

**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): DLR0049(R6R14830120WS)**

**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

<b>1.1 Rated Values:</b>	
Rated Voltage / Frequency	120Vac, 50/60 Hz
Nominal Power	14.0W
Rated Initial Lamp Lumen	1400 lm
Declared CCT	3000K

## 1.2 Test Specifications:

Test item	<ol style="list-style-type: none"> <li>1. Total Luminous Flux</li> <li>2. Luminous Distribution Intensity</li> <li>3. Luminous Efficacy</li> <li>4. Correlated Color Temperature</li> <li>5. Color Rendering Index</li> <li>6. Chromaticity Coordinate</li> <li>7. Electrical Parameters</li> </ol>
Reference Standard	<ol style="list-style-type: none"> <li>1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products</li> <li>2. ANSI C78.377-2015 Specifications for the Chromaticity of Solid State Lighting Products</li> <li>3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources</li> <li>4. CIE 15-2004 Technical Report Colorimetry</li> <li>5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source</li> <li>6. IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems</li> </ol>
Reference Work Instruction	QD25

## 1.3 Test Methods

<p><b>1) Photometric and Light Distribution Measurement – Goniophotometer Method:</b></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><b>2) Chromaticity Measurement – Sphere-Spectroradiometer Method:</b></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><b>3) Electrical Measurements:</b></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	DLR0049(R6R14830120WS)		

### Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
1908250033	120.0	60	0.1180	13.90	0.982

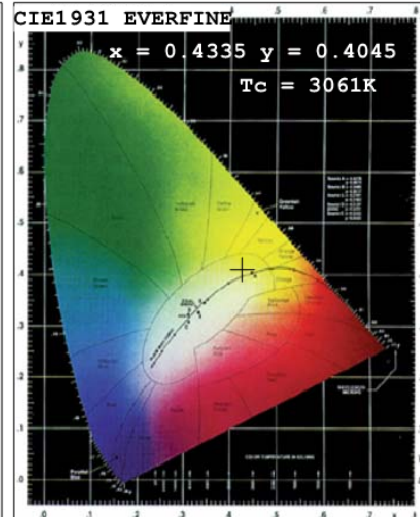
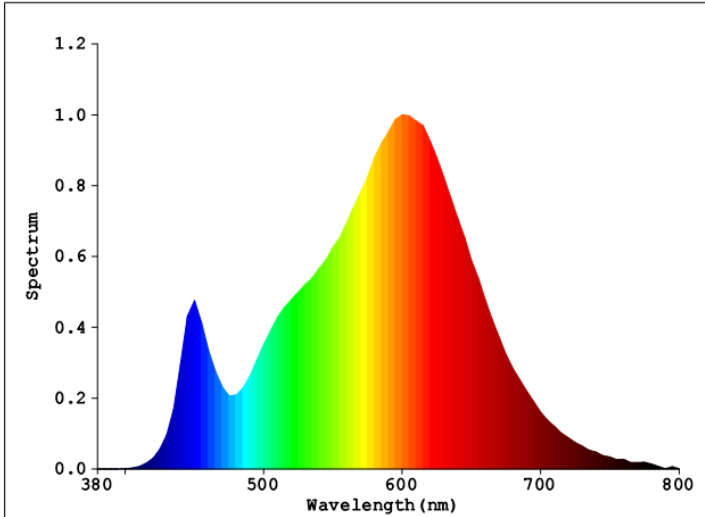
### Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	82	R9	9
Frequency (Hz)	60	R2	91	R10	80
CCT (K)	3061	R3	97	R11	82
Duv	0.00063	R4	82	R12	74
Chromaticity (x, y)	x=0.4335 y=0.4045	R5	82	R13	84
Chromaticity (u', v')	u'=0.2482 v'=0.5210	R6	89	R14	99
Color Rendering Index (CRI)	83.4	R7	84	R15	74
R9	9	R8	60	--	--

### Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1464.0
Luminous Efficacy (lm/W)	105.32
Beam Angle (°)	98.5
Center Beam Candle Power (cd)	602.5

