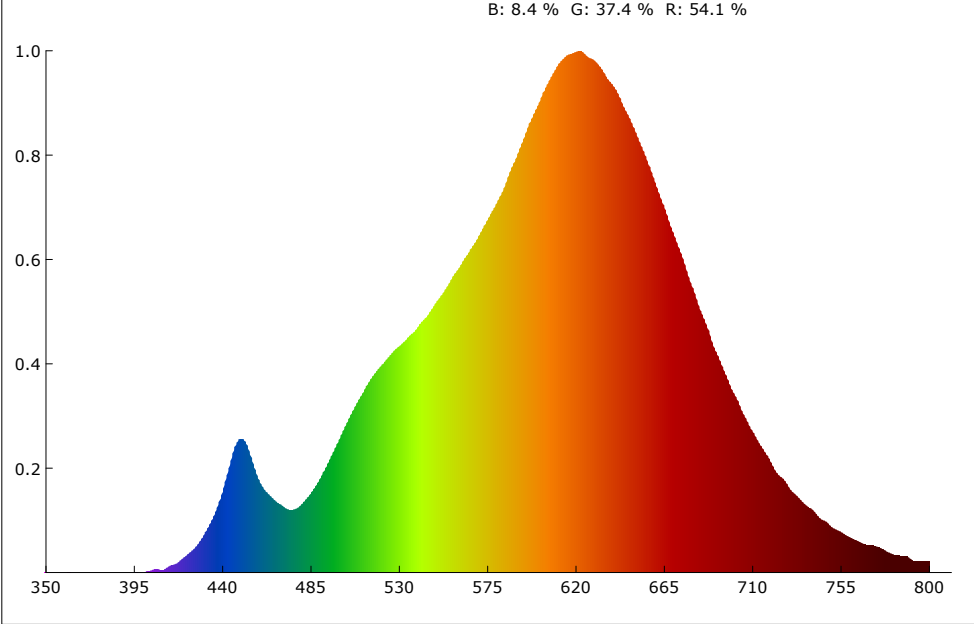
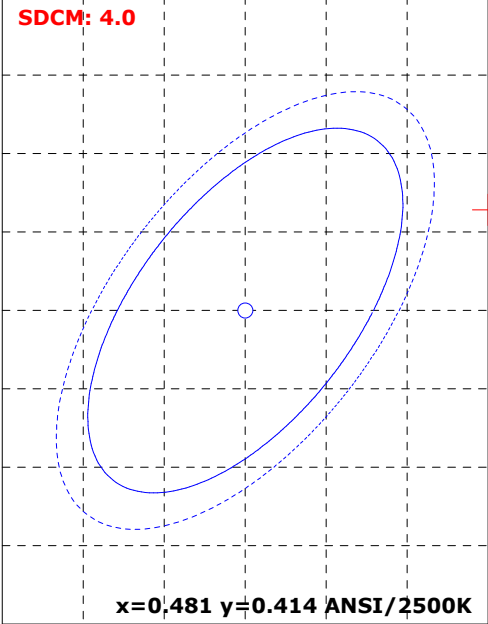


Spectrogram



SDCM



Color Parameter:

x: 0.4757 y: 0.4165 u: 0.2700 v: 0.3546 u': 0.2700 v': 0.5319
R_ratio: 54.1 % G_ratio: 37.4 % B_ratio: 8.4 % RedRatio: 26.8 % GreenRatio: 72.1 % BlueRatio: 1.1 %

Ra: 91.3 AvgR: 88.3
R1: 91.0 R2: 94.7 R3: 97.8 R4: 92.1 R5: 90.9 R6: 95.2 R7: 90.9 R8: 77.9
R9: 51.6 R10: 87.5 R11: 93.6 R12: 85.3 R13: 91.8 R14: 97.8 R15: 85.8

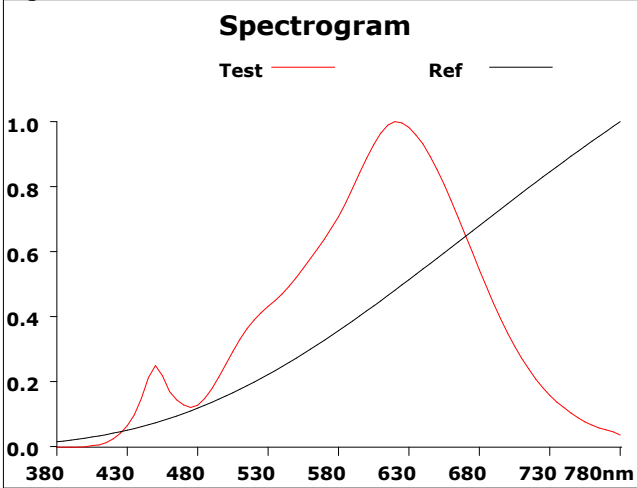
CCT: 2537 K Flux: 642.837 lm PeakWave: 621.6 nm SDCM: 4.0
S/P: 1.2 CentralWave: 614.6 nm DominantWave: 584.8 nm CentroidWave: 606.3 nm
HalfWidth: 136.6 nm duv: 0.00101 purity: 67.8 % CQS: 87.0
LER(TM-30): 278.5 Ep: 2308.1 mw Rg: 99.6 Rf: 90.5
Red Ep: 1153.2 mw Near red Ep: 169.6 mw Near infrared Ep: 8.9 mw

Electrical parameters:

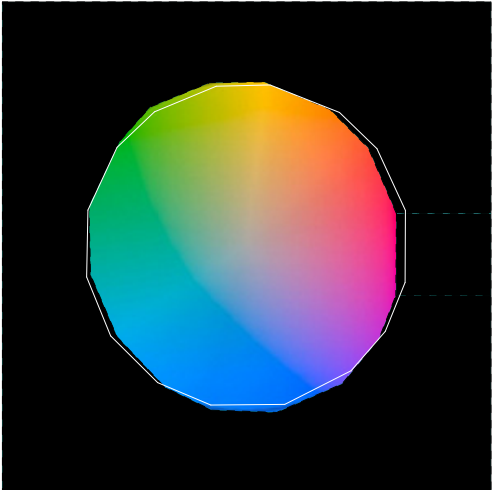
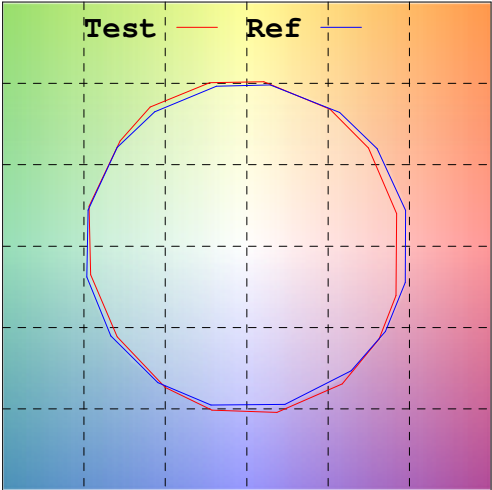
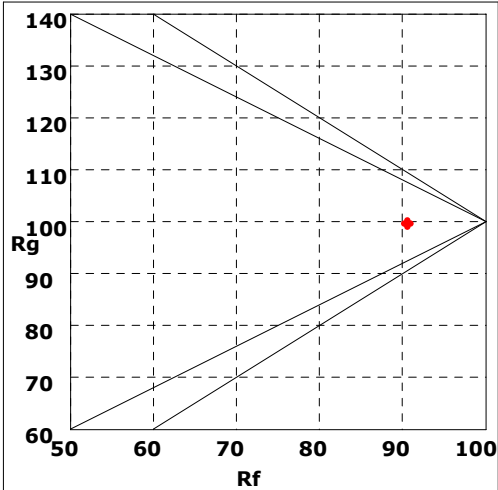
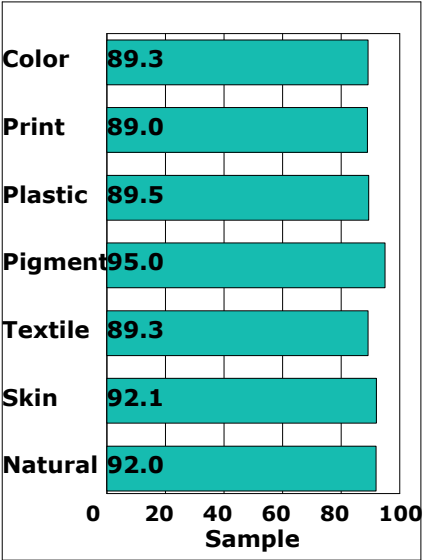
Effic: 43.2 Lm/W Energy: 47.1 Effi: G
U: 222.1 V I: 0.069 A P: 14.870 W Pf: 0.958

