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): DLC0016(C6R12940UNVW)

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	4000K

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	DLC0016(C6R12940UNVW)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
1909180029	120.0	60	0.086	10.30	0.995

Chromaticity Measurement - Sphere-Spectroradiometer Method:

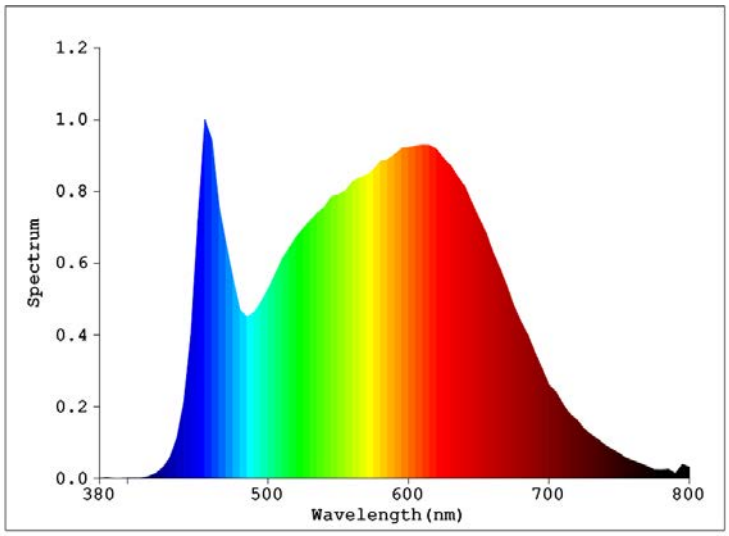
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
CCT (K)	3958
Duv	0.00189
Chromaticity (x, y)	x=0.3837 y=0.3828
Chromaticity (u', v')	u'=0.2248 v'=0.5047
Color Rendering Index (CRI)	91.6
R9	59

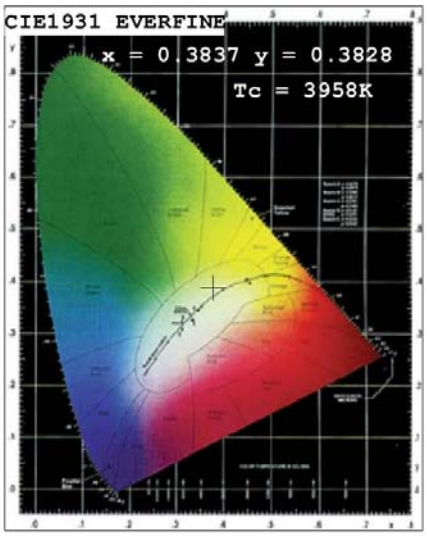
Special Color Rendering Indices			
R1	92	R9	59
R2	97	R10	92
R3	98	R11	88
R4	88	R12	68
R5	90	R13	94
R6	94	R14	99
R7	91	R15	89
R8	82	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1015.1
Luminous Efficacy (lm/W)	98.55
Beam Angle (°)	85.4
Center Beam Candle Power (cd)	500.3

