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): DLR0079(R4S7940120WB)

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	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	DLR0079(R4S7940120WB)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
1908250063	120.0	60	0.053	6.25	0.976

Chromaticity Measurement - Sphere-Spectroradiometer Method:

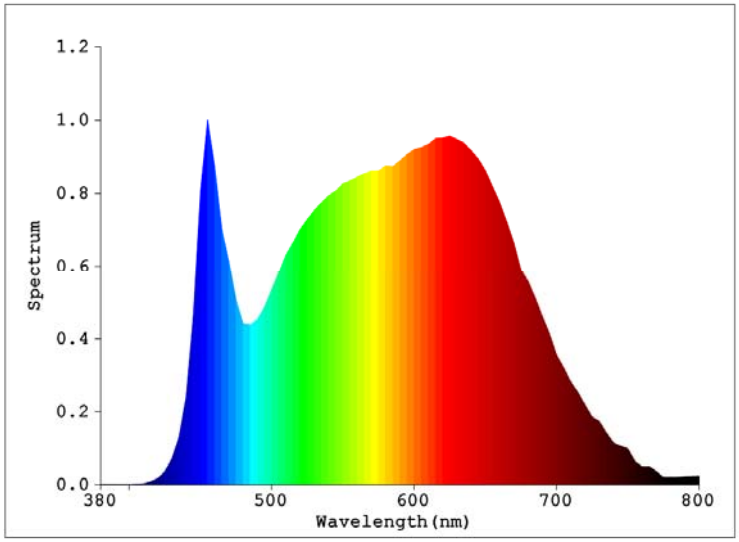
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
CCT (K)	3890
Duv	0.00162
Chromaticity (x, y)	x=0.3867 y=0.3841
Chromaticity (u', v')	u'=0.2263 v'=0.5057
Color Rendering Index (CRI)	94.2
R9	77

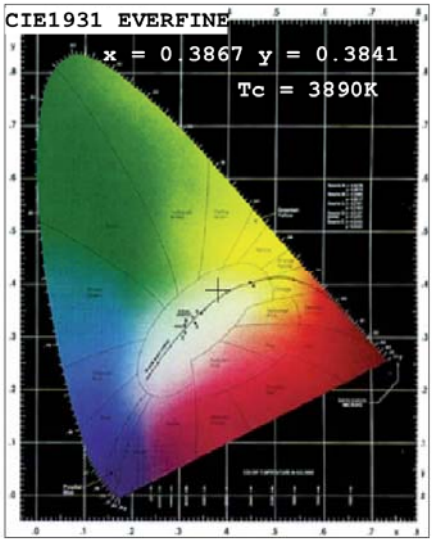
Special Color Rendering Indices			
R1	95	R9	77
R2	97	R10	92
R3	98	R11	92
R4	92	R12	70
R5	93	R13	96
R6	94	R14	98
R7	95	R15	93
R8	90	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	642.40
Luminous Efficacy (lm/W)	102.78
Beam Angle (°)	107.3
Center Beam Candle Power (cd)	230.4

