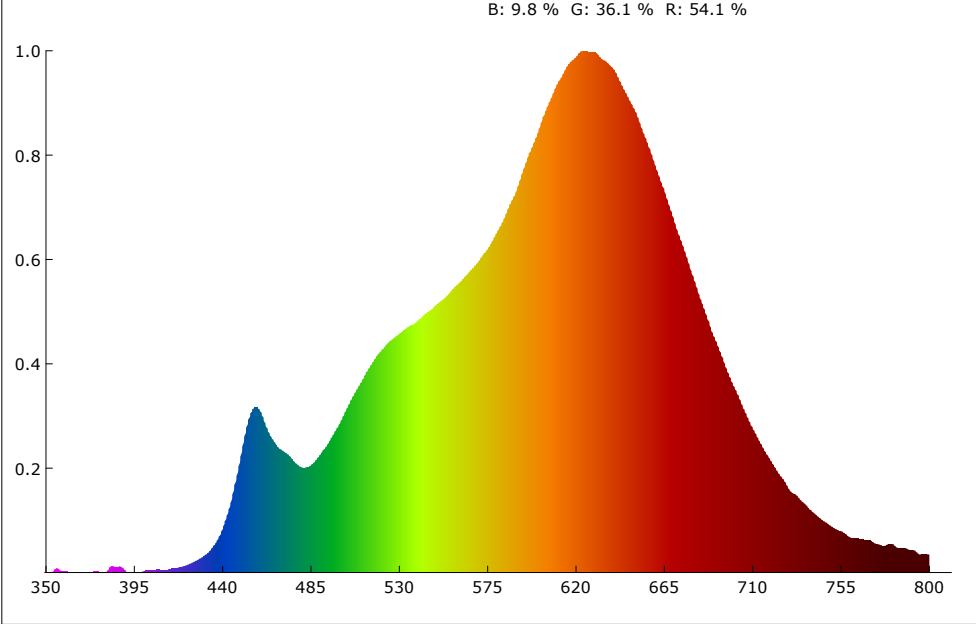
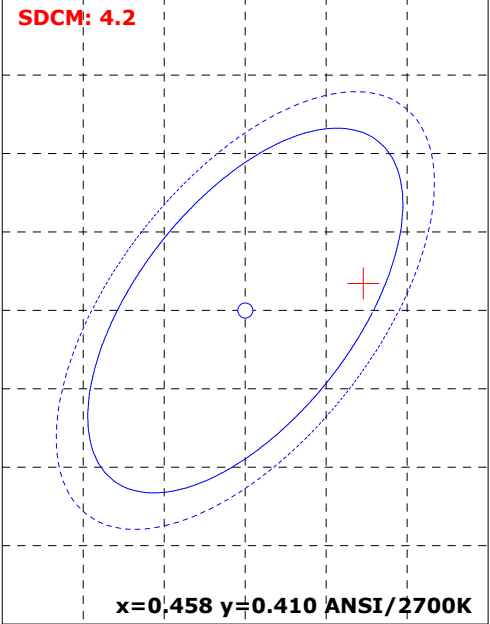


Spectrogram



SDCM



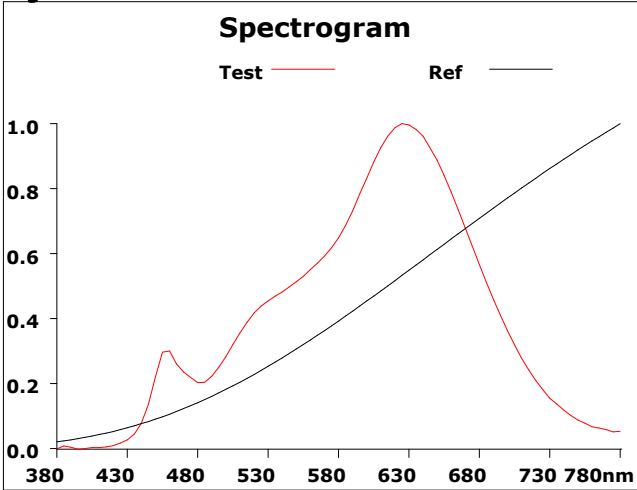
Color Parameter:

x: 0.4651	y: 0.4118	u: 0.2653	v: 0.3524	u': 0.2653	v': 0.5286		
R_ratio: 54.1 %	G_ratio: 36.1 %	B_ratio: 9.8 %	RedRatio: 26.9 %	GreenRatio: 71.5 %	BlueRatio: 1.6 %		
Ra: 96.6		AvgR: 95.1					
R1: 98.8	R2: 99.5	R3: 99.6	R4: 98.7	R5: 98.5	R6: 95.8	R7: 93.6	R8: 88.5
R9: 75.7	R10: 99.3	R11: 97.6	R12: 87.5	R13: 99.7	R14: 98.6	R15: 94.5	
CCT: 2638 K		Flux: 2824.983 lm	PeakWave: 624.6 nm	SDCM: 4.2			
S/P: 1.3		CentralWave: 615.8 nm	DominantWave: 584.5 nm	CentroidWave: 605.6 nm			
HalfWidth: 139.0 nm		duv: 0.00004	purity: 63.2 %	CQS: 87.6			
LER(TM-30): 268.9		Ep: 10505.6 mw	Rg: 98.4	Rf: 92.2			
Red Ep: 5228.9 mw		Near red Ep: 774.7 mw	Near infrared Ep: 61.0 mw				

