Input: Colorimetric Television Luminous System TLS00a

for hue *h = *lab*h* = 40/360 = 0.111**

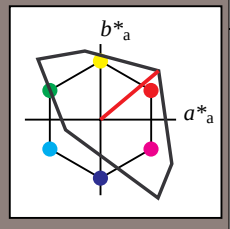
lab*tch* and *lab*nch

D65: hue O

LCH*Ma: 51 100 40

olv*Ma: 1.0 0.0 0.0

triangle lightness *t**



TLS00a; adapted (a) CIELAB data

	*L**=*L**a	*a**a	*b**a	*C**ab,a	*h**ab,a
O_{Ma}	50.5	76.92	64.55	100.42	40
Y_{Ma}	92.66	−20.69	90.75	93.08	103
L_{Ma}	83.63	−82.75	79.9	115.04	136
C_{Ma}	86.88	−46.16	−13.55	48.12	196
V_{Ma}	30.39	76.06	−103.59	128.52	306
M_{Ma}	57.3	94.35	−58.41	110.97	328
N_{Ma}	0.01	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

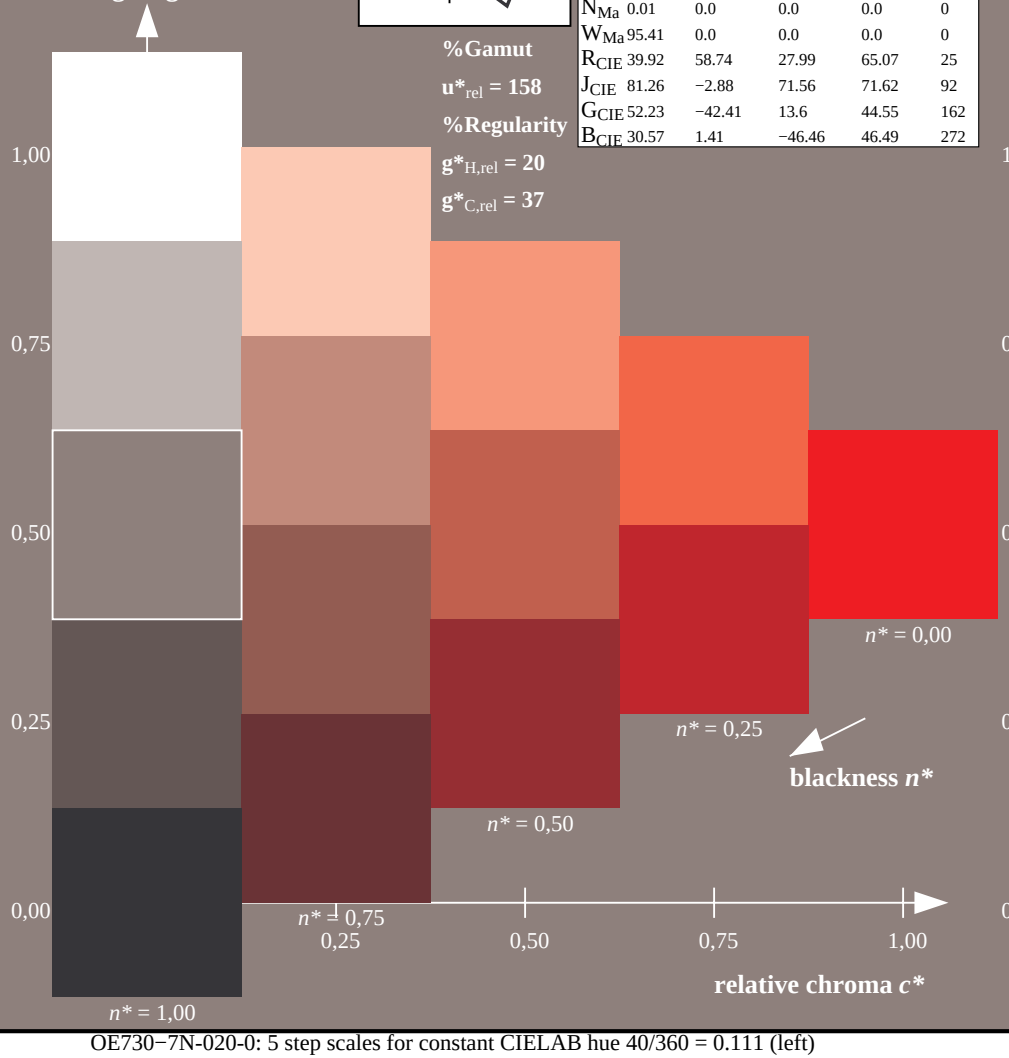
%Gamut

u^*_{rel} = 158

%Regularity

$g^*_{H,rel}$ = 20

$g^*_{C,rel}$ = 37



Output: Colorimetric Television Luminous System TLS00a

for hue *h = *lab*h* = 40/360 = 0.111**

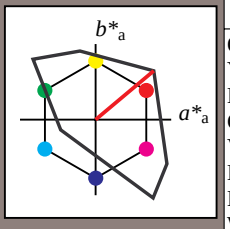
lab*tch* and *lab*nch

D65: hue O

LCH*Ma: 51 100 40

olv*Ma: 1.0 0.0 0.0

triangle lightness *t**



TLS00a; adapted (a) CIELAB data

	*L**=*L**a	*a**a	*b**a	*C**ab,a	*h**ab,a
O_{Ma}	50.5	76.92	64.55	100.42	40
Y_{Ma}	92.66	−20.69	90.75	93.08	103
L_{Ma}	83.63	−82.75	79.9	115.04	136
C_{Ma}	86.88	−46.16	−13.55	48.12	196
V_{Ma}	30.39	76.06	−103.59	128.52	306
M_{Ma}	57.3	94.35	−58.41	110.97	328
N_{Ma}	0.01	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

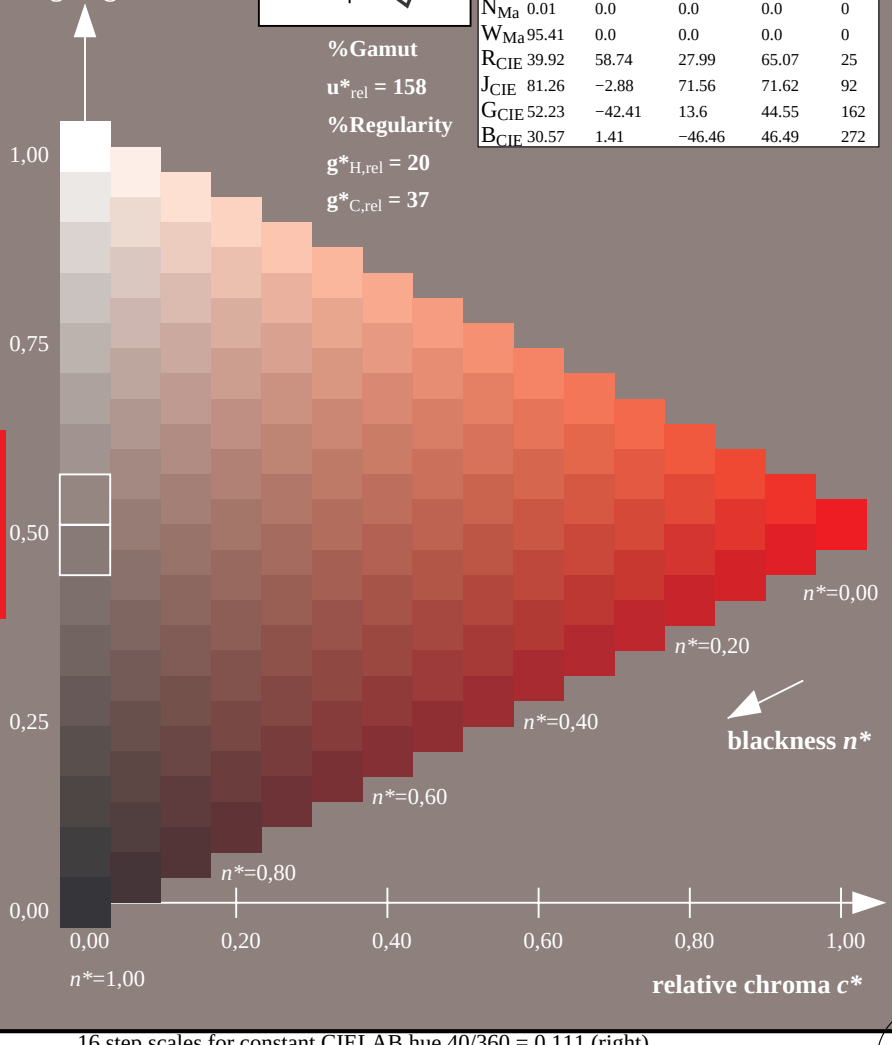
%Gamut

u^*_{rel} = 158

%Regularity

$g^*_{H,rel}$ = 20

$g^*_{C,rel}$ = 37



OE730−7N-020-0: 5 step scales for constant CIELAB hue 40/360 = 0.111 (left)

16 step scales for constant CIELAB hue 40/360 = 0.111 (right)

OE73: Test chart 2 according to DIN 33872-2, Hue O; DH
Discrimination of 5 and 16 step colour scales

input: *cmy0 (−>cmy0*d) setcmyk*
output 020-0: no change

Input: Colorimetric Television Luminous System TLS00a

for hue *h = *lab*h* = 103/360 = 0.286**

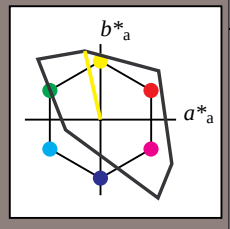
lab*tch* and *lab*nch

D65: hue Y

LCH*Ma: 93 93 103

olv*Ma: 1.0 1.0 0.0

triangle lightness *t**



%Gamut

u*rel = 158

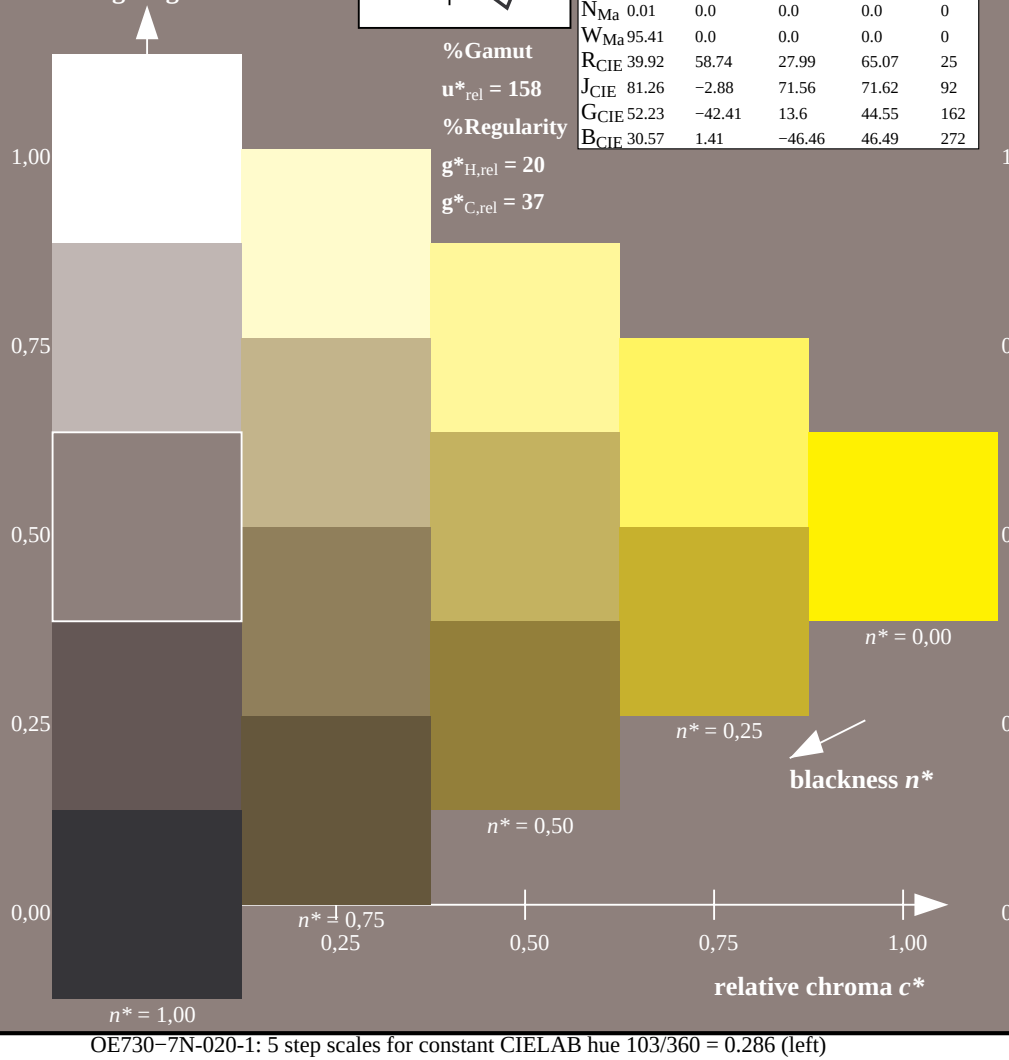
%Regularity

g*H,rel = 20

g*C,rel = 37

TLS00a; adapted (a) CIELAB data

	L*=L*a	a*a	b*a	C*ab,a	h*ab,a
O_{Ma}	50.5	76.92	64.55	100.42	40
Y_{Ma}	92.66	−20.69	90.75	93.08	103
L_{Ma}	83.63	−82.75	79.9	115.04	136
C_{Ma}	86.88	−46.16	−13.55	48.12	196
V_{Ma}	30.39	76.06	−103.59	128.52	306
M_{Ma}	57.3	94.35	−58.41	110.97	328
N_{Ma}	0.01	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



