Color Analysis

S(λ) : OSA Spectrum data (linear, Normalized to /nm value)

$\bar{x}(\lambda)$, $\bar{y}(\lambda)$, $\bar{z}(\lambda)$: color matching functions

X,Y,Z: Tristimulus values

x, y, z: chromaticity coordinates

1. Tristimulus values

$$X = \int_{380}^{780} S(\lambda)\bar{x}(\lambda)d\lambda$$
$$Y = \int_{380}^{780} S(\lambda)\bar{y}(\lambda)d\lambda$$
$$Z = \int_{380}^{780} S(\lambda)\bar{z}(\lambda)d\lambda$$

2. Chromaticity coordinates

$$x = \frac{X}{X + Y + Z}$$
$$y = \frac{Y}{X + Y + Z}$$
$$z = \frac{Z}{X + Y + Z}$$