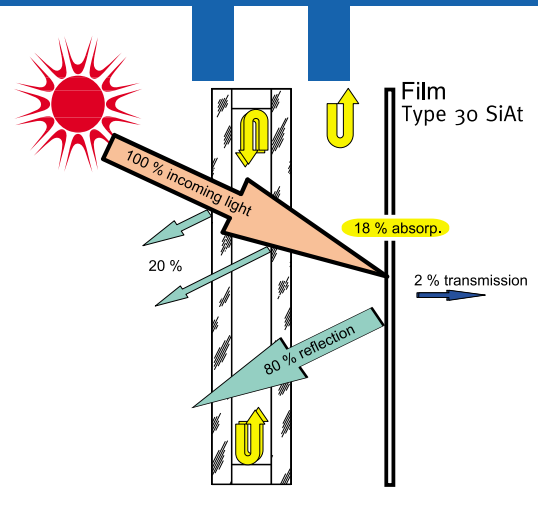


# Roller Blind Films

## Properties and use characteristics of the main roller blind films



### THE TASK

Large windows create bright and friendly interiors and a positive ambience in office buildings and industrial plants. Large glass areas however bring up also new problems:

- Too much solar energy heats up the rooms
- Too much light produces glare and dazzle

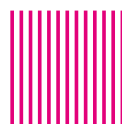
Working at a VDU work station without proper sun protection is next to impossible. Glare, dazzle, reflections and poor contrast overexert the operator's eyes and eye diseases might be the consequence in the long run.

Moreover, room temperatures rise when the sun shines bright. Effective material for sun protection should be able to eliminate these disturbing effects and allow undisturbed sight into the outside world, granting full protection against sun and dazzle at the same time.

### THE SOLUTION

Solar energy consisting of visible light and invisible infrared and ultraviolet radiation passes the glass panes of the windows largely unhindered. MULTIFILM-films reflect these rays like a mirror. The special metal-coated, but transparent film material reflects over 80 % of the incoming solar energy (with a g-value of 19.2 %) into the open. The reflected energy can thus not be converted into long-wave thermal radiation which would heat up the interior of the building.

The second positive effect is that the film material attenuates the incoming light by 97 to 98 %. That allows work at VDU workstations without glare and dazzle and provides for proper protection from solar heat. Film material type 30SiAt meets the requirements of the fire classification B1 "hardly combustible" according to ÖNORM B 3800, Part 2.



**MULTIFILM®**

*Perfection for windows*

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Technical Data for the most common MULTIFILM-roller blind films	30SiAt		20SiBc		10SiSi		40SiGy#		32SiAt#		80SiBk#	
	film	film + glass 4/12/4	film	film + glass 4/12/4	film	film + glass 4/12/4	film	film + glass 4/12/4	film	film + glass 4/12/4	film	film + glass 4/12/4
Window side colour Interior side colour	Silver/ Anthracite		Silver/ Bronze		Silver/ Silver		Silver grey/ Dark grey		Silver/ Anthracite		Silver/ Black	
Radiation transmittance factor with global radiation [%]	4,2 <sup>+</sup>	3,4 <sup>+</sup>	3,2 <sup>+</sup>	2,5 <sup>+</sup>	2,7 <sup>#</sup>	1,1 <sup>+</sup>	3,6	2,8	7,0	5,5	0,0	0,0
Light transmittance factor with standard illumination D65 [%]	3,2 <sup>+</sup>	2,9 <sup>+</sup>	2,2 <sup>+</sup>	2,0 <sup>+</sup>	1,6 <sup>#</sup>	1,4 <sup>+</sup>	-	2,4	-	6,3	-	0,0
Radiation reflection factor with global radiation [%]	73,4 <sup>+</sup>	55,4 <sup>+</sup>	72,1 <sup>+</sup>	55,1 <sup>+</sup>	74,0 <sup>#</sup>	60,1 <sup>+</sup>	64,0	48,6	66,0	50,1	84,0	63,8
Total energy transmittance factor (g-value)	0,100 <sup>+</sup>	0,226 <sup>+</sup>	0,096 <sup>+</sup>	0,229 <sup>+</sup>	0,094 <sup>#</sup>	0,192 <sup>+</sup>	-	0,241	-	0,245	-	0,138
Reduction factor from solar protection systems (z-value)	-	0,296 <sup>+</sup>	-	0,300 <sup>+</sup>	-	0,252 <sup>+</sup>	-	0,316	-	0,321	-	0,181
Heat transmission coefficient (k-value) [W*m <sup>-2</sup> *K <sup>-1</sup> ]	-	1,70 <sup>*</sup>	-	1,70 <sup>*</sup>	-	1,70 <sup>*</sup>	-	1,85	-	1,90	-	1,65

### Operational characteristics

Thermal protection	++	++	++	+	+	++
Glare protection	++	++	+	++	+	++
Clear view to the outside	++	++	++	++	++	-
Privacy protection from outside (daytime)	+	+	+	+	+	++
Privacy protection from outside (night-time)	-	-	-	-	-	++
Inconspicuous in the facade elevation	0	0	0	+	0	0

(++) Very good (o) Average (+) Good (-) Poor

\* measured by Fraunhofer-Inst. f. Bauphysik Stuttgart

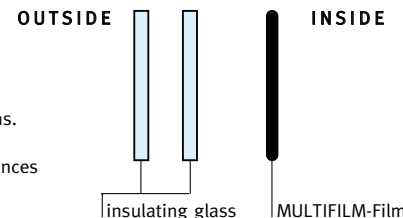
+ measured by Inst. f. Lichttechnik der Technischen Universität Berlin

# measured by MULTIFILM

The film 40SiGy can be used with either side to the glass.

The table shows the technical data from the experimental set-up for insulated glazing 4/12/4 + film and the technical data only from the film. Only the technical data from the insulated glazing 4/12/4 and film should be used for energy calculations.

All technical data are subject to manufacturing tolerances



**MULTIFILM®**

Perfection for windows are available from:

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