

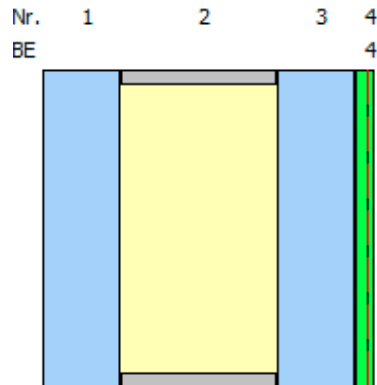
# Calculation SommerGlobal

**Project: 2020\_10\_29**

**Position: 05**

**Layer composition (outside to inside)**

| Number        | BE | Description         | mm    |
|---------------|----|---------------------|-------|
| 1             |    | EUROFLOAT           | 4,00  |
| 2             |    | 90% Argon           | 8,00  |
| 3             |    | EUROFLOAT           | 4,00  |
| 4             | 4  | Silverstar E 2019 * |       |
| * USERDEFINED |    |                     | 16,00 |



**Transmission, reflexion, absorption**

$\rho_v = 0,14$  (Light reflection factor outside)

$\rho'_v = 0,13$  (Light reflection factor inside)

$\rho_e = 0,17$  (direct radiation reflection factor outside)

$\rho'_e = 0,19$  (direct radiation reflection factor inside)

$\alpha_e \quad 1 = 0,08; 3 = 0,11$  (direct radiation absorption factor)

$T_{UV} = 0,30$  (ultraviolet transmittance)

$T_v = 0,82$  (Light transmission)

$T_e = 0,64$  (direct radiation transmission factor)

$R_a = 98$  (general color rendering index (CRI))

**EN 410**

$SC = 0,80$  (Shading Coefficient, g/0,87)

b-Faktor = 0,87 (VDI 2078, g/0,80)

$q_i = 0,05$  (secondary heat inside)

$g = 0,70$  (Total energy transmission factor)

**EN 673** Installation angle = 90° vertical

$U_g = 2,11 \text{ W/m}^2\text{K}$  (Heat transfer coefficient)  
Corrected emissivity according to EN 12898:2019

**EN ISO 52022-3**  $T_e = 5,00 \text{ }^\circ\text{C}$   $T_i = 20,00 \text{ }^\circ\text{C}$

$g_{th} = 0,004$  (Thermal radiation factor)

$g_c = 0,050$  (Convection factor)

$g_v = 0,000$  (Ventilation factor)

$E_s = 300,00 \text{ W/m}^2$  System height = 1,50 m

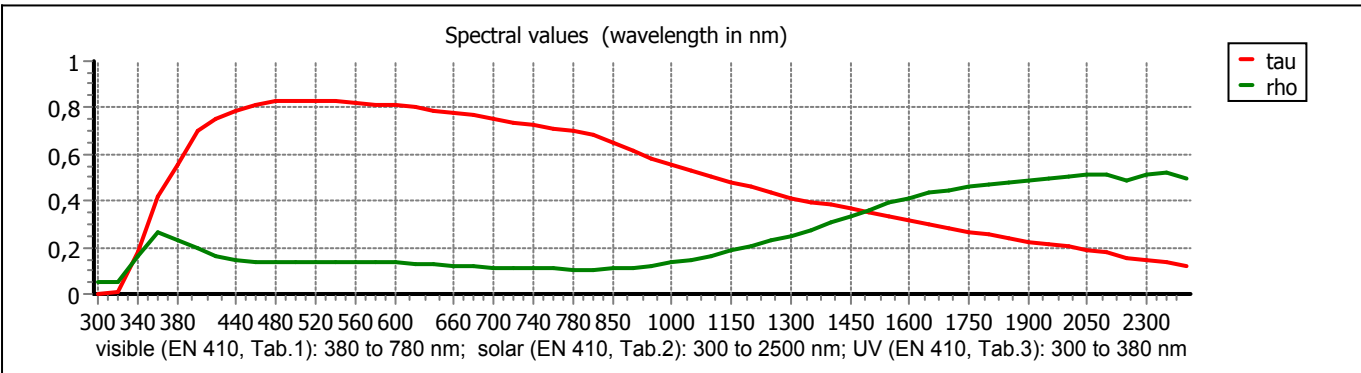
$h_{c,e} = 18,00 \text{ W/m}^2\text{K}$   $h_{c,i} = 3,60 \text{ W/m}^2\text{K}$

$q_i = 0,054$  (secondary heat inside)

$g_{tot} = 0,70$  (Total energy transmission factor)

Attention, the representation of the  $U_g$  value is not standard compliant. According to EN 1279-5 multi-pane insulating glass - Part 5: Conformity assessment, the  $U_g$  value according to EN 673 is to be calculated. According to 9.1 of this standard, the calculated U-value must be rounded to one decimal place. The  $U_w$  value of a window is according to EN ISO 10077-1 et al. calculated from the  $U_g$  value of the glazing.

Benutzerdefinierte Materialien werden verwendet.



Fluctuations of light and radiation technical values for the chemical composition of glass and manufacturing process possible. Function values take into account the permitted tolerances according to the product standards. The calculation-result does not give information about the technical practicability of this construction. We point out that the calculations were created on the basis of the manufacturers' spectral data. The company Sommer Informatik GmbH assumes no liability for the integrity of the manufacturers' data. For the declaration of performance the manufacturers' data placed at the disposal has to be confirmed separately.

EN 410, EN 673, EN ISO 52022-3, EN 12898:2019

ift-certified It. validation report no. 410 42167 (status as of 11/2009)

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2020-10-29 - 11:05:36 | 1 / 1

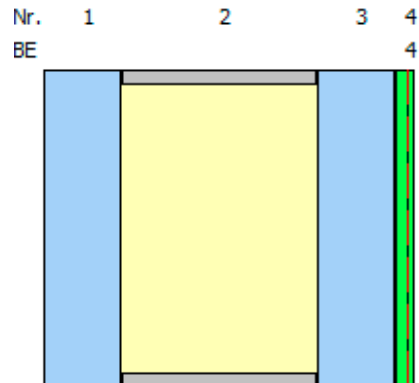
# Calculation SommerGlobal

**Project: 2020\_10\_29**

**Position: 05**

## Layer composition (outside to inside)

| Number        | BE | Description         | mm    |
|---------------|----|---------------------|-------|
| 1             |    | EUROFLOAT           | 4,00  |
| 2             |    | 90% Argon           | 10,00 |
| 3             |    | EUROFLOAT           | 4,00  |
| 4             | 4  | Silverstar E 2019 * |       |
| * USERDEFINED |    |                     | 18,00 |



