

## SPECIFICATION.

## WINDOW FILM TYPE: INSULATION - LOW-E - SILVER 20 - HIGH

## SILVER REFLECTIVE.

Sunguard Low-E Window Film range has a reflective appearance. It is designed for colder climates to reduce heat loss. Rejects up to 78% of solar energy, and retains heat in cooler months, reducing yearround energy costs. During warmer months a reduction of hot spots helps increase HVAC efficiency and lower energy costs. Shields 99% of UV radiation, helping to reduce fading of valuables, fabrics and furnishings. Constructed with a durable scratch resistant coating for easy cleaning.

## PHYSICAL PROPERTIES NOMINAL.

Nom. Thickness: 50 microns
Tensile strength: 2,100 kg/cm2
Melting point: 260 – 265°C

\*Infrared rejection = 1 - average unweighted transmittance using ASTM E 903.

\*\*Tdw-ISO is the percentage of transmitted light that causes fading. A lower number means more protection against fading.

All window films meet classification B-S1,d0 (tests acc to SBI EN13823) and class M1 (tests acc.to NF P 92-501).

SOLAR ENERGY REJECTED. UP TO: WINTER HEAT LOSS REDUCTION. UP TO: 26%

UV REJECTED. UP TO **99%** 

NO   WITH   FILM   FI	PERFORMANCE PARAMETERS FOR DIFFERENT WINDOW TYPES	4MM SINGLE CLEAR		4/12/4MM DOUBLE CLEAR	
Solar heat gain coefficient (G-value)       .87       .22       .77       .33         Solar heat gain reduction %       0       74       0       58         Total solar energy rejected %       13       78       23       67         Infrared rejection @780 - 2500 nm %*       17       84       17       73         Light to solar heat gain ratio (VLT/SHGC)       1.04       .97       1.05       .62         Transmittance %       85       15       73       .14         Absorptance %       7       41       14       .46         Reflectance %       8       .44       .13       .40         VISIBLE LIGHT.       90       22       .82       .20         Reflectance exterior %       8       .40       .15       .42         Reflectance interior %       8       .48       .15       .48         Glare reduction %       0       .76       0       .75         THERMAL ENERGY.       .84       .33       .84       .33         Winter U-factor (W/m 2°C)       .5.8       .4.2       .2.8       .2.4         Winter heat loss reduction %       0       .34       .0       .23         ULTRAVIOLET LIGHT.					
Solar heat gain reduction %       0       74       0       58         Total solar energy rejected %       13       78       23       67         Infrared rejection @780 - 2500 nm %*       17       84       17       73         Light to solar heat gain ratio (VLT/SHGC)       1.04       .97       1.05       .62         Transmittance %       85       15       73       14         Absorptance %       7       41       14       46         Reflectance %       8       44       13       40         VISIBLE LIGHT.       7       41       14       46         Reflectance exterior %       8       40       15       42         Reflectance interior %       8       48       15       48         Glare reduction %       0       76       0       75         THERMAL ENERGY.         Emissivity       84       .33       .84       .33         Winter heat loss reduction %       0       34       0       23         ULTRAVIOLET LIGHT.         Blocked @300 to 380 nm %       36       >99       51       >99         FADE CONTROL.         Fade control UV Tdw	SOLAR ENERGY.				
