

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): DLR0060(R6R11927120WS)

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	2700K

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	DLR0060(R6R11927120WS)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
1908250044	120.0	60	0.084	9.98	0.983

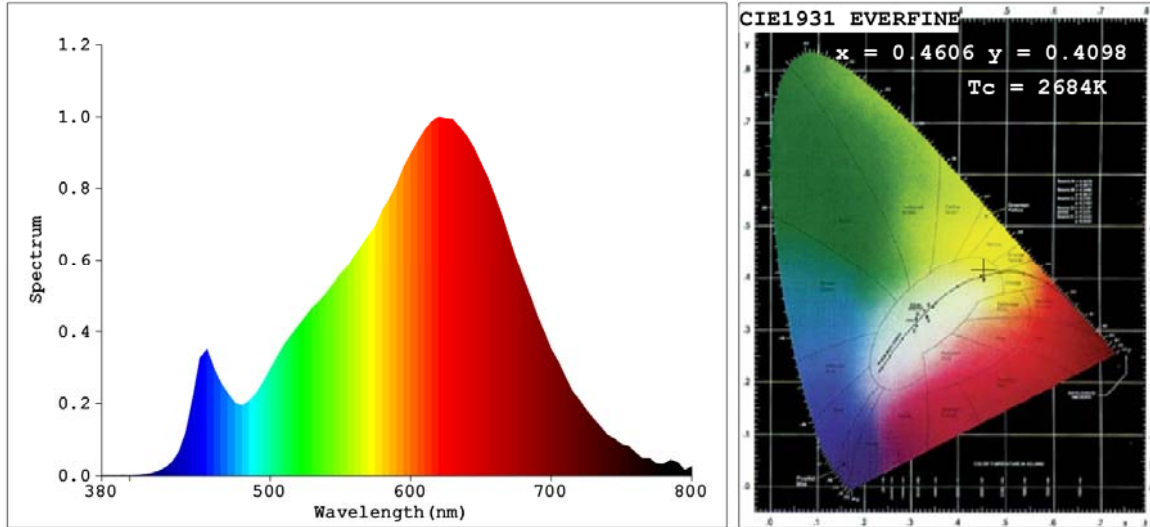
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	93	R9	59
Frequency (Hz)	60	R2	97	R10	92
CCT (K)	2684	R3	99	R11	94
Duv	0.00036	R4	93	R12	84
Chromaticity (x, y)	x=0.4606 y=0.4098	R5	93	R13	94
Chromaticity (u', v')	u'=0.2633 v'=0.5271	R6	97	R14	99
Color Rendering Index (CRI)	92.9	R7	91	R15	89
R9	59	R8	81	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	900.79
Luminous Efficacy (lm/W)	90.26
Beam Angle (°)	98.8
Center Beam Candle Power (cd)	372.0

Spectral Power Distribution & Chromaticity Diagram

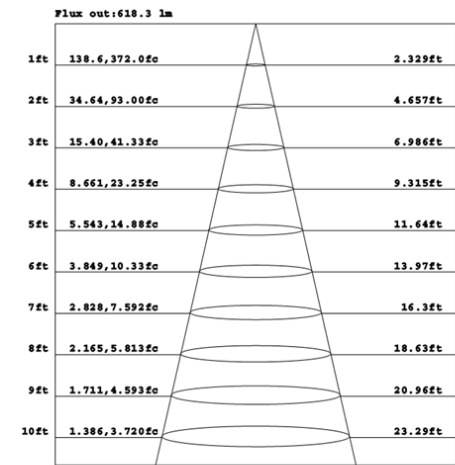
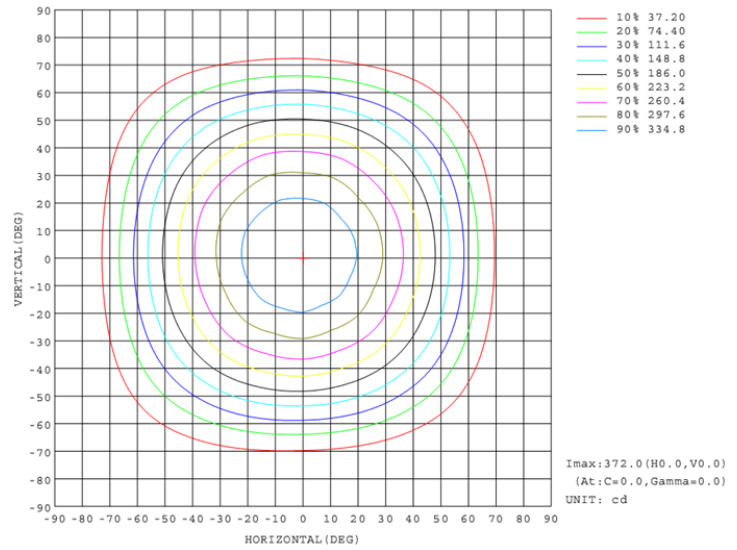
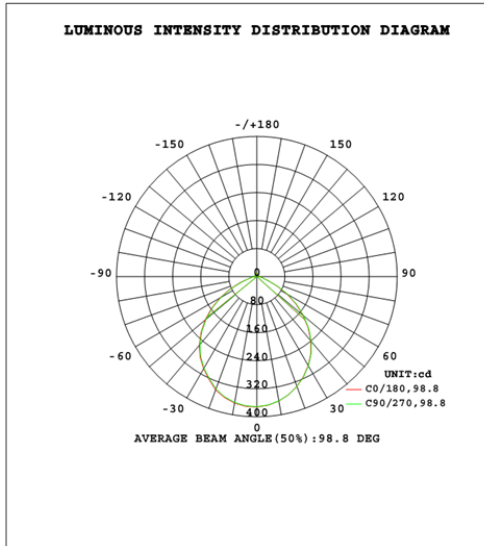


Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	280.9	31.2%
0-40	452.3	50.2%
0-60	749.2	83.2%
60-90	112.5	12.5%
70-100	44.0	4.9%
90-120	16.9	1.9%
0-90	861.7	95.7%
90-180	39.1	4.3%
0-180	900.8	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	35.0	3.9%	90-100	5.8	0.6%
10-20	99.2	11.0%	100-110	5.6	0.6%
20-30	146.7	16.3%	110-120	5.5	0.6%
30-40	171.4	19.0%	120-130	5.4	0.6%
40-50	166.0	18.4%	130-140	5.2	0.6%
50-60	130.9	14.5%	140-150	4.6	0.5%
60-70	74.3	8.2%	150-160	3.7	0.4%
70-80	27.1	3.0%	160-170	2.5	0.3%
80-90	11.2	1.2%	170-180	0.9	0.1%

Photometric Data



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

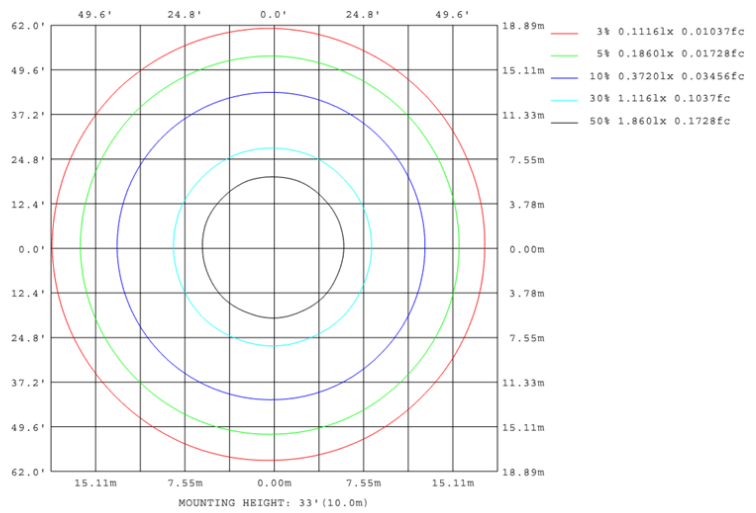
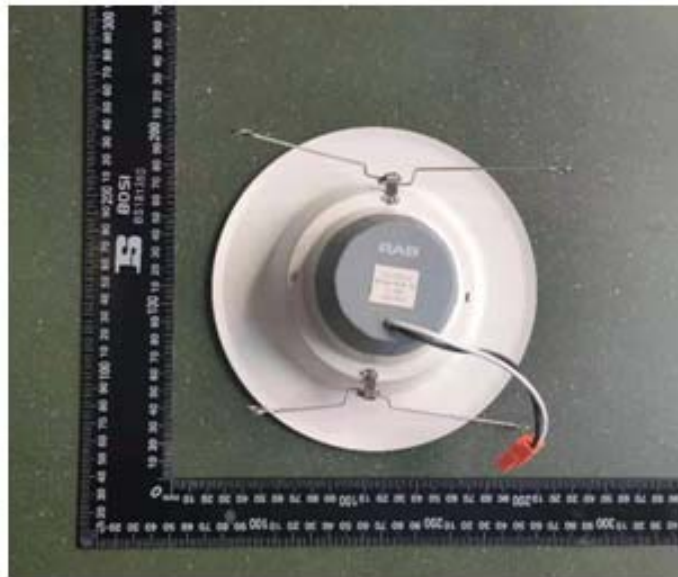


