

LED Test Report

Product Mark

Product Type : K52-40s-140H12 BIANCO

Manufacturer :

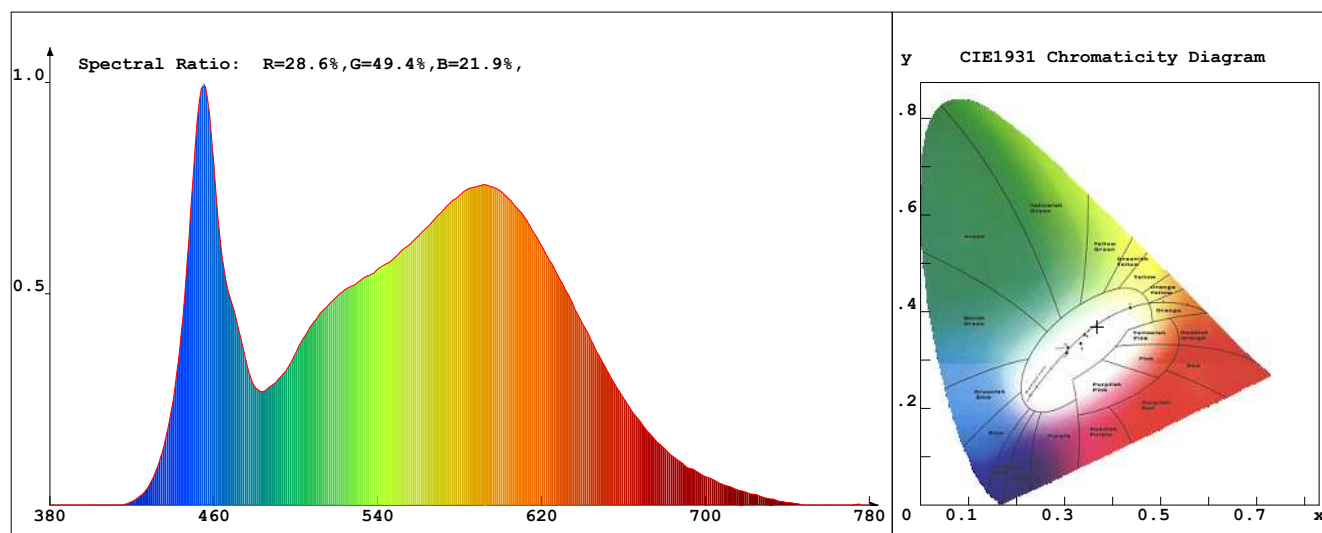
Temperature : 'C

Humidity : %

Operator :

Test Date : 07-07-21 14:09:29

Remark: BIN R620 G520 B 465 3NS1 LOTTO 444



Chroma Parameters

Chro.Coord.:x=0.3678 y=0.3683 u=0.2201 v=0.3306 duv=-0.0001

CCT: 4307K Dominant Wave.:577.9nm Purity:20.9% Centre Wave:455.6nm

Flux RGB Ratio:R=16.5%,G=80.4%,B=3.1% Peak Wave:453.8nm Half Width:21.5nm

Rendering Index:Ra= 82.0 CRI= 78.3

R1 =80 R2 =91 R3 =95 R4 =79 R5 =81 R6 =87 R7 =84 R8 =61

R9 =-1 R10=78 R11=78 R12=59 R13=83 R14=98 R15=74

PPF:10.906umol/s (400-700nm)

PRF:2.4mW (400-700nm)

PAR:2.0mW (400-700nm)

Photo Parameters

Flux:843.65lm Effi.:129.11m/W Radiant:2376.1mW Iv:0.0mcd

Scotopic Flux:1521.5Plm Effi.:0.0Plm/W S/P:1.8

Efficiency:0.00

Effi Level:A++ (EU 874-2012) Photon Flux:11043.700umol/s (380-780nm)

Ele. Parameters

Forward Current:If=273.0mA

Reverse Voltage:Vr=5.00V

Forward Voltage:Vf=23.93V

Reverse Current:Ir=0.00uA

Power:P=6.540W

Instrument state

Instrument:Lisun

Integral Time: 153.850ms

VPeak: 14760

VDark: 1293

Scan Range: 380-780nm

Product ID: 201508924

IES TM-30-2015 Test Report

Product Mark

Product Type : K52-40s-140H12 BIANCO

Manufacturer :

Temperature : 'C

Humidity : %

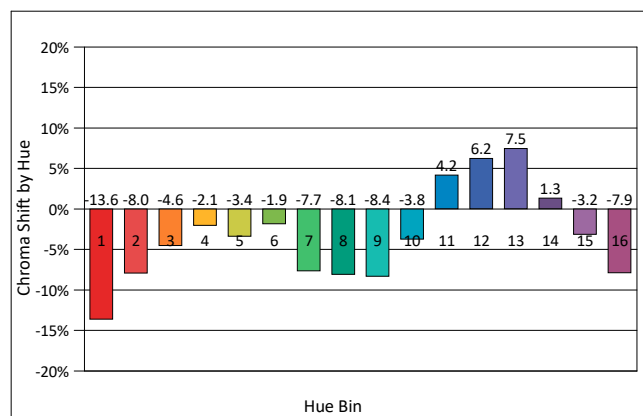
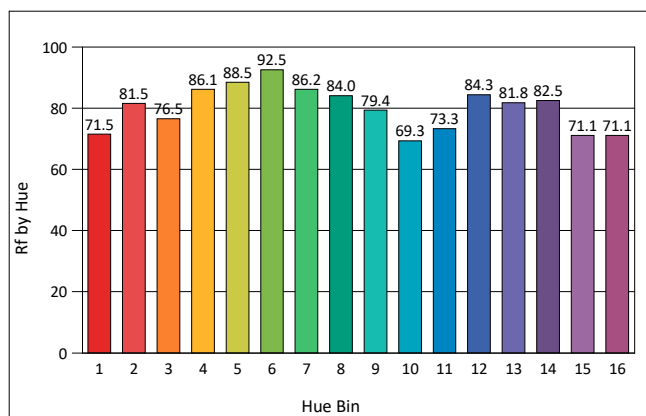
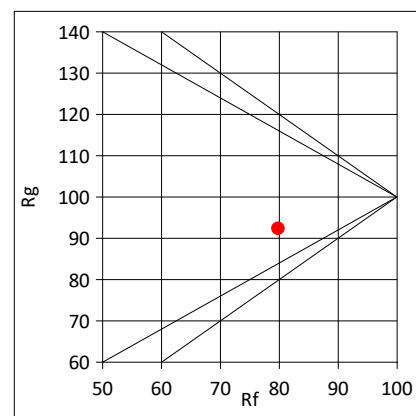
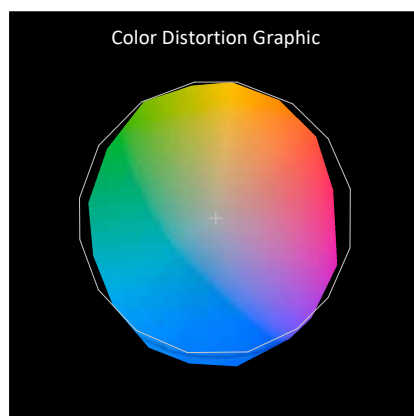
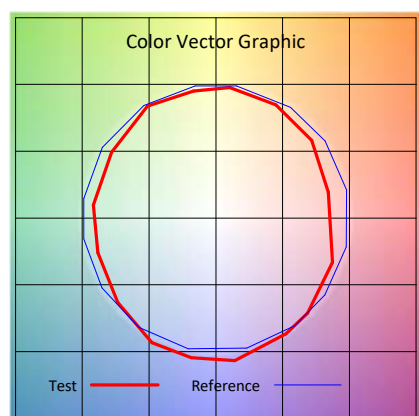
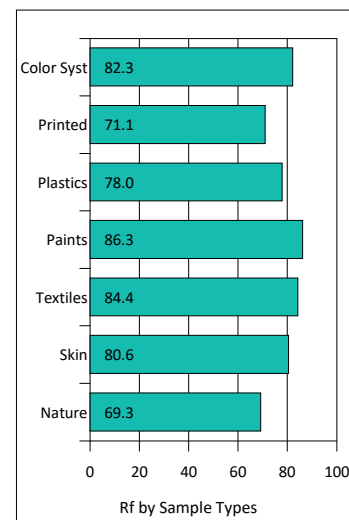
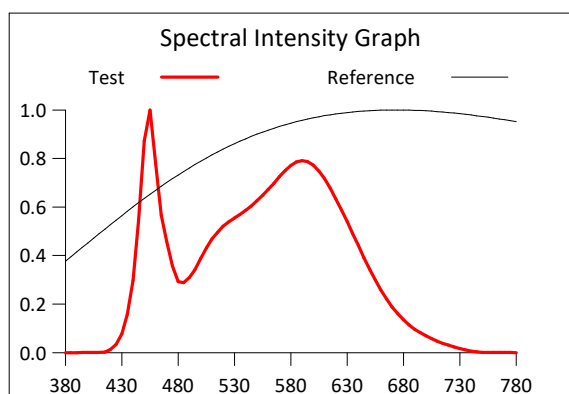
Operator :

