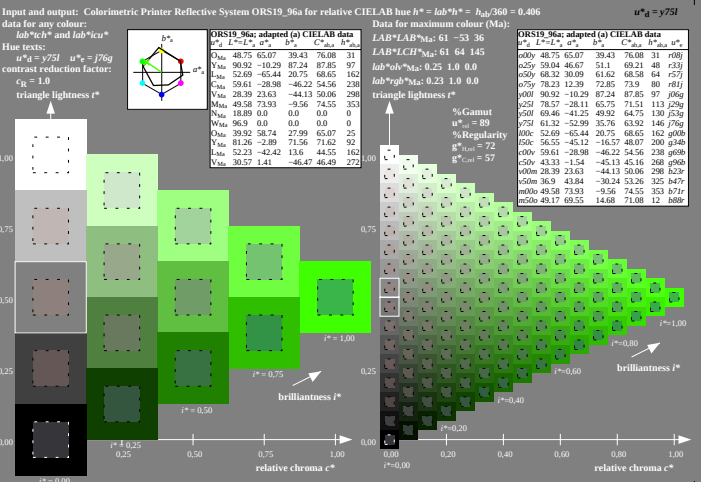
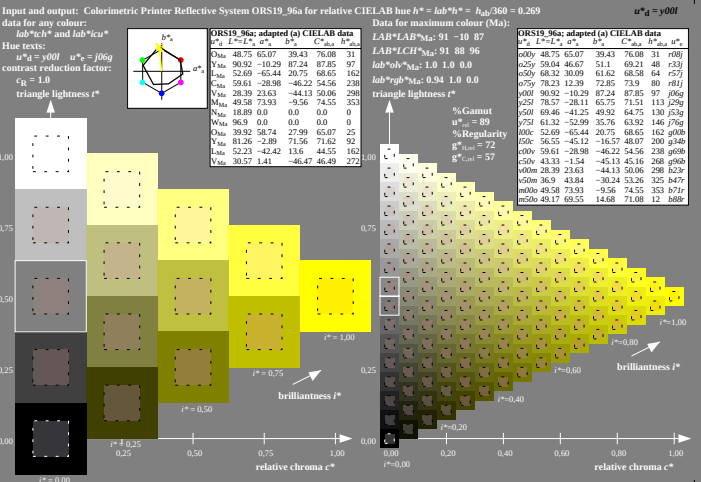
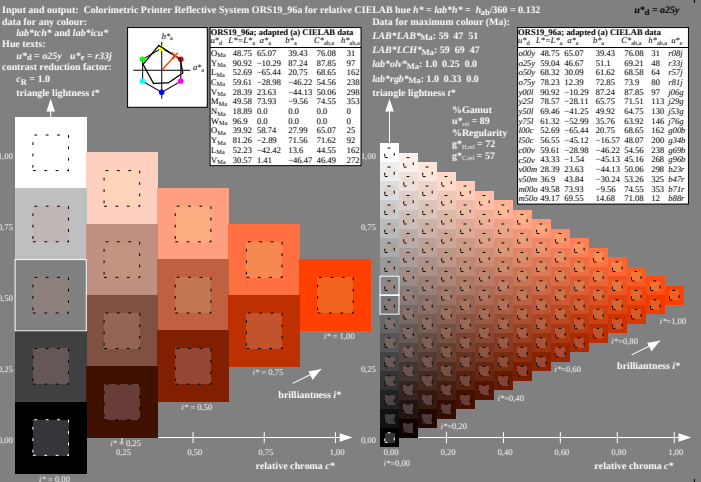
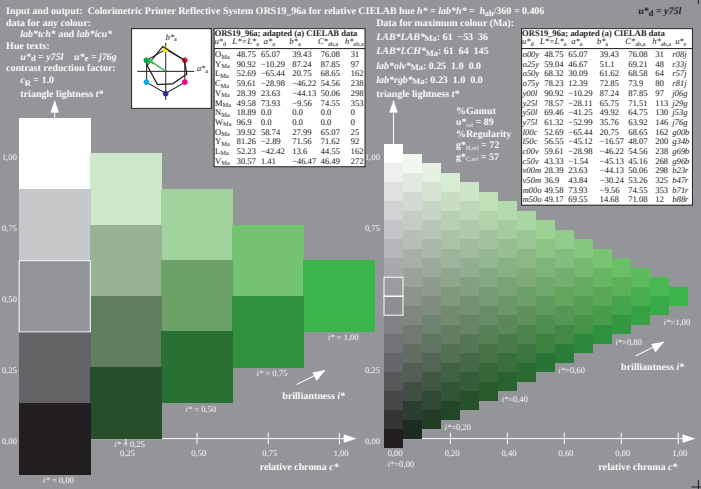
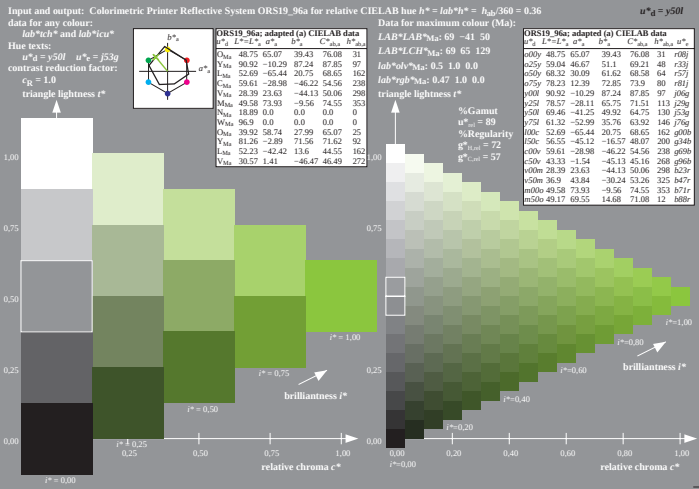
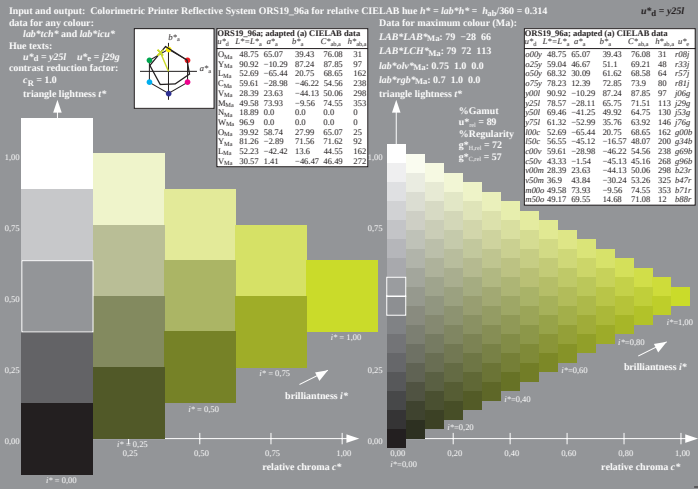
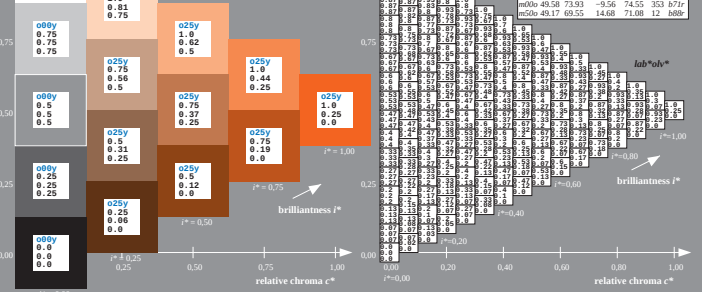


