

# LED Test Report

## Product Mark

Product Type : F52-R400-120512 4000K

Manufacturer : -

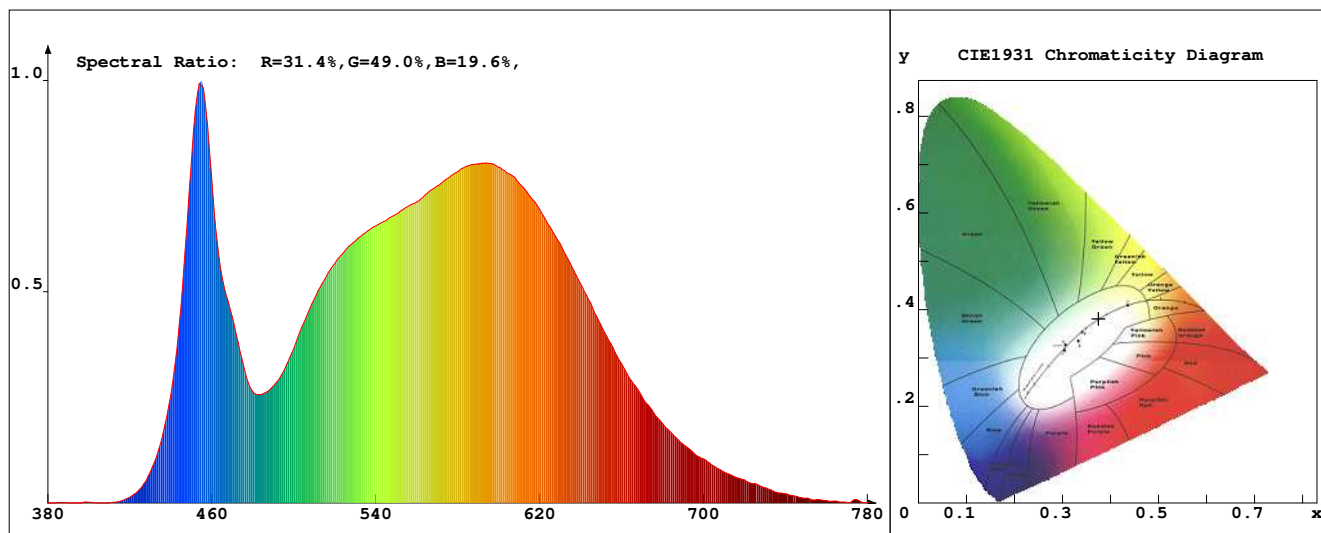
Temperature : 'C

Humidity : -%

Operator : -

Test Date : 2023-09-25

Remark:



## Chroma Parameters

Chro.Coord.:x=0.3751 y=0.3809 u=0.2200 v=0.3351 duv=0.0035

CCT: 4178K Dominant Wave.:576.5nm Purity:26.9% Centre Wave:455.0nm

Flux RGB Ratio:R=16.8%,G=80.5%,B=2.7% Peak Wave:453.8nm Half Width:21.1nm

## Rendering Index:Ra= 82.3 CRI= 78.0

R1 =81 R2 =89 R3 =95 R4 =80 R5 =80 R6 =83 R7 =87 R8 =65

R9 =8 R10=73 R11=79 R12=54 R13=83 R14=97 R15=74

PPF:9.964umol/s (400-700nm)

PRF:2.1mW (400-700nm)

PAR:1.8mW (400-700nm)

## Photo Parameters

Flux:783.14lm Effi.:92.4lm/W Radiant:2170.4mW Iv:0.0mcd

Scotopic Flux:1360.0Plm Effi.:0.0Plm/W S/P:1.7

Efficiency:0.00

Effi Level:A++ (EU 874-2012) Photon Flux:10186.800umol/s (380-780nm)

## Ele. Parameters

Forward Current:If=353.0mA

Reverse Voltage:Vr=5.00V

Forward Voltage:Vf=24.00V

Reverse Current:Ir=0.00uA

Power:P=8.490W

## Instrument state

Instrument:Lisun

Integral Time: 187.702ms

VPeak: 13288

VDark: 1228

Scan Range: 380-780nm

Product ID: 201508924

# IES TM-30-2015 Test Report

## Product Mark

Product Type : F52-R400-120512 4000K

Temperature : 'C

Operator : -

Remark :

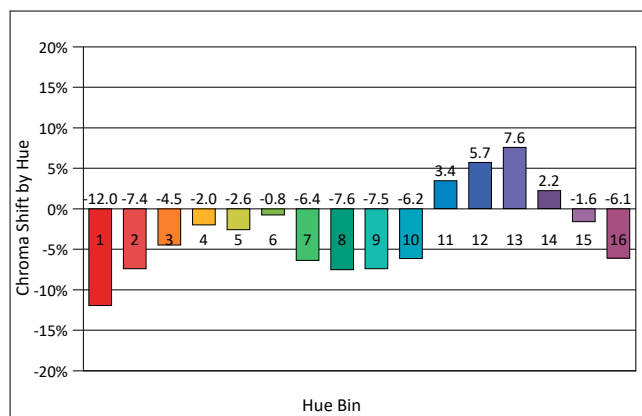
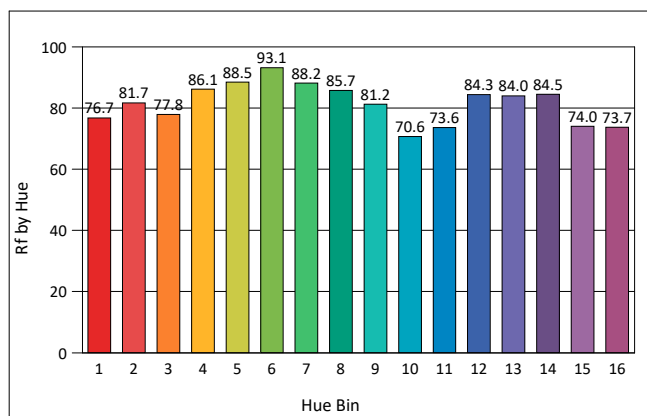
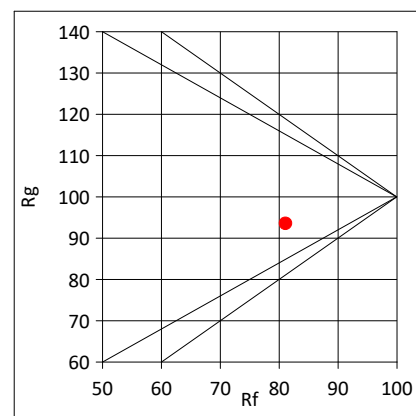
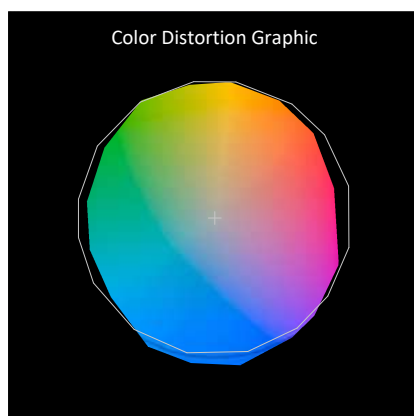
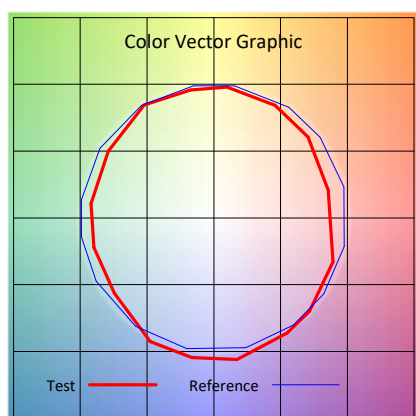
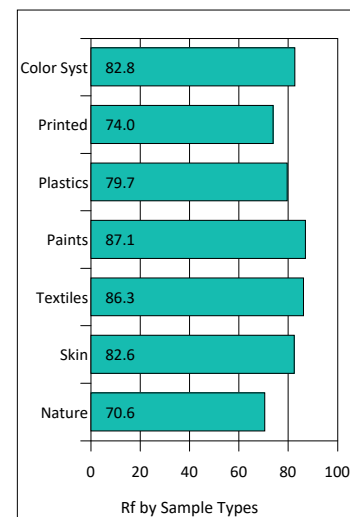
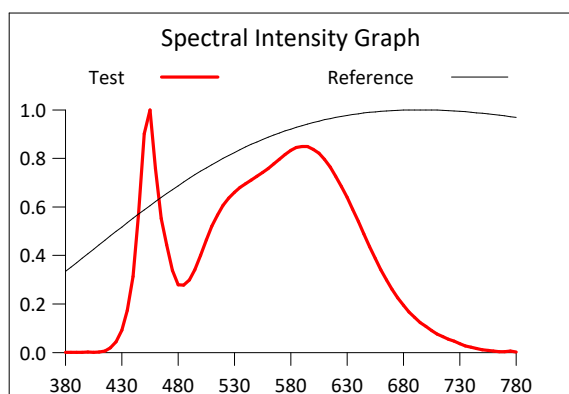
Manufacturer : -