Output: Colorimetric Television Luminous System TLS00a

for hue *h = *lab*h* = 103/360 = 0.286**

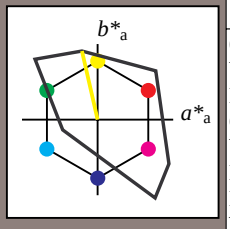
lab*tch* and *lab*nch

D65: hue Y

LCH*Ma: 93 93 103

olv*Ma: 1.0 1.0 0.0

triangle lightness *t**



%Gamut

u*rel = 158

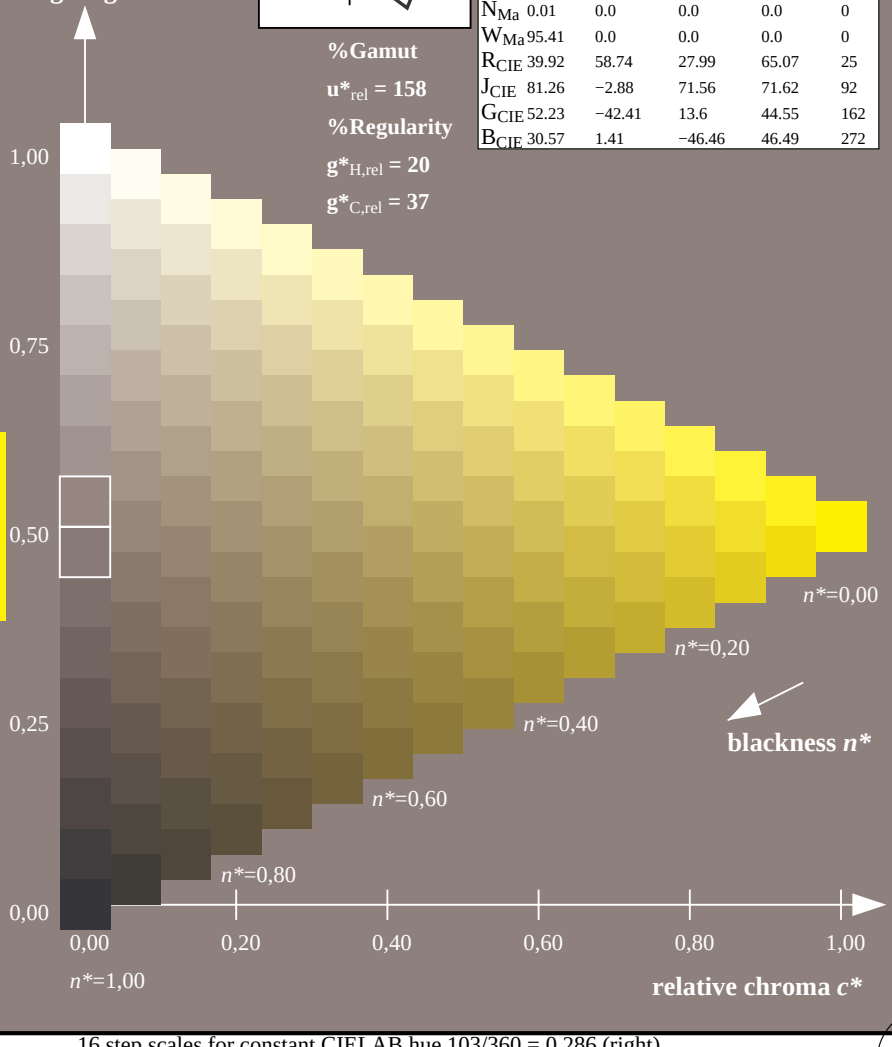
%Regularity

g*H,rel = 20

g*C,rel = 37

TLS00a; adapted (a) CIELAB data

	L*=L*a	a*a	b*a	C*ab,a	h*ab,a
O_{Ma}	50.5	76.92	64.55	100.42	40
Y_{Ma}	92.66	−20.69	90.75	93.08	103
L_{Ma}	83.63	−82.75	79.9	115.04	136
C_{Ma}	86.88	−46.16	−13.55	48.12	196
V_{Ma}	30.39	76.06	−103.59	128.52	306
M_{Ma}	57.3	94.35	−58.41	110.97	328
N_{Ma}	0.01	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



OE730−7N-020-1: 5 step scales for constant CIELAB hue 103/360 = 0.286 (left)

16 step scales for constant CIELAB hue 103/360 = 0.286 (right)

OE73: Test chart 2 according to DIN 33872-2, Hue Y; DH
Discrimination of 5 and 16 step colour scales

input: *cmy0 (−>cmy0*d) setcmyk*
output 020-1: no change

Input: Colorimetric Television Luminous System TLS00a

for hue *h = *lab*h* = 136/360 = 0.378**

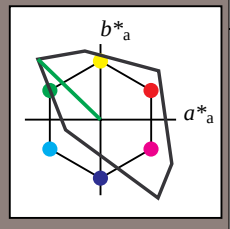
lab*tch* and *lab*nch

D65: hue L

LCH*Ma: 84 115 136

olv*Ma: 0.0 1.0 0.0

triangle lightness *t**



TLS00a; adapted (a) CIELAB data

	L*=L*a	a*a	b*a	C*ab,a	h*ab,a
O_{Ma}	50.5	76.92	64.55	100.42	40
Y_{Ma}	92.66	−20.69	90.75	93.08	103
L_{Ma}	83.63	−82.75	79.9	115.04	136
C_{Ma}	86.88	−46.16	−13.55	48.12	196
V_{Ma}	30.39	76.06	−103.59	128.52	306
M_{Ma}	57.3	94.35	−58.41	110.97	328
N_{Ma}	0.01	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

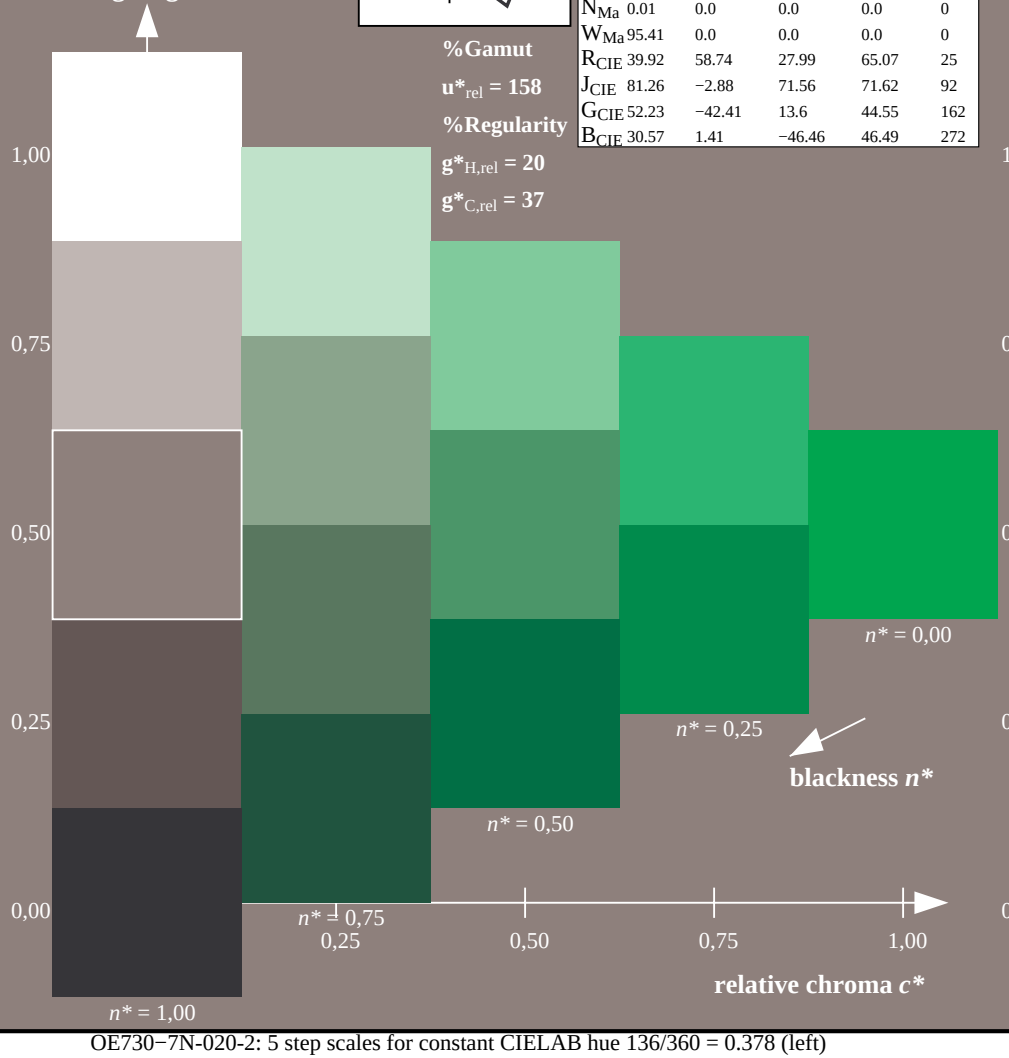
%Gamut

u^*_{rel} = 158

%Regularity

$g^*_{H,rel}$ = 20

$g^*_{C,rel}$ = 37



Output: Colorimetric Television Luminous System TLS00a

for hue *h = *lab*h* = 136/360 = 0.378**

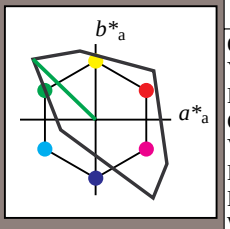
lab*tch* and *lab*nch

D65: hue L

LCH*Ma: 84 115 136

olv*Ma: 0.0 1.0 0.0

triangle lightness *t**



TLS00a; adapted (a) CIELAB data

	L*=L*a	a*a	b*a	C*ab,a	h*ab,a
O_{Ma}	50.5	76.92	64.55	100.42	40
Y_{Ma}	92.66	−20.69	90.75	93.08	103
L_{Ma}	83.63	−82.75	79.9	115.04	136
C_{Ma}	86.88	−46.16	−13.55	48.12	196
V_{Ma}	30.39	76.06	−103.59	128.52	306
M_{Ma}	57.3	94.35	−58.41	110.97	328
N_{Ma}	0.01	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

