



Fasara™ Glass Finishes

1. Product Description

3M™ Fasara™ Glass Finishes (the “Products”) are decorative glass and window films available in over 50 designs. These decorative films can be used to control both light and privacy through building’s interior glass.

The current Product line is in the 3M™ Fasara™ Glass Finishes Product Catalog (the “Catalog”).

2. Performance Characteristics

Performance Characteristics are based on test data deemed reliable, but not warranted.

A. For All Products

Discoloration-resistant through UV Block

Blocks at least 99% of UV light to reduce the discoloring (fading caused by sunlight) of furniture and other items that is mainly caused by UV light.

B. For Mat Crystal 2 and Milky Crystal Only

Anti-reflection Effect

When applied to the exterior of an outside glass wall, the Mat Crystal 2 and Milky Crystal designs scatter sunlight to prevent reflected light pollution. No other Products are recommended for an Exterior Application.

Use of Mat Crystal 2

Depending on the lighting source, application to partitions may give an uneven appearance. When used in Exterior Application, some caulk types may reduce adhesive. Contact 3M Technical Service for guidance.

C. Variable Characteristics for All Products

	Product	Film Thickness (µm) (Excluding Liner)	Shading Coefficient	Solar Heat (%)			Visible Light (%)		UV (%)
				Reflectance	Transmittance	Absorbance	Reflectance	Transmittance	Transmittance
Gradation	Illumina g	81	0.83	13	66	21	14	66	0.0
	Illumina	83	0.72	16	53	31	20	51	0.0
	Aerina	81	0.91	12	76	13	13	79	0.0
	Venetian	85	0.73	18	55	27	23	54	0.0
	Robe	85	0.59	23	39	38	31	35	0.0
	Lontano	81	0.74	20	57	23	22	61	0.0
	Tsurugi	81	0.75	19	58	23	21	61	0.0
Stripe	Nokto	81	0.44	7	12	81	7	13	0.0
	Radius	81	0.40	7	7	86	7	6	0.0
	Shutie	81	0.77	17	60	24	22	59	0.0
	Shutie Black	81	0.70	21	53	26	29	51	0.0
	Arpa	79	0.78	17	61	22	22	67	0.1
	Arpa Black	81	0.54	8	25	67	8	22	0.0
	Seattle	81	0.85	16	70	14	22	74	0.0
	Seattle Fine	80	0.85	16	71	13	25	68	0.0
	Fine	81	0.65	22	46	32	27	48	0.0

All of the data are calculated as theoretical value, and compiled with existing data.

**2. Performance Characteristics
(cont.)**

**C. Variable Characteristics for
All Products (cont.)**

	Product	Film Thickness (µm) (Excluding Liner)	Shading Coefficient	Solar Heat (%)			Visible Light (%)		UV (%)
				Reflectance	Transmittance	Absorbance	Reflectance	Transmittance	Transmittance
Border — Horizontal	Lattice	84	0.60	22	41	37	28	36	0.0
	Lattice g	79	0.80	13	62	26	14	60	0.0
	Slat	88	0.60	22	41	37	28	36	0.0
	Slat g	83	0.77	14	58	28	16	56	0.0
	Pixela	81	0.78	16	62	22	18	60	0.0
	Paracell	80	0.71	17	53	30	20	50	0.0
	Leise	81	0.96	9	81	11	9	88	0.0
Prism/Dot	Prism Noir	78	0.67	7	42	51	7	42	0.0
	Prism Silver	78	0.64	28	49	24	31	53	0.0
	Astral Silver	82	0.42	44	28	28	51	30	0.0
	Cielo	81	0.74	19	58	23	26	56	0.0
	Luna 6	76	0.68	17	48	34	22	46	0.0
	Vista	81	0.83	15	67	18	17	72	0.0
	Luna 9	83	0.63	19	43	39	24	39	0.0
	Aura 9	81	1.02	8	89	3	8	87	0.0
	SHIZUKU	81	0.84	13	68	19	16	71	0.0
	KANON	79	0.88	13	73	14	14	78	0.0
Fabric/Japan Paper	Linen	78	0.79	17	64	19	23	65	0.0
	Altair	86	0.77	17	60	22	23	60	0.0
	Vega	86	0.77	16	60	24	21	60	0.0
	SAGANO	89	0.83	14	66	20	18	68	0.0
	YAMATO	89	0.89	12	74	14	15	79	0.0
	RIKYU	103	0.86	7	67	26	8	72	0.0
Frost/Matte	ESSEN	120	0.67	23	50	27	26	55	0.1
	LAUSANNE	113	0.94	8	78	14	9	84	0.1
	OSLO	119	0.92	8	76	16	9	83	0.1
	CHAMONIX	120	0.67	26	51	23	35	47	0.0
	Opaque White	142	0.30	46	13	41	57	10	0.0
	Glace	85	0.77	14	58	28	18	56	0.0
	Fine Crystal	113	0.94	8	78	14	9	84	0.1
	Mat Crystal i	95	0.94	8	78	14	9	85	0.1
	Mat Crystal 2	126	0.95	7	79	14	8	86	0.2
	Milky White (Milano)	77	0.75	17	57	26	21	29	0.0
	Milky Milky (San Marino)	105	0.44	34	25	41	43	21	0.0
	Milky Crystal	150	0.40	31	18	51	42	19	0.0
	Luce	85	0.59	23	39	38	31	34	0.0
	Transparent	77	0.98	8	83	9	9	89	0.0
	Transparent Frosted Glass	3	1.00	8	86	6	8	90	71

