

**LM-79-08 Test Report**  
For  
**RAB LIGHTING INC**

**(Brand Name: N/A)**

170 Ludlow Ave, PO BOX 970, Northvale, NJ 07647-2305 USA

**Model name(s):**  
**C6R189SSUNVW/LC**

**Report Type:** Testing and Report According to IES LM-79-2008

**Type of  
Luminaire:** Downlights

**Report Date:** 2021-02-04

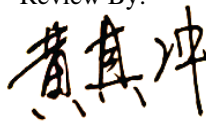
**Prepared By:**

Test & Report By:



Engineer: Sun Fangfang

Review By:



Manager: Huang Qichong

<b>1.1 Rated Values:</b>	
Rated Voltage / Frequency	120Vac, 60 Hz
Nominal Power	18.0W
Rated Initial Lamp Lumen	1300 lm
Declared CCT	2700K/3000K/3500K/4000K/5000K/5700K /6500K

### 1.2 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-79-2008 Electrical and Photometric 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

### 1.3 Test Methods

<p><b>1) Photometric and Light Distribution Measurement – Goniophotometer Method:</b> Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at 25°C ±1°C, measured at a point not more than 1 m from the sample and at the same height as the sample. 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.</p>
<p><b>2) Chromaticity Measurement – Sphere-Spectroradiometer Method:</b> Chromaticity parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25°C ±1°C. 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.</p>
<p><b>3) Electrical Measurements:</b> 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°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.</p>

## 2.1.1 Electrical, Photometric and Chromaticity Measurements

<b>Test date</b>	2021-02-04	<b>Test Ambient:</b>	25.3 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	C6R189SSUNVW/LC	2700K	

### Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz )	Current (A)	Power (W)	Power Factor
202102040002	120.0	60	0.144	17.20	0.995

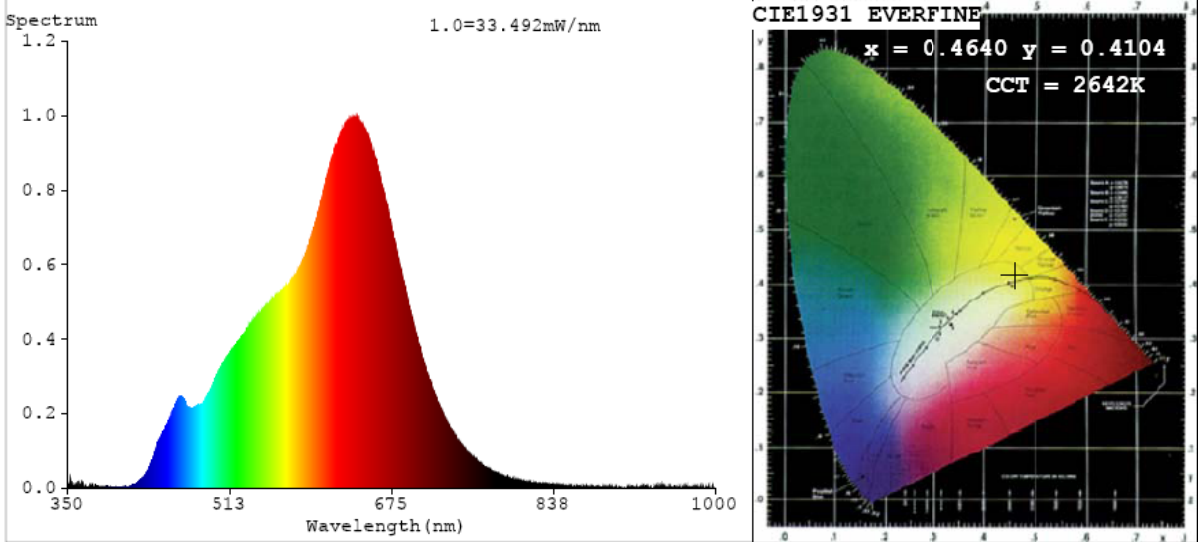
### Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	95	R9	98
Frequency (Hz)	60	R2	97	R10	94
CCT (K)	2642	R3	99	R11	91
Duv	0.0004	R4	95	R12	89
Chromaticity (x, y)	x=0.4640 y=0.4104	R5	95	R13	95
Chromaticity (u', v')	u'=0.2652 v'=0.5279	R6	93	R14	98
Color Rendering Index (CRI)	96.1	R7	98	R15	97
R9	98	R8	98	--	--

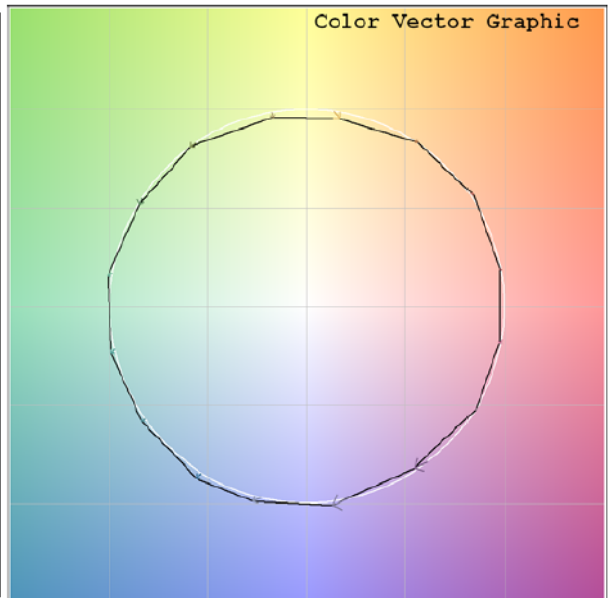
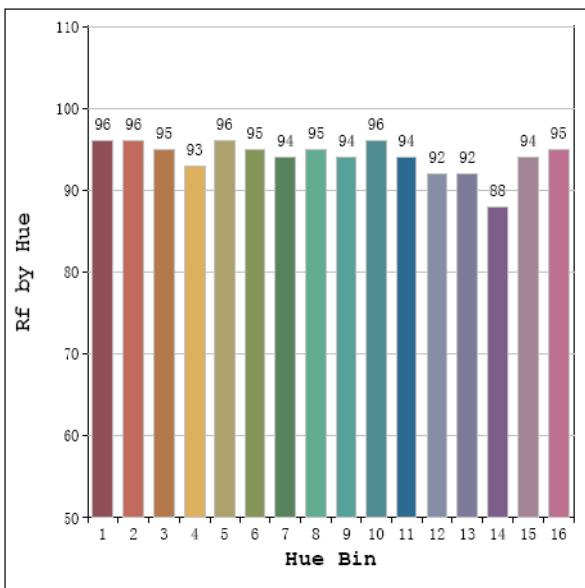
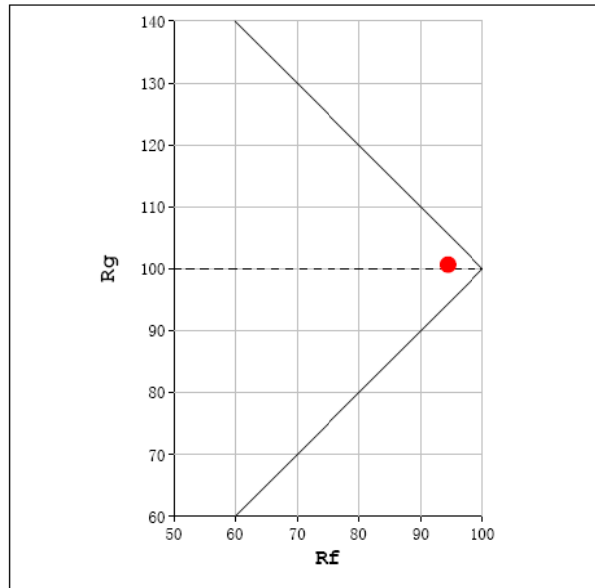
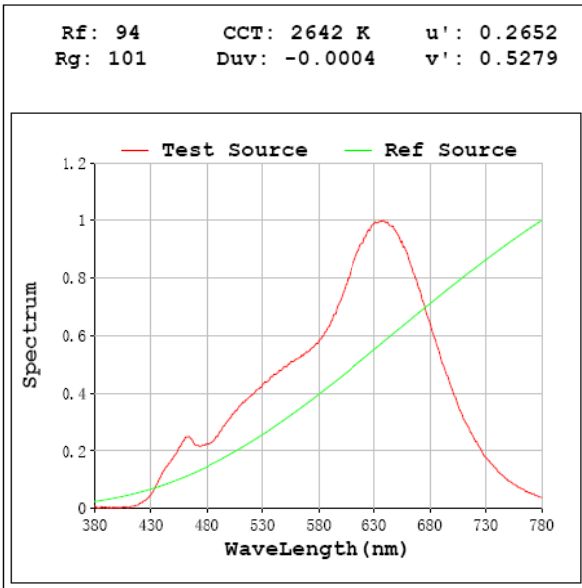
### Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1342.5
Luminous Efficacy (lm/W)	78.05
Beam Angle (°)	86.9
Center Beam Candle Power (cd)	673.1

