



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):

RLB-3F[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: 2024-11-15

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	RLB-3F[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	RLB-3F(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-C1	
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	15W/20W/25W (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	3207.9		Pass	≥375 lm/ft (-10%)	
Minimum Luminous Efficacy	134.64		Pass	Standard: ≥115(-3%)	Premium: ≥130(-3%)
Minimum Power Factor	0.9285		Pass	≥0.9(-3%)	
Maximum THD %	12.50		Pass	≤20(+5)	
Zonal Lumen Requirement	0-60°	66.4	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	RLB-3F(0%,3000 K)	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-	120.1	60	0.2001	23.92	0.9950	6.52
C1	277.1	60	0.0926	23.83	0.9285	12.50

**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)	3254.1	3207.9
Luminous Efficacy (lm/W)	136.04	134.64
Zonal lumens in the 0-60 °	66.4	--
Beam Angle (°)	117.6	--
Center Beam Candle Power (cd)	952	--

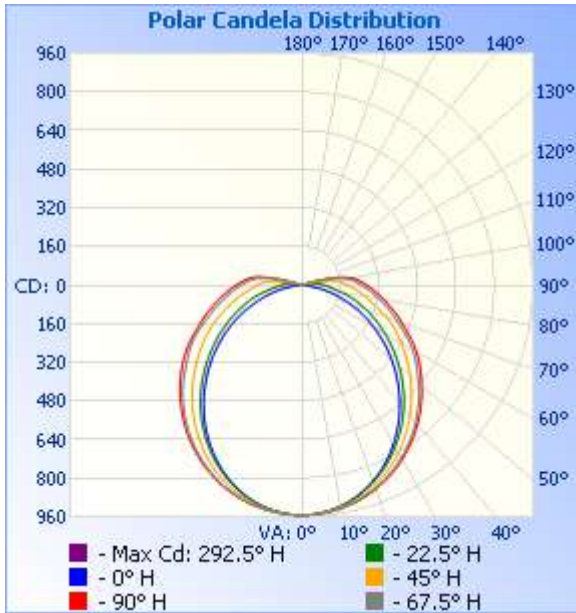


Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	736.5	22.6%
0-40	1,205.3	37%
0-60	2,160.3	66.4%
60-90	913.3	28.1%
70-100	658.2	20.2%
90-120	177.0	5.4%
0-90	3,073.5	94.5%
90-180	180.2	5.5%
0-180	3,253.8	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	90.1	2.8%	90-100	140.6	4.3%
10-20	257.5	7.9%	100-110	35.9	1.1%
20-30	389.0	12.0%	110-120	0.5	0%
30-40	468.7	14.4%	120-130	0.7	0%
40-50	491.7	15.1%	130-140	0.7	0%
50-60	463.3	14.2%	140-150	0.6	0%
60-70	395.7	12.2%	150-160	0.5	0%
70-80	303.6	9.3%	160-170	0.5	0%
80-90	213.9	6.6%	170-180	0.2	0%

Photometric Data



Illuminance at a Distance

Center Beam fc	Beam Width	
4.0ft	59.5 fc	9.9 ft 18.5 ft
8.0ft	14.9 fc	19.7 ft 37.1 ft
12.0ft	6.6 fc	29.6 ft 55.6 ft
16.0ft	3.7 fc	39.4 ft 74.1 ft
20.0ft	2.4 fc	49.3 ft 92.7 ft
24.0ft	1.7 fc	59.2 ft 111.2 ft
28.0ft	1.2 fc	69.0 ft 129.8 ft
32.0ft	0.9 fc	78.9 ft 148.3 ft

■ Vert. Spread: 101.9°
■ Horiz. Spread: 133.3°

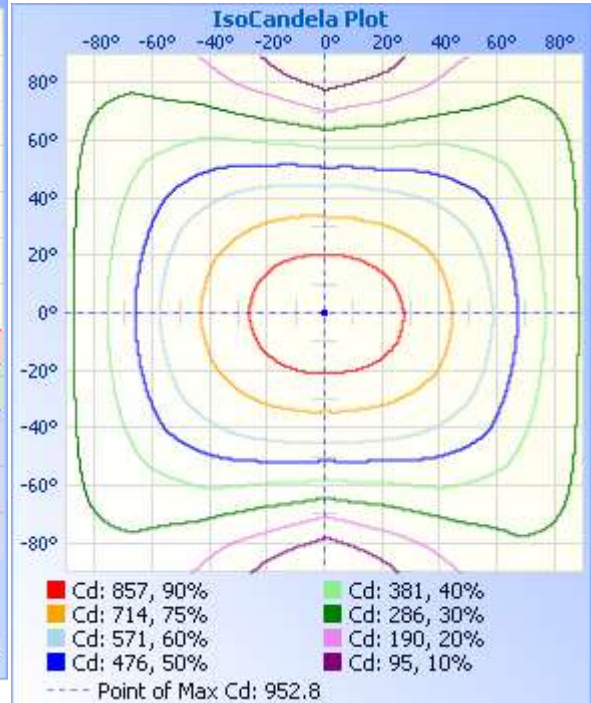
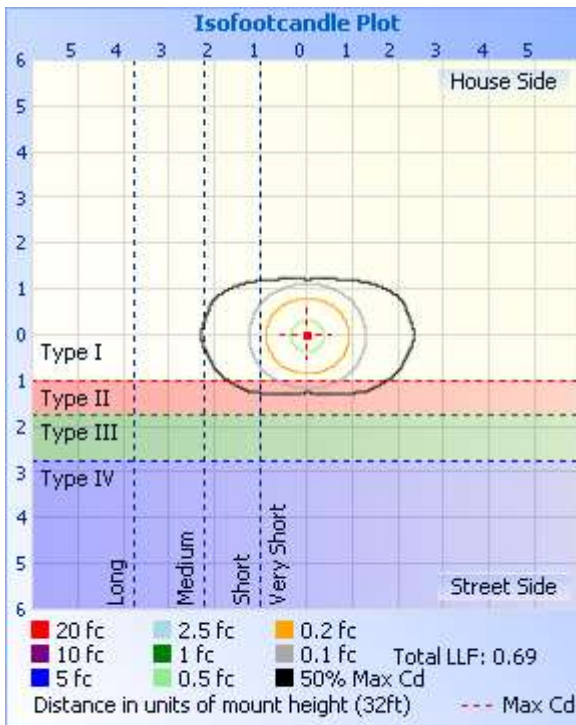




