

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): DLR0067(R6R14940120WS)

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

**Type of
Luminaire:** Downlights

Report Date: 2019-09-30

Prepared By:

Test & Report By:



Engineer: Sun Fangfang

Review By:



Manager: Huang Qichong

1.1 Rated Values:	
Rated Voltage / Frequency	120Vac, 50/60 Hz
Nominal Power	14.0W
Rated Initial Lamp Lumen	1200 lm
Declared CCT	4000K

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	2019-09-28	Test Ambient:	25.5 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	DLR0067(R6R14940120WS)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
19082510051	120.0	60	0.1170	13.80	0.981

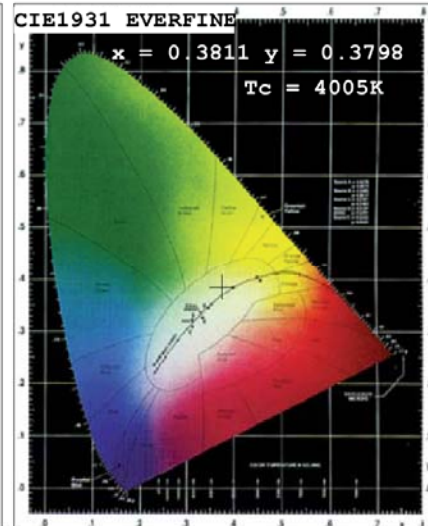
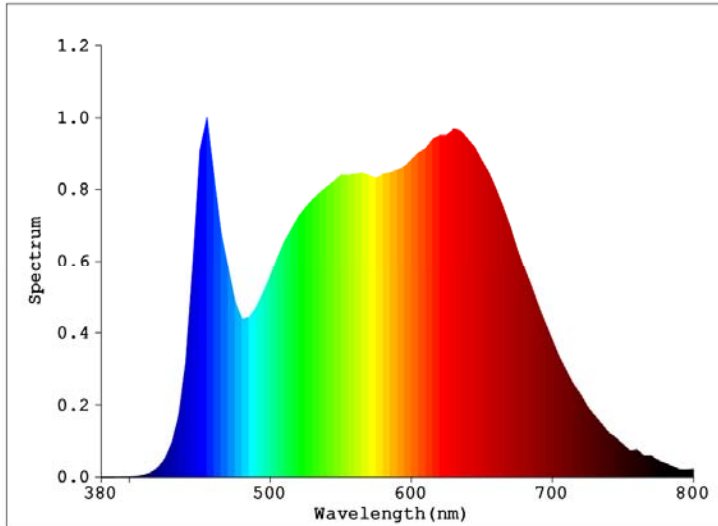
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	97	R9	88
Frequency (Hz)	60	R2	98	R10	93
CCT (K)	4005	R3	96	R11	95
Duv	0.00123	R4	95	R12	72
Chromaticity (x, y)	x=0.3811 y=0.3798	R5	95	R13	97
Chromaticity (u', v')	u'=0.2243 v'=0.5030	R6	95	R14	97
Color Rendering Index (CRI)	96.0	R7	97	R15	96
R9	88	R8	95	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1279.4
Luminous Efficacy (lm/W)	92.71
Beam Angle (°)	99.2
Center Beam Candle Power (cd)	527.3

