

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): DLR0065(R6R14930120WS)

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	14.0W
Rated Initial Lamp Lumen	1200 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	DLR0065(R6R14930120WS)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
1908250049	120.0	60	0.1160	13.70	0.981

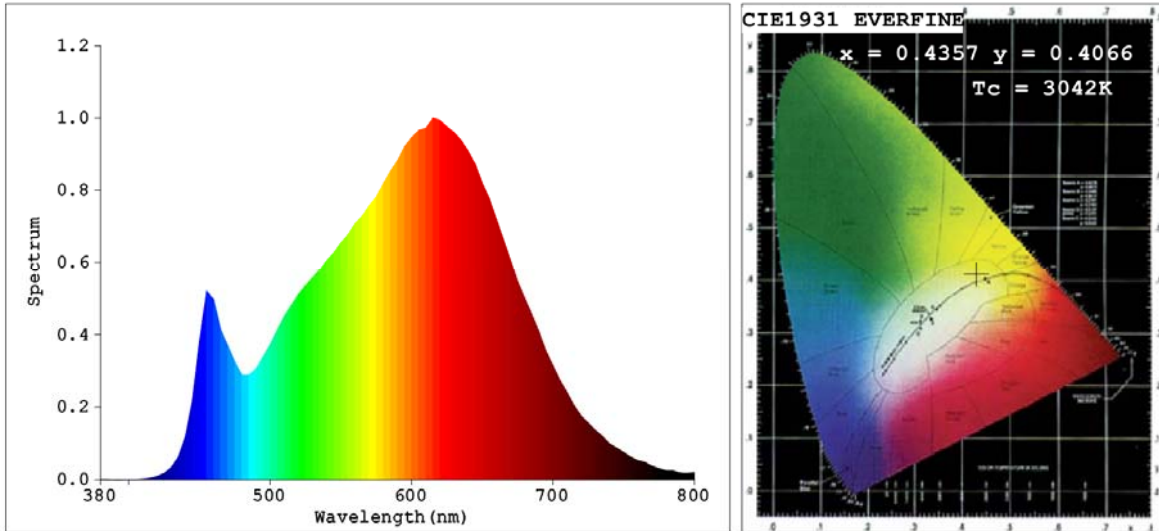
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	92	R9	55
Frequency (Hz)	60	R2	97	R10	92
CCT (K)	3042	R3	99	R11	90
Duv	0.00120	R4	90	R12	77
Chromaticity (x, y)	x=0.4357 y=0.4066	R5	91	R13	93
Chromaticity (u', v')	u'=0.2487 v'=0.5222	R6	96	R14	100
Color Rendering Index (CRI)	91.8	R7	91	R15	87
R9	55	R8	80	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1231.6
Luminous Efficacy (lm/W)	89.89
Beam Angle (°)	98.8
Center Beam Candle Power (cd)	506.7