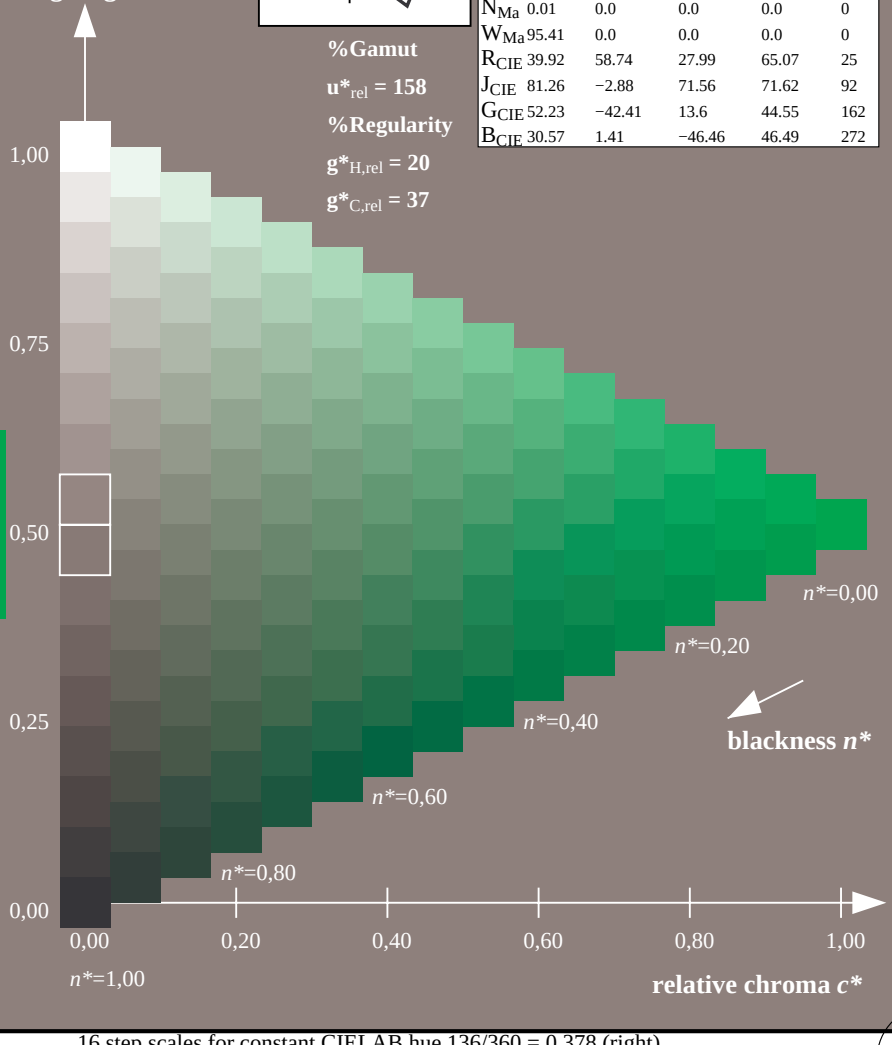
%Gamut

u^*_{rel} = 158

%Regularity

$g^*_{H,rel}$ = 20

$g^*_{C,rel}$ = 37



OE730−7N-020-2: 5 step scales for constant CIELAB hue 136/360 = 0.378 (left)

16 step scales for constant CIELAB hue 136/360 = 0.378 (right)

OE73: Test chart 2 according to DIN 33872-2, Hue L; DH
Discrimination of 5 and 16 step colour scales

input: *cmy0 (−>cmy0*d) setcmyk*
output 020-2: no change

Input: Colorimetric Television Luminous System TLS00a

for hue *h = *lab*h* = 196/360 = 0.545**

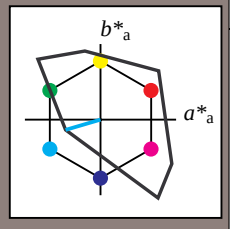
lab*tch* and *lab*nch

D65: hue C

LCH*Ma: 87 48 196

olv*Ma: 0.0 1.0 1.0

triangle lightness *t**



%Gamut

u^*_{rel} = 158

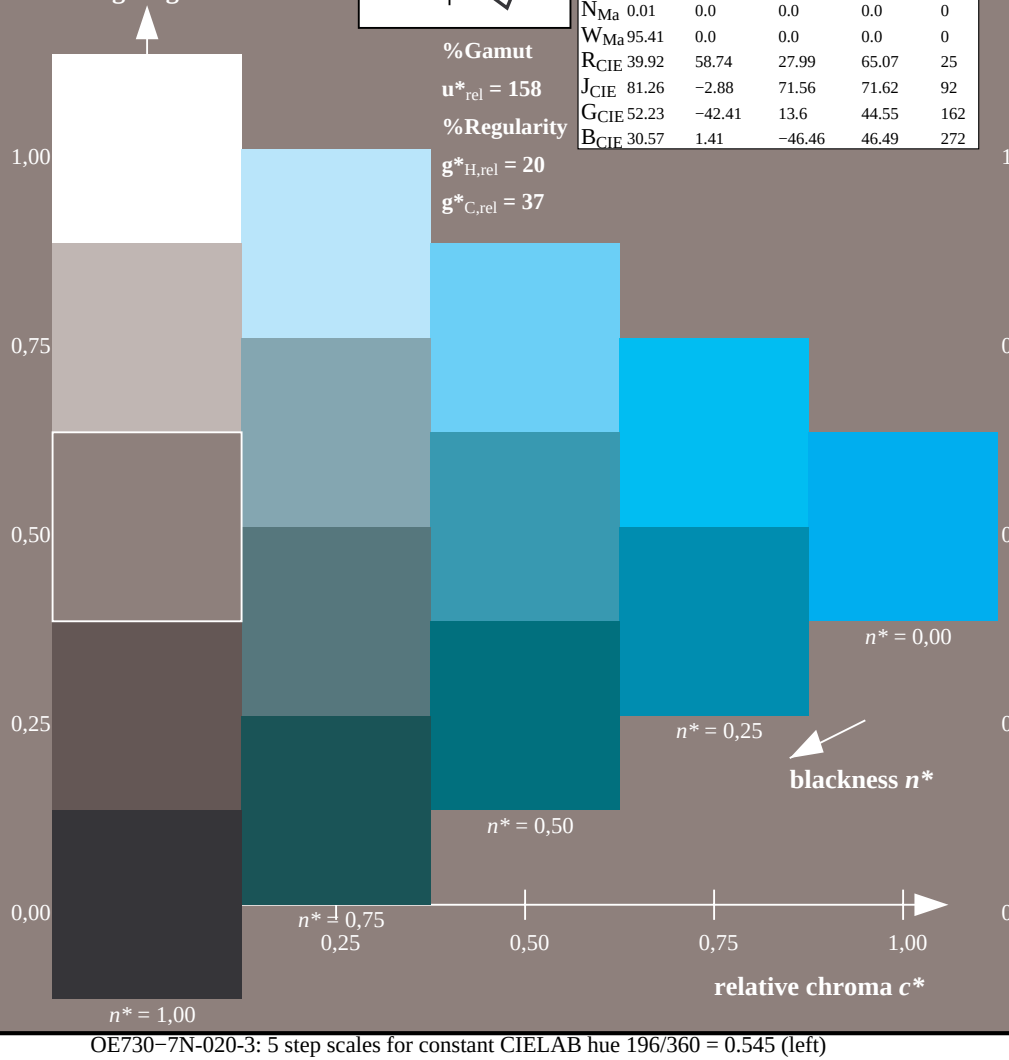
%Regularity

$g^*_{H,rel}$ = 20

$g^*_{C,rel}$ = 37

TLS00a; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	50.5	76.92	64.55	100.42	40
Y_{Ma}	92.66	−20.69	90.75	93.08	103
L_{Ma}	83.63	−82.75	79.9	115.04	136
C_{Ma}	86.88	−46.16	−13.55	48.12	196
V_{Ma}	30.39	76.06	−103.59	128.52	306
M_{Ma}	57.3	94.35	−58.41	110.97	328
N_{Ma}	0.01	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



Output: Colorimetric Television Luminous System TLS00a

for hue *h = *lab*h* = 196/360 = 0.545**

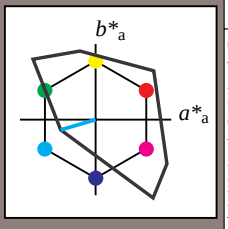
lab*tch* and *lab*nch

D65: hue C

LCH*Ma: 87 48 196

olv*Ma: 0.0 1.0 1.0

triangle lightness *t**



%Gamut

u^*_{rel} = 158

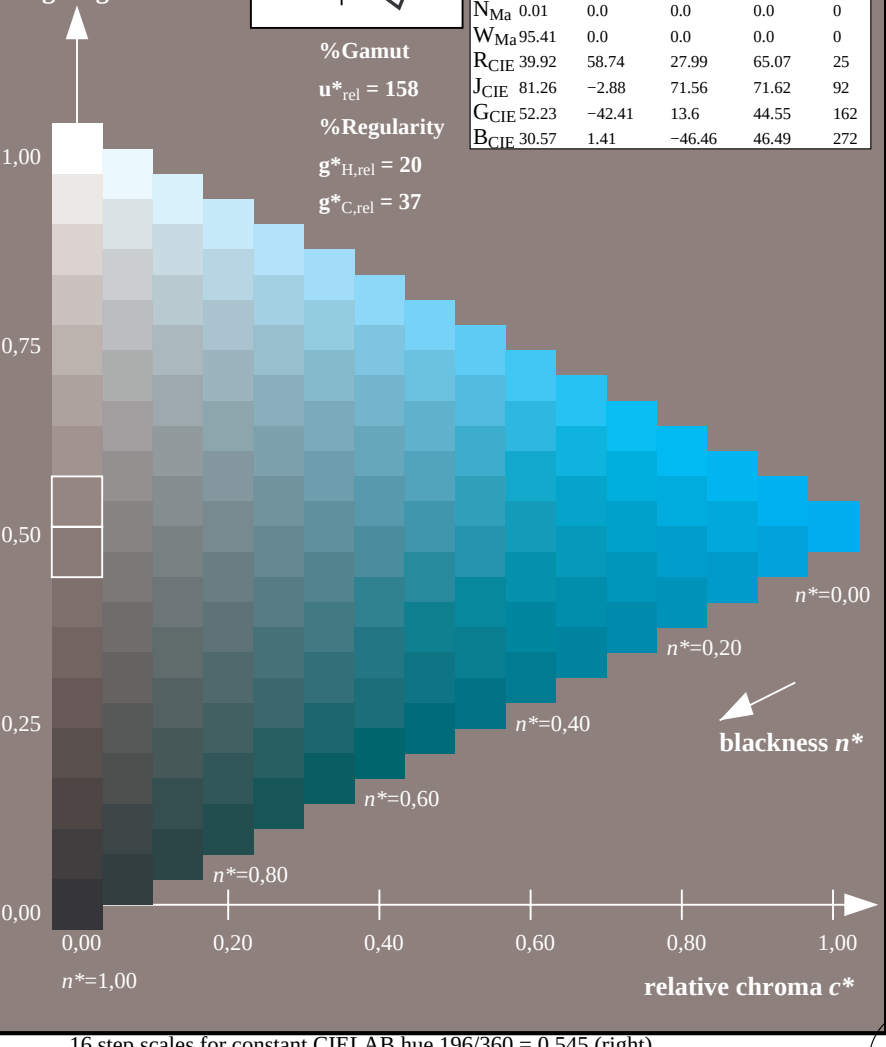
%Regularity

$g^*_{H,rel}$ = 20

$g^*_{C,rel}$ = 37

TLS00a; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	50.5	76.92	64.55	100.42	40
Y_{Ma}	92.66	−20.69	90.75	93.08	103
L_{Ma}	83.63	−82.75	79.9	115.04	136
C_{Ma}	86.88	−46.16	−13.55	48.12	196
V_{Ma}	30.39	76.06	−103.59	128.52	306
M_{Ma}	57.3	94.35	−58.41	110.97	328
N_{Ma}	0.01	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



OE730−7N-020-3: 5 step scales for constant CIELAB hue 196/360 = 0.545 (left)

16 step scales for constant CIELAB hue 196/360 = 0.545 (right)

