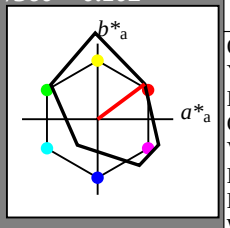
Input: Colorimetric Printer Reflective System FRS06
for hue $h^* = lab^*h = 37/360 = 0.102$
lab*tch* and *lab*nch

D65: hue O
LCH*Ma: 33 78 37
olv*Ma: 1.0 0.0 0.0

triangle lightness t^*



%Gamut
u^*_{rel} = 115
%Regularity
$g^*_{H,rel}$ = 28
$g^*_{C,rel}$ = 28

FRS06; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	32.57	62.32	46.49	77.75	37
Y_{Ma}	82.73	−3.16	113.99	114.03	92
L_{Ma}	39.43	−61.79	45.84	76.95	143
C_{Ma}	47.86	−26.79	−34.24	43.49	232
V_{Ma}	10.16	55.12	−61.03	82.24	312
M_{Ma}	34.5	80.68	−33.92	87.52	337
N_{Ma}	6.25	0.0	0.0	0.0	0
W_{Ma}	91.97	0.0	0.0	0.0	0
R_{CIE}	39.92	59.8	31.05	67.38	27
J_{CIE}	81.26	−2.52	76.25	76.29	92
G_{CIE}	52.23	−41.56	17.14	44.96	158
B_{CIE}	30.57	2.63	−43.77	43.86	273

***relative* Inform. Technology (IT)**
*olvi3** 1.0 1.0 1.0 (1.0)
*cmyn3** 0.0 0.0 0.0 (0.0)
*olvi4** 1.0 1.0 1.0 1.0
*cmyn4** 0.0 0.0 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 91.97 −0.17 −5.11
*LAB*LABa* 91.97 0.0 0.0
*LAB*TCHa* 99.99 0.01 –
relative* CIELAB *lab*
*lab*lab* 1.0 0.0 0.0
*lab*tch* 1.0 0.0 –
*lab*nch* 0.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 1.0 0.0 0.0
*lab*tce* 1.0 0.0 –
*lab*ncE* 0.0 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.5 0.5 (1.0)
*cmyn3** 0.5 0.5 0.5 (0.0)
*olvi4** 1.0 1.0 1.0 0.5
*cmyn4** 0.0 0.0 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 49.11 −0.89 −3.42
*LAB*LABa* 49.11 0.0 0.0
*LAB*TCHa* 50.0 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.5 0.0 0.0
*lab*tch* 0.5 0.0 –
*lab*nch* 0.5 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.5 0.0 0.0
*lab*tce* 0.5 0.0 –
*lab*ncE* 0.5 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.0 0.0 (1.0)
*cmyn3** 1.0 1.0 1.0 (0.0)
*olvi4** 1.0 1.0 1.0 0.0
*cmyn4** 0.0 0.0 0.0 1.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 6.26 −1.62 −1.73
*LAB*LABa* 6.26 0.0 0.0
*LAB*TCHa* 0.01 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.0 0.0 0.0
*lab*tch* 0.0 0.0 –
*lab*nch* 1.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.0 0.0 0.0
*lab*tce* 0.0 0.0 –
*lab*ncE* 1.0 0.0 –

$n^* = 1,0$

***relative* Inform. Technology (IT)**
*olvi3** 1.0 0.5 0.5 (1.0)
*cmyn3** 0.0 0.5 0.5 (0.0)
*olvi4** 1.0 0.5 0.5 1.0
*cmyn4** 0.0 0.5 0.5 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 62.27 30.47 19.3
*LAB*LABa* 62.27 31.16 23.24
*LAB*TCHa* 75.0 38.87 36.72
relative* CIELAB *lab*
*lab*lab* 0.653 0.401 0.299
*lab*tch* 0.75 0.5 0.102
*lab*nch* 0.0 0.5 0.102
***relative* Natural Colour (NC)**
*lab*lrj* 0.653 0.487 0.112
*lab*tce* 0.75 0.5 0.036
*lab*ncE* 0.0 0.5 r14j

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.0 0.0 (1.0)
*cmyn3** 0.5 1.0 1.0 (0.0)
*olvi4** 1.0 0.5 0.5 0.5
*cmyn4** 0.0 0.5 0.5 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 19.42 29.75 20.99
*LAB*LABa* 19.42 31.16 23.24
*LAB*TCHa* 25.01 38.87 36.72
relative* CIELAB *lab*
*lab*lab* 0.154 0.401 0.299
*lab*tch* 0.25 0.5 0.102
*lab*nch* 0.5 0.5 0.102
***relative* Natural Colour (NC)**
*lab*lrj* 0.154 0.487 0.112
*lab*tce* 0.25 0.5 0.036
*lab*ncE* 0.5 0.5 r14j

***relative* Inform. Technology (IT)**
*olvi3** 1.0 0.0 0.0 (1.0)
*cmyn3** 0.0 1.0 1.0 (0.0)
*olvi4** 1.0 0.0 0.0 1.0
*cmyn4** 0.0 1.0 1.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 32.57 61.13 43.71
*LAB*LABa* 32.57 62.31 46.48
*LAB*TCHa* 50.0 77.74 36.72
relative* CIELAB *lab*
*lab*lab* 0.307 0.801 0.598
*lab*tch* 0.5 1.0 0.102
*lab*nch* 0.0 1.0 0.102
***relative* Natural Colour (NC)**
*lab*lrj* 0.307 0.974 0.224
*lab*tce* 0.5 1.0 0.036
*lab*ncE* 0.0 1.0 r14j

$n^* = 0,00$

blackness n^*

0,25 0,50 $n^* = 0,50$ 0,75 1,00

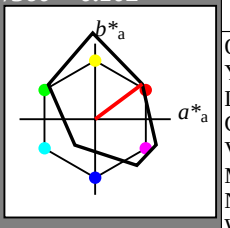
chromaticness c^*

VE210−7, 3 step scales for constant CIELAB hue 37/360 = 0.102 (left)

Output: Colorimetric Printer Reflective System FRS06
for hue $h^* = lab^*h = 37/360 = 0.102$
lab*tch* and *lab*nch

D65: hue O
LCH*Ma: 33 78 37
olv*Ma: 1.0 0.0 0.0

triangle lightness t^*



%Gamut
u^*_{rel} = 115
%Regularity
$g^*_{H,rel}$ = 28
$g^*_{C,rel}$ = 28

FRS06; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	32.57	62.32	46.49	77.75	37
Y_{Ma}	82.73	−3.16	113.99	114.03	92
L_{Ma}	39.43	−61.79	45.84	76.95	143
C_{Ma}	47.86	−26.79	−34.24	43.49	232
V_{Ma}	10.16	55.12	−61.03	82.24	312
M_{Ma}	34.5	80.68	−33.92	87.52	337
N_{Ma}	6.25	0.0	0.0	0.0	0
W_{Ma}	91.97	0.0	0.0	0.0	0
R_{CIE}	39.92	59.8	31.05	67.38	27
J_{CIE}	81.26	−2.52	76.25	76.29	92
G_{CIE}	52.23	−41.56	17.14	44.96	158
B_{CIE}	30.57	2.63	−43.77	43.86	273

***relative* Inform. Technology (IT)**
*olvi3** 1.0 1.0 1.0 (1.0)
*cmyn3** 0.0 0.0 0.0 (0.0)
*olvi4** 1.0 1.0 1.0 1.0
*cmyn4** 0.0 0.0 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 91.97 −0.17 −5.11
*LAB*LABa* 91.97 0.0 0.0
*LAB*TCHa* 99.99 0.01 –
relative* CIELAB *lab*
*lab*lab* 1.0 0.0 0.0
*lab*tch* 1.0 0.0 –
*lab*nch* 0.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 1.0 0.0 0.0
*lab*tce* 1.0 0.0 –
*lab*ncE* 0.0 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.5 0.5 (1.0)
*cmyn3** 0.5 0.5 0.5 (0.0)
*olvi4** 1.0 1.0 1.0 0.5
*cmyn4** 0.0 0.0 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 49.11 −0.89 −3.42
*LAB*LABa* 49.11 0.0 0.0
*LAB*TCHa* 50.0 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.5 0.0 0.0
*lab*tch* 0.5 0.0 –
*lab*nch* 0.5 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.5 0.0 0.0
*lab*tce* 0.5 0.0 –
*lab*ncE* 0.5 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.0 0.0 (1.0)
*cmyn3** 1.0 1.0 1.0 (0.0)
*olvi4** 1.0 1.0 1.0 0.0
*cmyn4** 0.0 0.0 0.0 1.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 6.26 −1.62 −1.73
*LAB*LABa* 6.26 0.0 0.0
*LAB*TCHa* 0.01 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.0 0.0 0.0
*lab*tch* 0.0 0.0 –
*lab*nch* 1.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.0 0.0 0.0
*lab*tce* 0.0 0.0 –
*lab*ncE* 1.0 0.0 –

$n^* = 1,0$

***relative* Inform. Technology (IT)**
*olvi3** 1.0 0.5 0.5 (1.0)
*cmyn3** 0.0 0.5 0.5 (0.0)
*olvi4** 1.0 0.5 0.5 1.0
*cmyn4** 0.0 0.5 0.5 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 62.27 30.47 19.3
*LAB*LABa* 62.27 31.16 23.24
*LAB*TCHa* 75.0 38.87 36.72
relative* CIELAB *lab*
*lab*lab* 0.653 0.401 0.299
*lab*tch* 0.75 0.5 0.102
*lab*nch* 0.0 0.5 0.102
***relative* Natural Colour (NC)**
*lab*lrj* 0.653 0.487 0.112
*lab*tce* 0.75 0.5 0.036
*lab*ncE* 0.0 0.5 r14j

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.0 0.0 (1.0)
*cmyn3** 0.5 1.0 1.0 (0.0)
*olvi4** 1.0 0.5 0.5 0.5
*cmyn4** 0.0 0.5 0.5 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 19.42 29.75 20.99
*LAB*LABa* 19.42 31.16 23.24
*LAB*TCHa* 25.01 38.87 36.72
relative* CIELAB *lab*
*lab*lab* 0.154 0.401 0.299
*lab*tch* 0.25 0.5 0.102
*lab*nch* 0.5 0.5 0.102
***relative* Natural Colour (NC)**
*lab*lrj* 0.154 0.487 0.112
*lab*tce* 0.25 0.5 0.036
*lab*ncE* 0.5 0.5 r14j

***relative* Inform. Technology (IT)**
*olvi3** 1.0 0.0 0.0 (1.0)
*cmyn3** 0.0 1.0 1.0 (0.0)
*olvi4** 1.0 0.0 0.0 1.0
*cmyn4** 0.0 1.0 1.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 32.57 61.13 43.71
*LAB*LABa* 32.57 62.31 46.48
*LAB*TCHa* 50.0 77.74 36.72
relative* CIELAB *lab*
*lab*lab* 0.307 0.801 0.598
*lab*tch* 0.5 1.0 0.102
*lab*nch* 0.0 1.0 0.102
***relative* Natural Colour (NC)**
*lab*lrj* 0.307 0.974 0.224
*lab*tce* 0.5 1.0 0.036
*lab*ncE* 0.0 1.0 r14j

$n^* = 0,00$

blackness n^*

0,25 0,50 $n^* = 0,50$ 0,75 1,00

chromaticness c^*

3 step scales for constant CIELAB hue 37/360 = 0.102 (right)

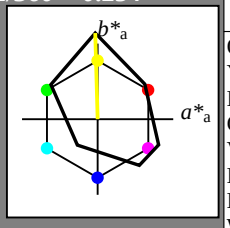
See for similar files: http://www.ps.bam.de/VE21/
Technical information: http://www.ps.bam.de Version 2.1, io=1,1

BAM registration: 20060101-VE21/10L/L21E00NP.PS/.PDF BAM material: code=rha4ta
application for evaluation and measurement of printer or monitor systems
/VE21/ Form: 1/10, Serie: 1/1, Page: 1 Page: count: 1

Input: Colorimetric Printer Reflective System FRS06
for hue *h = lab*h = 92/360 = 0.254**
lab*tch* and *lab*nch

D65: hue Y
LCH*Ma: 83 114 92
olv*Ma: 1.0 1.0 0.0

triangle lightness *t**



%Gamut
u^*_{rel} = 115
%Regularity
$g^*_{H,rel}$ = 28
$g^*_{C,rel}$ = 28

FRS06; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	32.57	62.32	46.49	77.75	37
Y_{Ma}	82.73	−3.16	113.99	114.03	92
L_{Ma}	39.43	−61.79	45.84	76.95	143
C_{Ma}	47.86	−26.79	−34.24	43.49	232
V_{Ma}	10.16	55.12	−61.03	82.24	312
M_{Ma}	34.5	80.68	−33.92	87.52	337
N_{Ma}	6.25	0.0	0.0	0.0	0
W_{Ma}	91.97	0.0	0.0	0.0	0
R_{CIE}	39.92	59.8	31.05	67.38	27
J_{CIE}	81.26	−2.52	76.25	76.29	92
G_{CIE}	52.23	−41.56	17.14	44.96	158
B_{CIE}	30.57	2.63	−43.77	43.86	273

***relative* Inform. Technology (IT)**
*olvi3** 1.0 1.0 1.0 (1.0)
*cmyn3** 0.0 0.0 0.0 (0.0)
*olvi4** 1.0 1.0 1.0 1.0
*cmyn4** 0.0 0.0 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 91.97 −0.17 −5.11
*LAB*LABa* 91.97 0.0 0.0
*LAB*TCHa* 99.99 0.01 –
relative* CIELAB *lab*
*lab*lab* 1.0 0.0 0.0
*lab*tch* 1.0 0.0 –
*lab*nch* 0.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 1.0 0.0 0.0
*lab*tce* 1.0 0.0 –
*lab*ncE* 0.0 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 1.0 1.0 0.5 (1.0)
*cmyn3** 0.0 0.0 0.5 (0.0)
*olvi4** 1.0 1.0 0.5 1.0
*cmyn4** 0.0 0.0 0.5 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 87.34 −1.83 52.05
*LAB*LABa* 87.34 −1.58 56.98
*LAB*TCHa* 75.0 57.0 91.59
relative* CIELAB *lab*
*lab*lab* 0.946 −0.013 0.5
*lab*tch* 0.75 0.5 0.254
*lab*nch* 0.0 0.5 0.254
***relative* Natural Colour (NC)**
*lab*lrj* 0.946 0.004 0.5
*lab*tce* 0.75 0.5 0.249
*lab*ncE* 0.0 0.5 r99j

