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): DLC0015(C6R12935UNVW)

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:

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	3500K

Note: The tests are conducted under the worst conditions.

1.2 Test Specifications:

Test item	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	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

1) Photometric and Light Distribution Measurement – Goniophotometer 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 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.

2) Chromaticity Measurement – Sphere-Spectroradiometer Method:

Chromaticity parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25ºC ±1ºC. 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.

3) Electrical Measurements:

Electrical parameters were measured using power meters incorporated in goniophotometer or sphere-spectroradiometer system. The ambient temperature surrounding the sample was maintained at 25ºC ±1ºC. 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.

2.1 Electrical, Photometric and Chromaticity Measurements

Test date	2019-10-08	**Test Ambient:**	25.6 ºC
Test Orientation	As intended	**Stabilization Time (min)**	90
Model Number	DLC0015(C6R12935UNVW)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
1909180028	120.0	60	0.084	10.00	0.996

Chromaticity Measurement - Sphere-Spectroradiometer Method:

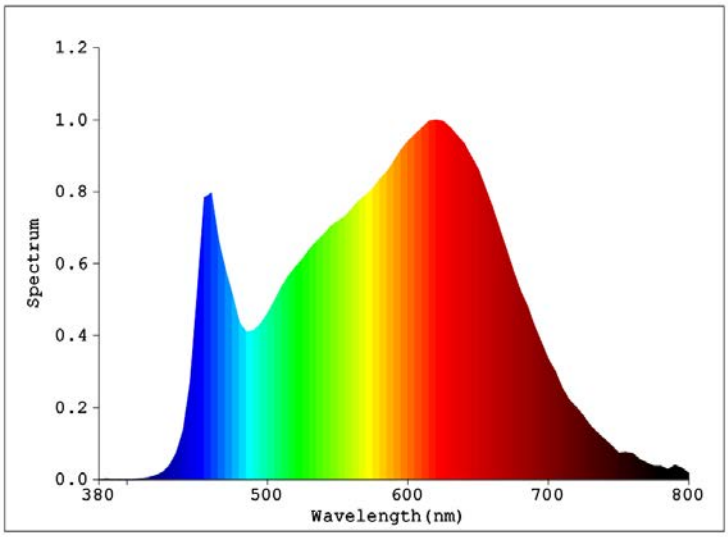
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
CCT (K)	3436
Duv	0.00128
Chromaticity (x, y)	x=0.4076 y=0.3889
Chromaticity (u', v')	u'=0.2379 v'=0.5108
Color Rendering Index (CRI)	94.2
R9	75

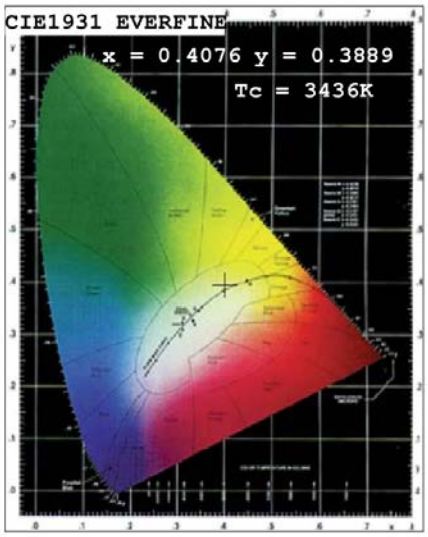
Special Color Rendering Indices			
R1	97	R9	75
R2	99	R10	100
R3	97	R11	94
R4	92	R12	76
R5	95	R13	99
R6	96	R14	99
R7	91	R15	94
R8	87	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	922.94
Luminous Efficacy (lm/W)	92.29
Beam Angle (°)	86.4
Center Beam Candle Power (cd)	415.2

