

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): DLR0055(R4R8940120WS)

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

**Type of
Luminaire:** Downlights

Report Date: 2019-09-30

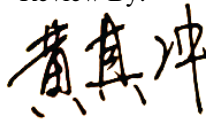
Prepared By:

Test & Report By:



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Review By:



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	4000K

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

1) Photometric and Light Distribution Measurement – Goniophotometer Method:

Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, 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 $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$. 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.

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 $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$. 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.

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	DLR0055(R4R8940120WS)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
1908250039	120.0	60	0.063	7.51	0.980

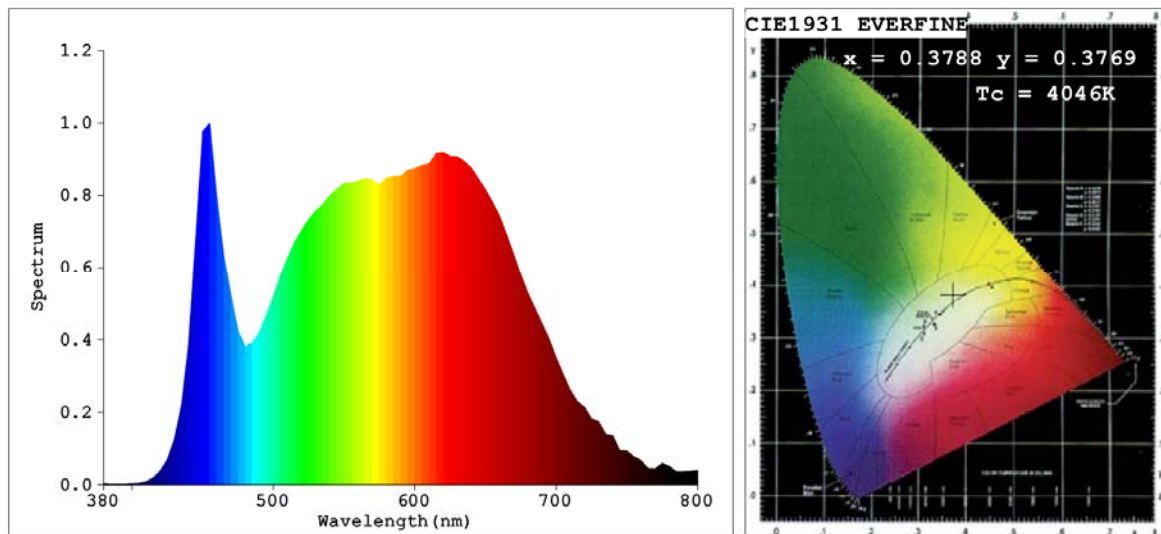
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	94	R9	77
Frequency (Hz)	60	R2	95	R10	87
CCT (K)	4046	R3	94	R11	93
Duv	0.00053	R4	94	R12	69
Chromaticity (x, y)	x=0.3788 y=0.3769	R5	93	R13	95
Chromaticity (u', v')	u'=0.2240 v'=0.5014	R6	92	R14	96
Color Rendering Index (CRI)	93.7	R7	97	R15	93
R9	77	R8	91	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	782.60
Luminous Efficacy (lm/W)	104.21
Beam Angle (°)	96.0
Center Beam Candle Power (cd)	330.7

