

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): DLC0008(C8R24830UNVW)

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	24W
Rated Initial Lamp Lumen	2300 lm
Declared CCT	3000K

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	DLC0008(C8R24830UNVW)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
1909180021	120.0	60	0.181	21.60	0.994

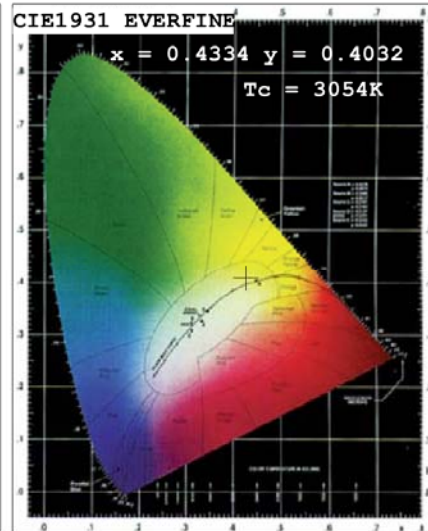
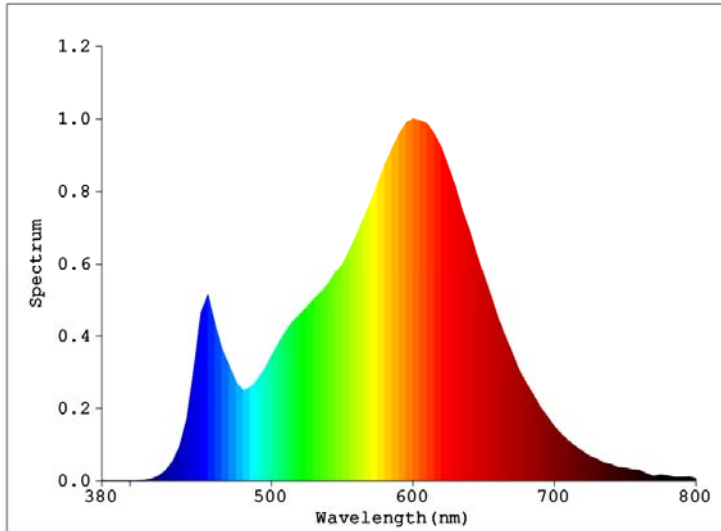
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	82	R9	7
Frequency (Hz)	60	R2	93	R10	84
CCT (K)	3054	R3	94	R11	80
Duv	0.00016	R4	80	R12	73
Chromaticity (x, y)	x=0.4334 y=0.4032	R5	82	R13	85
Chromaticity (u', v')	u'=0.2486 v'=0.5205	R6	92	R14	97
Color Rendering Index (CRI)	82.9	R7	82	R15	74
R9	7	R8	58	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	2336.5
Luminous Efficacy (lm/W)	108.17
Beam Angle (°)	89.8
Center Beam Candle Power (cd)	1118.0

Spectral Power Distribution & Chromaticity Diagram



Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	825.5	35.3%
0-40	1309.8	56.1%
0-60	2004.0	85.8%
60-90	230.9	9.9%
70-100	113.6	4.9%
90-120	42.6	1.8%
0-90	2234.9	95.6%
90-180	101.7	4.4%
0-180	2336.5	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	104.6	4.5%	90-100	14.2	0.6%
10-20	293.6	12.6%	100-110	14.1	0.6%
20-30	427.3	18.3%	110-120	14.3	0.6%
30-40	484.4	20.7%	120-130	14.3	0.6%
40-50	424.7	18.2%	130-140	13.7	0.6%
50-60	269.5	11.5%	140-150	12.3	0.5%
60-70	131.5	5.6%	150-160	9.9	0.4%
70-80	68.7	2.9%	160-170	6.6	0.3%
80-90	30.7	1.3%	170-180	2.4	0.1%

