

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): DLC0014(C6R12930UNVW)

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

1.1 Rated Values:	
Rated Voltage / Frequency	120V-277Vac, 50/60 Hz
Nominal Power	12W
Rated Initial Lamp Lumen	900 lm
Declared CCT	3000K

Note: The tests are conducted under the worst conditions.

1.2 Test Specifications:

Test item	<ol style="list-style-type: none"> 1. Total Luminous Flux 2. Luminous Distribution Intensity 3. Luminous Efficacy 4. Correlated Color Temperature 5. Color Rendering Index 6. Chromaticity Coordinate 7. Electrical Parameters
Reference Standard	<ol style="list-style-type: none"> 1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products 2. ANSI C78.377-2015 Specifications for the Chromaticity of Solid State Lighting Products 3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources 4. CIE 15-2004 Technical Report Colorimetry 5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source 6. IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems
Reference Work Instruction	QD25

1.3 Test Methods

<p>1) Photometric and Light Distribution Measurement – Goniophotometer Method:</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>2) Chromaticity Measurement – Sphere-Spectroradiometer Method:</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>3) Electrical Measurements:</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

Test date	2019-10-08	Test Ambient:	25.6 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	DLC0014(C6R12930UNVW)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
1909180027	120.0	60	0.085	10.20	0.996

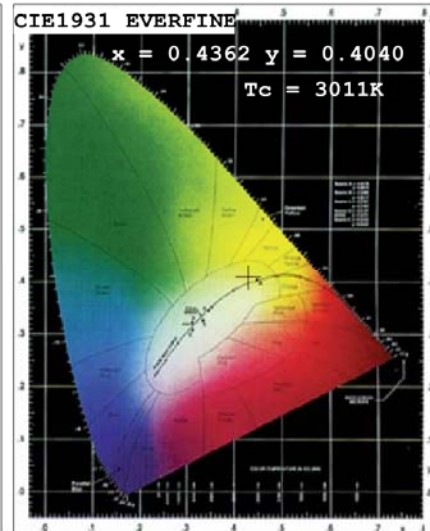
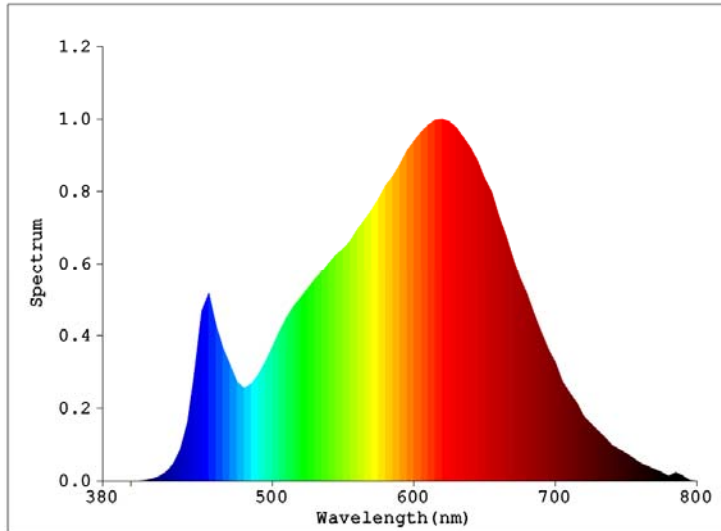
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	93	R9	58
Frequency (Hz)	60	R2	97	R10	91
CCT (K)	3011	R3	99	R11	92
Duv	0.00005	R4	92	R12	79
Chromaticity (x, y)	x=0.4362 y=0.4040	R5	92	R13	94
Chromaticity (u', v')	u'=0.2502 v'=0.5212	R6	96	R14	99
Color Rendering Index (CRI)	92.4	R7	91	R15	88
R9	58	R8	81	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	934.15
Luminous Efficacy (lm/W)	91.58
Beam Angle (°)	85.6
Center Beam Candle Power (cd)	459.4