***relative* Inform. Technology (IT)**
*olvi3** 1.0 1.0 0.0 (1.0)
*cmyn3** 0.0 0.0 1.0 (0.0)
*olvi4** 1.0 1.0 0.0 1.0
*cmyn4** 0.0 0.0 1.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 82.72 −3.5 109.22
*LAB*LABa* 82.72 −3.16 113.96
*LAB*TCHa* 50.0 114.01 91.59
relative* CIELAB *lab*
*lab*lab* 0.892 −0.027 0.999
*lab*tch* 0.5 1.0 0.254
*lab*nch* 0.0 1.0 0.254
***relative* Natural Colour (NC)**
*lab*lrj* 0.892 0.007 1.0
*lab*tce* 0.5 1.0 0.249
*lab*ncE* 0.0 1.0 r99j

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.5 0.5 (1.0)
*cmyn3** 0.5 0.5 0.5 (0.0)
*olvi4** 1.0 1.0 0.0 0.5
*cmyn4** 0.0 0.0 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 49.11 −0.89 −3.42
*LAB*LABa* 49.11 0.0 0.0
*LAB*TCHa* 50.0 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.5 0.0 0.0
*lab*tch* 0.5 0.0 –
*lab*nch* 0.5 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.5 0.0 0.0
*lab*tce* 0.5 0.0 –
*lab*ncE* 0.5 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.5 0.0 (1.0)
*cmyn3** 0.5 0.5 1.0 (0.0)
*olvi4** 1.0 1.0 0.5 0.5
*cmyn4** 0.0 0.0 0.5 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 44.49 −2.56 53.74
*LAB*LABa* 44.49 −1.58 56.98
*LAB*TCHa* 25.01 57.0 91.59
relative* CIELAB *lab*
*lab*lab* 0.446 −0.013 0.5
*lab*tch* 0.25 0.5 0.254
*lab*nch* 0.5 0.5 0.254
***relative* Natural Colour (NC)**
*lab*lrj* 0.446 0.004 0.5
*lab*tce* 0.25 0.5 0.249
*lab*ncE* 0.5 0.5 r99j

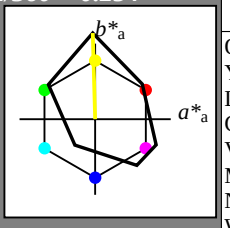
***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.0 0.0 (1.0)
*cmyn3** 1.0 1.0 1.0 (0.0)
*olvi4** 1.0 1.0 1.0 0.0
*cmyn4** 0.0 0.0 0.0 1.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 6.26 −1.62 −1.73
*LAB*LABa* 6.26 0.0 0.0
*LAB*TCHa* 0.01 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.0 0.0 0.0
*lab*tch* 0.0 0.0 –
*lab*nch* 1.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.0 0.0 0.0
*lab*tce* 0.0 0.0 –
*lab*ncE* 1.0 0.0 –

*n** = 0,00
blackness *n**
0,25 0,50 *n** = 0,50 0,75 1,00
chromaticness *c**
*n** = 1,0

Output: Colorimetric Printer Reflective System FRS06
for hue *h = lab*h = 92/360 = 0.254**
lab*tch* and *lab*nch

D65: hue Y
LCH*Ma: 83 114 92
olv*Ma: 1.0 1.0 0.0

triangle lightness *t**



%Gamut
u^*_{rel} = 115
%Regularity
$g^*_{H,rel}$ = 28
$g^*_{C,rel}$ = 28

FRS06; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	32.57	62.32	46.49	77.75	37
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***relative* Inform. Technology (IT)**
*olvi3** 1.0 1.0 1.0 (1.0)
*cmyn3** 0.0 0.0 0.0 (0.0)
*olvi4** 1.0 1.0 1.0 1.0
*cmyn4** 0.0 0.0 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 91.97 −0.17 −5.11
*LAB*LABa* 91.97 0.0 0.0
*LAB*TCHa* 99.99 0.01 –
relative* CIELAB *lab*
*lab*lab* 1.0 0.0 0.0
*lab*tch* 1.0 0.0 –
*lab*nch* 0.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 1.0 0.0 0.0
*lab*tce* 1.0 0.0 –
*lab*ncE* 0.0 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 1.0 1.0 0.5 (1.0)
*cmyn3** 0.0 0.0 0.5 (0.0)
*olvi4** 1.0 1.0 0.5 1.0
*cmyn4** 0.0 0.0 0.5 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 87.34 −1.83 52.05
*LAB*LABa* 87.34 −1.58 56.98
*LAB*TCHa* 75.0 57.0 91.59
relative* CIELAB *lab*
*lab*lab* 0.946 −0.013 0.5
*lab*tch* 0.75 0.5 0.254
*lab*nch* 0.0 0.5 0.254
***relative* Natural Colour (NC)**
*lab*lrj* 0.946 0.004 0.5
*lab*tce* 0.75 0.5 0.249
*lab*ncE* 0.0 0.5 r99j

***relative* Inform. Technology (IT)**
*olvi3** 1.0 1.0 0.0 (1.0)
*cmyn3** 0.0 0.0 1.0 (0.0)
*olvi4** 1.0 1.0 0.0 1.0
*cmyn4** 0.0 0.0 1.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 82.72 −3.5 109.22
*LAB*LABa* 82.72 −3.16 113.96
*LAB*TCHa* 50.0 114.01 91.59
relative* CIELAB *lab*
*lab*lab* 0.892 −0.027 0.999
*lab*tch* 0.5 1.0 0.254
*lab*nch* 0.0 1.0 0.254
***relative* Natural Colour (NC)**
*lab*lrj* 0.892 0.007 1.0
*lab*tce* 0.5 1.0 0.249
*lab*ncE* 0.0 1.0 r99j

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.5 0.5 (1.0)
*cmyn3** 0.5 0.5 0.5 (0.0)
*olvi4** 1.0 1.0 0.0 0.5
*cmyn4** 0.0 0.0 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 49.11 −0.89 −3.42
*LAB*LABa* 49.11 0.0 0.0
*LAB*TCHa* 50.0 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.5 0.0 0.0
*lab*tch* 0.5 0.0 –
*lab*nch* 0.5 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.5 0.0 0.0
*lab*tce* 0.5 0.0 –
*lab*ncE* 0.5 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.5 0.0 (1.0)
*cmyn3** 0.5 0.5 1.0 (0.0)
*olvi4** 1.0 1.0 0.5 0.5
*cmyn4** 0.0 0.0 0.5 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 44.49 −2.56 53.74
*LAB*LABa* 44.49 −1.58 56.98
*LAB*TCHa* 25.01 57.0 91.59
relative* CIELAB *lab*
*lab*lab* 0.446 −0.013 0.5
*lab*tch* 0.25 0.5 0.254
*lab*nch* 0.5 0.5 0.254
***relative* Natural Colour (NC)**
*lab*lrj* 0.446 0.004 0.5
*lab*tce* 0.25 0.5 0.249
*lab*ncE* 0.5 0.5 r99j

***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.0 0.0 (1.0)
*cmyn3** 1.0 1.0 1.0 (0.0)
*olvi4** 1.0 1.0 1.0 0.0
*cmyn4** 0.0 0.0 0.0 1.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 6.26 −1.62 −1.73
*LAB*LABa* 6.26 0.0 0.0
*LAB*TCHa* 0.01 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.0 0.0 0.0
*lab*tch* 0.0 0.0 –
*lab*nch* 1.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.0 0.0 0.0
*lab*tce* 0.0 0.0 –
*lab*ncE* 1.0 0.0 –

*n** = 0,00
blackness *n**
0,25 0,50 *n** = 0,50 0,75 1,00
chromaticness *c**
*n** = 1,0

VE210−7, 3 step scales for constant CIELAB hue 92/360 = 0.254 (left)
3 step scales for constant CIELAB hue 92/360 = 0.254 (right)

BAM-test chart VE21; Colorimetric systems FRS06 & FRS06
D65: 2 coordinate data of 3 step colour scales for 10 hues

input: *olv* setrgbcolor*
output: *no change compared to input*

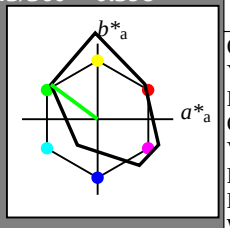
See for similar files: http://www.ps.bam.de/VE21/
Technical information: http://www.ps.bam.de Version 2.1, io=1,1

BAM registration: 20060101-VE21/10L/L21E01NP.PS/.PDF BAM material: code=rha4ta
application for evaluation and measurement of printer or monitor systems
/VE21/ Form: 2/10, Serie: 1/1, Page: 2 Page: count: 1

Input: Colorimetric Printer Reflective System FRS06
for hue *h = lab*h = 143/360 = 0.398**
lab*tch* and *lab*nch

D65: hue L
LCH*Ma: 39 77 143
olv*Ma: 0.0 1.0 0.0

triangle lightness *t**



%Gamut
u^*_{rel} = 115
%Regularity
$g^*_{H,rel}$ = 28
$g^*_{C,rel}$ = 28

FRS06; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	32.57	62.32	46.49	77.75	37
Y_{Ma}	82.73	−3.16	113.99	114.03	92
L_{Ma}	39.43	−61.79	45.84	76.95	143
C_{Ma}	47.86	−26.79	−34.24	43.49	232
V_{Ma}	10.16	55.12	−61.03	82.24	312
M_{Ma}	34.5	80.68	−33.92	87.52	337
N_{Ma}	6.25	0.0	0.0	0.0	0
W_{Ma}	91.97	0.0	0.0	0.0	0
R_{CIE}	39.92	59.8	31.05	67.38	27
J_{CIE}	81.26	−2.52	76.25	76.29	92
G_{CIE}	52.23	−41.56	17.14	44.96	158
B_{CIE}	30.57	2.63	−43.77	43.86	273

***relative* Inform. Technology (IT)**
*olvi3** 1.0 1.0 1.0 (1.0)
*cmyn3** 0.0 0.0 0.0 (0.0)
*olvi4** 1.0 1.0 1.0 1.0
*cmyn4** 0.0 0.0 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 91.97 −0.17 −5.11
*LAB*LABa* 91.97 0.0 0.0
*LAB*TCHa* 99.99 0.01 –
relative* CIELAB *lab*
*lab*lab* 1.0 0.0 0.0
*lab*tch* 1.0 0.0 –
*lab*nch* 0.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 1.0 0.0 0.0
*lab*tce* 1.0 0.0 –
*lab*ncE* 0.0 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.5 1.0 0.5 (1.0)
*cmyn3** 0.5 0.0 0.5 (0.0)
*olvi4** 0.5 1.0 0.5 1.0
*cmyn4** 0.5 0.0 0.5 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 65.7 −31.51 18.84
*LAB*LABa* 65.7 −30.88 22.91
*LAB*TCHa* 75.0 38.46 143.44
relative* CIELAB *lab*
*lab*lab* 0.693 −0.401 0.298
*lab*tch* 0.75 0.5 0.398
*lab*nch* 0.0 0.5 0.398
***relative* Natural Colour (NC)**
*lab*lrj* 0.693 −0.471 0.166
*lab*tce* 0.75 0.5 0.446
*lab*ncE* 0.0 0.5 j78g

***relative* Inform. Technology (IT)**
*olvi3** 0.0 1.0 0.0 (1.0)
*cmyn3** 1.0 0.0 1.0 (0.0)
*olvi4** 0.0 1.0 0.0 1.0
*cmyn4** 1.0 0.0 1.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 39.43 −62.85 42.79
*LAB*LABa* 39.43 −61.78 45.83
*LAB*TCHa* 50.0 76.93 143.44
relative* CIELAB *lab*
*lab*lab* 0.387 −0.802 0.596
*lab*tch* 0.5 1.0 0.398
*lab*nch* 0.0 1.0 0.398
***relative* Natural Colour (NC)**
*lab*lrj* 0.387 −0.942 0.332
*lab*tce* 0.5 1.0 0.446
*lab*ncE* 0.0 1.0 j78g

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.5 0.5 (1.0)
*cmyn3** 0.5 0.5 0.5 (0.0)
*olvi4** 1.0 1.0 1.0 0.5
*cmyn4** 0.0 0.0 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 49.11 −0.89 −3.42
*LAB*LABa* 49.11 0.0 0.0
*LAB*TCHa* 50.0 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.5 0.0 0.0
*lab*tch* 0.5 0.0 –
*lab*nch* 0.5 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.5 0.0 0.0
*lab*tce* 0.5 0.0 –
*lab*ncE* 0.5 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.5 0.0 (1.0)
*cmyn3** 1.0 0.5 1.0 (0.0)
*olvi4** 0.5 1.0 0.5 0.5
*cmyn4** 0.5 0.0 0.5 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 22.85 −32.23 20.53
*LAB*LABa* 22.85 −30.88 22.91
*LAB*TCHa* 25.01 38.46 143.44
relative* CIELAB *lab*
*lab*lab* 0.194 −0.401 0.298
*lab*tch* 0.25 0.5 0.398
*lab*nch* 0.5 0.5 0.398
***relative* Natural Colour (NC)**
*lab*lrj* 0.194 −0.471 0.166
*lab*tce* 0.25 0.5 0.446
*lab*ncE* 0.5 0.5 j78g

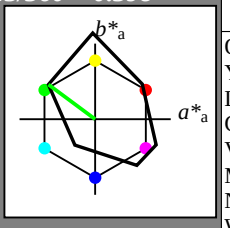
***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.0 0.0 (1.0)
*cmyn3** 1.0 1.0 1.0 (0.0)
*olvi4** 1.0 1.0 1.0 0.0
*cmyn4** 0.0 0.0 0.0 1.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 6.26 −1.62 −1.73
*LAB*LABa* 6.26 0.0 0.0
*LAB*TCHa* 0.01 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.0 0.0 0.0
*lab*tch* 0.0 0.0 –
*lab*nch* 1.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.0 0.0 0.0
*lab*tce* 0.0 0.0 –
*lab*ncE* 1.0 0.0 –

*n** = 0,00
blackness *n**
0,25 0,50 *n** = 0,50 0,75 1,00
chromaticness *c**
*n** = 1,0

Output: Colorimetric Printer Reflective System FRS06
for hue *h = lab*h = 143/360 = 0.398**
lab*tch* and *lab*nch

