NVLAP LAB CODE 201011-0

LM-79-08 Test Report

For

LIGHT EFFICIENT DESIGN

(Brand Name:N/A)

188 S. Northwest Highway Cary, IL 60013

LED Lamp

Model name(s): LED-8083E30
LED-8083M30

Remark : The suffix of the model name“E” stand for E26;
“M” stand for E39.

Representative (Tested) Model: LED-8083E30

Model Different :N/A

Test & Report By:

Jack Luo

Engineer: Jack Luo

Date: Apr.28,2016

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.

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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	Apr.28,2016
Test Report No.	GZE160347-U
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	LIGHT EFFICIENT DESIGN	
Brand Name	N/A	
Model Number	LED-8083E30	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	LED Lamp	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s

Electrical Measurements:	**Integrating Sphere Output**	**Goniophotometer Output**	
Input Wattage	--	31.14	W
Input Current	--	0.2631	A
Input Voltage (ac)	--	120.0	V
Power Factor	--	0.9863	
Off-State Power	--	0	W
Photometric Characteristics			
Total Initial Lumen Output	--	3661.9	lm
Initial Lumen Efficacy	--	117.58	lm/w
Correlated color temperature / CCT	2929	--	K
Color rendering index / CRI	81.9	--	
R9 Value	6	--	
Duv	-0.0001	--	
Luminous Intensity Distribution			
Center beam candlepower (if applicable)	-----	26	cd
Beam angle (if applicable)		291.5	°
Zonal lumens in the 0°-60° zone		19.1	%
Zonal lumens in the 60°-90° zone		31.6	%
Zonal lumens in the 90°-120° zone		31.3	%
Zonal lumens in the 120°-180° zone		17.9	%

Test Specifications:	
Date of Receipt	: Apr.01,2016
Date of Test	: Apr.24,2016
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° 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 Volts, 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° 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 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	N/A
Model Number	LED-8083E30, LED-8083M30
Luminaire Type	LED Lamp
Rated Voltage / Frequency	120~277 Vac, 50/60Hz
Nominal Power	30W
Rated Initial Lamp Lumen	--
Declared CCT	3000K
LED Manufacturer	N/A
LED Model	N/A
Sample Receipt Date	Apr.01,2016
Sample Number	GZE160347-U1(3000K)
Photo	
	
LED-8080E30	
	
LED-8080M30	

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

Test date	2016-04-24	**Test Ambient:**	25.2 °C
Test Orientation	As intended	**Stabilization Time (min)**	90
Model Number	LED-8083E30		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE160347	120.0	60	0.2631	31.14	0.9863	7.64
-U1	277.0	60	0.1247	31.11	0.9010	19.12

Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	81.9
R9	6
CCT (K)	2929
Chromaticity (x, y)	x=0.4419 y=0.4054
Chromaticity (u', v')	u'=0.2532 v'=0.5227
Duv	-0.0001

Special Color Rendering Indices			
R1	80	R9	6
R2	91	R10	79
R3	96	R11	77
R4	79	R12	70
R5	80	R13	83
R6	89	R14	98
R7	82	R15	73
R8	58	--	--

