



Report No.: STD150803NB-D-R

NVLAP LAB CODE 201011-0

LM-79-08 Test Report

For

CEA GROUP INTERNATIONAL CO.,LTD

(Brand Name: CEA/EAEC)

Sanjiali Industrial Zone Zhucheng Road Panshi North baixiang Yueqing Zhejiang China

Low-Bay Luminaires for Commercial and Industrial buildings

Model name(s): CNL1-75

Representative (Tested) Model: CNL1-75(2700K)
CNL1-75(5700K)

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

Test & Report By:

Peeta Cao

Engineer: Peeta Cao

Date: Dec.24,2015

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-C/2

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

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Fax: 8620-32290422

<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	Dec.24,2015
Test Report No.	STD150803NB-D
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	CEA GROUP INTERNATIONAL CO.,LTD	
Brand Name	CEA/EAEC	
Model Number	CNL1-75(2700K)	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Low-Bay Luminaires for Commercial and Industrial buildings	
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	--	76.74	W
Input Current	--	0.6478	A
Input Voltage (ac)	--	120.0	V
Power Factor	--	0.9872	
Off-State Power	--	0	W

Photometric Characteristics

Total Initial Lumen Output	--	5995.6	lm
Initial Lumen Efficacy	--	78.13	lm/w
Correlated color temperature / CCT	2783		K
Color rendering index / CRI	70.7		
R9 Value	0		
Duv	0.0006		

Luminous Intensity Distribution

Center beam candlepower (if applicable)	-----	1290	cd
Beam angle (if applicable)		132.4	°
Zonal lumens in the 0 °-60 °zone		68.4	%
Zonal lumens in the 60 °-90 °zone		24.4	%
Zonal lumens in the 90 °-120 °zone		5	%
Zonal lumens in the 120 °-180 °zone		2.2	%

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Date of Test Report	Dec.24,2015
Test Report No.	STD150803NB-D
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	CEA GROUP INTERNATIONAL CO.,LTD	
Brand Name	CEA/EAEC	
Model Number	CNL1-75(5700K)	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Low-Bay Luminaires for Commercial and Industrial buildings	
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	77.23	--	W
Input Current	0.6517	--	A
Input Voltage (ac)	120.0	--	V
Power Factor	0.9875	--	
Off-State Power	0	--	W

Photometric Characteristics

Total Initial Lumen Output	6307	--	lm
Initial Lumen Efficacy	81.67	--	lm/w
Correlated color temperature / CCT	5639	--	K
Color rendering index / CRI	75.1	--	
R9 Value	0	--	
Duv	-0.0007	--	

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	: Oct.18,2015
Date of Test	: Oct.20,2015
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 $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$, 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 $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$. 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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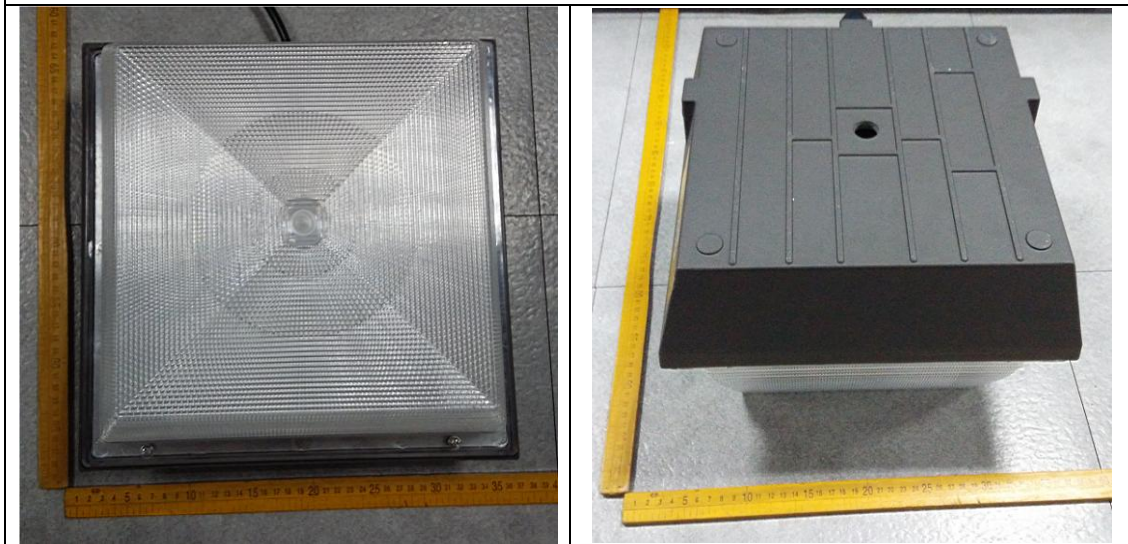
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1. Product Information:

