

About Hanita Coatings

For 30 years, Hanita Coatings, situated in Kibbutz Hanita, Israel, has specialized in the development and manufacture of engineered polyester films for high-end applications.

Hanita is a key provider of energy-efficiency solutions, a market leader in insulation laminates, a developer of core photovoltaic materials and a central player in the field of solar control window film. Hanita also manufactures safety and security anti-fragmentation window films, which add further value to energy-efficiency building upgrades.

Hanita's qualified representatives worldwide are ready to assist you with technical support, advice about energy efficiency, and whole-building modeling and savings forecasts.

Learn more about local incentive plans, green building energy ratings and sustainability regulations for your region by calling your local SolarZone representative.

Check **www.hanitacoatings.com** for more information and local contact details.



energy efficiency



SolarZone Window Films

Sample Book

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Accreditations and Testing Methods


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2. Interior Dual Reflective Films
3. Interior Neutral Films
4. Interior Spectrally Selective Films
5. Interior Specialty Films
6. Exterior Films
 - SolarZone Xtra Films
 - Reflective Films
 - Dual Reflective Films
 - Spectrally Selective Films
 - Exterior Films 1st generation
7. SolarZone XTRM Films

Definitions

Upgrade energy efficiency with SolarZone Window Films

SolarZone window films increase energy efficiency by reducing solar heat buildup, and lessening the cooling load on the air conditioning system. In most climates, a 10% cut in energy costs is realistic, but savings can reach up to 30%! Payback differs between regions, depending on climate, glazing, film type, cost of installation and electricity rates. But the return on investment can be around 2-3 years, one of the quickest of any energy efficiency measures.

SolarZone Xtra exterior solar control films are particularly energy efficient for double glazing (IGU), since they reject solar energy on the outer pane, keeping the inner pane cool. SolarZone high-performance, super-durable films ensure the long term value of your building upgrade, and continued energy savings.



80%
reduction in
solar heat
gain

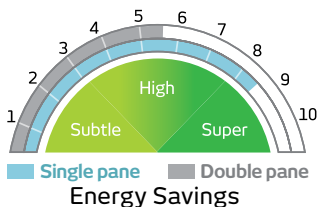
2-year
payback!*

*Typical figures based on whole building energy modeling with clear glass and SolarZone Reflective film.

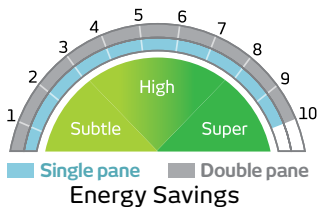
Energy Savings Indicator

A comparative energy savings scale based on whole-building energy modeling in climate zone 3, with highly reflective film as the benchmark (=level 10). Provided in this book for film applied on single-pane (SP) clear and on double-pane (DP) clear glazing.

Silver 20
(Interior)



Silver 20 Xtra
(Exterior)



Accreditation and Testing Methods

Performance results were generated from testing of this film applied on 3 mm clear single glass and simulated on 3mm double pane glass, using the Lawrence Berkeley National Laboratory (LBNL) Window 5.2 software program and NFRC methodology. Performance results are subject to variations in process conditions within industry standards.

NFRC is a non-profit organization that administers the only uniform, independent rating and labeling system for the energy performance of windows, doors, skylights and attachment products such as window films. The NFRC logo indicates that the film has passed the NFRC product certification program, and is NFRC listed.



WERS enables windows to be rated and labeled for their annual energy impact on a whole house, in any climate of Australia. To participate in WERS, window makers must obtain energy ratings for their products from a rating organization that is accredited by the AFRC (Australian Fenestration Rating Council). The WERS logo indicates that the film is WERS accredited.



Hanita Coatings is an **ISO 9001:2008, ISO 14001:2004 & OHSAS 18001:2007** certified company



Reflective Films Interior

Reflective Films

Hanita's range of Reflective films delivers high levels of solar control, a strong visual statement, effective heat rejection and quick payback. SolarZone Silver and Solar Bronze Reflective films deliver the most cost-efficient and energy-saving solution for upgrading sophisticated commercial projects.

Check out the SolarZone Xtra section for a range of exceptional high performance reflective films for external installation; for skylights and for plastic glazing. Silver security laminates are listed under the SolarZone Safe section.

Contents

Silver Films

- Silver 20 R06922W / R05822S
- Silver 35 R06934W / R05834S
- Silver 50 R05850S
- Silver Matte R06920

Solar Bronze Films

- Solar Bronze 20 R069B6S
- Solar Bronze 35 R069B5S

Low-E Films

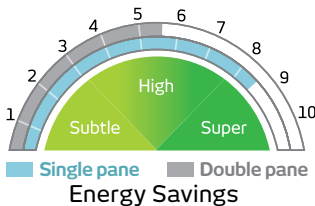
- Silver 20, Low-E R06922E
- Silver 35, Low-E R06934E

Silver 20

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	18 %	17 %
Visible Light Reflected (Int)	62 %	62 %
Visible Light Reflected (Ext)	61 %	61 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	55 %	49 %
Total Solar Energy Transmitted	13 %	12 %
Total Solar Energy Absorbed	32 %	38 %
Emissivity (Room Side)	0.71	0.71
Glare Reduction	80 %	79 %
Shading Coefficient	0.25	0.35
Solar Heat Gain Coeff. (G-Value)	0.22	0.30
U-Value Winter (IP)	0.97	0.46
U-Value Winter (SI)	5.51	2.62
Luminous Efficacy	0.72	0.49
Total Solar Energy Rejected	78 %	70 %

R06922W - Silver 20 Water Activated Adhesive
 R05822S - Silver 20 Pressure Sensitive Adhesive

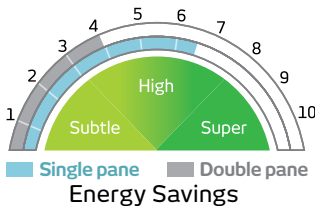


Silver 35

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	33 %	31 %
Visible Light Reflected (Int)	41 %	42 %
Visible Light Reflected (Ext)	42 %	44 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	39 %	37 %
Total Solar Energy Transmitted	25 %	22 %
Total Solar Energy Absorbed	36 %	41 %
Emissivity (Room Side)	0.72	0.72
Glare Reduction	63 %	62 %
Shading Coefficient	0.40	0.49
Solar Heat Gain Coeff. (G-Value)	0.35	0.42
U-Value Winter (IP)	0.98	0.46
U-Value Winter (SI)	5.57	2.63
Luminous Efficacy	0.85	0.64
Total Solar Energy Rejected	65 %	58 %

R06934W - Silver 35 Water Activated Adhesive
 R05834S - Silver 35 Pressure Sensitive Adhesive



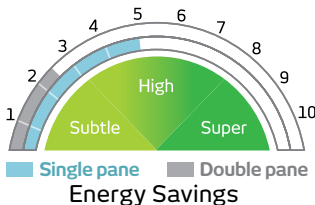
Ed-C DS No 1191 February 2013

Silver 50

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	51 %	46 %
Visible Light Reflected (Int)	23 %	25 %
Visible Light Reflected (Ext)	24 %	29 %
Ultra Violet Block	97 %	98 %
Total Solar Energy Reflected	24 %	25 %
Total Solar Energy Transmitted	39 %	34 %
Total Solar Energy Absorbed	37 %	41 %
Emissivity (Room Side)	0.81	0.81
Glare Reduction	44 %	43 %
Shading Coefficient	0.58	0.63
Solar Heat Gain Coeff. (G-Value)	0.50	0.55
U-Value Winter (IP)	1.02	0.47
U-Value Winter (SI)	5.78	2.70
Luminous Efficacy	0.87	0.73
Total Solar Energy Rejected	50 %	45 %

R05850S - Silver 50 Pressure Sensitive Adhesive

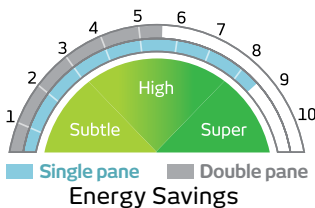


Silver Matte 20

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	19 %	18 %
Visible Light Reflected (Int)		
Visible Light Reflected (Ext)	56 %	56 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	56 %	45 %
Total Solar Energy Transmitted	14 %	13 %
Total Solar Energy Absorbed	30 %	42 %
Emissivity (Room Side)	0.73	0.73
Glare Reduction	79 %	78 %
Shading Coefficient	0.28	0.38
Solar Heat Gain Coeff. (G-Value)	0.24	0.33
U-Value Winter (IP)	0.97	0.46
U-Value Winter (SI)	5.54	2.63
Luminous Efficacy	0.67	0.47
Total Solar Energy Rejected	76 %	67 %