## Transmission, reflexion, absorption

$\rho_v = 0,14$  (Light reflection factor outside)

$\rho'_v = 0,13$  (Light reflection factor inside)

$\rho_e = 0,17$  (direct radiation reflection factor outside)

$\rho'_e = 0,19$  (direct radiation reflection factor inside)

$\alpha_e \quad 1 = 0,08; 3 = 0,11$  (direct radiation absorption factor)

$T_{UV} = 0,30$  (ultraviolet transmittance)

$T_v = 0,82$  (Light transmission)

$T_e = 0,64$  (direct radiation transmission factor)

$R_a = 98$  (general color rendering index (CRI))

## EN 410

**SC** = 0,81 (Shading Coefficient, g/0,87)

b-Faktor = 0,88 (VDI 2078, g/0,80)

$q_i = 0,06$  (secondary heat inside)

**g** = 0,70 (Total energy transmission factor)

**EN 673** Installation angle = 90° vertical

**U<sub>g</sub>** = 2,05 W/m<sup>2</sup>K (Heat transfer coefficient)  
Corrected emissivity according to EN 12898:2019

**EN ISO 52022-3**  $T_e = 5,00$  °C  $T_i = 20,00$  °C

$g_{th} = 0,004$  (Thermal radiation factor)

$g_c = 0,051$  (Convection factor)

$g_v = 0,000$  (Ventilation factor)

$E_s = 300,00$  W/m<sup>2</sup> System height = 1,50 m

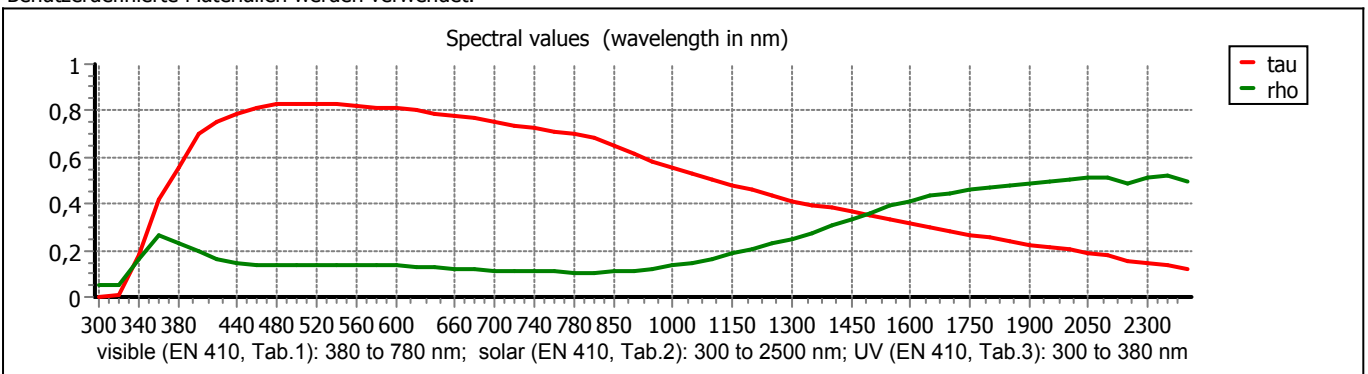
$h_{c,e} = 18,00$  W/m<sup>2</sup>K  $h_{c,i} = 3,60$  W/m<sup>2</sup>K

$q_i = 0,056$  (secondary heat inside)

**g<sub>tot</sub>** = 0,70 (Total energy transmission factor)

Attention, the representation of the U<sub>g</sub> value is not standard compliant. According to EN 1279-5 multi-pane insulating glass - Part 5: Conformity assessment, the U<sub>g</sub> value according to EN 673 is to be calculated. According to 9.1 of this standard, the calculated U-value must be rounded to one decimal place. The U<sub>w</sub> value of a window is according to EN ISO 10077-1 et al. calculated from the U<sub>g</sub> value of the glazing.

Benutzerdefinierte Materialien werden verwendet.



Fluctuations of light and radiation technical values for the chemical composition of glass and manufacturing process possible. Function values take into account the permitted tolerances according to the product standards. The calculation-result does not give information about the technical practicability of this construction. We point out that the calculations were created on the basis of the manufacturers' spectral data. The company Sommer Informatik GmbH assumes no liability for the integrity of the manufacturers' data. For the declaration of performance the manufacturers' data placed at the disposal has to be confirmed separately.

EN 410, EN 673, EN ISO 52022-3, EN 12898:2019

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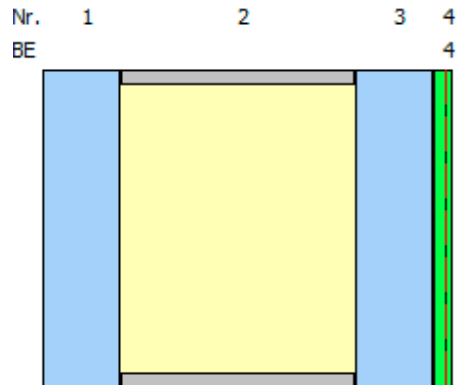
# Calculation SommerGlobal

**Project: 2020\_10\_29**

**Position: 05**

**Layer composition (outside to inside)**

| Number        | BE | Description         | mm    |
|---------------|----|---------------------|-------|
| 1             |    | EUROFLOAT           | 4,00  |
| 2             |    | 90% Argon           | 12,00 |
| 3             |    | EUROFLOAT           | 4,00  |
| 4             | 4  | Silverstar E 2019 * |       |
| * USERDEFINED |    |                     | 20,00 |



**Transmission, reflexion, absorption**

$\rho_v = 0,14$  (Light reflection factor outside)

$\rho'_v = 0,13$  (Light reflection factor inside)

$\rho_e = 0,17$  (direct radiation reflection factor outside)

$\rho'_e = 0,19$  (direct radiation reflection factor inside)

$\alpha_e \quad 1 = 0,08; 3 = 0,11$  (direct radiation absorption factor)

$T_{UV} = 0,30$  (ultraviolet transmittance)

$T_v = 0,82$  (Light transmission)

$T_e = 0,64$  (direct radiation transmission factor)