Spectral Power Distribution & Chromaticity Diagram

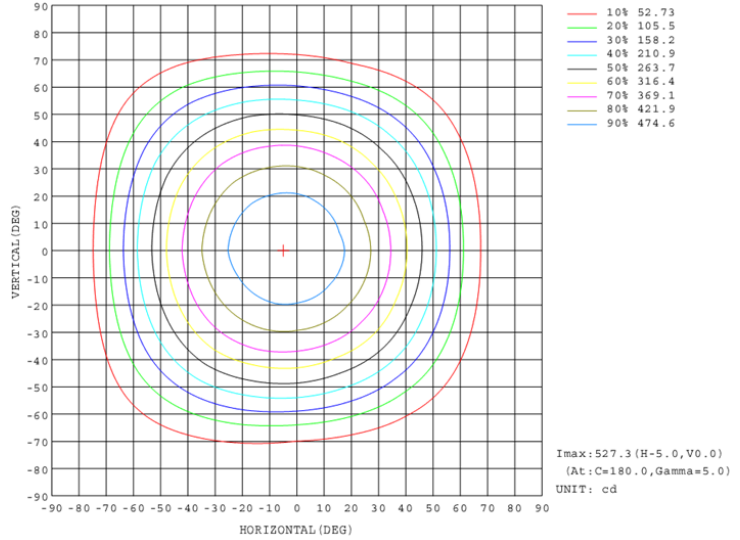
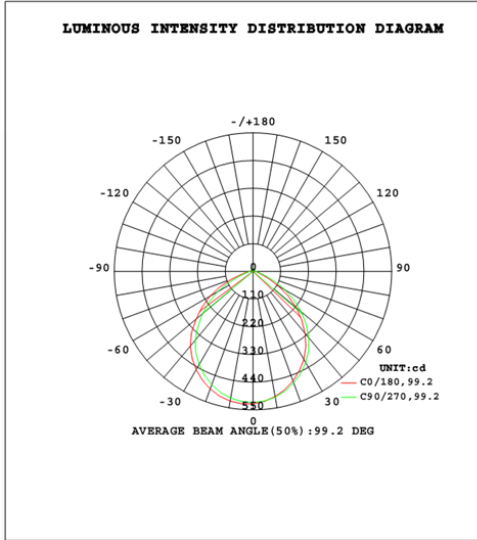


Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	397.2	31.0%
0-40	640.8	50.1%
0-60	1060.7	82.9%
60-90	162.2	12.7%
70-100	65.7	5.1%
90-120	24.5	1.9%
0-90	1222.9	95.6%
90-180	56.6	4.4%
0-180	1279.4	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	49.2	3.8%	90-100	8.5	0.7%
10-20	139.8	10.9%	100-110	8.0	0.6%
20-30	208.2	16.3%	110-120	8.0	0.6%
30-40	243.5	19.0%	120-130	7.9	0.6%
40-50	235.0	18.4%	130-140	7.4	0.6%
50-60	184.9	14.5%	140-150	6.6	0.5%
60-70	105.1	8.2%	150-160	5.3	0.4%
70-80	40.5	3.2%	160-170	3.5	0.3%
80-90	16.7	1.3%	170-180	1.3	0.1%

Photometric Data



Flux out:875.8 lm

Height	Havg, Hmax	Angle:98.92deg	Diameter
1ft	196.3,525.7fc		2.339ft
2ft	49.07,131.4fc		4.677ft
3ft	21.81,58.41fc		7.016ft
4ft	12.27,32.85fc		9.354ft
5ft	7.851,21.03fc		11.69ft
6ft	5.452,14.60fc		14.03ft
7ft	4.006,10.73fc		16.37ft
8ft	3.067,8.214fc		18.71ft
9ft	2.423,6.490fc		21.05ft
10ft	1.963,5.257fc		23.39ft

