



Report No.:GZE160435-A

LM-79-08 Test Report

For

IGT LIGHTING INC.

3755 Lincoln St. Suite B, Riverside, CA 92503

2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces

Model name(s): IGTPL-0504040FD-2x2
IGTPL-0504050FD-2x2

Test & Report By:

Jack Luo

Engineer: Jack Luo

Date: May.04,2016

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

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Performance Assessment:

Model name	CCT(K)	Total Luminous (lm)	Power (W)	Luminous Efficacy (lm/W)
IGTPL-0504040FD-2x2	4000K	4280 * ₁	40.31 * ₂	106.17 * ₃
IGTPL-0504050FD-2x2	5000K	4417 * ₁	40.40	109.33

*1: This value is calculated and the calculation formula is as below:

$$4280 = (4417 - 4142.8) / 2 + 4142.8$$

*2: This value is calculated and the calculation formula is as below:

$$37.86 = (38.25 + 37.46) / 2$$

*3: This value is calculated and the calculation formula is as below:

$$106.17 = 4280 / 40.31$$



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	May.04,2016
Test Report No.	GZE160435-A
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	IGT Lighting Inc.	
Brand Name		
Model Number	IGTPL-0504040FD-2x2	
SKU (if available)	N/A	
Type of Luminaire(for integral lamps, list base type and lamp type)	2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	

Electrical Measurements:

Integrating Sphere Output

Goniophotometer Output

Input Wattage	--	40.22	W
Input Current	--	0.3434	A
Input Voltage (ac)	--	120.0	V
Power Factor	--	0.9760	
Off-State Power	--	0	W

Photometric Characteristics

Total Initial Lumen Output	--	4142.8	lm
Initial Lumen Efficacy	--	103.00	lm/w
Correlated color temperature / CCT	3014	--	K
Color rendering index / CRI	82.7	--	
R9 Value	6	--	
Duv	-0.0016	--	

Luminous Intensity Distribution

Center beam candlepower (if applicable)	-----	1431	cd
Beam angle (if applicable)		113.1	°
Zonal lumens in the 0°-60° zone		78	%
Zonal lumens in the 60°-90° zone		21.9	%
Zonal lumens in the 90°-120° zone		0	%
Zonal lumens in the 120°-180° zone		0.1	%

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Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	IGT Lighting Inc.	
Brand Name		
Model Number	IGTPL-0504040FD-2x2	
SKU (if available)	N/A	
Type of Luminaire(for integral lamps, list base type and lamp type)	2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	

Electrical Measurements:

Integrating Sphere

Goniophotometer

Output

Output

Input Wattage	40.40	--	W
Input Current	0.3422	--	A
Input Voltage (ac)	120.0	--	V
Power Factor	0.9838	--	
Off-State Power	0	--	W

Photometric Characteristics

Total Initial Lumen Output	4417	--	lm
Initial Lumen Efficacy	109.33	--	lm/w
Correlated color temperature / CCT	5137	--	K
Color rendering index / CRI	82.8	--	
R9 Value	4	--	
Duv	0.0043	--	
Luminous Intensity Distribution			
Center beam candlepower (if applicable)	-----	-----	cd
Beam angle (if applicable)			°
Zonal lumens in the 0°-60° zone			%
Zonal lumens in the 60°-90° zone			%
Zonal lumens in the 90°-120° zone			%
Zonal lumens in the 120°-180° zone			%

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Test Specifications:	
Date of Receipt	: Apr.27, 2016
Date of Test	: Apr.28, 2016
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° Vertical 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.