# Spectral Power Distribution & Chromaticity Diagram



## T30

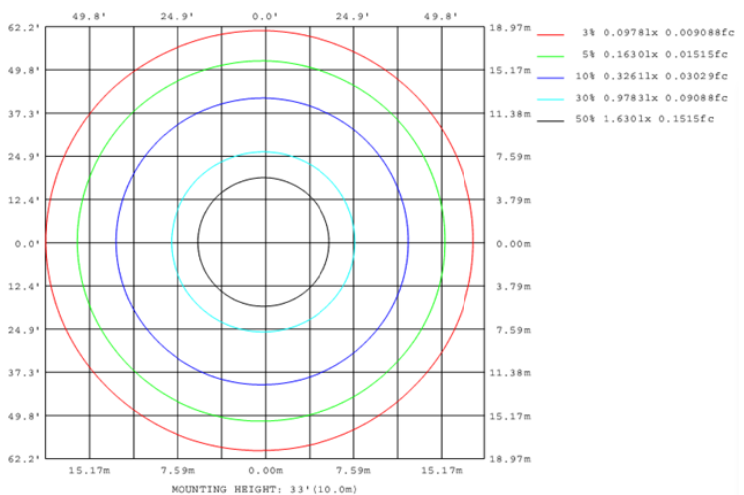
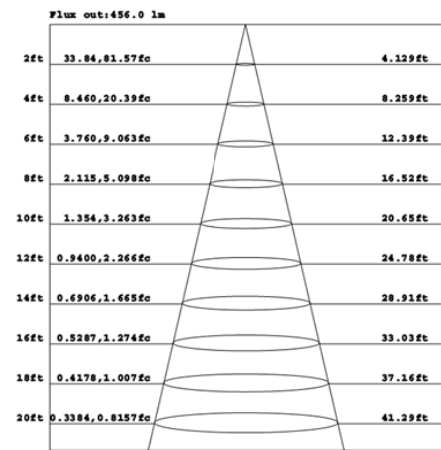
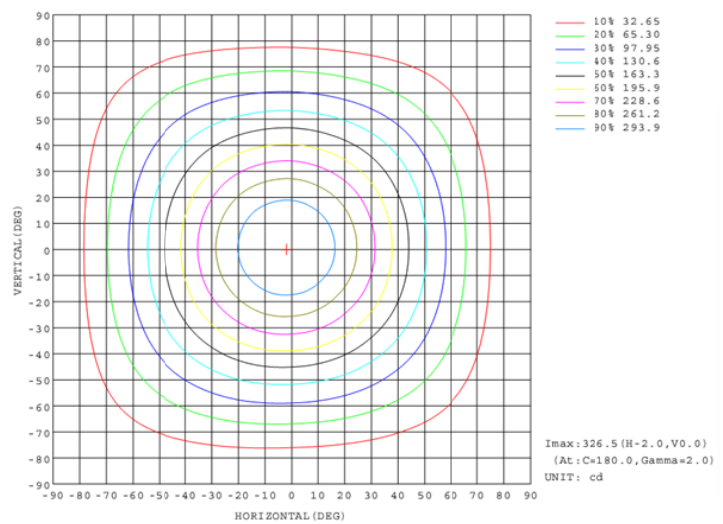
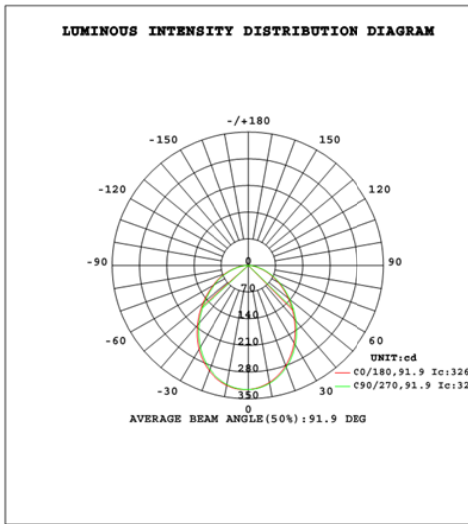


# Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	489.6	36.5%
0-40	766.9	57.1%
0-60	1183.8	88.2%
60-90	158.7	11.8%
70-100	61.1	4.6%
90-120	0.0	0.0%
0-90	1342.5	100.0%
90-180	0.0	0.0%
0-180	1342.5	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	63.2	4.7%	90-100	0.0	0.0%
10-20	175.5	13.1%	100-110	0.0	0.0%
20-30	250.9	18.7%	110-120	0.0	0.0%
30-40	277.3	20.7%	120-130	0.0	0.0%
40-50	243.4	18.1%	130-140	0.0	0.0%
50-60	173.5	12.9%	140-150	0.0	0.0%
60-70	97.6	7.3%	150-160	0.0	0.0%
70-80	42.5	3.2%	160-170	0.0	0.0%
80-90	18.6	1.4%	170-180	0.0	0.0%

## Photometric Data



Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.



**2.1.2 Electrical, Photometric and Chromaticity Measurements**

<b>Test date</b>	2021-02-04	<b>Test Ambient:</b>	25.3 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	C6R189SSUNVW/LC	3000K	

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202102040002	120.0	60	0.144	17.20	0.995

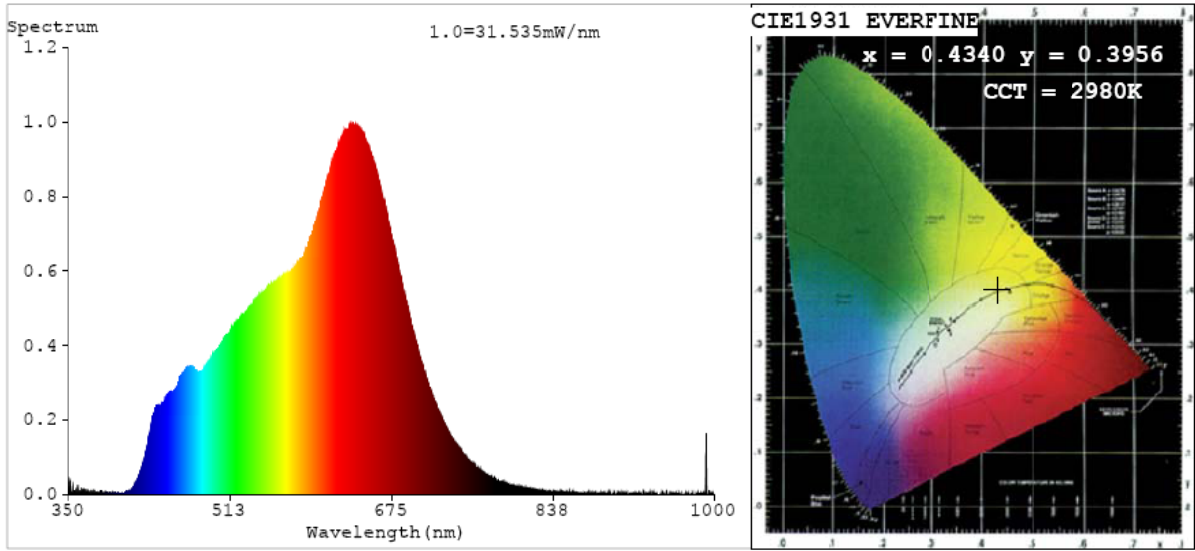
**Chromaticity Measurement - Sphere-Spectroradiometer Method:**

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	93	R9	89
Frequency (Hz)	60	R2	95	R10	90
CCT (K)	2980	R3	99	R11	90
Duv	0.0030	R4	94	R12	87
Chromaticity (x, y)	x=0.4340 y=0.3956	R5	92	R13	93
Chromaticity (u', v')	u'=0.2523 v'=0.5176	R6	91	R14	99
Color Rendering Index (CRI)	94.7	R7	98	R15	94
R9	89	R8	96	--	--

