

**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): DLR0039(R4R8840120WS)**

**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	8.0W
Rated Initial Lamp Lumen	800 lm
Declared CCT	4000K

## 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

<b>Test date</b>	2019-09-28	<b>Test Ambient:</b>	25.6 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	DLR0039(R4R8840120WS)		

### Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
1908250023	120.0	60	0.063	7.49	0.981

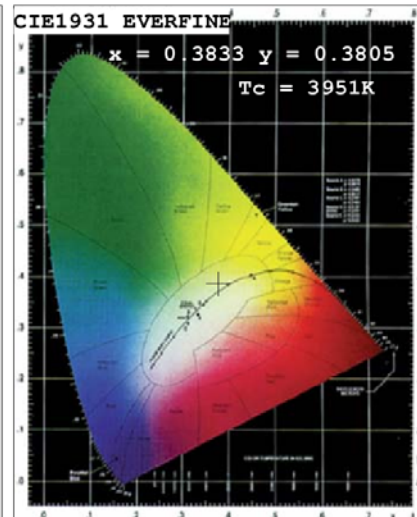
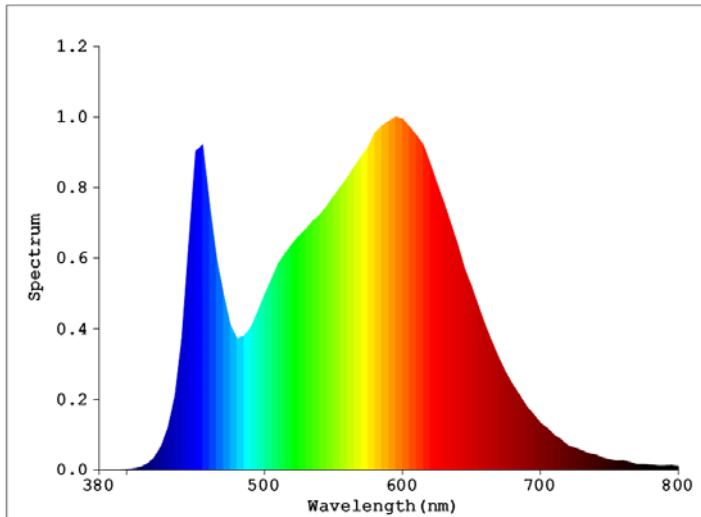
### Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	83	R9	13
Frequency (Hz)	60	R2	92	R10	81
CCT (K)	3951	R3	96	R11	81
Duv	0.00091	R4	82	R12	66
Chromaticity (x, y)	x=0.3833 y=0.3805	R5	83	R13	86
Chromaticity (u', v')	u'=0.2255 v'=0.5036	R6	89	R14	99
Color Rendering Index (CRI)	84.5	R7	86	R15	77
R9	13	R8	65	--	--

### Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	897.4
Luminous Efficacy (lm/W)	119.82
Beam Angle (°)	95.5
Center Beam Candle Power (cd)	384.1

## Spectral Power Distribution & Chromaticity Diagram



## Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	288.7	32.2%
0-40	461.5	51.4%
0-60	747.5	83.3%
60-90	111.1	12.4%
70-100	46.4	5.2%
90-120	16.7	1.9%
0-90	858.6	95.7%
90-180	38.8	4.3%
0-180	897.4	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	36.0	4.0%	90-100	5.7	0.6%
10-20	102.2	11.4%	100-110	5.5	0.6%
20-30	150.5	16.8%	110-120	5.5	0.6%
30-40	172.9	19.3%	120-130	5.4	0.6%
40-50	162.5	18.1%	130-140	5.1	0.6%
50-60	123.5	13.8%	140-150	4.6	0.5%
60-70	70.4	7.8%	150-160	3.7	0.4%
70-80	28.8	3.2%	160-170	2.4	0.3%
80-90	11.9	1.3%	170-180	0.9	0.1%

