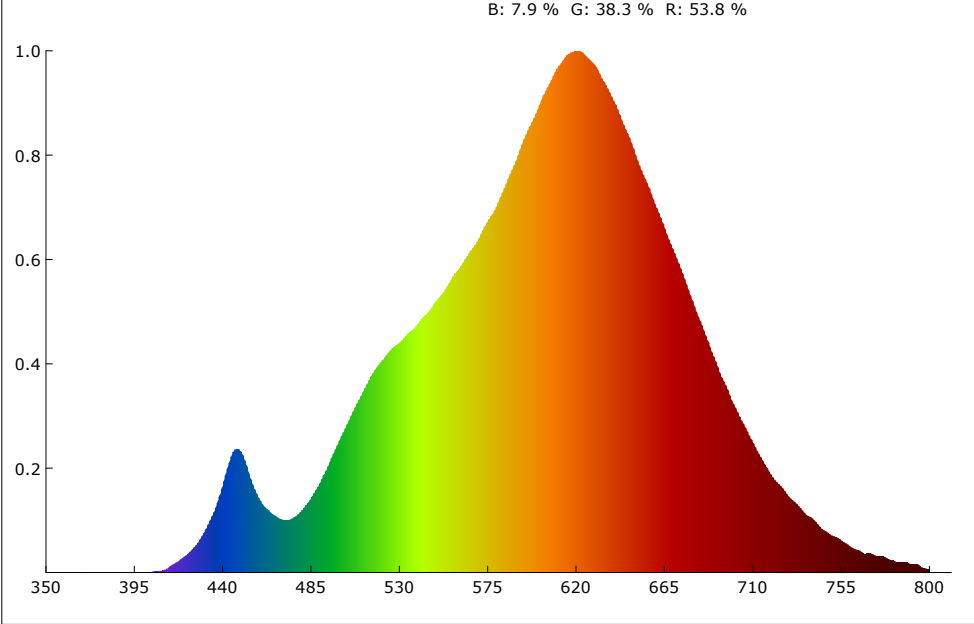
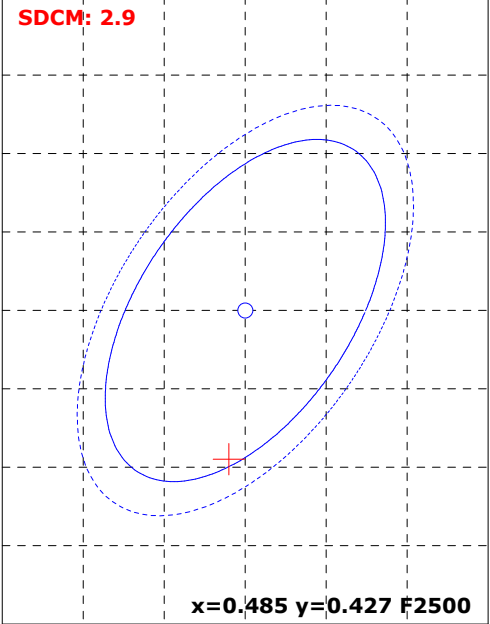


Spectrogram



SDCM



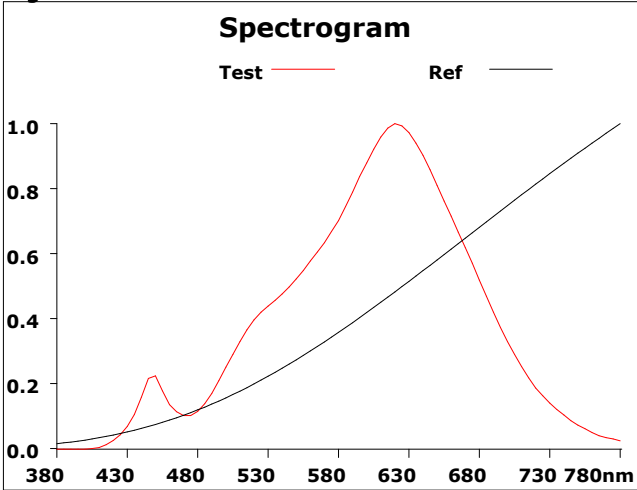
Color Parameter:

x: 0.4800	y: 0.4241	u: 0.2693	v: 0.3569	u': 0.2693	v': 0.5354
R_ratio: 53.8 %	G_ratio: 38.3 %	B_ratio: 7.9 %	RedRatio: 26.6 %	GreenRatio: 72.4 %	BlueRatio: 1.0 %
Ra: 88.7	AvgR: 85.5				
R1: 88.8	R2: 92.8	R3: 96.3	R4: 92.5	R5: 88.7	R6: 89.3
R7: 87.2	R8: 74.3	R9: 46.6	R10: 84.0	R11: 93.6	R12: 78.7
R13: 89.3	R14: 96.8	R15: 83.1			
CCT: 2540 K	Flux: 250.849 lm	PeakWave: 621.6 nm	SDCM: 2.9		
S/P: 1.1	CentralWave: 613.4 nm	DominantWave: 584.0 nm	CentroidWave: 604.8 nm		
HalfWidth: 134.6 nm	duv: 0.00341	purity: 71.4 %	CQS: 87.9		
LER(TM-30): 285.4	Ep: 878.9 mw	Rg: 98.9	Rf: 90.3		
Red Ep: 440.2 mw	Near red Ep: 58.4 mw	Near infrared Ep: 2.1 mw			

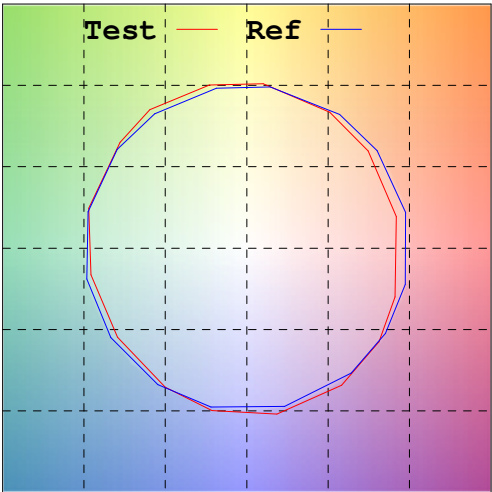
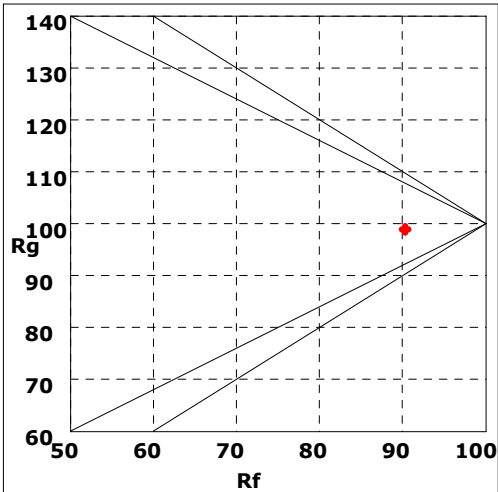
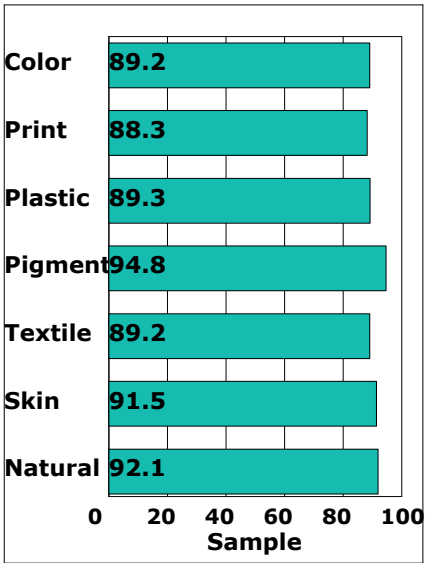
Electrical parameters:

