



Report No.: GZE160120-N

## LM-79-08 Test Report

For

### IKIO LED LIGHTING

(BrandName: IKIO)

8470 Allison Pointe Blvd, Suite 128  
Indianapolis, IN 46250

### Dual Mode Internal Driver (UL Type A and Type B)

Model name(s): IK-T804-NANO-0012-XXA&B-J (Frosted)

Representative (Tested) Model: IK-T804-NANO-0012-30A&B-J(Frosted)  
IK-T804-NANO-0012-35A&B-J(Frosted)  
IK-T804-NANO-0012-40A&B-J(Frosted)  
IK-T804-NANO-0012-50A&B-J(Frosted)

Model Difference: All construction and rating are the same, except CCT

Test & Report By:

*Jack Luo*

Engineer: Jack Luo

Date: Dec.15, 2016

Review By:

*Tommy Liang*

Manager: Tommy Liang

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

Laboratory: Standard-Tech Co. Ltd Testing Center  
NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: Standard-Tech Building, No.6 Guanhong Road, Guangzhou Science City, Guangzhou 510663, China

Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

### 1.1 Product Information:

Organization Name	IKIO LED LIGHTING	
Brand Name	IKIO	
Model Number	IK-T804-NANO-0012-XXA&B-J (Frosted)	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Dual Mode Internal Driver (UL Type A and Type B)	
Rated Voltage / Frequency	100 ~ 277 Vac, 50/60 Hz	
Nominal Power	12W	
Rated Initial Lamp Lumen	--	
Declared CCT	3000K,3500K,4000K,5000K	
LED Manufacturer	EVERLIGHT ELECTRONICS CO.,LTD	
LED Model	67-21S Series	
Test Ballast	OSRAM SYLVANIA QTP 2x32T8/UNV ISN-SC	
Sample Number	GZE160120-N1,N2(3000K),N3(3500K), N4(4000K),N5(5000K)	
Lamp Length	1200	mm
Lamp Width	--	mm
Number of Units (modular products)	N/A	s

#### Photo



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## 1.2 Test Specifications:

Date of Receipt	Dec.14, 2016
Date of Test	Dec.14, 2016
Test item	<ol style="list-style-type: none"> <li>1. Total Luminous Flux</li> <li>2. Luminous Distribution Intensity</li> <li>3. Luminous Efficacy</li> <li>4. Correlated Color Temperature</li> <li>5. Color Rendering Index</li> <li>6. Chromaticity Coordinate</li> <li>7. Electrical Parameters</li> </ol>
Reference Standard	<ol style="list-style-type: none"> <li>1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products</li> <li>2. ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products</li> <li>3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources</li> <li>4. CIE 15-2004 Technical Report Colorimetry</li> <li>5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source</li> <li>6. IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems</li> </ol>
Reference Work Instruction	QD25

## 1.3 Test Methods

### 1) Photometric and Light Distribution Measurement – Goniophotometer Method:

Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at  $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$ , measured at a point not more than 1 m from the sample and at the same height as the sample. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at  $1^{\circ}$  vertical intervals and  $22.5^{\circ}$  horizontal intervals.

### 2) Chromaticity Measurement – Sphere-Spectroradiometer Method:

Chromaticity parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at  $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$ . 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 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral power distribution taken at 5 nm intervals over the range of 380 to 780 nm.

### 3) Electrical Measurements:

Electrical parameters were measured using power meters incorporated in goniophotometer or sphere-spectroradiometer system. The ambient temperature surrounding the sample was maintained at  $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$ . The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Voltage, frequency, current, power, power factor and total harmonic distortion were measured by and read from the power meter.