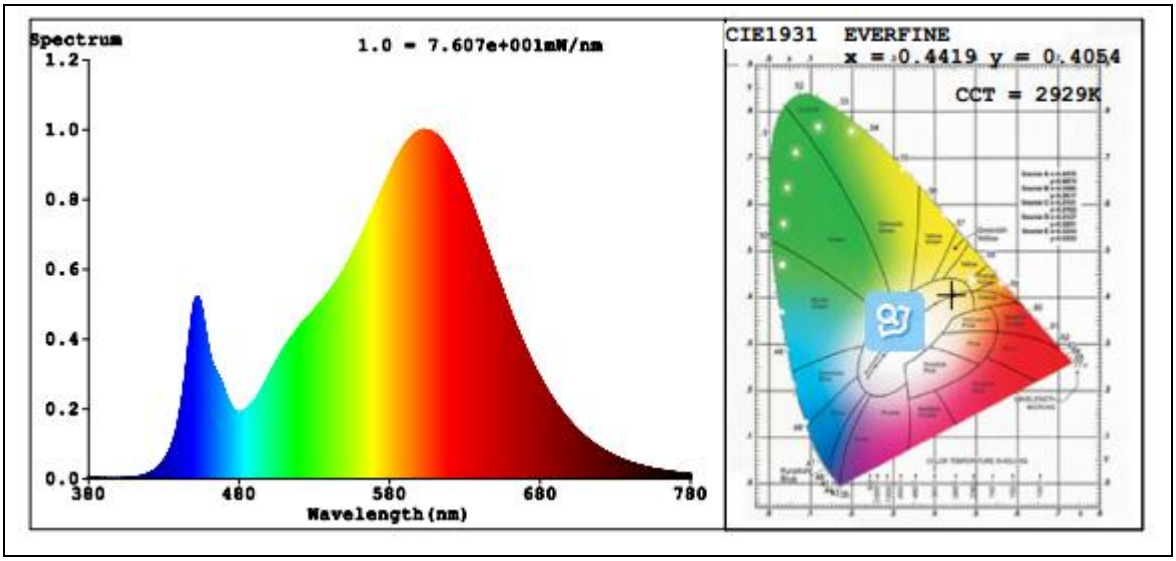
Goniophotometer Method :

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	3661.9
Luminous Efficacy (lm/W)	117.58
Beam Angle°	291.5
Center Beam Candle Power (cd)	26

Goniophotometer Methodn :

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	3601.6
Luminous Efficacy (lm/W)	115.78

Spectral Power Distribution & Chromaticity Diagram



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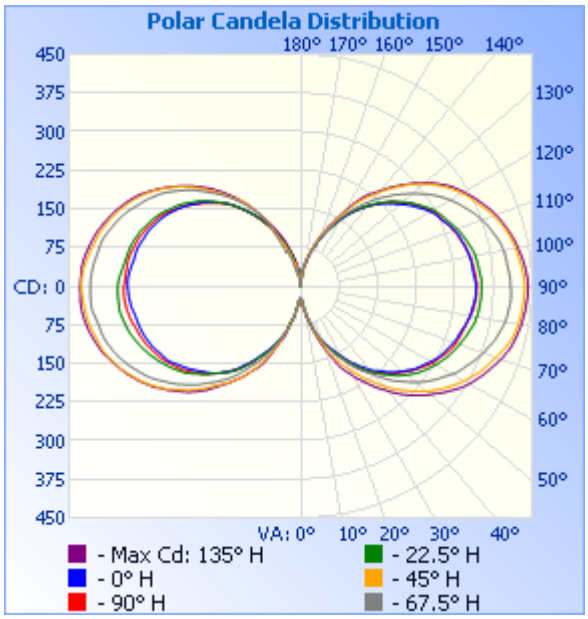
Zonal Lumen Tabulation

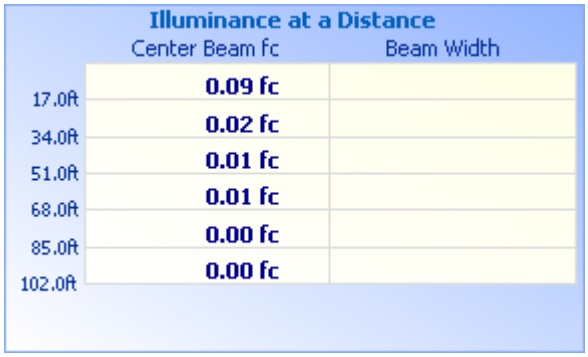
Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	92.4	2.5%
0-40	220.6	6%
0-60	701.1	19.1%
60-90	1,158.6	31.6%
70-100	1,231.8	33.6%
90-120	1,145.9	31.3%
0-90	1,859.7	50.8%
90-180	1,802.9	49.2%
0-180	3,662.6	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	3.4	0.1%	90-100	417.9	11.4%
10-20	23.1	0.6%	100-110	389.5	10.6%
20-30	66.0	1.8%	110-120	338.5	9.2%
30-40	128.2	3.5%	120-130	270.2	7.4%
40-50	202.3	5.5%	130-140	192.5	5.3%
50-60	278.2	7.6%	140-150	118.4	3.2%
60-70	344.6	9.4%	150-160	56.2	1.5%
70-80	393.7	10.7%	160-170	17.9	0.5%
80-90	420.3	11.5%	170-180	1.9	0.1%