Spectral Power Distribution & Chromaticity Diagram





Zonal Lumen Tabulation

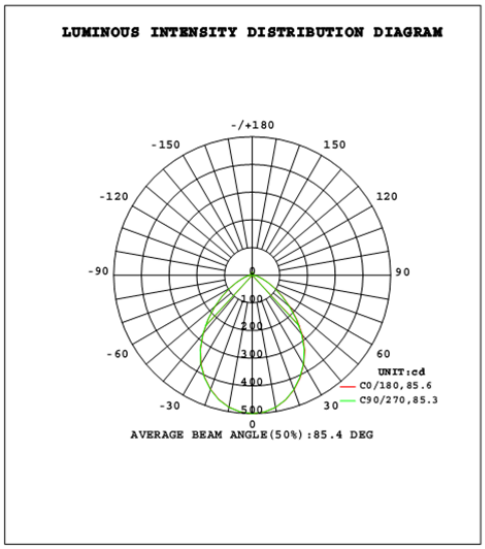
Zonal Lumen Summary

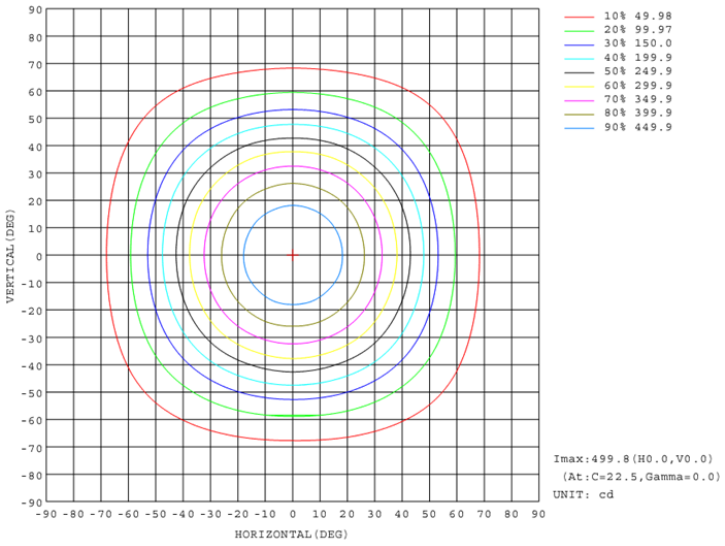
Zone	Lumens	% Luminaire
0-30	365.5	36.0%
0-40	569.6	56.1%
0-60	864.0	85.1%
60-90	106.9	10.5%
70-100	48.0	4.7%
90-120	18.3	1.8%
0-90	970.9	95.6%
90-180	44.2	4.4%
0-180	1015.1	100.0%

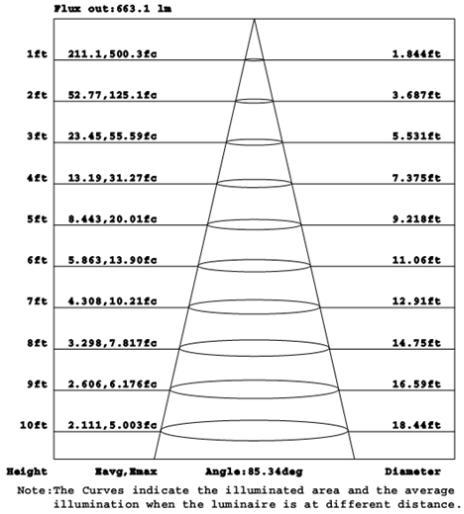
Lumens Per Zone

Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	47.0	4.6%	90-100	6.1	0.6%
10-20	131.0	12.9%	100-110	6.0	0.6%
20-30	187.5	18.5%	110-120	6.1	0.6%
30-40	204.1	20.1%	120-130	6.2	0.6%
40-50	175.0	17.2%	130-140	6.0	0.6%
50-60	119.4	11.8%	140-150	5.4	0.5%
60-70	65.0	6.4%	150-160	4.4	0.4%
70-80	29.4	2.9%	160-170	2.9	0.3%
80-90	12.5	1.2%	170-180	1.0	0.1%

