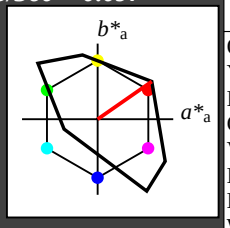
Input: Colorimetric Television Luminous System TLS18

for hue *h = lab*h = 35/360 = 0.097**
lab*tch* and *lab*nch

D65: hue O
LCH*Ma: 53 87 35
olv*Ma: 1.0 0.0 0.0

triangle lightness *t**



%Gamut
u*rel = 118
%Regularity
g*H,rel = 22
g*C,rel = 40

TLS18; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	52.76	71.63	49.88	87.29	35
Y_{Ma}	92.74	−20.02	84.97	87.3	103
L_{Ma}	84.0	−78.98	73.94	108.2	137
C_{Ma}	87.14	−44.41	−13.11	46.32	196
V_{Ma}	35.47	64.92	−95.06	115.12	304
M_{Ma}	59.01	89.33	−55.67	105.26	328
N_{Ma}	18.01	0.0	0.0	0.0	0
W_{Ma}	95.41	0.0	0.0	0.0	0
R_{CIE}	39.92	58.74	27.99	65.07	25
J_{CIE}	81.26	−2.88	71.56	71.62	92
G_{CIE}	52.23	−42.41	13.6	44.55	162
B_{CIE}	30.57	1.41	−46.46	46.49	272

***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* 95.41 0.0 0.0
*LAB*LABa* 95.41 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* 56.72 0.0 0.0
*LAB*LABa* 56.72 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* 18.03 0.0 0.0
*LAB*LABa* 18.03 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* 74.08 35.81 24.94
*LAB*LABa* 74.08 35.81 24.94
*LAB*TCHa* 75.0 43.63 34.85
relative* CIELAB *lab*
*lab*lab* 0.724 0.41 0.286
*lab*tch* 0.75 0.5 0.097
*lab*nch* 0.0 0.5 0.097
***relative* Natural Colour (NC)**
*lab*lrj* 0.724 0.488 0.109
*lab*tce* 0.75 0.5 0.035
*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* 35.39 35.81 24.94
*LAB*LABa* 35.39 35.81 24.94
*LAB*TCHa* 25.01 43.63 34.85
relative* CIELAB *lab*
*lab*lab* 0.225 0.41 0.286
*lab*tch* 0.25 0.5 0.097
*lab*nch* 0.5 0.5 0.097
***relative* Natural Colour (NC)**
*lab*lrj* 0.225 0.488 0.109
*lab*tce* 0.25 0.5 0.035
*lab*ncE* 0.5 0.5 r14j

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*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* 52.76 71.62 49.87
*LAB*LABa* 52.76 71.62 49.87
*LAB*TCHa* 50.0 87.27 34.85
relative* CIELAB *lab*
*lab*lab* 0.449 0.82 0.571
*lab*tch* 0.5 1.0 0.097
*lab*nch* 0.0 1.0 0.097
***relative* Natural Colour (NC)**
*lab*lrj* 0.449 0.976 0.218
*lab*tce* 0.5 1.0 0.035
*lab*ncE* 0.0 1.0 r14j

***n** = 0,00*

blackness *n**

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

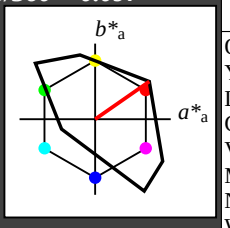
chromaticness *c**

Output: Colorimetric Television Luminous System TLS18

for hue *h = lab*h = 35/360 = 0.097**
lab*tch* and *lab*nch

D65: hue O
LCH*Ma: 53 87 35
olv*Ma: 1.0 0.0 0.0

triangle lightness *t**



%Gamut
u*rel = 118
%Regularity
g*H,rel = 22
g*C,rel = 40

TLS18; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
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V_{Ma}	35.47	64.92	−95.06	115.12	304
M_{Ma}	59.01	89.33	−55.67	105.26	328
N_{Ma}	18.01	0.0	0.0	0.0	0
W_{Ma}	95.41	0.0	0.0	0.0	0
R_{CIE}	39.92	58.74	27.99	65.07	25
J_{CIE}	81.26	−2.88	71.56	71.62	92
G_{CIE}	52.23	−42.41	13.6	44.55	162
B_{CIE}	30.57	1.41	−46.46	46.49	272

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*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
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*LAB*LAB* 95.41 0.0 0.0
*LAB*LABa* 95.41 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* 56.72 0.0 0.0
*LAB*LABa* 56.72 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* 18.03 0.0 0.0
*LAB*LABa* 18.03 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)
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*lab*nch* 0.0 0.5 0.097
***relative* Natural Colour (NC)**
*lab*lrj* 0.724 0.488 0.109
*lab*tce* 0.75 0.5 0.035
*lab*ncE* 0.0 0.5 r14j

***relative* Inform. Technology (IT)**
*olvi3** 0.5 0.0 0.0 (1.0)
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*olvi4** 1.0 0.5 0.5 0.5
*cmyn4** 0.0 0.5 0.5 0.5
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*LAB*LABa* 35.39 35.81 24.94
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*lab*nch* 0.5 0.5 0.097
***relative* Natural Colour (NC)**
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*olvi3** 1.0 0.0 0.0 (1.0)
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*cmyn4** 0.0 1.0 1.0 0.0
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*lab*nch* 0.0 1.0 0.097
***relative* Natural Colour (NC)**
*lab*lrj* 0.449 0.976 0.218
*lab*tce* 0.5 1.0 0.035
*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**

NE190−7, 3 step scales for constant CIELAB hue 35/360 = 0.097 (left)

3 step scales for constant CIELAB hue 35/360 = 0.097 (right)

See for similar files: http://www.ps.bam.de/NE19/
Technical information: http://www.ps.bam.de Version 2.1, io=1,1, CIELAB

BAM registration: 20060101-NE19/10S/S19E00FP.PS/.PDF BAM material: code=rha4ta
application for evaluation and measurement of printer or monitor systems

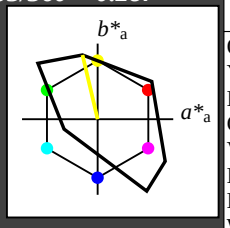
/NE19/ Form: 1/10, Serie: 1/1, Page: 1 Page: count: 1

Input: Colorimetric Television Luminous System TLS18

for hue *h = lab*h = 103/360 = 0.287**
lab*tch* and *lab*nch

D65: hue Y
LCH*Ma: 93 87 103
olv*Ma: 1.0 1.0 0.0

triangle lightness *t**



%Gamut
u^*_{rel} = 118
%Regularity
$g^*_{H,rel}$ = 22
$g^*_{C,rel}$ = 40

TLS18; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	52.76	71.63	49.88	87.29	35
Y_{Ma}	92.74	−20.02	84.97	87.3	103
L_{Ma}	84.0	−78.98	73.94	108.2	137
C_{Ma}	87.14	−44.41	−13.11	46.32	196
V_{Ma}	35.47	64.92	−95.06	115.12	304
M_{Ma}	59.01	89.33	−55.67	105.26	328
N_{Ma}	18.01	0.0	0.0	0.0	0
W_{Ma}	95.41	0.0	0.0	0.0	0
R_{CIE}	39.92	58.74	27.99	65.07	25
J_{CIE}	81.26	−2.88	71.56	71.62	92
G_{CIE}	52.23	−42.41	13.6	44.55	162
B_{CIE}	30.57	1.41	−46.46	46.49	272

***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* 95.41 0.0 0.0
*LAB*LABa* 95.41 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* 94.07 −10.0 42.48
*LAB*LABa* 94.07 −10.0 42.48
*LAB*TCHa* 75.0 43.64 103.26
relative* CIELAB *lab*
*lab*lab* 0.983 −0.114 0.487
*lab*tch* 0.75 0.5 0.287
*lab*nch* 0.0 0.5 0.287
***relative* Natural Colour (NC)**
*lab*lrj* 0.983 −0.121 0.485
*lab*tce* 0.75 0.5 0.289
*lab*ncE* 0.0 0.5 j15g

***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* 92.73 −20.02 84.95
*LAB*LABa* 92.73 −20.02 84.95
*LAB*TCHa* 50.0 87.28 103.26
relative* CIELAB *lab*
*lab*lab* 0.965 −0.228 0.973
*lab*tch* 0.5 1.0 0.287
*lab*nch* 0.0 1.0 0.287
***relative* Natural Colour (NC)**
*lab*lrj* 0.965 −0.243 0.97
*lab*tce* 0.5 1.0 0.289
*lab*ncE* 0.0 1.0 j15g

***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* 56.72 0.0 0.0
*LAB*LABa* 56.72 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* 55.38 −10.0 42.48
*LAB*LABa* 55.38 −10.0 42.48
*LAB*TCHa* 25.01 43.64 103.26
relative* CIELAB *lab*
*lab*lab* 0.483 −0.114 0.487
*lab*tch* 0.25 0.5 0.287
*lab*nch* 0.5 0.5 0.287
***relative* Natural Colour (NC)**
*lab*lrj* 0.483 −0.121 0.485
*lab*tce* 0.25 0.5 0.289
*lab*ncE* 0.5 0.5 j15g