Product model: Manufacturer: Guangzhou Hotion Technology Co.,
Product number: Test unit:
Tester: Date of observation: 03/04/13
Remarks:

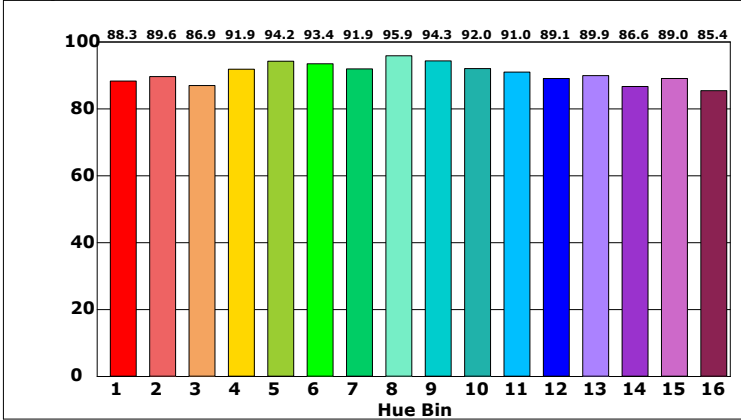
Rf: 90.5 CCT: 2537K u': 0.2700
Rg: 99.6 LER: 278.5 Duv: 0.00101 v': 0.5319



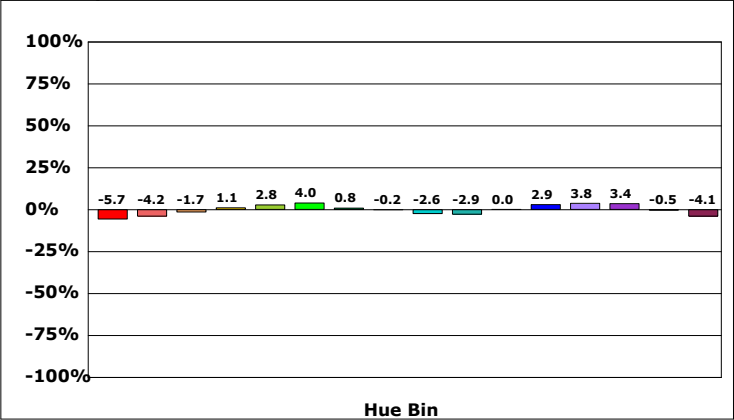
500			
Hue Bin	Rf	Chroma	Hue
1	88.3	-5.7%	-0.9%
2	89.6	-4.2%	3.2%
3	86.9	-1.7%	6.0%
4	91.9	1.1%	4.2%
5	94.2	2.8%	3.6%
6	93.4	4.0%	0.7%
7	91.9	0.8%	-4.3%
8	95.9	-0.2%	-2.3%
9	94.3	-2.6%	-1.1%
10	92.0	-2.9%	2.9%
11	91.0	0.0%	5.4%
12	89.1	2.9%	1.0%
13	89.9	3.8%	-5.6%
14	86.6	3.4%	-9.1%
15	89.0	-0.5%	-6.1%
16	85.4	-4.1%	-9.1%



