

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): DLR0036(R4R8827120WS)

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	800 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	DLR0036(R4R8827120WS)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
1908250020	120.0	60	0.063	7.45	0.981

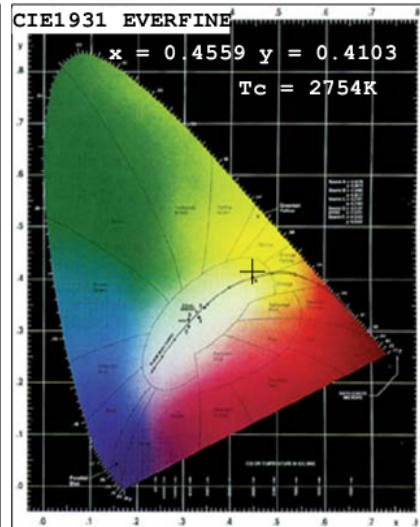
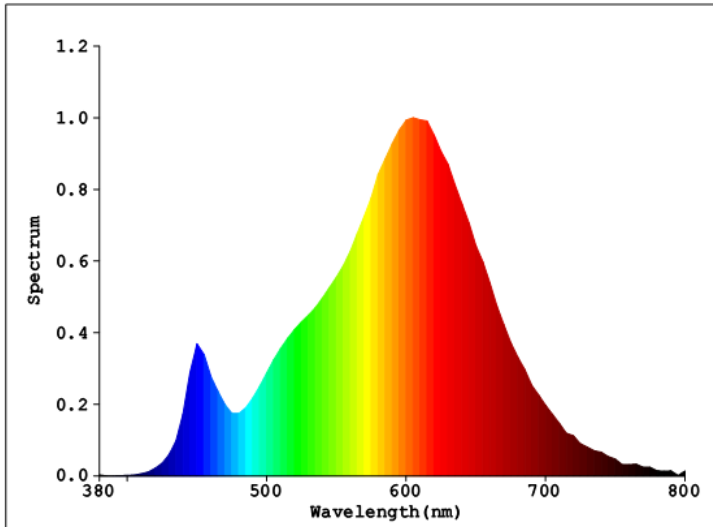
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	82	R9	12
Frequency (Hz)	60	R2	92	R10	82
CCT (K)	2754	R3	96	R11	81
Duv	0.00024	R4	81	R12	76
Chromaticity (x, y)	x=0.4559 y=0.4103	R5	82	R13	84
Chromaticity (u', v')	u'=0.2601 v'=0.5266	R6	91	R14	98
Color Rendering Index (CRI)	83.3	R7	83	R15	74
R9	12	R8	59	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	809.7
Luminous Efficacy (lm/W)	108.69
Beam Angle (°)	95.5
Center Beam Candle Power (cd)	345.6

Spectral Power Distribution & Chromaticity Diagram



Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	261.0	32.2%
0-40	417.2	51.5%
0-60	675.3	83.4%
60-90	99.0	12.2%
70-100	41.1	5.1%
90-120	15.3	1.9%
0-90	774.3	95.6%
90-180	35.5	4.4%
0-180	809.8	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	32.6	4.0%	90-100	5.2	0.6%
10-20	92.5	11.4%	100-110	5.1	0.6%
20-30	135.9	16.8%	110-120	5.0	0.6%
30-40	156.2	19.3%	120-130	5.0	0.6%
40-50	146.8	18.1%	130-140	4.7	0.6%
50-60	111.3	13.7%	140-150	4.2	0.5%
60-70	63.1	7.8%	150-160	3.4	0.4%
70-80	25.2	3.1%	160-170	2.2	0.3%
80-90	10.7	1.3%	170-180	0.8	0.1%

