

Center of Glass U-Values for Double and Triple Glazed Insulating Glass Units with Solarban® 60 Low-e Glass with 100% Air, Argon, or Krypton, or Mixtures of These Gases

As explained in TD-101, insulating glass U-values vary with airspace width, gas fill type and gas fill quantity. TD-128 shows performance data for Sungate 100® Low-e glass in double and triple glazed insulating glass units. This TD shows how U-values vary in double glazed insulating glass units, and in triple glazed insulating glass units, using Solarban 60® Low-e glass.

Using the LBNL WINDOW5 computer program, individual models were run for 7 different IG unit gap widths, and for 6 different gas fill configurations. As you can see from the graphs, there is an optimum gap width for each different gas fill configuration.

Notice that in both double-glazed and triple-glazed IG units, the line for “100% argon filled”, nearly overlaps the line for “5% air & 95% argon filled”. This

means they are very close in performance.

Gap widths analyzed:

- .250”
- .313”
- .375”
- .438”
- .500”
- .563”
- .625”

Gas mixtures analyzed:

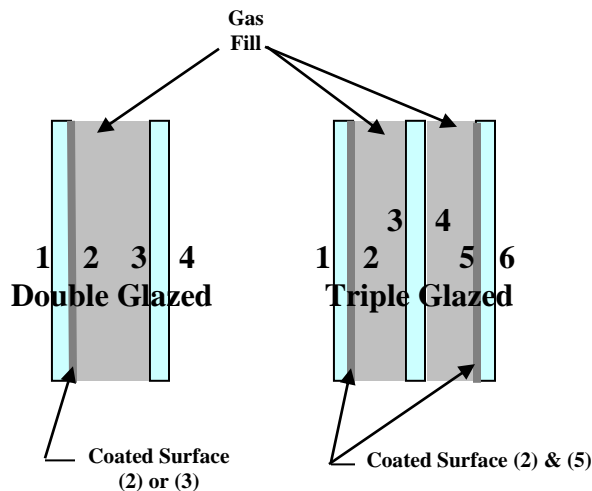
- 100% air
- 5% air & 95% argon
- 100% argon
- 12% air, 22% argon & 66% krypton
- 5% air & 95% krypton
- 100% krypton

In the analysis, all glass is clear glass.

Glass thicknesses are all 3.3mm.

Glass thicknesses of 2.5mm and 3.0mm would produce nearly identical results.

Standard NFRC Environmental Conditions were used.

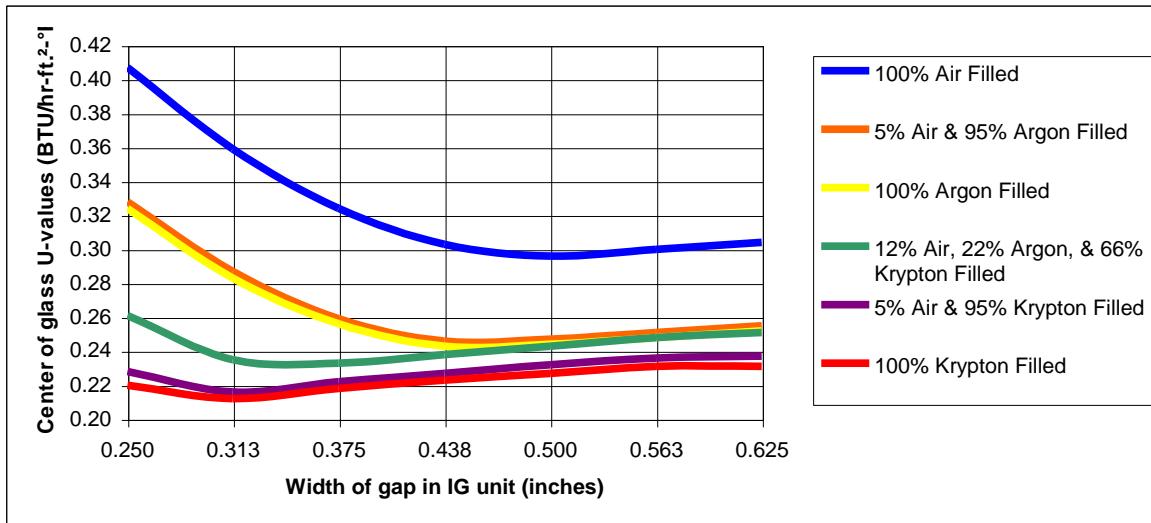


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DOUBLE GLAZED INSULATING GLASS WITH SOLARBAN 60 (2) OR (3)