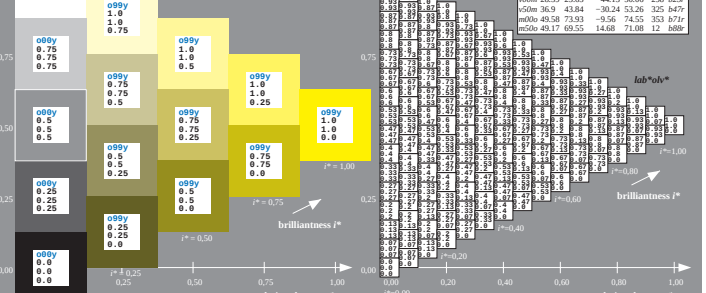




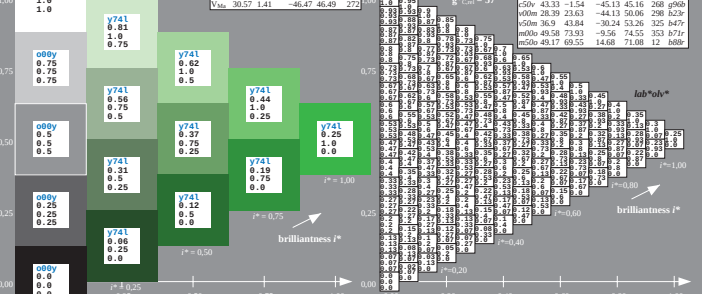
$u^*_d = 0.25y$ $lab^{*}poly^*$					
a; adapted (a) CIELAB data					
a^*	b^*	c^*	h^*	u^*_e	v^*_e
65.07	39.43	76.08	31	r08j	
46.67	51.1	69.21	48	r33j	
30.09	61.62	68.58	64	r57j	
12.39	87.25	73.9	80	r81j	
-10.29	82.74	87.85	97	j06g	
-28.11	65.75	71.51	113	j29g	
-41.25	49.92	64.75	130	j53g	
-52.99	35.76	63.92	146	j76g	
-65.44	20.75	68.65	162	g00b	
-45.12	16.57	48.07	200	y34b	
-28.98	46.22	54.56	238	g63b	
-1.54	-45.13	45.16	268	g90b	
23.63	-44.13	50.06	298	b27r	
43.84	-30.24	53.26	325	b47r	



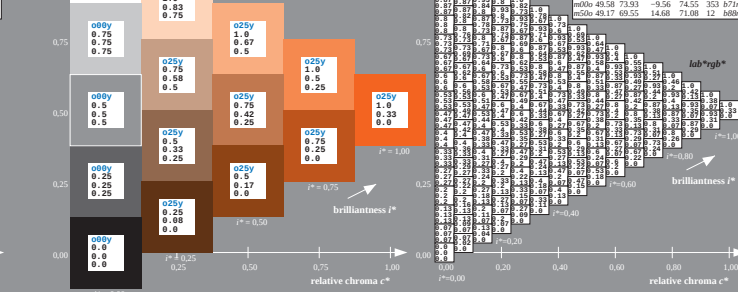
a; adapted (a) CIELAB data					
a^*_{ab}	b^*_{ab}	C^*_{ab}	h^*_{ab}	h^*_{ab}	u^*_{ab}
65.07	39.43	76.08	31	r08j	
46.67	51.1	69.21	48	r33j	
30.09	61.62	68.58	64	r57j	
12.39	72.85	73.9	80	r81j	
-10.29	87.24	87.85	97	j06g	
-28.11	65.75	71.51	113	j29g	
-41.25	49.92	64.75	130	j53g	
-52.99	35.76	63.92	146	j76g	
-65.44	20.75	68.65	162	q00b	
-45.12	-16.57	48.07	200	g34b	
-28.98	-46.22	54.56	238	g60b	
-1.54	-45.13	45.16	268	g99b	
23.63	-44.13	50.06	298	h23r	



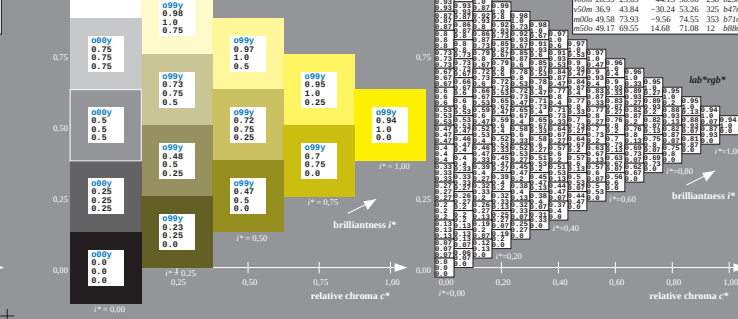
relative chroma c^*					
$u^*_d = y75l$ lab^*oh^*					
a; adapted (a) CIELab data					
a^*_s	b^*_s	C^*_s	h^*_s	a^*_e	u^*_e
65.07	39.43	76.08	31	r08j	
46.67	51.1	69.21	48	r33j	
30.09	61.62	68.58	64	r57j	
12.39	72.85	73.9	80	r81j	
-10.29	87.24	87.85	97	j06g	
-28.11	95.75	71.51	113	j29g	
-41.25	49.92	64.75	130	j53g	
-52.99	35.76	63.92	146	j76g	
-65.44	20.75	68.65	162	g00b	
-45.12	-16.57	48.07	200	g34b	
-28.98	-44.22	56.54	238	g63b	



