Concord Automotive Film
Solar Control Performance Data

Toll Free: (888)419-1402
concordwindowfilms.com

	Total Solar Transmittance	Total Solar Reflectance	Total Solar Absorbtance	Visible Light Transmission	Visible Light Reflectance (Int)	Visible Light Reflectance (Ext)	Infra-Red Rejected	Winter Median U Value	Shading Coefficient	UV Rejected	Emissivity	Solar Heat Gain Coefficient	Total Solar Energy Rejected	Luminous Efficacy	Solar Heat Reduction	Glare Reduction
Auto 1 Ply NR Standard Charcoal 50%	60	7	33	50	6	6	11	1.14	0.80	>98	0.86	0.70	28	0.63	18	50
Auto 1 Ply NR Standard Charcoal 35%	67	7	26	35	6	6	11	1.12	0.78	>98	0.88	0.68	25	0.45	24	65
Auto 1 Ply NR Standard Charcoal 20%	63	7	30	20	5	5	12	1.12	0.72	>98	0.88	0.63	34	0.28	29	80
Auto 1 Ply NR Standard Charcoal 05%	58	6	36	5	4	4	13	1.15	0.71	>98	0.88	0.62	40	0.07	33	95
Auto 2 Ply NR Deluxe Charcoal 70%	70	9	21	72	6	7	12	1.13	0.87	>98	0.86	0.76	24	0.83	13	28
Auto 2 Ply NR Deluxe Charcoal 50%	59	6	35	50	6	6	11	1.14	0.80	>98	0.86	0.70	28	0.63	18	50
Auto 2 Ply NR Deluxe Charcoal 35%	57	6	37	35	6	6	12	1.12	0.78	>98	0.88	0.68	25	0.45	24	65
Auto 2 Ply NR Deluxe Charcoal 20%	49	6	45	20	5	5	12	1.12	0.72	>98	0.88	0.63	34	0.28	29	80
Auto 2 Ply NR Deluxe Charcoal 05%	49	6	45	5	4	4	13	1.15	0.71	>98	0.88	0.62	40	0.07	33	95
Auto 2 Ply HP Premium Charcoal 35%	55	18	27	35	15	15	35	1.15	0.47	>98	0.86	0.41	44	0.74	42	65
Auto 2 Ply HP Premium Charcoal 20%	50	17	33	20	16	16	40	1.07	0.43	>98	0.87	0.37	48	0.47	49	80
Auto 2 Ply HP Premium Charcoal 05%	42	18	40	5	17	17	38	1.12	0.44	>98	0.85	0.38	56	0.11	52	95
Auto 2 Ply NR Deluxe Black 50%	59	6	35	50	6	7	11	1.14	0.80	>98	0.86	0.70	28	0.63	18	50
Auto 2 Ply NR Deluxe Black 35%	57	6	37	35	6	7	12	1.12	0.78	>98	0.88	0.68	25	0.45	24	65
Auto 2 Ply NR Deluxe Black 20%	49	6	45	20	5	6	14	1.12	0.72	>98	0.88	0.63	34	0.28	29	80
Auto 2 Ply NR Deluxe Black 05%	49	6	45	5	4	5	15	1.15	0.71	>98	0.88	0.62	40	0.07	33	95
Auto 2 Ply NR Deluxe Bronze 35%	55	7	38	35	6	6	12	1.12	0.79	>98	0.89	0.69	30	0.44	25	65
Auto 2 Ply NR Deluxe Bronze 20%	47	7	46	15	5	5	12	1.12	0.75	>98	0.89	0.65	34	0.20	30	85
Auto Ceramic 70%	53	8	39	69	6	7	39	1.05	0.76	>98	0.83	0.66	35	0.91	18	31
Auto Ceramic 50%	49	7	44	48	6	7	42	1.06	0.74	>98	0.83	0.64	37	0.65	22	52
Auto Ceramic 35%	45	7	48	34	6	7	49	1.04	0.72	>98	0.85	0.63	55	0.47	35	66
Auto Ceramic 20%	42	7	51	19	5	6	59	1.04	0.71	>98	0.85	0.62	64	0.27	39	81
Auto Ceramic 05%	39	7	54	5	4	5	62	1.07	0.68	>98	0.85	0.59	67	0.07	41	95
Auto Security 4Mil 50%	63	6	31	49	7	7	12	1.14	0.82	>98	0.88	0.71	28	0.60	18	51
Auto Security 4Mil 35%	67	6	27	33	7	7	11	1.12	0.76	>98	0.89	0.66	25	0.43	24	67
Auto Security 4Mil 20%	63	6	31	19	7	7	12	1.12	0.71	>98	0.93	0.62	34	0.27	29	81
Auto Security 4Mil 05%	59	6	35	7	7	7	15	1.15	0.67	>98	0.92	0.58	40	0.10	33	93

