

## LM-79-08 Test Report

For

### L-TECH CORPORTION (Brand Name: L-TECH CORP)

SHAOGANGTOU DISTRICT.QIAOTOU TOWN.DONGGUAN  
CITY.GUANGDONG PROVINCE,CHINA

### LED Luminare

Model name(s): LRKT560W-EN-3090 (LRKT563W-EN-3090)

Representative (Tested) Model: LRKT560W-EN-3090

Model Different: N/A

Test & Report By:

*Univ Xie*

Engineer: Univ Xie

Date: Jan.13,2017

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>

**1.1 Product Information:**

Organization Name	L-TECH CORPORTION	
Brand Name	L-TECH CORP	
Model Number	LRKT560W-EN-3090	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	LED Luminaire	
Rated Voltage / Frequency	120Vac, 60 Hz	
Nominal Power	13W	
Rated Initial Lamp Lumen	--	
Declared CCT	3000K	
LED Manufacturer	EVERLIGHT ELECTRONICS CO., LTD.	
LED Model	67-22ST	
Sample Number	GZE1612120-AC1	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s

**Photo**



**1.2 Test Specifications:**

Date of Receipt	Jan.08, 2017
Date of Test	Jan.11,2017
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**

<p><b>1) Photometric and Light Distribution Measurement – Goniophotometer Method:</b></p> <p>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><b>2) Chromaticity Measurement – Sphere-Spectroradiometer Method:</b></p> <p>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><b>3) Electrical Measurements:</b></p> <p>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>

**2.1 Electrical, Photometric and Chromaticity Measurements**  
*(Refer to Work Instruction QD25)*

<b>Test date</b>	2017-01-11	<b>Test Ambient:</b>	25.2 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	LRKT560W-EN-3090		

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
GZE161212 0-AC1	120.0	60	0.1110	12.74	0.9606

**Photometric Measurement – Goniophotometer Method:**

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	802.20
Luminous Efficacy (lm/W)	62.97
Beam Angle (°)	104.6
Center Beam Candle Power (cd)	321

**Zonal Lumen Tabulation**

<b>Zonal Lumen Summary</b>		
Zone	Lumens	% Luminaire
0-30	245.4	30.6%
0-40	397.4	49.5%
0-60	679.8	84.8%
60-90	121.5	15.1%
70-100	35.1	4.4%
90-120	0.3	0%
0-90	801.3	99.9%
90-180	0.8	0.1%
0-180	802.1	100%

<b>Lumens Per Zone</b>					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	30.3	3.8%	90-100	0.1	0%
10-20	86.3	10.8%	100-110	0.1	0%
20-30	128.8	16.1%	110-120	0.1	0%
30-40	152.0	19.0%	120-130	0.1	0%
40-50	152.7	19.0%	130-140	0.1	0%
50-60	129.7	16.2%	140-150	0.1	0%
60-70	86.5	10.8%	150-160	0.1	0%
70-80	31.9	4.0%	160-170	0.1	0%
80-90	3.1	0.4%	170-180	0.0	0%

