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): DLC0003(C6R12835UNVW)

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	1050 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	DLC0003(C6R12835UNVW)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
1909180016	120.0	60	0.087	10.40	0.997

Chromaticity Measurement - Sphere-Spectroradiometer Method:

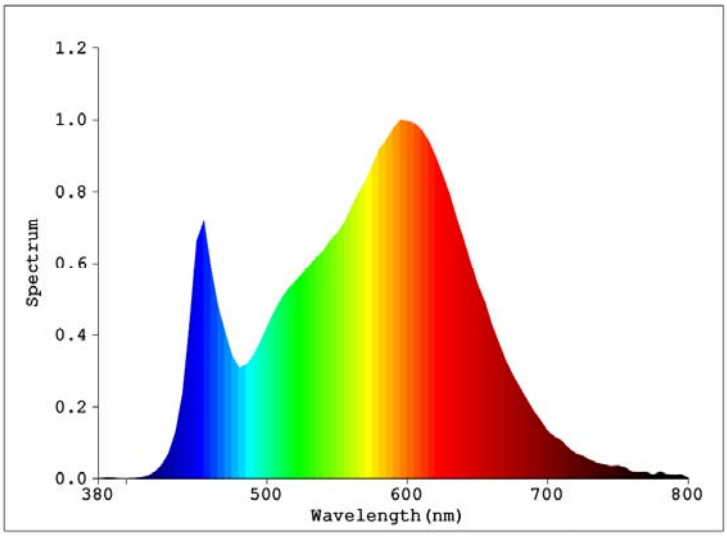
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
CCT (K)	3464
Duv	0.00072
Chromaticity (x, y)	x=0.4081 y=0.3936
Chromaticity (u', v')	u'=0.2363 v'=0.5129
Color Rendering Index (CRI)	84.1
R9	11

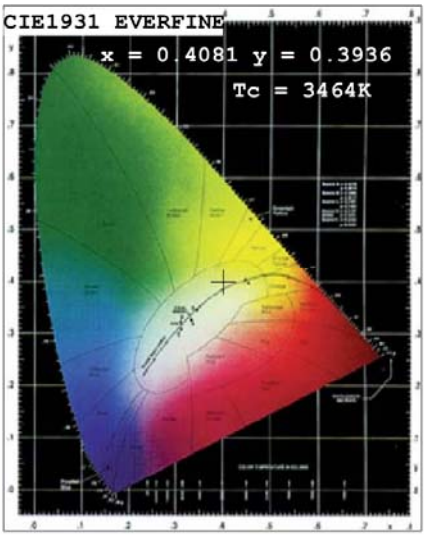
Special Color Rendering Indices			
R1	83	R9	11
R2	93	R10	83
R3	96	R11	81
R4	81	R12	69
R5	83	R13	86
R6	91	R14	98
R7	84	R15	76
R8	62	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1069.1
Luminous Efficacy (lm/W)	102.80
Beam Angle (°)	86.7
Center Beam Candle Power (cd)	516.5

