



**Special Filter Glasses
for sun beds
Advanced Materials
SCHOTT AG**

What kind of filter glasses can you obtain from us?

- uncoated filters

blue filter glasses

- M - UG 6
- M - UG 2
- UVISOL[®] 95

We recommend combining our uncoated blue filter glasses with a clear filter glass of our product range.

clear filter glasses

- Type 316
- Soladur
- Type 320
- Filter 322
- Filter 324
- Filter 326

What kind of filter glasses can you obtain from us?

- coated filters

Make your choice between blue and clear filter glasses!

blue filter as base glass

- M - UG 2 V1
- UVISOL® 95 V1
- UVISOL® 95 BL 11

clear filter as base glass

- Suntanning filter V59
- Suntanning filter V71

Discuss also with us your requirements for your specific coating design!

What are the characteristic properties of our filter glasses?



M - UG 6

The special filter glass M-UG 6 is a dark violet tinted silicate glass. Its main feature is a very high UV-B transmittance and an excellent absorption in the visible and IR region.



M - UG 2

The special filter glass M-UG 2 is a deep dark violet tinted silicate glass. Its main feature is a defined UV transmittance and an very excellent absorption in the visible and IR region.



UVISOL® 95

The special filter glass Uvisol 95 is a blue violet tinted silicate glass. Its main feature is a defined high transmittance in the UV-A range and a very low transmittance in the UV-B range.



Clear filter glasses

Transparent filter glasses with defined edge wavelength and extremely narrow edge wavelength tolerances

What are the differences of our coated filter glasses?

- ⇒ **M - UG 2 V1 / UVISOL® 95 V1**
dark violet tinted / blue violet tinted silicate glass with one-sided mirror coating V1

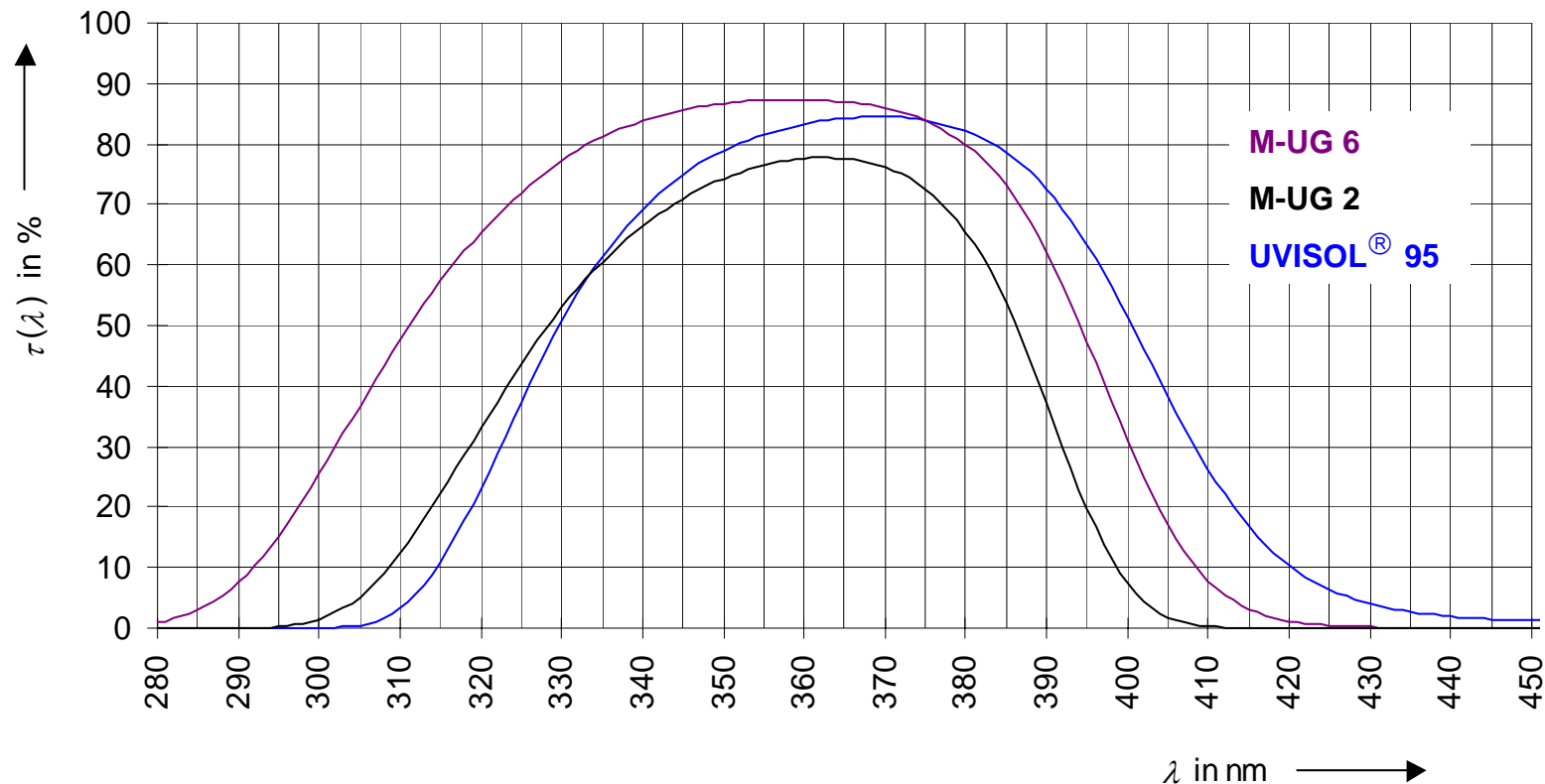
- ⇒ **UVISOL® 95 BL 11**
blue violet tinted silicate glass with one-sided IR coating (reduction of the IR transmittance)