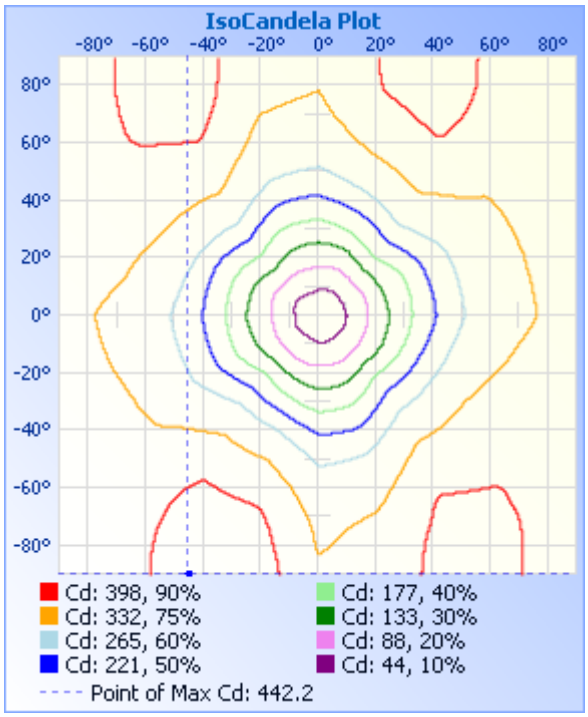
Photometric Data



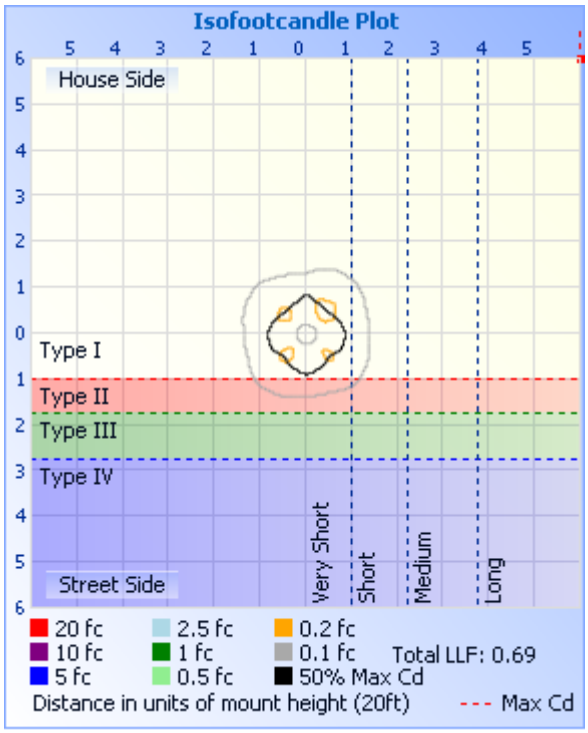
Illuminance Plots



ISOCANDELA DIAGRAM



ISOLUX DIAGRAM



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	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
1	26	26	25	25	25	25	25	25	25	26	25	26	26	26	26	26	26
2	25	25	25	25	25	25	25	25	25	25	25	25	26	26	26	25	25
3	24	24	24	24	25	25	25	25	24	24	24	24	25	25	25	25	24
4	24	24	24	26	28	28	26	25	24	24	24	25	25	25	25	24	24
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6	33	31	32	31	36	36	33	30	30	31	29	28	32	30	27	29	33
7	39	38	36	36	40	42	40	35	36	34	32	32	33	34	31	32	39
8	42	45	38	38	41	41	46	45	41	41	36	34	39	39	36	39	42
9	42	44	44	41	46	43	50	48	42	41	45	42	44	46	38	42	42
10	47	45	52	47	55	50	53	50	46	43	50	51	45	48	44	44	47
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135	227	231	274	249	229	236	277	273	230	231	267	259	228	237	272	248	227
136	222	225	267	242	224	231	271	265	226	226	260	253	224	232	266	242	222
137	217	220	260	236	218	225	264	257	221	221	252	247	219	227	260	236	217
138	213	215	253	231	213	219	257	250	217	216	246	241	214	221	253	231	213
139	207	210	246	224	208	214	249	243	212	210	239	235	210	216	245	225	207
140	203	204	239	217	203	209	242	236	206	205	233	229	204	211	240	218	203
141	197	199	231	210	197	202	235	230	200	200	226	223	197	206	232	212	197
142	191	194	224	204	192	196	229	224	194	194	219	216	192	200	225	207	191
143	186	189	217	198	187	190	223	218	188	188	213	210	186	195	218	201	186
144	180	183	210	190	182	184	217	211	182	182	208	203	181	189	211	195	180
145	175	178	202	184	176	179	210	203	176	176	202	197	175	183	204	189	175
146	169	172	195	178	171	173	202	194	171	170	197	190	169	177	196	182	169
147	163	167	186	171	165	166	192	186	166	165	190	183	162	172	189	176	163
148	157	160	177	164	158	159	183	178	160	159	182	176	156	165	181	169	157
149	151	153	168	157	152	153	174	171	155	153	171	168	150	158	173	163	151
