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): DLR0076(R6S10840120WB)

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	10.0W
Rated Initial Lamp Lumen	1000 lm
Declared CCT	4000K

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	DLR0076(R6S10840120WB)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
1908250060	120.0	60	0.083	9.88	0.980

Chromaticity Measurement - Sphere-Spectroradiometer Method:

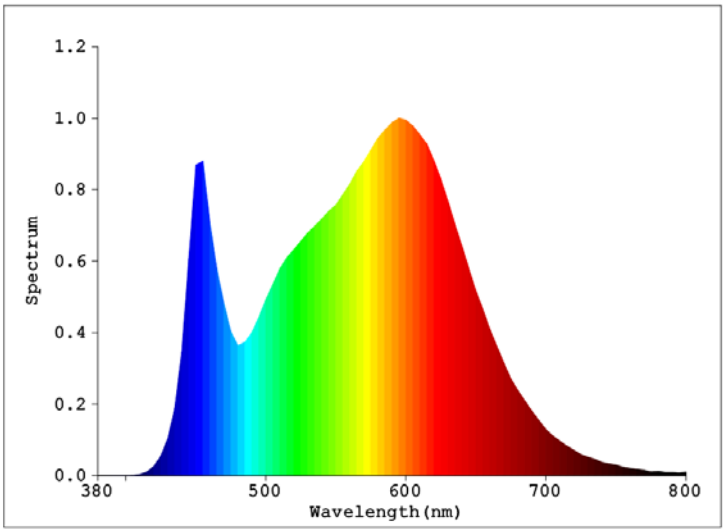
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
CCT (K)	3875
Duv	0.00137
Chromaticity (x, y)	x=0.3872 y=0.3838
Chromaticity (u', v')	u'=0.2267 v'=0.5057
Color Rendering Index (CRI)	84.7
R9	13

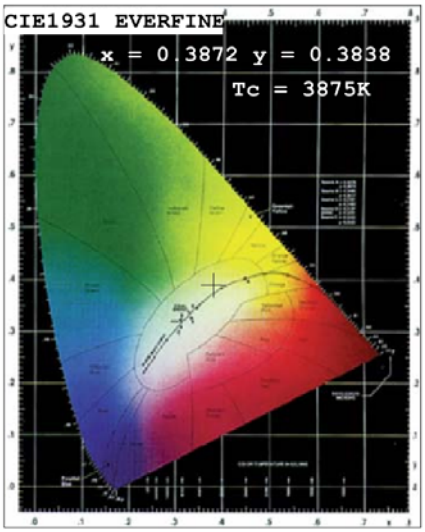
Special Color Rendering Indices			
R1	83	R9	13
R2	92	R10	82
R3	96	R11	82
R4	82	R12	66
R5	83	R13	86
R6	89	R14	99
R7	86	R15	77
R8	65	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1141.6
Luminous Efficacy (lm/W)	115.54
Beam Angle (°)	113.8
Center Beam Candle Power (cd)	383.1