Table--1

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	372	372	371	371	371	371	371	371	372	371	371	371	371	371	371	371			
5	368	368	367	368	368	368	369	370	371	371	371	370	370	369	369	368			
10	360	360	359	360	360	362	363	364	366	366	366	365	365	363	362	360			
15	349	348	347	348	349	351	352	354	357	357	357	356	355	353	351	349			
20	333	328	331	328	334	333	338	340	344	344	345	343	341	339	334	334			
25	315	309	313	310	315	314	321	320	323	328	324	327	321	322	315	316			
30	293	288	291	289	294	294	300	300	304	309	305	307	302	302	295	295			
35	268	264	266	264	270	270	277	278	282	286	283	285	279	279	272	271			
40	239	234	237	236	241	242	250	251	256	260	258	259	253	251	244	242			
45	207	203	205	204	209	211	218	221	225	230	227	228	222	219	212	210			
50	171	169	168	171	174	178	184	187	192	196	194	194	189	185	179	174			
55	136	135	134	137	139	144	148	153	158	159	160	157	154	149	144	139			
60	99.7	98.9	97.9	101	103	108	112	118	122	123	124	121	118	113	109	103			
65	63.3	62.3	61.3	64.0	66.3	71.6	75.5	80.9	85.4	86.3	87.1	84.2	81.5	76.2	72.3	67.2			
70	33.9	33.1	32.4	34.1	35.8	39.7	42.8	47.1	50.8	51.3	51.9	49.4	47.5	43.3	40.4	36.6			
75	19.1	18.8	18.5	19.2	19.9	21.6	23.1	25.1	27.1	27.4	27.7	26.4	25.4	23.4	22.0	20.3			
80	13.8	13.6	13.4	13.9	14.3	15.0	15.4	15.9	16.7	16.8	17.0	16.5	16.1	15.6	15.2	14.6			
85	7.80	7.57	7.36	7.89	8.37	9.40	10.2	11.2	12.3	12.4	12.5	12.1	11.7	10.8	10.0	9.06			
90	4.98	4.95	4.96	4.96	5.00	5.03	5.10	5.42	6.65	6.84	7.00	6.52	6.14	5.63	5.58	5.58			
95	4.79	4.77	4.79	4.79	4.82	4.83	4.86	4.86	5.55	5.54	5.53	5.54	5.53	5.54	5.55	5.55			
100	4.73	4.73	4.74	4.75	4.76	4.76	4.77	4.76	5.54	5.54	5.55	5.55	5.56	5.58	5.59	5.60			
105	4.78	4.79	4.81	4.81	4.81	4.80	4.80	4.79	5.63	5.62	5.62	5.63	5.65	5.67	5.70	5.71			
110	4.92	4.94	4.95	4.95	4.94	4.92	4.90	4.88	5.77	5.76	5.77	5.79	5.80	5.84	5.88	5.89			
115	5.12	5.14	5.16	5.16	5.14	5.13	5.09	5.05	5.96	5.95	5.96	5.99	6.00	6.04	6.08	6.11			
120	5.36	5.39	5.40	5.41	5.39	5.37	5.33	5.28	6.17	6.18	6.18	6.21	6.23	6.28	6.31	6.35			
125	5.63	5.66	5.69	5.68	5.67	5.64	5.60	5.56	6.41	6.42	6.42	6.45	6.48	6.53	6.57	6.60			
130	5.93	5.96	5.98	5.99	5.98	5.93	5.90	5.85	6.67	6.67	6.68	6.70	6.73	6.80	6.84	6.87			
135	6.25	6.29	6.31	6.31	6.30	6.26	6.22	6.16	6.95	6.94	6.96	6.99	7.03	7.09	7.13	7.15			
140	6.60	6.63	6.67	6.66	6.66	6.62	6.57	6.50	7.25	7.25	7.25	7.30	7.33	7.39	7.43	7.47			
145	6.98	7.02	7.05	7.04	7.04	7.00	6.95	6.89	7.57	7.56	7.57	7.62	7.65	7.71	7.74	7.78			
150	7.37	7.42	7.45	7.44	7.43	7.39	7.35	7.27	7.89	7.89	7.90	7.94	7.97	8.04	8.07	8.12			
155	7.78	7.81	7.85	7.84	7.84	7.78	7.75	7.68	8.23	8.23	8.24	8.28	8.31	8.36	8.40	8.43			
160	8.19	8.21	8.24	8.24	8.24	8.19	8.16	8.09	8.54	8.56	8.56	8.59	8.62	8.67	8.69	8.72			
165	8.57	8.60	8.62	8.62	8.62	8.58	8.55	8.48	8.82	8.83	8.85	8.88	8.89	8.92	8.94	8.96			
170	8.89	8.91	8.95	8.94	8.95	8.91	8.89	8.84	9.05	9.05	9.08	9.10	9.11	9.13	9.14	9.15			
175	9.13	9.15	9.17	9.18	9.18	9.16	9.15	9.11	9.20	9.20	9.22	9.24	9.25	9.26	9.26	9.25			
180	9.25	9.28	9.30	9.30	9.30	9.30	9.29	9.28	9.26	9.28	9.29	9.31	9.31	9.30	9.29	9.28			

3. Product Photo



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