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

Photo Reflective System: FRS06a

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

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

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

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

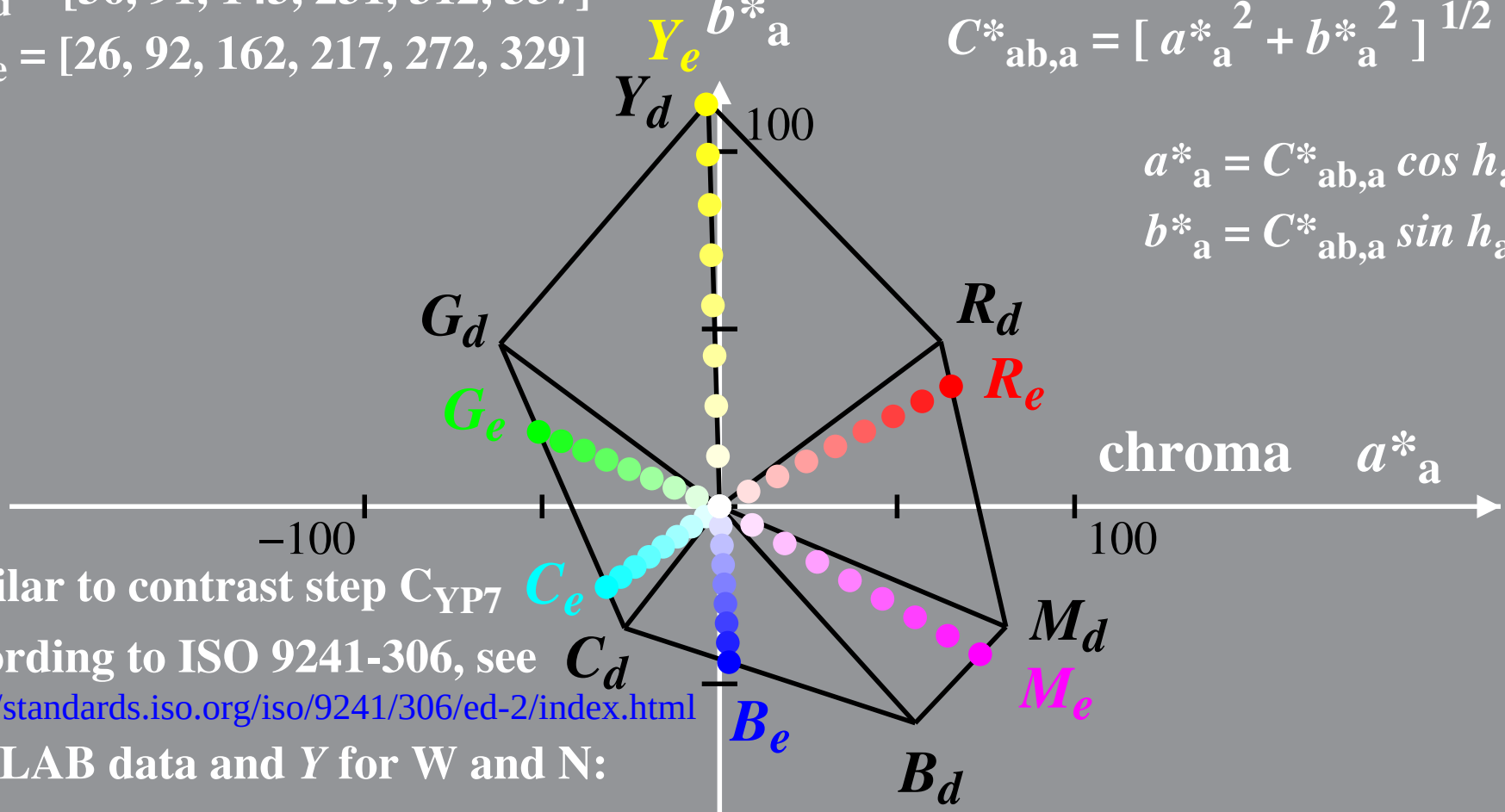
CIELAB hue angles *RYGCBM:*

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

$h_{ab,e}$ = [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_{YP7} 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:

$(L^*, a^*, b^*, Y)_W$=(91.97, −0.18, −5.11, 80.63)

$(L^*, a^*, b^*, Y)_N$=(6.25, −1.63, −1.73, 0.7)

AEY31−3N