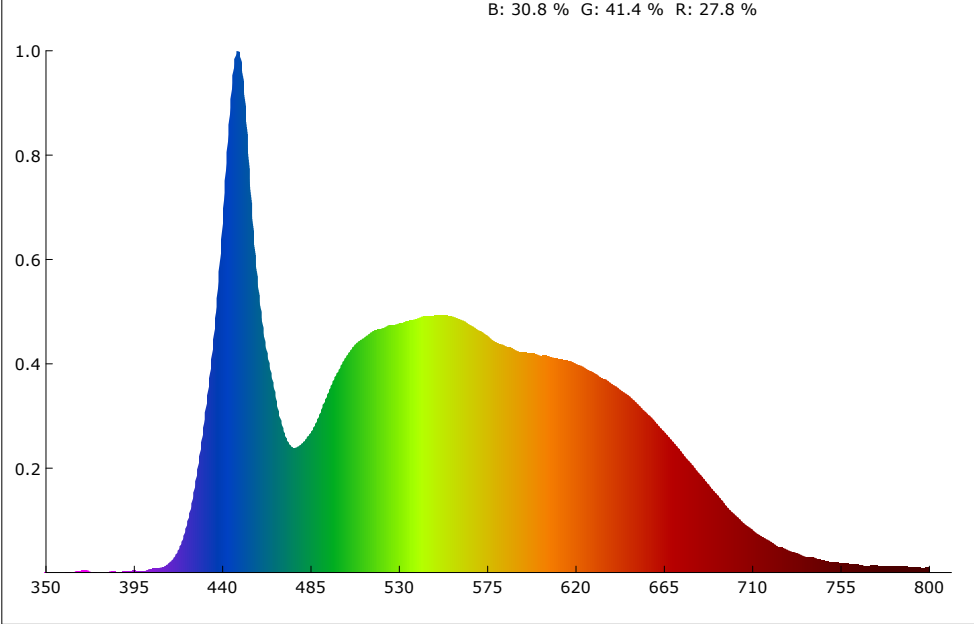
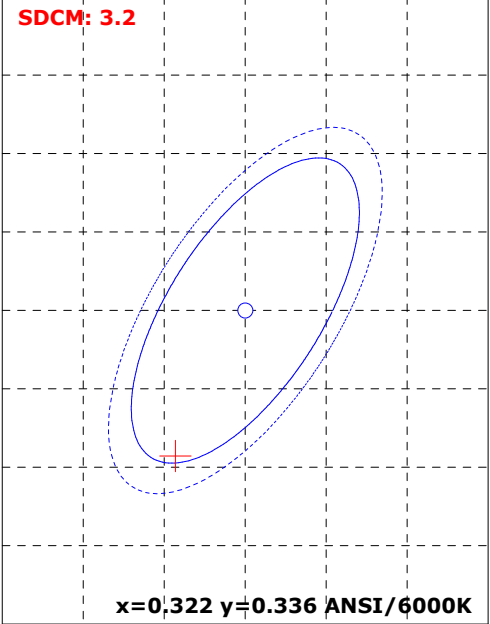


Spectrogram



SDCM



Color Parameter:

x: 0.3207      y: 0.3307      u: 0.2028      v: 0.3136      u': 0.2028      v': 0.4704  
R\_ratio: 27.8 %      G\_ratio: 41.4 %      B\_ratio: 30.8 %      RedRatio: 14.8 %      GreenRatio: 81.5 %      BlueRatio: 3.7 %

Ra: 90.2      AvgR: 87.2  
R1: 92.0      R2: 90.6      R3: 87.6      R4: 90.9      R5: 92.1      R6: 86.8      R7: 92.1      R8: 90.1  
R9: 69.8      R10: 77.2      R11: 91.3      R12: 71.7      R13: 91.2      R14: 93.0      R15: 92.2

|                    |                       |                           |                        |
|--------------------|-----------------------|---------------------------|------------------------|
| CCT: 6072 K        | Flux: 2042.315 lm     | PeakWave: 448.6 nm        | SDCM: 3.2              |
| S/P: 2.2           | CentralWave: 448.4 nm | DominantWave: 489.0 nm    | CentroidWave: 551.7 nm |
| HalfWidth: 22.0 nm | duv: 0.00006          | purity: 4.4 %             | CQS: 86.8              |
| LER(TM-30): 282.8  | Ep: 7220.6 mw         | Rg: 101.7                 | Rf: 87.3               |
| Red Ep: 1943.3 mw  | Near red Ep: 200.9 mw | Near infrared Ep: 15.0 mw |                        |

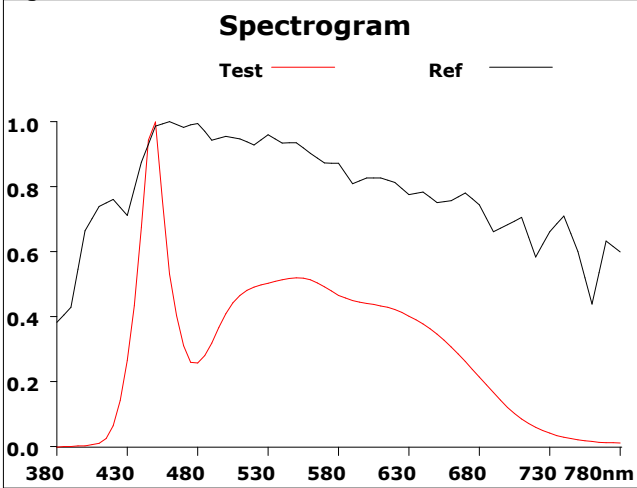
Electrical parameters:

|                  |              |             |           |
|------------------|--------------|-------------|-----------|
| Effic: 54.1 Lm/W | Energy: 58.9 | Effi: G     |           |
| U: 220.8 V       | I: 0.183 A   | P: 37.770 W | Pf: 0.932 |