OE73: Test chart 2 according to DIN 33872-2, Hue C; DH
Discrimination of 5 and 16 step colour scales

input: *cmy0 (−>cmy0*$_d$) setcmyk*
output 020-3: no change

Input: Colorimetric Television Luminous System TLS00a

for hue *h = *lab*h* = 306/360 = 0.851**

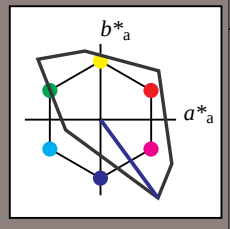
lab*tch* and *lab*nch

D65: hue V

LCH*Ma: 30 129 306

olv*Ma: 0.0 0.0 1.0

triangle lightness *t**



TLS00a; adapted (a) CIELAB data

	L*=L*a	a*a	b*a	C*ab,a	h*ab,a
O_{Ma}	50.5	76.92	64.55	100.42	40
Y_{Ma}	92.66	−20.69	90.75	93.08	103
L_{Ma}	83.63	−82.75	79.9	115.04	136
C_{Ma}	86.88	−46.16	−13.55	48.12	196
V_{Ma}	30.39	76.06	−103.59	128.52	306
M_{Ma}	57.3	94.35	−58.41	110.97	328
N_{Ma}	0.01	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} = 158

%Regularity

$g^*_{H,rel}$ = 20

$g^*_{C,rel}$ = 37

1,00
0,75
0,50
0,25
0,00

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

blackness *n**

0,25 0,50 0,75 1,00

relative chroma *c**

Output: Colorimetric Television Luminous System TLS00a

for hue *h = *lab*h* = 306/360 = 0.851**

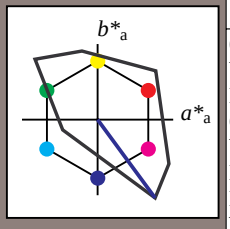
lab*tch* and *lab*nch

D65: hue V

LCH*Ma: 30 129 306

olv*Ma: 0.0 0.0 1.0

triangle lightness *t**



TLS00a; adapted (a) CIELAB data

	L*=L*a	a*a	b*a	C*ab,a	h*ab,a
O_{Ma}	50.5	76.92	64.55	100.42	40
Y_{Ma}	92.66	−20.69	90.75	93.08	103
L_{Ma}	83.63	−82.75	79.9	115.04	136
C_{Ma}	86.88	−46.16	−13.55	48.12	196
V_{Ma}	30.39	76.06	−103.59	128.52	306
M_{Ma}	57.3	94.35	−58.41	110.97	328
N_{Ma}	0.01	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} = 158

%Regularity

$g^*_{H,rel}$ = 20

$g^*_{C,rel}$ = 37

1,00
0,75
0,50
0,25
0,00

*n**=0,00
*n**=0,20
*n**=0,40
*n**=0,60
*n**=0,80
*n**=1,00

blackness *n**

0,00 0,20 0,40 0,60 0,80 1,00

relative chroma *c**

OE730−7N-020-4: 5 step scales for constant CIELAB hue 306/360 = 0.851 (left)

16 step scales for constant CIELAB hue 306/360 = 0.851 (right)

OE73: Test chart 2 according to DIN 33872-2, Hue V; DH
Discrimination of 5 and 16 step colour scales

input: *cmy0 (−>cmy0*d) setcmyk*
output 020-4: no change

Input: Colorimetric Television Luminous System TLS00a

for hue *h = *lab*h* = 328/360 = 0.912**

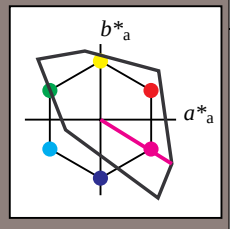
lab*tch* and *lab*nch

D65: hue M

LCH*Ma: 57 111 328

olv*Ma: 1.0 0.0 1.0

triangle lightness *t**



%Gamut

u^*_{rel} = 158

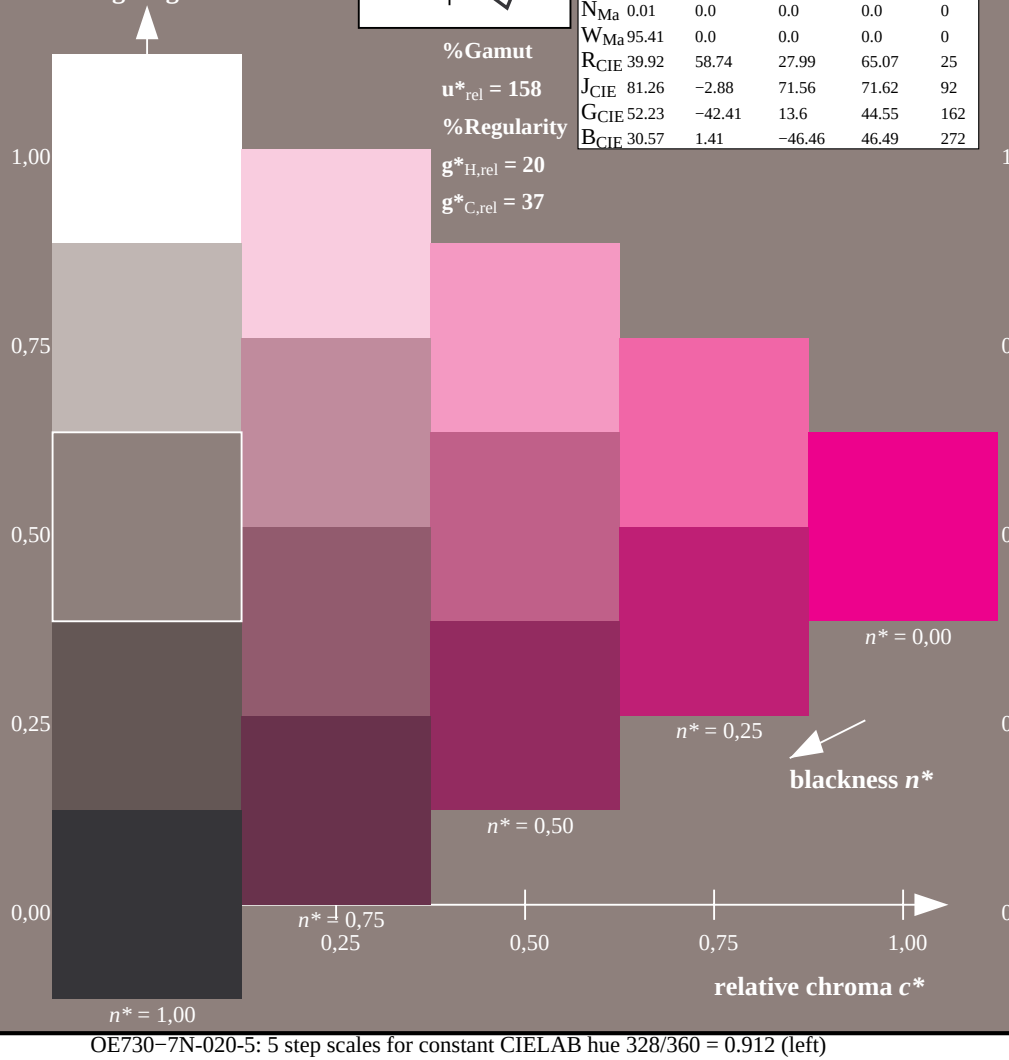
%Regularity

$g^*_{H,rel}$ = 20

$g^*_{C,rel}$ = 37

TLS00a; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	50.5	76.92	64.55	100.42	40
Y_{Ma}	92.66	−20.69	90.75	93.08	103
L_{Ma}	83.63	−82.75	79.9	115.04	136
C_{Ma}	86.88	−46.16	−13.55	48.12	196
V_{Ma}	30.39	76.06	−103.59	128.52	306
M_{Ma}	57.3	94.35	−58.41	110.97	328
N_{Ma}	0.01	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



Output: Colorimetric Television Luminous System TLS00a

for hue *h = *lab*h* = 328/360 = 0.912**

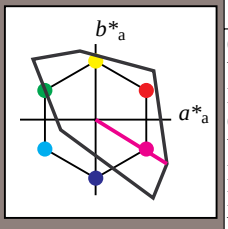
lab*tch* and *lab*nch

D65: hue M

LCH*Ma: 57 111 328

olv*Ma: 1.0 0.0 1.0

triangle lightness *t**



%Gamut

u^*_{rel} = 158

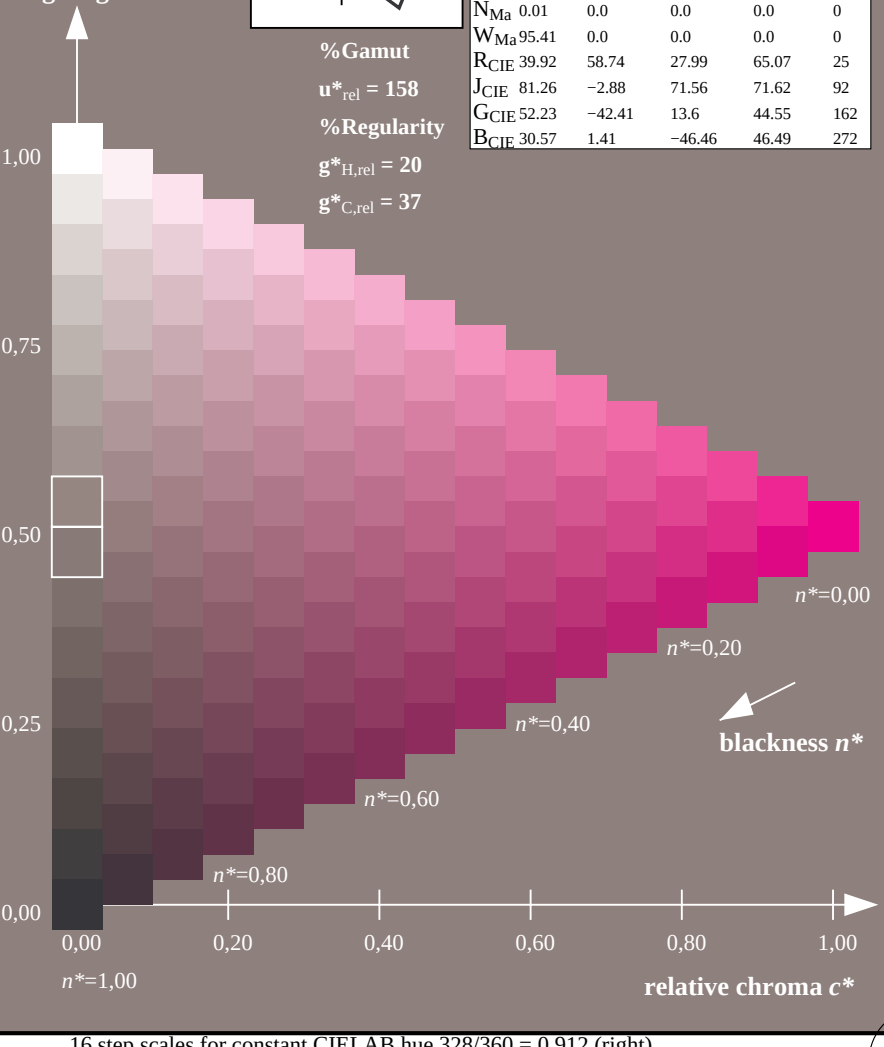
%Regularity

$g^*_{H,rel}$ = 20

$g^*_{C,rel}$ = 37

TLS00a; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	50.5	76.92	64.55	100.42	40
Y_{Ma}	92.66	−20.69	90.75	93.08	103
L_{Ma}	83.63	−82.75	79.9	115.04	136
C_{Ma}	86.88	−46.16	−13.55	48.12	196
V_{Ma}	30.39	76.06	−103.59	128.52	306
M_{Ma}	57.3	94.35	−58.41	110.97	328
N_{Ma}	0.01	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



OE730−7N-020-5: 5 step scales for constant CIELAB hue 328/360 = 0.912 (left)

16 step scales for constant CIELAB hue 328/360 = 0.912 (right)

OE73: Test chart 2 according to DIN 33872-2, Hue M; DH
Discrimination of 5 and 16 step colour scales

input: *cmy0 (−>cmy0*$_d$) setcmyk*
output 020-5: no change

Input: Colorimetric Television Luminous System TLS00a

for hue *h = *lab*h* = 25/360 = 0.071**

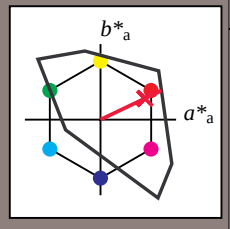
lab*tch* and *lab*nch

D65: hue R

LCH*Ma: 52 89 25

olv*Ma: 1.0 0.0 0.21

triangle lightness *t**



TLS00a; adapted (a) CIELAB data

	*L**=*L**a	*a**a	*b**a	*C**ab,a	*h**ab,a
O_{Ma}	50.5	76.92	64.55	100.42	40
Y_{Ma}	92.66	−20.69	90.75	93.08	103
L_{Ma}	83.63	−82.75	79.9	115.04	136
C_{Ma}	86.88	−46.16	−13.55	48.12	196
V_{Ma}	30.39	76.06	−103.59	128.52	306
M_{Ma}	57.3	94.35	−58.41	110.97	328
N_{Ma}	0.01	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

