

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): DLR0062(R6R11935120WS)

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	10.5W
Rated Initial Lamp Lumen	900 lm
Declared CCT	3500K

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	DLR0062(R6R11935120WS)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
1908250046	120.0	60	0.084	10.00	0.984

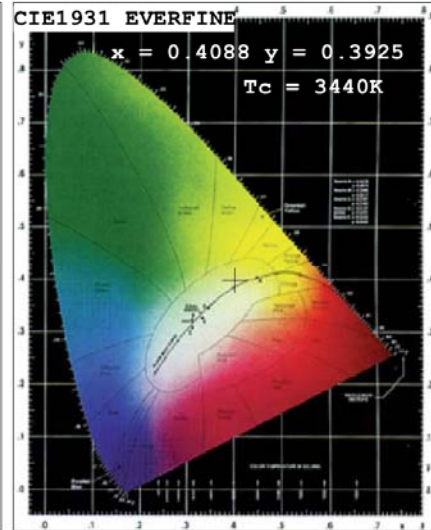
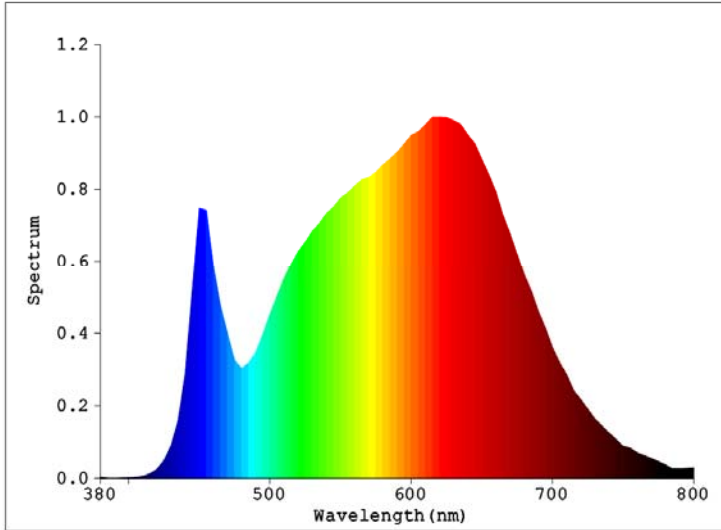
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	93	R9	69
Frequency (Hz)	60	R2	95	R10	88
CCT (K)	3440	R3	95	R11	93
Duv	0.00004	R4	93	R12	74
Chromaticity (x, y)	x=0.4088 y=0.3925	R5	92	R13	94
Chromaticity (u', v')	u'=0.2372 v'=0.5125	R6	93	R14	97
Color Rendering Index (CRI)	93.1	R7	95	R15	91
R9	69	R8	87	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1004.4
Luminous Efficacy (lm/W)	100.44
Beam Angle (°)	99.0
Center Beam Candle Power (cd)	415.0

Spectral Power Distribution & Chromaticity Diagram

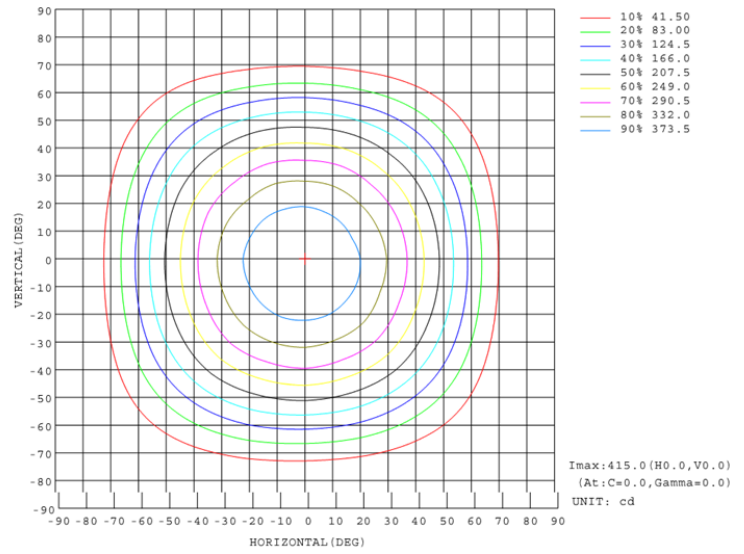
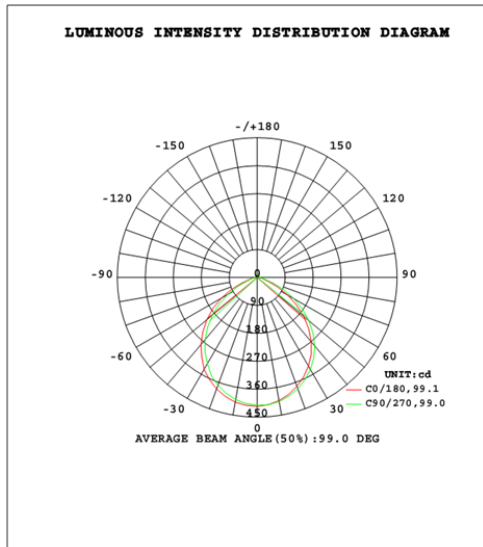


Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	313.3	31.2%
0-40	504.1	50.2%
0-60	834.7	83.1%
60-90	126.1	12.6%
70-100	49.6	4.9%
90-120	18.8	1.9%
0-90	960.8	95.7%
90-180	43.6	4.3%
0-180	1004.4	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	38.9	3.9%	90-100	6.5	0.6%
10-20	110.4	11.0%	100-110	6.2	0.6%
20-30	164.0	16.3%	110-120	6.2	0.6%
30-40	190.8	19.0%	120-130	6.1	0.6%
40-50	184.7	18.4%	130-140	5.7	0.6%
50-60	145.8	14.5%	140-150	5.1	0.5%
60-70	83.0	8.3%	150-160	4.1	0.4%
70-80	30.5	3.0%	160-170	2.7	0.3%
80-90	12.6	1.3%	170-180	1.0	0.1%

Photometric Data



Flux out: 688.8 lm

Height	Havg, Rmax	Angle: 98.58deg	Diameter
1ft	154.4, 415.0fc		2.324ft
2ft	38.59, 103.8fc		4.648ft
3ft	17.15, 46.11fc		6.973ft
4ft	9.649, 25.94fc		9.297ft
5ft	6.175, 16.60fc		11.62ft
6ft	4.288, 11.53fc		13.95ft
7ft	3.151, 8.470fc		16.27ft
8ft	2.412, 6.485fc		18.59ft
9ft	1.906, 5.124fc		20.92ft
10ft	1.544, 4.150fc		23.24ft

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

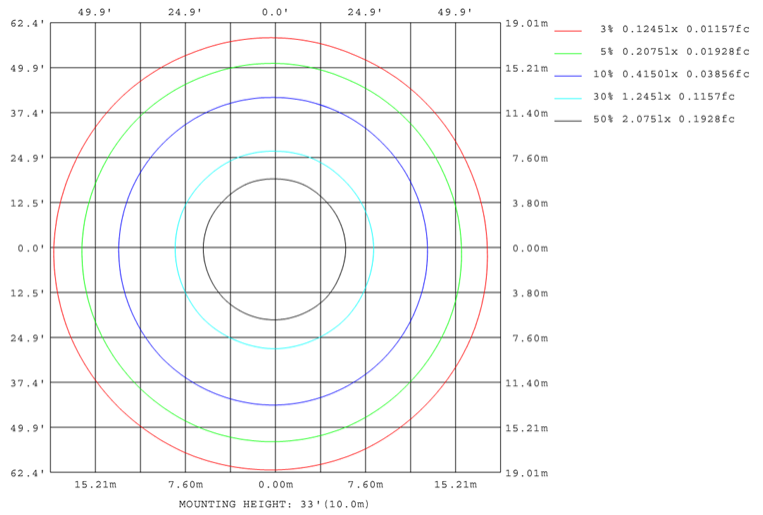
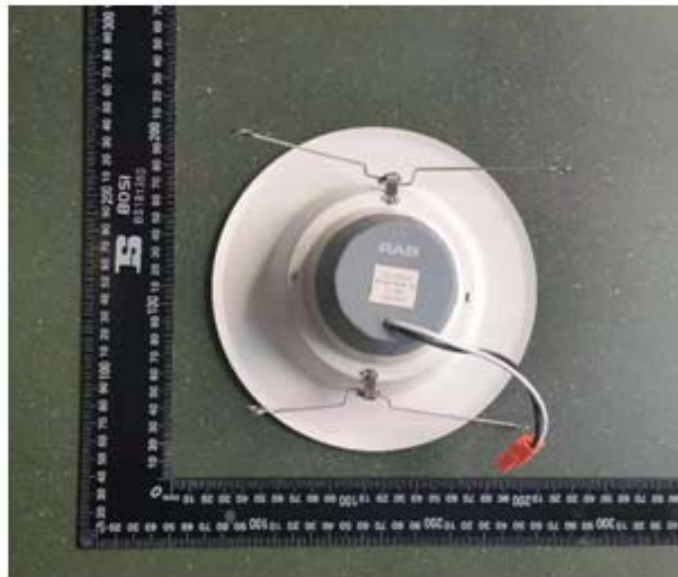


