

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): DLR0078(R4S7930120WB)

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	7.0W
Rated Initial Lamp Lumen	600 lm
Declared CCT	3000K

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	DLR0078(R4S7930120WB)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
1908250062	120.0	60	0.055	6.49	0.977

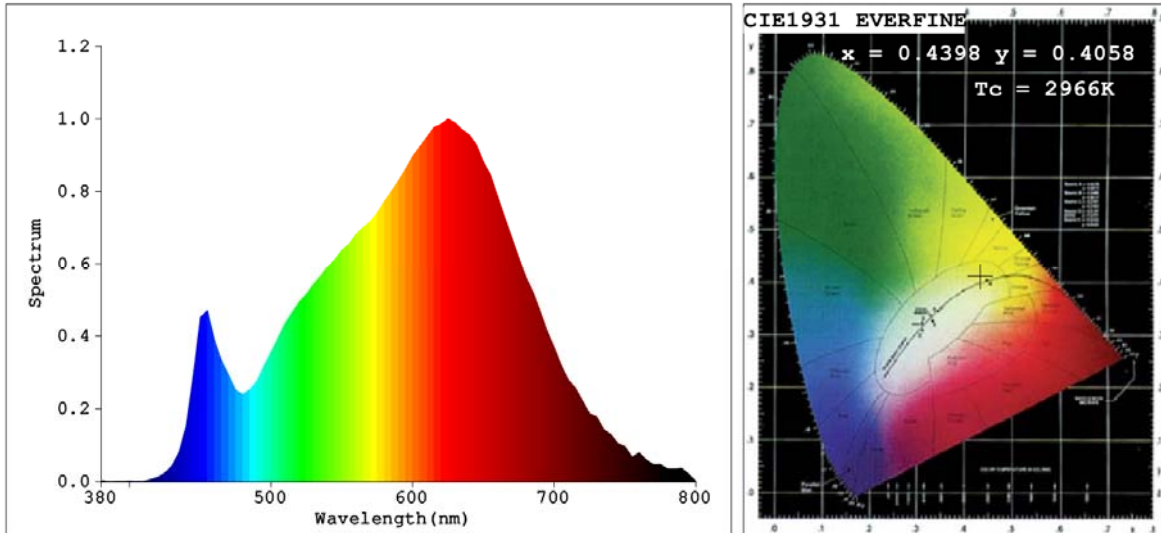
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	94	R9	68
Frequency (Hz)	60	R2	97	R10	92
CCT (K)	2966	R3	98	R11	95
Duv	0.00030	R4	94	R12	80
Chromaticity (x, y)	x=0.4398 y=0.4058	R5	94	R13	95
Chromaticity (u', v')	u'=0.2517 v'=0.5225	R6	96	R14	98
Color Rendering Index (CRI)	94.1	R7	94	R15	91
R9	68	R8	86	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	635.29
Luminous Efficacy (lm/W)	97.56
Beam Angle (°)	107.2
Center Beam Candle Power (cd)	227.7

Spectral Power Distribution & Chromaticity Diagram



Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	177.7	28.0%
0-40	290.8	45.8%
0-60	503.7	79.3%
60-90	103.7	16.3%
70-100	41.2	6.5%
90-120	12.4	2.0%
0-90	607.4	95.6%
90-180	27.9	4.4%
0-180	635.3	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	21.6	3.4%	90-100	4.3	0.7%
10-20	62.0	9.8%	100-110	4.1	0.6%
20-30	94.1	14.8%	110-120	4.0	0.6%
30-40	113.2	17.8%	120-130	3.9	0.6%
40-50	114.6	18.0%	130-140	3.6	0.6%
50-60	98.3	15.5%	140-150	3.2	0.5%
60-70	66.8	10.5%	150-160	2.6	0.4%
70-80	28.3	4.5%	160-170	1.7	0.3%
80-90	8.6	1.4%	170-180	0.6	0.1%

