

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): DLR0041(R6R8830120WS)

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

**Type of
Luminaire:** Downlights

Report Date: 2019-09-30

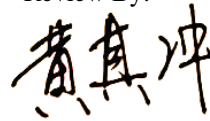
Prepared By:

Test & Report By:



Engineer: Sun Fangfang

Review By:



Manager: Huang Qichong

1.1 Rated Values:	
Rated Voltage / Frequency	120Vac, 50/60 Hz
Nominal Power	8.0W
Rated Initial Lamp Lumen	850 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:	25.5 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	DLR0041(R6R8830120WS)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
1908250025	120.0	60	0.065	7.66	0.976

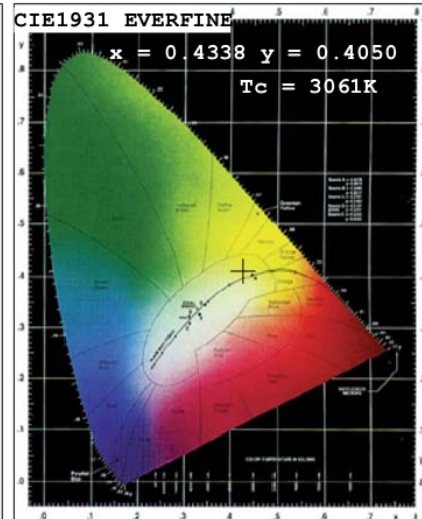
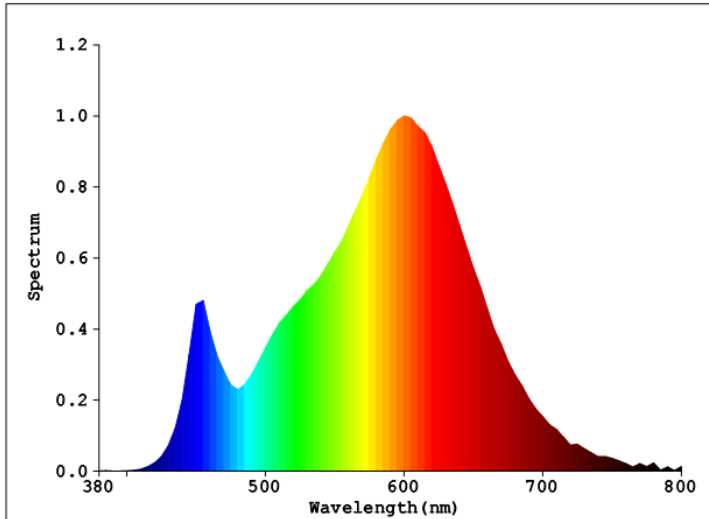
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	81	R9	6
Frequency (Hz)	60	R2	92	R10	81
CCT (K)	3061	R3	95	R11	79
Duv	0.00081	R4	80	R12	72
Chromaticity (x, y)	x=0.4338 y=0.4050	R5	81	R13	84
Chromaticity (u', v')	u'=0.2482 v'=0.5213	R6	90	R14	98
Color Rendering Index (CRI)	82.5	R7	82	R15	73
R9	6	R8	58	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	879.27
Luminous Efficacy (lm/W)	114.79
Beam Angle (°)	98.4
Center Beam Candle Power (cd)	363.2