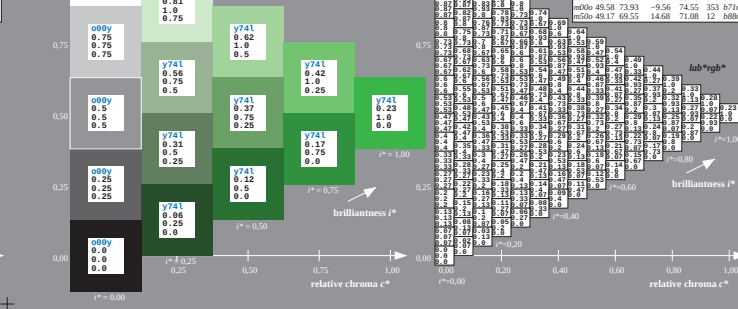
0.132		$u_b^* = 0.25y$	
		lab^*rb^*	
ORIS9 56a; adapted (a)	CIELAB data		
L^* , a^* , b^*	L^* , a^* , b^*	L^* , a^* , b^*	L^* , a^* , b^*
60/00	74.55 65.07 39.43	76.08 31 83	r03
55/05	59.04 46.67 51.1	69.21 48	r03
50/00	68.32 30.09 61.62	68.58 64	r57
45/05	78.23 12.39 71.85	74.26 85	r03
40/00	95.92 -10.29 87.24	87.05	r03
35/01	78.57 -28.11 65.75	71.51 113	25g
30/05	69.46 -41.25 49.92	64.75 130	35g
25/01	61.32 -52.99 35.76	63.92 146	76g
20/00	52.69 -45.45 20.75	68.65 162	90g
15/00	56.55 -45.12 -16.57	48.03 200	g48
10/00	58.98 -28.98 26.22	52.12 218	g65
5/00	38.33 -15.14 -45.07	45.16 268	90g
0/00	28.39 23.63 -44.13	50.56 289	b23
0/00	38.39 43.84 -30.24	53.26 325	35g



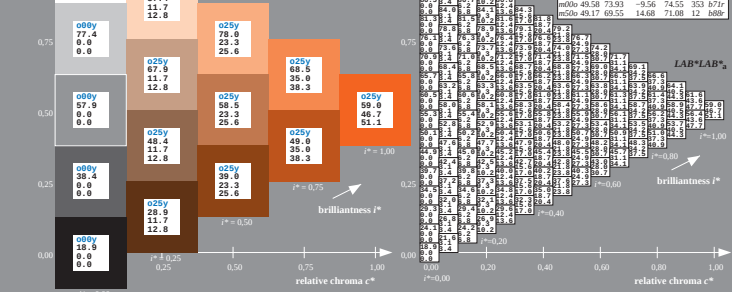
ORSR19_96a; adapted (a) CIELAB data		$u^*_d = y01$ $k_{\text{Lab}}^{\text{d}} = 0.05$	
L^*	a^*	L^*	a^*
500y	74.55	65.07	39.43
500y	59.04	40.64	67.08
500y	59.50	59.04	61.61
500y	68.32	30.69	68.28
500y	78.23	12.32	72.85
500y	80.92	-10.29	72.74
500y	78.27	-28.11	65.75
500y	69.46	-41.25	59.92
500y	61.32	-52.99	45.76
500y	52.69	-65.44	32.75
500y	56.55	-45.12	16.57
500y	53.61	-28.98	46.22
500y	43.33	-1.54	45.13
500y	78.27	-28.11	65.75
500y	69.46	-41.25	59.92
500y	61.32	-52.99	45.76
500y	52.69	-65.44	32.75
500y	56.55	-45.12	16.57
500y	53.61	-28.98	46.22
500y	43.33	-1.54	45.13
500y	78.27	-28.11	65.75
500y	69.46	-41.25	59.92
500y	61.32	-52.99	45.76
500y	52.69	-65.44	32.75
500y	56.55	-45.12	16.57
500y	53.61	-28.98	46.22
500y	43.33	-1.54	45.13
500y	78.27	-28.11	65.75
500y	69.46	-41.25	59.92
500y	61.32	-52.99	45.76
500y	52.69	-65.44	32.75
500y	56.55	-45.12	16.57
500y	53.61	-28.98	46.22
500y	43.33	-1.54	45.13
500y	78.27	-28.11	65.75
500y	69.46	-41.25	59.92
500y	61.32	-52.99	45.76
500y	52.69	-65.44	32.75
500y	56.55	-45.12	16.57
500y	53.61	-28.98	46.22
500y	43.33	-1.54	45.13
500y	78.27	-28.11	65.75
500y	69.46	-41.25	59.92
500y	61.32	-52.99	45.76
500y	52.69	-65.44	32.75
500y	56.55	-45.12	16.57
500y	53.61	-28.98	46.22
500y	43.33	-1.54	45.13
500y	78.27	-28.11	65.75
500y	69.46	-41.25	59.92
500y	61.32	-52.99	45.76
500y	52.69	-65.44	32.75
500y	56.55	-45.12	16.57
500y	53.61	-28.98	46.22
500y	43.33	-1.54	45.13
500y	78.27	-28.11	65.75
500y	69.46	-41.25	59.92
500y	61.32	-52.99	45.76
500y	52.69	-65.44	32.75
500y	56.55	-45.12	16.57
500y	53.61	-28.98	46.22
500y	43.33	-1.54	45.13
500y	78.27	-28.11	65.75
500y	69.46	-41.25	59.92
500y	61.32	-52.99	45.76
500y	52.69	-65.44	32.75
500y	56.55	-45.12	16.57
500y	53.61	-28.98	46.22
500y	43.33	-1.54	45.13
500y	78.27	-28.11	65.75
500y	69.46	-41.25	59.92
500y	61.32	-52.99	45.76
500y	52.69	-65.44	32.75
500y	56.55	-45.12	16.57
500y	53.61	-28.98	46.22
500y	43.33	-1.54	45.13
500y	78.27	-28.11	65.75
500y	69.46	-41.25	59.92
500y	61.32	-52.99	45.76
500y</			