R06920 - Silver Matte 20 Pressure Sensitive Adhesive

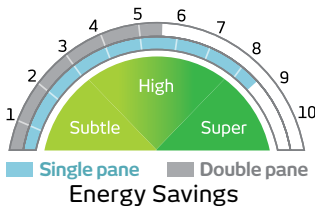


Solar Bronze 20

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	17 %	16 %
Visible Light Reflected (Int)	45 %	45 %
Visible Light Reflected (Ext)	40 %	43 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	53 %	47 %
Total Solar Energy Transmitted	9 %	8 %
Total Solar Energy Absorbed	38 %	45 %
Emissivity (Room Side)	0.69	0.69
Glare Reduction	81 %	81 %
Shading Coefficient	0.23	0.35
Solar Heat Gain Coeff. (G-Value)	0.19	0.30
U-Value Winter (IP)	0.96	0.46
U-Value Winter (SI)	5.45	2.61
Luminous Efficacy	0.74	0.45
Total Solar Energy Rejected	81 %	70 %

R069B6S - Solar Bronze 20 Pressure Sensitive Adhesive



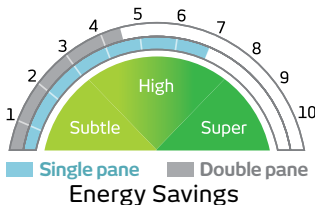
ED - B DS No 1500 August 2014

Solar Bronze 35

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	33 %	31 %
Visible Light Reflected (Int)	29 %	30 %
Visible Light Reflected (Ext)	30 %	33 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	44 %	40 %
Total Solar Energy Transmitted	21 %	18 %
Total Solar Energy Absorbed	35 %	42 %
Emissivity (Room Side)	0.70	0.70
Glare Reduction	63 %	63 %
Shading Coefficient	0.35	0.44
Solar Heat Gain Coeff. (G-Value)	0.30	0.38
U-Value Winter (IP)	0.97	0.46
U-Value Winter (SI)	5.51	2.62
Luminous Efficacy	0.94	0.68
Total Solar Energy Rejected	70 %	62 %

R069B5S - Solar Bronze 35 Pressure Sensitive Adhesive



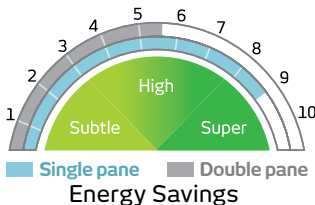
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Silver 20 Low-E

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	17 %	16 %
Visible Light Reflected (Int)	63 %	63 %
Visible Light Reflected (Ext)	56 %	57 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	51 %	46 %
Total Solar Energy Transmitted	12 %	11 %
Total Solar Energy Absorbed	37 %	43 %
Emissivity (Room Side)	0.39	0.39
Glare Reduction	81 %	81 %
Shading Coefficient	0.24	0.34
Solar Heat Gain Coeff. (G-Value)	0.20	0.29
U-Value Winter (IP)	0.79	0.41
U-Value Winter (SI)	4.49	2.31
Luminous Efficacy	0.71	0.47
Total Solar Energy Rejected	80 %	71 %

R06922E - Silver 20 Low E Pressure Sensitive Adhesive



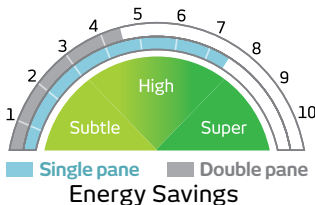
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Silver 35 Low-E

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	27 %	20 %
Visible Light Reflected (Int)	49 %	50 %
Visible Light Reflected (Ext)	44 %	46 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	41 %	38 %
Total Solar Energy Transmitted	19 %	17 %
Total Solar Energy Absorbed	40 %	45 %
Emissivity (Room Side)	0.45	0.45
Glare Reduction	70 %	69 %
Shading Coefficient	0.33	0.43
Solar Heat Gain Coeff. (G-Value)	0.28	0.37
U-Value Winter (IP)	0.83	0.42
U-Value Winter (SI)	4.71	2.38
Luminous Efficacy	0.80	0.58
Total Solar Energy Rejected	72 %	63 %

R06934E - Silver 35 Low-E Pressure Sensitive Adhesive



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Dual Reflective Films

Interior

Dual Reflective Films

OptiTune, OptiShade and Titan Duo Dual Reflective solar control films combine a warm, low-reflectance neutral interior with a sophisticated, high energy-rejecting exterior.

OptiTune neutral grey films are available with water activated adhesive, and as security laminates under the SolarZone Safe line.

OptiShade features a warm, neutral brown tone, ideal for residential use. Available with water activated adhesive.

Titan Duo provides an attractive neutral shade, delivering high solar energy rejection while enhancing comfort and privacy.

Titan Duo interior films are color compatible with Titan Xtra exterior films, combining an attractive appearance with exceptional energy savings.

Contents

OptiTune

- OptiTune 05 R070R0W
- OptiTune 15 R070R1W
- OptiTune 22 R069R2W
- OptiTune 30 R069R3W
- OptiTune 40 R069R4W

OptiShade

- OptiShade 15 R069O1W
- OptiShade 25 R069O2W
- OptiShade 35 R069O3W

Titan Duo

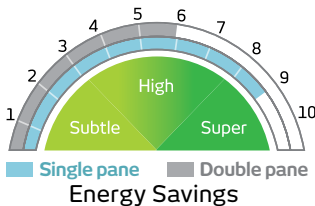
- Titan Duo 05 R058W0S
- Titan Duo 15 R058W1S

OptiTune 05

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	6 %	6 %
Visible Light Reflected (Int)	15 %	15 %
Visible Light Reflected (Ext)	63 %	63 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	56 %	50 %
Total Solar Energy Transmitted	6 %	6 %
Total Solar Energy Absorbed	38 %	44 %
Emissivity (Room Side)	0.75	0.75
Glare Reduction	93 %	93 %
Shading Coefficient	0.19	0.31
Solar Heat Gain Coeff. (G-Value)	0.16	0.27
U-Value Winter (IP)	0.99	0.47
U-Value Winter (SI)	5.62	2.66
Luminous Efficacy	0.32	0.19
Total Solar Energy Rejected	84 %	73 %

R070R0W - OptiTune 05 Water Activated Adhesive



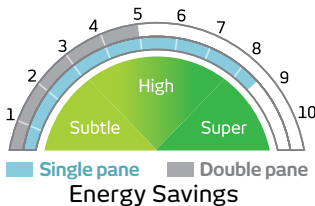
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OptiTune 15

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	13 %	13 %
Visible Light Reflected (Int)	25 %	24 %
Visible Light Reflected (Ext)	56 %	56 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	51 %	46 %
Total Solar Energy Transmitted	12 %	11%
Total Solar Energy Absorbed	37 %	43 %
Emissivity (Room Side)	0.76	0.76
Glare Reduction	85 %	85 %
Shading Coefficient	0.26	0.37
Solar Heat Gain Coeff. (G-Value)	0.22	0.32
U-Value Winter (IP)	1.00	0.47
U-Value Winter (SI)	5.68	2.67
Luminous Efficacy	0.50	0.34
Total Solar Energy Rejected	78 %	68 %

R070R1W - OptiTune 15 Water Activated Adhesive



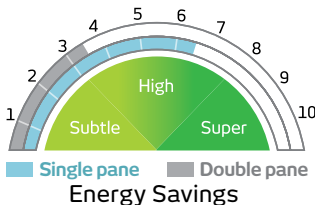
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OptiTune 22

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	21 %	19 %
Visible Light Reflected (Int)	15 %	15 %
Visible Light Reflected (Ext)	32 %	35 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	31 %	31 %
Total Solar Energy Transmitted	18 %	16 %
Total Solar Energy Absorbed	51 %	53 %
Emissivity (Room Side)	0.80	0.80
Glare Reduction	77 %	76 %
Shading Coefficient	0.38	0.51
Solar Heat Gain Coeff. (G-Value)	0.33	0.44
U-Value Winter (IP)	1.02	0.48
U-Value Winter (SI)	5.79	2.70
Luminous Efficacy	0.55	0.38
Total Solar Energy Rejected	67 %	56 %

R069R2W - OptiTune 22 Water Activated Adhesive



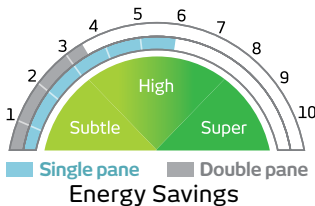
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OptiTune 30