# Photometric Data

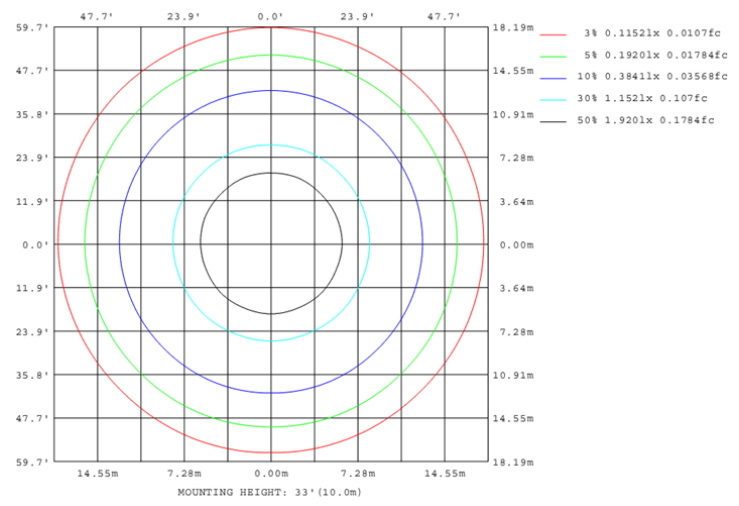
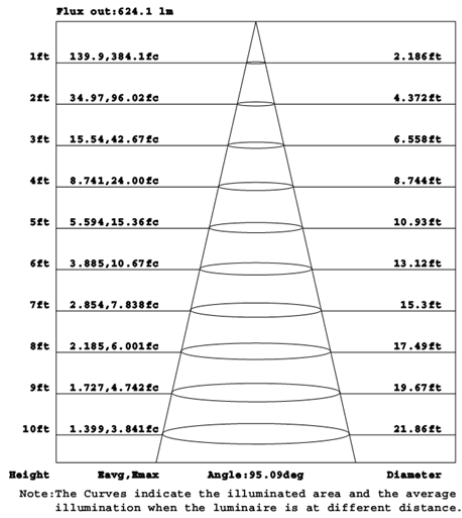
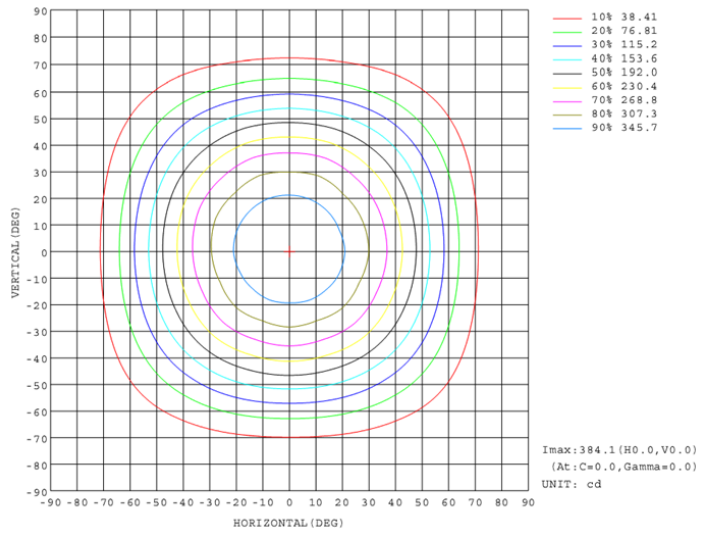
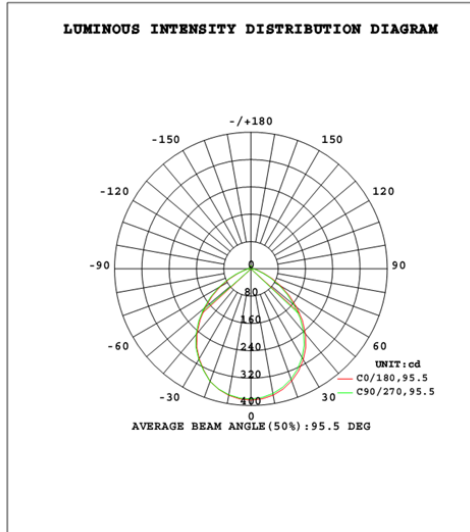


