

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): DLC0004(C6R12840UNVW)

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

**Type of
Luminaire:** Downlights

Report Date: 2019-10-10

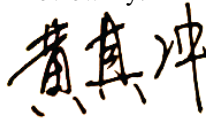
Prepared By:

Test & Report By:



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Review By:



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1.1 Rated Values:	
Rated Voltage / Frequency	120V-277Vac, 50/60 Hz
Nominal Power	12W
Rated Initial Lamp Lumen	1050 lm
Declared CCT	4000K

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	DLC0004(C6R12840UNVW)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
1909180017	120.0	60	0.088	10.50	0.997

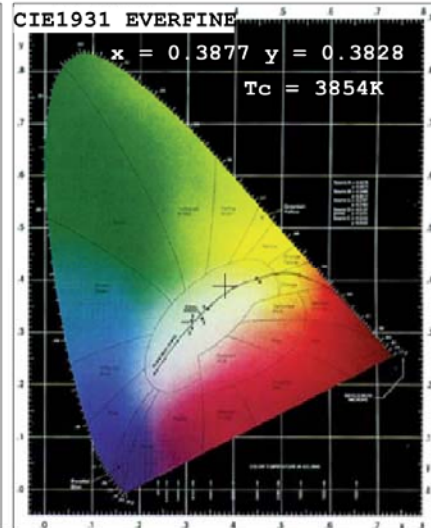
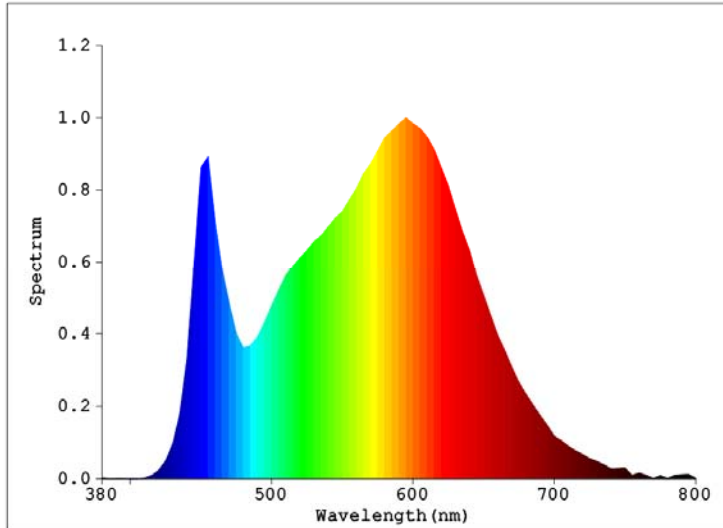
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	83	R9	10
Frequency (Hz)	60	R2	92	R10	82
CCT (K)	3854	R3	96	R11	81
Duv	0.00077	R4	81	R12	66
Chromaticity (x, y)	x=0.3877 y=0.3828	R5	83	R13	85
Chromaticity (u', v')	u'=0.2275 v'=0.5053	R6	89	R14	98
Color Rendering Index (CRI)	84.0	R7	85	R15	76
R9	10	R8	63	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1142.9
Luminous Efficacy (lm/W)	108.85
Beam Angle (°)	86.6
Center Beam Candle Power (cd)	551.3

Spectral Power Distribution & Chromaticity Diagram

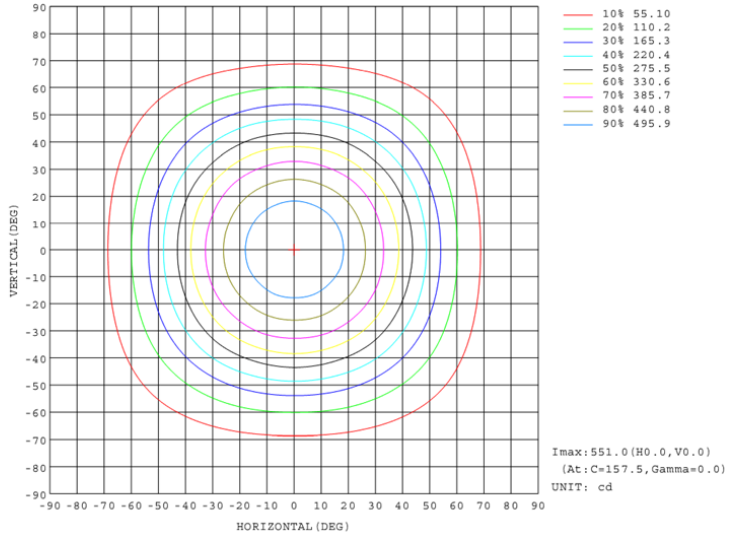
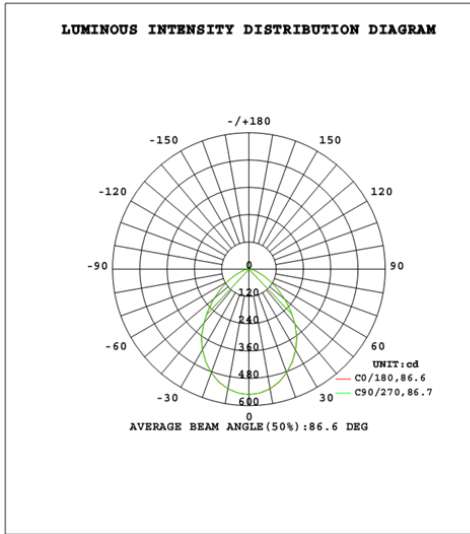


Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	403.2	35.3%
0-40	631.0	55.2%
0-60	968.9	84.8%
60-90	124.3	10.9%
70-100	54.8	4.8%
90-120	20.7	1.8%
0-90	1093.2	95.6%
90-180	49.8	4.4%
0-180	1143.0	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	51.8	4.5%	90-100	7.0	0.6%
10-20	144.4	12.6%	100-110	6.9	0.6%
20-30	207.0	18.1%	110-120	6.9	0.6%
30-40	227.8	19.9%	120-130	7.0	0.6%
40-50	198.8	17.4%	130-140	6.7	0.6%
50-60	139.1	12.2%	140-150	6.0	0.5%
60-70	76.5	6.7%	150-160	4.9	0.4%
70-80	33.7	2.9%	160-170	3.3	0.3%
80-90	14.1	1.2%	170-180	1.2	0.1%

Photometric Data



Flux out: 736.4 lm

Height	Havg, Rmax	Angle: 86.66deg	Diameter
1ft	234.4, 551.3fc		1.887ft
2ft	58.60, 137.8fc		3.774ft
3ft	26.05, 61.26fc		5.66ft
4ft	14.65, 34.46fc		7.547ft
5ft	9.377, 22.05fc		9.434ft
6ft	6.512, 15.32fc		11.32ft
7ft	4.784, 11.25fc		13.21ft
8ft	3.663, 8.615fc		15.09ft
9ft	2.894, 6.807fc		16.98ft
10ft	2.344, 5.513fc		18.87ft

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

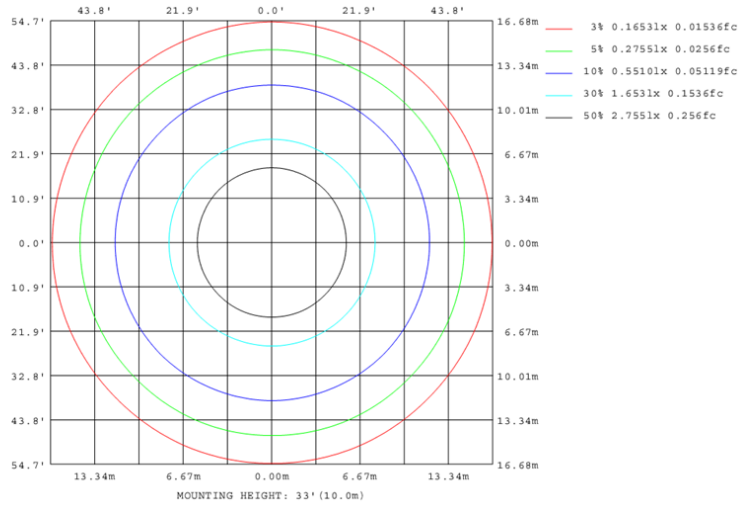
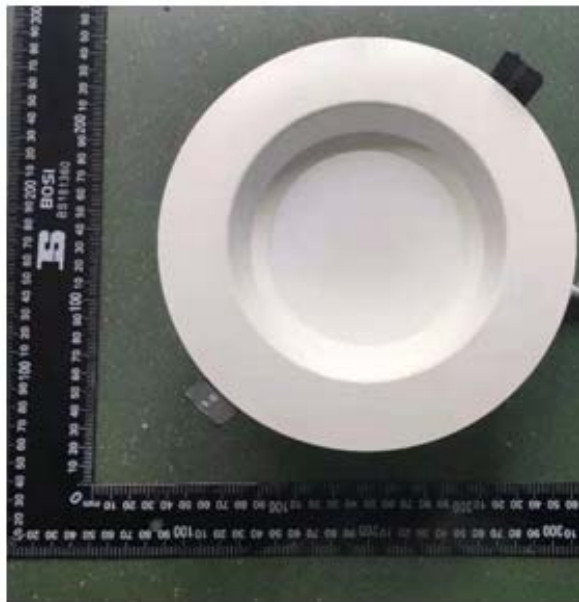