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	32 %	30 %
Visible Light Reflected (Int)	26 %	27 %
Visible Light Reflected (Ext)	32 %	36 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	32 %	31 %
Total Solar Energy Transmitted	25 %	22 %
Total Solar Energy Absorbed	43 %	47 %
Emissivity (Room Side)	0.81	0.81
Glare Reduction	63 %	63 %
Shading Coefficient	0.44	0.53
Solar Heat Gain Coeff. (G-Value)	0.37	0.46
U-Value Winter (IP)	1.03	0.48
U-Value Winter (SI)	5.85	2.71
Luminous Efficacy	0.75	0.57
Total Solar Energy Rejected	63 %	54 %

R069R3W - OptiTune 30 Water Activated Adhesive



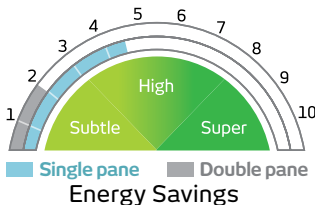
ED-E DS No 1160 February 2013

OptiTune 40

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	41 %	38 %
Visible Light Reflected (Int)	18 %	19 %
Visible Light Reflected (Ext)	21 %	26 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	22 %	24 %
Total Solar Energy Transmitted	33 %	29 %
Total Solar Energy Absorbed	45 %	47 %
Emissivity (Room Side)	0.83	0.83
Glare Reduction	54 %	54 %
Shading Coefficient	0.54	0.62
Solar Heat Gain Coeff. (G-Value)	0.46	0.54
U-Value Winter (IP)	1.04	0.48
U-Value Winter (SI)	5.91	2.72
Luminous Efficacy	0.77	0.60
Total Solar Energy Rejected	54 %	46 %

R069R4W - OptiTune 40 Water Activated Adhesive

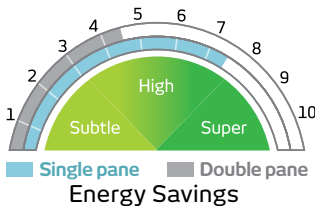


OptiShade 15

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	16 %	15 %
Visible Light Reflected (Int)	17 %	17 %
Visible Light Reflected (Ext)	44 %	46 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	42 %	39 %
Total Solar Energy Transmitted	13 %	11 %
Total Solar Energy Absorbed	45 %	50 %
Emissivity (Room Side)	0.79	0.79
Glare Reduction	82 %	82 %
Shading Coefficient	0.31	0.43
Solar Heat Gain Coeff. (G-Value)	0.27	0.38
U-Value Winter (IP)	1.01	0.47
U-Value Winter (SI)	5.76	2.69
Luminous Efficacy	0.52	0.34
Total Solar Energy Rejected	73 %	62 %

R06901W - OptiShade 15 Water Activated Adhesive

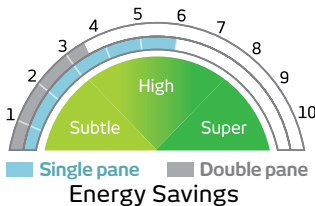


OptiShade 25

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	27 %	25 %
Visible Light Reflected (Int)	14 %	14 %
Visible Light Reflected (Ext)	25 %	30 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	26 %	27 %
Total Solar Energy Transmitted	23 %	20 %
Total Solar Energy Absorbed	51 %	53 %
Emissivity (Room Side)	0.84	0.84
Glare Reduction	70 %	69 %
Shading Coefficient	0.44	0.56
Solar Heat Gain Coeff. (G-Value)	0.39	0.49
U-Value Winter (IP)	1.04	0.48
U-Value Winter (SI)	5.91	2.73
Luminous Efficacy	0.61	0.45
Total Solar Energy Rejected	61 %	51 %

R06902W - OptiShade 25 Water Activated Adhesive

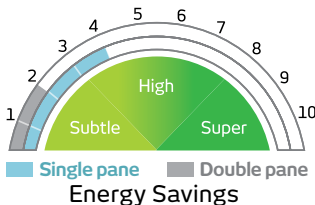


OptiShade 35

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	35 %	32 %
Visible Light Reflected (Int)	10 %	11 %
Visible Light Reflected (Ext)	13 %	20 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	14 %	18 %
Total Solar Energy Transmitted	34 %	29 %
Total Solar Energy Absorbed	53 %	53 %
Emissivity (Room Side)	0.86	0.86
Glare Reduction	61 %	61 %
Shading Coefficient	0.58	0.67
Solar Heat Gain Coeff. (G-Value)	0.5	0.59
U-Value Winter (IP)	1.05	0.48
U-Value Winter (SI)	5.97	2.75
Luminous Efficacy	0.6	0.47
Total Solar Energy Rejected	50 %	41 %

R06903W - OptiShade 35 Water Activated Adhesive

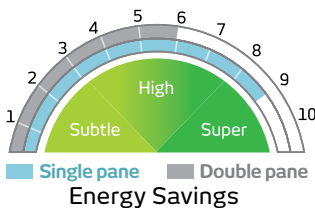


Titan Duo 05

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	7 %	7 %
Visible Light Reflected (Int)	18 %	18 %
Visible Light Reflected (Ext)	59 %	60 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	53 %	48 %
Total Solar Energy Transmitted	7 %	6 %
Total Solar Energy Absorbed	40 %	46 %
Emissivity (Room Side)	0.78	0.78
Glare Reduction	92 %	91 %
Shading Coefficient	0.21	0.34
Solar Heat Gain Coeff. (G-Value)	0.18	0.29
U-Value Winter (IP)	1.01	0.47
U-Value Winter (SI)	5.73	2.68
Luminous Efficacy	0.33	0.22
Total Solar Energy Rejected	82 %	71 %

R058W0S - Titan Duo 05 Pressure Sensitive Adhesive



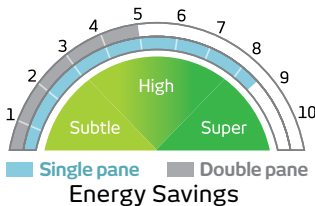
Ed-B DS No 1443 February 2013

Titan Duo 15

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	12 %	11 %
Visible Light Reflected (Int)	25 %	26 %
Visible Light Reflected (Ext)	56 %	57 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	51 %	46 %
Total Solar Energy Transmitted	9 %	9 %
Total Solar Energy Absorbed	39 %	45 %
Emissivity (Room Side)	0.78	0.78
Glare Reduction	87 %	87 %
Shading Coefficient	0.23	0.35
Solar Heat Gain Coeff. (G-Value)	0.20	0.30
U-Value Winter (IP)	1.01	0.47
U-Value Winter (SI)	5.73	2.68
Luminous Efficacy	0.51	0.31
Total Solar Energy Rejected	80 %	70 %

R058W1S - Titan Duo 15 Pressure Sensitive Adhesive



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Neutral Films Interior



Neutral Films

PerLite ceramic-based films deliver an attractive neutral color, low visible reflectance and outstanding performance*, ideal for both residential and commercial projects. PerLite is available with PS or water activated adhesive in a range of light transmissions, and as a security laminate under the SolarZone Safe line.

Natura is a range of low reflectance neutral grey interior solar control films, with highly effective heat rejection and glare reduction. Developed for residential & commercial projects targeting effective energy control but requiring a subtle appearance on glass, Natura is ideal for installation on single pane windows; consult Hanita's film-to-glass guide for additional applications.

Contents

PerLite

- PerLite 20 R070L6W
- PerLite 35 R070L5W
- PerLite 50 R069L3W / R058L3S
- PerLite 70 R069L4W

Natura

- Natura 07 R058L7W
- Natura 15 R058L9W
- Natura 28 R069L8W

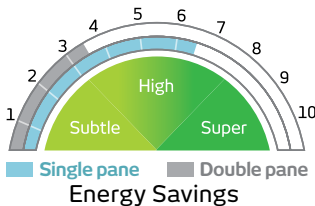
PerLite 20

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	22 %	20 %
Visible Light Reflected (Int)	24 %	25 %
Visible Light Reflected (Ext)	25 %	31 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	29 %	29 %
Total Solar Energy Transmitted	14 %	13 %
Total Solar Energy Absorbed	57 %	58 %
Emissivity (Room Side)	0.76	0.76
Glare Reduction	76 %	75 %
Shading Coefficient	0.36	0.51
Solar Heat Gain Coeff. (G-Value)	0.30	0.44
U-Value Winter (IP)	1.00	0.47
U-Value Winter (SI)	5.68	2.67
Luminous Efficacy	0.62	0.40
Total Solar Energy Rejected	70 %	56 %