Brand Name	CEA
Model Number	CNL1-75
Luminaire Type	Low-Bay Luminaires for Commercial and Industrial buildings
Rated Voltage / Frequency	100~ 277Vac, 50/60Hz
Nominal Power	75W
Rated Initial Lamp Lumen	--
Declared CCT	2700K,3000K,3500K,4000K,4500K,5000K,5700K
LED Manufacturer	Chuang Te LED
LED Model	CT-5730
Sample Receipt Date	Oct.18,2015
Sample Number	STD150803NB-D1(2700K),D2(5700K)

Photo



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

Test date	2015-10-20	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	CNL1-75(2700K)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
STD150803	120.0	60	0.6478	76.74	0.9872	10.21
NB-D1	277.0	60	0.2923	73.25	0.9046	14.56

Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	70.7
R9	0
CCT (K)	2783
Chromaticity (x, y)	x=0.4542 y=0.4109
Chromaticity (u', v')	u'=0.2588 v'=0.5266
Duv	0.0006

Special Color Rendering Indices			
R1	67	R9	0
R2	80	R10	55
R3	92	R11	61
R4	67	R12	46
R5	66	R13	69
R6	73	R14	95
R7	78	R15	60
R8	43	--	--

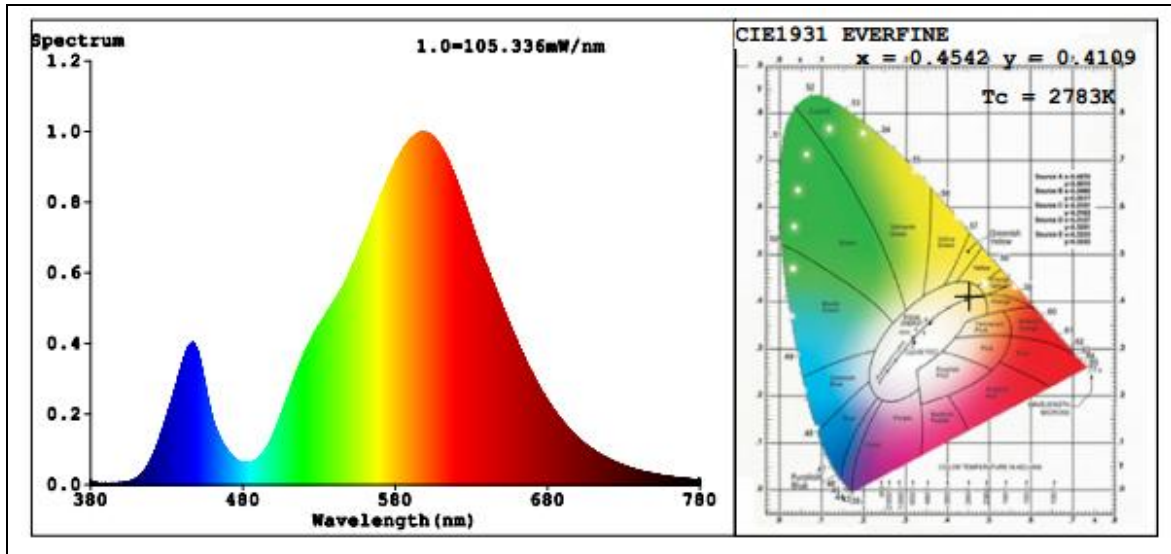
Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	5995.6
Luminous Efficacy (lm/W)	78.13
Beam Angle °	132.4
Center Beam Candle Power (cd)	1290

Goniophotometer Method:

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	5716.9
Luminous Efficacy (lm/W)	78.05

