



## Verification Services

Project No: 4786852099-2

Report No: 4786852099-2a

Report Issued Date: 2015-04-02


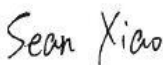
# Test Report

<b>Customer Company &amp; Address:</b>			
Company Name: ABBlighting, Inc.			
ADD: 1501 Industrial Way N. Toms River, NJ 08755 RD, Shanghai			
<b>Contact Person:</b>	Kevin Fan		
<b>Telephone:</b>	021-61262530	<b>Fax/Email address:</b>	kevinfan@abblighting.com

<b>Manufacturer:</b>	ABBlighting, Inc.
<b>Country of Origin:</b>	CHINA
<b>Country of Export:</b>	USA, Canada
<b>Product Description:</b>	Lamp Type: Retrofit Kits for 2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces Total Amount Of Light Source: N/A Manufacturer Of Light Source: SAMSUNG Model Number Of Light Source: LM561B
<b>Model Number:</b>	Model Name: TRK22D2530
<b>Electrical Specification:</b>	Rated voltage: 120-277 V Frequency: 50/60 Hz Wattage: 25 W

<b>Test Laboratory &amp; Address:</b>			
UL Verification Services (Guangzhou) Co., Ltd.			
ADD: Building A1, 1F & 2F, Nansha Science and Technology Innovation Center, No. 25, South Huanshi Avenue, Nansha District, Guangzhou 511458, China			
<b>Telephone:</b>	+86 20 28667188	<b>Fax:</b>	+86 20 83486605

<b>Receipt of Test Samples :</b>	2015-03-23	<b>Test Period:</b>	2015-03-23~2015-03-31
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<b>Tested By</b>	<b>Approved By</b>
 / Jackson Zeng	 / Sean Xiao
<b>Test Personnel Name &amp; Signatory</b>	<b>Approval Name &amp; Signatory</b>

The results reported herein have been performed in accordance with the laboratory's terms of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory. The results in this report apply to the test sample(s) mentioned above at the time of the testing period only and are not to be used to indicate applicability to other similar products. This report does not imply that the product(s) has met the criteria for certification.

Doc No: 10-CT-F0059

Issue No: 1.1



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# Test Report

## Statement of Results

Test Flow	Test Method	Sample ID (Lab)	Sample Serial No.	Pass/Fail/NA
1.	Integrating Sphere Test	2091409-S1	N/A	Evaluate by customer
2.	Goniophotometer Test	2091409-S1	N/A	Evaluate by customer
3.	Total Harmonic Distortion Test	2091409-S1	N/A	Evaluate by customer

## Deviation from Test Method (if any)

N/A

## Remark (if any)

1. This report shall not be used by the client to claim product endorsement by NVLAP, NIST or any agency of the US government.



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# Test Report

## Test No.1: Integrating Sphere Test

### Environmental Conditions

Temperature: 25.1°C

### Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Calibration Due Date
GVS-LE-PE001	Integrating Sphere	Before Use	Before Use
GVS-LE-FS019	Measurement Standard Lamp	8/19/2014	8/18/2015

### Test Sample

2091409-S1

### Test Method

The sample (bare lamp) was tested according to the IES LM-79-2008. Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25° C ± 1° C. The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. The sample was operated at rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm.

### Test Results

Test Type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation	Operate time (Min.)	Stabilization time (Min.)
Input	119.98	60	0.218	24.6	0.941	Base Up	58	50

Test type	CCT (K)	Luminous Flux (lm)	Color Rendering Index Ra	Luminous Efficacy (lm/W)
Output	3101	2190.43	84.5	89.04