Table--1

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	384	383	382	382	381	381	380	380	384	383	382	382	381	381	380	380			
5	382	380	379	379	378	378	378	378	382	381	381	380	380	379	379	378			
10	375	374	372	371	371	371	371	372	376	375	375	374	374	374	373	372			
15	364	363	361	360	359	360	360	361	365	365	365	365	365	364	363	362			
20	349	348	345	345	343	345	344	346	351	350	351	351	351	350	349	347			
25	330	324	325	320	323	320	325	323	328	331	329	332	329	331	326	328			
30	307	301	302	297	300	297	302	300	304	309	306	310	306	309	304	306			
35	280	274	274	270	272	270	274	273	278	282	281	284	281	283	279	279			
40	248	243	242	238	240	238	242	242	247	251	250	254	251	253	248	248			
45	213	208	207	203	204	203	207	207	212	216	216	219	217	218	214	214			
50	175	172	168	167	165	167	168	171	176	179	180	183	181	181	178	177			
55	138	136	132	131	130	131	132	136	139	141	144	144	146	144	143	139			
60	103	101	97.1	96.5	95.0	96.5	97.1	100	104	105	108	109	110	108	108	104			
65	69.8	68.1	65.0	64.5	63.1	64.3	64.6	67.4	70.6	72.0	74.8	75.4	76.6	75.1	74.5	71.6			
70	42.4	41.1	39.1	38.6	37.6	38.4	38.6	40.6	42.8	44.0	46.2	46.6	47.6	46.5	46.0	43.7			
75	25.1	24.5	23.3	23.1	22.5	22.9	23.0	24.1	25.3	25.9	27.1	27.3	27.9	27.3	27.0	25.8			
80	16.3	16.0	15.6	15.5	15.3	15.4	15.5	15.9	16.4	16.7	17.2	17.3	17.6	17.3	17.2	16.6			
85	10.9	10.5	9.81	9.66	9.30	9.59	9.67	10.3	11.3	11.6	12.2	12.3	12.6	12.4	12.3	11.7			
90	5.11	5.05	5.03	5.00	5.00	5.00	5.02	5.03	5.54	5.57	5.84	5.90	6.15	5.93	5.88	5.55			
95	4.87	4.84	4.82	4.81	4.81	4.81	4.81	4.82	5.49	5.46	5.45	5.44	5.45	5.45	5.44	5.44			
100	4.78	4.77	4.75	4.74	4.74	4.74	4.75	4.75	5.52	5.51	5.48	5.47	5.46	5.48	5.48	5.48			
105	4.80	4.80	4.80	4.79	4.80	4.78	4.80	4.79	5.63	5.61	5.58	5.57	5.57	5.58	5.58	5.59			
110	4.91	4.91	4.91	4.92	4.93	4.92	4.91	4.91	5.81	5.77	5.74	5.73	5.72	5.74	5.75	5.76			
115	5.10	5.10	5.11	5.11	5.13	5.12	5.11	5.09	6.02	5.98	5.96	5.95	5.94	5.96	5.96	5.98			
120	5.33	5.34	5.36	5.36	5.37	5.37	5.36	5.33	6.26	6.22	6.18	6.19	6.18	6.20	6.19	6.22			
125	5.62	5.62	5.64	5.65	5.66	5.66	5.66	5.62	6.52	6.48	6.44	6.44	6.44	6.45	6.46	6.49			
130	5.92	5.93	5.94	5.95	5.97	5.96	5.97	5.93	6.79	6.74	6.71	6.70	6.70	6.72	6.73	6.77			
135	6.24	6.23	6.26	6.26	6.27	6.28	6.27	6.25	7.06	7.01	6.99	6.98	6.98	7.00	7.00	7.04			
140	6.57	6.57	6.58	6.61	6.63	6.62	6.62	6.58	7.35	7.30	7.27	7.27	7.26	7.28	7.30	7.33			
145	6.92	6.93	6.95	6.95	6.98	6.97	6.98	6.93	7.64	7.60	7.58	7.56	7.56	7.58	7.59	7.62			
150	7.29	7.30	7.31	7.32	7.35	7.34	7.35	7.31	7.95	7.91	7.88	7.87	7.86	7.89	7.90	7.93			
155	7.68	7.68	7.70	7.71	7.73	7.72	7.72	7.68	8.27	8.22	8.19	8.18	8.18	8.20	8.21	8.24			
160	8.05	8.05	8.07	8.08	8.09	8.08	8.09	8.06	8.58	8.53	8.50	8.50	8.49	8.51	8.51	8.54			
165	8.43	8.43	8.44	8.45	8.47	8.46	8.46	8.43	8.85	8.80	8.78	8.76	8.76	8.78	8.78	8.81			
170	8.77	8.78	8.78	8.79	8.79	8.79	8.79	8.77	9.06	9.01	9.00	8.99	8.99	9.00	9.00	9.02			
175	9.06	9.05	9.04	9.06	9.05	9.05	9.05	9.03	9.20	9.15	9.14	9.13	9.13	9.14	9.14	9.15			
180	9.21	9.21	9.19	9.19	9.19	9.20	9.19	9.19	9.24	9.19	9.20	9.18	9.19	9.19	9.19	9.19			

### 3. Product Photo



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