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

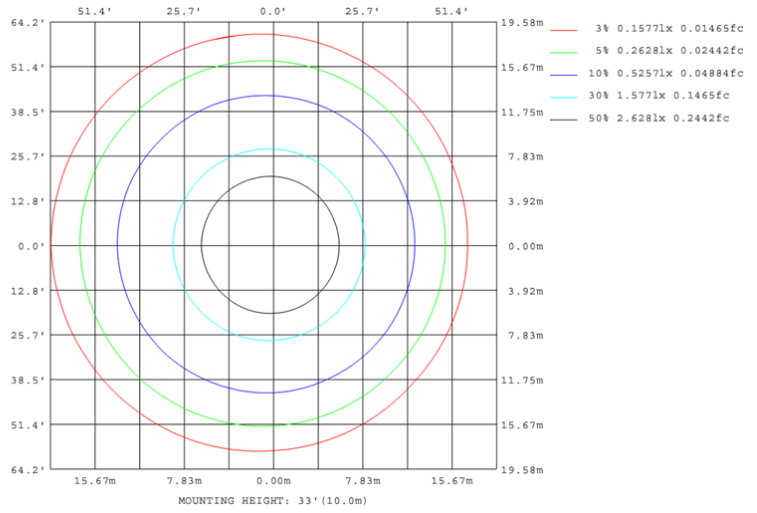
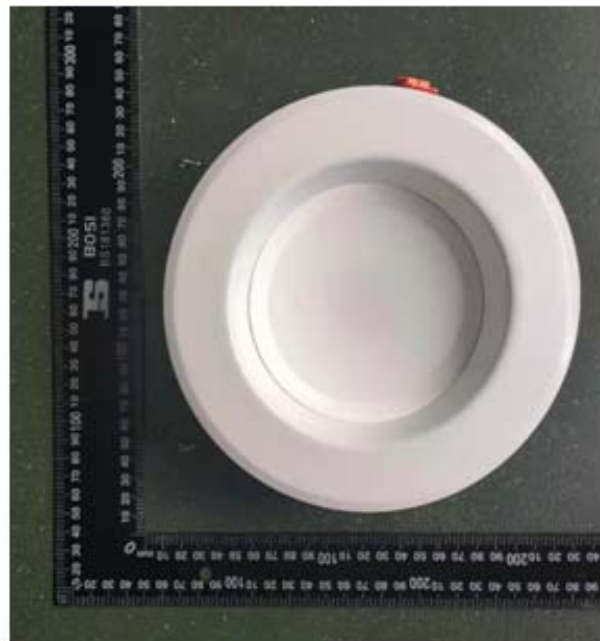
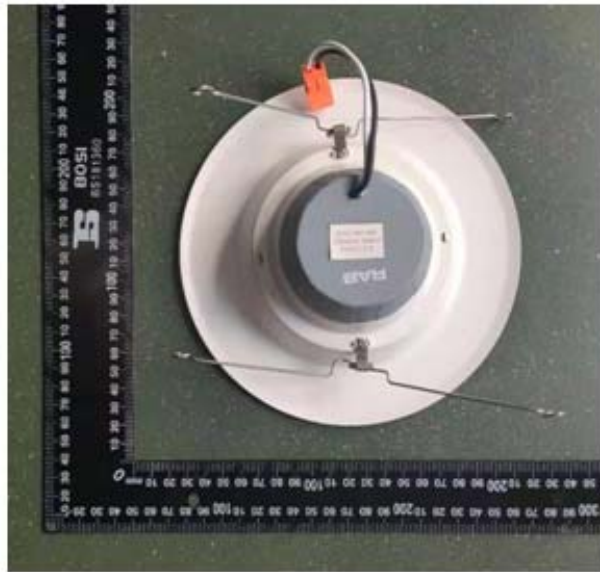


