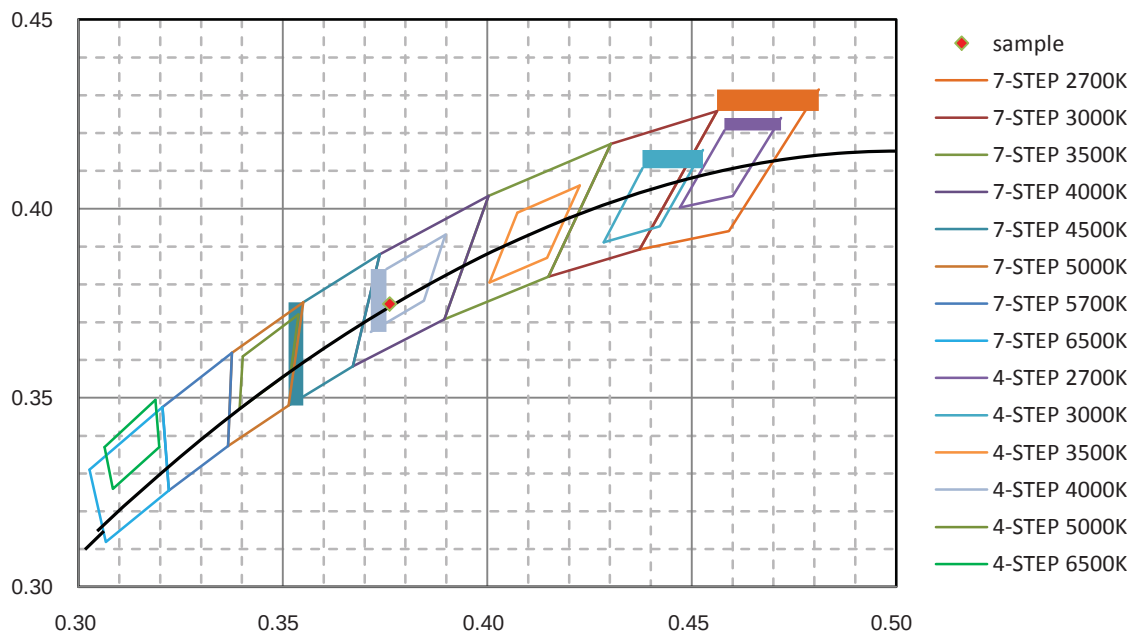


nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	1.428E-02	465	3.033E-01	550	3.349E-01	635	2.935E-01	720	3.763E-02
385	5.818E-03	470	2.495E-01	555	3.464E-01	640	2.714E-01	725	3.270E-02
390	3.534E-03	475	2.058E-01	560	3.536E-01	645	2.484E-01	730	2.834E-02
395	2.371E-03	480	1.749E-01	565	3.622E-01	650	2.266E-01	735	2.441E-02
400	2.479E-03	485	1.606E-01	570	3.745E-01	655	2.040E-01	740	2.132E-02
405	3.937E-03	490	1.635E-01	575	3.866E-01	660	1.816E-01	745	1.830E-02
410	7.940E-03	495	1.763E-01	580	3.913E-01	665	1.628E-01	750	1.643E-02
415	1.578E-02	500	1.910E-01	585	4.004E-01	670	1.448E-01	755	1.383E-02
420	2.976E-02	505	2.151E-01	590	4.028E-01	675	1.278E-01	760	1.222E-02
425	5.118E-02	510	2.370E-01	595	4.033E-01	680	1.125E-01	765	1.061E-02
430	8.075E-02	515	2.559E-01	600	4.009E-01	685	9.827E-02	770	9.161E-03
435	1.201E-01	520	2.710E-01	605	3.936E-01	690	8.840E-02	775	8.224E-03
440	1.724E-01	525	2.829E-01	610	3.846E-01	695	8.240E-02	780	7.159E-03
445	2.351E-01	530	2.952E-01	615	3.723E-01	700	6.572E-02	785	6.532E-03
450	3.290E-01	535	3.071E-01	620	3.548E-01	705	5.732E-02	790	5.956E-03
455	4.004E-01	540	3.175E-01	625	3.364E-01	710	5.002E-02	795	5.261E-03
460	3.820E-01	545	3.266E-01	630	3.151E-01	715	4.377E-02	800	4.539E-03

CIE 1931 x y Chromaticity Diagram



7-Step & 4-Step Chromaticity Quadrangles



[Goniophotometer System]