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Glare Reducing NR 70%	70	9	21	72	6	7	12	1.13	0.87	>98	0.86	0.76	24	0.83	13	28	Yes
Glare Reducing NR 50%	59	6	35	50	6	5	11	1.14	0.80	>98	0.86	0.70	28	0.63	18	50	Yes
Glare Reducing NR 35%	57	6	37	35	6	5	12	1.12	0.78	>98	0.88	0.68	25	0.45	24	65	Yes
Glare Reducing NR 20%	49	6	45	20	5	6	12	1.12	0.72	>98	0.88	0.63	34	0.28	29	80	Yes
Glare Reducing NR 05%	49	6	45	5	4	5	13	1.15	0.71	>98	0.88	0.62	40	0.07	33	95	Yes
Residential Neutral 50%	34	27	39	50	15	15	12	1.15	0.51	>98	0.76	0.44	34	0.98	47	50	Yes
Residential Neutral 35%	28	36	36	42	34	34	55	1.08	0.48	>98	0.75	0.42	53	0.88	54	58	Yes
Residential Neutral 20%	22	36	42	20	35	35	52	1.04	0.43	>98	0.75	0.37	58	0.47	57	80	NO
Reflective Silver 68	62	15	23	69	14	15	39	1.05	0.59	>98	0.83	0.51	34	1.17	40	31	Yes
Reflective Silver 53	27	40	33	56	36	37	53	0.94	0.43	>98	0.73	0.37	59	1.30	48	44	Yes
Reflective Silver 35	24	37	39	40	39	38	71	1.05	0.40	>98	0.69	0.35	65	1.00	51	60	Yes
Reflective Silver 15	10	48	42	25	65	64	81	1.01	0.24	>98	0.62	0.21	72	1.04	74	75	Yes
Reflective Silver/Grey 15	10	37	53	11	61	13	77	0.91	0.27	>98	0.60	0.23	77	0.41	75	89	NO
Reflective Silver/Green 15	10	36	54	22	60	24	78	0.91	0.29	>98	0.60	0.25	76	0.76	73	78	NO
Reflective Silver/Gold 15	16	33	51	15	64	52	73	0.91	0.29	>98	0.60	0.25	76	0.52	74	85	Yes
Reflective Silver/Bronze 15	10	38	52	13	60	19	80	0.91	0.27	>98	0.60	0.23	77	0.48	74	87	Yes
Reflective Silver/Blue 15	11	35	54	20	62	25	80	0.91	0.28	>98	0.60	0.24	78	0.71	73	80	NO
Dual Reflective 45%	42	9	49	42	8	10	48	1	0.66	>98	0.83	0.57	42	0.64	31	58	Yes
Dual Reflective 35%	35	12	52	34	9	13	51	0.98	0.59	>98	0.8	0.51	48	0.58	38	66	Yes
Dual Reflective 25%	22	26	52	12	15	30	60	0.94	0.43	>98	0.74	0.37	62	0.28	55	88	Yes
Dual Reflective 10%	14	39	47	10	13	37	54	0.92	0.27	>98	0.63	0.23	75	0.37	70	90	Yes
Sputtered Neutral 60%	53	8	39	60	8	10	34	1.04	0.74	>98	0.86	0.64	35	0.81	22	40	Yes
Sputtered Neutral 45%	39	11	50	45	12	14	45	1.04	0.62	>98	0.86	0.54	46	0.73	35	55	Yes
Sputtered Neutral 35%	29	15	57	33	17	19	63	1.03	0.51	>98	0.83	0.44	55	0.65	47	67	NO
Sputtered Neutral 20%	16	22	62	18	28	30	78	1.02	0.39	>98	0.82	0.34	66	0.46	59	82	NO

