Cree 2835 18V U Class 3500K, 90CRI

Summary Results

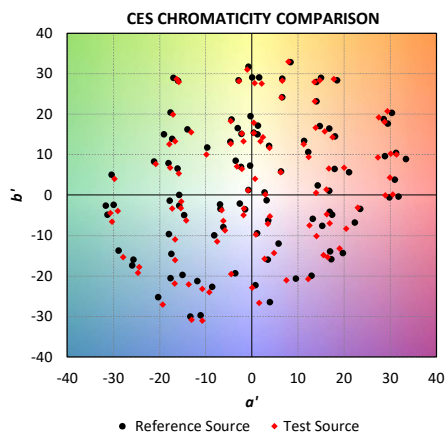| Metric	Test	Reference	Notes	Metric	Test	Reference	Notes
R_f	90	100	IES TM-30-15 Fidelity Index	CCT	3500	3500	Correlated Color Temperature
R_g	96	100	IES TM-30-15 Gamut Index	D_{uv}	0.0022	0.0000	Distance from the blackbody locus
CIE R_a	94	100	CIE Test Color Method General Index	x	0.4076	0.4053	CIE 1931 chromaticity coordinate
R_9	68	100	CIE Test Color Method Sample Nine Score	y	0.3969	0.3907	CIE 1931 chromaticity coordinate
LER	293	181	Luminous Efficacy of Radiation	u	0.2347	0.2357	CIE 1960 chromaticity coordinate
				v	0.3428	0.3408	CIE 1960 chromaticity coordinate
$R_{f,skin}$	92	100	Average of CES15 and CES18 (skin)	u'	0.2347	0.2357	CIE 1976 chromaticity coordinate
				v'	0.5142	0.5113	CIE 1976 chromaticity coordinate

Source Properties

SOURCE CHROMATICITY COMPARISON
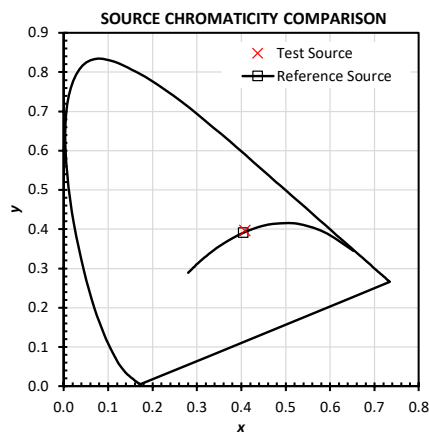
This chart plots the chromaticity of the test and reference sources in the CIE 1931 chromaticity diagram.

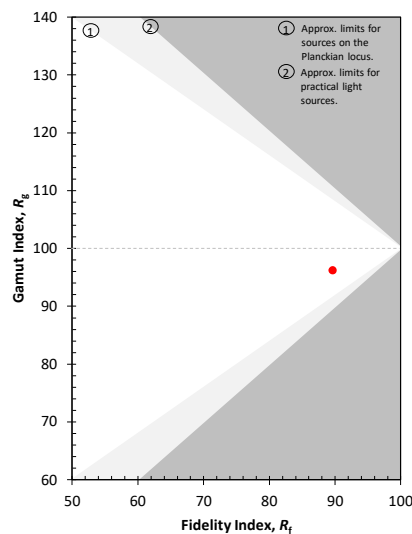**SPECTRAL POWER DISTRIBUTION COMPARISON**
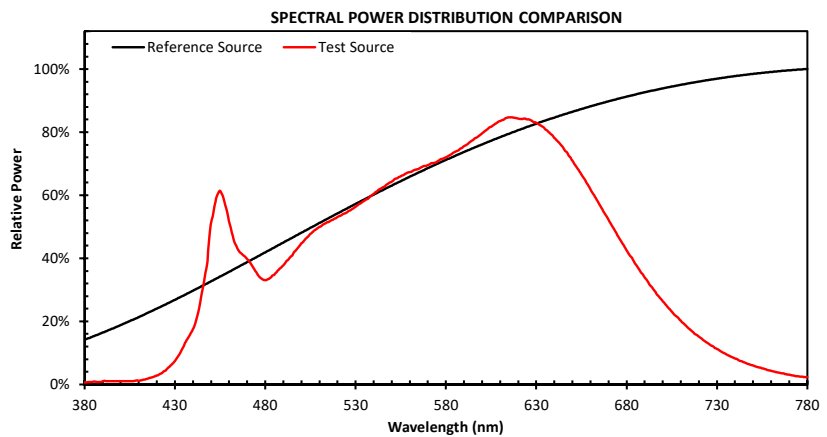
This chart displays the spectral power distributions for the test and reference source. Each SPD has been normalized so that the maximum values is 100%.

General Color Rendition

CES CHROMATICITY COMPARISON

This plot shows the shift in chromaticity for each individual CES.

① Approx. limits for sources on the Planckian locus.
② Approx. limits for practical light sources.

This plot shows a comparison of the R_f and R_g values relative to the range of possible values.