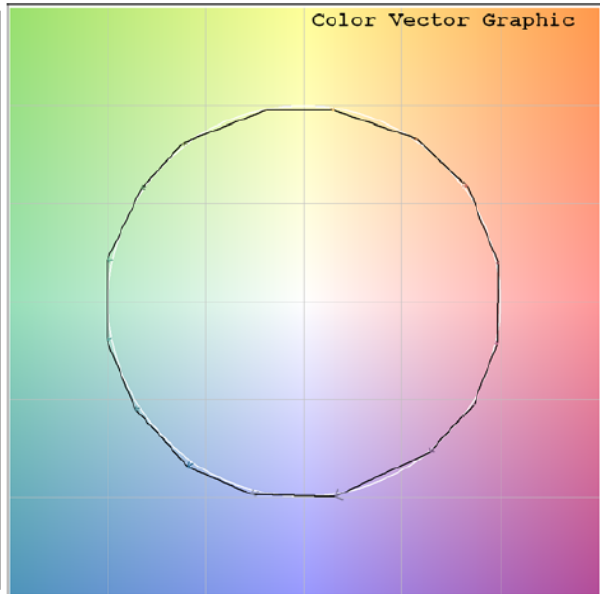
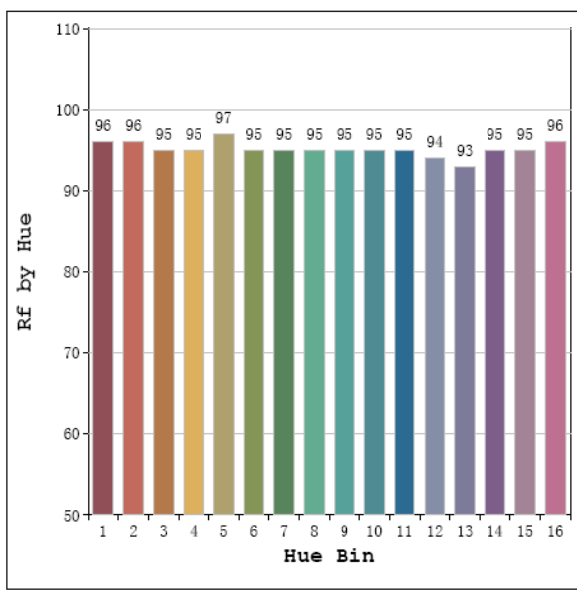
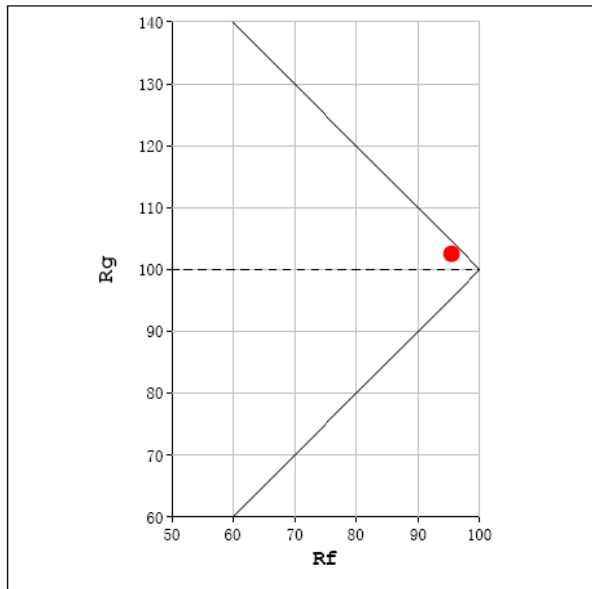
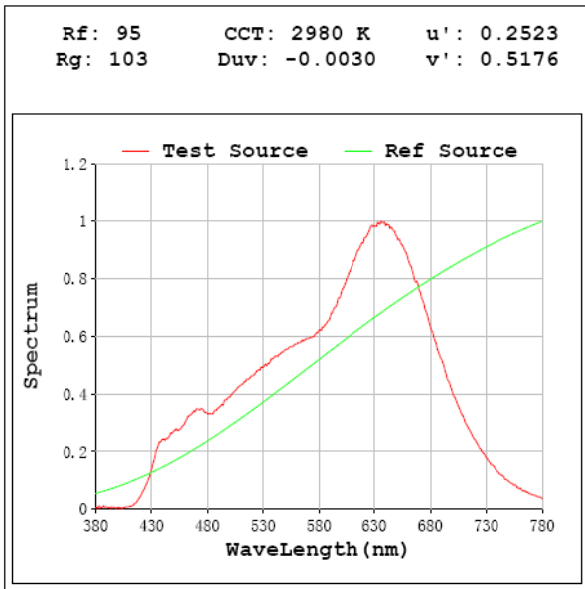
**Photometric Measurement – Goniophotometer Method:**

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1370.3
Luminous Efficacy (lm/W)	79.67
Beam Angle (°)	87.0
Center Beam Candle Power (cd)	686.6

# Spectral Power Distribution & Chromaticity Diagram



## T30



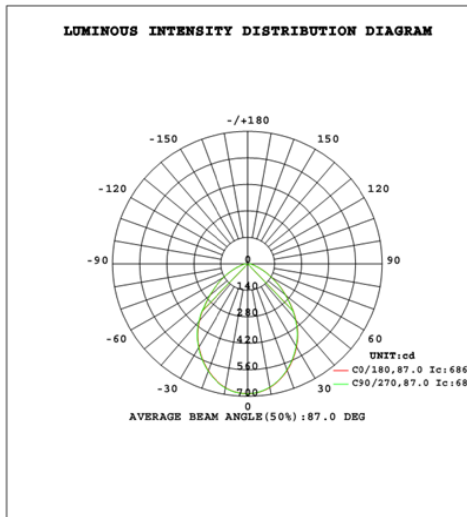


# Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	499.4	36.4%
0-40	782.3	57.1%
0-60	1208.3	88.2%
60-90	162.1	11.8%
70-100	62.4	4.6%
90-120	0.0	0.0%
0-90	1370.3	100.0%
90-180	0.0	0.0%
0-180	1370.3	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	64.5	4.7%	90-100	0.0	0.0%
10-20	179.0	13.1%	100-110	0.0	0.0%
20-30	255.9	18.7%	110-120	0.0	0.0%
30-40	282.9	20.6%	120-130	0.0	0.0%
40-50	248.7	18.1%	130-140	0.0	0.0%
50-60	177.3	12.9%	140-150	0.0	0.0%
60-70	99.7	7.3%	150-160	0.0	0.0%
70-80	43.4	3.2%	160-170	0.0	0.0%
80-90	19.0	1.4%	170-180	0.0	0.0%

## Photometric Data





### 2.1.3 Electrical, Photometric and Chromaticity Measurements

Test date	2021-02-04	Test Ambient:	25.3 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	C6R189SSUNVW/LC	3500K	

#### Electrical Measurement:

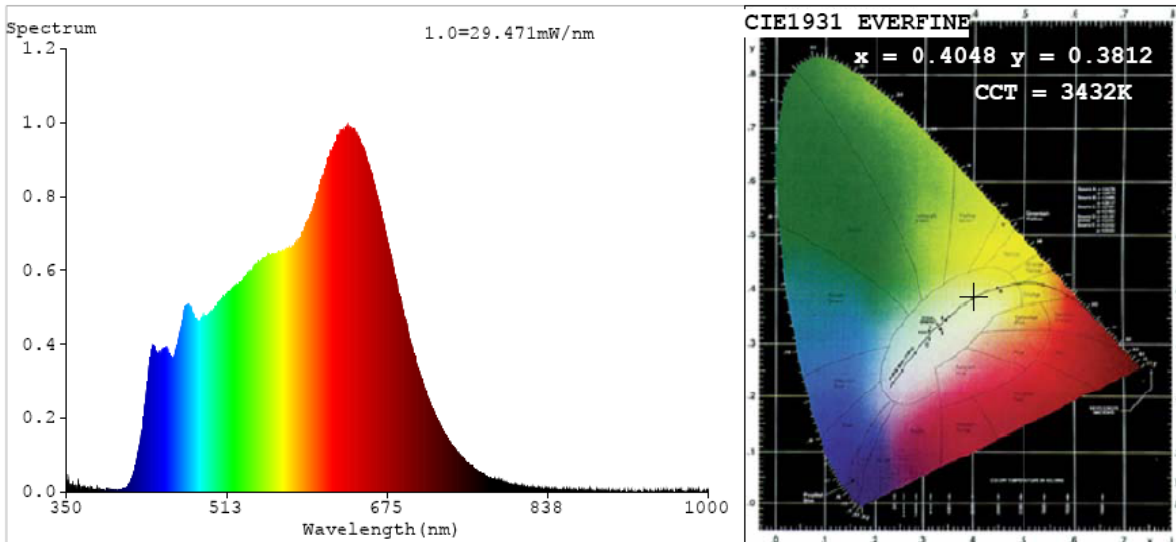
Sample No.	Voltage (Vac)	Frequency (Hz )	Current (A)	Power (W)	Power Factor
202102040002	120.0	60	0.144	17.13	0.994

#### Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	3432
Duv	0.0041
Chromaticity (x, y)	x=0.4048 y=0.3812
Chromaticity (u', v')	u'=0.2393 v'=0.5072
Color Rendering Index (CRI)	93.9
R9	81
Total Luminous (lm)	1421.0
Luminous Efficacy (lm/W)	82.95

