



LM-79-19 Test Report

For

RAB Lighting Inc.

(Brand Name: RAB Lighting)

Room 609, Building C, MixC, No. 1799 Wuzhong Road Minhang District, Shanghai,
China Xiao Xiang, 15921313292, gary.xiao@rablighting.com

Model name(s):

RLB2-2C[blank, /MVS, /LCBS/MVS][blank, /E]

Report Type: Testing and Report According to IES LM-79-2019

Type of Luminaire: Retrofit Kits for Direct Linear Ambient Luminaires

Report Date: 2024-11-22

Test & Report By:

Ferrum Li

Engineer: Ferrum Li

Review By:

Garman Mo

Manager: Garman Mo

Note: 1. The results contained in this report pertain only to the tested samples.

2. This report does not imply product certification, approval, or endorsement by A2LA or any agency of the Federal Government.



1.1 Product Information:		
Model Number	RLB2-2C[blank, /MVS, /LCBS/MVS][blank, /E]	
Remark	The suffix “[blank, /MVS, /LCBS/MVS]” can be “/MVS” =with motion sensor, “/LCBS/MVS” =motion sensor with Bluetooth and smart controller or Blank=no sensor and smart controller provided. The suffix “[blank, /E]” can be “/E” =with emergency backup driver or Blank=no emergency backup driver provided.	
Representative (Tested) Model	RLB2-2C(0%,3000K)	
Model Difference	N/A	
SKU (if available)	--	
Type of Luminaire (for integral lamps, list base type and lamp type)	Retrofit Kits for Direct Linear Ambient Luminaires	
LED Manufacturer	Bridgelux Inc.	
LED Model	BXEN-30E-13H-9C1 BXEN-65E-13H-9C1	
Integral Controls Availability	Yes	
Dimming	Continuous	
Sample Number	JDE241105-H1	
Date of Receipt	2024-11-09	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaire Width	--	mm
Number of Units (modular products)	N/A	s

1.2 Rated Values:	
Rated Voltage / Frequency	120-277Vac, 50/60Hz
Nominal Power	20W/25W/30W/35W/40W (Power Adjustable)
Rated Initial Lamp Lumen	--
Declared CCT	3000K,3500K,4000K,5000K,6500K (Color Tunable)



1.3 Test Specifications:

Test item	<ol style="list-style-type: none"> 1. Total Luminous Flux 2. Luminous Distribution Intensity 3. Luminous Efficacy 4. Electrical Parameters
Reference Standard	<ol style="list-style-type: none"> 1. IES LM-79-2019 Optical and Electrical 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

1.4 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 ± 1.2 °C, measured at a point not more than 1.5 m from the sample and at the same height as the sample. The humidity should be maintained between 10% and 65%. 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) 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 °C ± 1.2 °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 Summary of Test Result

Criteria Item	Measured Value		Compliance	Requirement (DLC V5.1)	
Minimum Total Luminous	5956.3		Pass	≥375 lm/ft (-10%)	
Minimum Luminous Efficacy	151.95		Pass	Standard: ≥115(-3%)	Premium: ≥130(-3%)
Minimum Power Factor	0.9600		Pass	≥ 0.9(-3%)	
Maximum THD %	13.35		Pass	≤ 20(+5)	
Zonal Lumen Requirement	0-60°	80.8	Pass	≥40(-3)	



2.2 Electrical, Photometric and Chromaticity Measurements

Test date	2024-11-12	Test Ambient:	25 ± 1 °C
Test Orientation	As intended	Stabilization Time (min)	60
Model Number	RLB2-2C(0%,300 0K)	Total Operating Time (min)	75

Electrical Measurement in Lithonia C2 25 MVOLT GEB10IS:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
JDE241105-	120.0	60	0.3308	39.59	0.9974	5.83
H1	277.0	60	0.1453	38.63	0.9600	13.35

**Photometric Measurement in Lithonia C2 25 MVOLT GEB10IS–
Goniophotometer Method(Test Distance:26.000m):**

Parameter	Result	
Test Voltage (V)	120	277
Frequency (Hz)	60	60
Total Luminous (lm)	6015.8	5956.3
Luminous Efficacy (lm/W)	151.95	154.19
Zonal lumens in the 0-60 °	80.8	--
Beam Angle (°)	106.8	--
Center Beam Candle Power (cd)	2133	--

