



## **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):**

**RLB2-4C[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.



<b>1.1 Product Information:</b>		
Model Number	RLB2-4C[blank, /MVS, /LCBS/MVS][blank, /E]	
Remark	<p>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.</p> <p>The suffix “[blank, /E]” can be “/E” =with emergency backup driver or Blank=no emergency backup driver provided.</p>	
Representative (Tested) Model	RLB2-4C(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-L1	
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

<b>1.2 Rated Values:</b>	
Rated Voltage / Frequency	120-277Vac, 50/60Hz
Nominal Power	30W/35W/40W/45W/50W (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"> <li>1. Total Luminous Flux</li> <li>2. Luminous Distribution Intensity</li> <li>3. Luminous Efficacy</li> <li>4. Electrical Parameters</li> </ol>
Reference Standard	<ol style="list-style-type: none"> <li>1. IES LM-79-2019 Optical and Electrical Measurements of Solid-State Lighting Products</li> <li>2. ANSI C78.377-2015 Specifications for the Chromaticity of Solid State Lighting Products</li> <li>3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources</li> <li>4. CIE 15-2004 Technical Report Colorimetry</li> <li>5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source</li> <li>6. IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems</li> </ol>
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	7387.3		Pass	≥375 lm/ft (-10%)	
Minimum Luminous Efficacy	151.57		Pass	Standard: ≥115(-3%)	Premium: ≥130(-3%)
Minimum Power Factor	0.9663		Pass	≥0.9(-3%)	
Maximum THD %	12.84		Pass	≤20(+5)	
Zonal Lumen Requirement	0-60°	80.3	Pass	≥40(-3)	



**2.2 Electrical, Photometric and Chromaticity Measurements**

<b>Test date</b>	2024-11-12	<b>Test Ambient:</b>	25 ± 1 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	60
<b>Model Number</b>	RLB2-4C(0%,300 0K)	<b>Total Operating Time (min)</b>	75

**Electrical Measurement in Lithonia C2 32 MVOLT GEB10IS:**

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
JDE241105-	120.1	60	0.4102	49.13	0.9973	6.02
L1	277.2	60	0.1796	48.10	0.9663	12.84

**Photometric Measurement in Lithonia C2 32 MVOLT GEB10IS–  
Goniophotometer Method(Test Distance:26.000m):**

Parameter	Result	
Test Voltage (V)	120	277
Frequency (Hz)	60	60
Total Luminous (lm)	7446.6	7387.3
Luminous Efficacy (lm/W)	151.57	153.58
Zonal lumens in the 0-60 °	80.3	--
Beam Angle ( °)	109.1	--
Center Beam Candle Power (cd)	2617	--

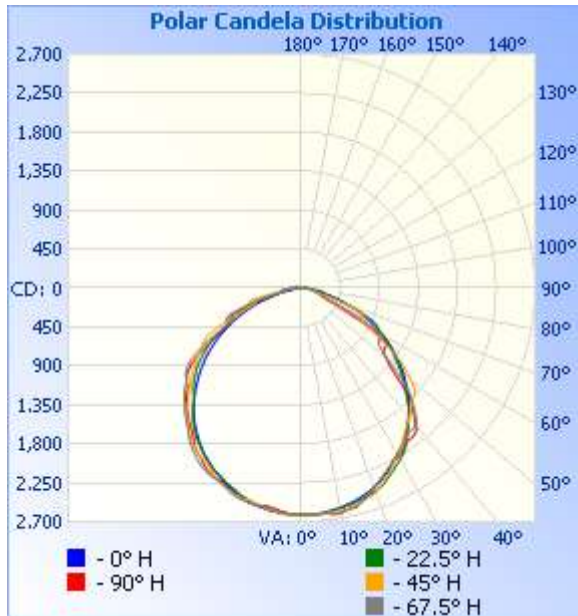


**Zonal Lumen Tabulation**

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	2,056.3	27.6%
0-40	3,390.3	45.5%
0-60	5,979.1	80.3%
60-90	1,354.8	18.2%
70-100	587.7	7.9%
90-120	94.0	1.3%
0-90	7,333.9	98.5%
90-180	112.0	1.5%
0-180	7,445.9	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	248.3	3.3%	90-100	57.1	0.8%
10-20	717.3	9.6%	100-110	26.4	0.4%
20-30	1,090.6	14.6%	110-120	10.5	0.1%
30-40	1,334.0	17.9%	120-130	4.6	0.1%
40-50	1,382.1	18.6%	130-140	3.9	0.1%
50-60	1,206.8	16.2%	140-150	3.4	0%
60-70	824.3	11.1%	150-160	2.8	0%
70-80	388.9	5.2%	160-170	2.3	0%
80-90	141.6	1.9%	170-180	0.9	0%