Spectral Power Distribution & Chromaticity Diagram

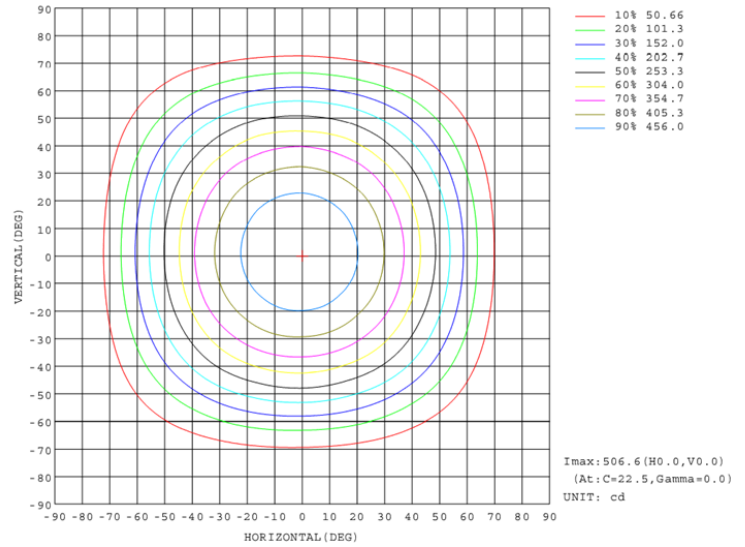
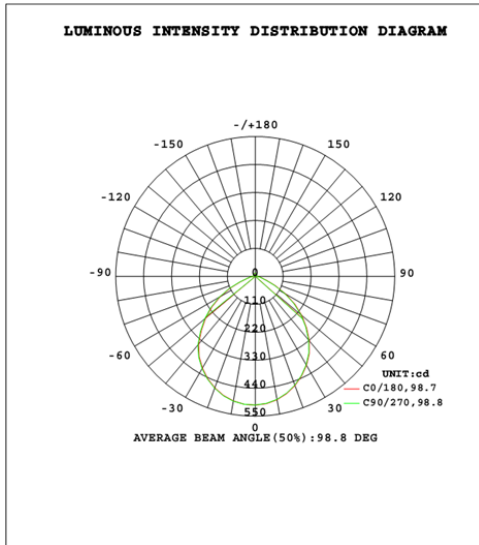


Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	385.2	31.3%
0-40	621.0	50.4%
0-60	1025.2	83.2%
60-90	152.5	12.4%
70-100	60.8	4.9%
90-120	23.3	1.9%
0-90	1177.6	95.6%
90-180	54.0	4.4%
0-180	1231.6	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	47.8	3.9%	90-100	7.9	0.6%
10-20	135.6	11.0%	100-110	7.7	0.6%
20-30	201.8	16.4%	110-120	7.7	0.6%
30-40	235.8	19.1%	120-130	7.5	0.6%
40-50	226.5	18.4%	130-140	7.1	0.6%
50-60	177.7	14.4%	140-150	6.3	0.5%
60-70	99.6	8.1%	150-160	5.1	0.4%
70-80	37.2	3.0%	160-170	3.4	0.3%
80-90	15.7	1.3%	170-180	1.2	0.1%

Photometric Data



Flux out: 847.5 lm

Height	Havg, Rmax	Angle: 98.72deg	Diameter
1ft	189.9, 506.7fc		2.33ft
2ft	47.48, 126.7fc		4.66ft
3ft	21.10, 56.30fc		6.99ft
4ft	11.87, 31.67fc		9.32ft
5ft	7.597, 20.27fc		11.65ft
6ft	5.276, 14.08fc		13.98ft
7ft	3.876, 10.34fc		16.31ft
8ft	2.968, 7.917fc		18.64ft
9ft	2.345, 6.256fc		20.97ft
10ft	1.899, 5.067fc		23.3ft