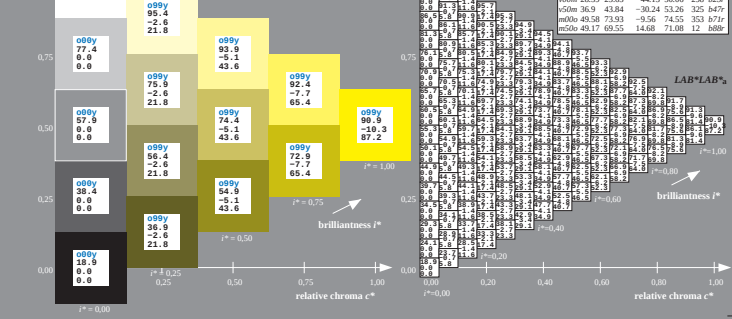
	ORSR19_36a; adopted (a)			CIELAB data (b)		
	L^*	a^*	b^*	L^*	a^*	b^*
500y	48.75	65.07	39.43	76.08	31	r(33)
505y	40.04	46.67	51.1	69.21	48	r(33)
510y	68.32	30.09	61.65	68.58	64	s(57)
515y	78.23	12.29	72.85	73.93	80	r(18)
520y	90.92	-10.29	72.24	87.85	97	j(66)
525y	88.33	-28.11	65.49	85.92	100	j(66)
530y	69.46	-41.45	49.92	64.75	130	j(35)
535y	61.32	-52.99	35.76	63.92	146	j(76)
540y	52.69	-65.45	20.75	63.95	162	j(60)
545y	56.55	-45.12	-16.57	48.07	200	g(48)
550y	59.61	-28.98	-46.22	54.56	238	69(68)
555y	43.33	-1.54	-45.13	50.33	298	92(36)
560y	38.29	23.63	-44.13	50.06	298	92(36)
565m	36.9	43.84	-30.24	53.26	325	76(45)



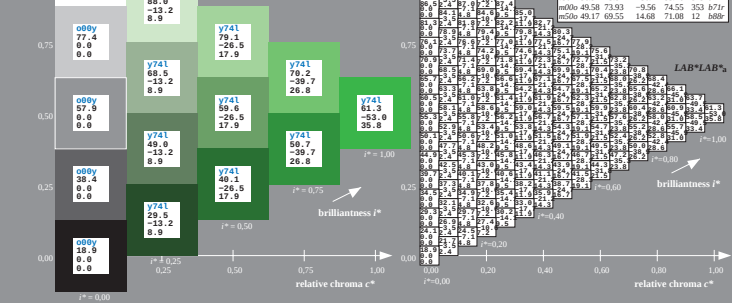
RS19 96a; adapted (a) CIELAB data		$u^*_a = 0.25y$ LAB^*/LAB^*		
$x^* = L^* - 16$	$y^* = b^*$	a^*	b^*	
59.45	65.07	39.43	76.08	31 r03j
59.04	46.67	51.1	69.21	48 r38j
68.32	30.09	61.62	68.58	64 r57j
78.23	12.39	74.85	64.78	80 r71j
90.92	-10.29	87.24	87.95	95 r87j
98.57	-28.11	95.75	71.51	113 j29g
69.46	-41.25	49.92	64.75	130 j53g
61.32	-52.99	35.76	63.92	146 j76g
52.69	-65.44	20.75	68.65	162 g00b
56.55	-45.12	-16.57	48.03	200 g34b
60.61	-39.99	-46.22	54.61	226 g60b
43.33	-14.54	-55.15	62.68	296 g96b
39.28	23.63	-44.13	50.06	298 h23r
36.9	43.84	-30.24	32.26	325 b47r



RS19, 96a; adapted (a) CIELAB data	$u^*_a = 0.01$ LAB^*LAB^*a			
	L^*	a^*	b^*	
48.75	65.07	39.43	76.08	31 r08j
59.04	46.67	51.1	69.21	48 r33j
68.32	30.09	61.62	68.58	64 r57j
78.23	12.32	72.85	73.9	80 r06j
90.92	-10.29	82.74	87.85	97 r01j
78.57	-28.11	65.75	74.13	229 r29j
69.46	-41.25	49.92	64.75	130 r53j
61.32	-52.99	35.76	63.92	146 r26j
52.69	-65.44	20.75	68.65	162 g00b
56.55	-45.12	-16.57	48.07	200 g34b
59.61	-28.98	-46.22	54.56	238 g69b
43.33	-15.4	-45.13	45.16	268 g90b



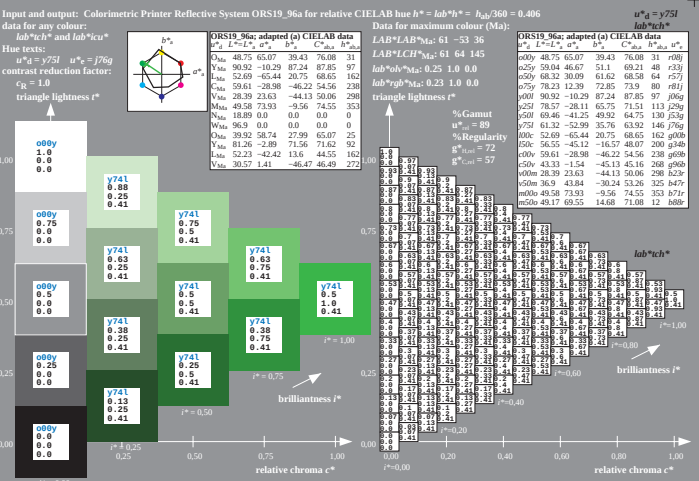
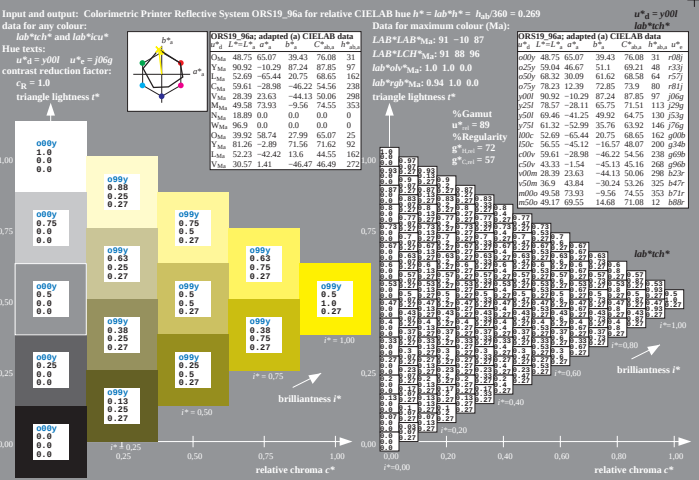
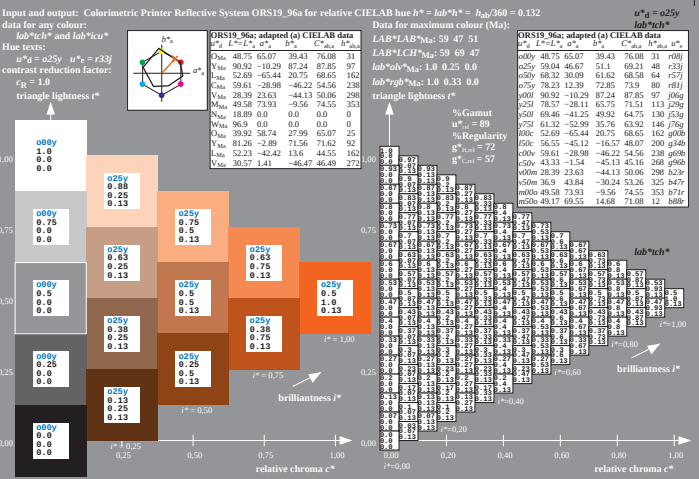
RS19_96a; adapted (a) CIELAB data	$u^*_a = y/51$ LAB^*AB^*
L^* a^* b^*	C_{10} C_{20} u^*_a
40.75 65.07 39.43	76.08 31 r08j
59.04 46.67 51.1	69.21 48 r33j
68.32 30.09 61.85	68.58 64 r57j
78.23 12.39 72.68	73.9 80 r15j
90.92 -10.29 72.44	87.85 97 j06g
78.57 -10.29 72.44	87.85 97 j06g
69.46 -41.25 49.92	64.75 130 j35g
51.32 -52.99 30.76	63.92 146 j76g
52.69 -65.45 25.85	66.85 162 g00b
56.55 -45.12 -16.57	84.08 200 g34b
59.61 -28.98	84.22 236 g98b
43.33 -1.54 -45.13	45.1 45 j45j
29.39 23.63	44.13 50.06 29.32j
36.9 43.84	-30.24 325 326 j47j