All of the data are calculated as theoretical value, and compiled with existing data.

2. Performance Characteristics (cont.)

D. Heat Transmission Coefficient, All Products 5.9 W/m²K

E. Roll Sizes 50 inches wide x 98.4 feet long (1270mm wide x 30m long)

F. Definitions for Variable Performance Characteristics

Shading Coefficient

This shows the Product's sun-blocking effect, based on the percentage of sunlight entering a room when the Product is applied to 0.24 inches (6mm) thick transparent glass and the value "1" is used for the amount of sunlight passing through 0.12 inches (3mm) thick transparent glass.

Transmittance, Reflectance and Absorbency

These show the respective rates at which UV (ultraviolet), brightness (visible light), and hotness (sunlight) are transmitted, reflected, or absorbed.

Heat Transmission

This shows the ease of heat escape caused by a temperature difference between interior and exterior, based on the heat amount that would escape in 1 hour from a surface area of 10.8 square feet (1m²) when there is a temperature difference of 34°F (1°C).

3. Safety

⚠ CAUTION: Risk of Glass Breakage Due to Thermal Expansion.

When glass is exposed to direct sunlight, it absorbs heat. If covered by an opaque film, glass will absorb more heat. Heat absorption can create thermal stress, resulting in glass breakage (also called thermal cracking), which can cause personal injury and property damage. 3M specifically does not recommend using any of the following Products on glass that may be at risk for thermal expansion.

- Black (includes Nokto, Radius, Prism Noir, Shuttle Black, and Arpa Black)
- Silver (includes Prism Silver, and Astral Silver)

4. Physical Characteristics

Characteristics	Value
Application Substrate	Use only glass substrates. Users must test and approve for use on polycarbonate. Illumina-P and OSLO-P are for use on plastic substrates.
Application Location	Mat Crystal 2 and Milky Crystal can be in Exterior Applications. All other Products are only for Interior Applications.
Environment Temperature	Mat Crystal 2 and Milky Crystal Exterior Applications must be in environments with consistent temperature not to exceed 149°F (65°C). All Interior Applications must be in environments with consistent temperature not to exceed 176°F (80°C).
High Humidity Environments	Products are not recommended for Interior Applications where condensation consistently occurs.
Flammability	When used in Interior Applications, Products have the National Fire Protection Association Class 1 (A) (as defined in NFPA 101 "Life Safety Code" Test Method ASTM E84).

5. Limitation of Liability

3M WILL NOT UNDER ANY CIRCUMSTANCES BE LIABLE TO A BUYER FOR DIRECT, SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES (INCLUDING, WITHOUT LIMITATION, LOSS OF PROFITS) IN ANY WAY RELATED TO A PRODUCT OR THIS PRODUCT BULLETIN, REGARDLESS OF THE LEGAL OR EQUITABLE THEORY ON WHICH SUCH DAMAGES ARE SOUGHT.

6. Warranty

Please refer to 3M Fasara Glass Finishes warranty document.



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