Test Date : 07-07-21 14:09:29

Remark: BIN R620 G520 B 465 3NS1 LOTTO 444

Rf: 79.8 CCT(K): 4307 u': 0.2201
 Rg: 92.4 LER: 335.1 Duv: -0.0001 v': 0.3306

Hue Bin	Rf	Graphic Shifts (%)	
		Chroma	Hue
1	71.5	-13.6%	1.1%
2	81.5	-8.0%	5.9%
3	76.5	-4.6%	10.0%
4	86.1	-2.1%	4.6%
5	88.5	-3.4%	1.9%
6	92.5	-1.9%	-2.0%
7	86.2	-7.7%	-1.0%
8	84.0	-8.1%	3.1%
9	79.4	-8.4%	12.2%
10	69.3	-3.8%	15.6%
11	73.3	4.2%	14.6%
12	84.3	6.2%	3.5%
13	81.8	7.5%	-10.6%
14	82.5	1.3%	-8.8%
15	71.1	-3.2%	-18.5%
16	71.1	-7.9%	-13.2%



IES TM-30-2015 Test Report

Product Mark

Product Type : K52-40s-140H12 BIANCO

Manufacturer :

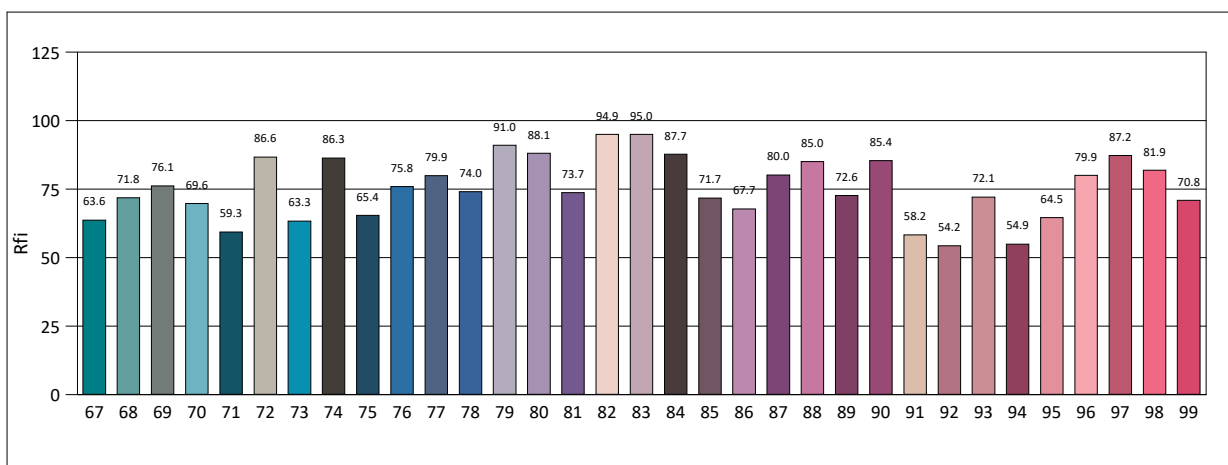
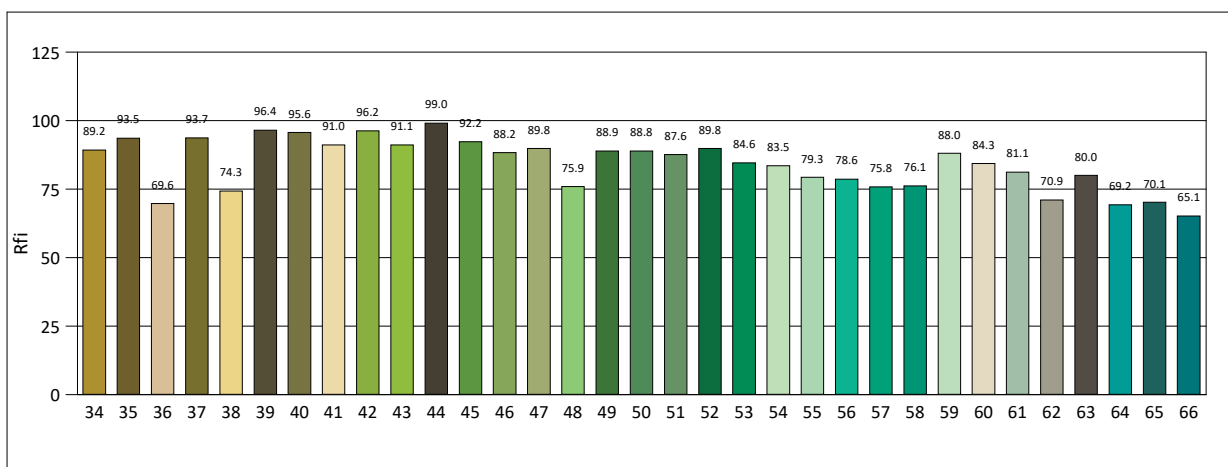
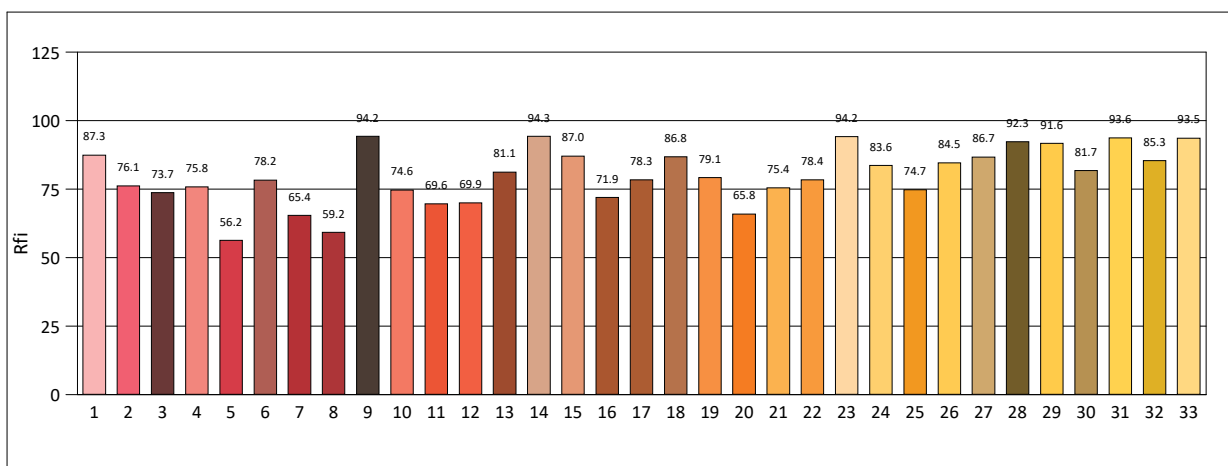
Temperature : 'C

Humidity : %

Operator :

Test Date : 07-07-21 14:09:29

Remark: BIN R620 G520 B 465 3NS1 LOTTO 444



LED Test Report

Product Mark

Product Type : K52-40s-140H12 RGB

Manufacturer :

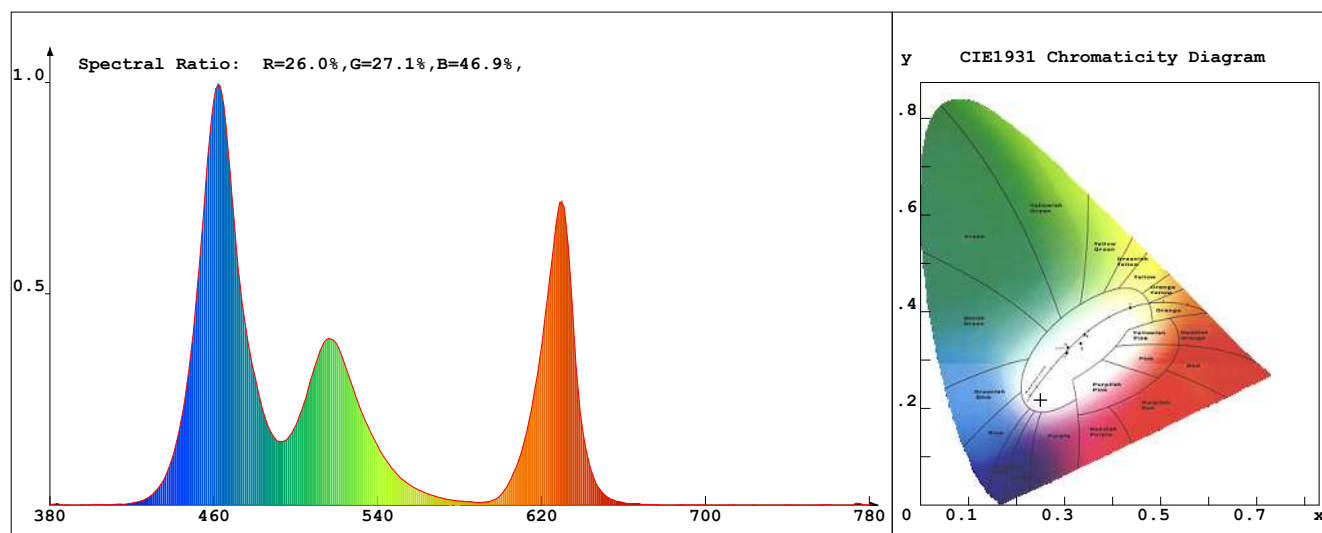
Temperature : 'C

Humidity : %

Operator :