Total solar energy rejected %       13       78       23       67         Infrared rejection @780 - 2500 nm %*       17       84       17       73         Light to solar heat gain ratio (VLT/SHGC)       1.04       .97       1.05       .62         Transmittance %       85       15       73       .14         Absorptance %       7       .41       .14       .46         Reflectance %       8       .44       .13       .40         VISIBLE LIGHT.         Transmittance %       90       .22       .82       .20         Reflectance exterior %       8       .40       .15       .42         Reflectance interior %       8       .48       .15       .48         Glare reduction %       0       .76       0       .75         THERMAL ENERGY.         Emissivity       .84       .33       .84       .33         Winter U-factor (W/m 2°C)       .58       4.2       2.8       2.4         Winter heat loss reduction %       0       .34       0       .23         ULTRAVIOLET LIGHT.       .85       .85       .87       .99       .51       .>99         FADE CONT	Solar heat gain coefficient (G-value)	.87	.22	.77	.33
Infrared rejection @780 - 2500 nm %*       17       84       17       73         Light to solar heat gain ratio (VLT/SHGC)       1.04       .97       1.05       .62         Transmittance %       85       15       73       .14         Absorptance %       7       41       .14       .46         Reflectance %       8       .44       .13       .40         VISIBLE LIGHT.         Transmittance %       90       .22       .82       .20         Reflectance exterior %       8       .40       .15       .42         Reflectance interior %       8       .48       .15       .48         Glare reduction %       0       .76       0       .75         THERMAL ENERGY.         Emissivity       .84       .33       .84       .33         Winter U-factor (W/m 2°C)       .5.8       4.2       .2.8       .2.4         Winter heat loss reduction %       0       .34       0       .23         ULTRAVIOLET LIGHT.         Blocked @300 to 380 nm %       36       >99       51       >99         FADE CONTROL.         Fade control UV Tdw-ISO @300 - 700 nm %**       85	Solar heat gain reduction %	0	74	0	58
Light to solar heat gain ratio (VLT/SHGC)  1.04 .97 1.05 .62  Transmittance % 85 15 73 14  Absorptance % 7 41 14 46  Reflectance % 8 44 13 40  VISIBLE LIGHT.  Transmittance % 90 22 82 20  Reflectance exterior % 8 40 15 42  Reflectance interior % 8 48 15 48  Glare reduction % 0 76 0 75  THERMAL ENERGY.  Emissivity .84 .33 .84 .33  Winter U-factor (W/m 2°C) 5.8 4.2 2.8 2.4  Winter heat loss reduction % 0 34 0 23  ULTRAVIOLET LIGHT.  Blocked @300 to 380 nm % 36 >99 51 >99  FADE CONTROL.  Fade control UV Tdw-ISO @300 - 700 nm %*** 85 18 74 16	Total solar energy rejected %	13	78	23	67
Transmittance %       85       15       73       14         Absorptance %       7       41       14       46         Reflectance %       8       44       13       40         VISIBLE LIGHT.       Transmittance %         P0       22       82       20         Reflectance exterior %       8       40       15       42         Reflectance interior %       8       48       15       48         Glare reduction %       0       76       0       75         THERMAL ENERGY.       Emissivity       84       .33       .84       .33         Winter U-factor (W/m 2°C)       5.8       4.2       2.8       2.4         Winter heat loss reduction %       0       34       0       23         ULTRAVIOLET LIGHT.         Blocked @300 to 380 nm %       36       >99       51       >99         FADE CONTROL.         Fade control UV Tdw-ISO @300 - 700 nm %**       85       18       74       16	Infrared rejection @780 - 2500 nm %*	17	84	17	73
Absorptance % 7 41 14 46 Reflectance % 8 44 13 40  VISIBLE LIGHT.  Transmittance % 90 22 82 20 Reflectance exterior % 8 40 15 42 Reflectance interior % 8 48 15 48 Glare reduction % 0 76 0 75  THERMAL ENERGY.  Emissivity 84 .33 .84 .33 Winter U-factor (W/m 2°C) 5.8 4.2 2.8 2.4 Winter heat loss reduction % 0 34 0 23  ULTRAVIOLET LIGHT.  Blocked @300 to 380 nm % 36 >99 51 >99  FADE CONTROL.  Fade control UV Tdw-ISO @300 - 700 nm %** 85 18 74 16	Light to solar heat gain ratio (VLT/SHGC)	1.04	.97	1.05	.62
