



**BESTWAY COMPLIANCE CO., LTD.**

Unit 301, Building 3, No. 178, Fenggang Section, Dongshen Road, Fenggang Town,  
Dongguan, Guangdong, People's Republic of China  
Tel: (+86)0769-82699983

## **LM-79-19 Test Report**

For

**RAB Lighting INC.**

**(Brand Name: RAB)**

408 W 14th St, New York, NY 10014, USA

**Model name(s):  
ALR-RB**

**Report Type:** Testing and Report According to IES LM-79-2019  
**Type of Luminaire:** LED luminaire  
**Report Date:** 2024-08-27

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	ALR-RB	
Remark	N/A	
Representative (Tested) Model	ALR-RB(mode:2700K) ALR-RB(mode:3000K) ALR-RB(mode:3500K) ALR-RB(mode:4000K) ALR-RB(mode:5000K)	
Model Difference	N/A	
SKU (if available)	--	
Type of Luminaire (for integral lamps, list base type and lamp type)	LED luminaire	
LED Manufacturer	Lumileds Holding B.V.	
LED Model	L128-xx90RC35xxxxx	
Integral Controls Availability	Yes	
Dimming	Continuous	
Sample Number	STD240728NB-B1	
Date of Receipt	2024-08-14	
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	120Vac, 60Hz
Nominal Power	16W
Rated Initial Lamp Lumen	--
Declared CCT	2700K,3000K,3500K,4000K,5000K (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. Correlated Color Temperature</li> <li>5. Color Rendering Index</li> <li>6. Chromaticity Coordinate</li> <li>7. 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  $25^{\circ}\text{C} \pm 1.2^{\circ}\text{C}$ , 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  $1^{\circ}$  vertical intervals and  $22.5^{\circ}$  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  $25^{\circ}\text{C} \pm 1.2^{\circ}\text{C}$ . The humidity should be maintained between 10% and 65%. 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  $25^{\circ}\text{C} \pm 1.2^{\circ}\text{C}$ . 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.



**2.2 Electrical, Photometric and Chromaticity Measurements**

<b>Test date</b>	2024-08-16	<b>Test Ambient:</b>	25 ± 1° C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	60
<b>Model Number</b>	ALR-RB(mode:2700K)	<b>Total Operating Time (min)</b>	75

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
STD240728 NB-B1	120.0	60	0.1433	15.78	0.9179	42.23

**Photometric Measurement – Goniophotometer Method(Test Distance:26.000m):**

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
Total Luminous (lm)	1137.1
Luminous Efficacy (lm/W)	72.05
Beam Angle (°)	166.2
Center Beam Candle Power (cd)	199

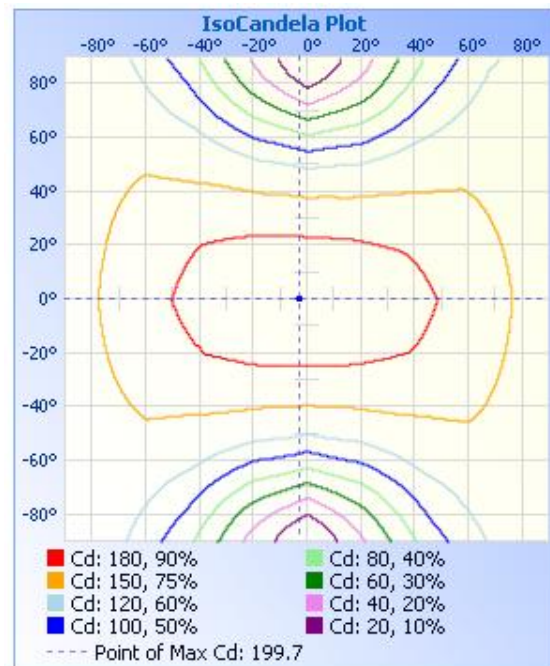
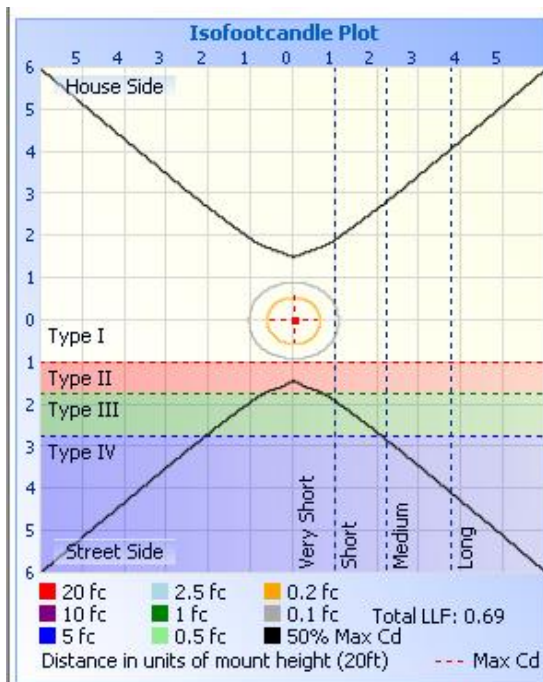
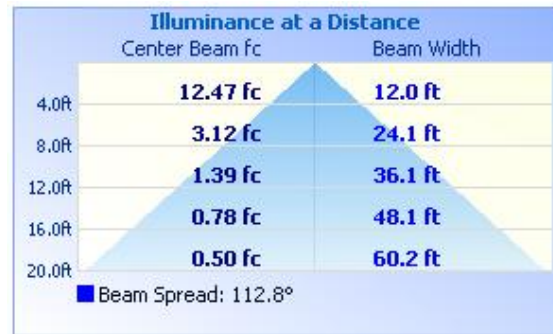
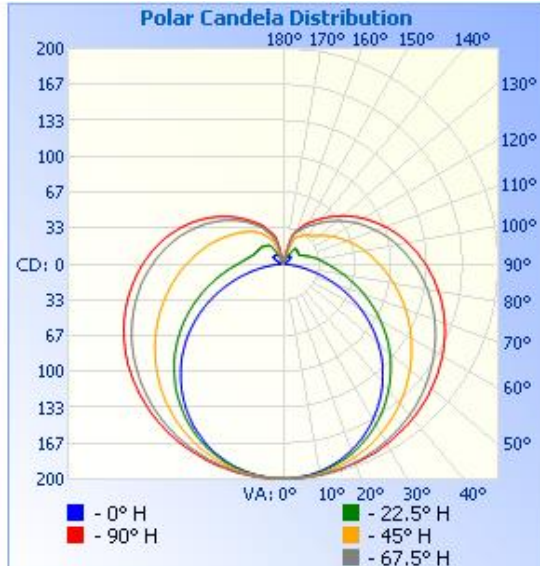


