Formulary
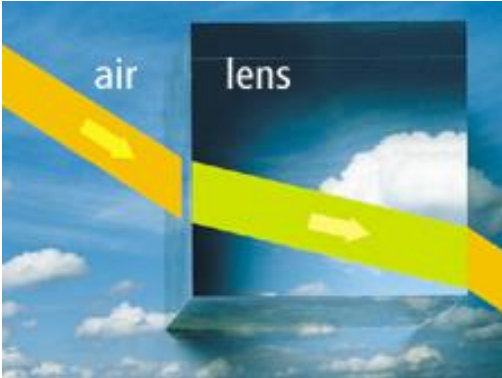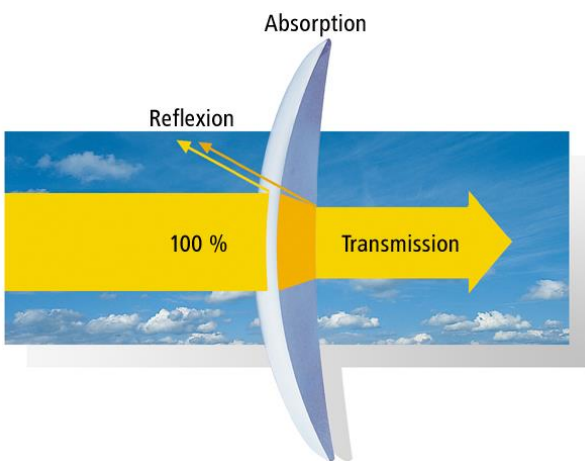
Refractive index n

$$n = \frac{c_{vacuum}}{c_{lens}} = \frac{\text{velocity of light in vacuum}}{\text{velocity of light in lens}}$$
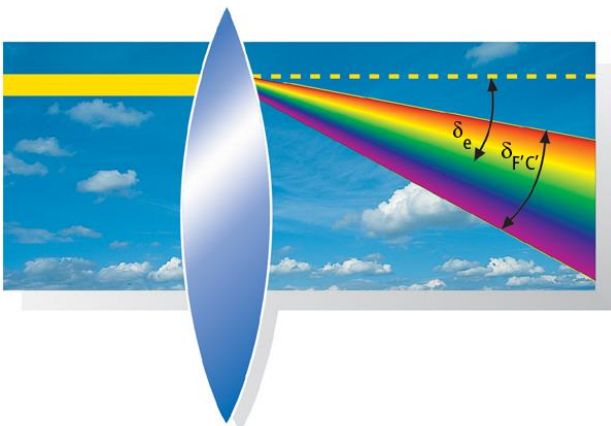
Reflection + Absorption + Transmission

$$\rho = \left(\frac{n' - n}{n' + n}\right)^2$$

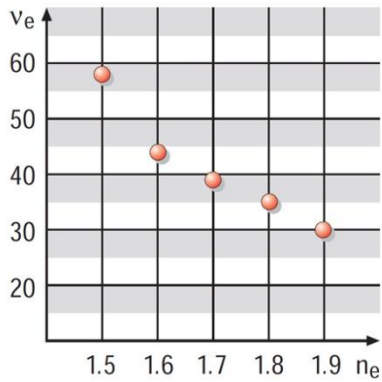n: medium in front of an
   interface
n': medium behind an interface

Dispersion

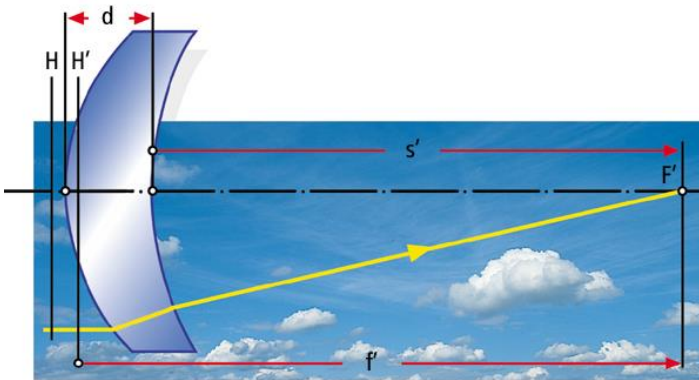$$\Delta n = n_{F'} - n_{C'}$$

$n_{C'}$: refractive index of the red
   cadmium line (644nm)
n_e: refractive index of the green
   mercury line
$n_{F'}$: refractive index of the blue
   cadmium line (480 nm)

Abbe number ν

$$\nu = \frac{n_e - 1}{n_{F'} - n_{C'}} = \frac{\delta_e}{\delta_{F'C'}}$$

Equivalent power F

$$F = \frac{1}{f'} = F_1 + F_2 - \frac{t}{n'} * F_1 * F_2$$

Surface power of front surface:
$$F_1 = \frac{1}{f'_1} = \frac{(n' - n)}{r_1}$$

Surface power of back surface:
$$F_2 = \frac{1}{f'_2} = \frac{(n - n')}{r_2}$$