# Test Report

## Test Condition

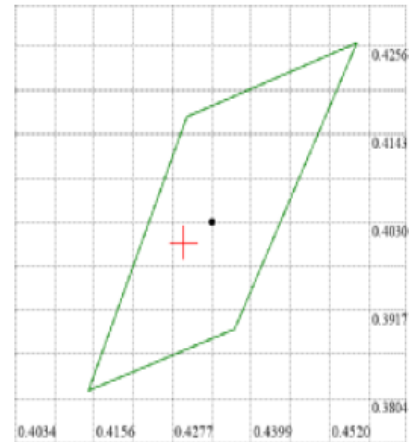
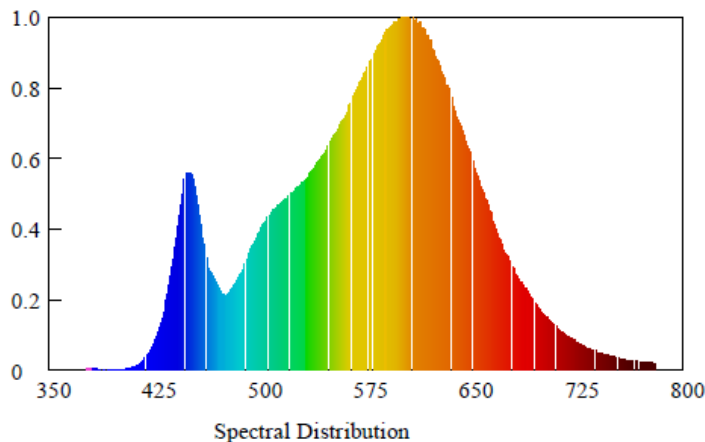
Temperature: 25°C

RH: ----%

Spectrum Range: 380-780 nm

Scan Step: 1 nm

## Spectroradiometric Parameters



Nominal CCT: LED\_3000K  
x0=0.4294 y0=0.4004

Chromaticity Coordinates: x=0.4294 y=0.4004 u'=0.2473 v'=0.5188

Correlated Color Temperature: 3101 K

Dominant Wavelength: 581.0 nm(E)

Luminous Flux: 2190.430 lm

Purity: 0.4925

Chromaticity Difference: -0.00039Duv

Peak Wavelength: 604.8 nm

Color Ratio: Kr=44.0% Kg=48.0% Kb=8.0%

Bandwidth: 134.3nm

Radiant Flux: 5.793 W

Rendering Index: Ra=84.5

R1=83 R2=92 R3=97 R4=83 R5=84 R6=91 R7=84 R8=63

R9=15 R10=82 R11=83 R12=76 R13=86 R14=99 R15=76



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# Test Report

## Test No. 2: Goniophotometer Test

### Environmental Conditions

Temperature: 25.1°C

### Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Calibration Due Date
GVS-LE-GS002	Goniophotometer	Before Use	Before Use
GVS-LE-FS019	Measurement Standard Lamp	8/19/2014	8/18/2015
GVS-LE-CA008	Digital Caliper	04/03/2014	04/02/2015

### Test Sample

2091409-S1

### Test Method

The samples(three lamps in fixture) were tested according to the IES LM-79-2008. Photometric parameters were measured using a type C goniophotometer and software. The ambient temperature shall be maintained at 25° C ± 1° C, measured at a point not more than 1 m from the sample and at the same height as the sample. The samples were operated at rated voltage and was stabilized before measurement. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 50 vertical intervals and 10 horizontal interval

### Test Result

Test Type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientat ion	Operate time (Min.)	Stabilization time (Min.)
Input	119.98	60	0.218	24.6	0.941	Base Up	58	50

Test Type	Flux (lm)	Field angle (10%)		Beam angle (50%)		Zonal Lumen Result	Spacing criteria		Luminous Efficacy (lm/W)
		Horizontal Spread	Vertical Spread	Horizontal Spread	Vertical Spread		0°-180°	90°-270°	
Output	2210.4	157.7	167.6	106.7	126.6	76.0%	1.28	1.20	89.85

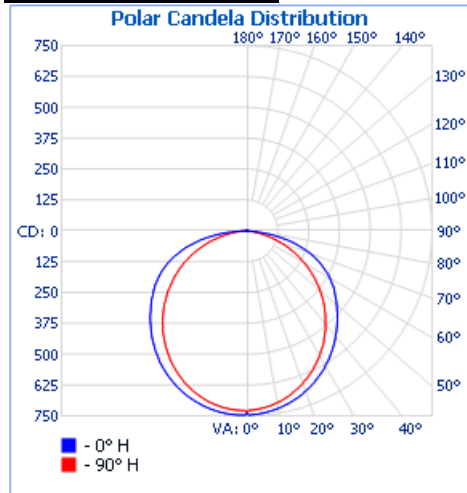


## Verification Services

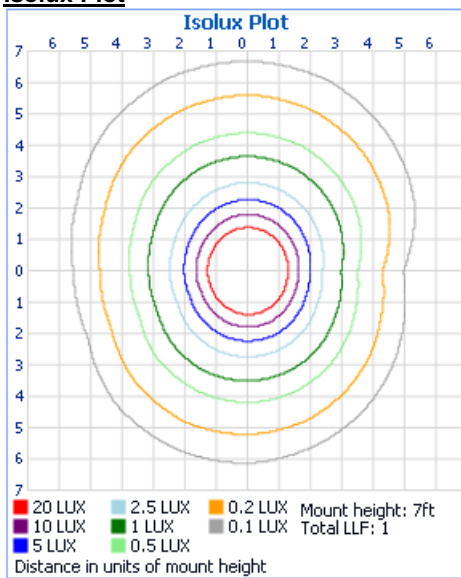
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# Test Report

