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): DLR0109(R4R8950120WB)

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

Type of

Downlights

Luminaire:

Report Date:

2020-09-15

Prepared By:

Test & Report By:

Review By:

Engineer: Sun Fangfang

Manager: Huang Qichong

1.1 Rated Values:		
Rated Voltage / Frequency	120Vac, 60 Hz	
Nominal Power	8.0W	
Rated Initial Lamp Lumen	700 lm	
Declared CCT	5000K	

1.2 Test Specifications:

112 Test specifications		
Solid-State Lighting Products 2. ANSI C78.377-2015 Specifications for the Chromatic State Lighting Products 3. CIE 13.3-1995 Method of Measuring and Specifying Rendering Properties of Light Sources 4. CIE 15-2004 Technical Report Colorimetry 5. IESNA LM-16-93 Practical Guide to Colorimetry of 6. IESNA TM-16-05 Technical Memorandum on Light Diode (LED) Sources and Systems	Total Luminous Flux	
	2.	Luminous Distribution Intensity
	3.	Luminous Efficacy
Test item	2. L 3. L 4. C 5. C 6. C 7. E 1. III S 2. A S 3. C R 4. C 5. II 6. III	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
		IESNA LM-16-93 Practical Guide to Colorimetry of Light Source
		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°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° 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	2020-09-15	Test Ambient:	25.3 ℃
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	DLR0109(R4R8950120WB)	5000K	

Electrical Measurement:

1	Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
	202009150022	120.0	60	0.063	7.42	0.979

Chromaticity Measurement - Sphere-Spectroradiometer Method:

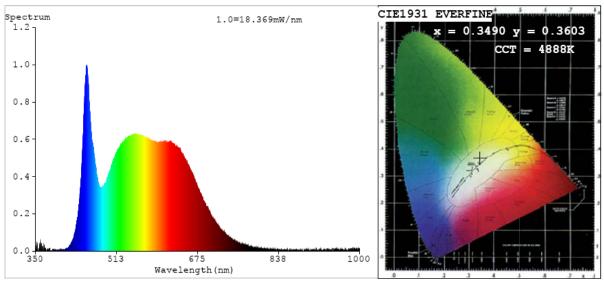
Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	4888
Duv	0.0028
Chromaticity (x, y)	x=0.3490 y=0.3603
Chromaticity (u', v')	u'=0.2107 v'=0.4894
Color Rendering Index (CRI)	92.3
R9	71

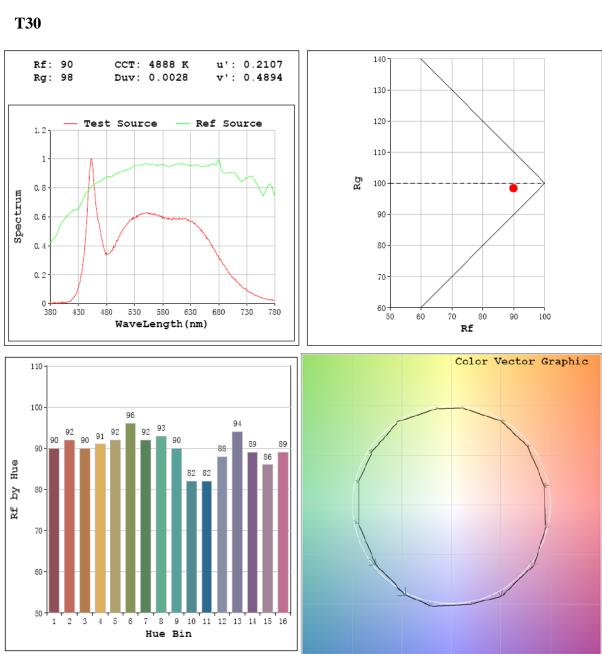
Special 6	Color Ren	dering In	dices
R1	92	R9	71
R2	95	R10	86
R3	95	R11	90
R4	91	R12	64
R5	90	R13	93
R6	90	R14	97
R7	96	R15	91
R8	89		

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	775.38
Luminous Efficacy (lm/W)	104.50
Beam Angle (°)	99.7
Center Beam Candle Power (cd)	328.1

Spectral Power Distribution & Chromaticity Diagram





Zonal Lumen Tabulation

Zonal Lun	nen Summ	nary				
Zone	Lumens	% Luminaire				
0-30	248.8	32.1%				
0-40	400.7	51.7%				
0-60	667.2	86.0%				
60-90	108.2	14.0%				
70-100	37.3	4.8%				
90-120	0.0	0.0%				
0-90	775.4	100.0%				
90-180	0.0	0.0%				
0-180	775.4	100.0%				

