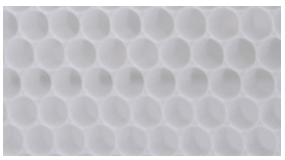
OMBRA™
Honeycomb

The Ombra™ Insulated Glass Unit (IGU) was developed for exterior glazing applications using a UV-stabilized tubular honeycomb core that offers sperior shading performance. In addition to the benefits of visual privacy and a Visible Light Transmittance of up to 50%, the Ombra™ IGU achieves a Solar Heat Gain Coefficient of 0.18 at midday, approximately 75% lower than that of other insulated glass units without the need for tinted, reflective or specialty glass. This dramatically reduces climate control requirements and results in significant energy savings over the life of a building.

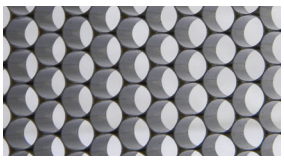
The Ombra™ IGU may be customized to meet a broad range of performance and aesthetic requirements.

AVAILABLE COLORS

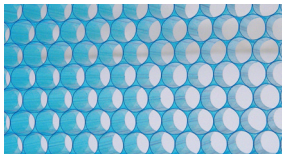
Clear
Ref. # 15000



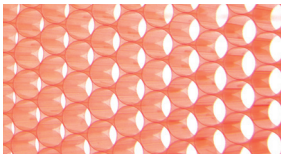
White
Ref. # 15000



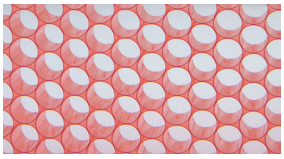
Black
Ref. # 15000



Blue
Ref. # 15000



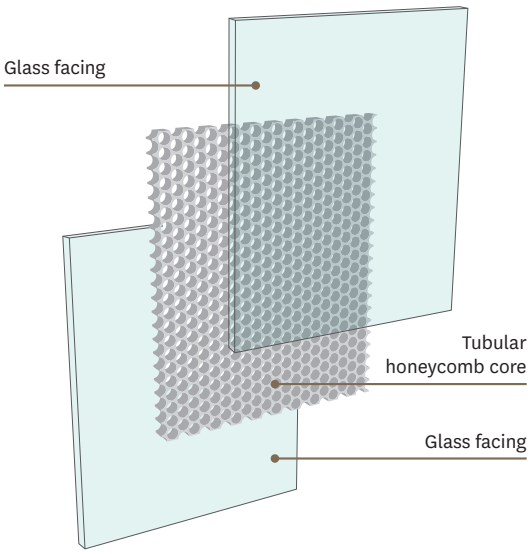
Orange
Ref. # 15000

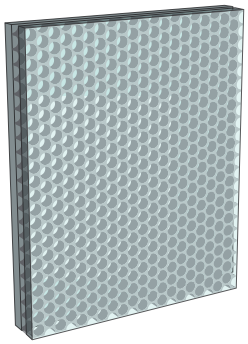


Red
Ref. # 15000

PULP STUDIO, INC.
Los Angeles, California USA
310.815.4999
www.pulpstudio.com

©2014 Pulp Studio, Inc. All rights resrved.
Ver. 1.4/01.23.2014





Core + Facings + Space/seal =
Hermetically Sealed Unit

PANEL COMPOSITION

Standard Unit Composition

» 1" overall unit thickness
» Inboard Lite: 1/4" tempered glass
» Interior: 1/2" airspace with Ombra™ Honeycomb core
» Outboard Lite: 1/4" tempered glass

Honeycomb Core Options

» Cell diameter: 1/4" standard
» Standard core thickness: 1/2"
» Standard colors: Clear, White, Black, Orange, Blue and Red (all colors UV-stabilized)
» Custom color cores available for 1600sqft. minimum order

Glass Lite Facing Options

» Laminated (5/16", 7/16" and 9/16")
» Tempered (1/4", 3/8" and 1/2")
» Custom colored PVB interlayer (laminated glass only)
» Standard Glass Colors: bronze, grey, blue, green, and white
» Acid-etched, low-e coated glass, low iron, ceramic patterns

Panel Dimensions

» Units are produced to specified dimensions per project
» Maximum dimensions: 53" X 120"
» Panel thickness is subject to unit composition

Minimum Order

» 800 sqft. for standard color units
» 1,600 sqft. for custom color core units

TECHNICAL PERFORMANCE

Thermal Performance

See comparative performance chart (pages 4 and 5) for performance values of industry standard and Ombra™ IGU's. For increased insulating properties, Pulp Studio can provide units with low-e coatings on surface 2 or 3.

