

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): DLR0052(R4R8927120WS)

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	8.0W
Rated Initial Lamp Lumen	700 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:	25.6 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	DLR0052(R4R8927120WS)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
1908250036	120.0	60	0.064	7.58	0.980

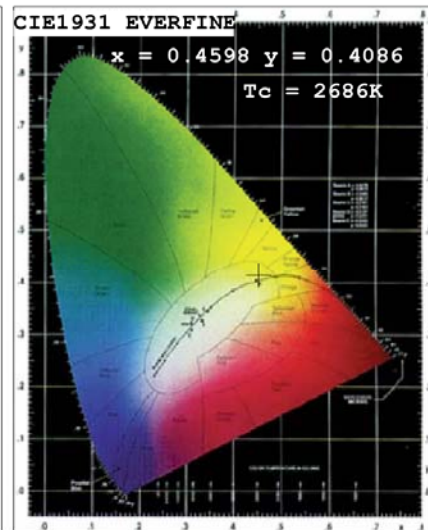
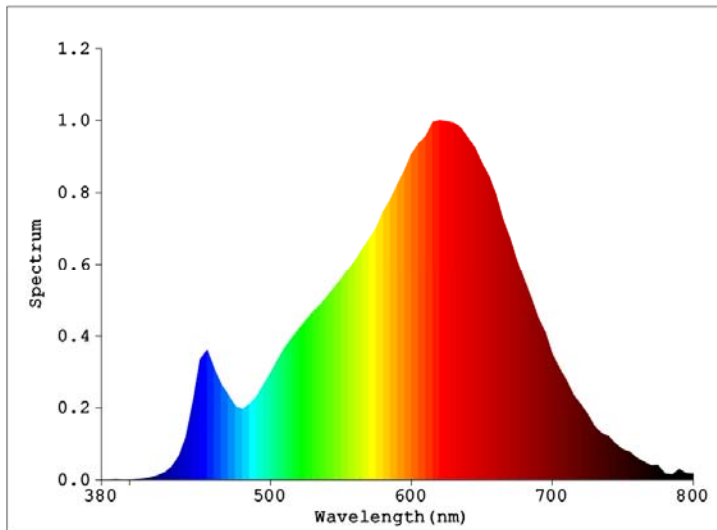
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	93	R9	60
Frequency (Hz)	60	R2	97	R10	93
CCT (K)	2686	R3	99	R11	94
Duv	0.00074	R4	93	R12	84
Chromaticity (x, y)	x=0.4598 y=0.4086	R5	93	R13	94
Chromaticity (u', v')	u'=0.2633 v'=0.5266	R6	97	R14	99
Color Rendering Index (CRI)	93.0	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)	720.26
Luminous Efficacy (lm/W)	95.02
Beam Angle (°)	95.8
Center Beam Candle Power (cd)	304.8

Spectral Power Distribution & Chromaticity Diagram

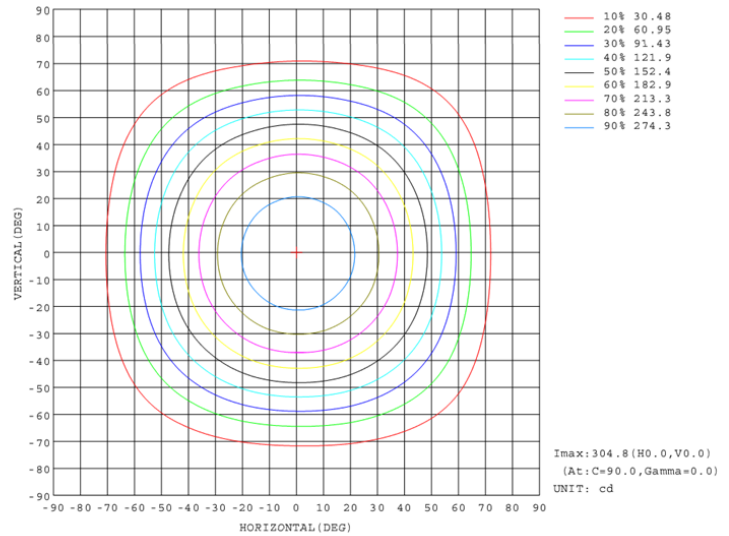
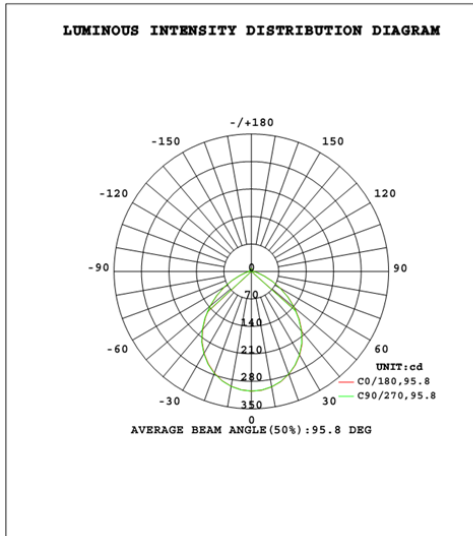


Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	230.8	32.0%
0-40	369.3	51.3%
0-60	599.1	83.2%
60-90	89.5	12.4%
70-100	37.4	5.2%
90-120	13.6	1.9%
0-90	688.6	95.6%
90-180	31.7	4.4%
0-180	720.3	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	28.8	4.0%	90-100	4.6	0.6%
10-20	81.5	11.3%	100-110	4.5	0.6%
20-30	120.5	16.7%	110-120	4.5	0.6%
30-40	138.5	19.2%	120-130	4.4	0.6%
40-50	130.3	18.1%	130-140	4.2	0.6%
50-60	99.6	13.8%	140-150	3.7	0.5%
60-70	56.8	7.9%	150-160	3.0	0.4%
70-80	23.1	3.2%	160-170	2.0	0.3%
80-90	9.6	1.3%	170-180	0.7	0.1%

Photometric Data



Flux out: 499.6 lm

Height	Havg, Hmax	Angle: 95.75deg	Diameter
1ft	112.0, 304.8fc		2.212ft
2ft	27.99, 76.20fc		4.423ft
3ft	12.44, 33.87fc		6.635ft
4ft	6.997, 19.05fc		8.846ft
5ft	4.478, 12.19fc		11.06ft
6ft	3.110, 8.466fc		13.27ft
7ft	2.285, 6.220fc		15.48ft
8ft	1.749, 4.762fc		17.69ft
9ft	1.382, 3.763fc		19.9ft
10ft	1.120, 3.048fc		22.12ft

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

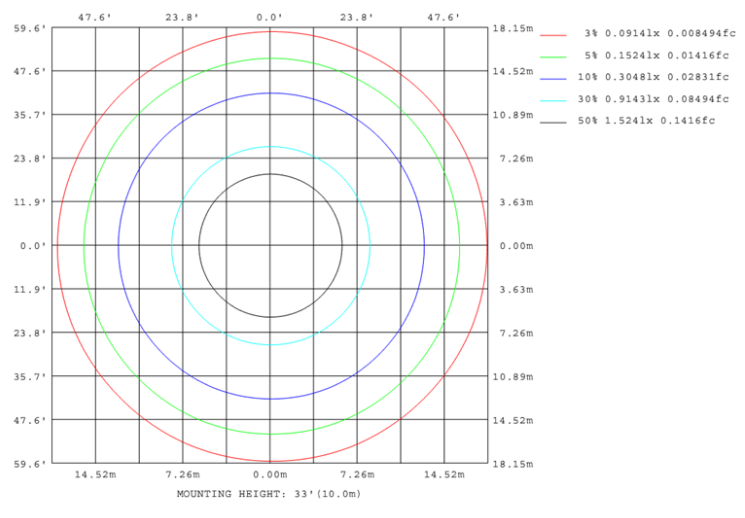
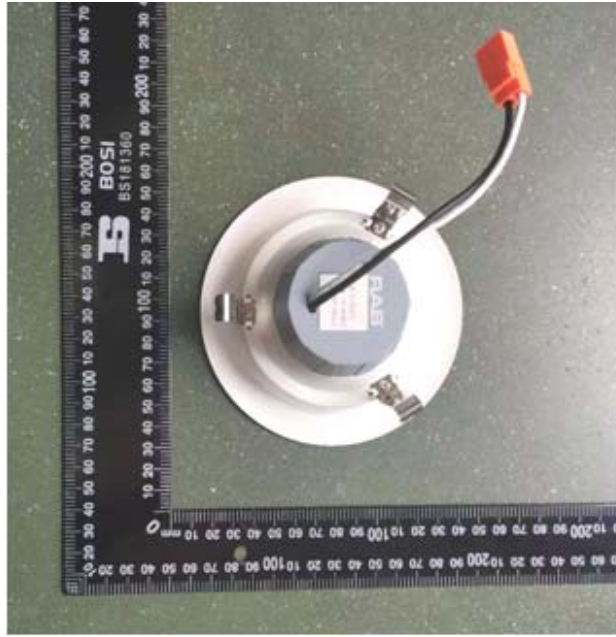


