# 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): DLR0113(R6S10950120WB)**

**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:

0 3 70 7

Engineer: Sun Fangfang

Manager: Huang Qichong

1.1 Rated Values:							
Rated Voltage / Frequency	120Vac, 60 Hz						
Nominal Power	10.0W						
Rated Initial Lamp Lumen	900 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	2020-09-15	Test Ambient:	25.3 ℃
<b>Test Orientation</b>	As intended	Stabilization Time (min)	90
Model Number	DLR0113(R6S10950120WB)	5000K	

## **Electrical Measurement:**

1	Sample No.	Voltage (Vac)	Frequency (Hz )	Current (A)	Power (W)	Power Factor
	202009150018	120.0	60	0.084	9.90	0.980

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

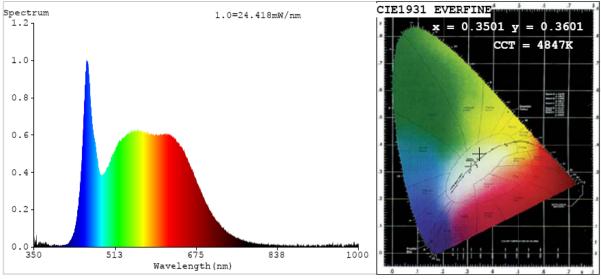
Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	4847
Duv	0.0023
Chromaticity (x, y)	x=0.3501 y=0.3601
Chromaticity (u', v')	u'=0.2115 v'=0.4895
Color Rendering Index (CRI)	92.9
R9	74

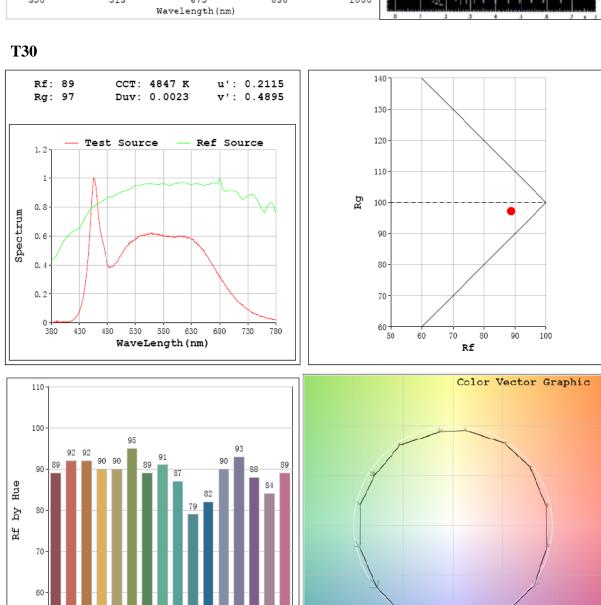
Special Color Rendering Indices										
R1	94	R9	74							
R2	98	R10	92							
R3	98	R11	89							
R4	89	R12	65							
R5	91	R13	95							
R6	93	R14	99							
R7	93	R15	91							
R8	88									

# **Photometric Measurement – Goniophotometer Method:**

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1026.7
Luminous Efficacy (lm/W)	103.70
Beam Angle (°)	113.9
Center Beam Candle Power (cd)	359.2

## **Spectral Power Distribution & Chromaticity Diagram**





8 9 10 11 12 13 14 15 16

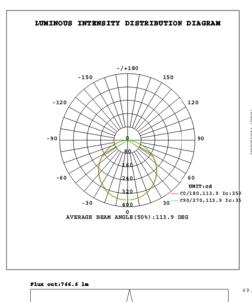
Hue Bin

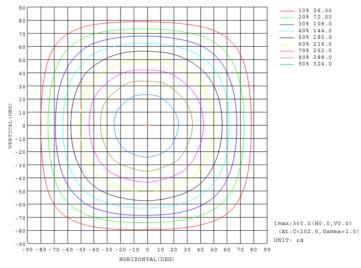
### **Zonal Lumen Tabulation**

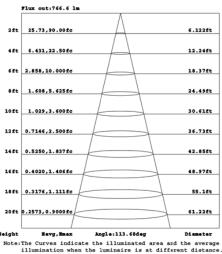
Zonal Lumen Summary											
Zone	Lumens	% Luminaire									
0-30	279.2	27.2%									
0-40	457.7	44.6%									
0-60	814.4	79.3%									
60-90	212.3	20.7%									
70-100	83.4	8.1%									
90-120	0.0	0.0%									
0-90	1026.7	100.0%									
90-180	0.0	0.0%									
0-180	1026.7	100.0%									