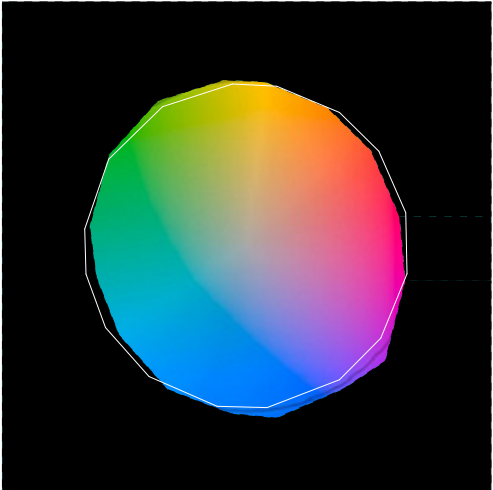
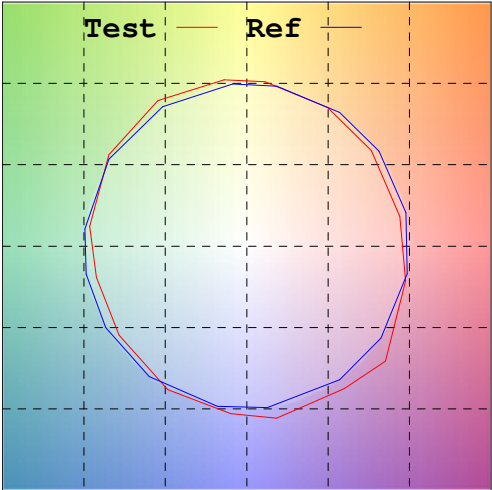
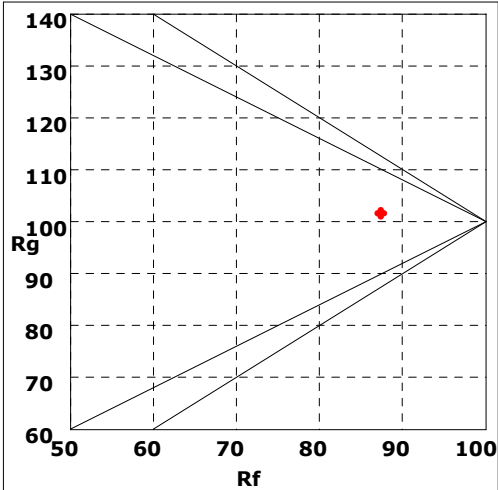
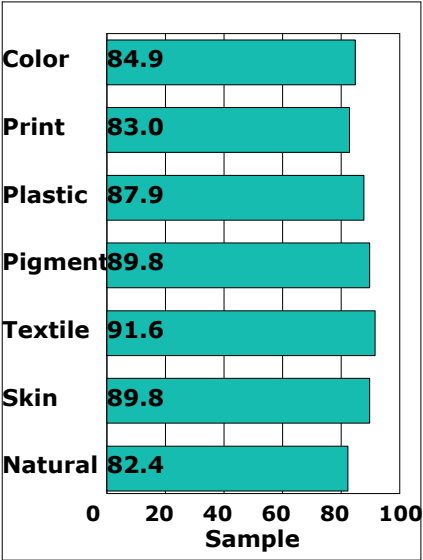
Product model:  
Product number:  
Tester:  
Remarks:

Manufacturer:  
Test unit:  
Date of observation: 10/13/23

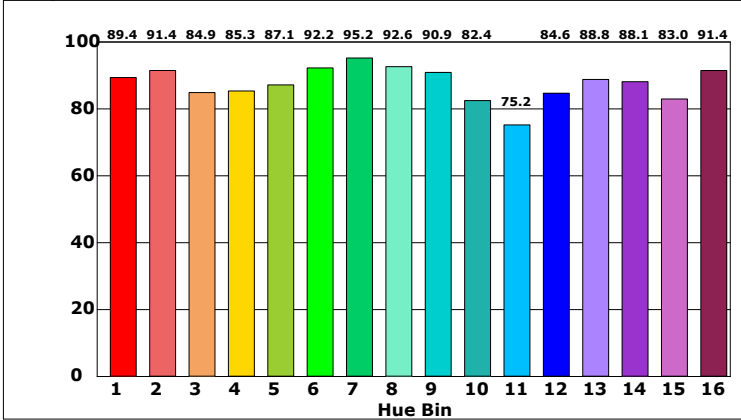
Rf: 87.3 CCT: 6072K u': 0.2028  
Rg: 101.7 LER: 282.8 Duv: 0.00006 v': 0.4704



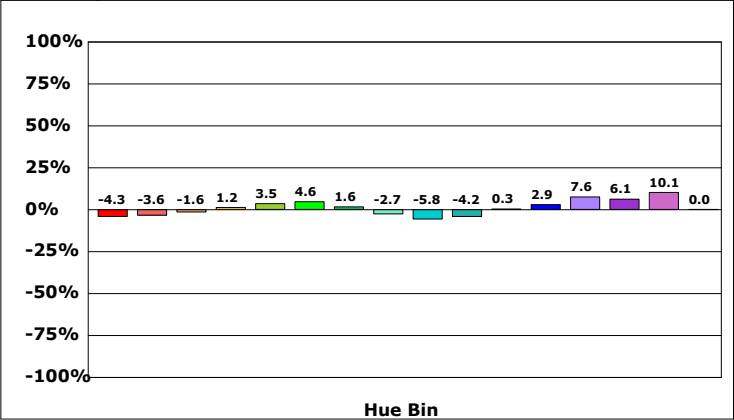
| 500     |      |        |        |
|---------|------|--------|--------|
| Hue Bin | Rf   | Chroma | Hue    |
| 1       | 89.4 | -4.3%  | -1.7%  |
| 2       | 91.4 | -3.6%  | 2.8%   |
| 3       | 84.9 | -1.6%  | 7.6%   |
| 4       | 85.3 | 1.2%   | 7.7%   |
| 5       | 87.1 | 3.5%   | 4.8%   |
| 6       | 92.2 | 4.6%   | 0.4%   |
| 7       | 95.2 | 1.6%   | -2.4%  |
| 8       | 92.6 | -2.7%  | -2.2%  |
| 9       | 90.9 | -5.8%  | 3.2%   |
| 10      | 82.4 | -4.2%  | 8.6%   |
| 11      | 75.2 | 0.3%   | 14.0%  |
| 12      | 84.6 | 2.9%   | 8.9%   |
| 13      | 88.8 | 7.6%   | 4.3%   |
| 14      | 88.1 | 6.1%   | -0.7%  |
| 15      | 83.0 | 10.1%  | -10.3% |
| 16      | 91.4 | 0.0%   | -4.6%  |