Photometric Data

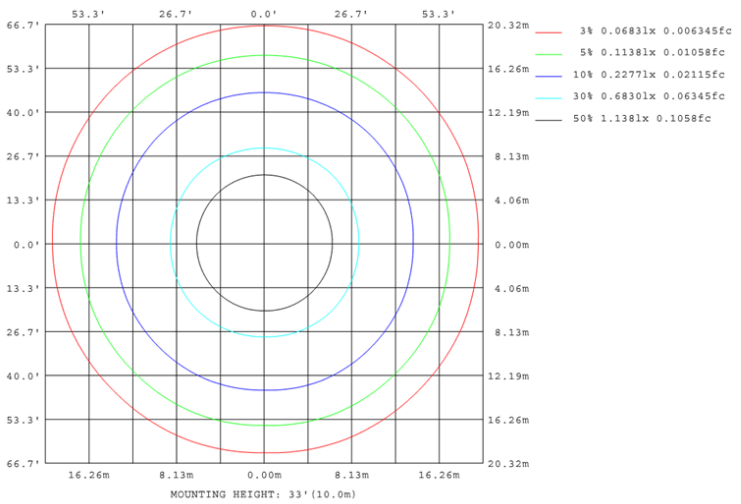
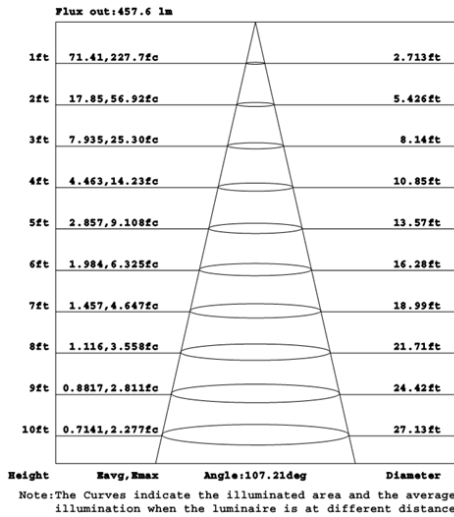
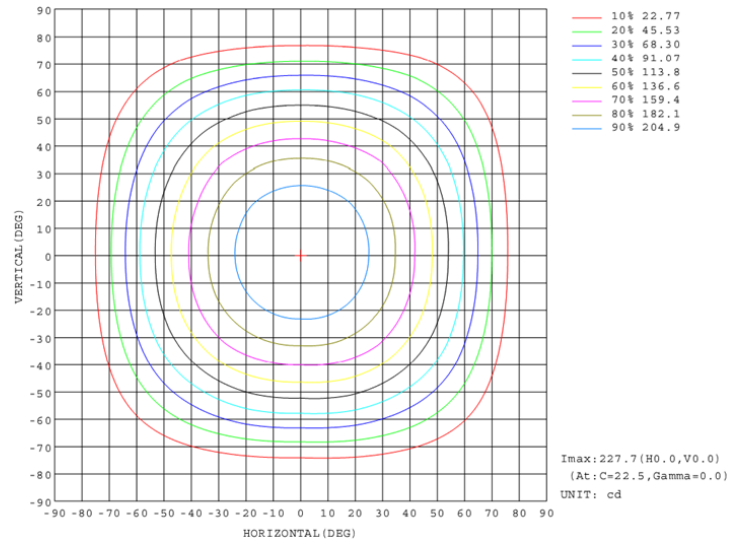
