Transmittance Measurement of Wavelength Calibration Filters

INTRODUCTION

The transmittance of a wavelength calibration filter having specified values at certain wavelengths was measured. By using a filter which has the specified value close to the transmittance at the wavelength to be confirmed, the validity of the transmission spectrum can be confirmed.
The specified values of V10 are the transmittance of 80% or higher at the wavelength of 550 nm and the transmittance of 2% or less at the wavelength of 586 nm.
This time, the transmission spectrum of V10 was measured by using U-3900H spectrophotometer. As a result, the measured values were found to be within the ranges of the specified values and thus, the validity was confirmed.
U-3900H spectrophotometer employs a double monochrometer and even a low transmittance can be analyzed with a good accuracy.

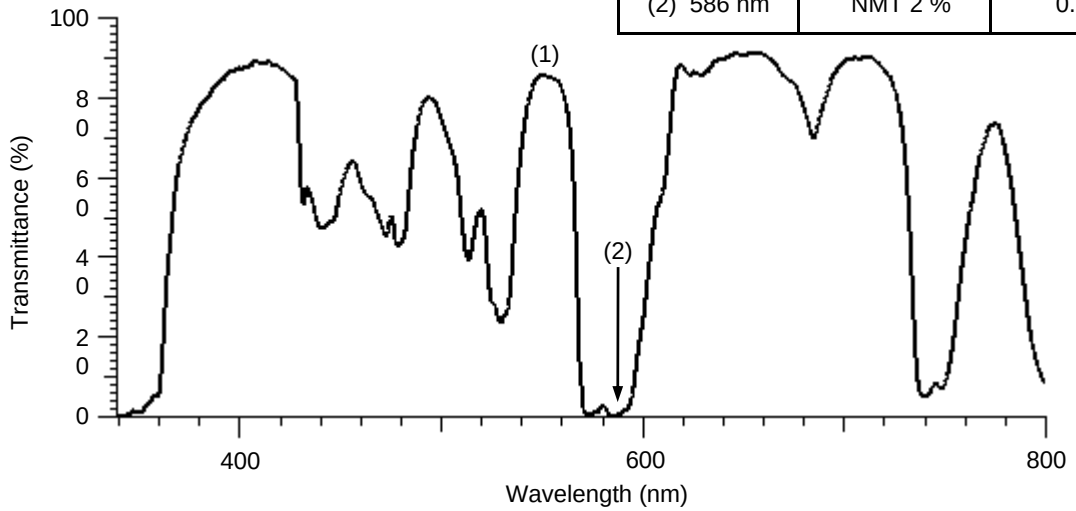
SAMPLE

Sample : Wavelength calibration filter V10
(HOYA)

INSTRUMENT CONDITIONS		Accessory
Instrument	: U-3900H spectrophotometer	Glass filter holder (P/N : 210-2109)
Measurement wavelength	: 340 - 800 nm	
Scan speed	: 300 nm/min	
Slit	: 0.5 nm	
Sampling interval	: 0.5 nm	

Transmittance of Wavelength Calibration Filter V10 at Each Wavelength

Wavelength	Specified value for V10	Measured value
(1) 550 nm	NLT 80 %	85.43 %
(2) 586 nm	NMT 2 %	0.13 %



Transmission Spectrum of Wavelength Calibration Filter V10

KEY WORDS
Material/Processing Material Related, Glass/Ceramics, Wavelength Calibration Filter, Transmission Spectrum, Transmittance, Neodymium Filter, Spectrophotometer, UV, U-2900, U-3900, U-3900H, U-4100

Spectrophotometer (UV)

Sheet No. UV110002-01

Transmittance Measurement of Wavelength Calibration Filters

INTRODUCTION

The transmittance of a wavelength calibration filter having specified values at certain wavelengths was measured. By using a filter which has the specified value close to the transmittance at the wavelength to be confirmed, the validity of the transmission spectrum can be confirmed.
The specified values of V30 are the transmittance of 68 ± 3% at the wavelength of 550 nm and the transmittance of 1% or less at the wavelength of 586 nm.
This time, the transmission spectrum of V30 was measured by using U-3900H spectrophotometer. As a result, the measured values were found to be within the ranges of the specified values and thus, the validity was confirmed.
U-3900H spectrophotometer employs a double monochrometer and even a low transmittance can be analyzed with a good accuracy.