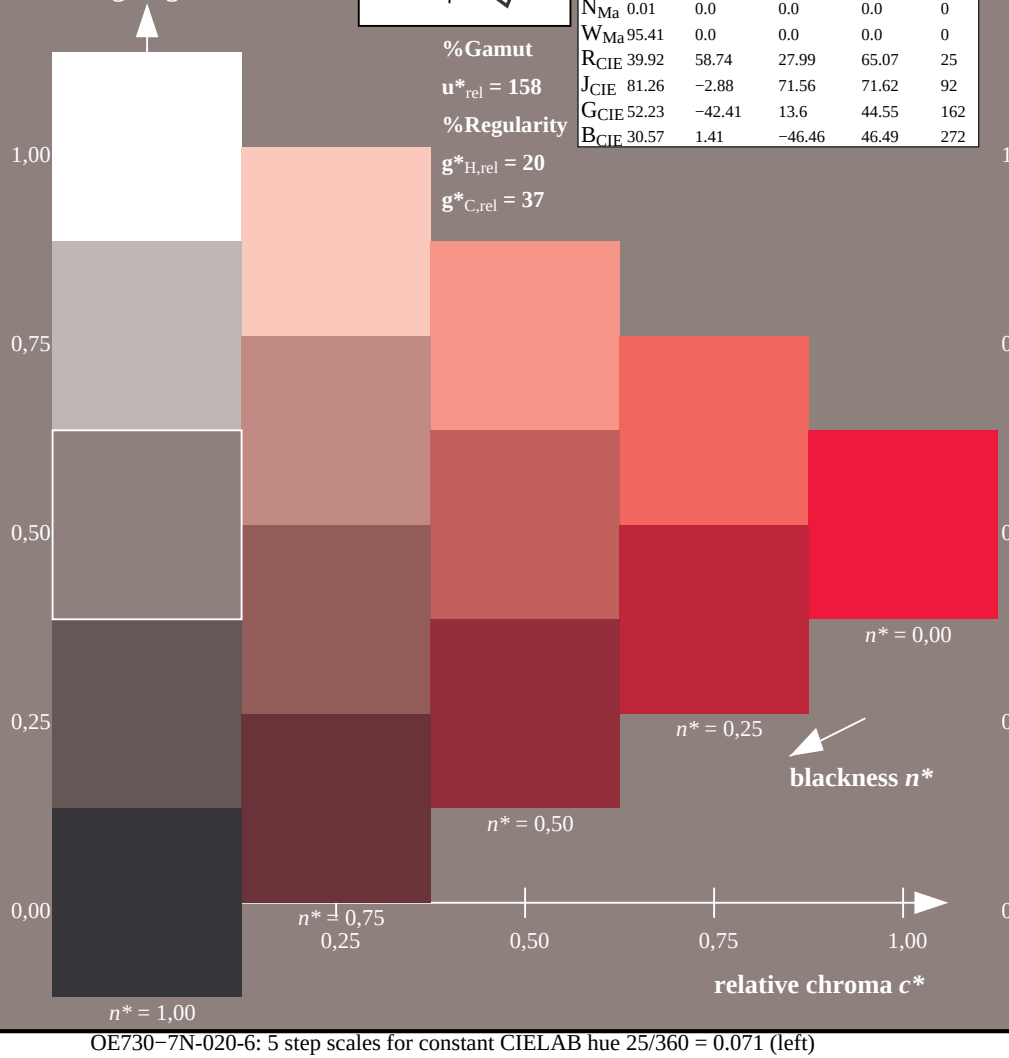
%Gamut

u^*_{rel} = 158

%Regularity

$g^*_{H,rel}$ = 20

$g^*_{C,rel}$ = 37



Output: Colorimetric Television Luminous System TLS00a

for hue *h = *lab*h* = 25/360 = 0.071**

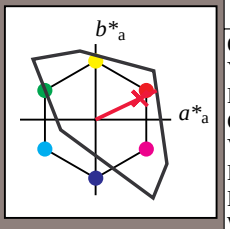
lab*tch* and *lab*nch

D65: hue R

LCH*Ma: 52 89 25

olv*Ma: 1.0 0.0 0.21

triangle lightness *t**



TLS00a; adapted (a) CIELAB data

	*L**=*L**a	*a**a	*b**a	*C**ab,a	*h**ab,a
O_{Ma}	50.5	76.92	64.55	100.42	40
Y_{Ma}	92.66	−20.69	90.75	93.08	103
L_{Ma}	83.63	−82.75	79.9	115.04	136
C_{Ma}	86.88	−46.16	−13.55	48.12	196
V_{Ma}	30.39	76.06	−103.59	128.52	306
M_{Ma}	57.3	94.35	−58.41	110.97	328
N_{Ma}	0.01	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

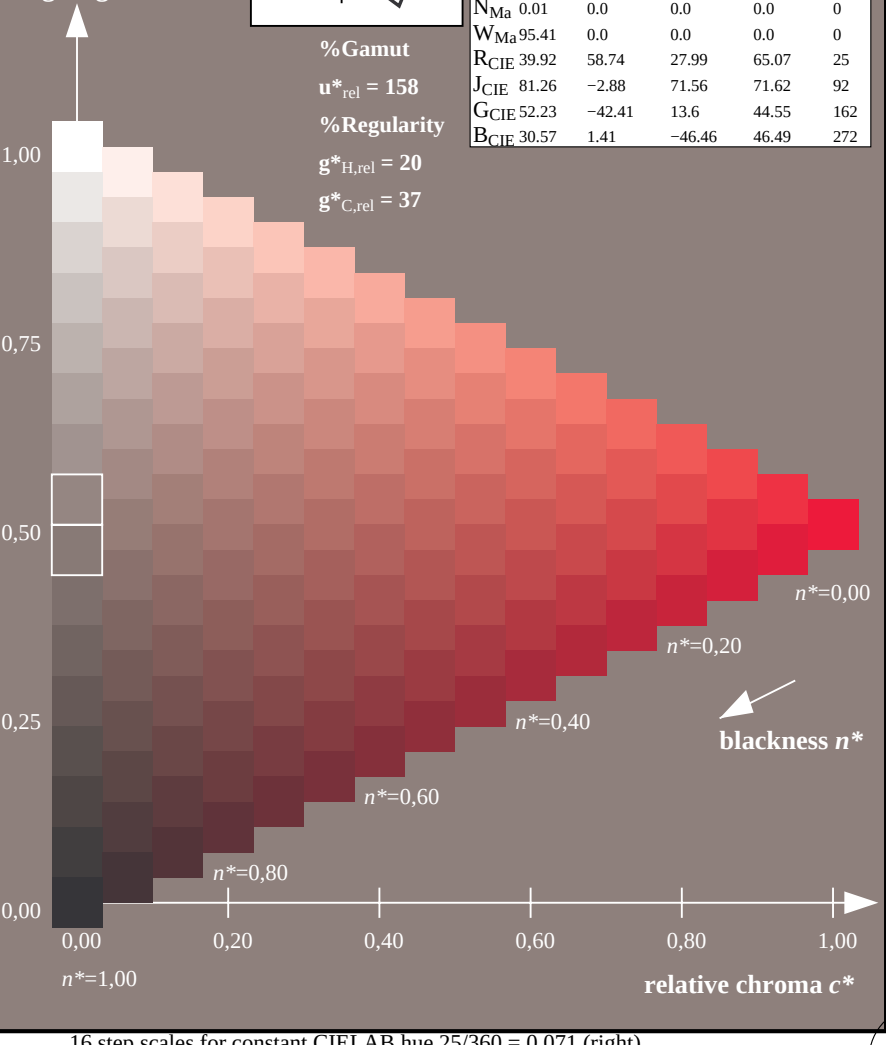
%Gamut

u^*_{rel} = 158

%Regularity

$g^*_{H,rel}$ = 20

$g^*_{C,rel}$ = 37



OE730−7N-020-6: 5 step scales for constant CIELAB hue 25/360 = 0.071 (left)

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

OE73: Test chart 2 according to DIN 33872-2, Hue R; DEH
Discrimination of 5 and 16 step colour scales

input: *cmy0 (−>cmy0*$_{de}$) setcmyk*
output 020-6: no change

Input: Colorimetric Television Luminous System TLS00a

for hue *h = *lab*h* = 92/360 = 0.256**

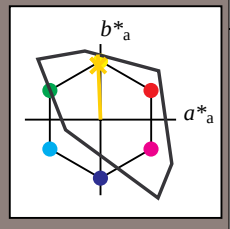
lab*tch* and *lab*nch

D65: hue J

LCH*Ma: 85 86 92

olv*Ma: 1.0 0.82 0.0

triangle lightness *t**



%Gamut

u^*_{rel} = 158

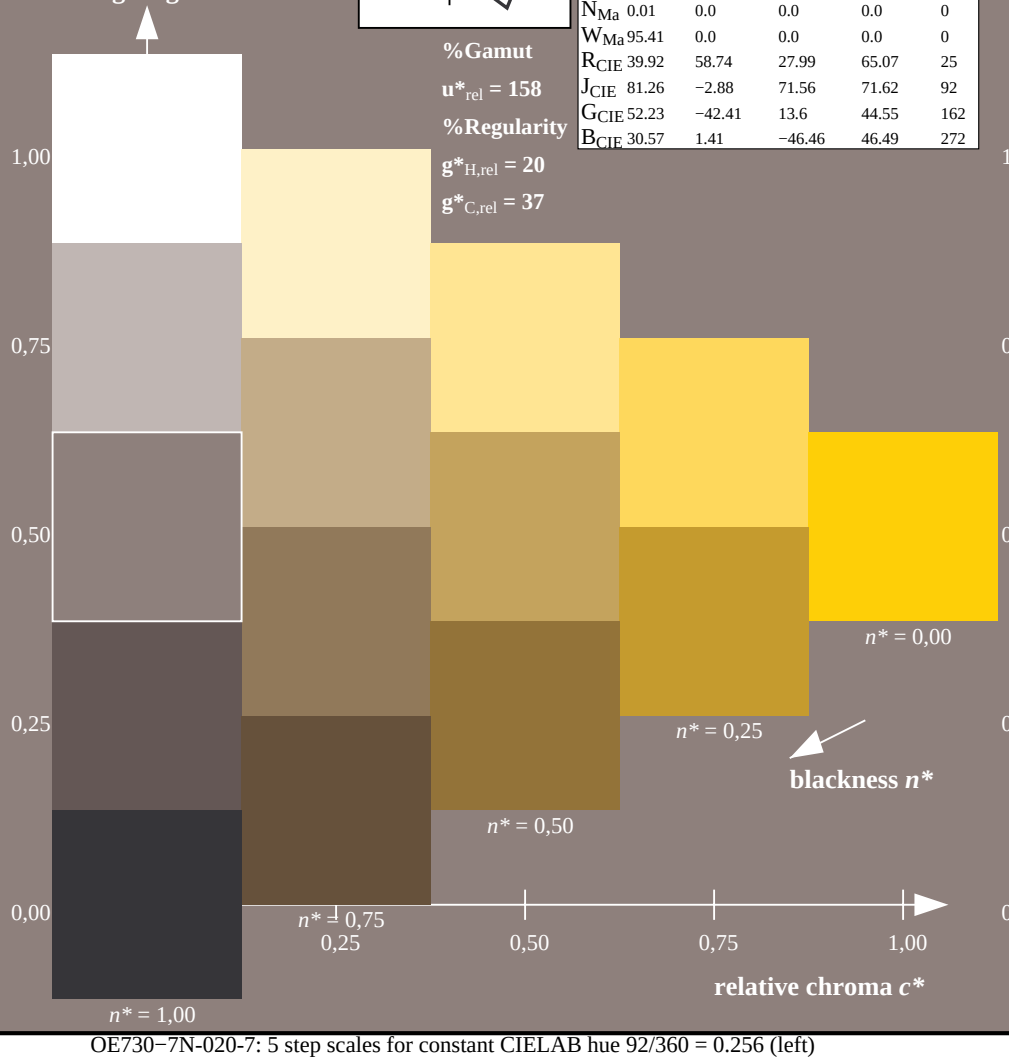
%Regularity

$g^*_{H,rel}$ = 20

$g^*_{C,rel}$ = 37

TLS00a; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	50.5	76.92	64.55	100.42	40
Y_{Ma}	92.66	−20.69	90.75	93.08	103
L_{Ma}	83.63	−82.75	79.9	115.04	136
C_{Ma}	86.88	−46.16	−13.55	48.12	196
V_{Ma}	30.39	76.06	−103.59	128.52	306
M_{Ma}	57.3	94.35	−58.41	110.97	328
N_{Ma}	0.01	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