Humidity : -%

Test Date : 2023-09-25

Rf: 81.1 CCT(K): 4178 u': 0.2200  
Rg: 93.5 LER: 334.4 Duv: 0.0035 v': 0.3351

| Hue Bin | Rf   | Graphic Shifts (%) |        |
|---------|------|--------------------|--------|
|         |      | Chroma             | Hue    |
| 1       | 76.7 | -12.0%             | -0.1%  |
| 2       | 81.7 | -7.4%              | 5.3%   |
| 3       | 77.8 | -4.5%              | 9.4%   |
| 4       | 86.1 | -2.0%              | 5.2%   |
| 5       | 88.5 | -2.6%              | 2.8%   |
| 6       | 93.1 | -0.8%              | -1.6%  |
| 7       | 88.2 | -6.4%              | -1.7%  |
| 8       | 85.7 | -7.6%              | 1.6%   |
| 9       | 81.2 | -7.5%              | 9.6%   |
| 10      | 70.6 | -6.2%              | 15.3%  |
| 11      | 73.6 | 3.4%               | 15.6%  |
| 12      | 84.3 | 5.7%               | 5.0%   |
| 13      | 84.0 | 7.6%               | -8.3%  |
| 14      | 84.5 | 2.2%               | -7.4%  |
| 15      | 74.0 | -1.6%              | -16.8% |
| 16      | 73.7 | -6.1%              | -12.9% |



# IES TM-30-2015 Test Report

## Product Mark

Product Type : F52-R400-120512 4000K

Manufacturer : -

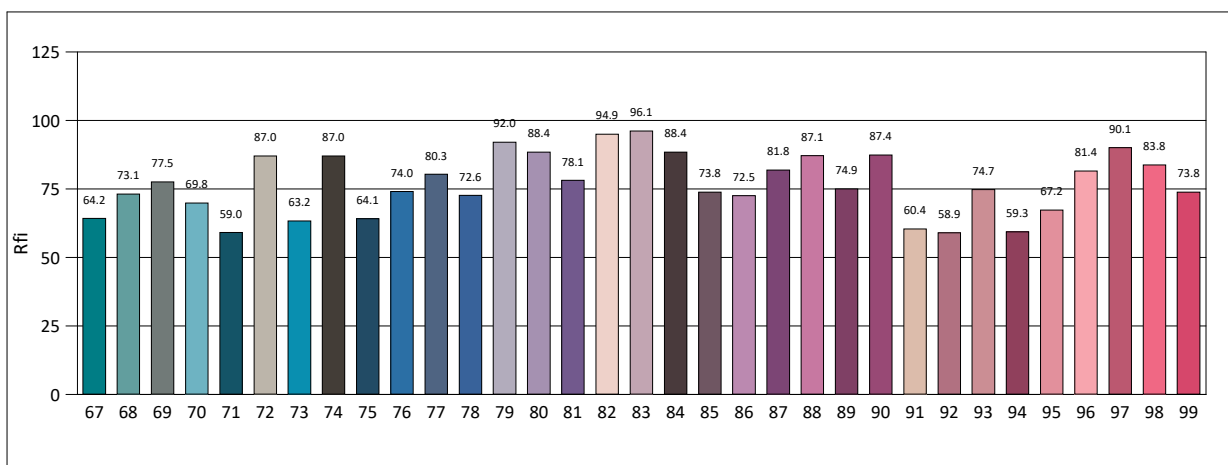
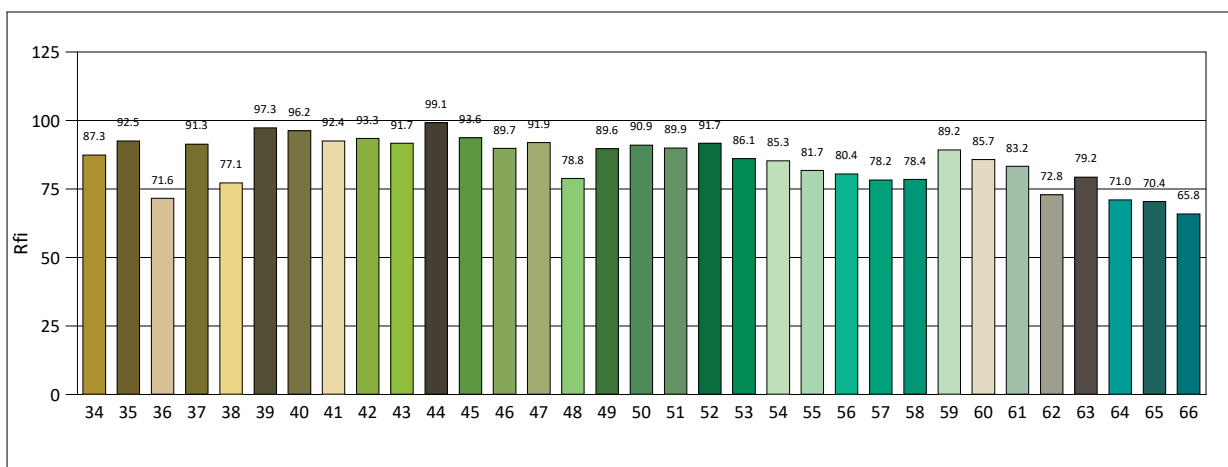
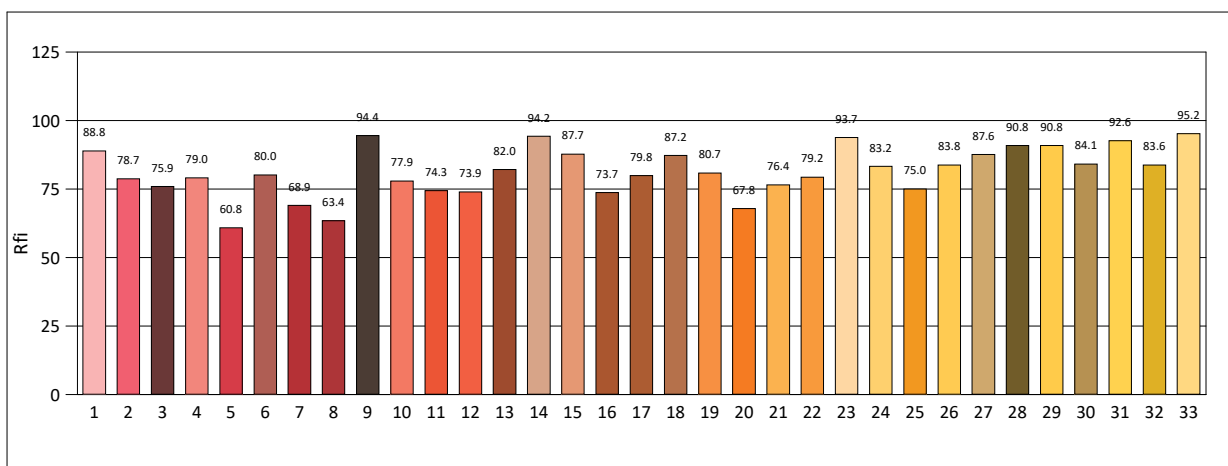
Temperature : 'C