Table--1

UNIT: cd

C (DEG) γ (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	551	551	551	551	551	551	551	551	551	551	551	551	551	551	551	551			
5	547	547	546	546	546	546	546	547	547	547	547	547	547	547	547	548			
10	534	535	533	534	533	533	533	534	534	534	534	534	535	534	535	535			
15	514	514	513	513	512	513	512	513	513	513	513	513	514	514	515	514			
20	486	487	485	485	484	484	484	485	484	484	485	484	486	485	486	486			
25	451	452	451	451	449	450	449	450	449	448	450	449	451	450	452	451			
30	412	413	411	412	410	411	409	410	409	408	410	409	411	410	412	412			
35	369	370	368	369	367	367	365	366	365	364	366	365	367	366	368	368			
40	316	314	316	313	315	311	313	309	308	311	308	312	310	314	312	315			
45	261	259	261	258	260	257	258	255	253	255	254	257	256	258	257	260			
50	207	206	207	205	206	204	204	202	201	202	201	203	202	205	204	207			
55	155	157	155	156	155	155	153	153	152	151	152	152	154	153	155	155			
60	112	113	112	113	111	112	110	110	110	108	110	109	111	110	112	111			
65	75.9	76.9	76.0	76.7	75.5	76.0	74.6	74.9	74.4	73.5	74.5	74.0	75.2	74.8	76.0	75.6			
70	48.4	49.1	48.4	49.0	48.2	48.6	47.7	47.9	47.7	47.0	47.6	47.2	48.0	47.6	48.5	48.2			
75	29.9	30.4	29.4	30.2	29.9	30.1	29.5	29.7	29.8	29.3	29.3	29.3	29.8	29.6	30.1	30.0			
80	20.2	19.9	19.7	19.8	20.2	20.3	20.1	20.2	20.5	19.9	20.0	19.8	20.4	20.3	20.5	20.5			
85	12.7	12.1	11.5	11.9	12.6	12.8	12.4	12.6	13.2	12.2	12.0	12.1	13.2	13.1	13.4	13.3			
90	6.17	6.16	6.15	6.16	6.15	6.16	6.15	6.13	6.85	6.85	6.84	6.87	6.85	6.87	6.88	6.88			
95	5.89	5.87	5.88	5.88	5.88	5.88	5.88	5.88	6.78	6.79	6.78	6.79	6.78	6.80	6.80	6.80			
100	5.81	5.80	5.80	5.79	5.81	5.80	5.81	5.81	6.85	6.86	6.85	6.86	6.85	6.86	6.85	6.86			
105	5.88	5.86	5.87	5.86	5.88	5.87	5.88	5.87	7.02	7.03	7.02	7.02	7.01	7.02	7.01	7.02			
110	6.07	6.04	6.05	6.05	6.06	6.05	6.07	6.06	7.28	7.29	7.28	7.29	7.27	7.28	7.26	7.27			
115	6.34	6.32	6.34	6.33	6.35	6.34	6.35	6.35	7.60	7.62	7.60	7.61	7.59	7.60	7.58	7.59			
120	6.71	6.69	6.71	6.68	6.71	6.71	6.73	6.72	7.97	7.98	7.96	7.97	7.95	7.96	7.94	7.96			
125	7.16	7.13	7.14	7.13	7.16	7.14	7.17	7.16	8.39	8.40	8.38	8.39	8.37	8.38	8.36	8.37			
130	7.62	7.59	7.61	7.58	7.62	7.61	7.63	7.62	8.82	8.83	8.81	8.82	8.79	8.80	8.79	8.80			
135	8.11	8.08	8.10	8.08	8.11	8.09	8.13	8.11	9.27	9.28	9.25	9.27	9.23	9.25	9.22	9.24			
140	8.62	8.59	8.61	8.60	8.63	8.60	8.63	8.62	9.71	9.73	9.70	9.70	9.67	9.69	9.66	9.68			
145	9.14	9.11	9.14	9.12	9.14	9.12	9.16	9.14	10.2	10.2	10.1	10.2	10.1	10.1	10.1	10.1			
150	9.68	9.64	9.67	9.65	9.68	9.65	9.68	9.67	10.6	10.6	10.6	10.6	10.5	10.6	10.5	10.6			
155	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0			
160	10.8	10.7	10.7	10.7	10.7	10.7	10.8	10.7	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4			
165	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8			
170	11.8	11.7	11.8	11.7	11.7	11.7	11.7	11.7	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1			
175	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3			
180	12.3	12.4	12.3	12.3	12.3	12.3	12.3	12.3	12.4	12.3	12.3	12.3	12.3	12.3	12.3	12.3			

3. Product Photo



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