



## Hear the difference

The structure of Lumira<sup>®</sup> aerogel inhibits sound and vibration transmission not just by blocking, but by absorbing sound energy, creating significant sound control by reducing external and internal noise transfer.

The unique mechanical properties of Lumira particles enable it to absorb sound across a broad frequency band. Lumira aerogel-filled daylighting systems transmit much less sound than traditional systems, leading not only to better energy efficiency, but also quieter interior spaces. Lumira fabrics used in roofing systems can dramatically improve interior acoustics by significantly reducing reverberation and transmission of exterior noise. This means greater comfort for occupants, as well as freedom in design for mixed use facilities.

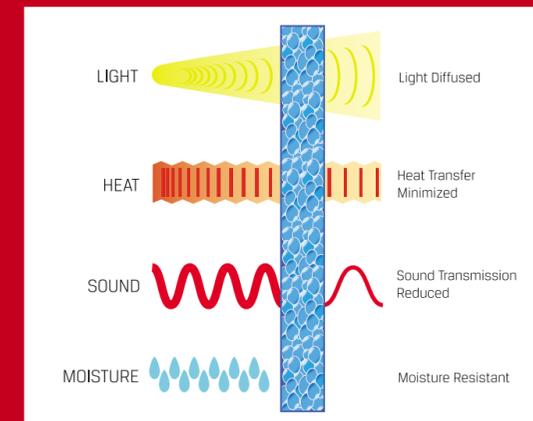
## Reduce your carbon footprint

Energy is a key part of the sustainability concept. It is widely acknowledged that the construction, occupation and running of buildings accounts for close to half of all energy consumption in the USA and Europe. Not only can Lumira aerogel save energy and reduce CO<sub>2</sub> emissions, it is also reusable when the building is decommissioned. Lumira aerogel is safe for human and ecological systems, and is manufactured with little to no impact on the environment. This means including daylighting systems with Lumira insulation in building designs can help create healthier living, recreational and work spaces, and can assist in securing LEED<sup>™</sup> certification and meet or exceed stringent building codes such as Part L in the UK, Energieein-sparverordnung in Germany, and Reglementation Technique in France. Lumira aerogel holds Silver Cradle to Cradle<sup>CM</sup> certification from McDonough Braungart Design Chemistry. Cabot Aerogel is also a member of the American Architectural Manufacturers Association and the US Green Building Council.



## About Lumira<sup>®</sup> Aerogel

Aerogel is among the lightest and most effective insulating materials in the world. Cabot's Lumira brand aerogel, is a solid which consists largely of air (>90%) contained in a structure with pore sizes less than the mean free path of air molecules, which severely inhibits heat transfer through the material, enabling worldclass performance. Cabot produces Lumira aerogel at its state-of-the-art manufacturing facility located near Frankfurt, Germany where it began commercial production in 2003.



*Cabot Aerogel is a business of Cabot Corporation, a global specialty chemicals and performance materials company, founded in 1882 and headquartered in Boston, Massachusetts, USA.*

**CABOT**

[cabotcorp.com](http://cabotcorp.com)

**NORTH AMERICA**  
Cabot Corporation Business and Technical Center  
157 Concord Road  
Billerica, MA 01821-7001 USA  
**TEL** 800 462 2313  
**FAX** +1 978 670 7035

**EUROPE**  
Cabot Specialty Chemicals  
Interleuvenlaan 151  
3001 Leuven, BELGIUM  
**TEL** +32 16 39 24 51  
**TEL** +32 16 39 24 13  
**FAX** +32 16 39 24 44

**ASIA PACIFIC**  
Cabot China Ltd.  
558 Shuangbai Road  
Shanghai 201108, CHINA  
**TEL** +86 21 5175 8800  
**FAX** +86 21 6434 5532

**JAPAN**  
Cabot Specialty Chemicals, Inc.  
Sumitomo Chiba-Daimon Bldg. 3F  
2-5-5 Shiba Daimon, Minato-ku,  
Tokyo 105-0012, JAPAN  
**TEL** +81 3 6820 0255  
**FAX** +81 3 5425 4500

This information is provided for informational purposes only. No guarantee or warranty as to this information, or any product to which it relates, is given or implied. Cabot disclaims all warranties express or implied, including merchantability or fitness for a particular purpose as to (i) such information, (ii) any product or (iii) intellectual property infringement. In no event is Cabot responsible for, and Cabot does not accept and hereby disclaims liability for, any damages whatsoever in connection with the use of or reliance on this information or any product to which it relates.

Lumira aerogel is a registered trademark of Cabot Corporation. Cradle to Cradle is a service mark of MBDC.

©2013 Cabot Corporation. All rights reserved worldwide.