### 2.1.1 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction QD25)

Test date	2016-12-14	Test Ambient:	25.2 °C
Test Orientation	Horizontal	Stabilization Time (min)	90
Model Number	IK-T804-NANO-0012-30A&B-J (Frosted) , with ballast OSRAM SYLVANIA QTP 2x32T8/UNV ISN-SC		

#### Electrical Measurement for Bare-lamp:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE160120	120.0	60	0.1052	12.60	0.9725	5.81
-N1	277.0	60	0.0509	12.58	0.9017	9.04
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

#### Chromaticity Measurement for Bare-lamp - Sphere-Spectroradiometer Method:

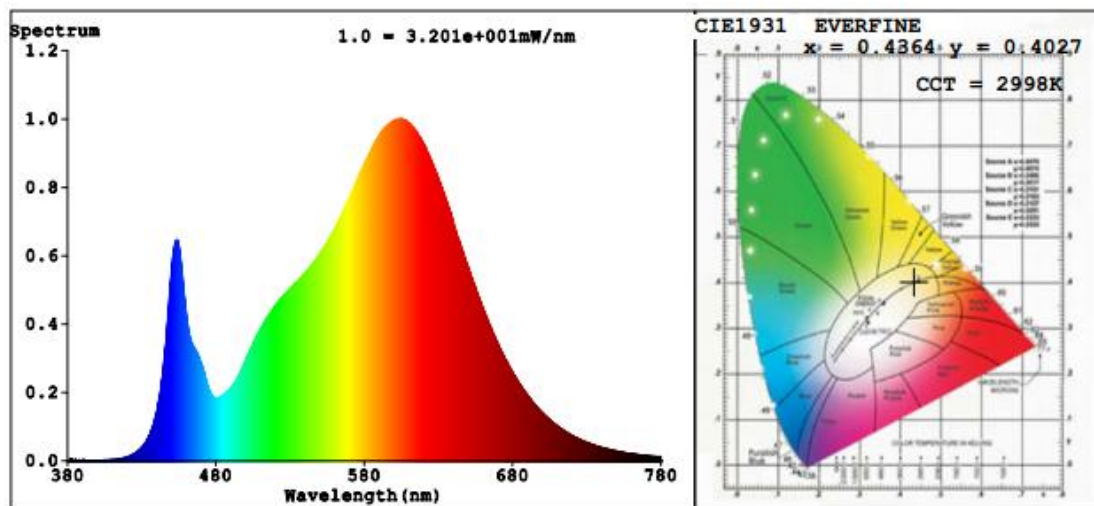
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	81	R9	5
Frequency (Hz)	60	R2	91	R10	80
CCT (K)	3001	R3	96	R11	78
Duv	-0.0005	R4	79	R12	67
Chromaticity (x, y)	x=0.4364 y=0.4027	R5	81	R13	83
Chromaticity (u', v')	u'=0.2508 v'=0.5208	R6	89	R14	99
Color Rendering Index (CRI)	82.2	R7	82	R15	73
R9	5	R8	58	--	--

#### Photometric Measurement for Bare-lamp –Sphere-Spectroradiometer Method:

Parameter	Result		DLC V4.0 Pass Criteria
Test Voltage (V)	120.0	277.0	--
Frequency (Hz)	60	60	
Total Luminous (lm)	1664	1676	Bare Lamp: >= 1600(-10%)
Luminous Efficacy (lm/W)	132.10	133.25	Bare lamp: >= 110(-3%)



**Spectral Power Distribution & Chromaticity Diagram**



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## 2.1.2 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction QD25)

Test date	2016-12-14	Test Ambient:	25.2 °C
Test Orientation	Horizontal	Stabilization Time (min)	90
Model Number	IK-T804-NANO-0012-30A&B-J (Frosted) , Connected to line voltage		

### Electrical Measurement for Bare-lamp:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE160120	120.0	60	0.1016	11.94	0.9803	8.88
-N1	277.0	60	0.0470	11.98	0.9091	10.55
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

