



<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. .... :	70.402.15.1040.25-01
Date of issue ..... :	2015-10-10
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 .....	: 55134										
Rating(s) .....	: 120-277VAC, 50/60Hz, 36W										
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):	36W										
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:	55134	
	Integrating Sphere	Goniophotometer
Input Voltage (VAC)	120,1	120,4
Input Current (Amps)	0,2712	0,2703
Input Frequency (Hz)	60	60
Power Factor	0,997	0,9969
Input Power (Watts)	32,45	32,41
Luminous Efficacy (Lumens/Watt)	-	110,52
Luminous Flux (Lumens)	-	3582,1
Beam angle (°)	-	142,8
ZL: 0-60°	-	55,8%
CCT (K)	3133	-
CRI	82,9	-
ISTMT (In-Situ Temp Test) (°C)	-	-



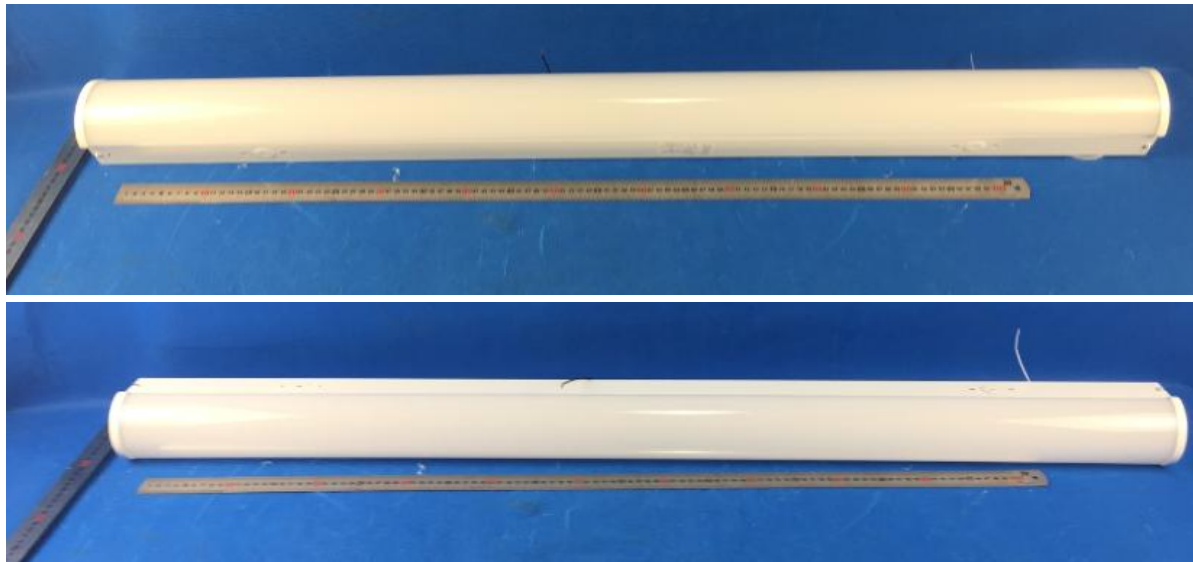
Measured values of PF & THDi at different input voltage

Input Voltage (VAC)	Input Frequency (Hz)	Input Power (Watts)	Power Factor	THDi
120,1	60	33,19	0,9970	3,21%
230,1	60	33,59	0,9683	3,75%
277,1	60	34,38	0,9455	4,44%