STC Rating (Acoustical)

While the standard Ombra™ IGU already provides and excellent sound barrier with an STC rating of 36, specified STC requirements up to 49 can be met by adjusting the glass composition and airspace/core ratio.

Fire Rating

Class A, non-combustible. Ombra™ IGU does not meet 1 or 2 hour fire rating requirements.

©2014 Pulp Studio, Inc. All rights resrved.
Ver. 1.4/01.23.2014

Wind Load

Up to hurricane force wind load requirements may be met using specifically designed glass composition.

Certification

Developed, manufactured and tested in accordance with IGCC and ISO 9001:2000 Specification, the Ombra™ IGU is certified for both exterior and interior applications. A dual-seal construction, IGCC certified and CBA rated,provides excellent resistance to MVT (Moisture Vapor Transmittance) and to UV degradation. All glass used in Pulp Studio's IGU fabrication is tested and certified per standards recognized by Glass Association of North America.

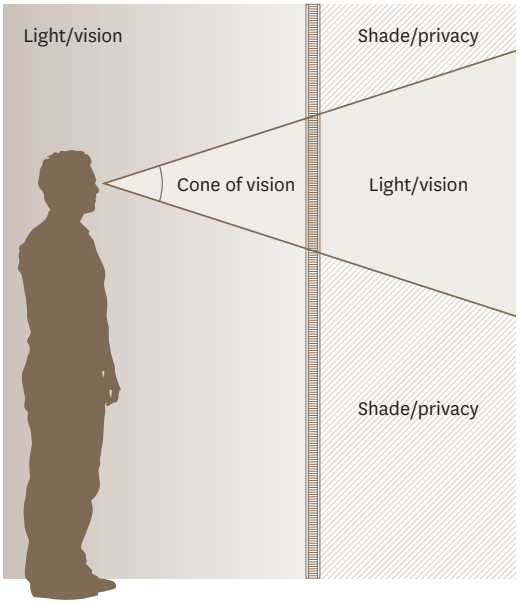
Installation

Ombra™ IGUs are compatible with most commercially available storefront and curtain wall systems.

Warranty

The Ombra™ IGU carries a 10-year limited liability warranty. Please inquire regarding project-specific technical requirements.

SOLAR HEAT GAIN PERFORMANCE



How Does "Sun Angle" Relate To Ombra™ IGU Performance?

Because of the interwoven nature of its architectural mesh core, the Ombra™ IGU acts as a shading device. Just as the unit allows for near full transparency when viewed frontally, but obscures the line of site when viewed from oblique angles, it allows more light and passive solar heat to enter the building in the morning and late afternoon when the sun is low but creates the most shading at mid-day when the sun is highest in the sky and most intense. See illustration.

What Is The Solar Heat Gain Coefficient?

The Solar Heat Gain Coefficient (SHGX) is the industry standard for measuring the amount of passive solar heat that is gained into an interior space through an IGU. Typical methods of improving the SHGC of an IGU include reflective films, tinted glass lites, and ceramic frit patterns. The lower the SHGC, the better the unit's performance.

How Is The SHGC Different From The Shading Coefficient (SC)?

The Shading Coefficient is directly related to the SHGC by the following formula:
Shading Coefficient = Solar Heat Gain Coefficient (SHGC) / .87

Why Is It Important To Know The SHGC Of Your Specified Glazing Panel?

Many IGU specifiers look solely at a unit's U-Value as a measure of its performance, but a unit with a very low SHGC can be a key factor in designing the most energy efficient facade possible.

©2014 Pulp Studio, Inc. All rights resrved.

How Does The SHGC Affect Building MEP And Energy Requirements?

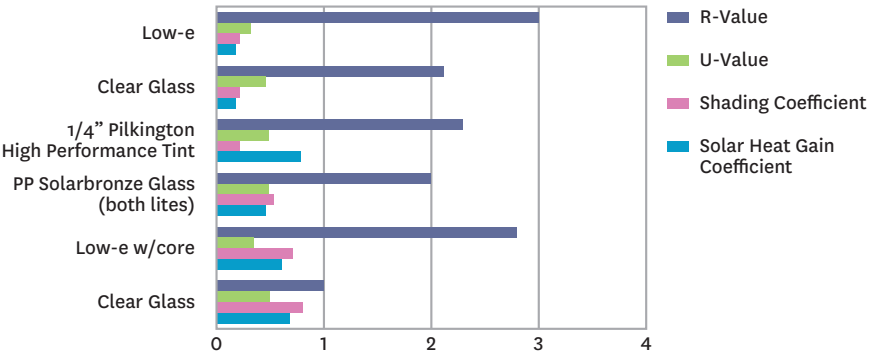
Reducing the amount of passive solar heat transmitted into the building by the sun (i.e. by using an IGU with a low SHGC) reduces the amount of energy required to cool interior spaces.