Rf by Bue

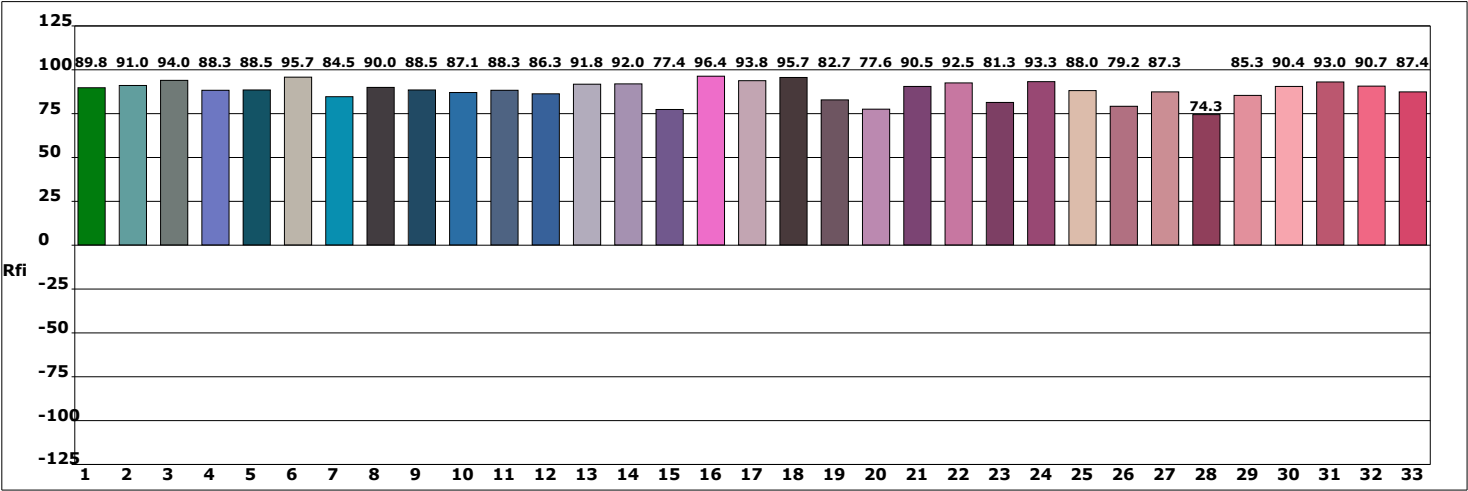
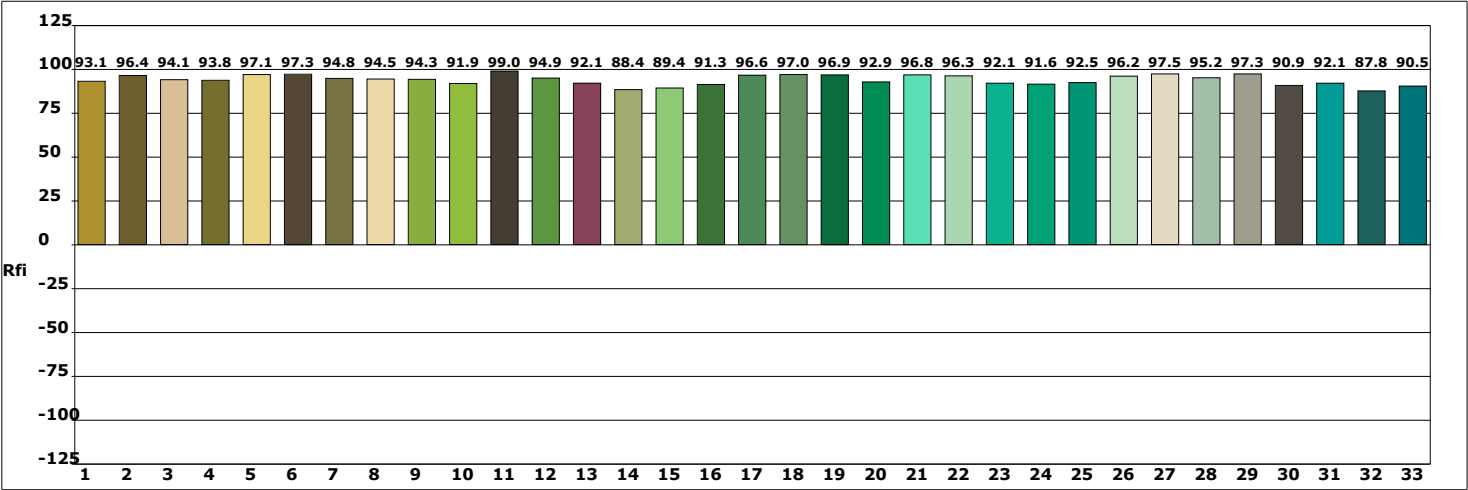
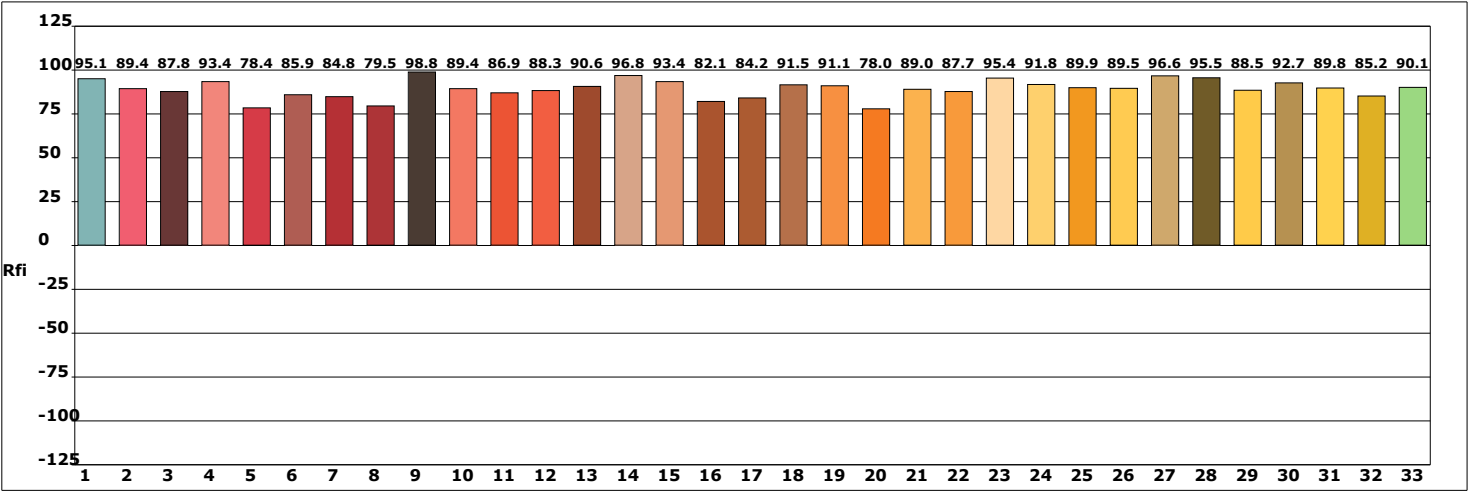


Chroma by Bue



Product model:
Product number:
Tester:
Remarks:

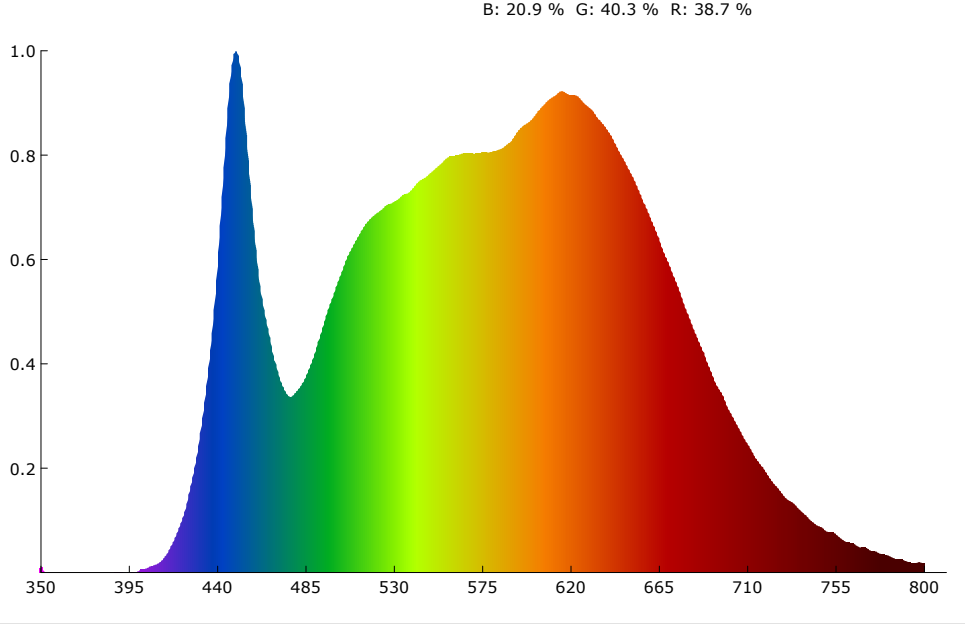
Manufacturer: Guangzhou Hotion Technology Co.,
Test unit:
Date of observation: 03/04/13