Spectral Power Distribution & Chromaticity Diagram



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Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	1,165.6	19.4%
0-40	2,071.8	34.6%
0-60	4,099.7	68.4%
60-90	1,462.3	24.4%
70-100	809.3	13.5%
90-120	302.3	5%
0-90	5,562.0	92.8%
90-180	433.6	7.2%
0-180	5,995.6	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	125.3	2.1%	90-100	117.4	2%
10-20	385.0	6.4%	100-110	97.2	1.6%
20-30	655.2	10.9%	110-120	87.7	1.5%
30-40	906.2	15.1%	120-130	73.0	1.2%
40-50	1,034.2	17.2%	130-140	38.1	0.6%
50-60	993.7	16.6%	140-150	15.2	0.3%
60-70	770.4	12.8%	150-160	4.3	0.1%
70-80	470.7	7.9%	160-170	0.6	0%
80-90	221.2	3.7%	170-180	0.2	0%

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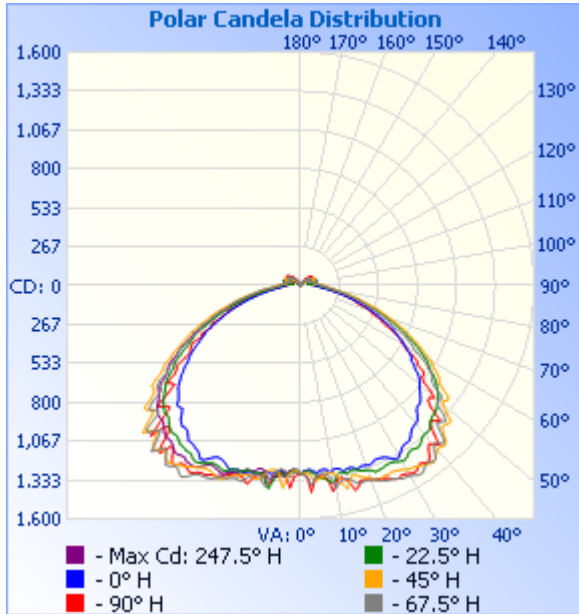
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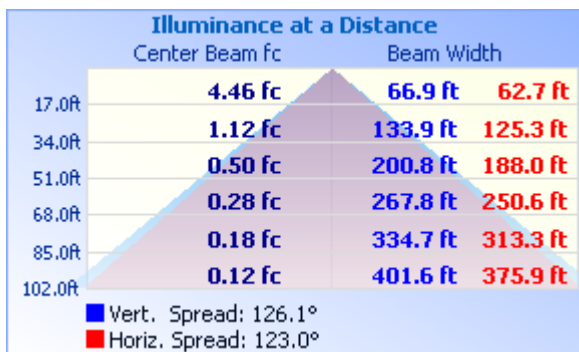
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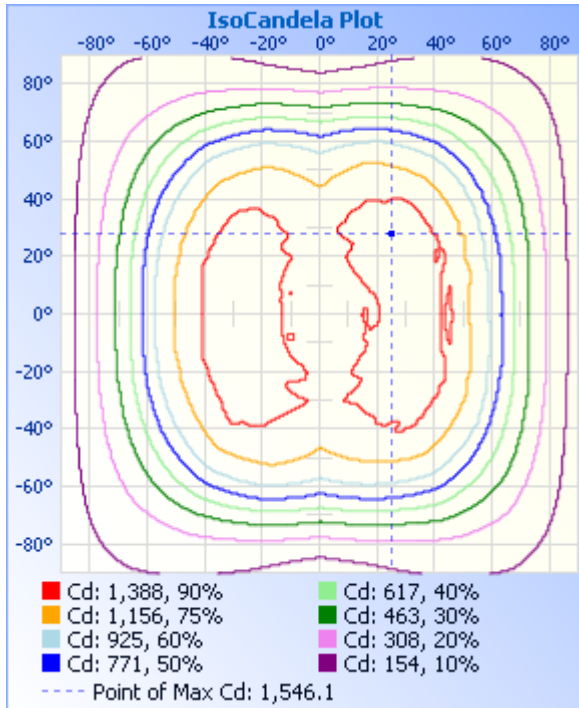
Photometric Data



