

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): DLR0070(R6R119FA120WS)

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

**Type of
Luminaire:** Downlights

Report Date: 2019-09-30

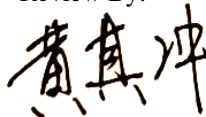
Prepared By:

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/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:</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:	25.6 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	DLR0070(R6R119FA120WS)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
1908250054	120.0	60	0.084	10.00	0.983

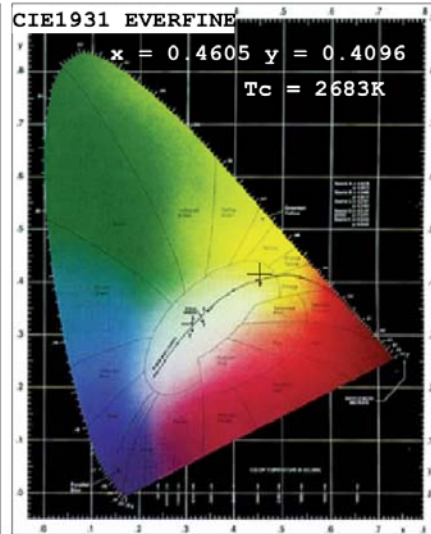
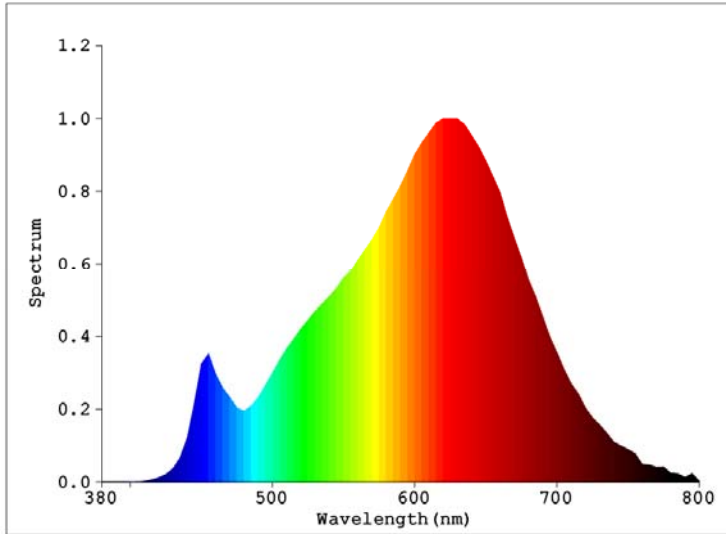
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	94	R9	61
Frequency (Hz)	60	R2	97	R10	93
CCT (K)	2683	R3	99	R11	94
Duv	0.00041	R4	93	R12	85
Chromaticity (x, y)	x=0.4605 y=0.4096	R5	93	R13	95
Chromaticity (u', v')	u'=0.2634 v'=0.5271	R6	97	R14	99
Color Rendering Index (CRI)	93.2	R7	91	R15	89
R9	61	R8	81	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	953.87
Luminous Efficacy (lm/W)	95.39
Beam Angle (°)	97.4
Center Beam Candle Power (cd)	404.3

Spectral Power Distribution & Chromaticity Diagram



Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	303.6	31.8%
0-40	486.7	51.0%
0-60	798.1	83.7%
60-90	114.3	12.0%
70-100	45.8	4.8%
90-120	17.8	1.9%
0-90	912.4	95.6%
90-180	41.5	4.3%
0-180	953.9	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	37.8	4.0%	90-100	6.0	0.6%
10-20	107.2	11.2%	100-110	5.9	0.6%
20-30	158.5	16.6%	110-120	5.9	0.6%
30-40	183.2	19.2%	120-130	5.8	0.6%
40-50	175.4	18.4%	130-140	5.5	0.6%
50-60	135.9	14.2%	140-150	4.9	0.5%
60-70	74.5	7.8%	150-160	4.0	0.4%
70-80	27.8	2.9%	160-170	2.6	0.3%
80-90	12.0	1.3%	170-180	0.9	0.1%