COLOR VECTOR GRAPHIC
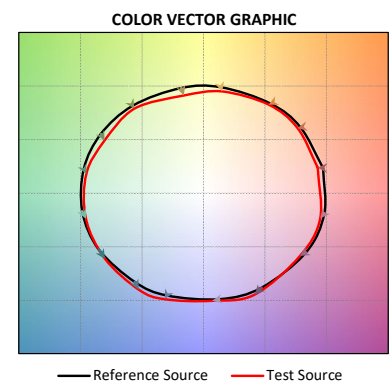
This plot shows the average chromaticity shift for the samples within each of 16 hue bins. The values are normalized so that the reference is a circle.

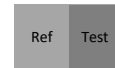# Cree 2835 18V U Class 3500K, 90CRI

Color Sample Comparison (Approximate)

CES 1 Type C	CES 2 Type C	CES 3 Type A	CES 4 Type A	CES 5 Type D	CES 6 Type C	CES 7 Type B	CES 8 Type D
CES 9 Type F	CES 10 Type G	CES 11 Type C	CES 12 Type A	CES 13 Type F	CES 14 Type E	CES 15 Type B	CES 16 Type C
CES 17 Type C	CES 18 Type B	CES 19 Type E	CES 20 Type F	CES 21 Type D	CES 22 Type D	CES 23 Type G	CES 24 Type E
CES 25 Type A	CES 26 Type C	CES 27 Type A	CES 28 Type G	CES 29 Type C	CES 30 Type A	CES 31 Type D	CES 32 Type C
CES 33 Type D	CES 34 Type G	CES 35 Type G	CES 36 Type A	CES 37 Type A	CES 38 Type A	CES 39 Type F	CES 40 Type F
CES 41 Type C	CES 42 Type F	CES 43 Type G	CES 44 Type F	CES 45 Type G	CES 46 Type E	CES 47 Type G	CES 48 Type D
CES 49 Type D	CES 50 Type F	CES 51 Type F	CES 52 Type F	CES 53 Type E	CES 54 Type F	CES 55 Type G	CES 56 Type G
CES 57 Type C	CES 58 Type D	CES 59 Type E	CES 60 Type G	CES 61 Type F	CES 62 Type C	CES 63 Type F	CES 64 Type E
CES 65 Type F	CES 66 Type E	CES 67 Type E	CES 68 Type F	CES 69 Type F	CES 70 Type F	CES 71 Type F	CES 72 Type F
CES 73 Type F	CES 74 Type C	CES 75 Type F	CES 76 Type F	CES 77 Type A	CES 78 Type F	CES 79 Type C	CES 80 Type G
CES 81 Type A	CES 82 Type C	CES 83 Type C	CES 84 Type F	CES 85 Type A	CES 86 Type C	CES 87 Type F	CES 88 Type F
CES 89 Type A	CES 90 Type E	CES 91 Type A	CES 92 Type A	CES 93 Type D	CES 94 Type C	CES 95 Type A	CES 96 Type A
CES 97 Type F	CES 98 Type A	CES 99 Type E					

WARNING: The colors in this graphic will not update unless the option is selected prior to calculation (see *Main* sheet). The colors shown are approximate and depend on proper monitor calibration. Some colors may be outside of the gamut of the monitor, and will not be displayed accurately. For each sample, the color on the left represents the reference source, and the color on the right represents the test source.
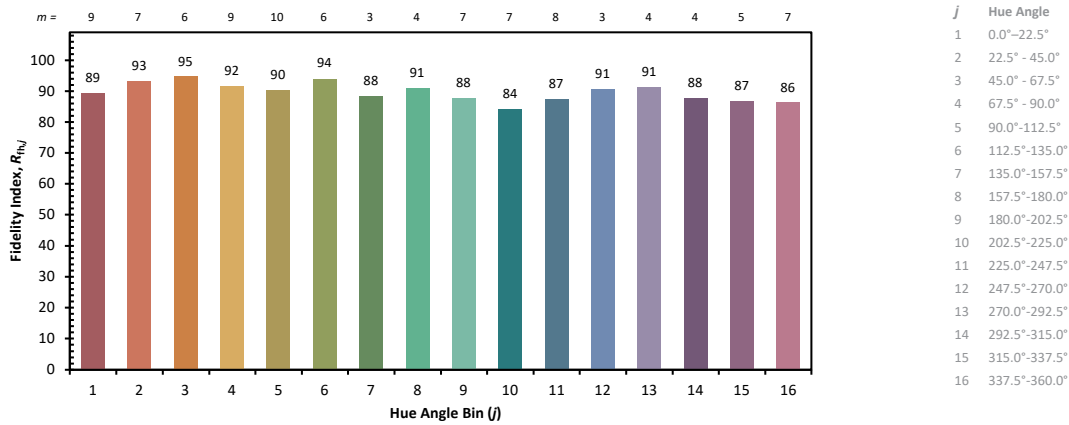
Sample Type:
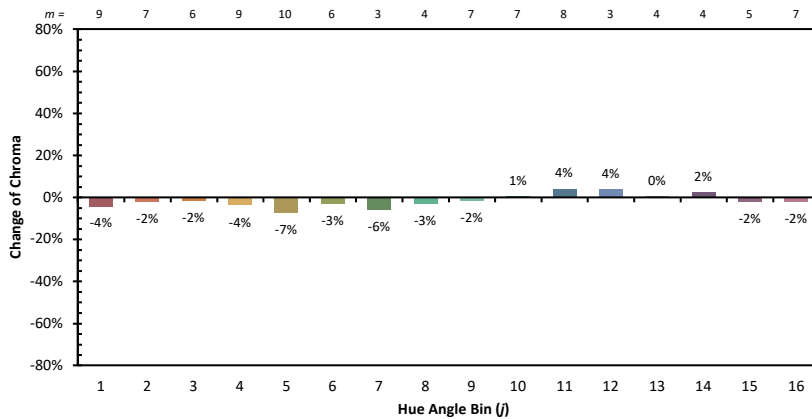 A - Nature
  B - Skin
  C - Textiles
  D - Paints
  E - Plastic