R070L6W - PerLite 20 Water Activated Adhesive

US Patented Technology



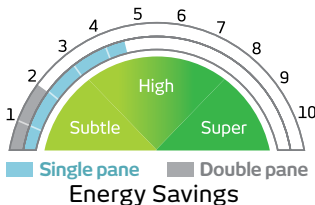
PerLite 35

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	40 %	37 %
Visible Light Reflected (Int)	15 %	16 %
Visible Light Reflected (Ext)	17 %	23 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	17 %	20 %
Total Solar Energy Transmitted	29 %	25 %
Total Solar Energy Absorbed	54 %	55 %
Emissivity (Room Side)	0.82	0.82
Glare Reduction	56 %	55 %
Shading Coefficient	0.52	0.64
Solar Heat Gain Coeff. (G-Value)	0.45	0.55
U-Value Winter (IP)	1.03	0.48
U-Value Winter (SI)	5.85	2.72
Luminous Efficacy	0.75	0.57
Total Solar Energy Rejected	55 %	45 %

R070L5W - PerLite 35 Water Activated Adhesive

US Patented Technology



PerLite 50

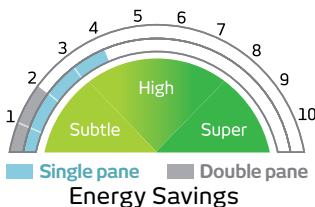
OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	51 %	47 %
Visible Light Reflected (Int)	16 %	19 %
Visible Light Reflected (Ext)	18 %	24 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	20 %	23 %
Total Solar Energy Transmitted	40 %	35 %
Total Solar Energy Absorbed	40 %	42 %
Emissivity (Room Side)	0.84	0.84
Glare Reduction	43 %	42 %
Shading Coefficient	0.60	0.66
Solar Heat Gain Coeff. (G-Value)	0.51	0.57
U-Value Winter (IP)	1.04	0.48
U-Value Winter (SI)	5.91	2.73
Luminous Efficacy	0.85	0.72
Total Solar Energy Rejected	49 %	43 %

R069L3W - PerLite 50 Water Activated Adhesive

R058L3S - PerLite 50 Pressure Sensitive Adhesive

US Patented Technology



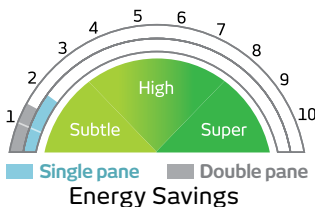
PerLite 70

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	68 %	61%
Visible Light Reflected (Int)	9 %	12 %
Visible Light Reflected (Ext)	10 %	17 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	10 %	15 %
Total Solar Energy Transmitted	59 %	50 %
Total Solar Energy Absorbed	31 %	35 %
Emissivity (Room Side)	0.91	0.91
Glare Reduction	25 %	25 %
Shading Coefficient	0.79	0.79
Solar Heat Gain Coeff. (G-Value)	0.69	0.68
U-Value Winter (IP)	1.08	0.49
U-Value Winter (SI)	6.13	2.78
Luminous Efficacy	0.86	0.78
Total Solar Energy Rejected	31 %	32 %

R069L4W - PerLite 70 Water Activated Adhesive

US Patented Technology

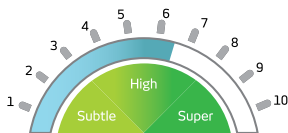


Natura 07

OPTICAL & SOLAR PROPERTIES

	Single Pane
Visible Light Transmitted	7 %
Visible Light Reflected (Int)	11 %
Visible Light Reflected (Ext)	14 %
Ultra Violet Block	99 %
Total Solar Energy Reflected	20 %
Total Solar Energy Transmitted	12 %
Total Solar Energy Absorbed	68 %
Emissivity (Room Side)	0.78
Glare Reduction	92 %
Shading Coefficient	0.35
Solar Heat Gain Coeff. (G-Value)	0.30
U-Value Winter (IP)	1.01
U-Value Winter (SI)	5.73
Luminous Efficacy	0.20
Total Solar Energy Rejected	70 %

R058L7W - Natura 07 Water Activated Adhesive



Energy Savings

energy efficiency

solar zone

Hanita Coatings

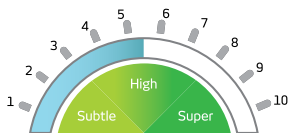
Natura 15

OPTICAL & SOLAR PROPERTIES

OPTICAL & SOLAR PROPERTIES	Single Pane
Visible Light Transmitted	16 %
Visible Light Reflected (Int)	11 %
Visible Light Reflected (Ext)	9 %
Ultra Violet Block	99 %
Total Solar Energy Reflected	10 %
Total Solar Energy Transmitted	15 %
Total Solar Energy Absorbed	75 %
Emissivity (Room Side)	0.86
Glare Reduction	83 %
Shading Coefficient	0.44
Solar Heat Gain Coeff. (G-Value)	0.38
U-Value Winter (IP)	1.05
U-Value Winter (SI)	5.8
Luminous Efficacy	0.36
Total Solar Energy Rejected	62 %

R058L9W - Natura 15 Water Activated Adhesive

WERS and NFRC pending



Energy Savings

energy efficiency

solar zone

Hanita Coatings

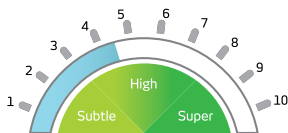
Natura 28

OPTICAL & SOLAR PROPERTIES

	Single Pane
Visible Light Transmitted	31 %
Visible Light Reflected (Int)	9 %
Visible Light Reflected (Ext)	14 %
Ultra Violet Block	99 %
Total Solar Energy Reflected	15 %
Total Solar Energy Transmitted	33 %
Total Solar Energy Absorbed	52 %
Emissivity (Room Side)	0.87
Glare Reduction	65 %
Shading Coefficient	0.56
Solar Heat Gain Coeff. (G-Value)	0.48
U-Value Winter (IP)	1.05
U-Value Winter (SI)	6.00
Luminous Efficacy	0.55
Total Solar Energy Rejected	52 %

R069L8W - Natura 28 Water Activated Adhesive

WERS and NFRC pending



Energy Savings

energy efficiency

solar zone

Hanita Coatings



Spectrally Selective Films

Interior

Spectrally Selective Films

e-Lite Spectrally Selective solar control films effectively reduce solar heat gain without noticeably affecting levels of daylight.

By filtering up to 88% of IR radiation, e-Lite films are ideal for residential, retail and commercial applications where retaining a natural appearance is important, but heat buildup is a problem.

The exterior versions of the Spectrally Selective range, e-lite 45 Xtra, e-lite 70 Xtra & OptiLite Xtra 75 are detailed in the SolarZone Xtra section.

Contents

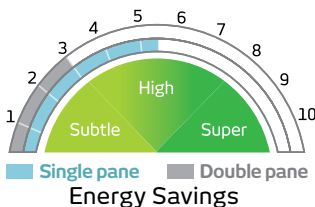
- e-Lite 45 R081I4W / R081IS4
- e-Lite 70 R081ISW / R081IS7

e-Lite 45

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	44 %	40 %
Visible Light Reflected (Int)	12 %	14 %
Visible Light Reflected (Ext)	17 %	23 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	24 %	26 %
Total Solar Energy Transmitted	26 %	23 %
Total Solar Energy Absorbed	50 %	51 %
Emissivity (Room Side)	0.83	0.83
Glare Reduction	51 %	50 %
Shading Coefficient	0.47	0.58
Solar Heat Gain Coeff. (G-Value)	0.41	0.51
U-Value Winter (IP)	1.04	0.48
U-Value Winter (SI)	5.88	2.72
Luminous Efficacy	0.94	0.69
Total Solar Energy Rejected	59 %	49 %

R08114W e-Lite 45 Water Activated Adhesive
 R0811S4 e-Lite 45 Pressure Sensitive Adhesive

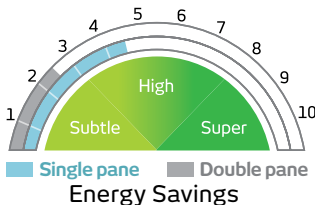


e-Lite 70

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	67 %	61 %
Visible Light Reflected (Int)	14 %	18 %
Visible Light Reflected (Ext)	16 %	21 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	24 %	25 %
Total Solar Energy Transmitted	37 %	33 %
Total Solar Energy Absorbed	39 %	42 %
Emissivity (Room Side)	0.82	0.82
Glare Reduction	25 %	24 %
Shading Coefficient	0.56	0.63
Solar Heat Gain Coeff. (G-Value)	0.48	0.55
U-Value Winter (IP)	1.03	0.48
U-Value Winter (SI)	5.85	2.71
Luminous Efficacy	1.20	0.97
Total Solar Energy Rejected	52 %	45 %

R081ISW 70 Water Activated Adhesive
 R081IS7 e-Lite 70 Pressure Sensitive Adhesive



Specialty Films Interior



Specialty Films

Hanita's Matte Privacy films provide a translucent sand-blast effect, adding privacy or designer elegance to doors and room dividers. Matte films are ideal for hiding unattractive views, or for disguising features that spoil the external appearance of glass-fronted buildings.