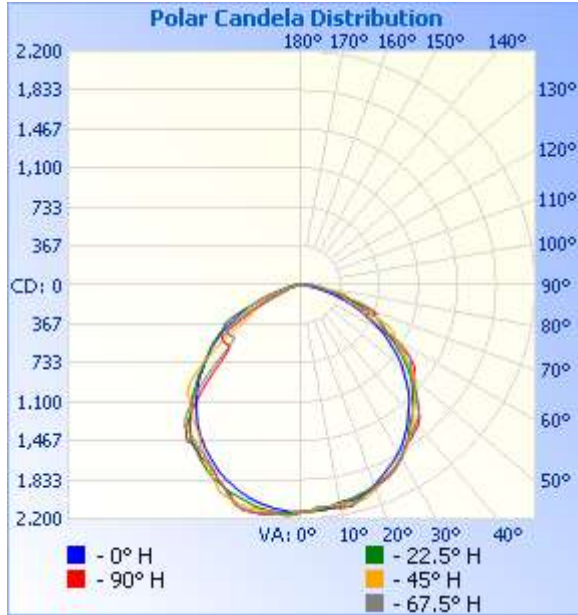


Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	1,698.8	28.2%
0-40	2,797.6	46.5%
0-60	4,861.4	80.8%
60-90	1,066.6	17.7%
70-100	462.5	7.7%
90-120	72.4	1.2%
0-90	5,928.0	98.5%
90-180	87.3	1.5%
0-180	6,015.2	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	203.4	3.4%	90-100	45.0	0.7%
10-20	593.4	9.9%	100-110	19.6	0.3%
20-30	902.0	15.0%	110-120	7.8	0.1%
30-40	1,098.7	18.3%	120-130	3.4	0.1%
40-50	1,117.4	18.6%	130-140	3.3	0.1%
50-60	946.4	15.7%	140-150	2.9	0%
60-70	649.1	10.8%	150-160	2.4	0%
70-80	309.4	5.1%	160-170	2.0	0%
80-90	108.1	1.8%	170-180	0.8	0%

Photometric Data



Illuminance at a Distance

	Center Beam fc	Beam Width	
4.0ft	133.3 fc	10.3 ft	10.3 ft
8.0ft	33.3 fc	20.7 ft	20.6 ft
12.0ft	14.8 fc	31.0 ft	31.0 ft
16.0ft	8.3 fc	41.3 ft	41.3 ft
20.0ft	5.3 fc	51.6 ft	51.6 ft
24.0ft	3.7 fc	62.0 ft	61.9 ft
28.0ft	2.7 fc	72.3 ft	72.2 ft
32.0ft	2.1 fc	82.6 ft	82.6 ft

