

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): DLR0071(R4S7827120WB)

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

1.1 Rated Values:	
Rated Voltage / Frequency	120Vac, 50/60 Hz
Nominal Power	7.0W
Rated Initial Lamp Lumen	700 lm
Declared CCT	2700K

1.2 Test Specifications:

Test item	<ol style="list-style-type: none"> 1. Total Luminous Flux 2. Luminous Distribution Intensity 3. Luminous Efficacy 4. Correlated Color Temperature 5. Color Rendering Index 6. Chromaticity Coordinate 7. Electrical Parameters
Reference Standard	<ol style="list-style-type: none"> 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 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	QD25

1.3 Test Methods

<p>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 ±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>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°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>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 ±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	DLR0071(R4S7827120WB)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
1908250055	120.0	60	0.055	6.47	0.978

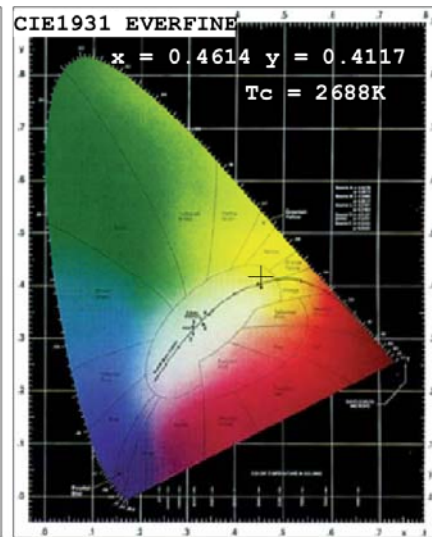
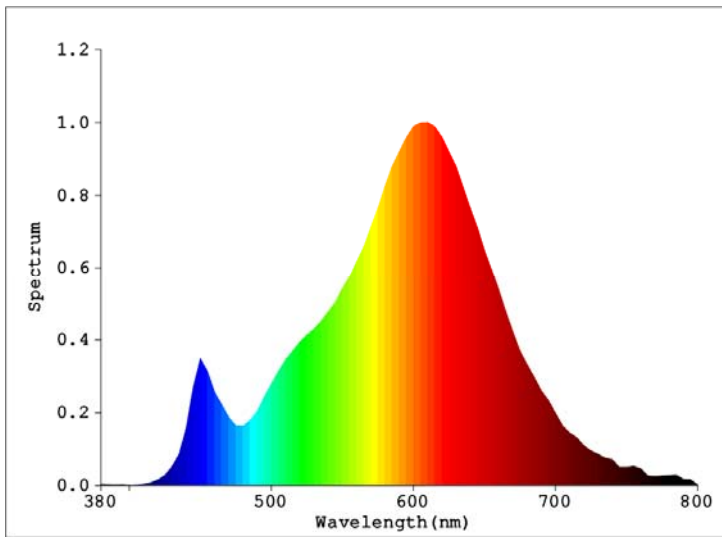
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	82	R9	11
Frequency (Hz)	60	R2	92	R10	83
CCT (K)	2688	R3	95	R11	81
Duv	0.00029	R4	81	R12	77
Chromaticity (x, y)	x=0.4614 y=0.4117	R5	82	R13	84
Chromaticity (u', v')	u'=0.2630 v'=0.5280	R6	92	R14	98
Color Rendering Index (CRI)	83.1	R7	82	R15	74
R9	11	R8	59	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	712.94
Luminous Efficacy (lm/W)	110.19
Beam Angle (°)	107.2
Center Beam Candle Power (cd)	254.9

