



## **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-24SB**

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

Test & Report By:

Review By:

*Ferrum Li*

*Garman Mo*

Engineer: Ferrum Li

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-24SB	
Remark	N/A	
Representative (Tested) Model	ALR-24SB(mode:2700K) ALR-24SB(mode:3000K) ALR-24SB(mode:3500K) ALR-24SB(mode:4000K) ALR-24SB(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-F1	
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	24W
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-24SB(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-F1	120.0	60	0.2144	23.66	0.9195	41.91

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

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
Total Luminous (lm)	1672.3
Luminous Efficacy (lm/W)	70.69
Beam Angle (°)	182.7
Center Beam Candle Power (cd)	257



**Zonal Lumen Tabulation**

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	222.3	13.3%
0-40	383.8	23%
0-60	764.4	45.7%
60-90	457.6	27.4%
70-100	383.2	22.9%
90-120	290.9	17.4%
0-90	1,222.0	73.1%
90-180	450.1	26.9%
0-180	1,672.1	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	24.8	1.5%	90-100	108.1	6.5%
10-20	75.0	4.5%	100-110	98.7	5.9%
20-30	122.5	7.3%	110-120	84.1	5%
30-40	161.5	9.7%	120-130	66.3	4%
40-50	186.6	11.2%	130-140	47.2	2.8%
50-60	194.1	11.6%	140-150	28.6	1.7%
60-70	182.6	10.9%	150-160	13.4	0.8%
70-80	154.1	9.2%	160-170	3.4	0.2%
80-90	120.9	7.2%	170-180	0.2	0%

**Photometric Data**

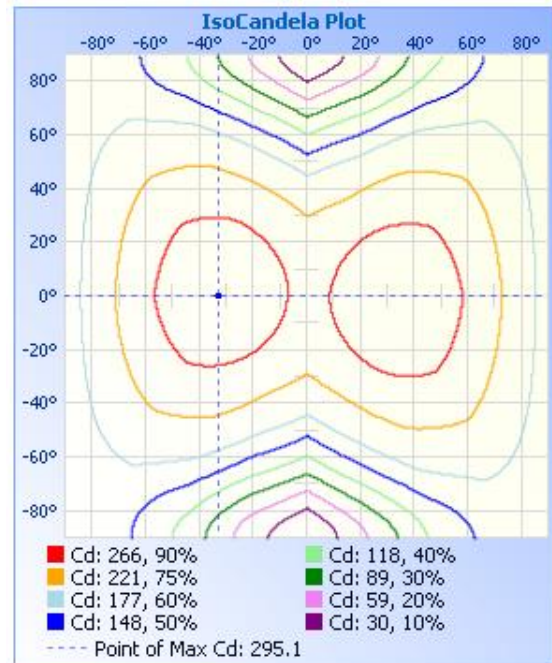
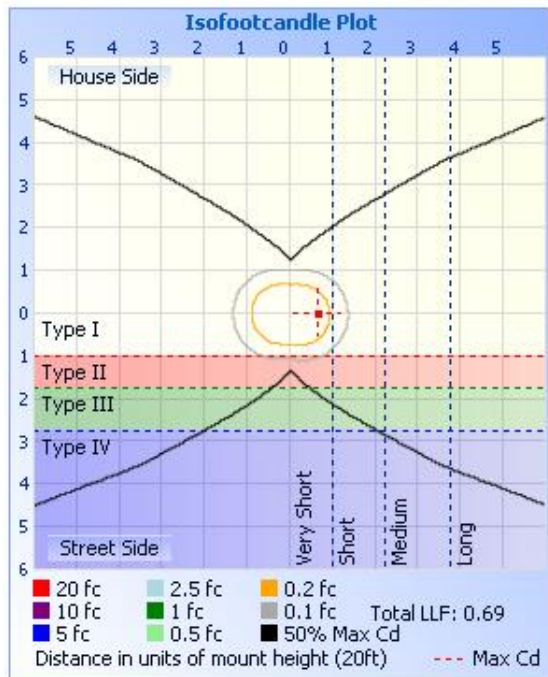
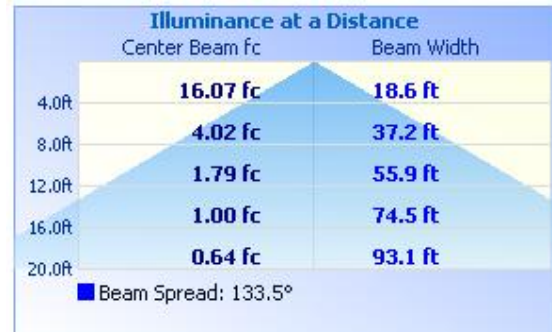
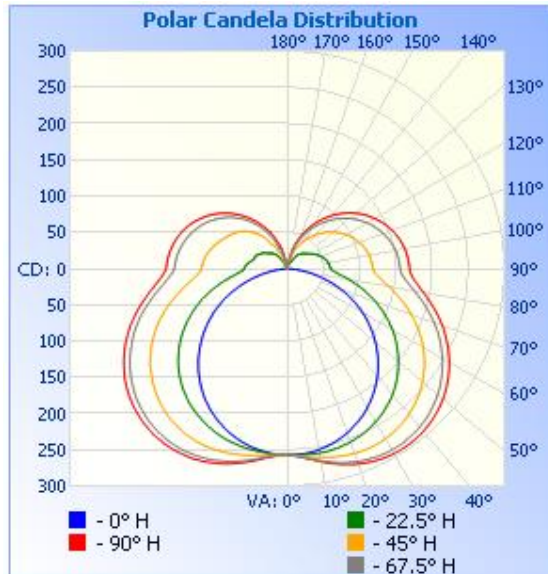




