

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): DLR0069(R6R89FA120WS)

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

**Type of
Luminaire:** Downlights

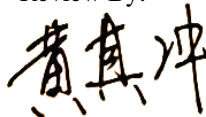
Report Date: 2019-09-30

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	725 lm
Declared CCT	2700K/3000K/3500K/4000K

Note: The tests are conducted under the worst conditions.

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	DLR0069(R6R89FA120WS)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
1908250053	120.0	60	0.065	7.71	0.975

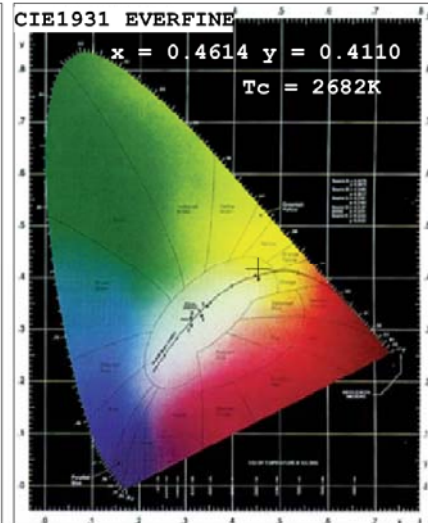
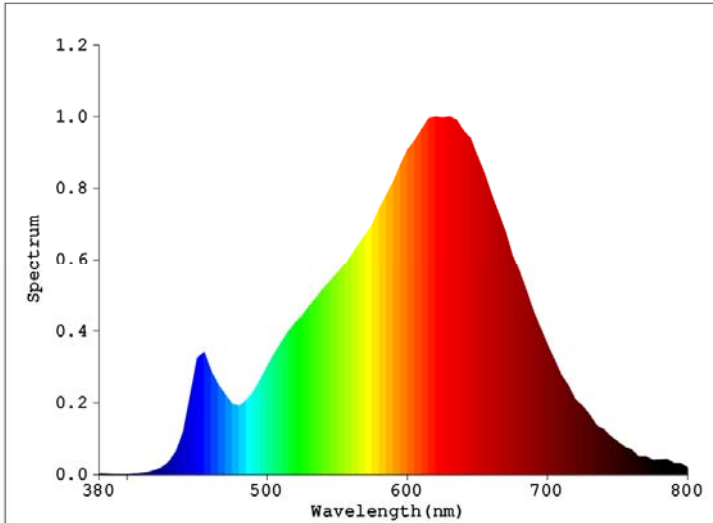
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	93	R9	60
Frequency (Hz)	60	R2	97	R10	92
CCT (K)	2682	R3	99	R11	94
Duv	0.00001	R4	93	R12	84
Chromaticity (x, y)	x=0.4614 y=0.4110	R5	93	R13	94
Chromaticity (u', v')	u'=0.2633 v'=0.5277	R6	97	R14	99
Color Rendering Index (CRI)	93.2	R7	91	R15	89
R9	60	R8	81	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	785.59
Luminous Efficacy (lm/W)	101.89
Beam Angle (°)	97.9
Center Beam Candle Power (cd)	327.4

Spectral Power Distribution & Chromaticity Diagram



Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	247.9	31.6%
0-40	398.6	50.7%
0-60	655.6	83.5%
60-90	95.5	12.2%
70-100	38.3	4.9%
90-120	14.8	1.9%
0-90	751.2	95.6%
90-180	34.4	4.4%
0-180	785.6	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	30.9	3.9%	90-100	5.0	0.6%
10-20	87.4	11.1%	100-110	4.9	0.6%
20-30	129.6	16.5%	110-120	4.9	0.6%
30-40	150.6	19.2%	120-130	4.8	0.6%
40-50	144.4	18.4%	130-140	4.6	0.6%
50-60	112.7	14.3%	140-150	4.1	0.5%
60-70	62.3	7.9%	150-160	3.3	0.4%
70-80	23.3	3.0%	160-170	2.2	0.3%
80-90	9.9	1.3%	170-180	0.8	0.1%