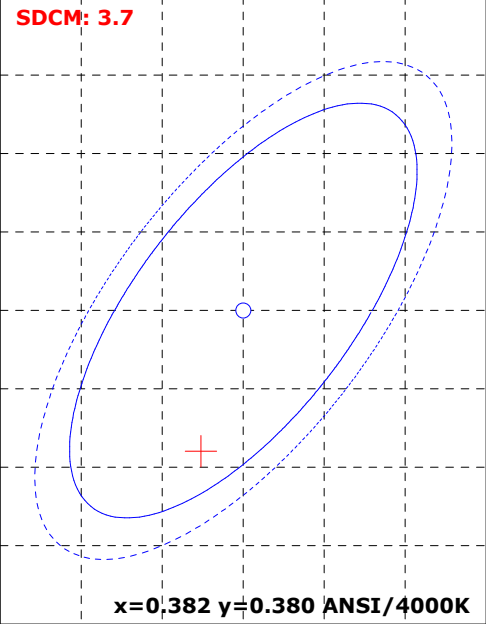
Product model:
Product number:
Tester:
Remarks:

Manufacturer: Guangzhou Hotion Technology Co.,
Test unit:
Date of observation: 03/04/13

Spectrogram



SDCM



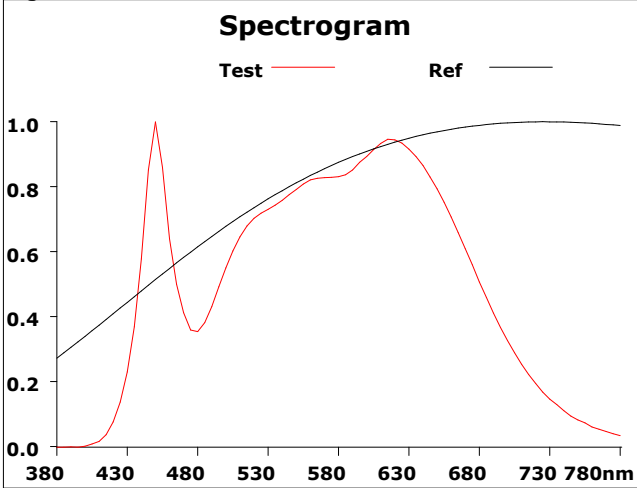
Color Parameter:

x: 0.3792	y: 0.3707	u: 0.2267	v: 0.3325	u': 0.2267	v': 0.4988		
R_ratio: 38.7 %	G_ratio: 40.3 %	B_ratio: 20.9 %	RedRatio: 19.6 %	GreenRatio: 77.7 %	BlueRatio: 2.7 %		
Ra: 94.5	AvgR: 92.3						
R1: 96.0	R2: 96.0	R3: 94.1	R4: 95.0	R5: 95.2	R6: 93.1	R7: 95.5	R8: 91.6
R9: 77.7	R10: 89.3	R11: 94.7	R12: 78.6	R13: 96.1	R14: 96.3	R15: 95.3	
CCT: 3988 K	Flux: 764.595 lm		PeakWave: 449.6 nm		SDCM: 3.7		
S/P: 1.8	CentralWave: 451.2 nm		DominantWave: 580.6 nm		CentroidWave: 576.9 nm		
HalfWidth: 24.7 nm	duv: -0.00247		purity: 25.1 %		CQS: 87.3		
LER(TM-30): 282.5	Ep: 2706.4 mw		Rg: 101.5		Rf: 91.4		
Red Ep: 990.3 mw	Near red Ep: 143.5 mw		Near infrared Ep: 7.1 mw				

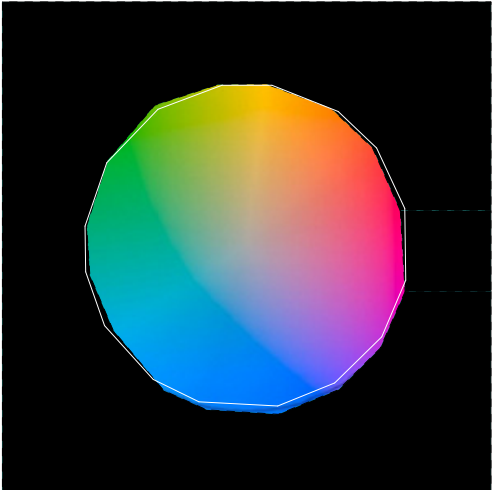
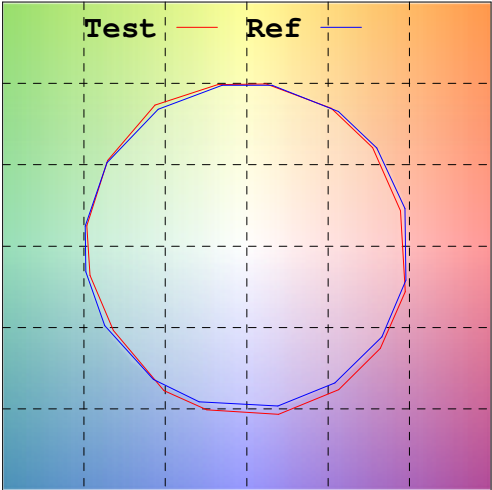
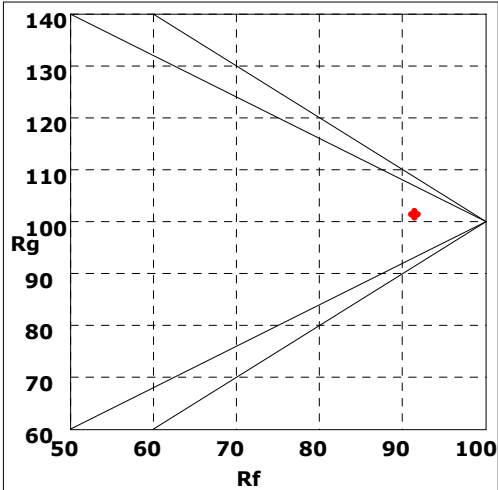
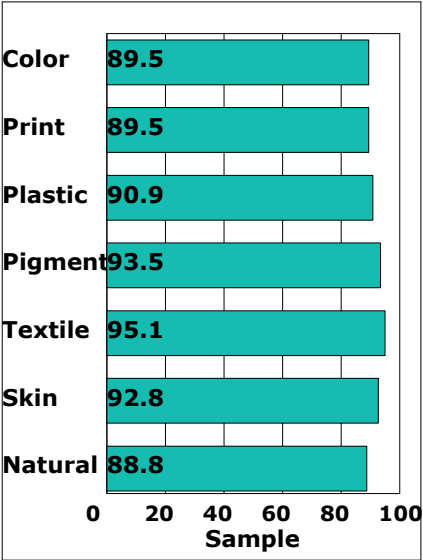
Electrical parameters:

Effic: 51.0 lm/W	Energy: 55.5	Effi: G	
U: 222.0 V	I: 0.070 A	P: 15.000 W	Pf: 0.958

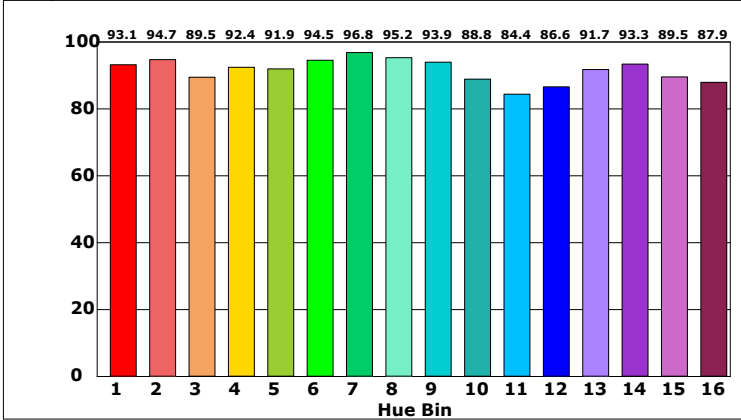
Rf: 91.4 CCT: 3988K u': 0.2267
Rg: 101.5 LER: 282.5 Duv: -0.00247 v': 0.4988