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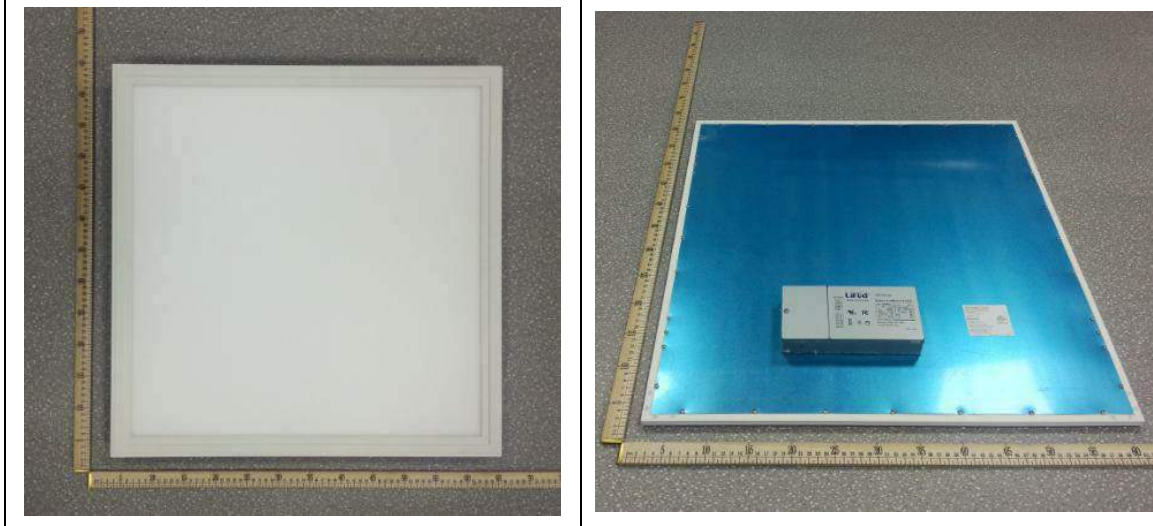
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1. Product Information:

Brand Name	
Model Number	IGTPL-0504040FD-2x2
Luminaire Type	2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces
Rated Voltage / Frequency	100 ~ 277 Vac, 50/60 Hz
Nominal Power	40W
Rated Initial Lamp Lumen	--
Remarks	4000K,5000K
LED Manufacturer	IGT Lighting Inc.
LED Model	IGTPL-0504040FD-2x2
Sample Receipt Date	Apr.28, 2016
Sample Number	IGTPL-0504040FD-2x2 (4000K), (5000K)

Photo



2.1 Electrical, Photometric and Chromaticity Measurements (Refer to Work Instruction QD25)
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IES LM-79 2008

Test date	2016-04-28	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	IGTPL-0504040FD-2x2		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
IGTPL 0504040FD -2x2	120.0	60	0.3434	40.22	0.9760	4.81
	277.0	60	0.1600	39.95	0.9013	9.57

Sphere-Spectroradiometer Method:

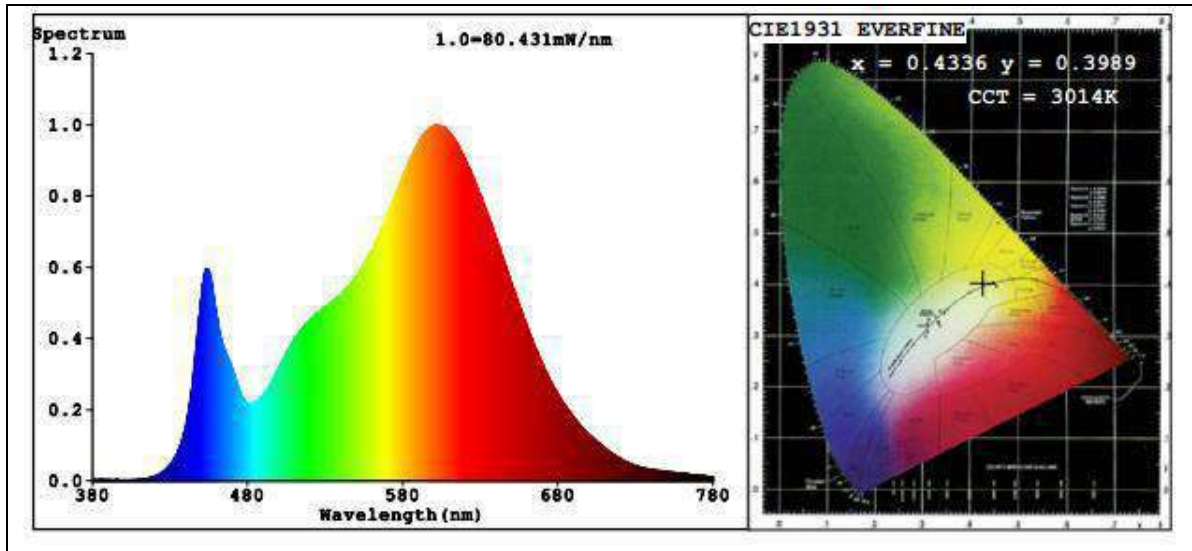
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	82.7
R9	6
CCT (K)	3014
Chromaticity (x, y)	x=0.4336 y=0.3989
Chromaticity (u', v')	u'=0.2507 v'=0.5188
Duv	-0.0016