***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
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***standard* and *adapted* CIELAB**
*LAB*LAB* 18.03 0.0 0.0
*LAB*LABa* 18.03 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**

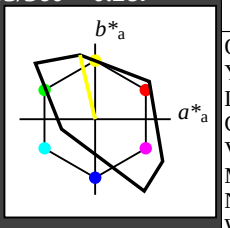
*n** = 1,0

Output: Colorimetric Television Luminous System TLS18

for hue *h = lab*h = 103/360 = 0.287**
lab*tch* and *lab*nch

D65: hue Y
LCH*Ma: 93 87 103
olv*Ma: 1.0 1.0 0.0

triangle lightness *t**



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*cmyn3** 0.0 0.0 0.0 (0.0)
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*LAB*LAB* 95.41 0.0 0.0
*LAB*LABa* 95.41 0.0 0.0
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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* 94.07 −10.0 42.48
*LAB*LABa* 94.07 −10.0 42.48
*LAB*TCHa* 75.0 43.64 103.26
relative* CIELAB *lab*
*lab*lab* 0.983 −0.114 0.487
*lab*tch* 0.75 0.5 0.287
*lab*nch* 0.0 0.5 0.287
***relative* Natural Colour (NC)**
*lab*lrj* 0.983 −0.121 0.485
*lab*tce* 0.75 0.5 0.289
*lab*ncE* 0.0 0.5 j15g

***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* 92.73 −20.02 84.95
*LAB*LABa* 92.73 −20.02 84.95
*LAB*TCHa* 50.0 87.28 103.26
relative* CIELAB *lab*
*lab*lab* 0.965 −0.228 0.973
*lab*tch* 0.5 1.0 0.287
*lab*nch* 0.0 1.0 0.287
***relative* Natural Colour (NC)**
*lab*lrj* 0.965 −0.243 0.97
*lab*tce* 0.5 1.0 0.289
*lab*ncE* 0.0 1.0 j15g

***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* 56.72 0.0 0.0
*LAB*LABa* 56.72 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* 55.38 −10.0 42.48
*LAB*LABa* 55.38 −10.0 42.48
*LAB*TCHa* 25.01 43.64 103.26
relative* CIELAB *lab*
*lab*lab* 0.483 −0.114 0.487
*lab*tch* 0.25 0.5 0.287
*lab*nch* 0.5 0.5 0.287
***relative* Natural Colour (NC)**
*lab*lrj* 0.483 −0.121 0.485
*lab*tce* 0.25 0.5 0.289
*lab*ncE* 0.5 0.5 j15g

***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* 18.03 0.0 0.0
*LAB*LABa* 18.03 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

NE190−7, 3 step scales for constant CIELAB hue 103/360 = 0.287 (left)

3 step scales for constant CIELAB hue 103/360 = 0.287 (right)

See for similar files: http://www.ps.bam.de/NE19/
Technical information: http://www.ps.bam.de Version 2.1, io=1,1, CIELAB

BAM registration: 20060101-NE19/10S/S19E01FP.PS/.PDF BAM material: code=rha4ta
application for evaluation and measurement of printer or monitor systems

/NE19/ Form: 2/10, Serie: 1/1, Page: 2 Page: count: 2

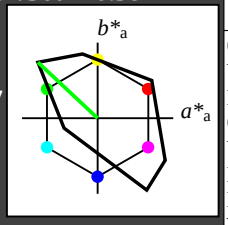
BAM-test chart NE19; Colorimetric systems TLS18 & TLS18
D65: 2 coordinate data of 3 step colour scales for 10 hues

input: *olv* setrgbcolor*
output: *olv* setrgbcolor / w* setgray*

Input: Colorimetric Television Luminous System TLS18
for hue $h^* = lab^*h = 137/360 = 0.38$
lab*tch* and *lab*nch

D65: hue L
LCH*Ma: 84 108 137
olv*Ma: 0.0 1.0 0.0

triangle lightness t^*



TLS18; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	52.76	71.63	49.88	87.29	35
Y_{Ma}	92.74	−20.02	84.97	87.3	103
L_{Ma}	84.0	−78.98	73.94	108.2	137
C_{Ma}	87.14	−44.41	−13.11	46.32	196
V_{Ma}	35.47	64.92	−95.06	115.12	304
M_{Ma}	59.01	89.33	−55.67	105.26	328
N_{Ma}	18.01	0.0	0.0	0.0	0
W_{Ma}	95.41	0.0	0.0	0.0	0
R_{CIE}	39.92	58.74	27.99	65.07	25
J_{CIE}	81.26	−2.88	71.56	71.62	92
G_{CIE}	52.23	−42.41	13.6	44.55	162
B_{CIE}	30.57	1.41	−46.46	46.49	272

%Gamut
u^*_{rel} = 118
%Regularity
$g^*_{H,rel}$ = 22
$g^*_{C,rel}$ = 40

***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* 95.41 0.0 0.0
*LAB*LABa* 95.41 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* 56.72 0.0 0.0
*LAB*LABa* 56.72 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* 18.03 0.0 0.0
*LAB*LABa* 18.03 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** 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* 89.7 −39.48 36.96
*LAB*LABa* 89.7 −39.48 36.96
*LAB*TCHa* 75.0 54.09 136.89
relative* CIELAB *lab*
*lab*lab* 0.926 −0.364 0.342
*lab*tch* 0.75 0.5 0.38
*lab*nch* 0.0 0.5 0.38
***relative* Natural Colour (NC)**
*lab*lrj* 0.926 −0.42 0.269
*lab*tce* 0.75 0.5 0.409
*lab*ncE* 0.0 0.5 j63g

***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* 51.01 −39.48 36.96
*LAB*LABa* 51.01 −39.48 36.96
*LAB*TCHa* 25.01 54.09 136.89
relative* CIELAB *lab*
*lab*lab* 0.426 −0.364 0.342
*lab*tch* 0.25 0.5 0.38
*lab*nch* 0.5 0.5 0.38
***relative* Natural Colour (NC)**
*lab*lrj* 0.426 −0.42 0.269
*lab*tce* 0.25 0.5 0.409
*lab*ncE* 0.5 0.5 j63g

***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* 83.99 −78.96 73.93
*LAB*LABa* 83.99 −78.96 73.93
*LAB*TCHa* 50.0 108.18 136.89
relative* CIELAB *lab*
*lab*lab* 0.853 −0.729 0.683
*lab*tch* 0.5 1.0 0.38
*lab*nch* 0.0 1.0 0.38
***relative* Natural Colour (NC)**
*lab*lrj* 0.853 −0.841 0.539
*lab*tce* 0.5 1.0 0.409
*lab*ncE* 0.0 1.0 j63g

$n^* = 0,00$

blackness n^*

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

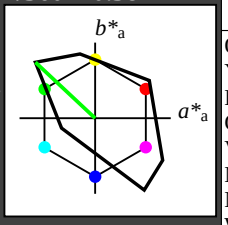
chromaticness c^*

NE190−7, 3 step scales for constant CIELAB hue 137/360 = 0.38 (left)

Output: Colorimetric Television Luminous System TLS18
for hue $h^* = lab^*h = 137/360 = 0.38$
lab*tch* and *lab*nch

D65: hue L
LCH*Ma: 84 108 137
olv*Ma: 0.0 1.0 0.0

triangle lightness t^*



TLS18; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	52.76	71.63	49.88	87.29	35
Y_{Ma}	92.74	−20.02	84.97	87.3	103
L_{Ma}	84.0	−78.98	73.94	108.2	137
C_{Ma}	87.14	−44.41	−13.11	46.32	196
V_{Ma}	35.47	64.92	−95.06	115.12	304
M_{Ma}	59.01	89.33	−55.67	105.26	328
N_{Ma}	18.01	0.0	0.0	0.0	0
W_{Ma}	95.41	0.0	0.0	0.0	0
R_{CIE}	39.92	58.74	27.99	65.07	25
J_{CIE}	81.26	−2.88	71.56	71.62	92
G_{CIE}	52.23	−42.41	13.6	44.55	162
B_{CIE}	30.57	1.41	−46.46	46.49	272

%Gamut
u^*_{rel} = 118
%Regularity
$g^*_{H,rel}$ = 22
$g^*_{C,rel}$ = 40

***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* 95.41 0.0 0.0
*LAB*LABa* 95.41 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* 56.72 0.0 0.0
*LAB*LABa* 56.72 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* 18.03 0.0 0.0
*LAB*LABa* 18.03 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** 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* 89.7 −39.48 36.96
*LAB*LABa* 89.7 −39.48 36.96
*LAB*TCHa* 75.0 54.09 136.89
relative* CIELAB *lab*
*lab*lab* 0.926 −0.364 0.342
*lab*tch* 0.75 0.5 0.38
*lab*nch* 0.0 0.5 0.38
***relative* Natural Colour (NC)**
*lab*lrj* 0.926 −0.42 0.269
*lab*tce* 0.75 0.5 0.409
*lab*ncE* 0.0 0.5 j63g