Spectral Power Distribution & Chromaticity Diagram





Zonal Lumen Tabulation

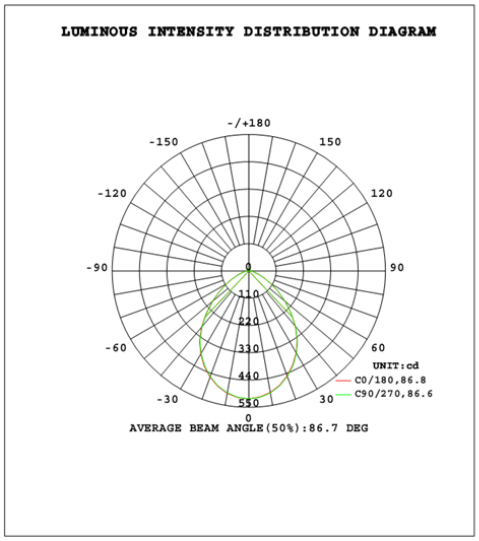
Zonal Lumen Summary

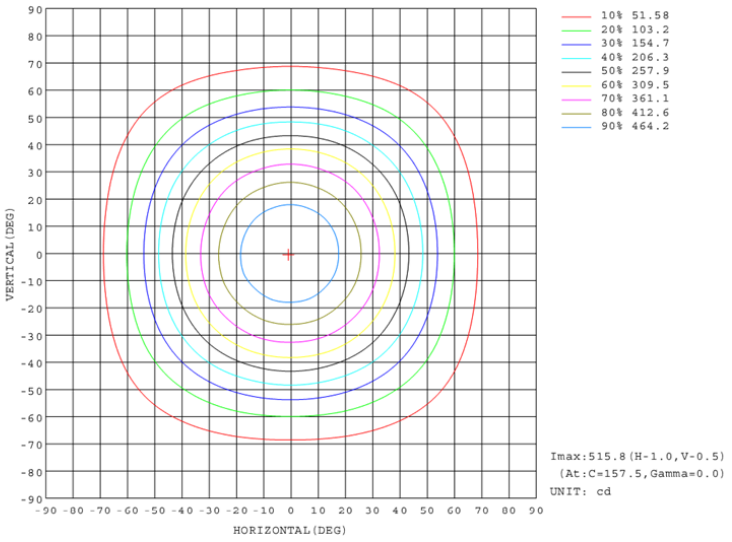
Zone	Lumens	% Luminaire
0-30	377.1	35.3%
0-40	590.3	55.2%
0-60	906.2	84.8%
60-90	116.3	10.9%
70-100	51.6	4.8%
90-120	19.6	1.8%
0-90	1022.5	95.6%
90-180	46.6	4.4%
0-180	1069.1	100.0%

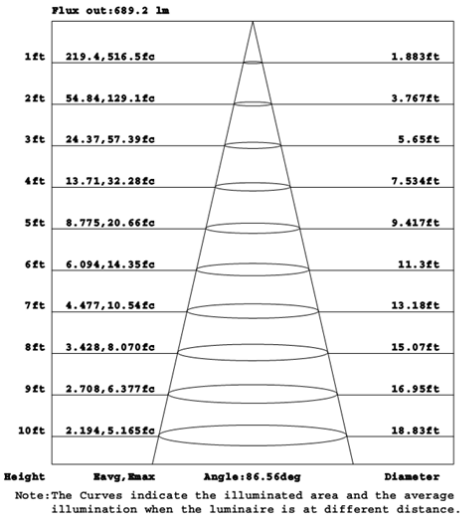
Lumens Per Zone

Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	48.5	4.5%	90-100	6.6	0.6%
10-20	135.1	12.6%	100-110	6.5	0.6%
20-30	193.6	18.1%	110-120	6.5	0.6%
30-40	213.2	19.9%	120-130	6.5	0.6%
40-50	186.0	17.4%	130-140	6.3	0.6%
50-60	129.9	12.2%	140-150	5.6	0.5%
60-70	71.3	6.7%	150-160	4.5	0.4%
70-80	31.6	3.0%	160-170	3.0	0.3%
80-90	13.5	1.3%	170-180	1.1	0.1%

Photometric Data







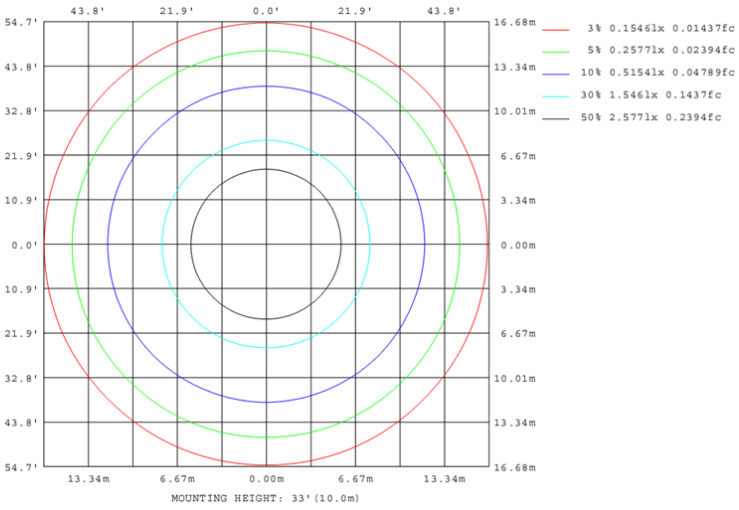
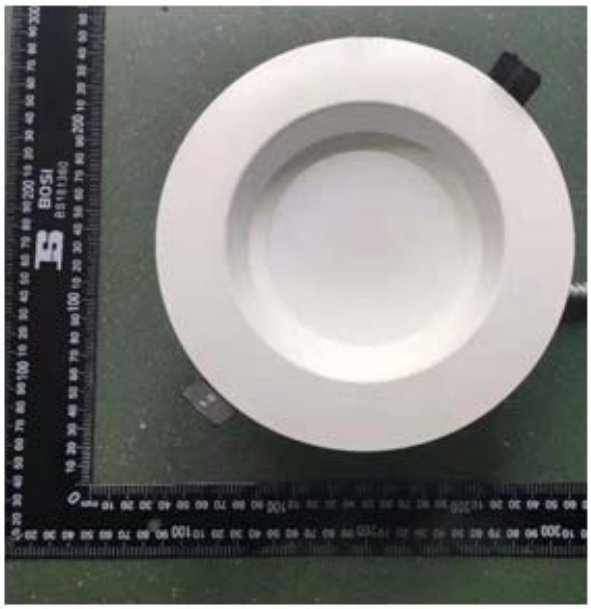