Spectral Power Distribution & Chromaticity Diagram

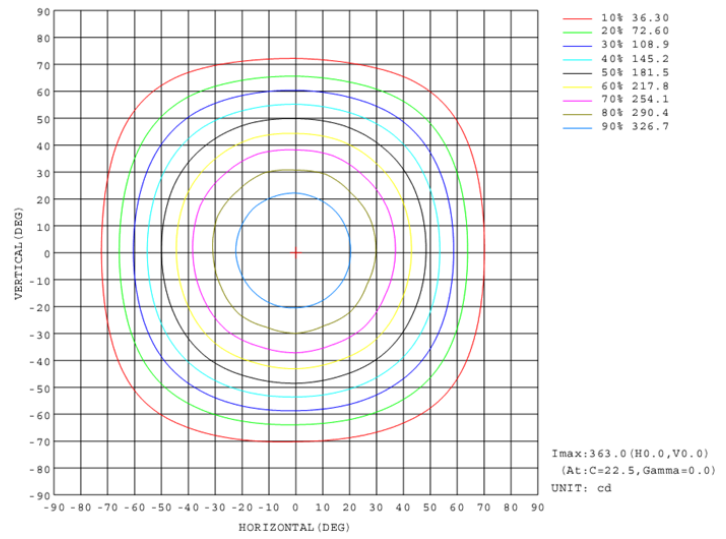
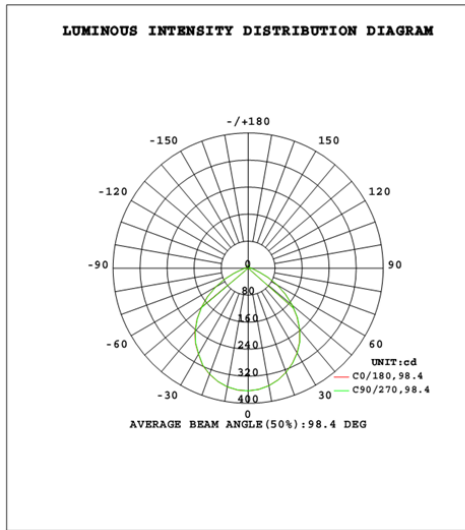


Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	275.7	31.3%
0-40	443.3	50.4%
0-60	730.5	83.1%
60-90	110.3	12.5%
70-100	44.8	5.1%
90-120	16.7	1.9%
0-90	840.8	95.6%
90-180	38.5	4.4%
0-180	879.3	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	34.3	3.9%	90-100	5.7	0.7%
10-20	97.2	11.1%	100-110	5.5	0.6%
20-30	144.2	16.4%	110-120	5.5	0.6%
30-40	167.6	19.1%	120-130	5.4	0.6%
40-50	161.4	18.4%	130-140	5.1	0.6%
50-60	125.8	14.3%	140-150	4.5	0.5%
60-70	71.2	8.1%	150-160	3.6	0.4%
70-80	27.4	3.1%	160-170	2.4	0.3%
80-90	11.7	1.3%	170-180	0.8	0.1%

Photometric Data



Flux out:604.7 lm

Height	Havg, Hmax	Angle:98.35deg	Diameter
1ft	135.5,363.2ftc		2.315ft
2ft	33.88,90.80ftc		4.63ft
3ft	15.06,40.35ftc		6.944ft
4ft	8.470,22.70ftc		9.259ft
5ft	5.421,14.53ftc		11.57ft
6ft	3.764,10.09ftc		13.89ft
7ft	2.766,7.412ftc		16.2ft
8ft	2.118,5.675ftc		18.52ft
9ft	1.673,4.484ftc		20.83ft
10ft	1.355,3.632ftc		23.15ft