Special Color Rendering Indices			
R1	82	R9	6
R2	93	R10	85
R3	94	R11	80
R4	80	R12	73
R5	83	R13	85
R6	92	R14	97
R7	81	R15	74
R8	57	--	--

Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	4142.8
Luminous Efficacy (lm/W)	103.00
Beam Angle°	113.1
Center Beam Candle Power (cd)	1431
S/MH(C0/180)	1.26
S/MH(C90/270)	1.26
Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	4158.7
Luminous Efficacy (lm/W)	104.10

Spectral Power Distribution & Chromaticity Diagram



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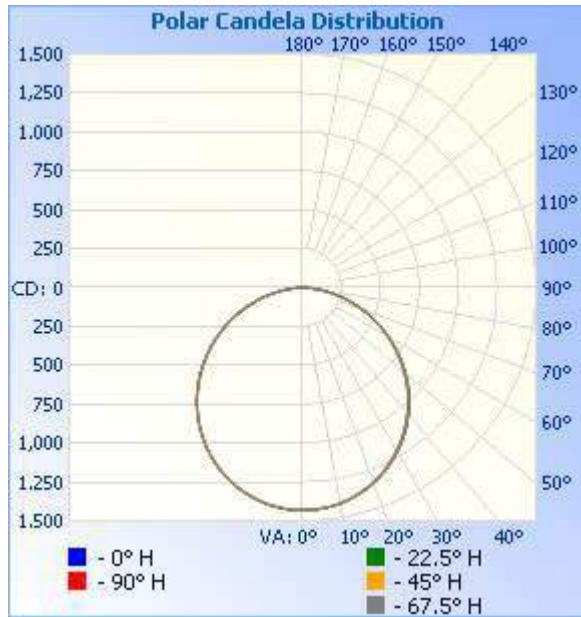
Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

Zonal Lumen Tabulation

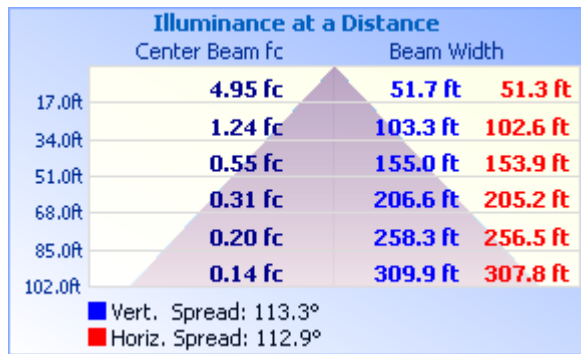
Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	1,111.9	26.8%
0-40	1,822.7	44%
0-60	3,232.3	78%
60-90	907.7	21.9%
70-100	390.8	9.4%
90-120	0.6	0%
0-90	4,140.0	99.9%
90-180	2.4	0.1%
0-180	4,142.4	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	135.4	3.3%	90-100	0.0	0%
10-20	387.9	9.4%	100-110	0.2	0%
20-30	588.6	14.2%	110-120	0.4	0%
30-40	710.8	17.2%	120-130	0.5	0%
40-50	739.1	17.8%	130-140	0.5	0%
50-60	670.5	16.2%	140-150	0.3	0%
60-70	516.9	12.5%	150-160	0.2	0%
70-80	307.2	7.4%	160-170	0.1	0%
80-90	83.6	2.0%	170-180	0.1	0%