Output: Colorimetric Television Luminous System TLS00a

for hue *h = *lab*h* = 92/360 = 0.256**

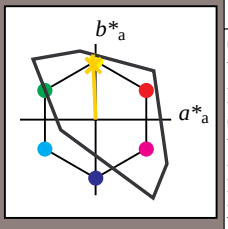
lab*tch* and *lab*nch

D65: hue J

LCH*Ma: 85 86 92

olv*Ma: 1.0 0.82 0.0

triangle lightness *t**



%Gamut

u^*_{rel} = 158

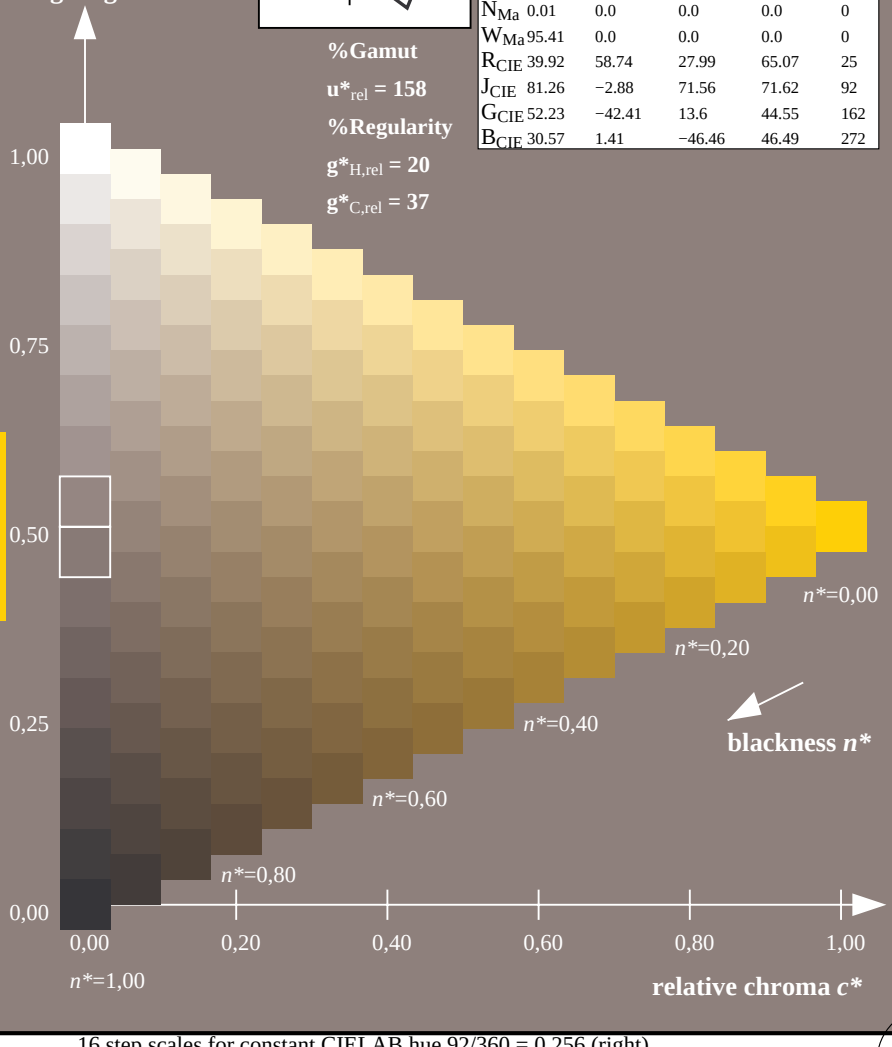
%Regularity

$g^*_{H,rel}$ = 20

$g^*_{C,rel}$ = 37

TLS00a; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	50.5	76.92	64.55	100.42	40
Y_{Ma}	92.66	−20.69	90.75	93.08	103
L_{Ma}	83.63	−82.75	79.9	115.04	136
C_{Ma}	86.88	−46.16	−13.55	48.12	196
V_{Ma}	30.39	76.06	−103.59	128.52	306
M_{Ma}	57.3	94.35	−58.41	110.97	328
N_{Ma}	0.01	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



OE730−7N-020-7: 5 step scales for constant CIELAB hue 92/360 = 0.256 (left)

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

OE73: Test chart 2 according to DIN 33872-2, Hue J; DEH
Discrimination of 5 and 16 step colour scales

input: *cmy0 (−>cmy0*$_{de}$) setcmyk*
output 020-7: no change

Input: Colorimetric Television Luminous System TLS00a

for hue *h = *lab*h* = 162/360 = 0.451**

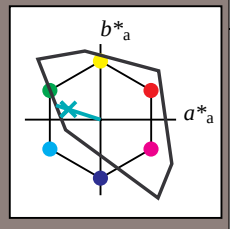
lab*tch* and *lab*nch

D65: hue G

LCH*Ma: 86 62 162

olv*Ma: 0.0 1.0 0.65

triangle lightness *t**



TLS00a; adapted (a) CIELAB data

	L*=L*a	a*a	b*a	C*ab,a	h*ab,a
O_{Ma}	50.5	76.92	64.55	100.42	40
Y_{Ma}	92.66	−20.69	90.75	93.08	103
L_{Ma}	83.63	−82.75	79.9	115.04	136
C_{Ma}	86.88	−46.16	−13.55	48.12	196
V_{Ma}	30.39	76.06	−103.59	128.52	306
M_{Ma}	57.3	94.35	−58.41	110.97	328
N_{Ma}	0.01	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

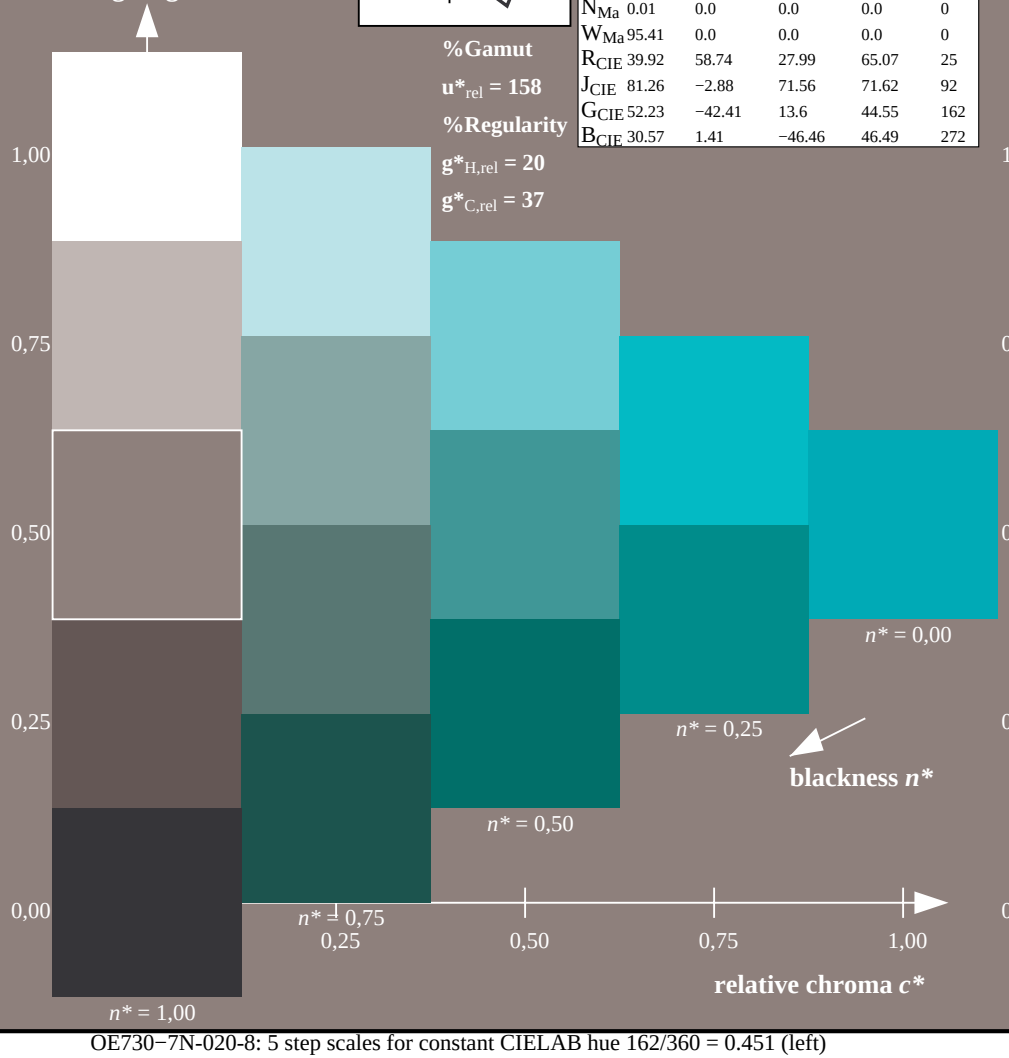
%Gamut

u^*_{rel} = 158

%Regularity

$g^*_{H,rel}$ = 20

$g^*_{C,rel}$ = 37



Output: Colorimetric Television Luminous System TLS00a

for hue *h = *lab*h* = 162/360 = 0.451**

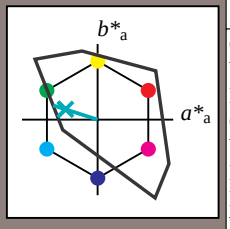
lab*tch* and *lab*nch

D65: hue G

LCH*Ma: 86 62 162

olv*Ma: 0.0 1.0 0.65

triangle lightness *t**



TLS00a; adapted (a) CIELAB data

	L*=L*a	a*a	b*a	C*ab,a	h*ab,a
O_{Ma}	50.5	76.92	64.55	100.42	40
Y_{Ma}	92.66	−20.69	90.75	93.08	103
L_{Ma}	83.63	−82.75	79.9	115.04	136
C_{Ma}	86.88	−46.16	−13.55	48.12	196
V_{Ma}	30.39	76.06	−103.59	128.52	306
M_{Ma}	57.3	94.35	−58.41	110.97	328
N_{Ma}	0.01	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