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

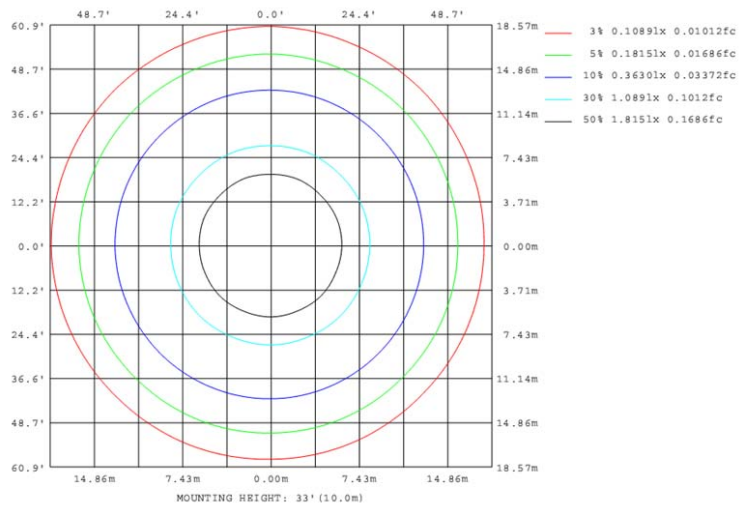
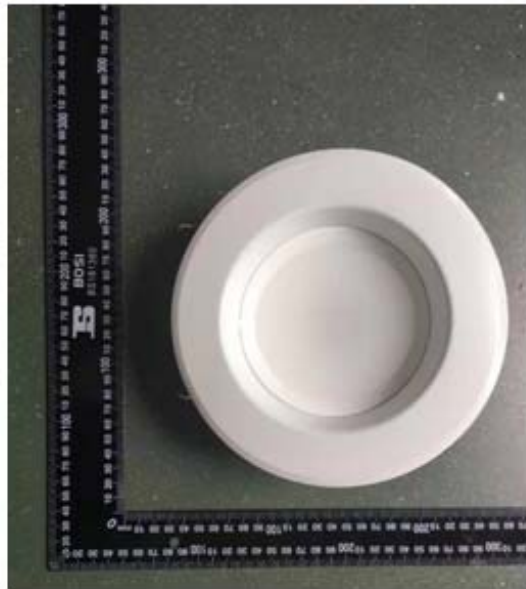
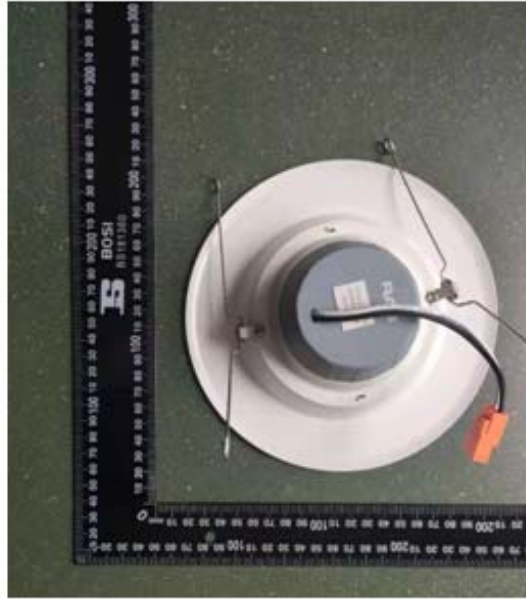