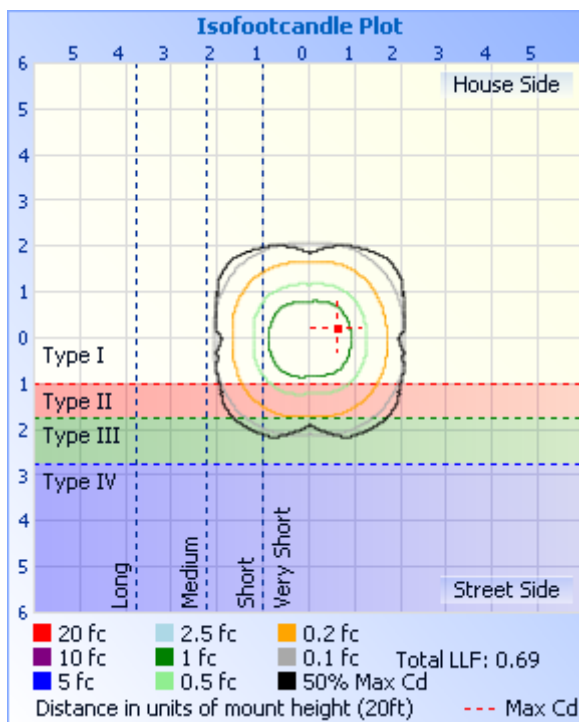
Illuminance Plots



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	1290	1290	1290	1290	1290	1290	1290	1290	1290	1290	1290	1290	1290	1290	1290	1290	1290
1	1272	1279	1288	1301	1291	1284	1272	1266	1265	1264	1270	1281	1297	1286	1274	1271	1272
2	1265	1272	1286	1309	1318	1295	1276	1267	1266	1266	1274	1283	1315	1285	1272	1263	1265
3	1263	1276	1300	1371	1416	1340	1297	1280	1270	1273	1282	1317	1387	1328	1275	1267	1263
4	1278	1290	1335	1333	1347	1315	1340	1302	1294	1302	1329	1297	1330	1296	1314	1283	1278
5	1286	1320	1335	1305	1315	1293	1332	1342	1279	1304	1391	1270	1286	1262	1315	1311	1286
6	1273	1328	1327	1293	1308	1285	1325	1340	1274	1288	1337	1265	1283	1254	1305	1306	1273
7	1269	1333	1323	1297	1314	1296	1312	1343	1282	1304	1280	1275	1293	1260	1283	1320	1269
8	1273	1346	1296	1307	1340	1309	1297	1346	1298	1347	1272	1292	1316	1275	1269	1322	1273
9	1298	1368	1301	1340	1426	1348	1305	1358	1307	1407	1278	1335	1375	1308	1274	1344	1298
10	1280	1361	1304	1410	1389	1401	1321	1342	1294	1370	1288	1399	1369	1353	1282	1333	1280
11	1276	1318	1325	1381	1349	1370	1352	1323	1302	1317	1318	1374	1326	1342	1305	1291	1276
12	1282	1307	1391	1365	1345	1362	1426	1323	1314	1309	1350	1331	1323	1333	1354	1283	1282
13	1307	1311	1429	1358	1362	1366	1436	1327	1331	1316	1359	1324	1335	1336	1401	1289	1307
14	1296	1327	1386	1364	1392	1371	1378	1349	1314	1328	1356	1333	1357	1340	1367	1314	1296
15	1292	1313	1348	1386	1450	1390	1370	1346	1319	1313	1343	1353	1405	1356	1341	1316	1292
16	1299	1310	1351	1405	1438	1425	1372	1349	1329	1315	1346	1375	1397	1382	1337	1310	1299
17	1314	1320	1364	1416	1400	1416	1390	1360	1343	1325	1354	1403	1371	1382	1350	1325	1314
18	1311	1334	1385	1410	1399	1408	1406	1380	1332	1342	1370	1397	1368	1379	1373	1337	1311
19	1304	1341	1393	1412	1401	1405	1438	1398	1333	1337	1370	1393	1375	1384	1395	1360	1304
20	1310	1345	1402	1418	1411	1413	1462	1408	1344	1339	1386	1400	1379	1389	1426	1364	1310
21	1317	1357	1423	1425	1424	1426	1465	1416	1353	1351	1413	1415	1389	1394	1427	1371	1317
22	1310	1376	1446	1439	1430	1438	1448	1437	1338	1368	1429	1416	1405	1403	1423	1391	1310
23	1297	1372	1429	1451	1435	1453	1442	1432	1322	1373	1441	1425	1419	1422	1417	1402	1297
24	1298	1372	1425	1462	1442	1464	1447	1402	1311	1363	1431	1445	1430	1443	1421	1385	1298
25	1303	1364	1426	1466	1458	1474	1453	1373	1306	1359	1421	1459	1432	1459	1427	1379	1303
26	1309	1361	1420	1472	1477	1483	1452	1360	1307	1356	1412	1464	1442	1461	1434	1372	1309
27	1323	1362	1426	1487	1483	1498	1455	1363	1323	1364	1412	1470	1453	1467	1436	1376	1323
28	1347	1367	1433	1496	1473	1500	1460	1374	1343	1377	1415	1470	1452	1475	1444	1394	1347
29	1358	1379	1441	1499	1477	1500	1463	1394	1366	1390	1426	1478	1463	1481	1452	1416	1358

