

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): DLC0011(C8R33830UNVW)

Report Type: Testing and Report According to IES LM-79-2008

**Type of
Luminaire:** Downlights

Report Date: 2019-10-10

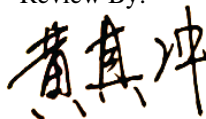
Prepared By:

Test & Report By:



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Review By:



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1.1 Rated Values:	
Rated Voltage / Frequency	120V-277Vac, 50/60 Hz
Nominal Power	33W
Rated Initial Lamp Lumen	3500 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

1) Photometric and Light Distribution Measurement – Goniophotometer Method:

Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, 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 $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$. 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.

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 $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$. 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.

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	DLC0011(C8R33830UNVW)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
1909180024	120.0	60	0.267	31.90	0.995

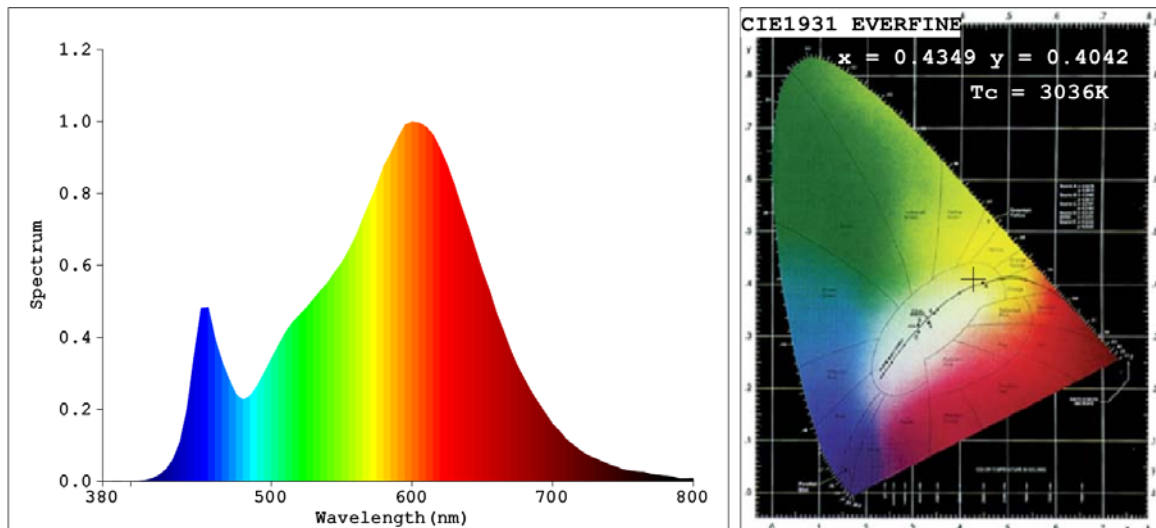
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	82	R9	9
Frequency (Hz)	60	R2	92	R10	82
CCT (K)	3036	R3	96	R11	80
Duv	0.00033	R4	81	R12	73
Chromaticity (x, y)	x=0.4349 y=0.4042	R5	82	R13	84
Chromaticity (u', v')	u'=0.2492 v'=0.5211	R6	91	R14	98
Color Rendering Index (CRI)	83.1	R7	83	R15	74
R9	9	R8	59	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	3529.9
Luminous Efficacy (lm/W)	110.66
Beam Angle (°)	94.2
Center Beam Candle Power (cd)	1532.0

Spectral Power Distribution & Chromaticity Diagram



Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	1136.9	32.2%
0-40	1803.3	51.1%
0-60	2924.8	82.9%
60-90	452.4	12.8%
70-100	183.4	5.2%
90-120	66.0	1.9%
0-90	3377.1	95.7%
90-180	152.8	4.3%
0-180	3529.9	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	144.0	4.1%	90-100	22.4	0.6%
10-20	404.5	11.5%	100-110	21.9	0.6%
20-30	588.3	16.7%	110-120	21.7	0.6%
30-40	666.4	18.9%	120-130	21.3	0.6%
40-50	632.3	17.9%	130-140	20.1	0.6%
50-60	489.2	13.9%	140-150	17.9	0.5%
60-70	291.5	8.3%	150-160	14.4	0.4%
70-80	117.6	3.3%	160-170	9.5	0.3%
80-90	43.3	1.2%	170-180	3.4	0.1%