**Zonal Lumen Tabulation**

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	160.0	14.1%
0-40	269.2	23.7%
0-60	518.6	45.6%
60-90	322.2	28.3%
70-100	280.0	24.6%
90-120	196.1	17.2%
0-90	840.9	73.9%
90-180	296.5	26.1%
0-180	1,137.3	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	18.9	1.7%	90-100	78.8	6.9%
10-20	55.1	4.8%	100-110	65.2	5.7%
20-30	86.0	7.6%	110-120	52.0	4.6%
30-40	109.2	9.6%	120-130	40.1	3.5%
40-50	122.9	10.8%	130-140	29.1	2.6%
50-60	126.5	11.1%	140-150	19.1	1.7%
60-70	121.0	10.6%	150-160	9.8	0.9%
70-80	108.4	9.5%	160-170	2.2	0.2%
80-90	92.8	8.2%	170-180	0.1	0%

**Photometric Data**





Certificate #4703.03

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Table--1

UNIT: °C

C (DEG) γ (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	199	199	199	199	199	199	199	199	199	199	199	199	199	199	199	199			
5	199	199	199	198	198	199	199	200	199	199	199	199	198	199	199	199			
10	199	198	197	196	196	197	198	199	199	199	198	197	196	196	197	198			
15	198	196	194	191	191	193	195	198	198	197	195	193	192	193	195	197			
20	196	194	190	186	185	187	192	196	197	196	192	188	186	188	191	195			
25	194	191	185	179	177	180	187	193	195	193	188	182	179	181	187	192			
30	192	187	179	170	167	172	182	190	193	190	182	174	170	173	181	189			
35	189	184	172	160	156	163	176	187	190	186	176	165	159	164	175	186			
40	186	179	165	150	144	153	169	183	187	183	169	154	147	154	169	182			
45	182	174	157	138	130	141	161	179	184	178	161	143	134	143	161	177			
50	178	169	148	126	116	130	154	173	180	172	153	131	120	132	153	172			
55	174	164	140	112	99.9	117	146	168	176	167	144	118	105	119	145	167			
60	169	158	131	98.9	83.4	104	137	162	171	161	136	104	87.9	106	137	161			
65	163	151	123	85.8	66.1	91.6	129	156	166	155	127	90.9	70.9	93.2	129	156			
70	157	145	114	73.0	48.6	79.1	121	150	160	148	118	77.4	53.2	80.9	121	149			
75	151	138	106	61.1	31.5	67.7	113	143	154	141	109	64.8	35.7	69.1	113	143			
80	144	131	97.9	50.6	15.8	57.3	105	136	147	134	101	53.4	19.3	58.5	105	136			
85	138	124	90.4	42.1	3.77	48.4	96.8	129	140	127	93.1	43.8	5.63	49.5	97.1	129			
90	131	117	83.7	35.5	0.00	41.1	89.2	121	133	120	85.5	36.3	0.00	42.3	89.5	121			
95	123	110	77.2	31.4	0.00	35.8	82.5	114	125	112	78.9	31.2	0.00	36.7	82.9	114			
100	116	103	71.3	26.6	0.00	30.9	76.0	107	117	105	72.3	27.2	0.30	32.7	76.7	107			
105	108	95.9	65.2	22.0	0.00	26.3	69.4	99.2	109	97.2	66.2	25.0	1.49	29.9	70.4	99.5			
110	100	88.5	59.5	18.1	0.00	22.1	63.1	91.5	101	90.1	60.8	23.6	3.86	28.4	64.9	91.8			
115	92.2	81.2	53.7	15.1	1.58	18.8	57.0	84.1	93.0	83.0	55.8	22.8	6.14	27.0	59.4	84.4			
120	84.2	74.0	48.2	14.8	4.55	17.2	51.5	76.8	85.1	75.7	51.1	22.5	8.73	26.3	54.7	77.0			
125	76.1	66.9	42.8	15.8	7.71	17.2	46.1	69.3	77.0	68.6	47.2	22.2	11.0	25.4	50.6	70.0			
130	68.5	59.9	38.2	17.1	8.22	17.4	41.1	62.2	69.4	62.0	43.8	21.9	10.9	25.2	46.3	63.2			
135	61.2	53.0	34.9	17.1	9.51	18.2	37.0	55.1	62.0	56.0	40.7	21.7	10.2	23.7	42.5	56.6			
140	54.0	46.9	33.3	17.1	9.71	18.5	34.6	48.8	54.9	50.5	37.7	18.6	10.2	22.4	38.6	50.2			
145	47.7	42.3	30.7	16.3	8.92	14.7	32.1	43.6	48.4	45.7	34.6	13.3	10.2	20.4	34.7	44.6			
150	42.2	38.2	28.0	8.39	7.92	3.69	29.5	39.1	42.8	41.2	32.2	7.24	9.80	9.91	29.2	38.9			
155	35.5	32.7	25.7	1.48	6.44	1.00	26.5	33.8	36.3	35.2	30.1	3.18	8.91	2.19	23.9	32.0			
160	30.5	28.4	19.4	0.00	5.05	0.00	10.3	29.1	30.8	30.4	21.8	1.09	6.14	1.49	9.89	24.9			
165	24.6	18.3	1.07	0.00	4.26	0.00	0.00	6.09	13.3	12.9	0.03	0.00	4.65	1.20	0.00	12.0			
170	0.04	0.00	0.00	0.00	4.26	1.78	0.00	0.00	0.00	0.00	0.00	0.78	4.65	1.20	0.00	0.00			
175	0.00	0.00	0.00	0.70	4.26	3.88	2.87	1.55	1.30	1.28	3.13	3.37	3.05	1.39	0.00	0.00			
180	0.00	1.69	2.20	3.36	3.77	2.81	1.93	0.00	0.00	0.00	0.89	1.88	2.77	3.19	2.40	1.31			

**2.3 Electrical, Photometric and Chromaticity Measurements**

<b>Test date</b>	2024-08-16	<b>Test Ambient:</b>	25 ± 1° C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	60
<b>Model Number</b>	ALR-RB(mode:2700K)	<b>Total Operating Time (min)</b>	61

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
STD240728 NB-B1	120.0	60	0.1444	15.90	0.9179	42.19

**Chromaticity Measurement - Sphere-Spectroradiometer**

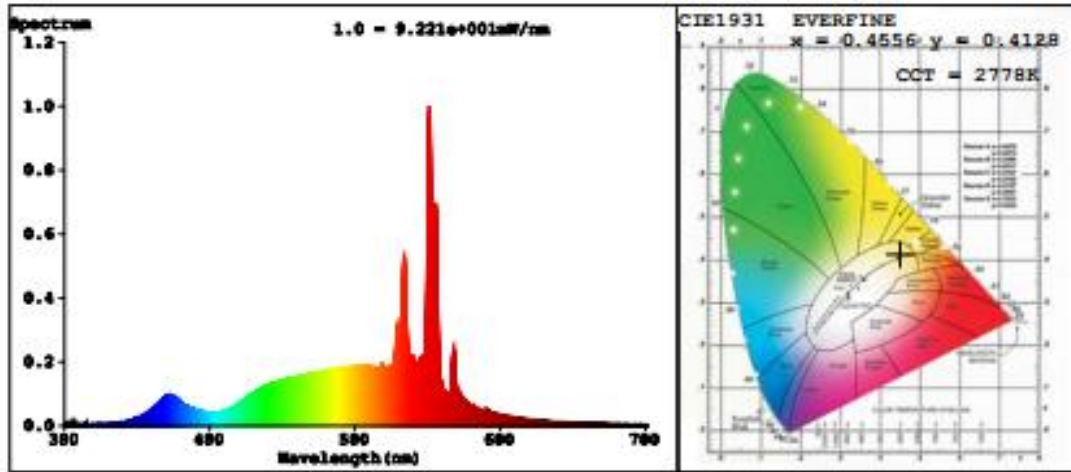
**Method(Self-absorption:1.1421) (4π geometry):**

