

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): DLR0072(R4S7830120WB)

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	3000K

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:</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>2) Chromaticity Measurement – Sphere-Spectroradiometer Method:</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>3) Electrical Measurements:</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	DLR0072(R4S7830120WB)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
1908250056	120.0	60	0.054	6.41	0.977

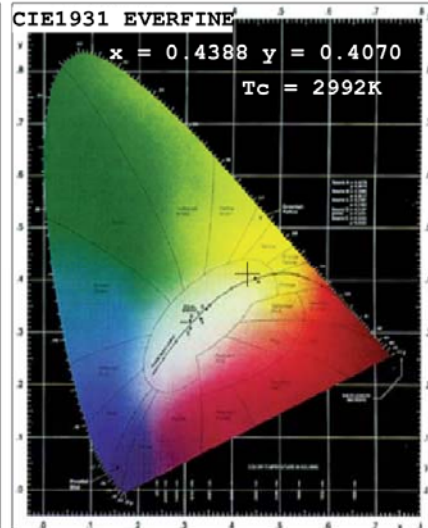
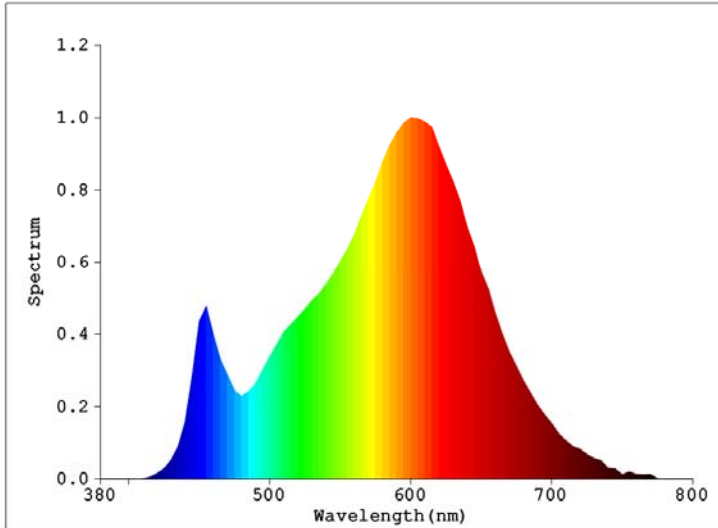
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	81	R9	5
Frequency (Hz)	60	R2	92	R10	83
CCT (K)	2992	R3	95	R11	79
Duv	0.00090	R4	79	R12	72
Chromaticity (x, y)	x=0.4388 y=0.4070	R5	81	R13	84
Chromaticity (u', v')	u'=0.2505 v'=0.5228	R6	91	R14	98
Color Rendering Index (CRI)	82.4	R7	82	R15	73
R9	5	R8	58	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	746.32
Luminous Efficacy (lm/W)	116.43
Beam Angle (°)	107.5
Center Beam Candle Power (cd)	267.1