Spectral Power Distribution & Chromaticity Diagram



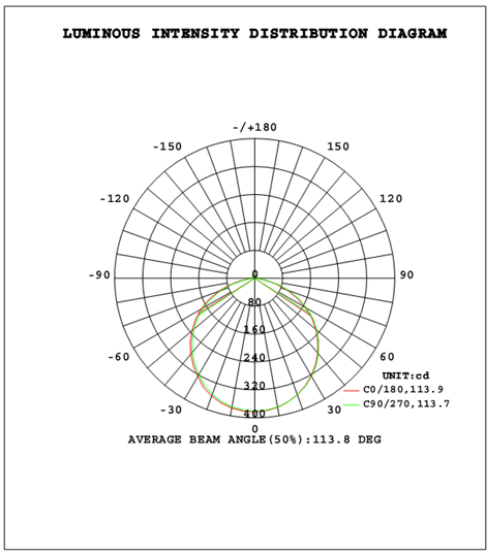


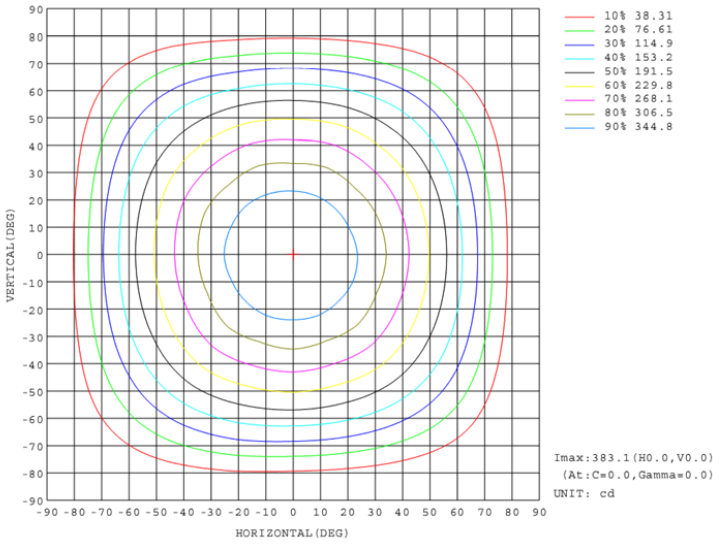
Zonal Lumen Tabulation

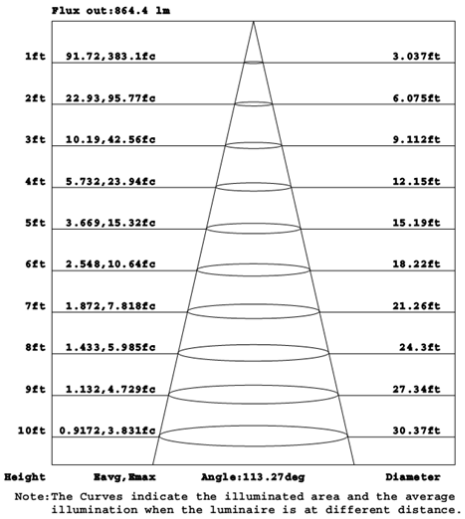
Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	296.7	26.0%
0-40	486.2	42.6%
0-60	864.4	75.7%
60-90	227.5	19.9%
70-100	98.5	8.6%
90-120	22.6	2.0%
0-90	1092.0	95.7%
90-180	49.6	4.3%
0-180	1141.6	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	36.1	3.2%	90-100	7.9	0.7%
10-20	103.5	9.1%	100-110	7.5	0.7%
20-30	157.1	13.8%	110-120	7.2	0.6%
30-40	189.5	16.6%	120-130	6.8	0.6%
40-50	197.9	17.3%	130-140	6.3	0.6%
50-60	180.4	15.8%	140-150	5.6	0.5%
60-70	137.0	12.0%	150-160	4.4	0.4%
70-80	73.0	6.4%	160-170	2.9	0.3%
80-90	17.5	1.5%	170-180	1.0	0.1%

