



3M™ Daylight Redirecting Film

Optimizing natural light in buildings helps provide a better experience for all of us.

3M™ Daylight Redirecting Film is a simple, effective daylighting solution which comfortably brings natural light deeper into buildings.

Buildings with abundant natural light have been shown to:

- ▶ Increase employee productivity
- ▶ Improve student test scores
- ▶ Improve patient recovery times
- ▶ Boost retail sales
- ▶ Decrease rates of absenteeism
- ▶ Reduce energy costs



**See the world in a different light
with 3M Daylight Redirecting Film.**



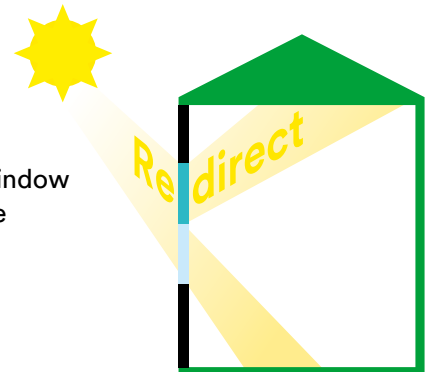
3M™ Daylight Redirecting Film installed in Clerestory Glass — Sacramento, CA

Naturally brighten your day.

3M™ Daylight Redirecting Film is designed to move excess light close to the window and redirect it deeper into the building to increase the daylighting penetration. Bringing natural light deeper into the building helps provide the many benefits of natural light for more occupants as well as helping reduce the need for artificial lighting which can save energy.

In addition, 3M Daylight Redirecting Film:

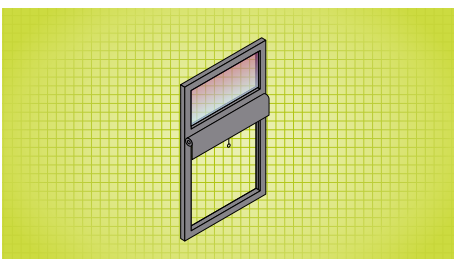
- ▶ Reduces glare and discomfort caused by direct sunlight on occupants
- ▶ Redirects natural light as much as 40 ft. or more into the building
- ▶ Extends daylight zone up to 8 ft. into the interior for every 1 ft. of treated window
- ▶ Can provide up to 52% lighting energy savings compared to baseline usage
- ▶ Can provide savings of up to 1.5 kwh/sq.ft. of floor area



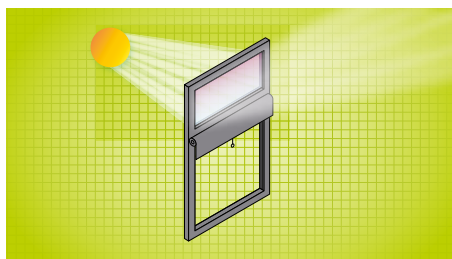
Simple, effective, daylighting solution.

Compared to existing light reflecting strategies, 3M Daylight Redirecting Film is easily integrated into new or existing windows. It requires no extra hardware or infrastructure, and little to no additional maintenance or special cleaning. It works at all times of the day, even when the sun is at a low angle. Plus, it's more cost effective than many existing daylighting solutions.

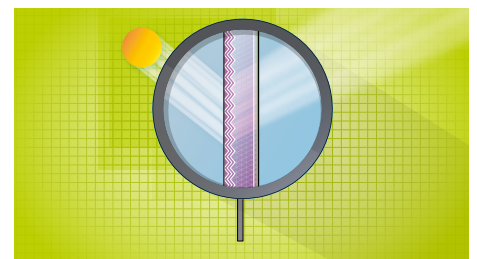
How it Works



3M Daylight Redirecting Film is installed in the upper portion of the window.



Daylight is redirected upwards towards the ceiling allowing natural light to comfortably penetrate deeper into the building.



Made of micro-structured prisms, the film optically redirects over 80% of the daylight upward and diffuses light to be more evenly distributed.