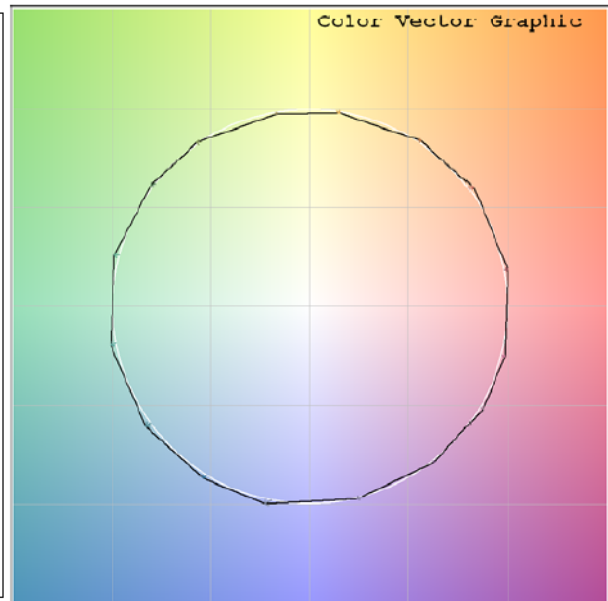
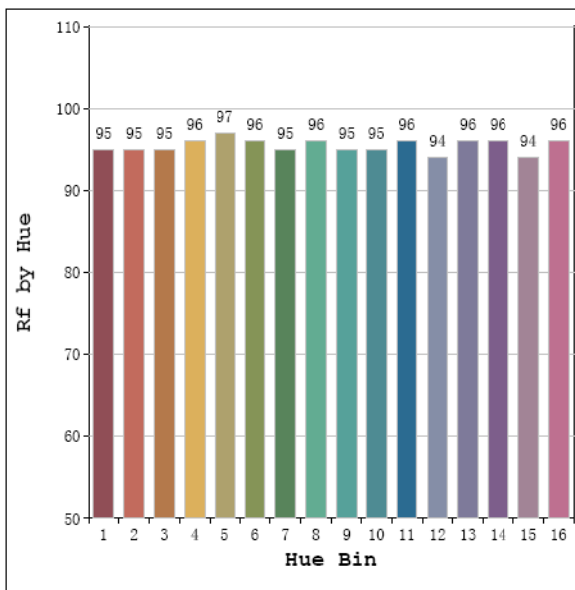
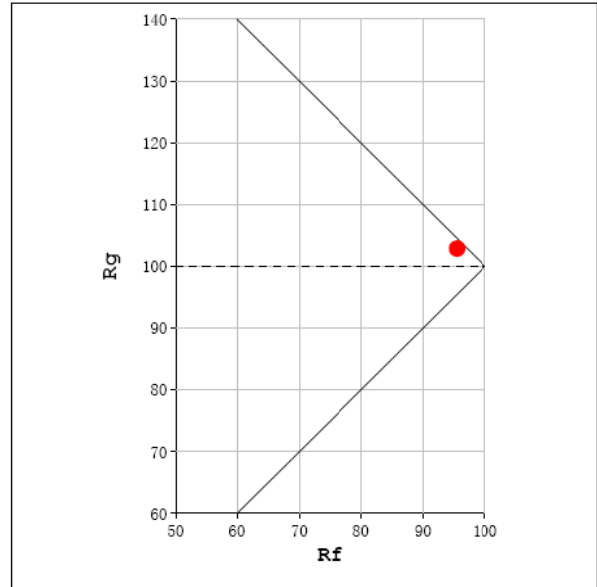
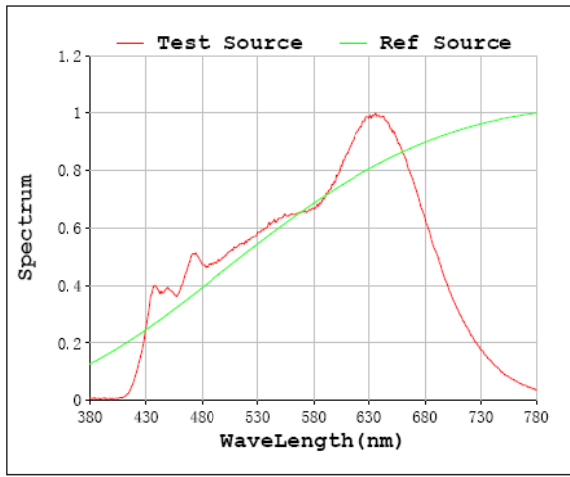
Special Color Rendering Indices			
R1	92	R9	81
R2	94	R10	88
R3	99	R11	94
R4	93	R12	86
R5	92	R13	92
R6	91	R14	99
R7	98	R15	91
R8	93	--	--

### Spectral Power Distribution & Chromaticity Diagram



# T30

Rf: 95      CCT: 3432 K      u': 0.2393  
 Rg: 103     Duv: -0.0041     v': 0.5072



## 2.1.4 Electrical, Photometric and Chromaticity Measurements

Test date	2021-02-04	Test Ambient:	25.3 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	C6R189SSUNVW/LC	4000K	

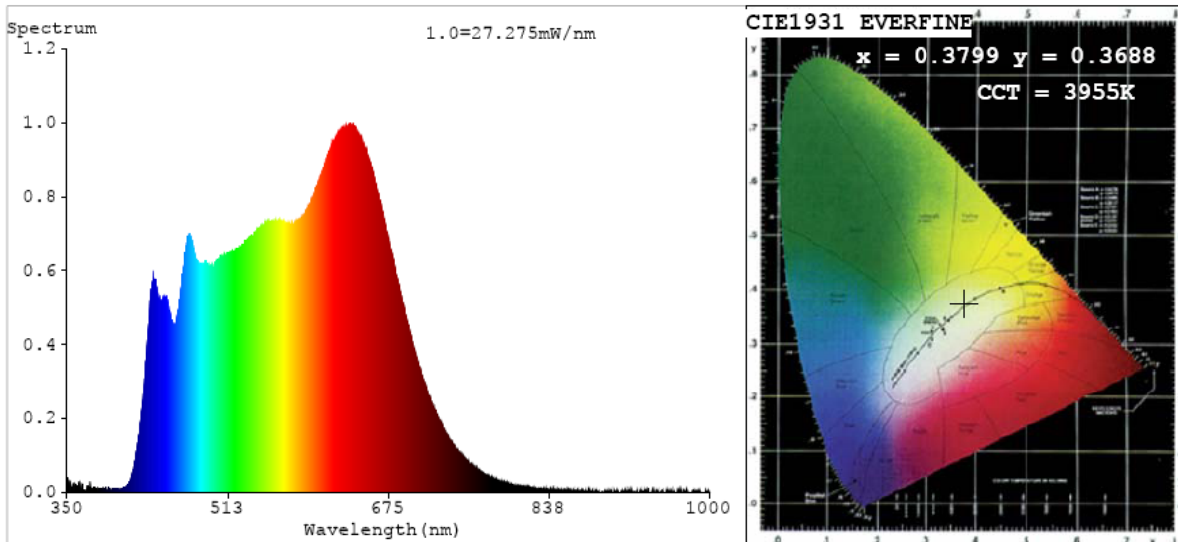
### Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202102040002	120.0	60	0.143	17.11	0.994

