





# Polycast<sup>®</sup> SolarControl<sup>™</sup> Cell Cast Acrylic Sheet Performance Characteristics & Comparisons

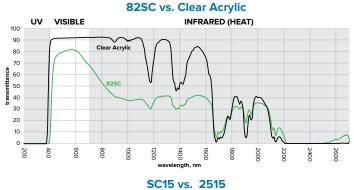
Polycast<sup>®</sup> SolarControl<sup>™</sup> is a custom cell cast acrylic sheet solution that blocks out significant amounts of nearinfrared (NIR) radiation while maintaining high visible light transmission. It is available in a wide range of colors and light transmissions, including Night Vision Compatibility (NVG). This aircraft-quality monolithic glazing material can be manufactured to MIL-PRF 5425, 8184 and 25690; DTD-5592; L-P-391; ASTM D-4802 and other specifications.

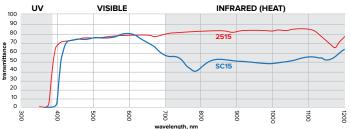
#### **BENEFITS**

- Reduces cabin temperatures by as much as 20°F
- Lowering cabin temperatures can impact operating costs while increasing pilot and passenger comfort
- SolarControl<sup>™</sup> colors provide full UV protection and resistance
- SolarControl<sup>™</sup> colors lessens UV exposure to pilots while minimizing visual impacts on cockpit and cabin materials
- Meets light transmission requirements for windscreens and windows
- Can be produced to meet standard aerospace specifications, including MIL P 25690 for stretched acrylic.
- Replicates many "standard colors" used in aircraft, with the ability to develop new colors
- Thermoforms same as colorless cast acrylic sheet.

### SPECTRAL TRANSMISSION COMPARISONS OF GLAZING MATERIALS

These two graphs illustrate the type of radiation allowed to pass through two different glazing materials. Graph A compares standard clear acrylic with Polycast<sup>®</sup> 82SC while Graph B shows differences between traditional 2515 and SC15 Gray.





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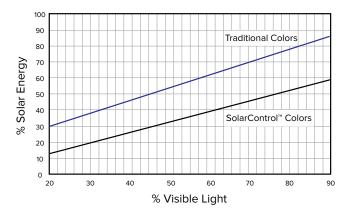


#### SOLAR ENERGY VS. VISIBLE LIGHT TRANSMISSION

The graph (right) depicts the typical relationship between solar energy transmission and visible light transmission when using traditional colors versus Polycast SolarControl<sup>™</sup> colors.

#### HEAT REDUCTION COMPARISONS BY COLOR

The tables below show examples of the heat reduction advantages of Polycast SolarControl<sup>™</sup> colors compared with traditional materials. All SolarControl<sup>™</sup> colors reduce UV damage by at least 98%. This typical data is not intended to be used for specification purposes.



Note: Both Polycast SolarControl<sup>™</sup> materials transmit high amounts of visible light (400 to 700 mm) and transmit much less radiation in the near-infrared (NIR) and in the UV. The NIR and UV regions contain significant amounts of solar energy, but do not contribute to visibility.

UV-SC COLO					
COLOR	% VISIBLE LIGHT	% SOLAR ENERGY**	% ENERGY REDUCTION		
Clear Acrylic 82SC*	92 82	85 53	15 47		200
2111 Green SC11 Green*	77 72	75 45	25 55		2
2515 Gray SC15 Gray*	76 72	74 51	26 49		2 0
2540 Bronze SC40 Bronze*	75 71	72 47	28 53		2 0
2256 Gray SC56 Gray*	65 65	66 47	34 53		200
2094 Gray SC94 Gray*	45 45	49 38	51 62		2 0
2537 Gray SC37 Gray*	32 32	41 27	59 73		*

REXAMPLES							
COLOR	% VISIBLE	% SOLAR	% ENERGY				
	LIGHT	ENERGY**	REDUCTION				
2412 Bronze	27	35	65				
SC12 Bronze*	27	26	74				
2064 Gray	26	34	66				
SC64 Gray*	26	24	76				
2130 Green	23	40	60				
SC30 Green*	24	21	79				
2538 Gray	16	26	74				
SC38 Gray*	15	15	85				
2074 Gray	13	32	68				
SC74 Gray*	13	13	87				
2370 Bronze	10	16	84				
SC70 Bronze*	10	13	87				

Indicates special solar control properties. Colors not listed are available upon request.

SolarControl<sup>®</sup> colors are available in a wide range of light transmissions. Solar Energy calculated using Lawrence Berkeley National Laboratory Optics v.5 software. The actual temperature in service will be dependent on the combination of many factors, such as weather conditions (including wind velocity) and type of application.

	NVG COMPATIBLE COLORS										
COLOR	DESCRIPTION	RELATIVE HEAT GAIN (BTU/HR X FT <sup>2</sup> )	% T SOLAR	% VLT	%T <sub>NVG</sub>	R (VLT/T SOLAR)					
Gold Coat	Gold Coating Standard	—	—	_	72	—					
NV73	Copper	173	57	73	75	1.3					
NV83	Near Clear	174	60	83	73	1.4					
NV72	Light Gray	173	59	73	73	1.2					

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