■ Vert. Spread: 104.5°
■ Horiz. Spread: 104.4°

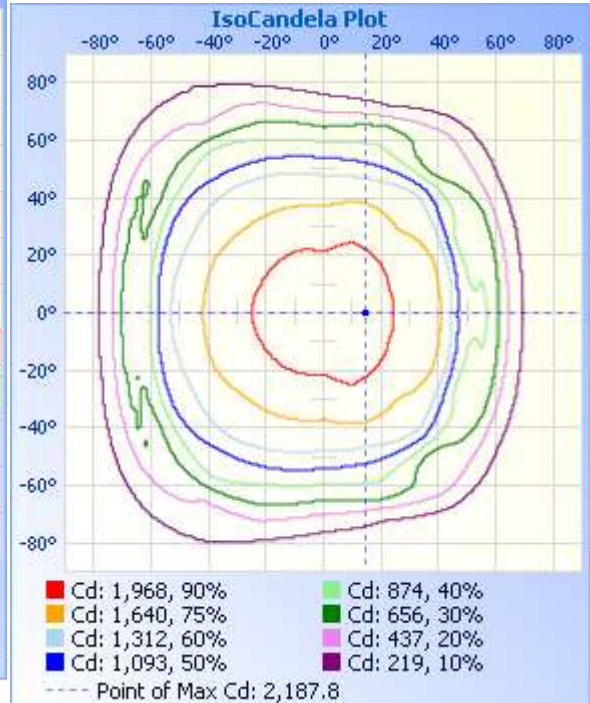
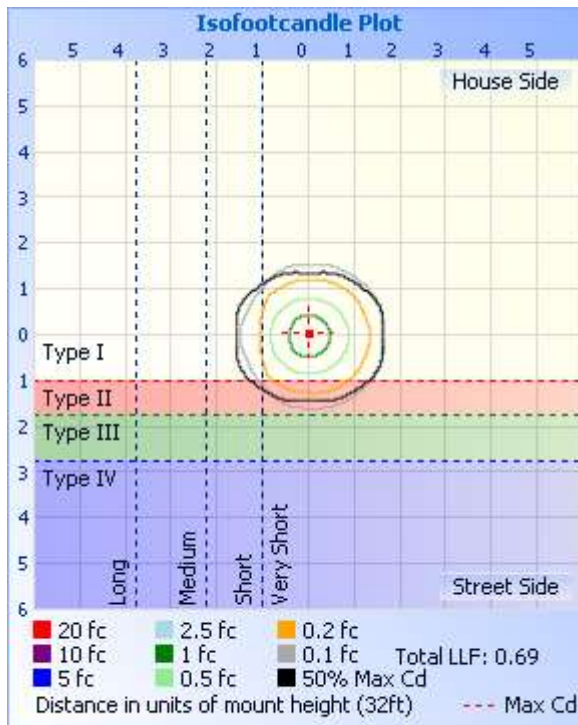




