

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): DLR0044(R6R11827120WS)

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

**Type of
Luminaire:** Downlights

Report Date: 2019-09-30

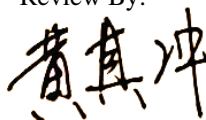
Prepared By:

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	10.5W
Rated Initial Lamp Lumen	1050 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

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:	25.5 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	DLR0044(R6R11827120WS)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
1908250028	120.0	60	0.082	9.79	0.982

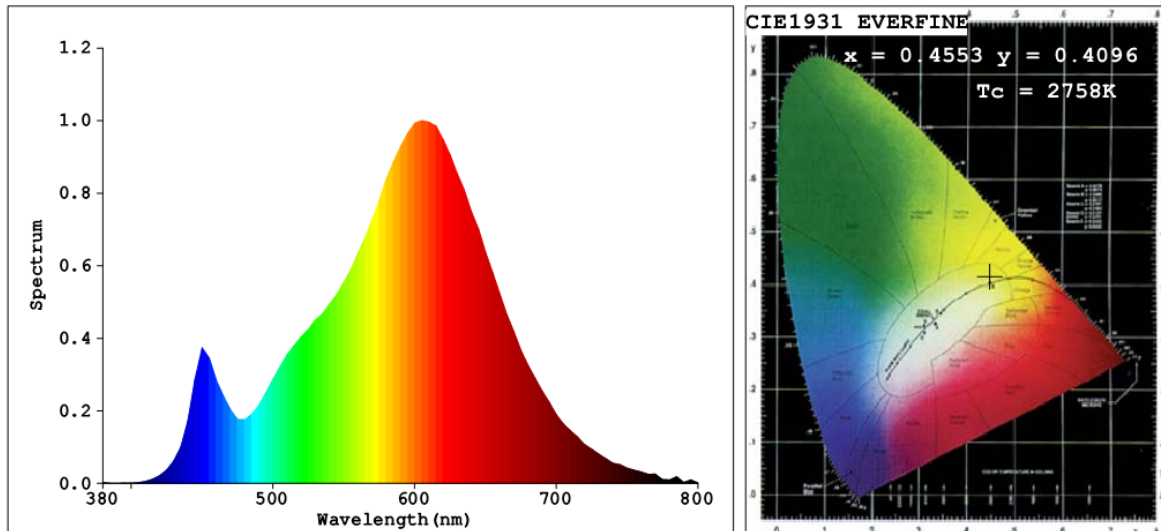
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	81	R9	10
Frequency (Hz)	60	R2	92	R10	82
CCT (K)	2758	R3	96	R11	80
Duv	0.00003	R4	81	R12	76
Chromaticity (x, y)	x=0.4553 y=0.4096	R5	82	R13	84
Chromaticity (u', v')	u'=0.2600 v'=0.5263	R6	91	R14	98
Color Rendering Index (CRI)	82.9	R7	82	R15	74
R9	10	R8	59	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1092.7
Luminous Efficacy (lm/W)	111.62
Beam Angle (°)	97.6
Center Beam Candle Power (cd)	457.1

Spectral Power Distribution & Chromaticity Diagram



Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	346.5	31.7%
0-40	556.7	50.9%
0-60	912.7	83.5%
60-90	132.7	12.1%
70-100	53.4	4.9%
90-120	20.3	1.9%
0-90	1045.5	95.7%
90-180	47.3	4.3%
0-180	1092.7	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	43.1	3.9%	90-100	6.9	0.6%
10-20	122.1	11.2%	100-110	6.7	0.6%
20-30	181.3	16.6%	110-120	6.7	0.6%
30-40	210.2	19.2%	120-130	6.6	0.6%
40-50	200.7	18.4%	130-140	6.2	0.6%
50-60	155.4	14.2%	140-150	5.6	0.5%
60-70	86.3	7.9%	150-160	4.5	0.4%
70-80	32.7	3.0%	160-170	3.0	0.3%
80-90	13.8	1.3%	170-180	1.1	0.1%