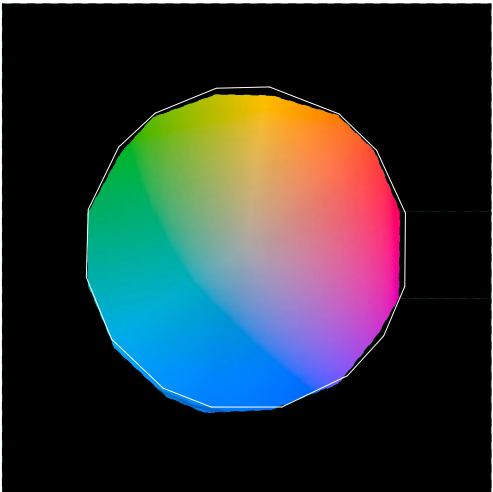
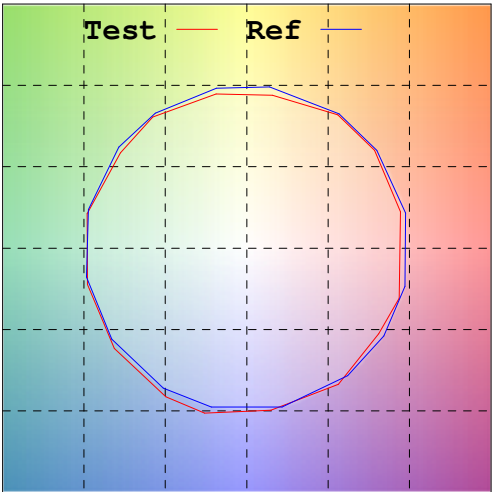
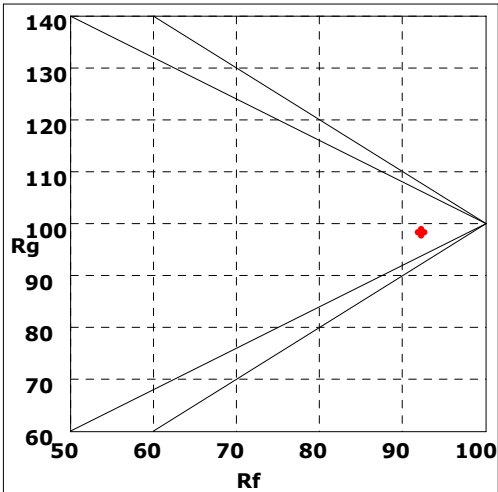
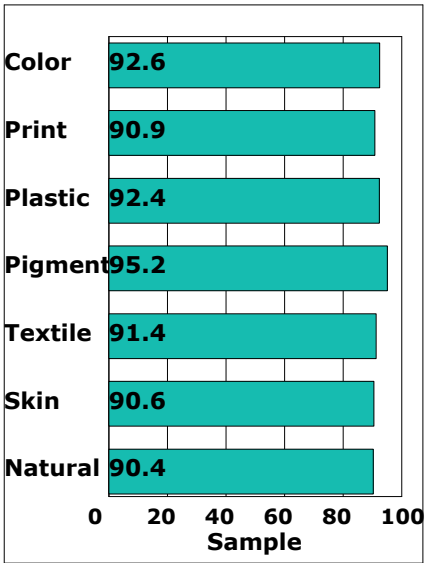
Electrical parameters:

Effic: 30.5 Lm/W	Energy: 33.2	Effi: G	
U: 220.5 V	I: 0.659 A	P: 92.740 W	Pf: 0.637

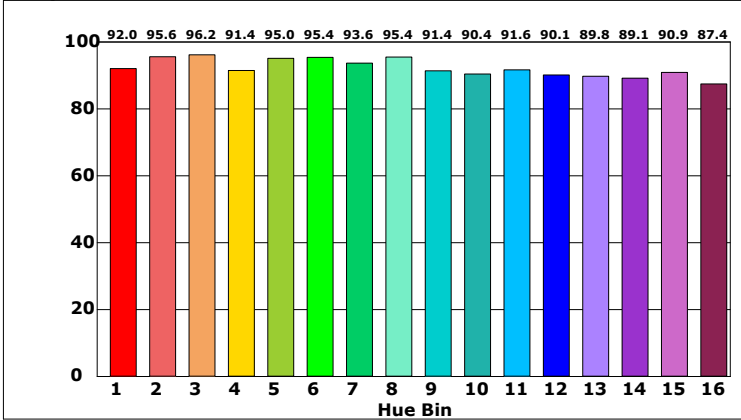
Rf: 92.2 CCT: 2638K u': 0.2653
Rg: 98.4 LER: 268.9 Duv: 0.00004 v': 0.5286



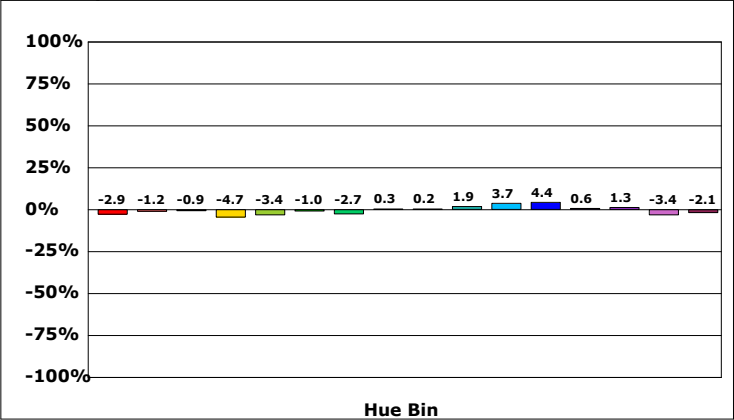
500			
Hue Bin	Rf	Chroma	Hue
1	92.0	-2.9%	1.4%
2	95.6	-1.2%	0.7%
3	96.2	-0.9%	0.4%
4	91.4	-4.7%	-2.8%
5	95.0	-3.4%	0.7%
6	95.4	-1.0%	2.6%
7	93.6	-2.7%	2.4%
8	95.4	0.3%	2.7%
9	91.4	0.2%	4.6%
10	90.4	1.9%	5.6%
11	91.6	3.7%	4.4%
12	90.1	4.4%	-3.2%
13	89.8	0.6%	-7.2%
14	89.1	1.3%	-7.7%
15	90.9	-3.4%	-0.6%
16	87.4	-2.1%	-8.0%



