

**LM-79-08 Test Report**  
For  
**RAB LIGHTING INC**  
**(Brand Name: N/A)**

170 Ludlow Ave, PO BOX 970, Northvale, NJ 07647-2305 USA

**Model name(s): DLC0012(C8R33835UNVW)**

**Report Type:** Testing and Report According to IES LM-79-2008

**Type of  
Luminaire:** Downlights

**Report Date:** 2019-10-10


**Prepared By:**

Test & Report By:



Engineer: Sun Fangfang

Review By:



Manager: Huang Qichong

<b>1.1 Rated Values:</b>	
Rated Voltage / Frequency	120V-277Vac, 50/60 Hz
Nominal Power	33W
Rated Initial Lamp Lumen	3500 lm
Declared CCT	3500K

Note: The tests are conducted under the worst conditions.

## 1.2 Test Specifications:

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 C78.377-2015 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

<b>Test date</b>	2019-10-08	<b>Test Ambient:</b>	25.6 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	DLC0012(C8R33835UNVW)		

### Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
1909180025	120.0	60	0.269	32.20	0.995

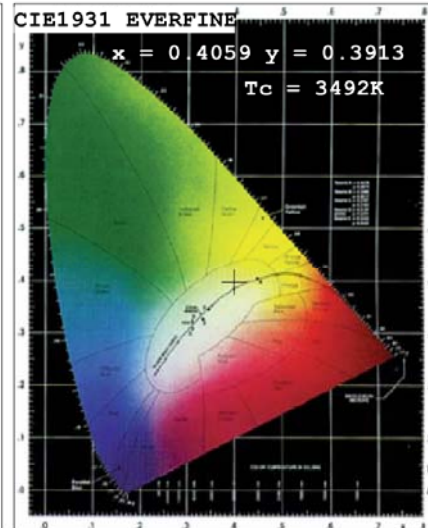
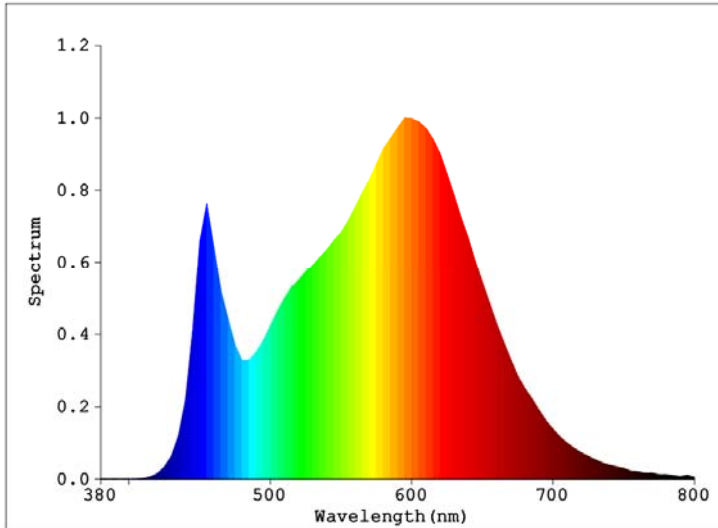
### Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	84	R9	13
Frequency (Hz)	60	R2	94	R10	85
CCT (K)	3492	R3	95	R11	81
Duv	0.00013	R4	82	R12	69
Chromaticity (x, y)	x=0.4059 y=0.3913	R5	84	R13	86
Chromaticity (u', v')	u'=0.2359 v'=0.5116	R6	91	R14	98
Color Rendering Index (CRI)	84.4	R7	83	R15	76
R9	13	R8	62	--	--

### Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	3523.5
Luminous Efficacy (lm/W)	109.43
Beam Angle (°)	94.1
Center Beam Candle Power (cd)	1534.0

## Spectral Power Distribution & Chromaticity Diagram

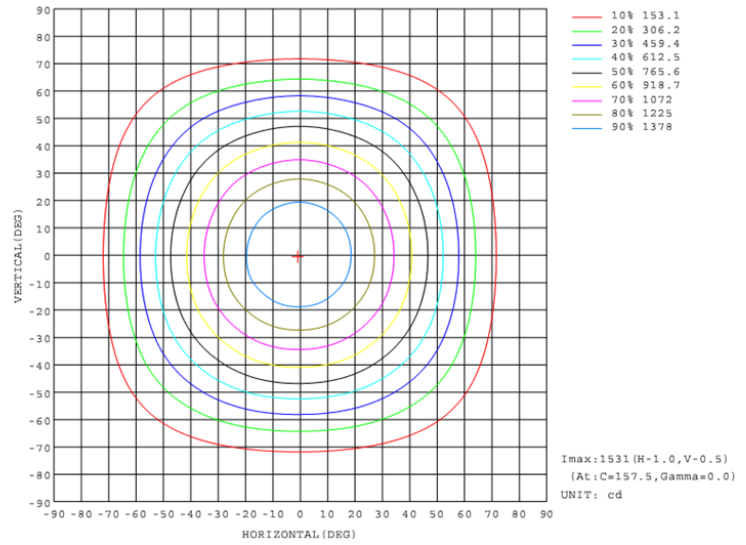
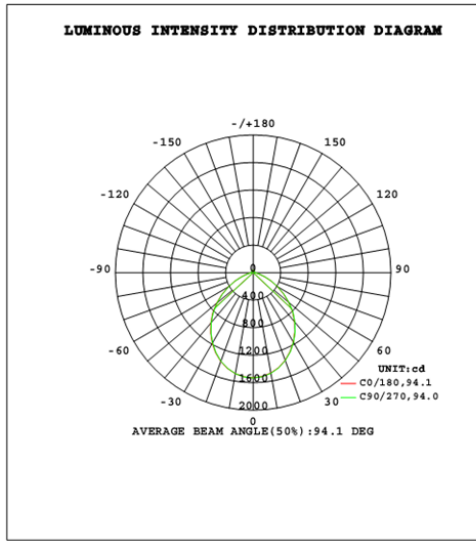


## Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	1136.5	32.3%
0-40	1802.0	51.1%
0-60	2920.9	82.9%
60-90	449.9	12.8%
70-100	182.3	5.2%
90-120	66.0	1.9%
0-90	3370.8	95.7%
90-180	152.7	4.3%
0-180	3523.5	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	144.1	4.1%	90-100	22.4	0.6%
10-20	404.5	11.5%	100-110	21.8	0.6%
20-30	587.9	16.7%	110-120	21.7	0.6%
30-40	665.5	18.9%	120-130	21.3	0.6%
40-50	631.1	17.9%	130-140	20.2	0.6%
50-60	487.8	13.8%	140-150	17.9	0.5%
60-70	290.0	8.2%	150-160	14.5	0.4%
70-80	116.7	3.3%	160-170	9.5	0.3%
80-90	43.2	1.2%	170-180	3.4	0.1%

# Photometric Data



Flux out: 2433 lm

Height	Havg, Hmax	Angle: 93.93deg	Diameter
1ft	545.3, 1534fc		2.142ft
2ft	136.3, 383.4fc		4.284ft
3ft	60.59, 170.4fc		6.426ft
4ft	34.08, 95.86fc		8.568ft
5ft	21.81, 61.35fc		10.71ft
6ft	15.15, 42.60fc		12.85ft
7ft	11.13, 31.30fc		14.99ft
8ft	8.520, 23.96fc		17.14ft
9ft	6.732, 18.93fc		19.28ft
10ft	5.453, 15.34fc		21.42ft

Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

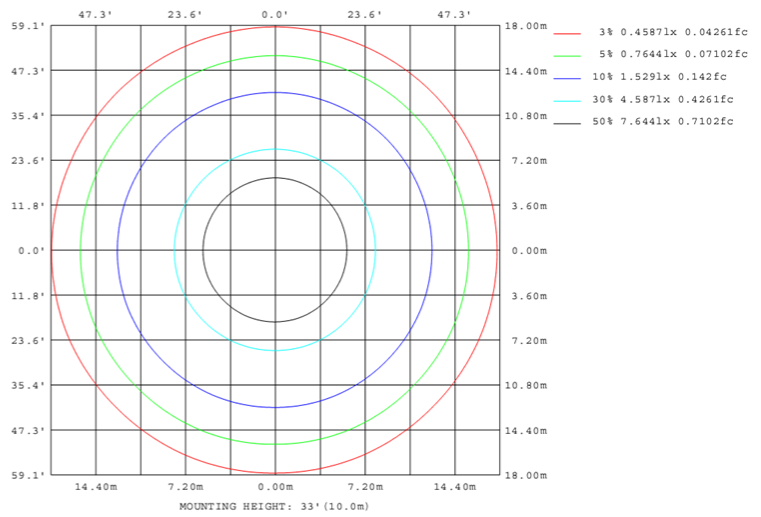
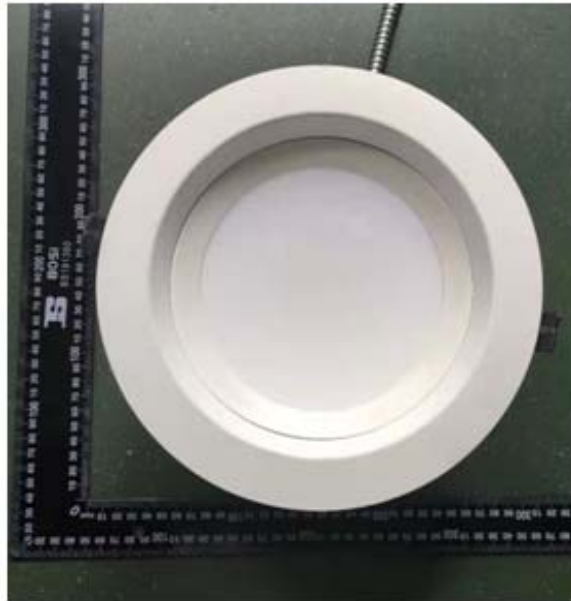