Photometric Data

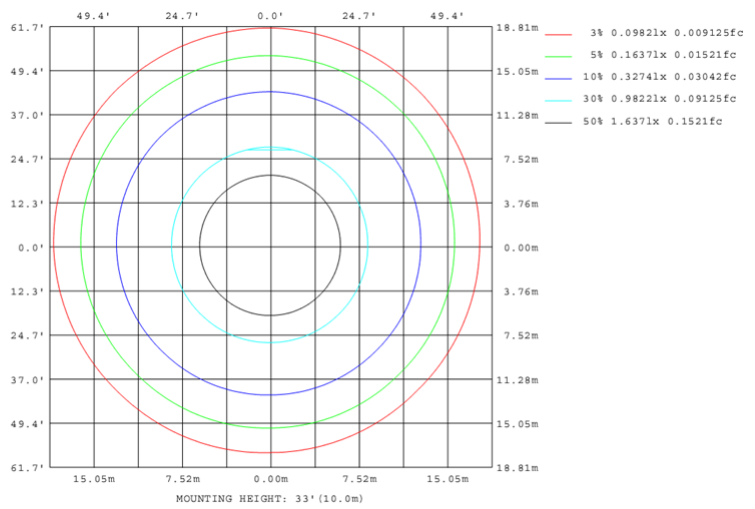
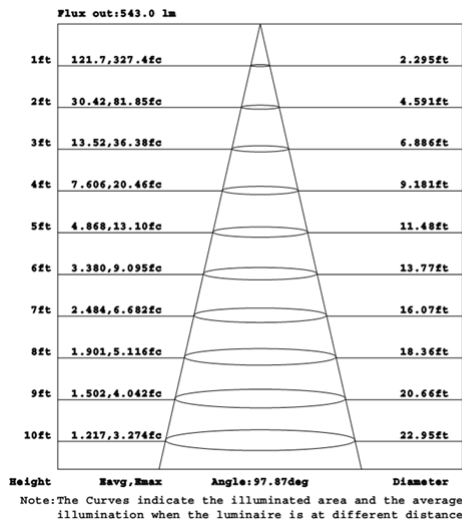
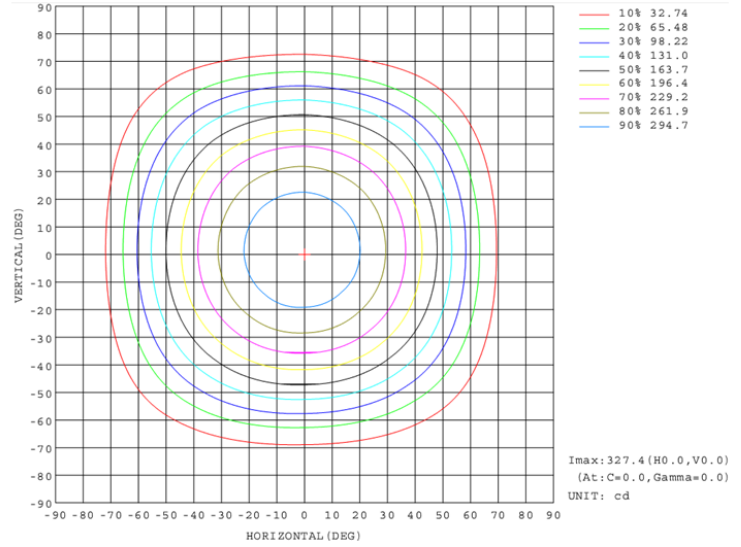
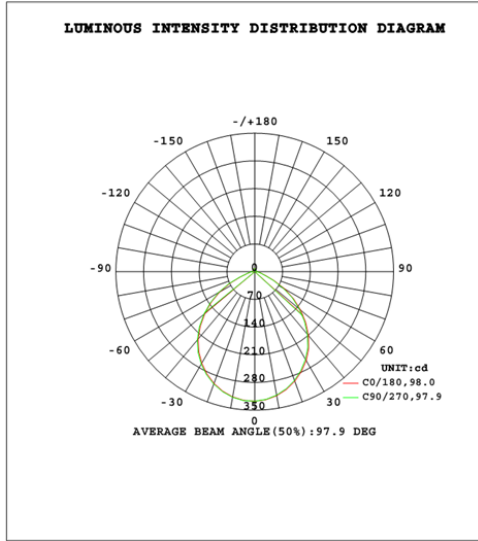
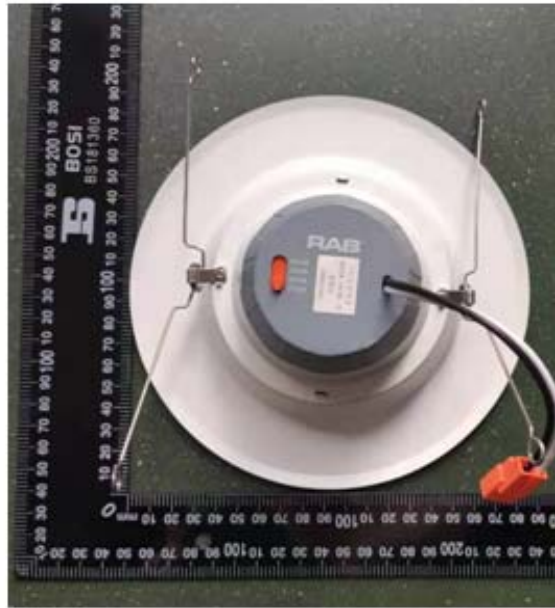