- ⇒ **Suntanning filter V59**
one-sided coated clear filter with defined edge wavelengths.
Due to coating design V 59 the clear filter becomes a bluish special filter glass (blue in transmission/silver in reflection).

- ⇒ **Suntanning filter V71**
one-sided coated clear filter with defined edge wavelengths.
Due to coating design V 71 the clear filter becomes a violet special filter glass (violet in transmission/silver in reflection).

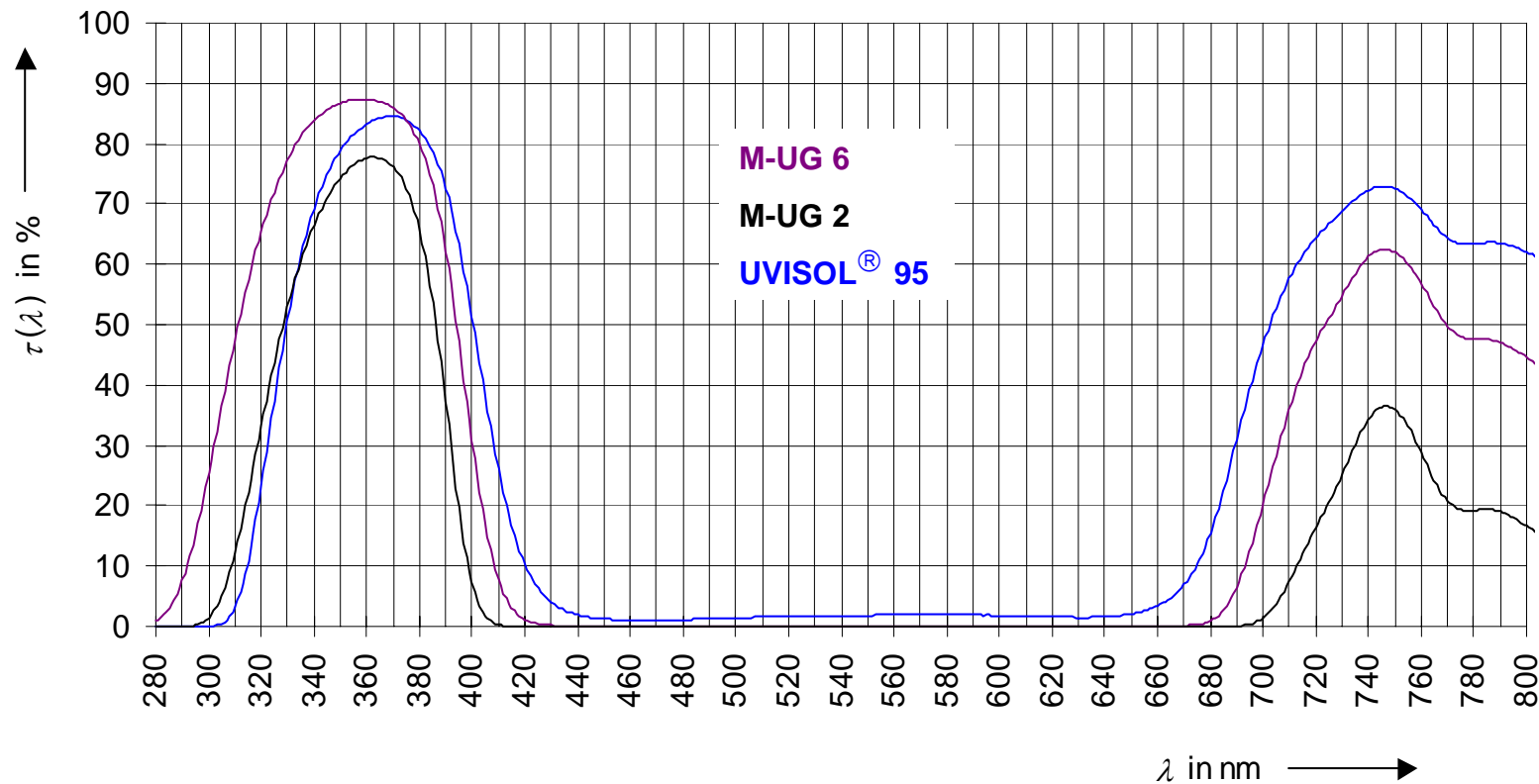
How does the spectral transmittance of the uncoated blue filter glasses look like in the UV - range?