Spectral Power Distribution & Chromaticity Diagram

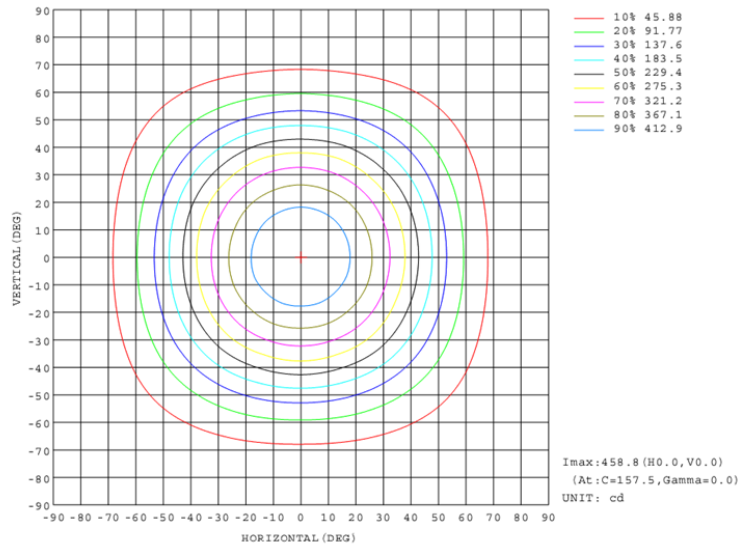
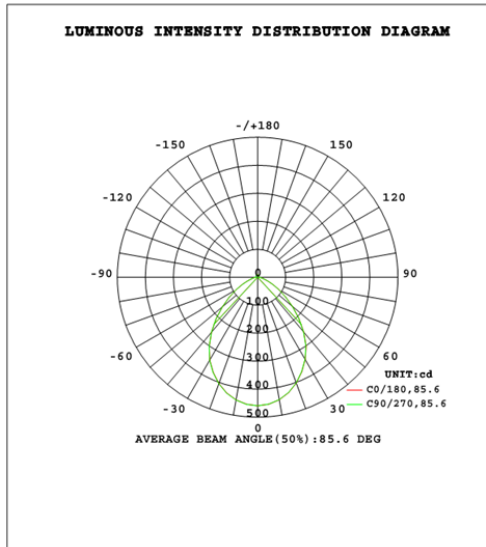


Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	335.3	35.9%
0-40	522.7	56.0%
0-60	794.4	85.0%
60-90	99.0	10.6%
70-100	44.6	4.8%
90-120	17.0	1.8%
0-90	893.4	95.6%
90-180	40.8	4.4%
0-180	934.2	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	43.1	4.6%	90-100	5.7	0.6%
10-20	120.2	12.9%	100-110	5.6	0.6%
20-30	172.0	18.4%	110-120	5.7	0.6%
30-40	187.4	20.1%	120-130	5.7	0.6%
40-50	161.3	17.3%	130-140	5.5	0.6%
50-60	110.4	11.8%	140-150	5.0	0.5%
60-70	60.1	6.4%	150-160	4.0	0.4%
70-80	27.2	2.9%	160-170	2.7	0.3%
80-90	11.7	1.3%	170-180	0.9	0.1%

Photometric Data



Flux out:608.7 lm

Height	Flux,lm	Beam Diameter
1ft	193.8,459.4fc	1.851ft
2ft	48.44,114.8fc	3.702ft
3ft	21.53,51.04fc	5.552ft
4ft	12.11,28.71fc	7.403ft
5ft	7.751,18.37fc	9.254ft
6ft	5.382,12.76fc	11.1ft
7ft	3.954,9.375fc	12.96ft
8ft	3.028,7.177fc	14.81ft
9ft	2.392,5.671fc	16.66ft
10ft	1.938,4.594fc	18.51ft

