

Transmittance of plate equipped with transparent conductive film

INTRODUCTION

Transparent conductive films are thin films having both visible transmittance and electric conductivity and used for flat panel displays such as LCD, touch panels, solar cells, etc. The transmission characteristics of the transparent conductive film used for solar cells need to be evaluated for incident angles as the position of the sun changes.

The transmittances of a plate equipped with the transparent conductive film for various incident angles were measured by U-4100 spectrophotometer and visible transmittances and solar transmittances were calculated by using an option package referring to JISR3106 (1998).

As a result, it was found that the visible transmittance and solar transmittance decrease as the incident angle increases.

By using U-4100 spectrophotometer, variable angle absolute reflectance accessory, and transmission holder (close contact), the transmission characteristics of a plate equipped with transparent conductive film can be evaluated.

SAMPLE

Sample : Plate equipped with transparent conductive film

INSTRUMENT CONDITIONS

Instrument : U-4100 spectrophotometer (solid sample measurement system)

[UV/VIS]

Measurement wavelength range : 300 – 2100 nm

Scan speed : 300 nm/min

Slit : 8 nm

Sample interval : 1 nm

[NIR]

Scan speed : 750 nm/min

Slit : Automatic control

PbS sensitivity : 2

OTHER ESSENTIAL ITEMS

Variable angle absolute reflectance accessory ^(note1)
(P/N : 134-0116)

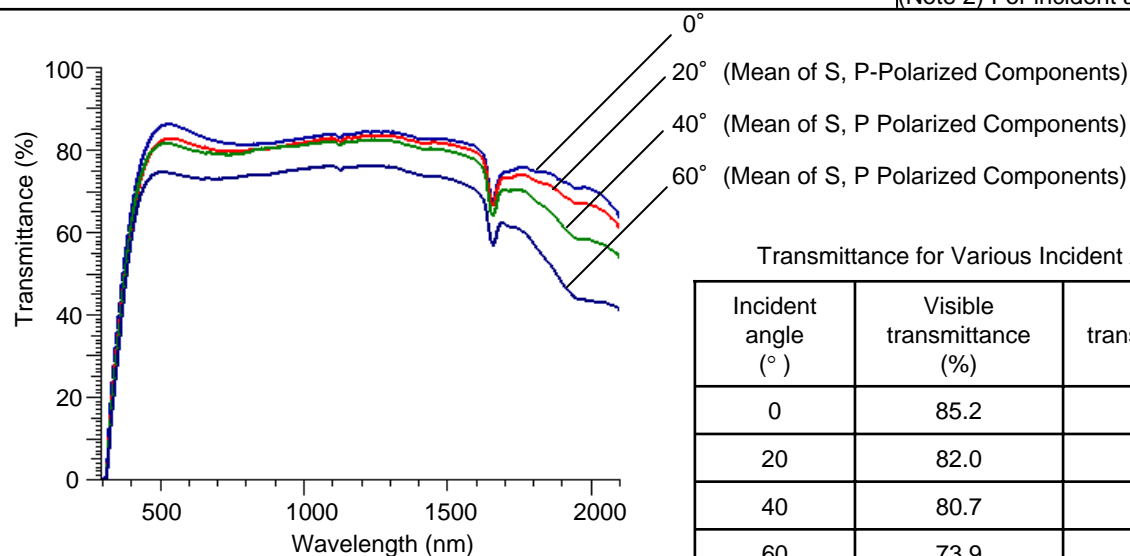
Polarizer holder ^(note1)
(P/N : 132-0325)

Transmission holder ^(note2)
(close contact)
(P/N : 1J0-0201)

Option package
(P/N : 2J1-0311)

(Note 1) For incident angle of 20, 40, and 60°

(Note 2) For incident angle of 0°



Transmittance for Various Incident Angles

Incident angle (°)	Visible transmittance (%)	Solar transmittance (%)
0	85.2	80.0
20	82.0	77.9
40	80.7	76.9
60	73.9	70.5

