

Linear relation CIELAB (L^*, a^*, b^*) and adapted (a) CIELAB ($C^*_{ab,a}, L^*$)
 System: ORS18

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

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

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

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

CIELAB hue angles:

$$h_{ab,d} = [37, 96, 150, 236, 305, 353]$$

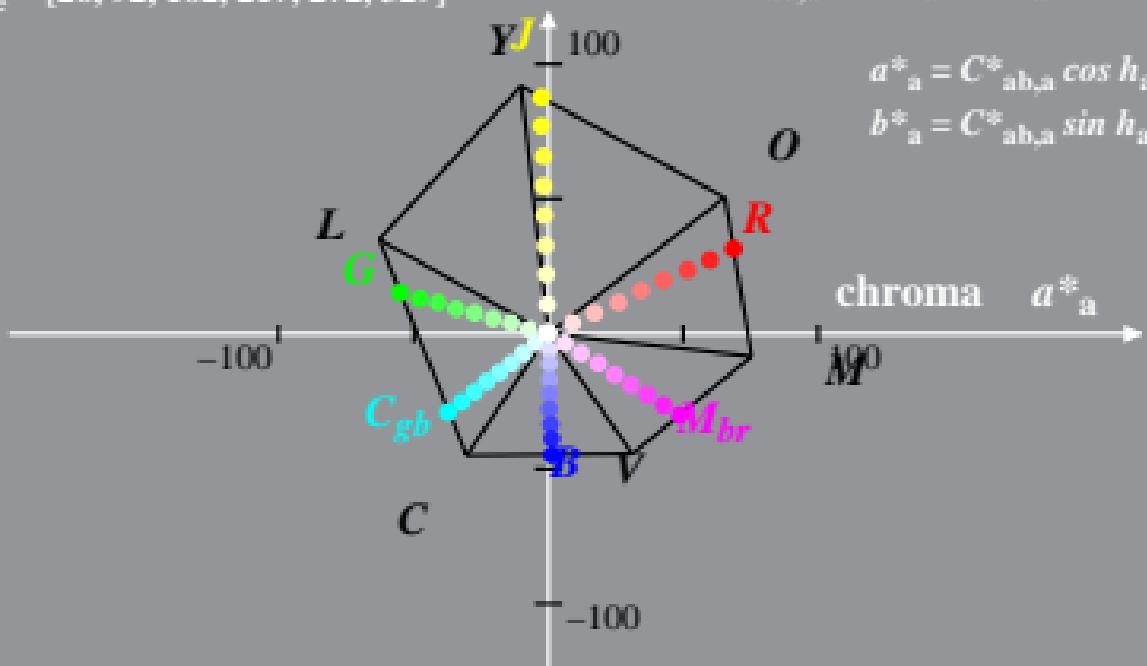
$$h_{ab,e} = [26, 92, 162, 217, 272, 329]$$