Spectral Power Distribution & Chromaticity Diagram

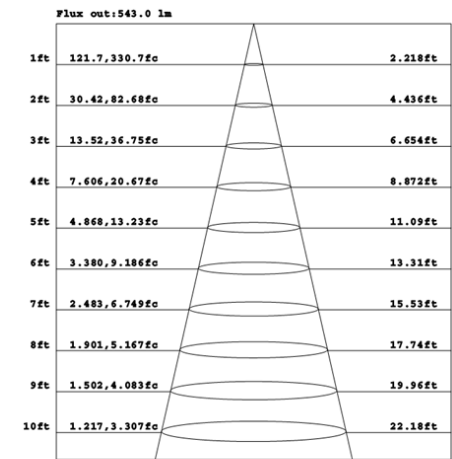
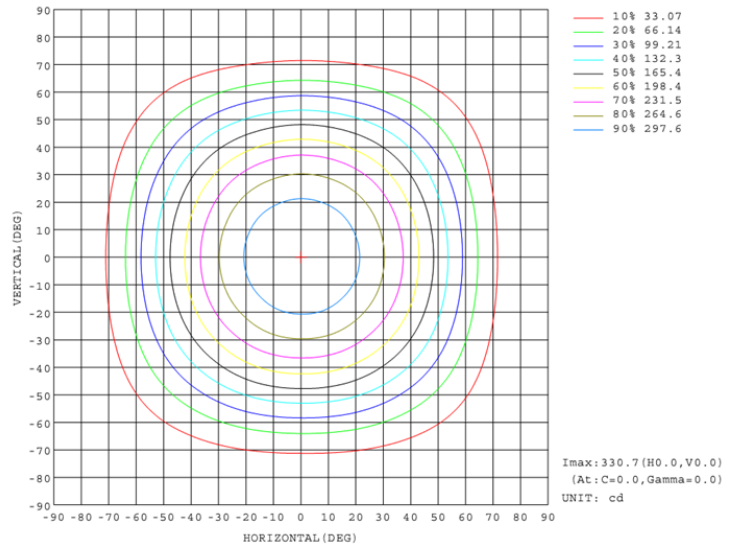
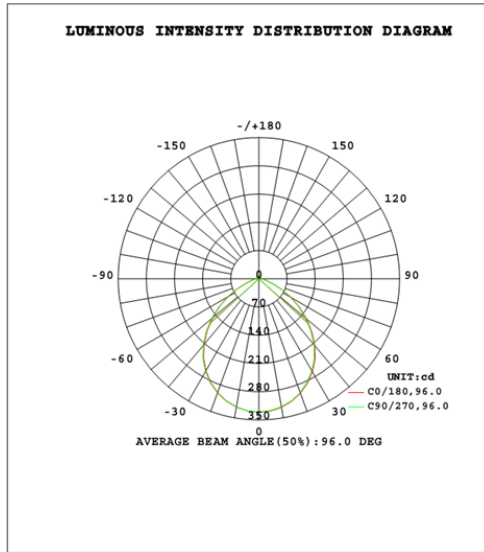


Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	250.5	32.0%
0-40	401.2	51.3%
0-60	651.3	83.2%
60-90	97.4	12.4%
70-100	40.5	5.2%
90-120	14.6	1.9%
0-90	748.7	95.7%
90-180	34.0	4.3%
0-180	782.6	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	31.2	4.0%	90-100	5.0	0.6%
10-20	88.4	11.3%	100-110	4.8	0.6%
20-30	130.9	16.7%	110-120	4.8	0.6%
30-40	150.7	19.3%	120-130	4.8	0.6%
40-50	141.8	18.1%	130-140	4.5	0.6%
50-60	108.3	13.8%	140-150	4.0	0.5%
60-70	61.8	7.9%	150-160	3.2	0.4%
70-80	25.2	3.2%	160-170	2.1	0.3%
80-90	10.4	1.3%	170-180	0.8	0.1%