Humidity : -%

Operator : -

Test Date : 2023-09-25

Remark:



# LED Test Report

## Product Mark

Product Type : F52-R400-120512 RED

Manufacturer : -

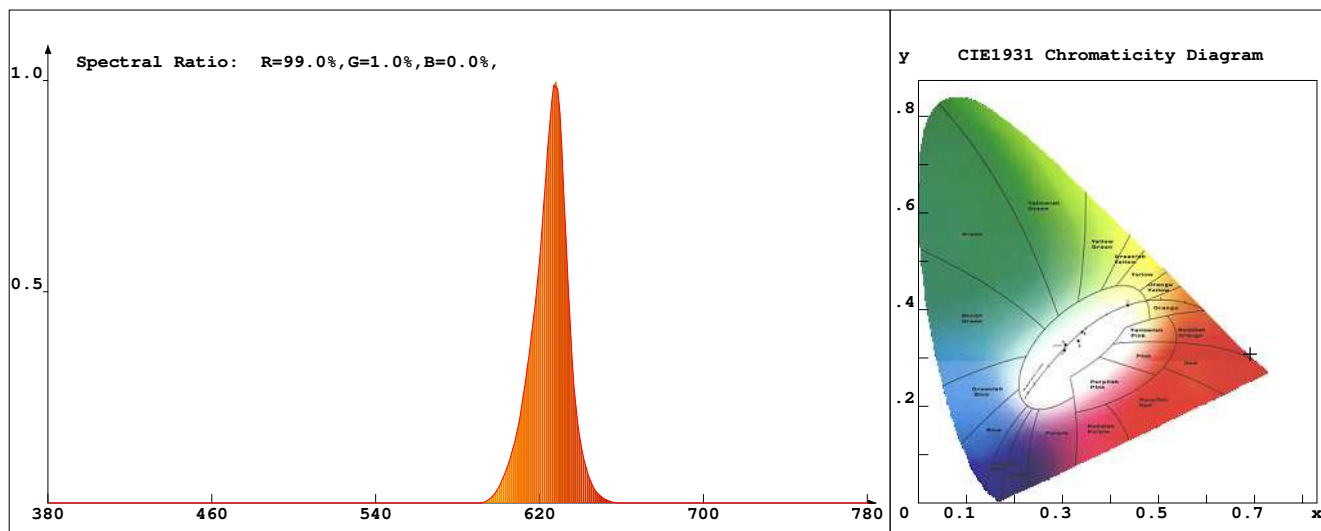
Temperature : 'C

Humidity : -%

Operator : -

Test Date : 2023-09-25

Remark:



## Chroma Parameters

Chro.Coord.:  $x=0.6909$   $y=0.3085$   $u=0.5195$   $v=0.3479$   $duv=-0.0006$ 

CCT: 1315K Dominant Wave.: 619.9nm Purity: 99.9% Centre Wave: 625.2nm

Flux RGB Ratio:  $R=98.1\%$ ,  $G=1.9\%$ ,  $B=0.0\%$  Peak Wave: 626.5nm Half Width: 15.7nm

## Rendering Index: $R_a=-20.9$ CRI=104.2

|          |         |        |          |          |         |         |           |
|----------|---------|--------|----------|----------|---------|---------|-----------|
| R1 = -37 | R2 = 62 | R3 = 1 | R4 = -82 | R5 = -48 | R6 = 49 | R7 = -5 | R8 = -107 |
|----------|---------|--------|----------|----------|---------|---------|-----------|

|           |          |           |          |          |          |           |
|-----------|----------|-----------|----------|----------|----------|-----------|
| R9 = -341 | R10 = 52 | R11 = -92 | R12 = 21 | R13 = -7 | R14 = 35 | R15 = -75 |
|-----------|----------|-----------|----------|----------|----------|-----------|

PPF: 2.794  $\mu\text{mol/s}$  (400-700nm)

PRF: 0.5mW (400-700nm)

PAR: 0.5mW (400-700nm)

## Photo Parameters

Flux: 129.85lm Effi.: 29.7lm/W Radiant: 535.8mW Iv: 0.0mcd

Scotopic Flux: 6.7Plm Effi.: 0.0Plm/W S/P: 0.1

Efficiency: 0.00

Effi Level: A++ (EU 874-2012) Photon Flux: 2795.140  $\mu\text{mol/s}$  (380-780nm)

## Ele. Parameters

Forward Current:  $I_f=182.0\text{mA}$ Reverse Voltage:  $V_r=5.00\text{V}$ Forward Voltage:  $V_f=24.02\text{V}$ Reverse Current:  $I_r=0.00\mu\text{A}$ Power:  $P=4.391\text{W}$ 

## Instrument state

Instrument: Lisun

Integral Time: 119.808ms

VPeak: 14824

VDark: 1211

Scan Range: 380-780nm

Product ID: 201508924

# IES TM-30-2015 Test Report

## Product Mark

Product Type : F52-R400-120512 RED

Temperature : 'C

Operator : -

Remark :

