



<b>TEST REPORT</b> <b>IES LM-79-08</b> <b>TÜV SÜD Test Report for</b> <b>Electrical and Photometric Measurements of Solid-State Lighting Products</b>	
Report reference No. .... :	70.402.15.1040.19-01
Date of issue ..... :	2015-10-08
Project handler..... :	Mr. Arsis XIN
Testing laboratory..... :	TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch
Address ..... :	3-13F, No. 151 Hengtong Road, 200070, Shanghai, P.R.China.
Testing procedure ..... :	<input type="checkbox"/> TMP <input type="checkbox"/> WMTL <input type="checkbox"/> SMTL <input type="checkbox"/> LTR
Testing location ..... :	No. 1999, Duhui Road, Shanghai, 201108, P. R. China
Client ..... :	Premium Quality Lighting, Inc.
Client number..... :	N/A
Address ..... :	2285 Ward Avenue Simi Valley, CA 93065
Contact person..... :	
Standard ..... :	This TÜV SÜD test program is based on the following requirements: IES LM-79-08
TRF originated by..... :	TÜV SÜD Product Service GmbH, Mr. Kenneth Lau
Copyright blank test report ..... :	This test report is based on the content of the standard (see above). The test report considered selected clauses of the a.m. standard(s) and experience gained with product testing. It was prepared by TÜV SÜD Product Service GmbH.  TUV SUD Group takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.
Test procedure ..... :	<input type="checkbox"/> TÜV Mark <input checked="" type="checkbox"/> without certification
Non-standard test method..... :	N/A
National deviations ..... :	N/A
Number of pages (Report) ..... :	14
Number of pages (Attachments)..... :	N/A
Compiled by..... :	Approved by..... :
(+ signature)                      Mr. Arsis XIN	(+ signature)                      Ms. Lucy LU



Test sample .....	: Linear Ambient Luminaire										
Type of test object .....	: Fixed										
Trade mark .....	: Superior Life®										
Model and/or type reference .....	: 55132										
Rating(s) .....	: 120-277VAC, 50/60Hz, 24W										
Manufacturer .....	: Premium Quality Lighting, Inc.										
Manufacturer number .....	: N/A										
Address .....	: 2285 Ward Avenue Simi Valley, CA 93065										
Sub-contractors/ tests (clause) .....	: N/A										
Name .....	: N/A										
Order description .....	<table border="1"> <tr> <td><input type="checkbox"/></td> <td>Complete test according to TRF</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Partial test according to manufacturer's specifications</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Preliminary test</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Spot check</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Other:</td> </tr> </table>	<input type="checkbox"/>	Complete test according to TRF	<input checked="" type="checkbox"/>	Partial test according to manufacturer's specifications	<input type="checkbox"/>	Preliminary test	<input type="checkbox"/>	Spot check	<input type="checkbox"/>	Other:
<input type="checkbox"/>	Complete test according to TRF										
<input checked="" type="checkbox"/>	Partial test according to manufacturer's specifications										
<input type="checkbox"/>	Preliminary test										
<input type="checkbox"/>	Spot check										
<input type="checkbox"/>	Other:										
Date of order .....	: 2015-09-20										
Date of receipt of test item .....	: 2015-09-23										
Date(s) of performance of test .....	: 2015-09-24 to 2015-09-30										
Test item particulars (declared):											
DLC Category :	Linear Ambient										
DLC Primary Use:	Direct Linear Ambient Luminaires										
Lamp cap installed :	N/A										
Rated Voltage: (V)	120-277VAC										
Rated Power: (W):	24W										
Rated Power Factor :	N/A										
Rated Luminous Flux : (lm)	N/A										
Rated CCT : (K)	3000										
Rated CRI :	N/A										
Attachments:											
	1. Test Equipment List										
	2. Lighting FactsCM Uniform LM-79 Reporting Template										

General remarks:

"(see remark #)" refers to a remark appended to the report.  
 "(see appended table)" refers to a table appended to the report.  
 Throughout this report a comma is used as the decimal separator.  
 The test results presented in this report relate only to the object tested.  
 This report shall not be reproduced except in full without the written approval of the testing laboratory.