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30	1350	1389	1456	1504	1489	1503	1466	1420	1374	1400	1437	1500	1483	1495	1468	1435	1350
31	1331	1390	1463	1515	1497	1521	1475	1441	1352	1406	1449	1529	1487	1517	1483	1441	1331
32	1310	1381	1466	1530	1499	1536	1485	1444	1331	1397	1464	1546	1473	1530	1495	1438	1310
33	1301	1362	1476	1532	1479	1538	1492	1426	1326	1376	1475	1531	1462	1513	1498	1437	1301
34	1298	1357	1486	1517	1469	1521	1500	1408	1316	1375	1484	1508	1470	1498	1504	1421	1298
35	1299	1364	1496	1495	1482	1508	1515	1400	1311	1375	1495	1508	1503	1504	1520	1422	1299
36	1282	1371	1508	1493	1495	1517	1529	1395	1309	1367	1505	1530	1501	1532	1538	1430	1282
37	1258	1362	1515	1511	1469	1525	1534	1389	1284	1367	1513	1539	1463	1544	1543	1431	1258
38	1242	1347	1501	1505	1425	1501	1527	1381	1261	1355	1501	1502	1416	1506	1527	1415	1242
39	1234	1329	1478	1459	1397	1455	1506	1364	1255	1338	1475	1461	1423	1458	1505	1398	1234
40	1231	1327	1463	1419	1418	1427	1486	1350	1261	1334	1467	1451	1497	1448	1496	1388	1231
41	1222	1326	1463	1423	1448	1445	1486	1351	1247	1339	1489	1497	1461	1502	1510	1385	1222
42	1198	1324	1474	1459	1369	1467	1495	1356	1230	1330	1515	1527	1357	1513	1522	1386	1198
43	1167	1303	1461	1440	1301	1401	1473	1344	1192	1322	1482	1442	1318	1414	1498	1370	1167
44	1151	1284	1411	1365	1286	1341	1427	1341	1169	1300	1423	1386	1354	1358	1441	1349	1151
45	1149	1274	1374	1330	1312	1326	1399	1309	1177	1279	1400	1399	1455	1377	1412	1330	1149
46	1143	1267	1373	1342	1328	1351	1397	1296	1179	1274	1431	1451	1326	1453	1438	1323	1143
47	1123	1266	1386	1361	1220	1349	1415	1296	1145	1275	1479	1443	1224	1411	1462	1322	1123
48	1103	1255	1387	1320	1175	1272	1378	1295	1126	1260	1419	1321	1233	1283	1407	1319	1103
49	1082	1240	1326	1243	1169	1222	1331	1275	1108	1244	1346	1297	1268	1275	1348	1300	1082
50	1067	1228	1272	1223	1195	1222	1309	1255	1097	1227	1323	1332	1281	1303	1332	1280	1067
51	1050	1213	1259	1239	1148	1240	1305	1233	1075	1206	1358	1336	1168	1323	1352	1255	1050
52	1031	1197	1277	1224	1070	1191	1289	1215	1047	1183	1356	1286	1097	1247	1331	1232	1031
53	1008	1171	1269	1150	1041	1122	1234	1188	1026	1159	1281	1191	1112	1154	1265	1216	1008
54	971	1152	1204	1111	1043	1094	1198	1171	995	1144	1241	1184	1136	1156	1231	1206	971
55	951	1126	1159	1101	1028	1091	1186	1133	971	1117	1229	1203	1050	1182	1226	1170	951
56	914	1097	1146	1088	964	1067	1159	1100	931	1082	1231	1166	1025	1123	1229	1127	914
57	905	1053	1123	1046	956	1019	1120	1058	915	1041	1186	1092	1013	1070	1156	1089	905
58	886	1036	1087	1021	907	998	1073	1030	892	1020	1126	1086	937	1059	1109	1071	886
59	853	1017	1054	976	848	951	1052	1006	858	996	1100	1021	879	993	1101	1054	853
60	826	983	1031	921	825	889	1010	976	831	953	1076	973	872	937	1074	1015	826
61	801	946	989	887	791	875	973	935	795	920	1022	967	859	929	1022	969	801