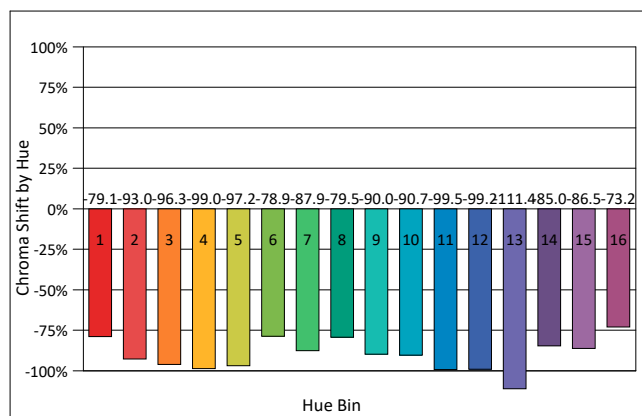
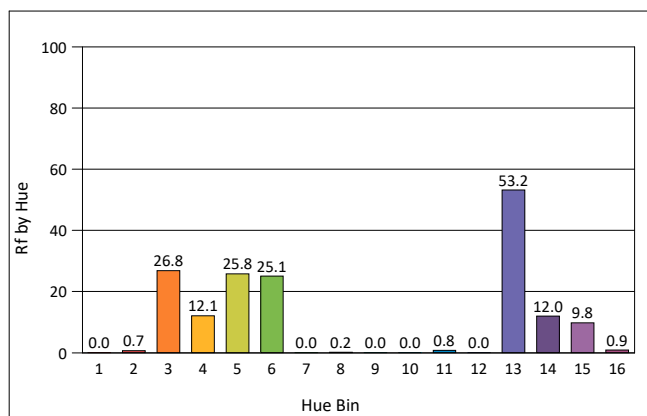
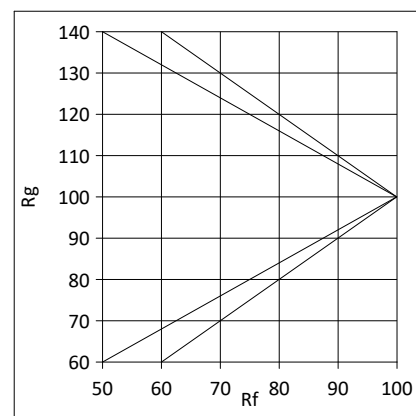
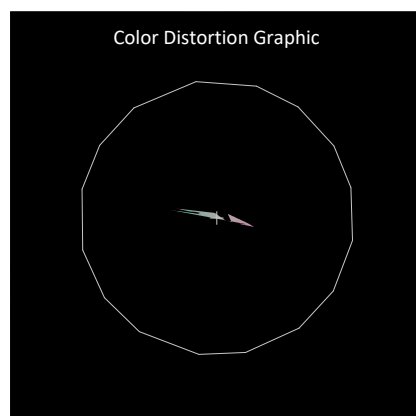
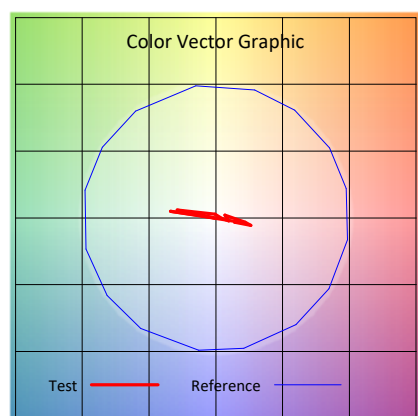
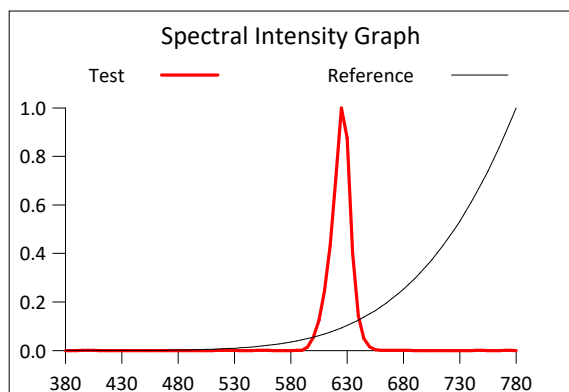
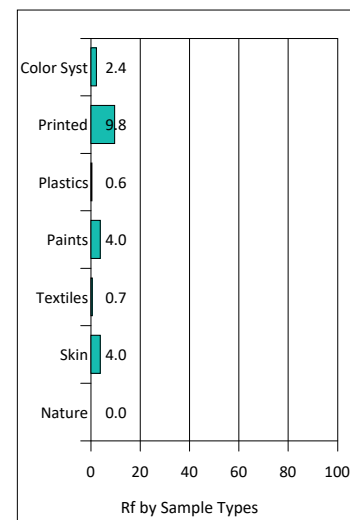
Manufacturer : -

Humidity : -%

Test Date : 2023-09-25

Rf: 0.4 CCT(K): 1315 u': 0.5195  
 Rg: 0.0 LER: 230.2 Duv: -0.0006 v': 0.3479

| Hue Bin | Rf   | Graphic Shifts (%) |        |
|---------|------|--------------------|--------|
|         |      | Chroma             | Hue    |
| 1       | 0.0  | -79.1%             | -9.8%  |
| 2       | 0.7  | -93.0%             | 1.7%   |
| 3       | 26.8 | -96.3%             | -4.9%  |
| 4       | 12.1 | -99.0%             | 5.4%   |
| 5       | 25.8 | -97.2%             | 4.6%   |
| 6       | 25.1 | -78.9%             | 15.3%  |
| 7       | 0.0  | -87.9%             | 1.9%   |
| 8       | 0.2  | -79.5%             | 1.3%   |
| 9       | 0.0  | -90.0%             | -8.9%  |
| 10      | 0.0  | -90.7%             | -12.5% |
| 11      | 0.8  | -99.5%             | 0.1%   |
| 12      | 0.0  | -99.2%             | -17.6% |
| 13      | 53.2 | -111.4%            | -33.9% |
| 14      | 12.0 | -85.0%             | 10.0%  |
| 15      | 9.8  | -86.5%             | 2.4%   |
| 16      | 0.9  | -73.2%             | -3.6%  |