***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* 51.01 −39.48 36.96
*LAB*LABa* 51.01 −39.48 36.96
*LAB*TCHa* 25.01 54.09 136.89
relative* CIELAB *lab*
*lab*lab* 0.426 −0.364 0.342
*lab*tch* 0.25 0.5 0.38
*lab*nch* 0.5 0.5 0.38
***relative* Natural Colour (NC)**
*lab*lrj* 0.426 −0.42 0.269
*lab*tce* 0.25 0.5 0.409
*lab*ncE* 0.5 0.5 j63g

***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* 83.99 −78.96 73.93
*LAB*LABa* 83.99 −78.96 73.93
*LAB*TCHa* 50.0 108.18 136.89
relative* CIELAB *lab*
*lab*lab* 0.853 −0.729 0.683
*lab*tch* 0.5 1.0 0.38
*lab*nch* 0.0 1.0 0.38
***relative* Natural Colour (NC)**
*lab*lrj* 0.853 −0.841 0.539
*lab*tce* 0.5 1.0 0.409
*lab*ncE* 0.0 1.0 j63g

$n^* = 0,00$

blackness n^*

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

chromaticness c^*

3 step scales for constant CIELAB hue 137/360 = 0.38 (right)

See for similar files: http://www.ps.bam.de/NE19/
Technical information: http://www.ps.bam.de Version 2.1, io=1,1, CIELAB

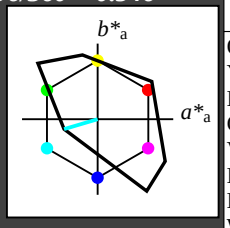
BAM registration: 20060101-NE19/10S/S19E02FP.PS/.PDF BAM material: code=rha4ta
application for evaluation and measurement of printer or monitor systems

/NE19/ Form: 3/10, Serie: 1/1, Page: 3 Page: count: 3

Input: Colorimetric Television Luminous System TLS18
for hue *h = lab*h = 196/360 = 0.546**
lab*tch* and *lab*nch

D65: hue C
LCH*Ma: 87 46 196
olv*Ma: 0.0 1.0 1.0

triangle lightness *t**



TLS18; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	52.76	71.63	49.88	87.29	35
Y_{Ma}	92.74	−20.02	84.97	87.3	103
L_{Ma}	84.0	−78.98	73.94	108.2	137
C_{Ma}	87.14	−44.41	−13.11	46.32	196
V_{Ma}	35.47	64.92	−95.06	115.12	304
M_{Ma}	59.01	89.33	−55.67	105.26	328
N_{Ma}	18.01	0.0	0.0	0.0	0
W_{Ma}	95.41	0.0	0.0	0.0	0
R_{CIE}	39.92	58.74	27.99	65.07	25
J_{CIE}	81.26	−2.88	71.56	71.62	92
G_{CIE}	52.23	−42.41	13.6	44.55	162
B_{CIE}	30.57	1.41	−46.46	46.49	272

%Gamut
u^*_{rel} = 118
%Regularity
$g^*_{H,rel}$ = 22
$g^*_{C,rel}$ = 40

***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* 95.41 0.0 0.0
*LAB*LABa* 95.41 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* 91.27 −22.2 −6.55
*LAB*LABa* 91.27 −22.2 −6.55
*LAB*TCHa* 75.0 23.15 196.46
relative* CIELAB *lab*
*lab*lab* 0.946 −0.478 −0.141
*lab*tch* 0.75 0.5 0.546
*lab*nch* 0.0 0.5 0.546
***relative* Natural Colour (NC)**
*lab*lrj* 0.946 −0.44 −0.235
*lab*tce* 0.75 0.5 0.578
*lab*ncE* 0.0 0.5 g31b

***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* 87.13 −44.4 −13.11
*LAB*LABa* 87.13 −44.4 −13.11
*LAB*TCHa* 50.0 46.31 196.46
relative* CIELAB *lab*
*lab*lab* 0.893 −0.958 −0.282
*lab*tch* 0.5 1.0 0.546
*lab*nch* 0.0 1.0 0.546
***relative* Natural Colour (NC)**
*lab*lrj* 0.893 −0.881 −0.47
*lab*tce* 0.5 1.0 0.578
*lab*ncE* 0.0 1.0 g31b

***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* 56.72 0.0 0.0
*LAB*LABa* 56.72 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* 52.58 −22.2 −6.55
*LAB*LABa* 52.58 −22.2 −6.55
*LAB*TCHa* 25.01 23.15 196.46
relative* CIELAB *lab*
*lab*lab* 0.447 −0.478 −0.141
*lab*tch* 0.25 0.5 0.546
*lab*nch* 0.5 0.5 0.546
***relative* Natural Colour (NC)**
*lab*lrj* 0.447 −0.44 −0.235
*lab*tce* 0.25 0.5 0.578
*lab*ncE* 0.5 0.5 g31b

***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* 18.03 0.0 0.0
*LAB*LABa* 18.03 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

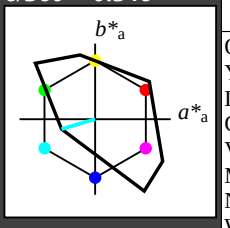
chromaticness *c**

*n** = 1,0

Output: Colorimetric Television Luminous System TLS18
for hue *h = lab*h = 196/360 = 0.546**
lab*tch* and *lab*nch

D65: hue C
LCH*Ma: 87 46 196
olv*Ma: 0.0 1.0 1.0

triangle lightness *t**



TLS18; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	52.76	71.63	49.88	87.29	35
Y_{Ma}	92.74	−20.02	84.97	87.3	103
L_{Ma}	84.0	−78.98	73.94	108.2	137
C_{Ma}	87.14	−44.41	−13.11	46.32	196
V_{Ma}	35.47	64.92	−95.06	115.12	304
M_{Ma}	59.01	89.33	−55.67	105.26	328
N_{Ma}	18.01	0.0	0.0	0.0	0
W_{Ma}	95.41	0.0	0.0	0.0	0
R_{CIE}	39.92	58.74	27.99	65.07	25
J_{CIE}	81.26	−2.88	71.56	71.62	92
G_{CIE}	52.23	−42.41	13.6	44.55	162
B_{CIE}	30.57	1.41	−46.46	46.49	272

%Gamut
u^*_{rel} = 118
%Regularity
$g^*_{H,rel}$ = 22
$g^*_{C,rel}$ = 40

***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* 95.41 0.0 0.0
*LAB*LABa* 95.41 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* 91.27 −22.2 −6.55
*LAB*LABa* 91.27 −22.2 −6.55
*LAB*TCHa* 75.0 23.15 196.46
relative* CIELAB *lab*
*lab*lab* 0.946 −0.478 −0.141
*lab*tch* 0.75 0.5 0.546
*lab*nch* 0.0 0.5 0.546
***relative* Natural Colour (NC)**
*lab*lrj* 0.946 −0.44 −0.235
*lab*tce* 0.75 0.5 0.578
*lab*ncE* 0.0 0.5 g31b

***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* 87.13 −44.4 −13.11
*LAB*LABa* 87.13 −44.4 −13.11
*LAB*TCHa* 50.0 46.31 196.46
relative* CIELAB *lab*
*lab*lab* 0.893 −0.958 −0.282
*lab*tch* 0.5 1.0 0.546
*lab*nch* 0.0 1.0 0.546
***relative* Natural Colour (NC)**
*lab*lrj* 0.893 −0.881 −0.47
*lab*tce* 0.5 1.0 0.578
*lab*ncE* 0.0 1.0 g31b

***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* 56.72 0.0 0.0
*LAB*LABa* 56.72 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* 52.58 −22.2 −6.55
*LAB*LABa* 52.58 −22.2 −6.55
*LAB*TCHa* 25.01 23.15 196.46
relative* CIELAB *lab*
*lab*lab* 0.447 −0.478 −0.141
*lab*tch* 0.25 0.5 0.546
*lab*nch* 0.5 0.5 0.546
***relative* Natural Colour (NC)**
*lab*lrj* 0.447 −0.44 −0.235
*lab*tce* 0.25 0.5 0.578
*lab*ncE* 0.5 0.5 g31b

***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* 18.03 0.0 0.0
*LAB*LABa* 18.03 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

NE190−7, 3 step scales for constant CIELAB hue 196/360 = 0.546 (left)

3 step scales for constant CIELAB hue 196/360 = 0.546 (right)

See for similar files: http://www.ps.bam.de/NE19/
Technical information: http://www.ps.bam.de Version 2.1, io=1,1, CIELAB

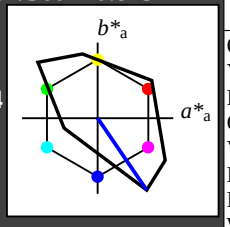
BAM registration: 20060101-NE19/10S/S19E03FP.PS/.PDF BAM material: code=rha4ta
application for evaluation and measurement of printer or monitor systems

/NE19/ Form: 4/10, Serie: 1/1, Page: 4 Page: count: 4

Input: Colorimetric Television Luminous System TLS18
for hue $h^* = lab^*h = 304/360 = 0.845$
lab*tch* and *lab*nch