## Light Distribution Curve



## Isolux Plot





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# Test Report

## Zonal Lumen Tabulation

### Zonal Lumen Summary

Zone	Lumens	% Luminaire
0-30	571.6	25.9%
0-40	937.8	42.4%
0-60	1,680.9	76%
60-90	529.4	24%
70-100	235.3	10.6%
90-120	0.0	0%
0-90	2,210.3	100%
90-180	0.1	0%
0-180	2,210.4	100%

### Lumens Per Zone

Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	69.7	3.2%	90-100	0.0	0%
10-20	199.5	9.0%	100-110	0.0	0%
20-30	302.5	13.7%	110-120	0.0	0%
30-40	366.2	16.6%	120-130	0.0	0%
40-50	384.2	17.4%	130-140	0.0	0%
50-60	358.9	16.2%	140-150	0.0	0%
60-70	294.2	13.3%	150-160	0.0	0%
70-80	186.4	8.4%	160-170	0.0	0%
80-90	48.8	2.2%	170-180	0.0	0%



# Test Report

## Intensity Data (cd)

Candela Table - Type C																			
	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	360		
0	737	737	737	737	737	737	737	737	737	737	737	737	737	737	737	737	737	737	737
1	745	748	742	733	727	727	730	737	746	749	742	734	728	727	730	737	745		
2	745	747	741	732	726	727	730	738	747	749	743	734	728	727	729	736	745		
3	743	746	740	731	725	727	729	737	746	749	743	733	727	727	728	735	743		
4	742	745	738	729	723	725	728	737	746	748	742	732	727	726	728	734	742		
5	741	743	737	728	721	724	727	736	746	748	741	732	726	725	726	732	741		
6	739	741	735	726	719	722	726	735	745	747	740	731	724	723	725	731	739		
7	737	740	733	723	716	721	724	734	744	746	739	729	723	721	723	729	737		
8	735	736	731	721	714	718	722	732	742	744	737	727	721	719	721	727	735		
9	733	734	728	718	710	716	720	731	741	743	736	725	718	717	719	724	733		
10	730	732	725	715	707	713	718	729	739	741	733	723	716	714	715	721	730		
11	728	729	721	711	703	710	715	727	737	739	731	720	713	711	713	719	728		
12	724	725	718	708	700	707	712	725	735	737	728	717	711	708	710	716	724		
13	721	722	715	704	695	704	710	722	732	734	726	714	707	704	707	713	721		
14	718	718	710	699	691	699	707	719	730	731	722	710	703	699	703	710	718		
15	713	715	706	695	686	695	702	716	727	728	720	706	699	695	699	706	713		
16	710	709	702	690	680	691	698	713	724	725	716	702	695	691	694	701	710		
17	706	705	698	686	675	687	694	709	721	721	712	698	691	687	690	697	706		
18	702	701	692	679	670	682	690	706	717	717	708	693	687	681	686	693	702		
19	698	696	687	674	664	677	686	702	713	713	703	689	681	676	682	689	698		
20	692	690	682	669	659	671	681	698	710	709	698	684	676	671	676	684	692		
25	665	662	652	636	625	642	655	674	687	685	672	655	647	640	648	657	665		
30	633	629	617	598	586	606	622	646	659	656	640	621	613	604	613	625	633		
35	598	592	576	555	545	566	586	613	626	621	602	581	572	563	574	588	598		
40	558	549	532	510	494	522	547	575	590	584	561	537	529	517	534	549	558		
50	476	462	433	405	391	425	456	491	509	498	469	441	428	418	437	463	476		
55	434	417	383	349	336	373	409	447	468	452	419	388	374	361	387	421	434		
60	390	373	332	293	277	320	359	403	427	409	368	334	318	305	338	375	390		
65	337	320	280	235	216	263	309	356	376	359	318	276	259	248	290	324	337		
70	277	257	222	177	156	206	258	298	320	303	264	218	198	192	236	267	277		
75	204	189	158	121	96	148	195	232	250	240	207	162	137	135	176	197	204		
80	120	109	88	64	43	91	127	157	170	163	139	104	81	79	108	122	120		
85	25	17	14	11	8	36	59	71	82	80	69	47	31	26	35	34	25		
90	0	0	0	0	0	0	0	0	0	0	2	2	2	0	0	0	0		
95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		