Spectral transmittance refers to nominal thickness, untoughened, unsolarized and measured at room temperature



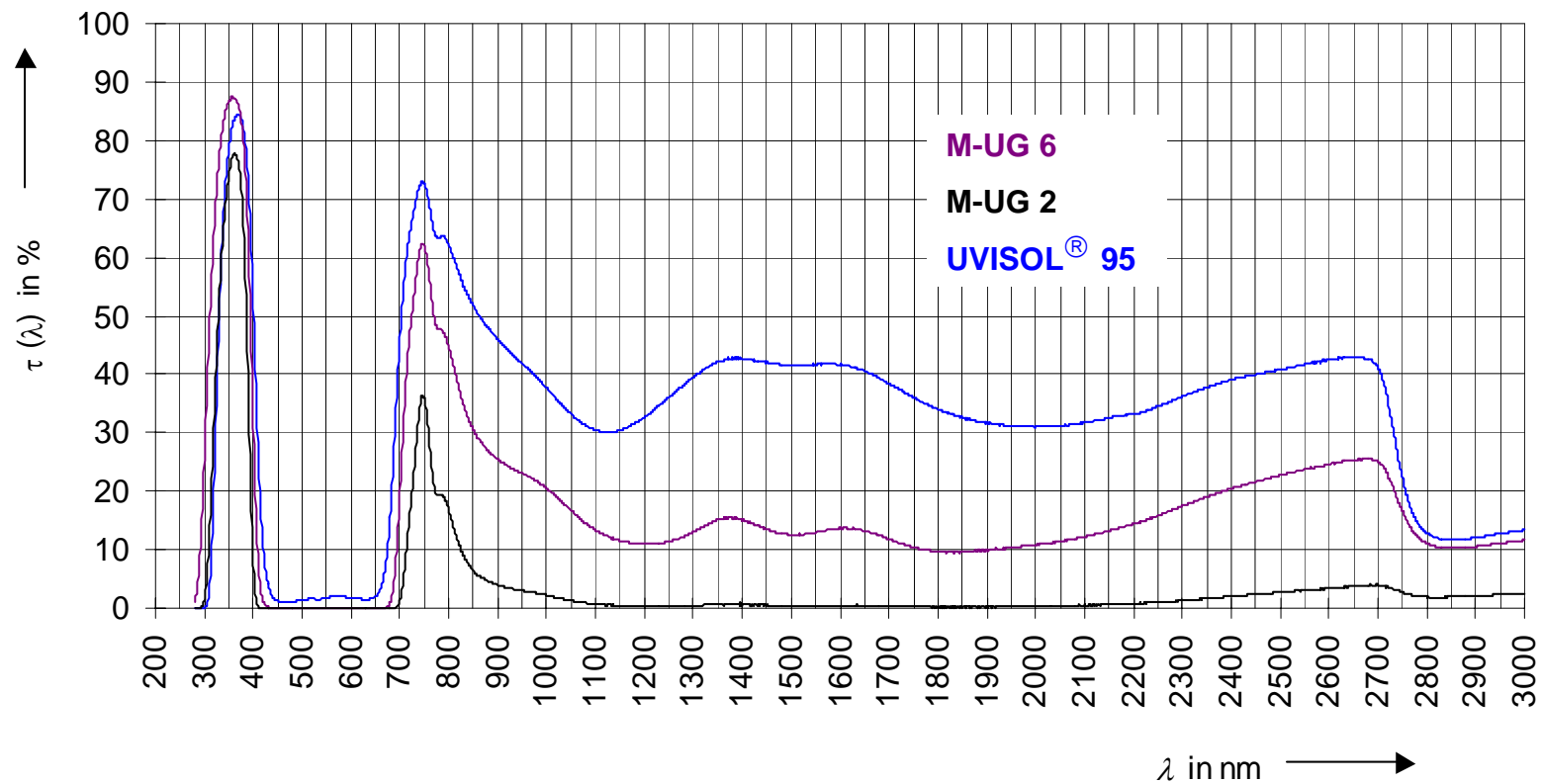
How does the spectral transmittance of the uncoated blue filter glasses look like in the UV/VIS - range?

