

Linear relation CIELAB (L^* , a^* , b^*) and adapted (a) CIELAB ($C^*_{ab,a}$, L^*)

System: HE89_FRS09_92_D65_00%_O0

CIELAB hue angles:

$h_{ab,d}=[35, 92, 143, 224, 313, 338]$

$h_{ab,ex}=[26, 92, 162, 217, 272, 329]$

$h_{ab,e}=[26, 92, 162, 217, 272, 329]$

$$I^*_{lab*} = (L^* - L^*_N) / (L^*_W - L^*_N)$$

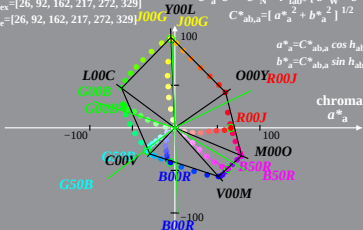
$$a^*_a = a^* - a^*_N - I^*_{lab*} [a^*_W - a^*_N]$$

$$b^*_a = b^* - b^*_N - I^*_{lab*} [b^*_W - b^*_N]$$

$$C^*_{ab,a} = [a^{*2}_a + b^{*2}_a]^{1/2}$$

$$a^*_a = C^*_{ab,a} \cos h_{ab}$$

$$b^*_a = C^*_{ab,a} \sin h_{ab}$$



Linear relation CIELAB (L^* , a^* , b^*) and adapted (a) CIELAB ($C^*_{ab,a}$, L^*)

System: HE89_FRS09_92_D65_00%_O1

CIELAB hue angles:

$h_{ab,d}=[35, 92, 143, 224, 313, 338]$

$h_{ab,ex}=[26, 92, 162, 217, 272, 329]$

$h_{ab,e}=[26, 92, 162, 217, 272, 329]$

$$l^*_{lab*}=(L^*-L^*_N)/(L^*_W-L^*_N)$$

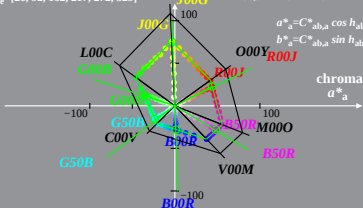
$$a^*_a=a^*-a^*_N-l^*_{lab*}[a^*_W-a^*_N]$$

$$b^*_a=b^*-b^*_N-l^*_{lab*}[b^*_W-b^*_N]$$

$$C^*_{ab,a}=[a^{*2}_a+b^{*2}_a]^{1/2}$$

$$a^*_a=C^*_{ab,a}\cos h_{ab}$$

$$b^*_a=C^*_{ab,a}\sin h_{ab}$$



Linear relation CIELAB (L^* , a^* , b^*) and adapted (a) CIELAB ($C^*_{ab,a}$, L^*)
 System: HE89_FRS09_92_D65_25%_O

CIELAB hue angles:

$h_{ab,d}=[35, 92, 143, 224, 313, 338]$

$h_{ab,ex}=[42, 109, 175, 230, 286, 343]$

$h_{ab,e}=[26, 92, 162, 217, 272, 329]$

$$I^*_{lab*}=(L^*-L^*_N)/(L^*_W-L^*_N)$$

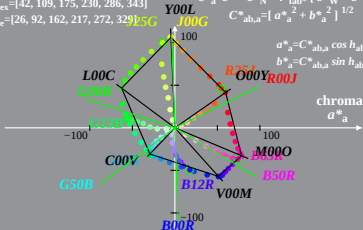
$$a^*_a=a^*-a^*_N-I^*_{lab*}[a^*_W-a^*_N]$$

$$b^*_a=b^*-b^*_N-I^*_{lab*}[b^*_W-b^*_N]$$

$$C^*_{ab,a}=[a^{*2}_a+b^{*2}_a]^{1/2}$$

$$a^*_a=C^*_{ab,a}\cos h_{ab}$$

$$b^*_a=C^*_{ab,a}\sin h_{ab}$$



Linear relation CIELAB (L^* , a^* , b^*) and *adapted* (a) CIELAB ($C^*_{ab,a}$, L^*)
 System: HE89_FRS09_92_D65_25%_O1

CIELAB hue angles:

$h_{ab,d}=[35, 92, 143, 224, 313, 338]$

$h_{ab,ex}=[42, 109, 175, 230, 286, 343]$

$h_{ab,e}=[26, 92, 162, 217, 272, 329]$

$$I^*_{lab*}=(L^*-L^*_N)/(L^*_W-L^*_N)$$

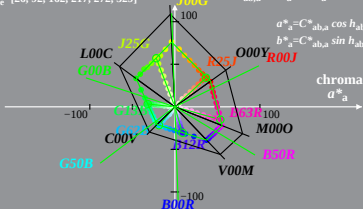
$$a^*_a=a^*-a^*_N-I^*_{lab*}[a^*_W-a^*_N]$$

$$b^*_a=b^*-b^*_N-I^*_{lab*}[b^*_W-b^*_N]$$

$$C^*_{ab,a}=[a^{*2}_a+b^{*2}_a]^{1/2}$$

$$a^*_a=C^*_{ab,a}\cos h_{ab}$$

$$b^*_a=C^*_{ab,a}\sin h_{ab}$$



Linear relation CIELAB (L^* , a^* , b^*) and adapted (a) CIELAB ($C^*_{ab,a}$, L^*)
 System: HE89_FRS09_92_D65_50%_O0