Spectral Power Distribution & Chromaticity Diagram



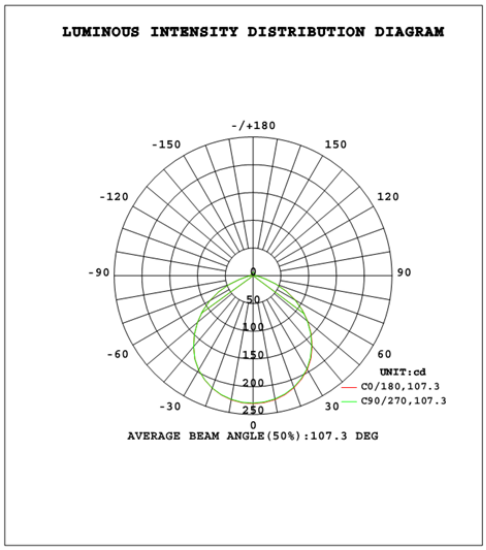


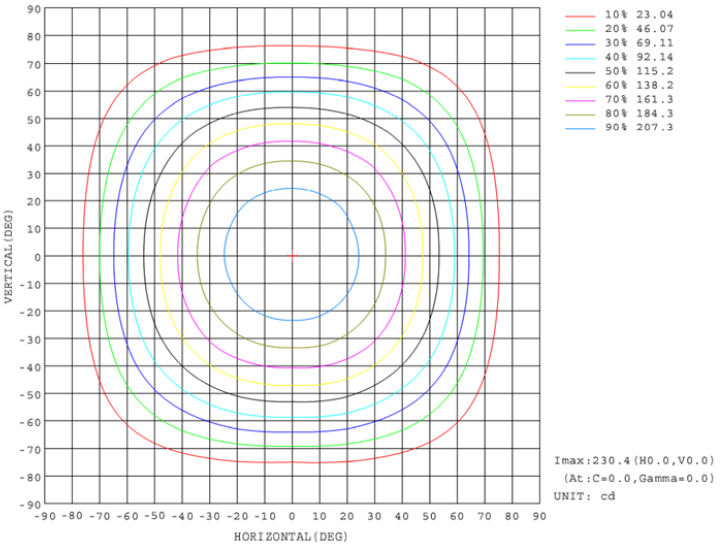
Zonal Lumen Tabulation

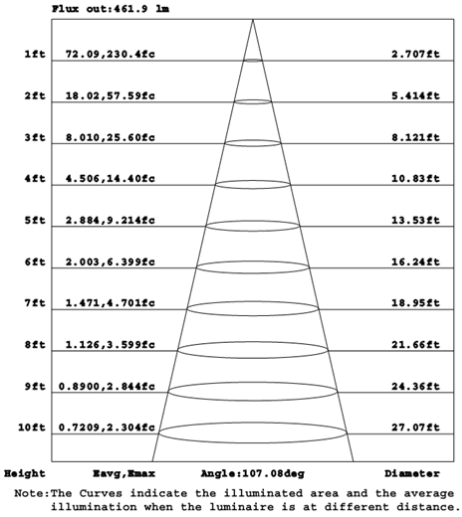
Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	179.3	27.9%
0-40	293.4	45.7%
0-60	508.6	79.2%
60-90	105.8	16.5%
70-100	42.4	6.6%
90-120	12.4	1.9%
0-90	614.4	95.6%
90-180	28.0	4.4%
0-180	642.4	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	21.8	3.4%	90-100	4.3	0.7%
10-20	62.5	9.7%	100-110	4.1	0.6%
20-30	95.0	14.8%	110-120	4.0	0.6%
30-40	114.2	17.8%	120-130	3.9	0.6%
40-50	115.7	18.0%	130-140	3.6	0.6%
50-60	99.4	15.5%	140-150	3.2	0.5%
60-70	67.7	10.5%	150-160	2.6	0.4%
70-80	29.3	4.6%	160-170	1.7	0.3%
80-90	8.9	1.4%	170-180	0.6	0.1%

