

LM-79-08 Test Report

For

Beyond LED Technology

(Brand Name: Beyond LED)

2725 Mountain Industrial Blvd. Suite A-1
Tucker, GA 30084

ZOHO Series LED Flood Light

Model name(s): BLTFLD50W5K

Representative (Tested) Model: BLTFLD50W5K 5000K

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

Test & Report By:

Garman Mo

Engineer: Garman Mo

Date: Jul.21,2017

Update: Sep.14,2017

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>

Revision Details

Report No. Revision	Revised Item:	Revised Reason	Issue date
GZE1707031-C	Adding 100V Electrical Data	Adding 100V Electrical Data	Jul.21,2017
GZE1707031-C-R			Sep.14,2017

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

Report Format Number STD/QR4909-A/2

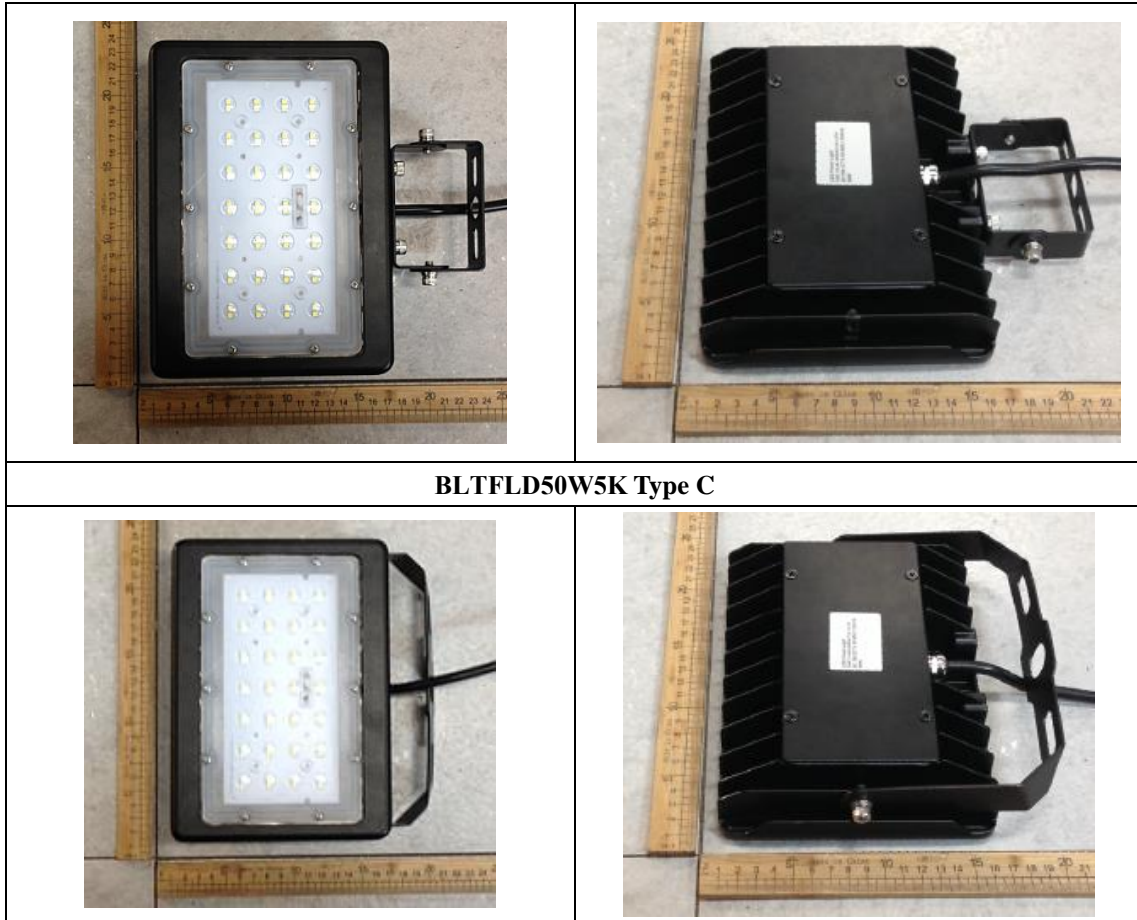
Address: Standard-Tech Building, No.6 Guanhong Road,Guangzhou Science City, Guangzhou 510663, China