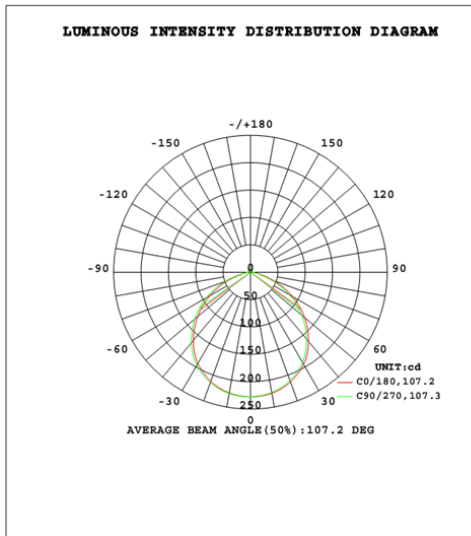
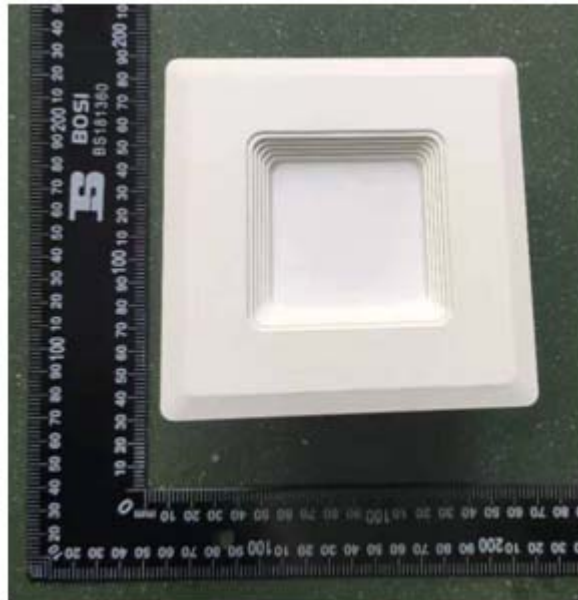
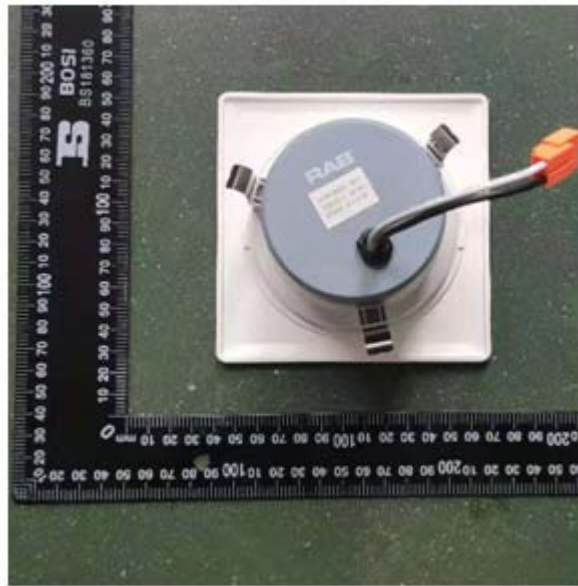