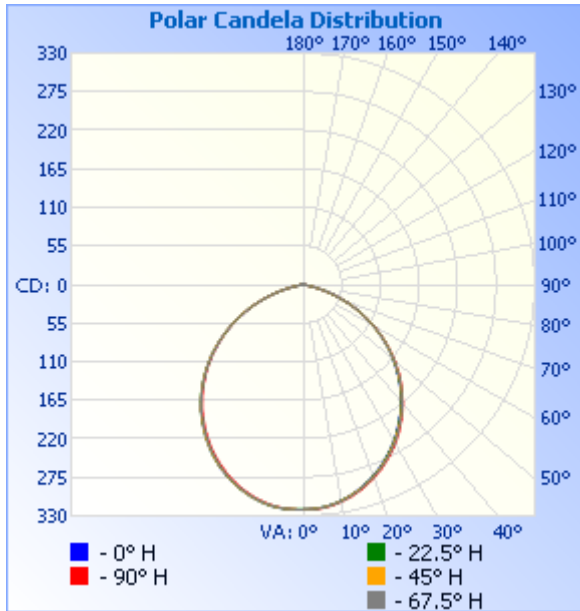
Laboratory: Standard-Tech Co. Ltd Testing Center  
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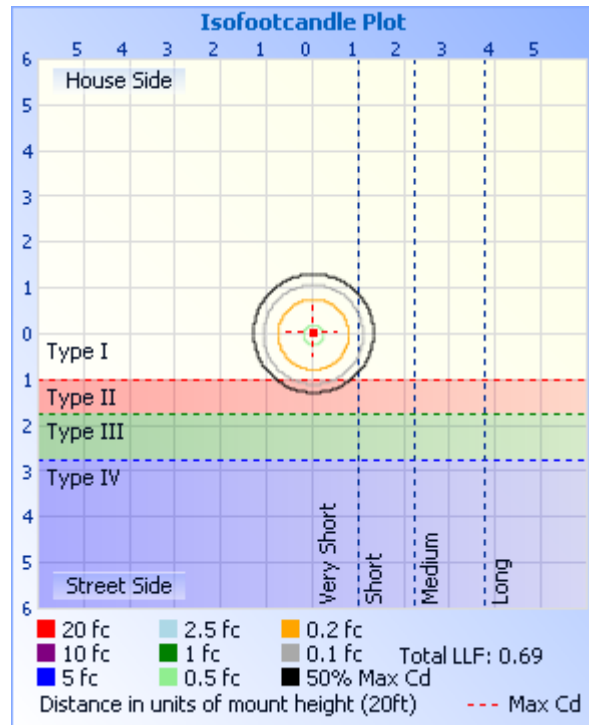
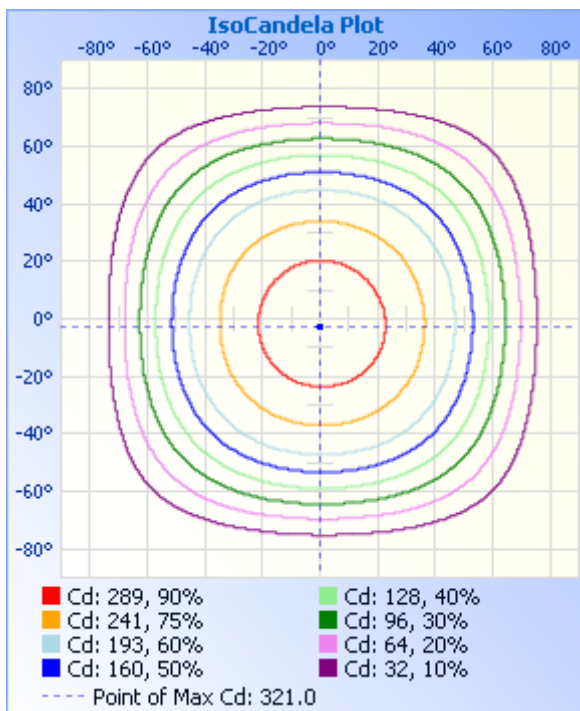
**Photometric Data**



**Illuminance at a Distance**

	Center Beam fc	Beam Width	
17.0ft	<b>1.11 fc</b>	<b>43.9 ft</b>	<b>44.0 ft</b>
34.0ft	<b>0.28 fc</b>	<b>87.7 ft</b>	<b>88.0 ft</b>
51.0ft	<b>0.12 fc</b>	<b>131.6 ft</b>	<b>132.1 ft</b>
68.0ft	<b>0.07 fc</b>	<b>175.4 ft</b>	<b>176.1 ft</b>
85.0ft	<b>0.04 fc</b>	<b>219.3 ft</b>	<b>220.1 ft</b>
102.0ft	<b>0.03 fc</b>	<b>263.1 ft</b>	<b>264.1 ft</b>