Tel: 8620-3229 0320

Fax: 8620-32290422

<http://www.standard-tech.com>

1.1 Product Information:		
Organization Name	Beyond LED Technology	
Brand Name	Beyond LED	
Model Number	BLTFLD50W5K	
SKU (if available)	150020	
Type of Luminaire (for integral lamps, list base type and lamp type)	Architectural Flood and Spot Luminaires	
Rated Voltage / Frequency	100 -277Vac, 50/60 Hz	
Nominal Power	50W	
Rated Initial Lamp Lumen	--	
Declared CCT	5000K	
LED Manufacturer	PHILIHLS LUMILEDS	
LED Model	L130-xxyy003000W21	
Sample Number	GZE1707031-C1(4000K),C2(5700K)	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s
Photo		
BLTFLD50W5K Type A		
		
BLTFLD50W5K Type B		



BLTFLD50W5K Type C

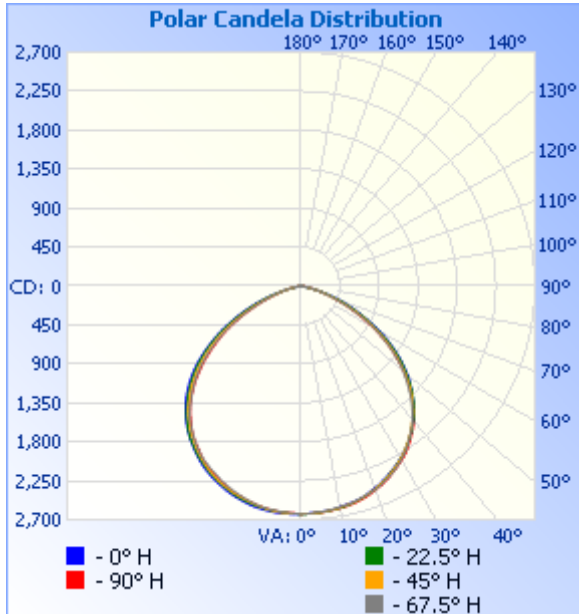
1.2 Test Specifications:

Date of Receipt	Jul.15,2017
Date of Test	Jul.16,2017
Test item	<ol style="list-style-type: none"> 1. Total Luminous Flux 2. Luminous Distribution Intensity 3. Luminous Efficacy 4. Correlated Color Temperature 5. Color Rendering Index 6. Chromaticity Coordinate 7. Electrical Parameters
Reference Standard	<ol style="list-style-type: none"> 1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products 2. ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products 3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources 4. CIE 15-2004 Technical Report Colorimetry 5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source 6. IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems
Reference Work Instruction	QD25

1.3 Test Methods

<p>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 °C ± 1 °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 ° vertical intervals and 22.5 ° horizontal intervals.</p>
<p>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 °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 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.</p>
<p>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 °C ± 1 °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.</p>