Table--1

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	228	228	228	228	228	228	228	228	228	228	228	228	228	228	228	228				
5	227	227	227	226	226	226	226	226	227	227	227	227	227	227	227	227				
10	225	224	224	223	223	223	223	224	224	224	224	225	225	225	225	225				
15	220	220	219	219	218	218	218	219	219	219	220	220	221	221	221	221				
20	213	213	212	212	211	211	211	212	212	213	214	214	215	215	215	214				
25	205	205	204	203	201	202	202	203	203	204	206	206	206	206	207	206				
30	194	194	193	192	190	191	191	192	192	193	195	196	196	196	197	196				
35	181	182	181	179	176	177	179	180	179	181	183	184	184	185	185	184				
40	165	166	167	163	159	161	164	164	163	165	170	169	168	169	172	169				
45	148	149	149	146	142	144	146	146	145	148	153	152	151	153	156	152				
50	129	130	129	127	123	125	126	127	126	129	134	134	133	134	137	134				
55	110	111	109	108	103	105	105	108	107	110	113	115	114	115	116	115				
60	89.3	90.3	87.4	86.1	81.9	84.3	84.1	86.1	86.1	89.2	92.4	94.0	93.4	95.0	95.4	93.8				
65	67.6	68.3	65.8	64.0	60.0	62.1	62.6	64.1	64.4	67.8	70.9	72.3	72.2	73.9	74.1	72.1				
70	45.3	45.6	44.2	41.7	38.0	39.7	41.0	41.9	42.4	45.3	49.5	50.1	49.9	51.3	52.6	49.8				
75	25.1	25.2	24.2	22.5	19.7	20.9	21.9	22.7	23.0	25.2	28.9	29.2	29.0	29.9	31.5	28.9				
80	13.1	12.9	12.0	11.9	10.9	11.4	11.2	11.9	12.5	13.0	14.2	14.2	14.0	14.6	15.5	14.1				
85	7.79	7.50	6.81	6.62	6.46	6.47	6.28	6.68	7.27	7.79	8.15	8.44	8.70	8.80	8.72	8.33				
90	3.97	3.90	3.91	3.87	3.86	3.86	3.88	3.88	4.12	4.15	4.22	4.30	4.60	4.54	4.52	4.28				
95	3.74	3.71	3.72	3.70	3.70	3.69	3.72	3.72	4.09	4.10	4.09	4.09	4.10	4.10	4.10	4.10				
100	3.64	3.63	3.63	3.62	3.62	3.63	3.64	3.64	4.11	4.11	4.10	4.11	4.10	4.11	4.10	4.11				
105	3.61	3.61	3.61	3.62	3.62	3.63	3.64	3.64	4.16	4.16	4.15	4.13	4.14	4.15	4.16	4.16				
110	3.63	3.65	3.65	3.67	3.67	3.69	3.68	3.69	4.25	4.24	4.22	4.22	4.22	4.23	4.23	4.25				
115	3.72	3.72	3.73	3.75	3.77	3.79	3.78	3.79	4.36	4.35	4.33	4.32	4.32	4.33	4.34	4.35				
120	3.83	3.85	3.86	3.88	3.89	3.91	3.90	3.91	4.47	4.47	4.45	4.43	4.43	4.46	4.46	4.47				
125	3.98	4.00	4.01	4.03	4.05	4.07	4.06	4.07	4.61	4.60	4.58	4.57	4.57	4.57	4.59	4.60				
130	4.15	4.17	4.18	4.20	4.24	4.25	4.25	4.24	4.76	4.76	4.73	4.73	4.73	4.72	4.75	4.76				
135	4.34	4.36	4.39	4.41	4.44	4.45	4.46	4.45	4.94	4.93	4.90	4.90	4.89	4.90	4.91	4.93				
140	4.56	4.58	4.60	4.62	4.66	4.67	4.69	4.68	5.13	5.12	5.09	5.09	5.08	5.10	5.10	5.12				
145	4.81	4.81	4.84	4.87	4.90	4.91	4.92	4.91	5.34	5.32	5.30	5.29	5.28	5.30	5.30	5.32				
150	5.07	5.07	5.10	5.12	5.15	5.17	5.18	5.16	5.53	5.51	5.50	5.49	5.48	5.50	5.50	5.52				
155	5.32	5.33	5.37	5.38	5.41	5.42	5.43	5.42	5.73	5.72	5.69	5.69	5.68	5.70	5.71	5.73				
160	5.58	5.59	5.61	5.63	5.66	5.66	5.68	5.66	5.92	5.90	5.88	5.89	5.88	5.89	5.89	5.92				
165	5.82	5.82	5.84	5.86	5.89	5.89	5.90	5.89	6.07	6.05	6.04	6.04	6.05	6.06	6.06	6.08				
170	6.03	6.03	6.04	6.06	6.09	6.09	6.10	6.10	6.19	6.19	6.17	6.17	6.18	6.18	6.18	6.21				
175	6.18	6.19	6.20	6.20	6.23	6.23	6.24	6.24	6.27	6.25	6.24	6.25	6.27	6.28	6.28	6.29				
180	6.30	6.29	6.28	6.30	6.31	6.32	6.32	6.32	6.29	6.28	6.28	6.29	6.32	6.32	6.31	6.33				

3. Product Photo



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