Rf by Bue

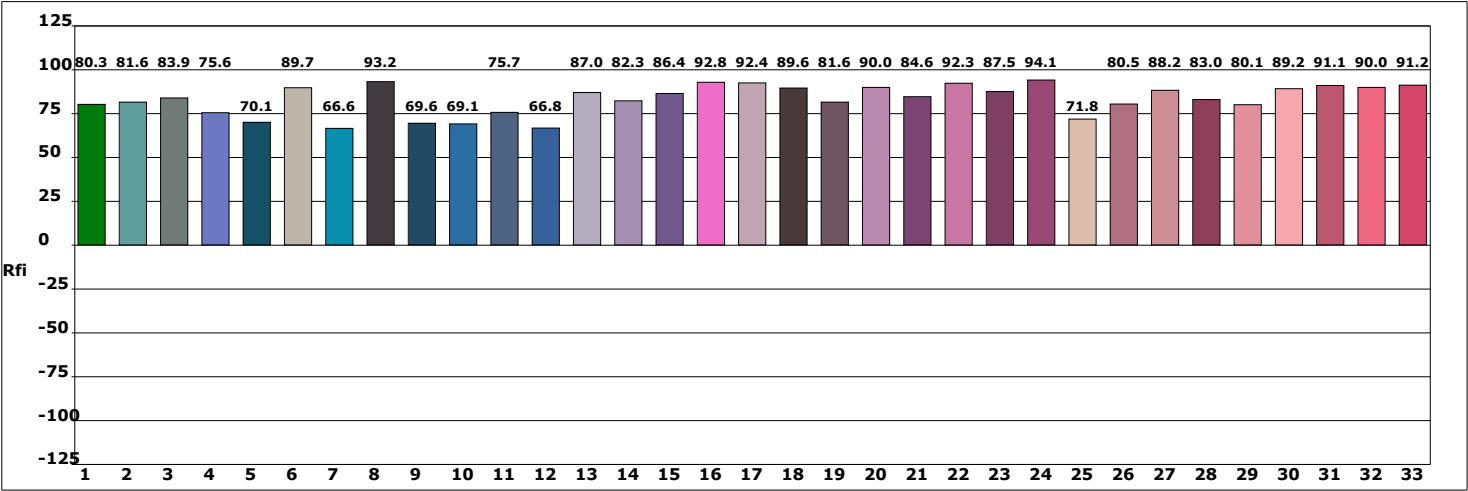
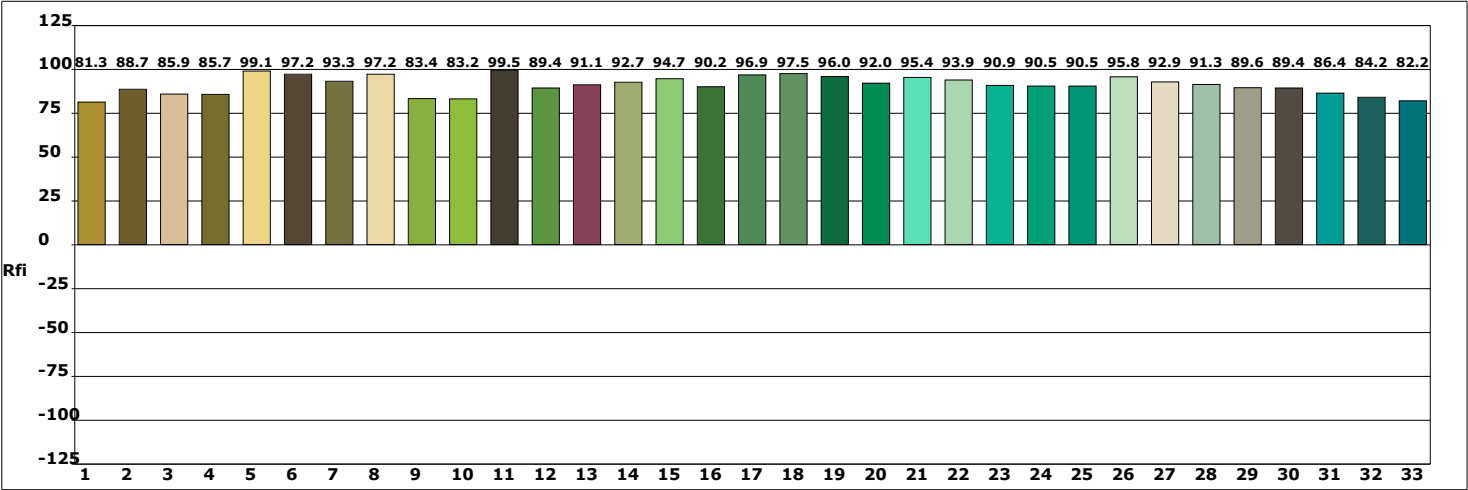
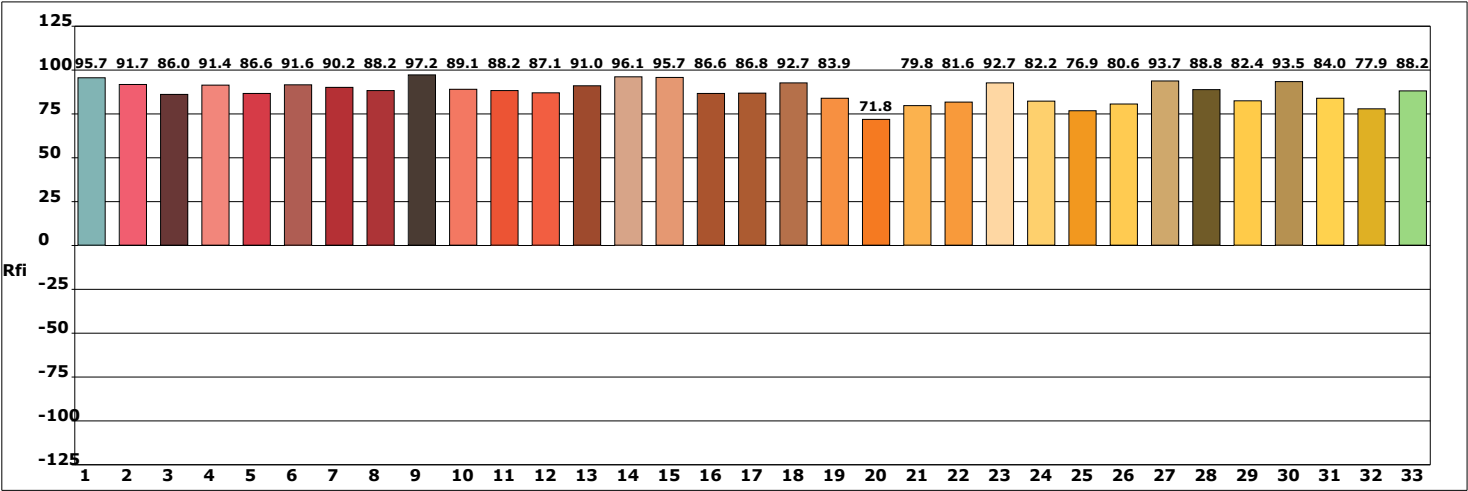


Chroma by Bue



Product model:  
Product number:  
Tester:  
Remarks:

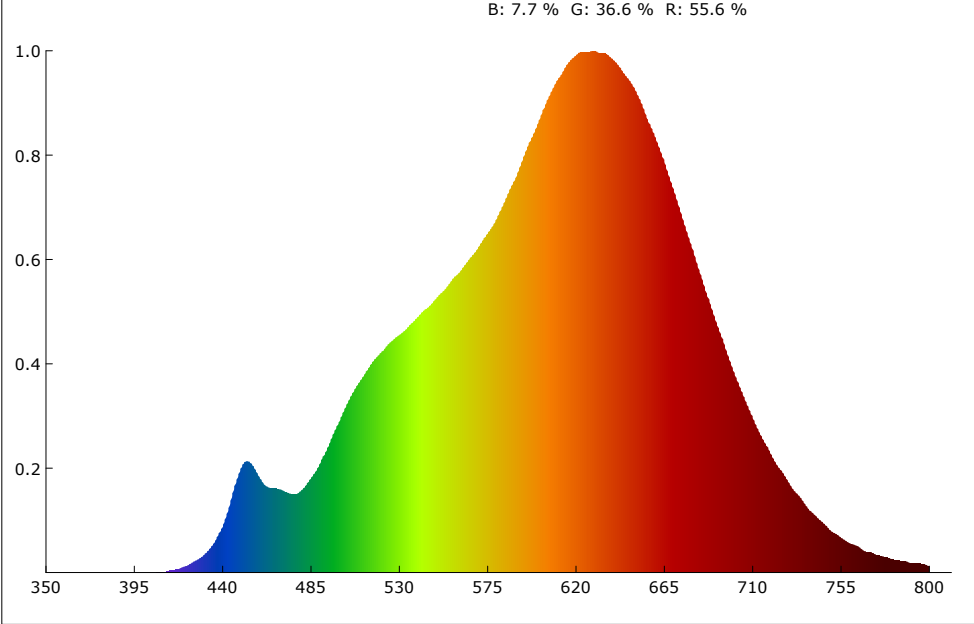
Manufacturer:  
Test unit:  
Date of observation: 10/13/23



