



Report No.: GZE140319-A3

NVLAP LAB CODE 201011-0

LM-79-08 Test Report

For

PREMIUM QUALITY LIGHTING (Brand Name: SUPERIOR LIFE®)

2285 WARD AVENUE
SIMI VALLEY, CA 93065

Retrofit Kits for Outdoor Pole/Arm-Mounted Area and Roadway Luminaires

Model name(s): 83384

Model Different: N/A

Test & Report By:

Sean Zhuo

Engineer: Sean Zhuo

Date: April 14, 2014

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 : 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

Tel: 8620-3229 0320

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

U.S. Department of Energy

Lighting Facts™ Uniform LM-79 Reporting Template
Laboratory Information:

Name of Test Laboratory	Standard-Tech Co. Ltd
Date of Test Report	April 14, 2014
Test Report No.	GZE140319-A3
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	PREMIUM QUALITY LIGHTING	
Brand Name	SUPERIOR LIFE®	
Model Number	83384	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Retrofit Kits for Outdoor Pole/Arm-Mounted Area and Roadway Luminaires	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s

Integrating Sphere
Goniophotometer
Electrical Measurements:
Output
Output

Input Wattage		40.19	W
Input Current		0.3366	A
Input Voltage (ac)		120.0	V
Power Factor		0.9950	
Off-State Power		0	W

Photometric Characteristics

Total Initial Lumen Output	--	3334.0	lm
Initial Lumen Efficacy	--	82.96	lm/w
Correlated color temperature / CCT	4500	--	K
Color rendering index / CRI	71.7	--	
R9 Value	0	--	
Duv	0.0025	--	
Luminous Intensity Distribution			
Center beam candlepower (if applicable)		1238	cd
Beam angle (if applicable)		116.1	°
Zonal lumens in the 0°-60° zone	-----	83.2	%
Zonal lumens in the 60°-90° zone		16.7	%
Zonal lumens in the 90°-120° zone		0.0	%
Zonal lumens in the 120°-180° zone		0.1	%

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Test Specifications:	
Date of Receipt	: April 10. 2014
Date of Test	: April 14.2014
Test item	: Total Luminous Flux, Luminous Distribution Intensity, Luminous Efficacy, Correlated Color Temperature, Color Rendering Index, Chromaticity Coordinate, Electrical parameters
Reference Standard	IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources CIE 15-2004 Technical Report Colorimetry IESNA LM-16-93 Practical Guide to Colorimetry of Light Source IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems
Reference Work Instruction	QD25

Test Methods

1. Photometric and Electrical measurements – Light Distribution 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 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.

2. Photometric and Electrical Measurements – Integrating Sphere Method:

Photometric 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 Volts AC, 60Hz. It was stabilized before measurement was made. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at least 5 nm intervals over the range of 380 to 780 nm.

1. Product Information:

Brand Name	SUPERIOR LIFE®
Model Number	83384
Luminaire Type	Retrofit Kits for Outdoor Pole/Arm-Mounted Area and Roadway Luminaires
Rated Voltage / Frequency	100 ~ 277 Vac, 50/60 Hz
Nominal Power	40W
Rated Initial Lamp Lumen	--
Declared CCT	4500K
LED Manufacturer	CREE
LED Model	XB-D
Sample Receipt Date	April 10.2014
Sample Number	140319-2

Photo



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2.1 Electrical, Photometric and Chromaticity Measurements (Refer to Work Instruction QD25)	IES LM-79 2008
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Test date	2014-04-14	Test Ambient:	25.2 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	83384		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
140319-2	120.0	60	0.3366	40.19	0.9950	5.3
	277.0	60	0.1650	41.94	0.9175	8.2

Sphere-Spectroradiometer Method in GE M250R2 Roadway Lamp:

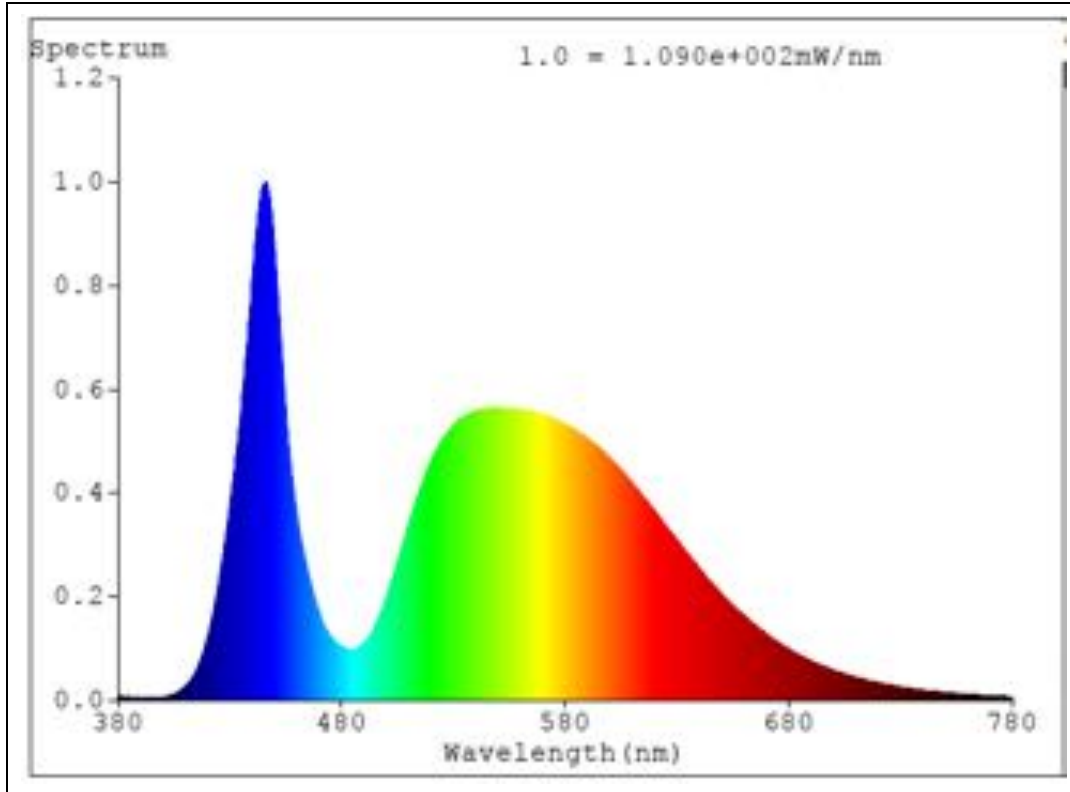
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	71	R9	0
Frequency (Hz)	60	R2	74	R10	38
Color Rendering Index (CRI)	71.7	R3	76	R11	72
R9	0	R4	74	R12	44
CCT (K)	4500	R5	72	R13	70
Chromaticity (x, y)	x=0.3310 y=0.3448	R6	66	R14	86
Chromaticity (u', v')	u'=0.2045 v'=0.4792	R7	79	R15	66
Duv	0.0025	R8	62	--	--

Goniophotometer Method in GE M250R2 Roadway Lamp:

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
Total Luminous (lm)	3334.0
Luminous Efficacy (lm/W)	82.96
Beam Angle°	116.1
Center Beam Candle Power (cd)	1238
S/MH(C0/180)	1.31
S/MH(C90/270)	1.26

Spectral Power Distribution

Spectral Power Distribution:



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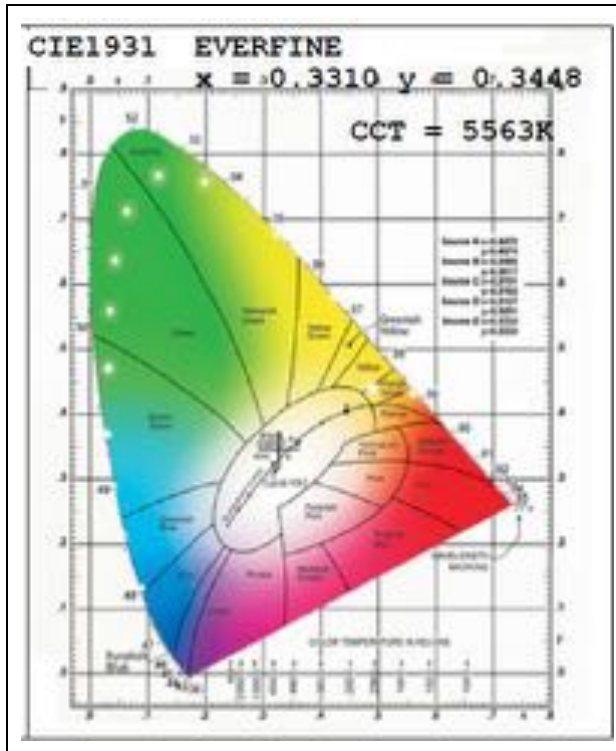
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Chromaticity Diagram