$R_a = 98$  (general color rendering index (CRI))

**EN 410**

**SC** = 0,81 (Shading Coefficient, g/0,87)

b-Faktor = 0,88 (VDI 2078, g/0,80)

$q_i = 0,06$  (secondary heat inside)

**g** = 0,70 (Total energy transmission factor)

**EN 673** Installation angle = 90° vertical

**U<sub>g</sub>** = 2,00 W/m<sup>2</sup>K (Heat transfer coefficient)  
Corrected emissivity according to EN 12898:2019

**EN ISO 52022-3** T<sub>e</sub> = 5,00 °C T<sub>i</sub> = 20,00 °C

**g<sub>th</sub>** = 0,005 (Thermal radiation factor)

**g<sub>c</sub>** = 0,052 (Convection factor)

**g<sub>v</sub>** = 0,000 (Ventilation factor)

**E<sub>s</sub>** = 300,00 W/m<sup>2</sup> System height = 1,50 m

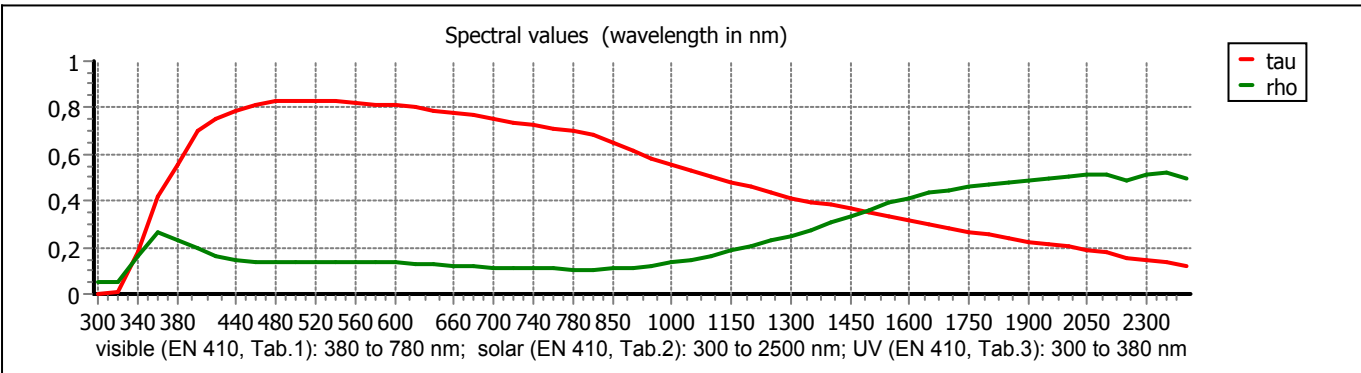
**h<sub>c,e</sub>** = 18,00 W/m<sup>2</sup>K **h<sub>c,i</sub>** = 3,60 W/m<sup>2</sup>K

$q_i = 0,057$  (secondary heat inside)

**g<sub>tot</sub>** = 0,70 (Total energy transmission factor)

Attention, the representation of the U<sub>g</sub> value is not standard compliant. According to EN 1279-5 multi-pane insulating glass - Part 5: Conformity assessment, the U<sub>g</sub> value according to EN 673 is to be calculated. According to 9.1 of this standard, the calculated U-value must be rounded to one decimal place. The U<sub>w</sub> value of a window is according to EN ISO 10077-1 et al. calculated from the U<sub>g</sub> value of the glazing.

Benutzerdefinierte Materialien werden verwendet.



Fluctuations of light and radiation technical values for the chemical composition of glass and manufacturing process possible. Function values take into account the permitted tolerances according to the product standards. The calculation-result does not give information about the technical practicability of this construction. We point out that the calculations were created on the basis of the manufacturers' spectral data. The company Sommer Informatik GmbH assumes no liability for the integrity of the manufacturers' data. For the declaration of performance the manufacturers' data placed at the disposal has to be confirmed separately.

EN 410, EN 673, EN ISO 52022-3, EN 12898:2019

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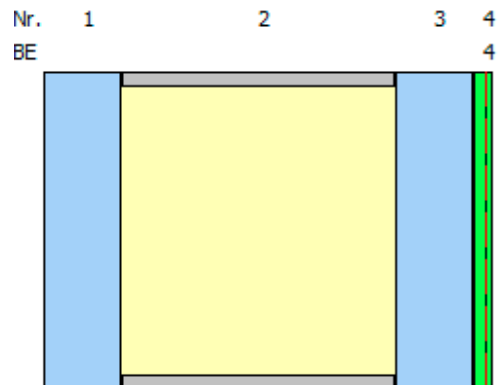
# Calculation SommerGlobal

Project: 2020\_10\_29

Position: 05

## Layer composition (outside to inside)

| Number        | BE | Description         | mm    |
|---------------|----|---------------------|-------|
| 1             |    | EUROFLOAT           | 4,00  |
| 2             |    | 90% Argon           | 14,00 |
| 3             |    | EUROFLOAT           | 4,00  |
| 4             | 4  | Silverstar E 2019 * |       |
| * USERDEFINED |    |                     | 22,00 |



## Transmission, reflexion, absorption

$\rho_v = 0,14$  (Light reflection factor outside)

$\rho'_v = 0,13$  (Light reflection factor inside)

$\rho_e = 0,17$  (direct radiation reflection factor outside)

$\rho'_e = 0,19$  (direct radiation reflection factor inside)

$\alpha_e \quad 1 = 0,08; \quad 3 = 0,11$  (direct radiation absorption factor)

$T_{UV} = 0,30$  (ultraviolet transmittance)

$T_v = 0,82$  (Light transmission)

$T_e = 0,64$  (direct radiation transmission factor)

$R_a = 98$  (general color rendering index (CRI))

## EN 410

$SC = 0,81$  (Shading Coefficient, g/0,87)

b-Faktor = 0,88 (VDI 2078, g/0,80)

$q_i = 0,06$  (secondary heat inside)

$g = 0,70$  (Total energy transmission factor)

EN 673 Installation angle = 90° vertical

$U_g = 1,97 \text{ W/m}^2\text{K}$  (Heat transfer coefficient)  
Corrected emissivity according to EN 12898:2019

EN ISO 52022-3  $T_e = 5,00 \text{ }^\circ\text{C}$   $T_i = 20,00 \text{ }^\circ\text{C}$