Table--1

UNIT: cd

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	257	257	257	257	257	257	257	257	257	257	257	257	257	257	257	257			
5	261	260	258	256	256	258	260	261	262	261	259	257	256	256	258	260			
10	269	267	261	255	254	258	264	269	270	268	262	256	252	255	262	267			
15	278	274	264	252	248	257	268	277	279	275	265	253	246	253	265	275			
20	286	280	266	248	241	255	271	283	287	281	267	249	239	250	268	282			
25	291	284	266	243	232	250	272	287	292	284	266	243	229	245	269	286			
30	294	286	265	236	221	244	271	289	295	285	264	236	218	239	268	289			
35	295	286	261	227	208	236	268	288	295	284	259	226	205	231	265	288			
40	293	283	255	217	194	227	262	285	293	281	252	215	190	222	260	286			
45	289	277	247	204	177	214	254	279	288	274	243	202	173	210	252	281			
50	282	269	237	190	159	201	244	271	281	266	232	187	155	196	243	273			
55	273	259	224	174	140	185	232	260	271	255	219	170	135	181	231	263			
60	260	246	210	157	120	168	217	247	259	242	204	152	114	164	217	251			
65	247	232	193	137	97.8	149	200	233	244	227	187	132	92.3	145	201	236			
70	231	215	175	117	75.1	128	182	216	228	210	168	110	69.2	126	183	220			
75	212	196	155	96.1	51.8	107	162	197	210	191	149	88.7	46.0	105	163	201			
80	194	178	136	75.4	29.7	86.6	143	179	191	173	130	68.4	24.7	84.2	144	182			
85	177	161	119	57.4	11.0	69.1	127	163	176	158	114	51.7	7.15	67.4	127	166			
90	167	150	108	47.2	1.07	60.1	118	156	169	151	108	45.3	0.10	59.6	118	156			
95	165	148	106	44.4	0.39	58.6	117	154	167	150	106	43.9	0.00	56.5	116	154			
100	162	146	103	40.1	0.00	56.4	114	152	164	147	104	42.0	0.00	52.1	112	151			
105	158	142	98.7	37.0	0.00	53.3	111	147	160	143	101	38.8	0.00	48.4	108	147			
110	153	136	93.0	36.4	0.00	49.5	106	141	154	138	96.4	35.1	0.10	47.1	103	142			
115	146	130	87.3	33.6	0.00	45.3	100	135	147	132	91.1	31.5	0.00	45.0	97.1	135			
120	138	122	83.0	30.8	0.00	40.7	93.9	127	139	124	84.9	27.8	0.00	41.6	92.0	128			
125	129	113	78.7	27.7	0.00	36.2	86.8	118	130	115	78.0	25.4	0.00	37.7	86.7	119			
130	119	105	72.1	25.9	0.00	32.6	78.7	108	119	105	70.4	23.3	0.00	32.7	80.3	110			
135	107	95.6	64.8	23.1	0.00	29.4	70.0	97.2	108	94.6	62.4	21.1	0.00	29.9	71.7	99.3			
140	95.1	84.5	55.4	20.4	0.00	25.8	60.8	85.5	95.2	83.6	54.8	18.6	0.00	26.1	62.4	87.8			
145	82.2	73.2	46.6	17.3	0.00	20.1	51.5	73.4	82.4	72.7	48.4	14.5	0.10	20.0	48.4	74.8			
150	68.8	61.2	39.6	11.2	0.00	10.9	42.7	60.9	68.4	61.6	42.8	11.8	0.19	8.37	36.6	60.8			
155	55.2	49.0	30.7	6.96	0.00	8.14	33.5	48.6	54.3	50.7	36.6	9.71	0.68	3.25	26.5	46.4			
160	40.4	32.7	20.4	5.00	0.00	5.68	19.6	35.9	40.3	38.6	29.4	8.24	1.08	0.79	8.95	29.2			
165	27.3	21.5	7.36	3.82	0.00	3.23	9.05	17.5	23.8	23.5	13.1	5.69	1.28	0.39	4.44	12.2			
170	9.28	6.03	4.72	3.04	0.29	1.96	4.25	7.48	7.72	8.01	5.83	2.75	1.28	0.39	2.38	3.46			
175	2.98	1.58	2.74	2.15	0.39	1.18	1.57	1.85	1.48	1.59	0.79	1.08	1.28	0.39	1.09	1.68			
180	0.00	0.50	0.59	1.47	0.39	0.98	0.89	0.39	0.00	0.20	0.49	0.98	1.47	0.39	0.99	0.69			

**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-24SB(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-F1	120.0	60	0.2156	23.79	0.9196	41.88

**Chromaticity Measurement - Sphere-Spectroradiometer**

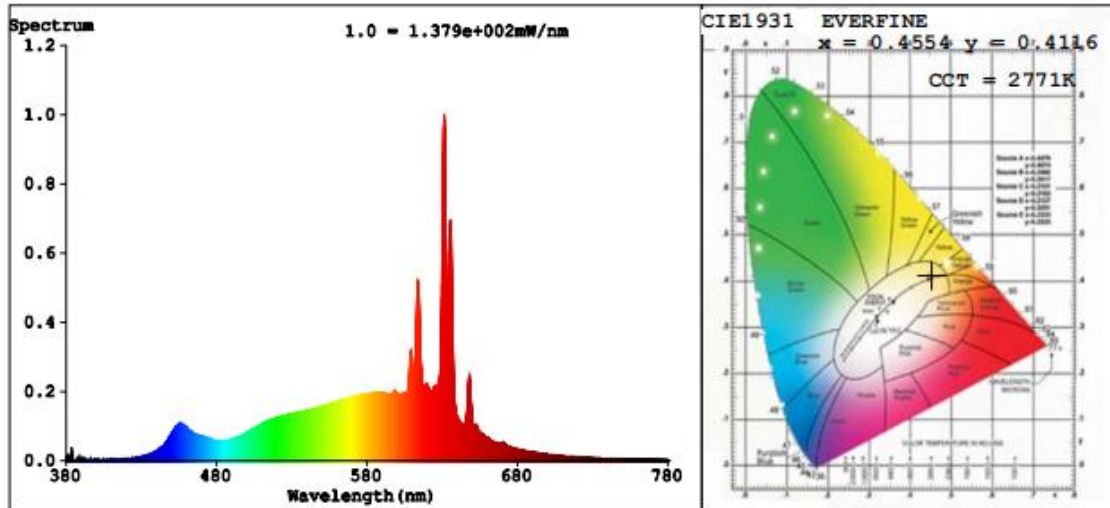
**Method(Self-absorption:1.1559) (4π geometry):**

Parameter	Result	Parameter	Result
Test Voltage (V)	120	Color Rendering Index (CRI)	95.7
Frequency (Hz)	60	R9	71
CCT (K)	2771	Rg	99
Duv	0.0008	Rf	92
Chromaticity (x, y)	x=0.4554 y=0.4116	Rcs,h1(%)	-5
Chromaticity (u', v')	u'=0.2592 v'=0.5271		

