

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): DLC0019(C6R18940UNVW)

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	18W
Rated Initial Lamp Lumen	1500 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	DLC0019(C6R18940UNVW)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
1909180032	120.0	60	0.142	17.00	0.996

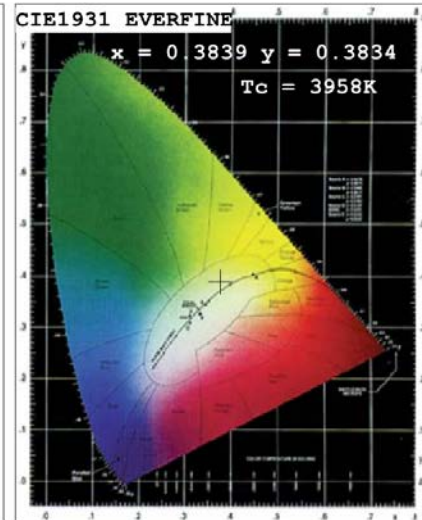
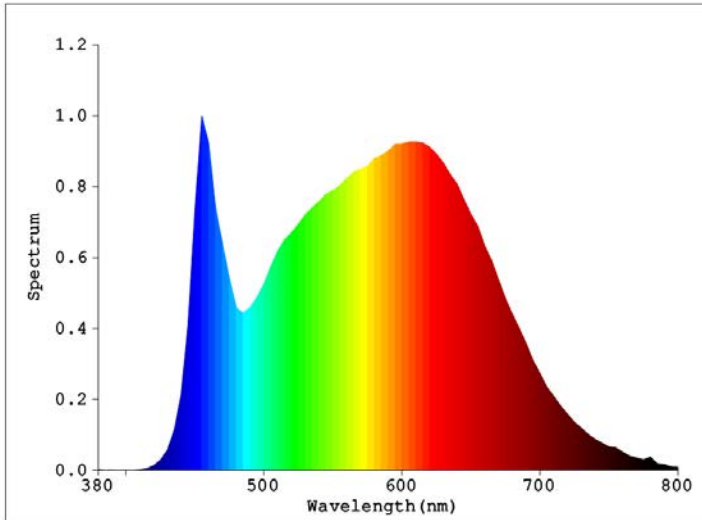
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	92	R9	58
Frequency (Hz)	60	R2	97	R10	92
CCT (K)	3958	R3	98	R11	88
Duv	0.00212	R4	88	R12	68
Chromaticity (x, y)	x=0.3839 y=0.3834	R5	90	R13	94
Chromaticity (u', v')	u'=0.2247 v'=0.5050	R6	94	R14	99
Color Rendering Index (CRI)	91.5	R7	91	R15	88
R9	58	R8	82	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1631.4
Luminous Efficacy (lm/W)	95.96
Beam Angle (°)	87.0
Center Beam Candle Power (cd)	784.6

Spectral Power Distribution & Chromaticity Diagram

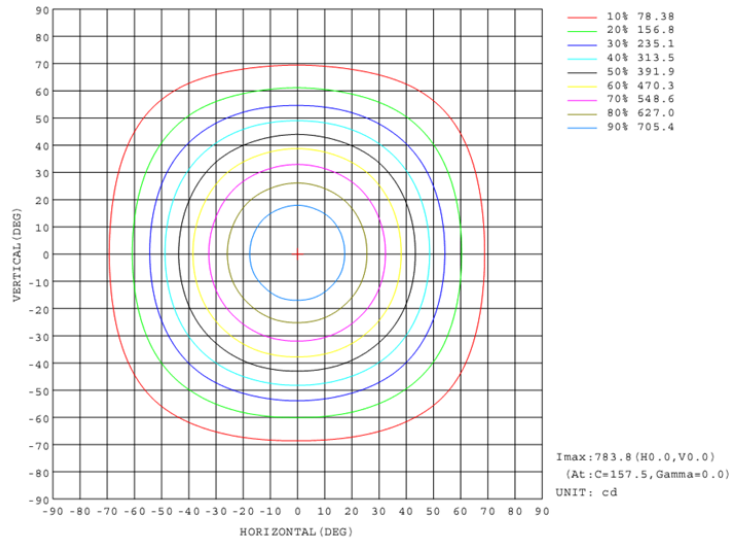
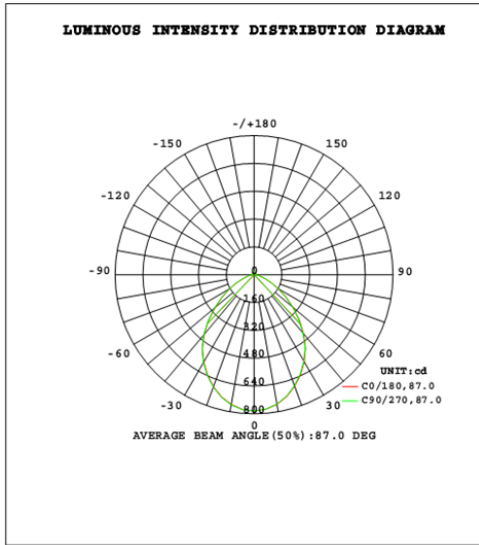


Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	569.6	34.9%
0-40	891.8	54.7%
0-60	1378.9	84.5%
60-90	181.4	11.1%
70-100	78.7	4.8%
90-120	29.7	1.8%
0-90	1560.2	95.6%
90-180	71.2	4.4%
0-180	1631.4	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	73.6	4.5%	90-100	10.0	0.6%
10-20	204.2	12.5%	100-110	9.8	0.6%
20-30	291.9	17.9%	110-120	9.9	0.6%
30-40	322.2	19.8%	120-130	10.0	0.6%
40-50	284.6	17.4%	130-140	9.6	0.6%
50-60	202.4	12.4%	140-150	8.6	0.5%
60-70	112.7	6.9%	150-160	7.0	0.4%
70-80	48.3	3.0%	160-170	4.6	0.3%
80-90	20.3	1.2%	170-180	1.7	0.1%

Photometric Data



Flux out: 1043 lm

Height	Avg, Max	Angle: 86.95deg	Diameter
1ft	331.9, 784.6fc		1.896ft
2ft	82.97, 196.1fc		3.793ft
3ft	36.88, 87.17fc		5.689ft
4ft	20.74, 49.04fc		7.585ft
5ft	13.28, 31.38fc		9.482ft
6ft	9.219, 21.79fc		11.38ft
7ft	6.773, 16.01fc		13.27ft
8ft	5.186, 12.26fc		15.17ft
9ft	4.097, 9.686fc		17.07ft
10ft	3.319, 7.846fc		18.96ft

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

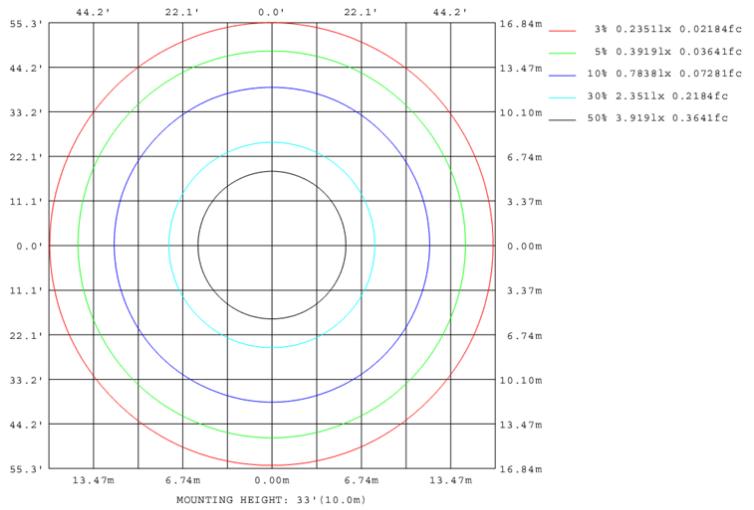
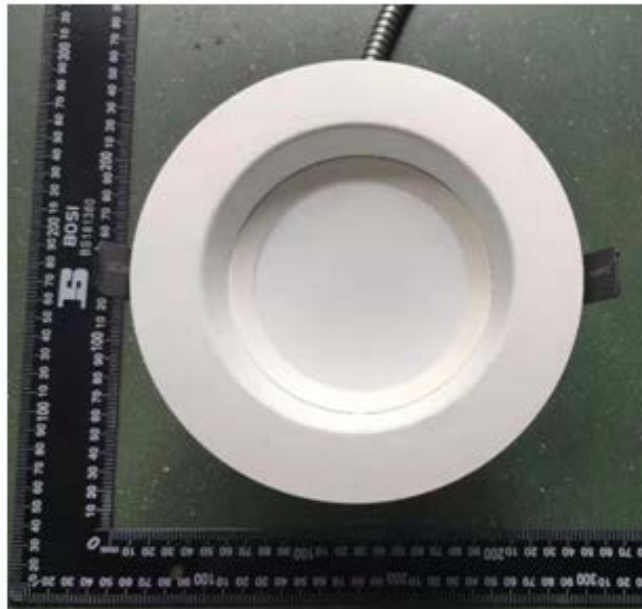
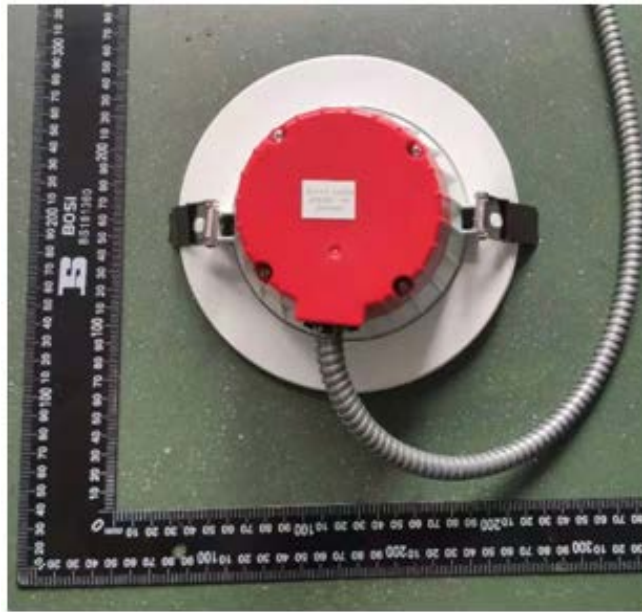