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

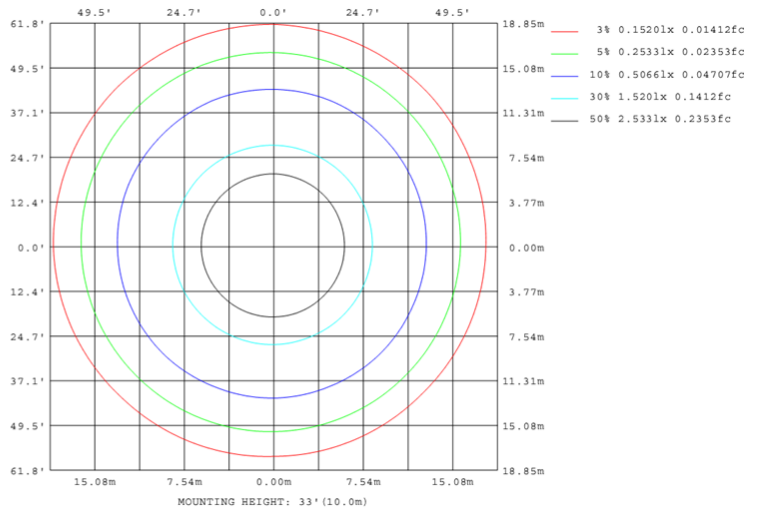
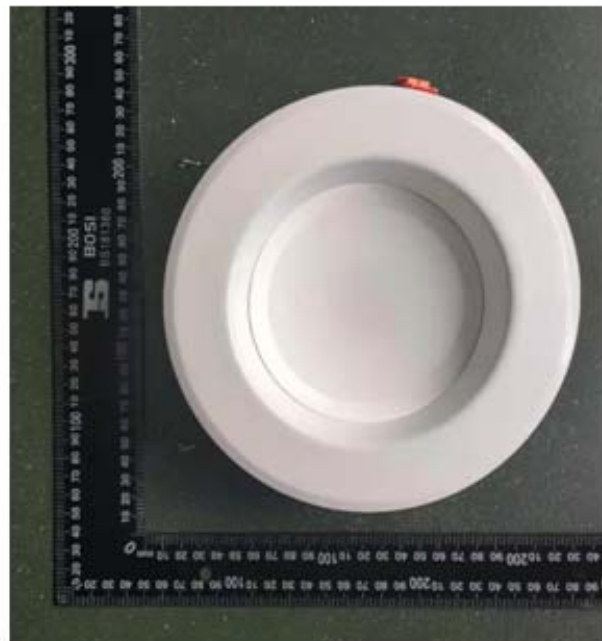
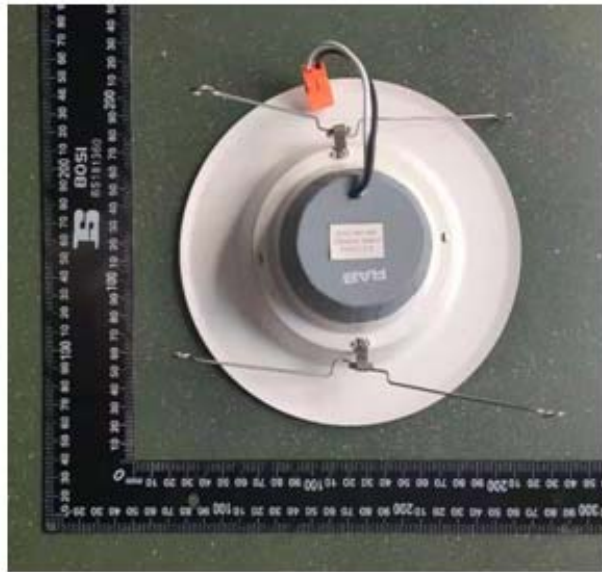