Spectral transmittance refers to nominal thickness, untoughened, unsolarized and measured at room temperature



How does the spectral transmittance of the uncoated blue filter glasses look like in the UV/VIS/IR - range?

Spectral transmittance refers to nominal thickness, untoughened, unsolarized and measured at room temperature



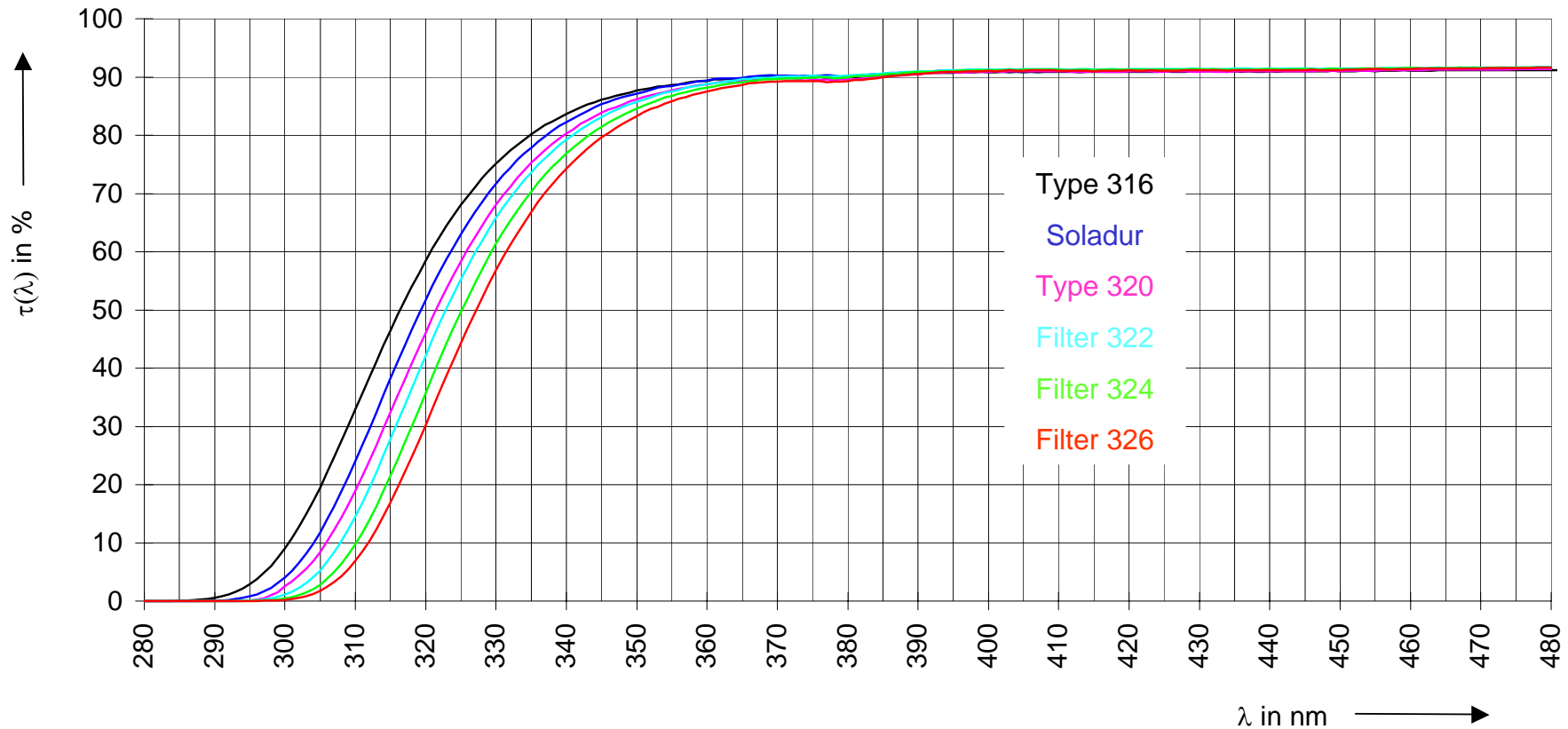
Choose one of our clear filter glass
– with extremely narrow edge wavelength tolerances –
(in conjunction with a blue filter glass out of our product range)