Table--1

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	784	784	783	784	783	784	783	785	784	784	783	784	783	784	783	785			
5	776	777	775	776	776	776	776	778	777	777	778	778	778	778	778	778			
10	757	757	755	756	755	756	756	758	758	758	760	759	760	759	759	758			
15	725	725	723	723	722	724	724	727	727	728	729	729	729	728	728	727			
20	683	683	680	681	680	682	681	685	685	686	688	687	688	687	687	685			
25	633	633	630	631	629	632	631	635	636	636	639	638	639	637	638	635			
30	577	577	574	575	573	575	576	579	580	581	584	582	584	582	582	579			
35	516	516	512	513	511	515	514	519	520	521	524	522	524	521	521	518			
40	443	443	438	440	438	441	441	446	448	449	452	450	452	449	449	445			
45	366	366	362	364	361	365	365	370	372	372	376	374	376	373	373	369			
50	292	288	289	286	288	287	291	292	294	298	298	300	298	298	294	295			
55	224	221	221	219	220	220	223	224	226	230	230	232	230	230	226	226			
60	160	161	158	159	158	160	160	163	165	166	168	167	168	165	165	162			
65	109	109	107	108	107	109	109	111	113	114	116	115	115	113	113	111			
70	68.8	68.8	67.4	68.0	67.3	68.8	68.8	70.6	72.0	72.2	73.7	72.8	73.6	71.9	72.0	70.1			
75	40.3	39.3	39.9	40.3	39.9	40.8	40.8	42.0	42.8	42.3	44.1	43.6	44.1	43.1	43.1	42.0			
80	27.9	28.0	27.6	28.8	28.5	28.9	28.9	29.3	29.4	29.6	30.0	30.4	30.5	30.2	30.2	29.7			
85	16.1	15.9	16.1	17.2	16.9	17.4	17.5	18.0	18.0	17.9	19.1	19.9	20.1	19.6	19.6	18.8			
90	8.82	8.81	8.80	8.80	8.81	8.81	8.83	8.84	9.84	9.88	9.95	9.92	9.95	9.87	9.84	9.85			
95	8.44	8.44	8.44	8.44	8.45	8.45	8.46	8.46	9.73	9.75	9.74	9.75	9.74	9.74	9.73	9.74			
100	8.33	8.32	8.34	8.34	8.35	8.35	8.36	8.35	9.81	9.82	9.81	9.82	9.80	9.81	9.80	9.83			
105	8.43	8.42	8.45	8.44	8.46	8.45	8.46	8.44	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.1			
110	8.69	8.68	8.72	8.71	8.73	8.71	8.72	8.70	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4			
115	9.09	9.09	9.13	9.12	9.14	9.12	9.13	9.10	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.9			
120	9.62	9.61	9.66	9.65	9.68	9.66	9.66	9.62	11.3	11.3	11.3	11.3	11.3	11.4	11.4	11.4			
125	10.2	10.2	10.3	10.3	10.3	10.3	10.3	10.2	11.9	11.9	11.9	11.9	11.9	11.9	11.9	12.0			
130	10.9	10.9	10.9	10.9	11.0	10.9	10.9	10.9	12.5	12.5	12.5	12.5	12.5	12.6	12.5	12.6			
135	11.6	11.6	11.6	11.6	11.7	11.6	11.7	11.6	13.1	13.2	13.1	13.2	13.1	13.2	13.2	13.2			
140	12.3	12.3	12.4	12.4	12.4	12.4	12.4	12.3	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.9			
145	13.0	13.0	13.1	13.1	13.1	13.1	13.1	13.1	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.5			
150	13.8	13.8	13.9	13.8	13.9	13.8	13.9	13.8	15.0	15.0	15.0	15.0	15.0	15.1	15.1	15.1			
155	14.5	14.6	14.6	14.6	14.6	14.6	14.6	14.6	15.7	15.7	15.6	15.6	15.6	15.7	15.7	15.7			
160	15.3	15.3	15.4	15.4	15.4	15.4	15.4	15.4	16.2	16.2	16.2	16.2	16.2	16.2	16.3	16.3			
165	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.8	16.8	16.7	16.7	16.7	16.8	16.8	16.8			
170	16.7	16.7	16.8	16.8	16.8	16.8	16.8	16.8	17.2	17.2	17.1	17.2	17.2	17.2	17.2	17.2			
175	17.2	17.2	17.3	17.3	17.3	17.2	17.3	17.2	17.5	17.5	17.4	17.4	17.4	17.5	17.5	17.5			
180	17.6	17.6	17.5	17.5	17.5	17.6	17.6	17.6	17.5	17.6	17.5	17.5	17.5	17.6	17.6	17.6			

3. Product Photo



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