Photometric Data

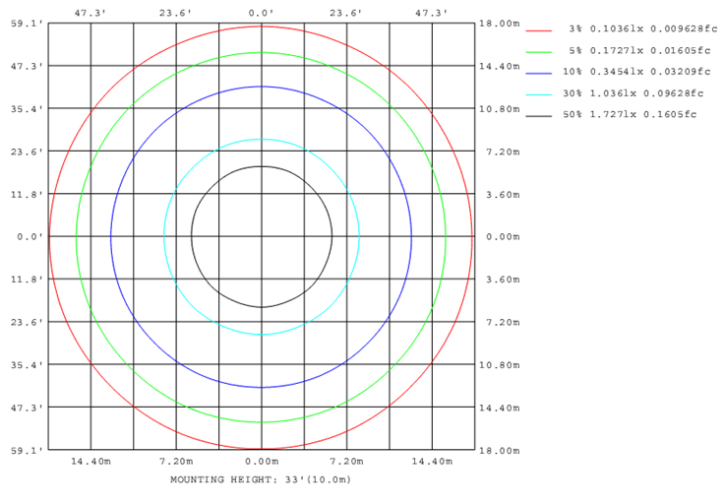
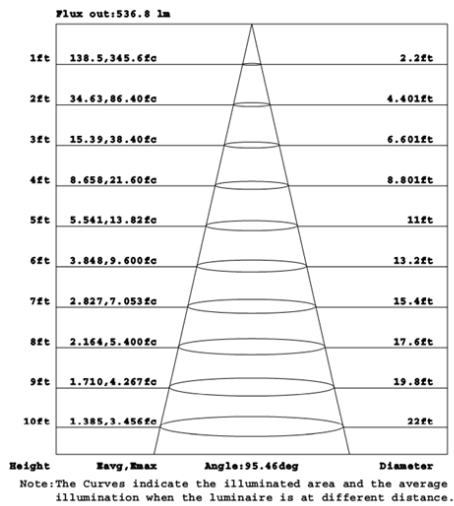
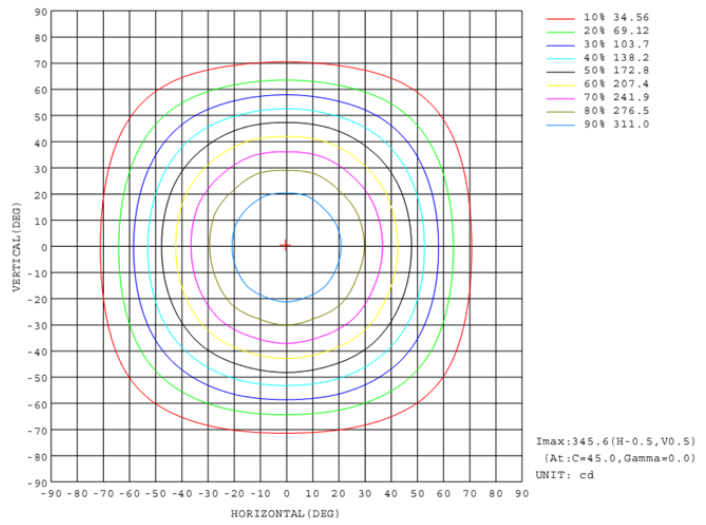
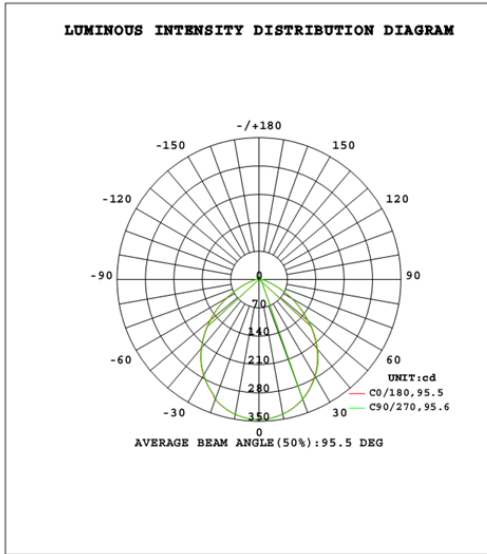
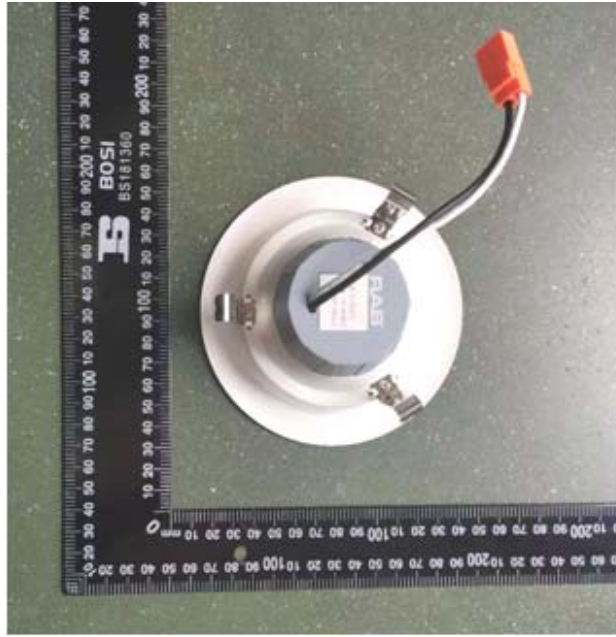