D65: hue L
LCH*Ma: 39 77 143
olv*Ma: 0.0 1.0 0.0

triangle lightness *t**



%Gamut
u^*_{rel} = 115
%Regularity
$g^*_{H,rel}$ = 28
$g^*_{C,rel}$ = 28

FRS06; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	32.57	62.32	46.49	77.75	37
Y_{Ma}	82.73	−3.16	113.99	114.03	92
L_{Ma}	39.43	−61.79	45.84	76.95	143
C_{Ma}	47.86	−26.79	−34.24	43.49	232
V_{Ma}	10.16	55.12	−61.03	82.24	312
M_{Ma}	34.5	80.68	−33.92	87.52	337
N_{Ma}	6.25	0.0	0.0	0.0	0
W_{Ma}	91.97	0.0	0.0	0.0	0
R_{CIE}	39.92	59.8	31.05	67.38	27
J_{CIE}	81.26	−2.52	76.25	76.29	92
G_{CIE}	52.23	−41.56	17.14	44.96	158
B_{CIE}	30.57	2.63	−43.77	43.86	273

***relative* Inform. Technology (IT)**
*olvi3** 1.0 1.0 1.0 (1.0)
*cmyn3** 0.0 0.0 0.0 (0.0)
*olvi4** 1.0 1.0 1.0 1.0
*cmyn4** 0.0 0.0 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 91.97 −0.17 −5.11
*LAB*LABa* 91.97 0.0 0.0
*LAB*TCHa* 99.99 0.01 –
relative* CIELAB *lab*
*lab*lab* 1.0 0.0 0.0
*lab*tch* 1.0 0.0 –
*lab*nch* 0.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 1.0 0.0 0.0
*lab*tce* 1.0 0.0 –
*lab*ncE* 0.0 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.5 1.0 0.5 (1.0)
*cmyn3** 0.5 0.0 0.5 (0.0)
*olvi4** 0.5 1.0 0.5 1.0
*cmyn4** 0.5 0.0 0.5 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 65.7 −31.51 18.84
*LAB*LABa* 65.7 −30.88 22.91
*LAB*TCHa* 75.0 38.46 143.44
relative* CIELAB *lab*
*lab*lab* 0.693 −0.401 0.298
*lab*tch* 0.75 0.5 0.398
*lab*nch* 0.0 0.5 0.398
***relative* Natural Colour (NC)**
*lab*lrj* 0.693 −0.471 0.166
*lab*tce* 0.75 0.5 0.446
*lab*ncE* 0.0 0.5 j78g

***relative* Inform. Technology (IT)**
*olvi3** 0.0 1.0 0.0 (1.0)
*cmyn3** 1.0 0.0 1.0 (0.0)
*olvi4** 0.0 1.0 0.0 1.0
*cmyn4** 1.0 0.0 1.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 39.43 −62.85 42.79
*LAB*LABa* 39.43 −61.78 45.83
*LAB*TCHa* 50.0 76.93 143.44
relative* CIELAB *lab*
*lab*lab* 0.387 −0.802 0.596
*lab*tch* 0.5 1.0 0.398
*lab*nch* 0.0 1.0 0.398
***relative* Natural Colour (NC)**
*lab*lrj* 0.387 −0.942 0.332
*lab*tce* 0.5 1.0 0.446
*lab*ncE* 0.0 1.0 j78g

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.5 0.5 (1.0)
*cmyn3** 0.5 0.5 0.5 (0.0)
*olvi4** 1.0 1.0 1.0 0.5
*cmyn4** 0.0 0.0 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 49.11 −0.89 −3.42
*LAB*LABa* 49.11 0.0 0.0
*LAB*TCHa* 50.0 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.5 0.0 0.0
*lab*tch* 0.5 0.0 –
*lab*nch* 0.5 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.5 0.0 0.0
*lab*tce* 0.5 0.0 –
*lab*ncE* 0.5 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.5 0.0 (1.0)
*cmyn3** 1.0 0.5 1.0 (0.0)
*olvi4** 0.5 1.0 0.5 0.5
*cmyn4** 0.5 0.0 0.5 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 22.85 −32.23 20.53
*LAB*LABa* 22.85 −30.88 22.91
*LAB*TCHa* 25.01 38.46 143.44
relative* CIELAB *lab*
*lab*lab* 0.194 −0.401 0.298
*lab*tch* 0.25 0.5 0.398
*lab*nch* 0.5 0.5 0.398
***relative* Natural Colour (NC)**
*lab*lrj* 0.194 −0.471 0.166
*lab*tce* 0.25 0.5 0.446
*lab*ncE* 0.5 0.5 j78g

***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.0 0.0 (1.0)
*cmyn3** 1.0 1.0 1.0 (0.0)
*olvi4** 1.0 1.0 1.0 0.0
*cmyn4** 0.0 0.0 0.0 1.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 6.26 −1.62 −1.73
*LAB*LABa* 6.26 0.0 0.0
*LAB*TCHa* 0.01 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.0 0.0 0.0
*lab*tch* 0.0 0.0 –
*lab*nch* 1.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.0 0.0 0.0
*lab*tce* 0.0 0.0 –
*lab*ncE* 1.0 0.0 –

*n** = 0,00
blackness *n**
0,25 0,50 *n** = 0,50 0,75 1,00
chromaticness *c**
*n** = 1,0

VE210−7, 3 step scales for constant CIELAB hue 143/360 = 0.398 (left)
3 step scales for constant CIELAB hue 143/360 = 0.398 (right)

BAM-test chart VE21; Colorimetric systems FRS06 & FRS06
D65: 2 coordinate data of 3 step colour scales for 10 hues

input: *olv* setrgbcolor*
output: *no change compared to input*

See for similar files: http://www.ps.bam.de/VE21/
Technical information: http://www.ps.bam.de Version 2.1, io=1,1

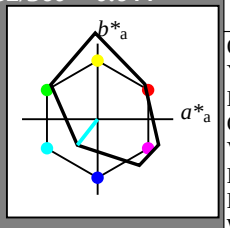
BAM registration: 20060101-VE21/10L/L21E02NP.PS/.PDF BAM material: code=rha4ta
application for evaluation and measurement of printer or monitor systems

/VE21/ Form: 3/10, Serie: 1/1, Page: 3 Page: count: 1

Input: Colorimetric Printer Reflective System FRS06
for hue $h^* = lab^*h = 232/360 = 0.644$
lab*tch* and *lab*nch

D65: hue C
LCH*Ma: 48 43 232
olv*Ma: 0.0 1.0 1.0

triangle lightness t^*



%Gamut
u^*_{rel} = 115
%Regularity
$g^*_{H,rel}$ = 28
$g^*_{C,rel}$ = 28

FRS06; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	32.57	62.32	46.49	77.75	37
Y_{Ma}	82.73	−3.16	113.99	114.03	92
L_{Ma}	39.43	−61.79	45.84	76.95	143
C_{Ma}	47.86	−26.79	−34.24	43.49	232
V_{Ma}	10.16	55.12	−61.03	82.24	312
M_{Ma}	34.5	80.68	−33.92	87.52	337
N_{Ma}	6.25	0.0	0.0	0.0	0
W_{Ma}	91.97	0.0	0.0	0.0	0
R_{CIE}	39.92	59.8	31.05	67.38	27
J_{CIE}	81.26	−2.52	76.25	76.29	92
G_{CIE}	52.23	−41.56	17.14	44.96	158
B_{CIE}	30.57	2.63	−43.77	43.86	273

***relative* Inform. Technology (IT)**
*olvi3** 1.0 1.0 1.0 (1.0)
*cmyn3** 0.0 0.0 0.0 (0.0)
*olvi4** 1.0 1.0 1.0 1.0
*cmyn4** 0.0 0.0 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 91.97 −0.17 −5.11
*LAB*LABa* 91.97 0.0 0.0
*LAB*TCHa* 99.99 0.01 –
relative* CIELAB *lab*
*lab*lab* 1.0 0.0 0.0
*lab*tch* 1.0 0.0 –
*lab*nch* 0.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 1.0 0.0 0.0
*lab*tce* 1.0 0.0 –
*lab*ncE* 0.0 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.5 1.0 1.0 (1.0)
*cmyn3** 0.0 0.0 0.0 (0.0)
*olvi4** 0.5 1.0 1.0 1.0
*cmyn4** 0.5 0.0 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 69.91 −13.94 −21.35
*LAB*LABa* 69.91 −13.39 −17.11
*LAB*TCHa* 75.0 21.74 231.95
relative* CIELAB *lab*
*lab*lab* 0.743 −0.307 −0.393
*lab*tch* 0.75 0.5 0.644
*lab*nch* 0.0 0.5 0.644
***relative* Natural Colour (NC)**
*lab*lrj* 0.743 −0.266 −0.422
*lab*tce* 0.75 0.5 0.66
*lab*ncE* 0.0 0.5 g64b

***relative* Inform. Technology (IT)**
*olvi3** 0.0 1.0 1.0 (1.0)
*cmyn3** 1.0 0.0 0.0 (0.0)
*olvi4** 0.0 1.0 1.0 1.0
*cmyn4** 1.0 0.0 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 47.86 −27.71 −37.6
*LAB*LABa* 47.86 −26.79 −34.23
*LAB*TCHa* 50.0 43.48 231.95
relative* CIELAB *lab*
*lab*lab* 0.485 −0.615 −0.786
*lab*tch* 0.5 1.0 0.644
*lab*nch* 0.0 1.0 0.644
***relative* Natural Colour (NC)**
*lab*lrj* 0.485 −0.532 −0.845
*lab*tce* 0.5 1.0 0.66
*lab*ncE* 0.0 1.0 g64b

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.5 0.5 (1.0)
*cmyn3** 0.5 0.5 0.5 (0.0)
*olvi4** 1.0 1.0 1.0 0.5
*cmyn4** 0.0 0.0 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 49.11 −0.89 −3.42
*LAB*LABa* 49.11 0.0 0.0
*LAB*TCHa* 50.0 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.5 0.0 0.0
*lab*tch* 0.5 0.0 –
*lab*nch* 0.5 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.5 0.0 0.0
*lab*tce* 0.5 0.0 –
*lab*ncE* 0.5 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.5 0.5 (1.0)
*cmyn3** 1.0 0.5 0.5 (0.0)
*olvi4** 0.5 1.0 1.0 0.5
*cmyn4** 0.5 0.0 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 27.06 −14.67 −19.66
*LAB*LABa* 27.06 −13.39 −17.11
*LAB*TCHa* 25.01 21.74 231.95
relative* CIELAB *lab*
*lab*lab* 0.243 −0.307 −0.393
*lab*tch* 0.25 0.5 0.644
*lab*nch* 0.5 0.5 0.644
***relative* Natural Colour (NC)**
*lab*lrj* 0.243 −0.266 −0.422
*lab*tce* 0.25 0.5 0.66
*lab*ncE* 0.5 0.5 g64b

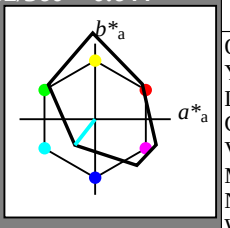
***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.0 0.0 (1.0)
*cmyn3** 1.0 1.0 1.0 (0.0)
*olvi4** 1.0 1.0 1.0 0.0
*cmyn4** 0.0 0.0 0.0 1.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 6.26 −1.62 −1.73
*LAB*LABa* 6.26 0.0 0.0
*LAB*TCHa* 0.01 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.0 0.0 0.0
*lab*tch* 0.0 0.0 –
*lab*nch* 1.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.0 0.0 0.0
*lab*tce* 0.0 0.0 –
*lab*ncE* 1.0 0.0 –

$n^* = 0{,}00$
blackness n^*
0,25 0,50 $n^* = 0{,}50$ 0,75 1,00
chromaticness c^*
$n^* = 1{,}0$

Output: Colorimetric Printer Reflective System FRS06
for hue $h^* = lab^*h = 232/360 = 0.644$
lab*tch* and *lab*nch

D65: hue C
LCH*Ma: 48 43 232
olv*Ma: 0.0 1.0 1.0

triangle lightness t^*



%Gamut
u^*_{rel} = 115
%Regularity
$g^*_{H,rel}$ = 28
$g^*_{C,rel}$ = 28

FRS06; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	32.57	62.32	46.49	77.75	37
Y_{Ma}	82.73	−3.16	113.99	114.03	92
L_{Ma}	39.43	−61.79	45.84	76.95	143
C_{Ma}	47.86	−26.79	−34.24	43.49	232
V_{Ma}	10.16	55.12	−61.03	82.24	312
M_{Ma}	34.5	80.68	−33.92	87.52	337
N_{Ma}	6.25	0.0	0.0	0.0	0
W_{Ma}	91.97	0.0	0.0	0.0	0
R_{CIE}	39.92	59.8	31.05	67.38	27
J_{CIE}	81.26	−2.52	76.25	76.29	92
G_{CIE}	52.23	−41.56	17.14	44.96	158
B_{CIE}	30.57	2.63	−43.77	43.86	273

***relative* Inform. Technology (IT)**
*olvi3** 1.0 1.0 1.0 (1.0)
*cmyn3** 0.0 0.0 0.0 (0.0)
*olvi4** 1.0 1.0 1.0 1.0
*cmyn4** 0.0 0.0 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 91.97 −0.17 −5.11
*LAB*LABa* 91.97 0.0 0.0
*LAB*TCHa* 99.99 0.01 –
relative* CIELAB *lab*
*lab*lab* 1.0 0.0 0.0
*lab*tch* 1.0 0.0 –
*lab*nch* 0.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 1.0 0.0 0.0
*lab*tce* 1.0 0.0 –
*lab*ncE* 0.0 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.5 1.0 1.0 (1.0)
*cmyn3** 0.5 0.0 0.0 (0.0)
*olvi4** 0.5 1.0 1.0 1.0
*cmyn4** 0.5 0.0 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 69.91 −13.94 −21.35
*LAB*LABa* 69.91 −13.39 −17.11
*LAB*TCHa* 75.0 21.74 231.95
relative* CIELAB *lab*
*lab*lab* 0.743 −0.307 −0.393
*lab*tch* 0.75 0.5 0.644
*lab*nch* 0.0 0.5 0.644
***relative* Natural Colour (NC)**
*lab*lrj* 0.743 −0.266 −0.422
*lab*tce* 0.75 0.5 0.66
*lab*ncE* 0.0 0.5 g64b

***relative* Inform. Technology (IT)**
*olvi3** 0.0 1.0 1.0 (1.0)
*cmyn3** 1.0 0.0 0.0 (0.0)
*olvi4** 0.0 1.0 1.0 1.0
*cmyn4** 1.0 0.0 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 47.86 −27.71 −37.6
*LAB*LABa* 47.86 −26.79 −34.23
*LAB*TCHa* 50.0 43.48 231.95
relative* CIELAB *lab*
*lab*lab* 0.485 −0.615 −0.786
*lab*tch* 0.5 1.0 0.644
*lab*nch* 0.0 1.0 0.644
***relative* Natural Colour (NC)**
*lab*lrj* 0.485 −0.532 −0.845
*lab*tce* 0.5 1.0 0.66
*lab*ncE* 0.0 1.0 g64b