Table--1

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	415	414	413	412	412	412	412	412	415	414	413	412	412	412	412	412			
5	411	411	411	411	411	412	411	411	414	412	410	409	408	407	407	407			
10	403	403	404	405	406	406	406	406	408	405	403	400	399	398	398	398			
15	390	392	393	395	396	397	396	396	397	393	391	388	386	385	385	385			
20	373	376	378	380	381	383	382	381	382	378	375	371	369	367	368	368			
25	353	356	358	362	363	365	364	363	364	358	355	351	349	347	347	347			
30	330	329	336	338	342	344	343	342	342	336	328	327	320	322	319	324			
35	303	303	311	311	317	315	318	313	312	310	302	300	293	295	292	297			
40	270	272	280	282	288	287	289	284	282	279	270	268	261	262	259	264			
45	234	237	245	248	254	253	255	250	248	244	235	232	226	225	223	228			
50	196	200	207	211	217	217	219	214	212	207	199	194	188	187	186	190			
55	154	161	166	173	177	179	180	177	174	167	161	153	150	146	147	148			
60	113	120	126	133	137	140	139	138	135	127	121	113	110	106	107	108			
65	72.6	79.4	84.7	92.0	95.8	99.7	98.7	97.2	93.4	85.8	80.3	73.4	70.0	66.4	67.1	68.2			
70	39.6	44.2	48.2	54.1	57.1	60.2	59.1	57.6	54.2	48.3	44.4	39.8	37.9	35.9	36.4	36.9			
75	22.5	24.5	26.3	28.9	30.2	31.7	31.1	30.4	28.7	25.9	24.3	22.4	21.6	20.8	21.1	21.4			
80	16.1	16.9	17.5	18.2	18.7	19.2	18.9	18.7	18.3	17.6	17.0	16.2	15.7	15.3	15.5	15.7			
85	9.79	10.9	11.7	12.8	13.3	13.8	13.5	13.2	12.9	11.7	10.9	9.84	9.42	9.00	9.28	9.55			
90	5.62	5.65	5.73	6.25	6.58	6.99	6.70	6.43	6.57	6.26	6.22	6.21	6.19	6.19	6.19	6.19			
95	5.42	5.42	5.43	5.44	5.46	5.46	5.46	5.42	6.24	6.21	6.20	6.18	6.18	6.18	6.16	6.16			
100	5.35	5.35	5.33	5.31	5.32	5.30	5.30	5.28	6.26	6.24	6.25	6.25	6.25	6.24	6.23	6.22			
105	5.41	5.39	5.35	5.34	5.30	5.29	5.28	5.27	6.36	6.36	6.38	6.39	6.40	6.39	6.38	6.35			
110	5.56	5.53	5.48	5.44	5.41	5.38	5.37	5.35	6.53	6.54	6.57	6.58	6.60	6.60	6.57	6.54			
115	5.78	5.74	5.68	5.64	5.58	5.55	5.53	5.53	6.76	6.78	6.82	6.83	6.84	6.84	6.81	6.78			
120	6.07	6.02	5.95	5.89	5.83	5.80	5.78	5.77	7.02	7.05	7.07	7.09	7.10	7.11	7.08	7.04			
125	6.38	6.32	6.25	6.18	6.13	6.09	6.06	6.05	7.31	7.33	7.37	7.38	7.39	7.39	7.36	7.33			
130	6.72	6.65	6.58	6.51	6.45	6.40	6.37	6.36	7.60	7.63	7.66	7.69	7.70	7.69	7.65	7.62			
135	7.08	7.01	6.93	6.86	6.79	6.74	6.71	6.69	7.92	7.95	7.98	8.01	8.02	8.01	7.98	7.94			
140	7.48	7.41	7.33	7.25	7.18	7.12	7.09	7.08	8.26	8.29	8.32	8.36	8.36	8.35	8.31	8.28			
145	7.90	7.84	7.74	7.67	7.59	7.53	7.50	7.49	8.61	8.64	8.67	8.71	8.71	8.71	8.66	8.63			
150	8.34	8.27	8.19	8.10	8.03	7.97	7.95	7.92	8.98	9.01	9.04	9.06	9.08	9.07	9.03	8.99			
155	8.80	8.73	8.65	8.55	8.48	8.43	8.40	8.38	9.35	9.37	9.41	9.42	9.42	9.41	9.37	9.33			
160	9.25	9.18	9.10	9.01	8.95	8.89	8.86	8.84	9.70	9.71	9.73	9.74	9.73	9.72	9.68	9.65			
165	9.67	9.62	9.54	9.47	9.40	9.35	9.32	9.31	10.0	9.99	10.0	10.0	10.0	9.98	9.93	9.91			
170	10.0	9.99	9.93	9.86	9.80	9.75	9.72	9.70	10.3	10.2	10.2	10.2	10.2	10.2	10.1	10.1			
175	10.3	10.3	10.2	10.2	10.1	10.1	10.0	10.0	10.4	10.4	10.4	10.3	10.3	10.3	10.3	10.2			
180	10.4	10.4	10.4	10.4	10.3	10.3	10.3	10.2	10.5	10.4	10.4	10.4	10.3	10.3	10.3	10.2			

3. Product Photo



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