

Determining Luminous Transmittance of Colored Contact Lenses using a UV-Vis Spectrophotometer

INTRODUCTION

Luminous transmittance is measured as a part of the standards used to evaluate the performance of non-corrective colored contact lenses (colored contact lenses). Luminous transmittance (%) is calculated based on the ratio of the transmitted light intensity to the incident light intensity when the contact lens is irradiated perpendicularly by a parallel beam. According to the standard, the luminous transmittance should be within $\pm 5\%$ of the established value and the tests are to be performed in accordance with methods such as ISO 18369-3 and JIS Z 8722.

This time, commercially available colored contact lenses were analyzed by using the luminous transmittance measurement accessory for contact lenses (custom made) and the luminous transmittance was calculated by using the product sum function of an option package program with reference to ISO 18369-3. By using the luminous transmittance measurement system, the luminous transmittance and optical properties of colored contact lenses can be easily determined.

SAMPLE

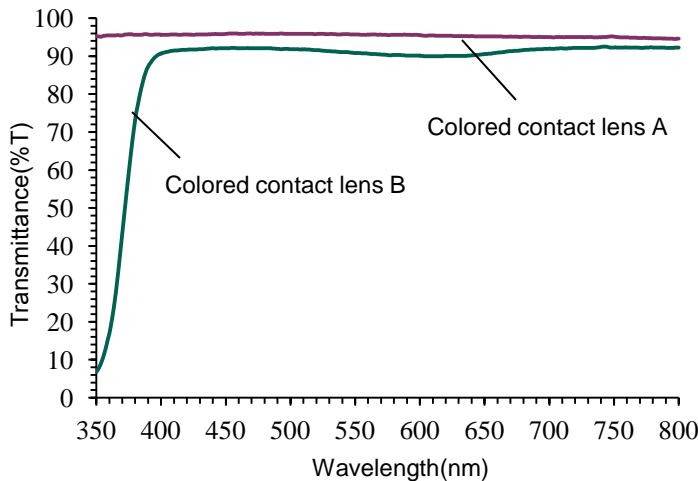
Sample : Colored contact lens

INSTRUMENT CONDITIONS

Instrument : U-3900 Spectrophotometer
 Measurement wavelength range : 350 - 800 nm
 Slit : 5 nm
 Scan speed : 300 nm/min
 Sampling interval : 1 nm

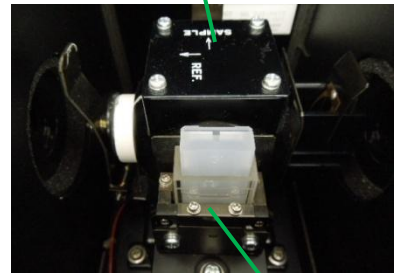
ACCESSORY

Luminous transmittance measurement accessory for contact lenses (custom made) (P/N : 2J0-0275)
 $\phi 60$ Integrating sphere accessory (P/N : 2J2-0176)
 Option package program (P/N: 3J2-0311)



Transmission Spectra of Colored contact lens

$\phi 60$ Integrating sphere accessory



Luminous transmittance measurement accessory for contact lenses (custom made)



Colored Contact Lens Set in Soft Contact Lens Holder

Calculation Results of Luminous Transmittance

	Colored contact lens A	Colored contact lens B
Luminous transmittance(%)*	95.66	90.81

* Calculated with reference to ISO 18369-3

KEY WORDS

Material/Processing Material Related, Other Material/Processing Material Related, Contact Lens, Transmission Spectrum, Transmittance, Luminous Transmittance, Spectrophotometer, ISO18369-3, Contact Lens, Transmission Spectrum, Transmittance, Luminous Transmittance, U-3900

Spectrophotometer (UV)

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