Photometric Data

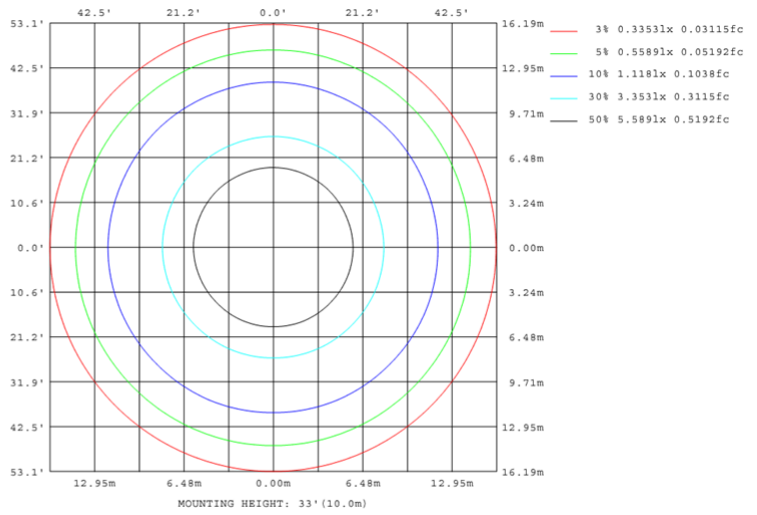
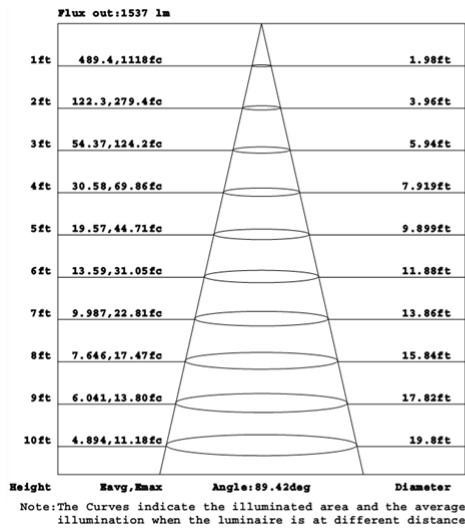
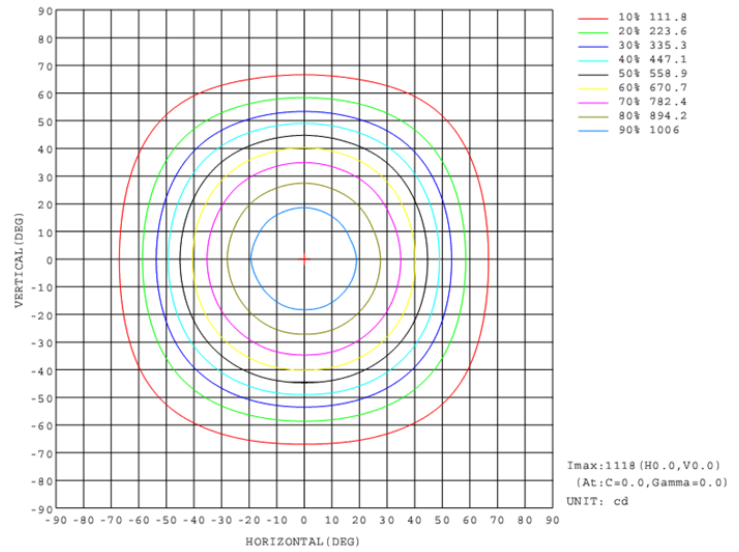