Photometric Data

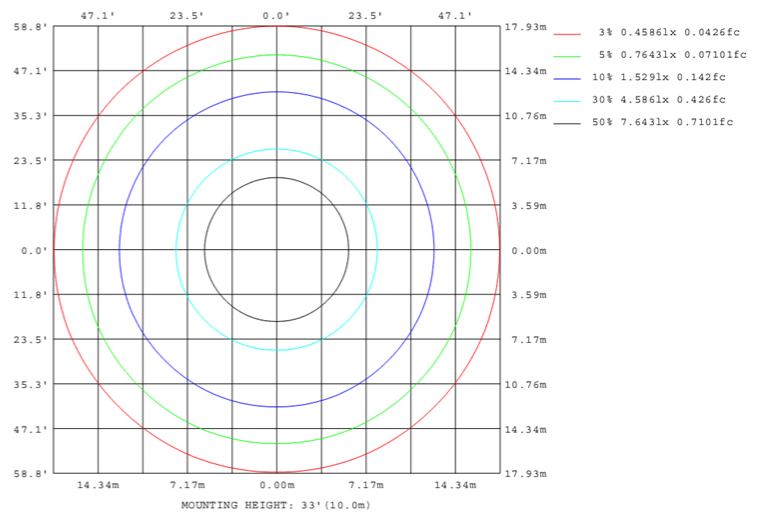
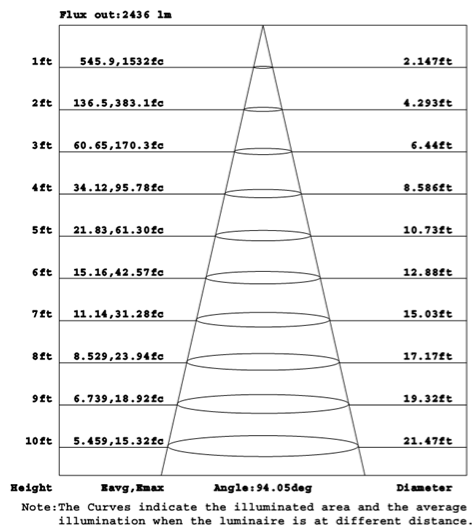
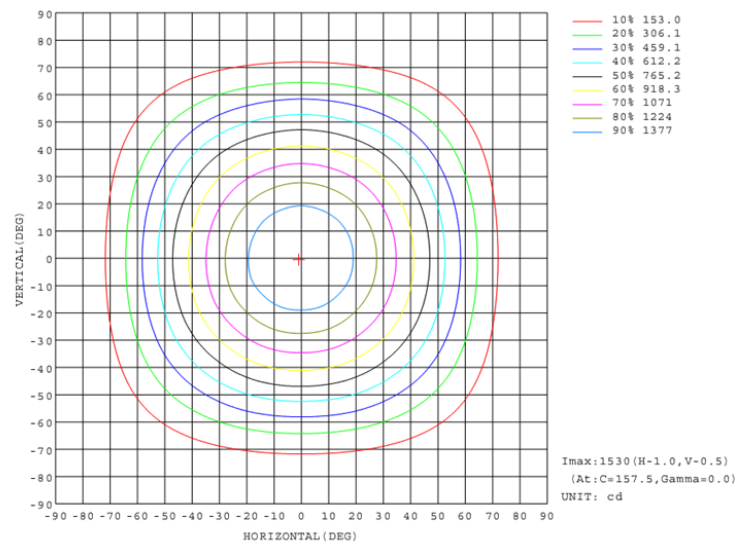
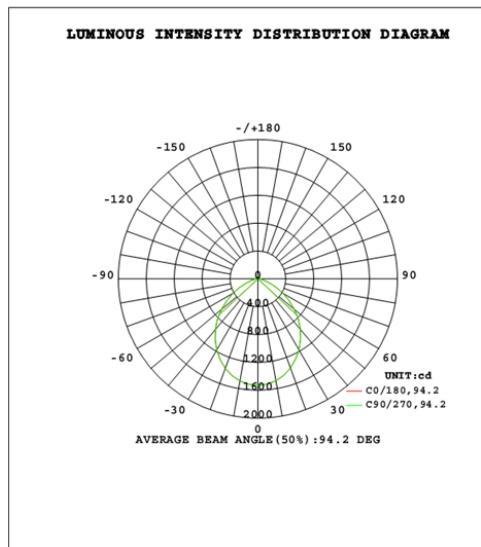
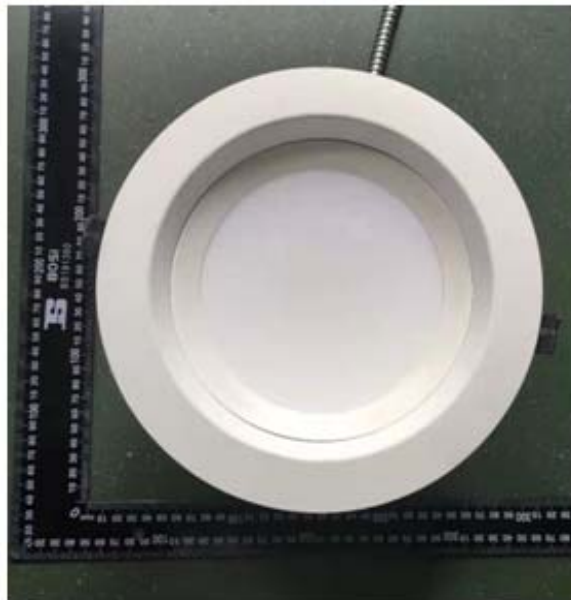