Photometric Data







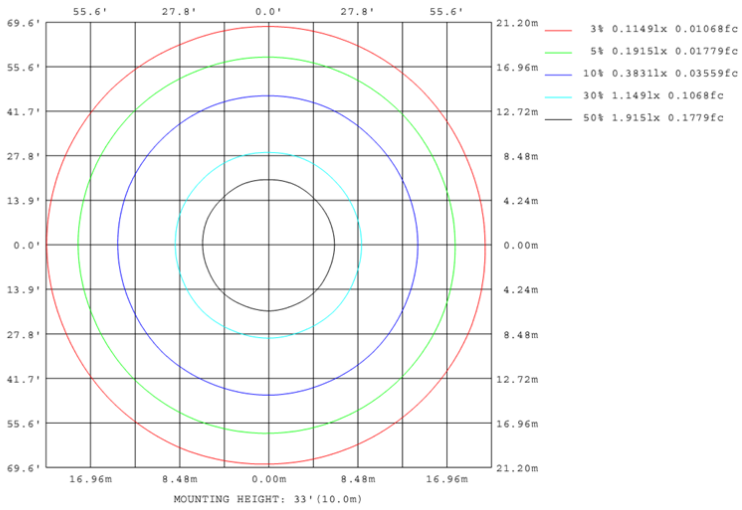
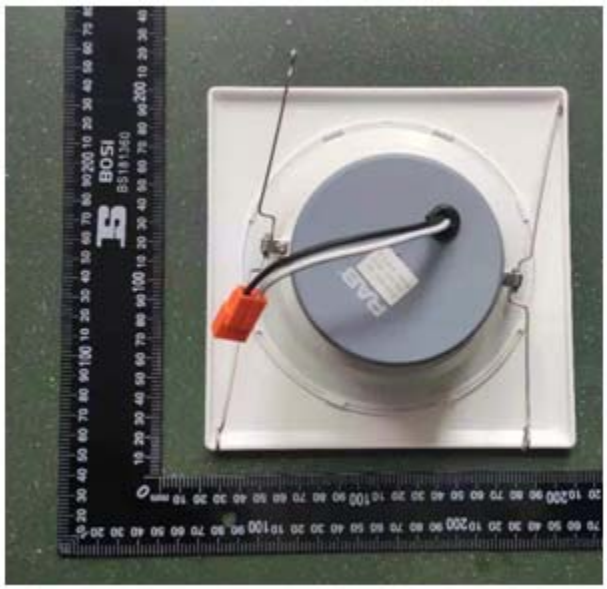
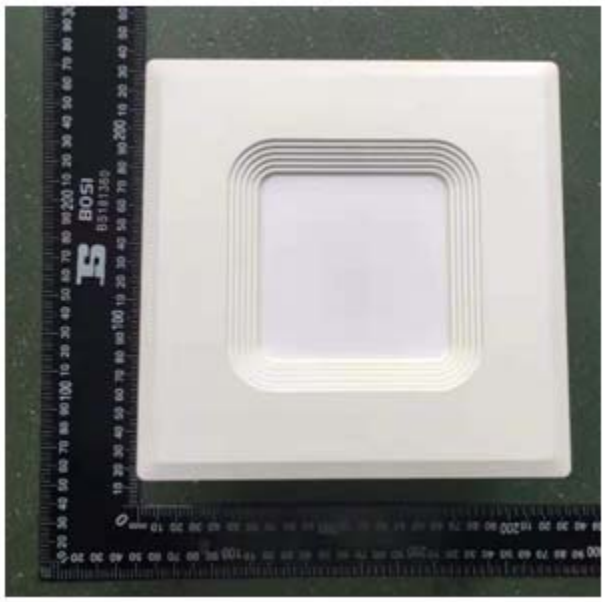


