

# Linear relation CIELAB ( $L^*, a^*, b^*$ ) and adapted (a) CIELAB ( $C^*_{ab,a}, L^*$ ) System: TLS00

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

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

$$b^*_{\text{a}} = b^* - b^*_N - l^*_{\text{lab}^*} [b^*_W - b^*_N]$$

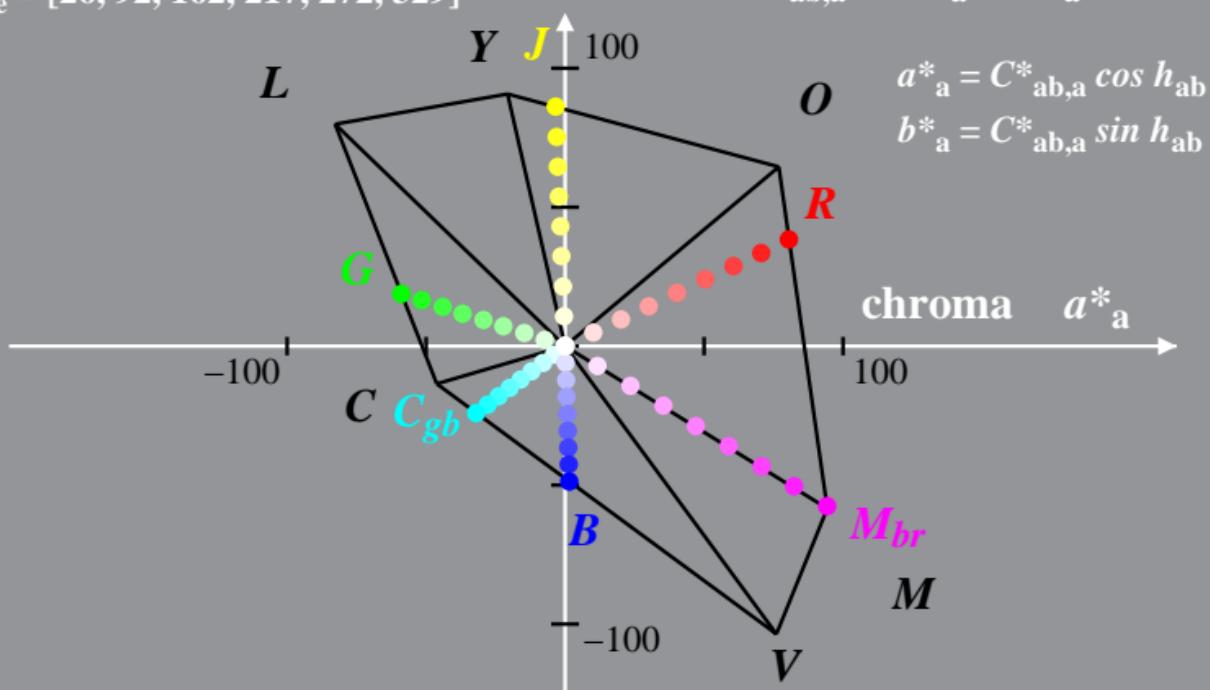
$$C^*_{ab,a} = [a^*_{\text{a}}^2 + b^*_{\text{a}}^2]^{1/2}$$

CIELAB hue angles:

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

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

$$b^*_{\text{a}}$$



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

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