**Photometric Data**



**Illuminance at a Distance**

	Center Beam fc	Beam Width	
4.0ft	163.5 fc	11.0 ft	11.0 ft
8.0ft	40.9 fc	21.9 ft	22.0 ft
12.0ft	18.2 fc	32.9 ft	32.9 ft
16.0ft	10.2 fc	43.9 ft	43.9 ft
20.0ft	6.5 fc	54.8 ft	54.9 ft
24.0ft	4.5 fc	65.8 ft	65.9 ft
28.0ft	3.3 fc	76.7 ft	76.8 ft
32.0ft	2.6 fc	87.7 ft	87.8 ft

■ Vert. Spread: 107.8°  
■ Horiz. Spread: 107.8°

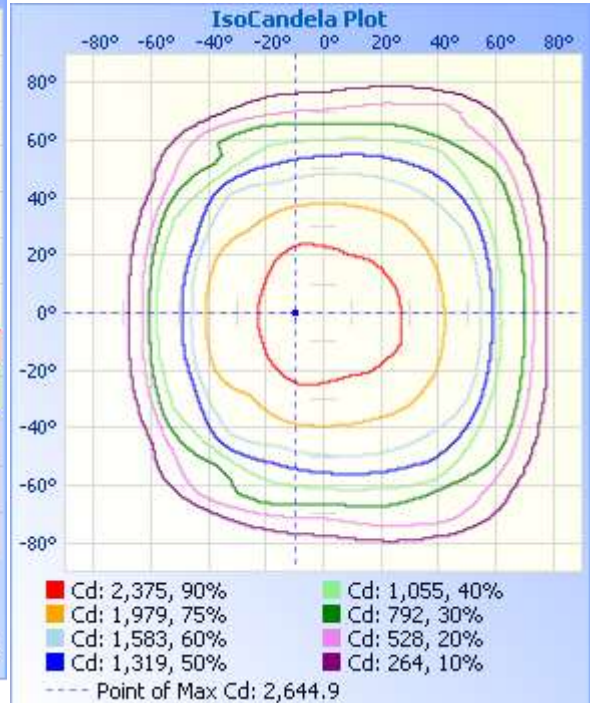
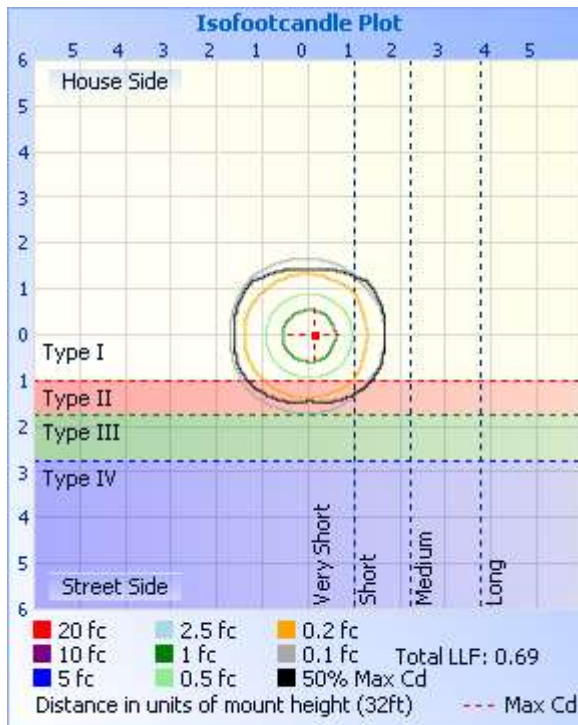