Total operating time for luminous intensity distribution: **1.5 hours**

Test orientation: **Downward**

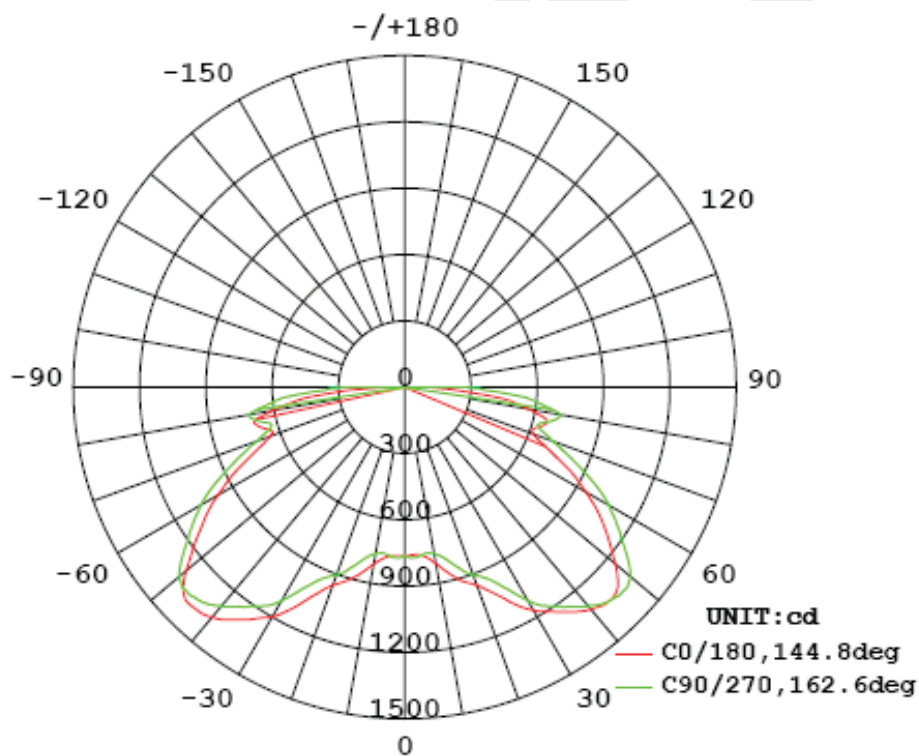
Electrical Measurement

Input Voltage (V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.1	60.0	0.6052	71.02	0.9771

Photometric Measurement

Luminous Flux (lm)	Efficacy (lm/W)	CBCP (cd)	S/MH (C0/180)	S/MH (C90/270)
5688.2	80.09	763	2.11	2.16

Luminous Intensity Distribution



	C0/180	C45/225	C90/270	C135/315	AVG.
Beam Angle (50% I _{max}):	144.8	159.5	162.6	159.5	156.6
Field Angle (10% I _{max}):	177.1	180.3	180.9	180.3	179.7

