

**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): DLR0059(R6R8940120WS)**

**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	725 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

Test date	2019-09-28	Test Ambient:	25.6 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	DLR0059(R6R8940120WS)		

### Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
1908250043	120.0	60	0.065	7.71	0.976

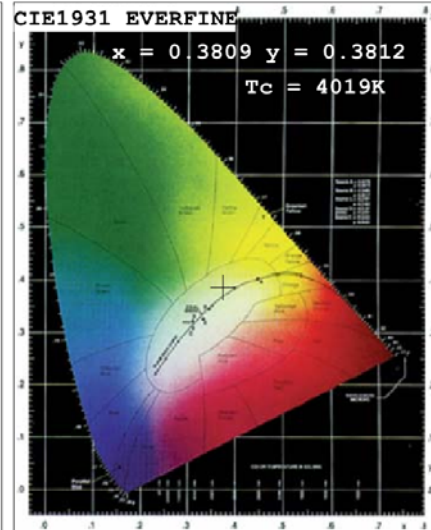
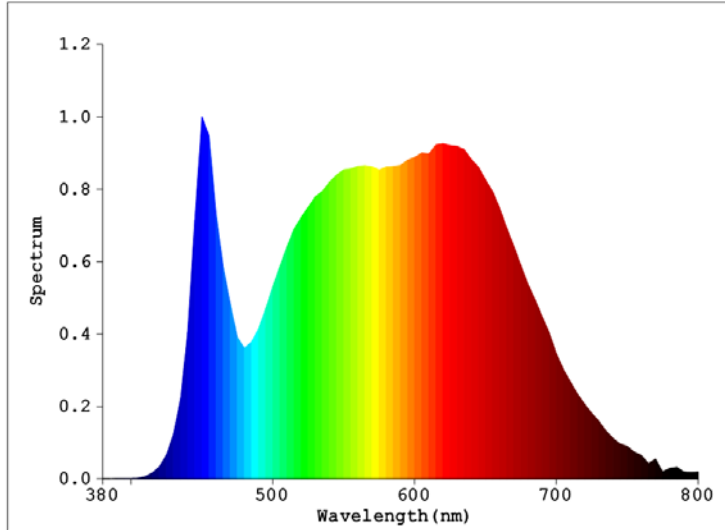
### Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	93	R9	73
Frequency (Hz)	60	R2	94	R10	84
CCT (K)	4019	R3	93	R11	92
Duv	0.00193	R4	93	R12	68
Chromaticity (x, y)	x=0.3809 y=0.3812	R5	91	R13	93
Chromaticity (u', v')	u'=0.2237 v'=0.5036	R6	90	R14	96
Color Rendering Index (CRI)	92.8	R7	97	R15	92
R9	73	R8	90	--	--

### Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	796.32
Luminous Efficacy (lm/W)	103.28
Beam Angle (°)	99.8
Center Beam Candle Power (cd)	324.0

## Spectral Power Distribution & Chromaticity Diagram

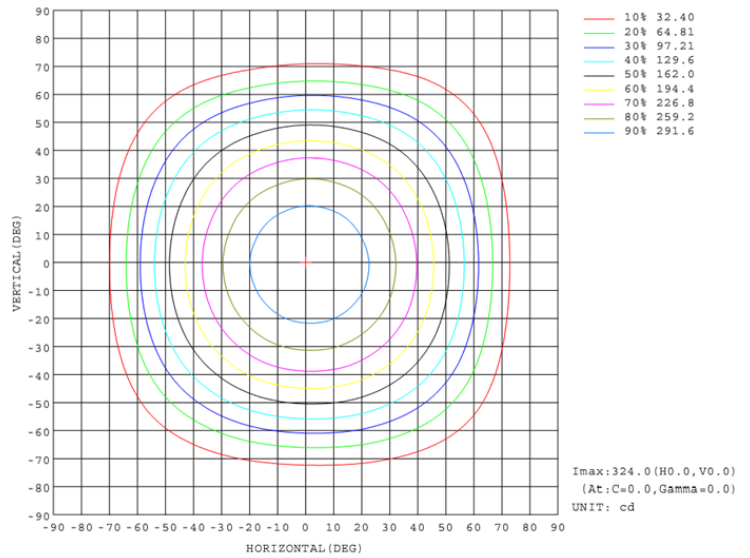
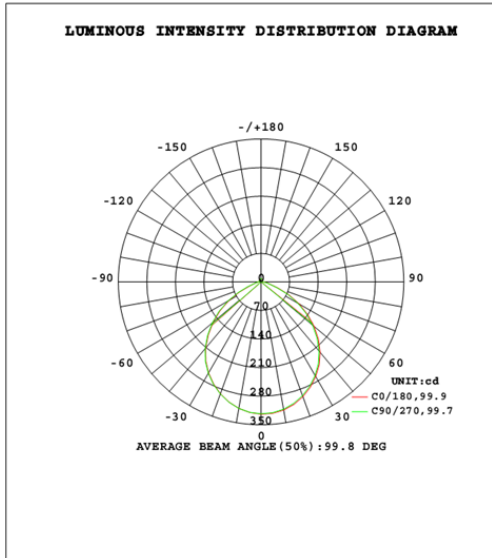


## Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	245.7	30.9%
0-40	396.5	49.8%
0-60	659.6	82.8%
60-90	102.0	12.8%
70-100	40.0	5.0%
90-120	15.0	1.9%
0-90	761.5	95.6%
90-180	34.8	4.4%
0-180	796.3	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	30.5	3.8%	90-100	5.1	0.6%
10-20	86.5	10.9%	100-110	5.0	0.6%
20-30	128.7	16.2%	110-120	4.9	0.6%
30-40	150.8	18.9%	120-130	4.8	0.6%
40-50	146.5	18.4%	130-140	4.6	0.6%
50-60	116.6	14.6%	140-150	4.1	0.5%
60-70	67.1	8.4%	150-160	3.3	0.4%
70-80	24.7	3.1%	160-170	2.2	0.3%
80-90	10.1	1.3%	170-180	0.8	0.1%

# Photometric Data



Flux out: 543.0 lm

Height	Havg, Hmax	Angle: 99.52deg	Diameter
1ft	121.7, 324.0fc		2.364ft
2ft	30.42, 81.01fc		4.727ft
3ft	13.52, 36.00fc		7.091ft
4ft	7.605, 20.25fc		9.454ft
5ft	4.867, 12.96fc		11.82ft
6ft	3.380, 9.001fc		14.18ft
7ft	2.483, 6.613fc		16.54ft
8ft	1.901, 5.063fc		18.91ft
9ft	1.502, 4.000fc		21.27ft
10ft	1.217, 3.240fc		23.64ft

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

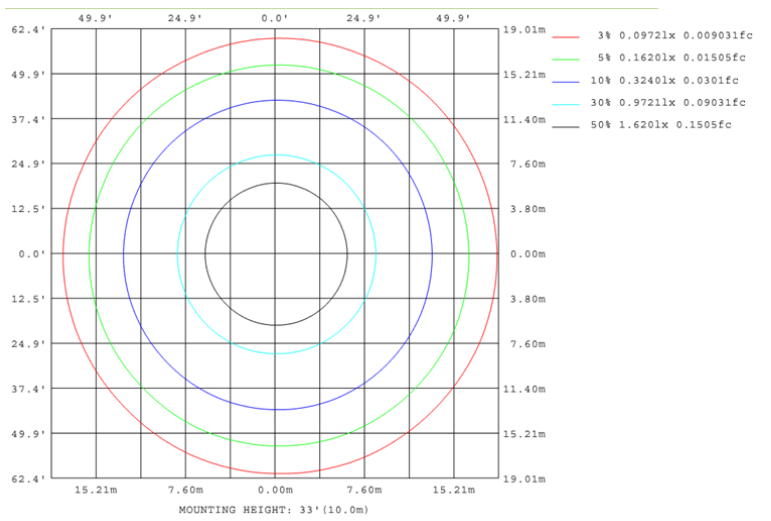
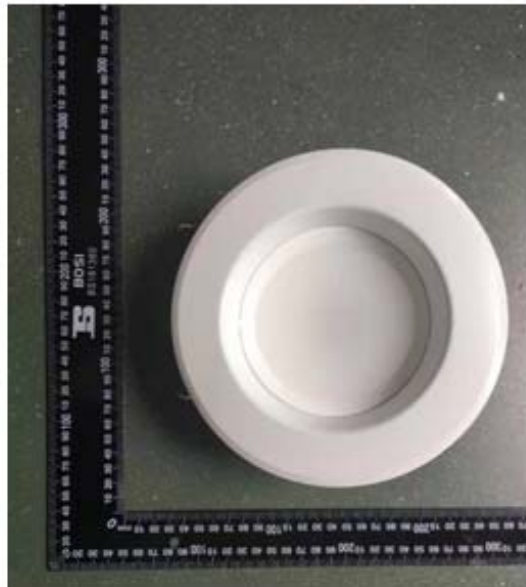
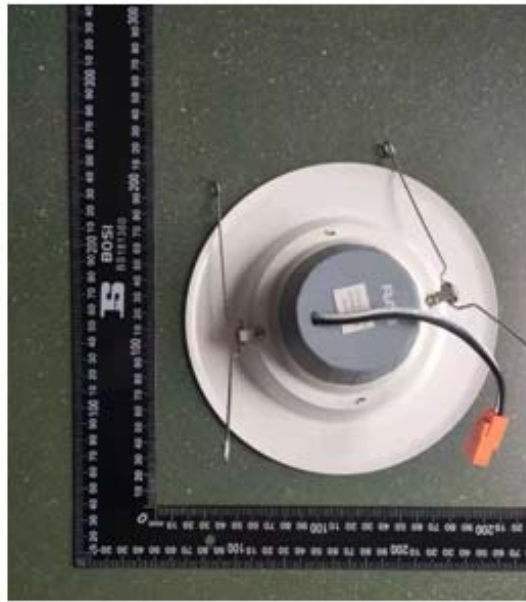