Spectral Power Distribution & Chromaticity Diagram

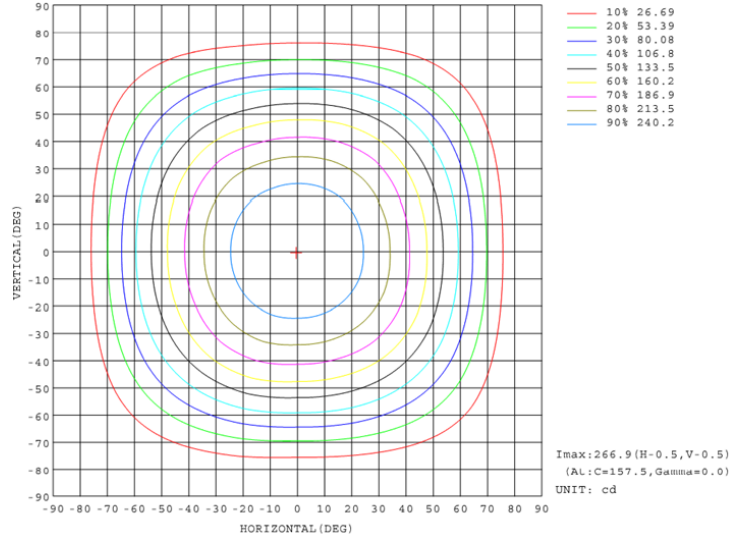
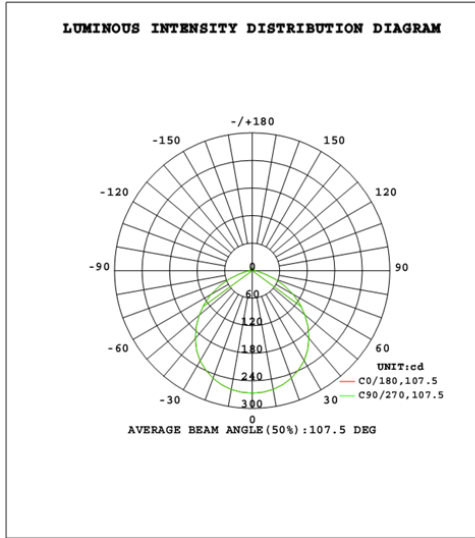


Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	208.3	27.9%
0-40	341.0	45.7%
0-60	590.8	79.2%
60-90	122.7	16.4%
70-100	49.3	6.6%
90-120	14.6	2.0%
0-90	713.5	95.6%
90-180	32.9	4.4%
0-180	746.3	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	25.3	3.4%	90-100	5.0	0.7%
10-20	72.7	9.7%	100-110	4.9	0.6%
20-30	110.4	14.8%	110-120	4.7	0.6%
30-40	132.7	17.8%	120-130	4.6	0.6%
40-50	134.4	18.0%	130-140	4.3	0.6%
50-60	115.4	15.5%	140-150	3.8	0.5%
60-70	78.4	10.5%	150-160	3.0	0.4%
70-80	33.9	4.5%	160-170	2.0	0.3%
80-90	10.3	1.4%	170-180	0.7	0.1%

Photometric Data



Flux out:536.7 lm

Height	Havg	Hmax	Angle:107.46deg	Diameter
1ft	83.76	267.1fc		2.726ft
2ft	20.94	66.77fc		5.451ft
3ft	9.307	29.68fc		8.177ft
4ft	5.235	16.69fc		10.9ft
5ft	3.350	10.68fc		13.63ft
6ft	2.327	7.419fc		16.35ft
7ft	1.709	5.451fc		19.08ft
8ft	1.309	4.173fc		21.81ft
9ft	1.034	3.297fc		24.53ft
10ft	0.8376	2.671fc		27.26ft