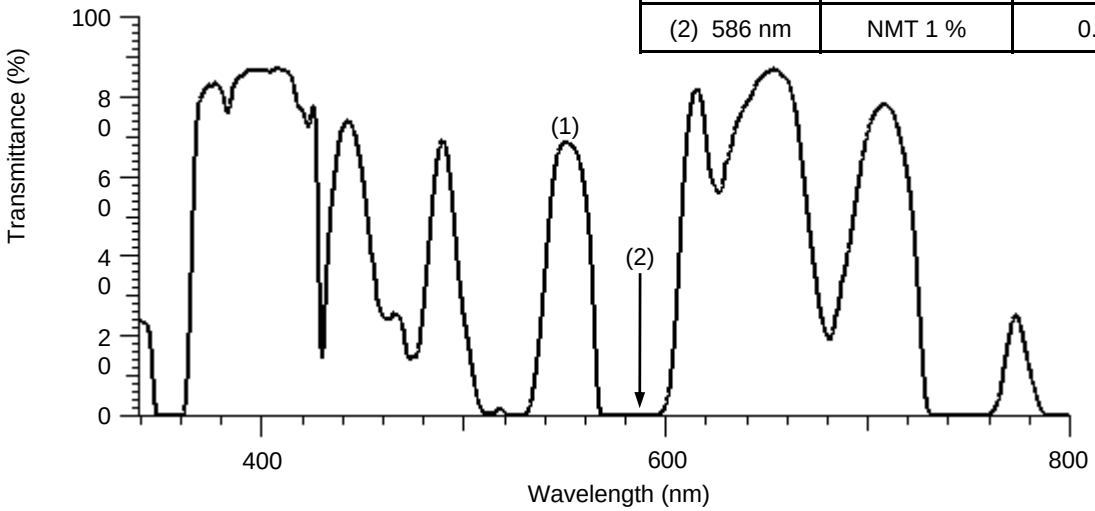
SAMPLE

Sample : Wavelength Calibration Filter V30
(HOYA)

INSTRUMENT CONDITIONS		Accessory
Instrument	: U-3900H spectrophotometer	Glass filter holder (P/N : 210-2109)
Measurement wavelength	: 340 - 800 nm	
Scan speed	: 300 nm/min	
Slit	: 0.5 nm	
Sampling interval	: 0.5 nm	

Transmittance of Wavelength Calibration Filter V30 at Each Wavelength

Wavelength	Specified value for V30	Measured value
(1) 550 nm	68 ± 3 %	68.40 %
(2) 586 nm	NMT 1 %	0.01 %



Transmission Spectrum of Wavelength Calibration Filter V30

KEY WORDS
Material/Processing Material Related, Glass/Ceramics, Wavelength Calibration Filter, Transmission Spectrum, Transmittance, Neodymium Filter, Spectrophotometer, UV, U-2900, U-3900, U-3900H, U-4100

Spectrophotometer (UV)

Sheet No. UV110002-02

Transmittance Measurement of Wavelength Calibration Filters

INTRODUCTION

The transmittance of a wavelength calibration filter having specified values at certain wavelengths was measured. By using a filter which has the specified value close to the transmittance at the wavelength to be confirmed, the validity of the transmission spectrum can be confirmed.
The specified values of HY-1 are the transmittance of 80% or higher at the wavelength of 435 nm and the transmittance of 5% or less at the wavelength of 445 nm.
This time, the transmission spectrum of HY-1 was measured by using U-3900H spectrophotometer. As a result, the measured values were found to be within the ranges of the specified values and thus, the validity was confirmed.
U-3900H spectrophotometer employs a double monochrometer and even a low transmittance can be analyzed with a good accuracy

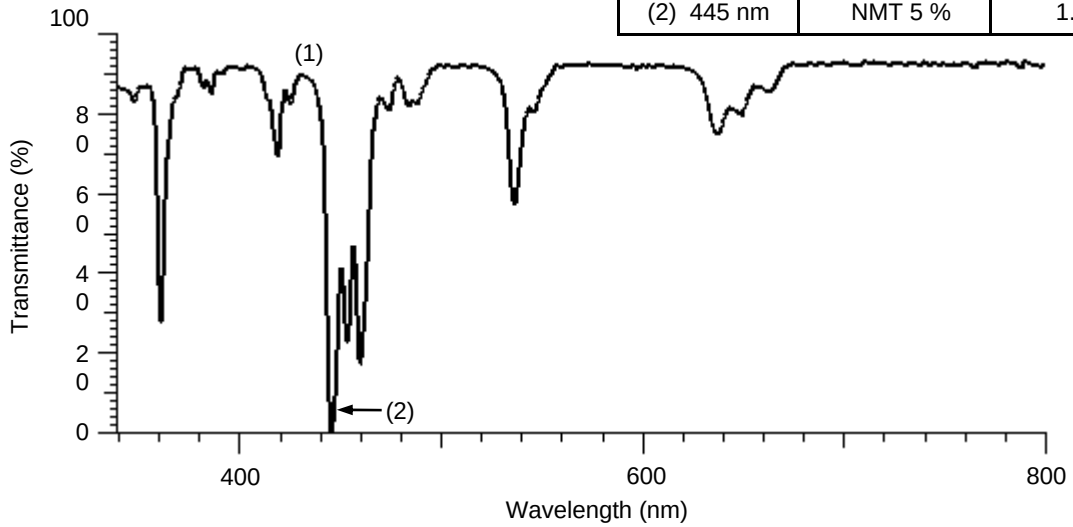
SAMPLE

Sample : Wavelength Calibration Filter HY-1
(HOYA)