Luminous Intensity (cd) Distribution Data

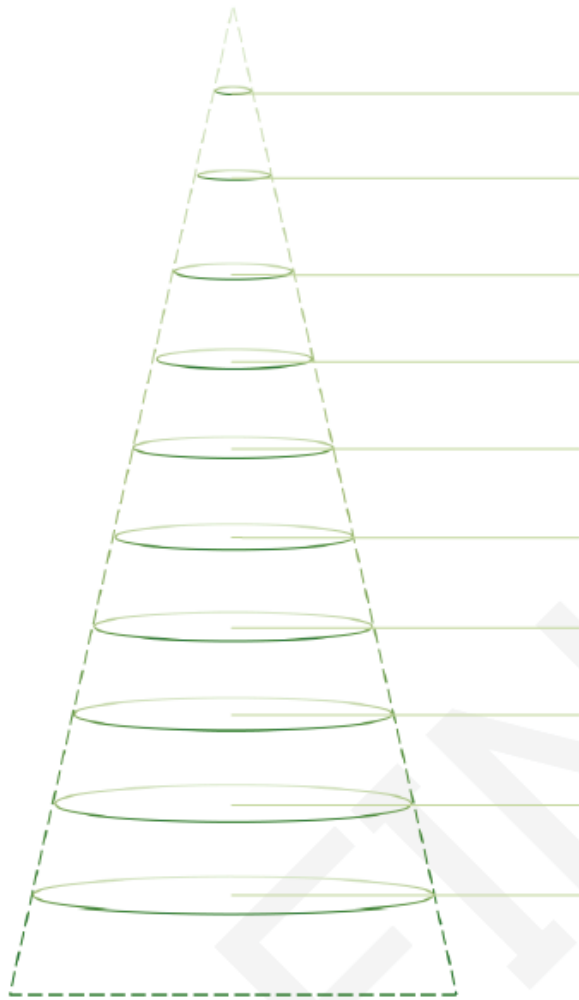
C y	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
0.0°	763	763	763	763	763	763	763	763
5.0°	767	767	766	767	767	763	759	759
10.0°	812	795	781	770	764	765	771	788
15.0°	890	874	854	835	824	830	844	867
20.0°	952	936	920	911	903	910	912	926
25.0°	1065	1030	994	982	975	980	976	1003
30.0°	1199	1165	1140	1119	1115	1120	1113	1127
35.0°	1285	1248	1241	1232	1208	1226	1218	1210
40.0°	1358	1329	1328	1321	1291	1304	1298	1284
45.0°	1384	1364	1370	1376	1346	1358	1327	1321
50.0°	1291	1299	1321	1349	1335	1342	1279	1254
55.0°	1132	1156	1171	1209	1197	1200	1149	1119
60.0°	978	1008	1034	1063	1068	1055	1025	986
65.0°	797	830	855	892	891	877	850	821
70.0°	648	671	698	727	711	715	688	653
75.0°	685	665	651	642	631	640	646	653
80.0°	606	651	693	706	718	705	668	628
85.0°	365	438	483	532	553	538	478	403
90.0°	82	112	174	244	268	237	160	113
95.0°	0	0	0	0	0	0	0	0
100.0°	0	0	0	0	0	0	0	0
105.0°	0	0	0	0	0	0	0	0
110.0°	0	0	0	0	0	0	0	0
115.0°	0	0	0	0	0	0	0	0
120.0°	0	0	0	0	0	0	0	0
125.0°	0	0	0	0	0	0	0	0
130.0°	0	0	0	0	0	0	0	0
135.0°	0	0	0	0	0	0	0	0
140.0°	0	0	0	0	0	0	0	0
145.0°	0	0	0	0	0	0	0	0
150.0°	0	0	0	0	0	0	0	0
155.0°	0	0	0	0	0	0	0	0
160.0°	0	0	0	0	0	0	0	0
165.0°	0	0	0	0	0	0	0	0
170.0°	0	0	0	0	0	0	0	0
175.0°	0	0	0	0	0	0	0	0
180.0°	0	0	0	0	0	0	0	0

Luminous Intensity (cd) Distribution Data (cont.)

C Y	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
0.0°	763	763	763	763	763	763	763	763
5.0°	761	759	759	763	767	767	766	767
10.0°	810	788	771	765	764	770	781	795
15.0°	892	867	844	830	824	835	854	874
20.0°	954	926	912	910	903	911	920	936
25.0°	1051	1003	976	980	975	982	994	1030
30.0°	1166	1127	1113	1120	1115	1119	1140	1165
35.0°	1242	1210	1218	1226	1208	1232	1241	1248
40.0°	1311	1284	1298	1304	1291	1321	1328	1329
45.0°	1339	1321	1327	1358	1346	1376	1370	1364
50.0°	1244	1254	1279	1342	1335	1349	1321	1299
55.0°	1103	1119	1149	1200	1197	1209	1171	1156
60.0°	946	986	1025	1055	1068	1063	1034	1008
65.0°	764	821	850	877	891	892	855	830
70.0°	619	653	688	715	711	727	698	671
75.0°	656	653	646	640	631	642	651	665
80.0°	573	628	668	705	718	706	693	651
85.0°	323	403	478	538	553	532	483	438
90.0°	85	113	160	237	268	244	174	112
95.0°	0	0	0	0	0	0	0	0
100.0°	0	0	0	0	0	0	0	0
105.0°	0	0	0	0	0	0	0	0
110.0°	0	0	0	0	0	0	0	0
115.0°	0	0	0	0	0	0	0	0
120.0°	0	0	0	0	0	0	0	0
125.0°	0	0	0	0	0	0	0	0
130.0°	0	0	0	0	0	0	0	0
135.0°	0	0	0	0	0	0	0	0
140.0°	0	0	0	0	0	0	0	0
145.0°	0	0	0	0	0	0	0	0
150.0°	0	0	0	0	0	0	0	0
155.0°	0	0	0	0	0	0	0	0
160.0°	0	0	0	0	0	0	0	0
165.0°	0	0	0	0	0	0	0	0
170.0°	0	0	0	0	0	0	0	0
175.0°	0	0	0	0	0	0	0	0
180.0°	0	0	0	0	0	0	0	0

Average Area Illumination Figure

Angle: 156.60°. Flux out: 5115.0 lm.