Photometric Data

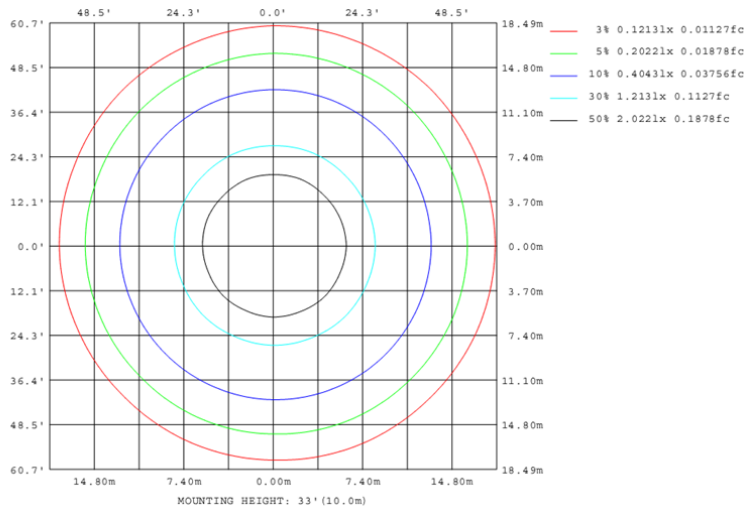
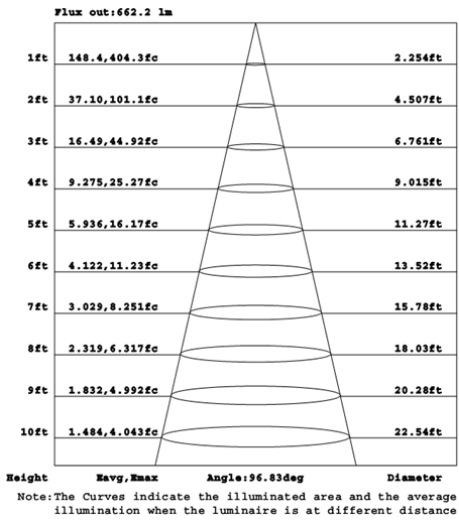
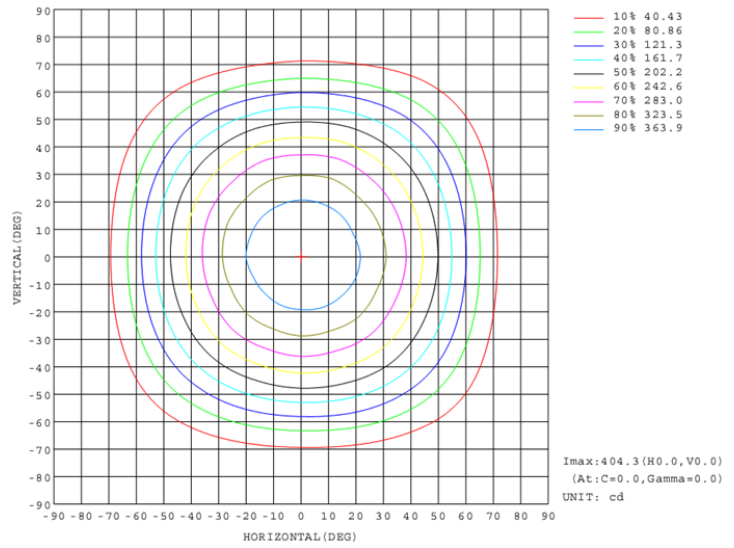
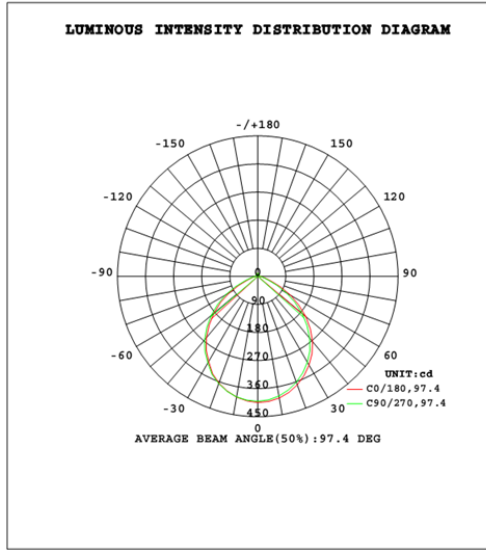
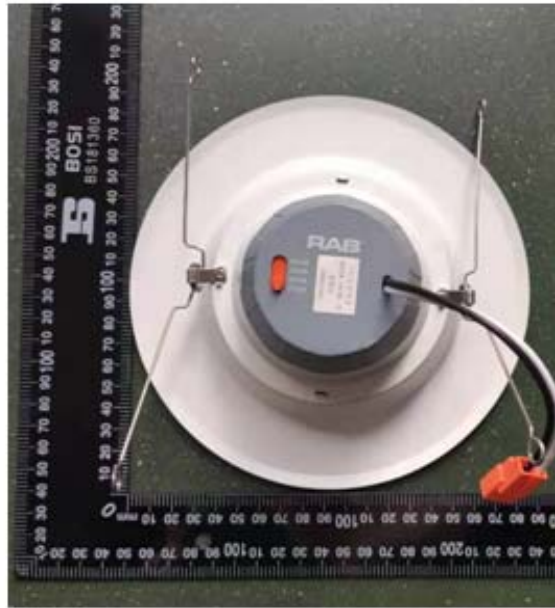