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Zonal Lumen Tabulation

Zonal Lumen Summary			
Zone	Lumens	% Lamp	% Luminaire
0-30	948.7	28.5%	28.5%
0-40	1,555.4	46.7%	46.7%
0-60	2,773.7	83.2%	83.2%
60-90	556.4	16.7%	16.7%
70-100	115.1	3.5%	3.5%
90-120	0.5	0%	0%
0-90	3,330.1	99.9%	99.9%
90-180	3.5	0.1%	0.1%
0-180	3,333.6	100%	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	115.0	3.5%	90-100	0.0	0%
10-20	330.5	9.9%	100-110	0.1	0%
20-30	503.1	15.1%	110-120	0.3	0%
30-40	606.8	18.2%	120-130	0.5	0%
40-50	630.1	18.9%	130-140	0.7	0%
50-60	588.2	17.6%	140-150	0.7	0%
60-70	441.3	13.2%	150-160	0.6	0%
70-80	104.8	3.1%	160-170	0.4	0%
80-90	10.2	0.3%	170-180	0.2	0%

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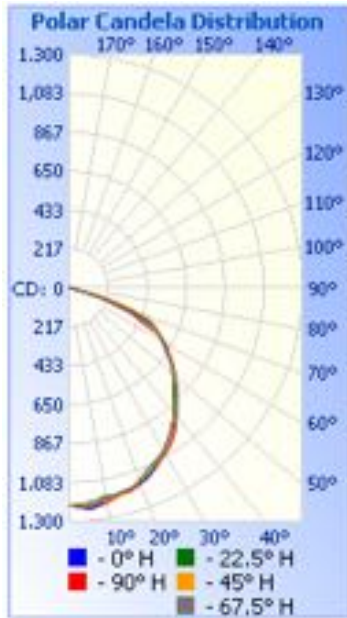
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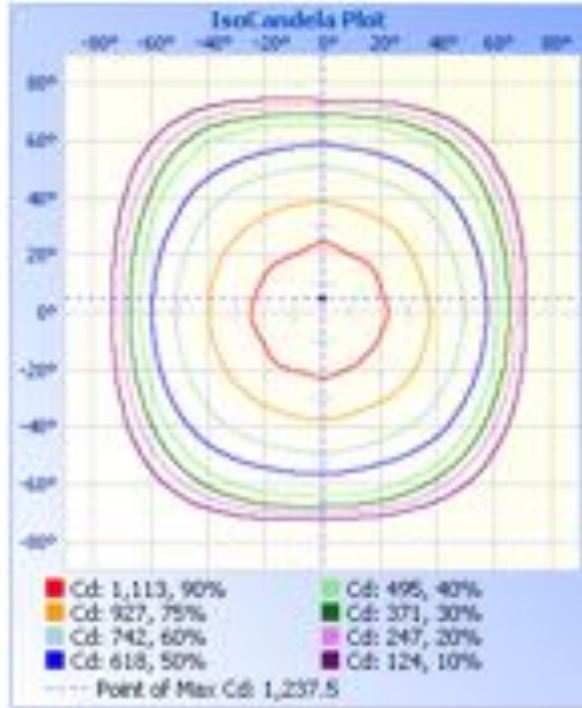
Photometric Data



Illuminance Plots



ISOCANDELA DIAGRAM



ISOLUX DIAGRAM

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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	1214	1214	1214	1214	1214	1214	1214	1214	1214	1214	1214	1214	1214	1214	1214	1214	1214
1	1216	1215	1209	1213	1214	1207	1217	1213	1211	1212	1217	1213	1222	1216	1210	1213	1216
2	1223	1214	1206	1214	1218	1206	1221	1206	1206	1208	1216	1210	1230	1210	1211	1211	1223
3	1228	1213	1209	1224	1220	1203	1223	1200	1208	1205	1212	1204	1229	1208	1210	1213	1228
4	1234	1208	1207	1224	1227	1197	1220	1198	1216	1204	1213	1199	1226	1210	1208	1213	1234
5	1236	1203	1204	1219	1230	1194	1217	1197	1218	1198	1217	1196	1227	1205	1205	1207	1236
6	1238	1203	1207	1214	1228	1193	1212	1200	1213	1191	1213	1194	1224	1201	1203	1197	1238
7	1231	1200	1207	1209	1224	1196	1207	1198	1216	1185	1205	1192	1222	1197	1208	1194	1231
8	1219	1191	1203	1203	1224	1195	1203	1194	1218	1186	1195	1192	1220	1191	1207	1190	1219
9	1208	1183	1201	1194	1224	1194	1203	1187	1219	1186	1194	1195	1215	1186	1202	1182	1208
10	1201	1182	1205	1187	1215	1194	1197	1183	1214	1187	1189	1197	1202	1182	1198	1180	1201
11	1197	1185	1205	1185	1211	1197	1187	1181	1205	1182	1184	1193	1192	1179	1197	1178	1197
12	1191	1185	1198	1183	1204	1189	1180	1175	1198	1176	1181	1189	1191	1174	1192	1171	1191
13	1185	1186	1196	1182	1196	1179	1177	1169	1183	1168	1174	1182	1186	1167	1187	1165	1185
14	1179	1185	1193	1177	1191	1177	1172	1161	1172	1159	1170	1169	1178	1160	1178	1164	1179
15	1175	1181	1181	1173	1186	1178	1168	1158	1167	1151	1167	1160	1174	1153	1170	1166	1175