Gap Width	Winter Nighttime U-values for various gas fill types					
	100% Air Filled	5% Air / 95% Argon Filled	100% Argon Filled	12% Air / 22% Argon / 66% Krypton Filled	5% Air / 95% Krypton Filled	100% Krypton
.250	.41	.33	.32	.26	.23	.22
.312	.36	.29	.28	.24	.22	.21
.375	.32	.26	.26	.23	.22	.22
.437	.30	.25	.24	.24	.23	.22
.500	.30	.25	.24	.24	.23	.23
.562	.30	.25	.25	.25	.24	.23
.625	.30	.26	.25	.25	.24	.23

DOUBLE GLAZED INSULATING GLASS WITH SOLARBAN 60 (2) OR (3)



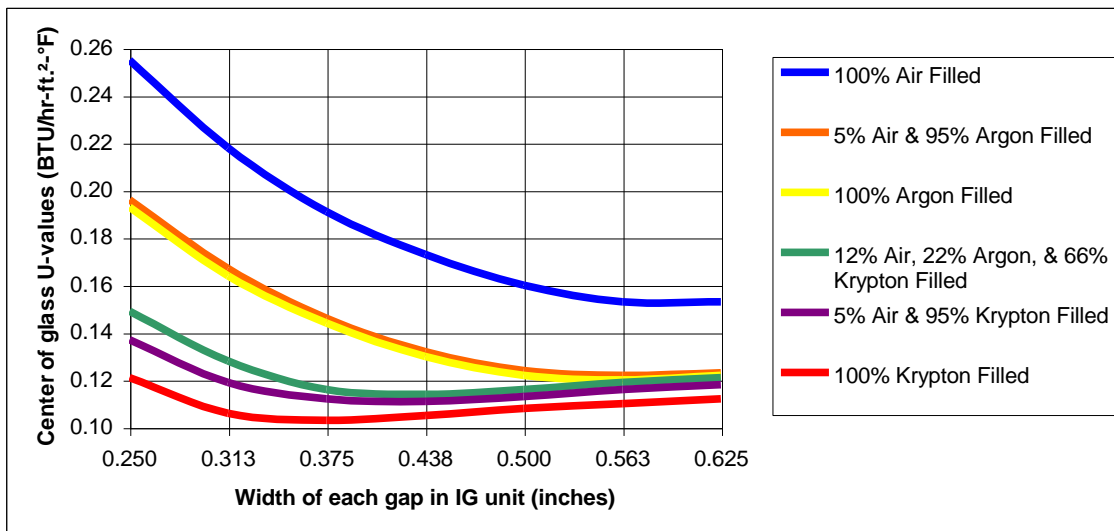
Center of Glass U-values for Double Glazed IG Units with Solarban 60 (2) or (3) and Clear Glass Other Lite

Center of Glass U-Values for Double and Triple Glazed Insulating Glass Units with Solarban® 60 Low-e Glass with 100% Air, Argon, or Krypton, or Mixtures of These Gases

TRIPLE GLAZED INSULATING GLASS WITH SOLARBAN 60 (2) & (5)

Gap Width	Winter Nighttime U-values for various gas fill types					
	100% Air Filled	5% Air / 95% Argon Filled	100% Argon Filled	12% Air / 22% Argon / 66% Krypton Filled	5% Air / 95% Krypton Filled	100% Krypton
.250	.26	.20	.19	.15	.14	.12
.312	.22	.17	.16	.13	.12	.11
.375	.19	.15	.14	.12	.11	.10
.437	.17	.13	.13	.11	.11	.11
.500	.16	.12	.12	.12	.11	.11
.562	.15	.12	.12	.12	.12	.11
.625	.15	.12	.12	.12	.12	.11

TRIPLE GLAZED INSULATING GLASS WITH SOLARBAN 60 (2) & (5)



Center of Glass U-values for Triple Glazed IG Units with Solarban 60 (2) & (5) and Clear Glass Middle Lite

To get a copy of the LBNL WINDOW5 computer program and other software related to the window industry, click on this Internet link. <http://windows.lbl.gov/software/>

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HISTORY TABLE		
ITEM	DATE	DESCRIPTION
Original Publication	4/22/2002	TD-121
Revised and updated	5/4/2002	Added reference to TD-128
Revision #2	2016-10-04	Updated to Vitro Logo and format

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