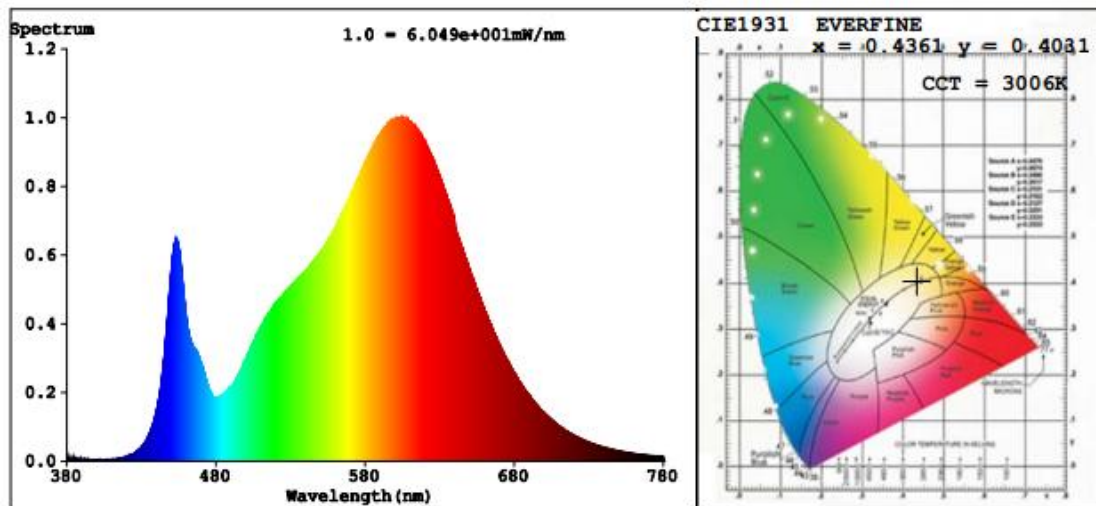
### Chromaticity Measurement for Bare-lamp - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	81	R9	5
Frequency (Hz)	60	R2	91	R10	80
CCT (K)	3005	R3	96	R11	78
Duv	-0.0003	R4	79	R12	67
Chromaticity (x, y)	x=0.4361 y=0.4031	R5	81	R13	84
Chromaticity (u', v')	u'=0.2504 v'=0.5209	R6	89	R14	99
Color Rendering Index (CRI)	82.2	R7	82	R15	73
R9	5	R8	58	--	--

### Photometric Measurement for Bare-lamp –Sphere-Spectroradiometer Method:

Parameter	Result		DLC V4.0 Pass Criteria
Test Voltage (V)	120.0	277.0	--
Frequency (Hz)	60	60	
Total Luminous (lm)	1602	1601	Bare Lamp: >= 1600(-10%)
Luminous Efficacy (lm/W)	134.20	133.62	Bare lamp: >= 110(-3%)

**Spectral Power Distribution & Chromaticity Diagram**



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Summary
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Sample No.	Test Method	Voltage (Vac)	Frequency (Hz )	Lumen Output(lm)	Lumen Efficacy(lm/w)	Power (W)
GZE160120-N1	With Ballast	120.0	60	1664	132.10	12.60
GZE160120-N1	Connected to line voltage	120.0	60	1602	134.20	11.94

The measured lumen efficacy of test condition “with ballast” was more than test condition “Connect to line voltage”, but had more power consumption. So the following test will be conducted as test condition “with ballast”.

## 2.2 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction QD25)

Test date	2016-12-14	Test Ambient:	25.2 °C
Test Orientation	Horizontal	Stabilization Time (min)	90
Model Number	IK-T804-NANO-0012-30A&B-J (Frosted), with ballast OSRAM SYLVANIA QTP 2x32T8/UNV ISN-SC		

### Electrical Measurement for 2-lamp in Lithonia 2PM3N 12 cell 2x4 parabolic:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE160120	120.0	60	0.2180	25.55	0.9718	6.45
-N1,N2	277.0	60	0.1021	25.68	0.9012	9.56
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

### Chromaticity Measurement for 2-lamp in Lithonia 2PM3N 12 cell 2x4 parabolic - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	81	R9	6
Frequency (Hz)	60	R2	91	R10	80
CCT (K)	3012	R3	96	R11	79
Duv	-0.0002	R4	80	R12	67
Chromaticity (x, y)	x=0.4359 y=0.4033	R5	81	R13	84
Chromaticity (u', v')	u'=0.2503 v'=0.5209	R6	89	R14	99
Color Rendering Index (CRI)	82.4	R7	82	R15	74
R9	6	R8	58	--	--