Rf by Bue

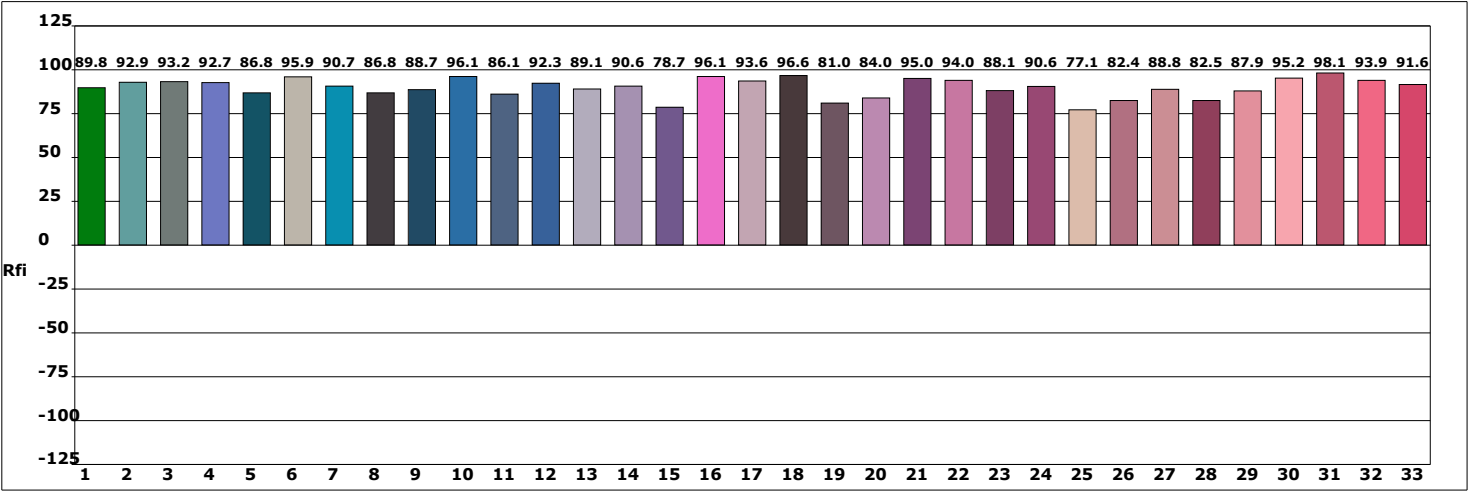
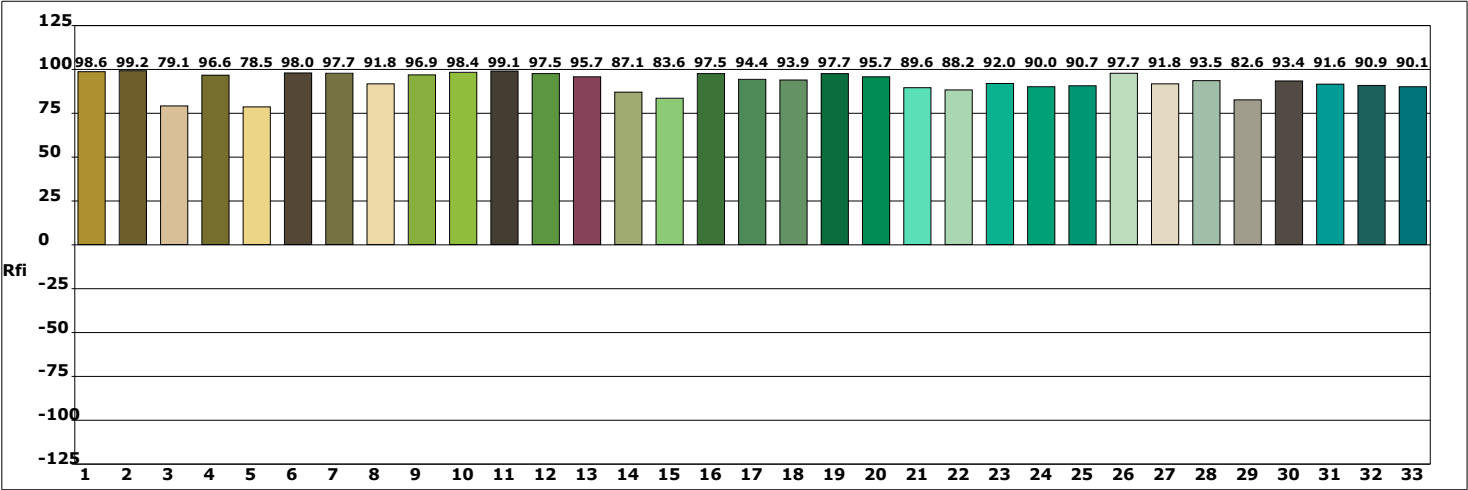
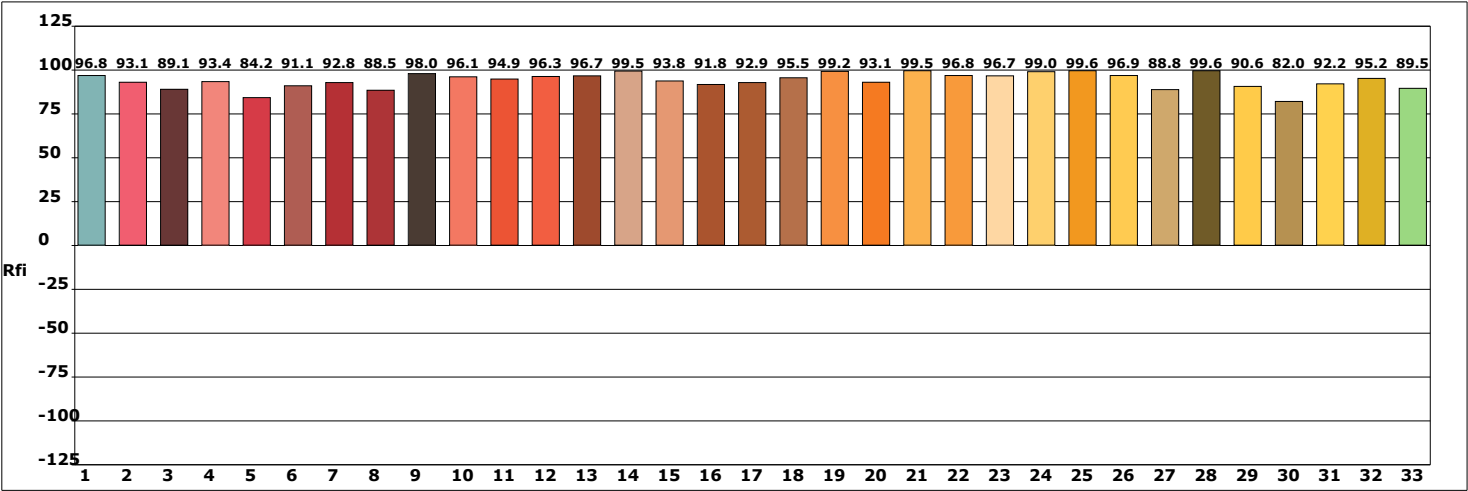