Table--1

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	324	324	323	323	323	323	323	323	324	324	323	323	323	323	323	323			
5	323	323	323	322	322	321	321	320	321	320	320	320	321	321	321	322			
10	319	319	318	318	317	316	315	314	315	314	314	314	315	315	316	317			
15	311	311	310	310	308	307	305	304	305	304	304	304	305	306	307	308			
20	299	300	299	298	296	295	293	292	292	290	291	291	292	293	295	297			
25	285	286	285	284	282	280	278	276	276	274	275	275	277	278	281	282			
30	268	269	268	267	264	263	260	258	258	256	256	257	259	260	263	265			
35	248	249	248	247	245	243	240	238	237	235	235	236	238	240	243	245			
40	225	227	225	224	221	219	215	213	211	209	210	210	213	216	220	222			
45	198	200	199	198	194	192	187	185	183	181	182	183	186	188	192	195			
50	170	171	170	169	165	162	158	156	154	152	153	153	156	159	163	166			
55	140	141	140	139	135	132	127	125	123	121	122	123	126	129	134	136			
60	108	110	109	107	103	100	95.5	93.2	91.1	89.1	90.2	91.1	94.8	97.7	102	105			
65	75.4	77.5	76.1	75.1	71.2	68.2	63.3	60.8	58.9	57.0	58.2	59.1	62.9	65.7	70.3	72.8			
70	44.2	46.0	45.0	44.4	41.4	39.2	35.6	33.7	32.2	31.0	31.9	32.6	35.2	37.1	40.5	42.3			
75	23.5	24.3	23.9	23.6	22.2	21.2	19.6	18.8	18.2	17.6	18.0	18.3	19.3	20.1	21.7	22.5			
80	15.0	15.2	15.0	14.8	14.4	14.0	13.6	13.3	13.1	12.8	13.0	13.1	13.5	13.9	14.4	14.6			
85	10.3	10.6	10.4	10.3	9.72	9.31	8.55	8.20	8.14	7.78	7.95	8.07	8.58	8.96	9.71	10.1			
90	4.87	5.11	4.99	4.96	4.68	4.58	4.57	4.52	4.95	4.94	4.92	4.95	4.92	4.96	4.95	5.07			
95	4.44	4.41	4.43	4.40	4.40	4.36	4.36	4.32	4.94	4.93	4.93	4.92	4.92	4.92	4.91	4.91			
100	4.32	4.30	4.32	4.28	4.29	4.27	4.28	4.27	5.01	4.98	4.99	4.96	4.96	4.95	4.94	4.93			
105	4.31	4.31	4.29	4.29	4.28	4.29	4.28	4.31	5.12	5.10	5.10	5.08	5.07	5.03	5.02	5.00			
110	4.38	4.38	4.35	4.36	4.36	4.38	4.38	4.40	5.29	5.28	5.26	5.24	5.22	5.20	5.17	5.14			
115	4.54	4.52	4.52	4.52	4.52	4.54	4.54	4.57	5.48	5.47	5.46	5.42	5.41	5.37	5.36	5.32			
120	4.72	4.71	4.67	4.69	4.69	4.72	4.75	4.77	5.70	5.67	5.67	5.63	5.62	5.58	5.56	5.52			
125	4.95	4.95	4.92	4.92	4.93	4.96	4.97	5.01	5.93	5.90	5.91	5.86	5.83	5.79	5.77	5.74			
130	5.21	5.20	5.16	5.18	5.19	5.21	5.24	5.28	6.16	6.14	6.13	6.09	6.07	6.03	6.00	5.98			
135	5.48	5.47	5.44	5.45	5.45	5.49	5.52	5.57	6.43	6.40	6.39	6.35	6.32	6.27	6.25	6.22			
140	5.79	5.77	5.74	5.75	5.75	5.79	5.81	5.86	6.70	6.68	6.66	6.62	6.59	6.55	6.52	6.49			
145	6.10	6.08	6.05	6.05	6.06	6.10	6.12	6.18	6.99	6.97	6.94	6.90	6.88	6.83	6.81	6.77			
150	6.46	6.43	6.40	6.40	6.41	6.44	6.46	6.52	7.27	7.25	7.24	7.19	7.16	7.11	7.10	7.07			
155	6.82	6.79	6.76	6.77	6.77	6.81	6.84	6.89	7.56	7.53	7.52	7.48	7.44	7.40	7.38	7.36			
160	7.21	7.18	7.15	7.16	7.15	7.19	7.22	7.26	7.82	7.79	7.77	7.74	7.70	7.67	7.66	7.64			
165	7.57	7.56	7.52	7.52	7.53	7.56	7.57	7.61	8.03	7.99	7.97	7.95	7.93	7.89	7.89	7.88			
170	7.90	7.87	7.84	7.84	7.84	7.86	7.88	7.91	8.19	8.15	8.14	8.12	8.09	8.08	8.07	8.08			
175	8.14	8.11	8.10	8.08	8.08	8.08	8.09	8.11	8.28	8.25	8.23	8.21	8.20	8.18	8.19	8.18			
180	8.30	8.27	8.24	8.23	8.22	8.22	8.22	8.24	8.31	8.27	8.24	8.23	8.22	8.22	8.22	8.24			

### 3. Product Photo



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