⇒	Type 316	$\lambda_C = 315.5 \text{ nm} \pm 1.5 \text{ nm}$	Thickness 2.75 to 3.25 mm	$\tau_{UVA} = 80.8 \%$	$\tau_{UVB} = 12.5 \%$
⇒	Soladur	$\lambda_C = 318.5 \text{ nm} \pm 1.0 \text{ nm}$	Thickness 3.75 to 4.25 mm	$\tau_{UVA} = 78.5 \%$	$\tau_{UVB} = 8.2 \%$
⇒	Type 320	$\lambda_C = 320.0 \text{ nm} \pm 1.0 \text{ nm}$	Thickness 3.75 to 4.75 mm	$\tau_{UVA} = 77.1 \%$	$\tau_{UVB} = 6.8 \%$
⇒	Filter 322	$\lambda_C = 322.0 \text{ nm} \pm 1.0 \text{ nm}$	Thickness 3.00 to 4.50 mm	$\tau_{UVA} = 75.9 \%$	$\tau_{UVB} = 5.1 \%$
⇒	Filter 324	$\lambda_C = 324.0 \text{ nm} \pm 1.0 \text{ nm}$	Thickness 3.00 to 4.50 mm	$\tau_{UVA} = 73.6 \%$	$\tau_{UVB} = 3.5 \%$
⇒	Filter 326	$\lambda_C = 326.0 \text{ nm} \pm 1.0 \text{ nm}$	Thickness 3.00 to 4.50 mm	$\tau_{UVA} = 71.2 \%$	$\tau_{UVB} = 2.5 \%$

τ_{UVA} and τ_{UVB} values refer to nominal edge wavelength

How does the spectral transmittance of the uncoated clear filter glasses look like?

Spectral transmittance refers to defined edge wavelength, untoughened, unsolarized and measured at 23 °C



Our wide product range offers you 18 different filter glass combinations !!!! (non binding information)

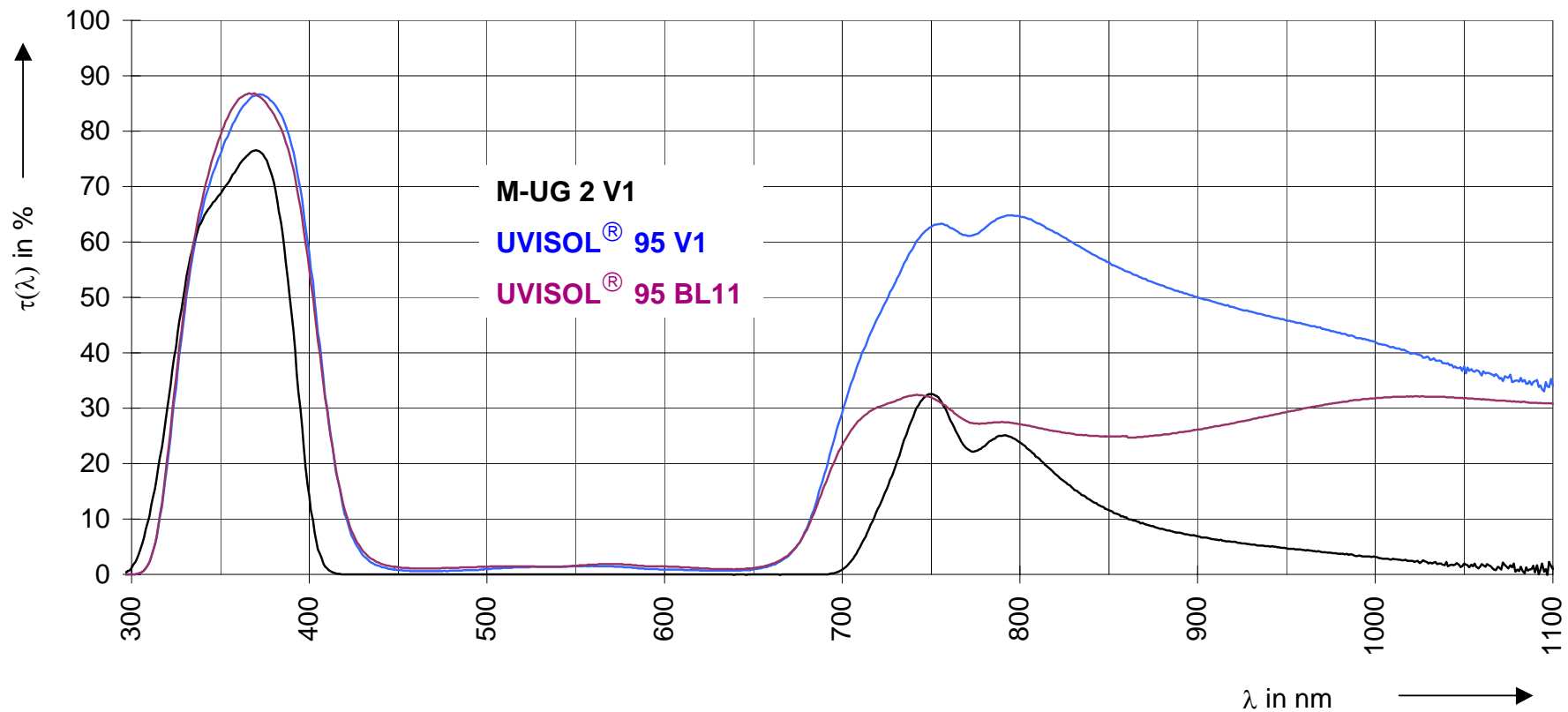
clear filter		without any clear filter	with Type 316	with Soladur	with Type 320	with Filter 322	with Filter 324	with Filter 326
blue filter								
M-UG 6	τ_{UVA} in %	80*	67.1	65.6	64.5	63,0	61.1	58.8
	τ_{UVB} in %	21*	5.5	3.9	3.3	2.4	1.6	1.1
M-UG 2	τ_{UVA} in %	$\geq 60^*$	53.7	52.7	52,0	51.1	50.1	49,0
	τ_{UVB} in %	$< 6^*$	1.5	1.1	0.9	0.7	0.5	0.3
UVISOL® 95	τ_{UVA} in %	68*	56.6	56.1	55,0	54.2	53.1	51.6
	τ_{UVB} in %	1*	0.6	0.5	0.4	0.3	0.2	0.1