## Spectral Power Distribution & Chromaticity Diagram

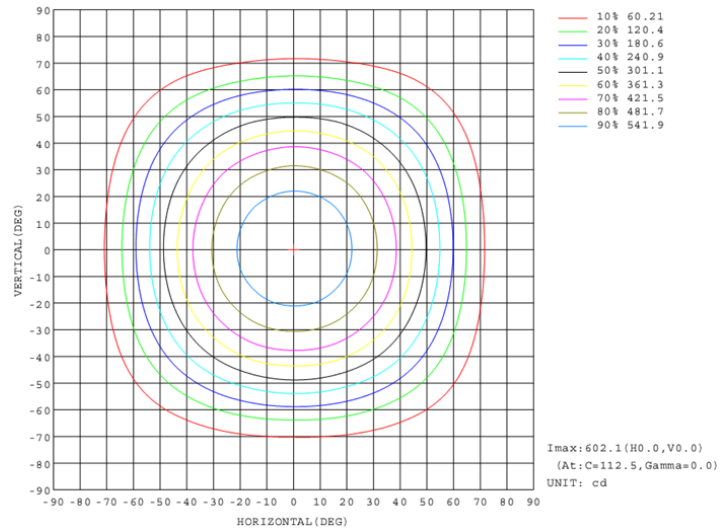
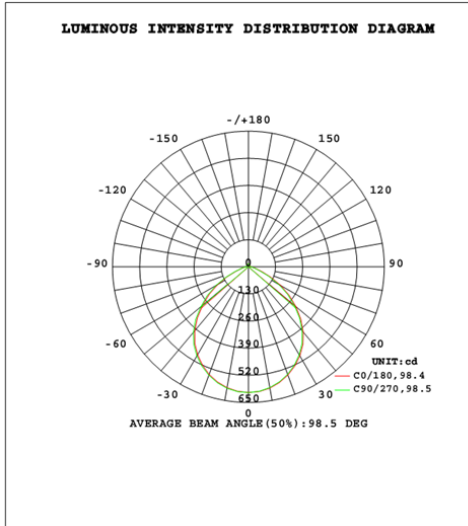


## Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	459.0	31.4%
0-40	740.2	50.6%
0-60	1218.8	83.3%
60-90	181.5	12.4%
70-100	74.6	5.1%
90-120	27.6	1.9%
0-90	1400.3	95.7%
90-180	63.6	4.3%
0-180	1464.0	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	56.9	3.9%	90-100	9.4	0.6%
10-20	161.5	11.0%	100-110	9.1	0.6%
20-30	240.6	16.4%	110-120	9.1	0.6%
30-40	281.2	19.2%	120-130	8.9	0.6%
40-50	269.7	18.4%	130-140	8.4	0.6%
50-60	208.9	14.3%	140-150	7.4	0.5%
60-70	116.4	7.9%	150-160	6.0	0.4%
70-80	45.5	3.1%	160-170	4.0	0.3%
80-90	19.7	1.3%	170-180	1.4	0.1%

# Photometric Data



Flux out: 1010 lm

Height	Havg, Hmax	Angle: 98.39deg	Diameter
1ft	226.3, 602.5fc		2.317ft
2ft	56.59, 150.6fc		4.633ft
3ft	25.15, 66.94fc		6.95ft
4ft	14.15, 37.66fc		9.267ft
5ft	9.054, 24.10fc		11.58ft
6ft	6.287, 16.74fc		13.9ft
7ft	4.619, 12.30fc		16.22ft
8ft	3.537, 9.414fc		18.53ft
9ft	2.794, 7.438fc		20.85ft
10ft	2.263, 6.025fc		23.17ft