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

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
Total Luminous (lm)	1687
Luminous Efficacy (lm/W)	70.91

**Spectral Power Distribution & Chromaticity Diagram**



**Special Color Rendering Indices**

<b>R1 =98</b>	<b>R2 =98</b>	<b>R3 =97</b>	<b>R4 =97</b>	<b>R5 =97</b>	<b>R6 =97</b>	<b>R7 =94</b>		
<b>R8 =88</b>	<b>R9 =71</b>	<b>R10=93</b>	<b>R11=99</b>	<b>R12=83</b>	<b>R13=98</b>	<b>R14=96</b>	<b>R15=93</b>	

**TM30**

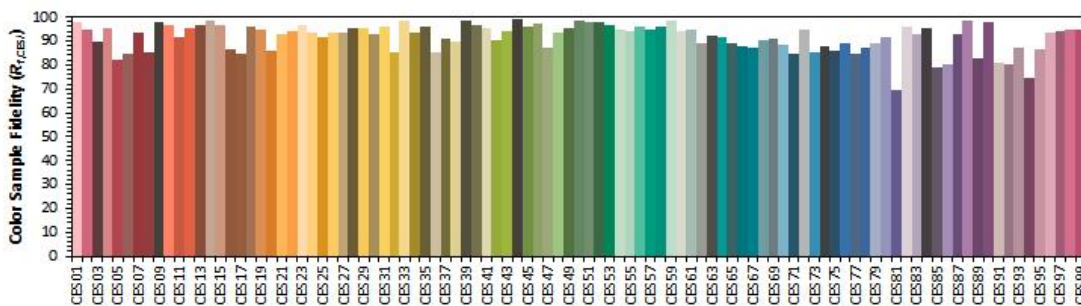
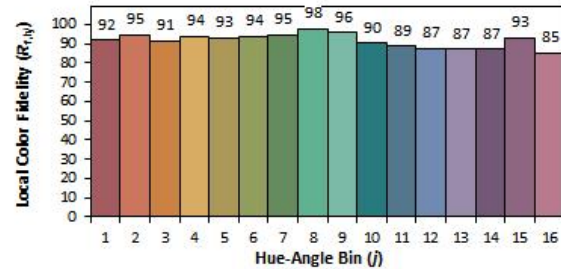
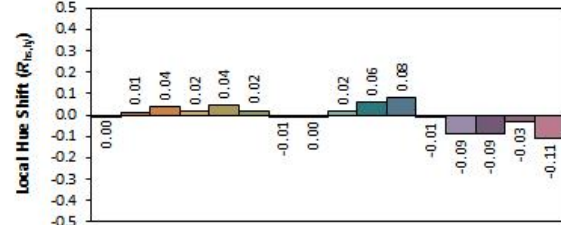
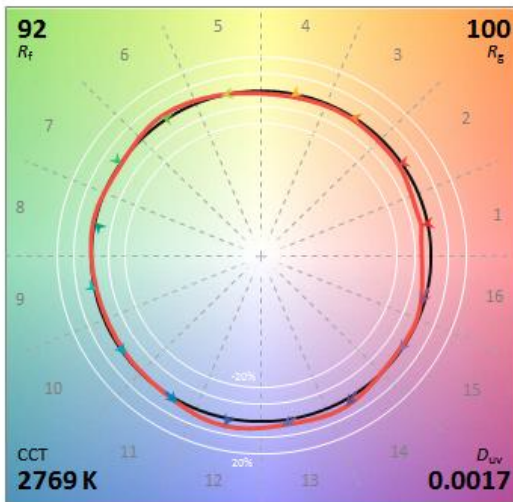
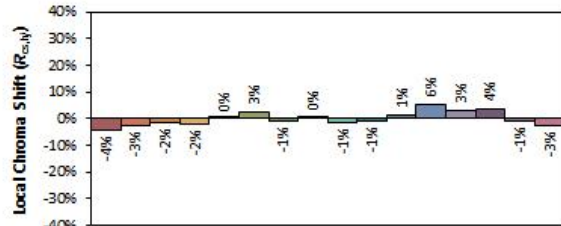
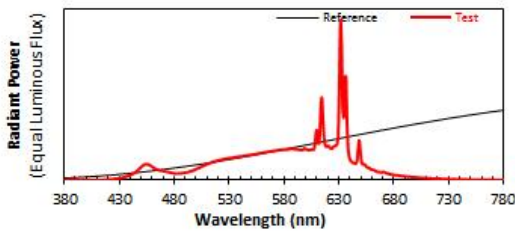
**ANSI/IES TM-30-18 Color Rendition Report**

Source: L128-xx90RC35xxxxx

Manufacturer: RAB Lighting INC.

Date: 2024-08-16

Model: ALR-24SB(mode:2700K)



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

$x$  0.4571  
 $y$  0.4144  
 $u'$  0.2590  
 $v'$  0.5284

CIE 13.3-1995  
(CRI)  
 $R_a$  95  
 $R_g$  70

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-24SB(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-F1	120.0	60	0.2115	23.33	0.9192	41.90

**Chromaticity Measurement - Sphere-Spectroradiometer**

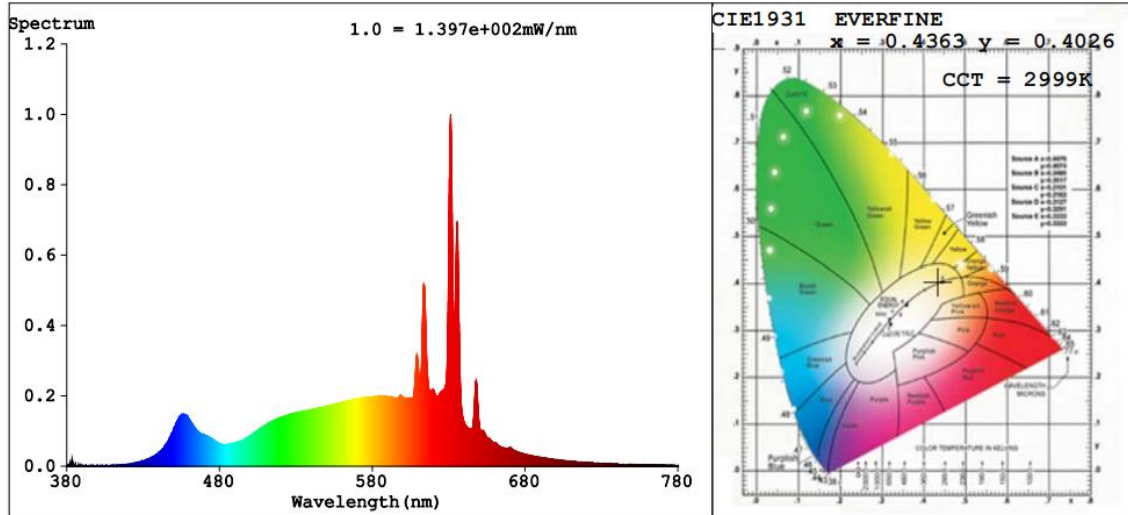
**Method(Self-absorption:1.1557) (4π geometry):**