a ₂		a ₁		C ^a ₂ a ₁		h ^a ₂ a ₁	
65	65.07	39.43	76.08	31	r08j		
64	46.67	51.1	69.21	48	r33j		
32	30.09	61.62	68.58	64	r57j		
23	12.39	72.85	73.9	80	r16j		
	-10.29	87.24	87.85	97	j08j		
57	-28.11	65.75	71.51	113	j29g		
46	-41.25	49.92	64.75	120	j53g		
32	-52.99	35.76	63.92	146	j76g		
39	-65.44	20.75	68.65	162	g08b		
35	-45.12	-16.57	48.07	200	g34b		
31	-28.98	-46.22	54.56	238	g68b		
63	-1.54	-43.13	45.16	268	p93b		
39	23.63	-44.13	50.06	298	b23r		
43	43.84	-30.24	53.26	325	b47r		

$u_d^* = y001$ LAB* $^{14}CH_3$				
δa ; adapted (a)	C _{1,abs}	C _{2,abs}	C _{3,abs}	C _{4,abs}
75.65	60.7	69.43	76.08	31 r08j
44	46.67	51.1	69.21	48 r33j
32	30.09	61.62	68.58	64 r57j
23	12.39	72.58	73.89	80 r61j
16	-10.29	87.24	87.85	97 r16j
7	-28.11	65.75	71.51	113 j29j
-46	-41.25	49.92	64.75	130 j53j
-52	-32.99	35.76	63.92	146 j70j
-59	-65.44	20.75	68.65	162 q06j
-65	-45.12	-16.57	48.07	200 g34b
-61	-28.98	-46.22	54.56	238 q96b
-51	-15.54	-45.23	48.98	258 q96b
-43	23.63	-44.43	50.06	295 b23r
-39	43.84	-30.24	53.26	325 b47r
-28	73.93	-9.56	74.55	353 b71r
-17	69.55	14.68	71.08	372 b89r

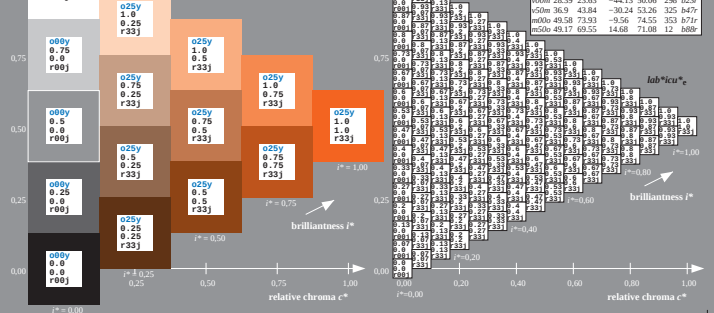
LAB ^a CH ^a ₂					
6a:	adapted (a)	CIELAB data			
<i>a</i> ^b	<i>a</i> ^b	<i>C</i> ^b	<i>L</i> ^b	<i>b</i> ^b	<i>u</i> ^b
75	65.07	39.43	76.08	31	r00j
44	46.67	51.11	69.21	48	r33j
32	30.09	61.62	68.58	64	r57j
23	12.39	72.25	73.9	80	r81j
12	-10.29	87.24	87.85	97	j06j
7	-28.11	65.75	71.51	113	j29j
46	-41.25	49.92	64.75	130	j53j
32	-52.99	35.76	63.92	146	j76j
19	-65.44	20.75	68.65	162	q00b
55	-45.12	-16.57	48.07	200	q34b
5	-28.98	-46.22	54.56	238	q69b
33	-1.54	-45.13	45.16	268	q96b
19	23.63	-44.13	50.06	298	b23r
9	43.84	-30.24	53.26	325	b47r
18	73.93	-9.56	74.55	353	b71r
17	69.55	14.68	71.08	12	b88r