Photometric Data

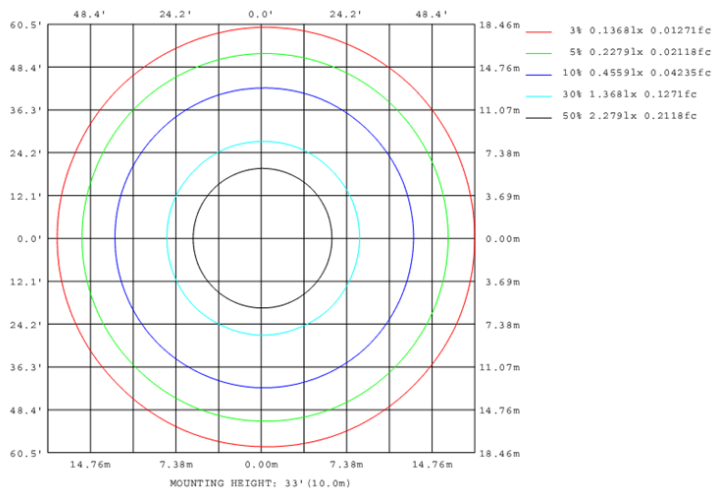
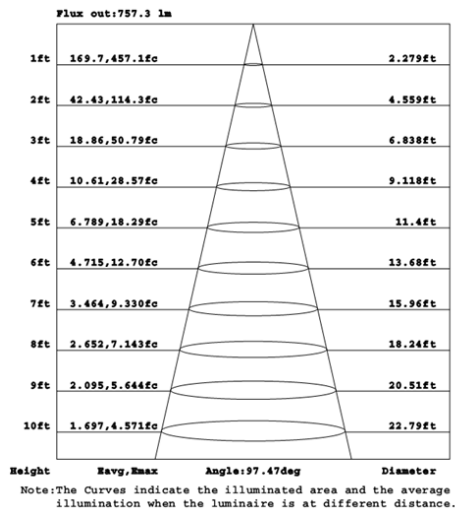
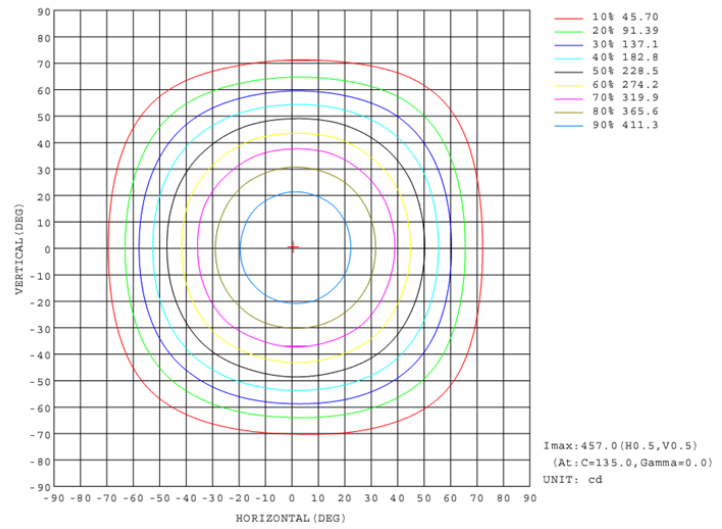
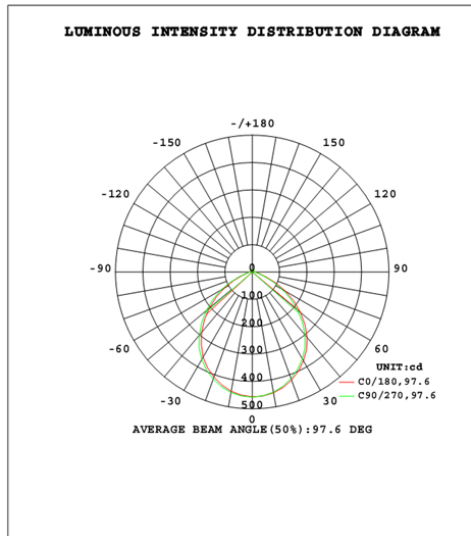
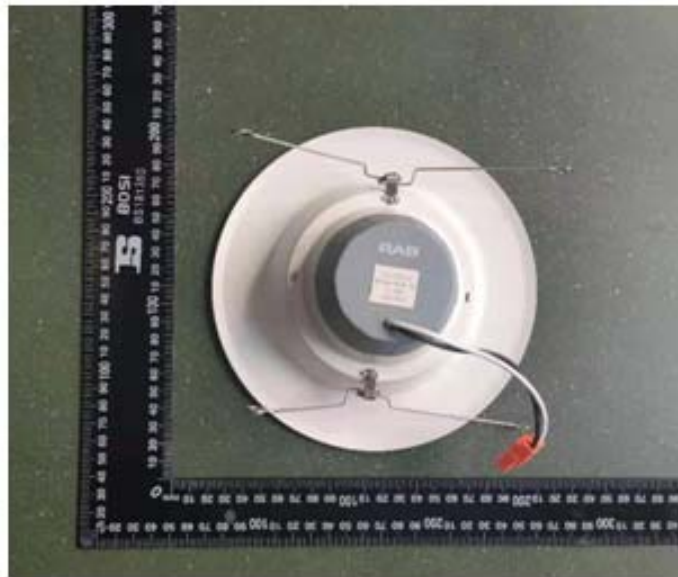