### Photometric Measurement 2-lamp in Lithonia 2PM3N 12 cell 2x4 parabolic – Goniophotometer Method:

Parameter	Result		DLC V4.0 Pass Criteria
Test Voltage (V)	120.0	277.0	--
Frequency (Hz)	60	60	
Total Luminous (lm)	2949	2935	In luminaire (2 lamps): >= 3000(-10%)
Luminous Efficacy (lm/W)	115.42	114.31	In luminaire: >= 100(-3%)
Zonal lumens in the 0-60° zone (%)	90	--	>= 75(-3)
SC: 0-180° (if applicable)	1.42	--	1.0-2.0(±0.1)
SC: 90-270° (if applicable)	1.15	--	1.0-2.0(±0.1)
Beam Angle (°)	102.4	--	--
Center Beam Candle Power (cd)	1204	--	--

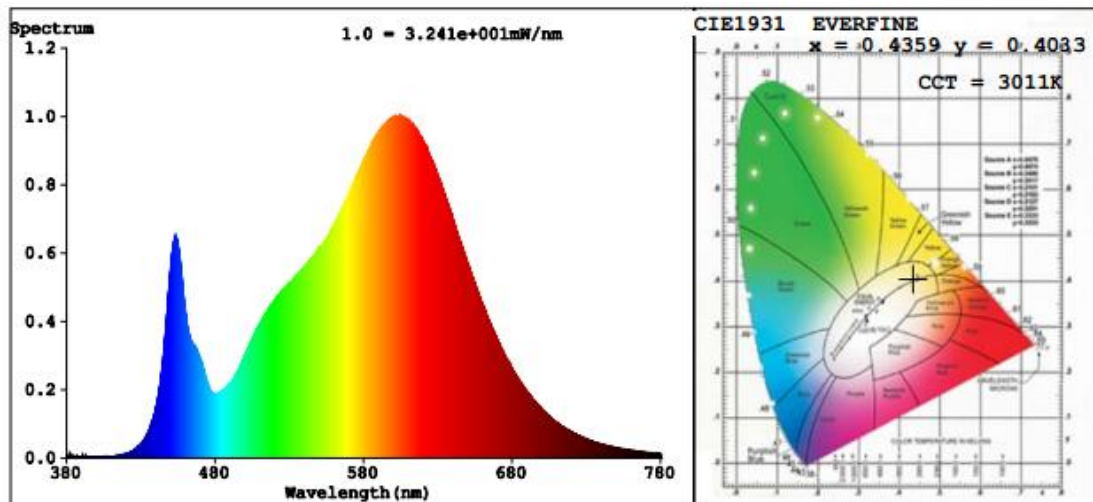
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## Spectral Power Distribution & Chromaticity Diagram



## Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	920.4	31.6%
0-40	1,508.8	51.8%
0-60	2,622.3	90%
60-90	289.9	10%
70-100	77.6	2.7%
90-120	0.0	0%
0-90	2,912.2	100%
90-180	0.0	0%
0-180	2,912.2	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	113.5	3.9%	90-100	0.0	0%
10-20	321.9	11.1%	100-110	0	0%
20-30	485.0	16.7%	110-120	0.0	0%
30-40	588.4	20.2%	120-130	0.0	0%
40-50	621.7	21.3%	130-140	0.0	0%
50-60	491.7	16.9%	140-150	0.0	0%
60-70	212.3	7.3%	150-160	0	0%
70-80	67.1	2.3%	160-170	0	0%
80-90	10.5	0.4%	170-180	0	0%

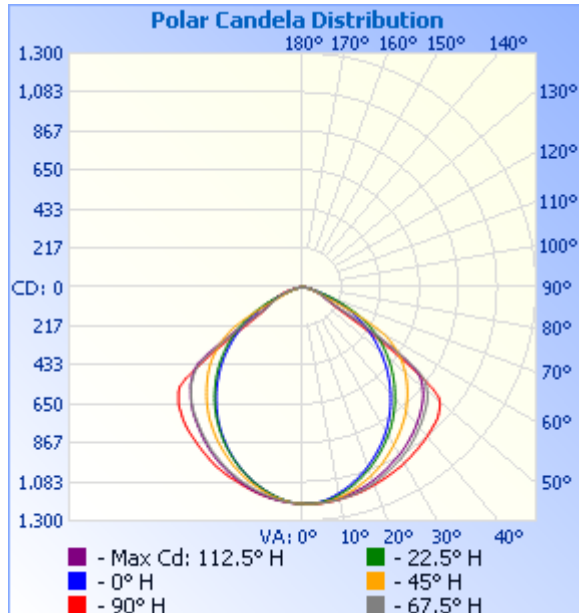
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**Photometric Data**