■ Vert. Spread: 104.4°  
■ Horiz. Spread: 104.6°



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**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	321	321	321	321	321	321	321	321	321	321	321	321	321	321	321	321	321
1	321	321	321	321	321	320	321	321	321	321	321	321	321	320	320	320	321
2	320	320	320	321	321	320	321	321	321	321	321	321	321	320	320	320	320
3	320	320	320	320	321	320	321	321	321	321	321	321	321	320	320	320	320
4	319	319	319	320	320	320	320	321	321	321	320	320	320	319	319	319	319
5	319	319	319	319	320	320	320	320	320	320	320	320	320	319	319	319	319
6	318	318	318	318	319	319	319	320	320	320	320	320	319	318	318	318	318
7	317	317	317	318	318	318	319	319	320	320	319	319	319	317	317	317	317
8	316	316	316	316	317	317	318	318	319	319	319	318	318	316	316	316	316
9	314	314	314	315	316	316	317	317	318	318	317	317	317	315	314	314	314
10	313	313	313	314	314	315	316	316	317	317	316	316	315	314	313	313	313
11	311	311	311	312	313	313	314	315	315	316	315	315	314	312	312	311	311
12	309	310	309	310	311	312	313	313	314	314	314	313	312	310	310	309	309
13	308	307	308	309	310	310	311	312	312	312	312	312	311	309	308	307	308
14	305	306	306	306	307	309	309	310	310	311	310	310	309	307	306	305	305
15	303	303	304	305	305	307	307	308	309	309	309	308	307	304	304	303	303
16	301	301	301	302	303	304	306	306	307	307	307	306	305	302	301	301	301
17	298	299	299	300	301	302	303	304	304	305	305	304	303	300	299	298	298
18	296	296	297	297	299	300	301	302	303	302	302	302	300	298	297	296	296
19	293	294	294	295	296	298	299	299	300	300	300	299	298	295	294	293	293
20	291	291	292	292	294	295	296	297	298	298	297	296	295	293	292	290	291
21	288	288	289	289	291	293	294	294	295	295	295	294	292	290	288	288	288
22	285	285	286	287	288	290	291	292	293	293	292	291	290	287	286	285	285
23	281	282	283	284	285	287	288	289	290	289	290	289	287	284	283	282	281
24	279	279	280	281	282	284	285	286	287	287	286	286	284	281	280	278	279
25	275	275	276	277	279	281	282	283	284	284	284	283	281	278	276	276	275
26	272	272	274	275	276	278	279	280	280	281	280	280	278	274	274	272	272
27	268	269	270	271	273	274	276	277	277	277	278	276	275	272	270	269	268
28	265	266	266	268	269	271	272	273	274	274	274	273	271	268	267	265	265

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29	261	262	263	264	266	267	268	270	271	271	270	269	268	265	263	262	261
30	258	258	259	261	262	263	265	266	267	267	267	266	264	261	259	258	258
31	254	254	256	257	258	260	261	263	263	263	263	262	260	258	255	254	254
32	251	251	251	253	254	256	258	259	260	259	260	258	257	253	251	250	251
33	246	247	248	249	251	252	254	255	255	256	255	255	253	250	248	246	246
34	242	243	244	245	246	248	249	251	252	252	252	251	249	246	243	243	242
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46	189	189	189	191	191	194	195	197	197	198	197	197	195	192	190	189	189
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49	173	174	175	176	176	178	179	181	182	182	182	181	181	177	175	173	173
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52	158	158	159	159	160	162	164	165	166	166	167	166	165	162	159	159	158
53	153	153	153	154	154	157	158	159	160	161	161	161	159	156	154	153	153
54	147	147	148	148	150	151	152	154	154	155	155	155	153	151	149	147	147
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56	136	136	137	137	137	140	141	143	143	144	144	144	142	139	138	136	136
57	130	130	131	132	132	134	135	137	138	138	138	138	137	134	132	131	130
58	125	125	124	125	126	128	130	131	132	131	133	133	131	128	126	125	125
59	119	119	119	119	121	123	123	126	125	126	126	126	125	123	121	119	119

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60	113	114	113	114	115	116	118	119	120	120	121	120	120	117	115	114	113
61	108	108	108	108	108	111	112	113	114	115	115	113	112	110	108	108	
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72	45	44	43	43	44	45	46	47	47	49	49	49	48	47	46	45	45
73	39	38	38	37	37	39	41	41	42	42	44	43	43	42	41	39	39
74	33	33	32	32	33	34	34	35	36	37	37	38	37	36	35	34	33
75	28	27	27	26	27	28	28	30	31	31	31	32	32	30	30	28	28
76	22	22	22	22	22	23	24	24	25	26	27	27	26	25	24	24	22
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78	13	13	13	12	13	14	15	15	16	16	17	16	16	16	15	14	13
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80	6	7	7	6	6	7	8	8	8	9	9	9	9	8	8	7	6
81	5	5	5	5	5	5	6	6	6	6	7	7	6	6	6	5	5
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83	4	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
84	3	3	3	3	3	3	3	3	3	4	4	4	4	3	3	3	3
85	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	2	2
86	2	2	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2
87	1	1	1	1	1	1	1	1	1	2	2	2	2	2	1	1	1
88	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0
89	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99	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
101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
104	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
106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109	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
111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
114	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
116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
118	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
119	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
121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
123	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
124	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
126	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
128	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
129	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
130	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
131	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
132	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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134	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
136	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
137	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
138	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
139	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
141	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
142	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
143	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
144	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
146	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
147	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
148	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
149	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
151	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
152	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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

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153	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
154	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
156	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
157	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
158	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
159	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
161	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
162	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
163	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
164	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
166	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
167	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
168	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
169	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
171	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
173	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
174	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
176	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
177	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
178	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
179	0	0	0	0	0	1	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

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**STANDARD-TECH**



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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 \*\*\*\*\***

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