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

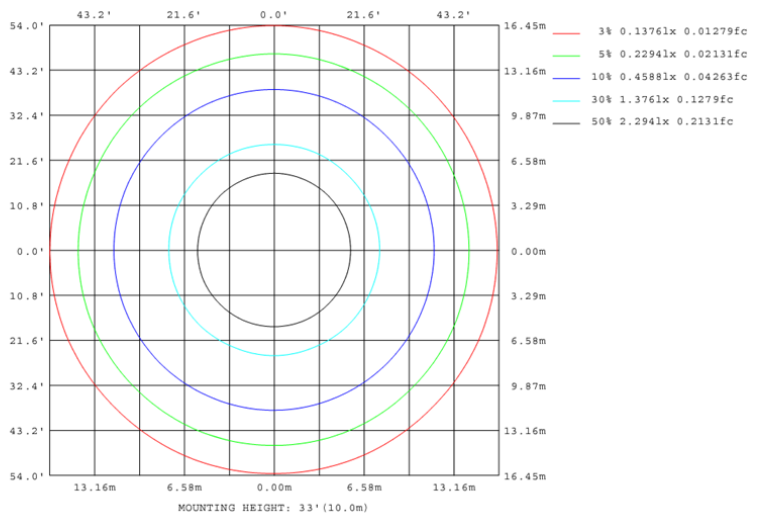
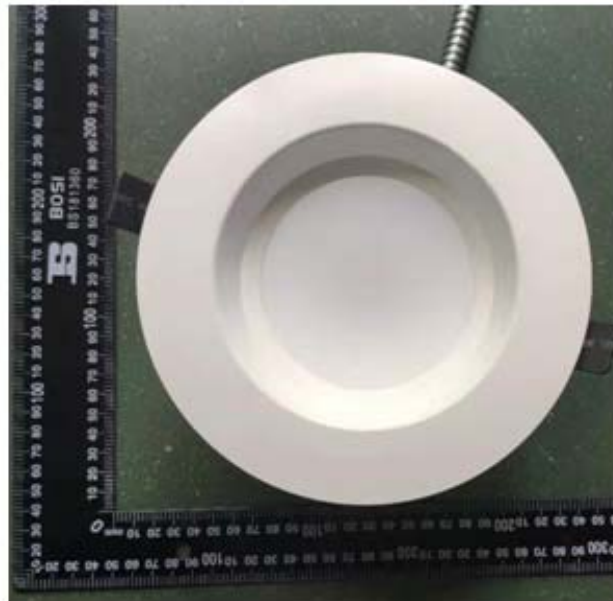
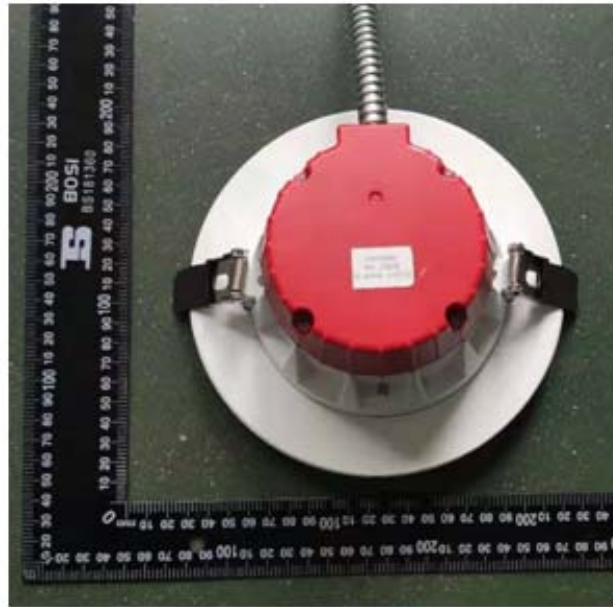