Parameter	Result	Parameter	Result
Test Voltage (V)	120	Color Rendering Index (CRI)	96.2
Frequency (Hz)	60	R9	78
CCT (K)	2999	Rg	101
Duv	-0.0005	Rf	92
Chromaticity (x, y)	x=0.4363 y=0.4026	Rcs,h1(%)	-4
Chromaticity (u', v')	u'=0.2508 v'=0.5207		

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

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
Total Luminous (lm)	1799
Luminous Efficacy (lm/W)	77.11

**Spectral Power Distribution & Chromaticity Diagram**



**Special Color Rendering Indices**

R1 =99	R2 =98	R3 =95	R4 =98	R5 =97	R6 =96	R7 =95	
R8 =91	R9 =78	R10=93	R11=98	R12=80	R13=99	R14=95	R15=96

**TM30**

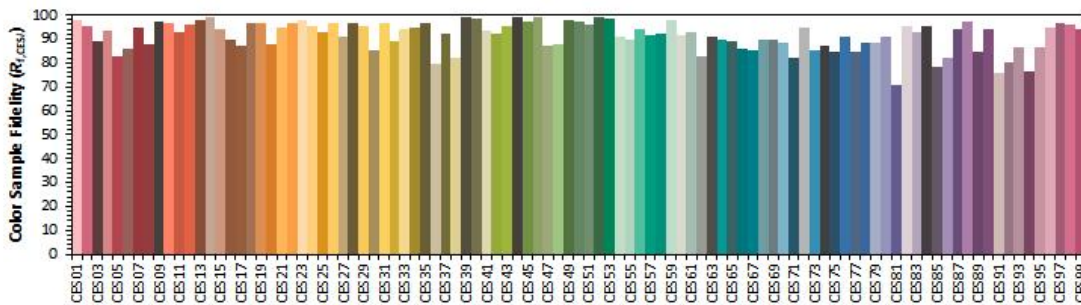
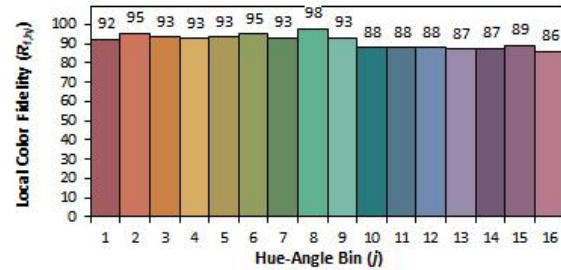
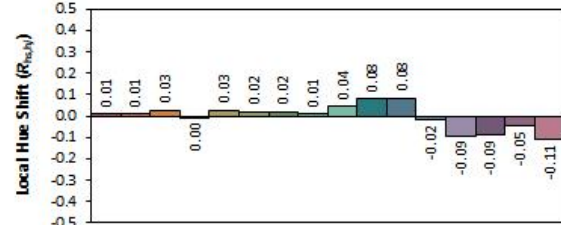
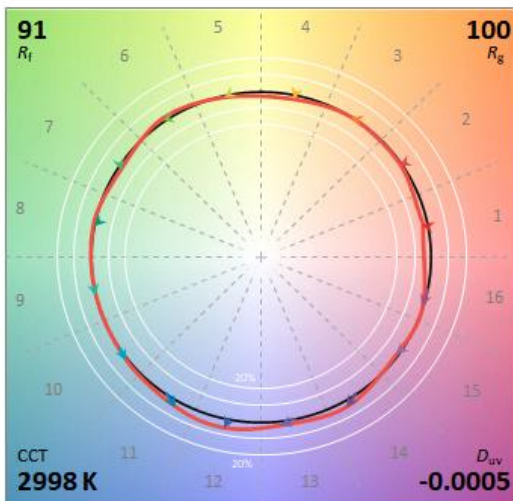
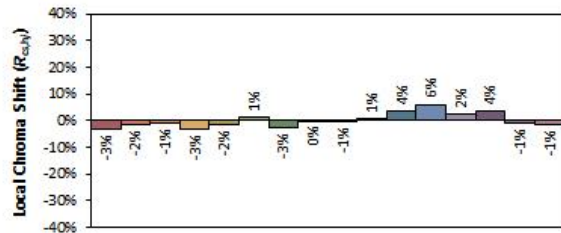
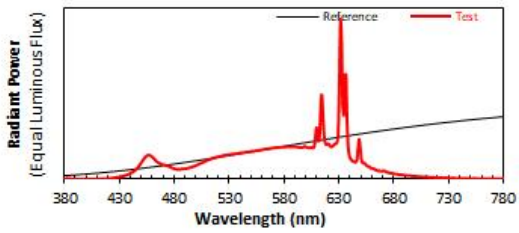
**ANSI/IES TM-30-18 Color Rendition Report**

Source: L128-xx90RC35xxxxx

Manufacturer: RAB Lighting INC.