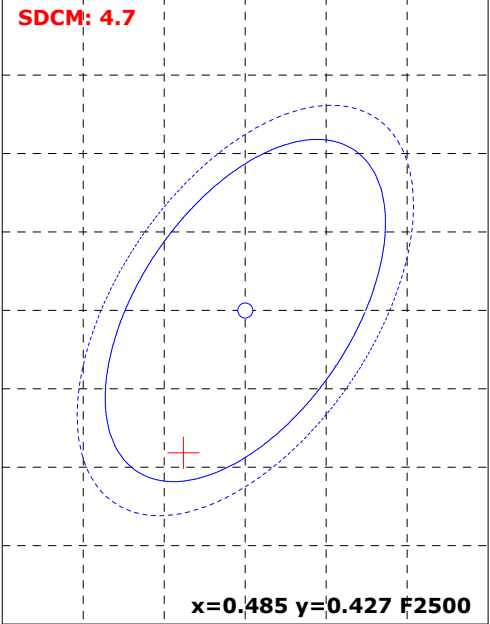
Product model:  
Product number:  
Tester:  
Remarks:

Manufacturer:  
Test unit:  
Date of observation: 10/13/23

Spectrogram



SDCM



Color Parameter:

x: 0.4772      y: 0.4245      u: 0.2674      v: 0.3567      u': 0.2674      v': 0.5351  
R\_ratio: 55.6 %      G\_ratio: 36.6 %      B\_ratio: 7.7 %      RedRatio: 26.8 %      GreenRatio: 72.0 %      BlueRatio: 1.2 %

Ra: 95.2      AvgR: 92.8  
R1: 95.4      R2: 96.6      R3: 97.1      R4: 97.3      R5: 95.8      R6: 98.7      R7: 94.6      R8: 86.3  
R9: 68.9      R10: 92.0      R11: 98.9      R12: 87.6      R13: 95.6      R14: 97.4      R15: 90.5

CCT: 2576 K      Flux: 1559.946 lm      PeakWave: 628.5 nm      SDCM: 4.7  
S/P: 1.2      CentralWave: 616.6 nm      DominantWave: 583.8 nm      CentroidWave: 608.4 nm  
HalfWidth: 145.4 nm      duv: 0.00368      purity: 70.7 %      CQS: 87.2  
LER(TM-30): 272.6      Ep: 5722.2 mw      Rg: 96.3      Rf: 92.2  
Red Ep: 2941.8 mw      Near red Ep: 419.0 mw      Near infrared Ep: 15.4 mw

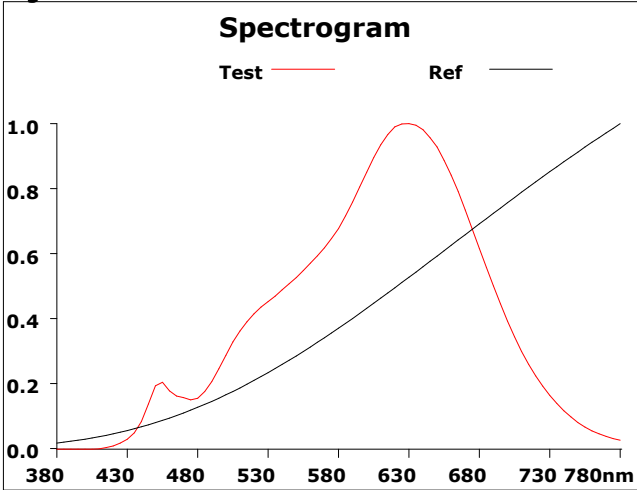
Electrical parameters:

Effic: 41.0 Lm/W      Energy: 44.7      Effi: G  
U: 220.9 V      I: 0.184 A      P: 38.010 W      Pf: 0.932

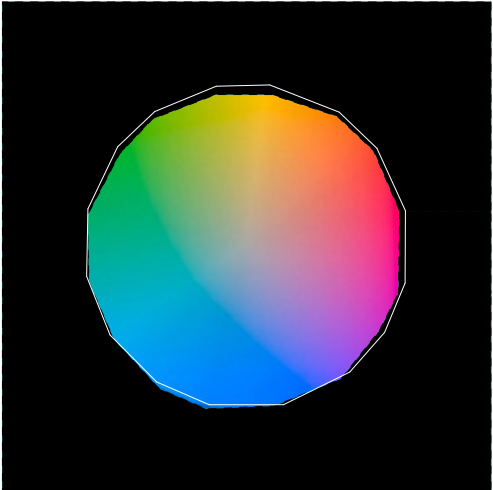
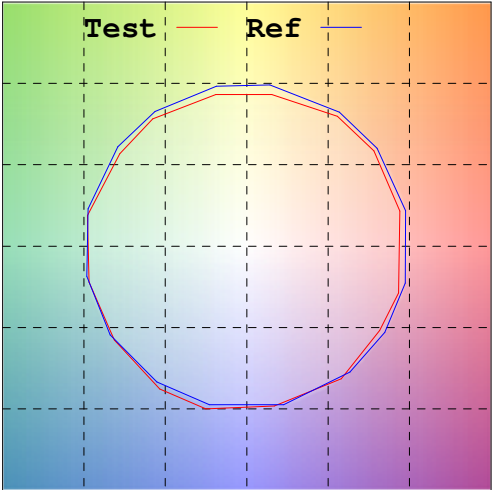
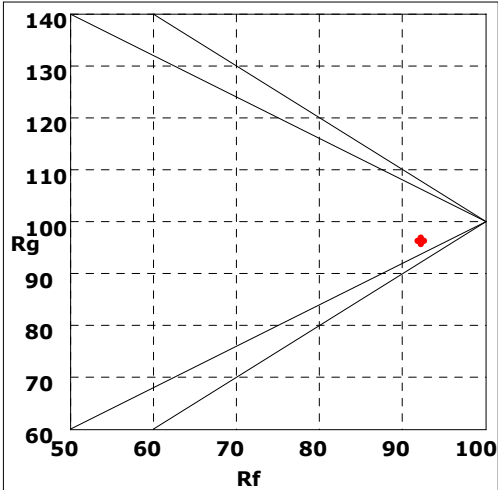
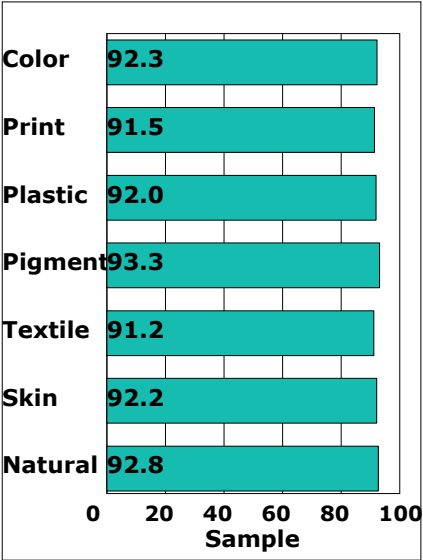
Product model:  
Product number:  
Tester:  
Remarks:

Manufacturer:  
Test unit:  
Date of observation: 10/13/23

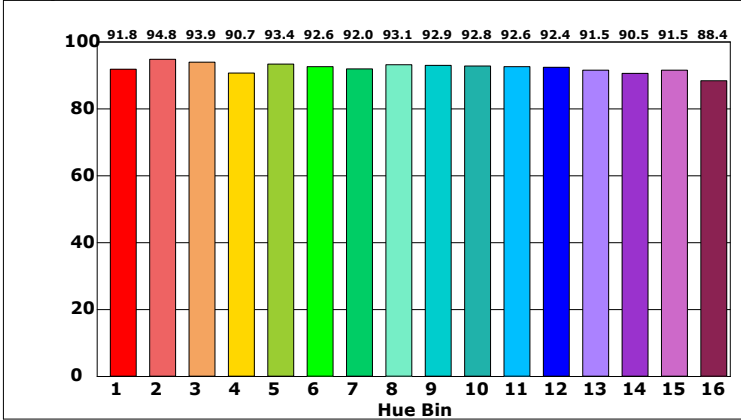
Rf: 92.2 CCT: 2576K u': 0.2674  
Rg: 96.3 LER: 272.6 Duv: 0.00368 v': 0.5351