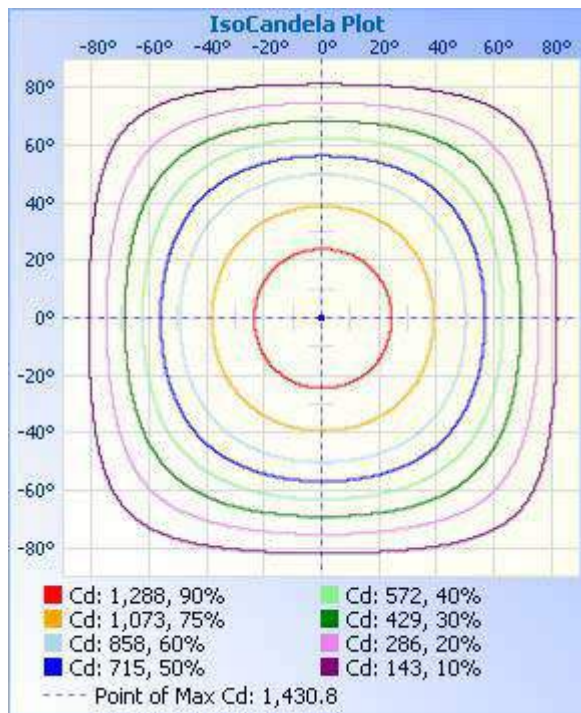
Photometric Data



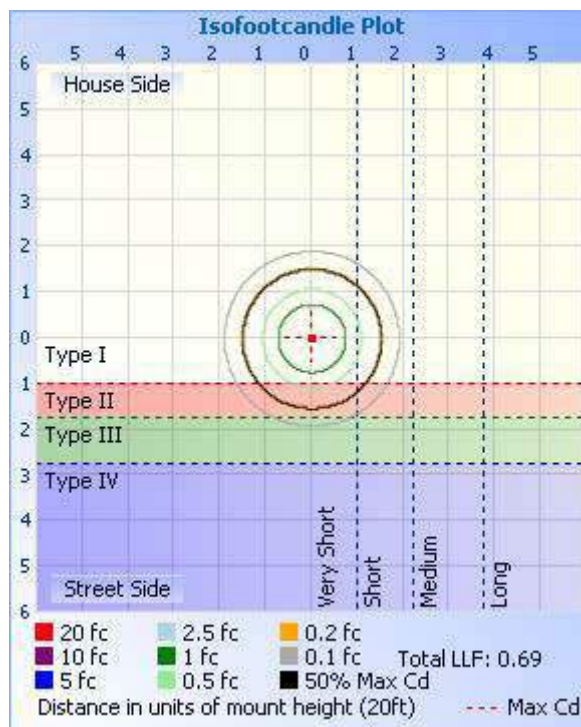
Illuminance Plots



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	1431	1431	1431	1431	1431	1431	1431	1431	1431	1431	1431	1431	1431	1431	1431	1431	1431
1	1431	1430	1430	1431	1430	1430	1430	1430	1430	1431	1431	1431	1430	1431	1430	1431	1431
2	1430	1430	1430	1430	1430	1430	1429	1430	1429	1430	1430	1430	1430	1430	1430	1430	1430
3	1429	1429	1428	1429	1428	1428	1428	1428	1428	1428	1428	1429	1429	1429	1429	1429	1429
4	1427	1427	1424	1426	1426	1427	1426	1426	1426	1426	1427	1427	1427	1427	1427	1427	1427
5	1425	1425	1424	1424	1424	1424	1424	1424	1424	1424	1424	1424	1425	1425	1425	1425	1425
6	1422	1422	1422	1421	1421	1421	1421	1421	1421	1422	1422	1422	1422	1422	1422	1422	1422
7	1419	1419	1418	1418	1418	1418	1417	1418	1418	1418	1418	1418	1418	1419	1419	1419	1419
8	1416	1415	1415	1414	1414	1414	1414	1414	1414	1414	1415	1414	1415	1415	1415	1416	1416
9	1412	1411	1411	1410	1410	1409	1409	1410	1410	1410	1410	1410	1411	1411	1411	1412	1412
10	1407	1407	1406	1405	1405	1405	1405	1405	1406	1405	1406	1405	1406	1406	1407	1407	1407
11	1402	1402	1401	1400	1400	1399	1399	1400	1400	1400	1400	1400	1400	1401	1401	1402	1402
12	1396	1396	1395	1394	1394	1393	1393	1394	1394	1394	1395	1394	1395	1395	1396	1396	1396
13	1391	1390	1389	1388	1388	1387	1387	1388	1388	1388	1388	1388	1388	1389	1389	1390	1391