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16	1177	1177	1172	1171	1185	1170	1170	1156	1160	1147	1159	1155	1166	1143	1159	1167	1177
17	1176	1172	1167	1173	1182	1160	1169	1151	1157	1145	1151	1146	1156	1136	1150	1164	1176
18	1169	1162	1160	1171	1175	1156	1165	1146	1154	1142	1139	1136	1146	1133	1145	1163	1169
19	1162	1151	1152	1163	1173	1147	1154	1139	1146	1132	1127	1129	1134	1129	1138	1154	1162
20	1159	1140	1146	1154	1163	1137	1141	1128	1134	1122	1121	1124	1127	1121	1135	1140	1159
21	1155	1130	1136	1144	1155	1127	1133	1120	1123	1114	1112	1114	1120	1119	1136	1127	1155
22	1147	1120	1126	1135	1150	1117	1131	1110	1115	1101	1100	1106	1115	1112	1128	1116	1147
23	1138	1105	1119	1129	1143	1112	1123	1099	1110	1086	1087	1094	1112	1103	1115	1104	1138
24	1129	1097	1114	1119	1129	1108	1111	1086	1102	1074	1080	1081	1104	1094	1105	1091	1129
25	1118	1092	1108	1105	1118	1102	1097	1077	1087	1067	1076	1070	1089	1077	1100	1081	1118
26	1106	1082	1102	1091	1110	1090	1083	1068	1078	1058	1064	1061	1079	1064	1088	1072	1106
27	1097	1075	1095	1082	1101	1080	1072	1054	1064	1048	1050	1053	1070	1056	1075	1062	1097
28	1084	1067	1086	1073	1086	1075	1060	1045	1050	1036	1034	1044	1059	1047	1061	1055	1084
29	1070	1058	1072	1065	1078	1061	1054	1037	1039	1022	1020	1031	1046	1031	1046	1047	1070
30	1056	1048	1057	1052	1071	1043	1043	1023	1028	1008	1014	1015	1033	1013	1034	1038	1056
31	1045	1038	1045	1040	1062	1036	1030	1009	1015	990	1002	1002	1017	999	1022	1031	1045
32	1027	1026	1033	1028	1052	1023	1017	1003	1001	981	988	991	999	986	1008	1018	1027
33	1009	1012	1017	1015	1039	1010	1004	990	992	968	976	981	985	973	997	1004	1009
34	996	1003	999	1005	1026	996	993	973	982	955	964	968	971	961	985	989	996
35	984	992	985	991	1014	983	977	959	962	939	953	961	955	946	969	977	984
36	969	978	972	978	998	970	959	940	946	922	938	945	941	931	951	962	969
37	955	962	959	964	982	956	941	923	931	909	921	926	927	916	937	943	955
38	943	944	949	953	965	942	928	909	913	892	903	904	915	905	923	928	943
39	925	929	932	944	948	924	916	894	899	881	884	886	901	890	907	910	925
40	911	913	917	930	929	908	902	877	882	865	868	872	886	877	890	892	911
41	897	895	902	913	914	889	886	863	863	847	851	856	870	864	874	875	897
42	884	874	889	897	897	870	870	846	845	829	837	840	856	849	861	859	884
43	873	856	874	884	882	857	855	831	826	814	824	826	838	836	849	842	873
44	859	838	859	869	866	843	837	814	813	798	806	813	823	824	832	824	859
45	844	823	845	851	852	827	822	799	799	782	790	794	810	808	812	809	844
46	828	808	830	832	838	812	807	782	783	770	775	776	796	791	796	795	828
47	810	794	815	811	823	799	790	770	765	753	759	758	778	772	780	782	810