Photometric Data







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

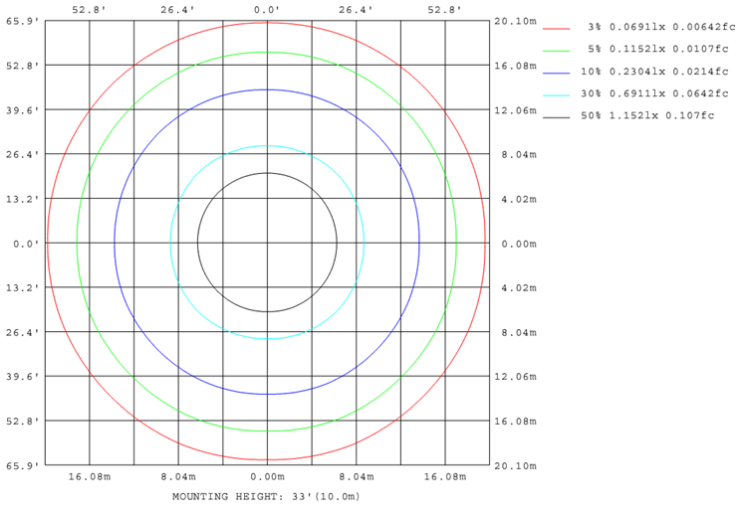
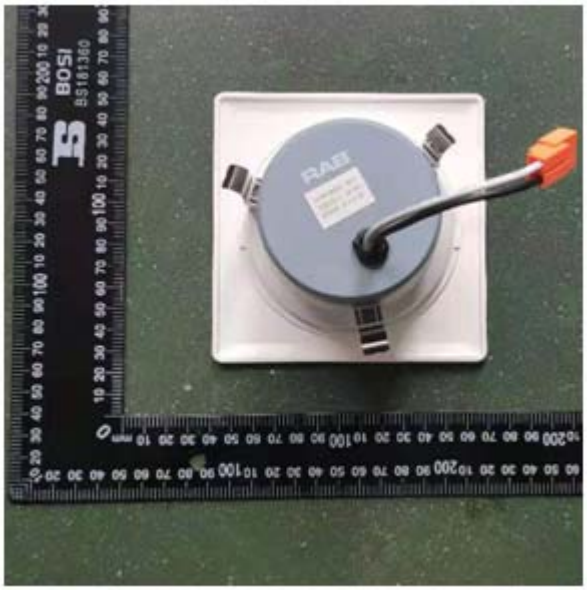