Parameter	Result	Parameter	Result
Test Voltage (V)	120	Color Rendering Index (CRI)	94.8
Frequency (Hz)	60	R9	75
CCT (K)	2778	Rg	102
Duv	0.0012	Rf	91
Chromaticity (x, y)	x=0.4556 y=0.4128	Rcs,h1(%)	-4
Chromaticity (u', v')	u'=0.2588 v'=0.5275		

**Photometric Measurement –Sphere-Spectroradiometer Method:**

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
Total Luminous (lm)	1148
Luminous Efficacy (lm/W)	72.20

**Spectral Power Distribution & Chromaticity Diagram**



**Special Color Rendering Indices**

<b>R1 -98</b>	<b>R2 -96</b>	<b>R3 -90</b>	<b>R4 -96</b>	<b>R5 -96</b>	<b>R6 -96</b>	<b>R7 -96</b>	
<b>R8 -91</b>	<b>R9 -75</b>	<b>R10-86</b>	<b>R11-96</b>	<b>R12-80</b>	<b>R13-97</b>	<b>R14-92</b>	<b>R15-95</b>

**TM30**

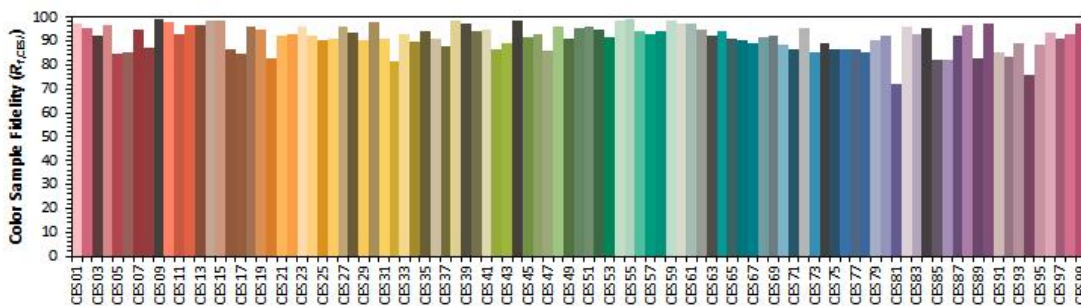
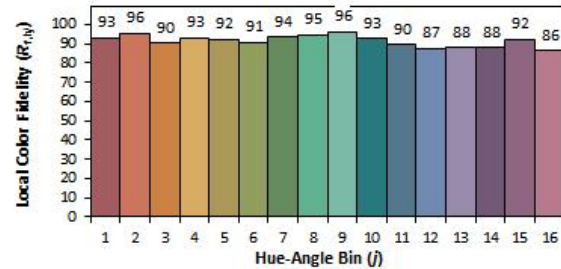
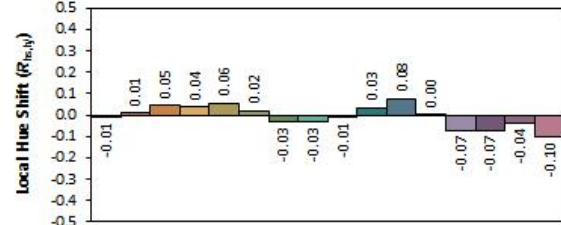
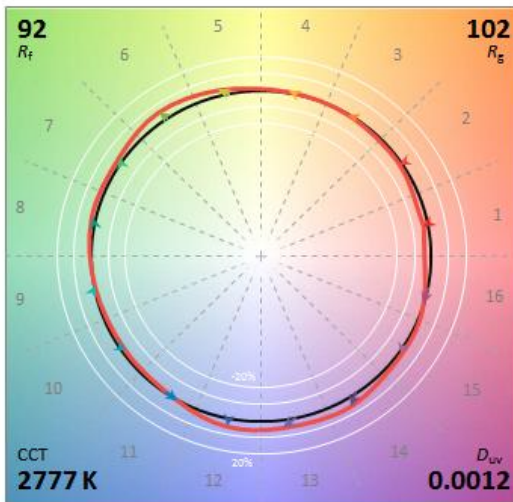
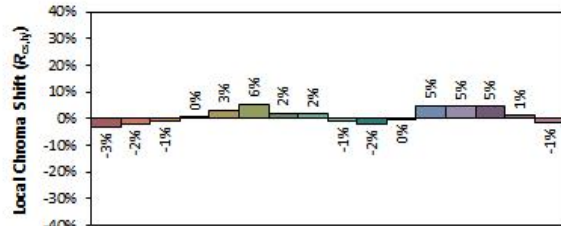
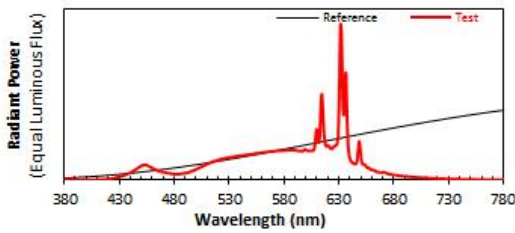
**ANSI/IES TM-30-18 Color Rendition Report**

Source: L128-xx90RC35xxxxx

Manufacturer: RAB Lighting INC.

Date: 2024-08-16

Model: ALR-RB (mode:2700K)



**Notes:** This is a recommended method for displaying ANSI/IES TM-30-18 information.

$x$  0.4556  
 $y$  0.4127  
 $u'$  0.2588  
 $v'$  0.5275

CIE 13.3-1995  
(CRI)  
 $R_a$  95  
 $R_g$  75

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

**2.3 Electrical, Photometric and Chromaticity Measurements**

<b>Test date</b>	2024-08-16	<b>Test Ambient:</b>	25 ± 1° C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	60
<b>Model Number</b>	ALR-RB(mode:3000K)	<b>Total Operating Time (min)</b>	61

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
STD240728 NB-B1	120.0	60	0.1441	15.89	0.9190	42.20