### Chromaticity Measurement - Sphere-Spectroradiometer Method:

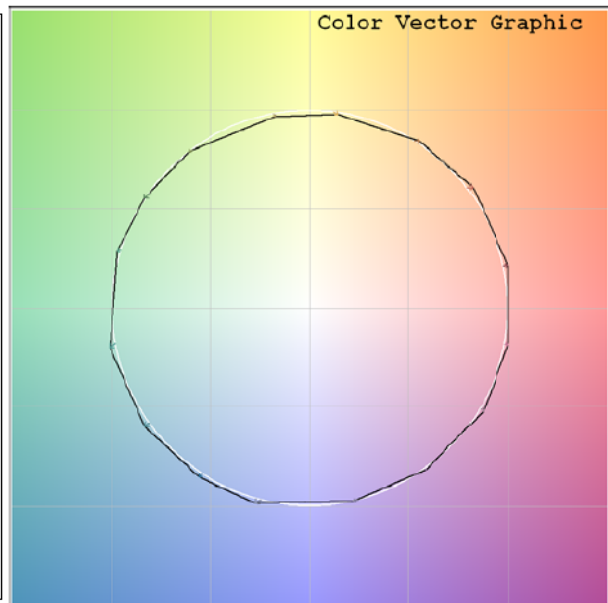
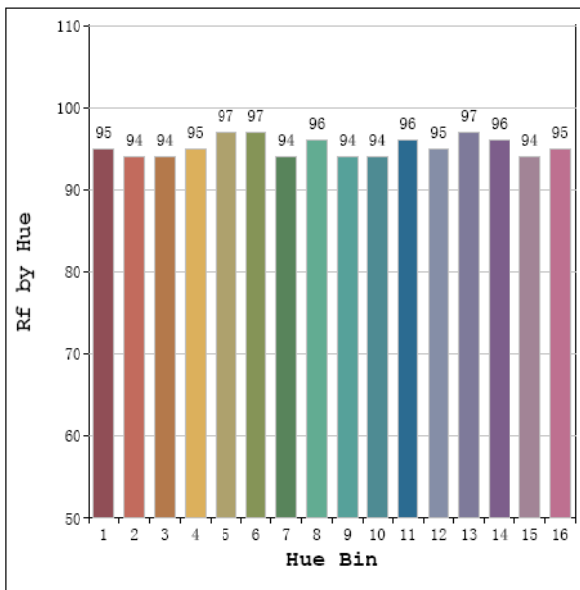
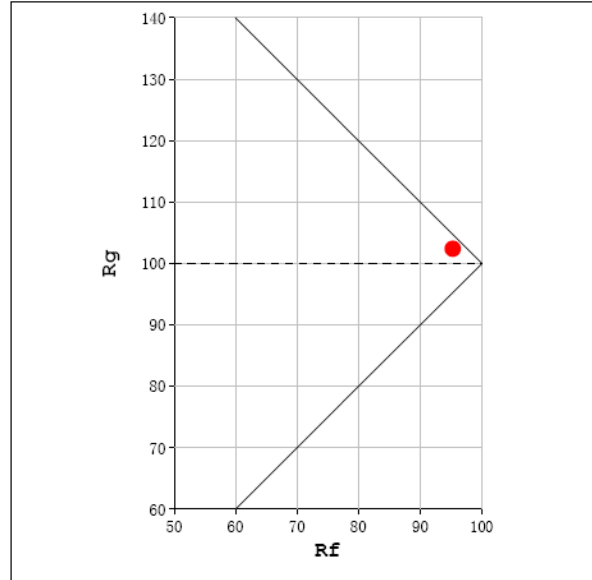
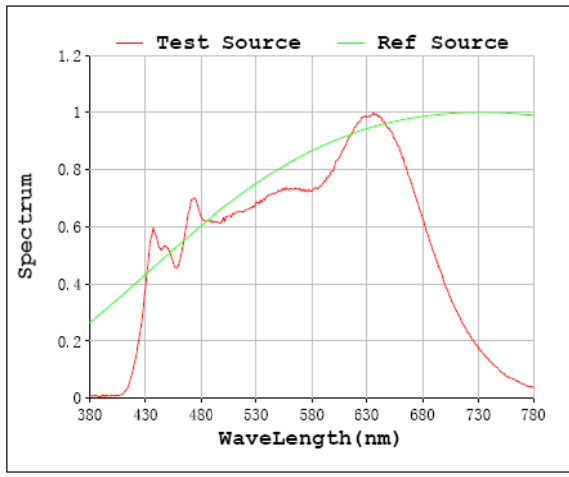
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	92	R9	78
Frequency (Hz)	60	R2	94	R10	88
CCT (K)	3955	R3	99	R11	92
Duv	0.0036	R4	94	R12	88
Chromaticity (x, y)	x=0.3799 y=0.3688	R5	92	R13	92
Chromaticity (u', v')	u'=0.2279 v'=0.4980	R6	92	R14	99
Color Rendering Index (CRI)	94.0	R7	97	R15	91
R9	78	R8	92	--	--
Total Luminous (lm)	1465.0				
Luminous Efficacy (lm/W)	85.63				

## Spectral Power Distribution & Chromaticity Diagram



# T30

Rf: 95 CCT: 3955 K u': 0.2279  
 Rg: 102 Duv: -0.0036 v': 0.4980



**2.1.5 Electrical, Photometric and Chromaticity Measurements**

<b>Test date</b>	2021-02-04	<b>Test Ambient:</b>	25.3 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	C6R189SSUNVW/LC	5000K	

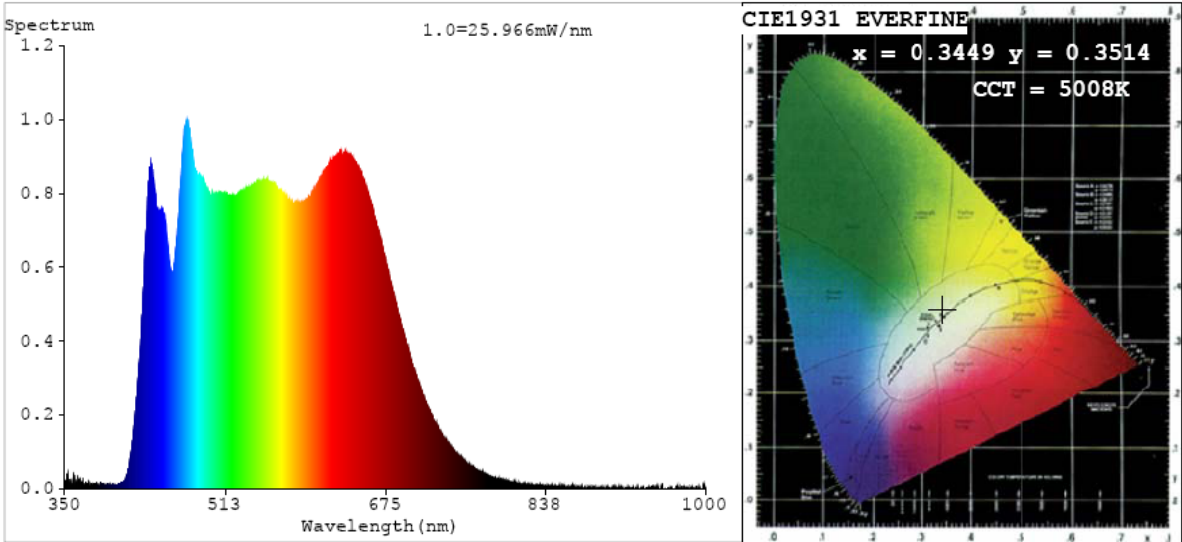
**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz )	Current (A)	Power (W)	Power Factor
202102040002	120.0	60	0.143	17.07	0.994