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62	772	916	947	864	772	833	939	901	772	880	992	939	840	912	986	943	772
63	744	880	917	832	734	815	896	859	741	851	950	920	745	900	946	902	744
64	717	842	880	804	694	780	859	827	723	822	912	836	755	811	920	858	717
65	695	808	840	761	650	729	819	799	686	801	870	812	679	803	855	825	695
66	658	779	801	714	614	686	785	761	649	760	840	764	667	735	844	801	658
67	618	738	764	680	599	663	748	721	617	715	812	748	653	736	797	754	618
68	589	696	726	660	556	637	711	682	582	678	760	733	585	705	747	712	589
69	559	657	689	616	526	595	672	641	554	640	734	666	568	649	723	674	559
70	531	626	649	588	507	576	632	611	526	612	679	650	533	627	672	638	531
71	500	593	613	560	486	546	602	580	493	578	655	608	526	588	646	607	500
72	470	556	580	529	441	510	565	542	464	543	613	587	463	570	606	568	470
73	437	523	546	483	406	468	532	509	425	504	587	526	445	512	583	533	437
74	405	480	509	455	399	451	494	470	398	467	538	515	432	504	536	494	405
75	379	450	468	442	375	431	460	440	375	439	503	492	420	481	496	464	379
76	351	423	439	412	346	402	431	409	339	409	475	462	384	453	467	432	351
77	318	384	413	381	321	373	405	374	312	376	447	427	344	415	446	398	318
78	293	356	379	354	302	350	374	348	288	351	412	391	322	381	406	368	293
79	264	328	352	331	281	327	349	318	259	319	378	365	302	356	373	338	264
80	239	296	327	299	248	293	322	291	237	292	348	333	275	325	343	305	239
81	217	271	297	271	227	268	290	268	216	270	317	312	254	303	312	278	217
82	194	247	269	253	214	253	268	243	192	243	297	291	243	285	291	252	194
83	173	221	251	240	203	239	251	219	174	221	275	277	232	271	273	225	173
84	157	202	233	223	185	219	233	203	158	204	253	252	205	247	252	209	157
85	144	187	215	202	165	198	213	187	143	186	227	219	175	212	227	193	144
86	132	173	199	185	150	182	198	174	134	171	206	195	153	188	202	175	132
87	124	162	187	173	140	171	187	165	127	161	192	177	136	170	187	163	124
88	118	155	178	164	130	162	179	157	121	153	182	164	123	157	177	155	118
89	113	148	171	156	123	154	171	151	116	147	174	156	115	149	169	149	113
90	109	143	164	148	115	146	162	142	111	140	165	148	108	142	160	142	109
91	102	133	155	140	109	138	151	132	105	131	154	140	103	133	150	132	102
92	96	123	146	134	103	132	144	123	98	121	147	135	98	129	142	122	96
93	90	115	139	130	99	128	138	113	92	112	139	130	95	124	134	112	90