Table--1 UNIT: cd

C (DEG) \ y (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	952	952	952	952	952	952	952	952	952	952	952	952	952	952	952	952			
5	949	949	948	947	947	947	948	949	949	949	948	947	947	947	949	950			
10	940	939	934	931	930	931	935	938	939	938	935	931	930	931	936	940			
15	924	921	912	904	902	904	914	920	922	919	912	905	902	904	915	922			
20	901	896	881	867	863	869	884	895	899	894	881	869	863	868	885	899			
25	872	864	842	822	816	825	846	863	869	861	844	825	816	824	847	868			
30	839	826	797	769	761	775	802	826	834	822	798	773	761	772	802	832			
35	798	783	747	710	700	719	753	783	793	779	749	716	699	715	752	790			
40	754	736	692	647	633	659	700	737	748	732	695	653	632	652	699	744			
45	707	685	634	581	563	595	645	687	700	682	639	589	562	587	642	695			
50	659	633	575	513	491	529	588	634	651	630	581	523	490	519	584	642			
55	608	580	516	445	418	463	531	582	601	578	523	456	416	451	526	586			
60	555	528	458	378	344	399	476	531	549	527	467	391	343	386	469	537			
65	498	473	404	313	271	337	425	472	493	473	415	328	269	322	415	482			
70	443	416	349	253	200	277	370	418	438	415	361	269	198	264	359	423			
75	395	367	292	198	132	223	312	371	392	367	304	215	130	211	302	372			
80	350	323	246	142	71.0	165	267	325	347	323	260	159	69.0	154	259	327			
85	309	282	207	97.1	22.8	122	228	286	307	283	219	111	21.9	113	217	287			
90	271	245	174	70.4	0.61	92.2	193	249	269	248	185	79.9	0.00	83.0	184	251			
95	236	212	146	36.6	0.00	54.6	161	215	235	213	150	39.6	0.00	47.6	153	216			
100	192	164	78.9	0.79	0.00	0.60	88.6	162	185	159	78.4	0.00	0.00	0.00	87.0	167			
105	95.0	65.5	1.49	0.59	0.00	0.59	2.76	61.3	88.1	57.3	0.20	0.00	0.00	0.00	1.48	70.3			
110	5.10	1.10	0.99	0.59	0.00	0.59	0.99	1.19	7.27	0.20	0.00	0.00	0.30	0.00	0.20	0.15			
115	0.90	0.89	0.99	0.59	0.30	0.59	0.89	0.99	0.00	0.10	0.00	0.39	0.60	0.20	0.20	0.00			
120	0.80	0.79	0.99	1.19	0.50	0.98	0.89	0.99	0.00	0.10	0.10	0.69	1.09	0.40	0.20	0.00			
125	0.70	0.79	0.99	1.48	1.19	1.38	0.89	0.99	0.00	0.10	0.20	0.99	1.59	0.79	0.20	0.00			
130	0.70	0.79	0.99	1.48	1.29	1.49	0.99	0.79	0.00	0.10	0.30	1.18	1.88	1.19	0.20	0.00			
135	0.70	0.79	0.99	1.48	1.29	1.49	1.09	0.79	0.00	0.10	0.40	1.18	1.88	1.59	0.20	0.00			
140	0.70	0.79	0.99	1.48	1.29	1.49	1.19	0.79	0.00	0.10	0.49	1.18	1.88	1.98	0.30	0.10			
145	0.70	0.79	1.09	1.48	1.29	1.49	1.39	0.79	0.10	0.10	0.59	1.18	1.88	1.98	0.50	0.30			
150	0.70	0.79	1.29	1.58	1.29	1.49	1.39	0.79	0.20	0.20	0.59	1.18	2.08	1.78	0.60	0.40			
155	0.70	0.79	1.38	1.88	1.39	1.68	1.39	0.79	0.20	0.30	0.59	1.18	2.68	1.59	0.80	0.50			
160	0.70	0.99	1.48	2.96	1.39	2.17	1.59	1.29	0.30	0.40	0.69	1.28	2.88	1.59	1.09	0.69			
165	0.70	1.29	1.78	3.16	1.58	2.87	1.89	1.39	1.00	1.19	1.48	2.27	3.47	1.59	2.69	1.69			
170	1.00	1.39	2.18	3.26	1.59	2.97	2.09	1.39	1.59	1.59	1.48	2.17	3.47	1.59	3.68	2.48			
175	1.20	1.39	2.18	3.26	1.59	3.27	2.19	1.49	1.69	1.59	1.38	2.17	3.56	1.59	3.68	2.48			
180	1.49	1.39	2.18	3.26	1.59	3.47	2.29	1.69	1.69	1.69	1.38	2.17	3.27	1.59	3.38	2.28			



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 *******