Test Date : 07-07-21 14:11:34

Remark: BIN R620 G520 B 465 3NS1 LOTTO 444



Chroma Parameters

Chro.Coord.: $x=0.2499$ $y=0.2176$ $u=0.1955$ $v=0.2555$ $duv=-0.0171$

CCT:100000K Dominant Wave.:468.1nm Purity:40.8% Centre Wave:461.6nm

Flux RGB Ratio:R=27.6%,G=60.6%,B=11.8% Peak Wave:460.7nm Half Width:21.9nm

Rendering Index:Ra= 22.9 CRI= 86.4

R1 =-7 R2 =32 R3 =64 R4 =18 R5 =20 R6 =30 R7 =53 R8 =-27

R9 =-300 R10=-61 R11=-2 R12=37 R13=-2 R14=74 R15=-28

PPF:5.255umol/s (400-700nm)

PRF:1.2mW (400-700nm)

PAR:1.0mW (400-700nm)

Photo Parameters

Flux:262.44lm Effi.:40.6lm/W Radiant:1208.9mW Iv:0.0mcd

Scotopic Flux:1132.4Plm Effi.:0.0Plm/W S/P:4.3

Efficiency:0.00

Effi Level:A++ (EU 874-2012) Photon Flux:5265.370umol/s (380-780nm)

Ele. Parameters

Forward Current:If=268.0mA

Reverse Voltage:Vr=5.00V

Forward Voltage:Vf=24.11V

Reverse Current:Ir=0.00uA

Power:P=6.510W

Instrument state

Instrument:Lisun

Integral Time: 153.850ms

VPeak: 15352

VDark: 1308

Scan Range: 380-780nm

Product ID: 201508924

IES TM-30-2015 Test Report

Product Mark

Product Type : K52-40s-140H12 RGB

Temperature : 'C

Operator :

Remark: BIN R620 G520 B 465 3NS1 LOTTO 444

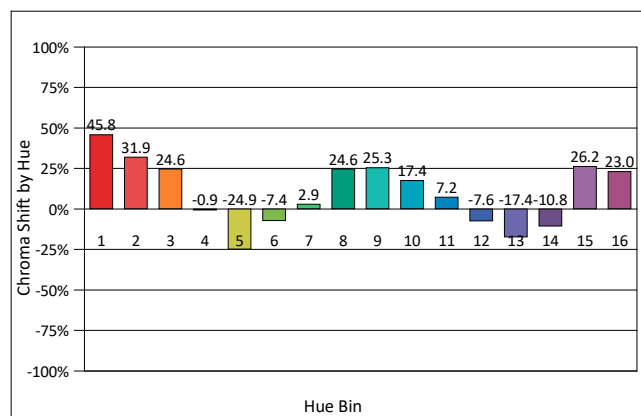
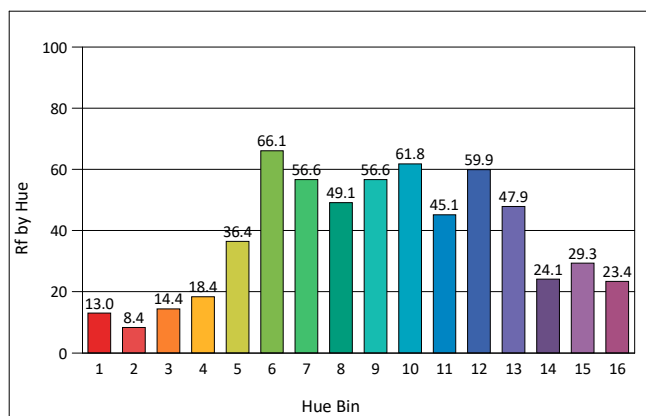
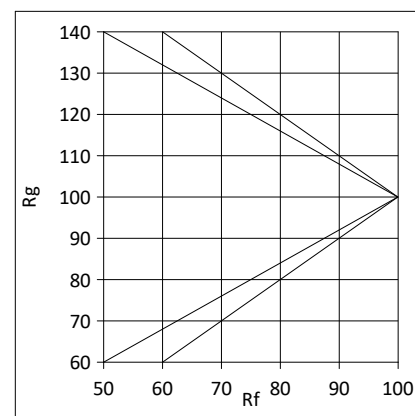
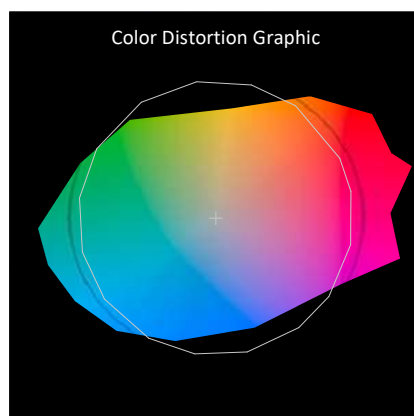
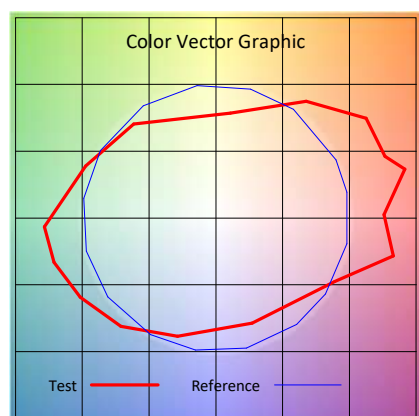
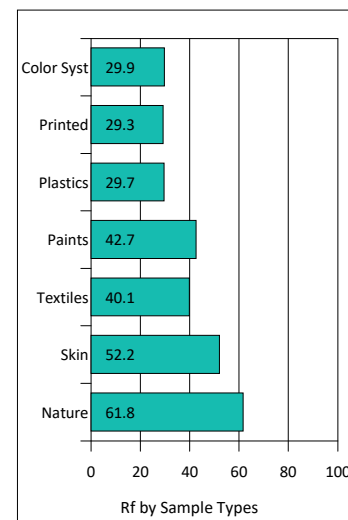
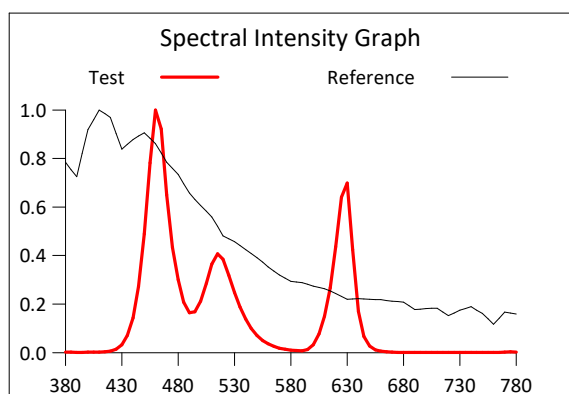
Manufacturer :

Humidity : %

Test Date : 07-07-21 14:11:34

Rf: 39.4 CCT(K): 100000 u': 0.1955
Rg: 109.8 LER: 200.5 Duv: -0.0171 v': 0.2555

Hue Bin	Rf	Graphic Shifts (%)	
		Chroma	Hue
1	13.0	45.8%	8.7%
2	8.4	31.9%	-18.0%
3	14.4	24.6%	-49.1%
4	18.4	-0.9%	-42.6%
5	36.4	-24.9%	-20.3%
6	66.1	-7.4%	13.6%
7	56.6	2.9%	15.7%
8	49.1	24.6%	26.5%
9	56.6	25.3%	3.4%
10	61.8	17.4%	-11.2%
11	45.1	7.2%	-22.1%
12	59.9	-7.6%	-15.1%
13	47.9	-17.4%	7.8%
14	24.1	-10.8%	41.7%
15	29.3	26.2%	51.8%
16	23.4	23.0%	26.8%



IES TM-30-2015 Test Report

Product Mark

Product Type : K52-40s-140H12 RGB

Manufacturer :