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

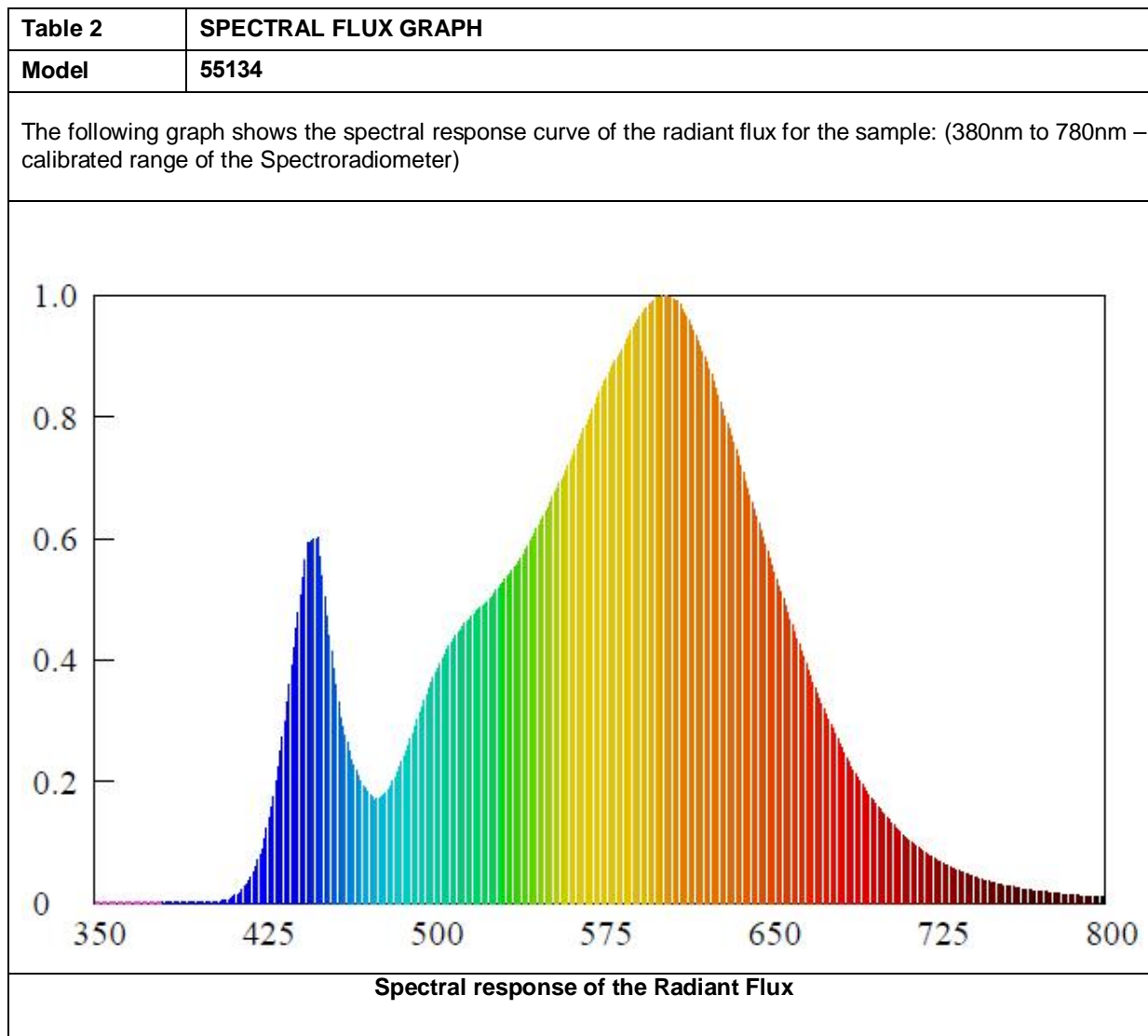


Clause	Requirement – Test	Measuring result – Remark	Verdict
	Measurments	See table 1	P
13.0	Uncertainty statement		N/A



Table 1a		Test data	
<b>Model:</b>	<b>55134</b>		
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)	-	110,52	
Total Luminous Flux (Lumens)	-	3582,09	
Correlated Color Temperature (CCT:K)	3133	-	
Color Rendering Index (CRI)	82,9	-	
Chromaticity (Chroma x / Chroma y)	0,4244 / 0,3933	-	
Chromaticity (Chroma u / Chroma v)	0,2471 / 0,3435	-	
Chromaticity (Chroma u' / Chroma v')	0,2471 / 0,5152	-	
Duv Value	-0,00254	-	
Stabilization Time (Light and Power)	30	30	
Total Run Time – (Minutes)	35	40	
Spacing Criteria (C/γ)	-	C:45.0° / γ:5.0°	
ZL: 0-60°	-	55,8%	
<b>Electrical Input Results</b>			
Input Power (Watts)	32,45	32,41	
Input Voltage (Volts AC)	120,1	120,3	
Input Current (Amps)	0,2712	0,2703	
Input Frequency (Hertz)	60	60	
Power Factor	0,9970	0,9969	
A-THD (Current – Total Harmonic Distortion)	3,20%	-	
<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>			