D65: hue V
LCH*Ma: 35 115 304
olv*Ma: 0.0 0.0 1.0

triangle lightness t^*



TLS18; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	52.76	71.63	49.88	87.29	35
Y_{Ma}	92.74	−20.02	84.97	87.3	103
L_{Ma}	84.0	−78.98	73.94	108.2	137
C_{Ma}	87.14	−44.41	−13.11	46.32	196
V_{Ma}	35.47	64.92	−95.06	115.12	304
M_{Ma}	59.01	89.33	−55.67	105.26	328
N_{Ma}	18.01	0.0	0.0	0.0	0
W_{Ma}	95.41	0.0	0.0	0.0	0
R_{CIE}	39.92	58.74	27.99	65.07	25
J_{CIE}	81.26	−2.88	71.56	71.62	92
G_{CIE}	52.23	−42.41	13.6	44.55	162
B_{CIE}	30.57	1.41	−46.46	46.49	272

%Gamut
u^*_{rel} = 118
%Regularity
$g^*_{H,rel}$ = 22
$g^*_{C,rel}$ = 40

***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* 95.41 0.0 0.0
*LAB*LABa* 95.41 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* 65.44 32.45 −47.52
*LAB*LABa* 65.44 32.45 −47.52
*LAB*TCHa* 75.0 57.55 304.33
relative* CIELAB *lab*
*lab*lab* 0.613 0.282 −0.412
*lab*tch* 0.75 0.5 0.845
*lab*nch* 0.0 0.5 0.845
***relative* Natural Colour (NC)**
*lab*lrj* 0.613 0.217 −0.449
*lab*tce* 0.75 0.5 0.822
*lab*ncE* 0.0 0.5 b28r

***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* 35.47 64.91 −95.04
*LAB*LABa* 35.47 64.91 −95.04
*LAB*TCHa* 50.0 115.1 304.33
relative* CIELAB *lab*
*lab*lab* 0.226 0.564 −0.825
*lab*tch* 0.5 1.0 0.845
*lab*nch* 0.0 1.0 0.845
***relative* Natural Colour (NC)**
*lab*lrj* 0.226 0.435 −0.899
*lab*tce* 0.5 1.0 0.822
*lab*ncE* 0.0 1.0 b28r

***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* 56.72 0.0 0.0
*LAB*LABa* 56.72 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* 26.75 32.45 −47.52
*LAB*LABa* 26.75 32.45 −47.52
*LAB*TCHa* 25.01 57.55 304.33
relative* CIELAB *lab*
*lab*lab* 0.113 0.282 −0.412
*lab*tch* 0.25 0.5 0.845
*lab*nch* 0.5 0.5 0.845
***relative* Natural Colour (NC)**
*lab*lrj* 0.113 0.217 −0.449
*lab*tce* 0.25 0.5 0.822
*lab*ncE* 0.5 0.5 b28r

***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* 18.03 0.0 0.0
*LAB*LABa* 18.03 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

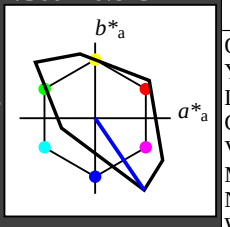
chromaticness c^*

$n^* = 1{,}0$

Output: Colorimetric Television Luminous System TLS18
for hue $h^* = lab^*h = 304/360 = 0.845$
lab*tch* and *lab*nch

D65: hue V
LCH*Ma: 35 115 304
olv*Ma: 0.0 0.0 1.0

triangle lightness t^*



TLS18; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	52.76	71.63	49.88	87.29	35
Y_{Ma}	92.74	−20.02	84.97	87.3	103
L_{Ma}	84.0	−78.98	73.94	108.2	137
C_{Ma}	87.14	−44.41	−13.11	46.32	196
V_{Ma}	35.47	64.92	−95.06	115.12	304
M_{Ma}	59.01	89.33	−55.67	105.26	328
N_{Ma}	18.01	0.0	0.0	0.0	0
W_{Ma}	95.41	0.0	0.0	0.0	0
R_{CIE}	39.92	58.74	27.99	65.07	25
J_{CIE}	81.26	−2.88	71.56	71.62	92
G_{CIE}	52.23	−42.41	13.6	44.55	162
B_{CIE}	30.57	1.41	−46.46	46.49	272

%Gamut
u^*_{rel} = 118
%Regularity
$g^*_{H,rel}$ = 22
$g^*_{C,rel}$ = 40

***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* 95.41 0.0 0.0
*LAB*LABa* 95.41 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* 65.44 32.45 −47.52
*LAB*LABa* 65.44 32.45 −47.52
*LAB*TCHa* 75.0 57.55 304.33
relative* CIELAB *lab*
*lab*lab* 0.613 0.282 −0.412
*lab*tch* 0.75 0.5 0.845
*lab*nch* 0.0 0.5 0.845
***relative* Natural Colour (NC)**
*lab*lrj* 0.613 0.217 −0.449
*lab*tce* 0.75 0.5 0.822
*lab*ncE* 0.0 0.5 b28r

***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* 35.47 64.91 −95.04
*LAB*LABa* 35.47 64.91 −95.04
*LAB*TCHa* 50.0 115.1 304.33
relative* CIELAB *lab*
*lab*lab* 0.226 0.564 −0.825
*lab*tch* 0.5 1.0 0.845
*lab*nch* 0.0 1.0 0.845
***relative* Natural Colour (NC)**
*lab*lrj* 0.226 0.435 −0.899
*lab*tce* 0.5 1.0 0.822
*lab*ncE* 0.0 1.0 b28r

***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* 56.72 0.0 0.0
*LAB*LABa* 56.72 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* 26.75 32.45 −47.52
*LAB*LABa* 26.75 32.45 −47.52
*LAB*TCHa* 25.01 57.55 304.33
relative* CIELAB *lab*
*lab*lab* 0.113 0.282 −0.412
*lab*tch* 0.25 0.5 0.845
*lab*nch* 0.5 0.5 0.845
***relative* Natural Colour (NC)**
*lab*lrj* 0.113 0.217 −0.449
*lab*tce* 0.25 0.5 0.822
*lab*ncE* 0.5 0.5 b28r

***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* 18.03 0.0 0.0
*LAB*LABa* 18.03 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^*

$n^* = 1{,}0$

See for similar files: http://www.ps.bam.de/NE19/
Technical information: http://www.ps.bam.de Version 2.1, io=1,1, CIELAB

BAM registration: 20060101-NE19/10S/S19E04FP.PS/.PDF BAM material: code=rha4ta
application for evaluation and measurement of printer or monitor systems

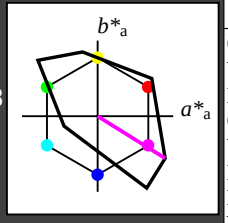
/NE19/ Form: 5/10, Serie: 1/1, Page: 5 Page: count: 5

NE190−7, 3 step scales for constant CIELAB hue 304/360 = 0.845 (left)
3 step scales for constant CIELAB hue 304/360 = 0.845 (right)

Input: Colorimetric Television Luminous System TLS18
for hue $h^* = lab^*h = 328/360 = 0.911$
lab*tch* and *lab*nch

D65: hue M
LCH*Ma: 59 105 328
olv*Ma: 1.0 0.0 1.0

triangle lightness t^*



%Gamut
u^*_{rel} = 118
%Regularity
$g^*_{H,rel}$ = 22
$g^*_{C,rel}$ = 22

TLS18; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	52.76	71.63	49.88	87.29	35
Y_{Ma}	92.74	−20.02	84.97	87.3	103
L_{Ma}	84.0	−78.98	73.94	108.2	137
C_{Ma}	87.14	−44.41	−13.11	46.32	196
V_{Ma}	35.47	64.92	−95.06	115.12	304
M_{Ma}	59.01	89.33	−55.67	105.26	328
N_{Ma}	18.01	0.0	0.0	0.0	0
W_{Ma}	95.41	0.0	0.0	0.0	0
R_{CIE}	39.92	58.74	27.99	65.07	25
J_{CIE}	81.26	−2.88	71.56	71.62	92
G_{CIE}	52.23	−42.41	13.6	44.55	162
B_{CIE}	30.57	1.41	−46.46	46.49	272

***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* 95.41 0.0 0.0
*LAB*LABa* 95.41 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* 56.72 0.0 0.0
*LAB*LABa* 56.72 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* 18.03 0.0 0.0
*LAB*LABa* 18.03 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* 77.21 44.66 −27.82
*LAB*LABa* 77.21 44.66 −27.82
*LAB*TCHa* 75.0 52.62 328.06
relative* CIELAB *lab*
*lab*lab* 0.765 0.424 −0.263
*lab*tch* 0.75 0.5 0.911
*lab*nch* 0.0 0.5 0.911
***relative* Natural Colour (NC)**
*lab*lrj* 0.765 0.351 −0.355
*lab*tce* 0.75 0.5 0.874
*lab*ncE* 0.0 0.5 b49r

***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* 38.51 44.66 −27.82
*LAB*LABa* 38.51 44.66 −27.82
*LAB*TCHa* 25.01 52.62 328.06
relative* CIELAB *lab*
*lab*lab* 0.265 0.424 −0.263
*lab*tch* 0.25 0.5 0.911
*lab*nch* 0.5 0.5 0.911
***relative* Natural Colour (NC)**
*lab*lrj* 0.265 0.351 −0.355
*lab*tce* 0.25 0.5 0.874
*lab*ncE* 0.5 0.5 b49r