$g_{th} = 0,005$  (Thermal radiation factor)

$g_c = 0,053$  (Convection factor)

$g_v = 0,000$  (Ventilation factor)

$E_s = 300,00 \text{ W/m}^2$  System height = 1,50 m

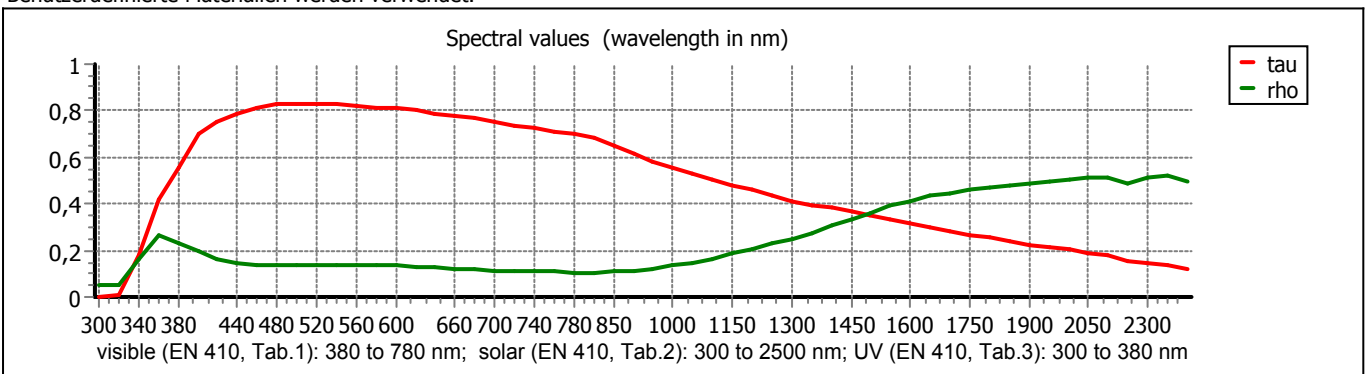
$h_{c,e} = 18,00 \text{ W/m}^2\text{K}$   $h_{c,i} = 3,60 \text{ W/m}^2\text{K}$

$q_i = 0,057$  (secondary heat inside)

$g_{tot} = 0,70$  (Total energy transmission factor)

Attention, the representation of the  $U_g$  value is not standard compliant. According to EN 1279-5 multi-pane insulating glass - Part 5: Conformity assessment, the  $U_g$  value according to EN 673 is to be calculated. According to 9.1 of this standard, the calculated U-value must be rounded to one decimal place. The  $U_w$  value of a window is according to EN ISO 10077-1 et al. calculated from the  $U_g$  value of the glazing.

Benutzerdefinierte Materialien werden verwendet.



Fluctuations of light and radiation technical values for the chemical composition of glass and manufacturing process possible. Function values take into account the permitted tolerances according to the product standards. The calculation-result does not give information about the technical practicability of this construction. We point out that the calculations were created on the basis of the manufacturers' spectral data. The company Sommer Informatik GmbH assumes no liability for the integrity of the manufacturers' data. For the declaration of performance the manufacturers' data placed at the disposal has to be confirmed separately.

EN 410, EN 673, EN ISO 52022-3, EN 12898:2019

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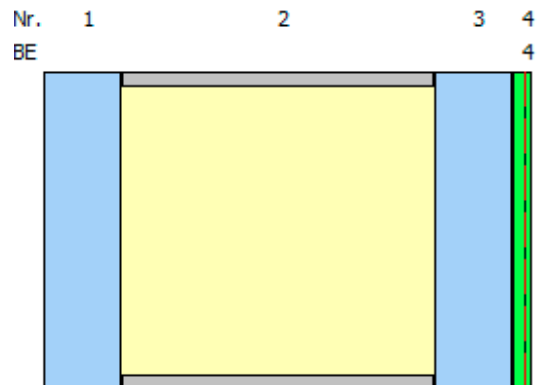
# Calculation SommerGlobal

**Project: 2020\_10\_29**

**Position: 05**

## Layer composition (outside to inside)

| Number        | BE | Description         | mm    |
|---------------|----|---------------------|-------|
| 1             |    | EUROFLOAT           | 4,00  |
| 2             |    | 90% Argon           | 16,00 |
| 3             |    | EUROFLOAT           | 4,00  |
| 4             | 4  | Silverstar E 2019 * |       |
| * USERDEFINED |    |                     | 24,00 |



## Transmission, reflexion, absorption

$\rho_v = 0,14$  (Light reflection factor outside)

$\rho'_v = 0,13$  (Light reflection factor inside)

$\rho_e = 0,17$  (direct radiation reflection factor outside)

$\rho'_e = 0,19$  (direct radiation reflection factor inside)

$\alpha_e \quad 1 = 0,08; 3 = 0,11$  (direct radiation absorption factor)

$T_{UV} = 0,30$  (ultraviolet transmittance)

$T_v = 0,82$  (Light transmission)

$T_e = 0,64$  (direct radiation transmission factor)

$R_a = 98$  (general color rendering index (CRI))

## EN 410

$SC = 0,81$  (Shading Coefficient, g/0,87)

b-Faktor = 0,88 (VDI 2078, g/0,80)

$q_i = 0,06$  (secondary heat inside)

$g = 0,70$  (Total energy transmission factor)

**EN 673** Installation angle = 90° vertical

$U_g = 1,97 \text{ W/m}^2\text{K}$  (Heat transfer coefficient)  
Corrected emissivity according to EN 12898:2019

**EN ISO 52022-3**  $T_e = 5,00 \text{ }^\circ\text{C}$   $T_i = 20,00 \text{ }^\circ\text{C}$

$g_{th} = 0,005$  (Thermal radiation factor)

$g_c = 0,053$  (Convection factor)

$g_v = 0,000$  (Ventilation factor)