Effic: 12.0 Lm/W	Energy: 13.1	Effi: G	
U: 219.3 V	I: 0.175 A	P: 20.930 W	Pf: 0.545

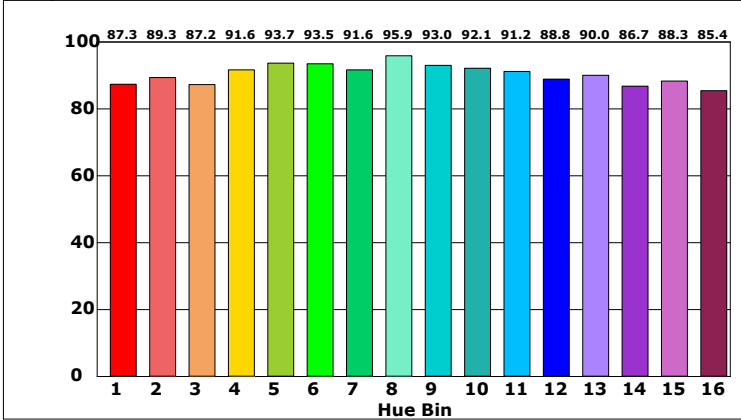
Rf: 90.3 CCT: 2540K u': 0.2693
Rg: 98.9 LER: 285.4 Duv: 0.00341 v': 0.5354



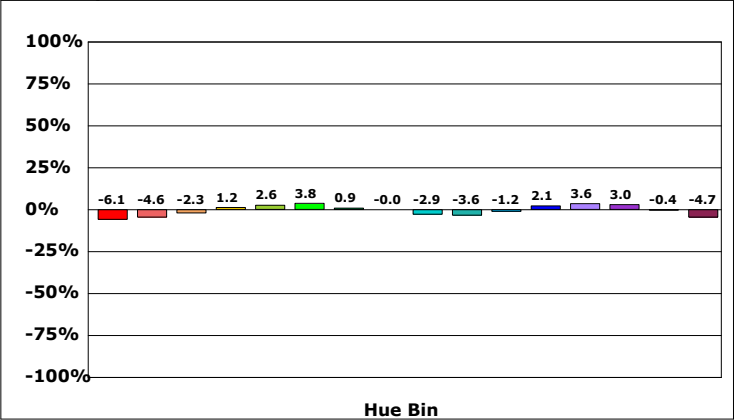
500			
Hue Bin	Rf	Chroma	Hue
1	87.3	-6.1%	-1.5%
2	89.3	-4.6%	2.9%
3	87.2	-2.3%	5.7%
4	91.6	1.2%	4.5%
5	93.7	2.6%	4.0%
6	93.5	3.8%	1.1%
7	91.6	0.9%	-4.5%
8	95.9	-0.0%	-2.4%
9	93.0	-2.9%	-2.1%
10	92.1	-3.6%	2.0%
11	91.2	-1.2%	4.7%
12	88.8	2.1%	1.0%
13	90.0	3.6%	-5.6%
14	86.7	3.0%	-9.1%
15	88.3	-0.4%	-6.5%
16	85.4	-4.7%	-8.8%



