# 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): DLR0117(R6R14950120WB)**

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

Type of

**Downlights** 

Luminaire: Report Date:

2020-09-16

**Prepared By:** 

Test & Report By:

Review By:

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Manager: Huang Qichong

1.1 Rated Values:						
Rated Voltage / Frequency	120Vac, 60 Hz					
Nominal Power	14.0W					
Rated Initial Lamp Lumen	1200 lm					
Declared CCT	5000K					

#### 1.2 Test Specifications:

1.2 Test specifications.		
	1.	Total Luminous Flux
	2.	Luminous Distribution Intensity
	3.	Luminous Efficacy
Test item	4.	Correlated Color Temperature
	5.	Color Rendering Index
	6.	Chromaticity Coordinate
	7.	Electrical Parameters
	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
Reference Standard		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	QD	25

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

# **2.1.1** Electrical, Photometric and Chromaticity Measurements

Test date	2020-09-16	Test Ambient:	25.3 ℃
<b>Test Orientation</b>	As intended	Stabilization Time (min)	90
Model Number	DLR0117(R6R14950120WB)	5000K	

# **Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz )	Current (A)	Power (W)	Power Factor
202009150014	120.0	60	0.112	13.10	0.978

**Chromaticity Measurement - Sphere-Spectroradiometer Method:** 

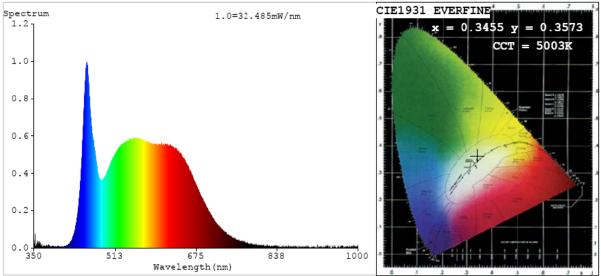
Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	5003
Duv	0.0027
Chromaticity (x, y)	x=0.3456 y=0.3573
Chromaticity (u', v')	u'=0.2095 v'=0.4875
Color Rendering Index (CRI)	93.5
R9	74

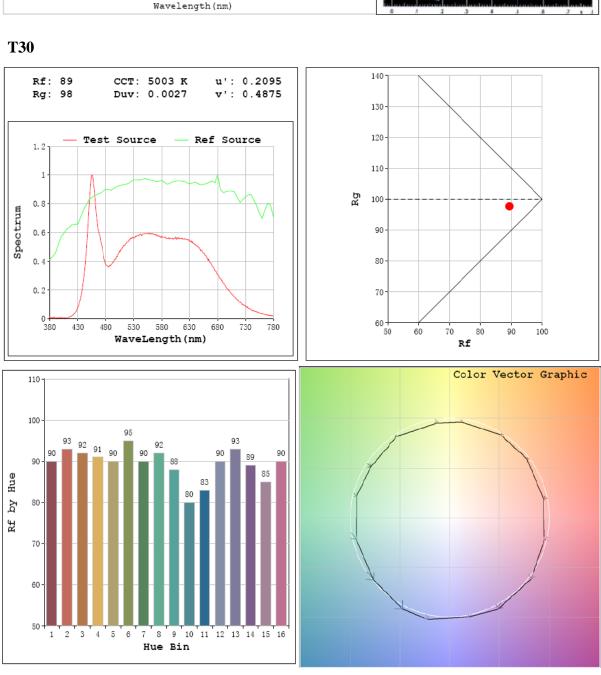
<b>Special Color Rendering Indices</b>								
R1	94	R9	74					
R2	97	R10	91					
R3	97	R11	91					
R4	92	R12	70					
R5	92	R13	95					
R6	93	R14	98					
R7	94	R15	93					
R8	89							

## **Photometric Measurement – Goniophotometer Method:**

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Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1296.1
Luminous Efficacy (lm/W)	98.94
Beam Angle (°)	101.0
Center Beam Candle Power (cd)	545.1

# **Spectral Power Distribution & Chromaticity Diagram**





### **Zonal Lumen Tabulation**

Zonal Lumen Summary									
Zone	Lumens	% Luminaire							
0-30	411.2	31.7%							
0-40	661.4	51.0%							
0-60	1115.1	86.0%							
60-90	181.0	14.0%							
70-100	56.9	4.4%							
90-120	0.0	0.0%							
0-90	1296.1	100.0%							
90-180	0.0	0.0%							
0-180	1296.1	100.0%							