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

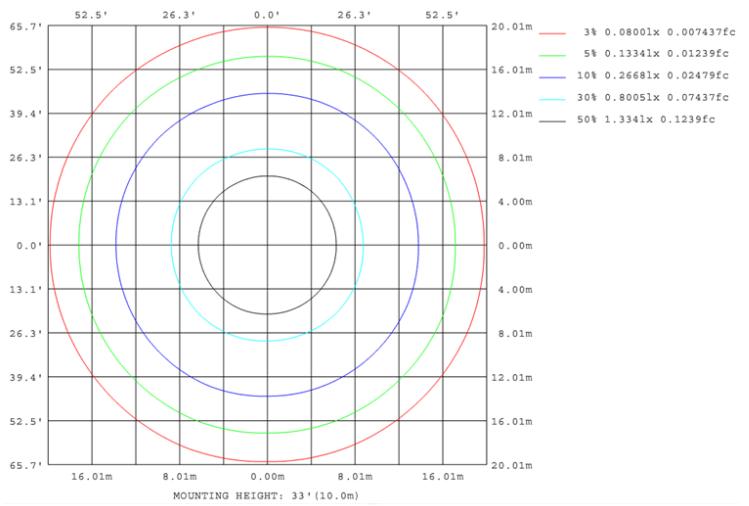
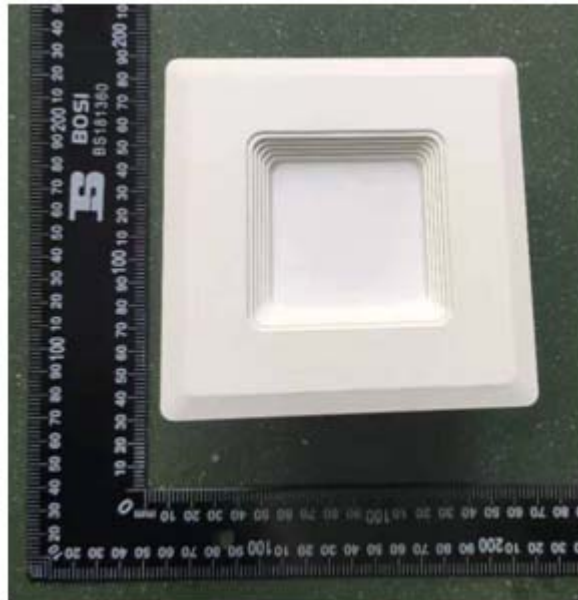
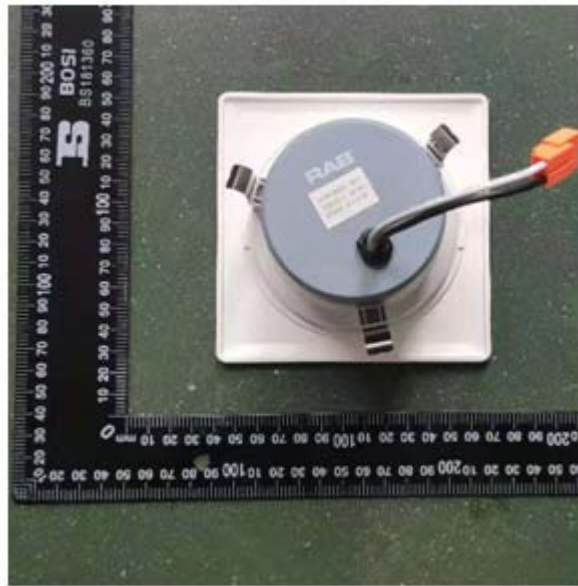