Table--1

UNIT: 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	363	363	363	363	363	363	363	363	363	363	363	363	363	363	363	363			
5	360	360	360	360	360	361	361	361	362	362	362	362	362	362	361	360			
10	353	353	353	353	353	354	355	356	357	357	357	357	356	355	355	354			
15	342	342	342	343	343	344	345	346	347	348	348	347	347	346	345	343			
20	328	328	327	328	328	330	331	333	334	335	335	334	334	332	331	329			
25	310	306	309	307	311	312	314	315	318	318	319	318	318	315	312	312			
30	289	285	289	286	290	289	294	292	294	299	295	298	293	295	290	291			
35	266	262	265	263	267	266	270	270	272	276	273	275	271	272	267	267			
40	237	233	236	234	238	238	243	243	245	249	247	249	244	244	239	239			
45	205	201	203	202	206	206	211	212	214	218	216	217	213	213	208	208			
50	171	168	169	169	172	173	177	178	181	185	183	184	180	180	175	173			
55	134	134	133	134	135	138	140	144	147	148	149	147	146	143	141	137			
60	99.3	98.6	97.2	99.2	99.7	103	105	109	112	113	114	112	111	108	106	102			
65	64.7	64.0	62.8	64.5	65.1	68.3	70.1	73.7	77.0	77.9	79.0	77.1	76.3	73.1	71.3	67.8			
70	36.6	36.2	35.4	36.5	37.0	39.1	40.3	42.9	45.4	46.0	47.0	45.5	44.9	42.3	41.2	38.6			
75	21.6	21.4	21.0	21.6	21.8	22.8	23.3	24.5	25.6	25.9	26.3	25.6	25.3	24.2	23.6	22.5			
80	15.2	15.1	14.9	15.2	15.3	15.6	15.8	16.1	16.6	16.7	17.0	16.7	16.6	16.2	16.0	15.6			
85	9.34	9.25	9.00	9.36	9.61	10.2	10.5	11.2	12.0	12.1	12.3	11.9	11.8	11.2	10.7	10.1			
90	5.05	5.01	5.02	5.01	5.05	5.08	5.14	5.41	6.24	6.32	6.45	6.14	6.01	5.63	5.51	5.51			
95	4.86	4.83	4.85	4.83	4.86	4.86	4.89	4.87	5.43	5.44	5.44	5.45	5.44	5.45	5.45	5.46			
100	4.81	4.80	4.81	4.80	4.81	4.81	4.82	4.82	5.45	5.45	5.46	5.46	5.48	5.47	5.49	5.50			
105	4.85	4.85	4.86	4.85	4.84	4.85	4.84	4.84	5.53	5.53	5.53	5.55	5.56	5.57	5.60	5.60			
110	4.94	4.96	4.95	4.96	4.95	4.95	4.95	4.94	5.67	5.68	5.68	5.70	5.72	5.72	5.75	5.75			
115	5.12	5.14	5.15	5.15	5.14	5.13	5.12	5.10	5.86	5.86	5.87	5.88	5.90	5.92	5.94	5.96			
120	5.34	5.36	5.36	5.38	5.37	5.35	5.35	5.32	6.07	6.07	6.08	6.10	6.12	6.13	6.16	6.18			
125	5.58	5.61	5.62	5.64	5.62	5.61	5.58	5.56	6.29	6.30	6.30	6.33	6.35	6.36	6.40	6.42			
130	5.86	5.89	5.90	5.92	5.90	5.90	5.87	5.84	6.54	6.54	6.54	6.57	6.59	6.62	6.64	6.67			
135	6.16	6.19	6.21	6.22	6.20	6.19	6.17	6.14	6.81	6.81	6.81	6.84	6.86	6.88	6.91	6.94			
140	6.50	6.53	6.55	6.55	6.54	6.52	6.51	6.46	7.08	7.09	7.10	7.13	7.14	7.17	7.20	7.22			
145	6.85	6.89	6.91	6.91	6.90	6.87	6.86	6.81	7.37	7.39	7.39	7.42	7.43	7.47	7.49	7.51			
150	7.21	7.24	7.26	7.27	7.26	7.23	7.21	7.17	7.68	7.69	7.70	7.73	7.75	7.78	7.80	7.82			
155	7.59	7.60	7.64	7.64	7.63	7.60	7.59	7.56	8.01	8.02	8.02	8.05	8.06	8.10	8.12	8.14			
160	7.96	7.98	8.01	8.02	8.01	7.98	7.98	7.94	8.31	8.31	8.32	8.35	8.36	8.38	8.41	8.41			
165	8.31	8.33	8.35	8.35	8.35	8.33	8.32	8.28	8.57	8.58	8.58	8.60	8.62	8.63	8.64	8.66			
170	8.62	8.63	8.65	8.66	8.66	8.65	8.64	8.61	8.78	8.79	8.79	8.81	8.81	8.83	8.84	8.84			
175	8.85	8.86	8.88	8.88	8.89	8.88	8.87	8.85	8.91	8.93	8.93	8.94	8.95	8.95	8.96	8.96			
180	8.97	8.98	8.99	9.00	9.01	9.00	9.00	8.99	8.97	8.99	8.99	9.00	9.01	9.00	8.99	8.99			

3. Product Photo



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