Lumens Per Zone											
Zone	Lumens	% Total	Zone	Lumens	% Total						
0-10	51.4	4.0%	90-100	0.0	0.0%						
10-20	145.3	11.2%	100-110	0.0	0.0%						
20-30	214.6	16.6%	110-120	0.0	0.0%						
30-40	250.2	19.3%	120-130	0.0	0.0%						
40-50	247.6	19.1%	130-140	0.0	0.0%						
50-60	206.1	15.9%	140-150	0.0	0.0%						
60-70	124.0	9.6%	150-160	0.0	0.0%						
70-80	41.8	3.2%	160-170	0.0	0.0%						
80-90	15.1	1.2%	170-180	0.0	0.0%						

### **Photometric Data**

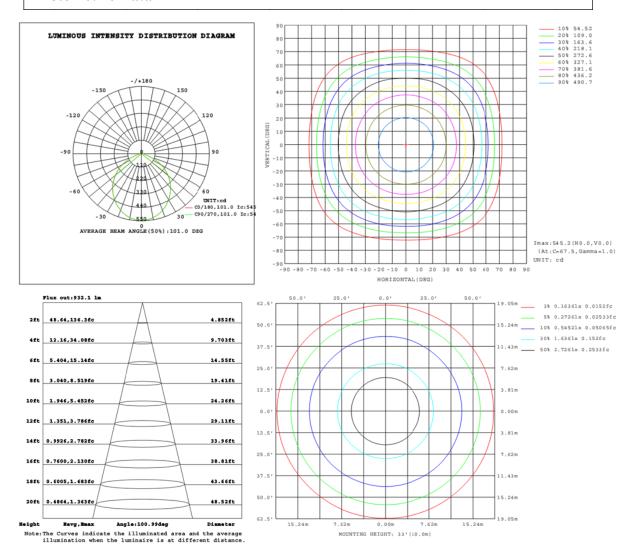
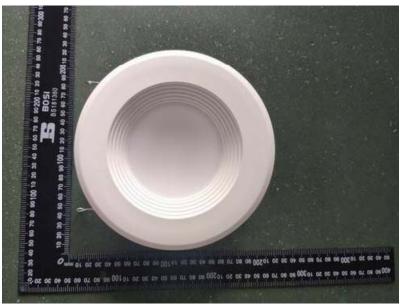
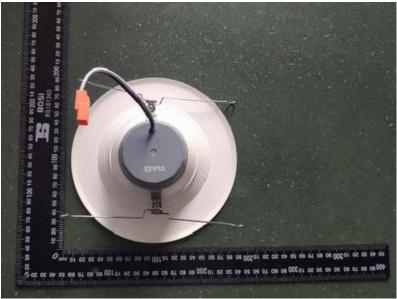


Table1																UNI	r: cd	
C(DEG)																		
γ (DEG)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5		
0	545	545	545	545	545	545	545	545	545	545	545	545	545	545	545	545		
5	542	542	542	542	542	542	542	542	541	541	541	541	541	541	542	542		
10	532	533	532	533	532	532	532	532	531	531	531	531	531	531	532	532		
15	516	517	516	517	516	516	515	515	515	514	514	514	515	515	516	515		
20	494	495	494	495	494	494	493	494	493	492	492	492	492	492	494	493		
25	467	468	467	468	467	467	466	466	465	464	465	464	465	465	466	466		
30	435	437	436	437	436	436	435	435	434	433	433	432	434	433	435	435		
35	401	402	402	403	401	402	400	401	400	398	399	398	399	398	400	400		
40	364	366	365	366	364	365	363	364	363	361	362	360	362	361	363	363		
45	323	321	325	321	325	321	324	319	318	320	316	320	316	320	317	322		
50	279	278	281	279	281	278	280	276	275	277	273	276	273	276	274	278		
55	233	232	235	234	236	233	234	231	229	230	227	229	227	230	228	232		
60	183	184	186	186	187	185	185	182	180	180	178	178	177	179	179	182		
65	125	129	129	131	130	130	127	127	126	122	122	120	122	121	124	124		
70	70.5	73.5	73.5	75.8	74.5	75.2	72.3	72.1	71.1	68.4	68.4	66.5	67.7	67.1	69.4	69.8		
75	36.5	37.9	37.9	39.0	38.4	38.9	37.7	37.5	36.9	35.6	35.6	34.7	35.2	34.9	36.0	36.0		
80	20.6	21.1	21.2	21.7	21.4	21.6	21.1	21.1	20.9	20.4	20.3	19.9	20.1	20.0	20.4	20.5		
85	13.4	13.8	13.8	14.0	13.9	14.0	13.7	13.6	13.9	13.6	13.6	13.4	13.5	13.4	13.6	13.7		
90	7.87	7.87	7.89	7.92	7.93	7.90	7.88	7.85	8.53	8.53	8.53	8.55	8.54	8.54	8.54	8.55		

# 3. Product Photo





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