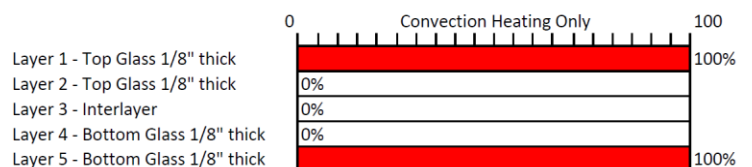
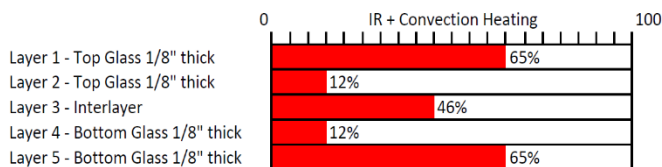


CASSO-SOLAR TECHNOLOGIES



Advantages of Casso-Solar Technologies' Combination Infrared and Convection Heating vs. Convection Only Heating for Lamination

- IR + Convection heating provides faster processing times than Convection only.
 - IR energy penetrates to heat the interlayer directly rather than relying on conduction via surface heating.
 - IR heating is 70-80% efficient whereas convection heating is only 50-60% efficient.
 - Convection heat helps process heat reflective and coated glass.
 - **Up to 30,000 ft²/day** possible with the following machine parameters:
 - 84" maximum glass width
 - ¼" over ¼" glass with .030"- .060" interlayer
 - Running 22 hours/day (3 shifts)
- Product is heated more uniformly
 - IR heats from within and delivers heat extremely uniformly.
 - Convection only heats the surface only and then the interior slowly warms creating a larger temperature gradient and slowing down the process.
 - Charts show how heat is absorbed by a ¼" over ¼" assembly with .060" interlayer when heating from both top and bottom, with IR heaters radiating at a wavelength between 3 and 3.5 microns.



- Zone configurations are more flexible
 - Our equipment is built with the ability to control IR separately from the top and bottom. Convection controls are also independent. When uncoated glass is run, convection heating can be shut off to save energy and lower production costs.
 - Separate top and bottom zones control the energy to increase uniform heat absorption.