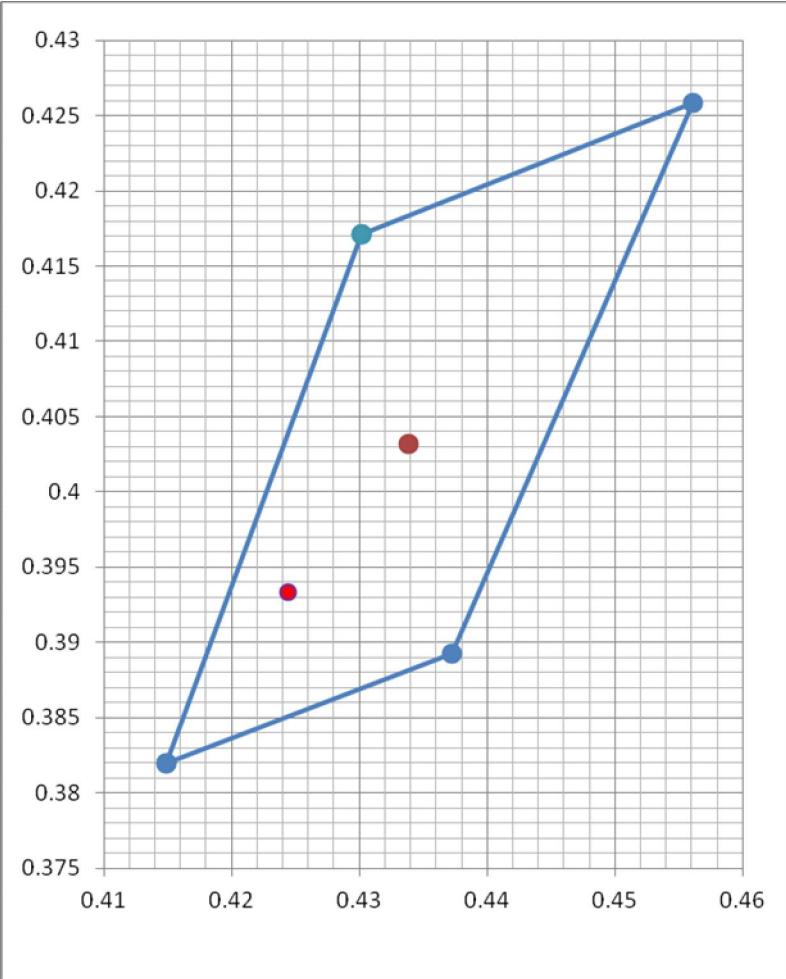
<b>Table 3</b>	<b>CHROMATICITY DIAGRAM</b>
<b>Model</b>	<b>55134</b>
<p style="text-align: center;"><b>ANSI 3000K</b></p> 	
<p style="text-align: center;"><b>Tristimulus values (from Table 1):</b>  <math>x / y = 0,4244 / 0,3933</math>  <b>Location is indicated by: The X point.</b></p>	

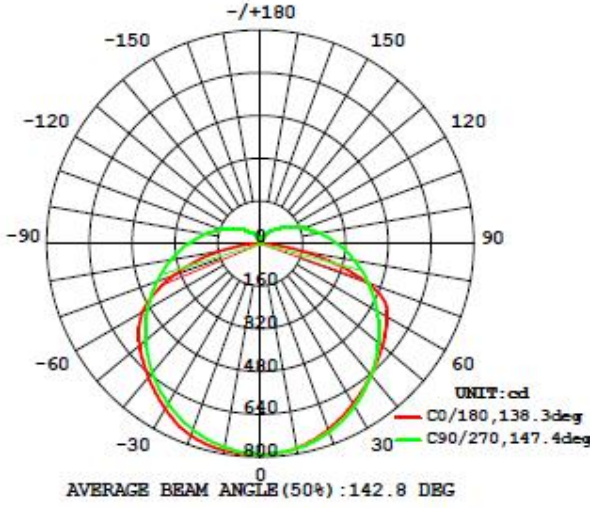
Table 4		LIGHT DISTRIBUTION & ZONAL FLUX DIAGRAM										
Model		55134										
 <p style="text-align: center;">AVERAGE BEAM ANGLE (50%) : 142.8 DEG</p>												
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	φ zone	φ total	tlum
10	777.7	778.3	780.2	782.4	785.9	779.3	774.4	774.5	0- 10	74.83	74.83	2.09
20	741.2	746.2	751.1	759.6	765.2	753.4	742.1	739.0	10- 20	216.7	291.5	8.14
30	693.1	695.6	704.7	717.4	715.1	708.8	693.2	685.3	20- 30	335.9	627.4	17.5
40	643.8	632.7	645.1	653.0	654.2	642.6	632.2	619.9	30- 40	421.2	1049	29.3
50	595.5	562.3	577.5	577.3	592.7	564.2	562.2	547.4	40- 50	469.2	1518	42.4
60	549.6	486.9	505.1	497.1	510.8	481.6	487.5	469.7	50- 60	480.4	1998	55.8
70	418.9	407.4	430.3	414.5	345.2	398.5	413.6	389.5	60- 70	449.6	2448	68.3
80	151.8	325.6	357.3	330.1	140.4	313.6	339.5	305.6	70- 80	362.3	2810	78.4
90	0.3201	247.7	289.8	249.9	0.9685	234.9	271.6	226.4	80- 90	251.9	3062	85.5
100	0.5756	179.8	228.5	180.6	0.5608	167.5	211.2	159.1	90-100	180.1	3242	90.5
110	3.196	125.4	175.1	125.3	2.766	114.5	159.6	108.4	100-110	127.6	3370	94.1
120	6.542	85.14	129.5	85.17	5.133	74.97	116.8	76.08	110-120	85.80	3456	96.5
130	8.921	58.67	92.02	58.72	8.392	45.29	83.07	60.06	120-130	55.37	3511	98
140	10.87	42.00	63.68	41.09	10.37	25.69	54.96	49.95	130-140	34.39	3545	99
150	11.41	30.95	43.07	26.08	11.35	16.20	35.44	39.12	140-150	20.10	3565	99.5
160	11.16	24.07	28.96	16.68	11.27	11.06	19.04	26.80	150-160	10.58	3576	99.8
170	10.81	17.46	21.57	14.69	10.92	10.87	16.33	21.88	160-170	4.780	3581	100
180	12.86	10.72	6.232	11.17	12.97	12.94	10.90	5.610	170-180	1.361	3582	100
DEG	LUMINOUS INTENSITY:cd								UNIT:lm			