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.5 0.5 (1.0)
*cmyn3** 0.5 0.5 0.5 (0.0)
*olvi4** 1.0 1.0 1.0 0.5
*cmyn4** 0.0 0.0 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 49.11 −0.89 −3.42
*LAB*LABa* 49.11 0.0 0.0
*LAB*TCHa* 50.0 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.5 0.0 0.0
*lab*tch* 0.5 0.0 –
*lab*nch* 0.5 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.5 0.0 0.0
*lab*tce* 0.5 0.0 –
*lab*ncE* 0.5 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.5 0.5 (1.0)
*cmyn3** 1.0 0.5 0.5 (0.0)
*olvi4** 0.5 1.0 1.0 0.5
*cmyn4** 0.5 0.0 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 27.06 −14.67 −19.66
*LAB*LABa* 27.06 −13.39 −17.11
*LAB*TCHa* 25.01 21.74 231.95
relative* CIELAB *lab*
*lab*lab* 0.243 −0.307 −0.393
*lab*tch* 0.25 0.5 0.644
*lab*nch* 0.5 0.5 0.644
***relative* Natural Colour (NC)**
*lab*lrj* 0.243 −0.266 −0.422
*lab*tce* 0.25 0.5 0.66
*lab*ncE* 0.5 0.5 g64b

***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.0 0.0 (1.0)
*cmyn3** 1.0 1.0 1.0 (0.0)
*olvi4** 1.0 1.0 1.0 0.0
*cmyn4** 0.0 0.0 0.0 1.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 6.26 −1.62 −1.73
*LAB*LABa* 6.26 0.0 0.0
*LAB*TCHa* 0.01 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.0 0.0 0.0
*lab*tch* 0.0 0.0 –
*lab*nch* 1.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.0 0.0 0.0
*lab*tce* 0.0 0.0 –
*lab*ncE* 1.0 0.0 –

$n^* = 0{,}00$
blackness n^*
0,25 0,50 $n^* = 0{,}50$ 0,75 1,00
chromaticness c^*
$n^* = 1{,}0$

VE210−7, 3 step scales for constant CIELAB hue 232/360 = 0.644 (left)
3 step scales for constant CIELAB hue 232/360 = 0.644 (right)

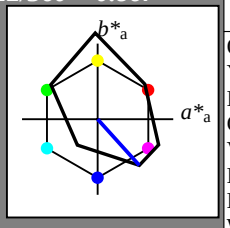
See for similar files: http://www.ps.bam.de/VE21/
Technical information: http://www.ps.bam.de Version 2.1, io=1,1

BAM registration: 20060101-VE21/10L/L21E03NP.PS/.PDF BAM material: code=rha4ta
application for evaluation and measurement of printer or monitor systems
/VE21/ Form: 4/10, Serie: 1/1, Page: 4 Page: count: 1

Input: Colorimetric Printer Reflective System FRS06
for hue $h^* = lab^*h = 312/360 = 0.867$
lab*tch* and *lab*nch

D65: hue V
LCH*Ma: 10 82 312
olv*Ma: 0.0 0.0 1.0

triangle lightness t^*



%Gamut
u^*_{rel} = 115
%Regularity
$g^*_{H,rel}$ = 28
$g^*_{C,rel}$ = 28

FRS06; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	32.57	62.32	46.49	77.75	37
Y_{Ma}	82.73	−3.16	113.99	114.03	92
L_{Ma}	39.43	−61.79	45.84	76.95	143
C_{Ma}	47.86	−26.79	−34.24	43.49	232
V_{Ma}	10.16	55.12	−61.03	82.24	312
M_{Ma}	34.5	80.68	−33.92	87.52	337
N_{Ma}	6.25	0.0	0.0	0.0	0
W_{Ma}	91.97	0.0	0.0	0.0	0
R_{CIE}	39.92	59.8	31.05	67.38	27
J_{CIE}	81.26	−2.52	76.25	76.29	92
G_{CIE}	52.23	−41.56	17.14	44.96	158
B_{CIE}	30.57	2.63	−43.77	43.86	273

***relative* Inform. Technology (IT)**
*olvi3** 1.0 1.0 1.0 (1.0)
*cmyn3** 0.0 0.0 0.0 (0.0)
*olvi4** 1.0 1.0 1.0 1.0
*cmyn4** 0.0 0.0 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 91.97 −0.17 −5.11
*LAB*LABa* 91.97 0.0 0.0
*LAB*TCHa* 99.99 0.01 –
relative* CIELAB *lab*
*lab*lab* 1.0 0.0 0.0
*lab*tch* 1.0 0.0 –
*lab*nch* 0.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 1.0 0.0 0.0
*lab*tce* 1.0 0.0 –
*lab*ncE* 0.0 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.5 1.0 (1.0)
*cmyn3** 0.5 0.5 0.0 (0.0)
*olvi4** 0.5 0.5 1.0 1.0
*cmyn4** 0.5 0.5 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 51.06 26.68 −34.0
*LAB*LABa* 51.06 27.56 −30.5
*LAB*TCHa* 75.0 41.11 312.09
relative* CIELAB *lab*
*lab*lab* 0.523 0.335 −0.37
*lab*tch* 0.75 0.5 0.867
*lab*nch* 0.0 0.5 0.867
***relative* Natural Colour (NC)**
*lab*lrj* 0.523 0.254 −0.43
*lab*tce* 0.75 0.5 0.835
*lab*ncE* 0.0 0.5 b33r

***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.0 1.0 (1.0)
*cmyn3** 1.0 1.0 0.0 (0.0)
*olvi4** 0.0 0.0 1.0 1.0
*cmyn4** 1.0 1.0 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 10.17 53.55 −62.9
*LAB*LABa* 10.17 55.11 −61.01
*LAB*TCHa* 50.0 82.23 312.09
relative* CIELAB *lab*
*lab*lab* 0.046 0.67 −0.741
*lab*tch* 0.5 1.0 0.867
*lab*nch* 0.0 1.0 0.867
***relative* Natural Colour (NC)**
*lab*lrj* 0.046 0.508 −0.86
*lab*tce* 0.5 1.0 0.835
*lab*ncE* 0.0 1.0 b33r

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.5 0.5 (1.0)
*cmyn3** 0.5 0.5 0.5 (0.0)
*olvi4** 1.0 1.0 1.0 0.5
*cmyn4** 0.0 0.0 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 49.11 −0.89 −3.42
*LAB*LABa* 49.11 0.0 0.0
*LAB*TCHa* 50.0 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.5 0.0 0.0
*lab*tch* 0.5 0.0 –
*lab*nch* 0.5 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.5 0.0 0.0
*lab*tce* 0.5 0.0 –
*lab*ncE* 0.5 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.0 0.5 (1.0)
*cmyn3** 1.0 1.0 0.5 (0.0)
*olvi4** 0.5 0.5 1.0 0.5
*cmyn4** 0.5 0.5 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 8.21 25.96 −32.31
*LAB*LABa* 8.21 27.56 −30.5
*LAB*TCHa* 25.01 41.11 312.09
relative* CIELAB *lab*
*lab*lab* 0.023 0.335 −0.37
*lab*tch* 0.25 0.5 0.867
*lab*nch* 0.5 0.5 0.867
***relative* Natural Colour (NC)**
*lab*lrj* 0.023 0.254 −0.43
*lab*tce* 0.25 0.5 0.835
*lab*ncE* 0.5 0.5 b33r

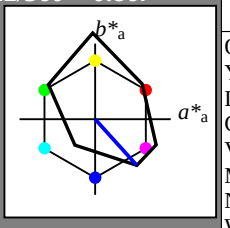
***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.0 0.0 (1.0)
*cmyn3** 1.0 1.0 1.0 (0.0)
*olvi4** 1.0 1.0 1.0 0.0
*cmyn4** 0.0 0.0 0.0 1.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 6.26 −1.62 −1.73
*LAB*LABa* 6.26 0.0 0.0
*LAB*TCHa* 0.01 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.0 0.0 0.0
*lab*tch* 0.0 0.0 –
*lab*nch* 1.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.0 0.0 0.0
*lab*tce* 0.0 0.0 –
*lab*ncE* 1.0 0.0 –

$n^* = 0{,}00$
blackness n^*
0,25 0,50 $n^* = 0{,}50$ 0,75 1,00
chromaticness c^*
$n^* = 1{,}0$

Output: Colorimetric Printer Reflective System FRS06
for hue $h^* = lab^*h = 312/360 = 0.867$
lab*tch* and *lab*nch

D65: hue V
LCH*Ma: 10 82 312
olv*Ma: 0.0 0.0 1.0

triangle lightness t^*



%Gamut
u^*_{rel} = 115
%Regularity
$g^*_{H,rel}$ = 28
$g^*_{C,rel}$ = 28

FRS06; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	32.57	62.32	46.49	77.75	37
Y_{Ma}	82.73	−3.16	113.99	114.03	92
L_{Ma}	39.43	−61.79	45.84	76.95	143
C_{Ma}	47.86	−26.79	−34.24	43.49	232
V_{Ma}	10.16	55.12	−61.03	82.24	312
M_{Ma}	34.5	80.68	−33.92	87.52	337
N_{Ma}	6.25	0.0	0.0	0.0	0
W_{Ma}	91.97	0.0	0.0	0.0	0
R_{CIE}	39.92	59.8	31.05	67.38	27
J_{CIE}	81.26	−2.52	76.25	76.29	92
G_{CIE}	52.23	−41.56	17.14	44.96	158
B_{CIE}	30.57	2.63	−43.77	43.86	273

***relative* Inform. Technology (IT)**
*olvi3** 1.0 1.0 1.0 (1.0)
*cmyn3** 0.0 0.0 0.0 (0.0)
*olvi4** 1.0 1.0 1.0 1.0
*cmyn4** 0.0 0.0 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 91.97 −0.17 −5.11
*LAB*LABa* 91.97 0.0 0.0
*LAB*TCHa* 99.99 0.01 –
relative* CIELAB *lab*
*lab*lab* 1.0 0.0 0.0
*lab*tch* 1.0 0.0 –
*lab*nch* 0.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 1.0 0.0 0.0
*lab*tce* 1.0 0.0 –
*lab*ncE* 0.0 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.5 1.0 (1.0)
*cmyn3** 0.5 0.5 0.0 (0.0)
*olvi4** 0.5 0.5 1.0 1.0
*cmyn4** 0.5 0.5 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 51.06 26.68 −34.0
*LAB*LABa* 51.06 27.56 −30.5
*LAB*TCHa* 75.0 41.11 312.09
relative* CIELAB *lab*
*lab*lab* 0.523 0.335 −0.37
*lab*tch* 0.75 0.5 0.867
*lab*nch* 0.0 0.5 0.867
***relative* Natural Colour (NC)**
*lab*lrj* 0.523 0.254 −0.43
*lab*tce* 0.75 0.5 0.835
*lab*ncE* 0.0 0.5 b33r

***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.0 1.0 (1.0)
*cmyn3** 1.0 1.0 0.0 (0.0)
*olvi4** 0.0 0.0 1.0 1.0
*cmyn4** 1.0 1.0 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 10.17 53.55 −62.9
*LAB*LABa* 10.17 55.11 −61.01
*LAB*TCHa* 50.0 82.23 312.09
relative* CIELAB *lab*
*lab*lab* 0.046 0.67 −0.741
*lab*tch* 0.5 1.0 0.867
*lab*nch* 0.0 1.0 0.867
***relative* Natural Colour (NC)**
*lab*lrj* 0.046 0.508 −0.86
*lab*tce* 0.5 1.0 0.835
*lab*ncE* 0.0 1.0 b33r

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.5 0.5 (1.0)
*cmyn3** 0.5 0.5 0.5 (0.0)
*olvi4** 1.0 1.0 1.0 0.5
*cmyn4** 0.0 0.0 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 49.11 −0.89 −3.42
*LAB*LABa* 49.11 0.0 0.0
*LAB*TCHa* 50.0 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.5 0.0 0.0
*lab*tch* 0.5 0.0 –
*lab*nch* 0.5 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.5 0.0 0.0
*lab*tce* 0.5 0.0 –
*lab*ncE* 0.5 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.0 0.5 (1.0)
*cmyn3** 1.0 1.0 0.5 (0.0)
*olvi4** 0.5 0.5 1.0 0.5
*cmyn4** 0.5 0.5 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 8.21 25.96 −32.31
*LAB*LABa* 8.21 27.56 −30.5
*LAB*TCHa* 25.01 41.11 312.09
relative* CIELAB *lab*
*lab*lab* 0.023 0.335 −0.37
*lab*tch* 0.25 0.5 0.867
*lab*nch* 0.5 0.5 0.867
***relative* Natural Colour (NC)**
*lab*lrj* 0.023 0.254 −0.43
*lab*tce* 0.25 0.5 0.835
*lab*ncE* 0.5 0.5 b33r

***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.0 0.0 (1.0)
*cmyn3** 1.0 1.0 1.0 (0.0)
*olvi4** 1.0 1.0 1.0 0.0
*cmyn4** 0.0 0.0 0.0 1.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 6.26 −1.62 −1.73
*LAB*LABa* 6.26 0.0 0.0
*LAB*TCHa* 0.01 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.0 0.0 0.0
*lab*tch* 0.0 0.0 –
*lab*nch* 1.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.0 0.0 0.0
*lab*tce* 0.0 0.0 –
*lab*ncE* 1.0 0.0 –

$n^* = 0{,}00$
blackness n^*
0,25 0,50 $n^* = 0{,}50$ 0,75 1,00
chromaticness c^*
$n^* = 1{,}0$

VE210−7, 3 step scales for constant CIELAB hue 312/360 = 0.867 (left)
3 step scales for constant CIELAB hue 312/360 = 0.867 (right)

BAM-test chart VE21; Colorimetric systems FRS06 & FRS06
D65: 2 coordinate data of 3 step colour scales for 10 hues

input: *olv* setrgbcolor*
output: *no change compared to input*

See for similar files: http://www.ps.bam.de/VE21/
Technical information: http://www.ps.bam.de Version 2.1, io=1,1

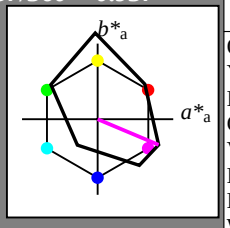
BAM registration: 20060101-VE21/10L/L21E04NP.PS/.PDF BAM material: code=rha4ta
application for evaluation and measurement of printer or monitor systems