Date: 2024-08-16

Model: ALR-24SB(mode:3000K)



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

$x$  0.4363  
 $y$  0.4025  
 $u'$  0.2508  
 $v'$  0.5207

CIE 13.3-1995 (CRI)	
$R_a$	96
$R_g$	78

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-24SB(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-F1	120.0	60	0.2115	23.39	0.9214	41.86

**Chromaticity Measurement - Sphere-Spectroradiometer**

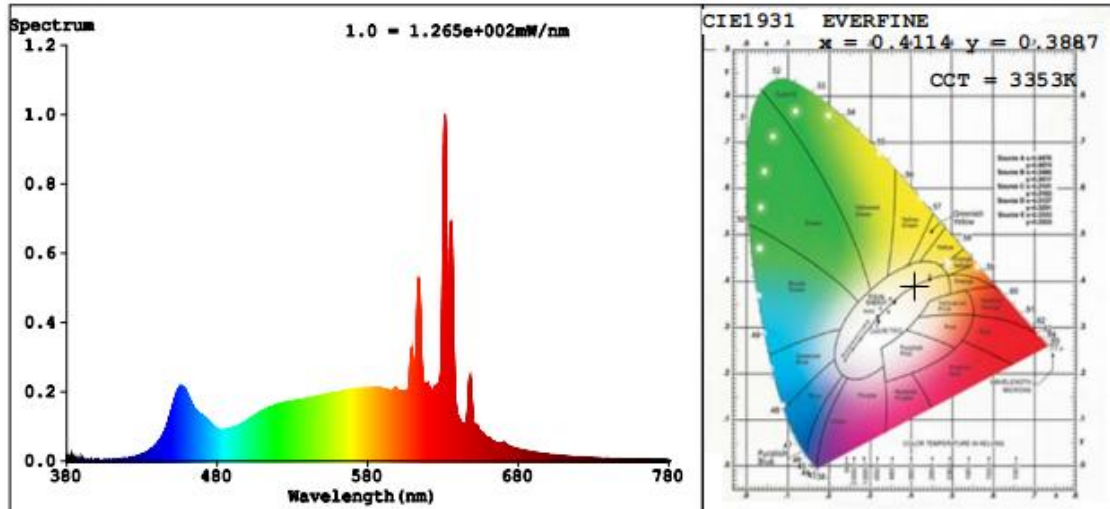
**Method(Self-absorption:1.1556) (4π geometry):**

Parameter	Result	Parameter	Result
Test Voltage (V)	120	Color Rendering Index (CRI)	96.7
Frequency (Hz)	60	R9	87
CCT (K)	3353	Rg	101
Duv	-0.0022	Rf	92
Chromaticity (x, y)	x=0.4114 y=0.3887	Rcs,h1(%)	-3
Chromaticity (u', v')	u'=0.2405v'=0.5113		

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

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
Total Luminous (lm)	1777
Luminous Efficacy (lm/W)	75.95

**Spectral Power Distribution & Chromaticity Diagram**



**Special Color Rendering Indices**

R1 =98	R2 =98	R3 =98	R4 =99	R5 =98	R6 =94	R7 =95		
R8 =94	R9 =87	R10=99	R11=98	R12=79	R13=98	R14=97	R15=98	

**TM30**

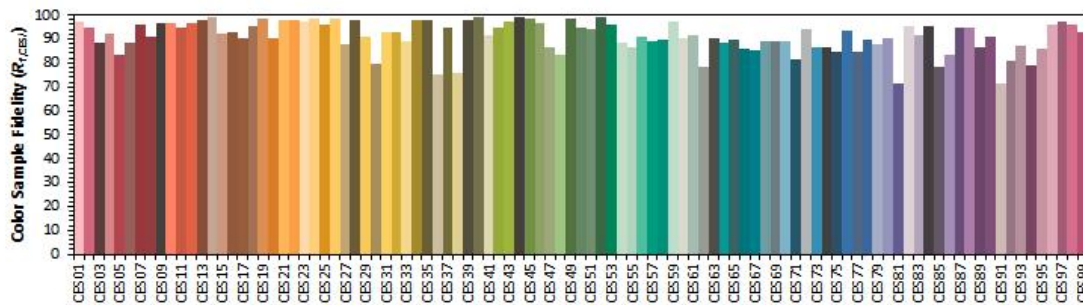
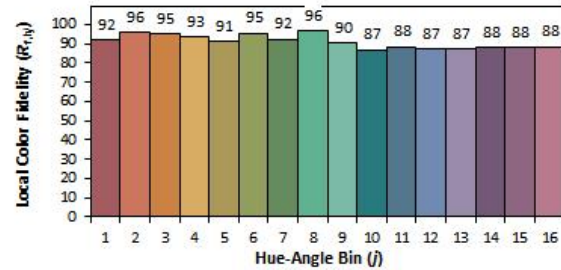
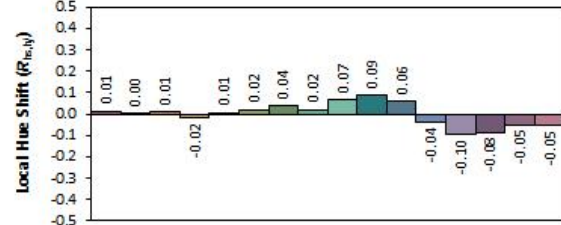
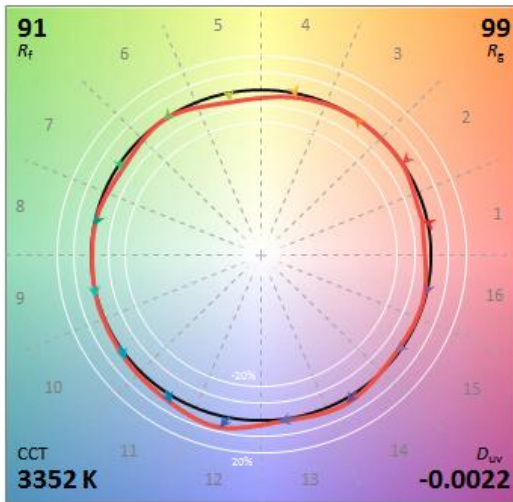
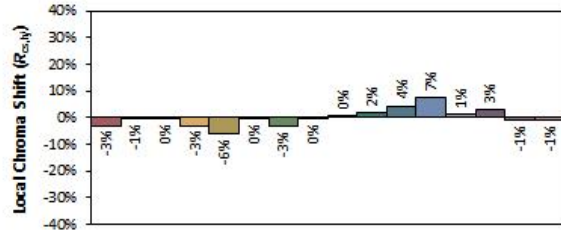
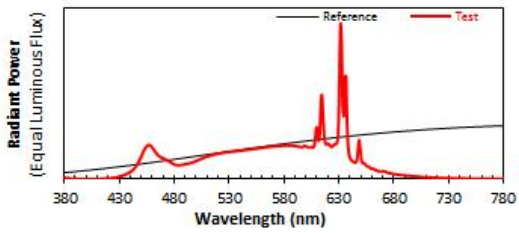
**ANSI/IES TM-30-18 Color Rendition Report**

Source: L128-xx90RC35xxxxx

Manufacturer: RAB Lighting INC.