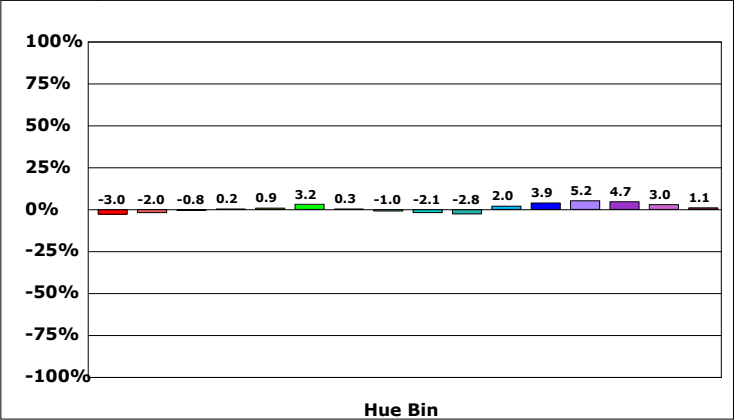
500			
Hue Bin	Rf	Chroma	Hue
1	93.1	-3.0%	-0.8%
2	94.7	-2.0%	1.7%
3	89.5	-0.8%	4.8%
4	92.4	0.2%	3.6%
5	91.9	0.9%	2.7%
6	94.5	3.2%	0.3%
7	96.8	0.3%	-1.3%
8	95.2	-1.0%	-0.4%
9	93.9	-2.1%	2.6%
10	88.8	-2.8%	5.4%
11	84.4	2.0%	9.3%
12	86.6	3.9%	5.5%
13	91.7	5.2%	-0.6%
14	93.3	4.7%	-0.4%
15	89.5	3.0%	-6.4%
16	87.9	1.1%	-7.0%



Rf by Bue

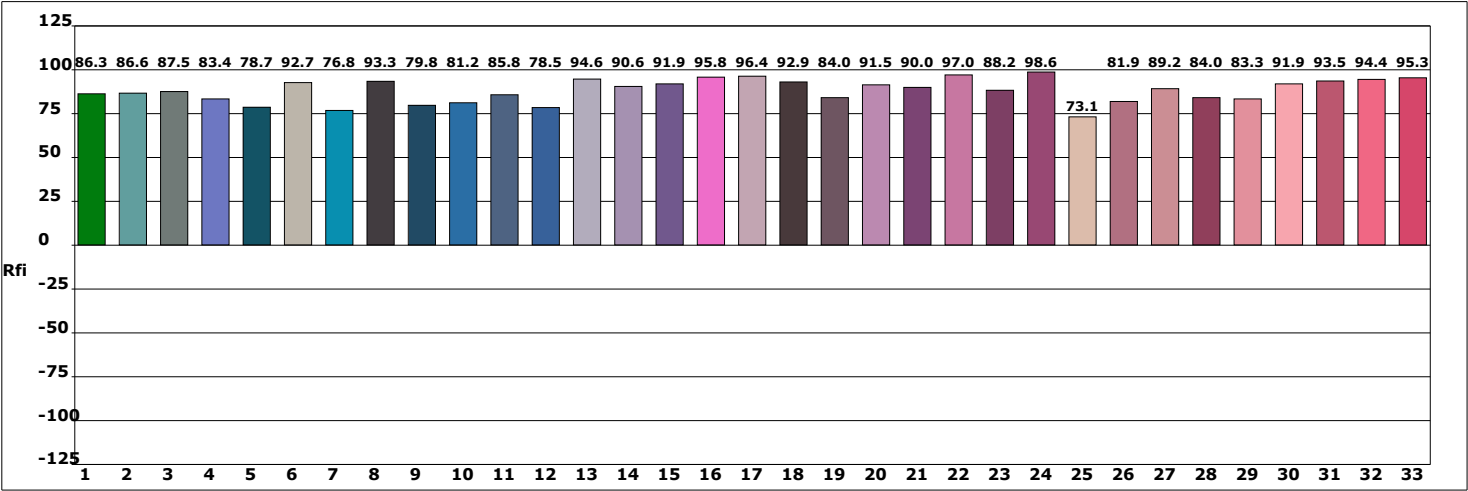
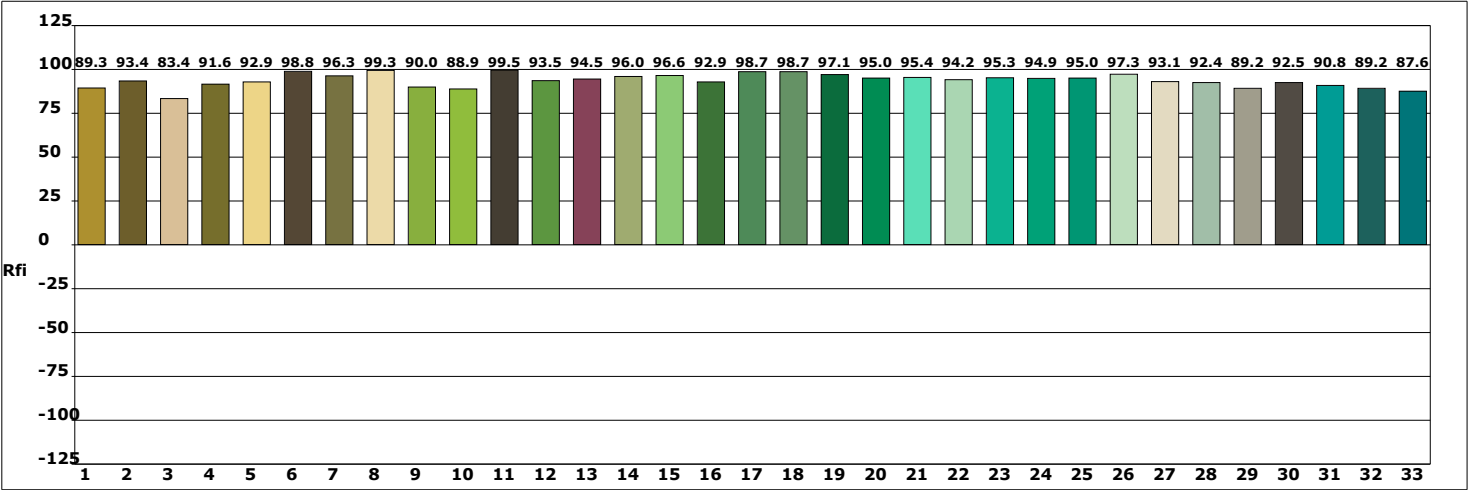
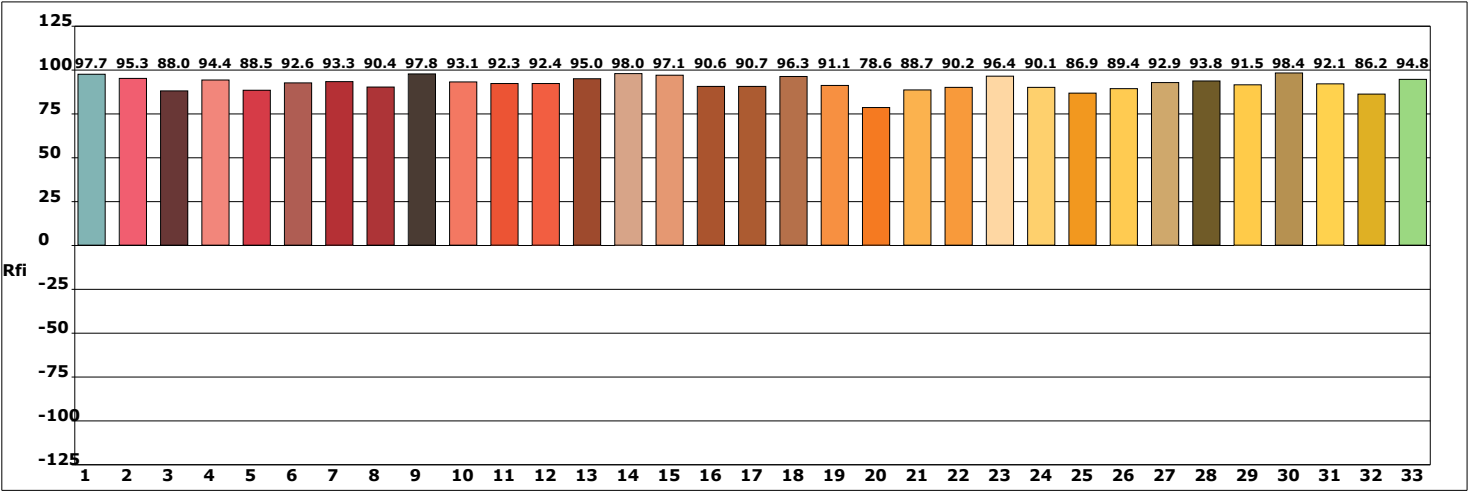