14	1384	1383	1382	1381	1381	1380	1380	1381	1381	1381	1382	1381	1382	1382	1383	1384	1384
15	1377	1376	1375	1374	1373	1372	1373	1374	1374	1374	1374	1374	1375	1375	1376	1377	1377
16	1370	1369	1368	1366	1366	1365	1365	1366	1367	1366	1367	1366	1367	1367	1368	1369	1370
17	1362	1361	1359	1358	1357	1357	1357	1358	1359	1358	1358	1358	1359	1359	1360	1361	1362
18	1354	1352	1351	1349	1349	1348	1348	1349	1350	1350	1350	1349	1350	1351	1352	1353	1354
19	1345	1343	1342	1340	1340	1339	1339	1340	1341	1340	1341	1340	1341	1341	1342	1344	1345
20	1335	1334	1332	1330	1330	1329	1330	1331	1332	1331	1331	1331	1331	1332	1333	1334	1335
21	1326	1324	1322	1320	1320	1319	1320	1321	1322	1321	1321	1320	1321	1322	1324	1325	1326
22	1315	1314	1312	1309	1309	1308	1309	1310	1312	1311	1311	1310	1310	1311	1313	1315	1315
23	1304	1303	1301	1298	1298	1297	1298	1299	1300	1300	1300	1299	1299	1300	1302	1304	1304
24	1293	1292	1290	1287	1286	1286	1287	1288	1289	1289	1288	1287	1288	1289	1291	1293	1293
25	1282	1280	1278	1275	1274	1274	1275	1276	1278	1277	1277	1276	1276	1277	1279	1281	1282
26	1270	1268	1266	1263	1262	1261	1263	1264	1265	1265	1264	1263	1264	1265	1267	1269	1270
27	1258	1255	1253	1250	1249	1249	1250	1251	1253	1252	1252	1250	1251	1252	1255	1256	1258
28	1244	1243	1240	1237	1236	1236	1237	1238	1240	1239	1238	1237	1238	1239	1242	1243	1244
29	1231	1229	1227	1223	1222	1222	1223	1225	1226	1226	1225	1224	1224	1225	1228	1230	1231