Date: 2024-08-16

Model: ALR-24SB(mode:3500K)



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

$x$  0.4114  
 $y$  0.3886  
 $u'$  0.2406  
 $v'$  0.5113

CIE 13.3-1995 (CRI)	
$R_a$	97
$R_g$	87

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

**2.6 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-24SB(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-F1	120.0	60	0.2132	22.84	0.9230	40.11

**Chromaticity Measurement - Sphere-Spectroradiometer**

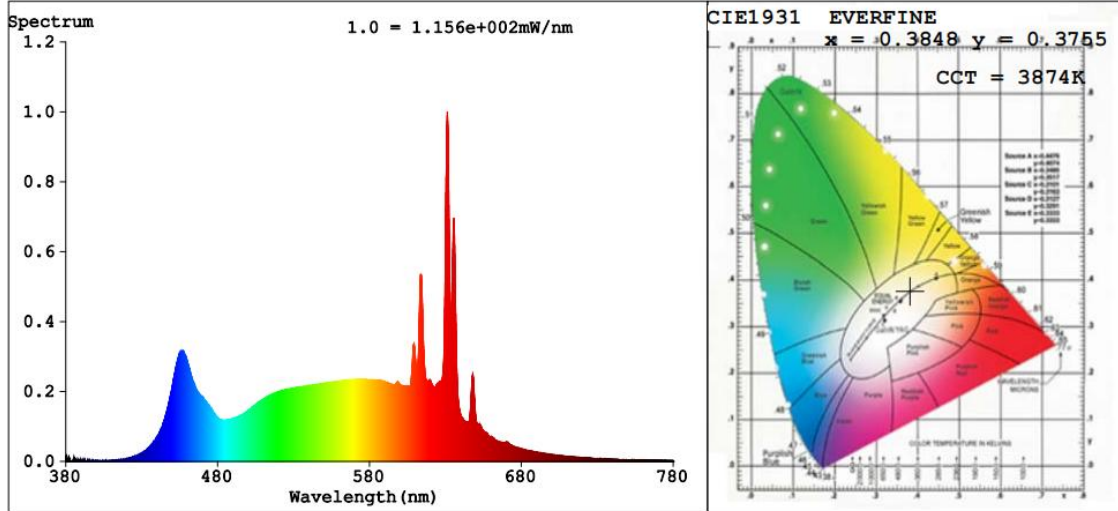
**Method(Self-absorption:1.1556) (4π geometry):**

Parameter	Result	Parameter	Result
Test Voltage (V)	120	Color Rendering Index (CRI)	94.6
Frequency (Hz)	60	R9	90
CCT (K)	3874	Rg	100
Duv	-0.0018	Rf	91
Chromaticity (x, y)	x=0.3848 y=0.3755	Rcs,h1(%)	-3
Chromaticity (u', v')	u'=0.2285 v'=0.5017		

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

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
Total Luminous (lm)	1860
Luminous Efficacy (lm/W)	81.44

**Spectral Power Distribution & Chromaticity Diagram**



**Special Color Rendering Indices**

R1 =98	R2 =99	R3 =97	R4 =97	R5 =96	R6 =95	R7 =95		
R8 =94	R9 =90	R10=98	R11=99	R12=74	R13=98	R14=97	R15=97	

**TM30**

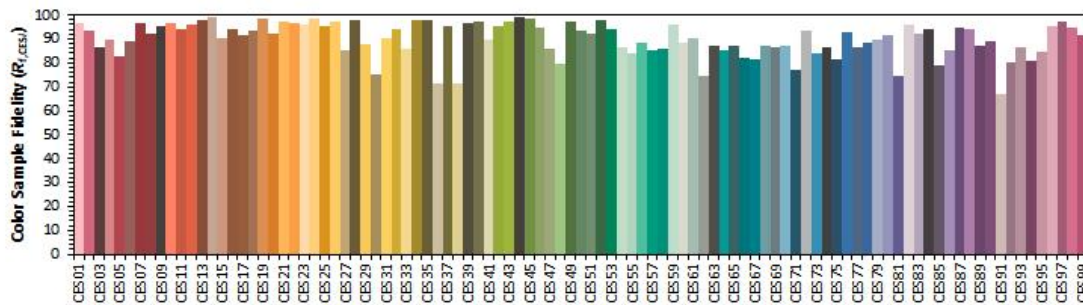
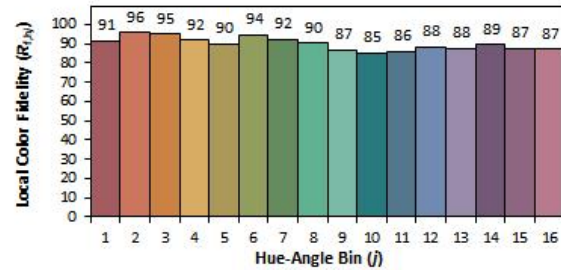
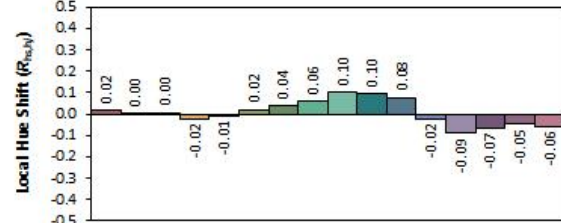
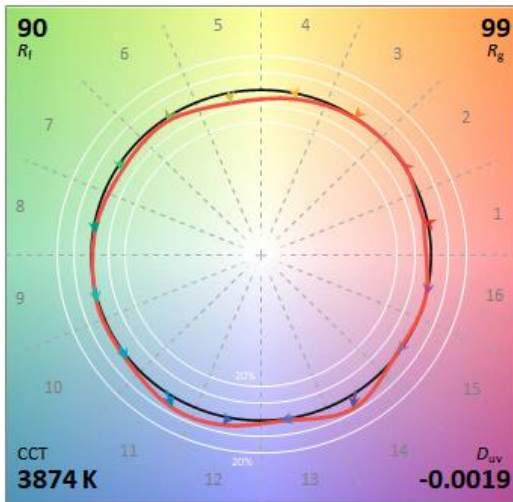
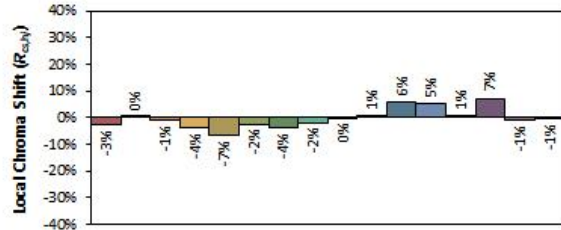
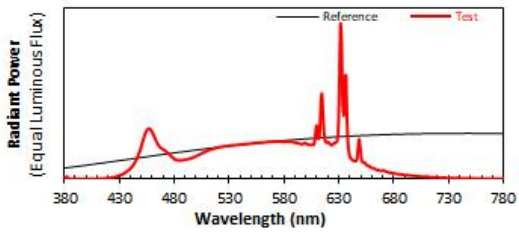
**ANSI/IES TM-30-18 Color Rendition Report**