TÜV SÜD Certification and Testing (China) Co., Ltd.  
 Shanghai Branch is an accredited Test Laboratory (A2LA Lab  
 Cert. No.: 3745.01) to IESNA LM-79-08 by A2LA (American  
 Association for Laboratory Accreditation).



Cert. No.: 3745.01

Summary of testing:

- deviation(s) found  
 no deviations found

Test at 120V/60Hz according to the applicant's instruction.

The specifications are met .

Model:	55132	
	Integrating Sphere	Goniophotometer
Input Voltage (VAC)	120,1	120,1
Input Current (Amps)	0,1848	0,1854
Input Frequency (Hz)	60	60
Power Factor	0,996	0,996
Input Power (Watts)	22,10	22,18
Luminous Efficacy (Lumens/Watt)	-	109,72
Luminous Flux (Lumens)	-	530,2
Beam angle (°)	-	55,4
ZL: 0-60°	-	66,3%
CCT (K)	3160	-
CRI	82,8	-
ISTMT (In-Situ Temp Test) (°C)	-	-



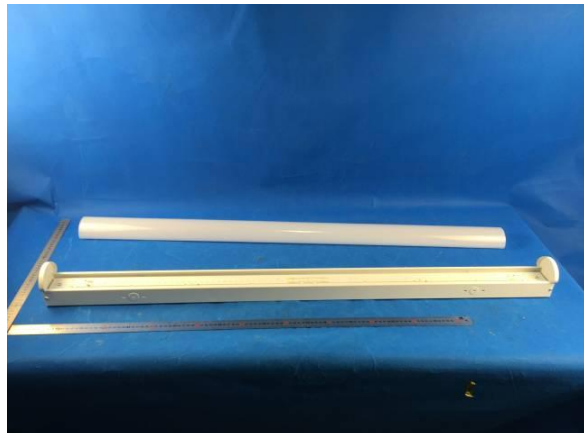
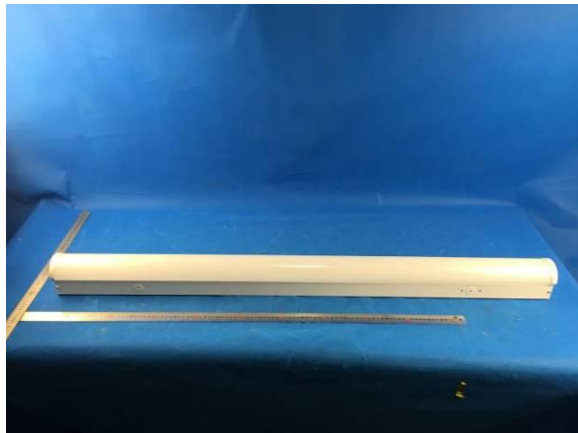
Measured values of PF & THDi at different input voltage

Input Voltage (VAC)	Input Frequency (Hz)	Input Power (Watts)	Power Factor	THDi
120,0	60	22,55	0,9972	3,20%
230,0	60	22,96	0,9455	4,43%
277,0	60	23,70	0,9203	5,18%

Copy of marking plate:

N/A

Picture of the product:



Picture of In-Situ Temp Test

N/A

Characteristic data

N/A



Purpose of the product

Direct linear ambient luminaire for for generally lighting purpose.

Manufacture of Light Source: LG

Model Number of Light Source: LGIT 5630HE

Possible test case verdicts:

- test case does not apply to the test object: .....: N(A.) / not included in the order
- test object does meet the requirement.....: P(ass)
- test object does not meet the requirement: .....: F(ail)

Possible suffixes to the verdicts:

- suffix for detailed information for the client.....:- C(omment)
- suffix for important information for factory inspection...: - M(anufacturing)