**Chromaticity Measurement - Sphere-Spectroradiometer Method:**

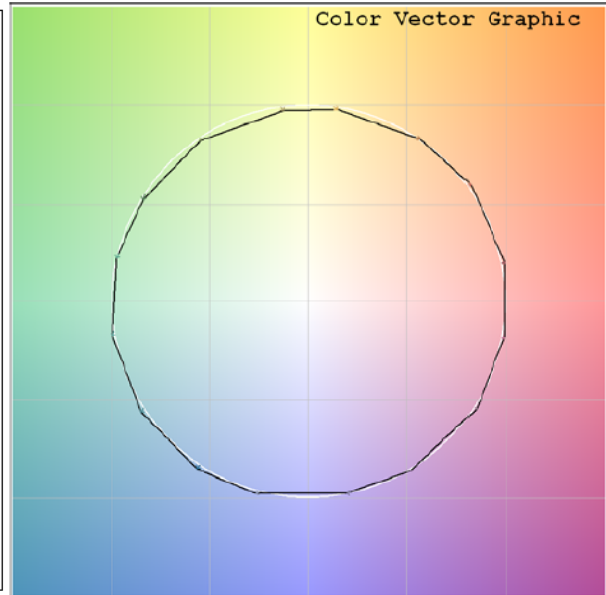
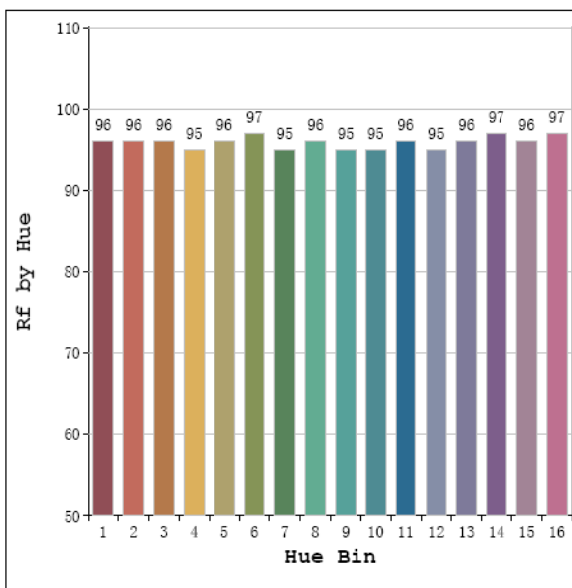
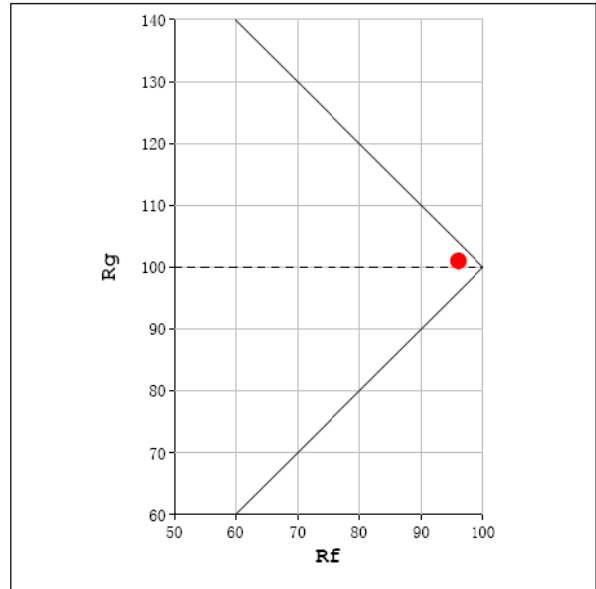
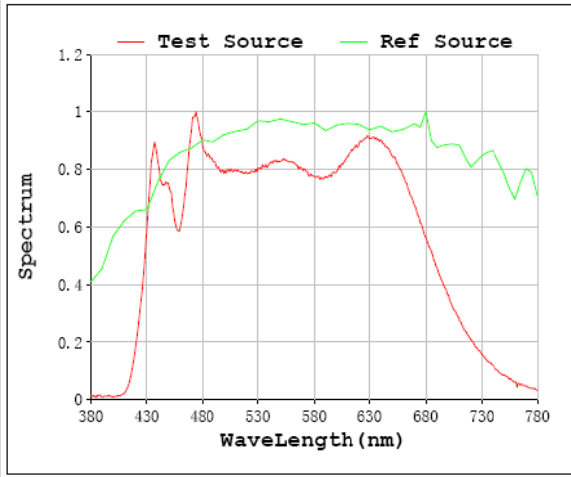
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	95	R9	84
Frequency (Hz)	60	R2	96	R10	92
CCT (K)	5008	R3	99	R11	95
Duv	0.0000	R4	96	R12	91
Chromaticity (x, y)	x=0.3449 y=0.3514	R5	95	R13	95
Chromaticity (u', v')	u'=0.2114 v'=0.4845	R6	94	R14	99
Color Rendering Index (CRI)	95.9	R7	98	R15	94
R9	84	R8	95	--	--
Total Luminous (lm)	1537.0				
Luminous Efficacy (lm/W)	90.00				

**Spectral Power Distribution & Chromaticity Diagram**



# T30

Rf: 96      CCT: 5008 K      u': 0.2114  
 Rg: 101      Duv: -0.0000      v': 0.4845





## 2.1.5 Electrical, Photometric and Chromaticity Measurements

<b>Test date</b>	2021-02-04	<b>Test Ambient:</b>	25.3 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	C6R189SSUNVW/LC	5700K	

### Electrical Measurement:

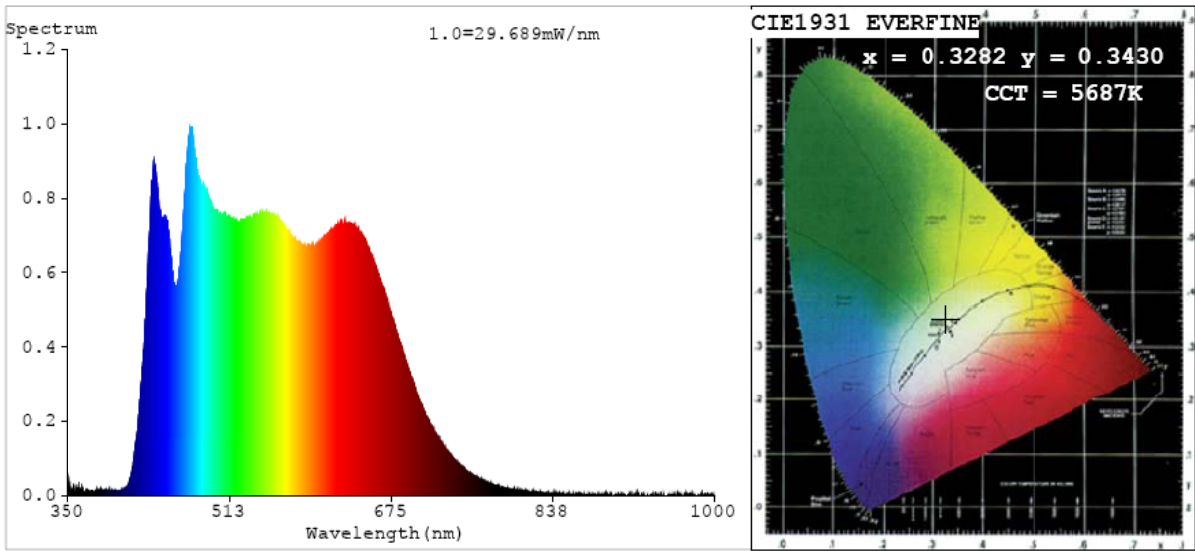
Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202102040002	120.0	60	0.143	17.05	0.994

### Chromaticity Measurement - Sphere-Spectroradiometer Method:

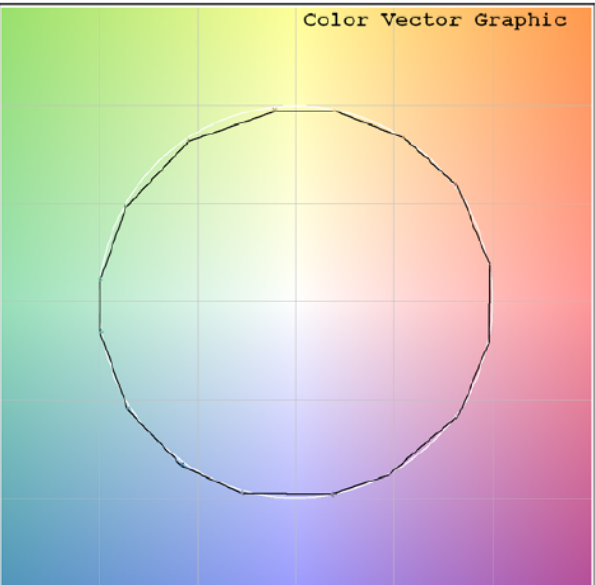
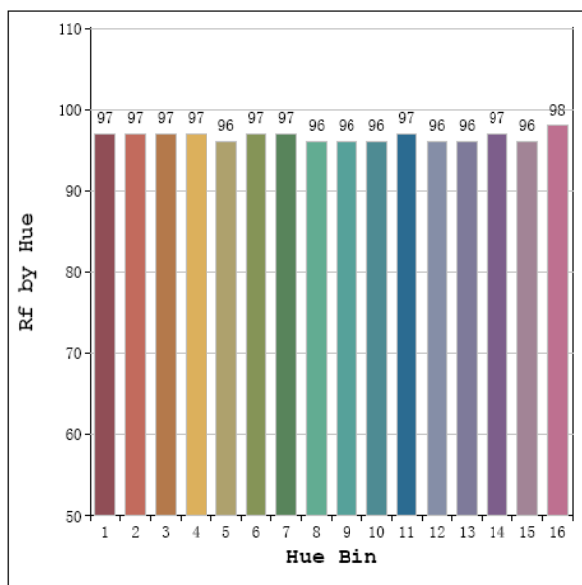
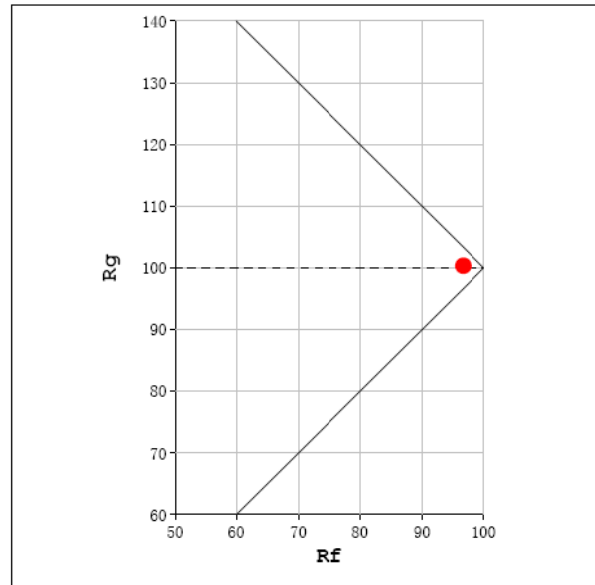
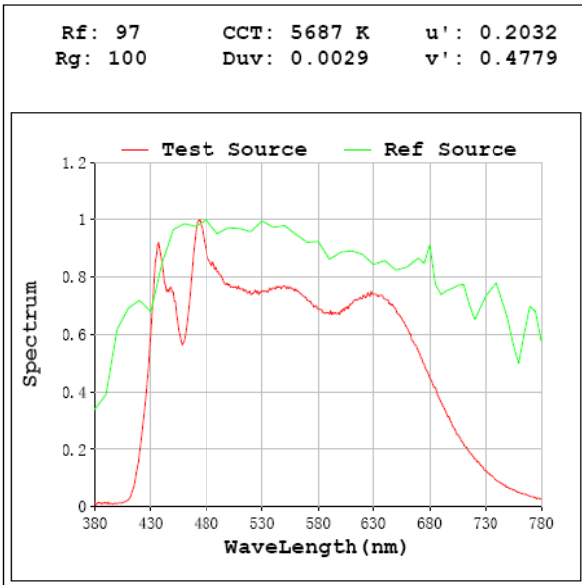
Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	5687
Duv	0.0029
Chromaticity (x, y)	x=0.3282 y=0.3430
Chromaticity (u', v')	u'=0.2032 v'=0.4779
Color Rendering Index (CRI)	97.1
R9	91
Total Luminous (lm)	1574.0
Luminous Efficacy (lm/W)	92.29