$E_s = 300,00 \text{ W/m}^2$  System height = 1,50 m

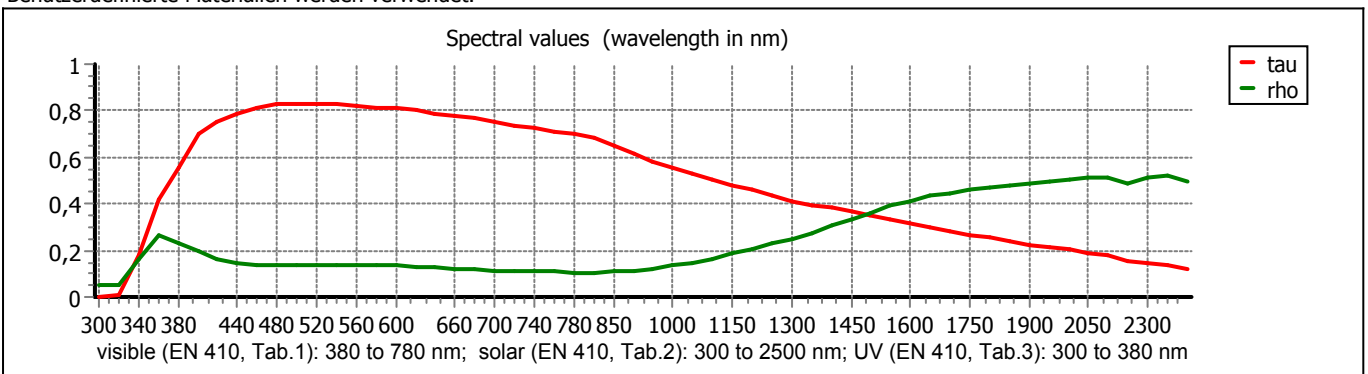
$h_{c,e} = 18,00 \text{ W/m}^2\text{K}$   $h_{c,i} = 3,60 \text{ W/m}^2\text{K}$

$q_i = 0,058$  (secondary heat inside)

$g_{tot} = 0,70$  (Total energy transmission factor)

Attention, the representation of the  $U_g$  value is not standard compliant. According to EN 1279-5 multi-pane insulating glass - Part 5: Conformity assessment, the  $U_g$  value according to EN 673 is to be calculated. According to 9.1 of this standard, the calculated U-value must be rounded to one decimal place. The  $U_w$  value of a window is according to EN ISO 10077-1 et al. calculated from the  $U_g$  value of the glazing.

Benutzerdefinierte Materialien werden verwendet.



Fluctuations of light and radiation technical values for the chemical composition of glass and manufacturing process possible. Function values take into account the permitted tolerances according to the product standards. The calculation-result does not give information about the technical practicability of this construction. We point out that the calculations were created on the basis of the manufacturers' spectral data. The company Sommer Informatik GmbH assumes no liability for the integrity of the manufacturers' data. For the declaration of performance the manufacturers' data placed at the disposal has to be confirmed separately.

EN 410, EN 673, EN ISO 52022-3, EN 12898:2019

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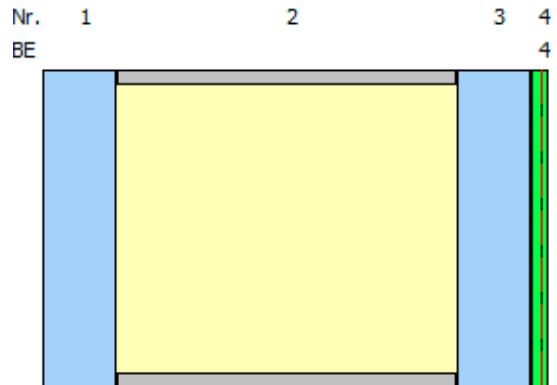
# Calculation SommerGlobal

**Project: 2020\_10\_29**

**Position: 05**

**Layer composition (outside to inside)**

| Number        | BE | Description         | mm    |
|---------------|----|---------------------|-------|
| 1             |    | EUROFLOAT           | 4,00  |
| 2             |    | 90% Argon           | 18,00 |
| 3             |    | EUROFLOAT           | 4,00  |
| 4             | 4  | Silverstar E 2019 * |       |
| * USERDEFINED |    |                     | 26,00 |



**Transmission, reflexion, absorption**

$\rho_v = 0,14$  (Light reflection factor outside)

$\rho'_v = 0,13$  (Light reflection factor inside)

$\rho_e = 0,17$  (direct radiation reflection factor outside)

$\rho'_e = 0,19$  (direct radiation reflection factor inside)

$\alpha_e \quad 1 = 0,08; 3 = 0,11$  (direct radiation absorption factor)

$T_{UV} = 0,30$  (ultraviolet transmittance)

$T_v = 0,82$  (Light transmission)

$T_e = 0,64$  (direct radiation transmission factor)

$R_a = 98$  (general color rendering index (CRI))

**EN 410**

**SC** = 0,81 (Shading Coefficient, g/0,87)

b-Faktor = 0,88 (VDI 2078, g/0,80)

$q_i = 0,06$  (secondary heat inside)

**g** = 0,70 (Total energy transmission factor)

**EN 673** Installation angle = 90° vertical

**U<sub>g</sub>** = 1,97 W/m<sup>2</sup>K (Heat transfer coefficient)  
Corrected emissivity according to EN 12898:2019

**EN ISO 52022-3** T<sub>e</sub> = 5,00 °C T<sub>i</sub> = 20,00 °C

$g_{th} = 0,005$  (Thermal radiation factor)

$g_c = 0,054$  (Convection factor)

$g_v = 0,000$  (Ventilation factor)

$E_s = 300,00 \text{ W/m}^2$  System height = 1,50 m

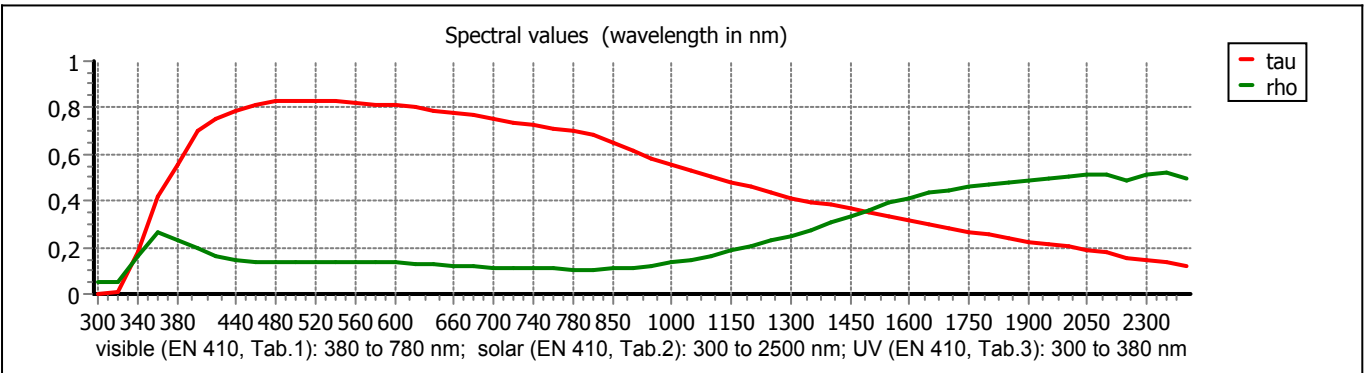
$h_{c,e} = 18,00 \text{ W/m}^2\text{K}$   $h_{c,i} = 3,60 \text{ W/m}^2\text{K}$