$$b^*_{ab}$$

$$C^*_{ab,a}$$

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

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



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

System: TLS00

$$l_{\text{lab}*}^* = (L^* - L_N^*) / (L_W^* - L_N^*)$$

$$a_{ab,a}^* = a^* - a_N^* - l_{\text{lab}*}^* [a_W^* - a_N^*]$$

$$b_{ab,a}^* = b^* - b_N^* - l_{\text{lab}*}^* [b_W^* - b_N^*]$$

$$C_{ab,a}^* = [a_{ab,a}^{*2} + b_{ab,a}^{*2}]^{1/2}$$

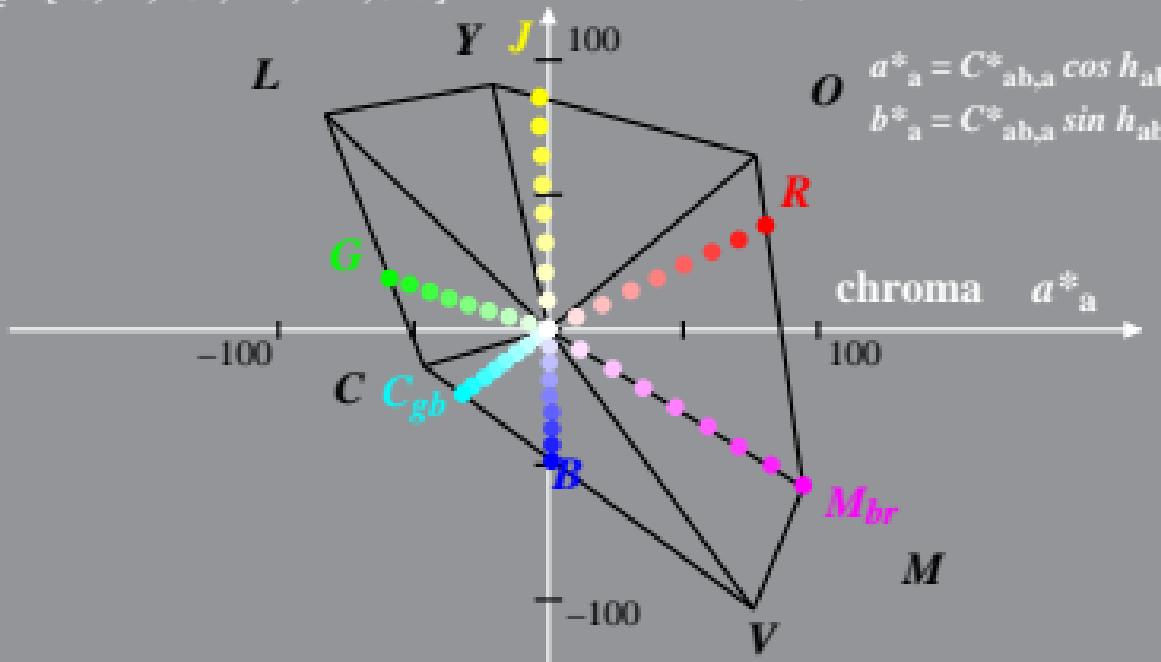
CIELAB hue angles:

$$h_{ab,d} = [40, 102, 136, 196, 306, 328]$$

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

$$b_{ab,a}^*$$

$$\begin{aligned} a_{ab,a}^* &= C_{ab,a}^* \cos h_{ab} \\ b_{ab,a}^* &= C_{ab,a}^* \sin h_{ab} \end{aligned}$$



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

System: FRS06

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

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

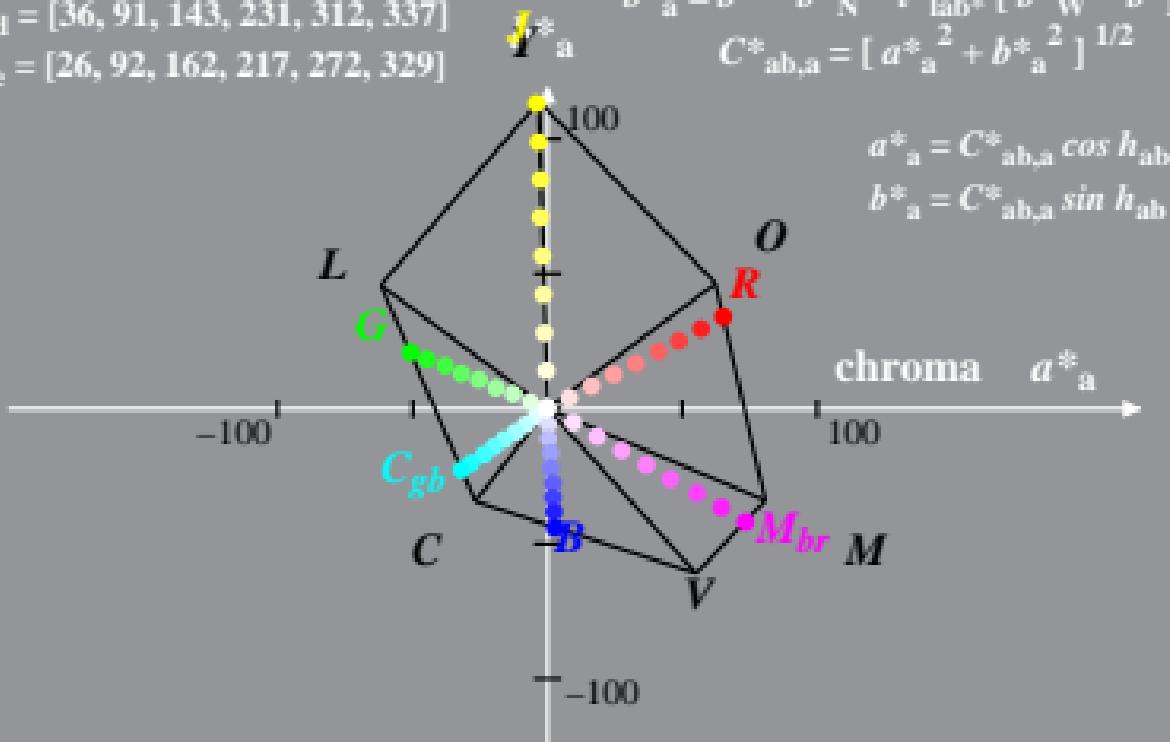
$$b^*_{ab} = b^* - b^*_N - l^*_{lab*} [b^*_W - b^*_N]$$