Hanita's UV Filter film provides one of the highest levels of protection from UV radiation available, reducing 99.8% of UVA and UVB rays, without noticeably altering the clarity of the glass.

Ideal for residential, commercial, museum, retail and automotive application, UV Filter Film slows fading and deterioration of art, fabrics, merchandise, upholstery and wood, and provides excellent protection from UV damage to skin and eyes.

Contents

- Matte Translucent, 2 mil R07311
- Black Out R06930S
- White Out R073WO
- UV Filter, 2 mil R069UVS

Matte 2 Mil

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	72 %	66%
Visible Light Reflected (Int)		
Visible Light Reflected (Ext)	17 %	23 %
Ultra Violet Block	94 %	95 %
Total Solar Energy Reflected	14 %	18 %
Total Solar Energy Transmitted	68 %	58 %
Total Solar Energy Absorbed	18 %	24 %
Emissivity (Room Side)	0.90	0.90
Glare Reduction	20 %	19 %
Shading Coefficient	0.84	0.79
Solar Heat Gain Coeff. (G-Value)	0.73	0.69
U-Value Winter (IP)	1.07	0.49
U-Value Winter (SI)	6.08	2.78
Luminous Efficacy	0.86	0.83
Total Solar Energy Rejected	27 %	31%

R07311 - Matte 2 Mil Pressure Sensitive Adhesive

Ed - F DS No.1182 February 2013

Blackout Film

OPTICAL & SOLAR PROPERTIES

	Single Pane
Visible Light Transmitted	0 %
Visible Light Reflected (Int)	
Visible Light Reflected (Ext)	6 %
Ultra Violet Block	100 %
Total Solar Energy Reflected	41 %
Total Solar Energy Transmitted	0 %
Total Solar Energy Absorbed	59 %
Emissivity (Room Side)	0.72
Glare Reduction	100 %
Shading Coefficient	0.20
Solar Heat Gain Coeff. (G-Value)	0.16
U-Value Winter (IP)	0.98
U-Value Winter (SI)	5.57
Luminous Efficacy	0.00
Total Solar Energy Rejected	84 %

R06930S - Blackout Film Pressure Sensitive Adhesive

Ed-D DS No 1800 February 2013

White Out Film

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	10 %	10 %
Visible Light Reflected (Int)		
Visible Light Reflected (Ext)	48 %	50 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	36 %	34 %
Total Solar Energy Transmitted	17 %	15 %
Total Solar Energy Absorbed	47 %	51 %
Emissivity (Room Side)	0.90	0.90
Glare Reduction	89 %	89 %
Shading Coefficient	0.37	0.49
Solar Heat Gain Coeff. (G-Value)	0.31	0.42
U-Value Winter (IP)	1.07	0.49
U-Value Winter (SI)	6.08	2.78
Luminous Efficacy	0.27	0.19
Total Solar Energy Rejected	69 %	58 %

R073WO - White Out Pressure Sensitive Adhesive Film

ED-A DS No 1801 February 2013

UV Filter Film 2 Mil

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	87 %	79 %
Visible Light Reflected (Int)		
Visible Light Reflected (Ext)	11 %	18 %
Ultra Violet Block	100 %	100 %
Total Solar Energy Reflected	9 %	15 %
Total Solar Energy Transmitted	79 %	67 %
Total Solar Energy Absorbed	12 %	18 %
Emissivity (Room Side)	0.86	0.86
Glare Reduction	3 %	3 %
Shading Coefficient	0.95	0.86
Solar Heat Gain Coeff. (G-Value)	0.82	0.74
U-Value Winter (IP)	1.05	0.48
U-Value Winter (SI)	5.96	2.75
Luminous Efficacy	0.92	0.93
Total Solar Energy Rejected	18 %	26 %

R069UVS - UV Filter Pressure Sensitive Adhesive Film

ED - C DS No 1198 February 2013



SolarZone Xtra Films Exterior

SolarZone Xtra Films Exterior

SolarZone Xtra reflective films offer one of the best solutions for keeping interiors cooler in the summer, maximizing savings on energy costs, and upgrading energy efficiency. SolarZone Xtra films are particularly energy efficient for double glazing (IGU), triple glazing and Low-E glass.

SolarZone Xtra can be used on almost all sophisticated glass units, without fear of thermal fracture or seal failure, and also provide the answer for installation when internal access is difficult or prohibited.

Engineered to withstand harsh outdoor conditions, Xtra films deliver outstanding durability for long-term solar performance, backed by an extended warranty.

Contents

SolarZone Xtra Films

Silver Films

- Silver 20 Xtra R07022X
- Silver 35 Xtra R07035X
- Silver 50 Xtra R07050X
- PolyZone Silver 20 Xtra R0705XP
- Silver Matte 20 Xtra R108SMX

Solar Bronze Films

- Solar Bronze 20 Xtra R069B2X
- Solar Bronze 35 Xtra R069B5X

Dual Reflective Films

- Titan Xtra 07 R070W0X
- Titan Xtra 20 R070W6X
- Titan Xtra 35 R070W5X
- Titan Xtra 50 R070W3X

Spectrally Selective Xtra Films

- e-Lite 45 Xtra R105I4X
- e-Lite 70 Xtra R105I7X
- OptiLite 75 Xtra R09275X

Exterior Films 1st generation

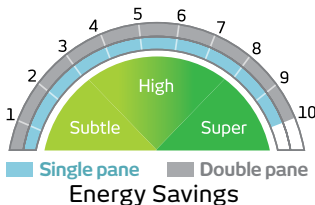
- Silver 20 Ext. 1st generation R06905X

Silver 20 Xtra

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	17 %	16 %
Visible Light Reflected (Int)	62 %	62 %
Visible Light Reflected (Ext)	62 %	62 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	63 %	64 %
Total Solar Energy Transmitted	12 %	11 %
Total Solar Energy Absorbed	25 %	25 %
Emissivity (Room Side)	0.84	0.84
Glare Reduction	81 %	80 %
Shading Coefficient	0.22	0.18
Solar Heat Gain Coeff. (G-Value)	0.19	0.15
U-Value Winter (IP)	1.04	0.48
U-Value Winter (SI)	5.91	2.73
Luminous Efficacy	0.75	0.91
Total Solar Energy Rejected	81 %	85 %

R07022X - Silver 20 Xtra Pressure Sensitive Adhesive



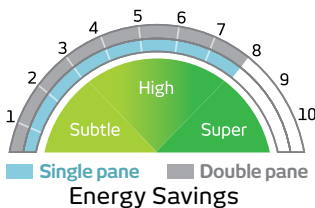
Ed-B DS No 1903 February 2013

Silver 35 Xtra

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	33 %	31 %
Visible Light Reflected (Int)	42 %	44 %
Visible Light Reflected (Ext)	42 %	43 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	45 %	46 %
Total Solar Energy Transmitted	25 %	22 %
Total Solar Energy Absorbed	30 %	32 %
Emissivity (Room Side)	0.84	0.84
Glare Reduction	63 %	62 %
Shading Coefficient	0.39	0.32
Solar Heat Gain Coeff. (G-Value)	0.34	0.28
U-Value Winter (IP)	1.04	0.48
U-Value Winter (SI)	5.91	2.73
Luminous Efficacy	0.84	0.96
Total Solar Energy Rejected	66 %	72 %

R07035X - Silver 35 Xtra Pressure Sensitive Adhesive



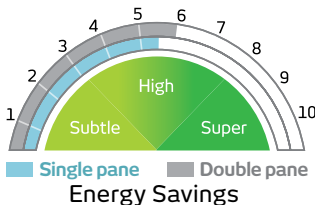
Ed-B DS No 1904 February 2013

Silver 50 Xtra

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	48 %	44 %
Visible Light Reflected (Int)	28 %	32 %
Visible Light Reflected (Ext)	27 %	29 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	30 %	32 %
Total Solar Energy Transmitted	37 %	31 %
Total Solar Energy Absorbed	33 %	37 %
Emissivity (Room Side)	0.84	0.84
Glare Reduction	46 %	45 %
Shading Coefficient	0.53	0.44
Solar Heat Gain Coeff. (G-Value)	0.46	0.38
U-Value Winter (IP)	1.04	0.48
U-Value Winter (SI)	5.91	2.73
Luminous Efficacy	0.90	1.00
Total Solar Energy Rejected	54 %	62 %