Table--1 UNIT: cd

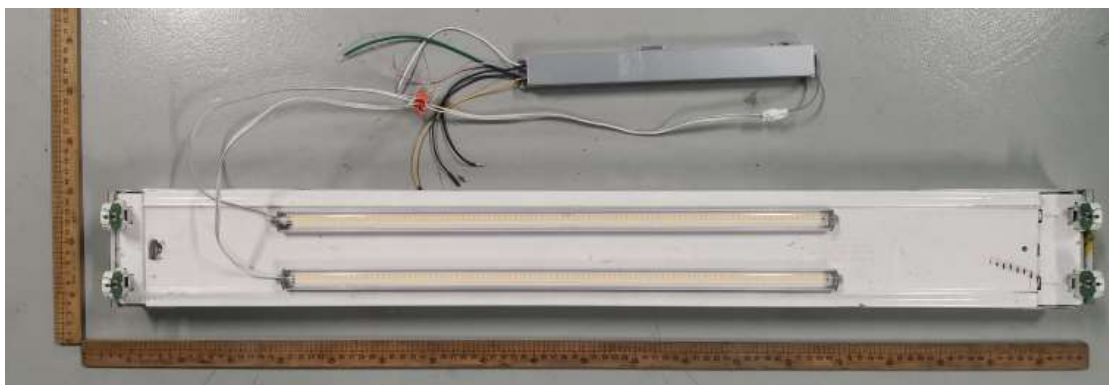
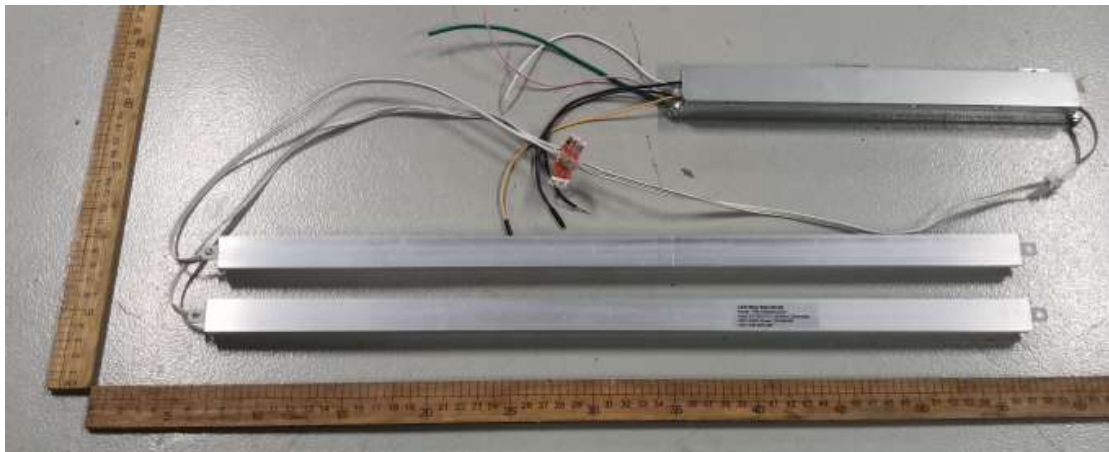
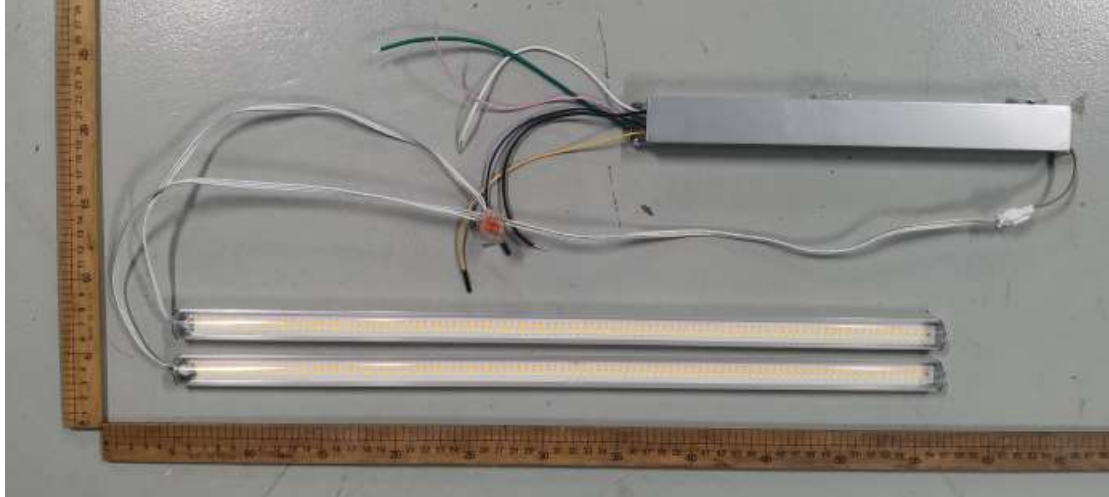
γ (DEG)	C (DEG)																		
	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5			
0	2133	2133	2133	2133	2133	2133	2133	2133	2133	2133	2133	2133	2133	2133	2133	2133			
5	2168	2169	2165	2151	2127	2129	2101	2096	2101	2098	2103	2126	2124	2153	2170	2169			
10	2185	2181	2146	2137	2102	2077	2105	2116	2130	2112	2098	2071	2094	2136	2152	2181			
15	2186	2170	2149	2104	2071	2047	2106	2093	2095	2095	2086	2031	2046	2093	2147	2173			
20	2057	2074	2116	2058	2004	2012	2036	2019	2035	2021	2031	1990	1979	2052	2108	2073			
25	1938	1952	2013	1997	1912	1952	1952	1960	1974	1954	1936	1934	1895	1993	1990	1953			
30	1879	1842	1856	1911	1820	1883	1860	1872	1868	1869	1851	1852	1795	1899	1833	1838			
35	1814	1772	1701	1814	1704	1752	1769	1754	1779	1745	1753	1736	1683	1804	1696	1774			
40	1658	1715	1608	1672	1566	1612	1635	1683	1708	1675	1613	1590	1541	1637	1605	1716			
45	1214	1395	1500	1469	1429	1480	1516	1544	1537	1553	1485	1453	1391	1448	1496	1366			
50	891	910	1360	1277	1249	1342	1395	1344	1386	1351	1373	1311	1213	1226	1314	891			
55	911	815	964	1055	1068	1156	1203	1253	1280	1241	1179	1124	1043	1048	896	824			
60	679	800	564	901	872	956	1032	1034	940	1030	1002	920	845	878	552	796			
65	360	468	551	757	657	818	885	657	674	652	863	771	636	727	567	450			
70	180	232	463	469	455	584	511	655	725	638	494	558	432	369	409	220			
75	123	127	211	190	260	450	419	407	383	404	404	411	243	183	179	124			
80	79.1	84.4	104	149	110	216	314	204	174	203	291	196	97.4	151	89.3	81.7			
85	65.9	63.0	62.9	93.5	26.7	158	183	140	127	135	173	136	19.0	66.5	59.2	62.7			
90	62.3	58.9	49.1	37.2	0.54	85.7	90.6	91.6	92.7	92.1	88.2	72.7	0.00	35.1	47.2	58.7			
95	37.6	34.7	26.4	15.5	0.00	47.6	69.2	75.5	75.6	73.4	63.1	35.3	0.00	13.7	23.6	33.1			