**Chromaticity Measurement - Sphere-Spectroradiometer**

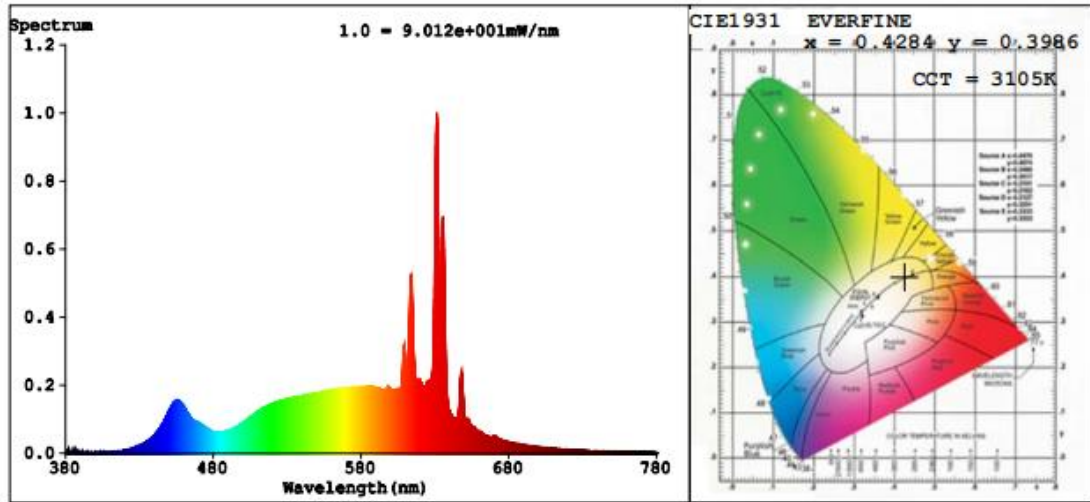
**Method(Self-absorption:1.1421) (4π geometry):**

Parameter	Result	Parameter	Result
Test Voltage (V)	120	Color Rendering Index (CRI)	96.8
Frequency (Hz)	60	R9	84
CCT (K)	3105	Rg	102
Duv	-0.0010	Rf	92
Chromaticity (x, y)	x=0.4284 y=0.3986	Rcs,h1(%)	-3
Chromaticity (u', v')	u'=0.2474 v'=0.5179		

**Photometric Measurement –Sphere-Spectroradiometer Method:**

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
Total Luminous (lm)	1212
Luminous Efficacy (lm/W)	76.26

**Spectral Power Distribution & Chromaticity Diagram**



**Special Color Rendering Indices**

R1 =99    R2 =98    R3 =93    R4 =98    R5 =98    R6 =96    R7 =97  
R8 =94    R9 =84    R10=92    R11=96    R12=80    R13=100    R14=94    R15=98

**TM30**

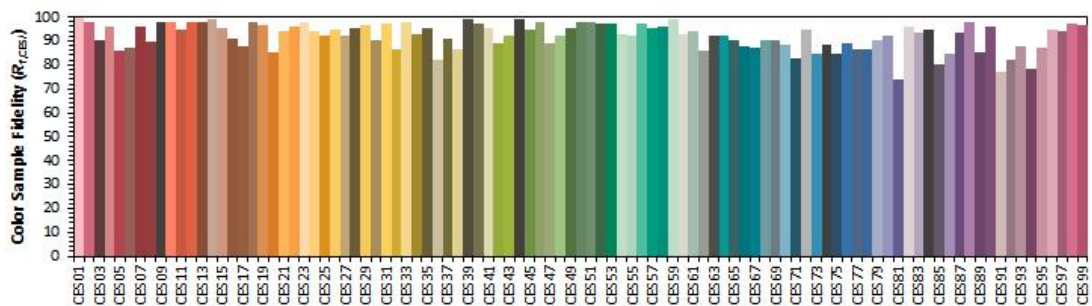
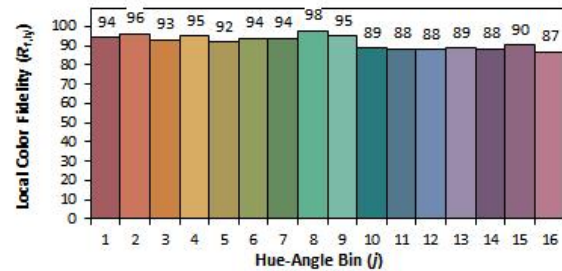
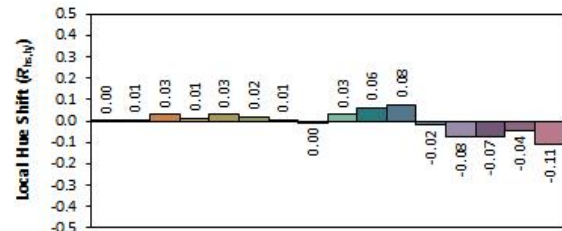
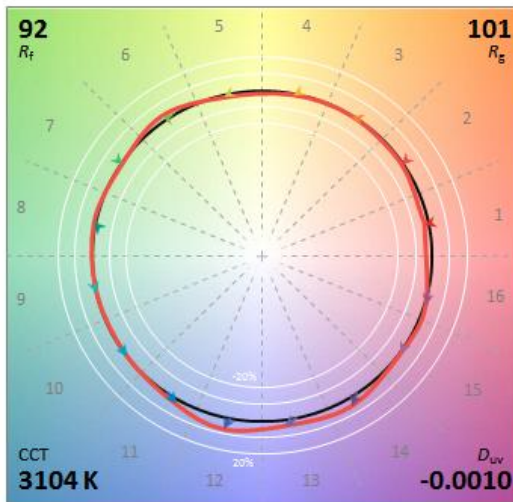
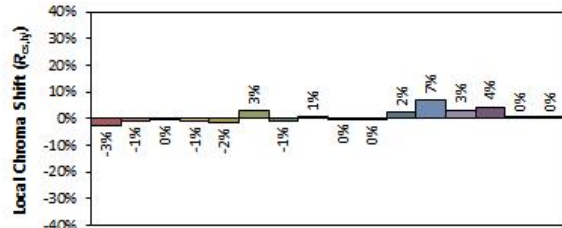
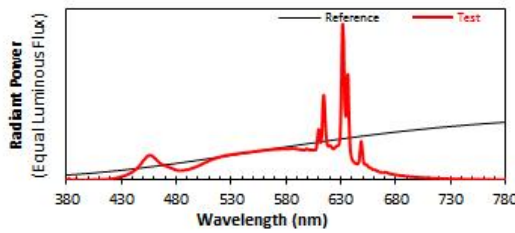
**ANSI/IES TM-30-18 Color Rendition Report**

**Source:** L128-xx90RC35xxxxx

**Manufacturer:** RAB Lighting INC.

**Date:** 2024-08-16

**Model:** ALR-RB (mode:3000K)



**Notes:** This is a recommended method for displaying ANSI/IES TM-30-18 information.

$x$     **0.4283**  
 $y$     **0.3985**  
 $u'$    **0.2474**  
 $v'$    **0.5179**

CIE 13.3-1995  
(CRI)  
 $R_a$     97  
 $R_9$     84

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

**2.4 Electrical, Photometric and Chromaticity Measurements**

<b>Test date</b>	2024-08-16	<b>Test Ambient:</b>	25 ± 1° C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	60
<b>Model Number</b>	ALR-RB(mode:3500K)	<b>Total Operating Time (min)</b>	61

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
STD240728 NB-B1	120.0	60	0.1394	15.39	0.9197	42.17