Source: L128-xx90RC35xxxxx

Manufacturer: RAB Lighting INC.

Date: 2024-08-16

Model: ALR-24SB(mode:4000K)



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

$x$  0.3847  
 $y$  0.3754  
 $u'$  0.2285  
 $v'$  0.5016

CIE 13.3-1995 (CRI)	
$R_a$	96
$R_g$	91

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

**2.7 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-24SB(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-F1	120.0	60	0.2132	23.51	0.9189	41.86

**Chromaticity Measurement - Sphere-Spectroradiometer**

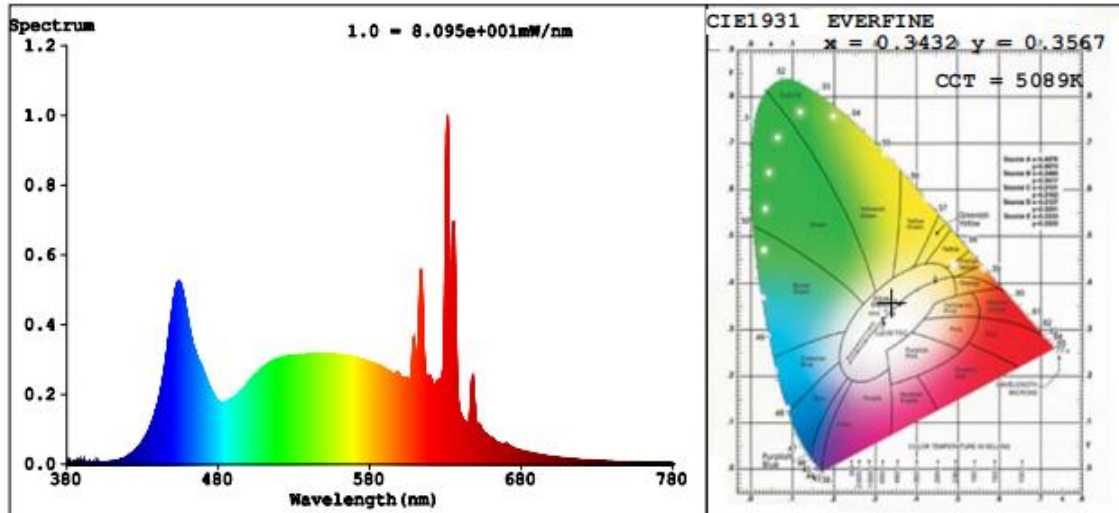
**Method(Self-absorption:1.1557) (4π geometry):**

Parameter	Result	Parameter	Result
Test Voltage (V)	120	Color Rendering Index (CRI)	94.6
Frequency (Hz)	60	R9	78
CCT (K)	5089	Rg	99
Duv	0.0033	Rf	92
Chromaticity (x, y)	x=0.3432 y=0.3567	Rcs,h1(%)	-4
Chromaticity (u', v')	u'=0.2082v'=0.4869		

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

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
Total Luminous (lm)	1714
Luminous Efficacy (lm/W)	72.90

**Spectral Power Distribution & Chromaticity Diagram**



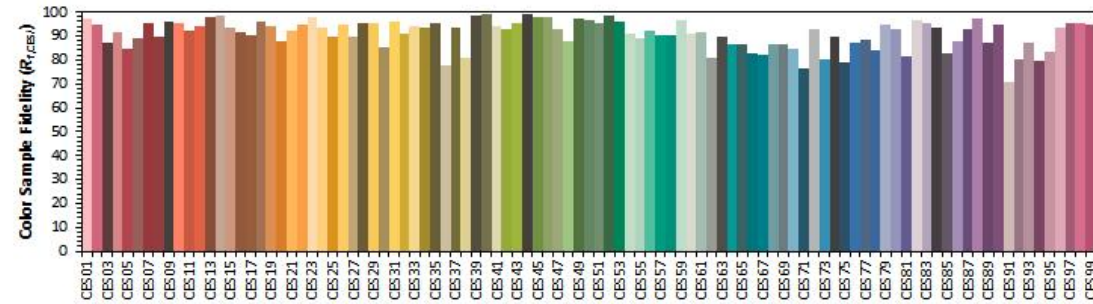
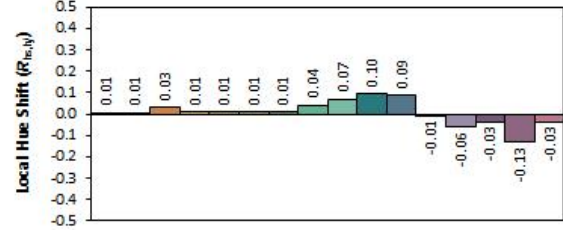
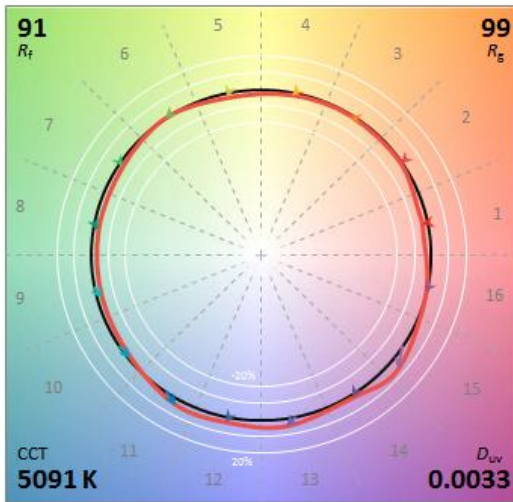
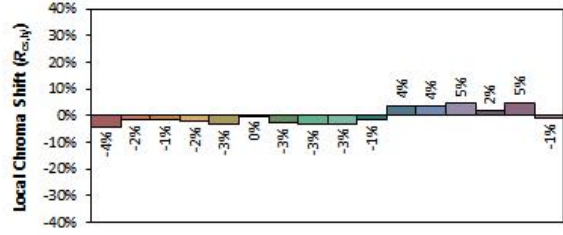
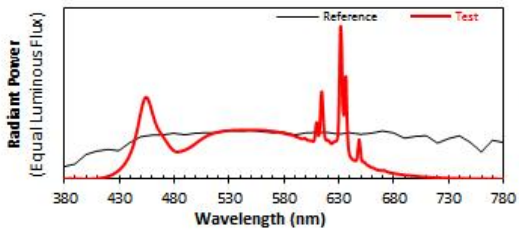
**Special Color Rendering Indices**