***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* 59.01 89.31 −55.66
*LAB*LABa* 59.01 89.31 −55.66
*LAB*TCHa* 50.0 105.24 328.06
relative* CIELAB *lab*
*lab*lab* 0.53 0.848 −0.528
*lab*tch* 0.5 1.0 0.911
*lab*nch* 0.0 1.0 0.911
***relative* Natural Colour (NC)**
*lab*lrj* 0.53 0.702 −0.711
*lab*tce* 0.5 1.0 0.874
*lab*ncE* 0.0 1.0 b49r

$n^* = 0{,}00$

blackness n^*

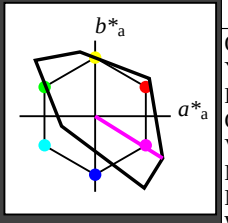
0,25 0,50 $n^* = 0{,}50$ 0,75 1,00

chromaticness c^*

Output: Colorimetric Television Luminous System TLS18
for hue $h^* = lab^*h = 328/360 = 0.911$
lab*tch* and *lab*nch

D65: hue M
LCH*Ma: 59 105 328
olv*Ma: 1.0 0.0 1.0

triangle lightness t^*



%Gamut
u^*_{rel} = 118
%Regularity
$g^*_{H,rel}$ = 22
$g^*_{C,rel}$ = 22

TLS18; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	52.76	71.63	49.88	87.29	35
Y_{Ma}	92.74	−20.02	84.97	87.3	103
L_{Ma}	84.0	−78.98	73.94	108.2	137
C_{Ma}	87.14	−44.41	−13.11	46.32	196
V_{Ma}	35.47	64.92	−95.06	115.12	304
M_{Ma}	59.01	89.33	−55.67	105.26	328
N_{Ma}	18.01	0.0	0.0	0.0	0
W_{Ma}	95.41	0.0	0.0	0.0	0
R_{CIE}	39.92	58.74	27.99	65.07	25
J_{CIE}	81.26	−2.88	71.56	71.62	92
G_{CIE}	52.23	−42.41	13.6	44.55	162
B_{CIE}	30.57	1.41	−46.46	46.49	272

***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* 95.41 0.0 0.0
*LAB*LABa* 95.41 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* 56.72 0.0 0.0
*LAB*LABa* 56.72 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* 18.03 0.0 0.0
*LAB*LABa* 18.03 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* 77.21 44.66 −27.82
*LAB*LABa* 77.21 44.66 −27.82
*LAB*TCHa* 75.0 52.62 328.06
relative* CIELAB *lab*
*lab*lab* 0.765 0.424 −0.263
*lab*tch* 0.75 0.5 0.911
*lab*nch* 0.0 0.5 0.911
***relative* Natural Colour (NC)**
*lab*lrj* 0.765 0.351 −0.355
*lab*tce* 0.75 0.5 0.874
*lab*ncE* 0.0 0.5 b49r

***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* 38.51 44.66 −27.82
*LAB*LABa* 38.51 44.66 −27.82
*LAB*TCHa* 25.01 52.62 328.06
relative* CIELAB *lab*
*lab*lab* 0.265 0.424 −0.263
*lab*tch* 0.25 0.5 0.911
*lab*nch* 0.5 0.5 0.911
***relative* Natural Colour (NC)**
*lab*lrj* 0.265 0.351 −0.355
*lab*tce* 0.25 0.5 0.874
*lab*ncE* 0.5 0.5 b49r

***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* 59.01 89.31 −55.66
*LAB*LABa* 59.01 89.31 −55.66
*LAB*TCHa* 50.0 105.24 328.06
relative* CIELAB *lab*
*lab*lab* 0.53 0.848 −0.528
*lab*tch* 0.5 1.0 0.911
*lab*nch* 0.0 1.0 0.911
***relative* Natural Colour (NC)**
*lab*lrj* 0.53 0.702 −0.711
*lab*tce* 0.5 1.0 0.874
*lab*ncE* 0.0 1.0 b49r

$n^* = 0{,}00$

blackness n^*

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

chromaticness c^*

NE190−7, 3 step scales for constant CIELAB hue 328/360 = 0.911 (left)

3 step scales for constant CIELAB hue 328/360 = 0.911 (right)

See for similar files: http://www.ps.bam.de/NE19/
Technical information: http://www.ps.bam.de Version 2.1, io=1,1, CIELAB

BAM registration: 20060101-NE19/10S/S19E05FP.PS/.PDF BAM material: code=rha4ta
application for evaluation and measurement of printer or monitor systems

/NE19/ Form: 6/10, Serie: 1/1, Page: 6 Page: count: 6

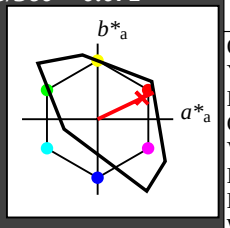
BAM-test chart NE19; Colorimetric systems TLS18 & TLS18
D65: 2 coordinate data of 3 step colour scales for 10 hues

input: *olv* setrgbcolor*
output: *olv* setrgbcolor / w* setgray*

Input: Colorimetric Television Luminous System TLS18
for hue $h^* = lab^*h = 25/360 = 0.071$
lab*tch* and *lab*nch

D65: hue R
LCH*Ma: 54 82 25
olv*Ma: 1.0 0.0 0.14

triangle lightness t^*



%Gamut
u^*_{rel} = 118
%Regularity
$g^*_{H,rel}$ = 22
$g^*_{C,rel}$ = 22

TLS18; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	52.76	71.63	49.88	87.29	35
Y_{Ma}	92.74	−20.02	84.97	87.3	103
L_{Ma}	84.0	−78.98	73.94	108.2	137
C_{Ma}	87.14	−44.41	−13.11	46.32	196
V_{Ma}	35.47	64.92	−95.06	115.12	304
M_{Ma}	59.01	89.33	−55.67	105.26	328
N_{Ma}	18.01	0.0	0.0	0.0	0
W_{Ma}	95.41	0.0	0.0	0.0	0
R_{CIE}	39.92	58.74	27.99	65.07	25
J_{CIE}	81.26	−2.88	71.56	71.62	92
G_{CIE}	52.23	−42.41	13.6	44.55	162
B_{CIE}	30.57	1.41	−46.46	46.49	272

***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* 95.41 0.0 0.0
*LAB*LABa* 95.41 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 0.569 (1.0)
*cmyn3** 0.0 0.5 0.431 (0.0)
*olvi4** 1.0 0.5 0.569 1.0
*cmyn4** 0.0 0.5 0.431 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 74.51 37.03 17.64
*LAB*LABa* 74.51 37.03 17.64
*LAB*TCHa* 75.0 41.02 25.48
relative* CIELAB *lab*
*lab*lab* 0.73 0.451 0.215
*lab*tch* 0.75 0.5 0.071
*lab*nch* 0.0 0.5 0.071
***relative* Natural Colour (NC)**
*lab*lrj* 0.73 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 0.138 (1.0)
*cmyn3** 0.0 1.0 0.862 (0.0)
*olvi4** 1.0 0.0 0.138 1.0
*cmyn4** 0.0 1.0 0.862 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 53.62 74.06 35.3
*LAB*LABa* 53.62 74.06 35.3
*LAB*TCHa* 50.0 82.04 25.48
relative* CIELAB *lab*
*lab*lab* 0.46 0.903 0.43
*lab*tch* 0.5 1.0 0.071
*lab*nch* 0.0 1.0 0.071
***relative* Natural Colour (NC)**
*lab*lrj* 0.46 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* 56.72 0.0 0.0
*LAB*LABa* 56.72 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 0.069 (1.0)
*cmyn3** 0.5 1.0 0.931 (0.0)
*olvi4** 1.0 0.5 0.569 0.5
*cmyn4** 0.0 0.5 0.431 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 35.82 37.03 17.65
*LAB*LABa* 35.82 37.03 17.65
*LAB*TCHa* 25.01 41.02 25.49
relative* CIELAB *lab*
*lab*lab* 0.23 0.451 0.215
*lab*tch* 0.25 0.5 0.071
*lab*nch* 0.5 0.5 0.071
***relative* Natural Colour (NC)**
*lab*lrj* 0.23 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* 18.03 0.0 0.0
*LAB*LABa* 18.03 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

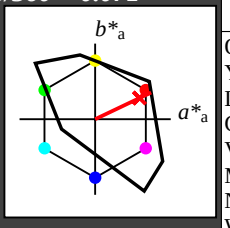
chromaticness c^*

$n^* = 1{,}0$

Output: Colorimetric Television Luminous System TLS18
for hue $h^* = lab^*h = 25/360 = 0.071$
lab*tch* and *lab*nch