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48	794	783	799	794	806	783	773	753	748	737	739	743	759	750	764	767	794
49	780	770	784	778	788	767	756	735	732	721	721	727	739	732	749	754	780
50	767	757	770	762	772	751	737	719	715	705	705	709	723	718	734	739	767
51	751	746	755	747	757	731	724	703	697	687	689	692	710	704	721	724	751
52	734	732	737	731	742	716	712	688	684	671	673	676	695	688	706	712	734
53	718	715	719	716	727	703	697	673	667	651	656	661	679	672	693	696	718
54	703	699	702	698	711	686	678	652	649	634	641	648	663	658	679	680	703
55	684	681	685	680	695	672	661	635	634	618	627	632	649	643	661	665	684
56	665	662	669	664	681	659	645	620	617	604	612	615	636	627	641	649	665
57	647	645	652	648	663	642	628	607	604	591	591	600	620	611	625	633	647
58	632	628	633	631	648	626	611	590	588	574	576	584	603	596	610	616	632
59	618	614	617	617	634	610	596	576	571	558	562	568	585	579	594	600	618
60	606	599	604	602	618	593	582	562	555	543	546	520	534	563	577	586	606
61	591	584	589	587	601	576	566	544	539	528	531	486	488	544	562	572	591
62	575	570	573	573	583	556	551	530	526	514	513	435	462	518	546	557	575
63	560	557	557	559	540	501	536	515	510	499	462	418	428	465	531	543	560
64	547	544	543	544	480	454	518	501	496	487	417	398	398	434	519	530	547
65	534	533	531	517	441	420	456	488	459	468	394	321	363	409	506	519	534
66	488	522	518	466	423	407	422	461	423	408	349	293	312	370	492	507	488
67	462	508	506	431	388	387	399	415	370	368	296	251	262	342	455	490	462
68	408	456	492	383	365	318	372	372	340	326	252	197	209	292	406	436	408
69	396	436	475	364	319	283	329	329	253	268	223	182	189	245	362	391	396
70	348	384	412	335	259	260	269	278	226	214	188	136	140	231	339	369	348
71	293	370	383	280	235	200	232	216	162	157	130	92	113	157	281	331	293
72	259	292	336	245	213	188	197	173	91	121	80	50	67	133	237	264	259
73	203	272	289	209	158	118	144	126	47	65	39	22	26	89	190	229	203
74	171	210	235	173	118	93	90	67	27	27	19	22	23	51	154	179	171
75	103	188	189	142	77	51	61	27	17	17	18	21	23	20	88	135	103
76	69	118	160	88	37	24	20	17	17	17	18	21	23	18	56	76	69
77	30	85	110	53	26	24	19	17	17	16	17	20	22	18	20	51	30
78	30	40	64	22	25	23	19	16	16	15	16	19	21	18	15	25	30
79	29	25	33	20	25	22	18	16	15	14	15	18	20	17	14	23	29

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80	29	24	16	19	24	21	17	14	14	12	13	16	19	16	14	22	29
81	28	23	15	19	23	20	16	13	13	10	11	15	18	15	12	21	28
82	27	22	14	18	22	19	14	11	11	9	9	13	16	14	11	19	27
83	25	20	13	17	21	17	12	9	9	7	7	11	15	12	10	16	25
84	21	17	12	16	19	15	10	8	6	5	5	9	13	11	9	13	21
85	16	13	10	14	18	13	8	5	4	2	3	6	11	9	7	10	16
86	11	10	9	13	16	12	6	3	1	1	1	3	8	7	6	7	11
87	6	7	7	11	15	9	4	1	0	0	0	0	3	4	4	5	6
88	5	5	6	9	13	6	2	0	0	0	0	0	0	2	3	3	5
89	3	4	4	6	8	3	0	0	0	0	0	0	0	0	1	2	3
90	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	2

3. Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-336	2 meter Integrating Sphere	2013-07-08	2014-07-07
ST-R-331	Spectral analysis system HAAS-2000	2013-06-21	2014-06-20
D204	Standard Lamp	2013-06-28	2014-06-27
PF2010	Power Meter for Integrating Sphere	2013-06-20	2014-06-19
EE-09	Goniophotometer system	2013-06-21	2014-06-20
D908S	Standard Lamp	2013-07-05	2014-07-04
PF210	Power Meter for Goniophotometer	2013-06-20	2014-06-19
ST-R-181A	Temperature Tester	2013-08-14	2014-08-13

******* END OF DATASHEET PACKAGE *******

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