Spectral Power Distribution & Chromaticity Diagram





Zonal Lumen Tabulation

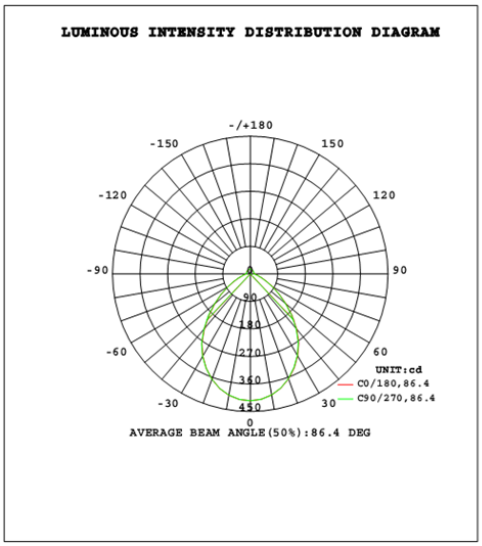
Zonal Lumen Summary

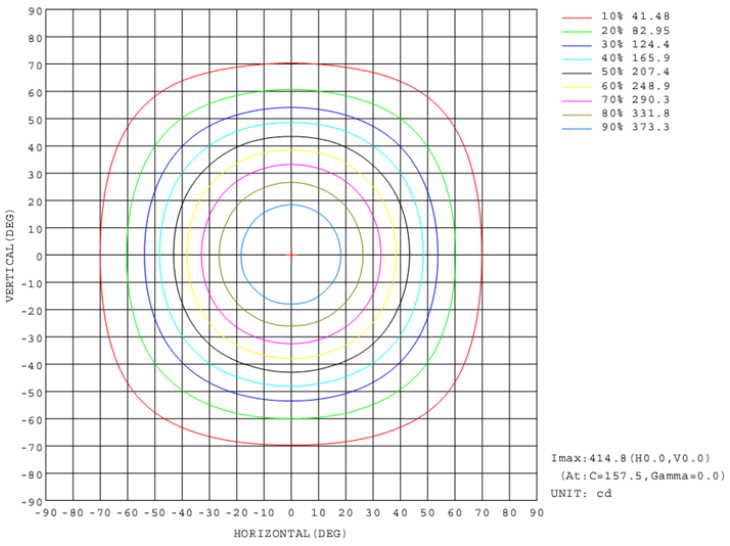
Zone	Lumens	% Luminaire
0-30	304.2	33.0%
0-40	475.6	51.5%
0-60	728.9	79.0%
60-90	111.3	12.1%
70-100	63.8	6.9%
90-120	38.5	4.2%
0-90	840.2	91.0%
90-180	82.8	9.0%
0-180	922.9	100.0%

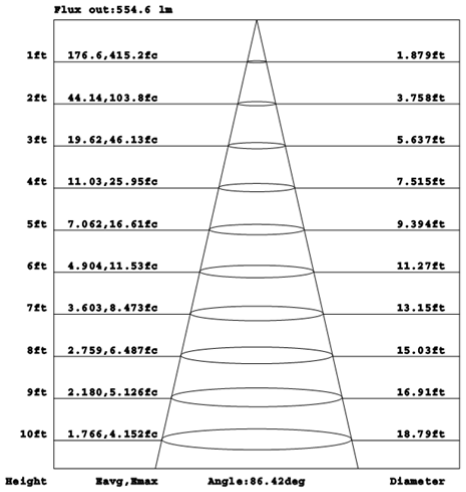
Lumens Per Zone

Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	39.0	4.2%	90-100	13.2	1.4%
10-20	108.9	11.8%	100-110	12.9	1.4%
20-30	156.3	16.9%	110-120	12.4	1.3%
30-40	171.4	18.6%	120-130	11.7	1.3%
40-50	148.8	16.1%	130-140	10.6	1.2%
50-60	104.5	11.3%	140-150	9.0	1.0%
60-70	60.7	6.6%	150-160	6.9	0.8%
70-80	32.1	3.5%	160-170	4.4	0.5%
80-90	18.6	2.0%	170-180	1.5	0.2%

Photometric Data







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

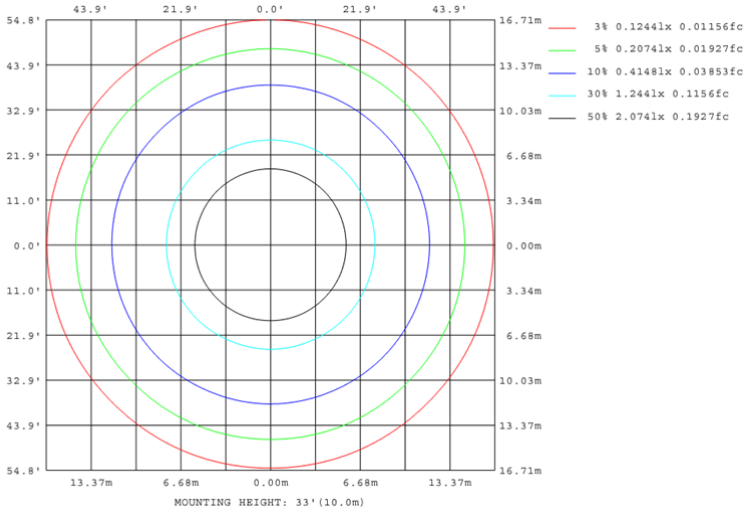
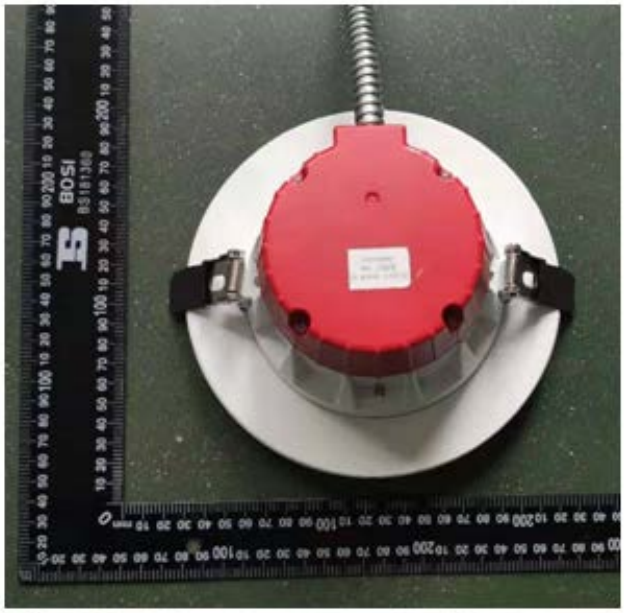