D65: hue R
LCH*Ma: 54 82 25
olv*Ma: 1.0 0.0 0.14

triangle lightness t^*



%Gamut
u^*_{rel} = 118
%Regularity
$g^*_{H,rel}$ = 22
$g^*_{C,rel}$ = 22

TLS18; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	52.76	71.63	49.88	87.29	35
Y_{Ma}	92.74	−20.02	84.97	87.3	103
L_{Ma}	84.0	−78.98	73.94	108.2	137
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V_{Ma}	35.47	64.92	−95.06	115.12	304
M_{Ma}	59.01	89.33	−55.67	105.26	328
N_{Ma}	18.01	0.0	0.0	0.0	0
W_{Ma}	95.41	0.0	0.0	0.0	0
R_{CIE}	39.92	58.74	27.99	65.07	25
J_{CIE}	81.26	−2.88	71.56	71.62	92
G_{CIE}	52.23	−42.41	13.6	44.55	162
B_{CIE}	30.57	1.41	−46.46	46.49	272

***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* 95.41 0.0 0.0
*LAB*LABa* 95.41 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 0.569 (1.0)
*cmyn3** 0.0 0.5 0.431 (0.0)
*olvi4** 1.0 0.5 0.569 1.0
*cmyn4** 0.0 0.5 0.431 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 74.51 37.03 17.64
*LAB*LABa* 74.51 37.03 17.64
*LAB*TCHa* 75.0 41.02 25.48
relative* CIELAB *lab*
*lab*lab* 0.73 0.451 0.215
*lab*tch* 0.75 0.5 0.071
*lab*nch* 0.0 0.5 0.071
***relative* Natural Colour (NC)**
*lab*lrj* 0.73 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 0.138 (1.0)
*cmyn3** 0.0 1.0 0.862 (0.0)
*olvi4** 1.0 0.0 0.138 1.0
*cmyn4** 0.0 1.0 0.862 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 53.62 74.06 35.3
*LAB*LABa* 53.62 74.06 35.3
*LAB*TCHa* 50.0 82.04 25.48
relative* CIELAB *lab*
*lab*lab* 0.46 0.903 0.43
*lab*tch* 0.5 1.0 0.071
*lab*nch* 0.0 1.0 0.071
***relative* Natural Colour (NC)**
*lab*lrj* 0.46 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* 56.72 0.0 0.0
*LAB*LABa* 56.72 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 0.069 (1.0)
*cmyn3** 0.5 1.0 0.931 (0.0)
*olvi4** 1.0 0.5 0.569 0.5
*cmyn4** 0.0 0.5 0.431 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 35.82 37.03 17.65
*LAB*LABa* 35.82 37.03 17.65
*LAB*TCHa* 25.01 41.02 25.49
relative* CIELAB *lab*
*lab*lab* 0.23 0.451 0.215
*lab*tch* 0.25 0.5 0.071
*lab*nch* 0.5 0.5 0.071
***relative* Natural Colour (NC)**
*lab*lrj* 0.23 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* 18.03 0.0 0.0
*LAB*LABa* 18.03 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^*

$n^* = 1{,}0$

NE190−7, 3 step scales for constant CIELAB hue 25/360 = 0.071 (left)

3 step scales for constant CIELAB hue 25/360 = 0.071 (right)

See for similar files: http://www.ps.bam.de/NE19/
Technical information: http://www.ps.bam.de Version 2.1, io=1,1, CIELAB

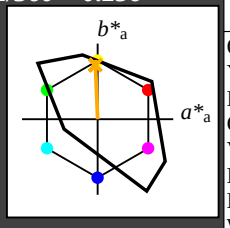
BAM registration: 20060101-NE19/10S/S19E06FP.PS/.PDF BAM material: code=rha4ta
application for evaluation and measurement of printer or monitor systems

/NE19/ Form: 7/10, Serie: 1/1, Page: 7 Page: count: 7

Input: Colorimetric Television Luminous System TLS18
for hue *h = lab*h = 92/360 = 0.256**
lab*tch* and *lab*nch

D65: hue J
LCH*Ma: 85 79 92
olv*Ma: 1.0 0.82 0.0

triangle lightness *t**



%Gamut
u^*_{rel} = 118
%Regularity
$g^*_{H,rel}$ = 22
$g^*_{C,rel}$ = 40

TLS18; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	52.76	71.63	49.88	87.29	35
Y_{Ma}	92.74	−20.02	84.97	87.3	103
L_{Ma}	84.0	−78.98	73.94	108.2	137
C_{Ma}	87.14	−44.41	−13.11	46.32	196
V_{Ma}	35.47	64.92	−95.06	115.12	304
M_{Ma}	59.01	89.33	−55.67	105.26	328
N_{Ma}	18.01	0.0	0.0	0.0	0
W_{Ma}	95.41	0.0	0.0	0.0	0
R_{CIE}	39.92	58.74	27.99	65.07	25
J_{CIE}	81.26	−2.88	71.56	71.62	92
G_{CIE}	52.23	−42.41	13.6	44.55	162
B_{CIE}	30.57	1.41	−46.46	46.49	272

***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* 95.41 0.0 0.0
*LAB*LABa* 95.41 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 0.908 0.5 (1.0)
*cmyn3** 0.0 0.092 0.5 (0.0)
*olvi4** 1.0 0.908 0.5 1.0
*cmyn4** 0.0 0.092 0.5 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 90.39 −1.58 39.25
*LAB*LABa* 90.39 −1.58 39.25
*LAB*TCHa* 75.0 39.29 92.32
relative* CIELAB *lab*
*lab*lab* 0.935 −0.019 0.499
*lab*tch* 0.75 0.5 0.256
*lab*nch* 0.0 0.5 0.256
***relative* Natural Colour (NC)**
*lab*lrj* 0.935 0.0 0.5
*lab*tce* 0.75 0.5 0.25
*lab*ncE* 0.0 0.5 j00g

***relative* Inform. Technology (IT)**
*olvi3** 1.0 0.816 0.0 (1.0)
*cmyn3** 0.0 0.184 1.0 (0.0)
*olvi4** 1.0 0.816 0.0 1.0
*cmyn4** 0.0 0.184 1.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 85.38 −3.17 78.5
*LAB*LABa* 85.38 −3.17 78.5
*LAB*TCHa* 50.0 78.57 92.32
relative* CIELAB *lab*
*lab*lab* 0.87 −0.039 0.999
*lab*tch* 0.5 1.0 0.256
*lab*nch* 0.0 1.0 0.256
***relative* Natural Colour (NC)**
*lab*lrj* 0.87 0.0 1.0
*lab*tce* 0.5 1.0 0.25
*lab*ncE* 0.0 1.0 j00g

***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* 56.72 0.0 0.0
*LAB*LABa* 56.72 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 0.408 0.0 (1.0)
*cmyn3** 0.5 0.592 1.0 (0.0)
*olvi4** 1.0 0.908 0.5 0.5
*cmyn4** 0.0 0.092 0.5 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 51.7 −1.57 39.25
*LAB*LABa* 51.7 −1.57 39.25
*LAB*TCHa* 25.01 39.28 92.31
relative* CIELAB *lab*
*lab*lab* 0.435 −0.019 0.499
*lab*tch* 0.25 0.5 0.256
*lab*nch* 0.5 0.5 0.256
***relative* Natural Colour (NC)**
*lab*lrj* 0.435 0.0 0.5
*lab*tce* 0.25 0.5 0.25
*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* 18.03 0.0 0.0
*LAB*LABa* 18.03 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

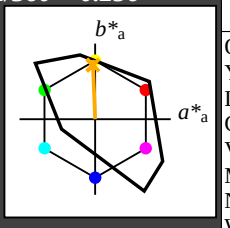
chromaticness *c**

*n** = 1,0

Output: Colorimetric Television Luminous System TLS18
for hue *h = lab*h = 92/360 = 0.256**
lab*tch* and *lab*nch

D65: hue J
LCH*Ma: 85 79 92
olv*Ma: 1.0 0.82 0.0

triangle lightness *t**



%Gamut
u^*_{rel} = 118
%Regularity
$g^*_{H,rel}$ = 22
$g^*_{C,rel}$ = 40

TLS18; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	52.76	71.63	49.88	87.29	35
Y_{Ma}	92.74	−20.02	84.97	87.3	103
L_{Ma}	84.0	−78.98	73.94	108.2	137
C_{Ma}	87.14	−44.41	−13.11	46.32	196
V_{Ma}	35.47	64.92	−95.06	115.12	304
M_{Ma}	59.01	89.33	−55.67	105.26	328
N_{Ma}	18.01	0.0	0.0	0.0	0
W_{Ma}	95.41	0.0	0.0	0.0	0
R_{CIE}	39.92	58.74	27.99	65.07	25
J_{CIE}	81.26	−2.88	71.56	71.62	92
G_{CIE}	52.23	−42.41	13.6	44.55	162
B_{CIE}	30.57	1.41	−46.46	46.49	272

***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* 95.41 0.0 0.0
*LAB*LABa* 95.41 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 0.908 0.5 (1.0)
*cmyn3** 0.0 0.092 0.5 (0.0)
*olvi4** 1.0 0.908 0.5 1.0
*cmyn4** 0.0 0.092 0.5 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 90.39 −1.58 39.25
*LAB*LABa* 90.39 −1.58 39.25
*LAB*TCHa* 75.0 39.29 92.32
relative* CIELAB *lab*
*lab*lab* 0.935 −0.019 0.499
*lab*tch* 0.75 0.5 0.256
*lab*nch* 0.0 0.5 0.256
***relative* Natural Colour (NC)**
*lab*lrj* 0.935 0.0 0.5
*lab*tce* 0.75 0.5 0.25
*lab*ncE* 0.0 0.5 j00g