150	145	145	160	150	146	147	165	165	149	146	161	160	144	152	164	156	145
151	139	138	152	143	140	141	156	158	143	140	153	154	137	145	156	149	139
152	133	133	144	136	134	135	147	152	137	134	145	145	131	137	149	143	133
153	126	127	136	129	129	129	139	147	131	128	137	133	126	131	141	137	126
154	120	121	129	122	123	123	132	143	125	122	129	112	120	126	135	130	120
155	114	116	124	116	117	116	126	139	119	115	120	99	113	120	129	123	114
156	108	110	117	110	110	109	118	133	114	109	107	84	107	113	122	116	108

157	103	104	110	104	103	102	112	127	109	103	97	70	100	107	116	110	103
158	97	98	104	98	98	96	107	121	107	98	92	73	94	101	109	103	97
159	92	92	97	93	92	91	100	112	102	92	88	74	88	95	103	97	92
160	86	88	91	86	85	85	94	103	96	86	82	68	82	90	96	91	86
161	81	83	85	81	80	79	88	96	89	81	73	61	75	84	90	86	81
162	77	77	79	75	75	75	81	88	83	76	71	56	69	79	84	80	77
163	73	72	75	68	71	70	74	83	75	72	64	38	64	73	77	75	73
164	67	67	69	63	65	64	69	78	69	66	47	34	59	68	72	69	67
165	62	62	64	59	59	59	64	72	63	59	39	23	55	62	67	63	62
166	57	57	59	56	54	54	59	67	56	44	46	23	50	56	62	58	57
167	52	53	54	53	48	48	53	62	51	34	45	34	45	51	58	53	52
168	47	49	49	50	44	44	48	55	47	30	45	32	40	47	53	50	47
169	43	45	43	44	40	40	44	49	43	30	41	22	35	43	48	49	43
170	41	40	37	37	36	36	40	44	40	30	32	11	30	39	45	47	41
171	37	36	32	24	32	32	37	39	37	28	22	9	24	33	42	43	37
172	33	32	28	15	21	22	32	34	33	28	19	7	16	29	38	37	33
173	29	29	23	9	16	16	26	27	28	26	17	3	13	22	32	31	29
174	26	22	14	5	9	10	16	18	21	24	19	3	10	20	20	21	26
175	15	12	5	4	4	4	9	7	11	14	10	2	7	12	7	12	15
176	4	3	2	1	1	1	3	3	3	4	3	0	2	3	2	3	4
177	1	1	1	0	0	0	1	1	1	1	0	0	0	0	1	1	1
178	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
179	0	0	0	0	0	0	0	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	0

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%			

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