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

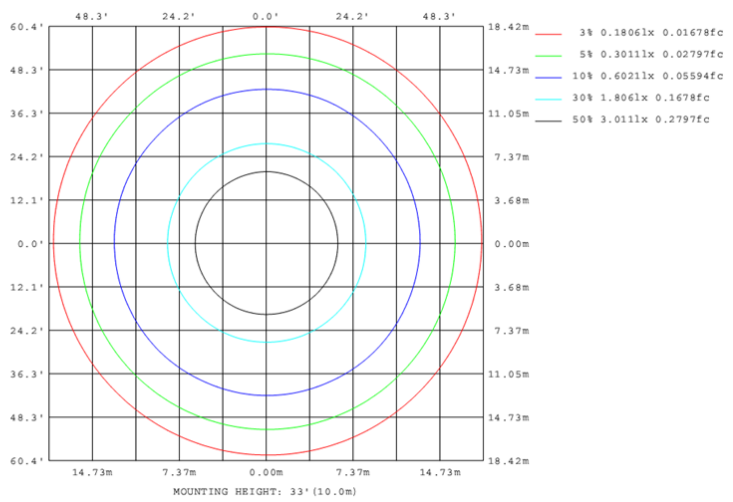
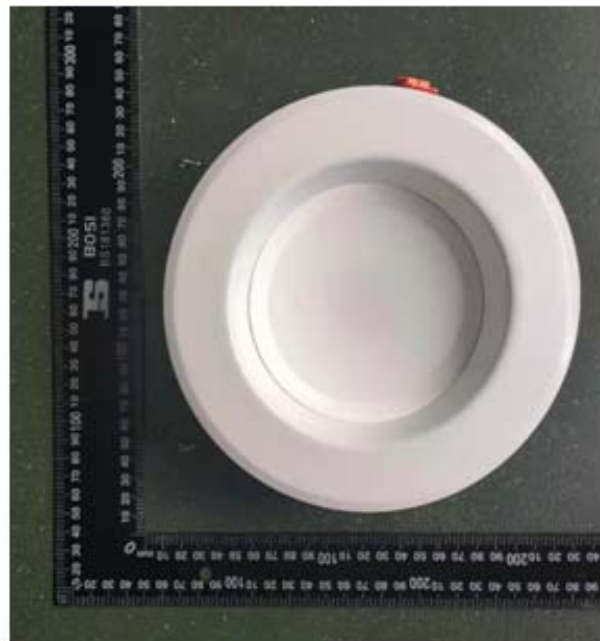
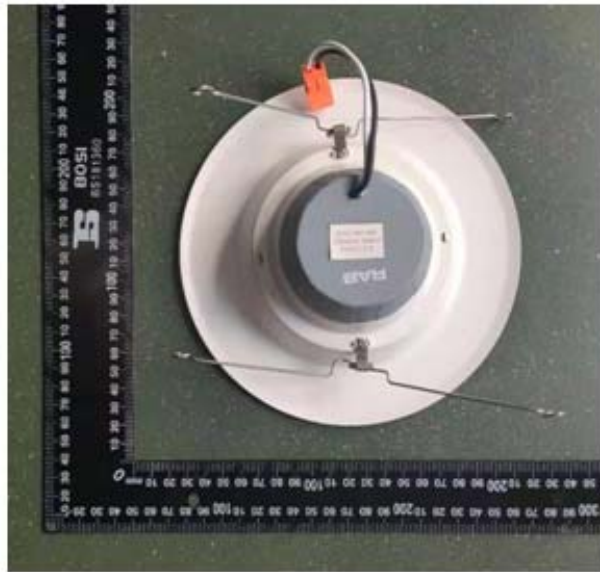