**Chromaticity Measurement - Sphere-Spectroradiometer**

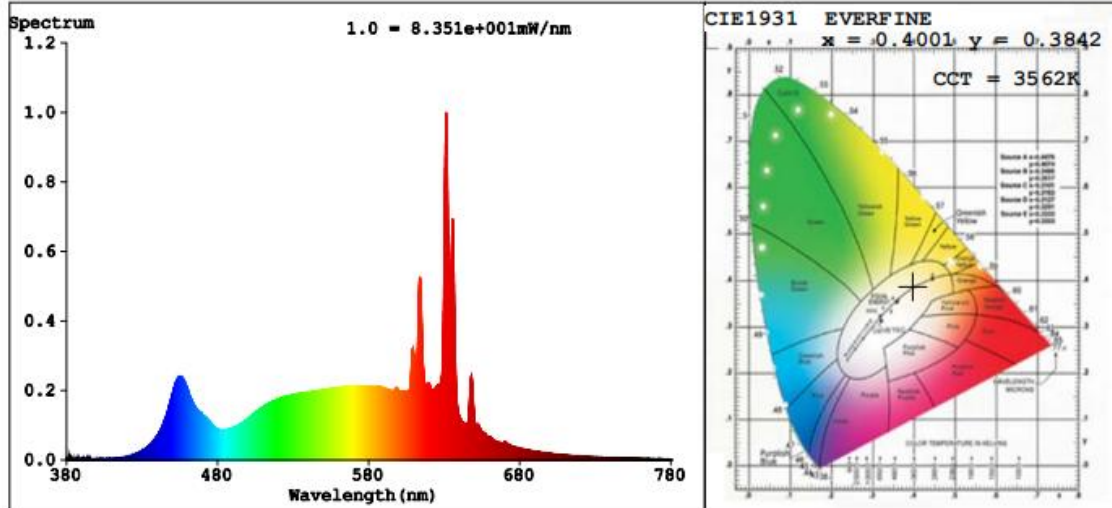
**Method(Self-absorption:1.1423) (4π geometry):**

Parameter	Result	Parameter	Result
Test Voltage (V)	120	Color Rendering Index (CRI)	97.3
Frequency (Hz)	60	R9	89
CCT (K)	3562	Rg	101
Duv	-0.0017	Rf	92
Chromaticity (x, y)	x=0.4001 y=0.3842	Rcs,h1(%)	-2
Chromaticity (u', v')	u'=0.2350v'=0.5077		

**Photometric Measurement –Sphere-Spectroradiometer Method:**

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
Total Luminous (lm)	1251
Luminous Efficacy (lm/W)	81.27

**Spectral Power Distribution & Chromaticity Diagram**



**Special Color Rendering Indices**

R1 =99	R2 =99	R3 =94	R4 =99	R5 =98	R6 =96	R7 =97	
R8 =96	R9 =89	R10=94	R11=97	R12=76	R13=99	R14=95	R15=98

**TM30**

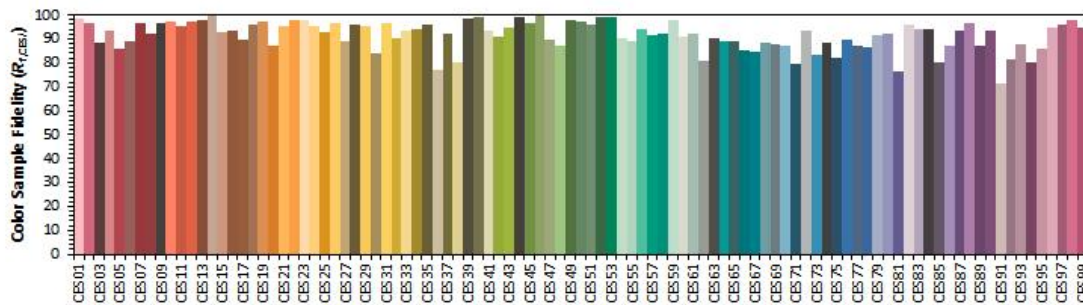
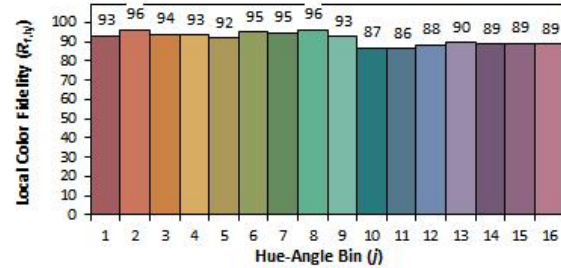
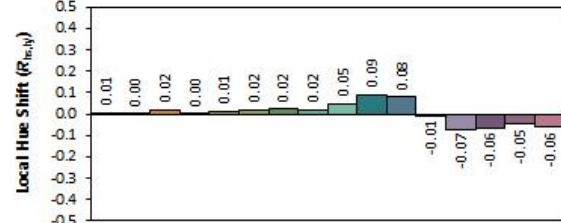
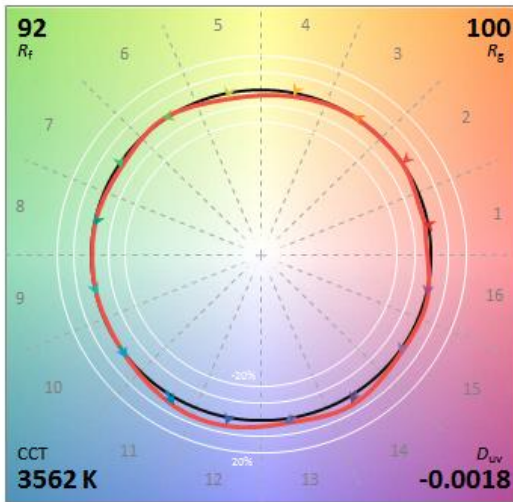
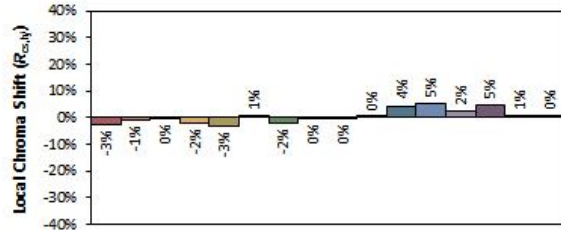
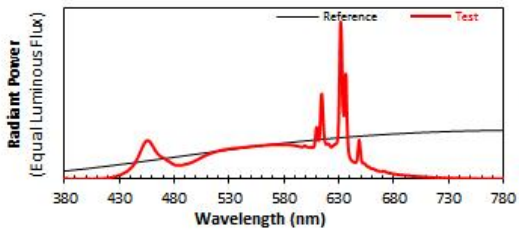
**ANSI/IES TM-30-18 Color Rendition Report**

Source: L128-xx90RC35xxxxx

Manufacturer: RAB Lighting INC.