# IES TM-30-2015 Test Report

## Product Mark

Product Type : F52-R400-120512 RED

Manufacturer : -

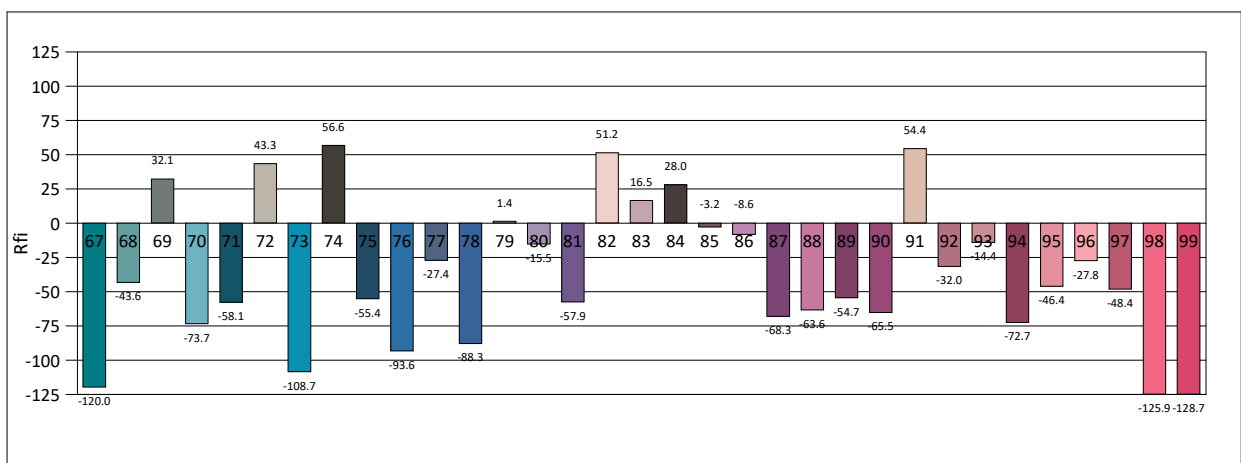
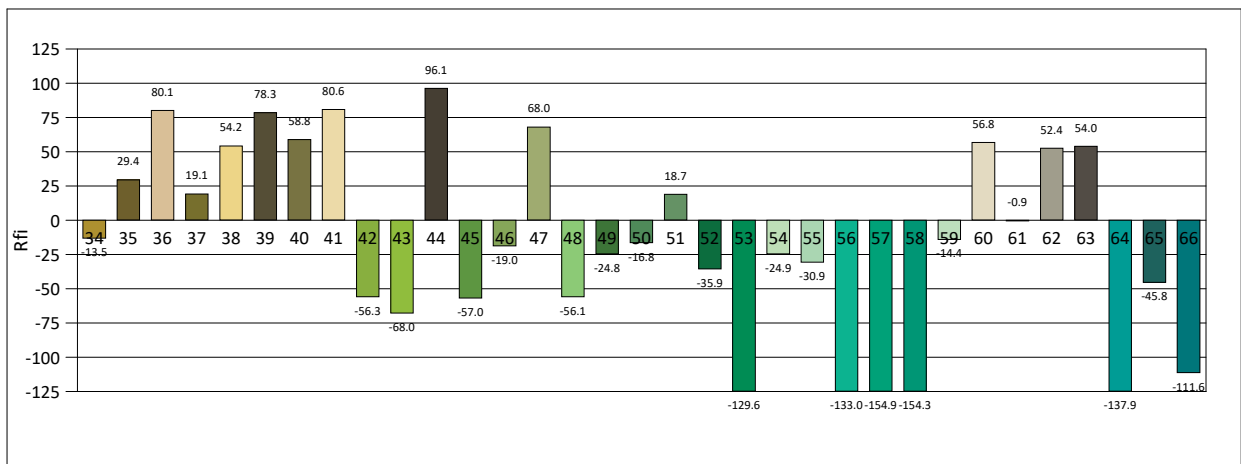
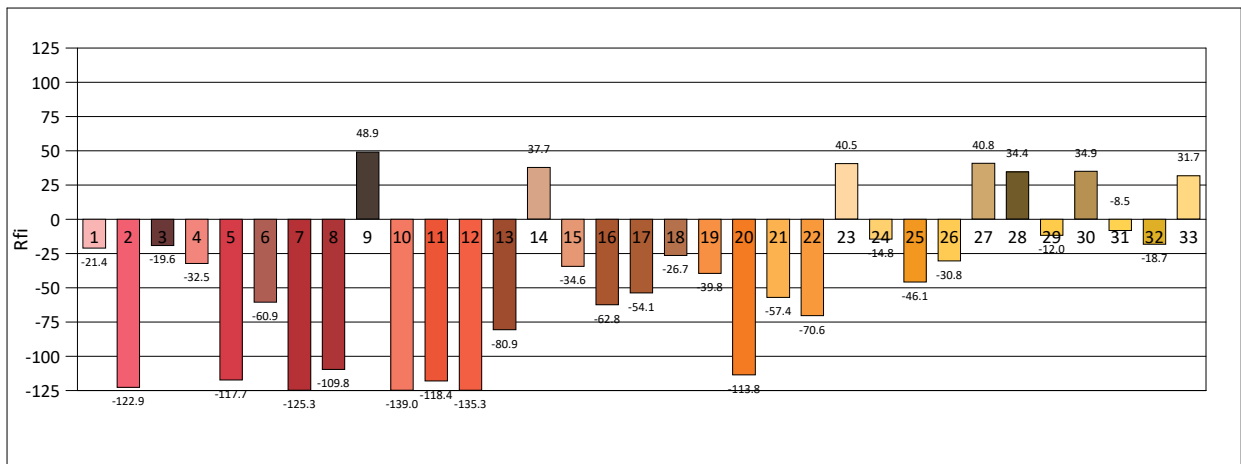
Temperature : 'C

Humidity : -%

Operator : -

Test Date : 2023-09-25

Remark :



# LED Test Report

## Product Mark

Product Type : F52-R400-120512 GREEN

Manufacturer : -

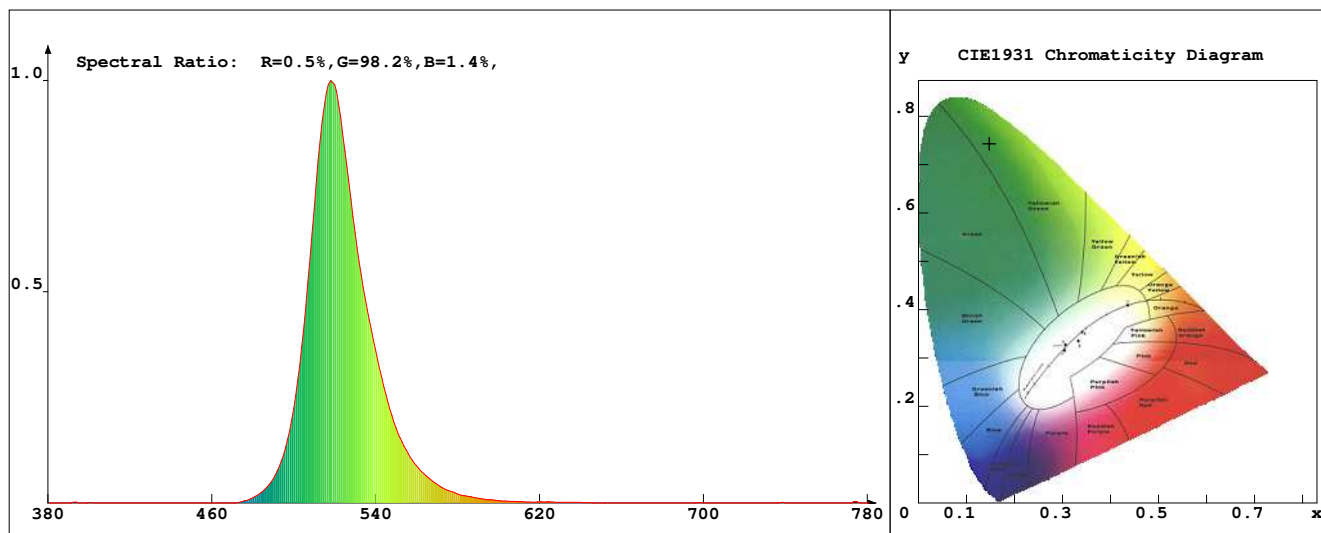
Temperature : 'C

Humidity : -%

Operator : -

Test Date : 2023-09-25

Remark :



## Chroma Parameters

Chro.Coord.:  $x=0.1478$   $y=0.7431$   $u=0.0509$   $v=0.3837$   $duv=0.1656$ 

CCT: 8023K Dominant Wave.: 524.4nm Purity: 82.8% Centre Wave: 519.4nm

Flux RGB Ratio: R=0.2%, G=99.5%, B=0.3% Peak Wave: 517.6nm Half Width: 27.5nm

## Rendering Index: Ra=-32.1 CRI=107.1

R1 =-36 R2 =-17 R3 =-41 R4 =-75 R5 =-13 R6 =-24 R7 =-16 R8 =-35

R9 =-359 R10=-124 R11=-105 R12=-44 R13=-44 R14=29 R15=-33

PPF: 3.178  $\mu\text{mol/s}$  (400-700nm)

PRF: 0.7mW (400-700nm)

PAR: 0.6mW (400-700nm)

## Photo Parameters

Flux: 394.20lm Effi.: 91.1lm/W Radiant: 726.9mW Iv: 0.0mcd

Scotopic Flux: 1182.2Plm Effi.: 0.0Plm/W S/P: 3.0

Efficiency: 0.00

Effi Level: A++ (EU 874-2012) Photon Flux: 3181.400  $\mu\text{mol/s}$  (380-780nm)