Table--1

UNIT: cd

γ (DEG)	C (DEG)																		
	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5			
0	1529	1528	1529	1529	1531	1531	1531	1534	1529	1528	1529	1529	1531	1531	1531	1534			
5	1515	1516	1516	1517	1518	1520	1521	1525	1520	1520	1521	1520	1521	1520	1520	1521			
10	1482	1483	1483	1484	1485	1489	1491	1496	1491	1491	1492	1490	1491	1488	1488	1488			
15	1429	1430	1429	1432	1432	1438	1440	1447	1442	1441	1442	1440	1440	1436	1436	1433			
20	1356	1358	1356	1360	1361	1366	1370	1377	1373	1372	1373	1370	1370	1365	1364	1361			
25	1268	1270	1267	1272	1272	1279	1282	1291	1287	1285	1287	1282	1283	1277	1276	1271			
30	1166	1169	1166	1170	1171	1178	1181	1191	1187	1184	1186	1181	1181	1175	1174	1168			
35	1054	1057	1054	1059	1058	1067	1069	1079	1075	1072	1075	1069	1069	1062	1061	1055			
40	936	939	936	941	941	949	951	961	956	953	955	949	950	943	942	936			
45	810	814	812	817	817	826	828	837	831	827	829	823	824	818	818	811			
50	672	676	673	680	679	688	689	698	692	687	689	683	684	678	678	671			
55	535	539	537	543	542	550	551	559	553	547	549	543	546	540	540	534			
60	404	409	406	412	411	418	419	425	420	414	416	411	413	407	408	403			
65	284	286	286	290	289	294	295	301	295	292	292	288	290	286	285	282			
70	178	179	180	181	182	184	187	189	185	183	182	181	180	179	178	176			
75	99.1	102	101	103	102	104	104	107	105	102	103	101	102	99.9	100	98.2			
80	55.2	56.8	56.4	57.7	56.7	58.3	58.1	59.6	58.6	57.2	57.9	56.5	56.9	55.8	56.3	55.3			
85	38.8	39.7	39.4	40.1	39.8	40.5	40.3	41.1	41.5	40.7	41.0	40.3	40.6	39.9	40.0	39.4			
90	20.0	20.0	20.1	20.1	20.1	20.2	20.3	20.6	21.9	21.8	21.7	21.7	21.7	21.8	21.7	21.8			
95	19.2	19.2	19.2	19.2	19.3	19.3	19.3	19.4	21.5	21.5	21.5	21.5	21.5	21.6	21.5	21.6			
100	18.9	18.9	18.9	18.9	19.0	19.0	19.0	19.0	21.7	21.7	21.6	21.7	21.7	21.7	21.7	21.8			
105	19.0	19.0	19.1	19.0	19.1	19.0	19.1	19.1	22.0	22.1	22.0	22.1	22.1	22.1	22.1	22.2			
110	19.5	19.4	19.5	19.5	19.5	19.5	19.5	19.5	22.7	22.7	22.7	22.7	22.7	22.8	22.8	22.9			
115	20.2	20.1	20.2	20.2	20.2	20.2	20.2	20.1	23.5	23.5	23.4	23.5	23.5	23.6	23.6	23.7			
120	21.1	21.0	21.1	21.1	21.1	21.1	21.1	21.0	24.4	24.4	24.3	24.4	24.4	24.5	24.5	24.6			
125	22.1	22.1	22.2	22.1	22.2	22.1	22.1	22.0	25.3	25.4	25.3	25.4	25.4	25.5	25.5	25.6			
130	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.2	26.3	26.4	26.3	26.4	26.4	26.5	26.5	26.6			
135	24.5	24.5	24.6	24.5	24.6	24.5	24.5	24.4	27.4	27.4	27.4	27.5	27.5	27.6	27.6	27.7			
140	25.9	25.9	25.9	25.9	25.9	25.9	25.9	25.8	28.6	28.6	28.6	28.6	28.7	28.8	28.8	28.9			
145	27.3	27.3	27.4	27.3	27.4	27.3	27.3	27.2	29.7	29.8	29.8	29.8	29.8	30.0	30.0	30.1			
150	28.8	28.7	28.8	28.8	28.8	28.8	28.8	28.7	31.0	31.0	31.0	31.1	31.1	31.2	31.2	31.3			
155	30.3	30.2	30.3	30.2	30.3	30.3	30.3	30.2	32.2	32.2	32.2	32.3	32.3	32.4	32.4	32.6			
160	31.7	31.7	31.8	31.7	31.8	31.7	31.7	31.7	33.3	33.4	33.4	33.5	33.5	33.6	33.5	33.7			
165	33.1	33.1	33.2	33.1	33.2	33.1	33.2	33.1	34.3	34.4	34.4	34.5	34.5	34.5	34.5	34.6			
170	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4	35.2	35.2	35.2	35.3	35.3	35.3	35.3	35.4			
175	35.4	35.3	35.4	35.4	35.4	35.4	35.4	35.4	35.7	35.7	35.7	35.8	35.8	35.8	35.8	35.9			
180	35.9	35.9	35.9	36.0	36.0	36.0	36.0	36.0	35.9	35.9	35.9	36.0	36.0	36.0	36.0	36.1			

### 3. Product Photo



**\*\*\*\*\* END OF REPORT \*\*\*\*\***