Photometric Data







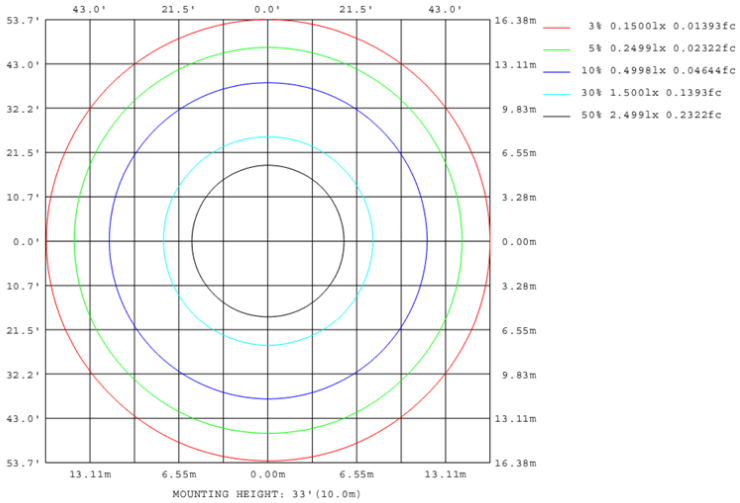
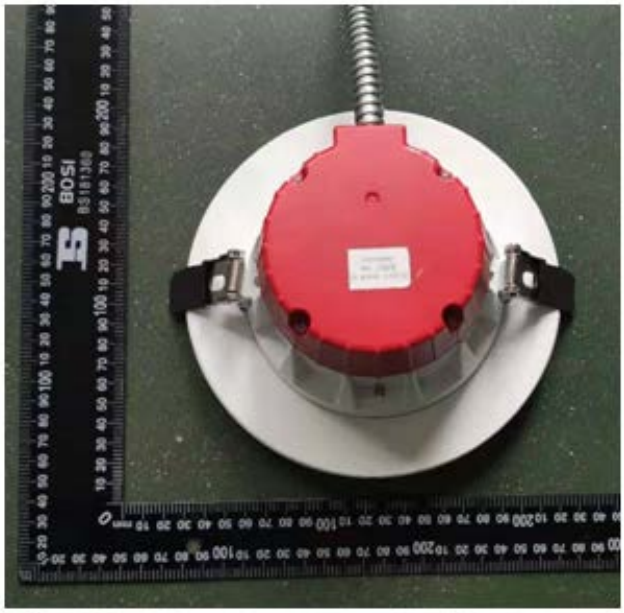