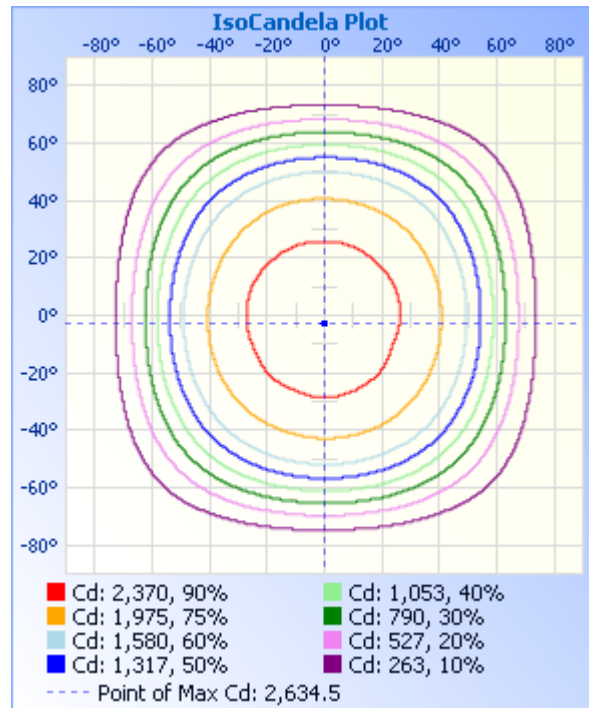
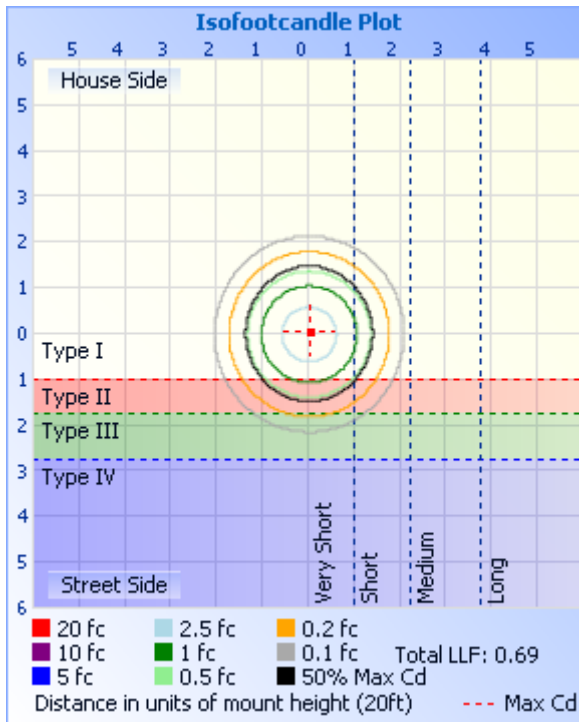
Photometric Data



Illuminance at a Distance

	Center Beam fc	Beam Width	
17.0ft	9.11 fc	50.2 ft	46.9 ft
34.0ft	2.28 fc	100.4 ft	93.8 ft
51.0ft	1.01 fc	150.6 ft	140.7 ft
68.0ft	0.57 fc	200.8 ft	187.7 ft
85.0ft	0.36 fc	251.0 ft	234.6 ft
102.0ft	0.25 fc	301.2 ft	281.5 ft