Rf by Bue

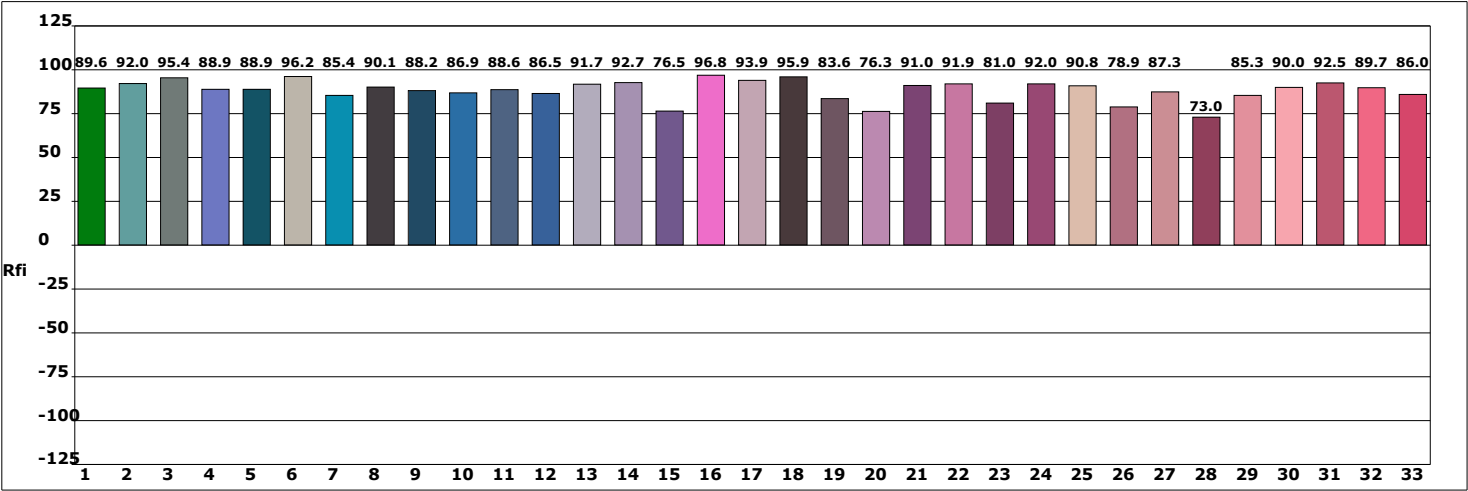
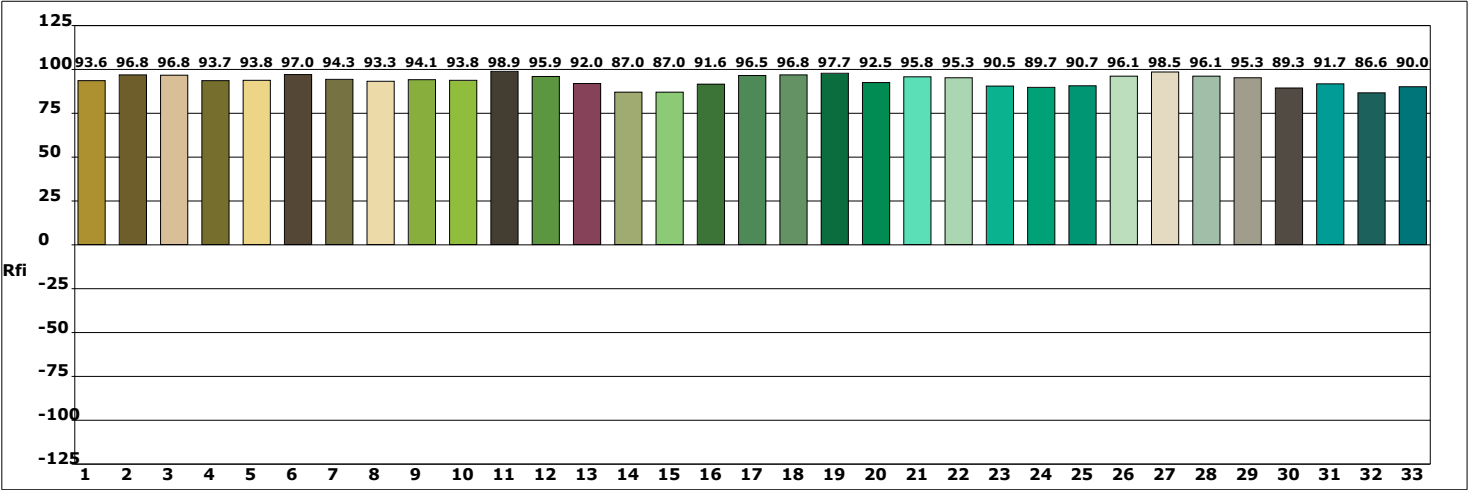
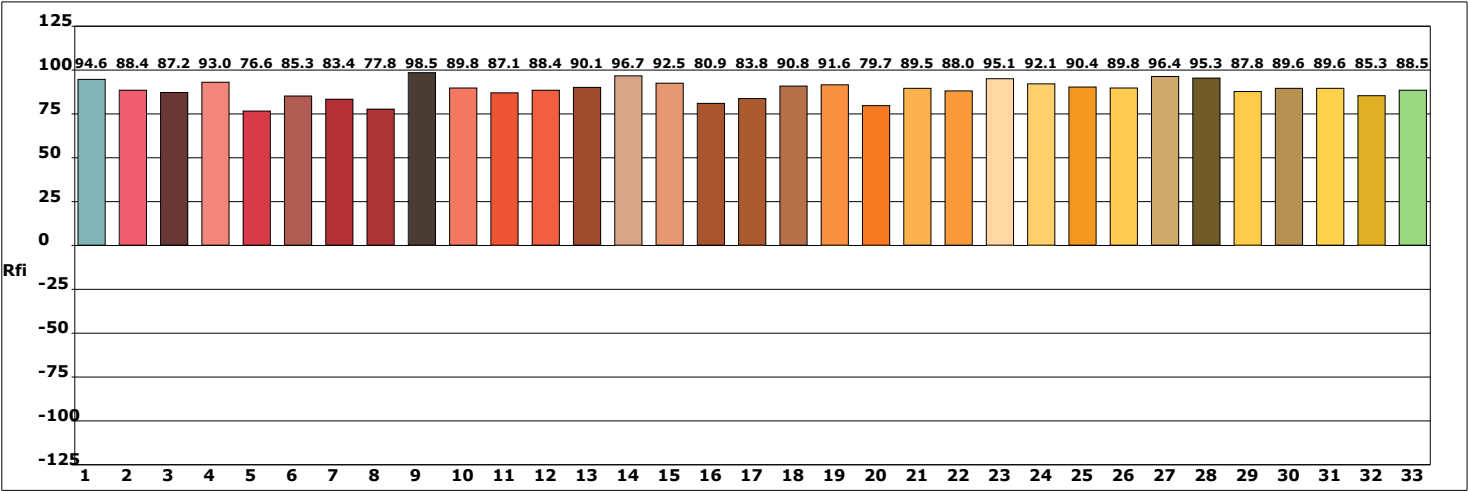


Chroma by Bue



Product model:
Product number:
Tester:
Remarks:

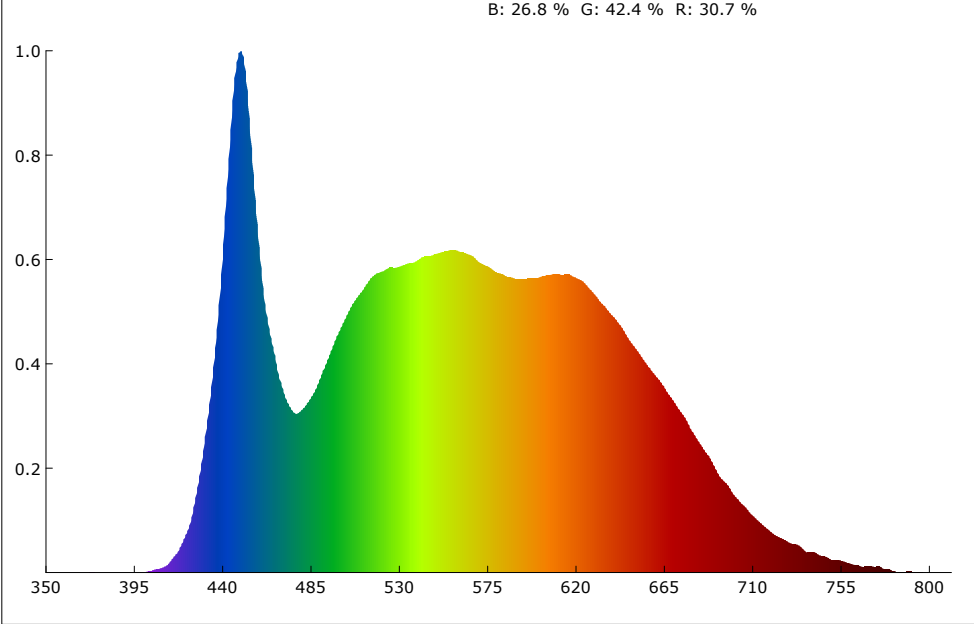
Manufacturer: Guangzhou Hotion Technology Co.,
Test unit:
Date of observation: 12/23/13



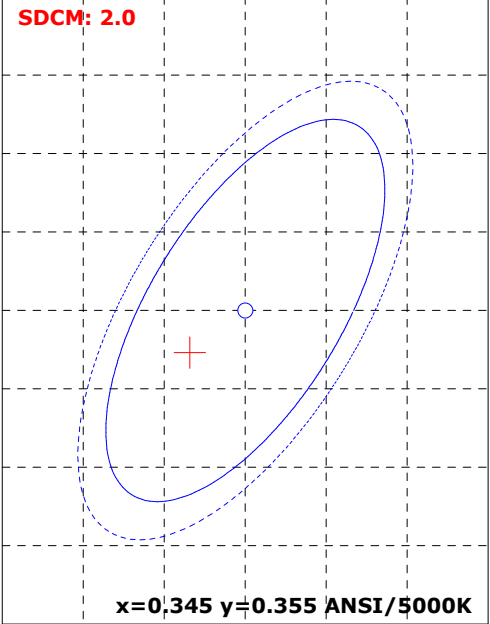
Product model:
Product number:
Tester:
Remarks:

Manufacturer: Guangzhou Hotion Technology Co.,
Test unit:
Date of observation: 12/23/13

Spectrogram



SDCM



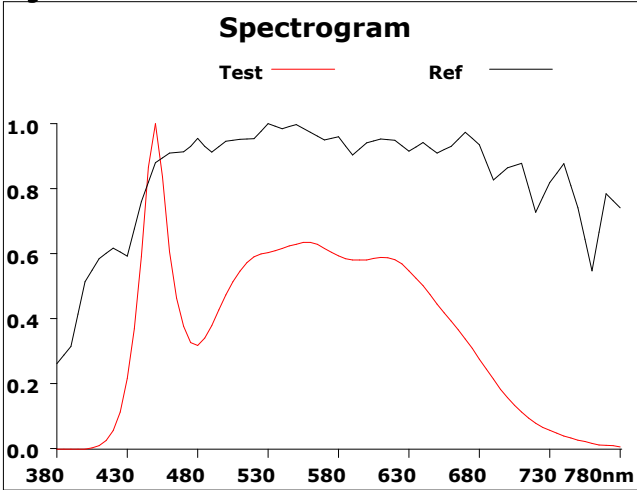
Color Parameter:

x: 0.3413	y: 0.3526	u: 0.2085	v: 0.3231	u': 0.2085	v': 0.4847
R_ratio: 30.7 %	G_ratio: 42.4 %	B_ratio: 26.8 %	RedRatio: 16.1 %	GreenRatio: 80.6 %	BlueRatio: 3.3 %
Ra: 90.8	AvgR: 87.4				
R1: 91.2	R2: 91.9	R3: 91.4	R4: 92.0	R5: 91.4	R6: 88.8
R7: 93.4	R8: 86.9	R9: 62.2	R10: 80.6	R11: 92.0	R12: 73.2
R13: 91.0	R14: 95.1	R15: 89.9			
CCT: 5147 K	Flux: 323.406 lm	PeakWave: 449.6 nm	SDCM: 2.0		
S/P: 2.0	CentralWave: 450.6 nm	DominantWave: 568.1 nm	CentroidWave: 558.7 nm		
HalfWidth: 23.9 nm	duv: 0.00204	purity: 8.2 %	CQS: 89.2		
LER(TM-30): 294.1	Ep: 1099.7 mw	Rg: 100.4	Rf: 88.9		
Red Ep: 327.8 mw	Near red Ep: 32.3 mw	Near infrared Ep: 0.3 mw			

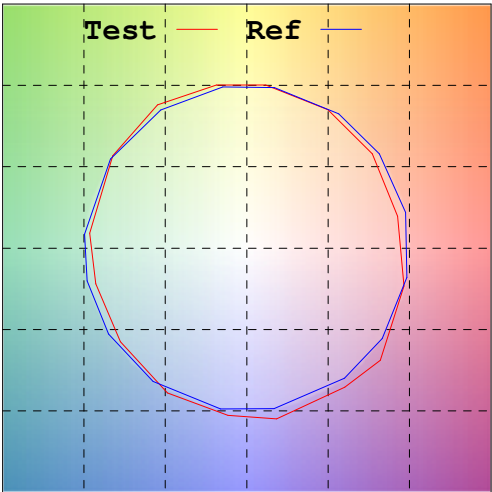
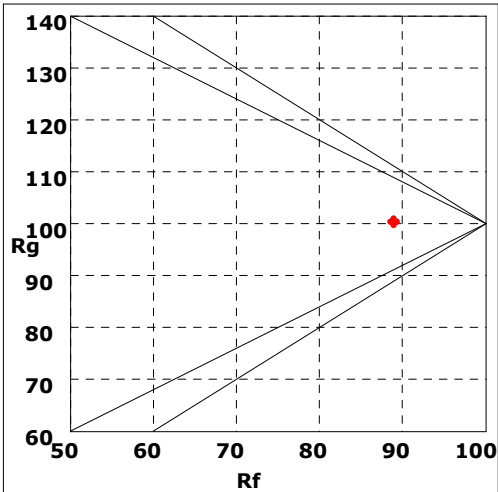
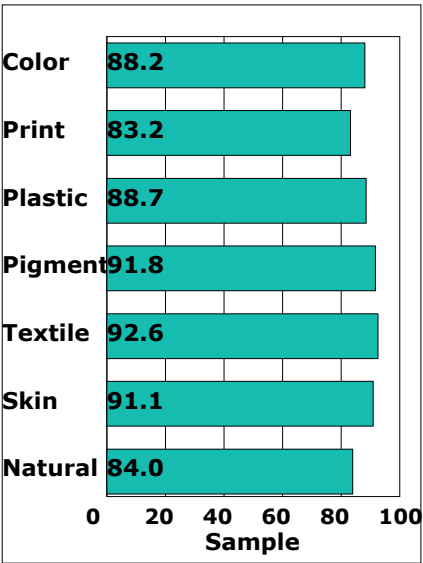
Electrical parameters:

Effic: 15.0 Lm/W	Energy: 16.3	Effi: G	
U: 219.3 V	I: 0.179 A	P: 21.590 W	Pf: 0.547

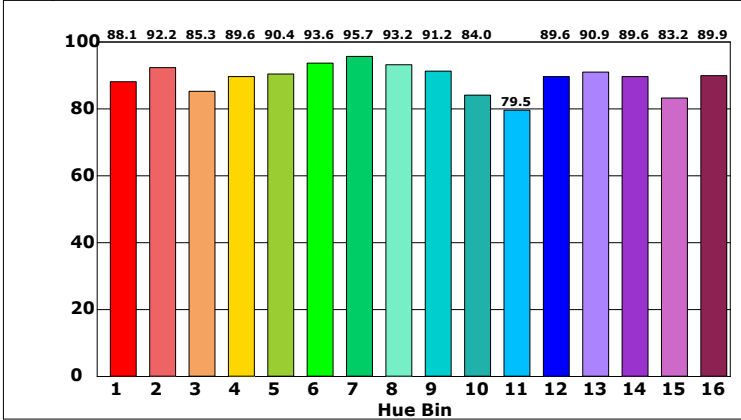
Rf: 88.9 CCT: 5147K u': 0.2085
Rg: 100.4 LER: 294.1 Duv: 0.00204 v': 0.4847