R1 =96	R2 =96	R3 =94	R4 =95	R5 =94	R6 =93	R7 =96	
R8 =92	R9 =78	R10=89	R11=95	R12=71	R13=96	R14=96	R15=94

**TM30**

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

Source: L128-xx90RC35xxxxx      Manufacturer: RAB Lighting INC.  
Date: 2024-08-16      Model: ALR-24SB(mode:5000K)



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

$x$     **0.3431**  
 $y$     **0.3566**  
 $u'$    **0.2082**  
 $v'$    **0.4868**

CIE 13.3-1995  
(CRI)  
 $R_a$     95  
 $R_g$     78

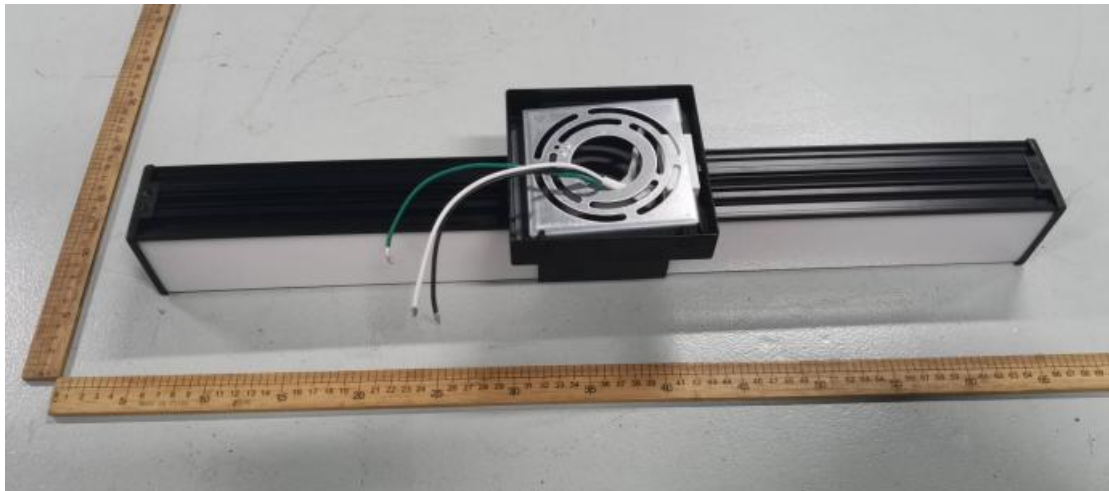
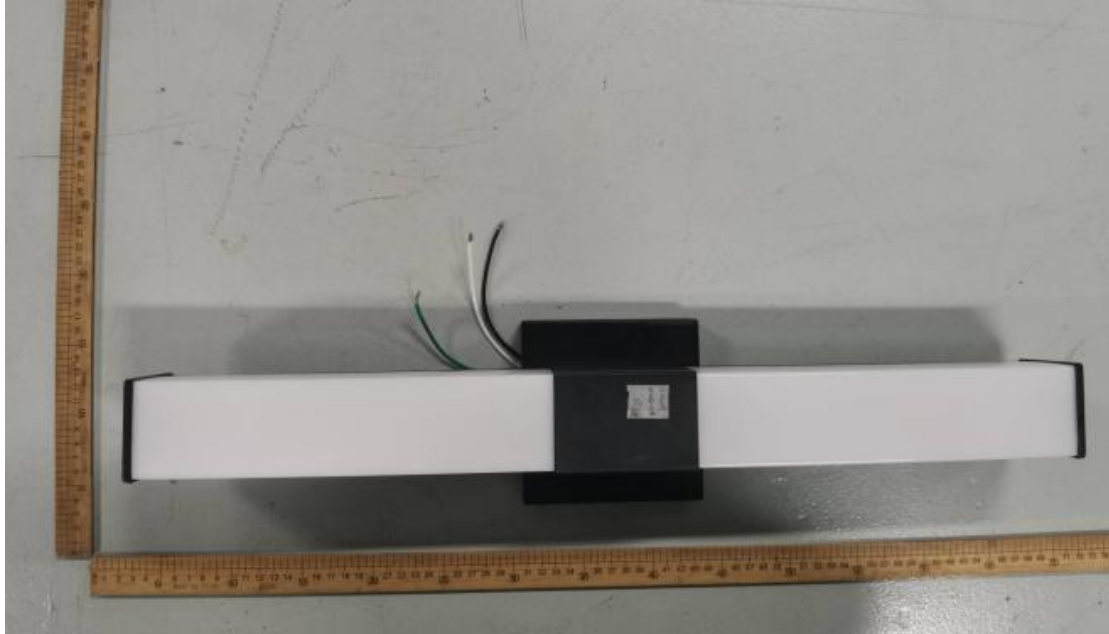
Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.



### 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 \*\*\*\*\***