$q_i = 0,058$  (secondary heat inside)

**g<sub>tot</sub>** = 0,70 (Total energy transmission factor)

Attention, the representation of the U<sub>g</sub> value is not standard compliant. According to EN 1279-5 multi-pane insulating glass - Part 5: Conformity assessment, the U<sub>g</sub> value according to EN 673 is to be calculated. According to 9.1 of this standard, the calculated U-value must be rounded to one decimal place. The U<sub>w</sub> value of a window is according to EN ISO 10077-1 et al. calculated from the U<sub>g</sub> value of the glazing.

Benutzerdefinierte Materialien werden verwendet.



Fluctuations of light and radiation technical values for the chemical composition of glass and manufacturing process possible. Function values take into account the permitted tolerances according to the product standards. The calculation-result does not give information about the technical practicability of this construction. We point out that the calculations were created on the basis of the manufacturers' spectral data. The company Sommer Informatik GmbH assumes no liability for the integrity of the manufacturers' data. For the declaration of performance the manufacturers' data placed at the disposal has to be confirmed separately.

EN 410, EN 673, EN ISO 52022-3, EN 12898:2019

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2020-10-29 - 11:09:34 | 1 / 1

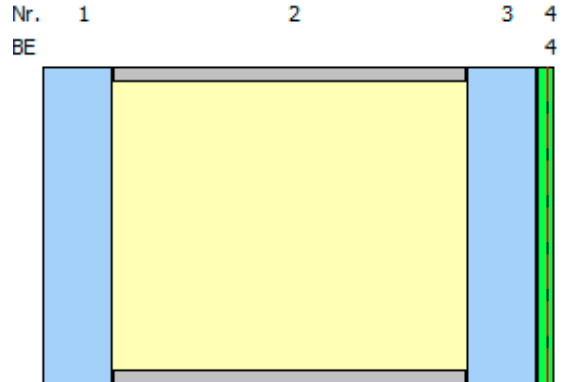
# Calculation SommerGlobal

**Project: 2020\_10\_29**

**Position: 05**

**Layer composition (outside to inside)**

| Number        | BE | Description         | mm    |
|---------------|----|---------------------|-------|
| 1             |    | EUROFLOAT           | 4,00  |
| 2             |    | 90% Argon           | 20,00 |
| 3             |    | EUROFLOAT           | 4,00  |
| 4             | 4  | Silverstar E 2019 * |       |
| * USERDEFINED |    |                     | 28,00 |



**Transmission, reflexion, absorption**

- $\rho_v = 0,14$  (Light reflection factor outside)
- $\rho'_v = 0,13$  (Light reflection factor inside)
- $\rho_e = 0,17$  (direct radiation reflection factor outside)
- $\rho'_e = 0,19$  (direct radiation reflection factor inside)
- $\alpha_e \quad 1 = 0,08; 3 = 0,11$  (direct radiation absorption factor)
- $T_{UV} = 0,30$  (ultraviolet transmittance)
- $T_v = 0,82$  (Light transmission)
- $T_e = 0,64$  (direct radiation transmission factor)
- $R_a = 98$  (general color rendering index (CRI))

**EN 410**

- $SC = 0,81$  (Shading Coefficient, g/0,87)
- b-Faktor = 0,88 (VDI 2078, g/0,80)
- $q_i = 0,06$  (secondary heat inside)
- $g = 0,70$  (Total energy transmission factor)

**EN 673** Installation angle = 90° vertical

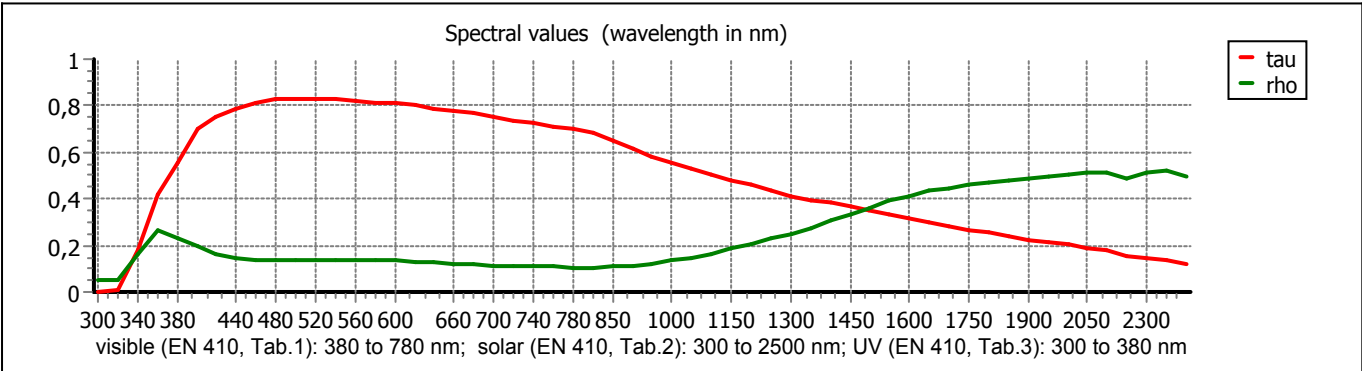
**EN ISO 52022-3**  $T_e = 5,00 \text{ °C}$   $T_i = 20,00 \text{ °C}$

- $g_{th} = 0,005$  (Thermal radiation factor)
- $g_c = 0,053$  (Convection factor)
- $g_v = 0,000$  (Ventilation factor)
- $E_s = 300,00 \text{ W/m}^2$  System height = 1,50 m
- $h_{c,e} = 18,00 \text{ W/m}^2\text{K}$   $h_{c,i} = 3,60 \text{ W/m}^2\text{K}$
- $q_i = 0,058$  (secondary heat inside)
- $g_{tot} = 0,70$  (Total energy transmission factor)

$U_g = 1,97 \text{ W/m}^2\text{K}$  (Heat transfer coefficient)  
Corrected emissivity according to EN 12898:2019

Attention, the representation of the  $U_g$  value is not standard compliant. According to EN 1279-5 multi-pane insulating glass - Part 5: Conformity assessment, the  $U_g$  value according to EN 673 is to be calculated. According to 9.1 of this standard, the calculated U-value must be rounded to one decimal place. The  $U_w$  value of a window is according to EN ISO 10077-1 et al. calculated from the  $U_g$  value of the glazing.