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

CIELAB hue angles:

$$h_{ab,d} = [36, 91, 143, 231, 312, 337]$$

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



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

System: TSL18

$$L^*_{lab*} = (L^* - L^*_{N}) / (L^*_{W} - L^*_{N})$$

$$a^*_{ab} = a^* - a^*_{N} - L^*_{lab*} [a^*_{W} - a^*_{N}]$$

$$b^*_{ab} = b^* - b^*_{N} - L^*_{lab*} [b^*_{W} - b^*_{N}]$$

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

CIELAB hue angles:

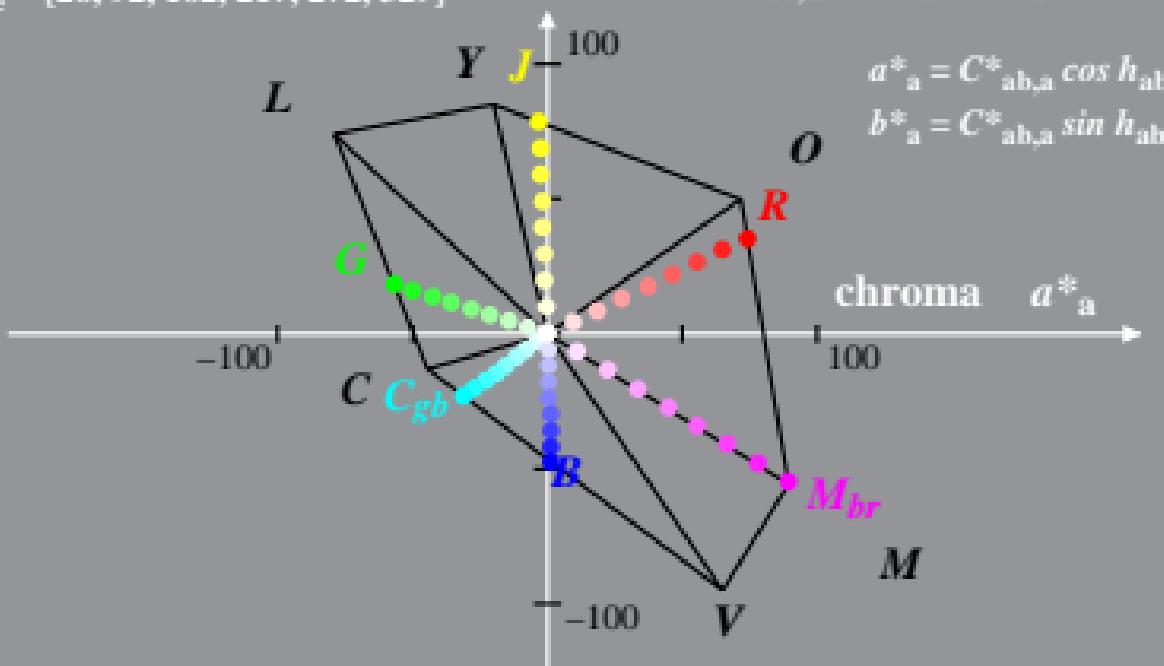
$$h_{ab,d} = [34, 103, 136, 196, 304, 328]$$

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

$$b^*_{ab}$$

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

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



Linear relation CIELAB (L^*, a^*, b^*) and adapted (a) CIELAB ($C^*_{ab,a}, L^*$)
 System: NLS00