**Illuminance at a Distance**

	Center Beam fc	Beam Width	
17.0ft	4.17 fc	38.1 ft	47.5 ft
34.0ft	1.04 fc	76.1 ft	95.0 ft
51.0ft	0.46 fc	114.2 ft	142.5 ft
68.0ft	0.26 fc	152.2 ft	190.0 ft
85.0ft	0.17 fc	190.3 ft	237.5 ft
102.0ft	0.12 fc	228.4 ft	285.0 ft

■ Vert. Spread: 96.4°  
 ■ Horiz. Spread: 108.8°

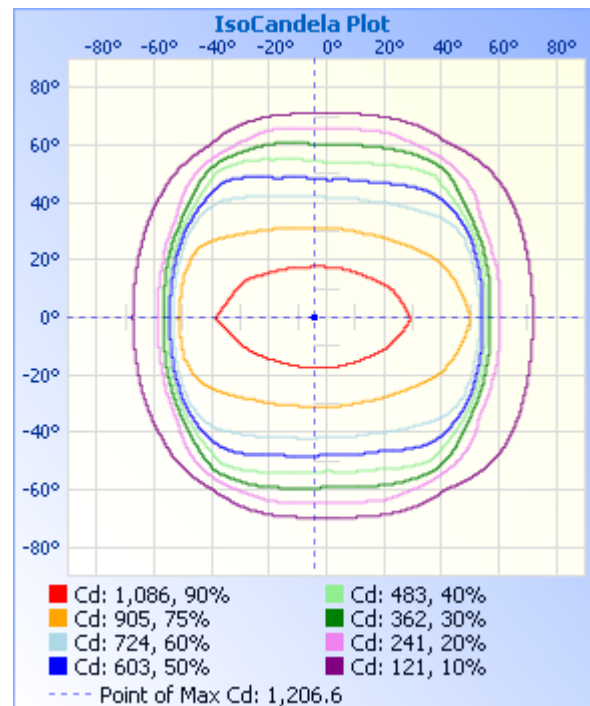
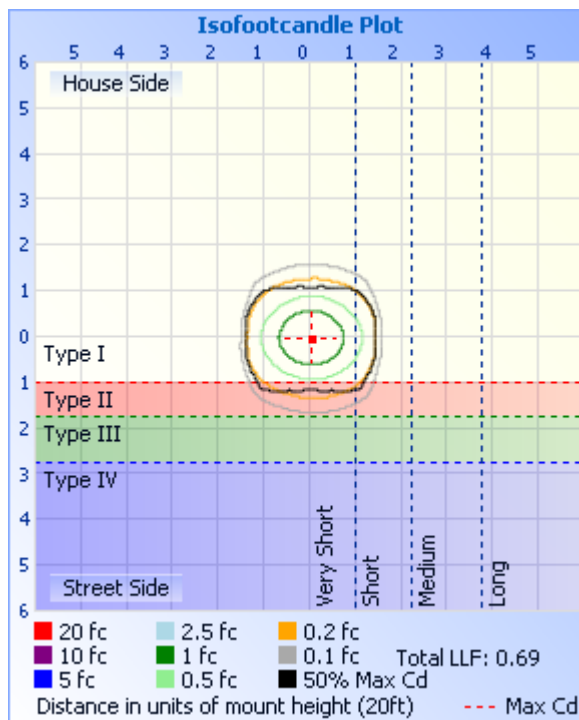