Benutzerdefinierte Materialien werden verwendet.



Fluctuations of light and radiation technical values for the chemical composition of glass and manufacturing process possible. Function values take into account the permitted tolerances according to the product standards. The calculation-result does not give information about the technical practicability of this construction. We point out that the calculations were created on the basis of the manufacturers' spectral data. The company Sommer Informatik GmbH assumes no liability for the integrity of the manufacturers' data. For the declaration of performance the manufacturers' data placed at the disposal has to be confirmed separately.

EN 410, EN 673, EN ISO 52022-3, EN 12898:2019



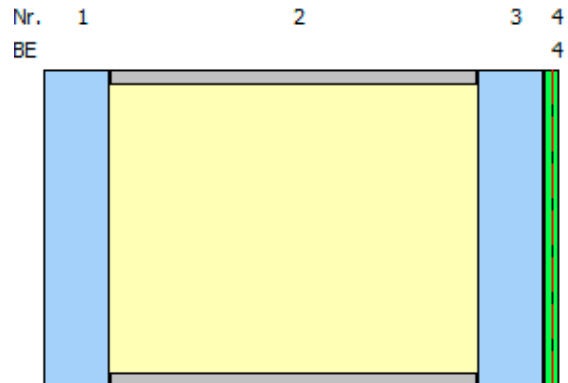
# Calculation SommerGlobal

**Project: 2020\_10\_29**

**Position: 05**

## Layer composition (outside to inside)

| Number        | BE | Description         | mm    |
|---------------|----|---------------------|-------|
| 1             |    | EUROFLOAT           | 4,00  |
| 2             |    | 90% Argon           | 22,00 |
| 3             |    | EUROFLOAT           | 4,00  |
| 4             | 4  | Silverstar E 2019 * |       |
| * USERDEFINED |    |                     | 30,00 |



## Transmission, reflexion, absorption

$\rho_v = 0,14$  (Light reflection factor outside)

$\rho'_v = 0,13$  (Light reflection factor inside)

$\rho_e = 0,17$  (direct radiation reflection factor outside)

$\rho'_e = 0,19$  (direct radiation reflection factor inside)

$\alpha_e \quad 1 = 0,08; 3 = 0,11$  (direct radiation absorption factor)

$T_{UV} = 0,30$  (ultraviolet transmittance)

$T_v = 0,82$  (Light transmission)

$T_e = 0,64$  (direct radiation transmission factor)

$R_a = 98$  (general color rendering index (CRI))

## EN 410

**SC** = 0,81 (Shading Coefficient, g/0,87)

b-Faktor = 0,88 (VDI 2078, g/0,80)

$q_i = 0,06$  (secondary heat inside)

**g** = 0,70 (Total energy transmission factor)

**EN 673** Installation angle = 90° vertical

**U<sub>g</sub>** = 1,97 W/m<sup>2</sup>K (Heat transfer coefficient)  
Corrected emissivity according to EN 12898:2019

**EN ISO 52022-3**  $T_e = 5,00$  °C  $T_i = 20,00$  °C

$g_{th} = 0,005$  (Thermal radiation factor)

$g_c = 0,053$  (Convection factor)

$g_v = 0,000$  (Ventilation factor)

$E_s = 300,00$  W/m<sup>2</sup> System height = 1,50 m

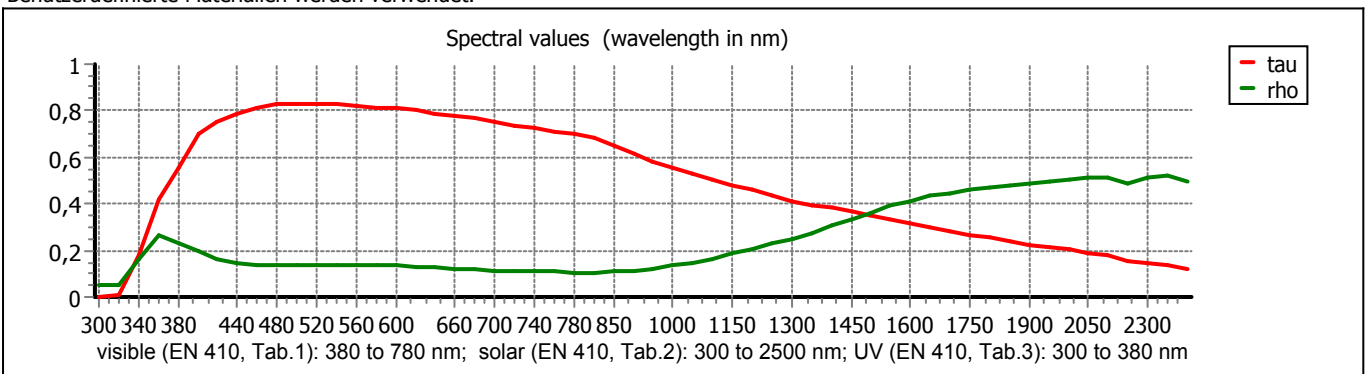
$h_{c,e} = 18,00$  W/m<sup>2</sup>K  $h_{c,i} = 3,60$  W/m<sup>2</sup>K

$q_i = 0,057$  (secondary heat inside)

**g<sub>tot</sub>** = 0,70 (Total energy transmission factor)

Attention, the representation of the U<sub>g</sub> value is not standard compliant. According to EN 1279-5 multi-pane insulating glass - Part 5: Conformity assessment, the U<sub>g</sub> value according to EN 673 is to be calculated. According to 9.1 of this standard, the calculated U-value must be rounded to one decimal place. The U<sub>w</sub> value of a window is according to EN ISO 10077-1 et al. calculated from the U<sub>g</sub> value of the glazing.

Benutzerdefinierte Materialien werden verwendet.