## Ele. Parameters

Forward Current: If=180.0mA

Reverse Voltage: Vr=5.00V

Forward Voltage: Vf=24.03V

Reverse Current: Ir=0.00uA

Power: P=4.330W

## Instrument state

Instrument: Lisun

Integral Time: 119.808ms

VPeak: 13064

VDark: 1090

Scan Range: 380-780nm

Product ID: 201508924

# IES TM-30-2015 Test Report

## Product Mark

Product Type : F52-R400-120512 GREEN

Manufacturer : -

Temperature : 'C

Humidity : -%

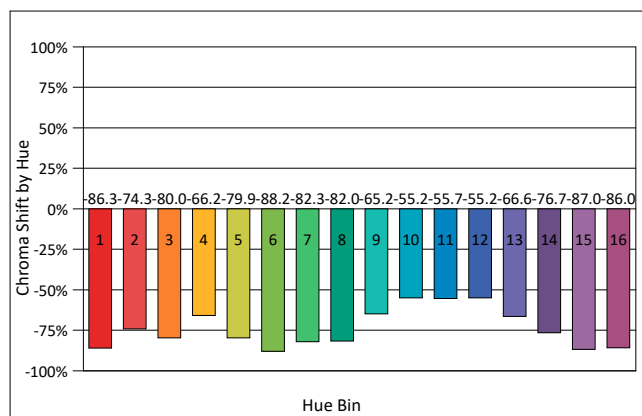
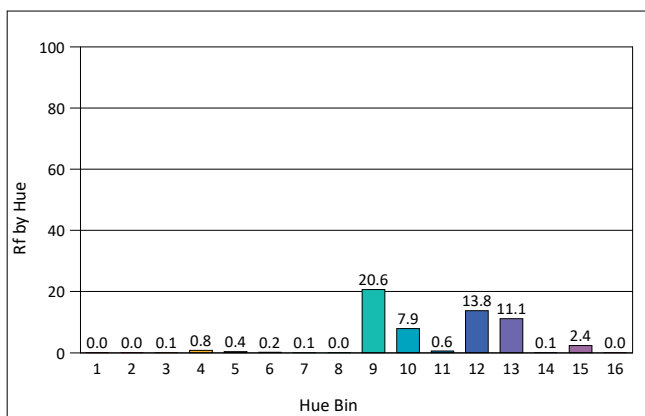
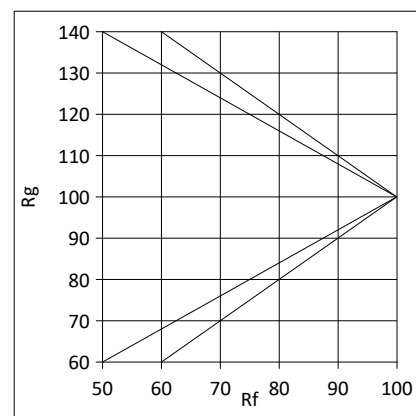
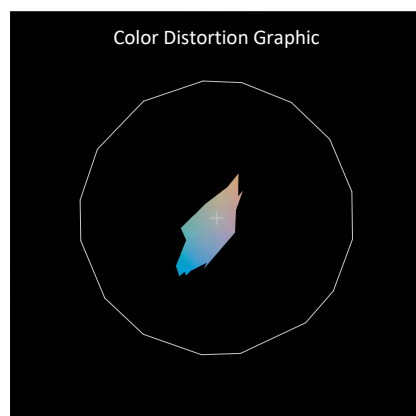
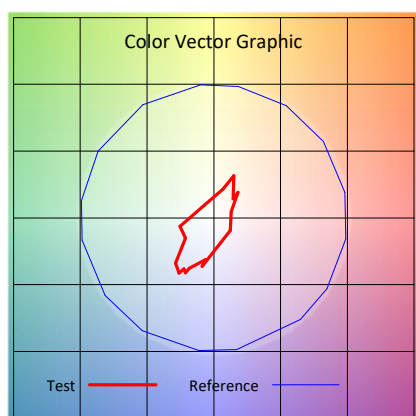
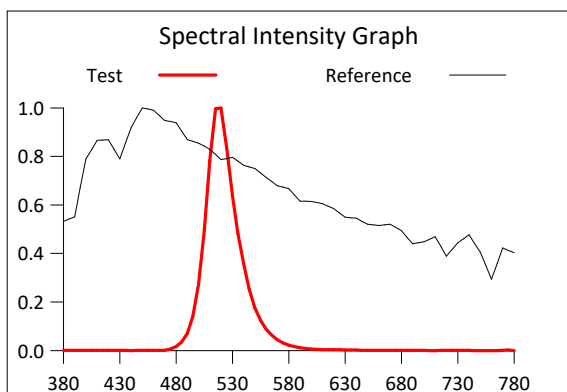
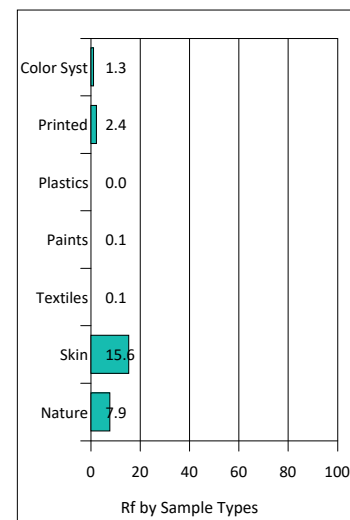
Operator : -

Test Date : 2023-09-25

Remark :

Rf: 0.3 CCT(K): 8023 u': 0.0509  
 Rg: 4.8 LER: 475.9 Duv: 0.1656 v': 0.3837

| Hue Bin | Rf   | Graphic Shifts (%) |        |
|---------|------|--------------------|--------|
|         |      | Chroma             | Hue    |
| 1       | 0.0  | -86.3%             | 2.6%   |
| 2       | 0.0  | -74.3%             | 3.9%   |
| 3       | 0.1  | -80.0%             | -5.5%  |
| 4       | 0.8  | -66.2%             | -9.8%  |
| 5       | 0.4  | -79.9%             | -1.2%  |
| 6       | 0.2  | -88.2%             | 3.6%   |
| 7       | 0.1  | -82.3%             | 12.7%  |
| 8       | 0.0  | -82.0%             | 12.2%  |
| 9       | 20.6 | -65.2%             | 30.6%  |
| 10      | 7.9  | -55.2%             | 16.7%  |
| 11      | 0.6  | -55.7%             | 0.0%   |
| 12      | 13.8 | -55.2%             | -21.3% |
| 13      | 11.1 | -66.6%             | -22.9% |
| 14      | 0.1  | -76.7%             | -34.1% |
| 15      | 2.4  | -87.0%             | -37.9% |
| 16      | 0.0  | -86.0%             | -10.9% |