Ref	Test

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Color Rendition by Hue

j	Hue Angle
1	0.0°–22.5°
2	22.5° - 45.0°
3	45.0° - 67.5°
4	67.5° - 90.0°
5	90.0°-112.5°
6	112.5°-135.0°
7	135.0°-157.5°
8	157.5°-180.0°
9	180.0°-202.5°
10	202.5°-225.0°
11	225.0°-247.5°
12	247.5°-270.0°
13	270.0°-292.5°
14	292.5°-315.0°
15	315.0°-337.5°
16	337.5°-360.0°

Fidelity Index chart ($R_{f,hj}$). m values (top): 9, 7, 6, 9, 10, 6, 3, 4, 7, 7, 8, 3, 4, 4, 5, 7. Bar values: 89, 93, 95, 92, 90, 94, 88, 91, 88, 84, 87, 91, 91, 88, 87, 86.
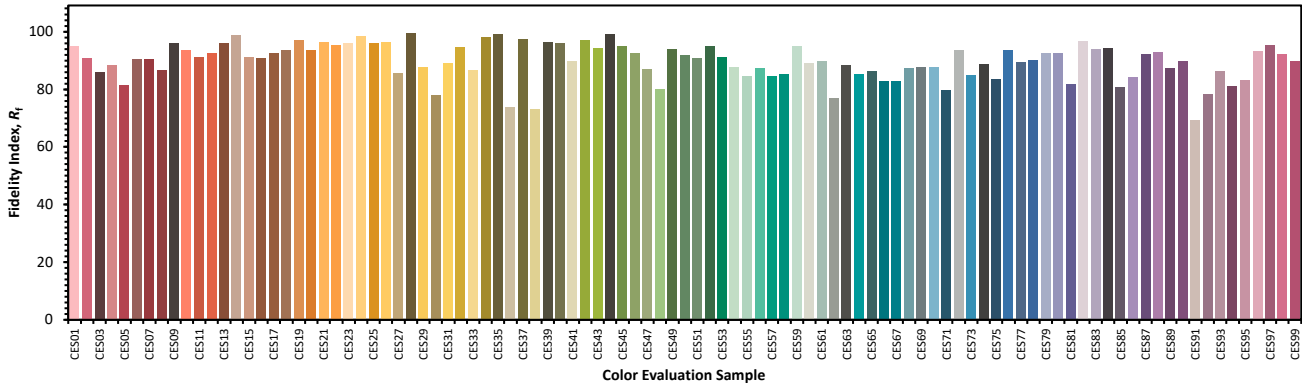
This chart displays the average Fidelity Index for all samples within the hue bin. The number of samples per bin, which can vary based on the CCT used for the calculation, is shown at the top. The color of the bar is based on the average chromaticity under the 5000 K reference illuminant; the colors may not display accurately depending on the calibration of the monitor, and should be used for orientation only.

Change of Chroma chart. m values (top): 9, 7, 6, 9, 10, 6, 3, 4, 7, 7, 8, 3, 4, 4, 5, 7. Bar values: -4%, -2%, -2%, -4%, -7%, -3%, -6%, -3%, -2%, 1%, 4%, 4%, 0%, 2%, -2%, -2%.

This chart displays the change in chroma for the average sample within each hue bin. The number of samples per bin, which can vary based on the CCT used for the calculation, is shown at the top. The color of the bar is based on the average chromaticity under the 5000 K reference illuminant; the colors may not display accurately depending on the calibration of the monitor, and should be used for orientation only.

Metalumen
Ideas brought to light

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Color Fidelity by Sample

This chart displays the Fidelity Index for each of the 99 CES. The CES are arranged by their hue angle under the 5000 K reference source, which was also used to determine the color of each bar. The colors are approximate and depend on proper monitor calibration. Some colors may be outside of the gamut of the monitor, and will not be displayed accurately.

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