* values of the spec
PCE (physical and chemical properties)

all values refer to nominal thickness or defined edge wavelength,
room temperature for the untoughened and unsolarized condition

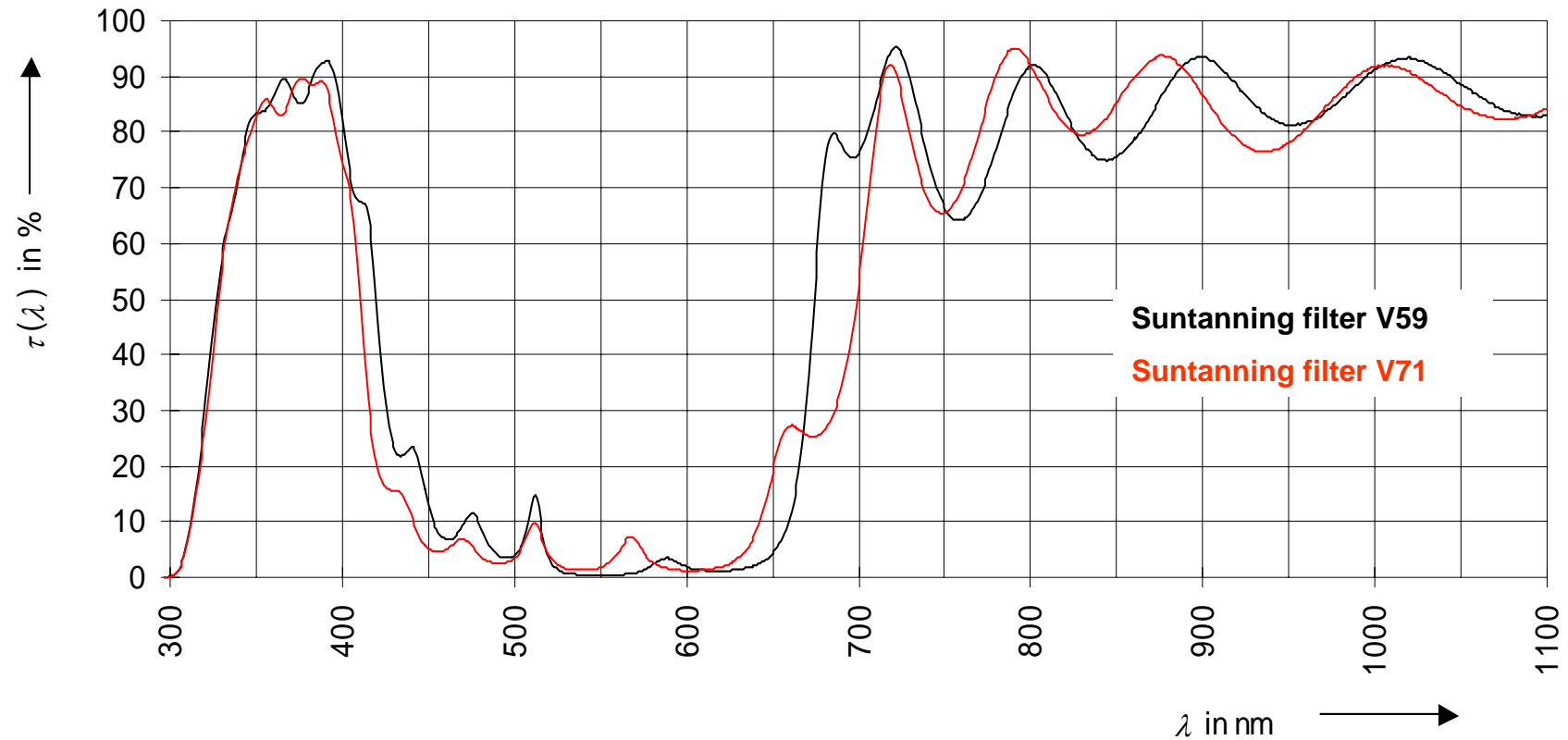
How does the spectral transmittance of the coated blue filter glasses look like in the UV/VIS/IR - range?