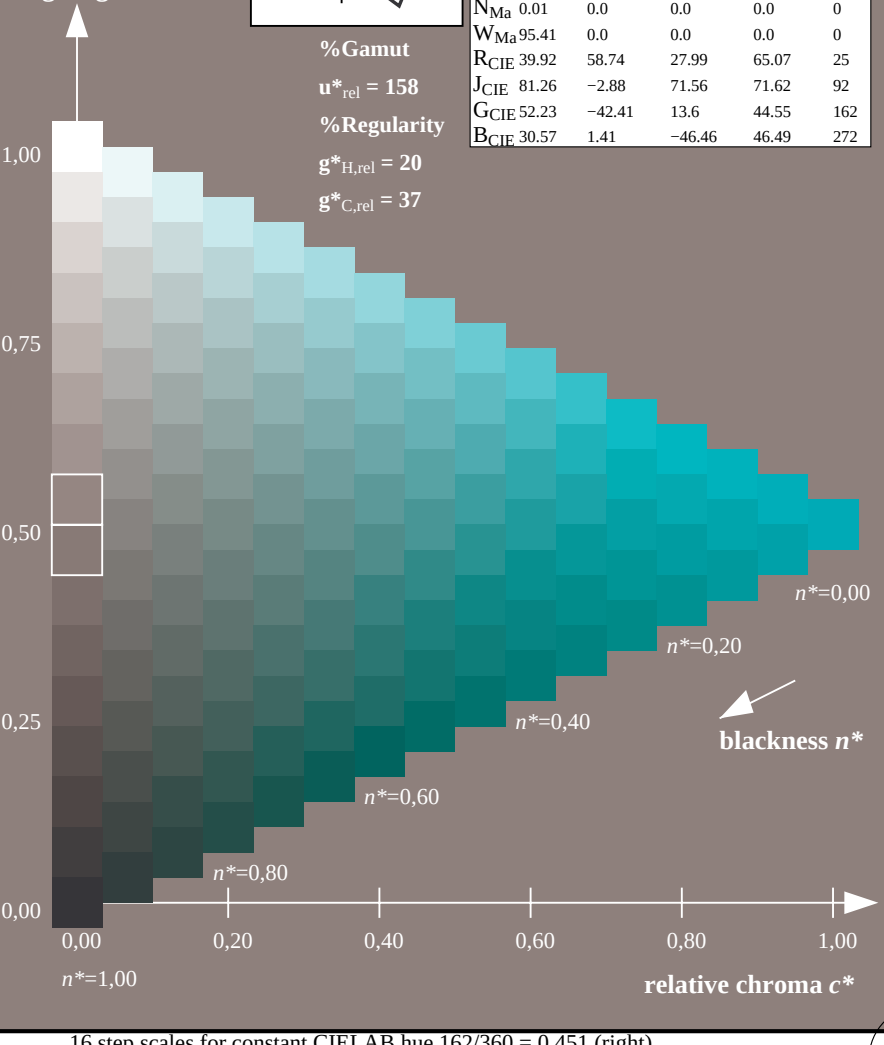
%Gamut

u^*_{rel} = 158

%Regularity

$g^*_{H,rel}$ = 20

$g^*_{C,rel}$ = 37



OE730−7N-020-8: 5 step scales for constant CIELAB hue 162/360 = 0.451 (left)

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

OE73: Test chart 2 according to DIN 33872-2, Hue G; DEH
Discrimination of 5 and 16 step colour scales

input: *cmy0 (−>cmy0*de) setcmyk*
output 020-8: no change

Input: Colorimetric Television Luminous System TLS00a

for hue *h = *lab*h* = 272/360 = 0.755**

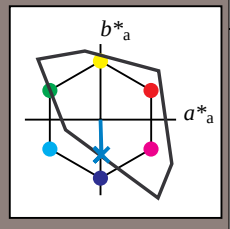
lab*tch* and *lab*nch

D65: hue B

LCH*Ma: 65 49 272

olv*Ma: 0.0 0.61 1.0

triangle lightness *t**



TLS00a; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	50.5	76.92	64.55	100.42	40
Y_{Ma}	92.66	−20.69	90.75	93.08	103
L_{Ma}	83.63	−82.75	79.9	115.04	136
C_{Ma}	86.88	−46.16	−13.55	48.12	196
V_{Ma}	30.39	76.06	−103.59	128.52	306
M_{Ma}	57.3	94.35	−58.41	110.97	328
N_{Ma}	0.01	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

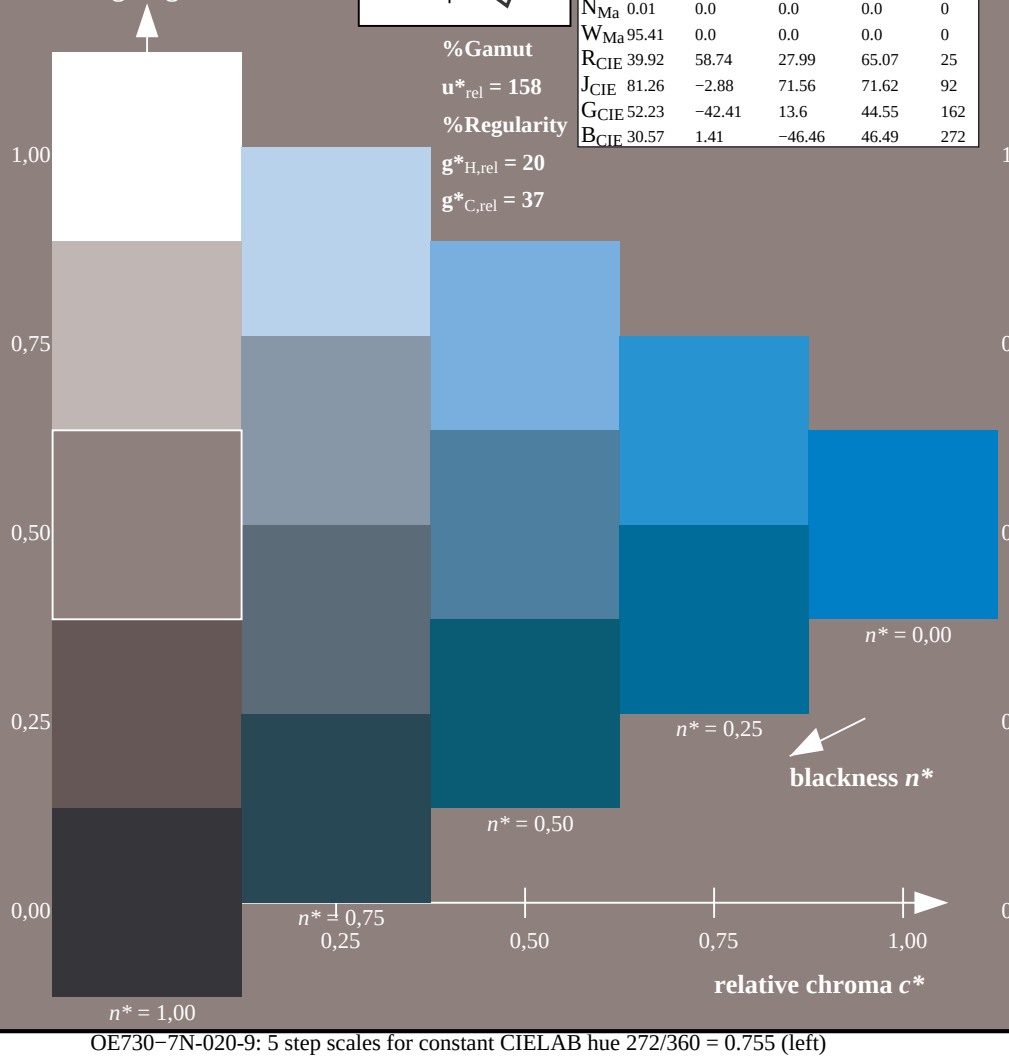
%Gamut

u^*_{rel} = 158

%Regularity

$g^*_{H,rel}$ = 20

$g^*_{C,rel}$ = 37



Output: Colorimetric Television Luminous System TLS00a

for hue *h = *lab*h* = 272/360 = 0.755**

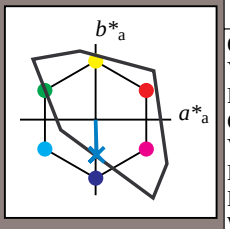
lab*tch* and *lab*nch

D65: hue B

LCH*Ma: 65 49 272

olv*Ma: 0.0 0.61 1.0

triangle lightness *t**



TLS00a; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
O_{Ma}	50.5	76.92	64.55	100.42	40
Y_{Ma}	92.66	−20.69	90.75	93.08	103
L_{Ma}	83.63	−82.75	79.9	115.04	136
C_{Ma}	86.88	−46.16	−13.55	48.12	196
V_{Ma}	30.39	76.06	−103.59	128.52	306
M_{Ma}	57.3	94.35	−58.41	110.97	328
N_{Ma}	0.01	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

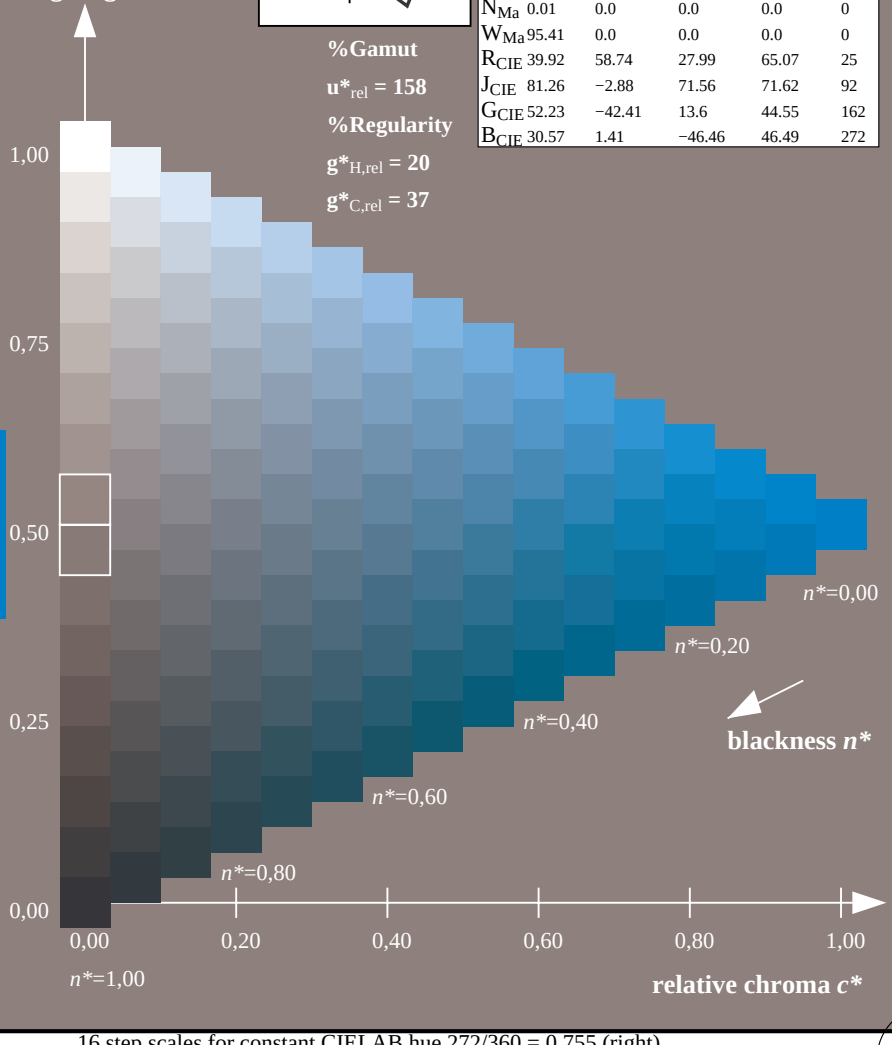
%Gamut

u^*_{rel} = 158

%Regularity

$g^*_{H,rel}$ = 20

$g^*_{C,rel}$ = 37



OE730−7N-020-9: 5 step scales for constant CIELAB hue 272/360 = 0.755 (left)

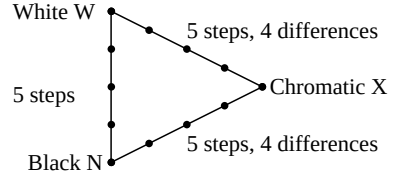
16 step scales for constant CIELAB hue 272/360 = 0.755 (right)

OE73: Test chart 2 according to DIN 33872-2, Hue B; DEH
Discrimination of 5 and 16 step colour scales

input: *cmy0 (−>cmy0*$_{de}$) setcmyk*
output 020-9: no change

Discriminability of 5 step colour series (Yes/No decision)

Layout example: three 5 step colour series



There are three basic colours on each page:
Black N, White W and Chromatic X.
Ten pages include 10 hue planes
X = OYLCVM and RJGB.
There are at maximum 12 distinguashable steps.

All steps of the three series N−W, W−X and X−N should be distiguishable on **all** pages.

Are the three 5step series distinguishable on all pages? **underline: Yes/No**

only in case of No: Are the three 5 step series on Page x of 10 pages distiguishable?
Underline Yes/No and give in case of No the number of distinguishable steps?