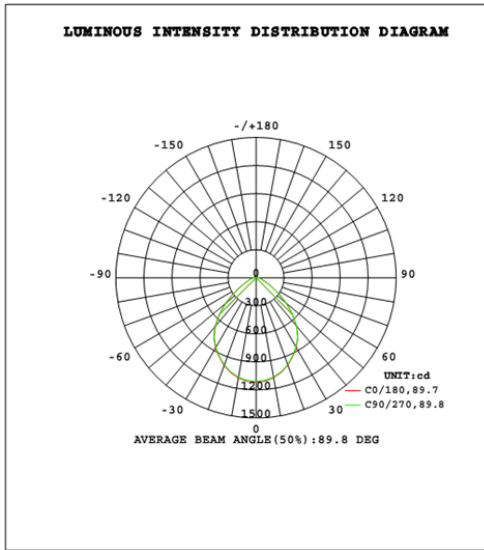
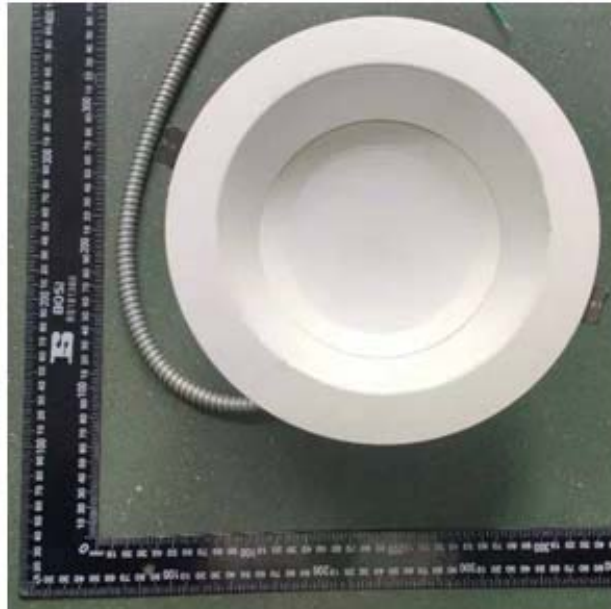
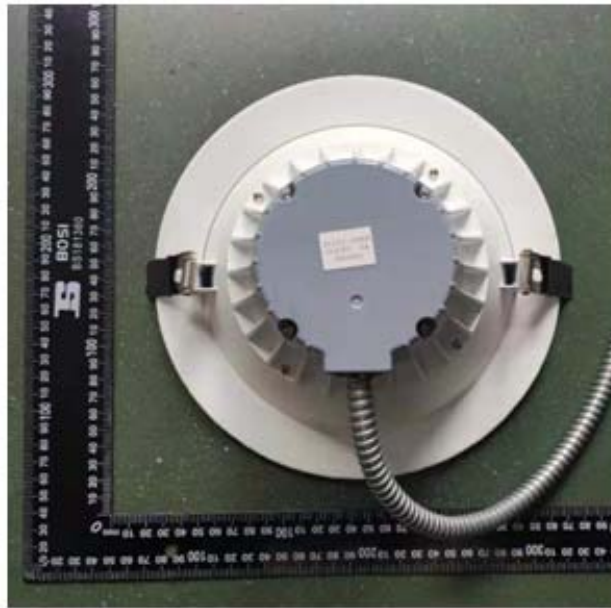