Reflectance % 8 44 13 40  VISIBLE LIGHT.  Transmittance % 90 22 82 20  Reflectance exterior % 8 40 15 42  Reflectance interior % 8 48 15 48  Glare reduction % 0 76 0 75  THERMAL ENERGY.  Emissivity 84 33 84 33  Winter U-factor (W/m 2°C) 5.8 4.2 2.8 2.4  Winter heat loss reduction % 0 34 0 23  ULTRAVIOLET LIGHT.  Blocked @300 to 380 nm % 36 >99 51 >99  FADE CONTROL.  Fade control UV Tdw-ISO @300 - 700 nm %** 85 18 74 16	Transmittance %	85	15	73	14
VISIBLE LIGHT.         Transmittance %       90       22       82       20         Reflectance exterior %       8       40       15       42         Reflectance interior %       8       48       15       48         Glare reduction %       0       76       0       75         THERMAL ENERGY.         Emissivity       .84       .33       .84       .33         Winter U-factor (W/m 2°C)       5.8       4.2       2.8       2.4         Winter heat loss reduction %       0       34       0       23         ULTRAVIOLET LIGHT.         Blocked @300 to 380 nm %       36       >99       51       >99         FADE CONTROL.         Fade control UV Tdw-ISO @300 - 700 nm %**       85       18       74       16	Absorptance %	7	41	14	46
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Reflectance exterior %       8       40       15       42         Reflectance interior %       8       48       15       48         Glare reduction %       0       76       0       75         THERMAL ENERGY.         Emissivity       .84       .33       .84       .33         Winter U-factor (W/m 2°C)       5.8       4.2       2.8       2.4         Winter heat loss reduction %       0       34       0       23         ULTRAVIOLET LIGHT.         Blocked @300 to 380 nm %       36       >99       51       >99         FADE CONTROL.         Fade control UV Tdw-ISO @300 - 700 nm %**       85       18       74       16	VISIBLE LIGHT.				
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Glare reduction % 0 76 0 75  THERMAL ENERGY.  Emissivity 8.84 3.33 8.4 .33  Winter U-factor (W/m 2°C) 5.8 4.2 2.8 2.4  Winter heat loss reduction % 0 34 0 23  ULTRAVIOLET LIGHT.  Blocked @300 to 380 nm % 36 >99 51 >99  FADE CONTROL.  Fade control UV Tdw-ISO @300 - 700 nm %** 85 18 74 16	Reflectance exterior %	8	40	15	42
THERMAL ENERGY.         Emissivity       .84       .33       .84       .33         Winter U-factor (W/m 2°C)       5.8       4.2       2.8       2.4         Winter heat loss reduction %       0       34       0       23         ULTRAVIOLET LIGHT.         Blocked @300 to 380 nm %       36       >99       51       >99         FADE CONTROL.         Fade control UV Tdw-ISO @300 - 700 nm %**       85       18       74       16	Reflectance interior %	8	48	15	48
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Winter U-factor (W/m 2°C)       5.8       4.2       2.8       2.4         Winter heat loss reduction %       0       34       0       23         ULTRAVIOLET LIGHT.         Blocked @300 to 380 nm %       36       >99       51       >99         FADE CONTROL.         Fade control UV Tdw-ISO @300 - 700 nm %**       85       18       74       16	THERMAL ENERGY.				
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ULTRAVIOLET LIGHT.         Blocked @300 to 380 nm %       36       >99       51       >99         FADE CONTROL.         Fade control UV Tdw-ISO @300 - 700 nm %**       85       18       74       16	Winter U-factor (W/m 2°C)	5.8	4.2	2.8	2.4
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Fade control UV Tdw-ISO @300 - 700 nm %** 85 18 74 16	Blocked @300 to 380 nm %	36	>99	51	>99
	FADE CONTROL.				
Fade reduction % 0 79 0 78	Fade control UV Tdw-ISO @300 - 700 nm %**	85	18	74	16
	Fade reduction %	0	79	0	78