/VE21/ Form: 5/10, Serie: 1/1, Page: 5 Page: count: 1

Input: Colorimetric Printer Reflective System FRS06
for hue $h^* = lab^*h = 337/360 = 0.937$
lab*tch* and *lab*nch

D65: hue M
LCH*Ma: 35 88 337
olv*Ma: 1.0 0.0 1.0

triangle lightness t^*



%Gamut
u^*_{rel} = 115
%Regularity
$g^*_{H,rel}$ = 28
$g^*_{C,rel}$ = 28

FRS06; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	32.57	62.32	46.49	77.75	37
Y_{Ma}	82.73	−3.16	113.99	114.03	92
L_{Ma}	39.43	−61.79	45.84	76.95	143
C_{Ma}	47.86	−26.79	−34.24	43.49	232
V_{Ma}	10.16	55.12	−61.03	82.24	312
M_{Ma}	34.5	80.68	−33.92	87.52	337
N_{Ma}	6.25	0.0	0.0	0.0	0
W_{Ma}	91.97	0.0	0.0	0.0	0
R_{CIE}	39.92	59.8	31.05	67.38	27
J_{CIE}	81.26	−2.52	76.25	76.29	92
G_{CIE}	52.23	−41.56	17.14	44.96	158
B_{CIE}	30.57	2.63	−43.77	43.86	273

***relative* Inform. Technology (IT)**
*olvi3** 1.0 1.0 1.0 (1.0)
*cmyn3** 0.0 0.0 0.0 (0.0)
*olvi4** 1.0 1.0 1.0 1.0
*cmyn4** 0.0 0.0 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 91.97 −0.17 −5.11
*LAB*LABa* 91.97 0.0 0.0
*LAB*TCHa* 99.99 0.01 –
relative* CIELAB *lab*
*lab*lab* 1.0 0.0 0.0
*lab*tch* 1.0 0.0 –
*lab*nch* 0.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 1.0 0.0 0.0
*lab*tce* 1.0 0.0 –
*lab*ncE* 0.0 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.5 0.5 (1.0)
*cmyn3** 0.5 0.5 0.5 (0.0)
*olvi4** 1.0 1.0 1.0 0.5
*cmyn4** 0.0 0.0 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 49.11 −0.89 −3.42
*LAB*LABa* 49.11 0.0 0.0
*LAB*TCHa* 50.0 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.5 0.0 0.0
*lab*tch* 0.5 0.0 –
*lab*nch* 0.5 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.5 0.0 0.0
*lab*tce* 0.5 0.0 –
*lab*ncE* 0.5 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.0 0.0 (1.0)
*cmyn3** 1.0 1.0 1.0 (0.0)
*olvi4** 1.0 1.0 1.0 0.0
*cmyn4** 0.0 0.0 0.0 1.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 6.26 −1.62 −1.73
*LAB*LABa* 6.26 0.0 0.0
*LAB*TCHa* 0.01 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.0 0.0 0.0
*lab*tch* 0.0 0.0 –
*lab*nch* 1.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.0 0.0 0.0
*lab*tce* 0.0 0.0 –
*lab*ncE* 1.0 0.0 –

$n^* = 1{,}0$

***relative* Inform. Technology (IT)**
*olvi3** 1.0 0.5 1.0 (1.0)
*cmyn3** 0.0 0.5 0.0 (0.0)
*olvi4** 1.0 0.5 1.0 1.0
*cmyn4** 0.0 0.5 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 63.23 39.67 −20.93
*LAB*LABa* 63.23 40.33 −16.95
*LAB*TCHa* 75.0 43.75 337.19
relative* CIELAB *lab*
*lab*lab* 0.665 0.461 −0.193
*lab*tch* 0.75 0.5 0.937
*lab*nch* 0.0 0.5 0.937
***relative* Natural Colour (NC)**
*lab*lrj* 0.665 0.385 −0.318
*lab*tce* 0.75 0.5 0.89
*lab*ncE* 0.0 0.5 b55r

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.0 0.5 (1.0)
*cmyn3** 0.5 1.0 0.5 (0.0)
*olvi4** 1.0 0.5 1.0 0.5
*cmyn4** 0.0 0.5 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 20.38 38.94 −19.24
*LAB*LABa* 20.38 40.33 −16.95
*LAB*TCHa* 25.01 43.75 337.19
relative* CIELAB *lab*
*lab*lab* 0.165 0.461 −0.193
*lab*tch* 0.25 0.5 0.937
*lab*nch* 0.5 0.5 0.937
***relative* Natural Colour (NC)**
*lab*lrj* 0.165 0.385 −0.318
*lab*tce* 0.25 0.5 0.89
*lab*ncE* 0.5 0.5 b55r

***relative* Inform. Technology (IT)**
*olvi3** 1.0 0.0 1.0 (1.0)
*cmyn3** 0.0 1.0 0.0 (0.0)
*olvi4** 1.0 0.0 1.0 1.0
*cmyn4** 0.0 1.0 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 34.5 79.51 −36.75
*LAB*LABa* 34.5 80.67 −33.91
*LAB*TCHa* 50.0 87.51 337.19
relative* CIELAB *lab*
*lab*lab* 0.33 0.922 −0.387
*lab*tch* 0.5 1.0 0.937
*lab*nch* 0.0 1.0 0.937
***relative* Natural Colour (NC)**
*lab*lrj* 0.33 0.77 −0.637
*lab*tce* 0.5 1.0 0.89
*lab*ncE* 0.0 1.0 b55r

$n^* = 0{,}00$

blackness n^*

0,25 0,50 $n^* = 0{,}50$ 0,75 1,00

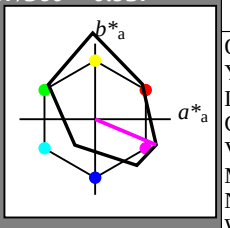
chromaticness c^*

VE210−7, 3 step scales for constant CIELAB hue 337/360 = 0.937 (left)

Output: Colorimetric Printer Reflective System FRS06
for hue $h^* = lab^*h = 337/360 = 0.937$
lab*tch* and *lab*nch

D65: hue M
LCH*Ma: 35 88 337
olv*Ma: 1.0 0.0 1.0

triangle lightness t^*



%Gamut
u^*_{rel} = 115
%Regularity
$g^*_{H,rel}$ = 28
$g^*_{C,rel}$ = 28

FRS06; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	32.57	62.32	46.49	77.75	37
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C_{Ma}	47.86	−26.79	−34.24	43.49	232
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N_{Ma}	6.25	0.0	0.0	0.0	0
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R_{CIE}	39.92	59.8	31.05	67.38	27
J_{CIE}	81.26	−2.52	76.25	76.29	92
G_{CIE}	52.23	−41.56	17.14	44.96	158
B_{CIE}	30.57	2.63	−43.77	43.86	273

***relative* Inform. Technology (IT)**
*olvi3** 1.0 1.0 1.0 (1.0)
*cmyn3** 0.0 0.0 0.0 (0.0)
*olvi4** 1.0 1.0 1.0 1.0
*cmyn4** 0.0 0.0 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 91.97 −0.17 −5.11
*LAB*LABa* 91.97 0.0 0.0
*LAB*TCHa* 99.99 0.01 –
relative* CIELAB *lab*
*lab*lab* 1.0 0.0 0.0
*lab*tch* 1.0 0.0 –
*lab*nch* 0.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 1.0 0.0 0.0
*lab*tce* 1.0 0.0 –
*lab*ncE* 0.0 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.5 0.5 (1.0)
*cmyn3** 0.5 0.5 0.5 (0.0)
*olvi4** 1.0 1.0 1.0 0.5
*cmyn4** 0.0 0.0 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 49.11 −0.89 −3.42
*LAB*LABa* 49.11 0.0 0.0
*LAB*TCHa* 50.0 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.5 0.0 0.0
*lab*tch* 0.5 0.0 –
*lab*nch* 0.5 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.5 0.0 0.0
*lab*tce* 0.5 0.0 –
*lab*ncE* 0.5 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.0 0.0 (1.0)
*cmyn3** 1.0 1.0 1.0 (0.0)
*olvi4** 1.0 1.0 1.0 0.0
*cmyn4** 0.0 0.0 0.0 1.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 6.26 −1.62 −1.73
*LAB*LABa* 6.26 0.0 0.0
*LAB*TCHa* 0.01 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.0 0.0 0.0
*lab*tch* 0.0 0.0 –
*lab*nch* 1.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.0 0.0 0.0
*lab*tce* 0.0 0.0 –
*lab*ncE* 1.0 0.0 –

$n^* = 1{,}0$

***relative* Inform. Technology (IT)**
*olvi3** 1.0 0.5 1.0 (1.0)
*cmyn3** 0.0 0.5 0.0 (0.0)
*olvi4** 1.0 0.5 1.0 1.0
*cmyn4** 0.0 0.5 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 63.23 39.67 −20.93
*LAB*LABa* 63.23 40.33 −16.95
*LAB*TCHa* 75.0 43.75 337.19
relative* CIELAB *lab*
*lab*lab* 0.665 0.461 −0.193
*lab*tch* 0.75 0.5 0.937
*lab*nch* 0.0 0.5 0.937
***relative* Natural Colour (NC)**
*lab*lrj* 0.665 0.385 −0.318
*lab*tce* 0.75 0.5 0.89
*lab*ncE* 0.0 0.5 b55r

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.0 0.5 (1.0)
*cmyn3** 0.5 1.0 0.5 (0.0)
*olvi4** 1.0 0.5 1.0 0.5
*cmyn4** 0.0 0.5 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 20.38 38.94 −19.24
*LAB*LABa* 20.38 40.33 −16.95
*LAB*TCHa* 25.01 43.75 337.19
relative* CIELAB *lab*
*lab*lab* 0.165 0.461 −0.193
*lab*tch* 0.25 0.5 0.937
*lab*nch* 0.5 0.5 0.937
***relative* Natural Colour (NC)**
*lab*lrj* 0.165 0.385 −0.318
*lab*tce* 0.25 0.5 0.89
*lab*ncE* 0.5 0.5 b55r

***relative* Inform. Technology (IT)**
*olvi3** 1.0 0.0 1.0 (1.0)
*cmyn3** 0.0 1.0 0.0 (0.0)
*olvi4** 1.0 0.0 1.0 1.0
*cmyn4** 0.0 1.0 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 34.5 79.51 −36.75
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*lab*tch* 0.5 1.0 0.937
*lab*nch* 0.0 1.0 0.937
***relative* Natural Colour (NC)**
*lab*lrj* 0.33 0.77 −0.637
*lab*tce* 0.5 1.0 0.89
*lab*ncE* 0.0 1.0 b55r

$n^* = 0{,}00$

blackness n^*

0,25 0,50 $n^* = 0{,}50$ 0,75 1,00

chromaticness c^*

3 step scales for constant CIELAB hue 337/360 = 0.937 (right)

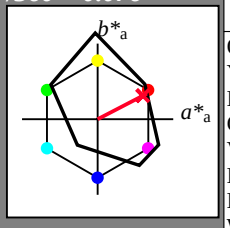
See for similar files: http://www.ps.bam.de/VE21/
Technical information: http://www.ps.bam.de Version 2.1, io=1,1

BAM registration: 20060101-VE21/10L/L21E05NP.PS/.PDF BAM material: code=rha4ta
application for evaluation and measurement of printer or monitor systems
/VE21/ Form: 6/10, Serie: 1/1, Page: 6 Page: count: 1

Input: Colorimetric Printer Reflective System FRS06
for hue $h^* = lab^*h = 27/360 = 0.076$
lab*tch* and *lab*nch

D65: hue R
LCH*Ma: 33 73 27
olv*Ma: 1.0 0.0 0.16

triangle lightness t^*



%Gamut
u^*_{rel} = 115
%Regularity
$g^*_{H,rel}$ = 28
$g^*_{C,rel}$ = 28

FRS06; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	32.57	62.32	46.49	77.75	37
Y_{Ma}	82.73	−3.16	113.99	114.03	92
L_{Ma}	39.43	−61.79	45.84	76.95	143
C_{Ma}	47.86	−26.79	−34.24	43.49	232
V_{Ma}	10.16	55.12	−61.03	82.24	312
M_{Ma}	34.5	80.68	−33.92	87.52	337
N_{Ma}	6.25	0.0	0.0	0.0	0
W_{Ma}	91.97	0.0	0.0	0.0	0
R_{CIE}	39.92	59.8	31.05	67.38	27
J_{CIE}	81.26	−2.52	76.25	76.29	92
G_{CIE}	52.23	−41.56	17.14	44.96	158
B_{CIE}	30.57	2.63	−43.77	43.86	273

***relative* Inform. Technology (IT)**
*olvi3** 1.0 1.0 1.0 (1.0)
*cmyn3** 0.0 0.0 0.0 (0.0)
*olvi4** 1.0 1.0 1.0 1.0
*cmyn4** 0.0 0.0 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 91.97 −0.17 −5.11
*LAB*LABa* 91.97 0.0 0.0
*LAB*TCHa* 99.99 0.01 –
relative* CIELAB *lab*
*lab*lab* 1.0 0.0 0.0
*lab*tch* 1.0 0.0 –
*lab*nch* 0.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 1.0 0.0 0.0
*lab*tce* 1.0 0.0 –
*lab*ncE* 0.0 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 1.0 0.5 0.579 (1.0)
*cmyn3** 0.0 0.5 0.421 (0.0)
*olvi4** 1.0 0.5 0.579 1.0
*cmyn4** 0.0 0.5 0.421 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 62.42 31.92 12.98
*LAB*LABa* 62.42 32.6 16.92
*LAB*TCHa* 75.0 36.73 27.44
relative* CIELAB *lab*
*lab*lab* 0.655 0.444 0.23
*lab*tch* 0.75 0.5 0.076
*lab*nch* 0.0 0.5 0.076
***relative* Natural Colour (NC)**
*lab*lrj* 0.655 0.5 0.0
*lab*tce* 0.75 0.5 1.0
*lab*ncE* 0.0 0.5 b99r

***relative* Inform. Technology (IT)**
*olvi3** 1.0 0.0 0.157 (1.0)
*cmyn3** 0.0 1.0 0.843 (0.0)
*olvi4** 1.0 0.0 0.157 1.0
*cmyn4** 0.0 1.0 0.843 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 32.88 64.01 31.07
*LAB*LABa* 32.88 65.19 33.85
*LAB*TCHa* 50.0 73.46 27.44
relative* CIELAB *lab*
*lab*lab* 0.311 0.887 0.461
*lab*tch* 0.5 1.0 0.076
*lab*nch* 0.0 1.0 0.076
***relative* Natural Colour (NC)**
*lab*lrj* 0.311 1.0 0.0
*lab*tce* 0.5 1.0 0.0
*lab*ncE* 0.0 1.0 r00j