Table--1

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	515	515	515	515	515	516	516	517	515	515	515	515	515	516	516	517			
5	510	510	511	511	512	513	513	514	512	512	512	511	511	511	511	511			
10	498	498	498	499	500	501	501	503	501	500	500	499	499	499	499	498			
15	477	478	478	480	480	482	482	484	482	481	481	480	480	479	479	478			
20	450	452	451	453	453	455	456	458	456	455	455	454	453	452	452	451			
25	418	419	419	421	421	423	423	426	424	422	423	421	421	419	420	418			
30	381	382	382	384	383	386	386	389	387	385	386	384	384	382	383	381			
35	340	341	340	342	342	344	345	348	346	344	345	343	343	341	342	340			
40	291	292	291	292	292	294	295	297	296	296	295	294	293	292	292	291			
45	240	238	240	238	241	240	243	243	242	244	241	242	239	241	238	240			
50	190	189	190	189	191	190	193	193	192	193	191	192	189	190	188	190			
55	143	143	143	144	143	144	145	147	146	145	145	144	144	143	143	142			
60	102	103	102	103	103	104	104	106	105	104	104	103	103	102	103	102			
65	69.2	70.1	69.3	70.2	69.5	70.6	70.4	72.0	71.4	70.5	71.0	70.0	70.3	69.3	69.8	69.0			
70	44.2	44.8	44.3	44.9	44.4	45.2	45.0	46.0	45.6	45.0	45.5	44.8	45.1	44.4	44.8	44.1			
75	27.3	27.7	27.4	27.8	27.5	28.1	27.9	28.4	28.4	28.0	28.3	27.9	28.1	27.8	28.0	27.4			
80	18.6	18.7	18.6	18.8	18.8	19.0	18.9	19.1	19.2	19.1	19.2	19.1	19.2	19.1	19.1	18.9			
85	11.6	11.8	11.6	11.8	11.7	12.0	11.9	12.2	12.7	12.5	12.6	12.4	12.6	12.3	12.4	12.1			
90	5.81	5.81	5.80	5.80	5.81	5.82	5.83	5.85	6.44	6.44	6.44	6.44	6.43	6.43	6.43	6.44			
95	5.57	5.56	5.56	5.57	5.57	5.57	5.58	5.59	6.37	6.37	6.36	6.37	6.36	6.37	6.37	6.40			
100	5.51	5.51	5.51	5.50	5.51	5.50	5.51	5.52	6.42	6.43	6.42	6.43	6.42	6.43	6.44	6.46			
105	5.59	5.57	5.58	5.58	5.58	5.57	5.57	5.58	6.57	6.58	6.57	6.59	6.58	6.59	6.59	6.62			
110	5.76	5.75	5.76	5.75	5.76	5.75	5.75	5.74	6.80	6.82	6.81	6.83	6.81	6.84	6.84	6.87			
115	6.03	6.02	6.03	6.01	6.02	6.00	6.02	6.00	7.10	7.12	7.10	7.12	7.11	7.15	7.14	7.18			
120	6.36	6.35	6.37	6.35	6.36	6.34	6.36	6.34	7.44	7.45	7.44	7.46	7.45	7.48	7.49	7.52			
125	6.76	6.74	6.77	6.74	6.75	6.73	6.74	6.72	7.80	7.82	7.81	7.83	7.82	7.86	7.85	7.89			
130	7.18	7.17	7.19	7.16	7.18	7.15	7.16	7.14	8.18	8.20	8.19	8.21	8.20	8.23	8.23	8.27			
135	7.62	7.61	7.63	7.61	7.63	7.60	7.61	7.58	8.58	8.59	8.58	8.60	8.60	8.63	8.63	8.67			
140	8.08	8.07	8.09	8.07	8.09	8.07	8.07	8.05	8.96	8.98	8.97	8.99	8.98	9.02	9.02	9.06			
145	8.55	8.53	8.57	8.54	8.56	8.53	8.55	8.52	9.35	9.36	9.35	9.38	9.37	9.40	9.40	9.44			
150	9.01	9.01	9.03	9.01	9.04	9.00	9.01	8.99	9.75	9.76	9.74	9.77	9.75	9.79	9.79	9.82			
155	9.49	9.48	9.51	9.48	9.50	9.48	9.49	9.47	10.1	10.1	10.1	10.2	10.2	10.2	10.2	10.2			
160	9.96	9.95	9.97	9.96	9.97	9.95	9.97	9.95	10.5	10.5	10.5	10.5	10.5	10.6	10.6	10.6			
165	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9			
170	10.9	10.8	10.9	10.8	10.9	10.8	10.9	10.9	11.1	11.1	11.2	11.2	11.2	11.2	11.2	11.2			
175	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.4			
180	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4			

3. Product Photo



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