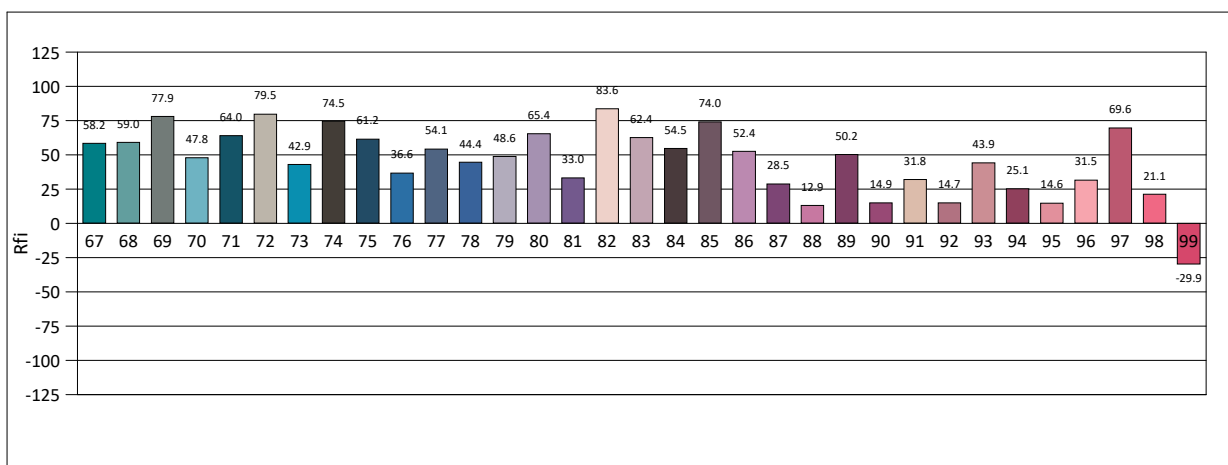
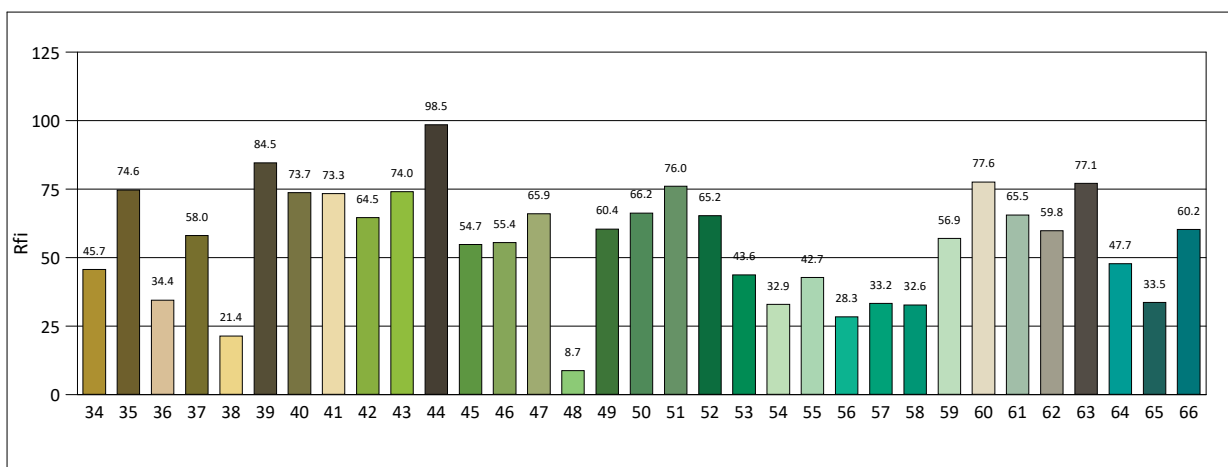
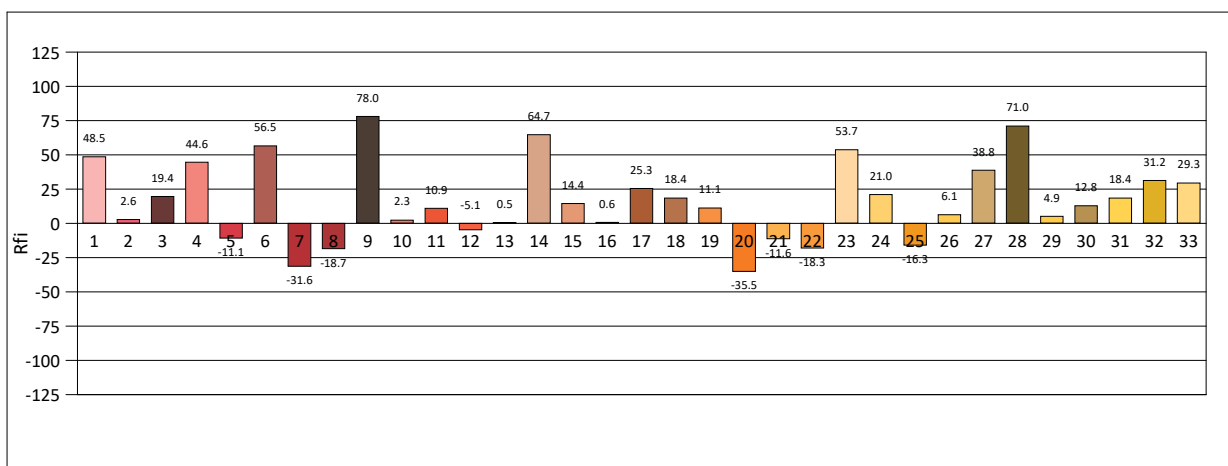
Temperature : 'C

Humidity : %

Operator :

Test Date : 07-07-21 14:11:34

Remark: BIN R620 G520 B 465 3NS1 LOTTO 444



LED Test Report

Product Mark

Product Type : K52-40s-140H12 RED

Manufacturer :

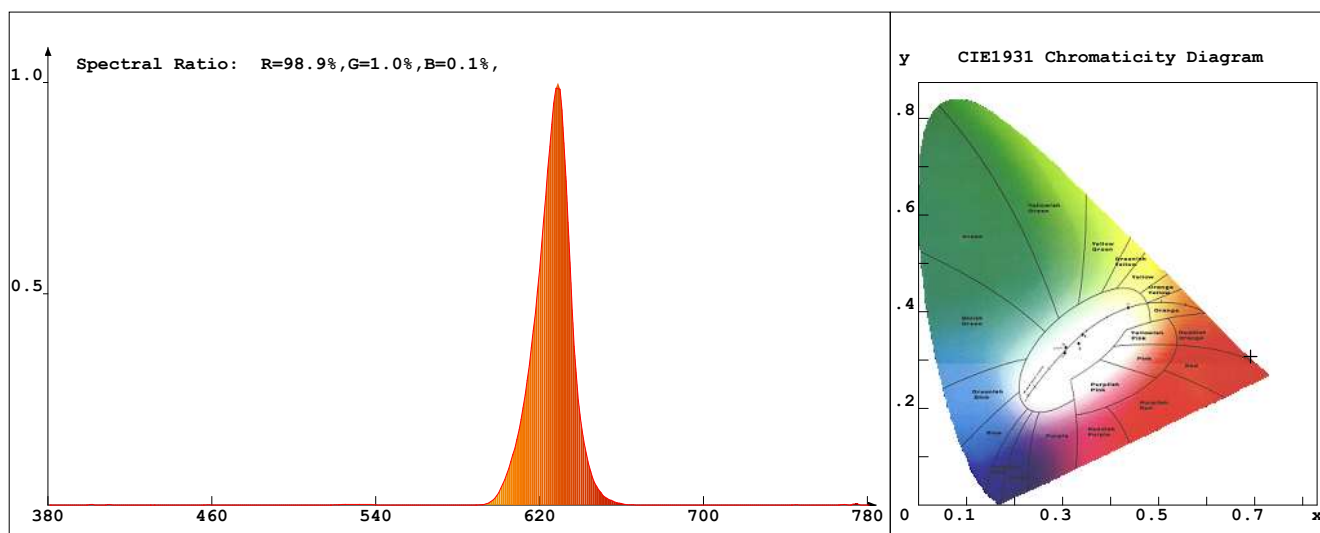
Temperature : 'C

Humidity : %

Operator :

Test Date : 07-07-21 14:15:26

Remark: BIN R620 G520 B 465 3NS1 LOTTO 444



Chroma Parameters

Chro.Coord.: $x=0.6918$ $y=0.3074$ $u=0.5216$ $v=0.3476$ $duv=-0.0007$

CCT: 1324K Dominant Wave.: 620.5nm Purity: 99.8% Centre Wave: 626.1nm

Flux RGB Ratio: $R=97.9\%$, $G=2.1\%$, $B=0.0\%$ Peak Wave: 627.5nm Half Width: 16.8nm

Rendering Index: $R_a=-11.9$ CRI= 99.4

R1 = -35	R2 = 59	R3 = 14	R4 = -58	R5 = -27	R6 = 66	R7 = -8	R8 = -105
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R9 = -330	R10 = 48	R11 = -61	R12 = 40	R13 = -8	R14 = 43	R15 = -74
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PPF: 1.675 $\mu\text{mol/s}$ (400-700nm)

PRF: 0.3mW (400-700nm)

PAR: 0.3mW (400-700nm)

Photo Parameters

Flux: 72.41lm Effi.: 33.4lm/W Radiant: 321.2mW Iv: 0.0mcd

Scotopic Flux: 4.7Plm Effi.: 0.0Plm/W S/P: 0.1

Efficiency: 0.00

Effi Level: A++ (EU 874-2012) Photon Flux: 1677.960 $\mu\text{mol/s}$ (380-780nm)

Ele. Parameters

Forward Current: $I_f=90.0\text{mA}$ Reverse Voltage: $V_r=5.00\text{V}$ Forward Voltage: $V_f=24.12\text{V}$ Reverse Current: $I_r=0.00\mu\text{A}$ Power: $P=2.161\text{W}$

Instrument state

Instrument: Lisun

Integral Time: 184.193ms

VPeak: 14520

VDark: 1334

Scan Range: 380-780nm

Product ID: 201508924

IES TM-30-2015 Test Report

Product Mark

Product Type : K52-40s-140H12 RED

Manufacturer :