R07050X - Silver 50 Xtra Pressure Sensitive Adhesive



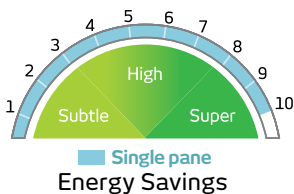
PolyZone Silver 20 Xtra

Film for Application to Rigid Plastic Glazing

OPTICAL & SOLAR PROPERTIES

	Single Pane
Visible Light Transmitted	16 %
Visible Light Reflected (Int)	63 %
Visible Light Reflected (Ext)	64 %
Ultra Violet Block	99 %
Total Solar Energy Reflected	65 %
Total Solar Energy Transmitted	12 %
Total Solar Energy Absorbed	23 %
Emissivity (Room Side)	0.84
Glare Reduction	82 %
Shading Coefficient	0.22
Solar Heat Gain Coeff. (G-Value)	0.19
U-Value Winter (IP)	1.04
U-Value Winter (SI)	5.91
Luminous Efficacy	0.75
Total Solar Energy Rejected	81 %

R0705XP - PolyZone Silver 20 Xtra Pressure Sensitive Adhesive



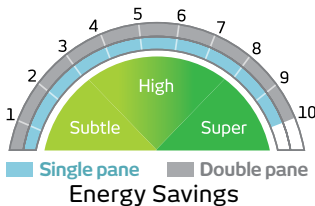
Ed-A DS No.1910 February 2013

Silver Matte 20 Xtra

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	13 %	12 %
Visible Light Reflected (Int)	48 %	48 %
Visible Light Reflected (Ext)	60 %	60 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	62 %	61 %
Total Solar Energy Transmitted	10 %	9 %
Total Solar Energy Absorbed	28 %	30 %
Emissivity (Room Side)	0.84	0.84
Glare Reduction	84 %	85 %
Shading Coefficient	0.22	0.16
Solar Heat Gain Coeff. (G-Value)	0.19	0.14
U-Value Winter (IP)	1.04	0.48
U-Value Winter (SI)	5.91	2.73
Luminous Efficacy	0.72	0.78
Total Solar Energy Rejected	81 %	86 %

R108SMX - Silver Matter 20 Xtra Pressure Sensitive Adhesive

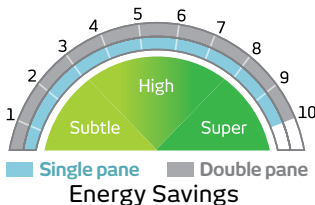


Solar Bronze 20 Xtra

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	16%	15 %
Visible Light Reflected (Int)	46 %	47 %
Visible Light Reflected (Ext)	39 %	40 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	64 %	64 %
Total Solar Energy Transmitted	9 %	8 %
Total Solar Energy Absorbed	27 %	28 %
Emissivity (Room Side)	0.84	0.84
Glare Reduction	82 %	81 %
Shading Coefficient	0.20	0.14
Solar Heat Gain Coeff. (G-Value)	0.17	0.12
U-Value Winter (IP)	1.04	0.48
U-Value Winter (SI)	5.91	2.73
Luminous Efficacy	0.83	1.06
Total Solar Energy Rejected	83 %	88 %

R069B2X - Solar Bronze 20 Xtra Pressure Sensitive Adhesive



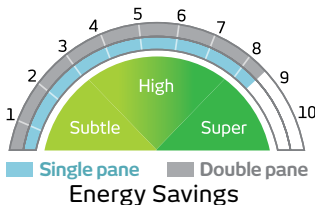
Ed-B DS No 1506 February 2013

Solar Bronze 35 Xtra

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	33 %	30 %
Visible Light Reflected (Int)	28 %	32 %
Visible Light Reflected (Ext)	30 %	31 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	52 %	53 %
Total Solar Energy Transmitted	21 %	18 %
Total Solar Energy Absorbed	27 %	29 %
Emissivity (Room Side)	0.84	0.84
Glare Reduction	64 %	63 %
Shading Coefficient	0.33	0.27
Solar Heat Gain Coeff. (G-Value)	0.29	0.23
U-Value Winter (IP)	1.04	0.48
U-Value Winter (SI)	5.91	2.73
Luminous Efficacy	0.97	1.10
Total Solar Energy Rejected	71 %	77 %

R069B5X - Solar Bronze 35 Xtra Pressure Sensitive Adhesive



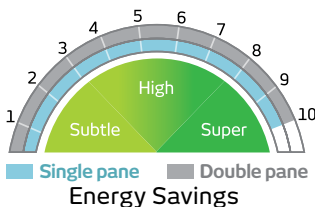
Ed-B DS No 1507 February 2013

Titan 07 Xtra

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	8 %	7 %
Visible Light Reflected (Int)	17 %	23 %
Visible Light Reflected (Ext)	55 %	55 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	58 %	58 %
Total Solar Energy Transmitted	7 %	6 %
Total Solar Energy Absorbed	35 %	36 %
Emissivity (Room Side)	0.84	0.84
Glare Reduction	91 %	91 %
Shading Coefficient	0.20	0.14
Solar Heat Gain Coeff. (G-Value)	0.17	0.12
U-Value Winter (IP)	1.04	0.48
U-Value Winter (SI)	5.91	2.73
Luminous Efficacy	0.40	0.50
Total Solar Energy Rejected	83 %	88 %

R070W0X - Titan 07 Xtra Pressure Sensitive Adhesive



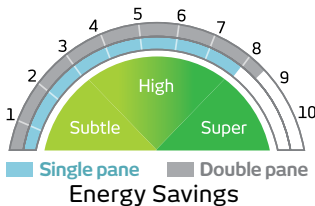
Ed-B DS No 1445 February 2013

Titan 20 Xtra

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	19 %	18%
Visible Light Reflected (Int)	14 %	21 %
Visible Light Reflected (Ext)	34 %	35 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	38 %	38 %
Total Solar Energy Transmitted	18 %	15 %
Total Solar Energy Absorbed	45 %	47 %
Emissivity (Room Side)	0.84	0.84
Glare Reduction	79%	78 %
Shading Coefficient	0.36	0.27
Solar Heat Gain Coeff. (G-Value)	0.31	0.23
U-Value Winter (IP)	1.04	0.48
U-Value Winter (SI)	5.91	2.73
Luminous Efficacy	0.54	0.66
Total Solar Energy Rejected	69 %	77%

R070W6X - Titan 20 Xtra Pressure Sensitive Adhesive



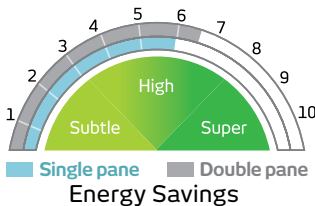
Ed-B DS No 1902 February 2013

Titan 35 Xtra

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	36 %	32 %
Visible Light Reflected (Int)	14 %	21 %
Visible Light Reflected (Ext)	22 %	23 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	26 %	27 %
Total Solar Energy Transmitted	31 %	26 %
Total Solar Energy Absorbed	44 %	47 %
Emissivity (Room Side)	0.84	0.84
Glare Reduction	61 %	61 %
Shading Coefficient	0.50	0.40
Solar Heat Gain Coeff. (G-Value)	0.43	0.35
U-Value Winter (IP)	1.04	0.48
U-Value Winter (SI)	5.91	2.73
Luminous Efficacy	0.70	0.80
Total Solar Energy Rejected	57 %	65 %

R070W5X - Titan 35 Xtra Pressure Sensitive Adhesive



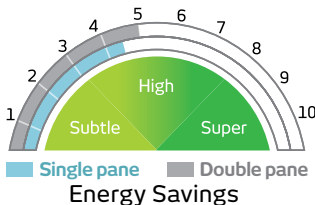
Ed-B DS No 1901 February 2013

Titan 50 Xtra

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	53 %	48 %
Visible Light Reflected (Int)	19 %	25 %
Visible Light Reflected (Ext)	18 %	21 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	22 %	24 %
Total Solar Energy Transmitted	40 %	35 %
Total Solar Energy Absorbed	38 %	41 %
Emissivity (Room Side)	0.84	0.84
Glare Reduction	41 %	41 %
Shading Coefficient	0.59	0.49
Solar Heat Gain Coeff. (G-Value)	0.51	0.42
U-Value Winter (IP)	1.04	0.48
U-Value Winter (SI)	5.91	2.73
Luminous Efficacy	0.89	0.98
Total Solar Energy Rejected	49 %	58 %