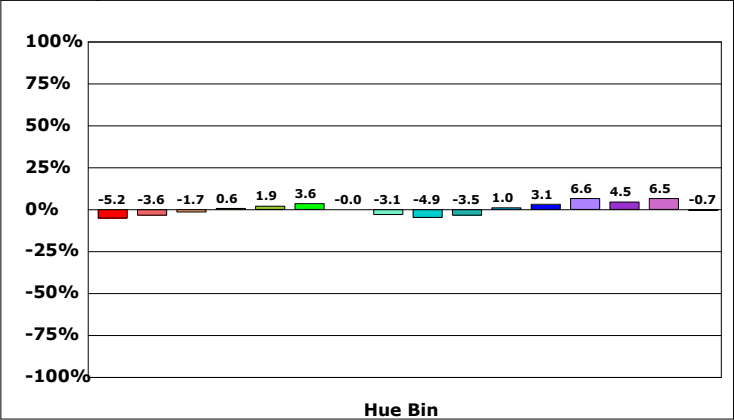
500			
Hue Bin	Rf	Chroma	Hue
1	88.1	-5.2%	-1.3%
2	92.2	-3.6%	2.4%
3	85.3	-1.7%	6.9%
4	89.6	0.6%	5.6%
5	90.4	1.9%	3.7%
6	93.6	3.6%	-0.1%
7	95.7	-0.0%	-2.2%
8	93.2	-3.1%	-1.1%
9	91.2	-4.9%	2.9%
10	84.0	-3.5%	8.0%
11	79.5	1.0%	11.4%
12	89.6	3.1%	5.4%
13	90.9	6.6%	0.2%
14	89.6	4.5%	-2.9%
15	83.2	6.5%	-11.8%
16	89.9	-0.7%	-5.5%



Rf by Bue

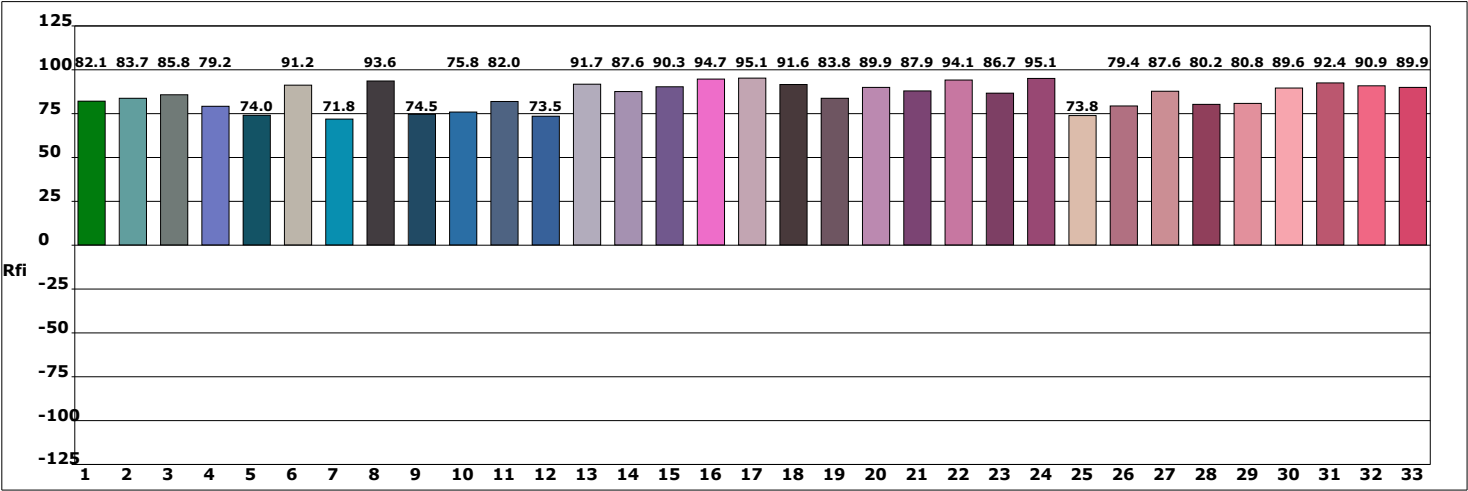
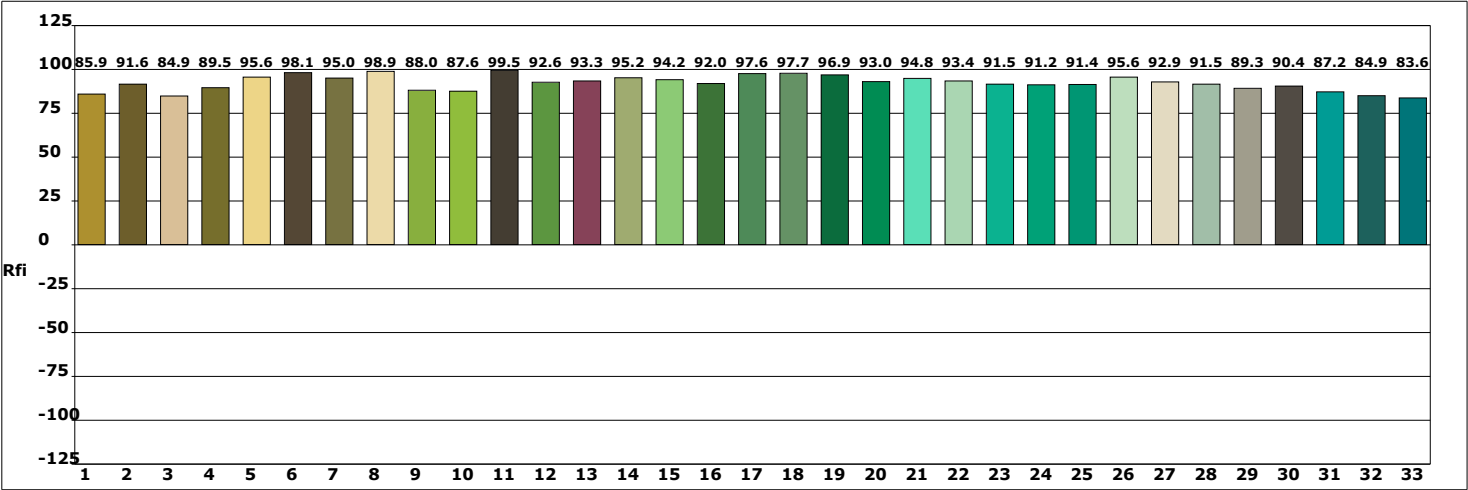
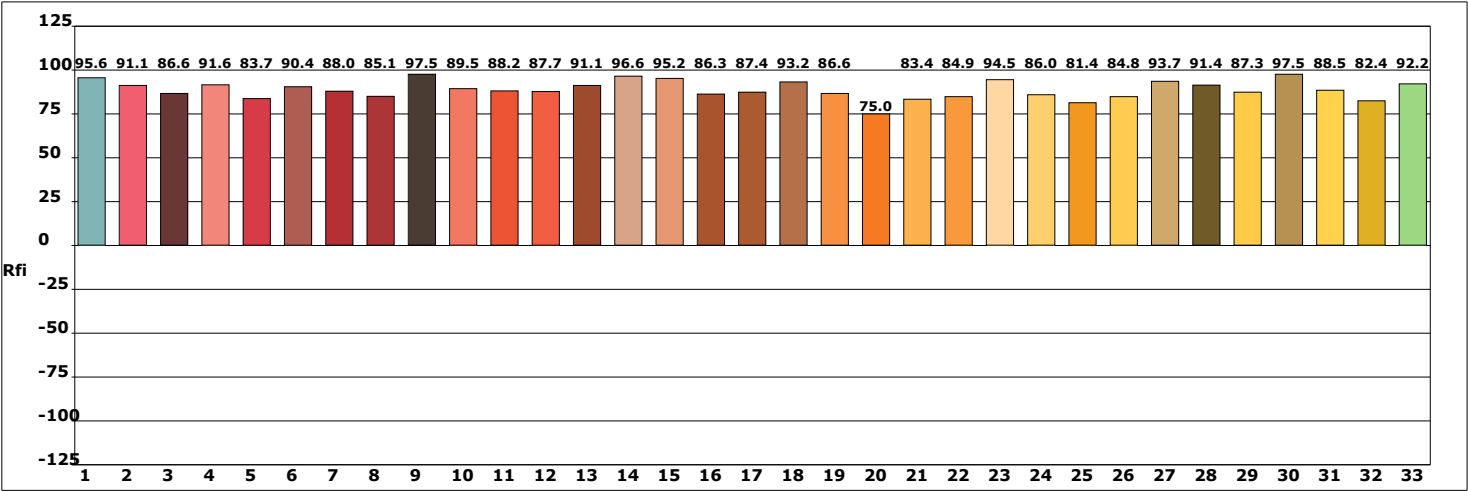


