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): DLR0054(R4R8935120WS)

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:

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Review By:

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1.1 Rated Values:	
Rated Voltage / Frequency	120Vac, 50/60 Hz
Nominal Power	8.0W
Rated Initial Lamp Lumen	700 lm
Declared CCT	3500K

1.2 Test Specifications:

Test item	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	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

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.

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 25ºC ±1ºC. 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.

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 25ºC ±1ºC. 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.

2.1 Electrical, Photometric and Chromaticity Measurements

Test date	2019-09-28	**Test Ambient:**	25.6 ºC
Test Orientation	As intended	**Stabilization Time (min)**	90
Model Number	DLR0054(R4R8935120WS)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
1908250038	120.0	60	0.064	7.58	0.981

Chromaticity Measurement - Sphere-Spectroradiometer Method:

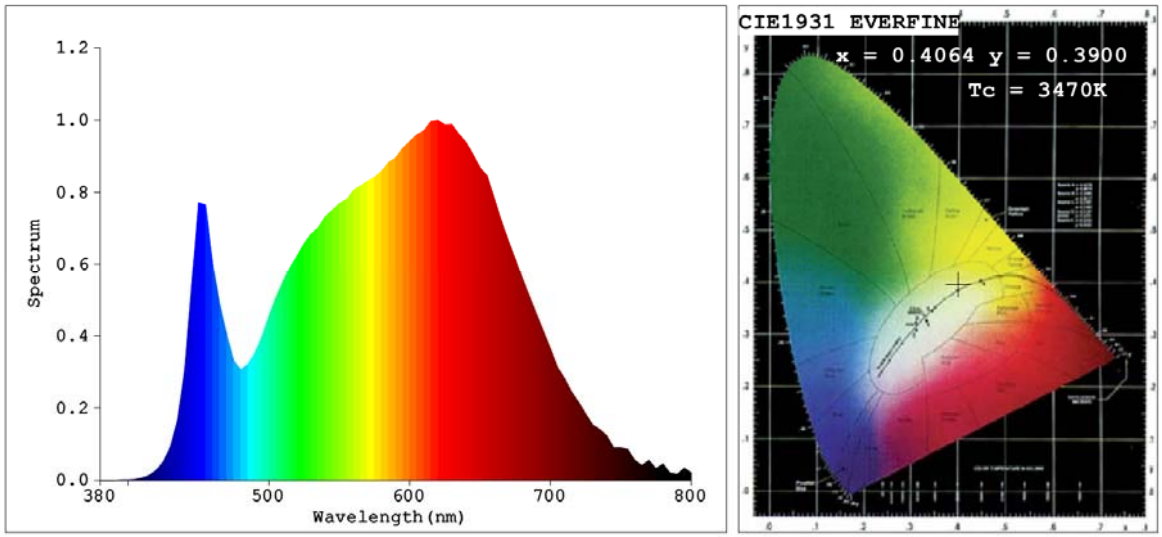
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
CCT (K)	3470
Duv	0.00056
Chromaticity (x, y)	x=0.4064 y=0.3900
Chromaticity (u', v')	u'=0.2367 v'=0.5111
Color Rendering Index (CRI)	93.3
R9	70

Special Color Rendering Indices			
R1	94	R9	70
R2	96	R10	88
R3	95	R11	93
R4	93	R12	74
R5	93	R13	94
R6	93	R14	97
R7	95	R15	92
R8	88	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	771.38
Luminous Efficacy (lm/W)	101.77
Beam Angle (°)	95.5
Center Beam Candle Power (cd)	328.3

