Linear relation CIELAB (*L**, *a**, *b**) and *adapted (a)* CIELAB (*C*_ab,a*, *L**)
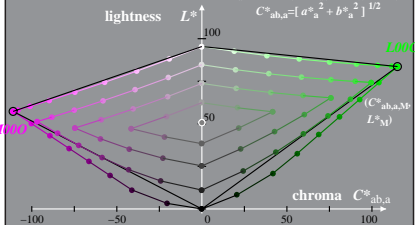**System: JE28_sRGB display 0%_G0**
Hue: *h**_L00C=151/360; *h**_M00O=354/360

$l^*_{lab} = (L^* - L^*_N) / (L^*_W - L^*_N)$
$a^*_a = a^* - a^*_N - l^*_{lab} \cdot [a^*_W - a^*_N]$
$b^*_a = b^* - b^*_N - l^*_{lab} \cdot [b^*_W - b^*_N]$
$C^*_{ab,a} = [a^{*2}_a + b^{*2}_a]^{1/2}$

lightness   *L**

100

M00O

50

(*C*_ab,a,M*, *L*_M*)

L00O

−100   −50   0   50   100

chroma   *C*_ab,a*

JE280−3A, 1; cf1=1.00; nt=0.18; nx=1.0, sRGB_00_95

Linear relation CIELAB (L*, a*, b*) and *adapted (a)* CIELAB (C*$_{ab,a}$, L*)
System: JE28_sRGB display 40%_G0
Hue: h*$_{L00C}$=151/360; h*$_{M00O}$=354/360

l*$_{lab}$=-(L* − L*$_N$) /(L*$_W$ − L*$_N$)
a*$_a$=a* − a*$_N$ − l*$_{lab}$* [a*$_W$ − a*$_N$]
b*$_a$=b* − b*$_N$ − l*$_{lab}$* [b*$_W$ − b*$_N$]
C*$_{ab,a}$=[a*$_a^2$ + b*$_a^2$]$^{1/2}$

lightness   L*

100   L00C

(C*$_{ab,a,M}$,
L*$_M$)

50

M60O

chroma   C*$_{ab,a}$

−100   −50   0   50   100

JE280−3A, 2; cf1=1.00; nt=0.18; nx=1.0, sRGB_00_95