Table--1

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	1529	1528	1528	1528	1529	1530	1531	1532	1529	1528	1528	1528	1529	1530	1531	1532			
5	1517	1517	1516	1517	1518	1520	1521	1525	1519	1519	1519	1519	1519	1519	1521	1522			
10	1485	1486	1484	1486	1486	1489	1491	1495	1489	1489	1489	1488	1489	1488	1489	1488			
15	1433	1435	1432	1435	1434	1438	1440	1445	1439	1437	1439	1437	1437	1435	1437	1435			
20	1362	1364	1361	1364	1363	1368	1369	1375	1369	1367	1369	1366	1367	1364	1366	1365			
25	1276	1278	1274	1277	1276	1281	1282	1288	1282	1279	1282	1278	1280	1276	1279	1276			
30	1175	1178	1173	1177	1175	1180	1181	1188	1182	1178	1180	1176	1178	1174	1177	1175			
35	1064	1066	1062	1066	1063	1069	1069	1077	1069	1065	1068	1063	1065	1062	1065	1063			
40	947	949	945	948	946	951	951	958	951	946	948	944	947	942	946	945			
45	821	824	820	823	819	826	824	832	824	820	825	820	823	820	823	819			
50	682	685	680	684	680	686	684	691	684	681	685	682	686	683	686	681			
55	545	548	542	546	542	547	545	552	546	542	547	544	549	545	548	543			
60	414	416	411	414	410	415	412	419	413	410	415	413	417	414	417	412			
65	292	292	290	290	288	290	290	293	289	289	291	291	293	292	293	291			
70	185	185	184	182	182	182	182	184	181	181	182	184	185	185	186	184			
75	103	105	102	103	101	102	101	103	102	101	103	102	105	103	105	103			
80	57.3	58.0	56.5	56.9	55.4	56.4	55.8	57.3	57.1	56.8	58.2	57.7	58.8	58.2	59.1	57.8			
85	40.0	40.2	39.1	39.3	38.5	39.0	38.7	39.8	40.8	40.6	41.4	41.3	41.9	41.4	41.9	41.1			
90	20.2	20.2	20.2	20.1	20.1	20.1	20.2	20.2	21.8	21.8	21.8	21.8	21.9	21.8	21.9	21.9			
95	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.4	21.6	21.6	21.6	21.6	21.6	21.6	21.6	21.6			
100	19.0	18.9	19.0	18.9	19.0	19.0	19.0	19.0	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.8			
105	19.0	19.0	19.0	19.0	19.1	19.0	19.1	19.1	22.1	22.1	22.1	22.1	22.1	22.1	22.1	22.2			
110	19.4	19.4	19.4	19.4	19.5	19.5	19.5	19.5	22.8	22.8	22.7	22.8	22.7	22.8	22.8	22.9			
115	20.1	20.1	20.1	20.1	20.1	20.1	20.2	20.2	23.6	23.6	23.5	23.6	23.5	23.6	23.6	23.7			
120	21.0	21.0	21.0	21.0	21.1	21.0	21.1	21.1	24.5	24.5	24.4	24.4	24.4	24.5	24.5	24.6			
125	22.1	22.0	22.1	22.0	22.1	22.1	22.2	22.1	25.4	25.4	25.4	25.4	25.4	25.5	25.4	25.6			
130	23.2	23.2	23.2	23.2	23.3	23.2	23.3	23.3	26.4	26.4	26.4	26.4	26.4	26.5	26.5	26.6			
135	24.5	24.4	24.5	24.4	24.5	24.5	24.5	24.5	27.5	27.5	27.5	27.5	27.5	27.6	27.6	27.7			
140	25.8	25.8	25.8	25.8	25.9	25.8	25.9	25.9	28.7	28.7	28.6	28.7	28.6	28.7	28.7	28.8			
145	27.2	27.2	27.2	27.2	27.3	27.3	27.4	27.3	29.8	29.9	29.8	29.9	29.8	29.9	29.9	30.0			
150	28.7	28.7	28.7	28.7	28.8	28.7	28.9	28.8	31.1	31.1	31.0	31.1	31.0	31.1	31.1	31.3			
155	30.2	30.1	30.2	30.2	30.3	30.2	30.3	30.3	32.3	32.3	32.3	32.3	32.2	32.4	32.3	32.5			
160	31.7	31.6	31.7	31.6	31.7	31.7	31.8	31.7	33.4	33.5	33.4	33.4	33.4	33.5	33.5	33.6			
165	33.1	33.0	33.1	33.1	33.2	33.1	33.2	33.2	34.5	34.4	34.4	34.4	34.4	34.5	34.5	34.6			
170	34.4	34.3	34.4	34.3	34.4	34.3	34.5	34.5	35.3	35.2	35.2	35.2	35.2	35.3	35.3	35.4			
175	35.4	35.3	35.3	35.3	35.4	35.3	35.5	35.5	35.8	35.7	35.7	35.7	35.7	35.8	35.8	35.9			
180	35.9	35.9	35.9	35.9	35.9	35.9	36.0	36.0	35.9	35.9	35.9	35.9	35.9	35.9	36.0	36.1			

3. Product Photo



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