Table--1

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	602	602	602	602	602	602	602	602	602	602	602	602	602	602	602	602			
5	599	599	599	599	598	598	598	598	598	599	599	599	600	600	600	600			
10	590	590	589	588	588	588	587	588	588	588	589	590	591	591	591	590			
15	574	574	572	572	571	571	570	571	571	572	573	573	575	575	576	575			
20	552	552	550	549	548	548	547	549	549	549	551	551	553	553	554	553			
25	525	524	522	522	520	520	519	520	520	520	523	523	526	526	527	526			
30	492	492	489	488	486	487	485	487	487	487	489	490	493	493	494	493			
35	454	454	451	450	448	448	446	448	448	448	451	452	455	455	457	455			
40	408	408	404	404	400	400	398	399	400	400	404	405	409	409	410	408			
45	354	354	350	350	346	346	343	346	346	347	352	353	357	357	358	356			
50	297	293	293	288	288	284	286	284	286	291	291	297	297	301	298	299			
55	239	235	234	229	229	226	227	226	228	233	235	240	241	244	241	241			
60	179	175	172	169	167	166	165	167	170	174	176	181	182	184	183	182			
65	118	117	112	111	107	108	106	110	112	114	118	119	122	122	124	121			
70	69.6	68.6	65.0	63.9	61.6	62.2	61.6	63.5	64.8	65.0	67.3	67.6	70.2	70.2	72.3	71.0			
75	40.7	40.5	39.1	38.6	37.5	37.6	37.1	37.8	38.3	38.3	39.4	39.5	40.7	40.7	41.5	41.1			
80	27.7	27.4	26.8	26.7	26.4	26.6	26.4	26.7	27.0	27.0	27.5	27.6	28.0	28.1	28.3	28.1			
85	18.6	18.7	18.0	18.0	17.4	17.4	16.9	17.1	17.7	17.6	18.1	18.1	18.7	18.8	19.4	19.2			
90	8.73	8.82	8.61	8.59	8.43	8.40	8.37	8.38	9.08	9.10	9.11	9.11	9.18	9.21	9.45	9.45			
95	8.09	8.08	8.06	8.05	8.04	8.04	8.05	8.06	9.02	9.02	9.02	9.01	9.00	9.00	9.01	9.05			
100	7.96	7.95	7.94	7.94	7.94	7.95	7.97	7.96	9.08	9.09	9.07	9.06	9.05	9.06	9.06	9.09			
105	7.99	7.99	8.00	7.99	8.02	8.02	8.04	8.03	9.24	9.25	9.23	9.21	9.20	9.22	9.21	9.24			
110	8.16	8.15	8.17	8.17	8.20	8.19	8.23	8.22	9.50	9.51	9.47	9.48	9.45	9.47	9.46	9.50			
115	8.42	8.42	8.45	8.45	8.49	8.48	8.52	8.50	9.83	9.83	9.79	9.80	9.76	9.78	9.78	9.81			
120	8.78	8.77	8.81	8.81	8.86	8.85	8.88	8.87	10.2	10.2	10.2	10.1	10.1	10.1	10.1	10.2			
125	9.20	9.19	9.23	9.23	9.28	9.28	9.32	9.30	10.6	10.6	10.5	10.5	10.5	10.5	10.5	10.6			
130	9.65	9.64	9.69	9.69	9.74	9.74	9.79	9.77	11.0	11.0	10.9	10.9	10.9	10.9	10.9	11.0			
135	10.1	10.1	10.2	10.2	10.2	10.2	10.3	10.3	11.4	11.4	11.4	11.4	11.3	11.4	11.4	11.4			
140	10.7	10.7	10.7	10.7	10.8	10.8	10.8	10.8	11.9	11.9	11.8	11.8	11.8	11.8	11.8	11.9			
145	11.3	11.3	11.3	11.3	11.4	11.4	11.4	11.4	12.4	12.4	12.3	12.3	12.3	12.3	12.3	12.4			
150	11.9	11.9	11.9	11.9	12.0	12.0	12.0	12.0	12.9	12.9	12.9	12.8	12.8	12.8	12.8	12.9			
155	12.5	12.5	12.5	12.5	12.6	12.6	12.6	12.6	13.4	13.4	13.4	13.4	13.3	13.4	13.4	13.4			
160	13.1	13.1	13.2	13.2	13.2	13.2	13.3	13.2	13.9	13.9	13.9	13.9	13.8	13.9	13.9	13.9			
165	13.7	13.7	13.8	13.8	13.8	13.8	13.8	13.8	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3			
170	14.3	14.2	14.3	14.3	14.3	14.3	14.4	14.3	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.7			
175	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.8	14.8	14.8	14.8	14.8	14.8	14.9	14.9			
180	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9			

### 3. Product Photo



**\*\*\*\*\* END OF REPORT \*\*\*\*\***