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.5 0.5 (1.0)
*cmyn3** 0.5 0.5 0.5 (0.0)
*olvi4** 1.0 1.0 1.0 0.5
*cmyn4** 0.0 0.0 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 49.11 −0.89 −3.42
*LAB*LABa* 49.11 0.0 0.0
*LAB*TCHa* 50.0 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.5 0.0 0.0
*lab*tch* 0.5 0.0 –
*lab*nch* 0.5 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.5 0.0 0.0
*lab*tce* 0.5 0.0 –
*lab*ncE* 0.5 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.0 0.079 (1.0)
*cmyn3** 0.5 1.0 0.921 (0.0)
*olvi4** 1.0 0.5 0.579 0.5
*cmyn4** 0.0 0.5 0.421 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 19.57 31.19 14.68
*LAB*LABa* 19.57 32.6 16.93
*LAB*TCHa* 25.01 36.73 27.45
relative* CIELAB *lab*
*lab*lab* 0.155 0.444 0.23
*lab*tch* 0.25 0.5 0.076
*lab*nch* 0.5 0.5 0.076
***relative* Natural Colour (NC)**
*lab*lrj* 0.155 0.5 0.0
*lab*tce* 0.25 0.5 0.0
*lab*ncE* 0.5 0.5 r00j

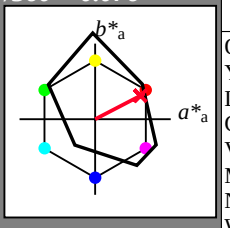
***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.0 0.0 (1.0)
*cmyn3** 1.0 1.0 1.0 (0.0)
*olvi4** 1.0 1.0 1.0 0.0
*cmyn4** 0.0 0.0 0.0 1.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 6.26 −1.62 −1.73
*LAB*LABa* 6.26 0.0 0.0
*LAB*TCHa* 0.01 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.0 0.0 0.0
*lab*tch* 0.0 0.0 –
*lab*nch* 1.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.0 0.0 0.0
*lab*tce* 0.0 0.0 –
*lab*ncE* 1.0 0.0 –

$n^* = 0{,}00$
blackness n^*
0,25 0,50 $n^* = 0{,}50$ 0,75 1,00
chromaticness c^*
$n^* = 1{,}0$

Output: Colorimetric Printer Reflective System FRS06
for hue $h^* = lab^*h = 27/360 = 0.076$
lab*tch* and *lab*nch

D65: hue R
LCH*Ma: 33 73 27
olv*Ma: 1.0 0.0 0.16

triangle lightness t^*



%Gamut
u^*_{rel} = 115
%Regularity
$g^*_{H,rel}$ = 28
$g^*_{C,rel}$ = 28

FRS06; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	32.57	62.32	46.49	77.75	37
Y_{Ma}	82.73	−3.16	113.99	114.03	92
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N_{Ma}	6.25	0.0	0.0	0.0	0
W_{Ma}	91.97	0.0	0.0	0.0	0
R_{CIE}	39.92	59.8	31.05	67.38	27
J_{CIE}	81.26	−2.52	76.25	76.29	92
G_{CIE}	52.23	−41.56	17.14	44.96	158
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***relative* Inform. Technology (IT)**
*olvi3** 1.0 1.0 1.0 (1.0)
*cmyn3** 0.0 0.0 0.0 (0.0)
*olvi4** 1.0 1.0 1.0 1.0
*cmyn4** 0.0 0.0 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 91.97 −0.17 −5.11
*LAB*LABa* 91.97 0.0 0.0
*LAB*TCHa* 99.99 0.01 –
relative* CIELAB *lab*
*lab*lab* 1.0 0.0 0.0
*lab*tch* 1.0 0.0 –
*lab*nch* 0.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 1.0 0.0 0.0
*lab*tce* 1.0 0.0 –
*lab*ncE* 0.0 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 1.0 0.5 0.579 (1.0)
*cmyn3** 0.0 0.5 0.421 (0.0)
*olvi4** 1.0 0.5 0.579 1.0
*cmyn4** 0.0 0.5 0.421 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 62.42 31.92 12.98
*LAB*LABa* 62.42 32.6 16.92
*LAB*TCHa* 75.0 36.73 27.44
relative* CIELAB *lab*
*lab*lab* 0.655 0.444 0.23
*lab*tch* 0.75 0.5 0.076
*lab*nch* 0.0 0.5 0.076
***relative* Natural Colour (NC)**
*lab*lrj* 0.655 0.5 0.0
*lab*tce* 0.75 0.5 1.0
*lab*ncE* 0.0 0.5 b99r

***relative* Inform. Technology (IT)**
*olvi3** 1.0 0.0 0.157 (1.0)
*cmyn3** 0.0 1.0 0.843 (0.0)
*olvi4** 1.0 0.0 0.157 1.0
*cmyn4** 0.0 1.0 0.843 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 32.88 64.01 31.07
*LAB*LABa* 32.88 65.19 33.85
*LAB*TCHa* 50.0 73.46 27.44
relative* CIELAB *lab*
*lab*lab* 0.311 0.887 0.461
*lab*tch* 0.5 1.0 0.076
*lab*nch* 0.0 1.0 0.076
***relative* Natural Colour (NC)**
*lab*lrj* 0.311 1.0 0.0
*lab*tce* 0.5 1.0 0.0
*lab*ncE* 0.0 1.0 r00j

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.5 0.5 (1.0)
*cmyn3** 0.5 0.5 0.5 (0.0)
*olvi4** 1.0 1.0 1.0 0.5
*cmyn4** 0.0 0.0 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 49.11 −0.89 −3.42
*LAB*LABa* 49.11 0.0 0.0
*LAB*TCHa* 50.0 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.5 0.0 0.0
*lab*tch* 0.5 0.0 –
*lab*nch* 0.5 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.5 0.0 0.0
*lab*tce* 0.5 0.0 –
*lab*ncE* 0.5 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.0 0.079 (1.0)
*cmyn3** 0.5 1.0 0.921 (0.0)
*olvi4** 1.0 0.5 0.579 0.5
*cmyn4** 0.0 0.5 0.421 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 19.57 31.19 14.68
*LAB*LABa* 19.57 32.6 16.93
*LAB*TCHa* 25.01 36.73 27.45
relative* CIELAB *lab*
*lab*lab* 0.155 0.444 0.23
*lab*tch* 0.25 0.5 0.076
*lab*nch* 0.5 0.5 0.076
***relative* Natural Colour (NC)**
*lab*lrj* 0.155 0.5 0.0
*lab*tce* 0.25 0.5 0.0
*lab*ncE* 0.5 0.5 r00j

***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.0 0.0 (1.0)
*cmyn3** 1.0 1.0 1.0 (0.0)
*olvi4** 1.0 1.0 1.0 0.0
*cmyn4** 0.0 0.0 0.0 1.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 6.26 −1.62 −1.73
*LAB*LABa* 6.26 0.0 0.0
*LAB*TCHa* 0.01 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.0 0.0 0.0
*lab*tch* 0.0 0.0 –
*lab*nch* 1.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.0 0.0 0.0
*lab*tce* 0.0 0.0 –
*lab*ncE* 1.0 0.0 –

$n^* = 0{,}00$
blackness n^*
0,25 0,50 $n^* = 0{,}50$ 0,75 1,00
chromaticness c^*
$n^* = 1{,}0$

VE210−7, 3 step scales for constant CIELAB hue 27/360 = 0.076 (left)
3 step scales for constant CIELAB hue 27/360 = 0.076 (right)

BAM-test chart VE21; Colorimetric systems FRS06 & FRS06
D65: 2 coordinate data of 3 step colour scales for 10 hues

input: *olv* setrgbcolor*
output: *no change compared to input*

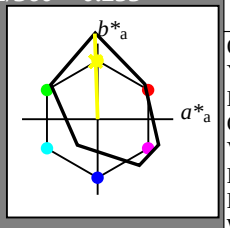
See for similar files: http://www.ps.bam.de/VE21/
Technical information: http://www.ps.bam.de Version 2.1, io=1,1

BAM registration: 20060101-VE21/10L/L21E06NP.PS/.PDF BAM material: code=rha4ta
application for evaluation and measurement of printer or monitor systems
/VE21/ Form: 7/10, Serie: 1/1, Page: 7 Page: count: 1

Input: Colorimetric Printer Reflective System FRS06
for hue $h^* = lab^*h = 92/360 = 0.255$
lab*tch* and *lab*nch

D65: hue J
LCH*Ma: 82 113 92
olv*Ma: 0.99 1.0 0.0

triangle lightness t^*



%Gamut
u^*_{rel} = 115
%Regularity
$g^*_{H,rel}$ = 28
$g^*_{C,rel}$ = 28

FRS06; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	32.57	62.32	46.49	77.75	37
Y_{Ma}	82.73	−3.16	113.99	114.03	92
L_{Ma}	39.43	−61.79	45.84	76.95	143
C_{Ma}	47.86	−26.79	−34.24	43.49	232
V_{Ma}	10.16	55.12	−61.03	82.24	312
M_{Ma}	34.5	80.68	−33.92	87.52	337
N_{Ma}	6.25	0.0	0.0	0.0	0
W_{Ma}	91.97	0.0	0.0	0.0	0
R_{CIE}	39.92	59.8	31.05	67.38	27
J_{CIE}	81.26	−2.52	76.25	76.29	92
G_{CIE}	52.23	−41.56	17.14	44.96	158
B_{CIE}	30.57	2.63	−43.77	43.86	273

***relative* Inform. Technology (IT)**
*olvi3** 1.0 1.0 1.0 (1.0)
*cmyn3** 0.0 0.0 0.0 (0.0)
*olvi4** 1.0 1.0 1.0 1.0
*cmyn4** 0.0 0.0 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 91.97 −0.17 −5.11
*LAB*LABa* 91.97 0.0 0.0
*LAB*TCHa* 99.99 0.01 –
relative* CIELAB *lab*
*lab*lab* 1.0 0.0 0.0
*lab*tch* 1.0 0.0 –
*lab*nch* 0.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 1.0 0.0 0.0
*lab*tce* 1.0 0.0 –
*lab*ncE* 0.0 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.995 1.0 0.5 (1.0)
*cmyn3** 0.005 0.0 0.5 (0.0)
*olvi4** 0.995 1.0 0.5 1.0
*cmyn4** 0.005 0.0 0.5 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 87.13 −2.12 51.73
*LAB*LABa* 87.13 −1.86 56.65
*LAB*TCHa* 75.0 56.68 91.89
relative* CIELAB *lab*
*lab*lab* 0.944 −0.016 0.5
*lab*tch* 0.75 0.5 0.255
*lab*nch* 0.0 0.5 0.255
***relative* Natural Colour (NC)**
*lab*lrj* 0.944 0.0 0.5
*lab*tce* 0.75 0.5 0.25
*lab*ncE* 0.0 0.5 r99j

***relative* Inform. Technology (IT)**
*olvi3** 0.99 1.0 0.0 (1.0)
*cmyn3** 0.01 0.0 1.0 (0.0)
*olvi4** 0.99 1.0 0.0 1.0
*cmyn4** 0.01 0.0 1.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 82.3 −4.09 108.56
*LAB*LABa* 82.3 −3.74 113.29
*LAB*TCHa* 50.0 113.35 91.9
relative* CIELAB *lab*
*lab*lab* 0.887 −0.032 0.999
*lab*tch* 0.5 1.0 0.255
*lab*nch* 0.0 1.0 0.255
***relative* Natural Colour (NC)**
*lab*lrj* 0.887 0.0 1.0
*lab*tce* 0.5 1.0 0.25
*lab*ncE* 0.0 1.0 r99j

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.5 0.5 (1.0)
*cmyn3** 0.5 0.5 0.5 (0.0)
*olvi4** 1.0 1.0 1.0 0.5
*cmyn4** 0.0 0.0 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 49.11 −0.89 −3.42
*LAB*LABa* 49.11 0.0 0.0
*LAB*TCHa* 50.0 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.5 0.0 0.0
*lab*tch* 0.5 0.0 –
*lab*nch* 0.5 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.5 0.0 0.0
*lab*tce* 0.5 0.0 –
*lab*ncE* 0.5 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.495 0.5 0.0 (1.0)
*cmyn3** 0.505 0.5 1.0 (0.0)
*olvi4** 0.995 1.0 0.5 0.5
*cmyn4** 0.005 0.0 0.5 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 44.28 −2.86 53.41
*LAB*LABa* 44.28 −1.87 56.64
*LAB*TCHa* 25.01 56.67 91.9
relative* CIELAB *lab*
*lab*lab* 0.444 −0.016 0.5
*lab*tch* 0.25 0.5 0.255
*lab*nch* 0.5 0.5 0.255
***relative* Natural Colour (NC)**
*lab*lrj* 0.444 0.0 0.5
*lab*tce* 0.25 0.5 0.25
*lab*ncE* 0.5 0.5 j00g

***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.0 0.0 (1.0)
*cmyn3** 1.0 1.0 1.0 (0.0)
*olvi4** 1.0 1.0 1.0 0.0
*cmyn4** 0.0 0.0 0.0 1.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 6.26 −1.62 −1.73
*LAB*LABa* 6.26 0.0 0.0
*LAB*TCHa* 0.01 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.0 0.0 0.0
*lab*tch* 0.0 0.0 –
*lab*nch* 1.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.0 0.0 0.0
*lab*tce* 0.0 0.0 –
*lab*ncE* 1.0 0.0 –

$n^* = 0{,}00$

blackness n^*

0,25 0,50 $n^* = 0{,}50$ 0,75 1,00

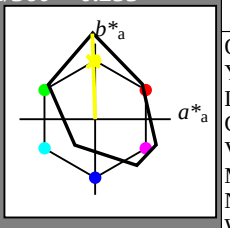
chromaticness c^*

$n^* = 1{,}0$

Output: Colorimetric Printer Reflective System FRS06
for hue $h^* = lab^*h = 92/360 = 0.255$
lab*tch* and *lab*nch