Table--1

UNIT: cd

C (DEG) γ (DEG)	0	23	45	68	90	113	135	158	180	203	225	248	270	293	315	338	
0	1204	1204	1204	1204	1204	1204	1204	1204	1204	1204	1204	1204	1204	1204	1204	1204	
5	1195	1196	1196	1199	1197	1200	1205	1205	1206	1204	1197	1193	1189	1189	1191	1195	
10	1181	1181	1171	1166	1163	1173	1187	1197	1198	1191	1173	1163	1154	1154	1162	1174	
15	1160	1156	1133	1120	1117	1130	1155	1184	1187	1172	1140	1119	1108	1108	1124	1146	
20	1135	1121	1084	1064	1061	1077	1116	1160	1170	1145	1099	1066	1051	1053	1077	1113	
25	1111	1084	1032	1001	998	1018	1069	1129	1151	1112	1049	1006	987	991	1022	1074	
30	1077	1039	974	932	927	952	1014	1097	1131	1076	993	937	914	921	964	1031	
35	1043	989	909	855	848	880	957	1059	1106	1036	934	863	834	845	901	982	
40	1009	938	839	774	762	801	896	1013	1081	990	870	782	745	762	830	932	
45	965	880	763	687	669	716	825	966	1053	938	798	694	651	673	754	876	
50	902	810	682	595	571	626	747	906	999	874	716	599	551	577	673	802	
55	472	647	585	498	471	532	656	710	586	698	612	495	443	474	572	590	
60	243	247	462	393	368	427	520	236	195	230	473	378	329	361	430	233	
65	194	178	210	277	262	302	213	140	145	133	191	246	215	236	165	174	
70	138	124	107	155	153	166	93.5	97.1	103	90.0	73.3	113	107	113	93.6	121	
75	85.7	74.7	57.5	68.9	72.4	67.5	51.4	60.4	66.9	54.1	41.2	46.4	50.1	47.9	49.2	72.2	
80	37.9	33.4	26.5	28.7	29.2	27.6	24.6	29.7	34.7	26.6	19.6	19.4	20.7	20.4	22.6	32.1	
85	10.9	9.59	7.80	7.56	8.05	8.05	8.47	10.1	12.0	8.70	5.83	4.95	5.05	4.90	5.90	9.16	
90	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
140	0.00	0.00	0.00	0.00	0.00	0.00	2.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
175	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

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## 2.3 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction QD25)

Test date	2016-12-14	Test Ambient:	25.2 °C
Test Orientation	Horizontal	Stabilization Time (min)	90
Model Number	IK-T804-NANO-0012-35A&B-J (Frosted), with ballast OSRAM SYLVANIA QTP 2x32T8/UNV ISN-SC		

### Electrical Measurement for Bare-lamp:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE160120	120.0	60	0.1080	12.73	0.9702	6.25
-N3	277.0	60	0.0512	12.72	0.8998	10.27
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

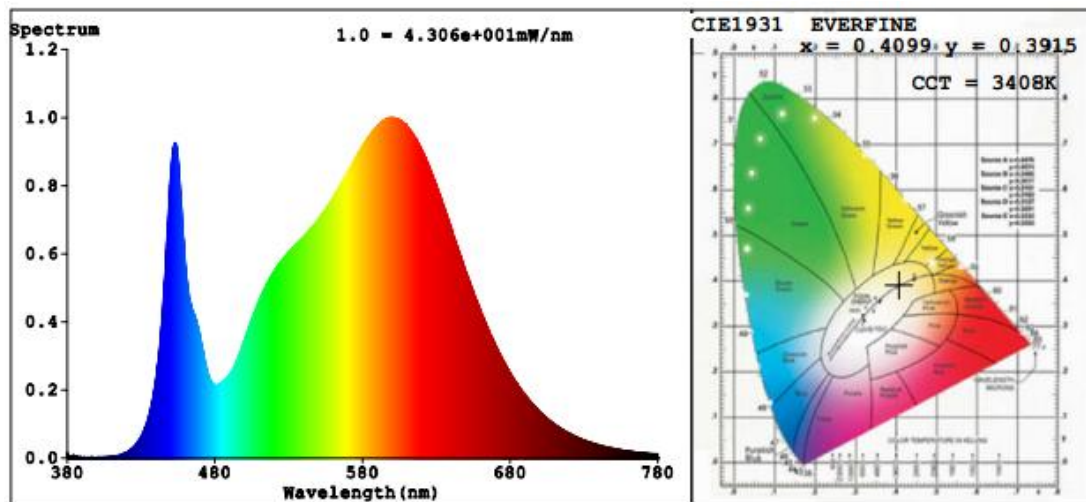
### Chromaticity Measurement for Bare-lamp - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	81	R9	9
Frequency (Hz)	60	R2	90	R10	76
CCT (K)	3409	R3	96	R11	79
Duv	-0.0006	R4	81	R12	62
Chromaticity (x, y)	x=0.4099 y=0.3915	R5	81	R13	84
Chromaticity (u', v')	u'=0.2384 v'=0.5123	R6	87	R14	98
Color Rendering Index (CRI)	82.7	R7	84	R15	75
R9	9	R8	62	--	--