Chroma by Bue



Product model: P19
Product number:
Tester:
Remarks:

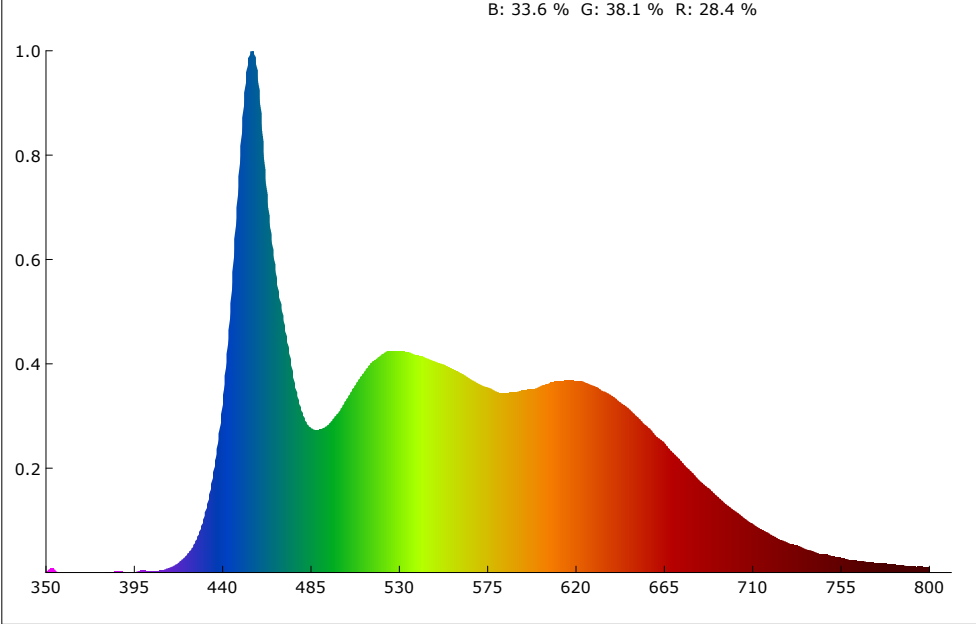
Manufacturer: Guangzhou Hotion Technology Co.,
Test unit:
Date of observation: 08/11/12



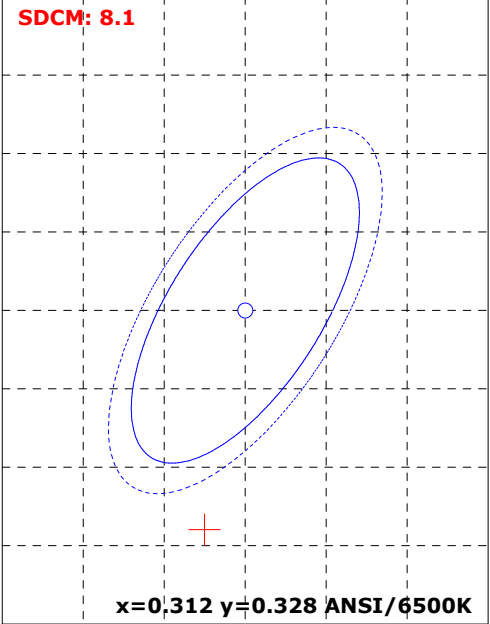
Product model: P19
Product number:
Tester:
Remarks:

Manufacturer: Guangzhou Hotion Technology Co.,
Test unit:
Date of observation: 08/11/12

Spectrogram



SDCM



Color Parameter:

x: 0.3098 y: 0.3142 u: 0.2015 v: 0.3065 u': 0.2015 v': 0.4597
R_ratio: 28.4 % G_ratio: 38.1 % B_ratio: 33.6 % RedRatio: 15.8 % GreenRatio: 79.0 % BlueRatio: 5.2 %

Ra: 95.0 AvgR: 92.6
R1: 94.0 R2: 97.1 R3: 94.0 R4: 96.9 R5: 94.2 R6: 92.7 R7: 96.5 R8: 94.7
R9: 86.1 R10: 96.6 R11: 97.2 R12: 67.3 R13: 95.1 R14: 95.9 R15: 91.3

CCT: 6811 K Flux: 3544.394 lm PeakWave: 455.4 nm SDCM: 8.1
S/P: 2.4 CentralWave: 457.6 nm DominantWave: 480.3 nm CentroidWave: 553.5 nm
HalfWidth: 26.1 nm duv: -0.00311 purity: 9.7 % CQS: 87.9
LER(TM-30): 264.6 Ep: 13397.8 mw Rg: 100.3 Rf: 88.4
Red Ep: 3642.2 mw Near red Ep: 520.6 mw Near infrared Ep: 35.6 mw

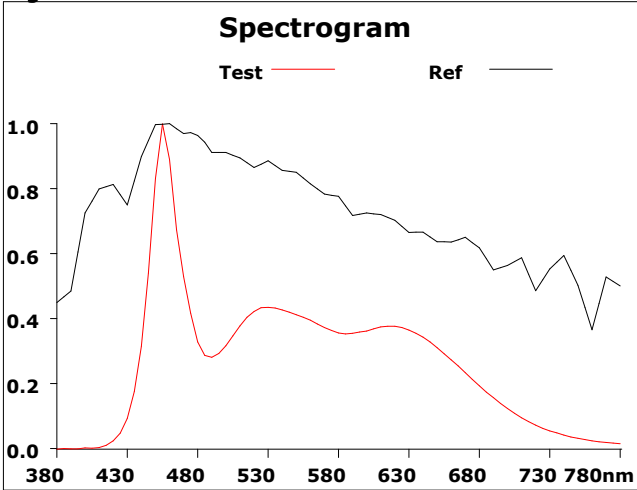
Electrical parameters:

Effic: 37.7 Lm/W Energy: 41.1 Effi: G
U: 220.7 V I: 0.666 A P: 93.930 W Pf: 0.639