Date: 2024-08-16

Model: ALR-RB (mode:3500K)



**Notes:** This is a recommended method for displaying ANSI/IES TM-30-18 information.

$x$  0.4001  
 $y$  0.3841  
 $u'$  0.2351  
 $v'$  0.5077

CIE 13.3-1995  
(CRI)  
 $R_a$  97  
 $R_g$  90

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

**2.4 Electrical, Photometric and Chromaticity Measurements**

<b>Test date</b>	2024-08-16	<b>Test Ambient:</b>	25 ± 1° C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	60
<b>Model Number</b>	ALR-RB(mode:4000K)	<b>Total Operating Time (min)</b>	61

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
STD240728 NB-B1	120.0	60	0.1442	15.91	0.9197	42.18

**Chromaticity Measurement - Sphere-Spectroradiometer**

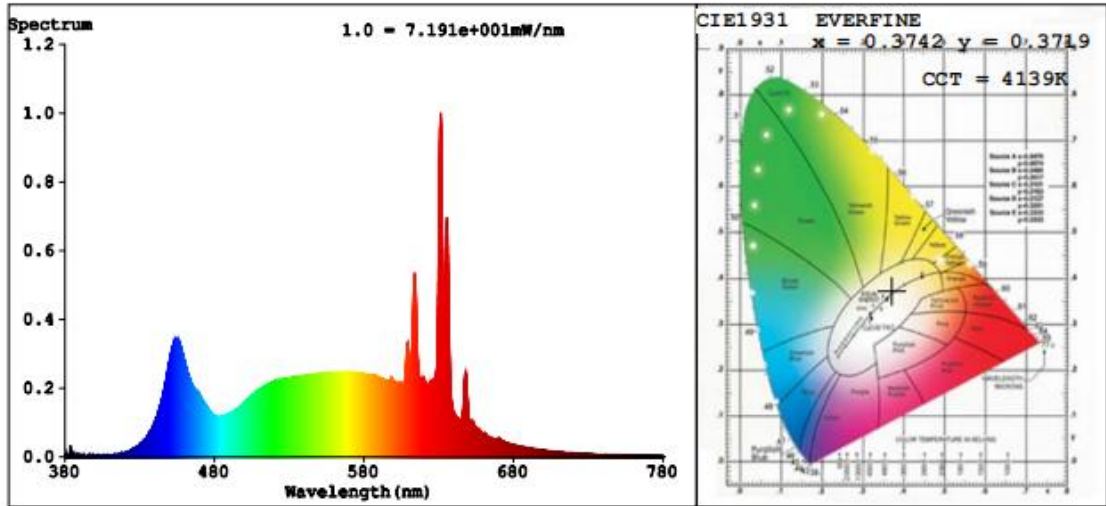
**Method(Self-absorption:1.1423) (4π geometry):**

Parameter	Result	Parameter	Result
Test Voltage (V)	120	Color Rendering Index (CRI)	96.5
Frequency (Hz)	60	R9	87
CCT (K)	4139	Rg	100
Duv	-0.0004	Rf	92
Chromaticity (x, y)	x=0.3742 y=0.3719	Rcs,h1(%)	-3
Chromaticity (u', v')	u'=0.2229v'=0.4985		

**Photometric Measurement –Sphere-Spectroradiometer Method:**

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
Total Luminous (lm)	1250
Luminous Efficacy (lm/W)	78.55

**Spectral Power Distribution & Chromaticity Diagram**



**Special Color Rendering Indices**

R1 =98	R2 =98	R3 =95	R4 =97	R5 =96	R6 =95	R7 =97		
R8 =95	R9 =87	R10=92	R11=97	R12=71	R13=99	R14=96	R15=97	

**TM30**

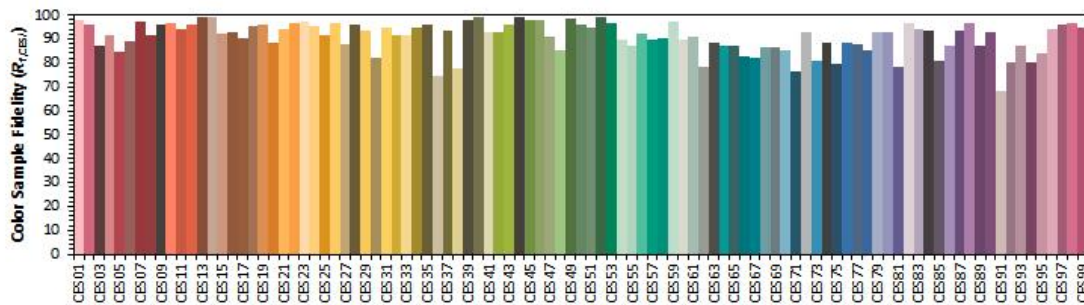
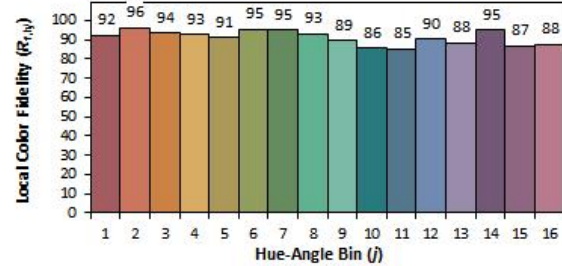
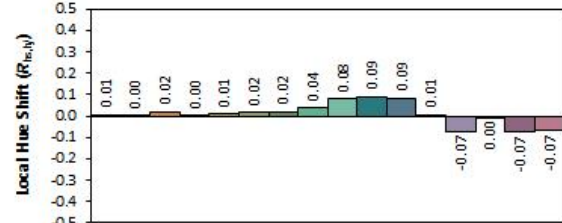
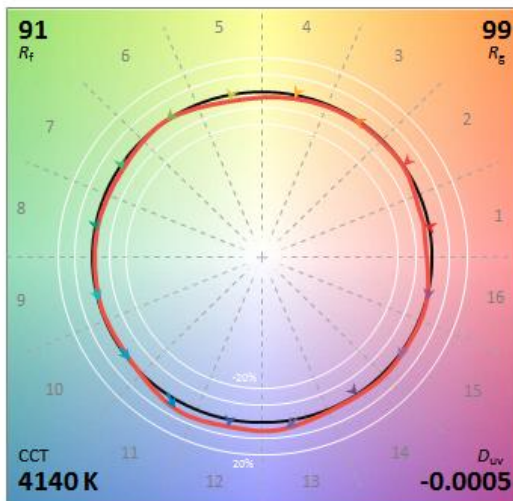
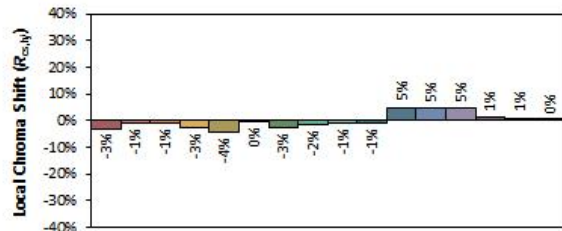
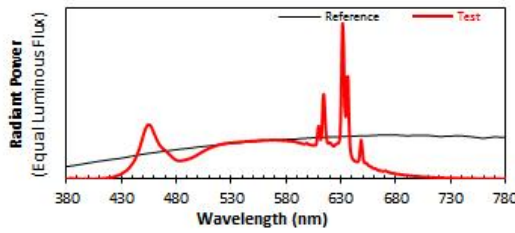
**ANSI/IES TM-30-18 Color Rendition Report**

Source: L128-xx90RC35xxxxx

Manufacturer: RAB Lighting INC.