Photometric Data



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

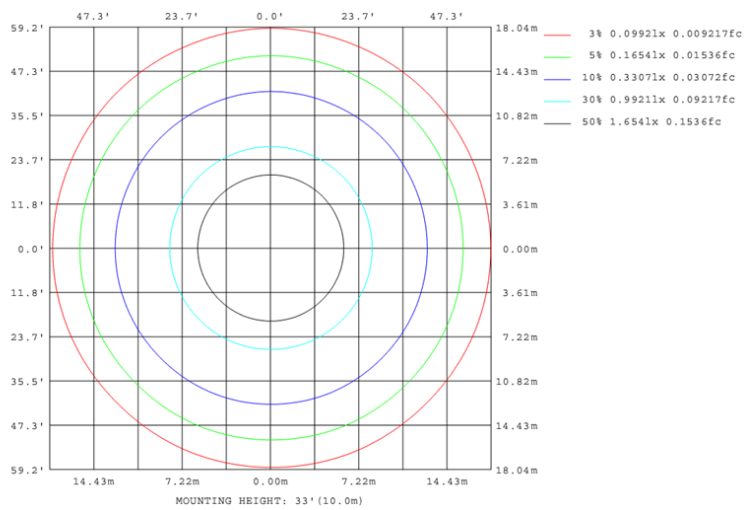
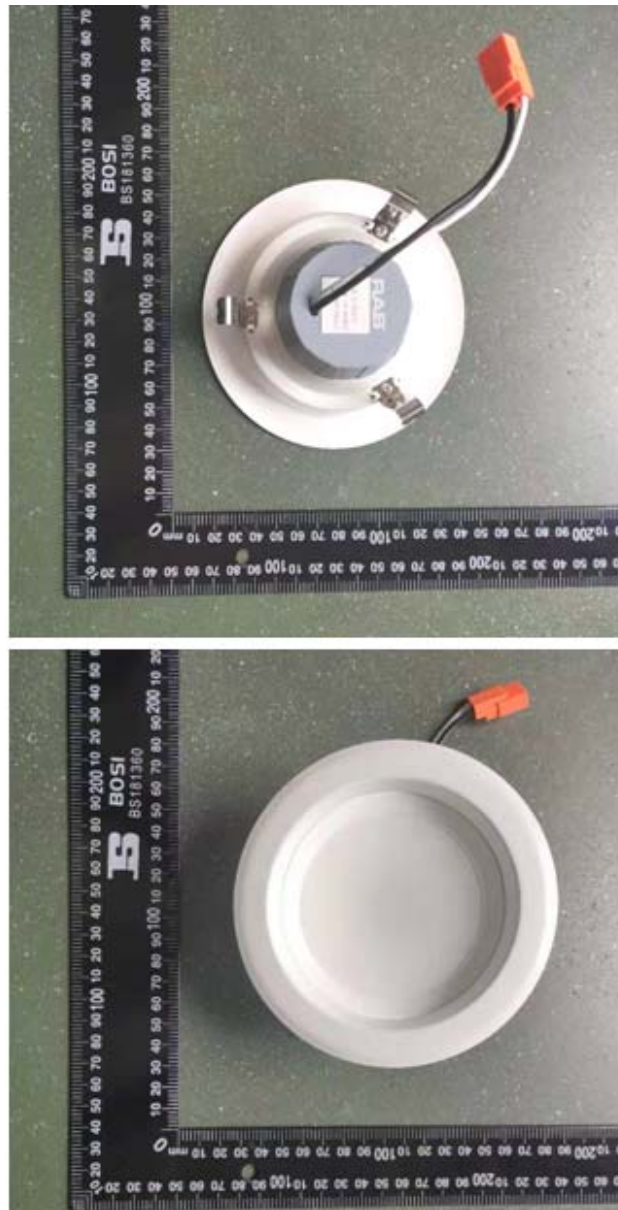