Lume	ns Per Zoi	ne					
Zone	Lumens	% Total	% Total Zone Lumens				
0-10	31.0	4.0%	90-100	0.0	0.0%		
10-20	87.7	11.3%	100-110	0.0	0.0%		
20-30	130.2	16.8%	110-120	0.0	0.0%		
30-40	151.8	19.6%	120-130	0.0	0.0%		
40-50	147.6	19.0%	130-140	0.0	0.0%		
50-60	119.0	15.3%	140-150	0.0	0.0%		
60-70	70.9	9.1%	150-160	0.0	0.0%		
70-80	27.0	3.5%	160-170	0.0	0.0%		
80-90	10.3	1.3%	170-180	0.0	0.0%		

Photometric Data

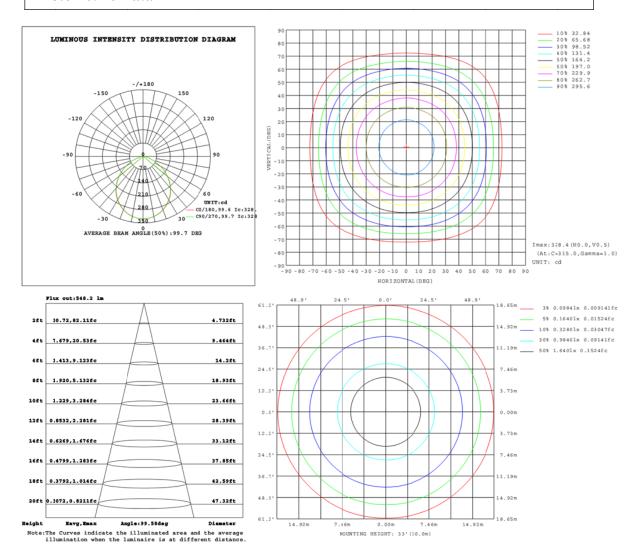
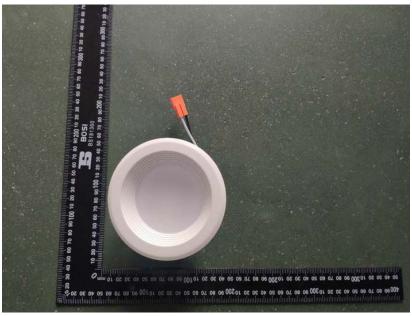


Table1																UNI	T: cd	Т
C(DEG)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5		
0	328	328	328	328	328	328	328	328	328	328	328	328	328	328	328	328		I
5	326	326	326	326	326	326	326	326	326	326	326	326	326	326	327	327		L
10	321	321	321	321	320	320	319	319	320	320	320	320	321	321	321	322		L
15	312	312	311	311	311	311	310	309	310	310	311	311	312	312	312	313		L
20	300	299	299	299	298	298	297	296	297	297	298	298	299	299	300	300		I
25	284	284	283	283	282	282	281	280	281	282	282	282	284	283	285	285		
30	266	266	265	265	264	264	262	262	263	263	264	264	266	265	267	267		I
35	245	245	244	244	242	242	241	240	241	242	243	243	244	244	246	246		Ι
40	220	220	219	219	218	218	216	216	217	217	218	218	220	219	221	221		Ι
45	193	193	192	193	191	191	189	189	190	190	191	191	193	192	194	194		Γ
50	165	165	164	164	162	163	161	161	161	161	162	162	164	164	166	166		Ι
55	135	135	134	134	133	133	131	131	132	132	133	132	134	134	135	135		Ι
60	103	104	103	103	102	103	101	101	101	101	102	101	103	103	104	104		Τ
65	71.9	72.6	71.7	71.9	70.6	71.6	70.3	70.5	70.5	69.9	71.0	70.3	71.5	71.6	73.0	72.5		Τ
70	43.4	44.1	43.3	43.5	42.5	43.4	42.3	42.7	42.6	42,2	43.0	42.3	43.2	43.3	44.3	44.0		Τ
75	24.2	24.6	24.2	24.4	23.9	24.2	23.8	24.0	24.0	23.7	24.1	23.8	24.2	24.0	24.6	24.3		T
80	14.4	14.5	14.4	14.5	14.4	14.4	14.3	14.4	14.4	14.2	14.3	14.3	14.4	14.3	14.3	14.2		Τ
85	9.26	9.42	9.28	9.38	9.23	9.32	9.18	9.29	9.56	9.41	9.54	9.44	9.57	9.49	9.60	9.51		T
90	4.73	4.72	4.72	4.71	4.72	4.72	4.71	4.71	5.15	5.14	5.14	5.14	5.14	5.15	5.15	5.14		T
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3. Product Photo





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