

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): DLR0046(R6R11835120WS)

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

**Type of
Luminaire:** Downlights

Report Date: 2019-09-30

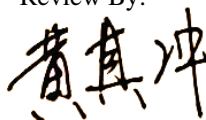
Prepared By:

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	3500K

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	DLR0046(R6R11835120WS)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
1908250030	120.0	60	0.086	10.10	0.984

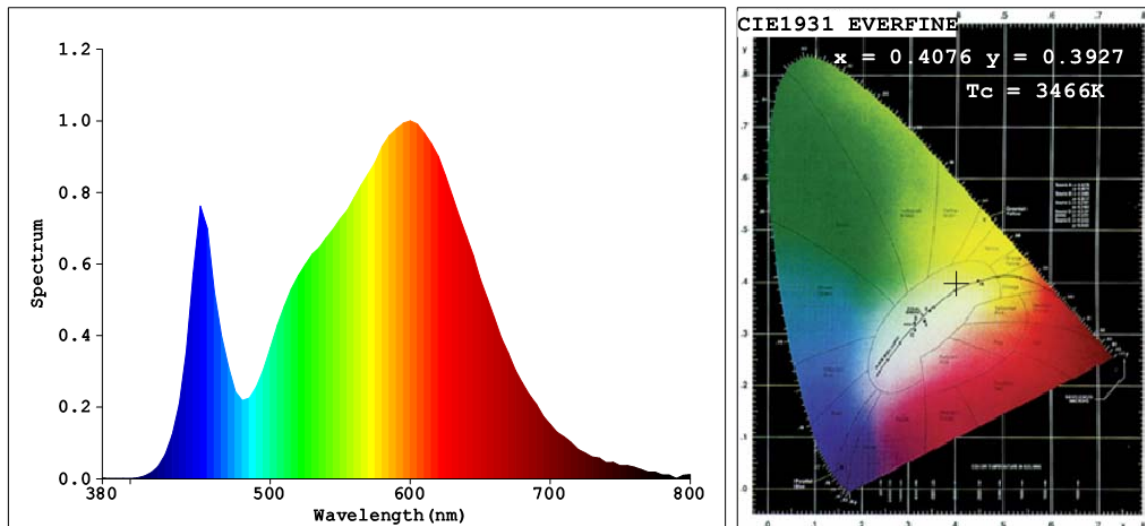
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	81	R9	8
Frequency (Hz)	60	R2	89	R10	74
CCT (K)	3466	R3	95	R11	80
Duv	0.00036	R4	81	R12	63
Chromaticity (x, y)	x=0.4076 y=0.3927	R5	80	R13	83
Chromaticity (u', v')	u'=0.2364 v'=0.5124	R6	85	R14	97
Color Rendering Index (CRI)	82.4	R7	85	R15	74
R9	8	R8	63	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1158.2
Luminous Efficacy (lm/W)	114.67
Beam Angle (°)	97.7
Center Beam Candle Power (cd)	483.6

Spectral Power Distribution & Chromaticity Diagram



Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	366.7	31.7%
0-40	589.7	50.9%
0-60	966.4	83.4%
60-90	141.3	12.2%
70-100	57.3	4.9%
90-120	21.7	1.9%
0-90	1107.7	95.6%
90-180	50.5	4.4%
0-180	1158.2	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	45.6	3.9%	90-100	7.4	0.6%
10-20	129.2	11.2%	100-110	7.2	0.6%
20-30	191.9	16.6%	110-120	7.1	0.6%
30-40	223.0	19.3%	120-130	7.0	0.6%
40-50	212.4	18.3%	130-140	6.7	0.6%
50-60	164.4	14.2%	140-150	5.9	0.5%
60-70	91.4	7.9%	150-160	4.8	0.4%
70-80	35.1	3.0%	160-170	3.2	0.3%
80-90	14.8	1.3%	170-180	1.1	0.1%