# IES TM-30-2015 Test Report

## Product Mark

Product Type : F52-R400-120512 GREEN

Manufacturer : -

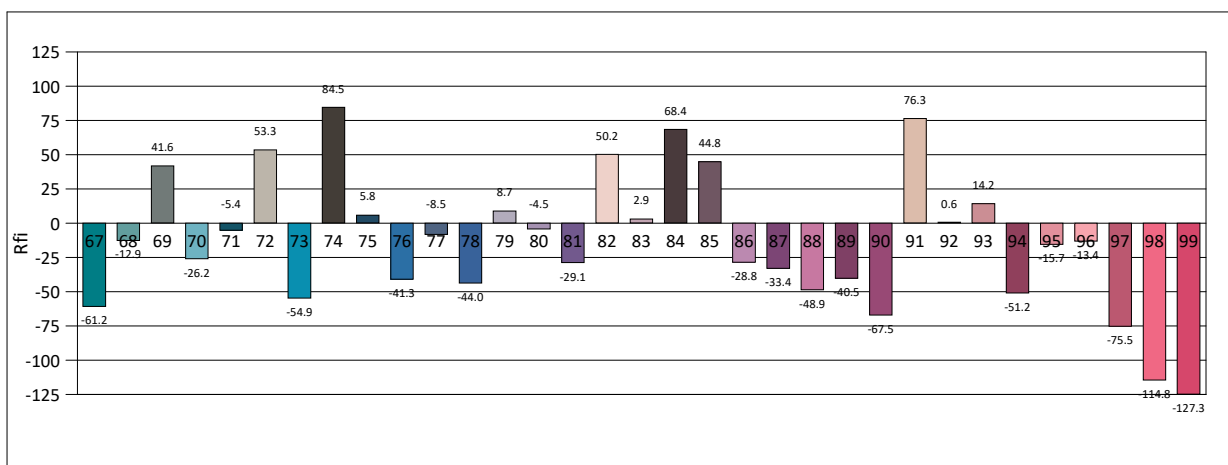
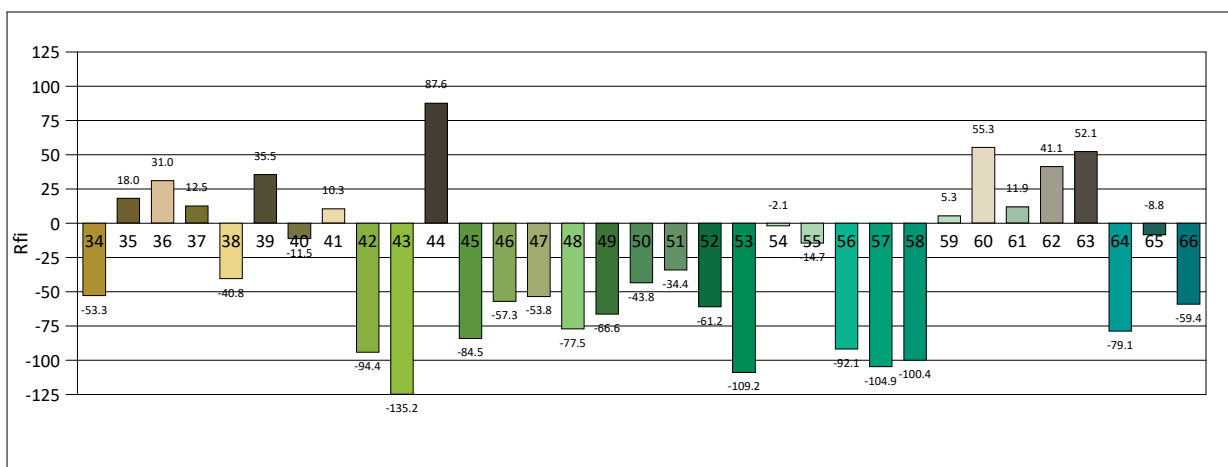
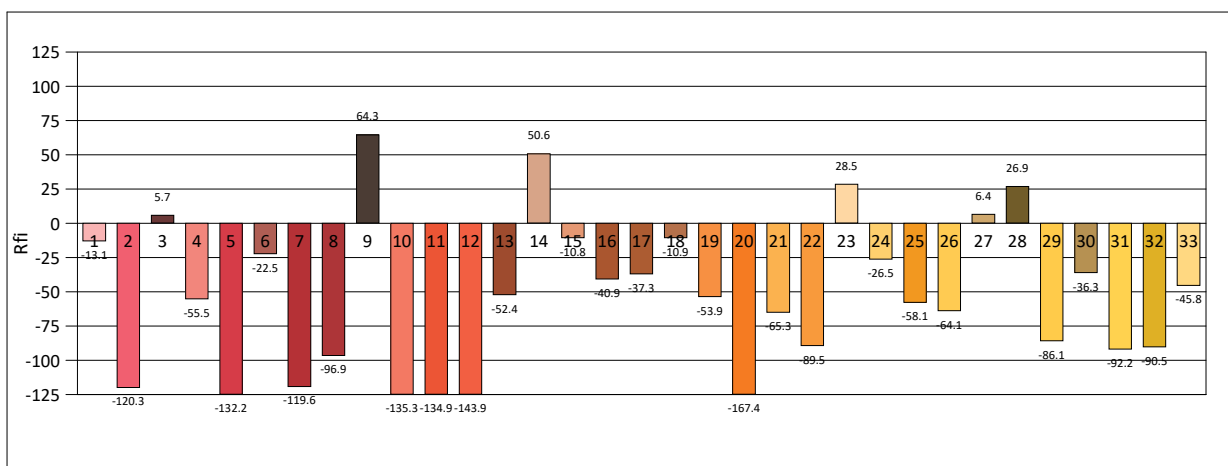
Temperature : 'C

Humidity : -%

Operator : -

Test Date : 2023-09-25

Remark :



# LED Test Report

## Product Mark

Product Type : F52-R400-120512 BLU

Manufacturer : -

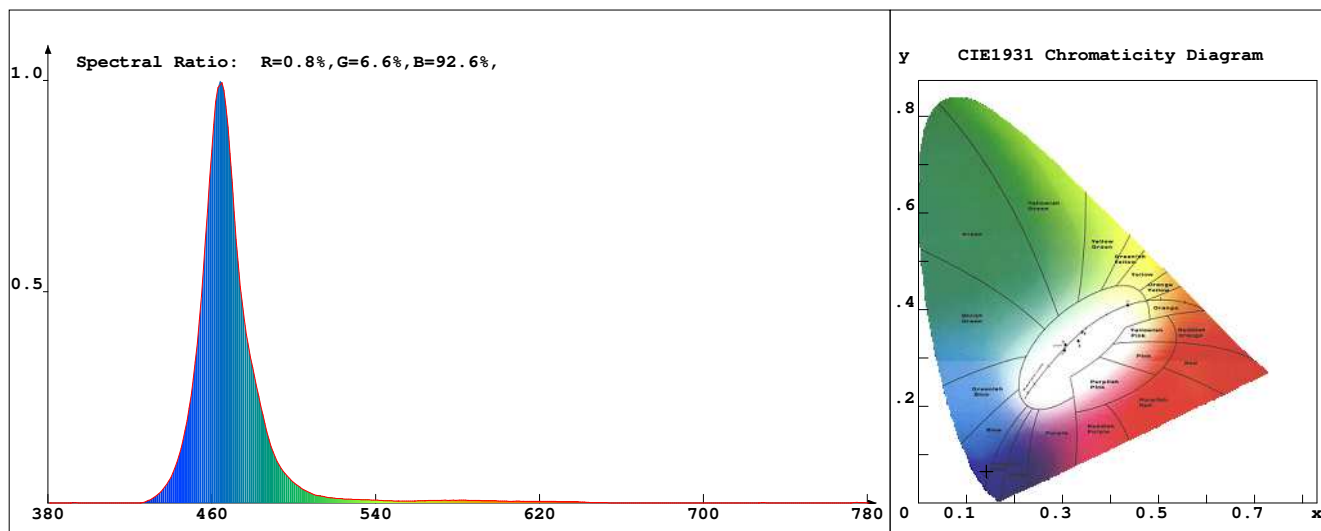
Temperature : 'C

Humidity : -%

Operator : -

Test Date : 2023-09-25

Remark:



## Chroma Parameters

Chro.Coord.: x=0.1417 y=0.0652 u=0.1620 v=0.1118 duv=-0.0201

CCT:100000K Dominant Wave.:467.7nm Purity:94.1% Centre Wave:463.7nm

Flux RGB Ratio:R=2.4%,G=30.8%,B=66.8% Peak Wave:462.7nm Half Width:19.3nm

## Rendering Index:Ra=-34.7 CRI= 87.1

R1 =26 R2 =-22 R3 =-135 R4 =-73 R5 =33 R6 =-28 R7 =-44 R8 =-33

R9 =-181 R10=-191 R11=-94 R12=-67 R13=9 R14=-26 R15=26

PPF:4.429umol/s (400-700nm)