■ Vert. Spread: 111.8°
■ Horiz. Spread: 108.1°



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>

Table--1

UNIT: cd

C (DEG) y (DEG)	0	23	45	68	90	113	135	158	180	203	225	248	270	293	315	338
0	2632	2632	2632	2632	2632	2632	2632	2632	2632	2632	2632	2632	2632	2632	2632	2632
5	2618	2616	2620	2617	2618	2622	2622	2616	2623	2626	2633	2624	2633	2621	2624	2616
10	2591	2587	2589	2587	2588	2599	2595	2588	2603	2598	2620	2608	2615	2599	2593	2589
15	2542	2542	2537	2534	2551	2557	2558	2554	2570	2563	2578	2564	2576	2559	2545	2534
20	2477	2474	2461	2471	2483	2494	2491	2500	2506	2501	2516	2504	2515	2495	2485	2463
25	2388	2392	2379	2393	2396	2403	2407	2422	2424	2414	2430	2422	2435	2416	2404	2373
30	2287	2273	2281	2288	2294	2297	2298	2313	2321	2306	2318	2321	2333	2318	2298	2281
35	2154	2149	2147	2155	2168	2168	2164	2169	2188	2182	2187	2195	2205	2198	2166	2151
40	1986	1984	1984	1995	2011	2015	2001	2000	2021	2020	2033	2044	2059	2048	2015	1996
45	1790	1784	1797	1814	1822	1827	1810	1787	1811	1816	1833	1857	1885	1859	1827	1790
50	1534	1541	1570	1596	1606	1596	1568	1546	1556	1566	1600	1645	1664	1634	1592	1553
55	1254	1264	1300	1336	1347	1334	1296	1267	1273	1288	1328	1370	1402	1375	1323	1275
60	958	968	1004	1037	1056	1036	996	969	967	986	1036	1078	1104	1079	1023	972
65	649	658	697	727	747	732	694	656	657	679	728	767	793	768	712	663
70	392	390	404	440	468	447	406	388	397	408	438	478	500	470	423	400
75	208	199	192	201	201	204	190	195	198	204	212	231	235	226	209	212
80	90.8	80.2	64.2	45.2	40.0	48.0	62.6	82.1	86.1	82.9	74.3	59.6	57.1	62.4	75.1	89.7
85	34.5	22.9	6.50	1.14	0.24	2.24	10.2	28.1	33.3	28.1	17.7	18.6	16.9	20.1	19.8	32.9
90	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
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	0.11	0.01	0.00	0.00
110	0.45	0.35	0.35	0.41	0.46	0.36	0.35	0.35	0.51	0.26	0.30	0.61	0.93	0.56	0.26	0.41
115	1.11	1.01	0.96	0.61	1.02	0.91	0.91	1.11	0.96	0.86	0.81	0.87	1.74	1.02	0.66	0.86
120	1.61	1.61	1.62	1.73	1.64	1.57	1.52	1.67	1.47	1.36	1.27	1.58	2.00	1.64	1.22	1.12
125	2.27	2.27	1.93	2.44	2.92	2.80	2.03	2.37	2.02	1.87	1.52	2.29	3.18	2.25	1.42	1.67
130	2.82	2.77	2.28	3.31	3.79	3.27	2.38	2.84	2.57	2.12	2.08	2.65	3.33	2.87	2.08	2.03
135	3.17	2.77	2.73	3.46	3.94	3.73	2.84	2.84	2.87	2.47	2.48	2.60	3.38	3.12	2.38	2.33
140	3.18	2.88	2.79	3.76	3.74	4.09	2.94	2.99	3.13	2.98	2.53	3.31	3.33	3.32	2.48	2.89
145	3.63	2.88	3.19	3.72	3.89	4.24	2.79	3.14	3.68	3.18	2.79	3.67	3.79	3.78	3.14	3.19
150	3.68	2.93	4.35	4.27	4.61	4.50	3.55	3.44	3.73	3.53	3.60	3.82	4.00	3.88	4.11	3.49
155	3.43	3.67	4.51	4.48	4.71	4.50	4.05	3.80	3.68	3.88	3.75	3.87	3.64	3.78	4.10	3.65
160	3.28	3.68	4.61	4.38	4.76	4.39	4.36	3.85	3.43	3.83	3.80	3.97	3.69	3.73	4.05	3.75
165	3.68	3.68	4.66	4.43	4.61	4.50	4.41	3.80	4.14	3.99	3.80	4.02	3.74	3.88	4.05	4.05
170	4.39	4.14	5.47	5.19	5.22	5.31	5.17	4.10	4.89	4.74	4.51	5.50	5.49	5.52	5.22	5.42
175	4.39	4.64	5.68	5.35	6.04	5.77	5.52	4.40	4.99	4.84	4.87	5.90	5.69	6.28	5.73	5.72
180	4.49	5.00	5.88	5.50	6.20	6.03	5.93	4.61	4.64	4.54	4.87	5.75	5.53	6.18	5.73	5.77

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>

BUG Rating: B3-U2-G1

IESNA Luminaire Flux Distribution Table:

Zone	Lumens	Luminaire %
FL - Front-Low(0-30)	1036.8	14.9
FM - Front-Medium(30-60)	1946.6	27.9
FH - Front-High(60-80)	457.55	6.6
FVH - Front-Very High(80-90)	10.248	0.1
Total Forward Light	3456.9	49.5

BL - Back-Low(0-30)	1043.6	15.0
BM - Back-Medium(30-60)	1980.1	28.4
BH - Back-High(60-80)	478.81	6.9
BVH - Back-Very High(80-90)	13.877	0.2
Total Back Light	3521.7	50.5

UL - Uplight-Low(90-100)	0	0.0
UH - Uplight-High(100-180)	10.94	0.2
Total Up Light	10.94	0.2

BUG (Back, Up, Glare) Rating	B3-U2-G1
-------------------------------------	-----------------

Zone	Downward Lumens	Upward Lumens	Total Lumens
House Side	3516.4	5.245	3521.7
Street Side	3451.2	5.695	3456.9

2.2 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction QD25)

Test date	2017-07-16	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	BLTFLD50W5K		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE170703 1-C2	100.0	60	0.5438	53.67	0.9869	12.54
	120.0	60	0.4435	52.08	0.9785	13.62
	277.0	60	0.2051	50.65	0.8915	19.06
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