Table--1																	UNIT: cd		
γ (DEG) \ C (DEG)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5			
0	331	331	330	330	330	330	330	330	331	331	330	330	330	330	330	330			
5	329	329	329	328	328	328	328	328	329	328	329	328	329	329	329	329			
10	324	324	323	323	322	322	322	322	323	323	323	323	323	323	323	323			
15	315	315	314	314	313	313	313	313	313	313	314	314	314	314	315	314			
20	302	302	301	301	300	300	299	300	300	300	301	301	302	302	302	302			
25	286	286	285	284	283	283	283	283	284	283	284	284	285	285	286	286			
30	266	266	265	265	263	263	262	263	264	263	264	265	266	266	267	266			
35	244	244	242	242	240	240	239	240	240	240	241	242	243	243	244	243			
40	217	217	215	215	213	213	212	212	212	212	214	214	216	216	217	216			
45	186	187	185	185	183	183	181	182	182	182	183	183	185	185	187	186			
50	155	155	153	153	151	151	150	151	151	150	152	152	154	154	155	155			
55	123	124	122	122	120	120	119	119	119	119	120	120	122	122	124	123			
60	92.2	92.6	91.1	91.2	89.4	89.5	87.9	88.4	88.3	87.9	89.3	89.3	91.0	91.0	92.4	92.0			
65	62.9	63.4	62.2	62.3	60.8	60.8	59.4	59.7	59.7	59.2	60.4	60.4	61.9	61.9	63.2	62.8			
70	38.2	38.7	37.9	38.1	37.0	37.0	36.0	36.2	36.2	35.8	36.6	36.5	37.6	37.5	38.5	38.1			
75	22.4	22.8	22.4	22.4	21.9	21.9	21.4	21.6	21.5	21.3	21.6	21.6	22.1	22.0	22.5	22.3			
80	14.4	14.6	14.4	14.4	14.2	14.3	14.1	14.1	14.1	14.0	14.1	14.0	14.2	14.2	14.4	14.4			
85	9.67	9.85	9.62	9.70	9.40	9.47	9.19	9.30	9.62	9.46	9.64	9.57	9.84	9.78	10.0	9.95			
90	4.47	4.47	4.48	4.44	4.44	4.43	4.44	4.41	4.79	4.82	4.79	4.82	4.80	4.84	4.82	4.84			
95	4.26	4.24	4.25	4.24	4.24	4.23	4.24	4.22	4.77	4.77	4.77	4.77	4.77	4.79	4.77	4.77			
100	4.17	4.16	4.18	4.16	4.16	4.16	4.17	4.16	4.82	4.81	4.81	4.80	4.80	4.81	4.81	4.80			
105	4.19	4.19	4.20	4.19	4.19	4.21	4.20	4.19	4.91	4.91	4.90	4.91	4.90	4.89	4.89	4.89			
110	4.29	4.28	4.29	4.29	4.29	4.29	4.30	4.29	5.07	5.06	5.07	5.06	5.06	5.05	5.05	5.05			
115	4.46	4.46	4.46	4.45	4.47	4.47	4.47	4.47	5.27	5.27	5.26	5.24	5.25	5.24	5.23	5.24			
120	4.65	4.65	4.65	4.66	4.66	4.67	4.68	4.67	5.48	5.48	5.46	5.45	5.44	5.45	5.44	5.45			
125	4.89	4.90	4.91	4.90	4.90	4.92	4.93	4.93	5.72	5.71	5.70	5.69	5.68	5.68	5.68	5.68			
130	5.16	5.15	5.16	5.16	5.18	5.19	5.19	5.19	5.94	5.94	5.93	5.92	5.91	5.91	5.91	5.91			
135	5.43	5.42	5.45	5.43	5.44	5.45	5.47	5.47	6.19	6.19	6.17	6.17	6.16	6.15	6.15	6.16			
140	5.72	5.72	5.73	5.74	5.75	5.75	5.76	5.75	6.45	6.44	6.42	6.43	6.41	6.41	6.40	6.41			
145	6.03	6.03	6.05	6.04	6.05	6.06	6.07	6.07	6.70	6.70	6.69	6.69	6.66	6.68	6.66	6.67			
150	6.36	6.36	6.38	6.36	6.39	6.39	6.40	6.39	6.98	6.97	6.96	6.96	6.94	6.94	6.94	6.94			
155	6.70	6.70	6.71	6.70	6.72	6.73	6.73	6.73	7.25	7.24	7.23	7.23	7.21	7.22	7.21	7.22			
160	7.03	7.02	7.04	7.03	7.05	7.04	7.06	7.06	7.51	7.50	7.49	7.49	7.47	7.48	7.48	7.48			
165	7.37	7.36	7.37	7.36	7.38	7.37	7.39	7.38	7.74	7.73	7.72	7.72	7.70	7.71	7.71	7.71			
170	7.67	7.66	7.67	7.66	7.67	7.67	7.68	7.68	7.92	7.91	7.90	7.90	7.89	7.90	7.89	7.90			
175	7.92	7.91	7.90	7.91	7.91	7.91	7.92	7.92	8.02	8.01	8.00	8.01	8.00	8.02	8.00	8.01			
180	8.06	8.04	8.04	8.03	8.04	8.05	8.06	8.05	8.07	8.05	8.04	8.04	8.04	8.04	8.06	8.07			

3. Product Photo



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