Table--1

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	327	327	327	327	327	327	327	327	327	327	327	327	327	327	327	327			
5	325	324	324	324	324	324	325	325	326	326	327	327	327	326	326	325			
10	318	317	317	317	317	318	319	320	321	322	322	322	322	321	320	319			
15	308	307	306	306	306	308	309	311	312	313	314	314	314	313	312	310			
20	295	293	292	292	292	294	295	298	300	302	303	303	302	301	299	297			
25	278	277	275	275	275	278	279	282	285	287	288	288	287	285	284	281			
30	259	257	255	255	256	258	260	264	267	269	271	270	270	267	265	262			
35	237	235	233	233	233	236	239	243	246	248	250	250	249	247	244	240			
40	211	208	206	206	207	210	213	218	222	224	227	226	225	222	219	215			
45	181	179	176	177	177	181	184	189	194	197	199	198	197	194	191	186			
50	151	148	146	146	147	151	154	159	164	167	169	169	168	164	161	155			
55	119	117	114	115	116	120	123	128	133	136	139	138	137	133	130	124			
60	86.9	84.2	81.2	82.1	82.9	87.2	90.7	96.4	102	105	107	106	105	101	97.6	92.0			
65	54.3	51.8	49.3	50.0	50.8	54.7	58.0	63.5	68.9	71.8	74.6	73.7	72.8	68.4	64.8	59.3			
70	29.7	28.3	27.0	27.4	27.8	29.9	31.8	35.3	39.1	41.2	43.6	42.9	42.2	38.8	36.2	32.5			
75	17.9	17.3	16.6	16.8	17.0	18.0	18.9	20.5	22.1	22.9	24.0	23.7	23.4	21.9	20.8	19.2			
80	12.9	12.5	12.1	12.2	12.3	12.9	13.4	14.0	14.5	14.8	15.3	15.1	14.9	14.3	13.9	13.4			
85	7.68	7.23	6.73	6.85	6.95	7.64	8.18	9.12	10.2	10.6	11.1	11.0	10.9	10.2	9.71	8.83			
90	4.41	4.36	4.37	4.35	4.39	4.40	4.46	4.51	5.15	5.46	5.93	5.87	5.78	5.24	4.94	4.87			
95	4.23	4.21	4.22	4.20	4.24	4.24	4.28	4.28	4.80	4.80	4.79	4.82	4.82	4.83	4.81	4.83			
100	4.17	4.17	4.18	4.19	4.21	4.21	4.22	4.20	4.82	4.81	4.82	4.83	4.85	4.85	4.86	4.88			
105	4.20	4.22	4.22	4.25	4.24	4.26	4.23	4.23	4.91	4.88	4.89	4.91	4.94	4.94	4.97	4.96			
110	4.30	4.33	4.34	4.37	4.37	4.37	4.35	4.34	5.05	5.02	5.03	5.04	5.07	5.09	5.12	5.14			
115	4.49	4.51	4.55	4.56	4.55	4.56	4.51	4.51	5.24	5.21	5.22	5.23	5.26	5.28	5.31	5.34			
120	4.67	4.73	4.75	4.78	4.77	4.77	4.73	4.71	5.44	5.42	5.42	5.44	5.46	5.48	5.53	5.58			
125	4.92	4.98	5.00	5.04	5.02	5.02	4.99	4.96	5.67	5.64	5.65	5.66	5.70	5.71	5.76	5.78			
130	5.20	5.25	5.28	5.31	5.29	5.29	5.26	5.22	5.90	5.87	5.89	5.90	5.94	5.96	6.00	6.04			
135	5.48	5.53	5.57	5.60	5.59	5.59	5.54	5.52	6.15	6.12	6.13	6.16	6.19	6.21	6.26	6.31			
140	5.78	5.84	5.89	5.90	5.90	5.90	5.86	5.82	6.42	6.39	6.41	6.42	6.45	6.48	6.54	6.58			
145	6.10	6.15	6.20	6.23	6.23	6.22	6.18	6.14	6.71	6.68	6.69	6.71	6.73	6.78	6.83	6.86			
150	6.44	6.50	6.55	6.58	6.56	6.57	6.52	6.47	7.00	6.99	6.98	7.01	7.03	7.06	7.12	7.16			
155	6.81	6.87	6.92	6.94	6.94	6.92	6.88	6.84	7.29	7.27	7.28	7.30	7.34	7.37	7.41	7.44			
160	7.19	7.25	7.28	7.31	7.31	7.29	7.26	7.22	7.57	7.56	7.57	7.59	7.63	7.65	7.68	7.72			
165	7.56	7.60	7.64	7.65	7.66	7.65	7.62	7.59	7.83	7.81	7.83	7.84	7.86	7.90	7.92	7.94			
170	7.86	7.89	7.92	7.94	7.95	7.94	7.92	7.89	8.02	8.02	8.03	8.05	8.07	8.09	8.11	8.12			
175	8.06	8.10	8.12	8.14	8.15	8.15	8.14	8.13	8.14	8.15	8.17	8.19	8.21	8.22	8.23	8.23			
180	8.19	8.22	8.23	8.24	8.26	8.26	8.27	8.26	8.19	8.20	8.23	8.26	8.26	8.27	8.27	8.26			

3. Product Photo



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