Table--1

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	526	524	522	521	520	520	520	520	526	524	522	521	520	520	520	520			
5	518	516	515	516	517	518	520	521	527	525	523	521	518	516	515	513			
10	505	503	503	505	507	511	513	516	523	520	518	514	511	507	504	501			
15	486	485	485	488	492	497	501	505	513	510	507	502	497	492	487	483			
20	463	462	462	467	472	479	484	489	497	494	491	485	479	471	466	460			
25	435	434	435	441	447	455	462	468	476	473	469	462	455	446	440	433			
30	404	403	404	411	418	428	436	443	451	448	444	435	427	417	410	402			
35	365	365	367	376	385	396	405	413	421	418	413	404	396	384	374	365			
40	321	317	324	330	344	358	369	379	387	383	379	368	357	343	328	322			
45	273	270	277	284	299	310	326	334	346	342	334	325	308	297	282	275			
50	224	221	228	235	251	263	279	287	295	296	287	278	262	249	234	226			
55	170	170	175	186	201	214	230	239	247	247	238	229	213	200	185	174			
60	117	118	122	134	146	163	177	188	197	197	189	177	163	146	133	121			
65	68.3	69.3	72.6	83.0	94.7	111	124	136	145	142	137	124	111	94.7	83.0	72.6			
70	37.2	37.7	39.5	45.1	52.3	64.1	74.7	85.6	92.9	90.9	86.0	74.6	63.9	52.2	44.7	39.0			
75	24.2	24.2	24.6	26.8	30.0	35.3	40.5	46.6	51.0	49.5	46.5	40.2	35.0	29.7	26.6	24.4			
80	16.7	17.0	17.7	19.7	21.6	23.7	25.4	27.7	29.5	28.9	27.6	25.1	23.4	21.6	19.8	17.9			
85	8.22	8.35	8.91	10.9	13.1	16.0	18.2	20.2	21.5	21.1	20.4	18.4	16.3	13.4	11.3	9.52			
90	7.08	7.08	7.12	7.17	7.27	7.57	9.32	11.4	13.1	12.7	11.9	9.93	8.19	7.88	7.86	7.85			
95	6.91	6.92	6.93	6.96	6.98	7.04	7.10	7.16	7.95	7.91	7.89	7.88	7.86	7.87	7.88	7.89			
100	6.91	6.92	6.92	6.92	6.91	6.90	6.91	6.92	7.92	7.90	7.90	7.91	7.93	7.98	8.01	8.04			
105	7.04	7.05	7.03	7.02	6.98	6.92	6.90	6.86	8.02	7.99	8.02	8.05	8.09	8.16	8.21	8.25			
110	7.27	7.29	7.28	7.23	7.15	7.08	7.01	6.95	8.19	8.18	8.21	8.27	8.34	8.43	8.50	8.55			
115	7.58	7.60	7.59	7.53	7.44	7.32	7.24	7.14	8.46	8.46	8.50	8.57	8.65	8.76	8.82	8.89			
120	7.94	7.98	7.96	7.89	7.79	7.65	7.56	7.44	8.76	8.76	8.82	8.90	9.00	9.12	9.19	9.25			
125	8.36	8.38	8.37	8.30	8.20	8.06	7.93	7.80	9.11	9.12	9.18	9.27	9.36	9.49	9.57	9.63			
130	8.81	8.84	8.81	8.73	8.63	8.47	8.34	8.20	9.46	9.48	9.55	9.65	9.75	9.88	9.95	10.0			
135	9.28	9.30	9.29	9.21	9.10	8.93	8.77	8.62	9.86	9.87	9.94	10.1	10.2	10.3	10.4	10.4			
140	9.78	9.81	9.79	9.70	9.58	9.41	9.25	9.10	10.3	10.3	10.4	10.5	10.6	10.7	10.8	10.9			
145	10.3	10.3	10.3	10.2	10.1	9.91	9.76	9.59	10.7	10.7	10.8	10.9	11.0	11.2	11.3	11.3			
150	10.8	10.9	10.8	10.8	10.6	10.5	10.3	10.1	11.2	11.2	11.3	11.4	11.5	11.6	11.7	11.8			
155	11.4	11.4	11.4	11.3	11.2	11.0	10.9	10.7	11.7	11.7	11.8	11.9	12.0	12.1	12.2	12.2			
160	12.0	12.0	12.0	11.9	11.8	11.6	11.5	11.3	12.2	12.2	12.2	12.3	12.4	12.5	12.6	12.6			
165	12.5	12.6	12.5	12.5	12.4	12.2	12.1	11.9	12.6	12.6	12.7	12.7	12.8	12.9	12.9	12.9			
170	12.9	13.0	12.9	12.9	12.8	12.7	12.6	12.5	13.0	13.0	13.0	13.1	13.1	13.1	13.1	13.1			
175	13.2	13.3	13.2	13.2	13.1	13.1	13.0	12.9	13.3	13.2	13.3	13.3	13.3	13.3	13.2	13.2			
180	13.3	13.4	13.4	13.4	13.3	13.3	13.2	13.2	13.4	13.4	13.4	13.4	13.3	13.3	13.3	13.2			

3. Product Photo



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