Temperature : 'C

Humidity : %

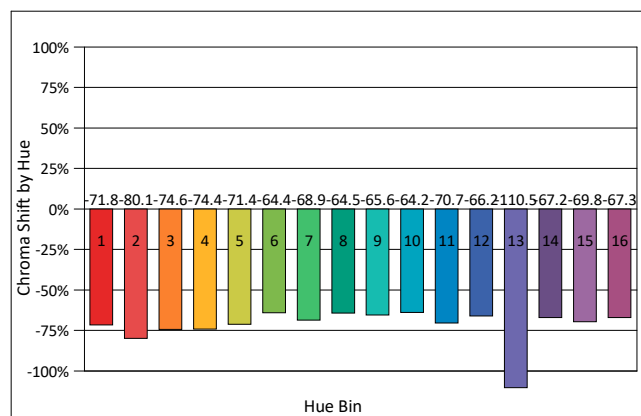
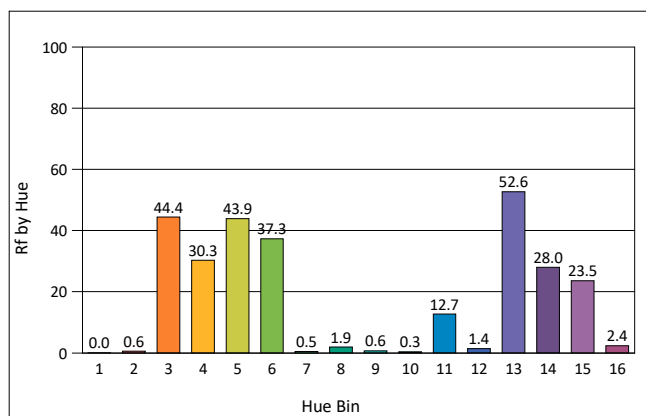
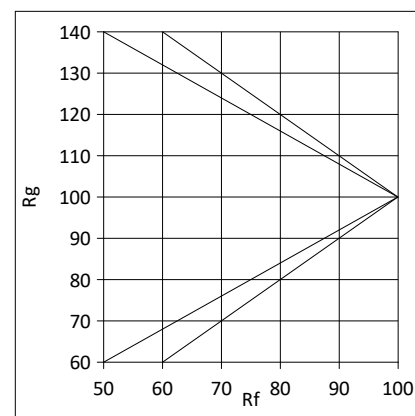
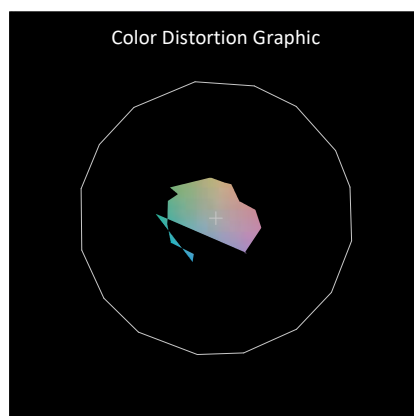
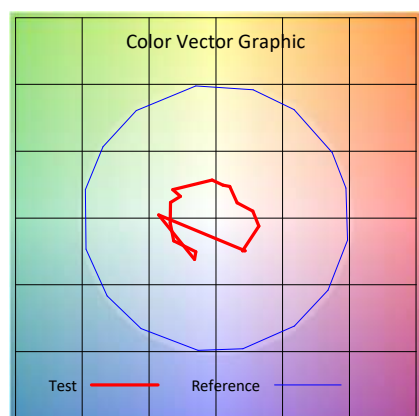
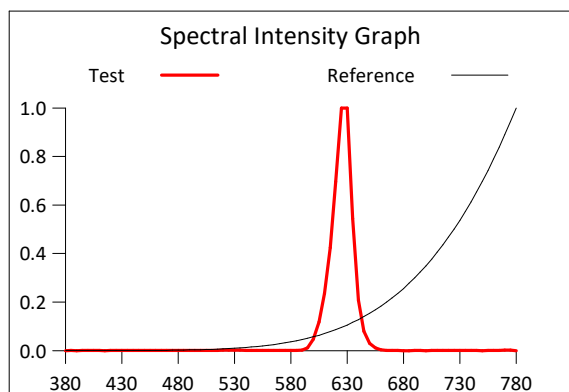
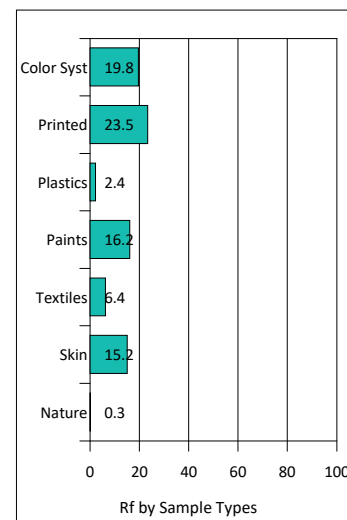
Operator :

Test Date : 07-07-21 14:15:26

Remark: BIN R620 G520 B 465 3NS1 LOTTO 444

Rf: 3.3 CCT(K): 1324 u': 0.5216
 Rg: 8.0 LER: 221.9 Duv: -0.0007 v': 0.3476

Hue Bin	Rf	Graphic Shifts (%)	
		Chroma	Hue
1	0.0	-71.8%	-3.4%
2	0.6	-80.1%	8.1%
3	44.4	-74.6%	8.0%
4	30.3	-74.4%	8.2%
5	43.9	-71.4%	1.9%
6	37.3	-64.4%	10.3%
7	0.5	-68.9%	-1.3%
8	1.9	-64.5%	-2.9%
9	0.6	-65.6%	-6.9%
10	0.3	-64.2%	-6.7%
11	12.7	-70.7%	2.1%
12	1.4	-66.2%	-15.9%
13	52.6	-110.5%	-42.4%
14	28.0	-67.2%	0.6%
15	23.5	-69.8%	-11.0%
16	2.4	-67.3%	-2.6%



IES TM-30-2015 Test Report

Product Mark

Product Type : K52-40s-140H12 RED

Manufacturer :

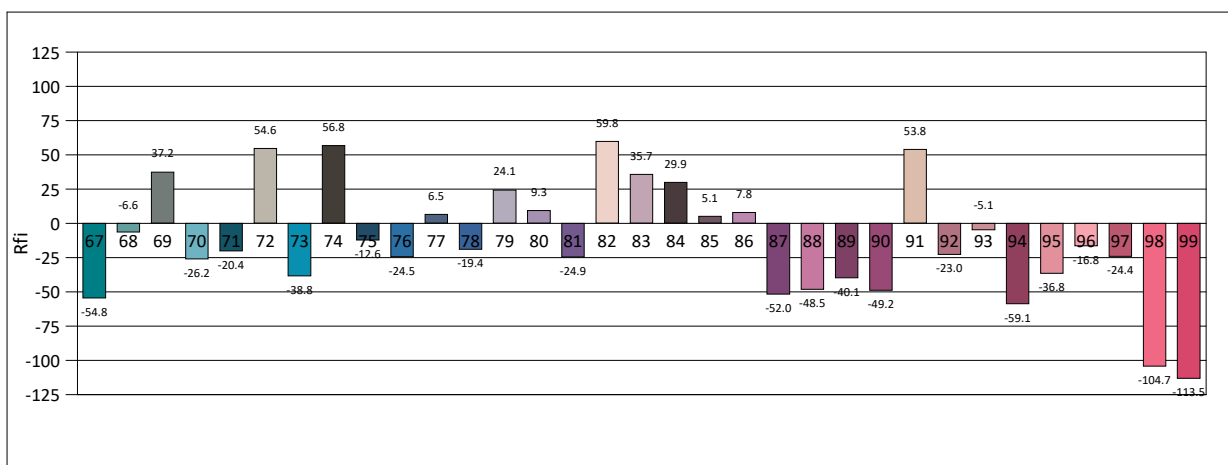
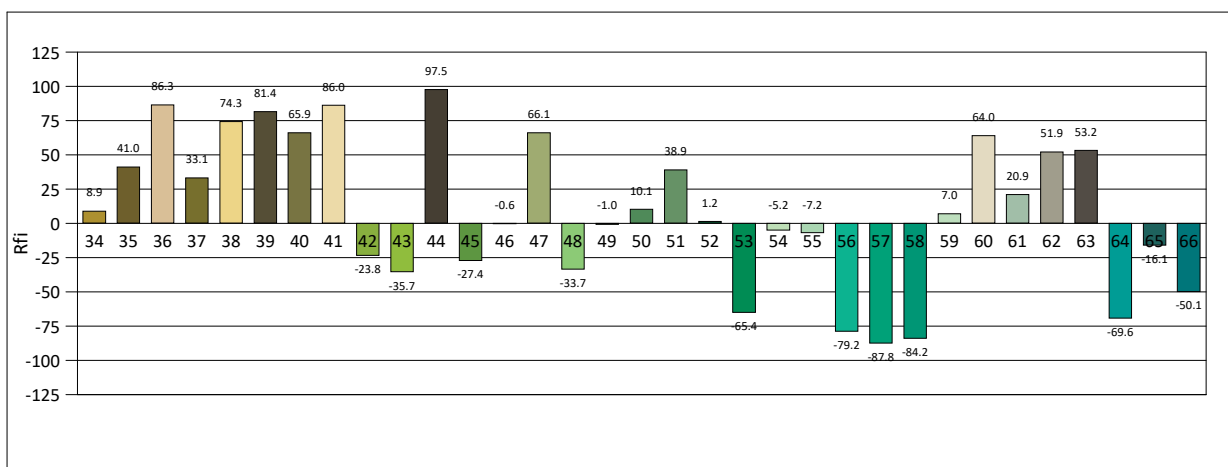
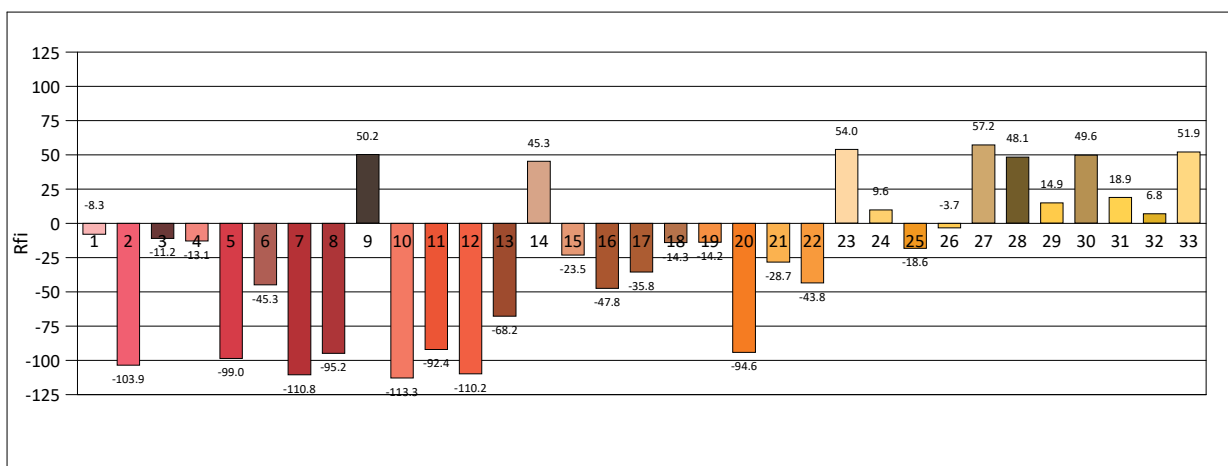
Temperature : 'C