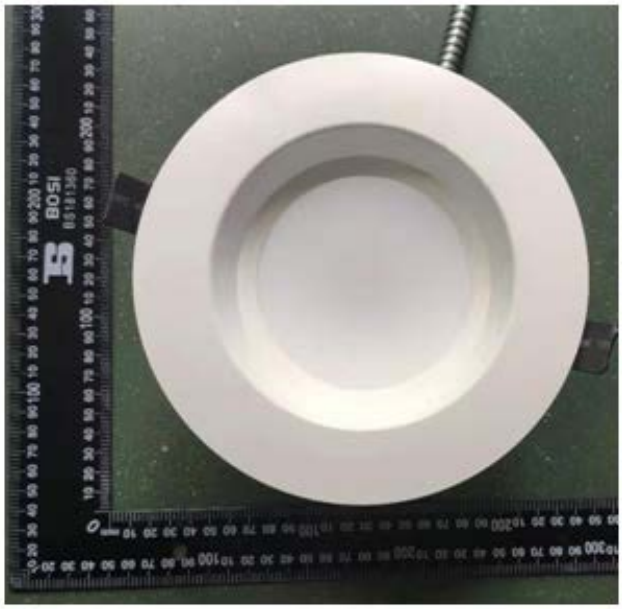
Table--1

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	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500			
5	496	497	496	497	496	496	496	496	496	495	496	496	496	496	496	496			
10	485	485	485	485	485	485	484	484	484	484	484	484	485	484	485	485			
15	466	467	466	467	466	467	465	466	465	465	465	465	466	466	467	466			
20	441	442	440	441	440	440	439	440	439	438	439	439	440	440	441	441			
25	409	409	408	408	407	408	407	408	407	406	408	407	408	408	409	408			
30	372	373	371	372	370	371	370	371	370	370	371	370	372	371	373	372			
35	331	328	329	327	328	326	328	326	326	329	327	329	327	330	328	331			
40	281	278	279	276	278	275	277	276	276	279	277	280	277	280	278	282			
45	229	227	227	225	226	224	225	224	225	228	226	228	226	229	227	230			
50	179	178	177	175	175	174	175	175	176	178	177	178	178	179	178	179			
55	133	133	131	131	129	130	129	131	132	132	133	132	134	133	134	133			
60	95.3	95.5	93.6	93.5	91.8	92.2	91.5	93.0	93.8	93.9	95.1	94.5	95.5	94.8	95.9	95.4			
65	64.7	65.0	63.5	63.4	62.0	62.3	61.7	62.8	63.4	63.4	64.4	64.0	64.8	64.3	65.1	64.7			
70	42.0	42.2	41.2	41.2	40.2	40.4	39.9	40.5	41.0	40.9	41.7	41.4	42.1	41.7	42.3	42.1			
75	26.4	26.4	26.0	26.1	25.4	25.5	25.3	25.6	26.0	26.0	26.5	26.4	26.8	26.6	27.0	26.8			
80	17.5	17.6	17.5	17.8	17.6	17.7	17.5	17.6	17.7	17.7	18.2	18.3	18.5	18.4	18.5	18.2			
85	10.3	10.3	10.5	11.1	10.8	10.9	10.7	10.7	10.7	10.6	11.3	11.7	12.0	11.9	12.1	11.7			
90	5.42	5.40	5.39	5.39	5.37	5.37	5.38	5.39	6.05	6.05	6.05	6.06	6.05	6.05	6.08	6.06			
95	5.17	5.17	5.16	5.16	5.14	5.15	5.15	5.16	5.98	5.99	5.98	5.98	5.98	5.98	5.98	5.99			
100	5.10	5.10	5.10	5.09	5.09	5.09	5.10	5.10	6.05	6.05	6.04	6.05	6.03	6.04	6.04	6.05			
105	5.17	5.16	5.17	5.17	5.16	5.17	5.18	5.17	6.20	6.21	6.19	6.20	6.17	6.19	6.19	6.20			
110	5.34	5.33	5.35	5.34	5.35	5.34	5.36	5.35	6.44	6.45	6.43	6.43	6.41	6.43	6.42	6.44			
115	5.60	5.60	5.61	5.61	5.61	5.61	5.63	5.62	6.74	6.75	6.72	6.73	6.71	6.73	6.71	6.73			
120	5.95	5.94	5.96	5.95	5.96	5.95	5.97	5.97	7.08	7.09	7.06	7.07	7.06	7.07	7.05	7.08			
125	6.35	6.33	6.36	6.34	6.37	6.36	6.38	6.37	7.46	7.47	7.45	7.45	7.43	7.45	7.44	7.46			
130	6.77	6.76	6.78	6.78	6.80	6.79	6.82	6.81	7.85	7.86	7.84	7.85	7.82	7.85	7.84	7.86			
135	7.22	7.21	7.24	7.24	7.26	7.25	7.27	7.26	8.27	8.28	8.24	8.26	8.24	8.25	8.24	8.27			
140	7.68	7.67	7.71	7.70	7.72	7.70	7.73	7.72	8.67	8.69	8.65	8.67	8.65	8.66	8.65	8.67			
145	8.15	8.14	8.18	8.16	8.19	8.18	8.20	8.19	9.07	9.08	9.05	9.06	9.04	9.05	9.05	9.07			
150	8.62	8.62	8.65	8.65	8.67	8.66	8.68	8.67	9.47	9.47	9.44	9.45	9.43	9.44	9.43	9.47			
155	9.12	9.12	9.15	9.14	9.16	9.14	9.17	9.15	9.87	9.86	9.83	9.84	9.82	9.84	9.83	9.85			
160	9.62	9.62	9.64	9.63	9.65	9.64	9.66	9.65	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2			
165	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.6	10.6	10.5	10.5	10.5	10.5	10.5	10.5			
170	10.5	10.5	10.5	10.5	10.5	10.5	10.6	10.5	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8			
175	10.9	10.9	10.9	10.9	10.9	10.8	10.9	10.9	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0			
180	11.1	11.1	11.0	11.0	11.0	11.0	11.0	11.0	11.1	11.1	11.1	11.0	11.0	11.0	11.0	11.0			

3. Product Photo





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