CIELAB hue angles:

$h_{ab,d}=[35, 92, 143, 224, 313, 338]$

$h_{ab,ex}=[59, 127, 189, 244, 300, 357]$

$h_{ab,e}=[26, 92, 162, 217, 272, 329]$

$$I^*_{lab*} = (L^* - L^*_N) / (L^*_W - L^*_N)$$

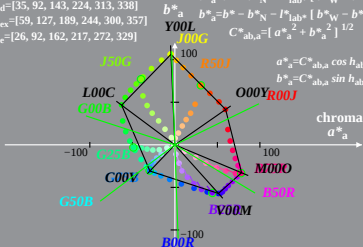
$$a^*_a = a^* - a^*_N - I^*_{lab*} [a^*_W - a^*_N]$$

$$b^*_a = b^* - b^*_N - I^*_{lab*} [b^*_W - b^*_N]$$

$$C^*_{ab,a} = [a^{*2}_a + b^{*2}_a]^{1/2}$$

$$a^*_a = C^*_{ab,a} \cos h_{ab}$$

$$b^*_a = C^*_{ab,a} \sin h_{ab}$$



Linear relation CIELAB (L^* , a^* , b^*) and adapted (a) CIELAB ($C^*_{ab,a}$, L^*)

System: HE89_FRS09_92_D65_50%_O1

CIELAB hue angles:

$h_{ab,d}=[35, 92, 143, 224, 313, 338]$

$h_{ab,ex}=[59, 127, 189, 244, 300, 357]$

$h_{ab,e}=[26, 92, 162, 217, 272, 329]$

$$I^*_{lab*}=(L^*-L^*_N)/(L^*_W-L^*_N)$$

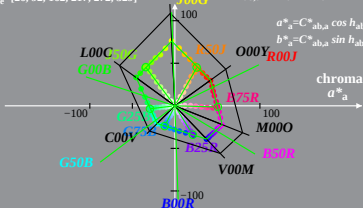
$$a^*_a=a^*-a^*_N-I^*_{lab*}[a^*_W-a^*_N]$$

$$b^*_a=b^*-b^*_N-I^*_{lab*}[b^*_W-b^*_N]$$

$$C^*_{ab,a}=[a^{*2}_a+b^{*2}_a]^{1/2}$$

$$a^*_a=C^*_{ab,a}\cos h_{ab}$$

$$b^*_a=C^*_{ab,a}\sin h_{ab}$$



Linear relation CIELAB (L^* , a^* , b^*) and adapted (a) CIELAB ($C^*_{ab,a}$, L^*)
 System: HE89_FRS09_92_D65_75%_O0

CIELAB hue angles:

$h_{ab,d}=[35, 92, 143, 224, 313, 338]$

$h_{ab,ex}=[75, 144, 203, 258, 314, 371]$

$h_{ab,e}=[26, 92, 162, 217, 272, 329]$

$$I^*_{lab*}=(L^*-L^*_N)/(L^*_W-L^*_N)$$

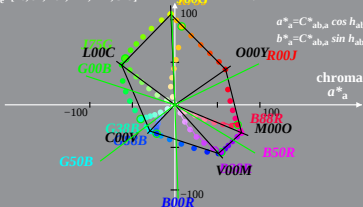
$$a^*_a=a^*-a^*_N-I^*_{lab*}[a^*_W-a^*_N]$$

$$b^*_a=b^*-b^*_N-I^*_{lab*}[b^*_W-b^*_N]$$

$$C^*_{ab,a}=[a^{*2}_a+b^{*2}_a]^{1/2}$$

$$a^*_a=C^*_{ab,a}\cos h_{ab}$$

$$b^*_a=C^*_{ab,a}\sin h_{ab}$$



Linear relation CIELAB (L^* , a^* , b^*) and adapted (a) CIELAB ($C^*_{ab,a}$, L^*)

System: HE89_FRS09_92_D65_75%_O1

CIELAB hue angles:

$h_{ab,d}=[35, 92, 143, 224, 313, 338]$

$h_{ab,ex}=[75, 144, 203, 258, 314, 371]$

$h_{ab,e}=[26, 92, 162, 217, 272, 329]$

$$l^*_{lab*}=(L^*-L^*_N)/(L^*_W-L^*_N)$$

$$a^*_a=a^*-a^*_N-l^*_{lab*}[a^*_W-a^*_N]$$

$$b^*_a=b^*-b^*_N-l^*_{lab*}[b^*_W-b^*_N]$$

$$C^*_{ab,a}=[a^{*2}_a+b^{*2}_a]^{1/2}$$

$$a^*_a=C^*_{ab,a}\cos h_{ab}$$

$$b^*_a=C^*_{ab,a}\sin h_{ab}$$