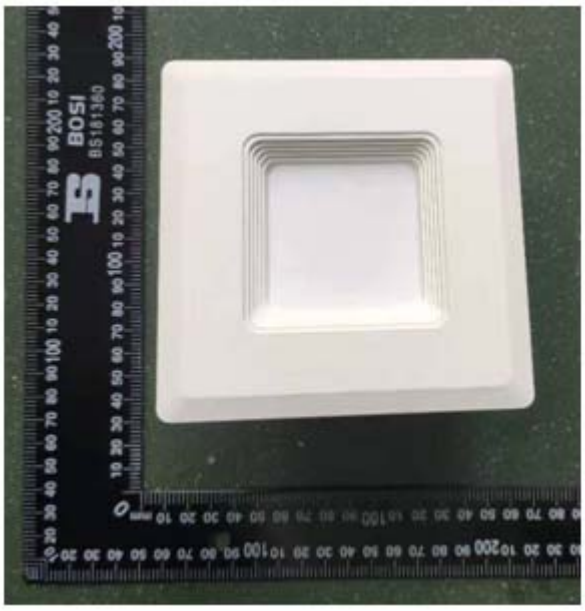
Table--1

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	230	230	230	230	229	229	229	229	230	230	230	230	229	229	229	229			
5	229	229	229	229	228	228	228	228	230	229	229	229	229	229	228	228			
10	227	226	226	226	225	226	226	226	227	227	227	226	226	226	226	226			
15	222	222	221	221	221	221	221	221	222	222	222	222	222	222	222	221			
20	215	215	214	214	214	214	214	215	216	216	216	216	215	215	215	214			
25	206	206	206	205	205	205	206	206	207	207	208	207	207	206	207	206			
30	195	195	195	195	194	195	195	195	196	196	197	197	196	196	196	195			
35	181	182	183	182	180	182	183	183	183	184	185	184	183	183	184	183			
40	165	167	169	167	164	166	169	168	167	168	171	169	167	168	170	167			
45	147	149	151	149	146	149	151	151	149	151	155	152	150	151	153	150			
50	129	130	131	131	127	130	132	132	131	132	135	133	131	132	134	131			
55	109	111	110	111	108	110	111	113	111	113	114	114	111	112	113	112			
60	87.7	90.0	89.1	89.7	86.8	89.7	89.8	91.2	90.3	92.1	93.1	92.7	90.6	91.9	91.7	90.5			
65	65.7	67.9	67.4	67.6	64.8	67.7	68.1	69.2	68.5	70.4	71.5	70.7	68.9	70.1	70.1	68.6			
70	43.4	45.1	45.7	45.1	42.5	44.9	46.4	46.7	46.0	47.5	49.8	48.1	46.6	47.3	48.5	46.2			
75	23.6	24.9	25.4	25.0	23.0	24.7	25.9	26.2	25.6	26.7	28.8	27.4	26.1	26.6	27.8	26.0			
80	12.6	12.9	12.7	12.8	12.4	12.9	12.9	13.1	13.2	13.4	14.2	13.6	13.3	13.3	13.7	13.0			
85	7.44	7.40	7.16	7.32	7.35	7.39	7.31	7.62	7.86	8.00	8.05	8.08	8.05	7.95	7.83	7.70			
90	3.94	3.92	3.92	3.93	3.92	3.92	3.94	3.93	4.16	4.17	4.18	4.17	4.19	4.17	4.14	4.11			
95	3.74	3.75	3.75	3.74	3.74	3.74	3.75	3.75	4.08	4.08	4.07	4.07	4.06	4.07	4.06	4.07			
100	3.64	3.65	3.65	3.65	3.64	3.64	3.65	3.64	4.09	4.10	4.09	4.08	4.08	4.09	4.09	4.09			
105	3.63	3.62	3.63	3.63	3.63	3.62	3.62	3.62	4.14	4.15	4.16	4.13	4.14	4.13	4.14	4.15			
110	3.67	3.66	3.67	3.67	3.66	3.67	3.67	3.66	4.24	4.23	4.22	4.23	4.22	4.22	4.23	4.23			
115	3.76	3.76	3.76	3.77	3.76	3.76	3.75	3.75	4.35	4.34	4.32	4.33	4.32	4.34	4.34	4.34			
120	3.88	3.88	3.88	3.89	3.88	3.89	3.87	3.88	4.47	4.46	4.45	4.46	4.46	4.46	4.47	4.50			
125	4.03	4.03	4.04	4.04	4.05	4.04	4.04	4.03	4.61	4.60	4.58	4.58	4.59	4.60	4.60	4.60			
130	4.21	4.22	4.22	4.22	4.23	4.23	4.21	4.20	4.76	4.75	4.74	4.74	4.75	4.75	4.75	4.77			
135	4.42	4.41	4.41	4.41	4.44	4.43	4.41	4.40	4.93	4.93	4.92	4.92	4.92	4.94	4.94	4.95			
140	4.63	4.63	4.65	4.64	4.65	4.64	4.63	4.62	5.13	5.12	5.11	5.12	5.12	5.12	5.12	5.15			
145	4.86	4.87	4.87	4.87	4.88	4.88	4.87	4.85	5.34	5.33	5.32	5.33	5.32	5.33	5.33	5.34			
150	5.11	5.12	5.13	5.13	5.14	5.13	5.13	5.09	5.55	5.53	5.53	5.53	5.53	5.53	5.54	5.56			
155	5.38	5.38	5.39	5.38	5.39	5.38	5.38	5.36	5.74	5.72	5.72	5.73	5.73	5.74	5.74	5.74			
160	5.63	5.62	5.63	5.63	5.64	5.63	5.63	5.62	5.92	5.91	5.90	5.91	5.91	5.91	5.91	5.93			
165	5.87	5.86	5.87	5.86	5.87	5.86	5.86	5.85	6.08	6.07	6.06	6.07	6.07	6.06	6.07	6.07			
170	6.07	6.07	6.07	6.07	6.08	6.07	6.07	6.06	6.22	6.19	6.19	6.19	6.20	6.19	6.19	6.20			
175	6.23	6.23	6.22	6.22	6.23	6.22	6.21	6.21	6.30	6.28	6.27	6.27	6.28	6.28	6.26	6.27			
180	6.32	6.32	6.30	6.31	6.31	6.31	6.30	6.30	6.33	6.31	6.30	6.31	6.31	6.30	6.30	6.30			

3. Product Photo





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