Table--1

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	404	403	402	401	401	400	400	400	404	403	402	401	401	400	400	400			
5	403	401	399	398	397	397	396	396	401	400	399	399	399	399	399	398			
10	396	394	392	391	390	389	388	389	393	392	392	392	392	392	392	392			
15	385	384	381	379	378	377	376	376	381	380	380	381	382	382	382	381			
20	370	368	365	364	361	361	359	360	364	363	365	365	366	366	367	366			
25	351	349	346	345	341	339	339	338	344	343	345	346	348	348	349	348			
30	329	322	323	317	318	313	315	312	316	320	318	323	321	325	322	325			
35	303	297	297	291	291	286	288	285	289	293	291	297	295	300	297	300			
40	273	267	266	260	259	254	255	253	257	260	260	266	265	270	268	270			
45	238	233	231	225	223	219	219	218	221	225	225	231	231	236	234	236			
50	201	196	194	188	186	182	181	181	184	187	189	194	195	199	198	200			
55	161	159	154	151	146	144	141	143	146	147	151	154	158	159	161	160			
60	122	120	115	112	107	105	102	103	106	108	112	115	120	121	123	122			
65	82.2	80.0	74.8	71.8	67.2	65.6	63.3	64.1	66.4	67.9	72.6	75.5	80.2	81.7	84.0	82.8			
70	46.4	44.8	41.3	39.3	36.6	35.8	34.6	35.1	36.1	36.9	39.8	41.8	45.1	46.3	48.0	47.1			
75	26.6	25.9	24.2	23.3	22.0	21.7	21.1	21.3	21.8	22.2	23.6	24.5	25.9	26.4	27.1	26.7			
80	17.6	17.3	16.7	16.3	15.7	15.5	15.1	15.3	15.8	16.0	16.5	16.8	17.2	17.4	17.7	17.5			
85	12.1	11.7	10.8	10.3	9.49	9.27	8.90	9.02	9.89	10.1	10.8	11.3	12.1	12.3	12.6	12.5			
90	5.75	5.57	5.41	5.35	5.34	5.31	5.32	5.29	5.88	5.86	5.85	5.87	6.11	6.23	6.50	6.35			
95	5.24	5.20	5.15	5.11	5.11	5.11	5.11	5.09	5.87	5.83	5.80	5.80	5.79	5.79	5.80	5.80			
100	5.11	5.08	5.04	5.03	5.03	5.04	5.04	5.04	5.93	5.89	5.85	5.84	5.83	5.82	5.82	5.83			
105	5.12	5.08	5.06	5.06	5.08	5.08	5.10	5.09	6.06	6.01	5.99	5.96	5.94	5.94	5.93	5.94			
110	5.21	5.20	5.18	5.19	5.20	5.22	5.24	5.24	6.28	6.23	6.18	6.15	6.13	6.12	6.11	6.13			
115	5.39	5.37	5.37	5.38	5.41	5.43	5.44	5.45	6.53	6.47	6.43	6.38	6.36	6.35	6.35	6.36			
120	5.65	5.64	5.63	5.65	5.67	5.71	5.71	5.72	6.79	6.74	6.68	6.64	6.62	6.61	6.60	6.60			
125	5.95	5.94	5.93	5.95	5.98	6.01	6.02	6.03	7.08	7.02	6.97	6.93	6.88	6.88	6.88	6.90			
130	6.26	6.26	6.26	6.28	6.31	6.34	6.36	6.36	7.38	7.31	7.25	7.21	7.17	7.16	7.17	7.18			
135	6.61	6.61	6.62	6.64	6.67	6.70	6.73	6.73	7.69	7.62	7.57	7.53	7.49	7.49	7.47	7.50			
140	6.99	6.98	6.99	7.01	7.05	7.07	7.10	7.11	8.02	7.94	7.88	7.84	7.80	7.79	7.79	7.80			
145	7.37	7.35	7.37	7.39	7.42	7.45	7.48	7.49	8.36	8.27	8.21	8.17	8.13	8.14	8.13	8.15			
150	7.77	7.76	7.78	7.79	7.83	7.87	7.89	7.90	8.71	8.62	8.57	8.52	8.49	8.49	8.47	8.49			
155	8.23	8.21	8.22	8.24	8.27	8.30	8.33	8.33	9.06	8.98	8.92	8.88	8.85	8.84	8.83	8.86			
160	8.68	8.67	8.66	8.69	8.73	8.74	8.77	8.77	9.37	9.29	9.25	9.22	9.18	9.18	9.17	9.19			
165	9.13	9.10	9.10	9.12	9.15	9.16	9.19	9.19	9.66	9.57	9.52	9.51	9.47	9.47	9.47	9.50			
170	9.51	9.49	9.47	9.48	9.51	9.52	9.54	9.54	9.86	9.78	9.74	9.72	9.70	9.70	9.70	9.71			
175	9.80	9.78	9.75	9.75	9.76	9.77	9.78	9.79	9.97	9.90	9.89	9.85	9.85	9.85	9.86	9.86			
180	9.97	9.95	9.92	9.91	9.90	9.91	9.92	9.93	10.0	9.93	9.93	9.90	9.90	9.91	9.92	9.92			

3. Product Photo



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