R070W3X - Titan 50 Xtra Pressure Sensitive Adhesive

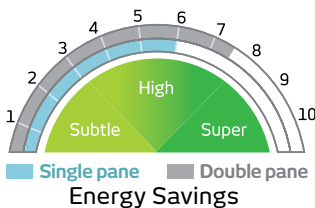


e-Lite 45 Xtra

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	47 %	43 %
Visible Light Reflected (Int)	12 %	19 %
Visible Light Reflected (Ext)	17 %	19 %
Ultra Violet Block	99.9 %	99.9 %
Total Solar Energy Reflected	30 %	31 %
Total Solar Energy Transmitted	27 %	23 %
Total Solar Energy Absorbed	43 %	46 %
Emissivity (Room Side)	0.84	0.84
Glare Reduction	48 %	47 %
Shading Coefficient	0.45	0.36
Solar Heat Gain Coeff. (G-Value)	0.39	0.31
U-Value Winter (IP)	1.04	0.48
U-Value Winter (SI)	5.92	2.73
Luminous Efficacy	1.04	1.19
Total Solar Energy Rejected	61 %	69 %

R105I4X - e-Lite 45 Xtra Pressure Sensitive Adhesive



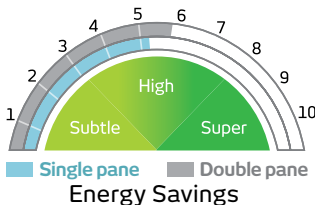
Ed-A_DS No 1451 February 2015

e-Lite 70 Xtra

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	67 %	61 %
Visible Light Reflected (Int)	17 %	23 %
Visible Light Reflected (Ext)	18 %	22 %
Ultra Violet Block	99.9 %	99.9 %
Total Solar Energy Reflected	30 %	31 %
Total Solar Energy Transmitted	37 %	33 %
Total Solar Energy Absorbed	33 %	36 %
Emissivity (Room Side)	0.84	0.84
Glare Reduction	25 %	24 %
Shading Coefficient	0.54	0.45
Solar Heat Gain Coeff. (G-Value)	0.47	0.39
U-Value Winter (IP)	1.04	0.48
U-Value Winter (SI)	5.92	2.73
Luminous Efficacy	1.24	1.36
Total Solar Energy Rejected	53 %	61 %

R105I7X - e-Lite 70 Xtra Pressure Sensitive Adhesive

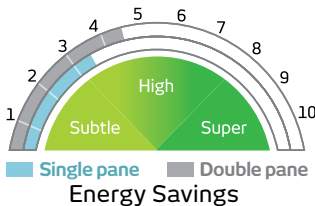


OptiLite 75 Xtra

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	76 %	69 %
Visible Light Reflected (Int)	9 %	17 %
Visible Light Reflected (Ext)	9 %	15 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	8 %	10 %
Total Solar Energy Transmitted	39 %	34 %
Total Solar Energy Absorbed	53 %	56 %
Emissivity (Room Side)	0.84	0.84
Glare Reduction	16 %	15 %
Shading Coefficient	0.62	0.50
Solar Heat Gain Coeff. (G-Value)	0.54	0.43
U-Value Winter (IP)	1.04	0.48
U-Value Winter (SI)	5.91	2.73
Luminous Efficacy	1.20	1.38
Total Solar Energy Rejected	46 %	57 %

R09275X - OptiLite 75 Xtra Pressure Sensitive Adhesive



Ed-A DS No 1446 February 2013

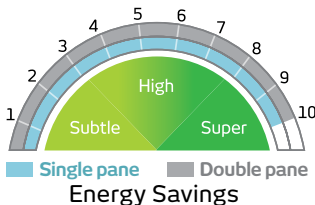
Silver 20 Exterior SR

(1st generation)

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	17 %	16 %
Visible Light Reflected (Int)	62 %	62 %
Visible Light Reflected (Ext)	62 %	62 %
Ultra Violet Block	99 %	99 %
Total Solar Energy Reflected	63 %	64 %
Total Solar Energy Transmitted	12 %	11 %
Total Solar Energy Absorbed	25 %	25 %
Emissivity (Room Side)	0.84	0.84
Glare Reduction	81 %	80 %
Shading Coefficient	0.22	0.18
Solar Heat Gain Coeff. (G-Value)	0.19	0.15
U-Value Winter (IP)	1.04	0.48
U-Value Winter (SI)	5.91	2.73
Luminous Efficacy	0.75	0.91
Total Solar Energy Rejected	81 %	85 %

R06905X - Silver 20 Exterior Pressure Sensitive Adhesive



SolarZoneXTRM Films



New XTRM **Durability** for maximum savings



SolarZone XTRM – long-life exterior window films

**Extreme durability, extreme energy efficiency,
extreme savings**

SolarZone XTRM is a new generation of extended-life exterior window films. Its exceptional durability ensures long-term energy efficient performance, year after year.

In fact, XTRM films are backed by the best exterior warranties in the market - for up to 15* years!

Developed to tackle commercial projects, where a long-term service period is critical to payback, SolarZone XTRM delivers outstanding levels of heat rejection and UV block, and is compatible with nearly all types of glazing.

Thanks to its specially engineered construction and robust polymeric and chemical components, SolarZone XTRM sets new standards on the long-term durability of outdoor window films, tested and proven in the lab and the field under extreme weathering conditions.

*See regional warranty for full details | XTRM requires edge sealing |
Products are available exclusively to SolarZone XTRM certified installers

Contents

SolarZoneXTRM Silver Films

- XTRM Silver 20X R12219X
- XTRM Silver 35X R12235X
- XTRM SkyLite S20X R157X15
- XTRM PolyZone SkyLite S20X R157X5P

SolarZoneXTRM Titan Dual Reflective Films

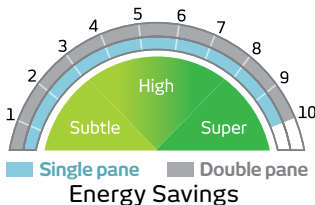
- XTRM Titan 07 R122W0X
- XTRM Titan 20 R122W6X
- XTRM Titan 35 R122W5X

SolarZoneXTRM Silver 20X

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	15 %	14 %
Visible Light Reflected (Int)	63 %	65 %
Visible Light Reflected (Ext)	63 %	65 %
Ultra Violet Block	99.9 %	99.9 %
Total Solar Energy Reflected	64 %	66 %
Total Solar Energy Transmitted	11 %	10 %
Total Solar Energy Absorbed	25 %	24 %
Emissivity (Room Side)	0.84	0.84
Glare Reduction	84 %	83 %
Shading Coefficient	0.20	0.16
Solar Heat Gain Coeff. (G-Value)	0.17	0.14
U-Value Winter (IP)	1.04	0.48
U-Value Winter (SI)	5.91	2.73
Luminous Efficacy	0.75	0.88
Total Solar Energy Rejected	83 %	86 %

R12219X - XTRM Silver 20X Pressure Sensitive Adhesive

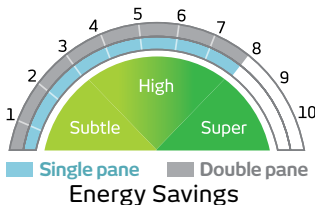


SolarZoneXTRM Silver 35X

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	33 %	31 %
Visible Light Reflected (Int)	42 %	44 %
Visible Light Reflected (Ext)	42 %	43 %
Ultra Violet Block	99.9 %	99.9 %
Total Solar Energy Reflected	45 %	46 %
Total Solar Energy Transmitted	25 %	22 %
Total Solar Energy Absorbed	30 %	32 %
Emissivity (Room Side)	0.84	0.84
Glare Reduction	63 %	62 %
Shading Coefficient	0.39	0.32
Solar Heat Gain Coeff. (G-Value)	0.34	0.28
U-Value Winter (IP)	1.04	0.48
U-Value Winter (SI)	5.91	2.73
Luminous Efficacy	0.84	0.96
Total Solar Energy Rejected	66 %	72 %

R12235X - XTRM Silver 35X Pressure Sensitive Adhesive



energy efficiency

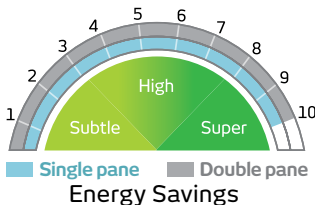


SolarZoneXTRM SkyLite S20X

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	15 %	14 %
Visible Light Reflected (Int)	63 %	65 %
Visible Light Reflected (Ext)	66 %	66 %
Ultra Violet Block	99.9 %	99.9 %
Total Solar Energy Reflected	64 %	66 %
Total Solar Energy Transmitted	10 %	10 %
Total Solar Energy Absorbed	26 %	24 %
Emissivity (Room Side)	0.84	0.84
Glare Reduction	84 %	83 %
Shading Coefficient	0.20	0.16
Solar Heat Gain Coeff. (G-Value)	0.17	0.14
U-Value Winter (IP)	1.03	0.48
U-Value Winter (SI)	5.85	2.71
Luminous Efficacy	0.72	0.89
Total Solar Energy Rejected	83 %	86%