Chroma by Bue



Product model:
Product number:
Tester:
Remarks:

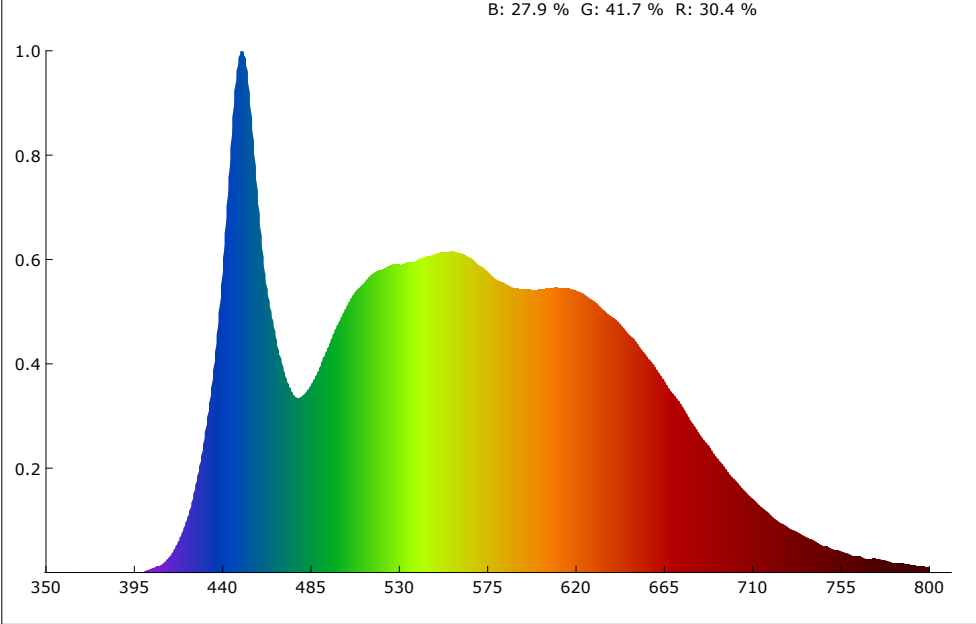
Manufacturer: Guangzhou Hotion Technology Co.,
Test unit:
Date of observation: 03/04/13



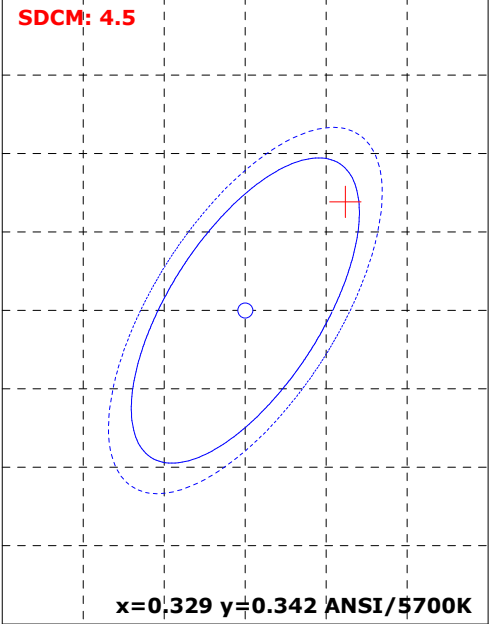
Product model:
Product number:
Tester:
Remarks:

Manufacturer: Guangzhou Hotion Technology Co.,
Test unit:
Date of observation: 03/04/13

Spectrogram



SDCM



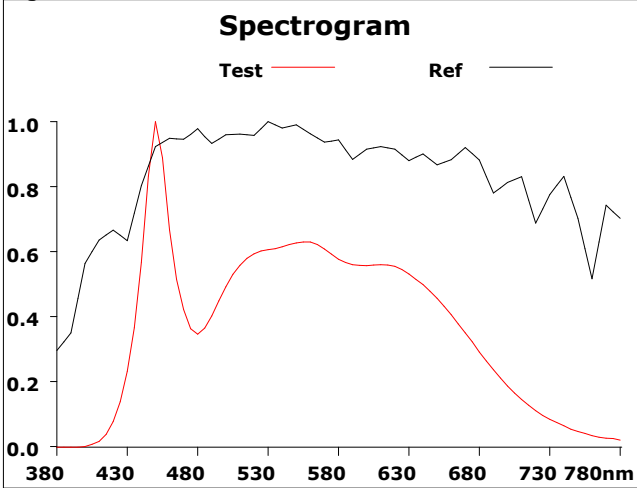
Color Parameter:

x: 0.3349	y: 0.3486	u: 0.2057	v: 0.3211	u': 0.2057	v': 0.4816
R_ratio: 30.4 %	G_ratio: 41.7 %	B_ratio: 27.9 %	RedRatio: 15.7 %	GreenRatio: 80.7 %	BlueRatio: 3.6 %
Ra: 92.1	AvgR: 89.0				
R1: 92.2	R2: 92.8	R3: 92.2	R4: 92.9	R5: 92.2	R6: 89.8
R7: 95.0	R8: 89.7	R9: 69.4	R10: 82.7	R11: 92.6	R12: 73.8
R13: 92.1	R14: 95.5	R15: 91.5			
CCT: 5400 K	Flux: 817.813 lm	PeakWave: 449.6 nm	SDCM: 4.5		
S/P: 2.1	CentralWave: 451.8 nm	DominantWave: 558.8 nm	CentroidWave: 560.4 nm		
HalfWidth: 25.7 nm	duv: 0.00270	purity: 5.1 %	CQS: 90.7		
LER(TM-30): 284.0	Ep: 2879.7 mw	Rg: 100.0	Rf: 90.0		
Red Ep: 837.0 mw	Near red Ep: 119.8 mw	Near infrared Ep: 6.6 mw			