Table--1

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	267	267	267	267	267	267	267	267	267	267	267	267	267	267	267	267			
5	266	266	266	266	266	266	266	266	266	266	266	266	266	266	266	266			
10	263	263	263	263	263	263	263	263	263	263	263	263	263	263	263	263			
15	257	257	257	257	257	258	258	258	257	257	258	257	257	257	258	257			
20	249	250	250	250	249	250	250	250	250	250	250	249	250	250	250	250			
25	239	240	240	239	239	240	240	240	239	240	240	239	239	240	240	239			
30	226	227	227	227	227	228	228	228	227	228	228	227	227	228	228	227			
35	211	213	213	212	211	214	214	212	212	214	214	212	212	213	214	212			
40	192	196	196	193	192	196	197	194	193	196	197	193	193	196	197	193			
45	172	176	176	173	172	176	177	174	173	176	177	173	173	176	177	173			
50	150	154	153	151	150	154	154	152	151	154	155	151	151	154	155	151			
55	127	130	129	128	127	131	130	129	128	130	131	129	128	130	131	128			
60	103	105	104	104	103	106	105	105	104	106	106	104	104	106	106	104			
65	77.7	79.9	79.1	78.9	77.3	80.0	79.5	79.2	78.8	80.2	81.1	79.4	79.1	80.2	80.9	79.3			
70	51.7	54.1	53.6	52.7	51.2	54.0	53.9	52.9	52.8	54.4	55.8	53.3	53.1	54.4	55.5	53.2			
75	28.4	30.5	30.1	29.1	28.1	30.4	30.2	29.2	29.4	30.9	31.8	29.5	29.6	30.8	31.6	29.4			
80	15.0	15.3	15.1	15.2	14.9	15.3	15.2	15.2	15.3	15.5	15.9	15.3	15.4	15.4	15.8	15.3			
85	8.78	8.87	8.64	8.82	8.74	8.88	8.70	8.85	9.11	9.09	9.20	9.03	9.13	9.07	9.17	9.02			
90	4.59	4.59	4.59	4.59	4.58	4.60	4.61	4.59	4.87	4.86	4.87	4.86	4.88	4.88	4.87	4.86			
95	4.38	4.39	4.39	4.38	4.38	4.39	4.40	4.39	4.80	4.81	4.80	4.80	4.80	4.82	4.81	4.81			
100	4.28	4.28	4.29	4.27	4.28	4.28	4.29	4.28	4.81	4.82	4.81	4.82	4.82	4.84	4.82	4.83			
105	4.26	4.25	4.27	4.25	4.26	4.25	4.27	4.26	4.88	4.89	4.88	4.89	4.88	4.89	4.88	4.89			
110	4.30	4.29	4.30	4.30	4.30	4.29	4.30	4.29	4.98	4.99	4.98	4.98	4.98	4.99	4.99	5.00			
115	4.41	4.39	4.40	4.39	4.40	4.39	4.40	4.40	5.11	5.11	5.10	5.11	5.11	5.12	5.11	5.12			
120	4.55	4.52	4.54	4.54	4.53	4.53	4.53	4.53	5.24	5.25	5.25	5.26	5.26	5.26	5.25	5.27			
125	4.72	4.72	4.72	4.71	4.72	4.72	4.72	4.72	5.41	5.42	5.40	5.42	5.42	5.42	5.42	5.43			
130	4.92	4.92	4.92	4.92	4.93	4.92	4.92	4.92	5.59	5.60	5.59	5.60	5.60	5.61	5.60	5.61			
135	5.16	5.16	5.16	5.16	5.17	5.16	5.17	5.16	5.79	5.81	5.79	5.81	5.80	5.81	5.80	5.82			
140	5.42	5.42	5.42	5.42	5.43	5.42	5.43	5.41	6.02	6.03	6.02	6.03	6.03	6.04	6.03	6.04			
145	5.69	5.69	5.70	5.70	5.70	5.70	5.70	5.69	6.26	6.26	6.26	6.27	6.26	6.27	6.27	6.28			
150	6.00	5.98	6.00	5.99	6.01	5.99	6.00	5.98	6.49	6.50	6.49	6.50	6.50	6.51	6.50	6.51			
155	6.30	6.29	6.30	6.29	6.30	6.29	6.30	6.29	6.73	6.73	6.72	6.73	6.73	6.74	6.73	6.75			
160	6.60	6.58	6.59	6.58	6.60	6.58	6.60	6.58	6.94	6.94	6.94	6.95	6.94	6.95	6.94	6.96			
165	6.87	6.86	6.86	6.85	6.87	6.86	6.87	6.87	7.12	7.12	7.11	7.13	7.12	7.12	7.12	7.13			
170	7.12	7.10	7.10	7.10	7.12	7.10	7.11	7.10	7.27	7.27	7.26	7.26	7.27	7.27	7.26	7.28			
175	7.29	7.28	7.28	7.29	7.29	7.28	7.28	7.28	7.36	7.35	7.35	7.35	7.35	7.35	7.35	7.36			
180	7.40	7.39	7.39	7.40	7.39	7.39	7.39	7.39	7.40	7.39	7.39	7.39	7.39	7.39	7.39	7.40			

3. Product Photo



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