Height (m)	Diameter (cm)	E _{avg} (lx)	E _{max} (lx)
0.5	482.9	246.1	3225.0
1.0	965.8	61.5	806.3
1.5	1448.6	27.3	358.4
2.0	1931.5	15.4	201.6
2.5	2414.4	9.8	129.0
3.0	2897.3	6.8	89.6
3.5	3380.2	5.0	65.8
4.0	3863.1	3.8	50.4
4.5	4345.9	3.0	39.8
5.0	4828.8	2.5	32.3

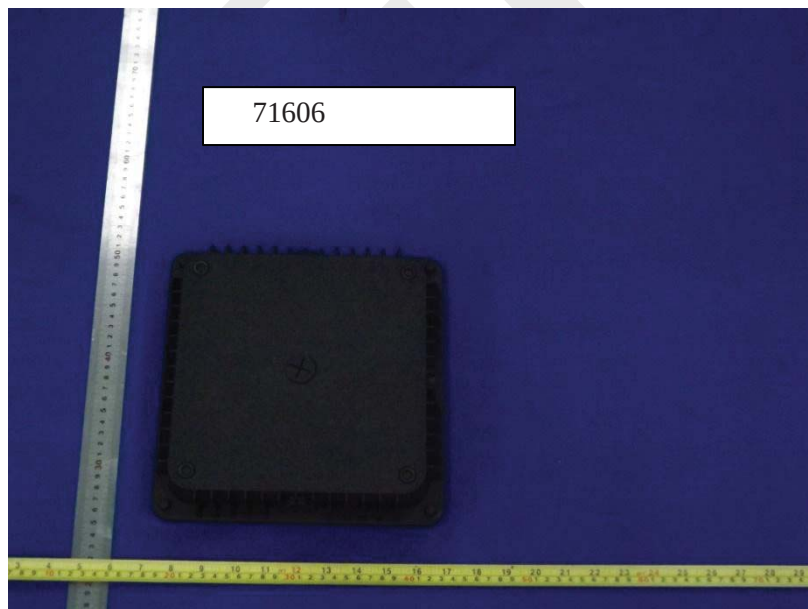
Zonal Lumen Density Measurement

Deg	Flux (lm)	%	Deg	Flux (lm)	%
0-5	18.3	0.32	0-5	18.3	0.32
5-10	55.0	0.97	0-10	73.3	1.29
10-15	96.8	1.70	0-15	170.1	2.99
15-20	146.9	2.58	0-20	317.0	5.57
20-25	200.6	3.53	0-25	517.6	9.10
25-30	270.3	4.75	0-30	787.9	13.85
30-35	349.9	6.15	0-35	1137.8	20.00
35-40	424.6	7.47	0-40	1562.4	27.47
40-45	495.2	8.70	0-45	2057.6	36.17
45-50	541.5	9.52	0-50	2599.1	45.69
50-55	537.5	9.45	0-55	3136.6	55.14
55-60	506.5	8.91	0-60	3643.1	64.05
60-65	456.7	8.02	0-65	4099.7	72.07
65-70	386.7	6.80	0-70	4486.5	78.87
70-75	339.1	5.96	0-75	4825.5	84.83
75-80	362.9	6.38	0-80	5188.4	91.21
80-85	313.3	5.51	0-85	5501.7	96.72
85-90	177.0	3.11	0-90	5678.7	99.83
90-95	9.5	0.17	0-95	5688.2	100.00
95-100	0.0	0.00	0-100	5688.2	100.00
100-105	0.0	0.00	0-105	5688.2	100.00
105-110	0.0	0.00	0-110	5688.2	100.00
110-115	0.0	0.00	0-115	5688.2	100.00
115-120	0.0	0.00	0-120	5688.2	100.00
120-125	0.0	0.00	0-125	5688.2	100.00
125-130	0.0	0.00	0-130	5688.2	100.00
130-135	0.0	0.00	0-135	5688.2	100.00
135-140	0.0	0.00	0-140	5688.2	100.00
140-145	0.0	0.00	0-145	5688.2	100.00
145-150	0.0	0.00	0-150	5688.2	100.00
150-155	0.0	0.00	0-155	5688.2	100.00
155-160	0.0	0.00	0-160	5688.2	100.00
160-165	0.0	0.00	0-165	5688.2	100.00
165-170	0.0	0.00	0-170	5688.2	100.00
170-175	0.0	0.00	0-175	5688.2	100.00
175-180	0.0	0.00	0-180	5688.2	100.00

[Additional Test]

Test Item	Test Voltage (V)	Frequency (Hz)	Test Result
Power Factor:	277	60	0.9074
Total Harmonic Distortion:	277	60	21.55%
Total Harmonic Distortion:	120	60	19.22%
Off State Power (W):	120	60	0.00

6. Product Photo



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