Table--1

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	345	345	346	346	346	345	345	346	345	345	346	346	346	345	345	346			
5	343	344	344	344	344	344	344	344	344	344	344	343	344	343	343	343			
10	337	338	338	338	338	338	338	338	338	338	338	337	337	337	337	337			
15	327	328	328	329	328	329	329	329	329	328	328	328	328	327	328	327			
20	314	315	314	316	315	316	315	316	316	314	315	314	313	313	312	313			
25	296	293	297	294	298	295	298	295	294	297	293	296	292	296	292	296			
30	275	273	276	274	277	274	278	274	273	276	273	275	272	275	271	275			
35	251	249	252	250	254	251	254	251	250	252	249	251	248	250	248	250			
40	222	221	224	223	225	223	226	223	222	223	220	222	219	221	219	221			
45	191	190	193	192	194	192	194	192	190	191	189	190	188	189	187	190			
50	156	157	158	159	159	160	159	159	158	156	156	155	155	154	155	154			
55	123	125	125	127	127	128	127	127	126	124	124	122	122	121	122	122			
60	91.5	93.6	93.8	95.6	95.2	96.3	95.1	95.5	94.2	92.2	92.1	90.2	90.5	89.3	90.5	90.3			
65	61.9	63.8	64.1	65.7	65.4	66.3	65.2	65.4	64.4	62.5	62.1	60.5	60.8	59.8	60.9	60.8			
70	37.3	38.9	39.1	40.3	40.1	40.8	39.9	40.1	39.3	37.8	37.5	36.2	36.4	35.9	36.7	36.7			
75	22.2	23.0	23.1	23.8	23.7	24.1	23.6	23.6	23.2	22.3	22.2	21.5	21.6	21.3	21.8	21.8			
80	14.4	14.7	14.7	15.0	15.0	15.2	15.0	14.9	14.8	14.5	14.4	14.2	14.3	14.2	14.4	14.3			
85	9.56	10.0	10.1	10.5	10.5	10.7	10.4	10.4	10.4	9.96	9.85	9.48	9.55	9.38	9.65	9.66			
90	4.62	4.62	4.65	4.72	4.71	4.77	4.69	4.67	5.06	5.06	5.05	5.03	5.03	5.04	5.04	5.04			
95	4.42	4.42	4.43	4.43	4.43	4.44	4.43	4.43	5.00	5.01	4.99	5.00	4.99	5.01	5.00	5.00			
100	4.36	4.37	4.37	4.37	4.37	4.37	4.37	4.36	5.03	5.04	5.03	5.03	5.02	5.03	5.03	5.03			
105	4.40	4.39	4.40	4.39	4.40	4.40	4.39	4.39	5.13	5.13	5.14	5.14	5.14	5.15	5.13	5.14			
110	4.51	4.50	4.50	4.49	4.50	4.50	4.50	4.48	5.28	5.30	5.29	5.30	5.29	5.31	5.29	5.30			
115	4.68	4.66	4.67	4.66	4.66	4.65	4.65	4.65	5.47	5.49	5.48	5.49	5.49	5.49	5.48	5.49			
120	4.90	4.89	4.90	4.87	4.88	4.86	4.88	4.87	5.69	5.71	5.71	5.72	5.72	5.71	5.70	5.71			
125	5.16	5.15	5.15	5.13	5.14	5.12	5.13	5.12	5.93	5.95	5.94	5.95	5.95	5.95	5.93	5.94			
130	5.44	5.42	5.42	5.40	5.40	5.40	5.40	5.39	6.17	6.18	6.19	6.20	6.19	6.20	6.19	6.18			
135	5.73	5.72	5.71	5.70	5.71	5.67	5.69	5.68	6.42	6.44	6.43	6.44	6.44	6.44	6.43	6.44			
140	6.04	6.02	6.03	6.00	6.01	5.98	6.01	5.99	6.68	6.71	6.70	6.71	6.70	6.71	6.70	6.70			
145	6.36	6.34	6.35	6.33	6.33	6.31	6.33	6.32	6.95	6.97	6.97	6.99	6.97	6.98	6.97	6.97			
150	6.70	6.68	6.69	6.66	6.67	6.65	6.66	6.65	7.22	7.25	7.25	7.26	7.25	7.25	7.24	7.24			
155	7.04	7.03	7.03	7.01	7.02	7.00	7.01	6.99	7.52	7.53	7.53	7.54	7.53	7.54	7.52	7.53			
160	7.38	7.35	7.37	7.33	7.35	7.32	7.34	7.33	7.79	7.81	7.80	7.81	7.80	7.81	7.80	7.80			
165	7.71	7.69	7.70	7.68	7.69	7.67	7.68	7.67	8.03	8.06	8.04	8.05	8.05	8.05	8.04	8.04			
170	8.02	8.00	8.01	7.99	7.99	7.99	7.99	7.98	8.24	8.24	8.23	8.25	8.23	8.24	8.23	8.23			
175	8.27	8.26	8.26	8.25	8.26	8.24	8.25	8.24	8.37	8.36	8.36	8.36	8.36	8.35	8.35	8.35			
180	8.40	8.41	8.40	8.40	8.39	8.39	8.39	8.38	8.40	8.40	8.40	8.39	8.39	8.39	8.38	8.38			

3. Product Photo



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