Table--1

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	456	456	456	457	457	457	457	457	457	456	456	456	457	457	457	457	457			
5	455	456	455	454	454	454	453	453	452	452	453	454	455	455	456	456				
10	448	448	448	447	446	445	444	444	442	443	445	446	447	448	449	449				
15	437	437	436	435	433	431	430	429	428	428	430	432	435	436	437	438				
20	420	420	419	417	414	413	411	411	409	410	412	414	417	419	421	421				
25	400	399	397	396	392	391	388	388	386	387	390	392	395	397	400	400				
30	375	375	372	370	366	364	361	361	360	360	363	366	370	372	375	375				
35	346	345	343	339	336	331	331	326	325	330	330	336	339	343	345	347				
40	312	308	308	301	300	293	294	289	288	293	293	300	301	308	308	313				
45	273	269	268	262	260	253	253	249	248	252	253	260	262	268	269	273				
50	230	227	225	219	217	211	209	206	205	209	211	217	220	226	227	231				
55	187	183	181	176	171	167	163	162	163	168	172	177	182	184	187					
60	140	139	135	132	126	123	118	118	118	119	123	127	133	136	140	140				
65	95.5	94.9	90.5	87.7	82.2	79.4	75.5	75.0	75.3	76.0	80.4	83.4	88.9	91.9	96.1	96.3				
70	56.2	55.6	52.2	50.2	46.5	44.6	42.1	41.8	41.9	42.4	45.2	47.2	51.2	53.3	56.5	56.8				
75	31.3	31.0	29.5	28.5	26.9	26.0	24.8	24.7	24.8	25.0	26.2	27.2	29.0	29.9	31.4	31.5				
80	20.2	20.1	19.6	19.2	18.6	18.3	17.7	17.7	17.9	18.1	18.6	18.9	19.5	19.8	20.3	20.4				
85	14.0	13.9	13.1	12.7	11.7	11.2	10.4	10.3	10.8	10.9	11.7	12.2	13.1	13.7	14.4	14.5				
90	6.71	6.66	6.29	6.18	6.13	6.08	6.06	6.03	6.70	6.72	6.73	6.75	6.77	6.88	7.29	7.37				
95	5.91	5.90	5.90	5.88	5.86	5.83	5.83	5.82	6.65	6.67	6.68	6.69	6.68	6.69	6.68	6.69				
100	5.79	5.78	5.78	5.77	5.77	5.77	5.77	5.77	6.72	6.74	6.73	6.72	6.70	6.71	6.70	6.70				
105	5.78	5.78	5.80	5.80	5.82	5.81	5.84	5.83	6.87	6.88	6.86	6.86	6.82	6.83	6.80	6.82				
110	5.89	5.88	5.91	5.92	5.95	5.96	5.99	6.01	7.10	7.10	7.07	7.06	7.02	7.01	6.99	7.00				
115	6.10	6.09	6.12	6.13	6.18	6.19	6.24	6.25	7.36	7.37	7.33	7.31	7.27	7.26	7.23	7.24				
120	6.38	6.37	6.41	6.43	6.46	6.49	6.55	6.56	7.65	7.65	7.61	7.59	7.55	7.53	7.51	7.52				
125	6.70	6.70	6.73	6.75	6.80	6.83	6.89	6.90	7.97	7.97	7.92	7.90	7.86	7.85	7.82	7.83				
130	7.07	7.05	7.09	7.10	7.16	7.19	7.25	7.27	8.30	8.29	8.25	8.23	8.17	8.16	8.13	8.15				
135	7.43	7.43	7.47	7.49	7.55	7.59	7.65	7.66	8.66	8.64	8.60	8.57	8.52	8.51	8.48	8.49				
140	7.86	7.85	7.89	7.91	7.98	8.02	8.08	8.10	9.02	9.02	8.96	8.95	8.89	8.88	8.85	8.87				
145	8.33	8.31	8.35	8.36	8.45	8.48	8.54	8.56	9.41	9.41	9.35	9.33	9.28	9.27	9.24	9.26				
150	8.81	8.79	8.83	8.85	8.93	8.96	9.02	9.04	9.81	9.80	9.75	9.73	9.68	9.67	9.64	9.65				
155	9.31	9.29	9.34	9.35	9.43	9.45	9.52	9.54	10.2	10.2	10.1	10.1	10.1	10.1	10.0	10.1				
160	9.81	9.80	9.84	9.85	9.92	9.95	10.0	10.0	10.6	10.6	10.5	10.5	10.5	10.5	10.4	10.5				
165	10.3	10.3	10.3	10.3	10.4	10.4	10.5	10.5	10.9	10.9	10.8	10.8	10.8	10.8	10.8	10.8				
170	10.7	10.7	10.7	10.8	10.8	10.8	10.9	10.9	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1				
175	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.3				
180	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3				

3. Product Photo



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