Special Color Rendering Indices			
R1	97	R9	91
R2	97	R10	94
R3	98	R11	98
R4	97	R12	95
R5	97	R13	97
R6	96	R14	99
R7	97	R15	97
R8	97	--	--

## Spectral Power Distribution & Chromaticity Diagram



# T30



## 2.1.5 Electrical, Photometric and Chromaticity Measurements

Test date	2021-02-04	Test Ambient:	25.3 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	C6R189SSUNVW/LC	6500K	

### Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202102040002	120.0	60	0.144	17.20	0.995

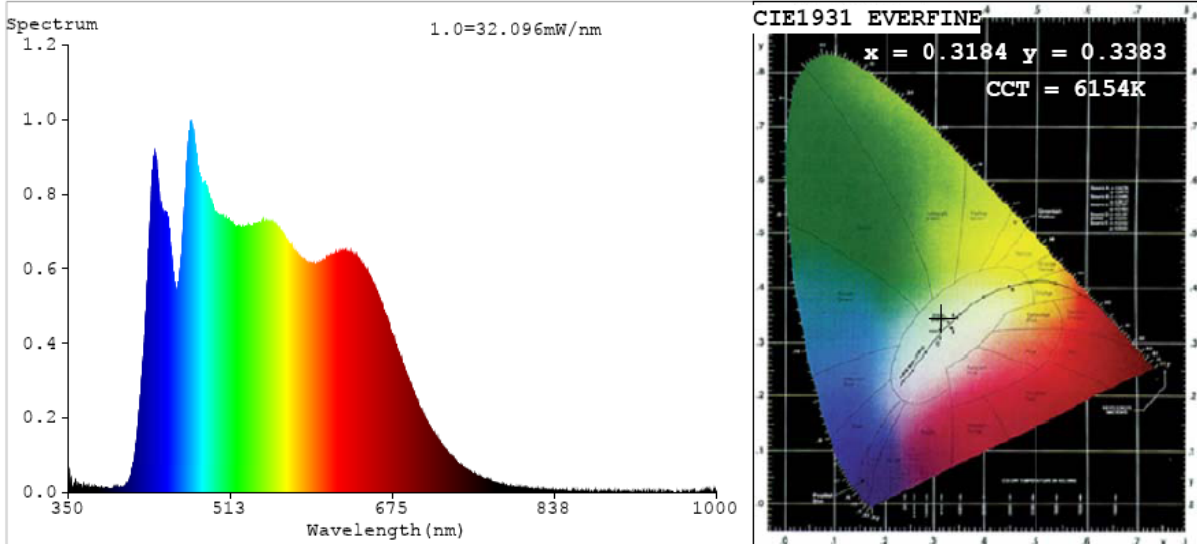
### Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	99	R9	98
Frequency (Hz)	60	R2	98	R10	96
CCT (K)	6154	R3	97	R11	98
Duv	0.0051	R4	96	R12	97
Chromaticity (x, y)	x=0.3184 y=0.3383	R5	99	R13	98
Chromaticity (u', v')	u'=0.1983 v'=0.4741	R6	98	R14	99
Color Rendering Index (CRI)	97.8	R7	97	R15	98
R9	98	R8	98	--	--

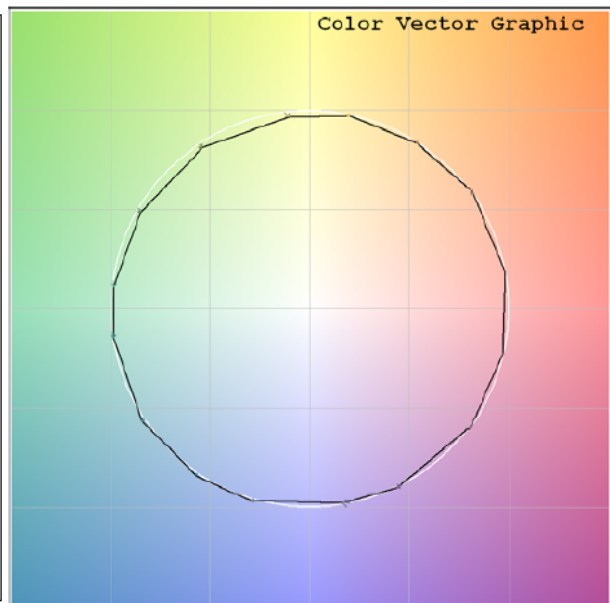
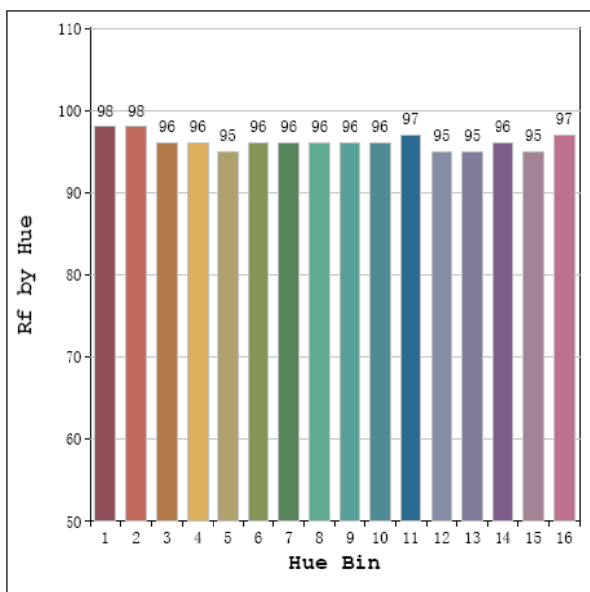
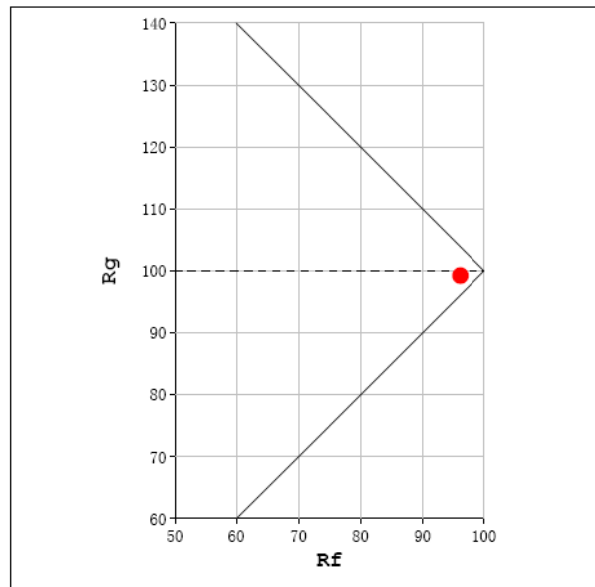
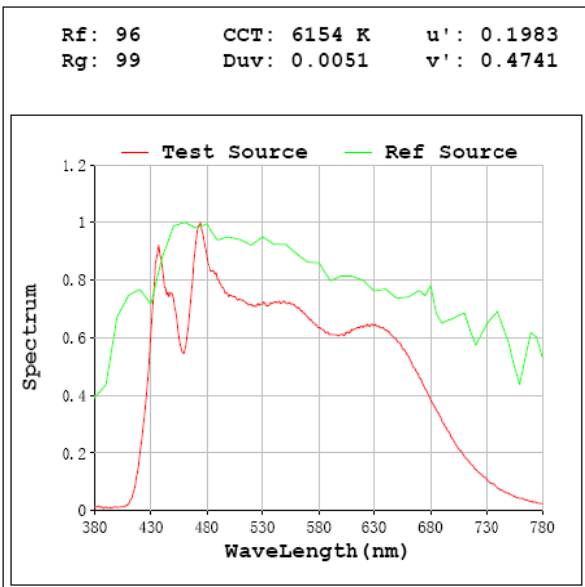
### Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1610.1
Luminous Efficacy (lm/W)	94.16
Beam Angle (°)	87.6
Center Beam Candle Power (cd)	801.3