***relative* Inform. Technology (IT)**
*olvi3** 1.0 0.816 0.0 (1.0)
*cmyn3** 0.0 0.184 1.0 (0.0)
*olvi4** 1.0 0.816 0.0 1.0
*cmyn4** 0.0 0.184 1.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 85.38 −3.17 78.5
*LAB*LABa* 85.38 −3.17 78.5
*LAB*TCHa* 50.0 78.57 92.32
relative* CIELAB *lab*
*lab*lab* 0.87 −0.039 0.999
*lab*tch* 0.5 1.0 0.256
*lab*nch* 0.0 1.0 0.256
***relative* Natural Colour (NC)**
*lab*lrj* 0.87 0.0 1.0
*lab*tce* 0.5 1.0 0.25
*lab*ncE* 0.0 1.0 j00g

***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* 56.72 0.0 0.0
*LAB*LABa* 56.72 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 0.408 0.0 (1.0)
*cmyn3** 0.5 0.592 1.0 (0.0)
*olvi4** 1.0 0.908 0.5 0.5
*cmyn4** 0.0 0.092 0.5 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 51.7 −1.57 39.25
*LAB*LABa* 51.7 −1.57 39.25
*LAB*TCHa* 25.01 39.28 92.31
relative* CIELAB *lab*
*lab*lab* 0.435 −0.019 0.499
*lab*tch* 0.25 0.5 0.256
*lab*nch* 0.5 0.5 0.256
***relative* Natural Colour (NC)**
*lab*lrj* 0.435 0.0 0.5
*lab*tce* 0.25 0.5 0.25
*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* 18.03 0.0 0.0
*LAB*LABa* 18.03 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

NE190−7, 3 step scales for constant CIELAB hue 92/360 = 0.256 (left)

3 step scales for constant CIELAB hue 92/360 = 0.256 (right)

BAM-test chart NE19; Colorimetric systems TLS18 & TLS18
D65: 2 coordinate data of 3 step colour scales for 10 hues

input: *olv* setrgbcolor*
output: *olv* setrgbcolor / w* setgray*

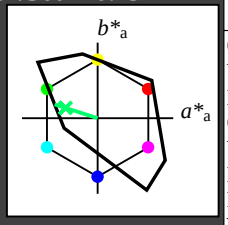
See for similar files: http://www.ps.bam.de/NE19/
Technical information: http://www.ps.bam.de Version 2.1, io=1,1, CIELAB

BAM registration: 20060101-NE19/10S/S19E07FP.PS/.PDF BAM material: code=rha4ta
application for evaluation and measurement of printer or monitor systems

Input: Colorimetric Television Luminous System TLS18
for hue *h = lab*h = 162/360 = 0.451**
lab*tch* and *lab*nch

D65: hue G
LCH*Ma: 86 60 162
olv*Ma: 0.0 1.0 0.64

triangle lightness *t**



TLS18; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	52.76	71.63	49.88	87.29	35
Y_{Ma}	92.74	−20.02	84.97	87.3	103
L_{Ma}	84.0	−78.98	73.94	108.2	137
C_{Ma}	87.14	−44.41	−13.11	46.32	196
V_{Ma}	35.47	64.92	−95.06	115.12	304
M_{Ma}	59.01	89.33	−55.67	105.26	328
N_{Ma}	18.01	0.0	0.0	0.0	0
W_{Ma}	95.41	0.0	0.0	0.0	0
R_{CIE}	39.92	58.74	27.99	65.07	25
J_{CIE}	81.26	−2.88	71.56	71.62	92
G_{CIE}	52.23	−42.41	13.6	44.55	162
B_{CIE}	30.57	1.41	−46.46	46.49	272

%Gamut
u^*_{rel} = 118
%Regularity
$g^*_{H,rel}$ = 22
$g^*_{C,rel}$ = 40

***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* 95.41 0.0 0.0
*LAB*LABa* 95.41 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 0.82 (1.0)
*cmyn3** 0.5 0.0 0.18 (0.0)
*olvi4** 0.5 1.0 0.82 1.0
*cmyn4** 0.5 0.0 0.18 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 90.7 −28.42 9.11
*LAB*LABa* 90.7 −28.42 9.11
*LAB*TCHa* 75.0 29.85 162.23
relative* CIELAB *lab*
*lab*lab* 0.939 −0.475 0.153
*lab*tch* 0.75 0.5 0.451
*lab*nch* 0.0 0.5 0.451
***relative* Natural Colour (NC)**
*lab*lrj* 0.939 −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 0.64 (1.0)
*cmyn3** 1.0 0.0 0.36 (0.0)
*olvi4** 0.0 1.0 0.64 1.0
*cmyn4** 1.0 0.0 0.36 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 86.0 −56.85 18.23
*LAB*LABa* 86.0 −56.85 18.23
*LAB*TCHa* 50.0 59.71 162.23
relative* CIELAB *lab*
*lab*lab* 0.878 −0.951 0.305
*lab*tch* 0.5 1.0 0.451
*lab*nch* 0.0 1.0 0.451
***relative* Natural Colour (NC)**
*lab*lrj* 0.878 −0.999 0.0
*lab*tce* 0.5 1.0 0.5
*lab*ncE* 0.0 1.0 g00b

***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* 56.72 0.0 0.0
*LAB*LABa* 56.72 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 0.32 (1.0)
*cmyn3** 1.0 0.5 0.68 (0.0)
*olvi4** 0.5 1.0 0.82 0.5
*cmyn4** 0.5 0.0 0.18 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 52.01 −28.42 9.12
*LAB*LABa* 52.01 −28.42 9.12
*LAB*TCHa* 25.01 29.86 162.22
relative* CIELAB *lab*
*lab*lab* 0.439 −0.475 0.153
*lab*tch* 0.25 0.5 0.451
*lab*nch* 0.5 0.5 0.451
***relative* Natural Colour (NC)**
*lab*lrj* 0.439 −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* 18.03 0.0 0.0
*LAB*LABa* 18.03 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**

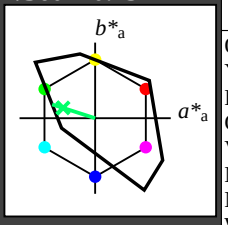
*n** = 1,0

NE190−7, 3 step scales for constant CIELAB hue 162/360 = 0.451 (left)

Output: Colorimetric Television Luminous System TLS18
for hue *h = lab*h = 162/360 = 0.451**
lab*tch* and *lab*nch

D65: hue G
LCH*Ma: 86 60 162
olv*Ma: 0.0 1.0 0.64

triangle lightness *t**



TLS18; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	52.76	71.63	49.88	87.29	35
Y_{Ma}	92.74	−20.02	84.97	87.3	103
L_{Ma}	84.0	−78.98	73.94	108.2	137
C_{Ma}	87.14	−44.41	−13.11	46.32	196
V_{Ma}	35.47	64.92	−95.06	115.12	304
M_{Ma}	59.01	89.33	−55.67	105.26	328
N_{Ma}	18.01	0.0	0.0	0.0	0
W_{Ma}	95.41	0.0	0.0	0.0	0
R_{CIE}	39.92	58.74	27.99	65.07	25
J_{CIE}	81.26	−2.88	71.56	71.62	92
G_{CIE}	52.23	−42.41	13.6	44.55	162
B_{CIE}	30.57	1.41	−46.46	46.49	272

%Gamut
u^*_{rel} = 118
%Regularity
$g^*_{H,rel}$ = 22
$g^*_{C,rel}$ = 40

***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* 95.41 0.0 0.0
*LAB*LABa* 95.41 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 0.82 (1.0)
*cmyn3** 0.5 0.0 0.18 (0.0)
*olvi4** 0.5 1.0 0.82 1.0
*cmyn4** 0.5 0.0 0.18 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 90.7 −28.42 9.11
*LAB*LABa* 90.7 −28.42 9.11
*LAB*TCHa* 75.0 29.85 162.23
relative* CIELAB *lab*
*lab*lab* 0.939 −0.475 0.153
*lab*tch* 0.75 0.5 0.451
*lab*nch* 0.0 0.5 0.451
***relative* Natural Colour (NC)**
*lab*lrj* 0.939 −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 0.64 (1.0)
*cmyn3** 1.0 0.0 0.36 (0.0)
*olvi4** 0.0 1.0 0.64 1.0
*cmyn4** 1.0 0.0 0.36 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 86.0 −56.85 18.23
*LAB*LABa* 86.0 −56.85 18.23
*LAB*TCHa* 50.0 59.71 162.23
relative* CIELAB *lab*
*lab*lab* 0.878 −0.951 0.305
*lab*tch* 0.5 1.0 0.451
*lab*nch* 0.0 1.0 0.451
***relative* Natural Colour (NC)**
*lab*lrj* 0.878 −0.999 0.0
*lab*tce* 0.5 1.0 0.5
*lab*ncE* 0.0 1.0 g00b