Humidity : %

Operator :

Test Date : 07-07-21 14:15:26

Remark: BIN R620 G520 B 465 3NS1 LOTTO 444



LED Test Report

Product Mark

Product Type : K52-40s-140H12 GREEN

Manufacturer :

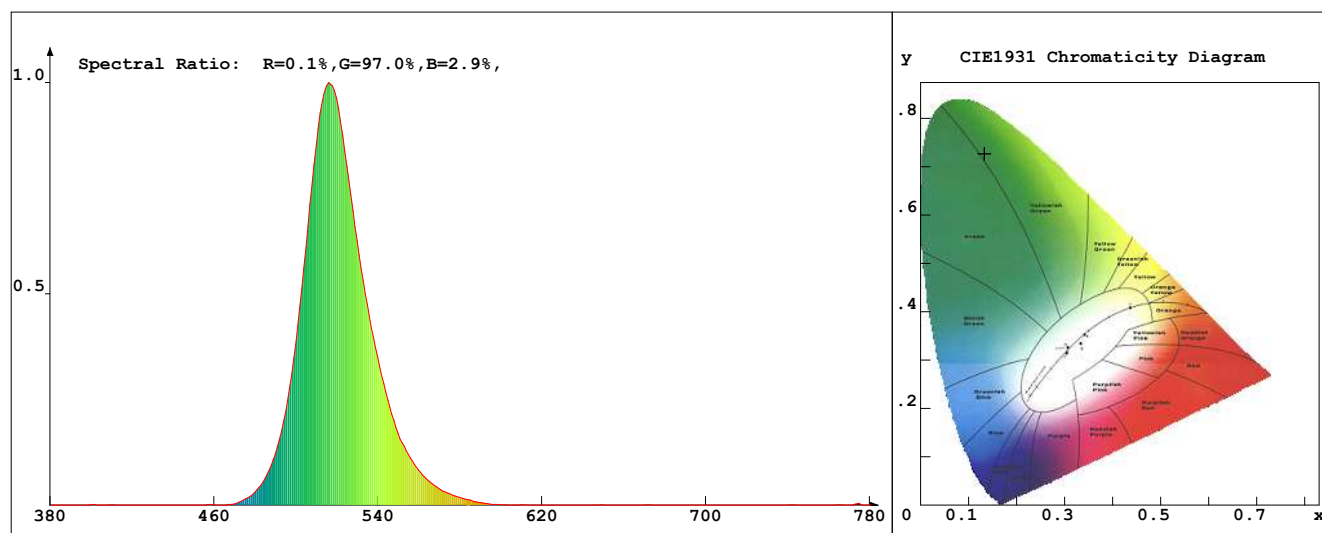
Temperature : 'C

Humidity : %

Operator :

Test Date : 07-07-21 14:17:35

Remark: BIN R620 G520 B 465 3NS1 LOTTO 444



Chroma Parameters

Chro.Coord.: $x=0.1329$ $y=0.7267$ $u=0.0464$ $v=0.3806$ $duv=0.1680$

CCT: 8419K Dominant Wave.: 520.5nm Purity: 78.6% Centre Wave: 517.4nm

Flux RGB Ratio: $R=0.0\%$, $G=99.2\%$, $B=0.7\%$ Peak Wave: 515.6nm Half Width: 31.1nm

Rendering Index: $R_a=-29.7$ CRI=107.1

R1 = -38	R2 = -14	R3 = -33	R4 = -72	R5 = -12	R6 = -22	R7 = -12	R8 = -34
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R9 = -364	R10 = -117	R11 = -101	R12 = -38	R13 = -46	R14 = 34	R15 = -34
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PPF: 1.358 $\mu\text{mol/s}$ (400-700nm)

PRF: 0.3mW (400-700nm)

PAR: 0.2mW (400-700nm)

Photo Parameters

Flux: 158.51lm Effi.: 73.3lm/W Radiant: 312.5mW Iv: 0.0mcd

Scotopic Flux: 516.3Plm Effi.: 0.0Plm/W S/P: 3.3

Efficiency: 0.00

Effi Level: A++ (EU 874-2012) Photon Flux: 1359.290 $\mu\text{mol/s}$ (380-780nm)

Ele. Parameters

Forward Current: $I_f=89.0\text{mA}$ Reverse Voltage: $V_r=5.00\text{V}$ Forward Voltage: $V_f=24.29\text{V}$ Reverse Current: $I_r=0.00\mu\text{A}$ Power: $P=2.161\text{W}$

Instrument state

Instrument: Lisun

Integral Time: 281.026ms

VPeak: 13384

VDark: 1360

Scan Range: 380-780nm

Product ID: 201508924

IES TM-30-2015 Test Report

Product Mark

Product Type : K52-40s-140H12 GREEN

Manufacturer :

Temperature : 'C

Humidity : %

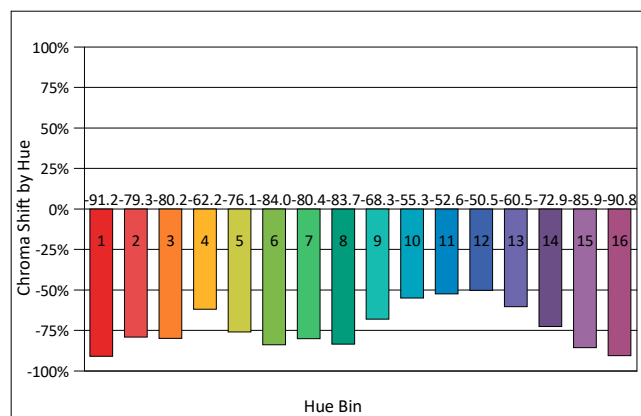
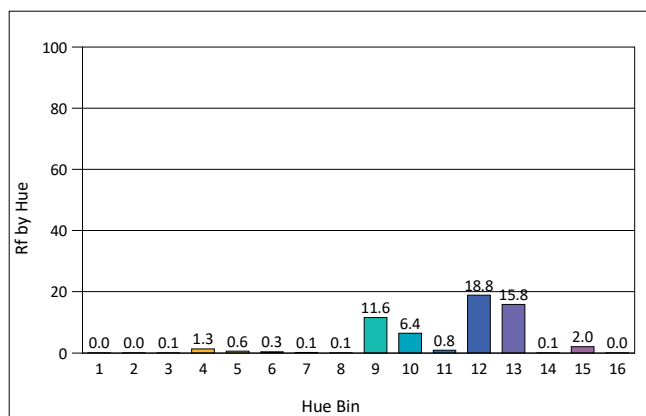
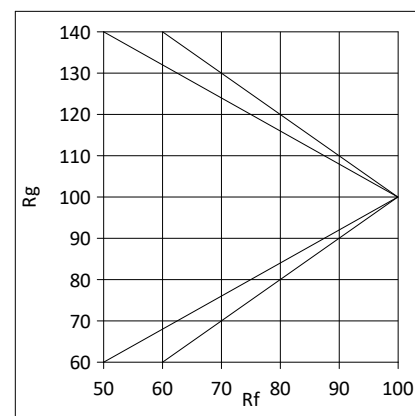
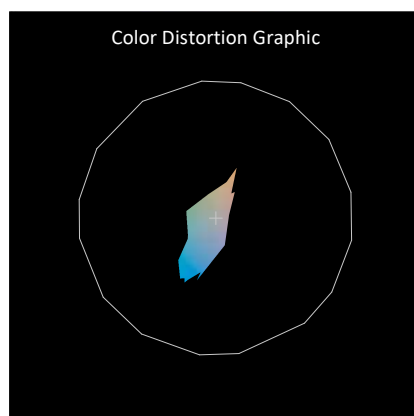
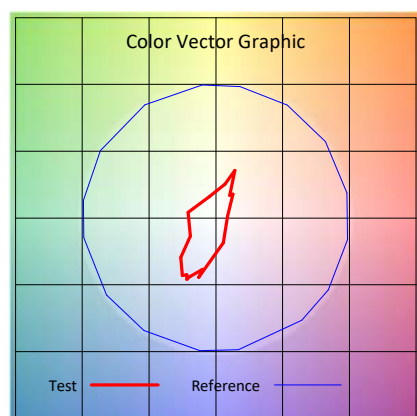
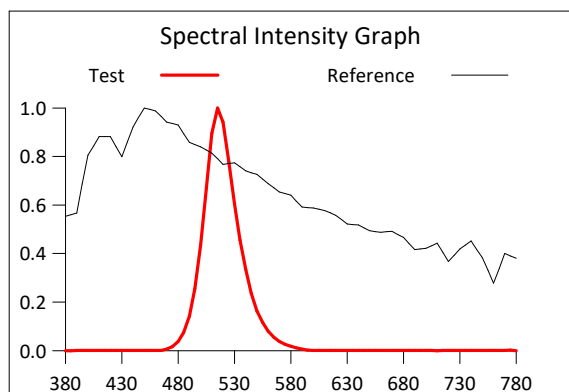
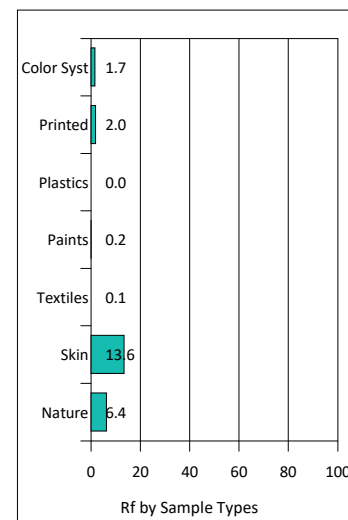
Operator :