### Photometric Measurement for Bare-lamp –Sphere-Spectroradiometer Method:

Parameter	Result		DLC V4.0 Pass Criteria
Test Voltage (V)	120.0	277.0	--
Frequency (Hz)	60	60	
Total Luminous (lm)	1734	1709	Bare Lamp: >= 1600(-10%)
Luminous Efficacy (lm/W)	136.20	134.34	Bare lamp: >= 110(-3%)

**Spectral Power Distribution & Chromaticity Diagram**



Laboratory: Standard-Tech Co. Ltd Testing Center  
NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: Standard-Tech Building, No.6 Guanhong Road, Guangzhou Science City, Guangzhou 510663, China

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## 2.4 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction QD25)

Test date	2016-12-14	Test Ambient:	25.2 °C
Test Orientation	Horizontal	Stabilization Time (min)	90
Model Number	IK-T804-NANO-0012-40A&B-J (Frosted), with ballast OSRAM SYLVANIA QTP 2x32T8/UNV ISN-SC		

### Electrical Measurement for Bare-lamp:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE160120	120.0	60	0.1093	12.68	0.9694	6.25
-N4	277.0	60	0.0520	12.81	0.9005	9.97
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

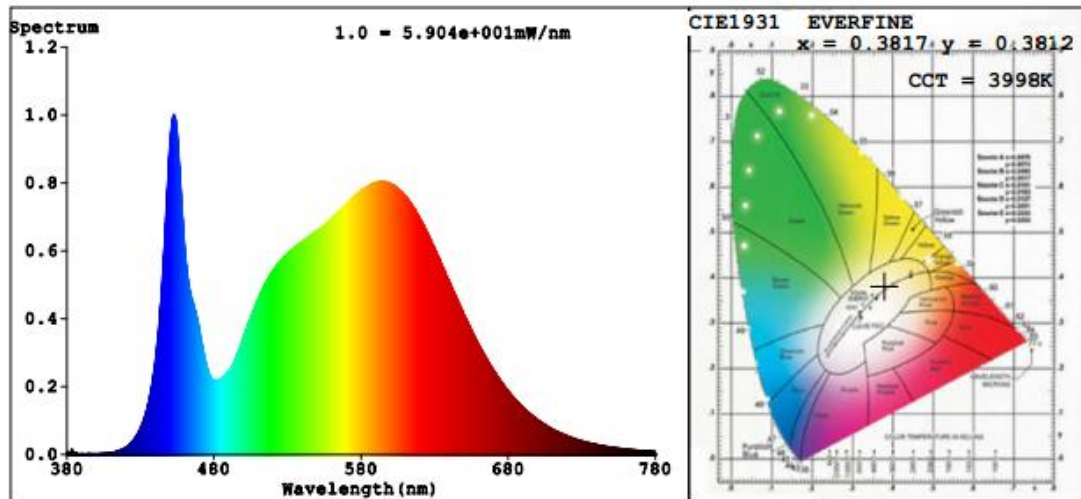
### Chromaticity Measurement for Bare-lamp - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	81	R9	7
Frequency (Hz)	60	R2	89	R10	72
CCT (K)	3997	R3	94	R11	79
Duv	0.0017	R4	81	R12	56
Chromaticity (x, y)	x=0.3817 y=0.3812	R5	80	R13	83
Chromaticity (u', v')	u'=0.2242 v'=0.5037	R6	84	R14	97
Color Rendering Index (CRI)	82.3	R7	86	R15	75
R9	7	R8	64	--	--

### Photometric Measurement for Bare-lamp –Sphere-Spectroradiometer Method:

Parameter	Result		DLC V4.0 Pass Criteria
Test Voltage (V)	120.0	277.0	--
Frequency (Hz)	60	60	
Total Luminous (lm)	1752	1758	Bare Lamp: >= 1600(-10%)
Luminous Efficacy (lm/W)	138.17	137.21	Bare lamp: >= 110(-3%)