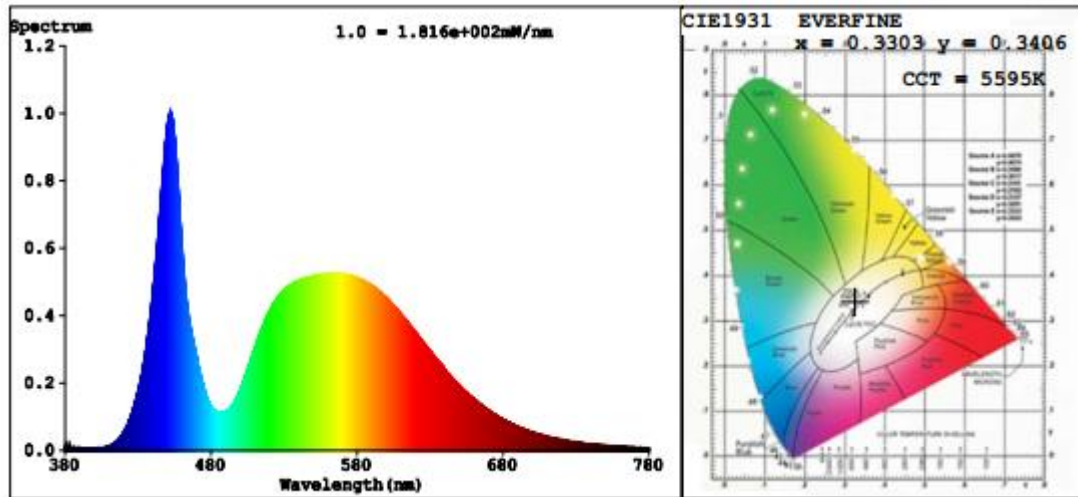
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	73	R9	0
Frequency (Hz)	60	R2	79	R10	49
CCT (K)	5595	R3	81	R11	72
Duv	0.0007	R4	76	R12	43
Chromaticity (x, y)	x=0.3303 y=0.3406	R5	74	R13	74
Chromaticity (u', v')	u'=0.2056 v'=0.4770	R6	71	R14	89
Color Rendering Index (CRI)	75.0	R7	84	R15	70
R9	0	R8	62	--	--

Photometric Measurement – Sphere-Spectroradiometer Method:

Parameter	Result		DLC V4.2 Pass Criteria	
Test Voltage (V)	120.0	277.0	--	
Frequency (Hz)	60	60		
Total Luminous (lm)	7083	6954	>=1000(-10%)	
Luminous Efficacy (lm/W)	136.01	137.30	Standard: >=	Premium: >=
Most worst Luminous/Highest Watts	133.53		95(-3%)	115(-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

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

2.3 Performance Assessment:

Model name	CCT(K)	Total Luminous (lm)	Power (W)	Luminous Efficacy (lm/W)
SNC-FL06-50WAT1A1-40K	4000K	6978.5	52.37	133.25
SNC-FL06-50WAT1A1-50K	5000K	7048 ^{*1}	52.23 ^{*2}	134.94 ^{*3}
SNC-FL06-50WAT1A1-57K	5700K	7083	52.08	136.01

- *1: This value is calculated and the calculation formula is as below:
 $7048 = (7083 - 6978.5) / 3 * 2 + 6978.5$
- *2: This value is calculated and the calculation formula is as below:
 $52.23 = (52.37 + 52.08) / 2$
- *3: This value is calculated and the calculation formula is as below:
 $134.94 = 7048 / 52.23$

3. Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-331	2 meter Integrating Sphere	2017-07-01	2018-06-30
ST-R-327	Spectral analysis system HAAS-2000	2017-07-01	2018-06-30
D204	Standard Lamp	2017-07-12	2018-07-11
PF2010	Power Meter for Integrating Sphere	2017-07-01	2018-06-30
GO-R5000	Goniophotometer system	2017-07-01	2018-06-30
D908S	Standard Lamp	2017-07-12	2018-07-11
PF210	Power Meter for Goniophotometer	2017-07-07	2018-07-06

Expand Uncertainty:
Photometric Measurement (Sphere):2.04%, k=2
Chromaticity Measurement(Sphere):28.8K, k=2
Photometric Measurement(Goniophotometer):2.36%, k=2

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

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>