Clause	Requirement – Test	Measuring result – Remark	Verdict
2.0	Ambient Conditions		P
2.1	General		P
2.2	Air Temperature		P
2.3	Thermal Condition for Mounting SSL Products		P
2.4	Air Movement		P
3.0	Power Supply Characteristics		P
3.1	Waveshape of AC power supply		P
3.2	Voltage regulation		P
4.0	Seasoning of SSL Product		P
	No seasoning of SSL product		P
5.0	Stabilisation of SSL Product		P
	SSL product has sufficiently satbilised before measurment		P
6.0	Operation Orientation		P
	SSL product shall be stabilized and measured in intended operating orientation		P
7.0	Electrical Settings		P
	SSL product shall be operated at rated voltage		P
	SSL product with dimming capability are tested at maximum input power condition		P
	SSL product with different modes are measured in all relvant modes		N/A
8.0	Electrical Instrumenttions		P
8.1	Circuits		P
8.2	Uncertainties		P
9.0	Testmethodes for Luminous Flux measurment		P
9.1	Integrating sphere with a spectroradiometer (Sphere-spectroradiometer system)		P
9.2	Integrating sphere with a photometer head (Sphere-photometer system)		P
9.3	Goniophotometer		P
10.0	Luminous Intensity Distribution		P
	Reporting acc. to IEC LM-63		P
11.0	Luminous Efficay		P
	Calculation	See table 1	P
12.0	Test Methodes for Color Characteristics of SSL Products		P