COMPARISON OF OMBRA™ IGU VS. TYPICAL CLEAR IGU

The following glazing units are compared on these charts:

» 1/4“ tempered glass
» 1/2” airspace 1/4” diameter clear cell Ombra™ tubular honeycomb core
» 1/4” tempered glass*

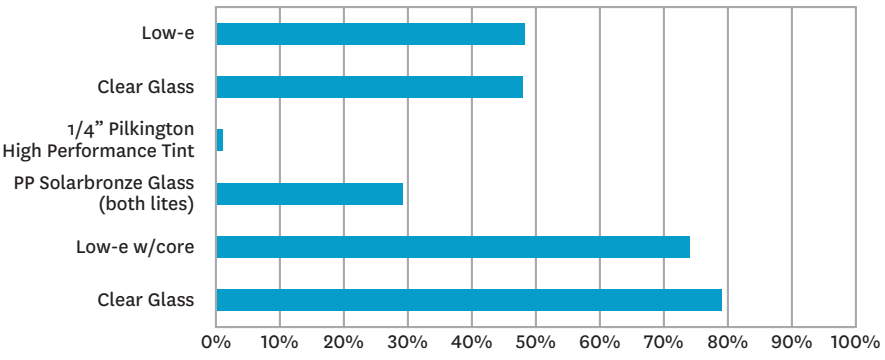
Performance Values



Typical clear IGU: Industry standard performance values for typical 1” IGU

1/4“ tempered glass
1/2” airspace
1/4” tempered glass*

Visible Light Transmission



** Typical ASHRAE (American Society of Heating, Refrigerating and Air Conditioning Engineers) IGU values*

** Typical IGU’s charted with low-e and non-low e versions*

©2014 Pulp Studio, Inc. All rights resrved.
Ver. 1.4/01.23.2014

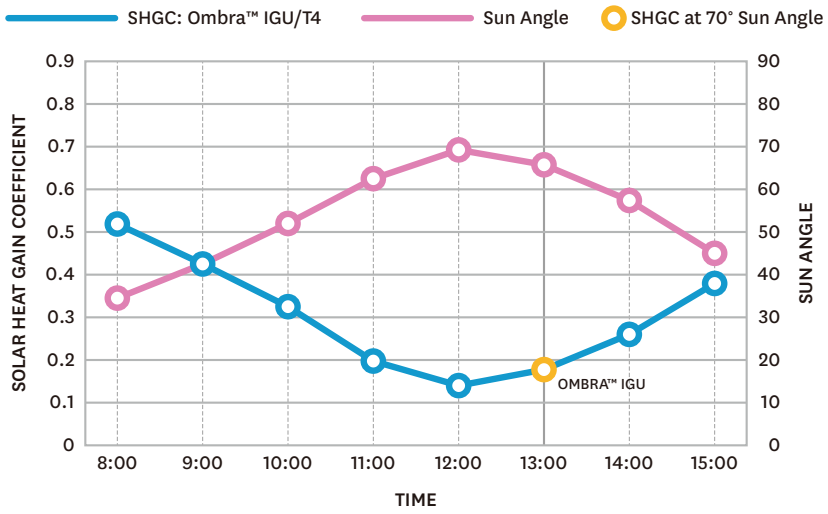
Functional Characteristics

Data based on third party testing. Testing methods comply with ASTM standards E972,E1084 and NFRC 201-2010

	Clear	White
Solar Heat Gain Coefficient		
70° Sun Angle	0.15	0.03
60° Sun Angle	0.21	0.12
50° Sun Angle	0.35	0.21
Min. Solar Heat Gain Coefficient	0.14	0.20
Visible Light Transmission		
VLT 70° Offset	14%	6%
VLT 50° Offset	38%	17%

Ombra IGU with low-e glass further reduces the solar heat gain coefficient approximately 20% and visible light transmittance by approximately 5% of the stated figures in the table.

Ombra™ IGU Standard 1" Unit with 1/4" Cell Clear Honeycomb



©2014 Pulp Studio, Inc. All rights resrved.
Ver. 1.4/01.23.2014