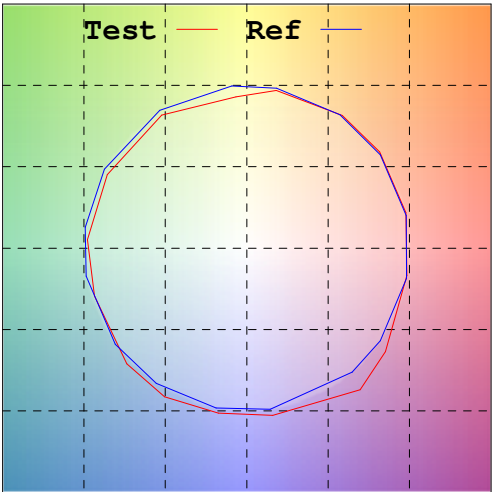
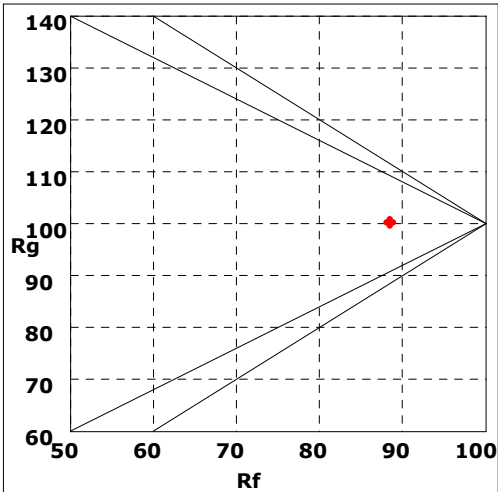
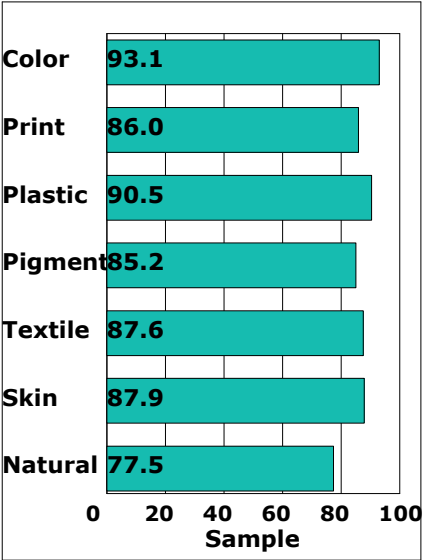
Product model: P19
Product number:
Tester:
Remarks:

Manufacturer: Guangzhou Hotion Technology Co.,
Test unit:
Date of observation: 08/11/12

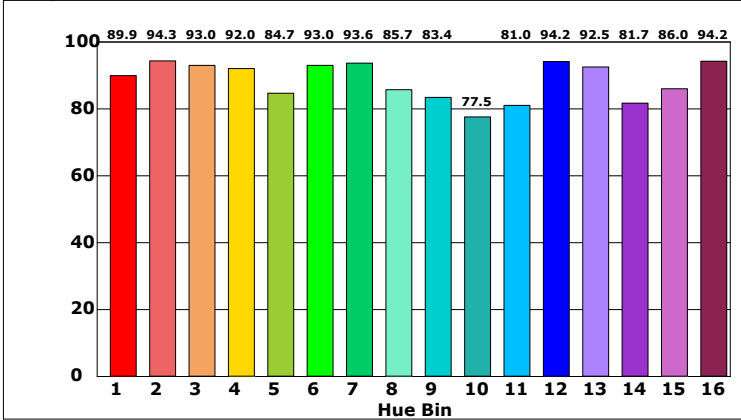
Rf: 88.4 CCT: 6811K u': 0.2015
Rg: 100.3 LER: 264.6 Duv: -0.00311 v': 0.4597



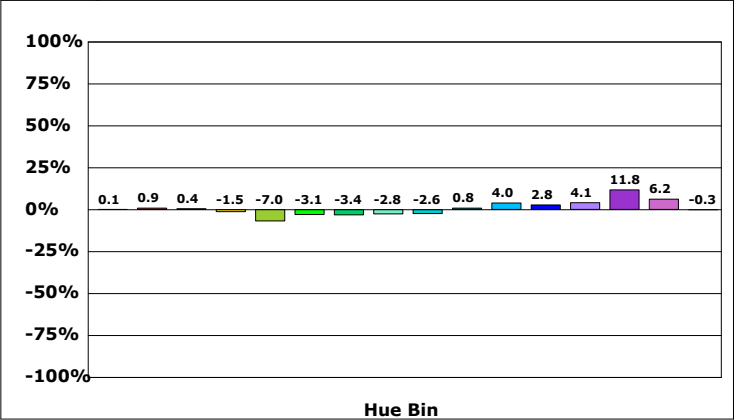
500			
Hue Bin	Rf	Chroma	Hue
1	89.9	0.1%	1.9%
2	94.3	0.9%	1.7%
3	93.0	0.4%	-1.2%
4	92.0	-1.5%	-0.0%
5	84.7	-7.0%	-1.2%
6	93.0	-3.1%	0.6%
7	93.6	-3.4%	1.8%
8	85.7	-2.8%	7.1%
9	83.4	-2.6%	13.0%
10	77.5	0.8%	13.8%
11	81.0	4.0%	8.9%
12	94.2	2.8%	2.1%
13	92.5	4.1%	0.9%
14	81.7	11.8%	-2.0%
15	86.0	6.2%	-3.8%
16	94.2	-0.3%	1.8%