Date: 2024-08-16

Model: ALR-RB(mode:4000K)



**Notes:** This is a recommended method for displaying ANSI/IES TM-30-18 information.

$x$  0.3742  
 $y$  0.3718  
 $u'$  0.2230  
 $v'$  0.4985

CIE 13.3-1995  
(CRI)  
 $R_a$  97  
 $R_g$  88

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

**2.5 Electrical, Photometric and Chromaticity Measurements**

<b>Test date</b>	2024-08-16	<b>Test Ambient:</b>	25 ± 1° C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	60
<b>Model Number</b>	ALR-RB(mode:5000K)	<b>Total Operating Time (min)</b>	61

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
STD240728 NB-B1	120.0	60	0.1417	15.58	0.9161	42.16

**Chromaticity Measurement - Sphere-Spectroradiometer**

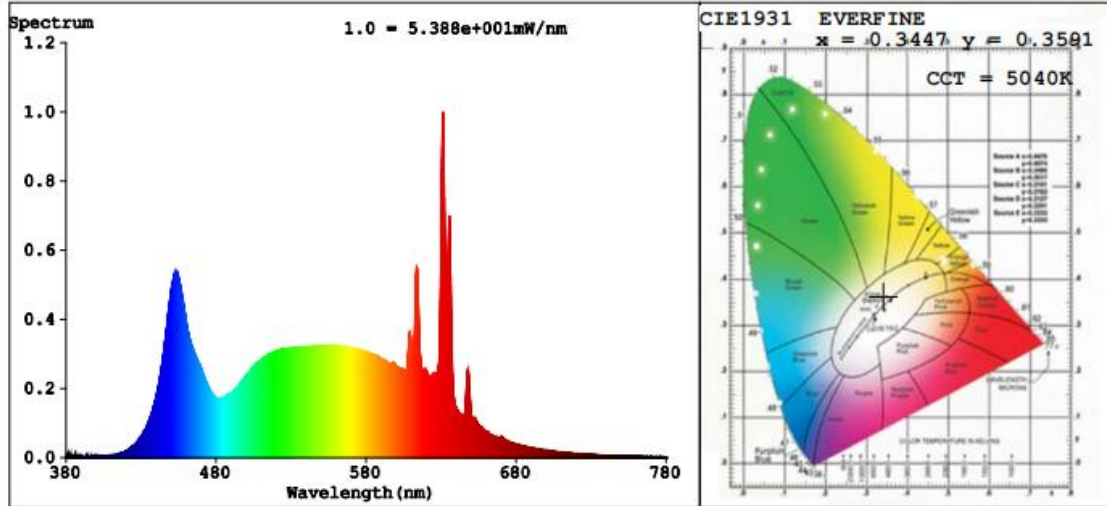
**Method(Self-absorption:1.1425) (4π geometry):**

Parameter	Result	Parameter	Result
Test Voltage (V)	120	Color Rendering Index (CRI)	93.0
Frequency (Hz)	60	R9	69
CCT (K)	5040	Rg	99
Duv	0.0039	Rf	91
Chromaticity (x, y)	x=0.3481 y=0.3654	Rcs,h1(%)	-5
Chromaticity (u', v')	u'=0.2082v'=0.4917		

**Photometric Measurement –Sphere-Spectroradiometer Method:**

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
Total Luminous (lm)	1208
Luminous Efficacy (lm/W)	77.51

**Spectral Power Distribution & Chromaticity Diagram**



**Special Color Rendering Indices**

R1 =93	R2 =95	R3 =94	R4 =93	R5 =92	R6 =92	R7 =95		
R8 =89	R9 =69	R10=86	R11=93	R12=70	R13=94	R14=96	R15=92	

**TM30**

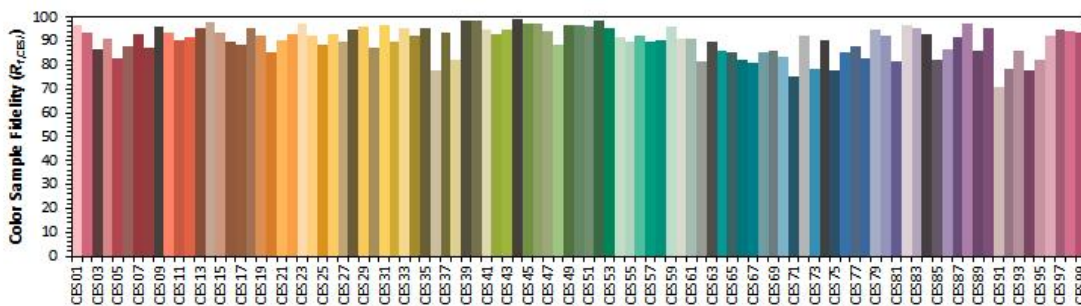
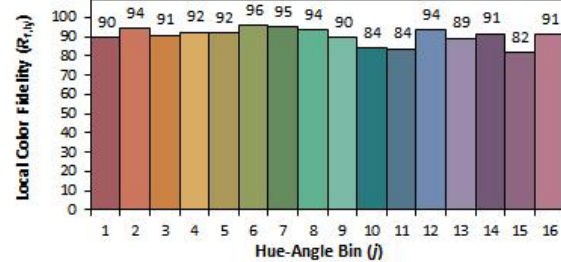
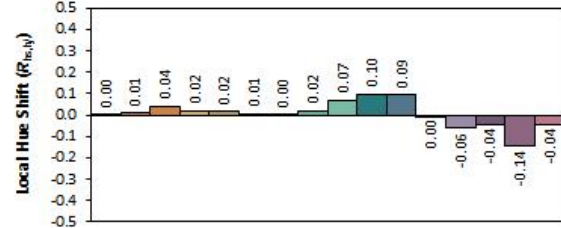
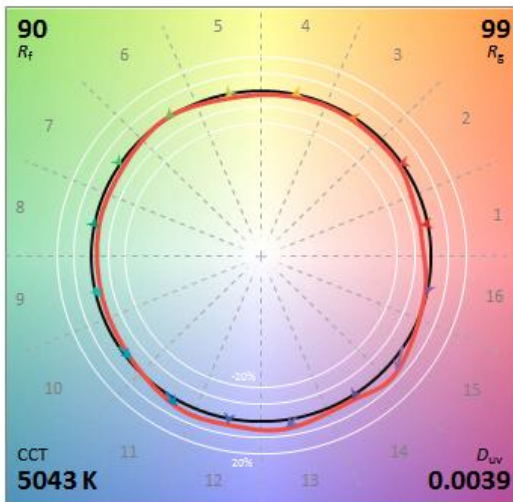
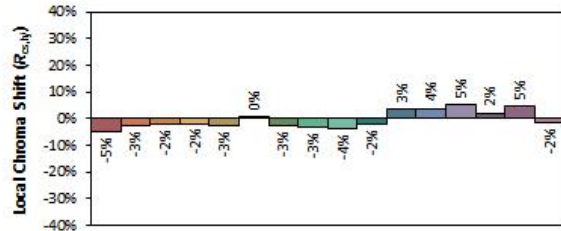
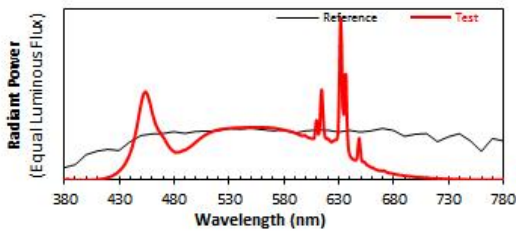
**ANSI/IES TM-30-18 Color Rendition Report**

Source: L128-xx90RC35xxxxx

Manufacturer: RAB Lighting INC.