Lumens Per Zone												
Zone	Lumens	% Total	Zone	Lumens	% Total							
0-10	34.0	3.3%	90-100	0.0	0.0% 0.0% 0.0%							
10-20	97.5	9.5%	100-110	0.0								
20-30	147.7	14.4%	110-120	0.0								
30-40	10/ 5 1		120-130	0.0	0.0%							
40-50			130-140	0.0								
50-60	170.1	16.6%	140-150	0.0	0.0%							
60-70	60-70 129.0 12.0   70-80 68.3 6.7   80-90 15.0 1.5		150-160	0.0	0.0%							
70-80			160-170	0.0	0.0%							
80-90			170-180	0.0	0.0%							

### **Photometric Data**







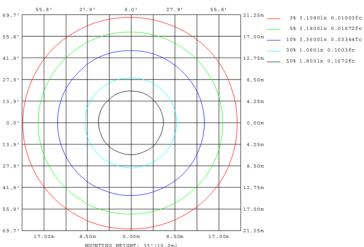
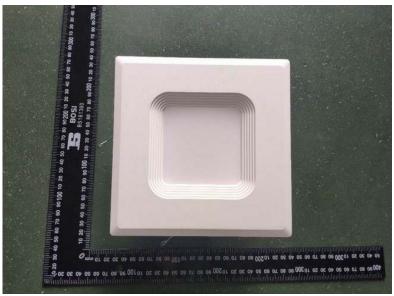
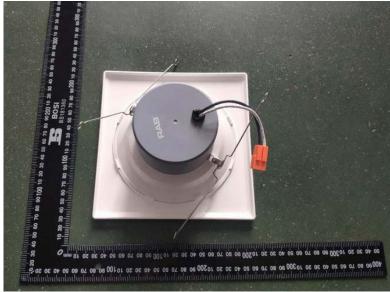


Table1																UNI	r: cd	
C (DEG)																		
Y (DEG)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5		
0	359	359	359	359	359	359	359	359	359	359	359	359	359	359	359	359		
5	357	357	357	358	358	358	358	358	358	358	358	358	358	357	357	357		
10	3 5 2	352	352	3 5 3	353	354	354	354	354	354	354	353	3 5 3	352	352	352		
15	344	344	344	346	346	347	347	347	347	347	347	346	345	344	344	344		
20	333	334	334	335	336	337	337	338	338	337	336	335	335	334	333	332		
25	319	315	320	317	322	321	324	323	322	324	319	322	316	320	315	319		
30	3 0 2	299	304	3 0 2	307	304	3 0 9	305	305	308	3 0 3	306	301	3 0 3	299	302		
35	283	281	286	284	288	286	291	287	287	290	285	288	282	285	280	283		
40	262	260	265	263	267	266	271	267	267	270	265	267	261	263	260	262		
45	238	237	242	240	245	243	248	245	244	247	243	243	238	240	237	239		
50	213	212	217	216	220	219	224	221	220	222	218	219	213	215	211	213		
55	186	186	190	190	193	193	197	195	194	195	192	192	187	188	185	187		
60	154	158	159	162	162	166	166	168	166	165	164	161	159	157	157	156		
65	123	127	130	131	131	135	138	137	135	134	135	130	127	126	128	124		
70	89.9	94.0	97.2	98.9	98.3	103	105	105	102	102	103	97.6	94.2	93.1	94.5	92.2		
75	56.8	61.1	63.4	66.0	65.3	69.7	71.3	71.8	69.5	68.9	68.6	64.7	60.9	60.2	60.8	59.3		
8 0	24.3	27.9	30.6	32.5	32.0	36.3	38.1	38.1	36.2	35.6	35.4	31.1	27.9	27.1	28.1	26.1		
85	9.50	9.87	10.0	10.6	10.7	11.3	11.9	11.9	11.3	11.1	11.0	10.4	9.90	9.74	9.76	9.63		
90	6.82	6.85	6.87	6.91	7.19	7.32	7.40	7.39	7.58	7.51	7.22	7.11	7.12	7.12	7.10	7.10		

# 3. Product Photo





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