Test Date : 07-07-21 14:17:35

Remark: BIN R620 G520 B 465 3NS1 LOTTO 444

Rf: 0.3 CCT(K): 8419 u': 0.0464
 Rg: 4.8 LER: 448.5 Duv: 0.1680 v': 0.3806

Hue Bin	Rf	Graphic Shifts (%)	
		Chroma	Hue
1	0.0	-91.2%	0.0%
2	0.0	-79.3%	5.9%
3	0.1	-80.2%	-1.7%
4	1.3	-62.2%	-8.5%
5	0.6	-76.1%	-2.1%
6	0.3	-84.0%	-2.0%
7	0.1	-80.4%	1.9%
8	0.1	-83.7%	10.9%
9	11.6	-68.3%	28.8%
10	6.4	-55.3%	19.5%
11	0.8	-52.6%	3.5%
12	18.8	-50.5%	-20.1%
13	15.8	-60.5%	-24.9%
14	0.1	-72.9%	-40.8%
15	2.0	-85.9%	-46.2%
16	0.0	-90.8%	-20.7%



IES TM-30-2015 Test Report

Product Mark

Product Type : K52-40s-140H12 GREEN

Manufacturer :

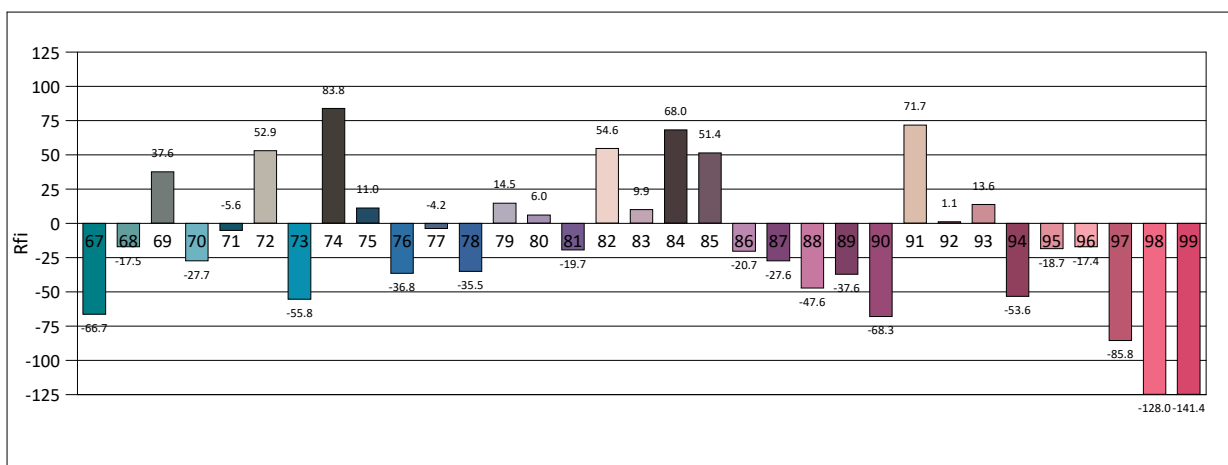
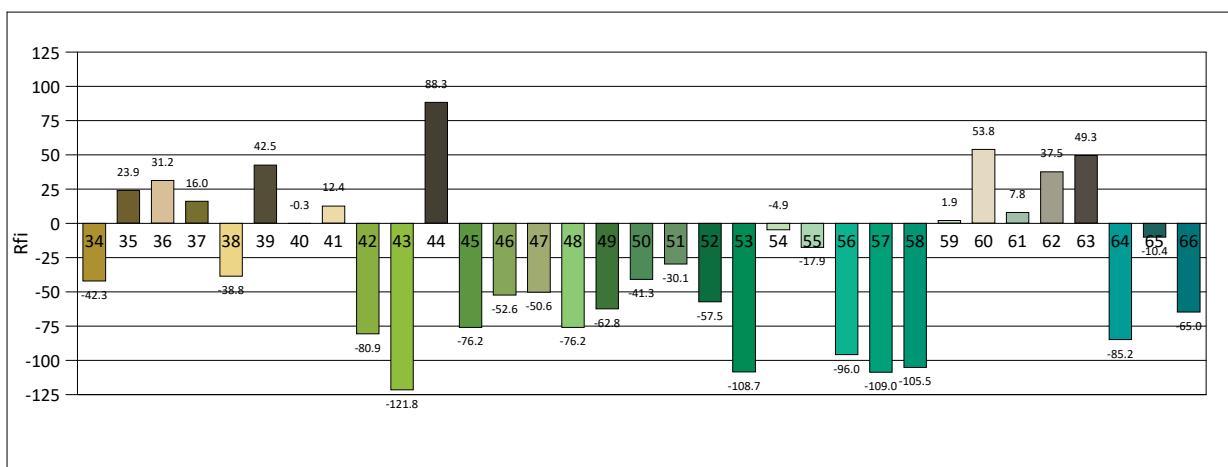
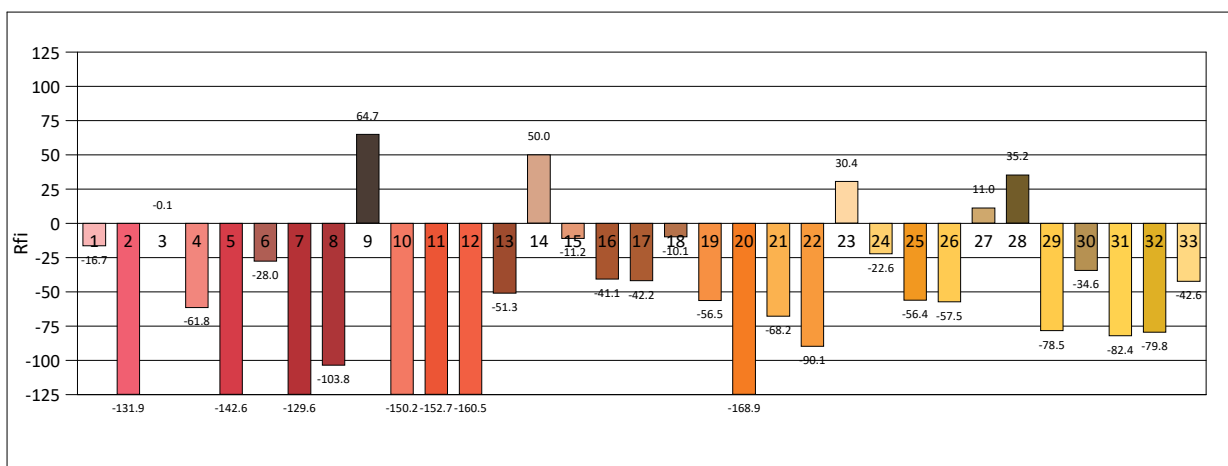
Temperature : 'C

Humidity : %

Operator :

Test Date : 07-07-21 14:17:35

Remark: BIN R620 G520 B 465 3NS1 LOTTO 444



LED Test Report

Product Mark

Product Type : K52-40s-140H12 BLU

Manufacturer :