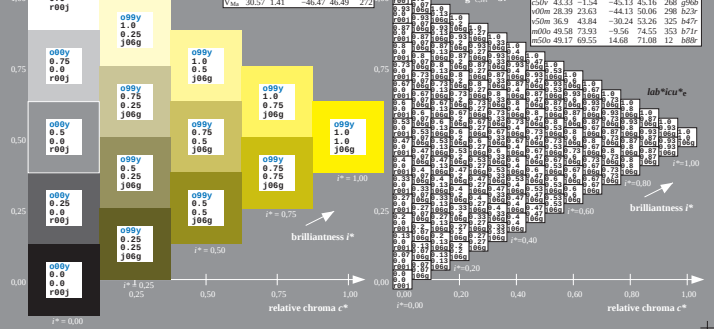
$lab^*d^*e = 0.25y$
 $lab^*t^*c^*e$

9.56a; adapted (a) CIELAB data

x^*	y^*	z^*	C_{ab}^*	h^*_{ab}	u^*	v^*
49.75	65.07	97.43	76.08	31	r08j	
58.04	46.67	51.11	69.21	48	r33j	
68.32	30.09	61.62	68.58	64	r57j	
78.23	12.39	72.85	73.9	80	r81j	
90.57	-10.29	87.24	87.85	97	j06g	
98.92	-18.11	65.75	71.51	113	j29g	
69.46	-41.25	49.92	64.75	130	f35g	
61.32	-52.99	35.76	63.92	146	j76g	
56.69	-65.44	20.79	68.65	162	g00b	
52.55	-45.12	16.57	48.07	200	g44b	
59.61	-28.98	-46.22	54.56	238	g90b	
43.31	-1.54	-45.13	45.16	288	g69b	
28.38	71.65	-44.13	50.0	298	g69b	



$u^*_d = y001$ $lab^{*}1cu^*_e$					
a^*_d	b^*_d	C^*_d	h^*_d	s^*_d	
59.96a; adapted (4)					
$-4.7^{\pm} 6.5$	$65.0^{\pm} 39.43$	$6.8^{\pm} 3.1$	$8.1^{\pm} 0.81$		
59.04 ± 46.67	51.1	69.21 ± 48	$r33$		
58.32 ± 30.09	61.62	68.58 ± 64	$r57j$		
70.23 ± 12.29	72.85	73.9	80 ± 12.1		
98.92 ± 10.29	87.24	87.85	$97 \pm 0.6q$		
78.57 ± 28.11	65.75	71.51 ± 113	$129g$		
69.46 ± 41.25	49.92	64.75	$130 \pm 53j$		
52.32 ± 52.99	35.76	63.92 ± 146	$176g$		
61.69 ± 65.44	20.75	68.65	$162 \pm 00q$		
56.65 ± 45.12	-16.57	48.07	$200 \pm 34ab$		
59.51 ± 28.98	-16.22	54.56	$238 \pm 699b$		



$u_d^* = y751$ $lab^* u^* e^*$					
9.96a; adapted (a) CIELAB data					
L^*	a^*	b^*	C_{ab}	h_{ab}	u^*
48.75	65.07	39.43	67.08	31	r08j
59.04	46.67	51.1	69.21	48	r33j
68.32	30.09	61.62	68.58	64	c57j
78.23	12.39	72.85	73.9	80	r06j
90.92	-10.29	87.24	87.85	97	j06j
78.57	-28.11	65.75	71.51	113	j29j
68.32	-41.25	49.92	62.42	129	j66j
61.32	-52.99	35.76	63.92	146	j76j
52.69	-65.44	20.75	68.65	162	g00b
56.65	-45.12	-16.57	48.07	200	g34b
59.61	-28.98	-46.22	54.56	238	g69b
43.33	-1.54	-44.13	51.16	268	g96b