***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* 56.72 0.0 0.0
*LAB*LABa* 56.72 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 0.32 (1.0)
*cmyn3** 1.0 0.5 0.68 (0.0)
*olvi4** 0.5 1.0 0.82 0.5
*cmyn4** 0.5 0.0 0.18 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 52.01 −28.42 9.12
*LAB*LABa* 52.01 −28.42 9.12
*LAB*TCHa* 25.01 29.86 162.22
relative* CIELAB *lab*
*lab*lab* 0.439 −0.475 0.153
*lab*tch* 0.25 0.5 0.451
*lab*nch* 0.5 0.5 0.451
***relative* Natural Colour (NC)**
*lab*lrj* 0.439 −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* 18.03 0.0 0.0
*LAB*LABa* 18.03 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

3 step scales for constant CIELAB hue 162/360 = 0.451 (right)

See for similar files: http://www.ps.bam.de/NE19/
Technical information: http://www.ps.bam.de Version 2.1, io=1,1, CIELAB

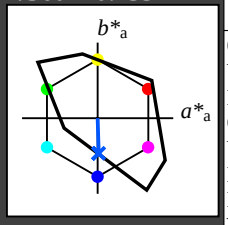
BAM registration: 20060101-NE19/10S/S19E08FP.PS/.PDF BAM material: code=rha4ta
application for evaluation and measurement of printer or monitor systems

/NE19/ Form: 9/10, Serie: 1/1, Page: 9 Page: count: 9

Input: Colorimetric Television Luminous System TLS18
for hue $h^* = lab^*h = 272/360 = 0.755$
lab*tch* and *lab*nch

D65: hue B
LCH*Ma: 65 48 272
olv*Ma: 0.0 0.58 1.0

triangle lightness t^*



%Gamut
u^*_{rel} = 118
%Regularity
$g^*_{H,rel}$ = 22
$g^*_{C,rel}$ = 22

TLS18; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	52.76	71.63	49.88	87.29	35
Y_{Ma}	92.74	−20.02	84.97	87.3	103
L_{Ma}	84.0	−78.98	73.94	108.2	137
C_{Ma}	87.14	−44.41	−13.11	46.32	196
V_{Ma}	35.47	64.92	−95.06	115.12	304
M_{Ma}	59.01	89.33	−55.67	105.26	328
N_{Ma}	18.01	0.0	0.0	0.0	0
W_{Ma}	95.41	0.0	0.0	0.0	0
R_{CIE}	39.92	58.74	27.99	65.07	25
J_{CIE}	81.26	−2.88	71.56	71.62	92
G_{CIE}	52.23	−42.41	13.6	44.55	162
B_{CIE}	30.57	1.41	−46.46	46.49	272

***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* 95.41 0.0 0.0
*LAB*LABa* 95.41 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 0.79 1.0 (1.0)
*cmyn3** 0.5 0.21 0.0 (0.0)
*olvi4** 0.5 0.79 1.0 1.0
*cmyn4** 0.5 0.21 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 80.44 0.71 −23.73
*LAB*LABa* 80.44 0.71 −23.73
*LAB*TCHa* 75.0 23.75 271.72
relative* CIELAB *lab*
*lab*lab* 0.807 0.015 −0.499
*lab*tch* 0.75 0.5 0.755
*lab*nch* 0.0 0.5 0.755
***relative* Natural Colour (NC)**
*lab*lrj* 0.807 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 0.581 1.0 (1.0)
*cmyn3** 1.0 0.419 0.0 (0.0)
*olvi4** 0.0 0.581 1.0 1.0
*cmyn4** 1.0 0.419 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 65.47 1.44 −47.47
*LAB*LABa* 65.47 1.44 −47.47
*LAB*TCHa* 50.0 47.5 271.74
relative* CIELAB *lab*
*lab*lab* 0.613 0.03 −0.998
*lab*tch* 0.5 1.0 0.755
*lab*nch* 0.0 1.0 0.755
***relative* Natural Colour (NC)**
*lab*lrj* 0.613 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* 56.72 0.0 0.0
*LAB*LABa* 56.72 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 0.29 0.5 (1.0)
*cmyn3** 1.0 0.71 0.5 (0.0)
*olvi4** 0.5 0.79 1.0 0.5
*cmyn4** 0.5 0.21 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 41.74 0.72 −23.74
*LAB*LABa* 41.74 0.72 −23.74
*LAB*TCHa* 25.01 23.76 271.75
relative* CIELAB *lab*
*lab*lab* 0.307 0.015 −0.499
*lab*tch* 0.25 0.5 0.755
*lab*nch* 0.5 0.5 0.755
***relative* Natural Colour (NC)**
*lab*lrj* 0.307 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* 18.03 0.0 0.0
*LAB*LABa* 18.03 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

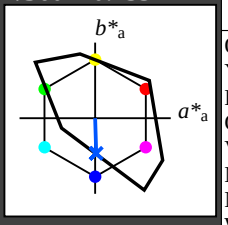
chromaticness c^*

$n^* = 1{,}0$

Output: Colorimetric Television Luminous System TLS18
for hue $h^* = lab^*h = 272/360 = 0.755$
lab*tch* and *lab*nch

D65: hue B
LCH*Ma: 65 48 272
olv*Ma: 0.0 0.58 1.0

triangle lightness t^*



%Gamut
u^*_{rel} = 118
%Regularity
$g^*_{H,rel}$ = 22
$g^*_{C,rel}$ = 22

TLS18; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	52.76	71.63	49.88	87.29	35
Y_{Ma}	92.74	−20.02	84.97	87.3	103
L_{Ma}	84.0	−78.98	73.94	108.2	137
C_{Ma}	87.14	−44.41	−13.11	46.32	196
V_{Ma}	35.47	64.92	−95.06	115.12	304
M_{Ma}	59.01	89.33	−55.67	105.26	328
N_{Ma}	18.01	0.0	0.0	0.0	0
W_{Ma}	95.41	0.0	0.0	0.0	0
R_{CIE}	39.92	58.74	27.99	65.07	25
J_{CIE}	81.26	−2.88	71.56	71.62	92
G_{CIE}	52.23	−42.41	13.6	44.55	162
B_{CIE}	30.57	1.41	−46.46	46.49	272

***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* 95.41 0.0 0.0
*LAB*LABa* 95.41 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 0.79 1.0 (1.0)
*cmyn3** 0.5 0.21 0.0 (0.0)
*olvi4** 0.5 0.79 1.0 1.0
*cmyn4** 0.5 0.21 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 80.44 0.71 −23.73
*LAB*LABa* 80.44 0.71 −23.73
*LAB*TCHa* 75.0 23.75 271.72
relative* CIELAB *lab*
*lab*lab* 0.807 0.015 −0.499
*lab*tch* 0.75 0.5 0.755
*lab*nch* 0.0 0.5 0.755
***relative* Natural Colour (NC)**
*lab*lrj* 0.807 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 0.581 1.0 (1.0)
*cmyn3** 1.0 0.419 0.0 (0.0)
*olvi4** 0.0 0.581 1.0 1.0
*cmyn4** 1.0 0.419 0.0 0.0
***standard* and *adapted* CIELAB**
*LAB*LAB* 65.47 1.44 −47.47
*LAB*LABa* 65.47 1.44 −47.47
*LAB*TCHa* 50.0 47.5 271.74
relative* CIELAB *lab*
*lab*lab* 0.613 0.03 −0.998
*lab*tch* 0.5 1.0 0.755
*lab*nch* 0.0 1.0 0.755
***relative* Natural Colour (NC)**
*lab*lrj* 0.613 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* 56.72 0.0 0.0
*LAB*LABa* 56.72 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 0.29 0.5 (1.0)
*cmyn3** 1.0 0.71 0.5 (0.0)
*olvi4** 0.5 0.79 1.0 0.5
*cmyn4** 0.5 0.21 0.0 0.5
***standard* and *adapted* CIELAB**
*LAB*LAB* 41.74 0.72 −23.74
*LAB*LABa* 41.74 0.72 −23.74
*LAB*TCHa* 25.01 23.76 271.75
relative* CIELAB *lab*
*lab*lab* 0.307 0.015 −0.499
*lab*tch* 0.25 0.5 0.755
*lab*nch* 0.5 0.5 0.755
***relative* Natural Colour (NC)**
*lab*lrj* 0.307 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* 18.03 0.0 0.0
*LAB*LABa* 18.03 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^*

$n^* = 1{,}0$

NE190−7, 3 step scales for constant CIELAB hue 272/360 = 0.755 (left)

3 step scales for constant CIELAB hue 272/360 = 0.755 (right)

See for similar files: http://www.ps.bam.de/NE19/
Technical information: http://www.ps.bam.de Version 2.1, io=1,1, CIELAB

BAM registration: 20060101-NE19/10S/S19E09FP.PS/.PDF BAM material: code=rha4ta
application for evaluation and measurement of printer or monitor systems

/NE19/ Form: 10/10,Serie: 1/1, Page: 10 Page: count: 10

BAM-test chart NE19; Colorimetric systems TLS18 & TLS18
D65: 2 coordinate data of 3 step colour scales for 10 hues

input: *olv* setrgbcolor*
output: *olv* setrgbcolor / w* setgray*