INSTRUMENT CONDITIONS		Accessory
Instrument	: U-3900H spectrophotometer	Glass filter holder (P/N : 210-2109)
Measurement wavelength	: 340 - 800 nm	
Scan speed	: 300 nm/min	
Slit	: 0.5 nm	
Sampling interval	: 0.5 nm	

Transmittance of Wavelength Calibration Filter HY-1 at Each Wavelength

Wavelength	Specified value for HY-1	Measured value
(1) 435 nm	NLT 80 %	88.54 %
(2) 445 nm	NMT 5 %	1.97 %



Transmission Spectrum of Wavelength Calibration Filter HY-1

KEY WORDS
Material/Processing Material Related, Glass/Ceramics, Wavelength Calibration Filter, Transmission Spectrum, Transmittance, Holmium Filter, Spectrophotometer, UV, U-2900, U-3900, U-3900H, U-4100

Spectrophotometer (UV)

Sheet No. UV110002-03

In case the measured values are outside the range of the values specified for the wavelength calibration filter, confirm the accuracy of the wavelength by referring to the instruction manual of the spectrophotometer being used.

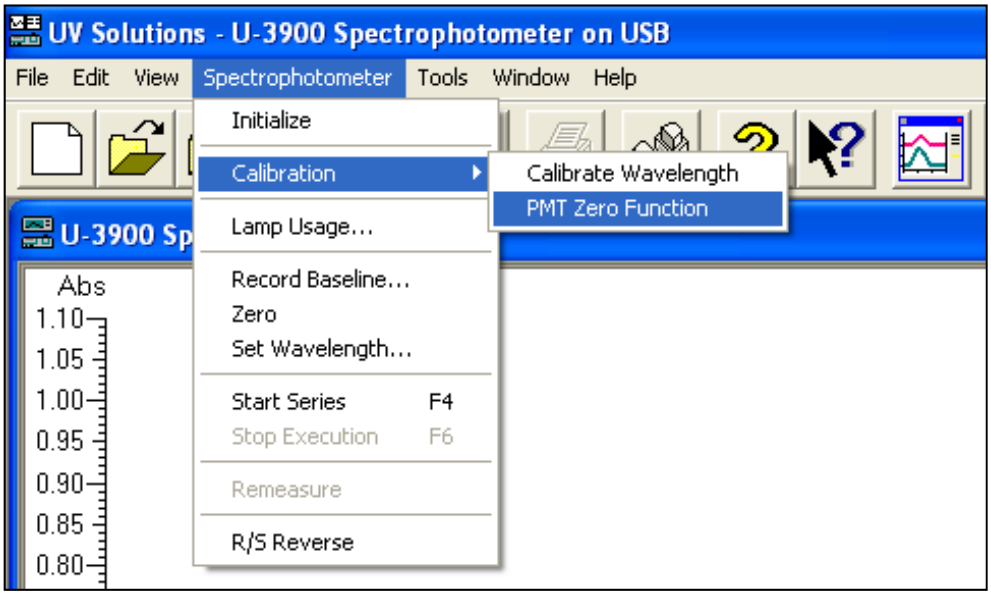
If the wavelength accuracy is outside the range of the instrument specification, calibrate the wavelength by following the procedure below.

For U-3900H spectrophotometer, the wavelength axis can be easily calibrated by using the wavelength calibration function of UV Solutions.

The emission line (656.1 nm) of the D_2 lamp, the light source, is used for the wavelength calibration.

(1) Make sure there is no object in the sample chamber, and tightly close the lid of the chamber.

(2) Select “wavelength calibration” under “Spectrophotometer” in the UV Solutions menu.
The wavelength calibration is performed automatically.



KEY WORDS
Material/Processing Material Related, Glass/Ceramics,
Wavelength Calibration Filter, Transmission Spectrum, Transmittance,
Spectrophotometer, UV, U-2900, U-3900, U-3900H, U-4100

Spectrophotometer (UV)

Sheet No. UV110002-04