Fluctuations of light and radiation technical values for the chemical composition of glass and manufacturing process possible. Function values take into account the permitted tolerances according to the product standards. The calculation-result does not give information about the technical practicability of this construction. We point out that the calculations were created on the basis of the manufacturers' spectral data. The company Sommer Informatik GmbH assumes no liability for the integrity of the manufacturers' data. For the declaration of performance the manufacturers' data placed at the disposal has to be confirmed separately.

EN 410, EN 673, EN ISO 52022-3, EN 12898:2019

ift-certified It. validation report no. 410 42167 (status as of 11/2009)

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2020-10-29 - 11:10:24 | 1 / 1



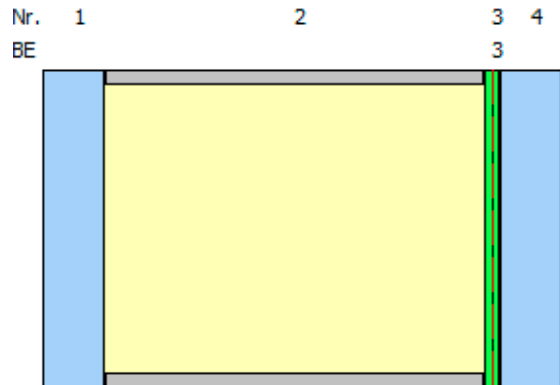
# Calculation SommerGlobal 3times

**Project: 2020\_10\_29**

**Position: 05**

**Layer composition (outside to inside)**

| Number        | BE | Description         | mm    |
|---------------|----|---------------------|-------|
| 1             |    | EUROFLOAT           | 4,00  |
| 2             |    | 90% Argon           | 24,00 |
| 3             | 3  | Silverstar E 2019 * |       |
| 4             |    | EUROFLOAT           | 4,00  |
| * USERDEFINED |    |                     | 32,00 |



**Transmission, reflexion, absorption**

$\rho_v = 0,13$  (Light reflection factor outside)

$\rho'_v = 0,13$  (Light reflection factor inside)

$\rho_e = 0,18$  (direct radiation reflection factor outside)

$\rho'_e = 0,18$  (direct radiation reflection factor inside)

$\alpha_e$  1 = 0,08; 3 = 0,09 (direct radiation absorption factor)

$T_{UV} = 0,31$  (ultraviolet transmittance)

$T_v = 0,82$  (Light transmission)

$T_e = 0,64$  (direct radiation transmission factor)

$R_a = 98$  (general color rendering index (CRI))

**EN 410**

**SC** = 0,83 (Shading Coefficient, g/0,87)

b-Faktor = 0,91 (VDI 2078, g/0,80)

$q_i = 0,08$  (secondary heat inside)

**g** = 0,73 (Total energy transmission factor)

**EN 673** Installation angle = 90° vertical

**U<sub>g</sub>** = 1,2 W/m<sup>2</sup>K (Heat transfer coefficient)  
Corrected emissivity according to EN 12898:2019

**EN ISO 52022-3** T<sub>e</sub> = 5,00 °C T<sub>i</sub> = 20,00 °C

**g<sub>th</sub>** = 0,046 (Thermal radiation factor)

**g<sub>c</sub>** = 0,034 (Convection factor)

**g<sub>v</sub>** = 0,000 (Ventilation factor)

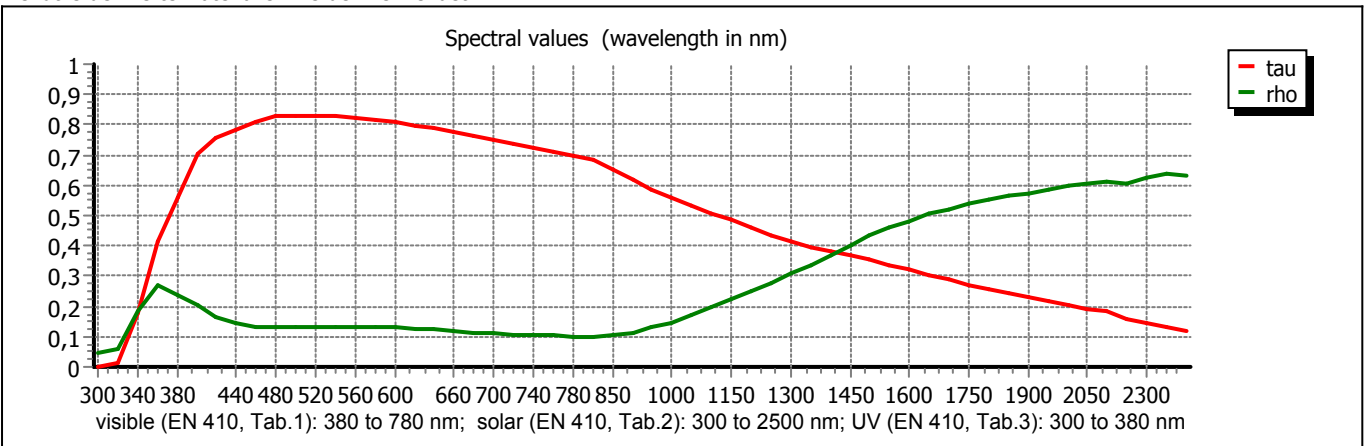
**E<sub>s</sub>** = 300,00 W/m<sup>2</sup> System height = 1,50 m

**h<sub>c,e</sub>** = 18,00 W/m<sup>2</sup>K **h<sub>c,i</sub>** = 3,60 W/m<sup>2</sup>K

**q<sub>i</sub>** = 0,080 (secondary heat inside)

**g<sub>tot</sub>** = 0,72 (Total energy transmission factor)

Benutzerdefinierte Materialien werden verwendet.



Fluctuations of light and radiation technical values for the chemical composition of glass and manufacturing process possible. Function values take into account the permitted tolerances according to the product standards. The calculation-result does not give information about the technical practicability of this construction. We point out that the calculations were created on the basis of the manufacturers' spectral data. The company Sommer Informatik GmbH assumes no liability for the integrity of the manufacturers' data. For the declaration of performance the manufacturers' data placed at the disposal has to be confirmed separately.

EN 410, EN 673, EN ISO 52022-3, EN 12898:2019

ift-certified It. validation report no. 410 42167 (status as of 11/2009)

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2020-10-29 - 15:57:40 | 1 / 1