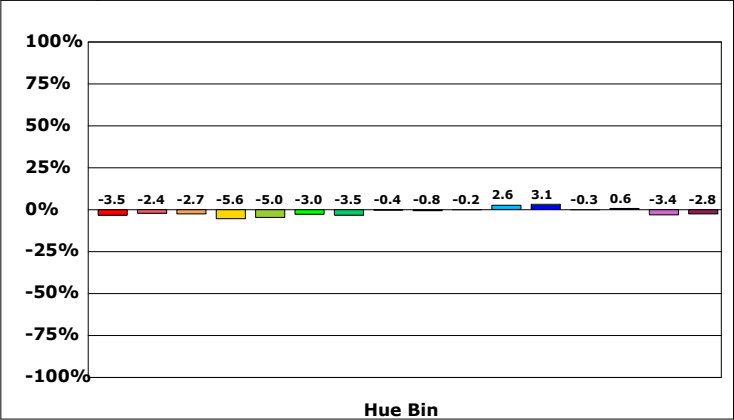
| 500     |      |        |       |
|---------|------|--------|-------|
| Hue Bin | Rf   | Chroma | Hue   |
| 1       | 91.8 | -3.5%  | 0.5%  |
| 2       | 94.8 | -2.4%  | -0.1% |
| 3       | 93.9 | -2.7%  | -0.3% |
| 4       | 90.7 | -5.6%  | -2.3% |
| 5       | 93.4 | -5.0%  | 1.4%  |
| 6       | 92.6 | -3.0%  | 3.7%  |
| 7       | 92.0 | -3.5%  | 3.0%  |
| 8       | 93.1 | -0.4%  | 4.1%  |
| 9       | 92.9 | -0.8%  | 3.7%  |
| 10      | 92.8 | -0.2%  | 3.9%  |
| 11      | 92.6 | 2.6%   | 4.0%  |
| 12      | 92.4 | 3.1%   | -1.6% |
| 13      | 91.5 | -0.3%  | -5.9% |
| 14      | 90.5 | 0.6%   | -6.7% |
| 15      | 91.5 | -3.4%  | -0.7% |
| 16      | 88.4 | -2.8%  | -6.8% |



Rf by Bue

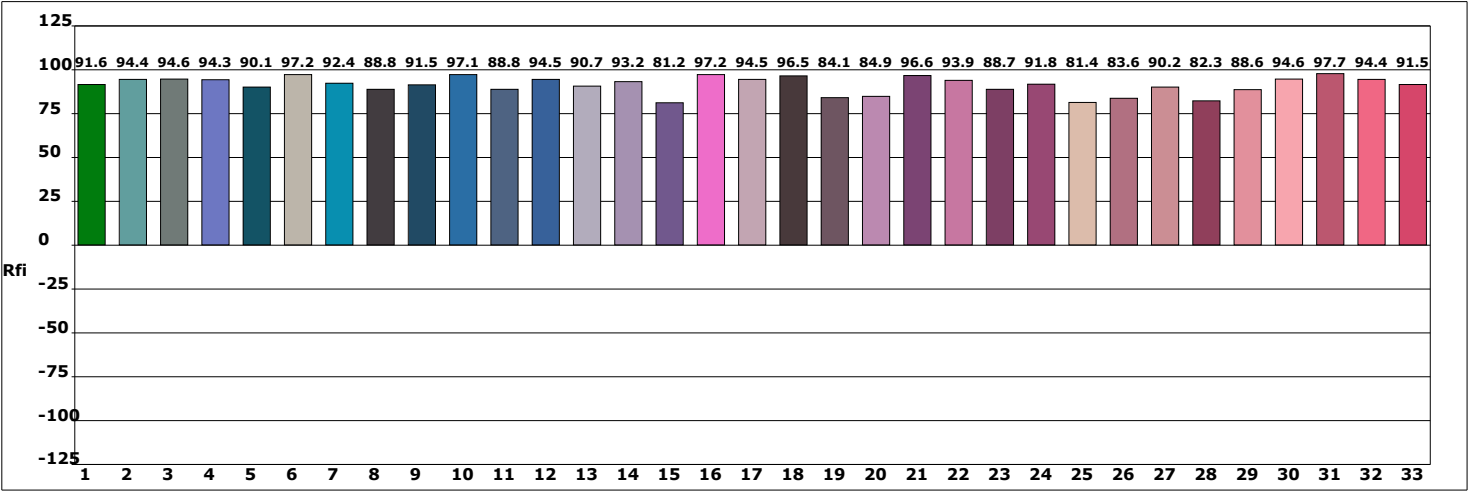
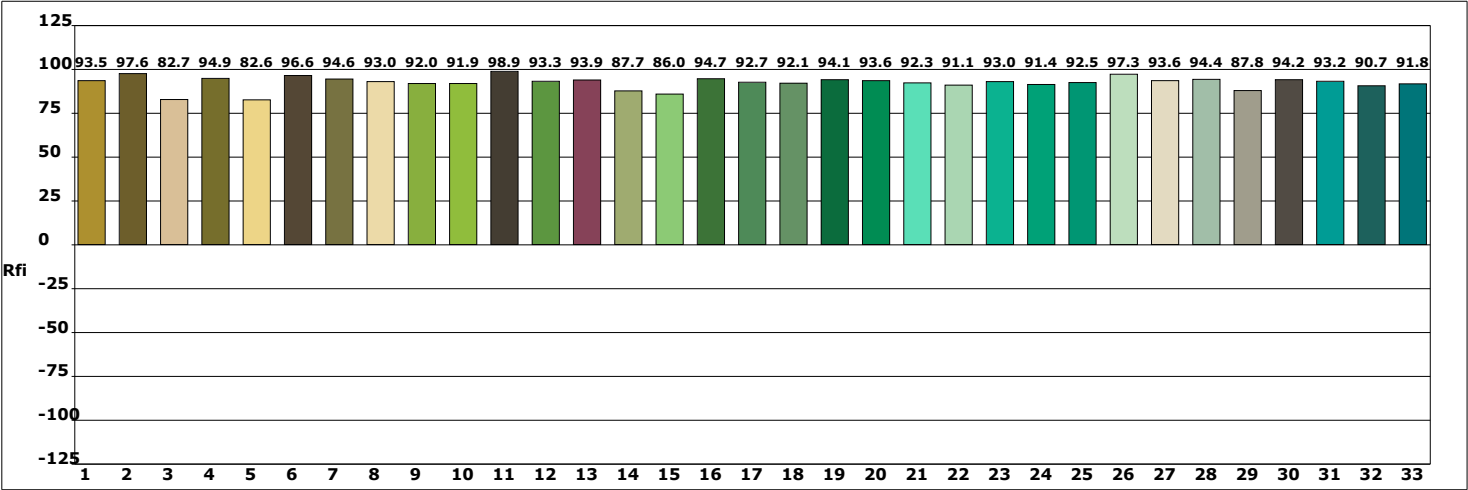
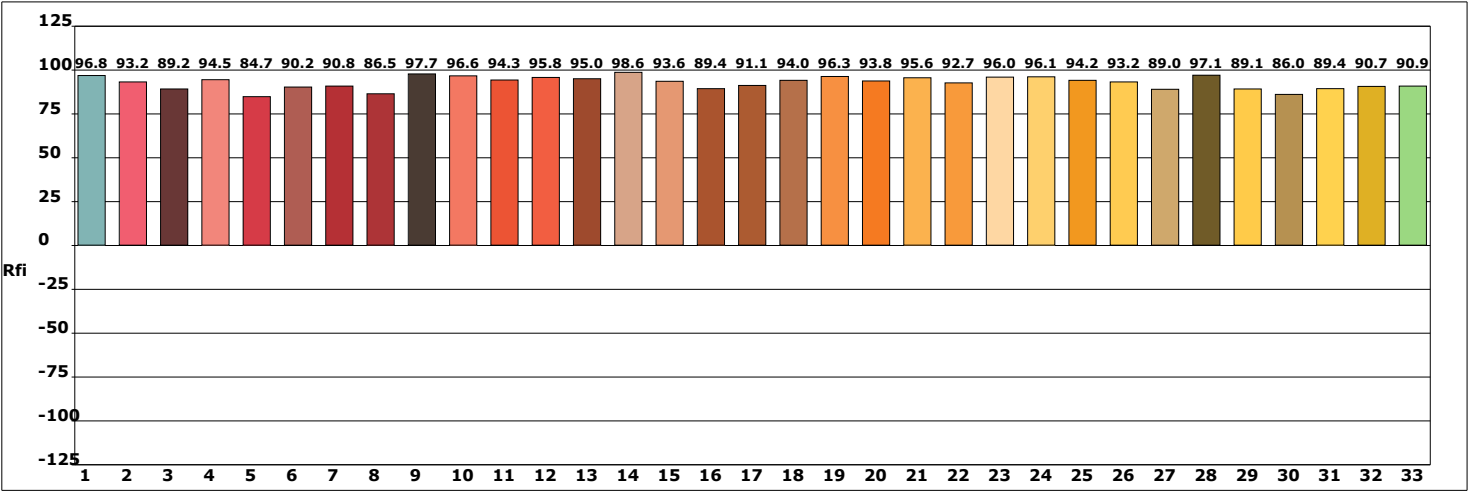