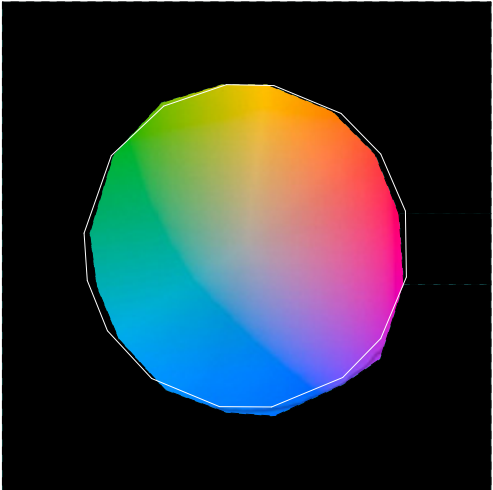
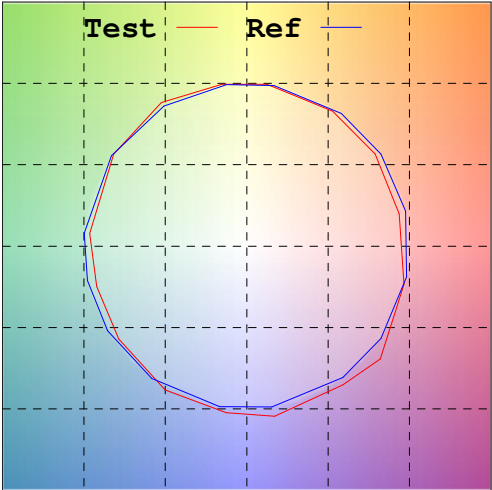
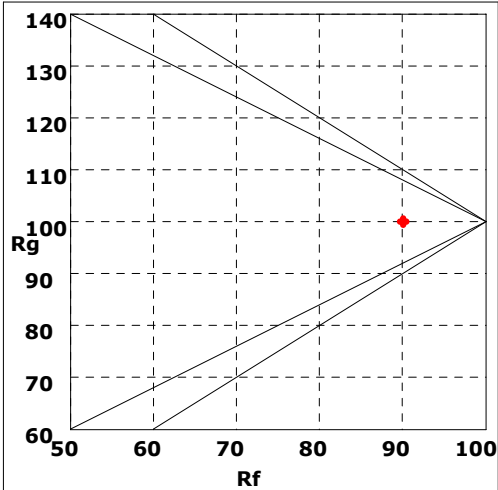
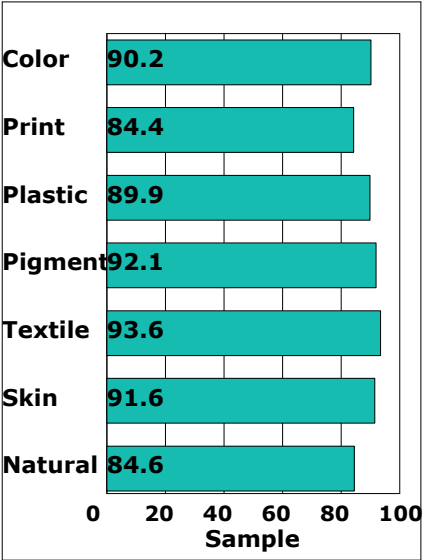
Electrical parameters:

Effic: 54.5 Lm/W	Energy: 59.4	Effi: G	
U: 222.1 V	I: 0.070 A	P: 15.000 W	Pf: 0.958

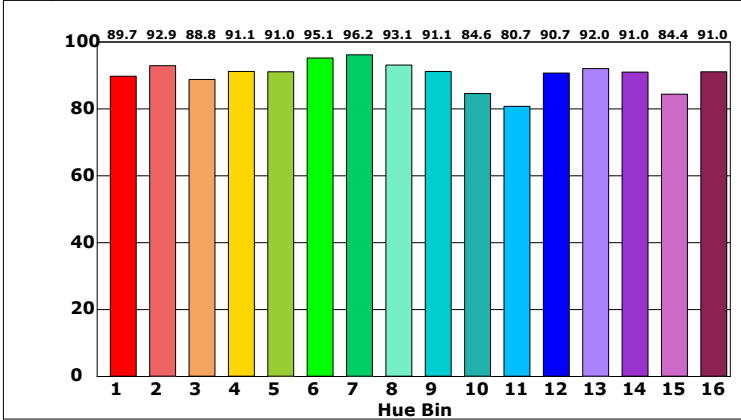
Rf: 90.0 CCT: 5400K u': 0.2057
Rg: 100.0 LER: 284.0 Duv: 0.00270 v': 0.4816



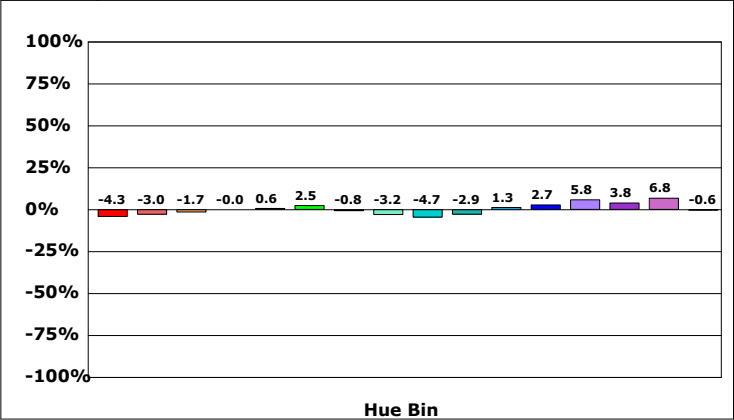
500			
Hue Bin	Rf	Chroma	Hue
1	89.7	-4.3%	-1.0%
2	92.9	-3.0%	2.1%
3	88.8	-1.7%	5.2%
4	91.1	-0.0%	4.3%
5	91.0	0.6%	2.8%
6	95.1	2.5%	0.1%
7	96.2	-0.8%	-1.5%
8	93.1	-3.2%	-0.4%
9	91.1	-4.7%	4.8%
10	84.6	-2.9%	8.0%
11	80.7	1.3%	10.7%
12	90.7	2.7%	4.9%
13	92.0	5.8%	0.5%
14	91.0	3.8%	-2.6%
15	84.4	6.8%	-10.7%
16	91.0	-0.6%	-4.8%