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Sputtered Copper Bronze 50%	32	23	46	48	16	18	52	0.92	0.5	>98	0.65	0.44	56	0.96	48	52	Yes
Sputtered Copper Bronze 35%	22	31	47	37	244	25	75	0.91	0.39	>98	0.62	0.34	66	0.95	59	63	Yes
Sputtered Copper Bronze 20%	9	43	49	18	38	37	88	0.94	0.25	>98	0.67	0.22	78	0.72	74	82	Yes
Pearl Ceramic 7643	44	16	40	76	8	8	43	0.99	0.70	>98	0.79	0.61	40	1.09	30	24	Yes
Pearl Ceramic 6865	37	18	45	68	8	8	65	0.90	0.56	>98	0.66	0.49	52	1.21	44	32	Yes
Pearl Ceramic 6777	32	21	47	67	9	9	77	0.92	0.52	>98	0.67	0.45	55	1.29	48	33	Yes
Pearl Ceramic 5885	26	24	50	58	8	8	85	0.91	0.51	>98	0.61	0.44	57	1.14	50	42	Yes
Blackout	0	41	59	0	3	13	15	1.00	0.18	>98	0.63	0.16	85	0.00	82	100	NO
Whiteout	12	47	41	17	71	72	81	1.12	0.25	>98	0.85	0.22	88	0.68	73	83	Yes
Frost Matte White	61	9	30	68	9	10	29	1.09	0.81	>98	0.85	0.70	30	0.84	19	32	Yes
Frost Matte Bronze	55	6	39	15	8	9	25	1.14	0.77	>98	0.86	0.67	69	0.19	23	85	Yes
Frost Matte Grey	55	7	38	36	9	7	28	1.14	0.78	>98	0.86	0.68	34	0.46	22	64	Yes
Frost Matte Silver	14	56	30	13	38	62	85	1.05	0.25	>98	0.70	0.22	78	0.52	75	87	Yes
Transparent Color Blue	55	7	38	38	5	7	14	1.14	0.76	>98	0.86	0.66	34	0.50	24	62	Yes
Transparent Color Green	21	38	41	38	8	8	10	1.12	0.71	>98	0.87	0.62	33	0.54	23	62	Yes
Transparent Color Red	59	6	35	23	4	4	10	1.13	0.80	>98	0.89	0.70	31	0.29	20	77	Yes
Transparent Color Yellow	72	6	22	83	7	7	11	1.13	0.90	>98	0.89	0.78	22	0.92	10	17	Yes
Security 4 Mil Clear	79	8	13	87	9	9	10	1.08	0.96	>98	0.90	0.84	11	0.91	2	13	Yes
Security 8 Mil Clear	82	9	9	87	10	10	10	1.07	0.98	>98	0.89	0.85	12	0.89	2	13	Yes
Security 4 Mil Tinted 50%	59	6	35	50	6	5	12	1.14	0.80	>98	0.86	0.70	28	0.63	18	50	Yes
Security 4 Mil Tinted 35%	57	6	37	35	6	5	11	1.12	0.78	>98	0.88	0.68	25	0.45	24	65	Yes
Security 4 Mil Tinted 20%	49	6	45	20	5	6	12	1.12	0.72	>98	0.88	0.63	34	0.28	29	80	Yes
Security 4 Mil Tinted 05%	49	6	45	5	4	5	12	1.15	0.71	>98	0.88	0.62	40	0.07	33	95	Yes
Security 4 Mil Silver 15%	12	48	40	26	65	64	80	1.01	0.31	>98	0.67	0.27	73	0.84	74	74	Yes
Security 8 Mil Silver 20	12	47	41	17	56	54	80	0.98	0.26	>98	0.60	0.23	78	0.65	74	83	Yes

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DEFINITIONS OF SOLAR ENGINEERING PARAMETERS

SOLAR ENERGY TRANSMITTED

Solar energy transmitted is the ratio of the total solar energy passing through the glazing system to the amount of total solar energy falling on that glazing system.

SOLAR ENERGY REFLECTED

Solar energy reflected is the ratio of the amount of the total solar energy directly reflected by the glazing system to the amount of total solar energy falling on that glazing system.

SOLAR ENERGY ABSORBED

Solar energy absorbed is the ratio of the amount of total solar energy directly absorbed by the glazing system to the amount of total solar energy falling on that glazing system.

VISIBLE LIGHT TRANSMITTED (VLT)

Visible light transmitted is the ratio of visible solar energy (380 – 750nm) that passes through the glazing system to the total visible solar energy falling on the glazing system.

VISIBLE LIGHT REFLECTED (VLR)

Visible light rejected is the total percentage of visible light reflected by a glazing system that can be seen visually. GWF performance results includes Interior and exterior VLR specifications on all films. Values may be published for both the exterior and interior sides of the film. In the case of Dual Reflective films, these may be significantly different.

U-VALUE

U-value is a measure of the rate of heat conductivity of a glazing system, independent of solar radiation. When multiplied by the difference between indoor and outdoor temperature in Fahrenheit, it gives the amount of heat in BTUs/hours/square foot of glazing. Note: the greater the difference between indoor and outdoor temperatures, the greater the Uvalue, so it is important to use the U-values closely representing your conditions. The lower the U-value the better the insulation qualities of the glazing system.

SHADING COEFFICIENT (SC)

Shading coefficient is 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. The lower the shading coefficient number, the better the sun control capability of the glazing system.

ULTRAVIOLET REJECTED (UVR)

Ultraviolet rejected is the ratio of ultraviolet solar energy (wavelength of 300 – 380nm) that is transmitted by a glazing system to the total solar ultraviolet energy falling on the glazing system. Note: UV energy is not visible to human eye and is mainly responsible for the degradation and fading of organic matter, upholstery, colors, etc.

EMISSIVITY (E)

Emissivity is a measure of a surface's ability to absorb or reflect far-infrared radiation. The lower the Emissivity the higher the far-infrared reflection. Infrared radiation is that which is sensed by the body as heat. The lower the Emissivity rating, the better the insulating qualities of the glazing system.

TOTAL SOLAR ENERGY REJECTED (TSER)

Total solar energy rejected is the percentage of incident solar energy rejected by a glazing system which is equal to solar reflectance plus the part of solar absorption which is re-radiated outward.

SOLAR HEAT REDUCTION (SHR)

Solar heat reduction, is the reduction in solar energy gained by a building from the sun, often by the addition of solar control window film.

GLARE REDUCTION (GR)

Glare reduction is the percentage of reduction in visible light transmission through a glazing system without film to that with film.