Table 5		LUMINOUS DISTRIBUTION INTENSITY DATA															
Model		55134															
γ (DEG)	C (DEG)	0	45	90	135	180	225	270	315								
	0	790	788	788	788	790	788	788	788								
5	787	786	786	787	790	786	784	784									
10	778	778	780	782	786	779	774	774									
15	762	765	768	773	779	768	761	759									
20	741	746	751	760	765	753	742	739									
25	718	723	730	741	744	733	720	714									
30	693	696	705	717	715	709	693	685									
35	669	665	676	687	685	678	664	654									
40	644	633	645	653	654	643	632	620									
45	619	598	612	615	624	604	598	584									
50	595	562	577	577	593	564	562	547									
55	573	525	542	537	558	523	525	509									
60	550	487	505	497	511	482	488	470									
65	514	448	467	456	436	441	451	431									
70	419	407	430	414	345	398	414	390									
75	290	366	393	372	245	356	376	347									
80	152	326	357	330	140	314	340	306									
85	34.5	286	323	289	49.5	273	305	265									
90	0.32	248	290	250	0.97	235	272	226									
95	0.32	213	258	214	0.34	199	240	191									
100	0.58	180	228	181	0.56	167	211	159									
105	0.89	151	201	151	1.47	140	184	132									
110	3.20	125	175	125	2.77	115	160	108									
115	5.20	104	151	103	4.03	92.1	137	90.0									
120	6.54	85.1	129	85.2	5.13	75.0	117	76.1									
125	7.45	70.4	110	70.4	6.62	59.7	98.9	66.6									
130	8.92	58.7	92.0	58.7	8.39	45.3	83.1	60.1									
135	10.1	49.4	76.8	49.5	9.57	34.3	67.2	55.1									
140	10.9	42.0	63.7	41.1	10.4	25.7	55.0	49.9									
145	11.2	36.0	52.5	31.8	11.0	19.5	45.7	44.5									
150	11.4	30.9	43.1	26.1	11.3	16.2	35.4	39.1									
155	11.3	27.0	35.2	20.8	11.4	15.5	26.0	32.9									
160	11.2	24.1	29.0	16.7	11.3	11.1	19.0	26.8									
165	10.7	21.3	24.3	14.7	10.8	10.7	15.2	24.2									
170	10.8	17.5	21.6	14.7	10.9	10.9	16.3	21.9									
175	11.9	13.0	20.5	12.4	12.3	12.3	11.4	14.6									
180	12.9	10.7	6.23	11.2	13.0	12.9	10.9	5.61									



**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	2015-10-10
Test report number	70.402.15.1040.25-01
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	55134		
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	32,45	32,41	W
Input current	0,2712	0,2703	A
Input voltage (AC)	120,1	120,3	V
Power factor	0,9970	0,9969	
Off-state power	-	-	W

**Photometric Characteristics**

Total initial lumen output	-	3582,09	lm
Initial luminaire efficacy	-	110,52	lm/W
Correlated color temperature / CCT	3133		K
Color rendering index / CRI	82,9		
Duv	-0,00254		

**Luminous Intensity Distribution**

Luminous Intensity Distribution		Goniophotometer output	
Center beam candlepower (if applicable)		791,0	cd
Beam angle (if applicable)		142,8	°
Zonal lumens in the 0°-60° zone		55,8	%
Zonal lumens in the 60°-90° zone	-	29,7	%
Zonal lumens in the 90°-120° zone		11,0	%
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 --