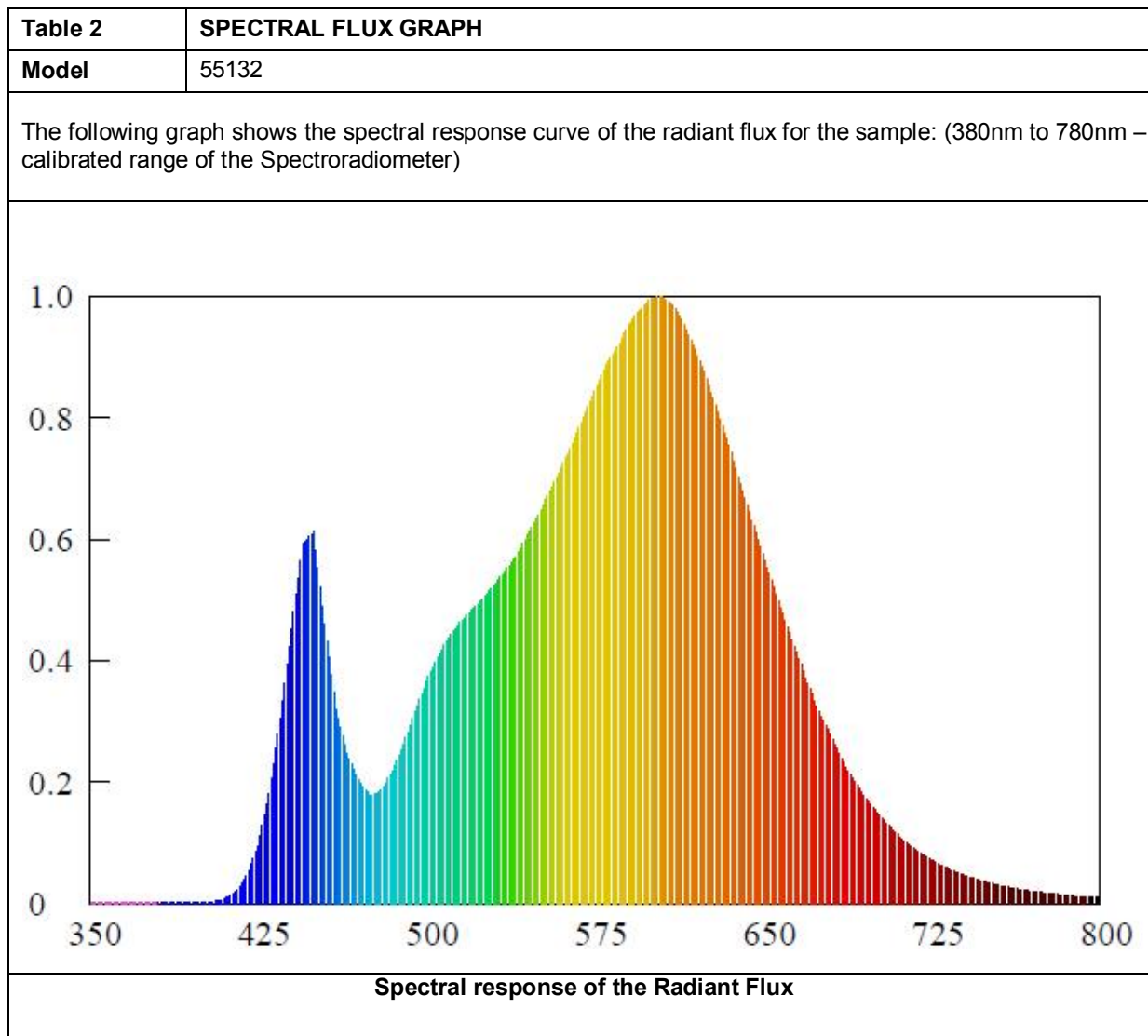


Clause	Requirement – Test	Measuring result – Remark	Verdict
	Measurments	See table 1	P
13.0	Uncertainty statement		N/A



Table 1a		Test data	
Model:	55132		
Rated Voltage (V):	120	Rated Power (W):	N/A
Rated luminous flux (lm):	-	Ambient temperature 25 ±1 (°C):	25,0
Test item	Measured Value		
	Integrating Sphere	Goniophotometer	
<b>Key Photometric Results</b>			
Luminous Efficacy (Lumens/Watt)	-	109,72	
Total Luminous Flux (Lumens)	-	2433,4	
Correlated Color Temperature (CCT:K)	3160	-	
Color Rendering Index (CRI)	82,8	-	
Chromaticity (Chroma x / Chroma y)	0,4225 / 0,3922	-	
Chromaticity (Chroma u / Chroma v)	0,2463 / 0,3430	-	
Chromaticity (Chroma u' / Chroma v')	0,2463 / 0,5144	-	
Duv Value	-0,00268	-	
Stabilization Time (Light and Power)	30	30	
Total Run Time – (Minutes)	35	40	
Spacing Criteria (C/γ)	-	C:45.0° / γ:1.0°	
ZL: 0-60°	-	55,4%	
<b>Electrical Input Results</b>			
Input Power (Watts)	22,10	22,18	
Input Voltage (Volts AC)	120,1	120,1	
Input Current (Amps)	0,1848	0,1854	
Input Frequency (Hertz)	60	60	
Power Factor	0,9960	0,9963	
A-THD (Current – Total Harmonic Distortion)	3,22%	-	
<b>Additional Information</b>			
Ambient Temperature (°C):	25,0	25,0	
Photometric measurement condition	-	-	
Number of hours operated prior to measurement	0h		
ISTMT (In-Situ Temperature Measurement) (°C):	-		
Orientation (burning position)	Base up & center		
Photometric measurement condition	-	-	
Supplementary Information:			
<ul style="list-style-type: none"> <li>- Absorbption Correction used: Yes</li> <li>- Stabilization was considered reached by: the variation (maximum-minimum) of at least 3 readings of the light output and electrical power over a period of 30 minutes is less than 0,5%.</li> </ul>			