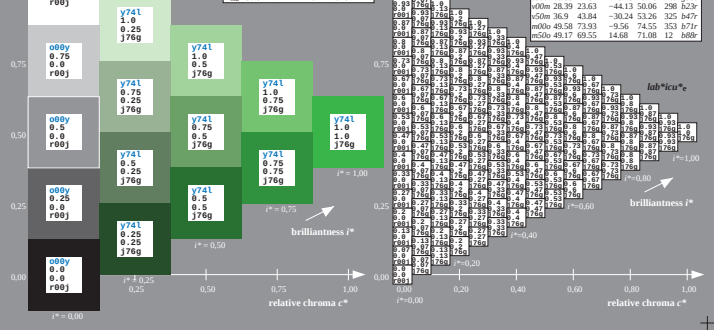
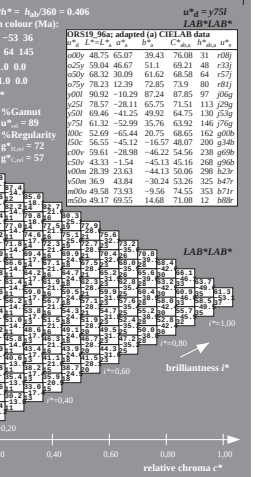
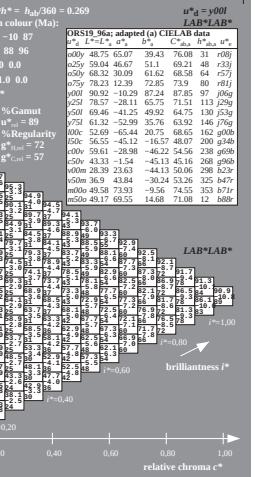
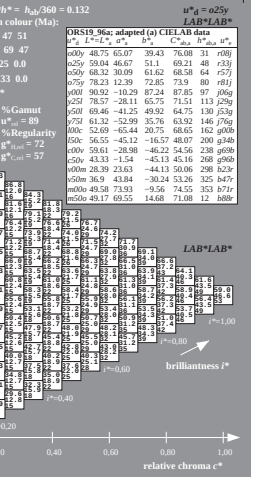
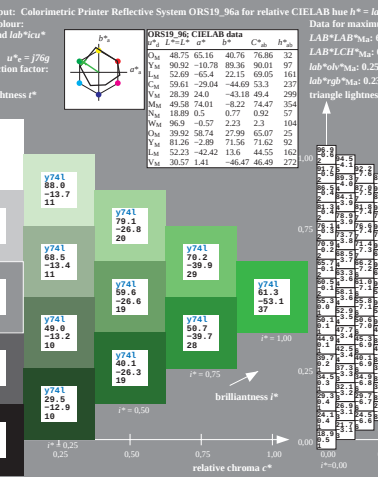
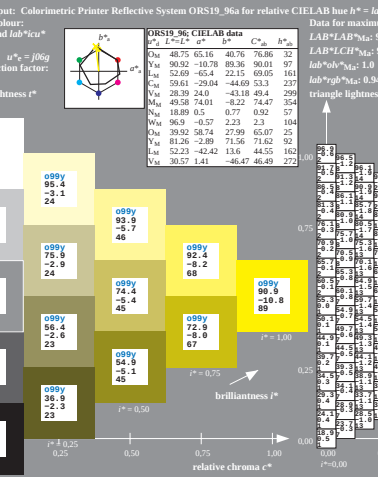
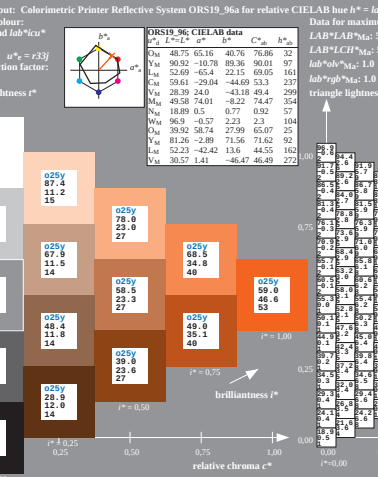
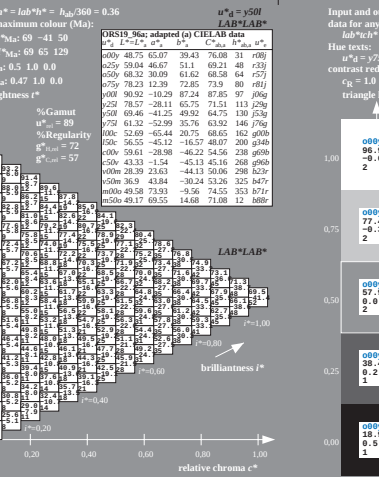
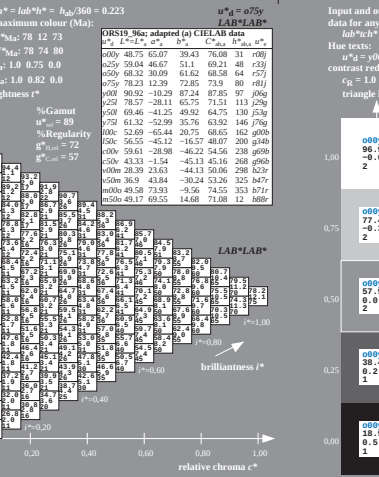
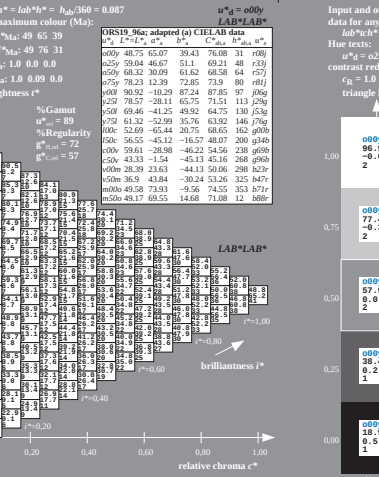
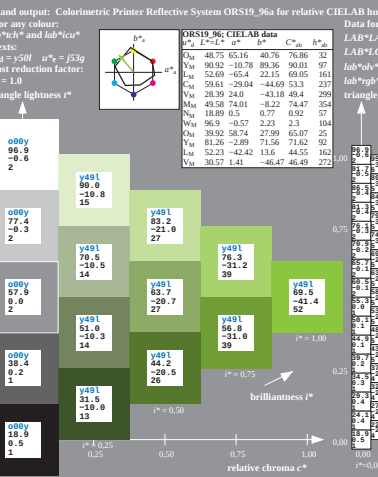
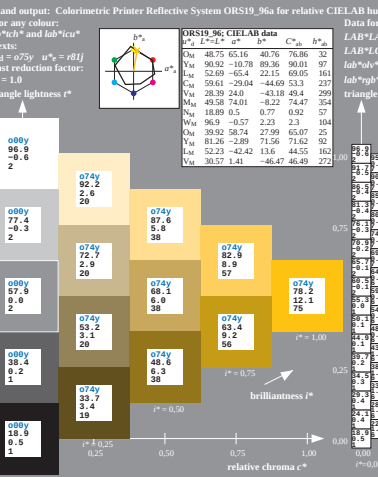
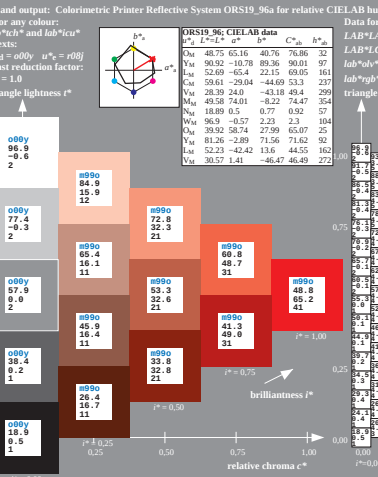
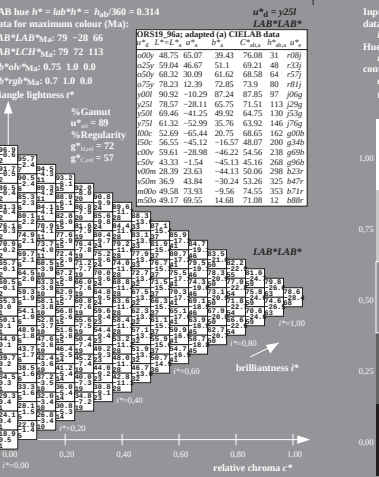
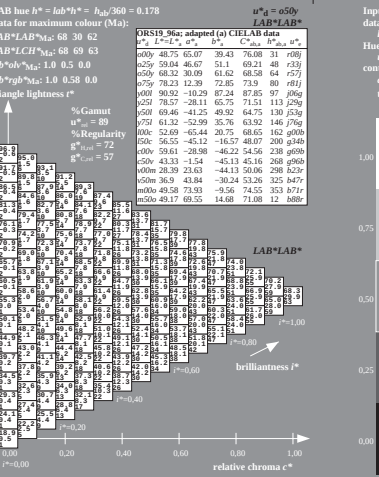
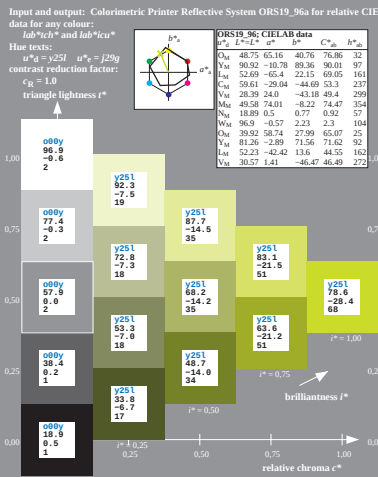
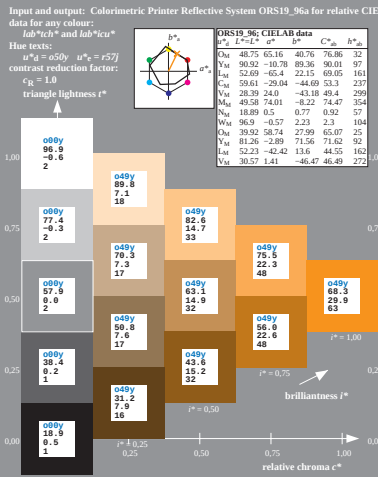


Figure 1 is a circular color chart showing 12 color categories arranged in a circle. Each category is represented by a colored square with its name and numerical values for L*, a*, and b* coordinates. The chart is divided into four quadrants by a vertical and horizontal axis. The top half is labeled 'Yellow J' and the bottom half is labeled 'Blue B'. The left half is labeled 'Greenish' and the right half is labeled 'Reddish'.