# Spectral Power Distribution & Chromaticity Diagram



## T30

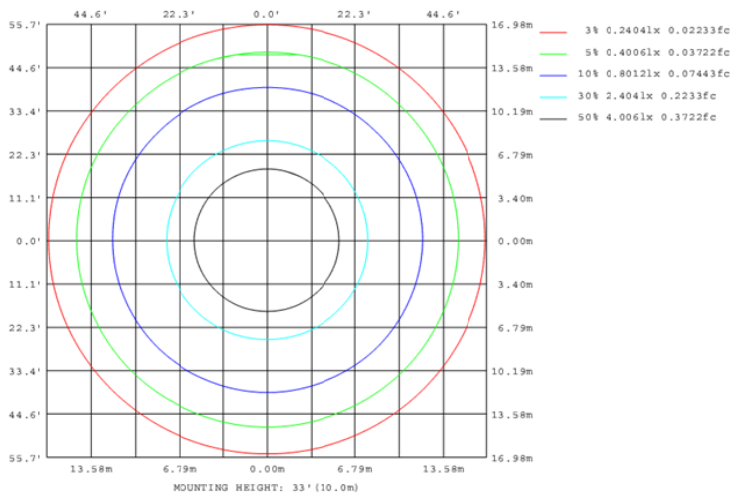
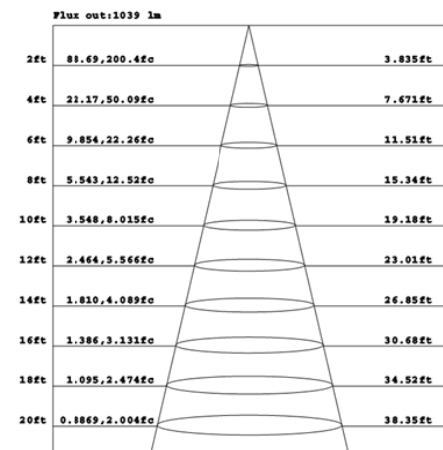
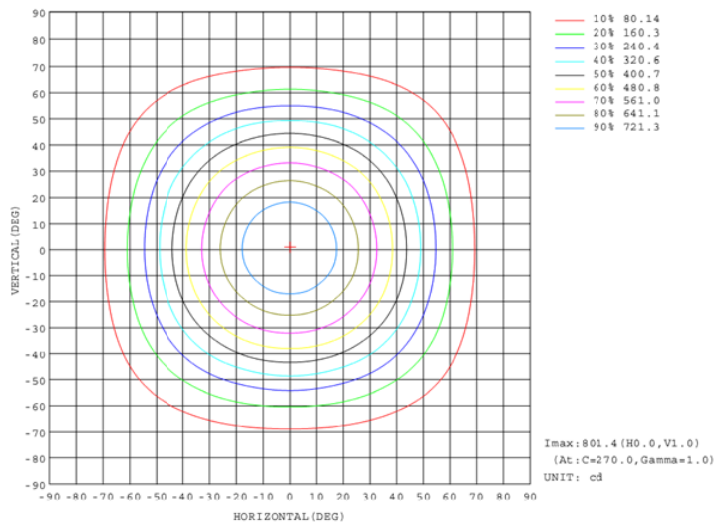
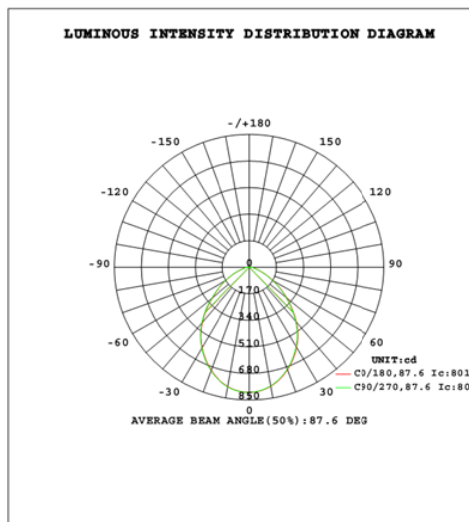


# Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	582.7	36.2%
0-40	913.7	56.7%
0-60	1419.0	88.1%
60-90	191.1	11.9%
70-100	73.2	4.5%
90-120	0.0	0.0%
0-90	1610.1	100.0%
90-180	0.0	0.0%
0-180	1610.1	100.0%

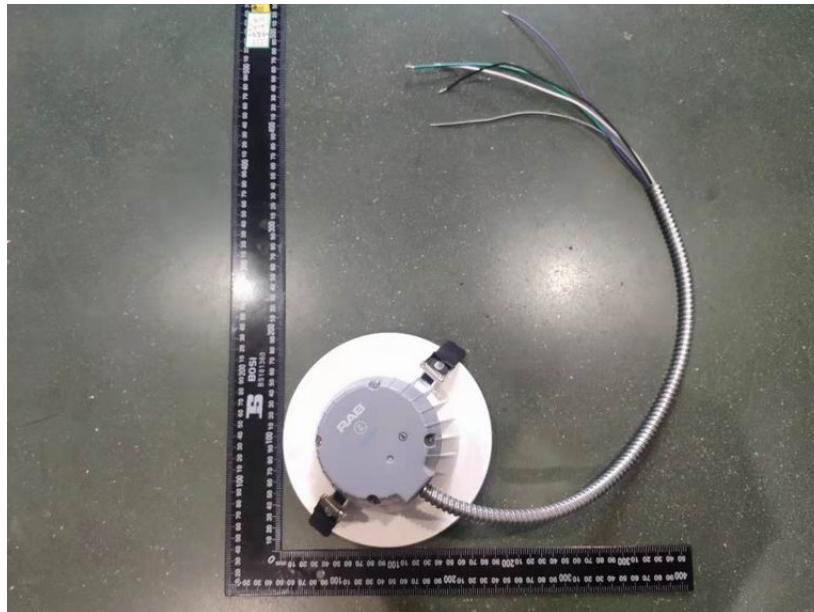
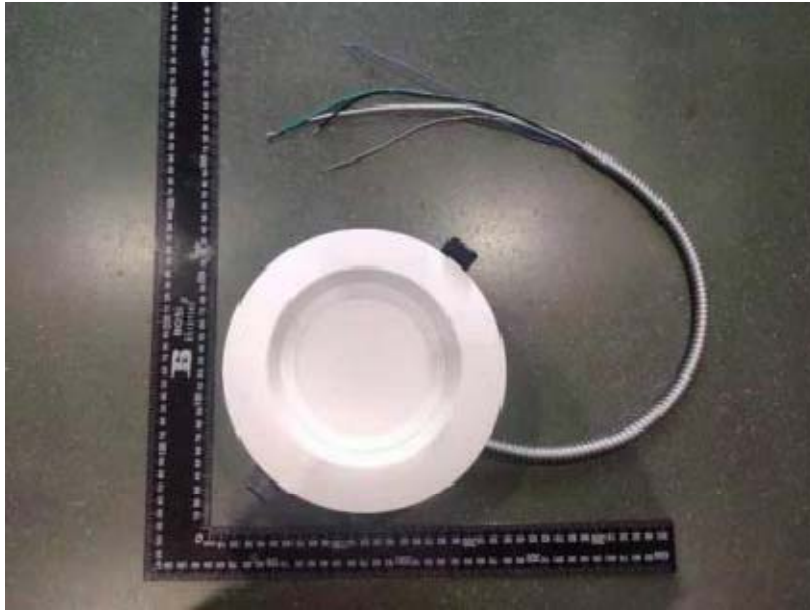
Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	75.2	4.7%	90-100	0.0	0.0%
10-20	208.9	13.0%	100-110	0.0	0.0%
20-30	298.7	18.5%	110-120	0.0	0.0%
30-40	330.9	20.6%	120-130	0.0	0.0%
40-50	294.4	18.3%	130-140	0.0	0.0%
50-60	210.9	13.1%	140-150	0.0	0.0%
60-70	117.9	7.3%	150-160	0.0	0.0%
70-80	50.9	3.2%	160-170	0.0	0.0%
80-90	22.3	1.4%	170-180	0.0	0.0%

## Photometric Data





### 3. Product Photo



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