Table--1

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	507	507	506	506	506	506	506	506	507	507	506	506	506	506	506	506
5	503	502	502	502	502	502	503	504	505	505	506	506	505	504	504	503
10	493	492	491	491	491	493	494	496	498	499	499	499	499	497	496	494
15	478	476	475	475	476	478	479	482	485	486	487	487	486	484	482	479
20	457	456	454	455	455	458	460	464	466	468	470	469	468	465	463	459
25	433	431	429	430	430	433	436	441	444	446	448	447	446	443	440	435
30	404	402	400	401	401	405	408	413	417	419	421	421	419	415	412	407
35	371	369	366	367	368	373	376	382	386	388	391	390	389	384	380	374
40	331	326	325	322	327	331	336	343	348	351	355	354	352	346	342	335
45	286	279	279	277	282	284	292	296	301	309	308	311	305	303	295	291
50	239	232	232	230	235	237	245	250	256	263	263	266	260	258	249	244
55	190	184	183	182	185	189	197	202	209	215	217	218	214	210	202	196
60	138	134	130	131	132	139	144	153	159	164	168	168	165	158	153	144
65	88.6	85.0	81.1	82.2	83.3	89.1	94.1	103	110	113	118	116	115	108	103	94.9
70	49.2	47.1	44.6	45.2	45.9	49.6	52.9	58.9	64.0	66.7	69.9	68.5	67.5	62.5	59.0	53.2
75	28.4	27.5	26.5	26.8	27.0	28.5	29.8	32.4	34.6	35.8	37.3	36.6	36.1	33.9	32.4	30.0
80	20.6	20.1	19.5	19.7	19.8	20.5	21.0	21.8	22.4	22.8	23.4	23.4	23.4	22.8	22.3	21.4
85	12.4	12.0	11.4	11.7	11.8	12.7	13.3	14.5	15.8	16.3	16.9	16.7	16.5	15.6	15.0	13.8
90	6.98	6.94	6.93	6.93	6.95	7.00	7.05	7.14	8.01	8.25	8.71	8.45	8.35	7.86	7.70	7.66
95	6.70	6.69	6.69	6.69	6.72	6.73	6.77	6.80	7.59	7.59	7.59	7.60	7.60	7.62	7.62	7.62
100	6.63	6.63	6.65	6.65	6.67	6.67	6.69	6.69	7.62	7.61	7.61	7.62	7.63	7.66	7.67	7.70
105	6.69	6.70	6.73	6.74	6.75	6.74	6.75	6.72	7.73	7.73	7.71	7.74	7.75	7.78	7.81	7.85
110	6.85	6.88	6.91	6.93	6.93	6.92	6.91	6.88	7.94	7.94	7.92	7.94	7.97	8.01	8.04	8.08
115	7.10	7.14	7.19	7.20	7.21	7.18	7.16	7.11	8.20	8.20	8.18	8.21	8.23	8.28	8.32	8.39
120	7.42	7.46	7.51	7.53	7.55	7.52	7.49	7.44	8.51	8.50	8.49	8.52	8.54	8.62	8.64	8.71
125	7.79	7.83	7.89	7.91	7.93	7.89	7.86	7.80	8.84	8.83	8.82	8.86	8.88	8.95	9.00	9.06
130	8.19	8.24	8.31	8.32	8.35	8.31	8.28	8.21	9.18	9.19	9.17	9.21	9.24	9.31	9.35	9.42
135	8.64	8.70	8.75	8.77	8.80	8.75	8.73	8.64	9.56	9.56	9.55	9.58	9.62	9.70	9.75	9.81
140	9.12	9.17	9.24	9.26	9.28	9.24	9.21	9.12	9.98	9.97	9.95	10.0	10.0	10.1	10.2	10.2
145	9.62	9.67	9.75	9.76	9.79	9.74	9.71	9.62	10.4	10.4	10.4	10.4	10.5	10.5	10.6	10.7
150	10.2	10.2	10.3	10.3	10.3	10.3	10.3	10.2	10.8	10.8	10.8	10.9	10.9	11.0	11.0	11.1
155	10.7	10.8	10.8	10.8	10.9	10.8	10.8	10.7	11.3	11.3	11.3	11.3	11.4	11.4	11.5	11.6
160	11.2	11.3	11.4	11.4	11.4	11.4	11.3	11.3	11.7	11.7	11.7	11.8	11.8	11.9	11.9	12.0
165	11.8	11.8	11.9	11.9	11.9	11.9	11.9	11.8	12.1	12.1	12.1	12.2	12.2	12.3	12.3	12.3
170	12.2	12.3	12.3	12.3	12.3	12.3	12.3	12.2	12.4	12.4	12.5	12.5	12.5	12.6	12.6	12.6
175	12.5	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.7	12.7	12.7	12.7	12.7	12.8	12.8
180	12.7	12.7	12.8	12.8	12.8	12.8	12.8	12.8	12.7	12.7	12.8	12.8	12.8	12.8	12.8	12.8

3. Product Photo



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