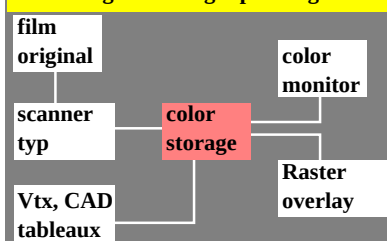


diagram for interfaces in the area image handling – printing



SI230-1, B6_28

sensation scaling functions

lightness L^* and tristimulus value Y

adaptation on surround white:

$$L^* = 100 (Y / 100)^{1/2,0}$$

adaptation on surround gray:

$$L^* = 100 (Y / 100)^{1/2,4}$$

description with CIELAB 1976:

$$L^* = 116 (Y / 100)^{1/3,0} - 16$$

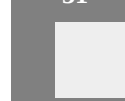
adaptation on surround black:

$$L^* = 100 (Y / 100)^{1/3,0}$$

SI230-2, B6_29

point amount:

$$n = 16^2 - 15^2 = 31$$



whiteness

$$W^* = E(14)$$

blackness

$$N^* = 1$$



SI231-1, B6_36_1

point amount:

$$n = 16^2 - 8^2 = 192$$



whiteness

$$W^* = 7$$

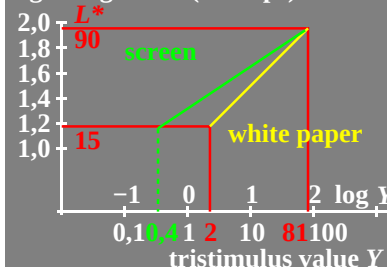
blackness

$$N^* = 8$$



SI231-2, B6_36_2

log L^* lightness (75 steps)



SI230-3, B6_30

colorness luminous value

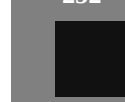
$$N^* \quad L^* \quad Y = (L^*/10)^2 Y = (L^*/10)^3 / 9$$

0	90	81	$Y_{\max}$	81,0	$Y_{\text{normalized}}$
2	80	64		56,9	(= Y_{paper})
4	70	49		38,1	
6	60	36		24,0	
8	50	25		13,9	
10	40	16		7,1	
12	30	9		3,0	
14	20	4		0,9	
15	15	2,25	$Y_{\min}$	0,4	

SI230-4, B6_31

point amount:

$$n = 16^2 - 2^2 = 252$$

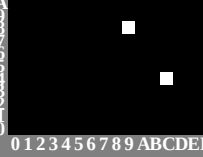


whiteness

$$W^* = 1$$

blackness

$$N^* = E(14)$$



SI231-3, B6_36_3

point amount:

$$n = 16^2 - 1^2 = 255$$

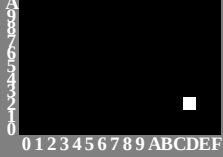


whiteness

$$W^* = 0$$

blackness

$$N^* = F(15)$$



SI231-4, B6_36_4

linear scan area	lightness- area	lightness color
Y	L^*	h^* no. d
76,6 ... 85,5	87,5 ... 92,4	90 FFF 4095
60,1 ... 68,1	77,5 ... 82,4	80 DDD 3549
45,6 ... 52,5	67,5 ... 72,4	70 BBB 3003
33,1 ... 39,0	57,5 ... 62,4	60 999 2457
22,6 ... 27,5	47,5 ... 52,4	50 777 1911
14,1 ... 18,0	37,5 ... 42,4	40 555 1365
7,6 ... 10,5	27,5 ... 32,4	30 333 819
3,1 ... 5,0	17,5 ... 22,4	20 111 273
1,6 ... 3,0	12,5 ... 17,4	15 000 0

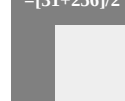
SI230-5, B6_32

whiteness	black-	tristimulus	cover-
$r_d^* g_d^* b_d^*$	ness N^*	value Y	rage b
15,15,15	0	81 $Y_{\max}$	0,00
13,13,13	2	64	0,22
11,11,11	4	49	0,41
9, 9, 9	6	36	0,57
7, 7, 7	8	25	0,71
5, 5, 5	10	16	0,83
3, 3, 3	12	9	0,91
1, 1, 1	14	4	0,98
0, 0, 0	15	2,25 $Y_{\min}$	1,00

SI230-6, B6_33

point amount:

$$n = [16^2 - 15^2 + 256] / 2 = [31 + 256] / 2$$

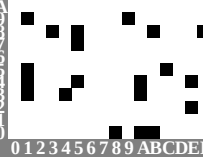


whiteness

$$W^* = E(14)$$

blackness

$$N^* = 1$$



SI231-5, B6_36_1

point amount:

$$n = [16^2 - 8^2 + 256] / 2 = [192 + 256] / 2$$



whiteness

$$W^* = 7$$

blackness

$$N^* = 8$$



SI231-6, B6_36_2

whiteness	yellow-	tristimulus	cover-
$r_d^* g_d^* b_d^*$	ness Y^*	value Y	rage b
15,15,15	0	81 $Y_{\max}$	0,00
15,15,13	2		0,22
15,15,11	4		0,41
15,15, 9	6		0,57
15,15, 7	8		0,71
15,15, 5	10		0,83
15,15, 3	12		0,91
15,15, 1	14		0,98
15,15, 0	15	76 $Y_{\min}$	1,00

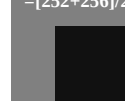
SI230-7, B6_34

whiteness	black-	tristimulus	cover-
$r_d^* g_d^* b_d^*$	ness N^*	value Y	rage b
15,15,15	0	81 $Y_{\max}$	0,00
13,13,13	2	64	0,22
11,11,11	4	49	0,41
9, 9, 9	6	36	0,57
7, 7, 7	8	25	0,71
5, 5, 5	10	16	0,83
3, 3, 3	12	9	0,91
1, 1, 1	14	4	0,98
0, 0, 0	15	2,25 $Y_{\min}$	1,00

SI231-8, B7_03

point amount:

$$n = [16^2 - 2^2 + 256] / 2 = [252 + 256] / 2$$

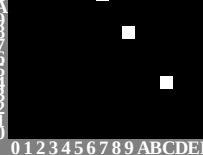


whiteness

$$W^* = 1$$

blackness

$$N^* = E(14)$$



SI231-7, B6_36_3

point amount:

$$n = [16^2 - 1^2 + 256] / 2 = [255 + 256] / 2$$

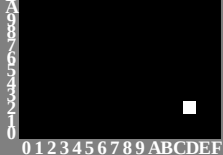


whiteness

$$W^* = 0$$

blackness

$$N^* = F(15)$$



SI231-8, B6_36_4

grafico TUB-SI23; Colour scaling
Lightness and scaling functions, area coverage

immettere: w/rgb/cmyk -> w/rgb/cmyk_d
uscita: nessun cambiamento