

Evidence of Performance

Determination of luminous and solar characteristics of glazing

Test report
No. 12-000489-PR01
(PB-H02-07-en-01)



Client
Glasfabrik Lamberts
GmbH & Co. KG
Egerstr. 197
95632 Wunsiedel
Germany

Basis

EN 410 : 2011-02
Glass in building – Determination of luminous and solar characteristics of glazing
Corresponds to the national version DIN EN

Product/Design	Single pane - ornament glass
System designation	PRISMASOLAR Spezialornament FR
Thickness of pane	See type sheet
Ornamentation	Ornamentation on Pos. 1
Name of ornamentation	PRISMASOLAR Spezialornament FR

Instructions for use

This test report may be used to classify the mentioned characteristics for glazing.

Validity

The data and results given relate solely to the described, tested object.

Testing of the present glazing does not allow any statement to be made on further characteristics, which could define performance and quality. The effects of weathering and ageing have not particularly been considered.

Total solar energy transmittance g
Light transmittance τ_v



$$g = 0.80 - 0.87^*$$

$$\tau_v = 0.88 - 0.92^*$$

* exact value depending on construction (see type sheet)

Notes on publication

The ift Guideline "Conditions and Guideline on the Use of ift Test Reports" applies.

The cover sheet can be used together with the type sheet as an abstract.

ift Rosenheim
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Client Glasfabrik Lamberts
GmbH & Co. KG, 95632 Wunsiedel (Germany)**Type sheet**

	Type	Thickness	Ornamentation	τ_v	g
1	PRISMASOLAR low iron	6 mm	on surface 1	0.92	0.87
2	PRISMASOLAR	10 mm	on surface 1	0.88	0.82
3	PRISMASOLAR low iron	10 mm	on surface 1	0.92	0.87
4	PRISMASOLAR	12 mm	on surface 1	0.88	0.80
5	Spezialornament FR	6 mm	on surface 1	0.90	0.83
6	Spezialornament FR	10 mm	on surface 1	0.88	0.80

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Client Glasfabrik Lamberts
GmbH & Co. KG, 95632 Wunsiedel (Germany)**1 Object****1.1 Description of test specimen** (all dimensions in mm)

Product	Single pane – ornament glass
System designation	PRISMASOLAR Spezialornament FR
Coating	-/-
Special features	Ornamentation on surface 1
Colour	white
Name of ornamentation	PRISMASOLAR Spezialornament FR

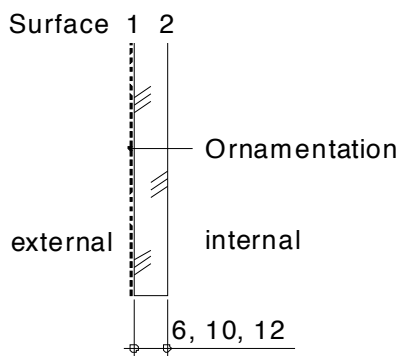
For the determination of the spectral data test specimen of single panes were used:

Dimensions (W x H)	40 × 70; 300 × 300
Glass thickness	6, 10, 12

The description is based on the documentation of **ift**. Numbers and names of material are given by the initial customer. (Further data from the initial customer are marked with *).

1.2 Representation of test specimen

The illustration was produced by the **ift** as a schematic representation of the cross section.

**Figure 1 Representation**



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2 Procedure

2.1 Sampling

The specimen were selected by the client.

Quantity	each 3 small samples and 3 big samples
Delivery on	21 February 2012 by the client 21. March 2012 by the client
Registration N°	31902 32094

The spectral data of „PRISMASOLAR low iron 10 mm“ originate from order 11-001127-AU01.

2.2 Process

Technical basis	
EN 410 : 2011-02	Glass in building - Determination of luminous and solar characteristics of glazing
Deviations	There are the following deviations from the test procedure or test conditions: Due to the light diffusing characteristic of the sample, the additional measurements for determination of spectral transmission characteristics according to DIN 5036 have been effected with an integrating sphere (Ø1.25 m).

2.3 Test equipment

Spectrometer UV-VIS-NIR	Appliance number 22133
Type	Shimadzu UV-3102PC with LISR-3100, integrating sphere Ø150 mm
Measuring range	190 nm to 2500 nm
Resolution	variable, 2 nm was selected
Reflection standard	calibrated reflection standard, company Labsphere; aluminium mirror
Climatic conditions	approx 20 °C, 50 % rh
Averaging	average of three samples

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Client Glasfabrik Lamberts
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Testing personnel Virginia Miguel Saez, Dipl.-Phys.**3 Detailed results****Table 1** Luminous and solar characteristics for single panes

	Type of pane	τ_{UV}	τ_v	ρ_v	ρ_v'	τ_e	ρ_e	ρ_e'	q_i	g	b
1	PRISMASOLAR low iron 6mm	0.636	0.916	0.062	0.234	0.842	0.061	0.215	0.025	0.867	1.084
2	PRISMASOLAR 10 mm	0.443	0.884	0.076	0.105	0.777	0.071	0.099	0.039	0.817	1.021
3	PRISMASOLAR low iron 10 mm	0.487	0.916	0.060	0.103	0.842	0.061	0.104	0.025	0.867	1.083
4	PRISMASOLAR 12 mm	0.396	0.878	0.072	0.111	0.753	0.067	0.096	0.046	0.799	0.999
5	Spezialornament FR 6 mm	0.453	0.903	0.058	0.080	0.794	0.054	0.075	0.039	0.833	1.042
6	Spezialornament FR 10 mm	0.368	0.877	0.063	0.080	0.751	0.059	0.075	0.049	0.800	1.000

Key:

τ_{UV}	ultraviolet transmittance	τ_e	solar direct transmittance
τ_v	light transmittance	ρ_e	solar reflectance (ornamented side)
ρ_v	light reflectance (ornamented side)	ρ_e'	solar reflectance (coated side)
ρ_v'	light reflectance (coated side)	q_i	secondary internal heat transfer factor
g	total solar energy transmittance ($g = \tau_e + q_i$)		
b	b-factor acc. to VDI 2078 ($b = g/0.8$)		

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04. April 2012