Chroma by Bue



Product model:
Product number:
Tester:
Remarks:

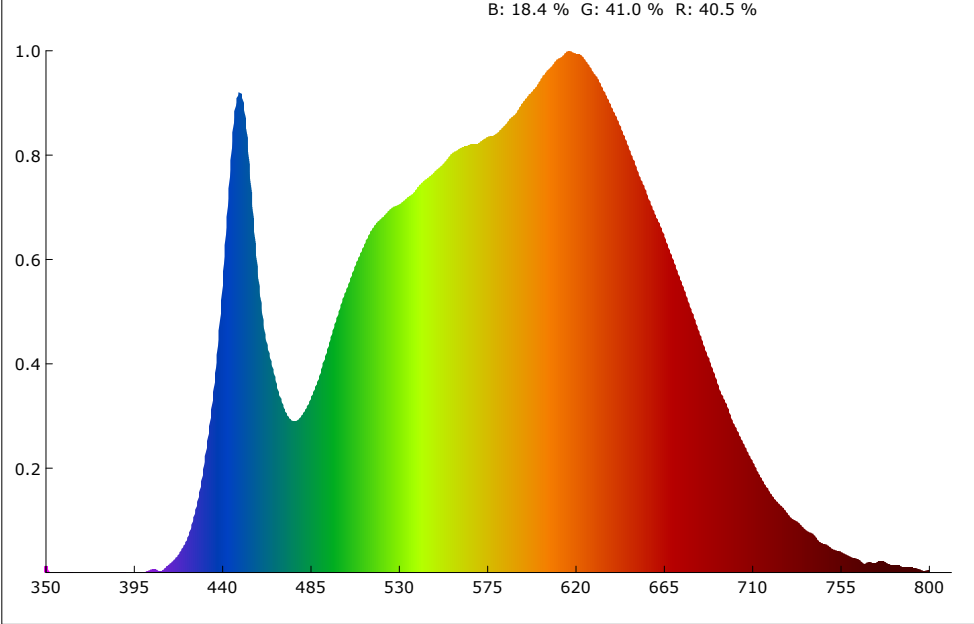
Manufacturer: Guangzhou Hotion Technology Co.,
Test unit:
Date of observation: 12/23/13



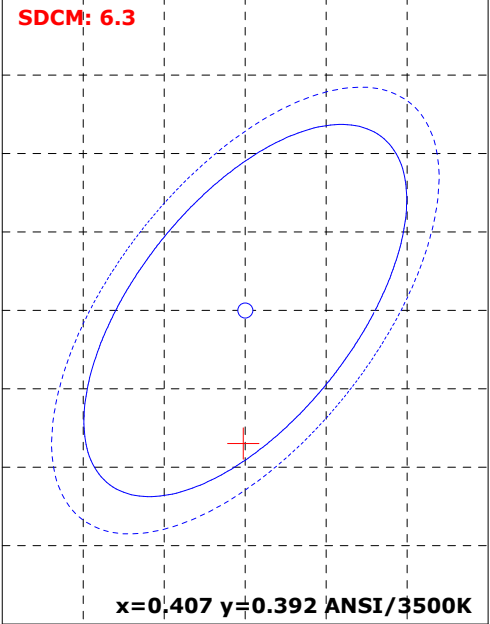
Product model:
Product number:
Tester:
Remarks:

Manufacturer: Guangzhou Hotion Technology Co.,
Test unit:
Date of observation: 12/23/13

Spectrogram



SDCM



Color Parameter:

x: 0.3949 y: 0.3815 u: 0.2327 v: 0.3372 u': 0.2327 v': 0.5058
R_ratio: 40.5 % G_ratio: 41.0 % B_ratio: 18.4 % RedRatio: 20.5 % GreenRatio: 77.2 % BlueRatio: 2.3 %

Ra: 93.1 AvgR: 90.3
R1: 94.2 R2: 94.8 R3: 93.9 R4: 94.0 R5: 93.8 R6: 92.9 R7: 94.1 R8: 87.4
R9: 67.9 R10: 86.9 R11: 94.0 R12: 78.3 R13: 94.2 R14: 96.0 R15: 92.1

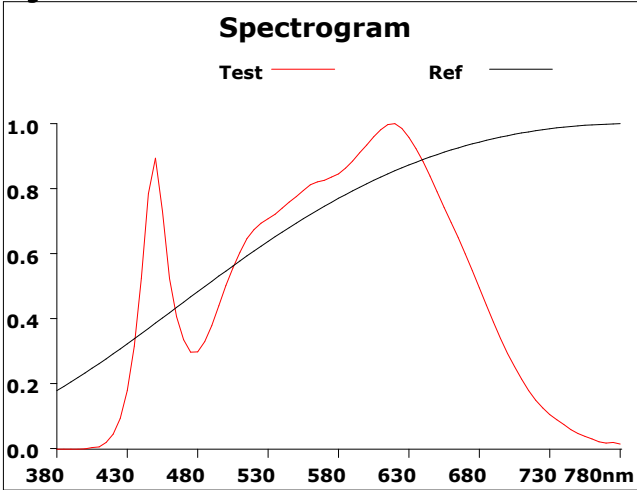
CCT: 3664 K Flux: 253.112 lm PeakWave: 617.6 nm SDCM: 6.3
S/P: 1.6 CentralWave: 589.2 nm DominantWave: 581.1 nm CentroidWave: 578.2 nm
HalfWidth: 178.6 nm duv: -0.00171 purity: 33.0 % CQS: 86.9
LER(TM-30): 294.1 Ep: 860.8 mw Rg: 101.3 Rf: 90.4
Red Ep: 334.3 mw Near red Ep: 35.0 mw Near infrared Ep: 0.9 mw