Photometric Data

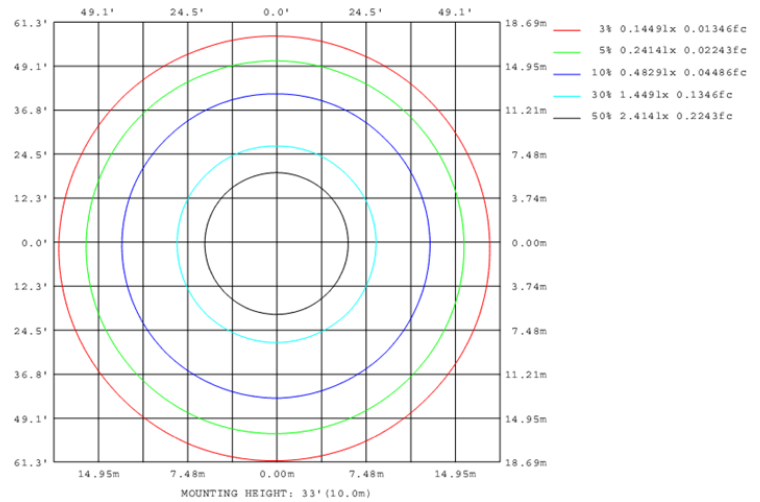
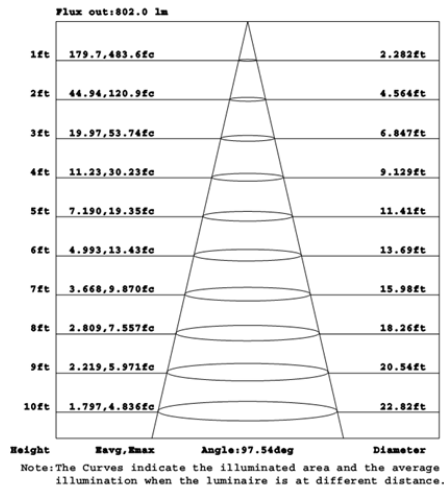
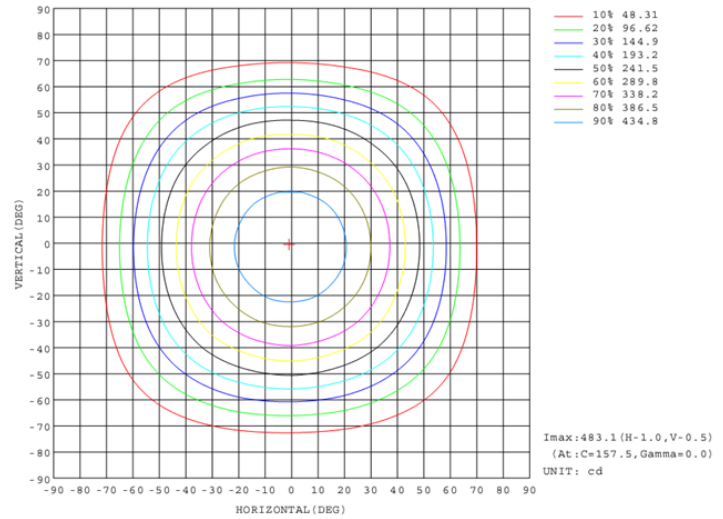
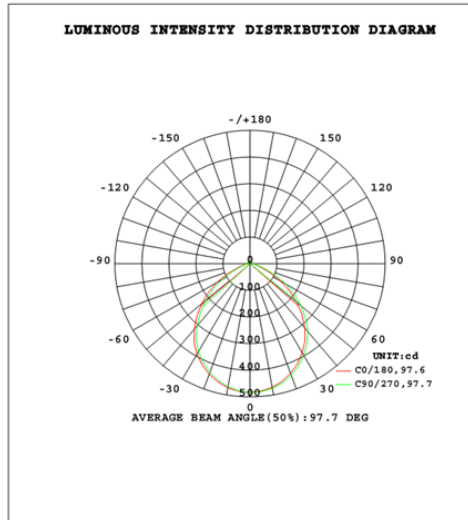
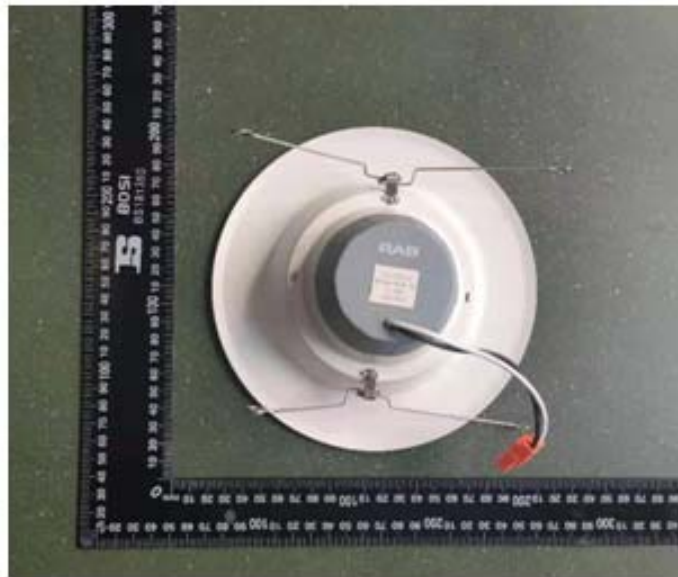