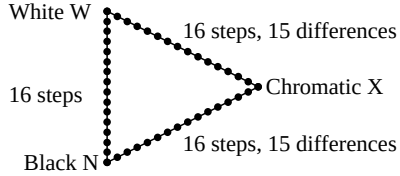
Page 1: Yes/No, if No ../12 step differences are distinguashable of O = Orange Red
Page 2: Yes/No, if No ../12 step differences are distinguashable of Y = Yellow
Page 3: Yes/No, if No ../12 step differences are distinguashable of L = Leaf green
Page 4: Yes/No, if No ../12 step differences are distinguashable of C = Cyan blue
Page 5: Yes/No, if No ../12 step differences are distinguashable of V = Violett blue
Page 6: Yes/No, if No ../12 step differences are distinguashable of M = Magenta Red
Page 7: Yes/No, if No ../12 step differences are distinguashable of R = Elementary Red
Page 8: Yes/No, if No ../12 step differences are distinguashable of J = Elementary yellow
Page 9: Yes/No, if No ../12 step differences are distinguashable of G = Elemantary Green
Page 10: Yes/No, if No ../12 step differences are distinguashable of B = Elementary blue

Sum: ../10 Yes-Pages and .../120 step differences are distingishable

Part 1 OE730−3N-020-10

Discriminability of 16 step colour series (Yes/No decision)

Layout example: three 16 step colour series



There are three basic colours on each page:
Black N, White W and Chromatic X.
Ten pages include 10 hue planes
X = OYLCVM and RJGB.
There are at maximum 45 distinguashable steps.

All steps of the three series N−W, W−X and X−N should be distinguishable on **all** pages.

Are the three 16step series distinguishable on all pages? **underline: Yes/No**

only in case of No: Are the three 16 step series on Page x of 10 pages distinguishable?
Underline Yes/No and give in case of No the number of distinguishable steps?

Page 1: Yes/No, if No ../45 step differences are distinguashable of O = Orange Red
Page 2: Yes/No, if No ../45 step differences are distinguashable of Y = Yellow
Page 3: Yes/No, if No ../45 step differences are distinguashable of L = Leaf green
Page 4: Yes/No, if No ../45 step differences are distinguashable of C = Cyan blue
Page 5: Yes/No, if No ../45 step differences are distinguashable of V = Violett blue
Page 6: Yes/No, if No ../45 step differences are distinguashable of M = Magenta Red
Page 7: Yes/No, if No ../45 step differences are distinguashable of R = Elementary Red
Page 8: Yes/No, if No ../45 step differences are distinguashable of J = Elementary yellow
Page 9: Yes/No, if No ../45 step differences are distinguashable of G = Elemantary Green
Page 10: Yes/No, if No ../45 step differences are distinguashable of B = Elementary blue

Sum: ../10 Yes-Pages and .../450 step differences are distingishable

Part 2 OE731−3N-020-10

Documentation of file format, hardware and software for this test:

PDF-File: http://130.149.60.45/farbmetrik/OE73/OE73L0NP.PDF **underline Yes/No**

PS-File: http://130.149.60.45/farbmetrik/OE73/OE73L0NA.PS **or underline Yes/No**

Used computer operating system:
either one of Windows/Mac/Unix/other and version:.....

This evaluation is for the device output: **underline monitor/data projector/printer**
Device model, driver and version:.....

Device output with PDF/PS-file: **underline PDF/PS-file**

For device output with PDF-file OE73L0NP.PDF:
either PDF-file transfer "download, copy" to PDF device.....
or with computer system interpretation by "Display-PDF":.....
or with software. e. g. Adobe-Reader/-Acrobat and version:.....
or with software e. g. Ghostscript and version:.....

For device output with PS-file OE73L0NA.PS:
either PS-file transfer "download, copy" to PS device.....
or with computer system interpretation by "Display-PS":.....
or with software e. g. Ghostscript and version:.....
or with software e. g. Mac-Yap and version:.....

Special remarks:Special remarks, e. g. output of Landscape (L)
.....
.....
.....

Part 3 OE730−7N-020-10

Documentation of assessor colour vision properties for visual assessment

The assessor has **normal** colour vision according to one test: **underline Yes/No**
either according to DIN 6160:1996 with Anomaloskop of *Nagel* **underline Yes/unknown**
or with test charts using colour points according to *Ishihara* **underline Yes/unknown**
or tested with, please specify: ..... **underline Yes/unknown**

For visual evaluation of the display (monitor, data projector) output

Office workplace illumination is daylight (clouded/north sky) **underline Yes/No**
PDF file: http://130.149.60.45/farbmetrik/OE73/OE73F1P2.PDF **underline Yes/No**
PS file: http://130.149.60.45/farbmetrik/OE73/OE73F1P2.PS **underline Yes/No**
Picture A7-020-2: **contrast range:** (>F:0) (F:0) (E:0) (D:0) (C:0) (A:0) (9:0) (7:0) (5:0) (3:0) (<3:0)
compare standard print output according to ISO/IEC 15775 with range F:0 **underline range**
Remark: In daylighted offices the contrast range is in many cases:
on display between: >F:0 and E:0 (monitor), D:0 and 3:0 (data projector)

Only for optional colorimetric specification with PDF/PS file output

PDF-File: http://130.149.60.45/farbmetrik/OE73/OE73F1P2.PDF
picture A7-020-2 **underline Yes/No**
PS-File: http://130.149.60.45/farbmetrik/OE73/OE73F1P2.PS
picture A7-020-2 **or underline Yes/No**

colour measurement and specification for:
CIE standard illuminant D65, 2 degree observer, CIE 45/0 geometry: **underline Yes/No**
If No, please give other parameters: .....

Colorimetric specification with PS file for colours in the columns A to T
Exchange of CIELAB data in file www.ps.bam.de/De17/10L/L17e00NP.PS and transfer
of the PS-file L17e00NP.PS in PDF-file L17e00NP.PDF **underline Yes/No**
If No, please describe other method: .....

Part 4 OE731−7N-020-10

i	LAB*ref			l*out	LAB*out			LAB*out/c−ref			ΔE*
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01
2	6.36	0.0	0.0	0.07	6.36	0.0	0.0	0.0	0.0	0.0	0.01
3	12.72	0.0	0.0	0.13	12.72	0.0	0.0	0.0	0.0	0.0	0.01
4	19.08	0.0	0.0	0.2	19.08	0.0	0.0	0.0	0.0	0.0	0.01
5	25.44	0.0	0.0	0.27	25.44	0.0	0.0	0.0	0.0	0.0	0.01
6	31.8	0.0	0.0	0.33	31.8	0.0	0.0	0.0	0.0	0.0	0.01
7	38.16	0.0	0.0	0.4	38.16	0.0	0.0	0.0	0.0	0.0	0.01
8	44.52	0.0	0.0	0.47	44.52	0.0	0.0	0.0	0.0	0.0	0.01
9	50.89	0.0	0.0	0.53	50.89	0.0	0.0	0.0	0.0	0.0	0.01
10	57.25	0.0	0.0	0.6	57.25	0.0	0.0	0.0	0.0	0.0	0.01
11	63.61	0.0	0.0	0.67	63.61	0.0	0.0	0.0	0.0	0.0	0.01
12	69.97	0.0	0.0	0.73	69.97	0.0	0.0	0.0	0.0	0.0	0.01
13	76.33	0.0	0.0	0.8	76.33	0.0	0.0	0.0	0.0	0.0	0.01
14	82.69	0.0	0.0	0.87	82.69	0.0	0.0	0.0	0.0	0.0	0.01
15	89.05	0.0	0.0	0.93	89.05	0.0	0.0	0.0	0.0	0.0	0.01
16	95.41	0.0	0.0	1.0	95.41	0.0	0.0	0.0	0.0	0.0	0.01
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01
18	23.85	0.0	0.0	0.25	23.85	0.0	0.0	0.0	0.0	0.0	0.01
19	47.71	0.0	0.0	0.5	47.71	0.0	0.0	0.0	0.0	0.0	0.01
20	71.56	0.0	0.0	0.75	71.56	0.0	0.0	0.0	0.0	0.0	0.01
21	95.41	0.0	0.0	1.0	95.41	0.0	0.0	0.0	0.0	0.0	0.01

Start output S1
Specification according to ISO/IEC 15775 Annex G and DIN 33866-1 Annex G

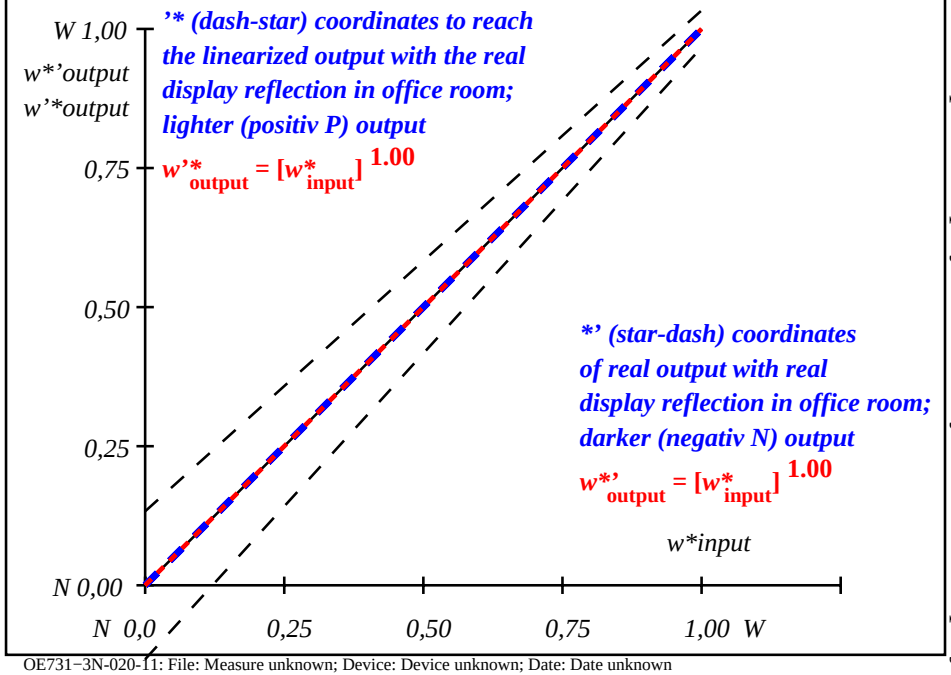
Mean lightness difference (16 steps)
ΔE^*_{CIELAB} = **0.0**

Mean lightness difference (5 steps)
ΔL^*_{CIELAB} = **0.0**

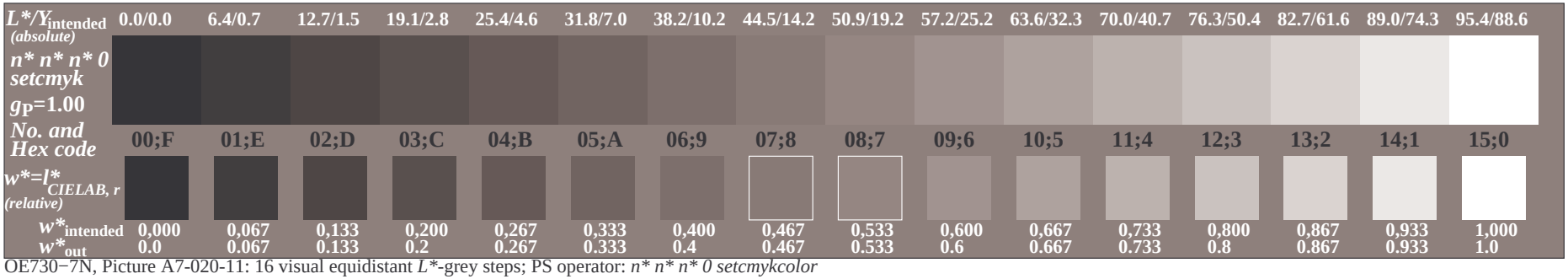
Mean colour reproduction index: $R^*_{ab,m}$ = **100**

OE730−3N-020-11: File: Measure unknown; Device: Device unknown; Date: Date unknown

For linearized output of the 16 grey steps of Picture A7-020-11



OE731−3N-020-11: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE730−7N, Picture A7-020-11: 16 visual equidistant L^*-grey steps; PS operator: *n* n* n* 0 setcmykcolor*

OE73: In-output relation according to ISO 9241-306; DH
Viewing *Y* contrast Y_W:Y_N=88,9:0,31; Y_N range 0,0 to <0,46

input: *cmy0 (−>cmy0*d) setcmyk*
output 020-11: no change