Spectral transmittance refers to nominal thickness, thermally toughened and unsolarized condition, measured at room temperature

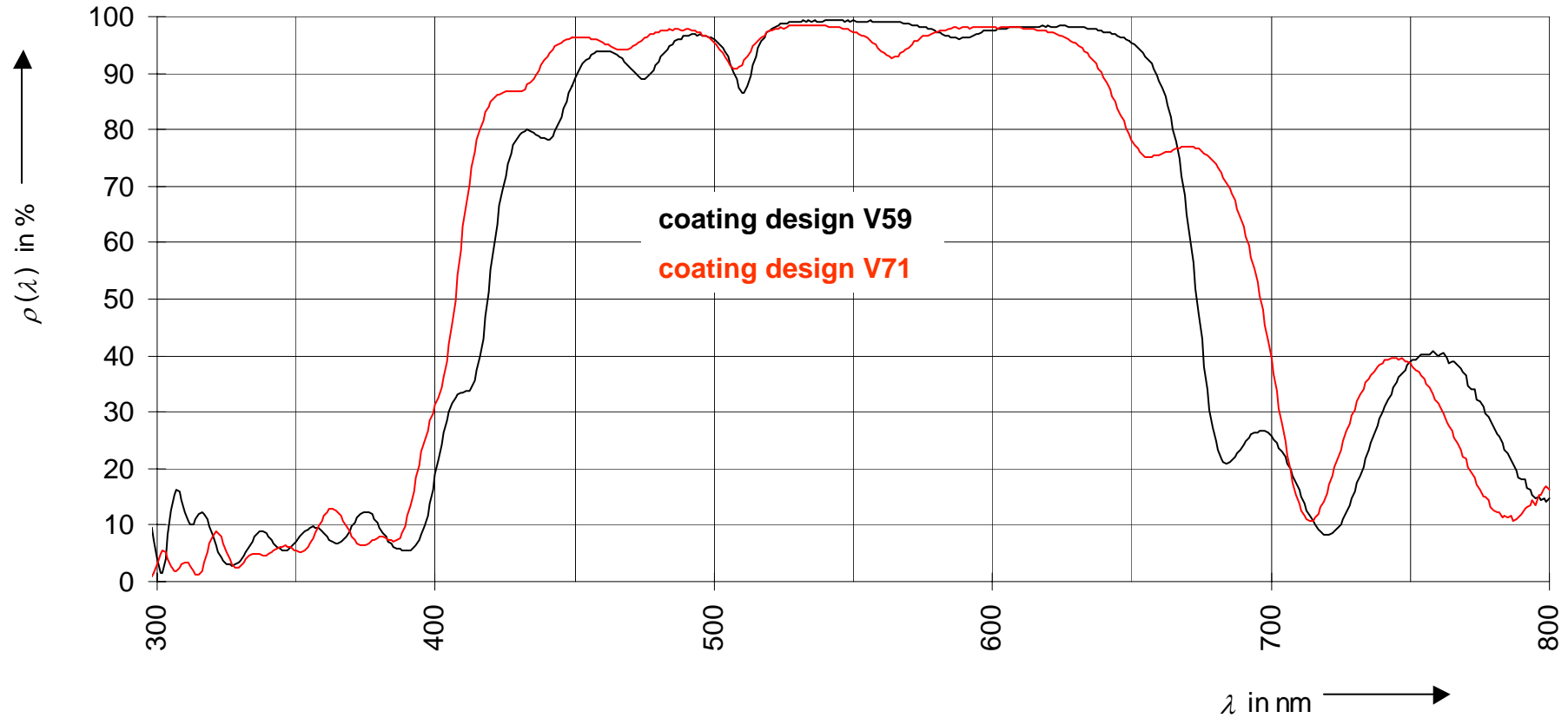


How does the spectral transmittance of the coated clear filter glasses look like in the UV/VIS/IR - range?

Spectral transmittance refers to thermally toughened and unsolarized condition, measured at room temperature



Reflection curves of the coating designs V59 and V71

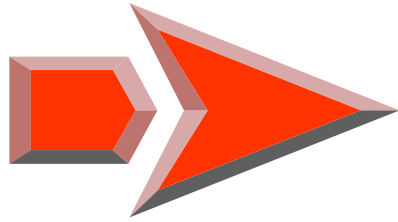


What UV properties offer our coated clear filters?

clear filter (base glass)		Type 320	Filter 322	Filter 324	Filter 326
coating design					
V 59 (blue in transmission)	λ_C in nm ¹⁾	320 ± 1	322 ± 1	324 ± 1	326 ± 1
	$\Delta \lambda_C$ in nm ²⁾	0.6	0.6	0.6	0.6
	τ_{UVA} in %	75	73	71	69
	τ_{UVB} in %	6.0	4.8	3.2	2.4
V 71 (violet in transmission)	λ_C in nm ¹⁾	320 ± 1	322 ± 1	324 ± 1	326 ± 1
	$\Delta \lambda_C$ in nm ²⁾	0.6	0.6	0.6	0.6
	τ_{UVA} in %	75	73	71	69
	τ_{UVB} in %	6.0	4.8	3.2	2.4

1) base glass only

2) mean shifting of the edge wavelength after the process thermal toughening and coating in the direction of longer wavelength
all values refer to room temperature and to the unsolarized condition



We strongly recommend using our filter glasses in thermally toughened condition!

We guarantee the following mechanical properties for thermally toughened filters:

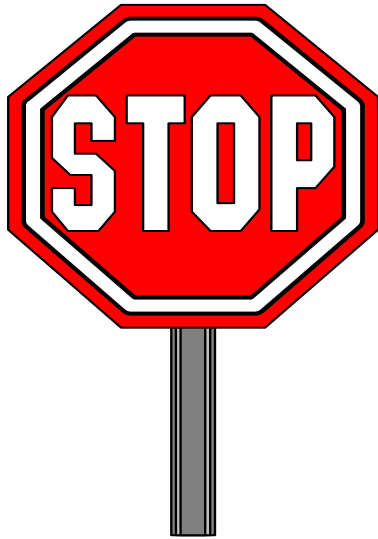
Bending strength increase σ_H : **> 100 N/mm²**

Maximum service temperature ϑ_{max} : **230 °C / 260 °C**
(depending on the type of filter glass)