Table--1

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	305	305	305	305	305	305	305	305	305	305	305	305	305	305	305	305			
5	303	304	303	303	303	303	303	303	303	302	303	303	303	303	303	303			
10	299	299	299	299	298	298	297	297	297	297	297	297	297	298	298	298			
15	291	291	291	291	290	290	289	289	288	288	288	288	289	289	290	290			
20	279	280	279	279	278	278	277	276	276	275	275	275	276	277	278	278			
25	264	265	264	264	263	263	261	261	260	259	259	259	261	261	263	263			
30	246	247	246	246	245	244	243	242	241	240	241	241	242	243	244	245			
35	225	226	225	225	224	223	221	220	219	218	219	219	221	221	223	224			
40	200	201	201	201	199	198	196	195	193	192	193	193	195	196	198	199			
45	173	174	173	173	171	170	168	167	165	164	165	165	167	168	171	171			
50	144	145	144	144	142	141	139	138	136	135	136	136	138	139	142	143			
55	115	116	115	115	113	112	110	109	108	106	107	107	109	110	113	114			
60	86.3	87.5	86.7	86.6	84.7	83.9	81.4	80.7	79.6	78.3	79.1	79.2	81.3	82.0	84.5	85.2			
65	59.2	60.4	59.7	59.7	57.9	57.1	55.0	54.3	53.3	52.2	52.8	53.0	54.7	55.5	57.6	58.3			
70	36.3	37.3	36.7	36.7	35.3	34.7	33.1	32.6	31.9	31.1	31.6	31.7	33.0	33.5	35.0	35.5			
75	21.3	21.9	21.6	21.5	20.8	20.5	19.6	19.4	19.0	18.6	18.9	18.9	19.6	19.9	20.7	20.9			
80	13.5	13.8	13.6	13.7	13.3	13.2	12.9	12.8	12.7	12.6	12.7	12.7	12.9	13.0	13.3	13.4			
85	9.35	9.63	9.49	9.50	9.12	8.96	8.48	8.31	8.42	8.16	8.29	8.29	8.66	8.82	9.29	9.44			
90	4.23	4.38	4.30	4.30	4.19	4.13	4.13	4.09	4.49	4.50	4.50	4.50	4.51	4.54	4.51	4.55			
95	3.97	3.97	3.98	3.97	3.96	3.94	3.94	3.93	4.46	4.46	4.46	4.46	4.47	4.47	4.46	4.46			
100	3.90	3.91	3.91	3.89	3.90	3.88	3.89	3.88	4.50	4.51	4.50	4.50	4.50	4.50	4.49	4.49			
105	3.92	3.92	3.92	3.91	3.92	3.92	3.91	3.93	4.60	4.60	4.59	4.59	4.60	4.58	4.57	4.57			
110	4.00	4.01	4.00	3.99	4.00	4.01	4.01	4.02	4.74	4.76	4.74	4.74	4.73	4.72	4.70	4.70			
115	4.15	4.15	4.14	4.14	4.15	4.15	4.16	4.18	4.92	4.92	4.92	4.91	4.91	4.89	4.88	4.87			
120	4.34	4.34	4.33	4.34	4.34	4.35	4.36	4.37	5.11	5.12	5.11	5.11	5.09	5.10	5.07	5.06			
125	4.57	4.56	4.56	4.55	4.57	4.57	4.58	4.61	5.32	5.33	5.32	5.32	5.31	5.29	5.28	5.27			
130	4.81	4.81	4.80	4.81	4.81	4.82	4.83	4.85	5.54	5.55	5.53	5.54	5.52	5.51	5.49	5.48			
135	5.08	5.06	5.07	5.06	5.06	5.08	5.09	5.10	5.77	5.78	5.76	5.75	5.73	5.73	5.71	5.71			
140	5.35	5.34	5.32	5.33	5.34	5.35	5.37	5.38	6.01	6.01	5.99	6.00	5.96	5.96	5.94	5.94			
145	5.65	5.62	5.63	5.62	5.64	5.64	5.66	5.67	6.26	6.25	6.23	6.23	6.21	6.20	6.18	6.19			
150	5.95	5.92	5.93	5.92	5.94	5.93	5.96	5.96	6.50	6.50	6.48	6.48	6.46	6.47	6.43	6.43			
155	6.25	6.23	6.23	6.23	6.25	6.24	6.27	6.28	6.75	6.76	6.74	6.74	6.72	6.70	6.68	6.68			
160	6.55	6.53	6.54	6.53	6.55	6.54	6.57	6.57	7.00	7.00	6.98	6.98	6.95	6.96	6.95	6.94			
165	6.86	6.84	6.84	6.84	6.85	6.85	6.87	6.87	7.21	7.21	7.19	7.19	7.17	7.17	7.15	7.16			
170	7.13	7.12	7.13	7.12	7.13	7.13	7.15	7.15	7.38	7.36	7.35	7.35	7.34	7.33	7.33	7.33			
175	7.37	7.36	7.36	7.35	7.36	7.35	7.36	7.37	7.48	7.47	7.45	7.45	7.44	7.44	7.44	7.45			
180	7.50	7.50	7.49	7.48	7.48	7.48	7.48	7.49	7.50	7.50	7.48	7.49	7.47	7.48	7.48	7.48			

3. Product Photo



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