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

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

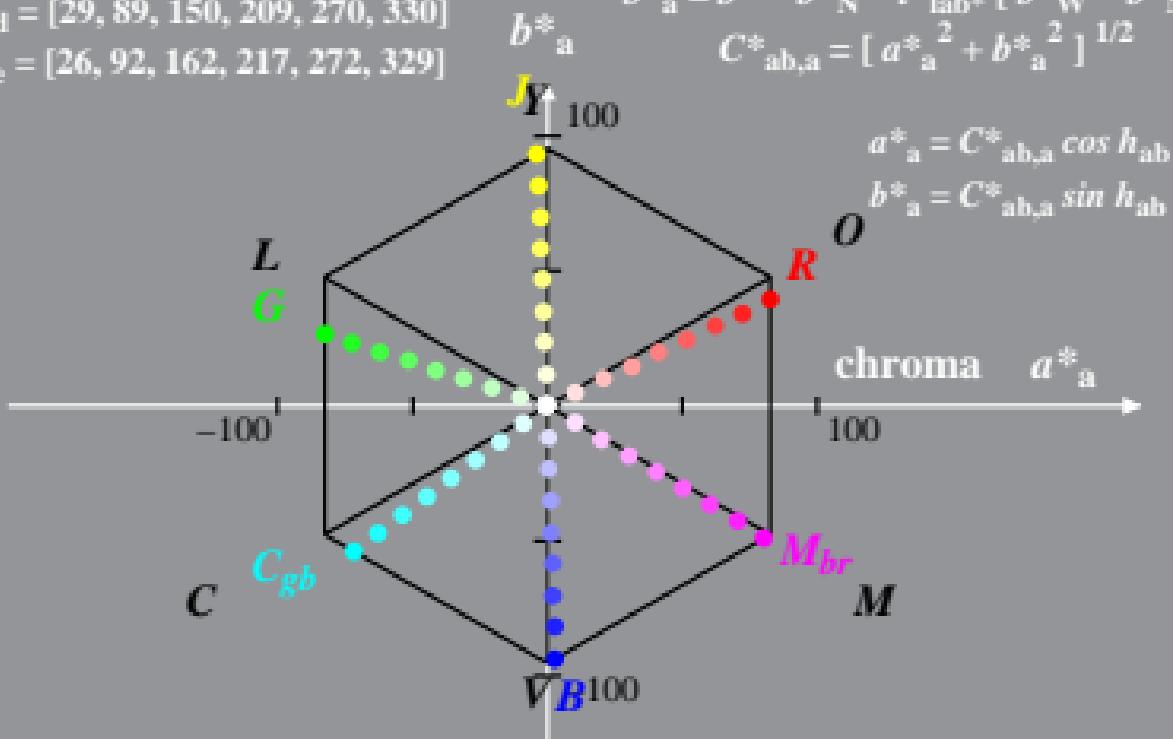
$$b^*_{ab} = b^* - b^*_N - l^*_{lab*} [b^*_W - b^*_N]$$

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

CIELAB hue angles:

$$h_{ab,d} = [29, 89, 150, 209, 270, 330]$$

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



Linear relation CIELAB (L^*, a^*, b^*) and adapted (a) CIELAB ($C^*_{ab,a}, L^*$)
 System: NLS18

CIELAB hue angles:

$$h_{ab,d} = [30, 89, 149, 210, 270, 329]$$

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

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

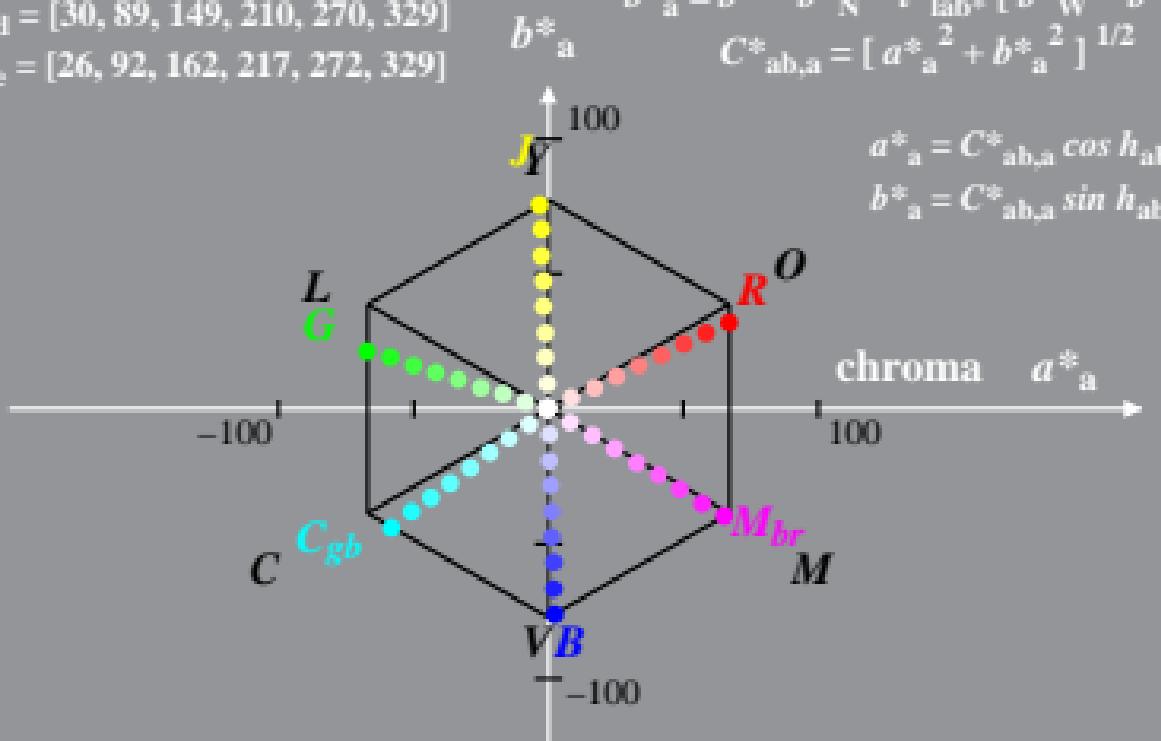
$$a^*_{ab} = a^* - a^*_N - l^*_{lab*} [a^*_W - a^*_N]$$