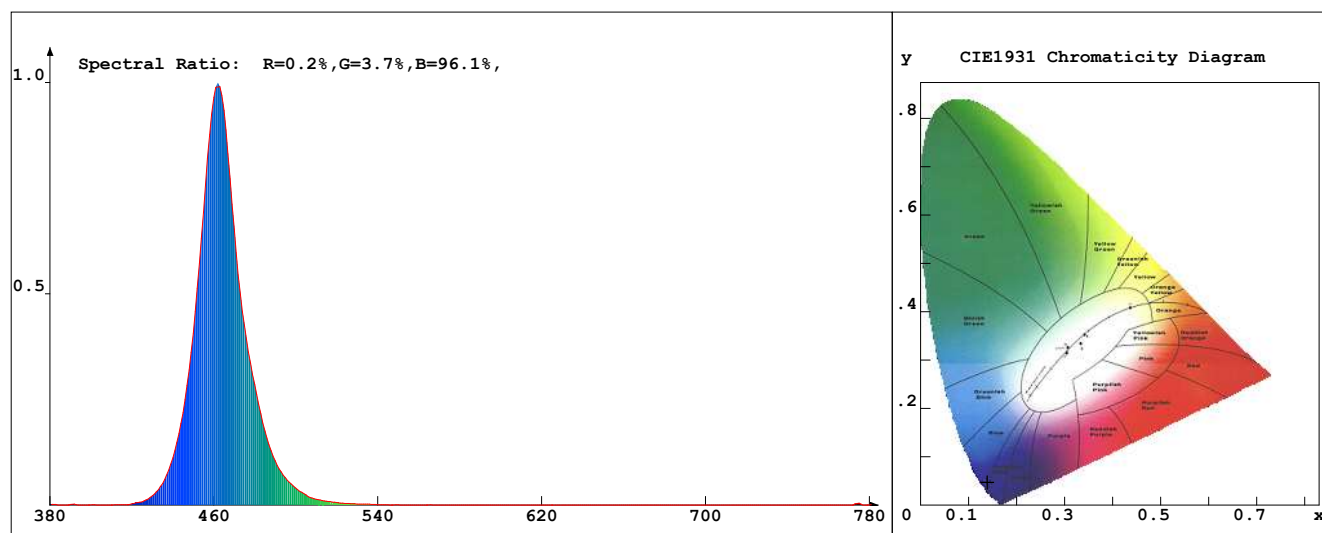
Temperature : 'C

Humidity : %

Operator :

Test Date : 07-07-21 14:13:48

Remark: BIN R620 G520 B 465 3NS1 LOTTO 444



Chroma Parameters

Chro.Coord.: x=0.1390 y=0.0474 u=0.1689 v=0.0864 duv=-0.0332

CCT:100000K Dominant Wave.:465.4nm Purity:97.8% Centre Wave:461.4nm

Flux RGB Ratio:R=0.1%,G=16.7%,B=83.2% Peak Wave:460.7nm Half Width:21.1nm

Rendering Index:Ra=-57.3 CRI=120.8

R1 =-20 R2 =-53 R3 =-145 R4 =-87 R5 =-5 R6 =-63 R7 =-50 R8 =-36

R9 =-292 R10=-250 R11=-118 R12=-120 R13=-41 R14=-33 R15=-2

PPF:2.226umol/s (400-700nm)

PRF:0.6mW (400-700nm)

PAR:0.4mW (400-700nm)

Photo Parameters

Flux:39.68lm Effi.:18.5lm/W Radiant:575.5mW Iv:0.0mcd

Scotopic Flux:707.6Plm Effi.:0.0Plm/W S/P:17.8

Efficiency:0.00

Effi Level:A++ (EU 874-2012) Photon Flux:2231.470umol/s (380-780nm)

Ele. Parameters

Forward Current:If=89.0mA

Reverse Voltage:Vr=5.00V

Forward Voltage:Vf=24.03V

Reverse Current:Ir=0.00uA

Power:P=2.161W

Instrument state

Instrument:Lisun

Integral Time: 153.850ms

VPeak: 15448

VDark: 1323

Scan Range: 380-780nm

Product ID: 201508924

IES TM-30-2015 Test Report

Product Mark

Product Type : K52-40s-140H12 BLU

Manufacturer :

Temperature : 'C

Humidity : %

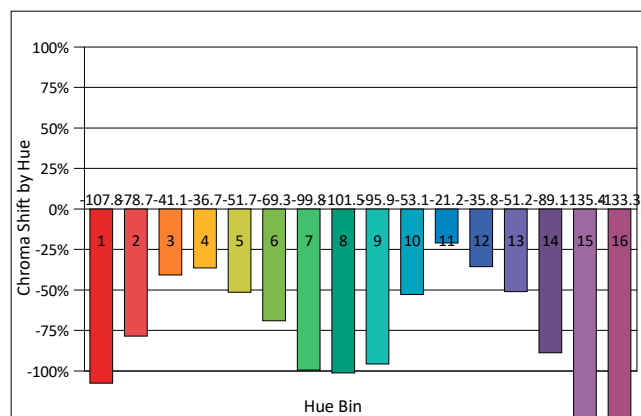
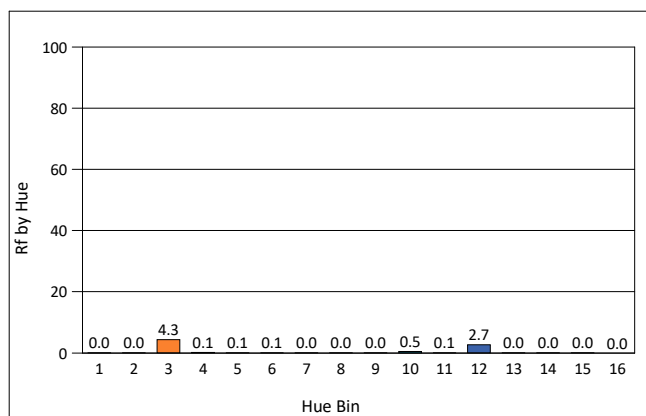
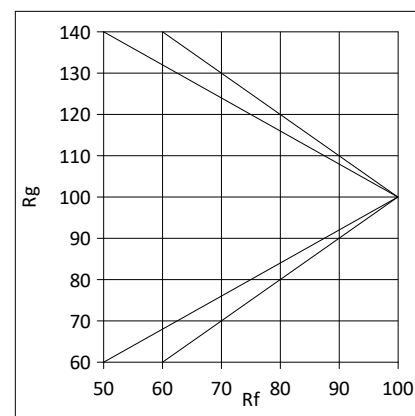
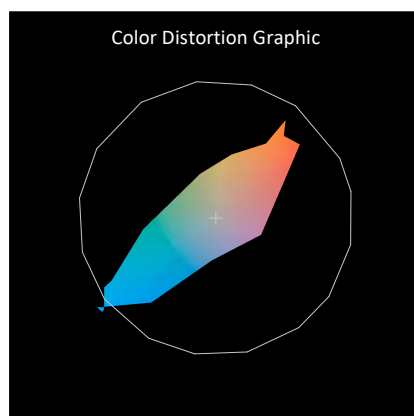
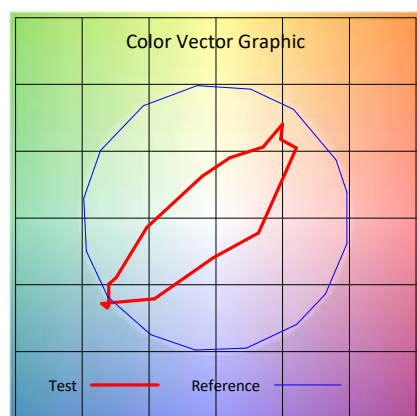
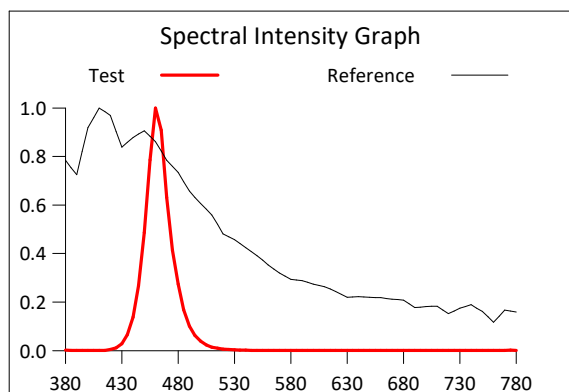
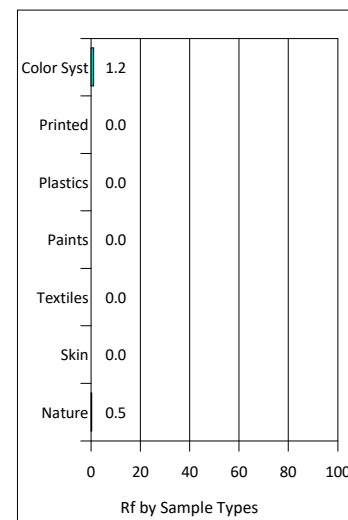
Operator :

Test Date : 07-07-21 14:13:48

Remark: BIN R620 G520 B 465 3NS1 LOTTO 444

Rf: 0.0 CCT(K): 100000 u': 0.1689
 Rg: 25.5 LER: 57.0 Duv: -0.0332 v': 0.0864

Hue Bin	Rf	Graphic Shifts (%)	
		Chroma	Hue
1	0.0	-107.8%	-28.5%
2	0.0	-78.7%	-13.2%
3	4.3	-41.1%	-21.2%
4	0.1	-36.7%	-42.1%
5	0.1	-51.7%	-53.3%
6	0.1	-69.3%	-78.9%
7	0.0	-99.8%	-69.9%
8	0.0	-101.5%	-51.2%
9	0.0	-95.9%	-38.2%
10	0.5	-53.1%	-27.0%
11	0.1	-21.2%	-45.2%
12	2.7	-35.8%	-73.2%
13	0.0	-51.2%	-94.9%
14	0.0	-89.1%	-110.9%
15	0.0	-135.4%	-99.0%
16	0.0	-133.3%	-68.5%



IES TM-30-2015 Test Report

Product Mark

Product Type : K52-40s-140H12 BLU

Manufacturer :

Temperature : 'C

Humidity : %

Operator :

Test Date : 07-07-21 14:13:48

Remark: BIN R620 G520 B 465 3NS1 LOTTO 444