Spectral Power Distribution & Chromaticity Diagram

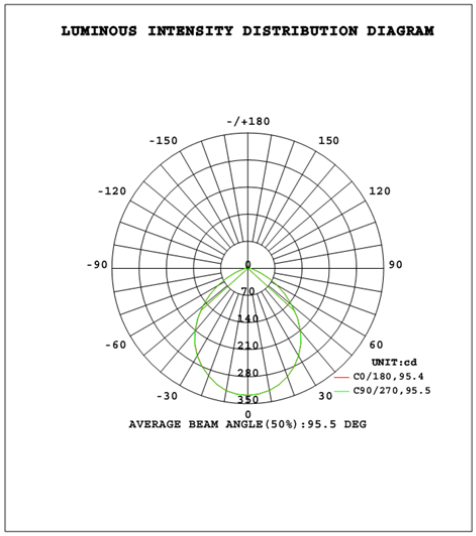


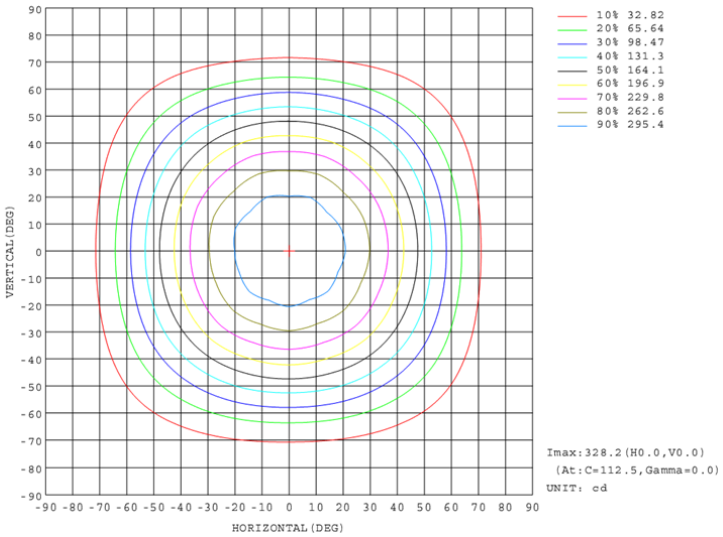
Zonal Lumen Tabulation

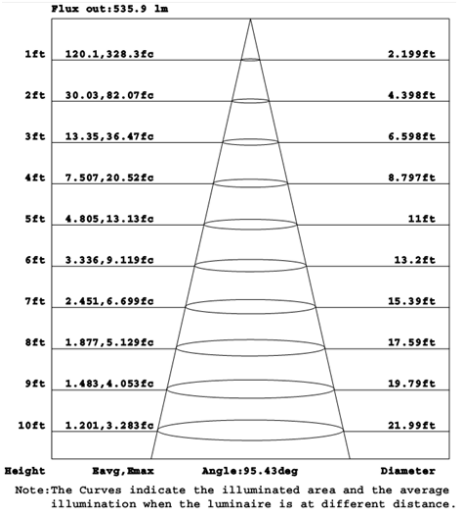
Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	247.6	32.1%
0-40	396.2	51.4%
0-60	642.2	83.3%
60-90	95.4	12.4%
70-100	39.7	5.1%
90-120	14.6	1.9%
0-90	737.6	95.6%
90-180	33.8	4.4%
0-180	771.4	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	31.0	4.0%	90-100	4.9	0.6%
10-20	87.5	11.3%	100-110	4.8	0.6%
20-30	129.1	16.7%	110-120	4.8	0.6%
30-40	148.6	19.3%	120-130	4.7	0.6%
40-50	139.7	18.1%	130-140	4.5	0.6%
50-60	106.3	13.8%	140-150	4.0	0.5%
60-70	60.6	7.9%	150-160	3.2	0.4%
70-80	24.6	3.2%	160-170	2.1	0.3%
80-90	10.2	1.3%	170-180	0.8	0.1%