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

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

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

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



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

System: NRS11

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

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

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

CIELAB hue angles:

$$h_{ab,d} = [23, 90, 167, 202, 272, 325]$$

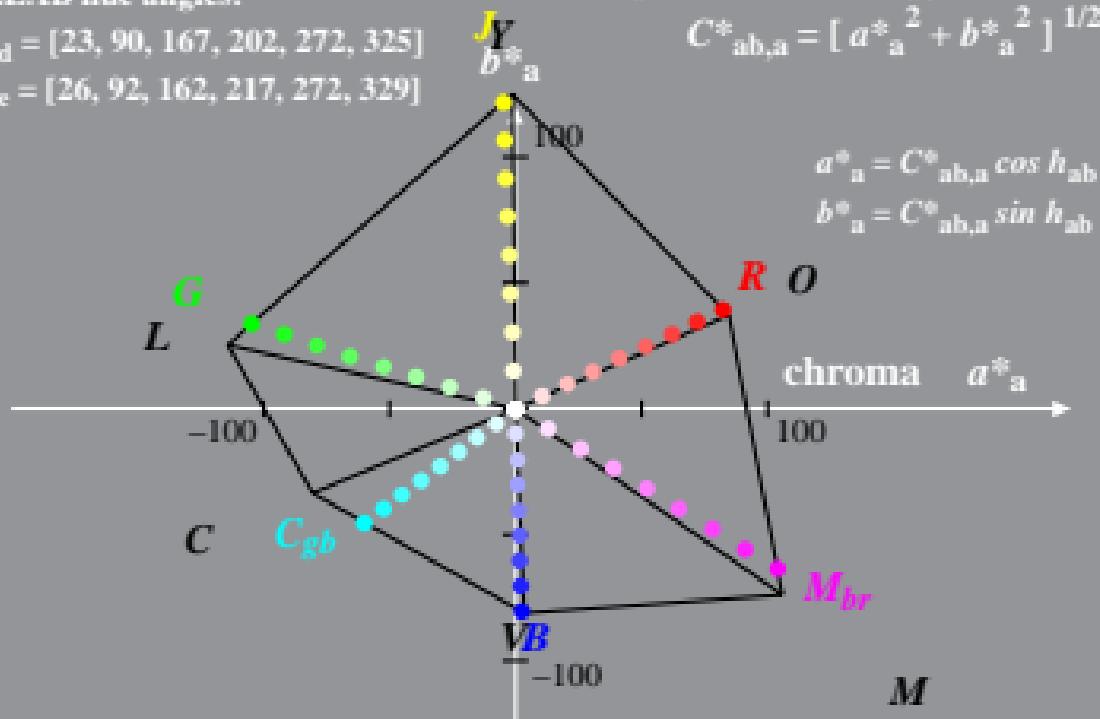
$$h_{ab,e} = [26, 92, 162, 217, 272, 329]$$

Y
 b^*_{ab}

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

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

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



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

System: TLS70

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

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

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

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

CIELAB hue angles:

$$h_{ab,d} = [21, 107, 142, 197, 293, 326]$$

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

$$b^*_{ab}$$

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

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