Electrical parameters:

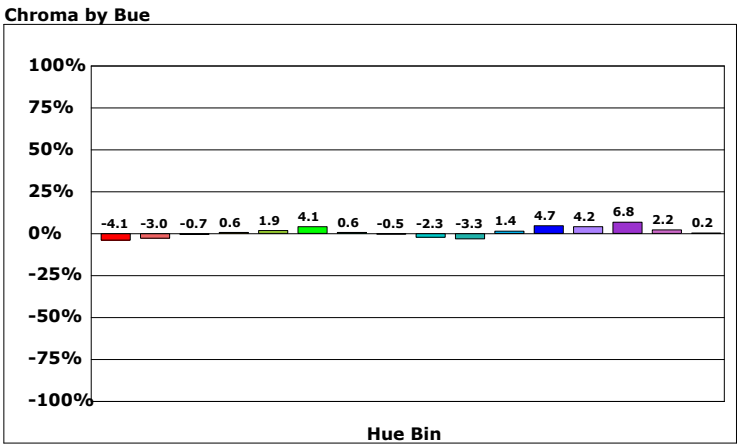
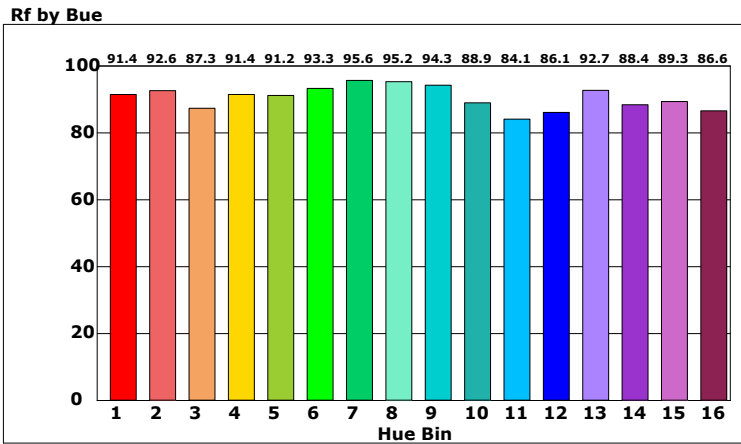
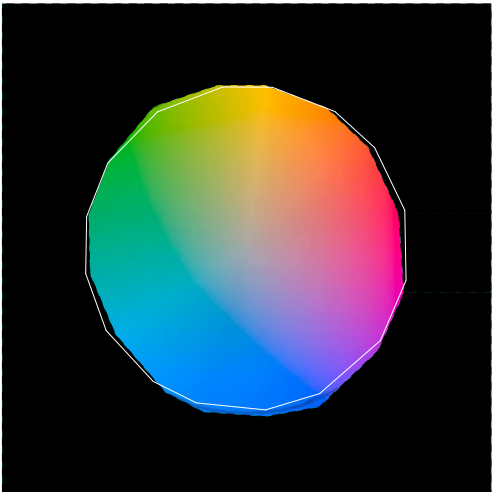
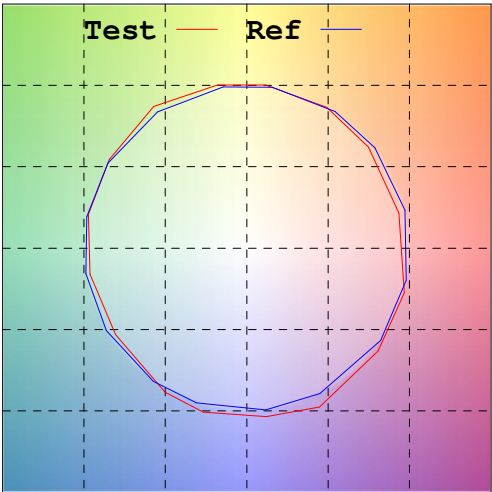
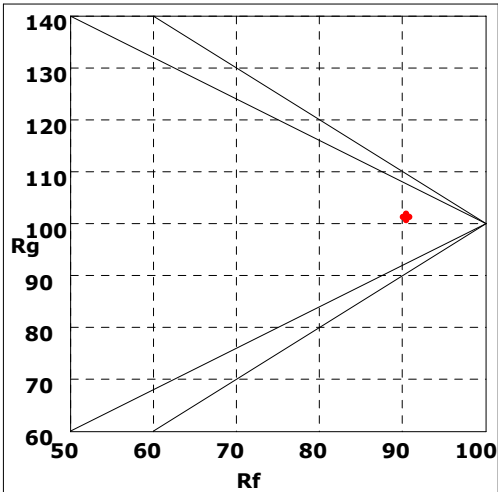
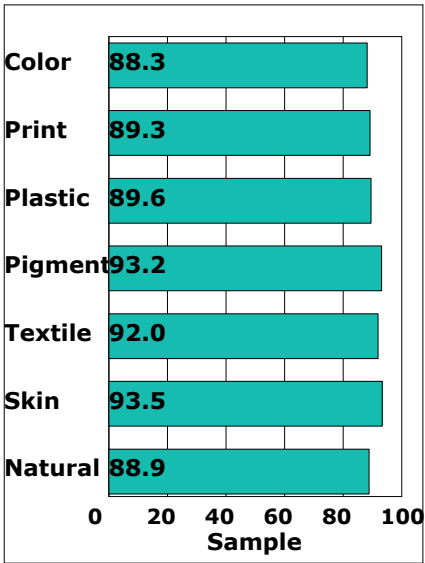
Effic: 13.9 lm/W Energy: 15.1 Effi: G
U: 219.4 V I: 0.154 A P: 18.240 W Pf: 0.538

Product model: Manufacturer: Guangzhou Hotion Technology Co.,
Product number: Test unit:
Tester: Date of observation: 12/23/13
Remarks:

Rf: 90.4 CCT: 3664K u': 0.2327
Rg: 101.3 LER: 294.1 Duv: -0.00171 v': 0.5058

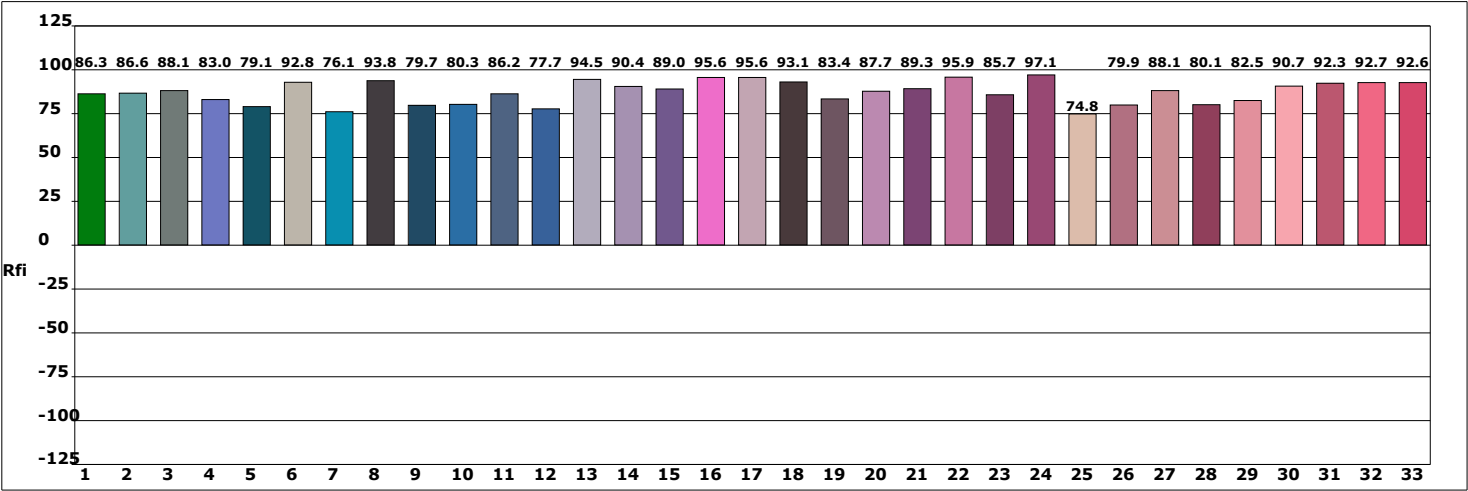
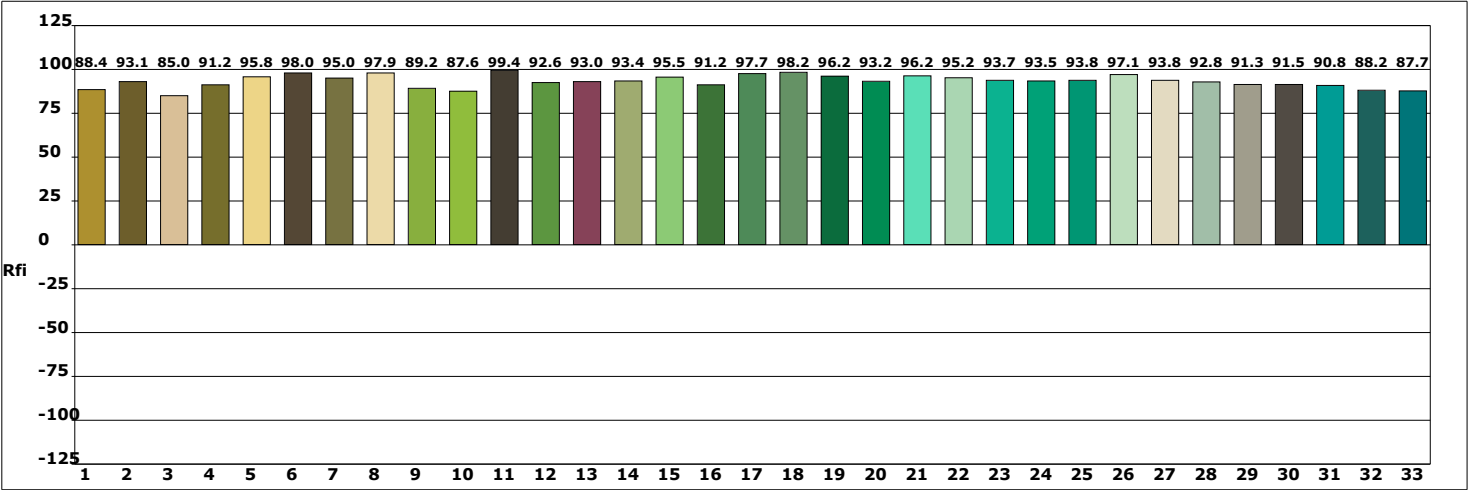
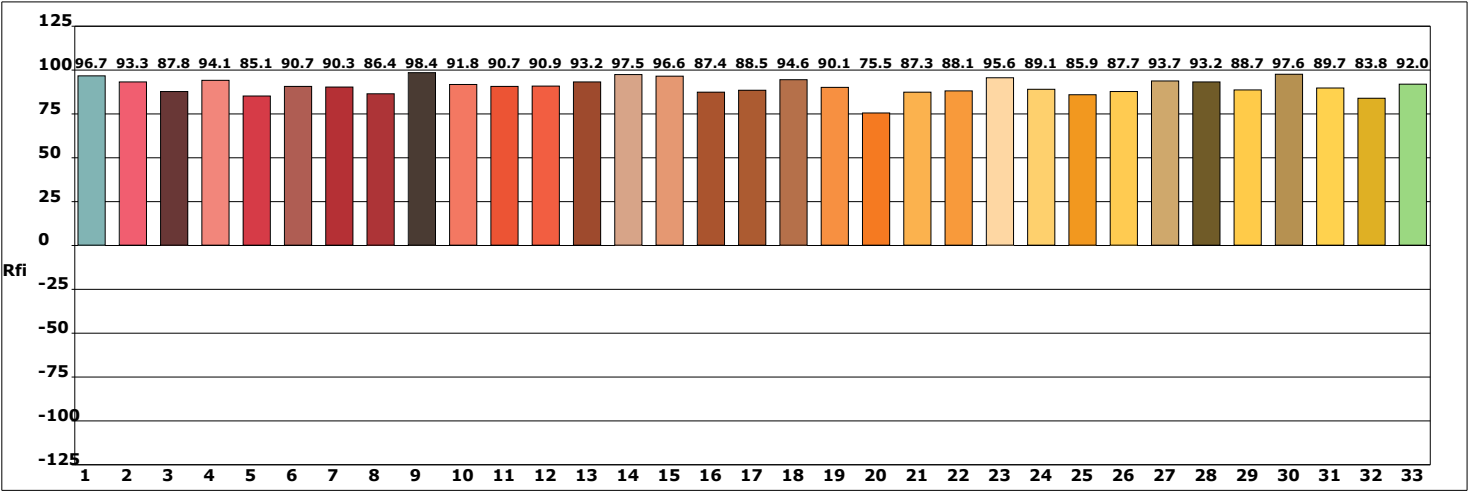


500			
Hue Bin	Rf	Chroma	Hue
1	91.4	-4.1%	-1.1%
2	92.6	-3.0%	2.4%
3	87.3	-0.7%	5.8%
4	91.4	0.6%	4.4%
5	91.2	1.9%	3.3%
6	93.3	4.1%	0.1%
7	95.6	0.6%	-2.3%
8	95.2	-0.5%	-1.6%
9	94.3	-2.3%	1.0%
10	88.9	-3.3%	5.4%
11	84.1	1.4%	9.6%
12	86.1	4.7%	5.1%
13	92.7	4.2%	-0.4%
14	88.4	6.8%	-4.8%
15	89.3	2.2%	-6.4%
16	86.6	0.2%	-7.8%



Product model:
Product number:
Tester:
Remarks:

Manufacturer: Guangzhou Hotion Technology Co.,
Test unit:
Date of observation: 12/23/13



Product model:
Product number:
Tester:
Remarks:

Manufacturer: Guangzhou Hotion Technology Co.,
Test unit:
Date of observation: 12/23/13