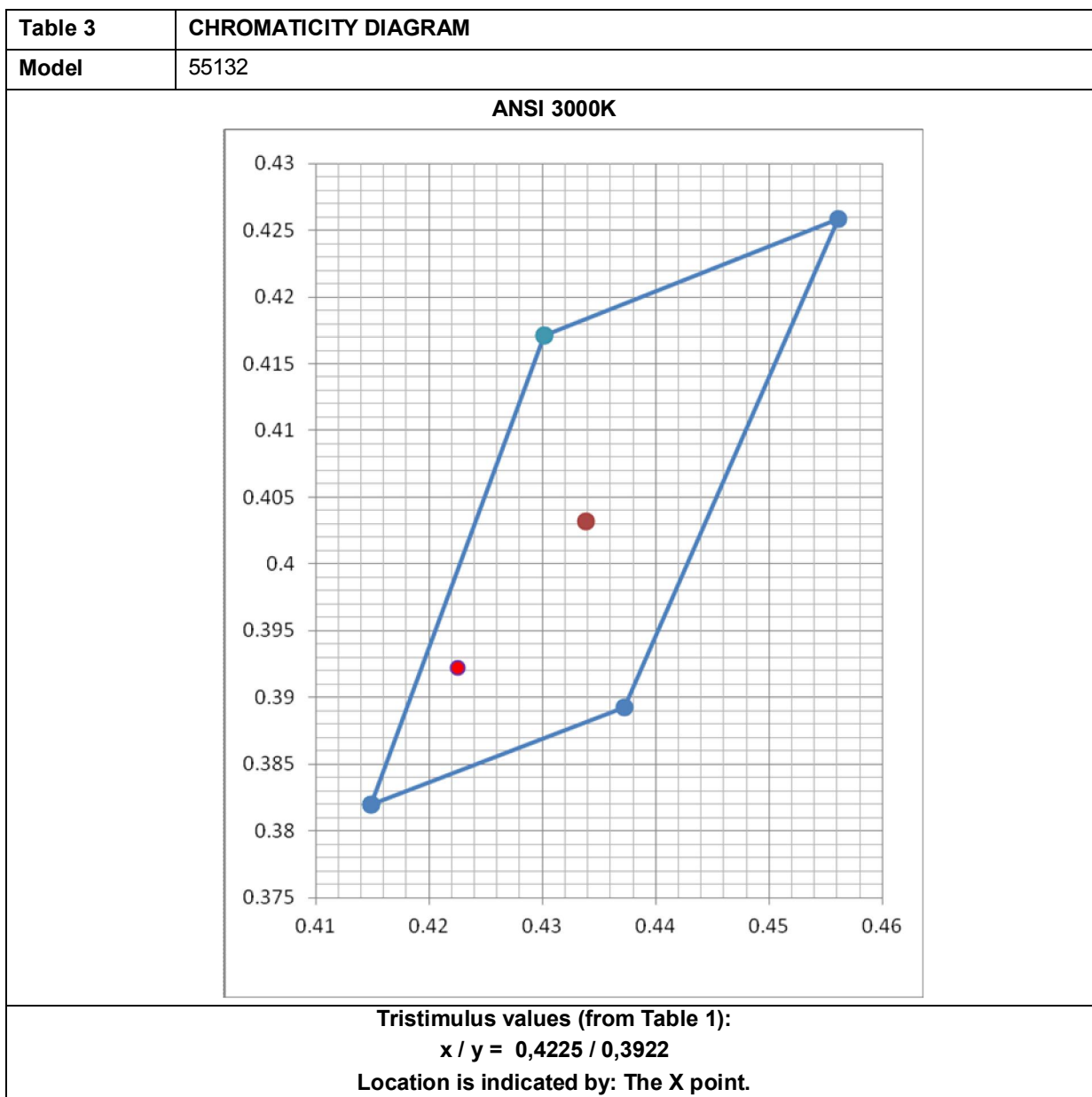




Table 4		LIGHT DISTRIBUTION & ZONAL FLUX DIAGRAM										
Model		55132										
<p style="text-align: center;">AVERAGE BEAM ANGLE(50%) :144.0 DEG</p>												
$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\phi$ zone	$\phi$ total	$\eta$ lum
10	523.8	517.3	515.5	519.2	526.8	528.1	526.6	525.7	0- 10	50.20	50.20	2.06
20	502.4	493.5	489.8	497.5	510.0	514.4	510.4	510.1	10- 20	145.5	195.7	8.04
30	467.1	455.8	454.8	461.6	477.9	486.8	483.5	479.4	20- 30	225.4	421.1	17.3
40	429.5	408.6	414.1	415.8	445.1	449.2	449.1	441.1	30- 40	283.0	704.1	28.9
50	391.8	358.3	367.7	366.3	409.5	403.7	407.1	395.2	40- 50	316.9	1021	42
60	350.8	305.5	318.0	313.6	369.6	353.0	359.6	345.3	50- 60	326.1	1347	55.4
70	245.9	251.5	268.4	258.5	261.9	298.3	309.6	291.5	60- 70	305.8	1653	67.9
80	92.75	198.8	220.9	204.1	102.9	241.2	259.5	235.2	70- 80	247.2	1900	78.1
90	1.339	149.6	177.8	151.7	0.1703	185.2	211.5	179.2	80- 90	174.1	2074	85.2
100	0.4355	107.6	139.0	107.5	0.3823	134.6	167.2	128.8	90-100	125.1	2199	90.4
110	1.724	75.14	105.5	73.76	3.129	91.43	127.7	88.53	100-110	88.93	2288	94
120	3.113	52.28	77.84	50.63	5.402	59.66	93.73	61.22	110-120	59.81	2348	96.5
130	5.291	37.23	55.95	35.65	5.133	33.18	65.53	46.67	120-130	38.46	2387	98.1
140	6.282	27.31	39.44	25.14	5.082	17.33	39.86	36.59	130-140	23.24	2410	99
150	6.358	21.45	27.58	17.55	5.345	8.668	25.14	26.67	140-150	13.12	2423	99.6
160	5.950	17.04	20.27	11.75	5.500	5.134	12.24	17.32	150-160	6.768	2430	99.8
170	5.728	11.56	15.64	10.22	5.712	5.411	7.259	10.96	160-170	2.944	2433	100
180	6.963	6.101	4.666	6.378	6.960	6.952	6.166	3.325	170-180	0.7491	2433	100
DEG	LUMINOUS INTENSITY:cd								UNIT:lm			