D65: hue J
LCH*Ma: 82 113 92
olv*Ma: 0.99 1.0 0.0

triangle lightness t^*



%Gamut
u^*_{rel} = 115
%Regularity
$g^*_{H,rel}$ = 28
$g^*_{C,rel}$ = 28

FRS06; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	32.57	62.32	46.49	77.75	37
Y_{Ma}	82.73	−3.16	113.99	114.03	92
L_{Ma}	39.43	−61.79	45.84	76.95	143
C_{Ma}	47.86	−26.79	−34.24	43.49	232
V_{Ma}	10.16	55.12	−61.03	82.24	312
M_{Ma}	34.5	80.68	−33.92	87.52	337
N_{Ma}	6.25	0.0	0.0	0.0	0
W_{Ma}	91.97	0.0	0.0	0.0	0
R_{CIE}	39.92	59.8	31.05	67.38	27
J_{CIE}	81.26	−2.52	76.25	76.29	92
G_{CIE}	52.23	−41.56	17.14	44.96	158
B_{CIE}	30.57	2.63	−43.77	43.86	273

***relative* Inform. Technology (IT)**
*olvi3** 1.0 1.0 1.0 (1.0)
*cmyn3** 0.0 0.0 0.0 (0.0)
*olvi4** 1.0 1.0 1.0 1.0
*cmyn4** 0.0 0.0 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 91.97 −0.17 −5.11
*LAB*LABa* 91.97 0.0 0.0
*LAB*TCHa* 99.99 0.01 –
relative* CIELAB *lab*
*lab*lab* 1.0 0.0 0.0
*lab*tch* 1.0 0.0 –
*lab*nch* 0.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 1.0 0.0 0.0
*lab*tce* 1.0 0.0 –
*lab*ncE* 0.0 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.995 1.0 0.5 (1.0)
*cmyn3** 0.005 0.0 0.5 (0.0)
*olvi4** 0.995 1.0 0.5 1.0
*cmyn4** 0.005 0.0 0.5 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 87.13 −2.12 51.73
*LAB*LABa* 87.13 −1.86 56.65
*LAB*TCHa* 75.0 56.68 91.89
relative* CIELAB *lab*
*lab*lab* 0.944 −0.016 0.5
*lab*tch* 0.75 0.5 0.255
*lab*nch* 0.0 0.5 0.255
***relative* Natural Colour (NC)**
*lab*lrj* 0.944 0.0 0.5
*lab*tce* 0.75 0.5 0.25
*lab*ncE* 0.0 0.5 r99j

***relative* Inform. Technology (IT)**
*olvi3** 0.99 1.0 0.0 (1.0)
*cmyn3** 0.01 0.0 1.0 (0.0)
*olvi4** 0.99 1.0 0.0 1.0
*cmyn4** 0.01 0.0 1.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 82.3 −4.09 108.56
*LAB*LABa* 82.3 −3.74 113.29
*LAB*TCHa* 50.0 113.35 91.9
relative* CIELAB *lab*
*lab*lab* 0.887 −0.032 0.999
*lab*tch* 0.5 1.0 0.255
*lab*nch* 0.0 1.0 0.255
***relative* Natural Colour (NC)**
*lab*lrj* 0.887 0.0 1.0
*lab*tce* 0.5 1.0 0.25
*lab*ncE* 0.0 1.0 r99j

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.5 0.5 (1.0)
*cmyn3** 0.5 0.5 0.5 (0.0)
*olvi4** 1.0 1.0 1.0 0.5
*cmyn4** 0.0 0.0 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 49.11 −0.89 −3.42
*LAB*LABa* 49.11 0.0 0.0
*LAB*TCHa* 50.0 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.5 0.0 0.0
*lab*tch* 0.5 0.0 –
*lab*nch* 0.5 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.5 0.0 0.0
*lab*tce* 0.5 0.0 –
*lab*ncE* 0.5 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.495 0.5 0.0 (1.0)
*cmyn3** 0.505 0.5 1.0 (0.0)
*olvi4** 0.995 1.0 0.5 0.5
*cmyn4** 0.005 0.0 0.5 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 44.28 −2.86 53.41
*LAB*LABa* 44.28 −1.87 56.64
*LAB*TCHa* 25.01 56.67 91.9
relative* CIELAB *lab*
*lab*lab* 0.444 −0.016 0.5
*lab*tch* 0.25 0.5 0.255
*lab*nch* 0.5 0.5 0.255
***relative* Natural Colour (NC)**
*lab*lrj* 0.444 0.0 0.5
*lab*tce* 0.25 0.5 0.25
*lab*ncE* 0.5 0.5 j00g

***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.0 0.0 (1.0)
*cmyn3** 1.0 1.0 1.0 (0.0)
*olvi4** 1.0 1.0 1.0 0.0
*cmyn4** 0.0 0.0 0.0 1.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 6.26 −1.62 −1.73
*LAB*LABa* 6.26 0.0 0.0
*LAB*TCHa* 0.01 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.0 0.0 0.0
*lab*tch* 0.0 0.0 –
*lab*nch* 1.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.0 0.0 0.0
*lab*tce* 0.0 0.0 –
*lab*ncE* 1.0 0.0 –

$n^* = 0{,}00$

blackness n^*

0,25 0,50 $n^* = 0{,}50$ 0,75 1,00

chromaticness c^*

$n^* = 1{,}0$

VE210−7, 3 step scales for constant CIELAB hue 92/360 = 0.255 (left)

3 step scales for constant CIELAB hue 92/360 = 0.255 (right)

See for similar files: http://www.ps.bam.de/VE21/
Technical information: http://www.ps.bam.de Version 2.1, io=1,1

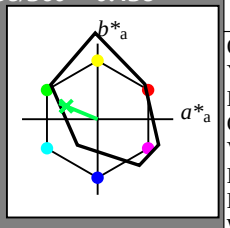
BAM registration: 20060101-VE21/10L/L21E07NP.PS/.PDF BAM material: code=rha4ta
application for evaluation and measurement of printer or monitor systems

/VE21/ Form: 8/10, Serie: 1/1, Page: 8 Page: count: 1

Input: Colorimetric Printer Reflective System FRS06
for hue *h = lab*h = 158/360 = 0.438**
lab*tch* and *lab*nch

D65: hue G
LCH*Ma: 42 55 158
olv*Ma: 0.0 1.0 0.31

triangle lightness *t**



%Gamut
u^*_{rel} = 115
%Regularity
$g^*_{H,rel}$ = 28
$g^*_{C,rel}$ = 28

FRS06; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	32.57	62.32	46.49	77.75	37
Y_{Ma}	82.73	−3.16	113.99	114.03	92
L_{Ma}	39.43	−61.79	45.84	76.95	143
C_{Ma}	47.86	−26.79	−34.24	43.49	232
V_{Ma}	10.16	55.12	−61.03	82.24	312
M_{Ma}	34.5	80.68	−33.92	87.52	337
N_{Ma}	6.25	0.0	0.0	0.0	0
W_{Ma}	91.97	0.0	0.0	0.0	0
R_{CIE}	39.92	59.8	31.05	67.38	27
J_{CIE}	81.26	−2.52	76.25	76.29	92
G_{CIE}	52.23	−41.56	17.14	44.96	158
B_{CIE}	30.57	2.63	−43.77	43.86	273

***relative* Inform. Technology (IT)**
*olvi3** 1.0 1.0 1.0 (1.0)
*cmyn3** 0.0 0.0 0.0 (0.0)
*olvi4** 1.0 1.0 1.0 1.0
*cmyn4** 0.0 0.0 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 91.97 −0.17 −5.11
*LAB*LABa* 91.97 0.0 0.0
*LAB*TCHa* 99.99 0.01 –
relative* CIELAB *lab*
*lab*lab* 1.0 0.0 0.0
*lab*tch* 1.0 0.0 –
*lab*nch* 0.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 1.0 0.0 0.0
*lab*tce* 1.0 0.0 –
*lab*ncE* 0.0 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.5 1.0 0.655 (1.0)
*cmyn3** 0.5 0.0 0.345 (0.0)
*olvi4** 0.5 1.0 0.655 1.0
*cmyn4** 0.5 0.0 0.345 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 67.0 −26.06 6.38
*LAB*LABa* 67.0 −25.46 10.5
*LAB*TCHa* 75.0 27.55 157.59
relative* CIELAB *lab*
*lab*lab* 0.709 −0.461 0.191
*lab*tch* 0.75 0.5 0.438
*lab*nch* 0.0 0.5 0.438
***relative* Natural Colour (NC)**
*lab*lrj* 0.709 −0.499 0.0
*lab*tce* 0.75 0.5 0.5
*lab*ncE* 0.0 0.5 g00b

***relative* Inform. Technology (IT)**
*olvi3** 0.0 1.0 0.31 (1.0)
*cmyn3** 1.0 0.0 0.69 (0.0)
*olvi4** 0.0 1.0 0.31 1.0
*cmyn4** 1.0 0.0 0.69 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 42.04 −51.96 17.87
*LAB*LABa* 42.04 −50.93 21.01
*LAB*TCHa* 50.0 55.11 157.59
relative* CIELAB *lab*
*lab*lab* 0.418 −0.923 0.381
*lab*tch* 0.5 1.0 0.438
*lab*nch* 0.0 1.0 0.438
***relative* Natural Colour (NC)**
*lab*lrj* 0.418 −0.999 0.0
*lab*tce* 0.5 1.0 0.5
*lab*ncE* 0.0 1.0 j99g

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.5 0.5 (1.0)
*cmyn3** 0.5 0.5 0.5 (0.0)
*olvi4** 1.0 1.0 1.0 0.5
*cmyn4** 0.0 0.0 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 49.11 −0.89 −3.42
*LAB*LABa* 49.11 0.0 0.0
*LAB*TCHa* 50.0 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.5 0.0 0.0
*lab*tch* 0.5 0.0 –
*lab*nch* 0.5 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.5 0.0 0.0
*lab*tce* 0.5 0.0 –
*lab*ncE* 0.5 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.5 0.155 (1.0)
*cmyn3** 1.0 0.5 0.845 (0.0)
*olvi4** 0.5 1.0 0.655 0.5
*cmyn4** 0.5 0.0 0.345 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 24.15 −26.79 8.07
*LAB*LABa* 24.15 −25.46 10.51
*LAB*TCHa* 25.01 27.56 157.58
relative* CIELAB *lab*
*lab*lab* 0.209 −0.461 0.191
*lab*tch* 0.25 0.5 0.438
*lab*nch* 0.5 0.5 0.438
***relative* Natural Colour (NC)**
*lab*lrj* 0.209 −0.499 0.0
*lab*tce* 0.25 0.5 0.5
*lab*ncE* 0.5 0.5 j99g

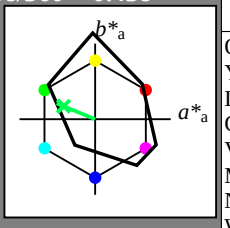
***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.0 0.0 (1.0)
*cmyn3** 1.0 1.0 1.0 (0.0)
*olvi4** 1.0 1.0 1.0 0.0
*cmyn4** 0.0 0.0 0.0 1.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 6.26 −1.62 −1.73
*LAB*LABa* 6.26 0.0 0.0
*LAB*TCHa* 0.01 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.0 0.0 0.0
*lab*tch* 0.0 0.0 –
*lab*nch* 1.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.0 0.0 0.0
*lab*tce* 0.0 0.0 –
*lab*ncE* 1.0 0.0 –

*n** = 0,00
blackness *n**
0,25 0,50 *n** = 0,50 0,75 1,00
chromaticness *c**
*n** = 1,0

Output: Colorimetric Printer Reflective System FRS06
for hue *h = lab*h = 158/360 = 0.438**
lab*tch* and *lab*nch

D65: hue G
LCH*Ma: 42 55 158
olv*Ma: 0.0 1.0 0.31

triangle lightness *t**



%Gamut
u^*_{rel} = 115
%Regularity
$g^*_{H,rel}$ = 28
$g^*_{C,rel}$ = 28

FRS06; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	32.57	62.32	46.49	77.75	37
Y_{Ma}	82.73	−3.16	113.99	114.03	92
L_{Ma}	39.43	−61.79	45.84	76.95	143
C_{Ma}	47.86	−26.79	−34.24	43.49	232
V_{Ma}	10.16	55.12	−61.03	82.24	312
M_{Ma}	34.5	80.68	−33.92	87.52	337
N_{Ma}	6.25	0.0	0.0	0.0	0
W_{Ma}	91.97	0.0	0.0	0.0	0
R_{CIE}	39.92	59.8	31.05	67.38	27
J_{CIE}	81.26	−2.52	76.25	76.29	92
G_{CIE}	52.23	−41.56	17.14	44.96	158
B_{CIE}	30.57	2.63	−43.77	43.86	273

***relative* Inform. Technology (IT)**
*olvi3** 1.0 1.0 1.0 (1.0)
*cmyn3** 0.0 0.0 0.0 (0.0)
*olvi4** 1.0 1.0 1.0 1.0
*cmyn4** 0.0 0.0 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 91.97 −0.17 −5.11
*LAB*LABa* 91.97 0.0 0.0
*LAB*TCHa* 99.99 0.01 –
relative* CIELAB *lab*
*lab*lab* 1.0 0.0 0.0
*lab*tch* 1.0 0.0 –
*lab*nch* 0.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 1.0 0.0 0.0
*lab*tce* 1.0 0.0 –
*lab*ncE* 0.0 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.5 1.0 0.655 (1.0)
*cmyn3** 0.5 0.0 0.345 (0.0)
*olvi4** 0.5 1.0 0.655 1.0
*cmyn4** 0.5 0.0 0.345 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 67.0 −26.06 6.38
*LAB*LABa* 67.0 −25.46 10.5
*LAB*TCHa* 75.0 27.55 157.59
relative* CIELAB *lab*
*lab*lab* 0.709 −0.461 0.191
*lab*tch* 0.75 0.5 0.438
*lab*nch* 0.0 0.5 0.438
***relative* Natural Colour (NC)**
*lab*lrj* 0.709 −0.499 0.0
*lab*tce* 0.75 0.5 0.5
*lab*ncE* 0.0 0.5 g00b

***relative* Inform. Technology (IT)**
*olvi3** 0.0 1.0 0.31 (1.0)
*cmyn3** 1.0 0.0 0.69 (0.0)
*olvi4** 0.0 1.0 0.31 1.0
*cmyn4** 1.0 0.0 0.69 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 42.04 −51.96 17.87
*LAB*LABa* 42.04 −50.93 21.01
*LAB*TCHa* 50.0 55.11 157.59
relative* CIELAB *lab*
*lab*lab* 0.418 −0.923 0.381
*lab*tch* 0.5 1.0 0.438
*lab*nch* 0.0 1.0 0.438
***relative* Natural Colour (NC)**
*lab*lrj* 0.418 −0.999 0.0
*lab*tce* 0.5 1.0 0.5
*lab*ncE* 0.0 1.0 j99g

