sensation scaling functions
lightness $L*$ and tristimulus value Y

adaptation on surround white:
$$L* = 100 \, (Y / 100)^{1/2,0}$$

adaptation on surround gray:
$$L* = 100 \, (Y / 100)^{1/2,4}$$
description with CIELAB 1976:
$$L* = 116 \, (Y / 100)^{1/3,0} - 16$$

adaptation on surround black:
$$L* = 100 \, (Y / 100)^{1/3,0}$$