Table 5		LUMINOUS DISTRIBUTION INTENSITY DATA								
Model		55132								
γ (DEG)	C (DEG)	0	45	90	135	180	225	270	315	
	0	0	530	529	529	528	530	529	529	528
5	5	528	525	524	525	530	530	530	529	
10	10	524	517	515	519	527	528	527	526	
15	15	516	507	504	510	521	523	520	520	
20	20	502	494	490	498	510	514	510	510	
25	25	485	476	473	481	495	502	498	496	
30	30	467	456	455	462	478	487	483	479	
35	35	448	433	435	439	460	468	467	460	
40	40	429	409	414	416	445	449	449	441	
45	45	411	384	391	391	427	427	429	419	
50	50	392	358	368	366	410	404	407	395	
55	55	373	332	343	340	392	379	384	371	
60	60	351	306	318	314	370	353	360	345	
65	65	312	279	293	286	329	326	335	319	
70	70	246	251	268	259	262	298	310	292	
75	75	171	224	244	231	185	270	284	264	
80	80	92.8	199	221	204	103	241	260	235	
85	85	26.0	173	199	177	30.6	213	235	207	
90	90	1.34	150	178	152	0.17	185	212	179	
95	95	0.29	127	158	128	0.18	159	189	153	
100	100	0.44	108	139	107	0.38	135	167	129	
105	105	1.08	90.1	121	89.2	1.42	112	147	107	
110	110	1.72	75.1	105	73.8	3.13	91.4	128	88.5	
115	115	2.38	62.6	90.9	61.0	4.60	73.9	110	73.2	
120	120	3.11	52.3	77.8	50.6	5.40	59.7	93.7	61.2	
125	125	4.51	44.0	66.2	42.4	5.52	46.2	79.0	52.9	
130	130	5.29	37.2	56.0	35.7	5.13	33.2	65.5	46.7	
135	135	5.96	31.7	47.1	30.3	5.00	23.5	52.4	41.7	
140	140	6.28	27.3	39.4	25.1	5.08	17.3	39.9	36.6	
145	145	6.38	24.0	32.8	21.1	5.16	11.8	32.1	31.5	
150	150	6.36	21.4	27.6	17.5	5.34	8.67	25.1	26.7	
155	155	6.18	19.2	23.6	14.2	5.44	6.53	17.8	22.1	
160	160	5.95	17.0	20.3	11.8	5.50	5.13	12.2	17.3	
165	165	5.64	15.0	17.1	10.6	5.47	4.65	8.29	13.7	
170	170	5.73	11.6	15.6	10.2	5.71	5.41	7.26	11.0	
175	175	6.50	7.68	8.62	7.50	6.57	6.52	5.80	8.25	
180	180	6.96	6.10	4.67	6.38	6.96	6.95	6.17	3.33	