Date: 2024-08-16

Model: ALR-RB (mode:5000K)



**Notes:** This is a recommended method for displaying ANSI/IES TM-30-18 information.

$x$  0.3446  
 $y$  0.3590  
 $u'$  0.2083  
 $v'$  0.4881

CIE 13.3-1995  
(CRI)  
 $R_a$  93  
 $R_g$  69

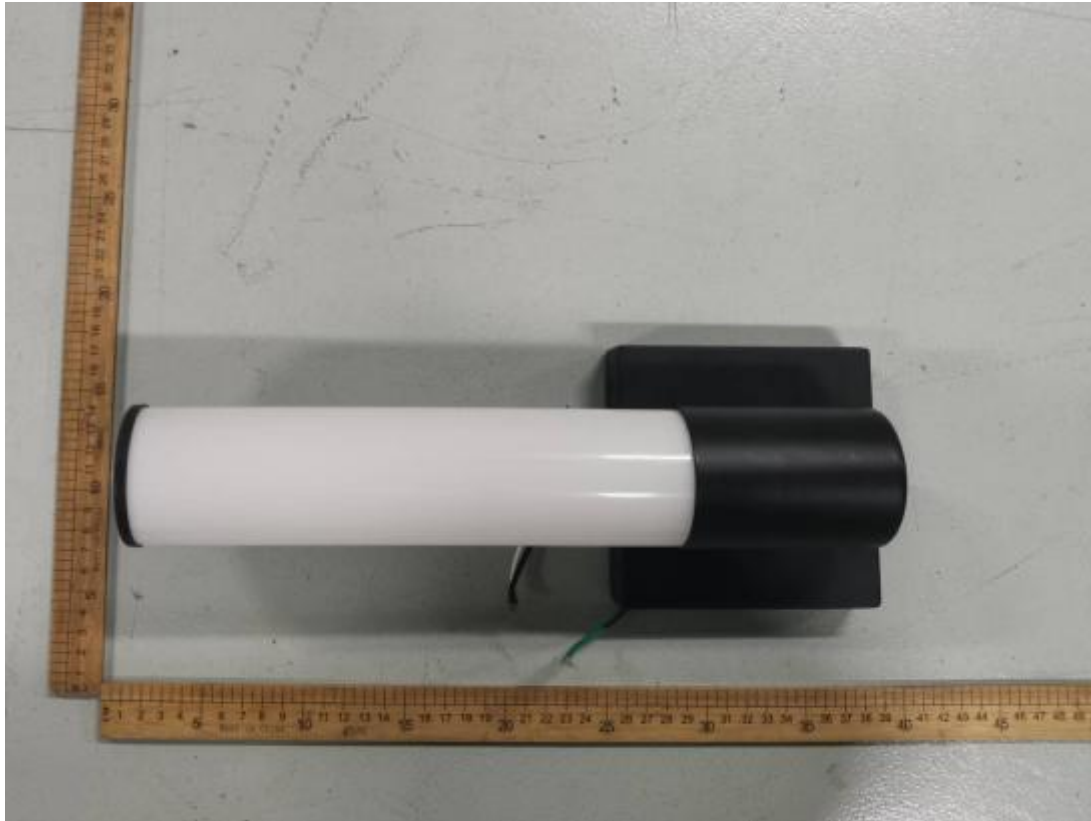
Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

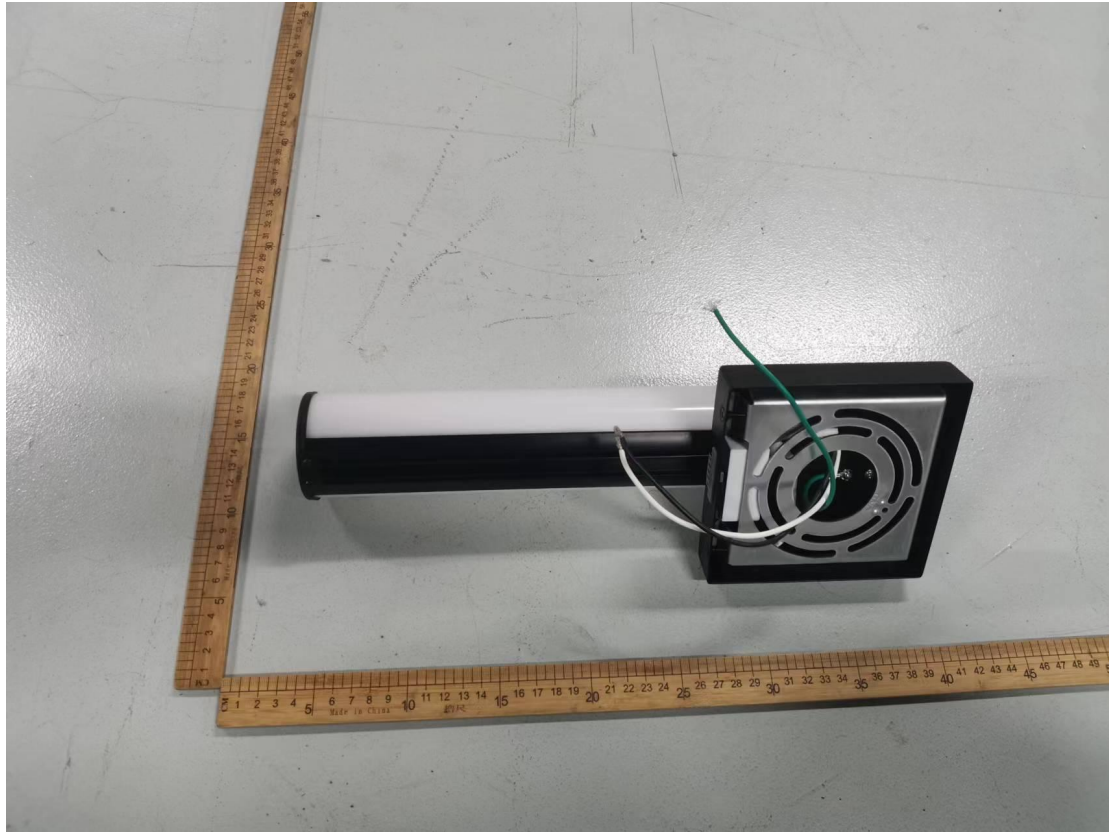


### 3. Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-S-451	2 meter Integrating Sphere	Verified by D204 standard lamp	
ST-R-S-455	Spectral analysis system HAAS-1200	Verified by D204 standard lamp	
ST-R-S-452	Standard Lamp D204	2023-06-26	2026-06-25
ST-R-S-453	Power Meter for Integrating Sphere	2024-05-29	2025-05-28
ST-R-S-467	Hygrothermograph	2024-06-06	2025-06-05
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 (Sphere):2.94%, k=2 Chromaticity Measurement(Sphere):52.28K, k=2 Photometric Measurement(Goniophotometer): 2.94%, k=2			

#### 4. Product Photo





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