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30	1218	1215	1213	1209	1208	1208	1209	1211	1212	1212	1211	1210	1210	1212	1214	1217	1218
31	1203	1201	1198	1195	1194	1194	1195	1197	1198	1198	1197	1195	1196	1197	1200	1202	1203
32	1189	1187	1184	1180	1179	1179	1180	1182	1183	1183	1182	1181	1181	1183	1186	1188	1189
33	1174	1172	1169	1165	1164	1164	1165	1167	1168	1168	1167	1166	1166	1168	1171	1173	1174
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35	1143	1141	1138	1134	1132	1132	1134	1136	1137	1137	1136	1134	1135	1136	1139	1142	1143
36	1127	1125	1122	1118	1116	1116	1117	1119	1121	1121	1119	1118	1118	1120	1123	1126	1127
37	1110	1108	1105	1101	1099	1099	1101	1103	1104	1104	1103	1102	1102	1104	1107	1110	1110
38	1094	1091	1088	1084	1082	1082	1084	1086	1087	1087	1086	1085	1085	1087	1090	1093	1094
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46	946	944	940	936	934	935	936	938	939	939	938	937	936	940	943	945	946
47	926	924	920	916	914	914	916	917	918	919	918	917	917	920	923	925	926
48	906	904	900	896	894	894	896	897	898	899	898	897	897	900	903	905	906
49	886	884	880	875	874	874	875	877	878	878	878	876	877	879	882	885	886
50	865	863	859	854	853	853	854	855	857	857	857	855	856	859	862	864	865
51	843	842	838	834	832	833	834	835	836	836	836	835	835	838	841	843	843
52	822	821	817	812	811	812	812	813	814	815	815	813	814	817	820	821	822
53	801	800	796	791	790	790	791	791	792	793	793	792	793	795	798	800	801
54	779	778	774	769	768	769	769	770	771	771	771	770	771	774	777	778	779
55	757	756	752	748	746	747	748	747	748	750	750	749	749	752	755	756	757
56	734	733	730	726	724	725	725	725	726	727	728	727	727	730	733	734	734
57	711	711	708	704	702	702	703	703	704	705	706	705	705	708	711	712	711
58	688	688	686	681	680	681	680	681	681	682	683	683	683	685	689	689	688
59	665	665	663	659	658	658	658	658	658	659	660	660	660	663	666	666	665
60	642	642	641	636	635	635	635	635	635	637	638	638	638	640	643	643	642
61	619	618	618	614	612	612	612	612	612	613	615	615	615	618	621	619	619