Table--1 UNIT: °C

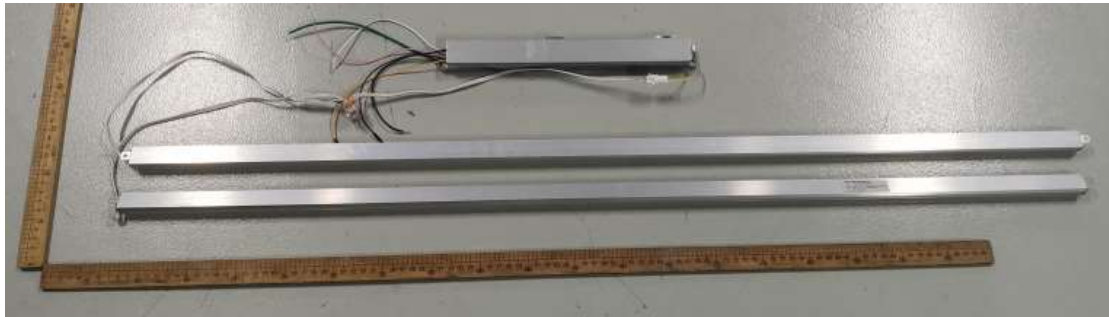
γ (DEG) \ C (DEG)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5			
0	2617	2617	2617	2617	2617	2617	2617	2617	2617	2617	2617	2617	2617	2617	2617	2617			
5	2592	2597	2610	2603	2608	2616	2615	2615	2619	2622	2619	2616	2607	2608	2614	2607			
10	2551	2543	2555	2570	2577	2582	2606	2632	2639	2640	2614	2589	2577	2571	2560	2556			
15	2526	2532	2512	2507	2520	2541	2569	2585	2582	2597	2582	2546	2528	2511	2525	2545			
20	2442	2457	2457	2414	2447	2500	2506	2459	2460	2478	2518	2487	2450	2425	2477	2481			
25	2398	2388	2367	2309	2343	2397	2372	2324	2338	2338	2378	2403	2350	2339	2394	2418			
30	2303	2319	2247	2221	2219	2282	2217	2207	2246	2219	2215	2275	2232	2244	2283	2350			
35	2168	2187	2152	2092	2084	2122	2069	2110	2149	2127	2058	2148	2093	2117	2193	2226			
40	2024	2018	2012	1947	1924	1929	1945	2055	2050	2065	1920	1949	1940	1956	2044	2057			
45	1883	1875	1840	1750	1745	1709	1809	1790	1722	1810	1778	1732	1749	1762	1864	1917			
50	1730	1712	1647	1590	1537	1494	1645	1326	1286	1351	1662	1499	1545	1619	1680	1754			
55	1567	1573	1462	1411	1318	1282	1287	1081	1185	1072	1336	1274	1328	1425	1493	1625			
60	1179	1272	1277	1172	1081	1071	856	1032	913	1047	876	1061	1083	1184	1327	1299			
65	931	863	1080	918	835	920	772	509	380	545	716	889	836	937	1069	878			
70	780	843	670	703	585	581	557	240	240	244	600	636	585	725	642	873			
75	364	443	560	522	352	285	194	196	189	195	200	289	347	535	632	435			
80	238	233	316	254	158	239	126	137	140	138	126	211	153	245	280	240			
85	180	188	180	181	39.5	85.2	101	106	111	107	99.1	93.4	39.0	186	183	191			
90	120	120	108	63.2	1.76	47.1	70.9	78.6	81.8	78.9	69.8	42.5	1.95	68.7	113	123			
95	95.4	93.1	86.4	43.5	1.54	21.6	35.5	44.3	48.2	44.3	33.8	17.7	0.55	47.3	87.0	95.2			
100	79.4	75.6	55.7	27.0	2.76	17.1	30.7	38.4	40.3	38.3	27.7	12.0	1.54	28.1	55.4	76.9			
105	54.9	50.8	45.7	5.48	3.75	6.61	13.9	19.1	22.7	17.5	11.3	2.75	3.51	3.36	46.6	51.4			
110	58.0	54.1	19.8	4.94	5.07	5.29	9.93	10.9	9.65	8.91	6.85	3.62	6.15	2.42	21.6	54.5			
115	30.7	18.6	8.14	5.71	5.84	5.85	7.25	8.89	6.96	6.78	3.87	4.93	7.03	3.41	6.18	19.2			
120	12.3	9.65	4.74	7.02	6.39	6.51	5.36	7.08	4.94	4.45	3.53	5.92	6.99	4.41	2.68	7.90			
125	4.95	3.67	4.63	7.48	5.69	6.72	5.32	4.72	3.14	3.33	4.08	6.58	6.96	5.62	3.24	2.03			
130	3.08	3.67	5.07	7.79	5.62	6.77	5.28	4.35	2.81	3.41	4.59	6.91	6.42	6.39	3.46	2.54			
135	3.17	3.67	5.33	7.97	5.55	6.81	5.13	4.30	2.96	3.58	4.85	6.91	6.01	6.95	4.13	2.86			
140	3.27	3.67	5.51	8.07	5.48	6.85	5.38	4.26	3.11	3.70	5.04	6.91	6.06	7.39	4.57	3.15			
145	3.36	3.90	6.07	8.17	5.41	6.89	5.70	4.21	3.42	3.94	5.21	6.91	6.50	8.60	5.13	3.83			
150	3.37	4.89	6.66	8.26	5.64	6.94	6.28	4.28	3.60	4.15	5.36	6.91	6.64	8.42	5.91	4.37			
155	3.82	5.25	6.95	8.56	6.06	7.98	6.81	5.07	3.76	4.36	5.52	6.91	6.84	7.94	6.47	4.73			
160	5.16	6.00	8.38	9.98	7.16	8.93	8.26	5.86	3.93	4.58	5.67	6.91	7.38	7.95	7.03	5.58			
165	5.51	7.16	9.60	11.1	8.60	10.4	9.04	6.78	5.62	5.67	7.17	9.54	10.3	8.82	10.0	7.76			
170	6.74	7.78	10.3	12.1	9.05	11.6	9.77	7.43	6.71	6.78	8.16	10.6	12.2	9.29	11.9	9.68			
175	6.85	7.89	10.4	12.2	9.12	12.2	10.0	7.75	6.89	6.78	8.60	10.5	12.3	9.35	12.3	10.2			
180	6.85	7.89	10.5	12.2	9.14	11.9	10.2	7.88	6.97	6.78	7.83	10.4	12.2	9.15	12.1	10.2			



**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 \*\*\*\*\***