Linear relation CIELAB (*L**, *a**, *b**) and *adapted (a)* CIELAB (*C**$_{ab,a}$, *L**)
Offset Reflective System: ORS18a

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

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

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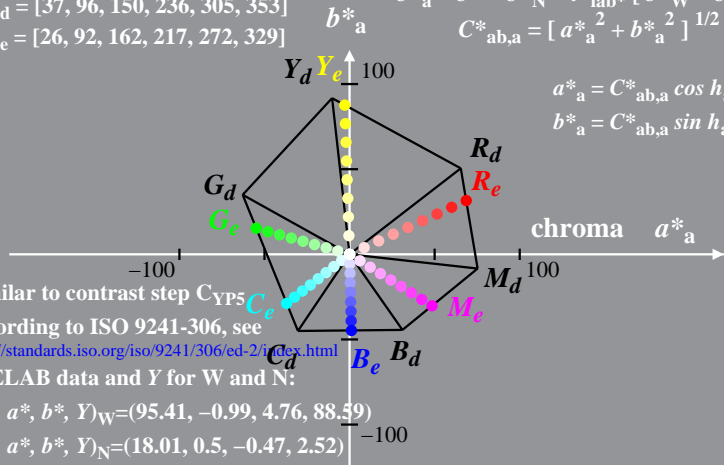
$$C^*_{ab,a} = [a^*_a{}^2 + b^*_a{}^2]^{1/2}$$

CIELAB hue angles *RYGCBM*:
$h_{ab,d}$ = [37, 96, 150, 236, 305, 353]
$h_{ab,e}$ = [26, 92, 162, 217, 272, 329]

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

Similar to contrast step C$_{YP5}$
according to ISO 9241-306, see
http://standards.iso.org/iso/9241/306/ed-2/index.html
CIELAB data and *Y* for W and N:
(*L**, *a**, *b**, *Y*)$_W$=(95.41, −0.99, 4.76, 88.59)
(*L**, *a**, *b**, *Y*)$_N$=(18.01, 0.5, −0.47, 2.52)

AEY30−3N