Spectral Power Distribution & Chromaticity Diagram

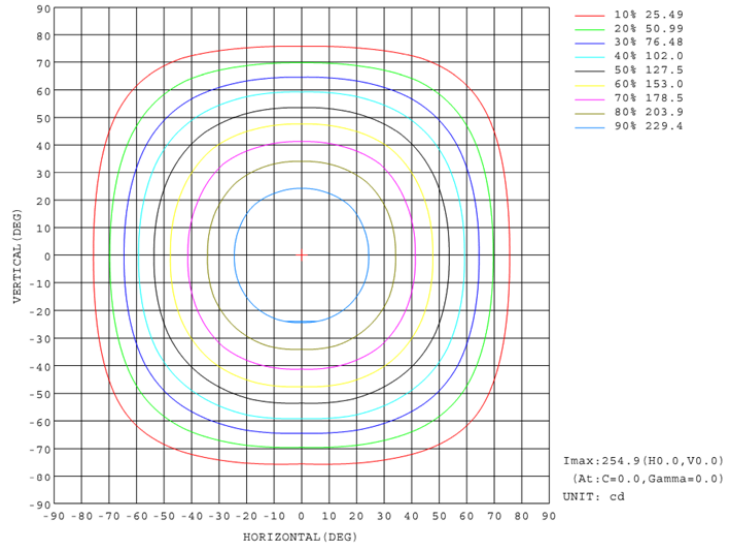
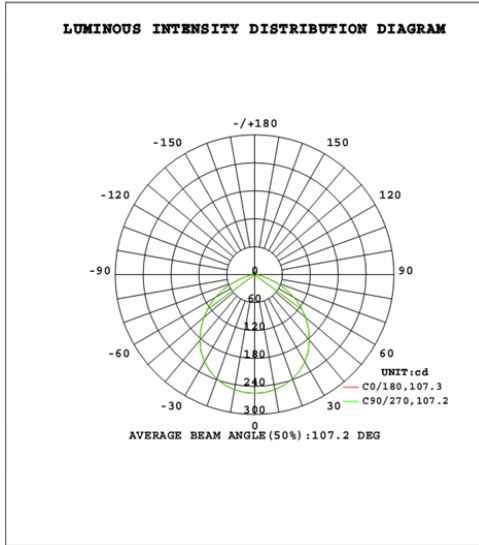


Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	198.9	27.9%
0-40	325.5	45.7%
0-60	564.1	79.1%
60-90	117.5	16.5%
70-100	47.2	6.6%
90-120	14.0	2.0%
0-90	681.6	95.6%
90-180	31.4	4.4%
0-180	712.9	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	24.1	3.4%	90-100	4.8	0.7%
10-20	69.4	9.7%	100-110	4.6	0.7%
20-30	105.4	14.8%	110-120	4.5	0.6%
30-40	126.7	17.8%	120-130	4.3	0.6%
40-50	128.3	18.0%	130-140	4.1	0.6%
50-60	110.3	15.5%	140-150	3.6	0.5%
60-70	75.1	10.5%	150-160	2.9	0.4%
70-80	32.5	4.6%	160-170	1.9	0.3%
80-90	9.9	1.4%	170-180	0.7	0.1%

Photometric Data



Flux out: 512.3 lm

Height	Havg, Hmax	Angle: 107.12deg	Diameter
1ft	79.96, 254.9fc		2.709ft
2ft	19.99, 63.73fc		5.418ft
3ft	8.884, 28.33fc		8.127ft
4ft	4.997, 15.93fc		10.84ft
5ft	3.198, 10.20fc		13.54ft
6ft	2.221, 7.081fc		16.25ft
7ft	1.632, 5.203fc		18.96ft
8ft	1.249, 3.983fc		21.67ft
9ft	0.9871, 3.147fc		24.38ft
10ft	0.7996, 2.549fc		27.09ft