**Spectral Power Distribution & Chromaticity Diagram**



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## 2.5 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction QD25)

Test date	2016-12-14	Test Ambient:	25.2 °C
Test Orientation	Horizontal	Stabilization Time (min)	90
Model Number	IK-T804-NANO-0012-50A&B-J (Frosted), with ballast OSRAM SYLVANIA QTP 2x32T8/UNV ISN-SC		

### Electrical Measurement for Bare-lamp:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE160120	120.0	60	0.1072	12.57	0.9711	6.65
-N5	277.0	60	0.0508	12.77	0.9042	9.14
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

### Chromaticity Measurement for Bare-lamp - Sphere-Spectroradiometer Method:

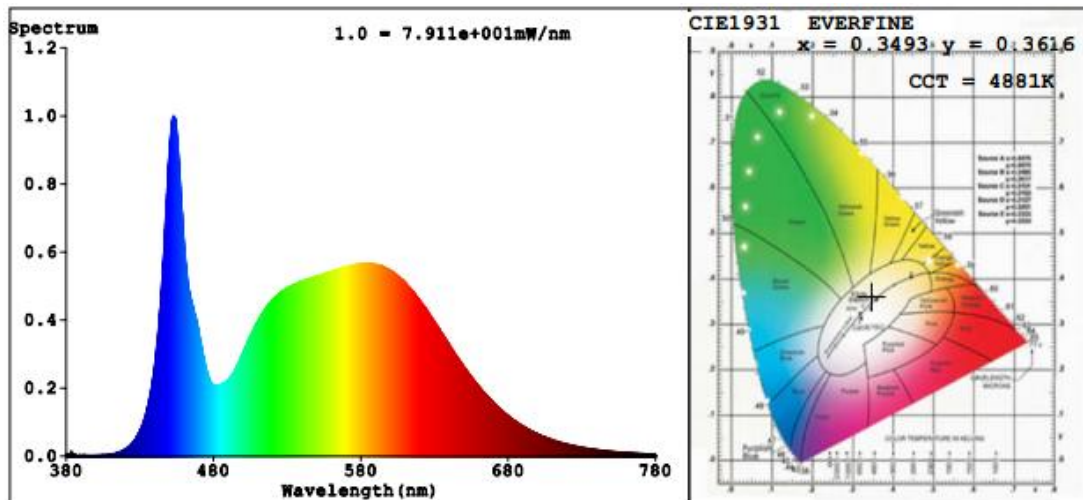
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	80	R9	6
Frequency (Hz)	60	R2	88	R10	71
CCT (K)	4884	R3	93	R11	78
Duv	0.0033	R4	80	R12	51
Chromaticity (x, y)	x=0.3493 y=0.3616	R5	79	R13	82
Chromaticity (u', v')	u'=0.2104 v'=0.4901	R6	82	R14	96
Color Rendering Index (CRI)	82.1	R7	88	R15	75
R9	6	R8	66	--	--

### Photometric Measurement for Bare-lamp –Sphere-Spectroradiometer Method:

Parameter	Result		DLC V4.0 Pass Criteria
Test Voltage (V)	120.0	277.0	--
Frequency (Hz)	60	60	
Total Luminous (lm)	1712	1752	Bare Lamp: >= 1600(-10%)
Luminous Efficacy (lm/W)	136.20	137.19	Bare lamp: >= 110(-3%)



**Spectral Power Distribution & Chromaticity Diagram**



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### 3. Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-336	2 meter Integrating Sphere	2016-07-01	2017-06-30
ST-R-331	Spectral analysis system HAAS-2000	2016-07-01	2017-06-30
D204	Standard Lamp	2016-07-01	2017-06-30
PF2010	Power Meter for Integrating Sphere	2016-07-01	2017-06-30
EE-09	Goniophotometer system	2016-07-01	2017-06-30
D908S	Standard Lamp	2016-07-01	2017-06-30
PF210	Power Meter for Goniophotometer	2016-07-01	2017-06-30
ST-R-181A	Temperature Tester	2016-07-01	2017-06-30
Uncertainty: Photometric Measurement (Sphere):1.74% Chromaticity Measurement(Sphere):14.3K Photometric Measurement(Goniophotometer):1.62%			

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