Rf by Bue

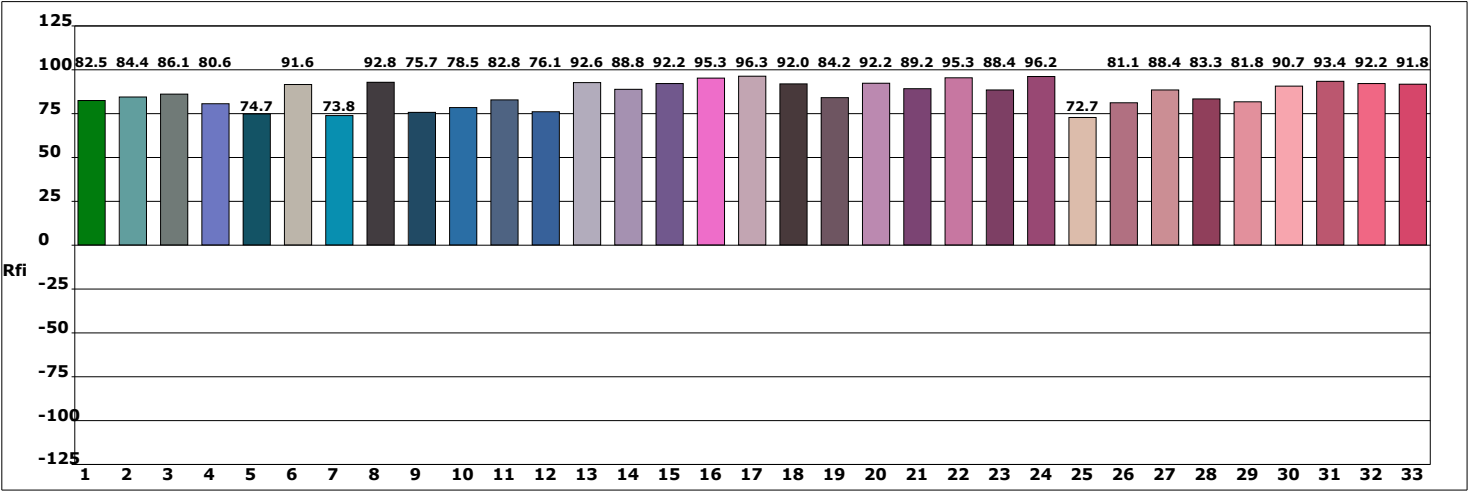
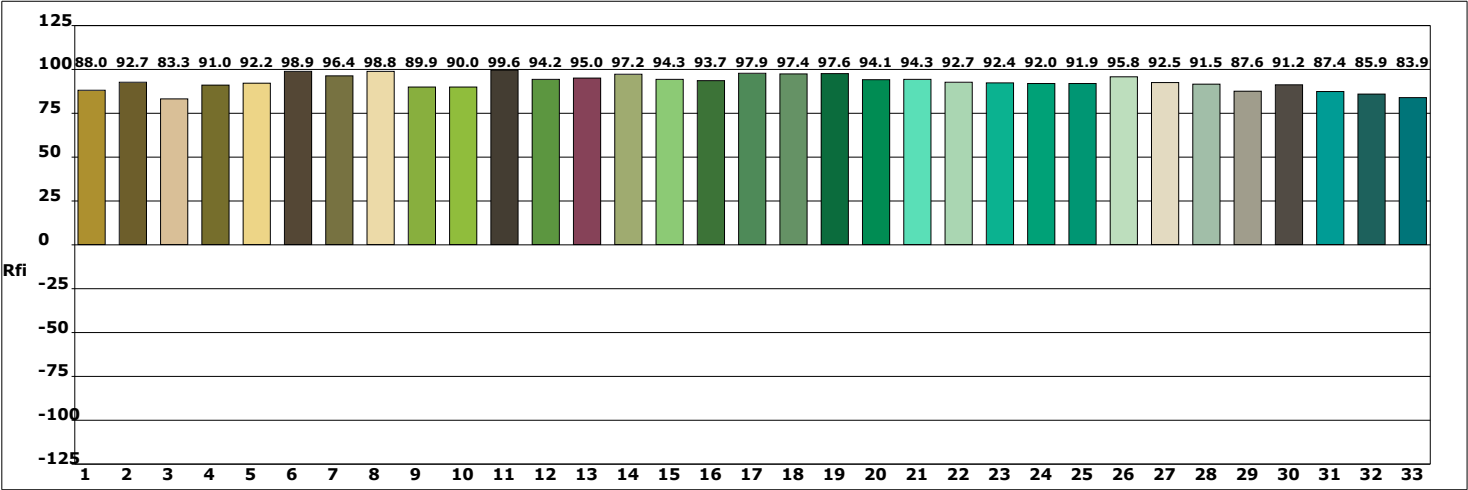
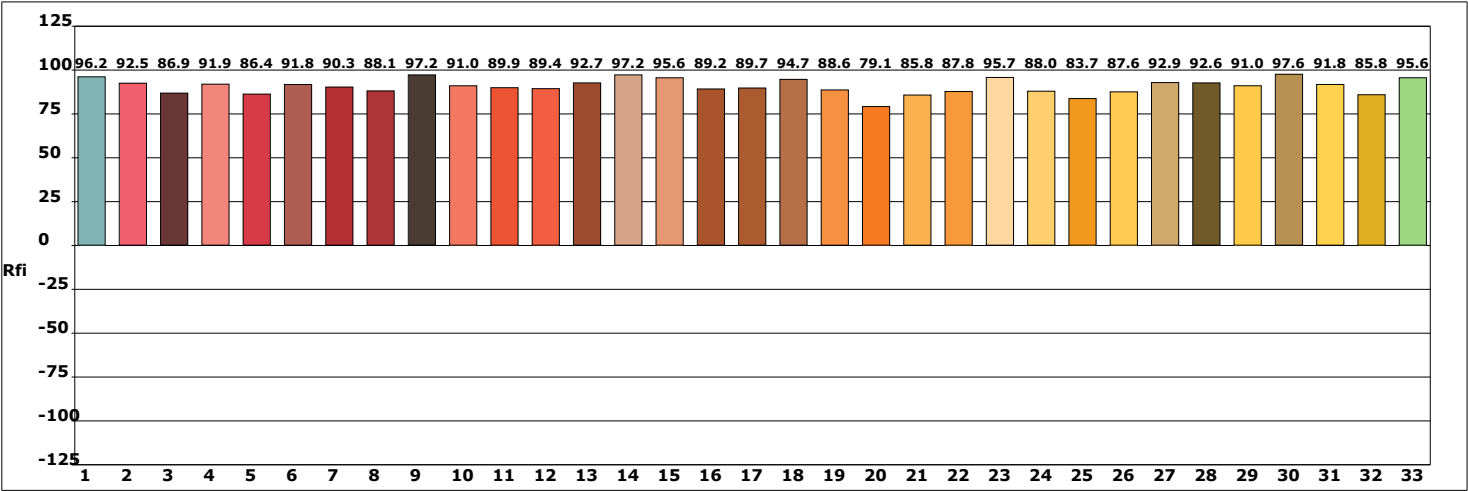


Chroma by Bue



Product model:
Product number:
Tester:
Remarks:

Manufacturer: Guangzhou Hotion Technology Co.,
Test unit:
Date of observation: 03/04/13



Product model:
Product number:
Tester:
Remarks:

Manufacturer: Guangzhou Hotion Technology Co.,
Test unit:
Date of observation: 03/04/13