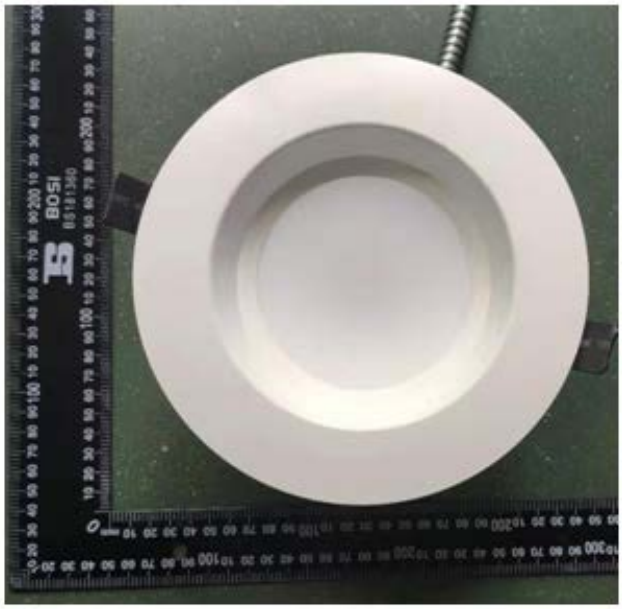
Table--1

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	415	415	415	415	415	415	415	415	415	415	415	415	415	415	415	415			
5	411	411	411	411	411	412	412	412	412	412	412	411	412	412	412	411			
10	402	402	402	402	402	403	403	404	403	402	403	402	402	402	402	402			
15	386	387	386	387	386	387	387	388	388	387	388	387	387	387	387	387			
20	365	366	365	365	364	366	366	367	367	366	367	366	367	366	366	365			
25	339	340	338	339	338	339	339	341	341	340	341	341	341	340	341	339			
30	309	310	308	309	308	309	309	311	310	310	312	311	312	310	311	310			
35	276	276	274	272	274	273	275	276	276	277	278	278	278	278	277	276			
40	236	233	234	231	233	231	235	234	234	237	235	238	236	238	234	236			
45	193	191	191	190	191	190	193	192	192	194	194	196	194	195	193	194			
50	153	151	151	150	151	150	152	152	152	154	154	155	154	155	153	153			
55	115	115	113	114	113	115	115	116	116	116	118	117	118	116	116	115			
60	83.8	84.1	82.9	83.5	82.8	83.9	83.8	85.2	85.1	84.9	86.3	85.7	86.3	85.3	85.4	84.0			
65	59.1	59.4	58.5	59.0	58.3	59.2	59.2	60.2	60.2	60.0	60.9	60.6	61.1	60.2	60.2	59.2			
70	40.9	41.1	40.5	40.8	40.4	40.9	40.9	41.7	41.7	41.5	42.1	41.9	42.3	41.7	41.7	41.0			
75	28.6	28.8	28.4	28.6	28.3	28.7	28.7	29.1	29.3	29.2	29.6	29.4	29.6	29.3	29.2	28.8			
80	22.0	22.1	21.9	22.0	21.8	22.0	22.0	22.2	22.5	22.4	22.5	22.4	22.5	22.4	22.4	22.2			
85	16.5	16.5	16.3	16.4	16.2	16.5	16.4	16.8	17.3	17.2	17.4	17.3	17.4	17.2	17.2	16.9			
90	11.9	11.9	12.0	11.9	11.9	11.9	11.9	11.9	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4			
95	11.8	11.8	11.8	11.7	11.7	11.7	11.7	11.7	12.4	12.4	12.4	12.4	12.4	12.4	12.3	12.3			
100	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4			
105	11.8	11.8	11.8	11.8	11.8	11.7	11.7	11.7	12.6	12.6	12.6	12.6	12.5	12.5	12.5	12.5			
110	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.8	12.8	12.8	12.7	12.7	12.7	12.7	12.7	12.7			
115	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.0	13.0	13.0	13.0	13.0	13.0	13.0	12.9	13.0			
120	12.4	12.4	12.4	12.4	12.4	12.3	12.3	12.3	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2			
125	12.7	12.7	12.7	12.7	12.7	12.6	12.6	12.6	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5			
130	13.0	13.0	13.0	13.0	13.0	13.0	13.0	12.9	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8			
135	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1			
140	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.6	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4			
145	14.0	14.0	14.1	14.0	14.0	14.0	14.0	14.0	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7			
150	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0			
155	14.8	14.7	14.8	14.8	14.8	14.8	14.7	14.7	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3			
160	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6			
165	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.9	15.9	15.8	15.8	15.8	15.8	15.8	15.8			
170	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	16.1	16.1	16.1	16.0	16.0	16.0	16.0	16.0			
175	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2			
180	16.3	16.3	16.2	16.2	16.2	16.2	16.2	16.2	16.3	16.3	16.3	16.2	16.2	16.2	16.2	16.2			

3. Product Photo





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