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94	83	105	132	126	97	125	132	104	85	102	132	127	92	121	127	102	83
95	78	95	126	123	94	121	126	95	81	93	126	125	91	118	122	94	78
96	72	85	120	120	93	118	120	84	75	82	121	122	91	116	117	84	72
97	66	74	114	117	91	115	116	71	68	72	116	120	90	114	113	73	66
98	59	62	109	114	90	112	110	58	59	60	110	118	91	112	109	61	59
99	52	52	103	111	89	109	103	49	54	56	103	115	90	110	103	52	52
100	49	48	96	108	88	105	97	53	53	61	98	111	89	106	98	52	49
101	54	62	92	103	86	100	94	69	63	78	95	107	88	103	95	68	54
102	71	80	90	99	84	96	91	84	80	95	94	103	87	99	93	85	71
103	89	96	90	95	83	92	90	101	96	112	95	100	86	95	92	103	89
104	106	108	91	92	81	88	90	108	113	117	95	96	83	92	91	111	106
105	111	111	90	88	79	85	89	110	114	116	94	92	81	88	89	115	111
106	112	110	89	84	76	81	87	113	115	115	92	89	79	84	87	114	112
107	112	109	87	81	74	77	85	112	114	113	92	85	75	81	86	113	112
108	111	107	87	77	70	73	83	110	113	110	94	80	72	76	85	111	111
109	111	105	87	73	67	69	83	107	112	108	99	75	68	71	91	109	111
110	110	104	92	68	64	64	88	105	111	106	103	71	65	67	96	107	110
111	110	102	96	64	61	59	92	104	111	104	108	67	62	63	101	106	110
112	110	101	99	61	58	55	96	102	110	103	111	65	59	60	106	104	110
113	109	99	103	58	55	52	99	100	110	101	115	64	57	57	110	102	109
114	108	98	105	55	53	49	102	98	108	99	117	68	55	61	113	100	108
115	107	96	107	58	51	52	105	96	107	97	119	73	57	67	116	99	107
116	106	94	108	62	50	56	105	94	106	94	116	77	63	72	118	97	106
117	104	91	107	65	55	61	106	91	103	92	114	81	70	77	116	94	104
118	102	88	104	68	60	66	106	89	101	89	111	85	77	83	114	92	102
119	99	85	101	71	66	70	102	86	98	86	108	88	83	88	111	88	99
120	97	82	97	73	71	74	99	83	95	82	105	93	90	93	108	85	97
121	93	79	94	76	77	78	95	80	92	79	101	97	96	97	104	83	93
122	89	75	90	78	82	82	91	77	88	75	98	101	102	103	101	79	89
123	85	72	86	82	87	86	88	75	84	72	94	100	108	104	97	76	85
124	81	69	82	83	91	90	84	73	81	69	90	99	114	103	93	73	81
125	77	66	77	81	96	88	80	70	77	67	87	98	114	101	89	71	77

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126	74	63	74	79	100	87	76	66	74	62	82	97	113	100	84	66	74
127	71	57	70	77	98	85	72	61	71	55	78	95	111	98	80	61	71
128	63	52	67	76	96	83	68	58	66	48	74	93	109	96	75	57	63
129	40	50	63	74	94	81	63	54	45	44	69	91	107	93	71	55	40
130	20	49	58	72	92	80	58	51	22	43	64	88	105	91	66	52	20
131	20	44	54	69	90	77	53	47	16	41	59	85	103	88	61	47	20
132	36	40	49	66	88	75	48	43	32	37	53	82	100	85	55	44	36
133	39	38	45	63	85	72	44	39	40	33	47	79	97	81	50	39	39
134	37	33	39	61	82	70	40	35	37	30	42	76	93	77	45	36	37
135	35	30	35	60	79	67	38	31	34	26	37	72	90	74	40	32	35
136	31	27	30	58	77	65	37	26	31	22	34	69	86	70	38	28	31
137	29	23	27	56	74	62	36	21	28	19	33	65	82	67	36	22	29
138	26	20	26	54	72	60	35	17	24	15	31	62	78	63	35	18	26
139	22	16	25	52	69	57	33	11	20	12	29	58	74	60	33	15	22
140	19	13	24	49	67	55	32	7	17	9	27	55	70	57	32	11	19
141	16	10	23	47	63	52	31	4	13	7	25	52	67	54	31	8	16
142	13	7	22	45	61	50	30	2	9	4	24	49	63	51	29	5	13
143	10	4	21	42	57	47	28	2	6	2	22	46	60	49	27	2	10
144	6	2	19	40	54	46	27	2	2	2	20	44	56	46	25	2	6
145	3	2	18	38	51	44	26	2	2	2	18	41	53	44	24	2	3
146	2	2	17	37	49	42	24	2	2	2	15	39	51	42	22	2	2
147	2	2	15	34	46	40	23	2	2	2	12	36	48	40	20	2	2
148	2	2	13	32	43	38	22	2	2	2	10	33	45	38	18	2	2
149	2	2	11	30	41	36	20	2	2	2	4	31	42	35	15	2	2
150	2	2	10	28	38	34	19	2	2	3	2	28	39	32	13	2	2
151	2	2	7	26	35	32	17	2	2	3	2	25	36	30	11	2	2
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155	2	2	2	16	24	22	10	2	2	2	2	9	23	18	2	2	2
156	2	2	2	13	21	19	6	2	2	2	2	2	20	15	2	2	2
157	2	2	2	10	17	17	2	2	2	2	2	2	16	10	2	2	2