Table--1 UNIT: cd

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	383	383	382	382	381	380	380	380	383	383	382	382	381	380	380	380			
5	381	381	380	380	379	379	379	379	382	381	381	380	379	378	378	378			
10	376	375	375	375	375	375	375	374	378	377	376	375	374	373	373	372			
15	367	367	367	367	367	367	367	367	370	369	368	367	366	365	365	364			
20	355	356	355	356	356	356	356	356	359	358	357	356	355	353	353	352			
25	340	342	341	342	342	343	343	343	346	344	344	341	339	339	337	337			
30	323	319	324	320	325	322	326	322	325	327	322	324	319	321	317	320			
35	303	300	304	301	305	303	307	303	306	308	303	305	300	302	297	300			
40	280	278	282	279	283	282	286	282	284	286	282	282	278	279	275	277			
45	255	253	257	255	259	258	262	258	260	262	258	258	253	255	251	252			
50	228	227	230	229	232	232	236	232	234	236	232	231	227	228	224	226			
55	199	198	202	201	204	204	208	205	207	208	204	203	199	200	196	197			
60	166	168	169	171	172	175	177	176	178	177	175	171	170	168	167	164			
65	132	136	136	137	139	144	144	143	145	145	143	138	137	136	134	131			
70	96.7	102	102	102	104	110	110	109	111	111	110	104	103	102	100	96.3			
75	61.2	65.2	66.1	67.3	69.1	74.3	75.2	73.8	76.0	75.7	74.6	68.8	67.8	66.2	65.0	61.3			
80	26.2	30.1	30.6	31.9	33.8	38.9	39.4	38.4	40.5	40.2	39.0	33.4	32.5	31.3	29.9	26.7			
85	10.1	10.4	10.5	10.8	11.2	12.4	12.6	12.6	13.1	12.9	12.5	11.2	11.0	10.6	10.4	10.2			
90	7.29	7.30	7.33	7.33	7.37	7.70	7.80	7.84	8.20	8.00	7.92	7.55	7.47	7.45	7.43	7.43			
95	6.97	6.99	7.00	7.00	7.01	7.03	7.04	7.02	7.45	7.43	7.40	7.40	7.39	7.38	7.36	7.36			
100	6.76	6.77	6.78	6.77	6.78	6.79	6.79	6.77	7.44	7.43	7.42	7.42	7.41	7.40	7.39	7.39			
105	6.67	6.67	6.68	6.66	6.66	6.66	6.66	6.64	7.51	7.51	7.49	7.50	7.49	7.49	7.47	7.47			
110	6.68	6.68	6.68	6.67	6.66	6.64	6.64	6.61	7.60	7.61	7.60	7.60	7.60	7.60	7.58	7.57			
115	6.78	6.77	6.77	6.75	6.73	6.71	6.70	6.68	7.73	7.73	7.73	7.74	7.73	7.73	7.72	7.70			
120	6.94	6.92	6.92	6.89	6.88	6.85	6.85	6.82	7.88	7.89	7.88	7.90	7.89	7.89	7.88	7.87			
125	7.17	7.16	7.15	7.12	7.10	7.07	7.06	7.03	8.08	8.09	8.08	8.10	8.10	8.11	8.09	8.08			
130	7.46	7.43	7.43	7.40	7.38	7.34	7.32	7.29	8.32	8.33	8.32	8.34	8.34	8.34	8.34	8.33			
135	7.77	7.75	7.74	7.70	7.69	7.64	7.62	7.60	8.59	8.59	8.61	8.62	8.63	8.63	8.62	8.62			
140	8.14	8.11	8.10	8.06	8.04	7.99	7.97	7.94	8.90	8.92	8.92	8.94	8.94	8.96	8.94	8.93			
145	8.52	8.49	8.48	8.43	8.41	8.36	8.34	8.31	9.24	9.25	9.25	9.26	9.27	9.27	9.26	9.26			
150	8.92	8.90	8.89	8.85	8.83	8.77	8.75	8.72	9.56	9.55	9.56	9.58	9.57	9.57	9.57	9.56			
155	9.33	9.30	9.29	9.25	9.23	9.19	9.16	9.13	9.85	9.85	9.85	9.86	9.85	9.85	9.84	9.84			
160	9.70	9.68	9.67	9.64	9.62	9.57	9.55	9.52	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1			
165	10.0	10.0	10.0	9.99	9.97	9.93	9.92	9.88	10.4	10.3	10.3	10.3	10.3	10.3	10.3	10.3			
170	10.4	10.3	10.3	10.3	10.3	10.3	10.2	10.2	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5			
175	10.6	10.6	10.5	10.5	10.5	10.5	10.5	10.4	10.7	10.6	10.6	10.6	10.6	10.6	10.6	10.6			
180	10.7	10.7	10.7	10.7	10.6	10.6	10.6	10.6	10.7	10.7	10.7	10.7	10.7	10.6	10.6	10.6			

3. Product Photo





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