Table--1

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	459	459	459	459	459	459	459	459	459	459	459	459	459	459	459	459			
5	455	455	455	455	455	455	455	456	455	455	455	455	456	455	456	456			
10	444	445	444	444	444	445	445	445	445	444	445	445	445	445	445	445			
15	427	427	426	427	426	427	427	429	427	427	428	428	428	428	428	427			
20	402	403	402	402	402	403	403	405	404	404	405	404	405	404	404	403			
25	373	373	372	373	372	374	374	376	375	375	376	375	376	375	375	373			
30	339	339	338	339	338	340	340	343	342	341	343	342	343	341	341	339			
35	301	297	300	297	300	298	303	302	302	304	302	304	302	303	299	301			
40	256	253	254	252	255	253	258	257	256	259	257	260	257	258	254	256			
45	208	206	207	205	207	207	211	210	210	212	210	212	210	211	207	208			
50	162	161	161	161	162	162	165	165	165	166	165	166	165	164	162	162			
55	120	121	120	121	120	122	122	124	124	123	124	123	124	122	122	120			
60	85.9	86.5	85.4	86.4	85.8	87.3	87.4	89.1	88.6	88.0	88.8	87.7	88.2	87.0	87.0	85.7			
65	58.1	58.5	57.8	58.5	58.1	59.1	59.2	60.4	60.1	59.6	60.2	59.4	59.8	58.8	58.9	57.9			
70	37.4	37.8	37.2	37.8	37.5	38.2	38.2	39.0	38.9	38.5	39.0	38.4	38.7	38.0	38.0	37.4			
75	23.6	23.8	23.5	23.8	23.6	24.1	24.1	24.7	24.7	24.5	24.8	24.4	24.6	24.1	24.1	23.6			
80	16.2	16.3	16.1	16.3	16.2	16.5	16.5	16.7	16.9	16.8	17.0	16.8	16.9	16.7	16.7	16.4			
85	9.98	10.1	9.88	10.1	9.98	10.3	10.3	10.6	11.1	11.0	11.2	11.0	11.1	10.8	10.8	10.5			
90	5.03	5.03	5.04	5.03	5.03	5.04	5.06	5.07	5.61	5.61	5.64	5.61	5.62	5.62	5.61	5.62			
95	4.83	4.83	4.83	4.83	4.83	4.84	4.85	4.85	5.54	5.54	5.53	5.54	5.54	5.56	5.56	5.57			
100	4.79	4.78	4.79	4.78	4.79	4.78	4.79	4.79	5.58	5.59	5.58	5.59	5.59	5.61	5.61	5.63			
105	4.86	4.85	4.86	4.85	4.86	4.85	4.85	4.85	5.72	5.73	5.71	5.73	5.72	5.75	5.76	5.78			
110	5.02	5.01	5.03	5.01	5.02	5.00	5.01	5.00	5.93	5.94	5.93	5.94	5.93	5.97	5.97	6.00			
115	5.26	5.25	5.26	5.26	5.27	5.26	5.25	5.23	6.20	6.20	6.20	6.21	6.21	6.24	6.24	6.27			
120	5.56	5.55	5.57	5.57	5.57	5.55	5.56	5.53	6.50	6.50	6.49	6.51	6.51	6.54	6.55	6.57			
125	5.91	5.91	5.94	5.93	5.94	5.91	5.91	5.88	6.82	6.84	6.83	6.85	6.84	6.88	6.88	6.91			
130	6.29	6.29	6.31	6.30	6.31	6.29	6.29	6.26	7.17	7.18	7.17	7.19	7.19	7.22	7.22	7.25			
135	6.68	6.68	6.71	6.69	6.72	6.68	6.69	6.66	7.51	7.52	7.52	7.54	7.54	7.57	7.57	7.61			
140	7.09	7.08	7.12	7.11	7.12	7.11	7.11	7.07	7.87	7.88	7.87	7.90	7.89	7.92	7.93	7.96			
145	7.51	7.50	7.53	7.52	7.55	7.52	7.53	7.49	8.21	8.23	8.23	8.24	8.24	8.27	8.27	8.30			
150	7.92	7.92	7.96	7.95	7.96	7.95	7.95	7.92	8.56	8.57	8.57	8.59	8.58	8.61	8.62	8.64			
155	8.33	8.33	8.37	8.35	8.38	8.36	8.37	8.34	8.89	8.92	8.91	8.93	8.93	8.96	8.96	8.98			
160	8.75	8.75	8.78	8.77	8.80	8.77	8.79	8.76	9.23	9.25	9.24	9.26	9.27	9.29	9.30	9.32			
165	9.18	9.18	9.20	9.19	9.21	9.19	9.20	9.17	9.54	9.55	9.55	9.57	9.57	9.59	9.59	9.62			
170	9.55	9.55	9.57	9.56	9.57	9.55	9.57	9.56	9.78	9.80	9.80	9.81	9.81	9.83	9.83	9.85			
175	9.85	9.84	9.85	9.85	9.86	9.85	9.87	9.86	9.95	9.95	9.95	9.97	9.97	9.98	9.98	10.00			
180	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.00	10.0	10.0	10.0	10.0	10.0	10.0			

3. Product Photo



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