Rf by Bue

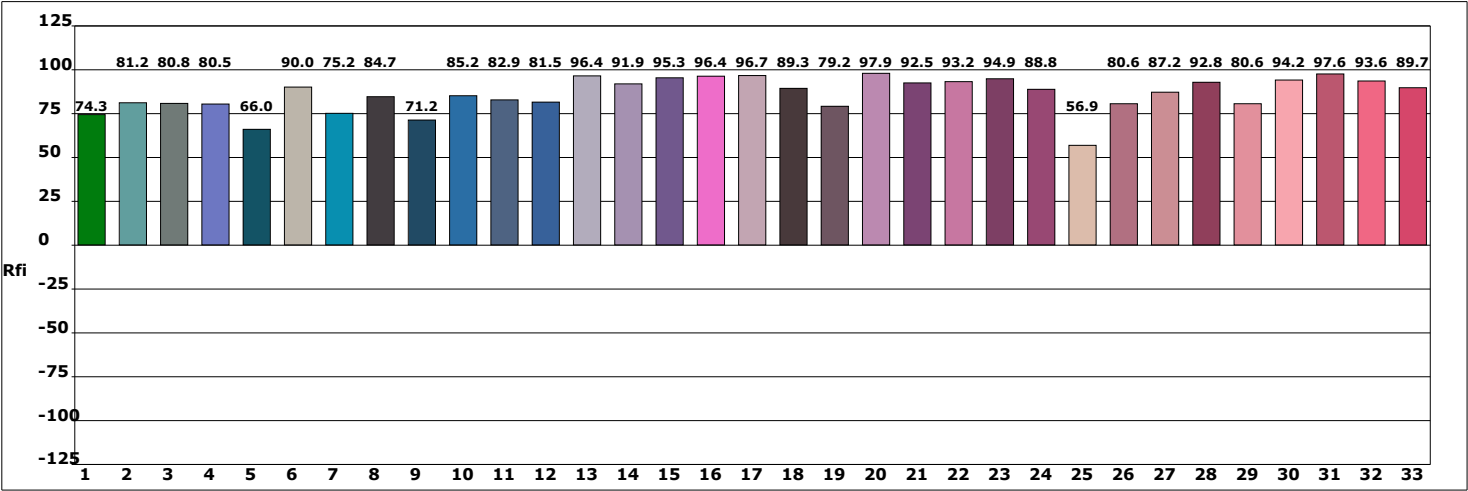
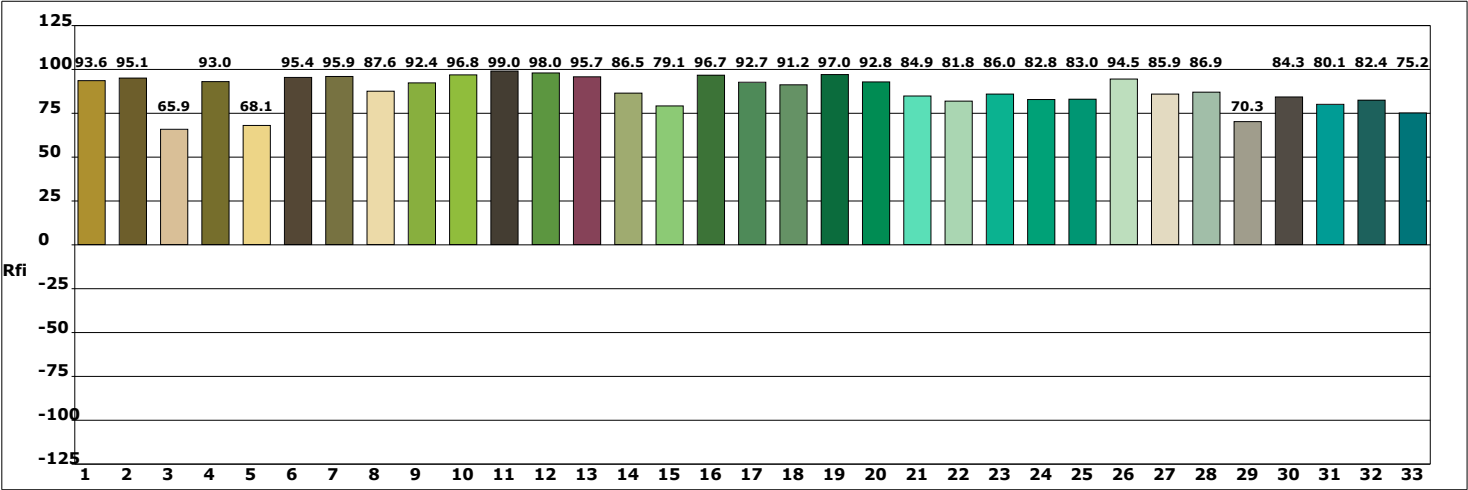
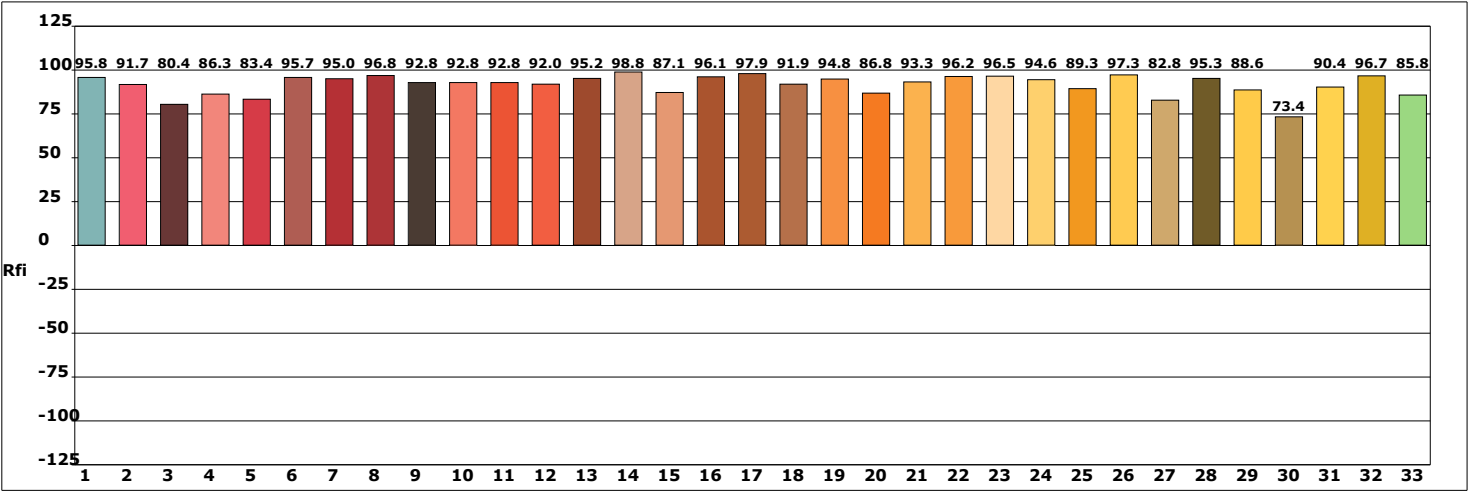