**Attachment 1**



**U.S. Department of Energy**

**Lighting Facts<sup>cm</sup> Uniform LM-79 Reporting Template  
Laboratory Information**

Name of test lab	TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch
Date of test report	2015-10-08
Test report number	70.402.15.1040.19-01
Laboratory contact name	Ms. Lucy LU
Laboratory contact signature*	

\* By signing this form, the signatory is attesting that the information on the form is correct and the same as on the original, complete test report(s).  
The signatory also attests that all of the results on this form were measured entirely in accordance with IES LM-79-08.

**Product Information**

Applicant	Premium Quality Lighting, Inc.		
Manufacturer	Premium Quality Lighting, Inc.		
Brand name	Superior Life®		
Model number	55132		
SKU (if available)	N/A		
Type of luminaire (for integral lamps, list base type and lamp type)	Linear Ambient Luminaire		
Luminaire aperture (downlights)	-	<input type="checkbox"/> in.	<input type="checkbox"/> mm
Luminaire length	-	<input type="checkbox"/> in.	<input type="checkbox"/> mm
Luminaire width	-	<input type="checkbox"/> in.	<input type="checkbox"/> mm
Number of units (modular products)	-		

Electrical Measurements	Integrating sphere output (Average)	Goniophotometer output (Average)	
Input wattage	22,10	22,18	W
Input current	0,1848	0,1854	A
Input voltage (AC)	120,1	120,1	V
Power factor	0,9960	0,9963	
Off-state power	-	-	W

**Photometric Characteristics**

Total initial lumen output	-	2433,4	lm
Initial luminaire efficacy	-	109,72	lm/W
Correlated color temperature / CCT	3160	K	
Color rendering index / CRI	82,8		
Duv	-0,00268		

**Luminous Intensity Distribution**

Luminous Intensity Distribution		Goniophotometer output	
Center beam candlepower (if applicable)		530,2	cd
Beam angle (if applicable)		144,0	°
Zonal lumens in the 0°-60° zone		55,4	%
Zonal lumens in the 60°-90° zone	-	29,8	%
Zonal lumens in the 90°-120° zone		11,3	%
Zonal lumens in the 120°-180° zone		3,5	%



**Attachment 2: Equipment List**

No.	Type	Manufacture	Model	Equipment ID	Next Calibration
1	Full-field Speed Goniophotometer	Everfine	GO-R5000	S1207714-YQ	Aug.8.2016
2	High-accuracy Digital Photometer Head	Everfine	ID-1000_P-B/ID-1000_P-C	S1207714a-YQ	Aug.8.2016
3	High-accuracy Digital Photometer Head	Everfine	ID-1000_P-B/ID-1000_P-C	S1207714b-YQ	Aug.8.2016
4	High Accuracy Array Spectroradio Meter	Everfine	HAAS-2000	S1207714c-YQ	Sep.4.2016
5	Standard Light Source	Everfine	D908	S1207714d-YQ	Aug.15.2016
6	Digital Power Meter	Yokogawa	WT310	S1310805-YQ	Nov.30.2016
7	Digital CC & CV DC Power Supply	Everfine	WY12010	S1207714f-YQ	Jul.30.2016
8	Intelligent AC Power Source	Everfine	DPS1060	S1207714g-YQ	May. 18.2016
9	Image Luminance Meter	Everfine	CX-2B_WL	S1207714h-YQ	May. 18.2016
10	DC Power Supply	Everfine	WY3010	S1108624-YQ	May. 18.2016
11	Flux Reference Lamp	Everfine	D204BH	S1108625-YQ	May. 18.2016
12	luminance Source	Everfine	SLS-150	S1108626-YQ	May. 18.2016
13	Thermometer	Fluke	Fluke 52-II	S0712414-YQ	May. 18.2016
Additional info of the Standard light: - HID, Omni, 557,81W, Traceability:NIM					

-- END OF TEST REPORT --