Chroma by Bue



Product model:  
Product number:  
Tester:  
Remarks:

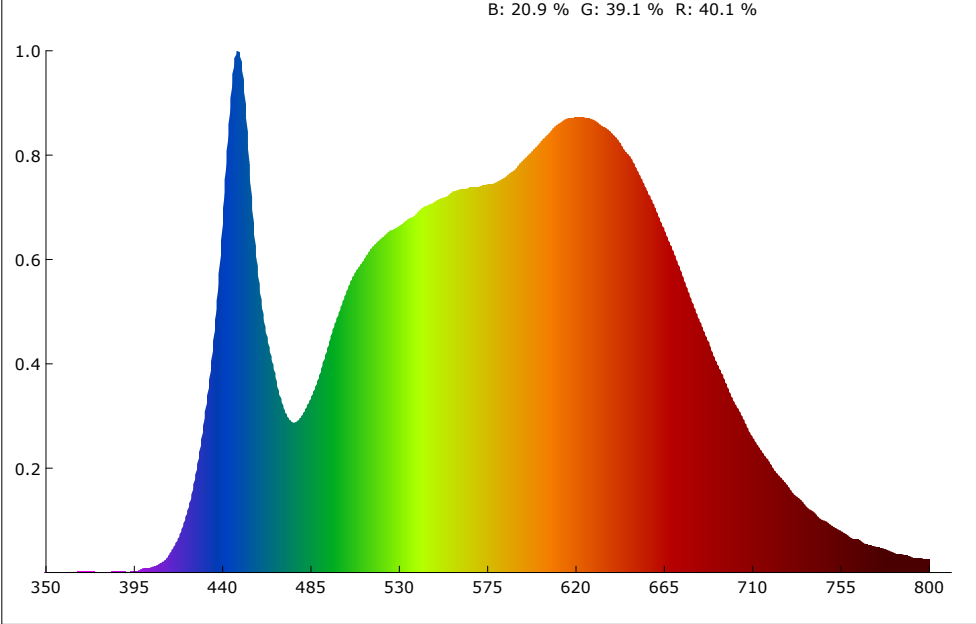
Manufacturer:  
Test unit:  
Date of observation: 10/13/23



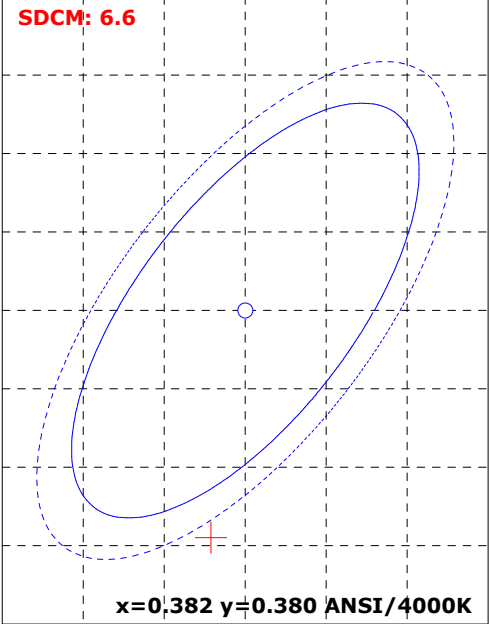
Product model:  
Product number:  
Tester:  
Remarks:

Manufacturer:  
Test unit:  
Date of observation: 10/13/23

Spectrogram



SDCM



Color Parameter:

x: 0.3797      y: 0.3652      u: 0.2293      v: 0.3308      u': 0.2293      v': 0.4962  
R\_ratio: 40.1 %      G\_ratio: 39.1 %      B\_ratio: 20.9 %      RedRatio: 20.1 %      GreenRatio: 77.3 %      BlueRatio: 2.6 %

Ra: 95.2      AvgR: 93.9  
R1: 98.2      R2: 96.2      R3: 92.4      R4: 93.6      R5: 97.5      R6: 94.2      R7: 95.0      R8: 95.2  
R9: 88.4      R10: 90.3      R11: 93.0      R12: 83.2      R13: 97.6      R14: 95.1      R15: 98.3

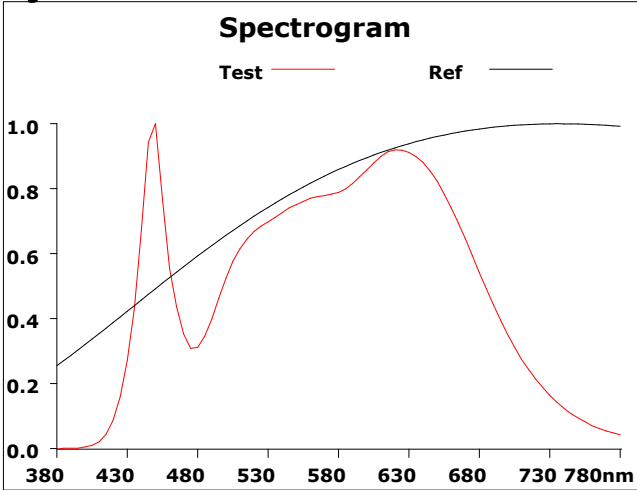
CCT: 3932 K      Flux: 1830.275 lm      PeakWave: 448.6 nm      SDCM: 6.6  
S/P: 1.8      CentralWave: 449.0 nm      DominantWave: 582.7 nm      CentroidWave: 579.3 nm  
HalfWidth: 23.0 nm      duv: -0.00533      purity: 23.5 %      CQS: 85.1  
LER(TM-30): 272.7      Ep: 6710.8 mw      Rg: 104.0      Rf: 91.0  
Red Ep: 2517.4 mw      Near red Ep: 399.6 mw      Near infrared Ep: 24.1 mw