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158	2	2	2	4	14	13	2	2	2	2	2	2	12	4	2	2	2
159	2	2	2	2	10	9	2	2	2	2	2	2	6	2	2	2	2
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2.3 Electrical, Photometric and Chromaticity Measurements (Refer to Work Instruction QD25)	IES LM-79 2008
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Test date	2015-10-20	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	CNL1-75(5700K)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
STD150803	120.0	60	0.6517	77.23	0.9875	10.35
NB-D2	277.0	60	0.3031	75.81	0.9032	14.63

Sphere-Spectroradiometer Method:

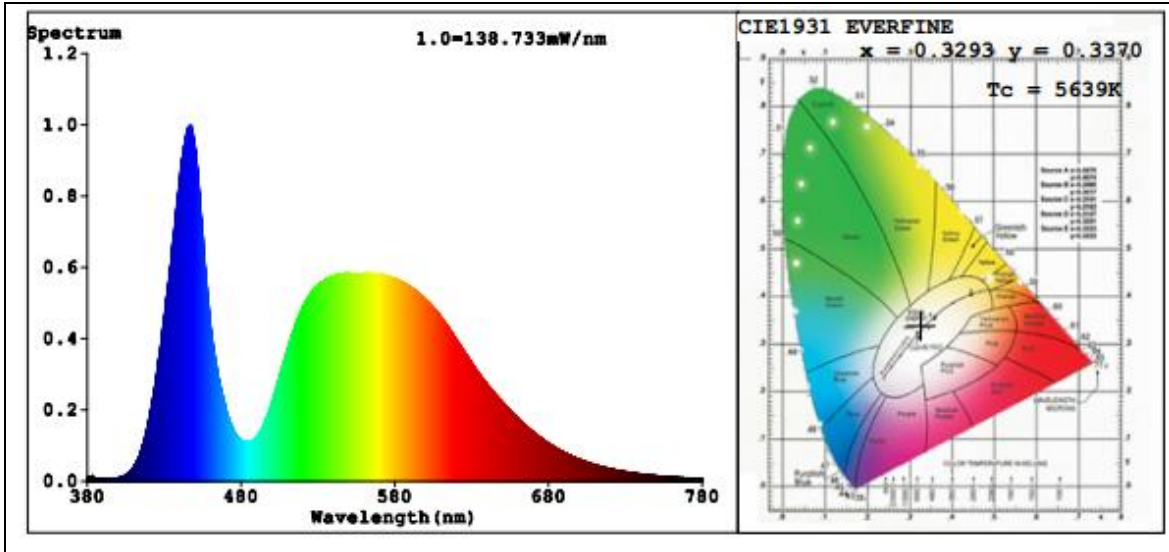
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	75.1
R9	0
CCT (K)	5639
Chromaticity (x, y)	x=0.3293 y=0.3370
Chromaticity (u', v')	u'=0.2063 v'=0.4750
Duv	-0.0007
Total Initial Lumen Output(lm)	6307
Initial Lumen Efficacy(lm/w)	81.67

Special Color Rendering Indices			
R1	74	R9	0
R2	78	R10	43
R3	79	R11	76
R4	77	R12	49
R5	76	R13	73
R6	71	R14	87
R7	82	R15	70
R8	64	--	--

Sphere-Spectroradiometer Method for 277V:

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Initial Lumen Output(lm)	6172
Initial Lumen Efficacy(lm/w)	81.42

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 *******