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62	595	595	595	591	589	589	589	589	589	590	592	592	592	595	597	596	595
63	572	571	571	568	566	566	566	565	565	566	568	569	569	572	574	573	572
64	548	548	548	545	543	543	543	542	542	543	545	546	546	549	550	549	548
65	525	525	524	522	521	520	520	519	519	520	522	523	523	526	527	526	525
66	501	501	501	499	498	497	496	495	495	496	498	500	500	503	503	502	501
67	478	477	477	475	475	474	473	472	472	473	475	477	477	479	480	478	478
68	454	453	453	453	452	451	449	448	448	449	451	454	454	456	456	455	454
69	431	430	430	430	428	428	426	425	425	426	428	430	431	433	433	432	431
70	407	406	407	407	406	405	403	401	401	402	404	408	408	410	410	408	407
71	384	383	383	384	383	382	379	378	378	379	381	385	385	387	386	385	384
72	361	360	360	361	360	359	356	355	357	356	358	361	362	364	363	361	361
73	337	337	337	338	337	336	333	331	331	332	335	338	340	341	340	338	337
74	314	314	314	315	315	314	310	309	308	309	312	316	317	319	317	315	314
75	291	291	291	293	291	291	287	286	285	286	289	293	294	296	294	292	291
76	269	268	269	270	268	268	265	263	262	264	267	271	271	273	271	270	269
77	246	246	247	246	245	244	243	241	240	241	244	248	248	250	249	248	246
78	224	224	225	223	222	221	221	219	218	219	222	225	225	227	227	225	224
79	202	202	203	200	200	198	199	197	196	197	200	202	202	204	205	203	202
80	180	180	180	178	177	176	176	176	175	176	179	179	180	181	183	182	180
81	159	159	158	156	155	154	154	154	153	155	157	157	158	159	161	160	159
82	137	137	136	134	134	133	133	133	132	133	135	135	137	137	138	139	137
83	117	117	115	113	113	112	111	112	111	113	113	114	115	116	117	118	117
84	96	97	93	92	93	91	90	91	91	92	92	93	95	95	95	97	96
85	76	76	73	72	72	70	70	71	71	72	71	73	74	74	75	77	76
86	57	56	53	52	53	51	50	52	52	53	52	53	55	55	55	57	57
87	38	37	34	33	34	32	31	33	34	34	33	34	36	35	35	37	38
88	20	19	16	15	16	14	14	15	16	16	16	16	18	17	18	19	20
89	4	3	2	1	1	1	1	2	2	2	2	2	2	2	3	3	4
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91	0	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	0
93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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62	595	595	595	591	589	589	589	589	589	590	592	592	592	595	597	596	595
63	572	571	571	568	566	566	566	565	565	566	568	569	569	572	574	573	572
64	548	548	548	545	543	543	543	542	542	543	545	546	546	549	550	549	548
65	525	525	524	522	521	520	520	519	519	520	522	523	523	526	527	526	525
66	501	501	501	499	498	497	496	495	495	496	498	500	500	503	503	502	501
67	478	477	477	475	475	474	473	472	472	473	475	477	477	479	480	478	478
68	454	453	453	453	452	451	449	448	448	449	451	454	454	456	456	455	454
69	431	430	430	430	428	428	426	425	425	426	428	430	431	433	433	432	431
70	407	406	407	407	406	405	403	401	401	402	404	408	408	410	410	408	407
71	384	383	383	384	383	382	379	378	378	379	381	385	385	387	386	385	384
72	361	360	360	361	360	359	356	355	357	356	358	361	362	364	363	361	361
73	337	337	337	338	337	336	333	331	331	332	335	338	340	341	340	338	337
74	314	314	314	315	315	314	310	309	308	309	312	316	317	319	317	315	314
75	291	291	291	293	291	291	287	286	285	286	289	293	294	296	294	292	291
76	269	268	269	270	268	268	265	263	262	264	267	271	271	273	271	270	269
77	246	246	247	246	245	244	243	241	240	241	244	248	248	250	249	248	246
78	224	224	225	223	222	221	221	219	218	219	222	225	225	227	227	225	224
79	202	202	203	200	200	198	199	197	196	197	200	202	202	204	205	203	202
80	180	180	180	178	177	176	176	176	175	176	179	179	180	181	183	182	180
81	159	159	158	156	155	154	154	154	153	155	157	157	158	159	161	160	159
82	137	137	136	134	134	133	133	133	132	133	135	135	137	137	138	139	137
83	117	117	115	113	113	112	111	112	111	113	113	114	115	116	117	118	117
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85	76	76	73	72	72	70	70	71	71	72	71	73	74	74	75	77	76
86	57	56	53	52	53	51	50	52	52	53	52	53	55	55	55	57	57
87	38	37	34	33	34	32	31	33	34	34	33	34	36	35	35	37	38
88	20	19	16	15	16	14	14	15	16	16	16	16	18	17	18	19	20
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92	0	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	0

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147	1	1	0	0	1	1	0	1	1	1	0	0	1	1	0	1	1
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157	1	0	0	0	1	1	0	0	1	1	0	0	0	0	0	1	1

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158	1	0	0	0	1	1	0	0	1	1	0	0	0	0	0	1	1
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179	1	1	0	0	1	1	1	0	1	1	1	0	1	1	0	1	1
180	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

2.3 Electrical, Photometric and Chromaticity Measurements (Refer to Work Instruction QD25)
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IES LM-79 2008