**CABOT**

THE NEW STANDARD  
IN ECO-DAYLIGHTING  
SOLUTIONS



## No compromises

Studies show that comfort, productivity, learning, healing and customer consumption/retention are dramatically improved by the tactical use of natural light as the primary source of illumination in workplaces, schools, hospitals, homes, and retail environments. Traditionally, this has resulted in a compromise, as the conventional materials used to transmit natural light have demonstrated an inability to insulate, while highly insulative materials have been unable to transmit meaningful quantities of daylight. Current transparent daylight systems, while allowing maximum daylight, also bring problems such as glare, solar overheating, drafts, hot spots and high contrast zones. Harnessing the exclusive properties of Lumira<sup>®</sup> aerogel for use in daylighting systems has changed all that, with:

- Unsurpassed thermal insulation - R-value of 8 per inch / U-value of 0.75 W/m<sup>2</sup>K per 25 mm
- Increased natural light transmission - > 90% per 3/8 inch or 10mm
- Superior light diffusion – elimination of glare
- Improved acoustic performance
- Reduced solar heat gain/loss
- Decreased energy consumption - heat, air conditioning, lighting, ventilation, carbon emissions
- Unmatched moisture resistance - 100% hydrophobic
- Exceptional color stability and insulation performance

## High efficiency, lower costs

Strengthening the customary weak link of the building envelope with high performance Lumira daylighting systems considerably impacts cost and energy efficiency in a variety of ways. The natural light diffusion and glare elimination provided by Lumira aerogel can replace or supplement artificial lighting, resulting in significant energy and demand savings. Heat loss and gain are controlled by the unique characteristics of Lumira particles, which inhibit heat transfer, measurably impacting HVAC loads and occupant comfort, at great energy savings to the building owner. The UV stability, durability, and moisture resistance of hydrophobic Lumira insulation result in extended product life and lower long-term operational costs. These benefits hold true even in extreme or demanding applications such as passive houses, zero-carbon or positive energy buildings.

## High performance daylighting

When incorporated into the following systems, in both roofs and facades, Lumira<sup>®</sup> aerogel offers architects and building owners a multitude of design benefits. Whether the installation is horizontal, vertical or at an angle, Lumira insulation retains its properties, enabling unflinching thermal efficiency while allowing exceptional daylight and optimized building aesthetics without sacrificing, but actually improving, occupant comfort and productivity. Lumira daylighting system projects have been installed all over the world. Visit our website, [www.cabotaerogel.com](http://www.cabotaerogel.com), for project profiles and more information.



Structural Composite Panels for Skylights and Façades



Structural Polycarbonate Skylight Systems



Polycarbonate Façade Systems



U-Channel Glass



Insulated Glass Units



Continuous Vaults and Ridges with Ventilation Systems



Unit Skylights, Rooflights, and Smoke Vents



Tensile Structures / Fabric Roofing

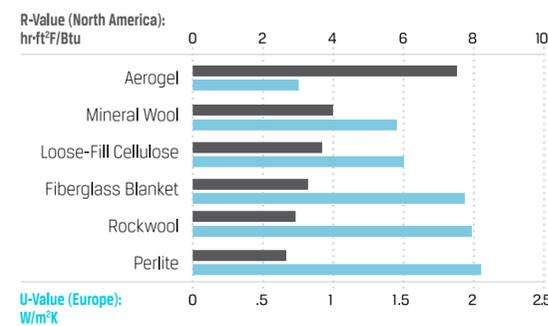
## Why Lumira<sup>®</sup> aerogel?

Cabot partners with architects and building owners to understand their evolving needs, providing solutions that optimize aesthetics and daylighting design while addressing increasingly stringent building and energy code requirements. As a global leader in infrastructure solutions, Cabot's products are developed with tomorrow's challenges in mind. Translucent Lumira aerogel maintains and enhances energy efficiency while enabling a wide range of commercial and residential building design choices, allowing architects and building owners to proactively reduce the carbon footprint of their buildings. The inclusion of Lumira aerogel in daylighting systems virtually eliminates the historical trade-off of insulation vs. natural light by providing 3 to 6 times the thermal performance of traditional, poorly

insulated fenestration products, while maintaining optimal light transmission. As a result, even large daylight surface areas can maintain high energy efficiency by reducing thermal loads.

### Insulation Values of Existing Building Insulation Products

(Values are per 1 inch/25 mm of material)



Solid, non light-transmissive construction delivers an R-value of 24 (U-value 0.24), while high performance triple-glazed krypton glass glazing delivers R-8 (U-0.7), making the choice easy when compared to Lumira aerogel, which allows daylighting products to deliver a range of R-values from 6 to 20 (U-0.28 to 0.89) while harvesting essential natural daylight.