Photometric Data







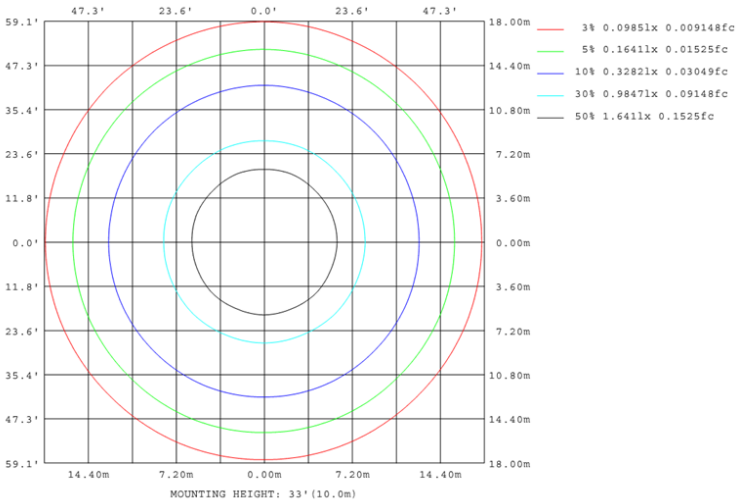


Table--1

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	328	328	328	328	328	328	328	328	328	328	328	328	328	328	328	328			
5	326	326	326	326	326	326	326	326	326	327	327	327	327	326	326	326			
10	320	321	320	320	320	321	321	321	321	321	322	321	322	321	321	320			
15	311	309	311	309	311	309	311	310	310	312	311	313	311	312	310	311			
20	298	294	297	294	298	294	298	295	296	300	297	300	296	300	295	298			
25	281	278	281	277	281	278	282	279	280	284	281	284	280	283	279	282			
30	262	258	261	258	261	258	262	260	260	264	262	265	261	263	259	262			
35	239	236	238	235	238	236	239	238	238	242	240	242	239	241	237	239			
40	211	209	210	208	210	209	212	211	211	215	213	216	213	214	210	211			
45	181	179	180	178	180	179	182	181	182	185	184	186	183	184	181	181			
50	148	148	147	147	147	149	149	150	151	151	153	152	152	150	150	148			
55	117	117	116	117	116	118	118	120	120	120	122	121	121	120	119	118			
60	87.2	87.3	86.0	86.7	86.2	87.6	87.6	89.2	89.9	89.9	91.3	90.6	90.9	89.4	89.3	87.8			
65	59.0	59.1	58.0	58.6	58.1	59.4	59.3	60.8	61.4	61.3	62.4	61.7	62.1	61.0	61.0	59.6			
70	35.6	35.7	34.9	35.4	35.0	35.9	35.9	36.9	37.4	37.3	38.0	37.5	37.8	36.9	37.0	36.0			
75	21.0	21.1	20.7	20.9	20.8	21.2	21.1	21.7	21.9	21.8	22.2	21.9	22.1	21.7	21.7	21.2			
80	13.6	13.7	13.6	13.6	13.5	13.7	13.6	13.9	14.1	14.0	14.2	14.1	14.2	14.0	14.0	13.8			
85	9.00	9.09	8.87	9.05	8.92	9.20	9.15	9.44	9.87	9.80	9.98	9.81	9.92	9.68	9.70	9.43			
90	4.40	4.38	4.39	4.37	4.39	4.39	4.40	4.41	4.83	4.83	4.85	4.83	4.83	4.83	4.81	4.81			
95	4.22	4.21	4.21	4.20	4.21	4.20	4.22	4.22	4.76	4.77	4.76	4.77	4.76	4.78	4.76	4.77			
100	4.15	4.15	4.16	4.15	4.16	4.16	4.16	4.16	4.79	4.80	4.78	4.79	4.79	4.79	4.79	4.80			
105	4.18	4.19	4.20	4.19	4.19	4.20	4.19	4.19	4.88	4.88	4.88	4.88	4.87	4.89	4.88	4.90			
110	4.28	4.30	4.30	4.30	4.31	4.31	4.29	4.29	5.03	5.03	5.02	5.03	5.02	5.04	5.04	5.04			
115	4.45	4.45	4.46	4.46	4.46	4.47	4.46	4.45	5.20	5.22	5.20	5.20	5.21	5.23	5.22	5.23			
120	4.67	4.67	4.67	4.67	4.70	4.69	4.68	4.66	5.41	5.42	5.40	5.41	5.41	5.43	5.43	5.45			
125	4.91	4.91	4.92	4.93	4.93	4.93	4.91	4.90	5.64	5.64	5.63	5.64	5.64	5.66	5.65	5.67			
130	5.17	5.17	5.18	5.19	5.19	5.18	5.17	5.16	5.86	5.87	5.86	5.87	5.87	5.88	5.89	5.90			
135	5.43	5.45	5.46	5.46	5.48	5.46	5.45	5.44	6.11	6.10	6.10	6.11	6.11	6.12	6.13	6.14			
140	5.74	5.75	5.76	5.76	5.77	5.76	5.76	5.74	6.35	6.35	6.34	6.35	6.35	6.38	6.37	6.39			
145	6.04	6.05	6.07	6.07	6.08	6.07	6.07	6.05	6.60	6.61	6.60	6.62	6.61	6.63	6.64	6.65			
150	6.36	6.37	6.39	6.38	6.40	6.39	6.40	6.36	6.86	6.87	6.86	6.88	6.87	6.90	6.89	6.90			
155	6.69	6.69	6.72	6.71	6.73	6.72	6.72	6.70	7.14	7.15	7.14	7.16	7.15	7.17	7.17	7.18			
160	7.01	7.01	7.04	7.03	7.05	7.03	7.03	7.02	7.41	7.41	7.41	7.42	7.41	7.43	7.43	7.45			
165	7.33	7.34	7.36	7.36	7.37	7.36	7.36	7.35	7.64	7.65	7.64	7.65	7.65	7.66	7.66	7.68			
170	7.63	7.62	7.65	7.64	7.66	7.64	7.65	7.63	7.83	7.84	7.83	7.84	7.84	7.85	7.85	7.86			
175	7.86	7.86	7.88	7.88	7.88	7.88	7.89	7.88	7.95	7.95	7.96	7.96	7.96	7.97	7.96	7.97			
180	8.00	8.00	8.00	8.01	8.01	8.01	8.00	8.01	7.99	7.99	7.99	8.01	8.01	8.01	8.01	8.01			

3. Product Photo

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