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.5 0.5 (1.0)
*cmyn3** 0.5 0.5 0.5 (0.0)
*olvi4** 1.0 1.0 1.0 0.5
*cmyn4** 0.0 0.0 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 49.11 −0.89 −3.42
*LAB*LABa* 49.11 0.0 0.0
*LAB*TCHa* 50.0 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.5 0.0 0.0
*lab*tch* 0.5 0.0 –
*lab*nch* 0.5 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.5 0.0 0.0
*lab*tce* 0.5 0.0 –
*lab*ncE* 0.5 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.5 0.155 (1.0)
*cmyn3** 1.0 0.5 0.845 (0.0)
*olvi4** 0.5 1.0 0.655 0.5
*cmyn4** 0.5 0.0 0.345 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 24.15 −26.79 8.07
*LAB*LABa* 24.15 −25.46 10.51
*LAB*TCHa* 25.01 27.56 157.58
relative* CIELAB *lab*
*lab*lab* 0.209 −0.461 0.191
*lab*tch* 0.25 0.5 0.438
*lab*nch* 0.5 0.5 0.438
***relative* Natural Colour (NC)**
*lab*lrj* 0.209 −0.499 0.0
*lab*tce* 0.25 0.5 0.5
*lab*ncE* 0.5 0.5 j99g

***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.0 0.0 (1.0)
*cmyn3** 1.0 1.0 1.0 (0.0)
*olvi4** 1.0 1.0 1.0 0.0
*cmyn4** 0.0 0.0 0.0 1.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 6.26 −1.62 −1.73
*LAB*LABa* 6.26 0.0 0.0
*LAB*TCHa* 0.01 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.0 0.0 0.0
*lab*tch* 0.0 0.0 –
*lab*nch* 1.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.0 0.0 0.0
*lab*tce* 0.0 0.0 –
*lab*ncE* 1.0 0.0 –

*n** = 0,00
blackness *n**
0,25 0,50 *n** = 0,50 0,75 1,00
chromaticness *c**
*n** = 1,0

VE210−7, 3 step scales for constant CIELAB hue 158/360 = 0.438 (left)
3 step scales for constant CIELAB hue 158/360 = 0.438 (right)

BAM-test chart VE21; Colorimetric systems FRS06 & FRS06
D65: 2 coordinate data of 3 step colour scales for 10 hues

input: *olv* setrgbcolor*
output: *no change compared to input*

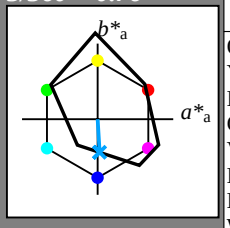
See for similar files: http://www.ps.bam.de/VE21/
Technical information: http://www.ps.bam.de Version 2.1, io=1,1

BAM registration: 20060101-VE21/10L/L21E08NP.PS/.PDF BAM material: code=rha4ta
application for evaluation and measurement of printer or monitor systems
/VE21/ Form: 9/10, Serie: 1/1, Page: 9 Page: count: 1

Input: Colorimetric Printer Reflective System FRS06
for hue $h^* = lab^*h = 273/360 = 0.76$
lab*tch* and *lab*nch

D65: hue B
LCH*Ma: 34 44 273
olv*Ma: 0.0 0.64 1.0

triangle lightness t^*



%Gamut
u^*_{rel} = 115
%Regularity
$g^*_{H,rel}$ = 28
$g^*_{C,rel}$ = 28

FRS06; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	32.57	62.32	46.49	77.75	37
Y_{Ma}	82.73	−3.16	113.99	114.03	92
L_{Ma}	39.43	−61.79	45.84	76.95	143
C_{Ma}	47.86	−26.79	−34.24	43.49	232
V_{Ma}	10.16	55.12	−61.03	82.24	312
M_{Ma}	34.5	80.68	−33.92	87.52	337
N_{Ma}	6.25	0.0	0.0	0.0	0
W_{Ma}	91.97	0.0	0.0	0.0	0
R_{CIE}	39.92	59.8	31.05	67.38	27
J_{CIE}	81.26	−2.52	76.25	76.29	92
G_{CIE}	52.23	−41.56	17.14	44.96	158
B_{CIE}	30.57	2.63	−43.77	43.86	273

***relative* Inform. Technology (IT)**
*olvi3** 1.0 1.0 1.0 (1.0)
*cmyn3** 0.0 0.0 0.0 (0.0)
*olvi4** 1.0 1.0 1.0 1.0
*cmyn4** 0.0 0.0 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 91.97 −0.17 −5.11
*LAB*LABa* 91.97 0.0 0.0
*LAB*TCHa* 99.99 0.01 –
relative* CIELAB *lab*
*lab*lab* 1.0 0.0 0.0
*lab*tch* 1.0 0.0 –
*lab*nch* 0.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 1.0 0.0 0.0
*lab*tce* 1.0 0.0 –
*lab*ncE* 0.0 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.82 1.0 (1.0)
*cmyn3** 0.5 0.18 0.0 (0.0)
*olvi4** 0.5 0.82 1.0 1.0
*cmyn4** 0.5 0.18 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 63.14 0.64 −25.89
*LAB*LABa* 63.14 1.31 −21.92
*LAB*TCHa* 75.0 21.97 273.42
relative* CIELAB *lab*
*lab*lab* 0.664 0.03 −0.498
*lab*tch* 0.75 0.5 0.76
*lab*nch* 0.0 0.5 0.76
***relative* Natural Colour (NC)**
*lab*lrj* 0.664 0.0 −0.499
*lab*tce* 0.75 0.5 0.75
*lab*ncE* 0.0 0.5 g99b

***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.641 1.0 (1.0)
*cmyn3** 1.0 0.359 0.0 (0.0)
*olvi4** 0.0 0.641 1.0 1.0
*cmyn4** 1.0 0.359 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 34.32 1.48 −46.69
*LAB*LABa* 34.32 2.63 −43.85
*LAB*TCHa* 50.0 43.94 273.43
relative* CIELAB *lab*
*lab*lab* 0.327 0.06 −0.997
*lab*tch* 0.5 1.0 0.76
*lab*nch* 0.0 1.0 0.76
***relative* Natural Colour (NC)**
*lab*lrj* 0.327 0.0 −0.999
*lab*tce* 0.5 1.0 0.75
*lab*ncE* 0.0 1.0 g99b

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.5 0.5 (1.0)
*cmyn3** 0.5 0.5 0.5 (0.0)
*olvi4** 1.0 1.0 1.0 0.5
*cmyn4** 0.0 0.0 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 49.11 −0.89 −3.42
*LAB*LABa* 49.11 0.0 0.0
*LAB*TCHa* 50.0 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.5 0.0 0.0
*lab*tch* 0.5 0.0 –
*lab*nch* 0.5 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.5 0.0 0.0
*lab*tce* 0.5 0.0 –
*lab*ncE* 0.5 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.32 0.5 (1.0)
*cmyn3** 1.0 0.68 0.5 (0.0)
*olvi4** 0.5 0.82 1.0 0.5
*cmyn4** 0.5 0.18 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 20.29 −0.06 −24.21
*LAB*LABa* 20.29 1.32 −21.92
*LAB*TCHa* 25.01 21.97 273.44
relative* CIELAB *lab*
*lab*lab* 0.164 0.03 −0.498
*lab*tch* 0.25 0.5 0.76
*lab*nch* 0.5 0.5 0.76
***relative* Natural Colour (NC)**
*lab*lrj* 0.164 0.0 −0.499
*lab*tce* 0.25 0.5 0.75
*lab*ncE* 0.5 0.5 b00r

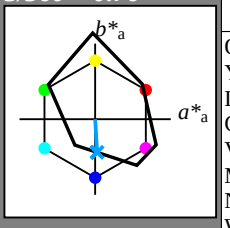
***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.0 0.0 (1.0)
*cmyn3** 1.0 1.0 1.0 (0.0)
*olvi4** 1.0 1.0 1.0 0.0
*cmyn4** 0.0 0.0 0.0 1.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 6.26 −1.62 −1.73
*LAB*LABa* 6.26 0.0 0.0
*LAB*TCHa* 0.01 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.0 0.0 0.0
*lab*tch* 0.0 0.0 –
*lab*nch* 1.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.0 0.0 0.0
*lab*tce* 0.0 0.0 –
*lab*ncE* 1.0 0.0 –

$n^* = 0{,}00$
blackness n^*
0,25 0,50 $n^* = 0{,}50$ 0,75 1,00
chromaticness c^*
$n^* = 1{,}0$

Output: Colorimetric Printer Reflective System FRS06
for hue $h^* = lab^*h = 273/360 = 0.76$
lab*tch* and *lab*nch

D65: hue B
LCH*Ma: 34 44 273
olv*Ma: 0.0 0.64 1.0

triangle lightness t^*



%Gamut
u^*_{rel} = 115
%Regularity
$g^*_{H,rel}$ = 28
$g^*_{C,rel}$ = 28

FRS06; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	32.57	62.32	46.49	77.75	37
Y_{Ma}	82.73	−3.16	113.99	114.03	92
L_{Ma}	39.43	−61.79	45.84	76.95	143
C_{Ma}	47.86	−26.79	−34.24	43.49	232
V_{Ma}	10.16	55.12	−61.03	82.24	312
M_{Ma}	34.5	80.68	−33.92	87.52	337
N_{Ma}	6.25	0.0	0.0	0.0	0
W_{Ma}	91.97	0.0	0.0	0.0	0
R_{CIE}	39.92	59.8	31.05	67.38	27
J_{CIE}	81.26	−2.52	76.25	76.29	92
G_{CIE}	52.23	−41.56	17.14	44.96	158
B_{CIE}	30.57	2.63	−43.77	43.86	273

***relative* Inform. Technology (IT)**
*olvi3** 1.0 1.0 1.0 (1.0)
*cmyn3** 0.0 0.0 0.0 (0.0)
*olvi4** 1.0 1.0 1.0 1.0
*cmyn4** 0.0 0.0 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 91.97 −0.17 −5.11
*LAB*LABa* 91.97 0.0 0.0
*LAB*TCHa* 99.99 0.01 –
relative* CIELAB *lab*
*lab*lab* 1.0 0.0 0.0
*lab*tch* 1.0 0.0 –
*lab*nch* 0.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 1.0 0.0 0.0
*lab*tce* 1.0 0.0 –
*lab*ncE* 0.0 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.82 1.0 (1.0)
*cmyn3** 0.5 0.18 0.0 (0.0)
*olvi4** 0.5 0.82 1.0 1.0
*cmyn4** 0.5 0.18 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 63.14 0.64 −25.89
*LAB*LABa* 63.14 1.31 −21.92
*LAB*TCHa* 75.0 21.97 273.42
relative* CIELAB *lab*
*lab*lab* 0.664 0.03 −0.498
*lab*tch* 0.75 0.5 0.76
*lab*nch* 0.0 0.5 0.76
***relative* Natural Colour (NC)**
*lab*lrj* 0.664 0.0 −0.499
*lab*tce* 0.75 0.5 0.75
*lab*ncE* 0.0 0.5 g99b

***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.641 1.0 (1.0)
*cmyn3** 1.0 0.359 0.0 (0.0)
*olvi4** 0.0 0.641 1.0 1.0
*cmyn4** 1.0 0.359 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 34.32 1.48 −46.69
*LAB*LABa* 34.32 2.63 −43.85
*LAB*TCHa* 50.0 43.94 273.43
relative* CIELAB *lab*
*lab*lab* 0.327 0.06 −0.997
*lab*tch* 0.5 1.0 0.76
*lab*nch* 0.0 1.0 0.76
***relative* Natural Colour (NC)**
*lab*lrj* 0.327 0.0 −0.999
*lab*tce* 0.5 1.0 0.75
*lab*ncE* 0.0 1.0 g99b

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.5 0.5 (1.0)
*cmyn3** 0.5 0.5 0.5 (0.0)
*olvi4** 1.0 1.0 1.0 0.5
*cmyn4** 0.0 0.0 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 49.11 −0.89 −3.42
*LAB*LABa* 49.11 0.0 0.0
*LAB*TCHa* 50.0 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.5 0.0 0.0
*lab*tch* 0.5 0.0 –
*lab*nch* 0.5 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.5 0.0 0.0
*lab*tce* 0.5 0.0 –
*lab*ncE* 0.5 0.0 –

***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.32 0.5 (1.0)
*cmyn3** 1.0 0.68 0.5 (0.0)
*olvi4** 0.5 0.82 1.0 0.5
*cmyn4** 0.5 0.18 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 20.29 −0.06 −24.21
*LAB*LABa* 20.29 1.32 −21.92
*LAB*TCHa* 25.01 21.97 273.44
relative* CIELAB *lab*
*lab*lab* 0.164 0.03 −0.498
*lab*tch* 0.25 0.5 0.76
*lab*nch* 0.5 0.5 0.76
***relative* Natural Colour (NC)**
*lab*lrj* 0.164 0.0 −0.499
*lab*tce* 0.25 0.5 0.75
*lab*ncE* 0.5 0.5 b00r

***relative* Inform. Technology (IT)**
*olvi3** 0.0 0.0 0.0 (1.0)
*cmyn3** 1.0 1.0 1.0 (0.0)
*olvi4** 1.0 1.0 1.0 0.0
*cmyn4** 0.0 0.0 0.0 1.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 6.26 −1.62 −1.73
*LAB*LABa* 6.26 0.0 0.0
*LAB*TCHa* 0.01 0.01 –
relative* CIELAB *lab*
*lab*lab* 0.0 0.0 0.0
*lab*tch* 0.0 0.0 –
*lab*nch* 1.0 0.0 –
***relative* Natural Colour (NC)**
*lab*lrj* 0.0 0.0 0.0
*lab*tce* 0.0 0.0 –
*lab*ncE* 1.0 0.0 –

$n^* = 0{,}00$
blackness n^*
0,25 0,50 $n^* = 0{,}50$ 0,75 1,00
chromaticness c^*
$n^* = 1{,}0$

VE210−7, 3 step scales for constant CIELAB hue 273/360 = 0.76 (left)
3 step scales for constant CIELAB hue 273/360 = 0.76 (right)

BAM-test chart VE21; Colorimetric systems FRS06 & FRS06
D65: 2 coordinate data of 3 step colour scales for 10 hues

input: *olv* setrgbcolor*
output: *no change compared to input*

See for similar files: http://www.ps.bam.de/VE21/
Technical information: http://www.ps.bam.de Version 2.1, io=1,1

BAM registration: 20060101-VE21/10L/L21E09NP.PS/.PDF BAM material: code=rha4ta
application for evaluation and measurement of printer or monitor systems
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