Electrical parameters:

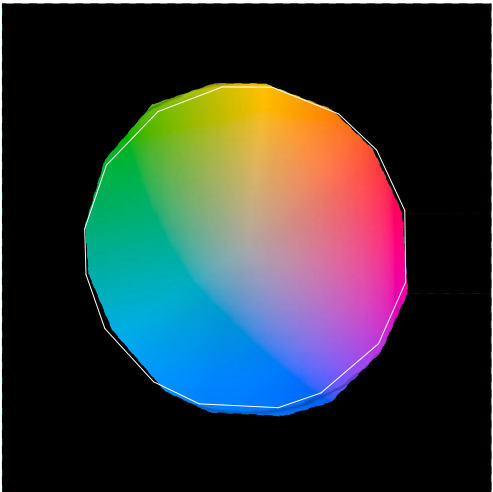
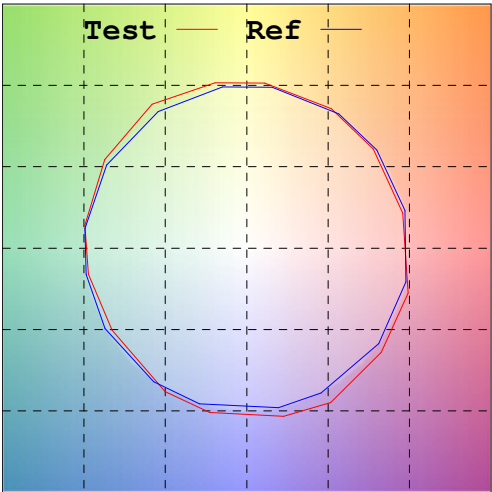
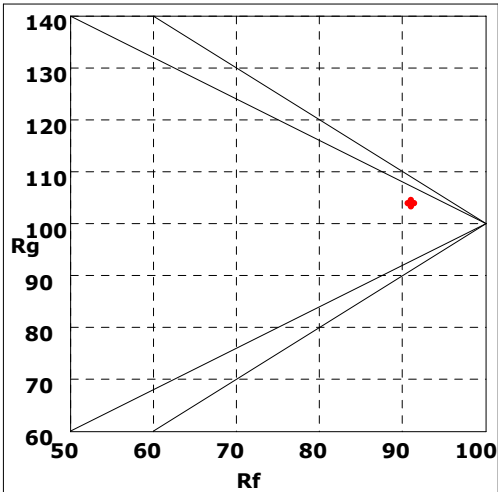
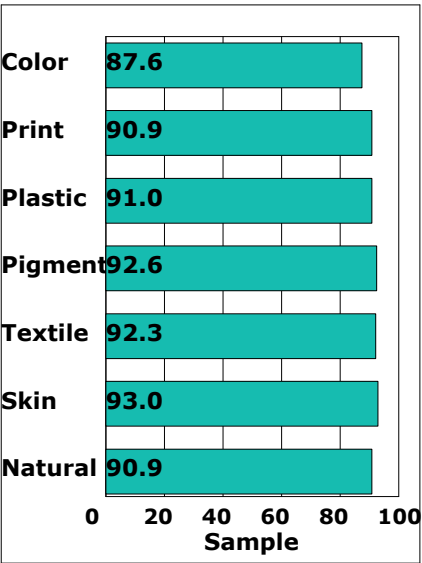
Effic: 48.1 lm/W      Energy: 52.4      Effi: G  
U: 221.0 V      I: 0.184 A      P: 38.040 W      Pf: 0.932

Product model:      Manufacturer:  
Product number:      Test unit:  
Tester:      Date of observation: 10/13/23  
Remarks:

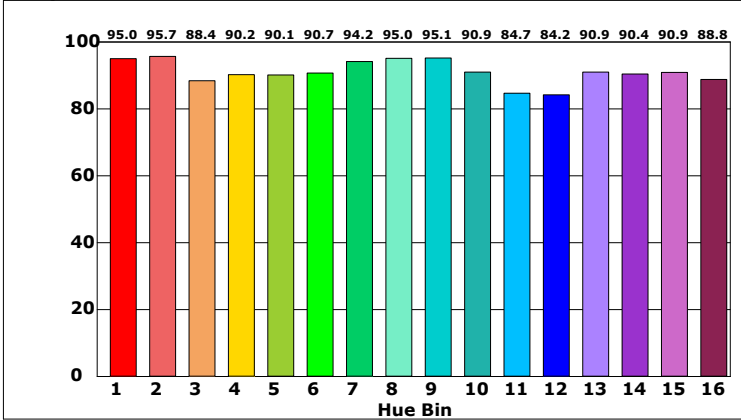
Rf: 91.0 CCT: 3932K u': 0.2293  
Rg: 104.0 LER: 272.7 Duv: -0.00533 v': 0.4962



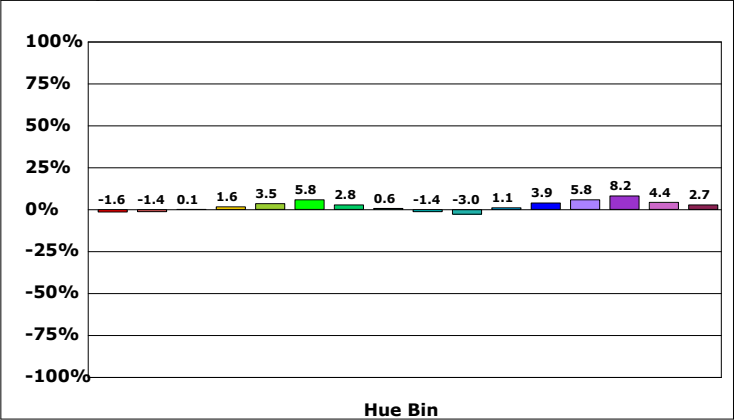
| 500     |      |        |       |
|---------|------|--------|-------|
| Hue Bin | Rf   | Chroma | Hue   |
| 1       | 95.0 | -1.6%  | -1.3% |
| 2       | 95.7 | -1.4%  | 1.6%  |
| 3       | 88.4 | 0.1%   | 5.5%  |
| 4       | 90.2 | 1.6%   | 5.0%  |
| 5       | 90.1 | 3.5%   | 3.8%  |
| 6       | 90.7 | 5.8%   | 0.6%  |
| 7       | 94.2 | 2.8%   | -2.3% |
| 8       | 95.0 | 0.6%   | -2.0% |
| 9       | 95.1 | -1.4%  | -0.0% |
| 10      | 90.9 | -3.0%  | 3.2%  |
| 11      | 84.7 | 1.1%   | 9.2%  |
| 12      | 84.2 | 3.9%   | 7.1%  |
| 13      | 90.9 | 5.8%   | 2.0%  |
| 14      | 90.4 | 8.2%   | 1.7%  |
| 15      | 90.9 | 4.4%   | -3.6% |
| 16      | 88.8 | 2.7%   | -6.5% |