PRF:1.1mW (400-700nm)

PAR:0.8mW (400-700nm)

## Photo Parameters

Flux:106.92lm Effi.:24.7lm/W Radiant:1130.3mW Iv:0.0mcd

Scotopic Flux:1504.0Plm Effi.:0.0Plm/W S/P:14.1

Efficiency:0.00

Effi Level:A++ (EU 874-2012) Photon Flux:4433.990umol/s (380-780nm)

## Ele. Parameters

Forward Current:If=180.0mA

Reverse Voltage:Vr=5.00V

Forward Voltage:Vf=24.03V

Reverse Current:Ir=0.00uA

Power:P=4.341W

## Instrument state

Instrument:Lisun

Integral Time: 75.103ms

VPeak: 13320

VDark: 1177

Scan Range: 380-780nm

Product ID: 201508924

# IES TM-30-2015 Test Report

## Product Mark

Product Type : F52-R400-120512 BLU

Temperature : 'C

Operator : -

Remark :

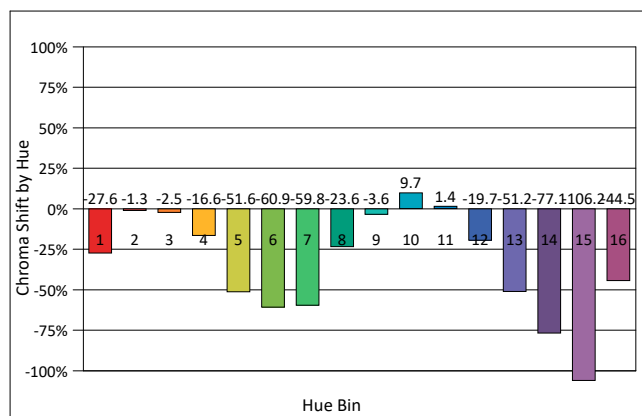
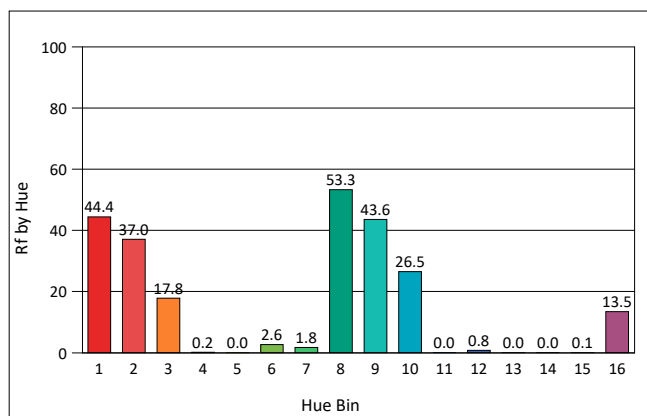
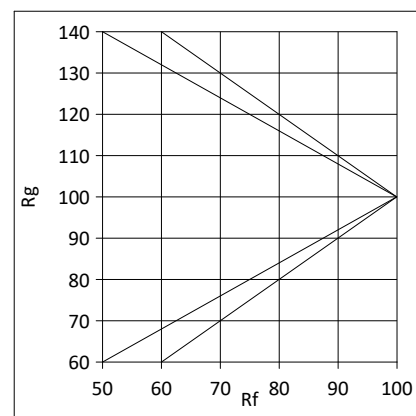
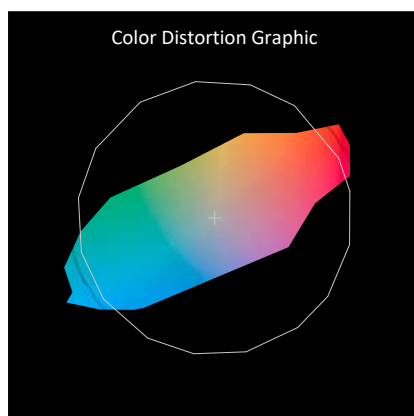
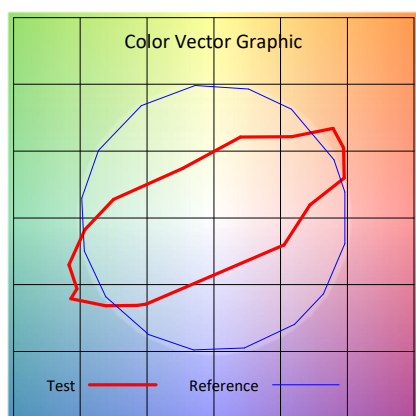
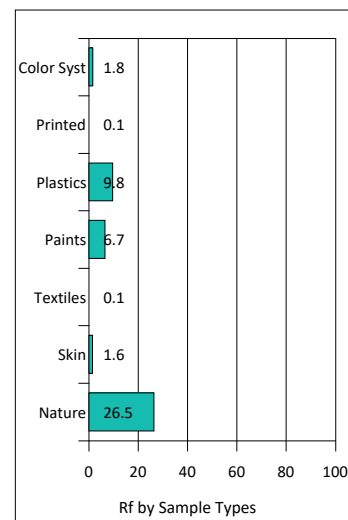
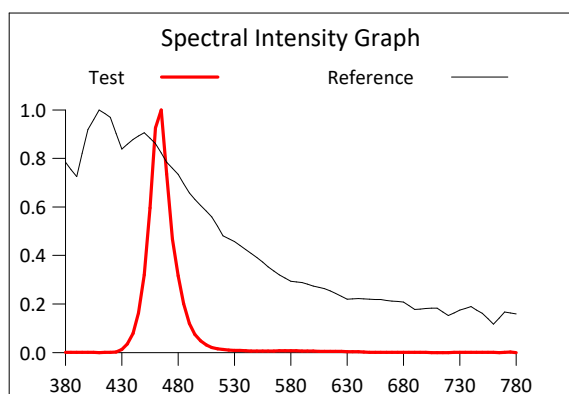
Manufacturer : -

Humidity : -%

Test Date : 2023-09-25

Rf: 3.9 CCT(K): 100000 u': 0.1620  
Rg: 50.2 LER: 75.0 Duv: -0.0201 v': 0.1118

| Hue Bin | Rf   | Graphic Shifts (%) |        |
|---------|------|--------------------|--------|
|         |      | Chroma             | Hue    |
| 1       | 44.4 | -27.6%             | -4.2%  |
| 2       | 37.0 | -1.3%              | -15.4% |
| 3       | 17.8 | -2.5%              | -48.6% |
| 4       | 0.2  | -16.6%             | -67.8% |
| 5       | 0.0  | -51.6%             | -63.5% |
| 6       | 2.6  | -60.9%             | -48.6% |
| 7       | 1.8  | -59.8%             | -23.8% |
| 8       | 53.3 | -23.6%             | -3.9%  |
| 9       | 43.6 | -3.6%              | -15.7% |
| 10      | 26.5 | 9.7%               | -35.2% |
| 11      | 0.0  | 1.4%               | -63.6% |
| 12      | 0.8  | -19.7%             | -97.3% |
| 13      | 0.0  | -51.2%             | -95.9% |
| 14      | 0.0  | -77.1%             | -90.0% |
| 15      | 0.1  | -106.2%            | -80.1% |
| 16      | 13.5 | -44.5%             | -9.7%  |



# IES TM-30-2015 Test Report

## Product Mark

Product Type : F52-R400-120512 BLU

Manufacturer : -

Temperature : 'C

Humidity : -%

Operator : -

Test Date : 2023-09-25

Remark :