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# Test Report

## Test No. 3: Total Harmonic Distortion Test

### Environmental Conditions

Temperature: 25.1°C

### Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Calibration Due Date
GVS-LE-PM012	Digital Power Meter	04/28/2014	04/27/2015
GVS-LE-PS047	Power Supply	----	----

### Test Sample

2091409-S1

### Test Method

The sample was tested according to the ANSI C82.77-2002. The ambient temperature condition was maintained at 25°C ± 1°C. The sample measurements were made using a digital power meter and power supply. The sample was operated at rated voltage and was stabilized before measurement. The total harmonic distortion were calculated from the digital power meter.

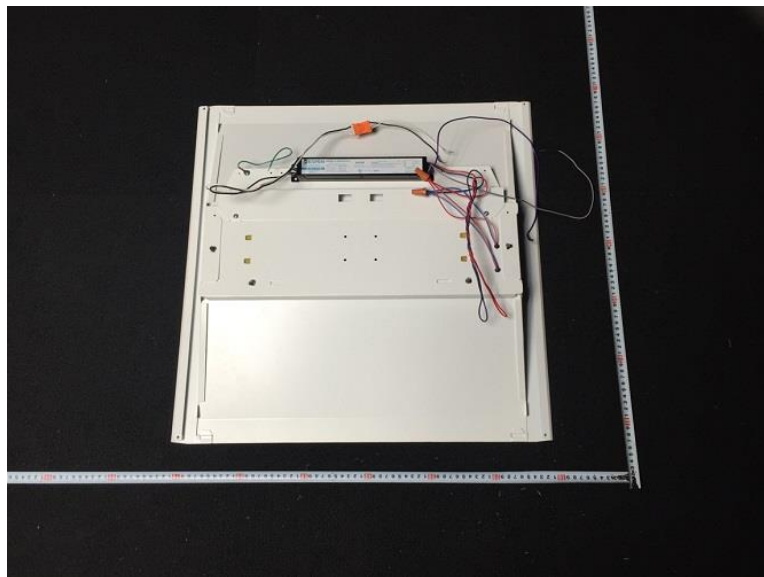
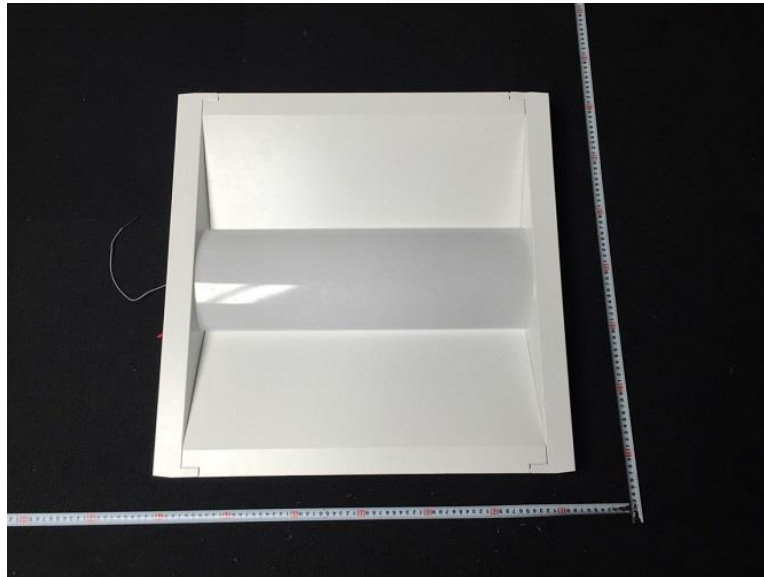
### Test Results

Test Type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Current THD (%)	Operate time (Min.)	Stabilization time (Min.)
Input	277.1	60	0.092	24.17	0.94	5.19	58	50



# Test Report

## Photos of sample



\*\*\*\*\***END OF TEST REPORT**\*\*\*\*\*