Test date	2016-04-28	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	IGTPL-0504050FD-2x2		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
IGTPL 0504050FD -2x2	120.0	60	0.3422	40.40	0.9838	4.31
	277.0	60	0.1608	40.16	0.9015	9.77

Sphere-Spectroradiometer Method:

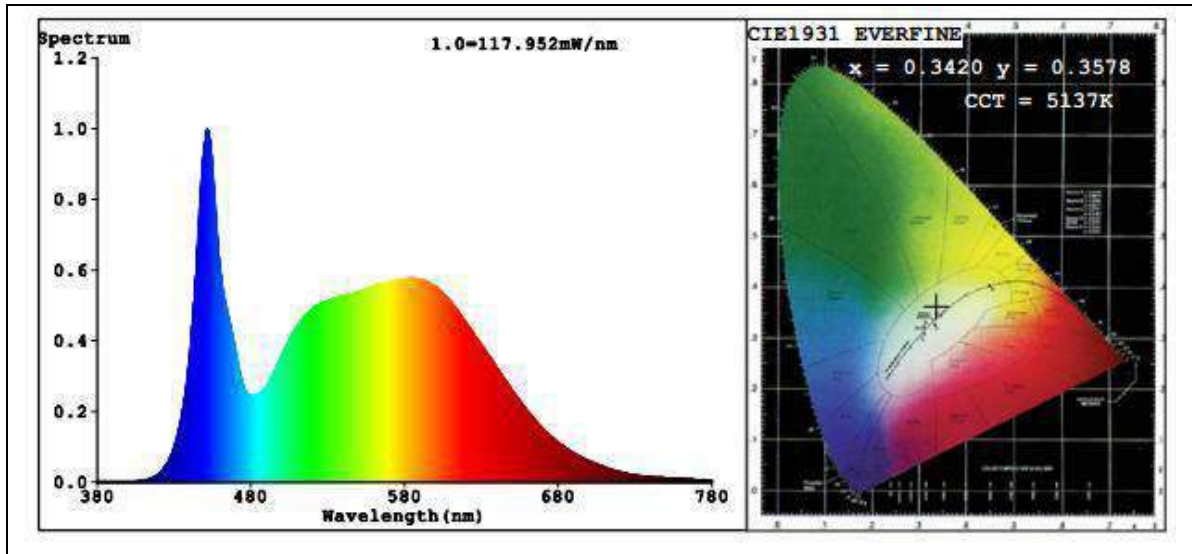
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	82.8
R9	4
CCT (K)	5137
Chromaticity (x, y)	x=0.3420 y=0.3578
Chromaticity (u', v')	u'=0.2070 v'=0.4872
Duv	0.0043
Total Luminous (lm)	4417
Luminous Efficacy (lm/W)	109.33

Special Color Rendering Indices			
R1	81	R9	4
R2	88	R10	72
R3	93	R11	82
R4	82	R12	60
R5	82	R13	83
R6	84	R14	97
R7	87	R15	75
R8	66	--	--

Sphere-Spectroradiometer Method for 277V:

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Initial Lumen Output(lm)	4432
Initial Lumen Efficacy(lm/w)	110.36

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	2015-07-01	2016-06-30
ST-R-331	Spectral analysis system HAAS-2000	2015-07-01	2016-06-30
D204	Standard Lamp	2015-07-01	2016-06-30
PF2010	Power Meter for Integrating Sphere	2015-07-01	2016-06-30
EE-09	Goniophotometer system	2015-07-01	2016-06-30
D908S	Standard Lamp	2015-07-01	2016-06-30
PF210	Power Meter for Goniophotometer	2015-07-01	2016-06-30
ST-R-181A	Temperature Tester	2015-07-01	2016-06-30
Uncertainty: Photometric Measurement (Sphere):1.74% Chromaticity Measurement(Sphere):14.3K Photometric Measurement(Goniophotometer):1.62%			

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