Thermal shock resistance TWB: **180 °C**

Resistance to temperature gradient over pane surface $\Delta\vartheta$: **150 K**

for further details please refer to the corresponding specifications



Still some further very important notice:

- The requirements acc. to IEC-60335-2-27 have to met.
- For mechanical reason it is absolutely necessary to use an acrylic panel as cover (between the filter glass and the user) to protect against glass fragments.
- The panels neither should be fixed nor fitted under mechanical pressure and stress and there shouldn't be any glass metal contact.
- The bed producer has to take care that the bed is immediately switched off if a filter breaks (automatically safety shutdown).
- Please take the cleaning instructions for mirror / coated filter glasses into consideration.
- **Thermally toughened glass are not allowed to be worked over after toughening.**

**Differentiate your company with
your logo on the filters!**

**We can print your company's logo
on the filter glasses**

Please contact us!

Prices on request

Your contact:

Thomas Wolter

Manager Sales Filter

Advanced Materials

SCHOTT AG

Hüttenstraße 1
31073 Grünenplan
Germany

Phone: + 49 (0)5187 771 574
Fax: + 49 (0)3641 2847 437
Mailto: thomas.wolter@schott.com
http://www.schott.com/advanced_materials

Very important notice:

All values of this leaflet are not binding.

For binding information please refer to our latest specifications (PCE – physical and chemical properties) which we kindly send you upon request.