Chroma by Bue

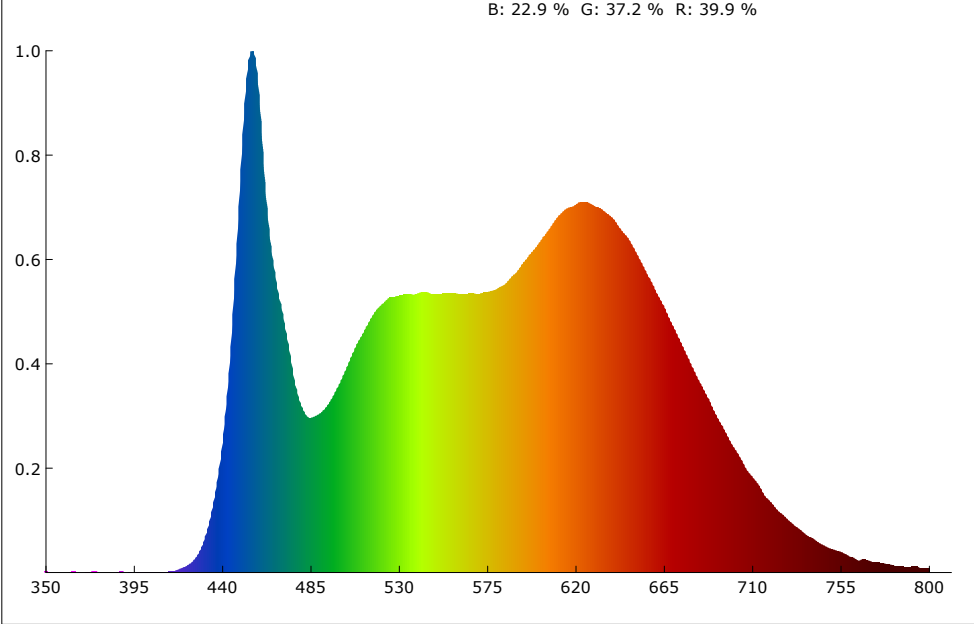


Product model: P19
Product number:
Tester:
Remarks:

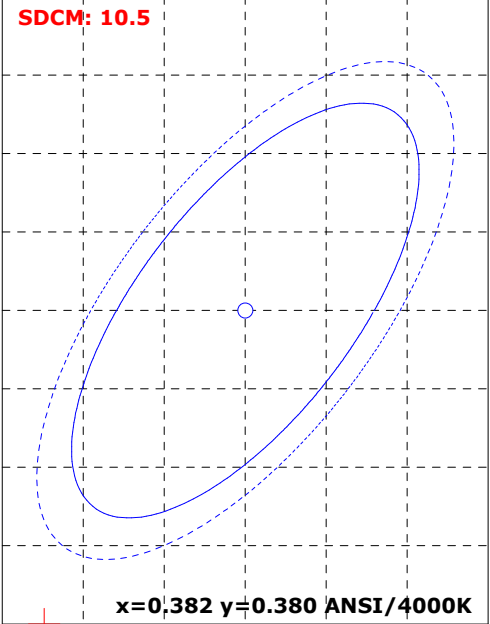
Manufacturer: Guangzhou Hotion Technology Co.,
Test unit:
Date of observation: 08/11/12



Spectrogram



SDCM



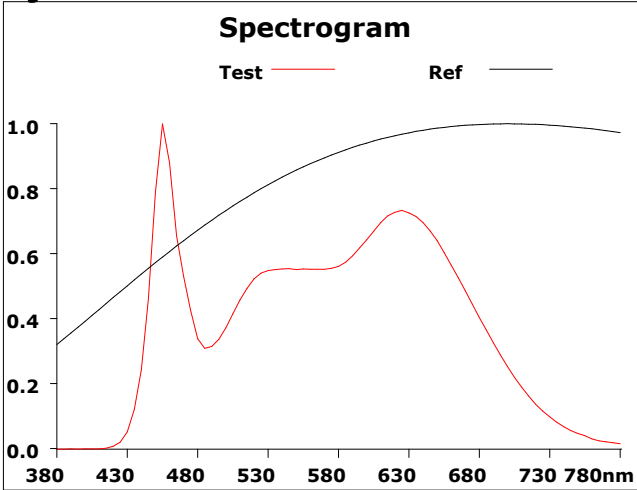
Color Parameter:

x: 0.3694	y: 0.3523	u: 0.2277	v: 0.3258	u': 0.2277	v': 0.4887		
R_ratio: 39.9 %	G_ratio: 37.2 %	B_ratio: 22.9 %	RedRatio: 20.8 %	GreenRatio: 75.6 %	BlueRatio: 3.6 %		
Ra: 94.5		AvgR: 92.1					
R1: 92.0	R2: 94.5	R3: 97.3	R4: 96.6	R5: 93.4	R6: 91.6	R7: 96.6	R8: 94.7
R9: 85.4	R10: 92.4	R11: 94.0	R12: 73.1	R13: 91.9	R14: 97.3	R15: 90.3	
CCT: 4139 K		Flux: 2415.573 lm	PeakWave: 455.4 nm	SDCM: 10.5			
S/P: 1.9		CentralWave: 458.4 nm	DominantWave: 586.0 nm	CentroidWave: 575.6 nm			
HalfWidth: 24.5 nm		duv: -0.00851	purity: 16.6 %	CQS: 85.7			
LER(TM-30): 269.5		Ep: 8962.1 mw	Rg: 101.6	Rf: 89.9			
Red Ep: 3396.3 mw		Near red Ep: 422.6 mw	Near infrared Ep: 15.0 mw				