100	26.8	25.2	21.5	11.7	0.22	20.3	48.1	64.9	70.0	62.4	43.8	13.6	0.00	9.14	19.6	23.8			
105	21.5	18.3	12.0	4.14	1.64	4.36	31.4	40.2	46.0	38.6	27.9	0.44	0.33	1.10	9.13	16.0			
110	9.99	9.41	8.07	3.42	3.06	3.59	21.0	36.8	38.3	34.0	14.4	0.76	0.98	1.20	4.73	6.61			
115	7.69	7.66	6.00	4.04	3.82	3.71	5.91	22.9	31.7	19.9	1.43	1.26	1.85	1.86	2.63	4.83			
120	6.37	6.13	5.13	5.02	5.02	4.67	4.61	5.81	3.93	2.53	1.42	1.96	2.72	2.56	2.45	3.08			
125	4.84	4.93	5.02	5.89	5.56	5.46	4.61	4.34	1.68	1.61	1.90	2.72	3.46	2.95	2.52	2.25			
130	4.20	4.54	5.02	6.86	6.43	5.90	5.00	4.23	1.65	1.86	2.29	3.59	3.94	3.46	2.82	2.31			
135	4.24	4.63	5.28	6.91	6.54	6.88	5.41	4.11	1.83	2.30	2.73	3.82	4.02	3.80	3.00	2.46			
140	4.29	4.72	5.57	6.96	5.24	6.92	6.03	4.72	2.09	2.30	3.16	4.25	4.10	4.04	3.18	2.66			
145	4.34	4.80	6.00	7.11	5.24	6.96	6.69	5.16	2.63	2.95	3.38	4.47	4.13	4.70	3.64	2.96			
150	4.38	5.08	6.53	7.30	5.24	7.11	7.13	5.71	2.78	3.27	3.74	4.51	4.14	5.08	3.99	3.27			
155	4.72	5.37	7.09	8.39	5.35	7.86	7.99	6.59	2.94	3.22	3.83	4.54	4.26	4.96	4.28	3.47			
160	5.15	6.46	8.19	9.05	5.75	8.52	8.41	6.90	3.44	3.28	3.91	4.68	5.12	4.81	4.76	4.11			
165	5.59	6.90	8.51	9.68	6.15	9.07	8.89	7.25	5.27	5.25	6.11	7.62	8.83	6.33	8.55	7.24			
170	6.36	7.13	8.99	10.0	6.63	9.42	9.57	7.90	6.53	6.68	7.53	8.96	10.3	7.10	10.1	9.22			
175	6.65	7.28	9.12	10.2	6.83	9.56	9.71	8.19	6.80	6.76	7.71	9.10	10.3	6.99	9.98	9.77			
180	6.69	7.34	9.17	10.2	6.76	9.61	9.76	8.23	6.91	6.90	7.31	9.15	10.3	6.77	9.65	9.77			



3. Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-355	Goniophotometer system	Verified by D908S standard lamp	
ST-R-359	Standard Lamp D908S	2022-07-19	2025-07-18
ST-R-357	AC Power Source	2024-01-29	2025-01-28
ST-R-S-422	Power Meter for Goniophotometer	2024-05-29	2025-05-28
ST-R-S-354	hygrothermograph for Goniophotometer	2024-05-29	2025-05-28
Uncertainty: Photometric Measurement(Goniophotometer): 2.94%, k=2			

4. Product Photo



******* END OF REPORT *******