Transmittance of Plate Equipped with Transparent Conductive Film and Angle Dependency

KEY WORDS

Material·Processing Material Related, Other Material·Processing Material Related, Transparent Conductive Film, Display, Solar Cell, Transmittance, Visible Transmittance, Solar Transmittance, Spectrophotometer, U-4100

Spectrophotometer (UV)

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Reflectance of plate equipped with transparent conductive film

INTRODUCTION

Transparent conductive films are thin films having both visible transmittance and electric conductivity and used for flat panel displays such as LCD, touch panels, solar cells, etc. The reflection characteristics of the transparent conductive film used for solar cells need to be evaluated for incident angles as the position of the sun changes.

The reflectances of a plate equipped with the transparent conductive film for various incident angles were measured by U-4100 spectrophotometer and visible reflectances and solar reflectances were calculated by using an option package referring to JISR3106 (1998).

As a result, it was found that the visible reflectance and solar reflectance increase as the incident angle increases.

By using U-4100 spectrophotometer, variable angle absolute reflectance accessory, and 5° specular reflectance accessory, the reflection characteristics of a plate equipped with transparent conductive film can be evaluated.

SAMPLE

Sample : Plate equipped with transparent conductive film

INSTRUMENT CONDITIONS

Instrument : U-4100 spectrophotometer (solid sample measurement system)

[UV/VIS]

Measurement wavelength range : 300 – 2100 nm
 Scan speed : 300 nm/min
 Slit : 8 nm

[NIR]

Scan speed : 750 nm/min
 Slit : Automatic control
 PbS sensitivity : 2

Sample interval : 1 nm

OTHER ESSENTIAL ITEMS

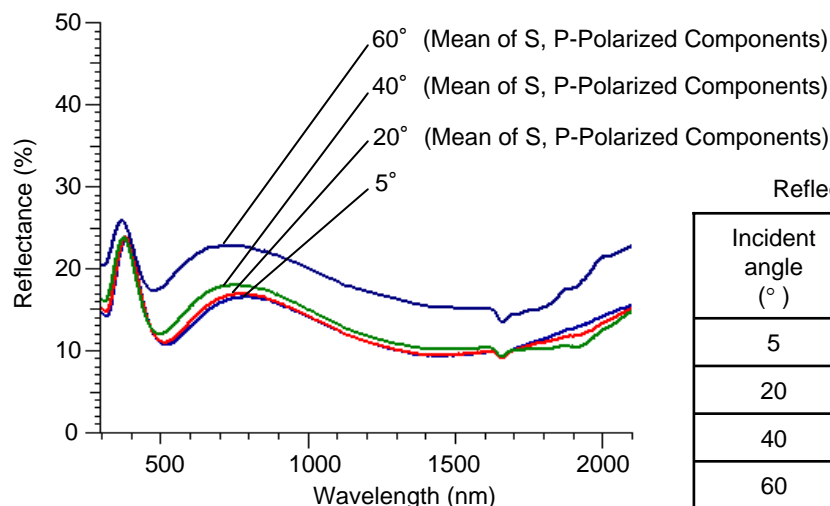
Variable angle absolute reflectance accessory ^(note1)
 (P/N : 134-0116)

Polarizer holder ^(note1)
 (P/N : 132-0325)

5° Specular reflectance accessory ^(note2)
 (P/N : 134-0102)

Option package
 (P/N : 2J1-0301)

(Note 1) For incident angle of 20, 40, and 60°
 (Note 2) For incident angle of 5°



Reflectance of Plate Equipped with Transparent Conductive Film and Angle Dependency

KEY WORDS

Material·Processing Material Related,
 Other Material·Processing Material Related, Transparent Conductive Film,
 Display, Solar Cell, Reflectance, Visible Reflectance, Solar Reflectance,
 Spectrophotometer, U-4100

Spectrophotometer (UV)

Sheet No. UV090011-02