R157X15 - XTRM SkyLite S20X Pressure Sensitive Adhesive



Ed-A DS No 1448 February 2014

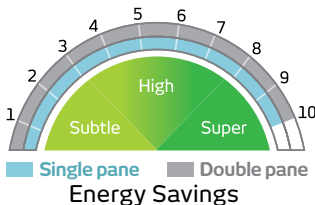
SolarZoneXTRM PolyZone SkyLite

Film for Application to Rigid Plastic Glazing

OPTICAL & SOLAR PROPERTIES

	Single Pane
Visible Light Transmitted	15 %
Visible Light Reflected (Int)	63 %
Visible Light Reflected (Ext)	66 %
Ultra Violet Block	99.9 %
Total Solar Energy Reflected	64 %
Total Solar Energy Transmitted	10 %
Total Solar Energy Absorbed	26 %
Emissivity (Room Side)	0.84
Glare Reduction	84 %
Shading Coefficient	0.20
Solar Heat Gain Coeff. (G-Value)	0.17
U-Value Winter (IP)	1.03
U-Value Winter (SI)	5.85
Luminous Efficacy	0.72
Total Solar Energy Rejected	83 %

R157X5P - XTRM PolyZone SkyLite S20X
Pressure Sensitive Adhesive



energy efficiency

solar zone XTRM

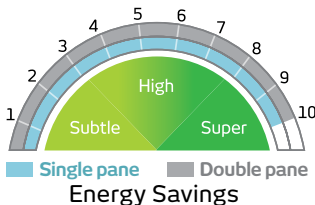
Hanita Coatings

SolarZoneXTRM Titan 07

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	7 %	7 %
Visible Light Reflected (Int)	20 %	26 %
Visible Light Reflected (Ext)	66 %	66 %
Ultra Violet Block	99.9 %	99.9 %
Total Solar Energy Reflected	66 %	66 %
Total Solar Energy Transmitted	7 %	6 %
Total Solar Energy Absorbed	27 %	28 %
Emissivity (Room Side)	0.84	0.84
Glare Reduction	92 %	92 %
Shading Coefficient	0.17	0.12
Solar Heat Gain Coeff. (G-Value)	0.15	0.10
U-Value Winter (IP)	1.04	0.48
U-Value Winter (SI)	5.91	2.73
Luminous Efficacy	0.41	0.58
Total Solar Energy Rejected	85 %	90 %

R122W0X - XTRM Titan 07 Pressure Sensitive Adhesive



MM-WF-ee-XTR-DS-T07-En-HC14.1

energy efficiency

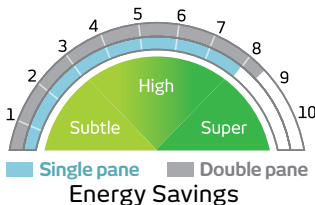


SolarZoneXTRM Titan 20

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	20 %	18%
Visible Light Reflected (Int)	17 %	23 %
Visible Light Reflected (Ext)	40 %	41 %
Ultra Violet Block	99.9 %	99.9 %
Total Solar Energy Reflected	44 %	44 %
Total Solar Energy Transmitted	17 %	15 %
Total Solar Energy Absorbed	39 %	41 %
Emissivity (Room Side)	0.84	0.84
Glare Reduction	78%	78 %
Shading Coefficient	0.33	0.25
Solar Heat Gain Coeff. (G-Value)	0.29	0.22
U-Value Winter (IP)	1.04	0.48
U-Value Winter (SI)	5.91	2.73
Luminous Efficacy	0.60	0.72
Total Solar Energy Rejected	71 %	78%

R122W6X - XTRM Titan 20 Pressure Sensitive Adhesive



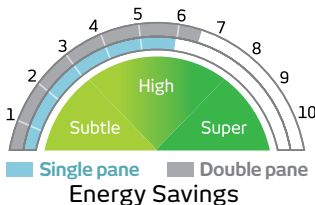
M-WF-ee-XTR-DS-T20-En-HC-14.1

SolarZoneXTRM Titan 35

OPTICAL & SOLAR PROPERTIES

	Single Pane	Double Pane
Visible Light Transmitted	36 %	32 %
Visible Light Reflected (Int)	14 %	21 %
Visible Light Reflected (Ext)	22 %	23 %
Ultra Violet Block	99.9 %	99.9 %
Total Solar Energy Reflected	25 %	27 %
Total Solar Energy Transmitted	31 %	26 %
Total Solar Energy Absorbed	44 %	47 %
Emissivity (Room Side)	0.84	0.84
Glare Reduction	61 %	61 %
Shading Coefficient	0.50	0.40
Solar Heat Gain Coeff. (G-Value)	0.43	0.35
U-Value Winter (IP)	1.04	0.48
U-Value Winter (SI)	5.91	2.73
Luminous Efficacy	0.70	0.80
Total Solar Energy Rejected	57 %	65 %

R122W5X - XTRM Titan 35 Pressure Sensitive Adhesive



MM-WF-ee-XTR-D5-T35-En-HC-14.1

energy efficiency



Definitions (1)

Visible Light Transmitted (VLT): The percent of total visible light (380-780 nanometers) to be passed through a glazing system. Test method - ASTM E 903-96.

Visible Light Reflected (VLR): The percent of total visible light to be reflected by a glazing system. Test method - ASTM E 903-96.

Total Solar Energy Reflected: The percent of total solar energy (300-2500 nanometers) to be reflected by a glazing system. Test method - ASTM E 903-96.

Total Solar Energy Transmitted: The percent of total solar energy (300-2500 nanometers) to be passed through a glazing system.

Total Solar Energy Absorbed: The percent of total solar energy (300-2500 nanometers) to be absorbed by a glazing system. Solar absorption is that portion of total solar energy neither transmitted nor reflected. Since solar transmittance and reflectance are measured directly, the following equation is used for calculating solar absorption. Test method - ASTM E 903. Total solar energy absorbed = $100\% - (\text{Total solar energy reflected}) - (\text{Total solar energy transmitted})$.

Ultra Violet Block: The percent of Ultra Violet radiation (300-380 nanometers) to be blocked by a glazing system. Ultra-violet is one portion of the total solar energy spectrum which greatly contributes to fading and deterioration of fabric and furnishings.

Definitions (2)

Emissivity: A measurement of a surface's ability to absorb or reflect radiant energy. For windows with film, emissivity refers to the heat reflected back into the room. The lower the emissivity rating, the better the insulation characteristic of the glazing system in regard to heat loss.

Shading Coefficient (SC): The ratio of the solar heat gain through a given glazing system to the solar heat gain under the same conditions for clear, unshaded double strength window glass (DSA). Shading coefficient defines the sun control capability or efficiency of the glazing system.

Glare reduction: Glare usually defined as being the difficulty of seeing in the presence of bright light such as direct or reflected sunlight or artificial light such as car headlamps at night. Window film can provide glare reduction of up to 95%.

Solar Heat Gain Coefficient (SHGC, or G-value): The percentage of solar energy directly transmitted into, or absorbed and re-radiated into a building. The lower the SHGC, the better the solar control properties of the film.

Definitions (3)

Total Solar Energy Rejected (TSER): Measures the window film's ability to reject solar energy in the form of visible light, infrared radiation and ultraviolet light. The higher the TSER number, the more solar energy is rejected away from the window.

Light to solar heat gain ratio: A measure of the ability of a glazing to provide light without excessive solar heat gain. It is the ratio between the visible transmittance of a glazing and its solar heat gain coefficient.

Luminous Efficacy Constant: Indicates a window's relative performance in rejecting solar heat while transmitting daylight. It is the ratio of the visible transmittance to the shading coefficient.

U-value (U-factor): The overall coefficient of heat transfer is a measure of the insulation level, mainly as applies to heat loss through glazing. Expressed in this book in both metric (SI) $W/(^{\circ}K \times m^2)$ and imperial (IP) $BTU/(hr \times ^{\circ}F \times ft^2)$ units, and given as center-of-glass value in winter conditions. The lower the U-value, the better the insulation qualities of the glazing system. U-value is the reciprocal of R value (thermal resistance).