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

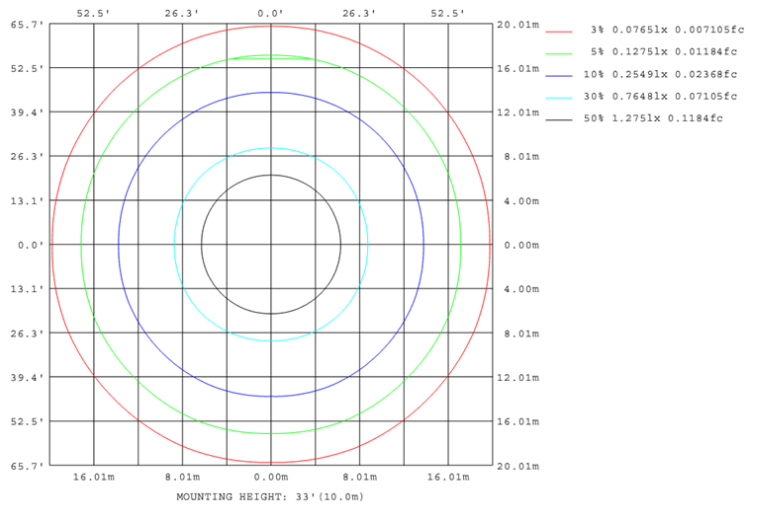
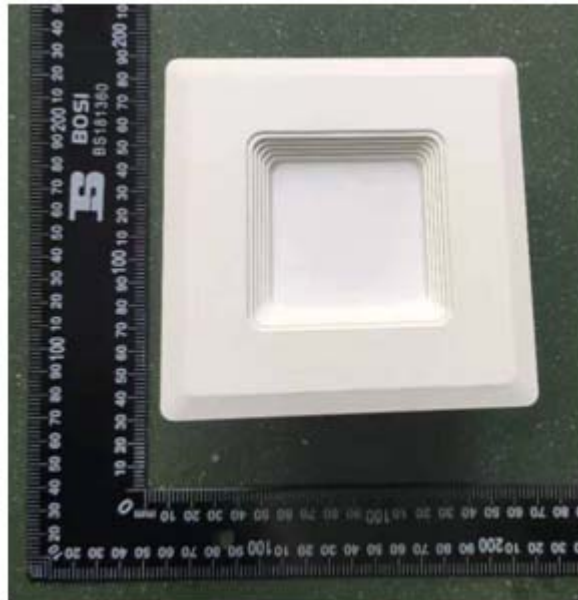
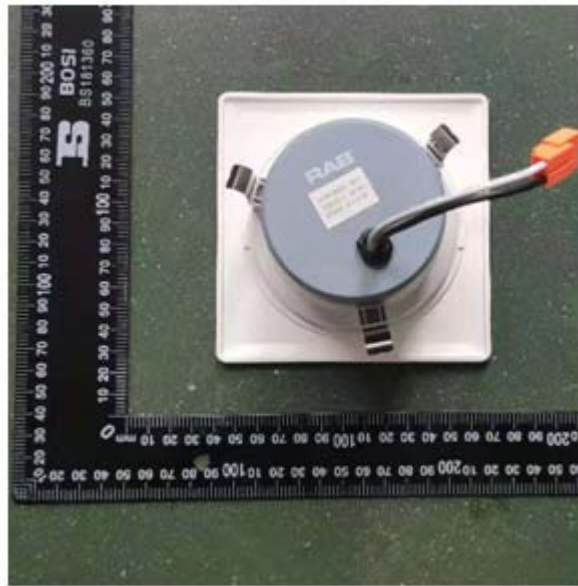