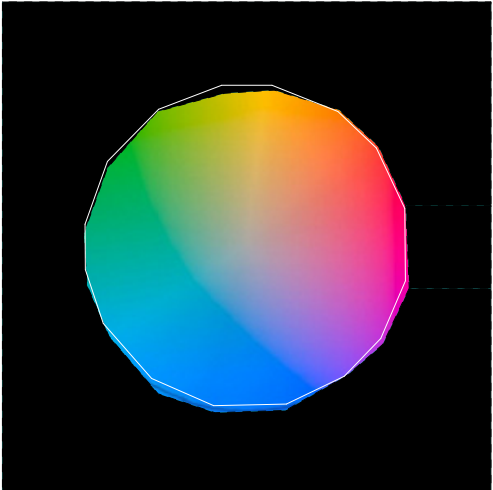
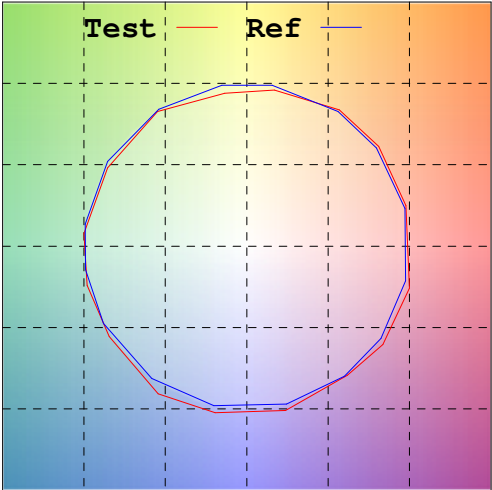
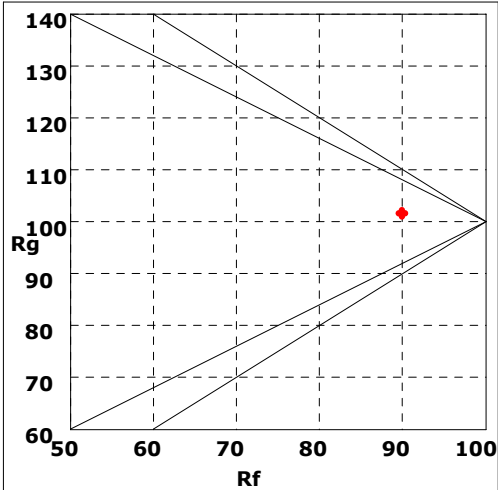
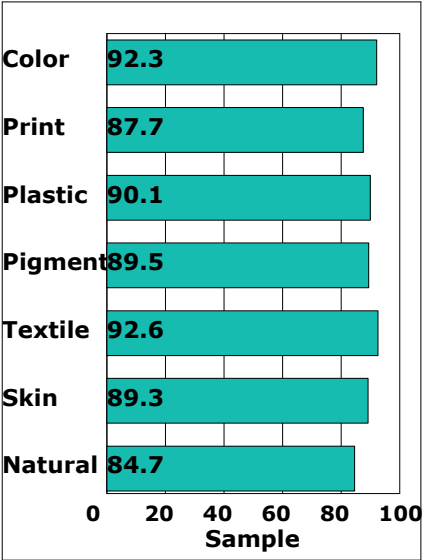
Electrical parameters:

Effic: 41.0 Lm/W	Energy: 44.7	Effi: G	
U: 220.8 V	I: 0.437 A	P: 58.910 W	Pf: 0.609

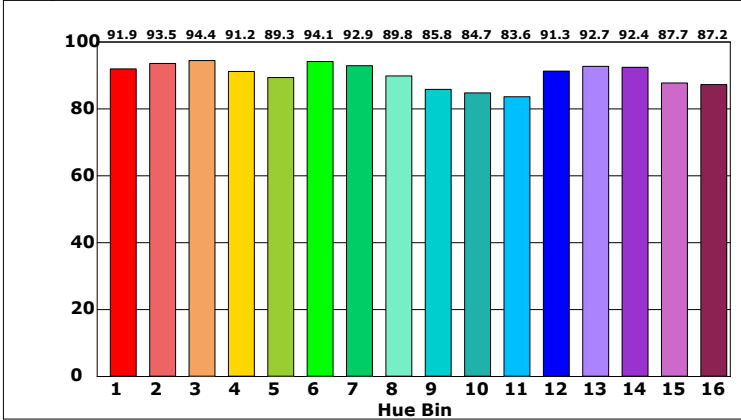
Rf: 89.9 CCT: 4139K u': 0.2277
Rg: 101.6 LER: 269.5 Duv: -0.00851 v': 0.4887



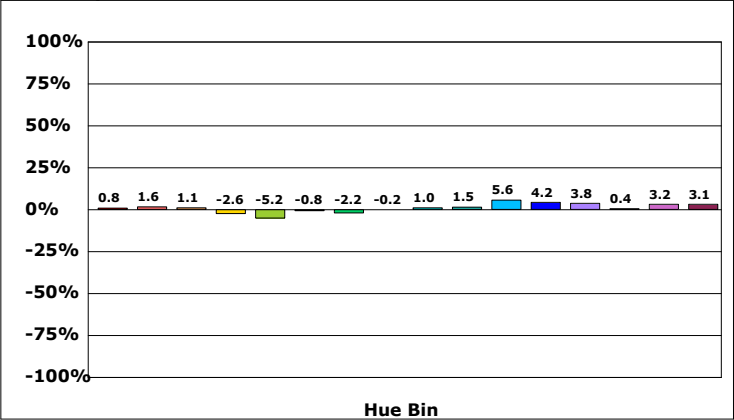
500			
Hue Bin	Rf	Chroma	Hue
1	91.9	0.8%	1.6%
2	93.5	1.6%	0.0%
3	94.4	1.1%	-0.1%
4	91.2	-2.6%	-1.9%
5	89.3	-5.2%	-0.8%
6	94.1	-0.8%	1.4%
7	92.9	-2.2%	3.3%
8	89.8	-0.2%	5.7%
9	85.8	1.0%	9.5%
10	84.7	1.5%	8.5%
11	83.6	5.6%	8.5%
12	91.3	4.2%	1.5%
13	92.7	3.8%	-1.3%
14	92.4	0.4%	2.0%
15	87.7	3.2%	-2.5%
16	87.2	3.1%	-4.0%



Rf by Bue



Chroma by Bue



Product model: P19
Product number:
Tester:
Remarks:

Manufacturer: Guangzhou Hotion Technology Co.,
Test unit:
Date of observation: 08/11/12