Table--1

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	1118	1113	1113	1111	1109	1109	1107	1107	1118	1113	1113	1111	1109	1109	1107	1107				
5	1109	1106	1105	1103	1101	1101	1100	1100	1110	1107	1106	1103	1103	1101	1100	1099				
10	1086	1084	1081	1081	1078	1078	1076	1078	1088	1084	1083	1081	1080	1078	1078	1076				
15	1047	1045	1044	1043	1040	1041	1039	1042	1051	1046	1046	1043	1042	1041	1040	1037				
20	995	994	990	991	989	990	988	991	1000	994	995	991	992	989	988	986				
25	930	930	927	928	925	926	925	928	935	930	932	927	928	925	926	921				
30	861	860	856	858	855	857	855	858	866	861	862	858	859	855	855	852				
35	782	782	780	781	778	780	778	782	788	783	784	780	781	777	778	774				
40	676	678	675	678	674	678	676	680	685	678	680	675	676	672	673	669				
45	551	555	552	555	552	556	553	557	560	553	555	550	552	547	549	544				
50	420	425	423	426	423	427	424	428	430	423	425	419	422	417	420	415				
55	295	297	298	299	299	300	299	300	301	297	296	293	293	292	291	291				
60	193	193	195	195	196	195	196	196	195	193	192	190	189	189	189	190				
65	126	128	128	129	128	129	128	129	128	126	126	124	125	123	125	124				
70	85.4	86.8	86.3	87.5	86.6	87.7	86.9	87.8	87.4	85.6	85.8	84.3	84.7	83.7	84.6	83.7				
75	64.2	64.9	64.6	65.1	64.8	65.3	65.0	65.4	65.6	64.7	64.7	63.9	63.9	63.4	63.7	63.3				
80	44.4	45.3	44.9	45.7	45.1	45.8	45.2	45.9	46.8	45.7	46.0	45.0	45.3	44.7	45.1	44.7				
85	25.8	26.5	26.3	26.9	26.5	27.0	26.5	27.1	28.5	27.6	27.8	27.1	27.4	26.9	27.3	26.8				
90	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	14.1	14.0	14.0	13.9	13.9	13.9	13.9	13.9				
95	12.1	12.0	12.0	12.0	12.0	12.0	12.0	12.0	13.9	13.9	13.8	13.8	13.8	13.8	13.8	13.8				
100	12.0	12.0	12.0	11.9	11.9	11.9	11.9	11.9	14.1	14.0	14.0	14.0	13.9	14.0	14.0	14.0				
105	12.2	12.2	12.2	12.2	12.2	12.1	12.1	12.1	14.5	14.4	14.4	14.3	14.3	14.3	14.3	14.3				
110	12.6	12.6	12.6	12.6	12.6	12.5	12.6	12.5	15.0	14.9	14.9	14.9	14.8	14.9	14.9	14.9				
115	13.2	13.2	13.2	13.2	13.2	13.1	13.1	13.1	15.6	15.6	15.6	15.5	15.5	15.5	15.5	15.6				
120	14.0	13.9	13.9	13.9	13.9	13.9	13.9	13.8	16.4	16.3	16.3	16.3	16.2	16.3	16.2	16.3				
125	14.9	14.8	14.8	14.8	14.8	14.8	14.8	14.7	17.2	17.2	17.1	17.1	17.1	17.1	17.1	17.1				
130	15.8	15.7	15.7	15.7	15.7	15.7	15.7	15.6	18.0	18.0	17.9	17.9	17.9	17.9	17.9	18.0				
135	16.7	16.7	16.7	16.7	16.7	16.6	16.6	16.6	18.9	18.8	18.8	18.8	18.7	18.8	18.8	18.8				
140	17.7	17.6	17.7	17.6	17.6	17.6	17.6	17.5	19.7	19.6	19.6	19.6	19.6	19.6	19.6	19.6				
145	18.7	18.6	18.7	18.6	18.6	18.6	18.6	18.5	20.5	20.4	20.4	20.4	20.4	20.4	20.4	20.4				
150	19.7	19.7	19.7	19.7	19.6	19.6	19.6	19.5	21.3	21.3	21.3	21.3	21.2	21.2	21.2	21.3				
155	20.8	20.7	20.7	20.7	20.7	20.6	20.7	20.6	22.2	22.2	22.2	22.2	22.1	22.1	22.1	22.2				
160	21.8	21.8	21.8	21.7	21.7	21.7	21.7	21.7	23.2	23.1	23.1	23.1	23.1	23.1	23.0	23.1				
165	22.9	22.9	22.9	22.8	22.8	22.8	22.8	22.8	24.0	24.0	23.9	23.9	23.9	23.9	23.9	23.9				
170	24.0	23.9	23.9	23.8	23.8	23.8	23.8	23.8	24.7	24.7	24.6	24.6	24.6	24.6	24.6	24.6				
175	24.8	24.7	24.7	24.7	24.6	24.6	24.6	24.6	25.2	25.1	25.1	25.0	25.0	25.0	25.0	25.0				
180	25.2	25.2	25.2	25.2	25.1	25.1	25.1	25.1	25.3	25.2	25.2	25.1	25.1	25.1	25.1	25.1				

3. Product Photo



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