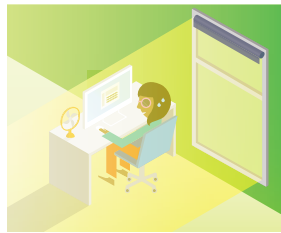
Increase natural light and comfort.

Clear Glass Windows



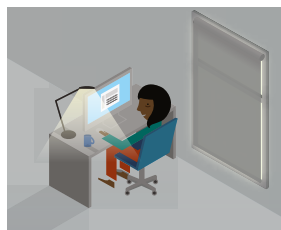
When Shades are Open*

Direct sunlight can beam into the space at low angles, causing glare and discomfort.



When Shades are Closed*

Shades are closed to block uncomfortable direct sunlight, which also decreases natural light in the space.



3M™ Daylight Redirecting Film

Installed in Upper Clerestory Windows



When Shades are Open*

The light from the upper glass is redirected to the ceiling, increasing natural light and decreasing glare in the space caused by direct sunlight.



When Shades are Closed*

Even when the vision glass shades are drawn, natural light continues to penetrate into the space through the clerestory glass with 3M Daylight Redirecting Film.

Case Studies

Six U.S. Department of Energy Facilities

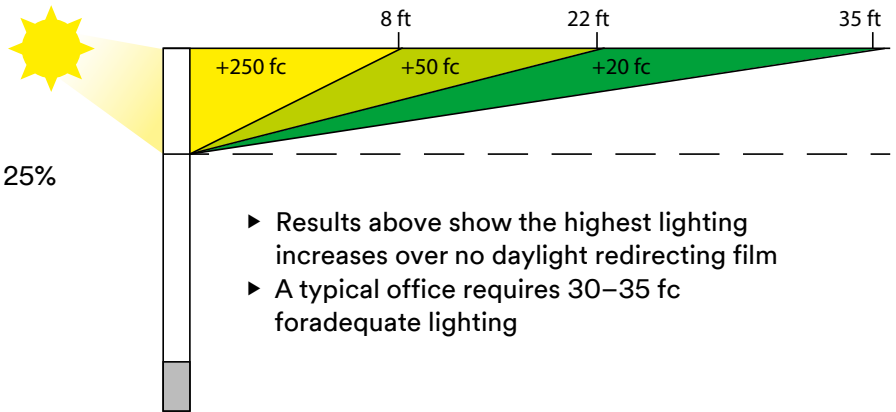
ESTCP-Programm

Locations

- ▶ Washington, California (2), Texas, Virginia, Rhode Island

Results

- ▶ Increased the naturally lit floorspace by 25%
- ▶ Up to 52% lighting energy savings



- ▶ Results above show the highest lighting increases over no daylight redirecting film
- ▶ A typical office requires 30–35 fc for adequate lighting

Sacramento Municipal Utilities Department

Location

- ▶ Sacramento, California

Comparison

- ▶ 3M Daylight Redirecting Film
- ▶ Daylight Redirecting Blinds
- ▶ Light Shelf

Results

- ▶ 3M Daylight Redirecting Film outperformed redirecting blinds and light shelves



3M Daylight Redirecting Film (Daylighting Zone)



Daylight Redirecting Blinds (Daylighting Zone)



Light Shelf (Daylighting Zone)

Daylit Zone	3M Daylight Redirecting Film (footcandles)	Daylight Redirecting Blinds (footcandles)	Light Shelf (footcandles)
1	74.0	57.5	58.9
2	45.1	36.4	37.0
3	26.7	23.9	16.0

Handheld illuminance readings on a sunny, winter day with electric lighting entirely off (Jan. 7th, 2012, 11:30 am)

Learn more at 3M.com/daylighting

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3M United Kingdom plc
 3M Centre
 Cain Road, Bracknell
 Berkshire RG12 8HT
3M.co.uk/windowfilm
 Email: RenewableUK@mmm.com

3M Ireland Limited
 The Iveagh Building
 The Park,
 Carrickmines
 Dublin 18
 Phone: 01 280 3555

Customer Service
 3M House
 28 Great Jackson Street
 Manchester M15 4PA
 Phone: 0845 600 954

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