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Revision 1

Metal Mirrors

Aluminum films are useful when you need reflectance without heat control or color correction. Aluminum films can be produced as bare aluminum, protected aluminum for physical protection (but reduced reflectance) and enhanced aluminum (for greater reflectance).

Typical characteristics for various basic aluminum films include:

- Bare aluminum provides flat reflectance band over the entire visible range.
- Protected aluminum provides fairly flat reflectance over the visible but with increased abrasion durability
- Enhanced aluminum provides increased reflectance over a narrower range than bare aluminum but with increased abrasion resistance

Note: Bare aluminum oxidizes as soon as it is exposed to air. Its reflection decreases as the metal oxidation forms. The reflectance will stabilize once the oxide layer reaches its final thickness.

Characteristic	Test/Attribute	Indication
Visible wavelength reflection	430 to 680 nm \geq 85% bare Al	How much visible light is reflected
Angle of Incidence	0°	Angle of incidence has little impact on bare aluminum film reflection performance. It does impact the performance of protected or enhanced films.
IR reflection		
Coating Uniformity		
Adhesion	Tape test	How well the film adheres to the substrate
Durability		
Heat Testing	Bare Aluminum 400°F for 48 hours	
Operating Temperature		
Thermal Shock		
Humidity		
Substrate Specifications	Customer specific	
Cosmetics Specifications	Customer specific	