Table--1

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	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255			
5	254	254	254	254	254	254	254	254	254	254	254	254	254	254	254	254			
10	251	251	251	251	251	251	251	251	251	251	251	251	251	251	251	251			
15	246	246	246	246	246	246	246	246	246	246	246	245	245	245	246	245			
20	238	239	238	239	238	239	239	239	238	238	239	238	238	238	238	238			
25	228	229	229	229	228	229	230	229	228	229	229	228	228	228	229	228			
30	216	217	217	217	216	218	218	218	217	217	217	216	216	216	217	217			
35	201	204	204	204	201	204	204	204	202	203	204	203	201	202	204	203			
40	183	186	188	186	183	186	189	186	184	185	188	185	183	185	188	185			
45	164	167	169	167	164	167	169	167	164	166	169	166	164	166	169	166			
50	143	146	147	146	143	147	147	147	143	145	147	145	143	145	147	145			
55	121	125	124	125	121	125	125	125	121	124	124	123	121	123	124	124			
60	98.3	102	101	102	98.2	102	101	102	98.5	101	101	100	98.2	101	101	101			
65	73.9	77.1	76.7	77.0	73.8	77.1	76.9	77.1	74.3	76.2	77.1	76.0	74.2	76.1	77.0	76.2			
70	49.1	51.9	52.6	51.9	49.0	51.9	52.7	51.9	49.5	51.0	53.1	51.0	49.5	51.0	53.2	51.2			
75	26.9	29.1	29.7	29.2	26.9	29.1	29.7	29.1	27.2	28.5	30.2	28.5	27.3	28.5	30.2	28.6			
80	14.3	14.8	14.7	14.8	14.2	14.8	14.8	14.7	14.3	14.5	15.0	14.6	14.4	14.6	15.1	14.6			
85	8.41	8.64	8.37	8.62	8.38	8.61	8.37	8.58	8.54	8.52	8.61	8.53	8.55	8.54	8.64	8.59			
90	4.41	4.42	4.41	4.41	4.39	4.41	4.42	4.41	4.63	4.64	4.63	4.64	4.64	4.64	4.64	4.64			
95	4.19	4.20	4.21	4.21	4.19	4.20	4.21	4.20	4.59	4.61	4.59	4.59	4.59	4.59	4.59	4.59			
100	4.10	4.10	4.10	4.09	4.09	4.09	4.10	4.10	4.61	4.62	4.60	4.60	4.60	4.61	4.61	4.61			
105	4.07	4.07	4.08	4.07	4.06	4.07	4.07	4.07	4.67	4.67	4.67	4.68	4.67	4.67	4.67	4.68			
110	4.12	4.11	4.11	4.11	4.11	4.10	4.11	4.11	4.77	4.77	4.76	4.77	4.76	4.77	4.76	4.77			
115	4.21	4.21	4.21	4.20	4.21	4.19	4.19	4.20	4.88	4.89	4.88	4.89	4.88	4.89	4.88	4.89			
120	4.34	4.33	4.34	4.33	4.34	4.33	4.33	4.33	5.01	5.02	5.01	5.02	5.02	5.02	5.01	5.02			
125	4.51	4.50	4.50	4.50	4.50	4.50	4.50	4.50	5.18	5.18	5.17	5.18	5.17	5.18	5.17	5.18			
130	4.70	4.70	4.70	4.69	4.70	4.69	4.70	4.69	5.35	5.35	5.34	5.35	5.35	5.35	5.35	5.35			
135	4.93	4.92	4.92	4.91	4.92	4.91	4.92	4.91	5.55	5.55	5.55	5.55	5.54	5.55	5.54	5.55			
140	5.18	5.17	5.17	5.16	5.17	5.16	5.17	5.16	5.76	5.76	5.75	5.76	5.76	5.77	5.75	5.77			
145	5.44	5.43	5.44	5.43	5.44	5.43	5.44	5.42	5.99	5.99	5.97	5.99	5.99	5.99	5.97	6.00			
150	5.72	5.71	5.72	5.70	5.71	5.71	5.72	5.71	6.21	6.22	6.20	6.21	6.21	6.22	6.21	6.22			
155	6.01	6.01	6.01	5.99	6.01	6.00	6.01	5.99	6.44	6.44	6.42	6.43	6.43	6.43	6.43	6.44			
160	6.30	6.28	6.29	6.28	6.29	6.28	6.29	6.28	6.64	6.64	6.62	6.64	6.63	6.63	6.62	6.64			
165	6.57	6.55	6.55	6.55	6.55	6.55	6.54	6.54	6.81	6.81	6.80	6.80	6.80	6.81	6.80	6.81			
170	6.79	6.78	6.78	6.77	6.79	6.78	6.78	6.77	6.95	6.94	6.92	6.94	6.94	6.93	6.93	6.94			
175	6.96	6.96	6.95	6.94	6.96	6.95	6.94	6.94	7.04	7.03	7.01	7.02	7.02	7.02	7.01	7.02			
180	7.06	7.06	7.05	7.05	7.06	7.05	7.04	7.05	7.08	7.06	7.05	7.05	7.05	7.05	7.04	7.05			

3. Product Photo



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