Rf by Bue

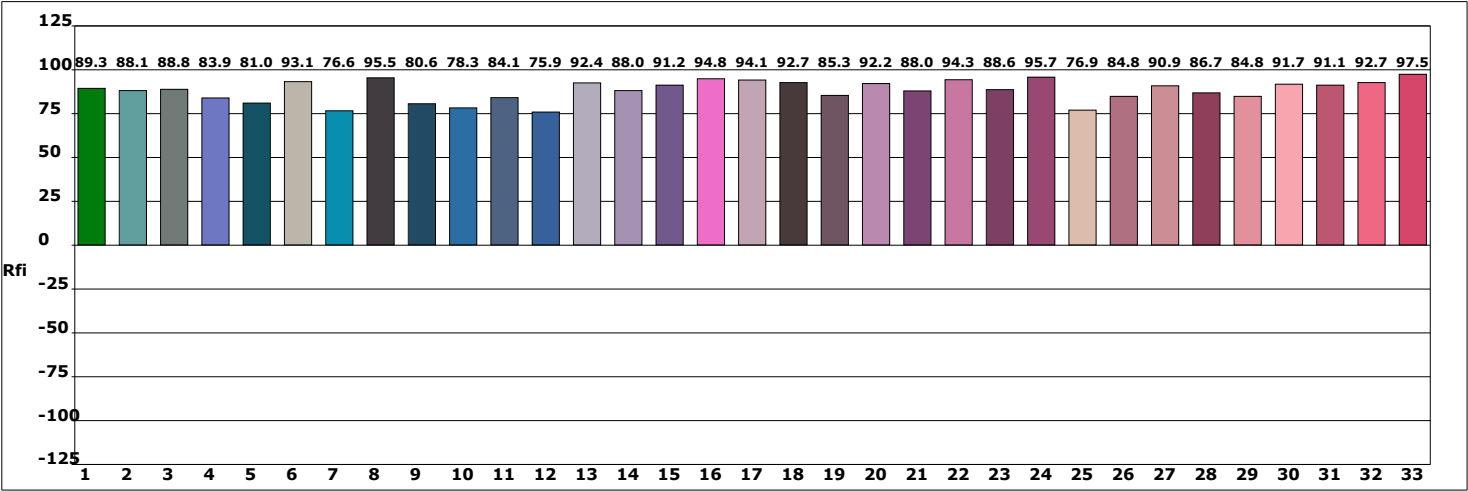
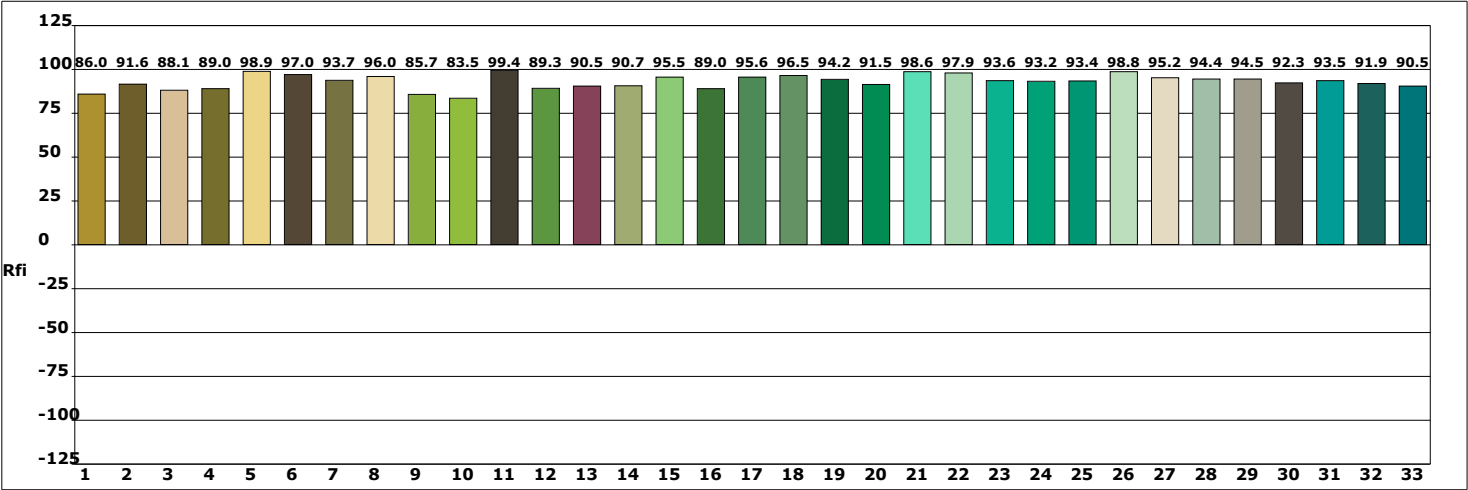
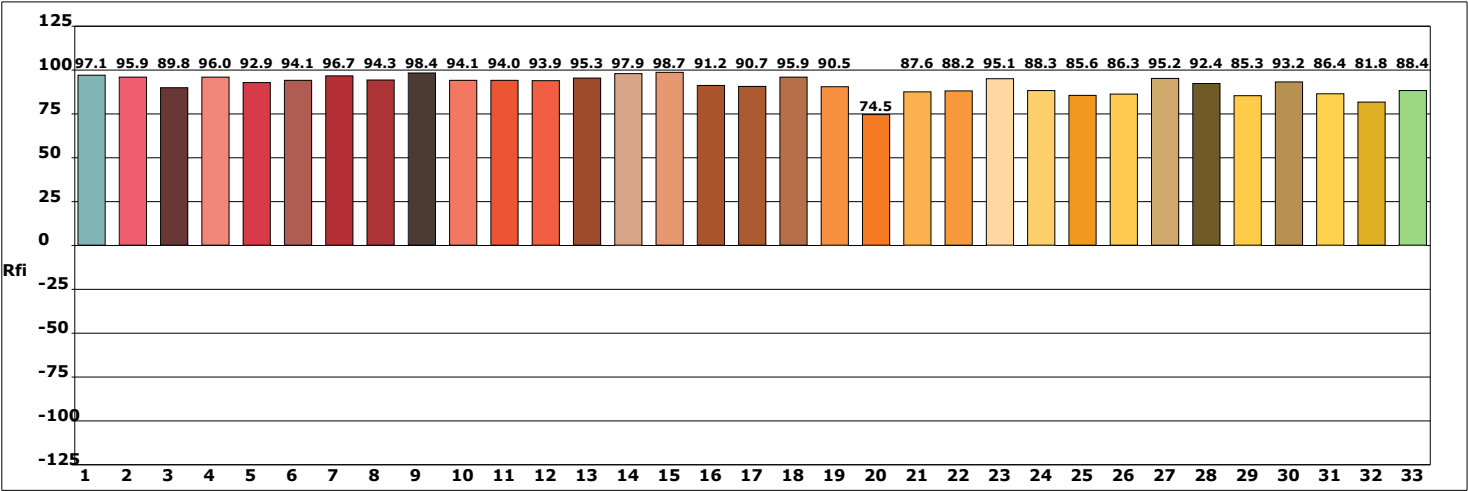


Chroma by Bue



Product model:  
Product number:  
Tester:  
Remarks:

Manufacturer:  
Test unit:  
Date of observation: 10/13/23



Product model:  
Product number:  
Tester:  
Remarks:

Manufacturer:  
Test unit:  
Date of observation: 10/13/23