Table--1

UNIT: cd

C (DEG) γ (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	483	483	483	483	483	483	483	484	483	483	483	483	483	483	483	484			
5	479	480	481	482	482	482	482	482	480	480	480	479	479	479	479	479			
10	471	472	473	475	475	475	475	474	473	472	471	470	469	469	469	470			
15	457	458	460	462	463	464	462	462	460	458	457	455	454	453	454	455			
20	437	440	442	445	445	447	445	444	442	439	438	435	435	433	435	435			
25	415	417	419	423	424	425	423	422	419	416	414	411	410	409	410	411			
30	386	390	393	397	398	399	397	396	392	388	386	383	382	380	382	383			
35	354	359	362	367	368	370	367	365	361	357	355	350	348	347	348	351			
40	316	317	326	327	333	332	331	325	320	319	311	310	304	307	305	312			
45	272	275	283	285	292	290	290	284	278	276	268	266	261	262	261	268			
50	227	230	238	241	247	246	246	240	234	231	223	220	215	216	216	222			
55	179	184	192	196	201	201	201	195	189	184	177	172	168	167	169	173			
60	130	137	142	149	152	155	152	148	143	135	130	123	121	119	122	125			
65	83.8	90.9	95.9	103	105	108	105	102	97.0	89.8	85.0	78.6	76.2	73.9	76.5	79.4			
70	47.7	52.6	56.2	61.2	63.1	64.9	62.3	59.9	56.1	51.1	48.0	44.0	42.5	41.2	42.8	44.7			
75	28.0	30.3	31.9	34.3	35.1	36.0	34.7	33.5	31.6	29.4	28.0	26.2	25.6	25.0	25.8	26.6			
80	19.6	20.5	21.2	22.0	22.4	22.8	22.2	21.8	21.3	20.4	19.8	19.0	18.7	18.4	18.8	19.2			
85	12.1	13.3	14.0	15.2	15.5	15.9	15.3	14.8	14.4	13.2	12.5	11.5	11.2	10.9	11.4	11.9			
90	6.51	6.56	6.67	7.17	7.38	7.67	7.21	6.91	7.26	7.18	7.15	7.15	7.12	7.12	7.12	7.14			
95	6.26	6.27	6.30	6.31	6.32	6.32	6.31	6.29	7.12	7.13	7.11	7.12	7.10	7.10	7.08	7.10			
100	6.18	6.18	6.19	6.18	6.18	6.16	6.16	6.15	7.16	7.18	7.18	7.19	7.18	7.18	7.15	7.15			
105	6.24	6.22	6.22	6.20	6.18	6.16	6.15	6.15	7.30	7.32	7.34	7.35	7.34	7.33	7.32	7.30			
110	6.40	6.37	6.35	6.31	6.28	6.27	6.26	6.26	7.51	7.55	7.57	7.59	7.58	7.57	7.54	7.52			
115	6.66	6.60	6.57	6.53	6.50	6.47	6.47	6.47	7.78	7.82	7.84	7.88	7.87	7.87	7.83	7.79			
120	6.98	6.92	6.89	6.83	6.80	6.76	6.76	6.77	8.07	8.13	8.16	8.19	8.19	8.18	8.14	8.10			
125	7.32	7.28	7.25	7.18	7.14	7.10	7.10	7.10	8.41	8.48	8.50	8.53	8.52	8.52	8.47	8.43			
130	7.71	7.66	7.63	7.56	7.52	7.48	7.47	7.47	8.76	8.83	8.85	8.89	8.88	8.88	8.82	8.78			
135	8.15	8.09	8.04	7.97	7.92	7.88	7.87	7.88	9.14	9.20	9.23	9.27	9.25	9.25	9.19	9.16			
140	8.61	8.55	8.50	8.41	8.37	8.32	8.33	8.33	9.54	9.61	9.62	9.67	9.66	9.65	9.58	9.55			
145	9.11	9.04	8.98	8.90	8.86	8.81	8.81	8.81	9.95	10.0	10.0	10.1	10.1	10.1	10.00	9.96			
150	9.61	9.55	9.50	9.41	9.38	9.31	9.32	9.32	10.4	10.4	10.4	10.5	10.5	10.5	10.4	10.4			
155	10.1	10.1	10.0	9.94	9.90	9.84	9.85	9.85	10.8	10.9	10.9	10.9	10.9	10.9	10.8	10.8			
160	10.7	10.6	10.5	10.5	10.4	10.4	10.4	10.4	11.2	11.3	11.3	11.3	11.3	11.3	11.2	11.2			
165	11.2	11.1	11.1	11.0	10.9	10.9	10.9	10.9	11.6	11.6	11.6	11.6	11.6	11.6	11.5	11.5			
170	11.6	11.5	11.5	11.4	11.4	11.4	11.4	11.4	11.8	11.9	11.9	11.9	11.8	11.8	11.8	11.8			
175	11.9	11.9	11.9	11.8	11.8	11.7	11.7	11.7	12.0	12.0	12.0	12.0	12.0	12.0	11.9	11.9			
180	12.1	12.1	12.1	12.0	12.0	12.0	12.0	11.9	12.1	12.1	12.1	12.0	12.0	12.0	12.0	11.9			

3. Product Photo



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