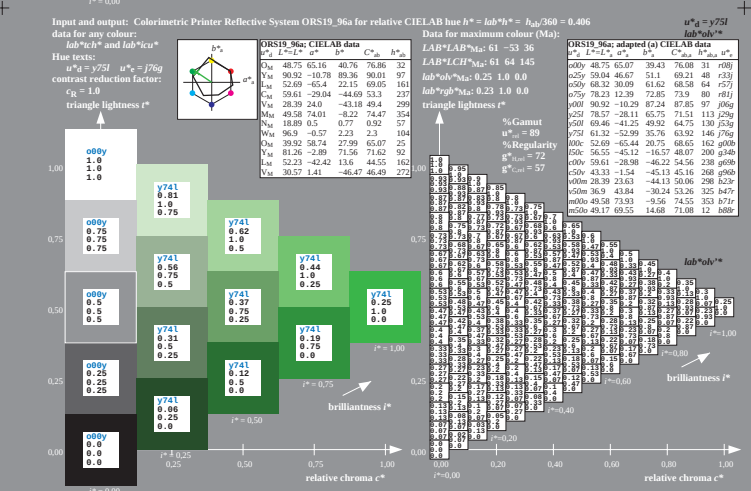
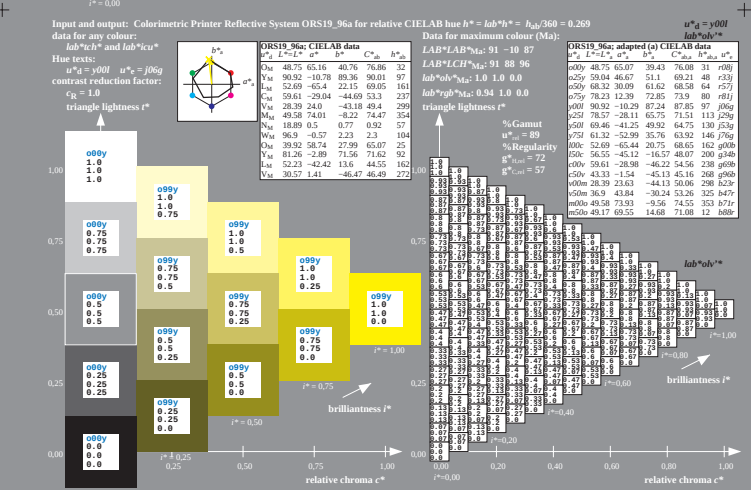
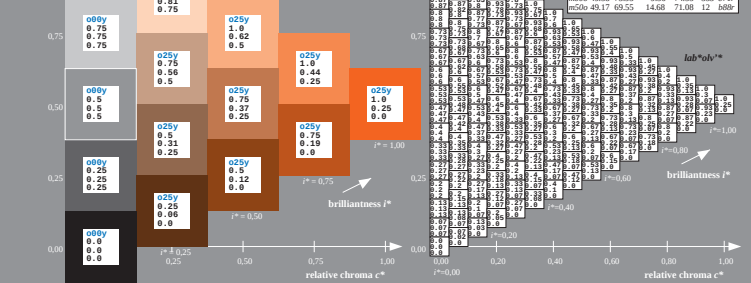
Color Category	L*	a*	b*
Yellow J	92.02	13.24	34.36
Yellowish	89.12	14.51	28.99
Green G	60.52	-18.12	24.49
Greenish	55.56	-24.49	16.82
Blue B	49.25	-25.96	11.81
Reddish	38.62	20.38	16.82
Red R	28.86	16.82	11.81
Bluish	28.86	-16.82	11.81
Greenish	55.56	-24.49	16.82
Yellowish	89.12	14.51	28.99
Yellow J	92.02	13.24	34.36



$u^*_d = 0.25y$
 $lab^{*}olv^{*}$

(a) CIELAB data

u^*_d	$C^*_{*d,lab}$	$h^*_{*d,lab}$	u^*_e
89.43	76.08	31	r08j
51.1	69.21	48	r33j
51.62	68.58	64	r57j
72.85	73.9	80	r81j
87.24	87.85	97	j06g
95.75	71.51	113	j29g
89.92	64.75	130	j53g
85.76	63.92	146	j76g
80.75	68.65	162	g00b
86.57	48.07	200	g34b
46.22	54.56	238	g69b
45.13	45.16	268	g95b
44.13	50.06	296	b23r
30.24	53.26	325	b47r
9.56	34.57	362	b71r



$\lambda_{\text{star}}^{\text{a}}$ = 4360 nm	$\lambda_{\text{star}}^{\text{b}}$ = 0.132	$\lambda_{\text{star}}^{\text{c}}$ = 0.255	$U_{\text{star}}^{\text{d}}$ = 1.00 cm^{-1}
$\lambda_{\text{star}}^{\text{a}}$ colour (Ma)			$C_{\text{star}}^{\text{e}}$ $h_{\text{star}}^{\text{f}}$ $u_{\text{star}}^{\text{g}}$
0.47 51	0.0519 51	0.0519 51	0.0519 51
0.49 47 51	0.0519 47 51	0.0519 47 51	0.0519 47 51
0.25 0.5	0.0519 0.5	0.0519 0.5	0.0519 0.5
0.33 0.0	0.0519 0.0	0.0519 0.0	0.0519 0.0
%Gamut	100	100	100
$u_{\text{star}}^{\text{g}}$ = 89			
%Regularity	100	100	100
$g_{\text{star}}^{\text{h}}$ = 72			
$g_{\text{star}}^{\text{h}}$ = 57			

