

PRODUCT OVERVIEW

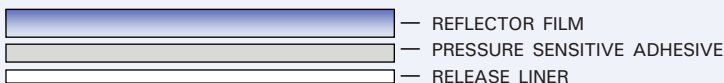


whiteoptics™ Film*

White97 high diffuse reflective film is available in pre-cut sheets and rolls up to 52" wide with or without pressure sensitive adhesive backing.

	Product #	Description	Total Thickness
White97™ Film	F-23	High diffuse Reflector film	0.4 mm
	F-23A	High diffuse Reflector film with adhesive and removable liner	0.4 mm

White97, F-23A
with PSA
and removable liner



Die Cutting

WhiteOptics film can be laser and die-cut to form PCB reflectors, cavity liners or any 2D designs.

Thermoformed Parts

WhiteOptics offers thermoformed insertable reflectors for complex geometries and ease of assembly.

whiteoptics™ Metal*

WhiteOptics Metal is available in coils up to 48" width and can be supplied as custom slit coils or cut-to-length sheets. It is supplied with a removable protective film and can be formed in most metal forming processes including punching, press brake and die forming.

	Product #	Substrate	Surface Type	Total Thickness
WhiteOptics™ Metal	M13A2	Aluminum	Diffuse	0.020" (0.5 mm)
	M13A6	Aluminum	Diffuse	0.024" (0.6 mm)
	M13F8	Steel	Diffuse	0.026" (0.55 mm)
	M13F6	Steel	Diffuse	0.034" (0.85 mm)
	M13GA6	Aluminum	Gloss (new)	0.024" (0.6 mm)

Environmental Durability (accelerated testing)

UV Stability	Does not yellow with exposure to ultraviolet 1000 hours UVA (340nm), less than 0.5% reflectance change 1000 hours UVB (313nm), less than 0.5% reflectance change
Thermal Stability	2000 hours @ 80°C, less than 0.5% reflectance change
Humidity Stability	1000 hours @ 60°C, 95%RH, less than 0.5% reflectance change
Dirt Depreciation	Antistatic, does not attract dust
Chemical Resistance	Compatible with most common cleaning solutions including ammonia, 409, dilute bleach solution and alcohols

* Patents pending.



Optical Properties of whiteoptics™ Materials

Product

60 deg
gloss

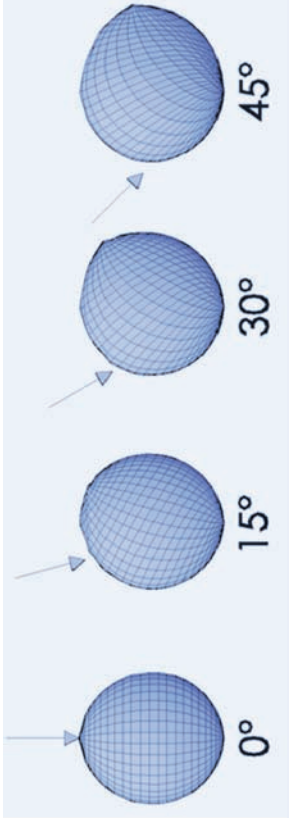
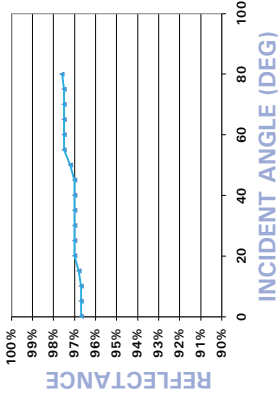
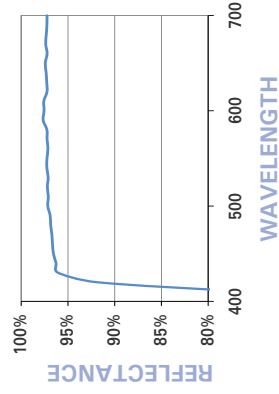
Reflectance vs
Wavelength

Reflectance vs
Incident Angle*

Bi-directional Reflectance Distribution
Function measurements*

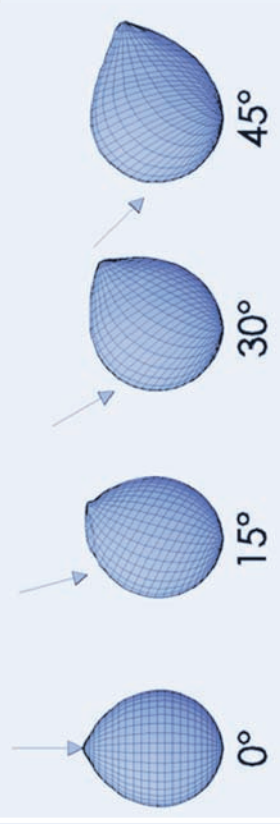
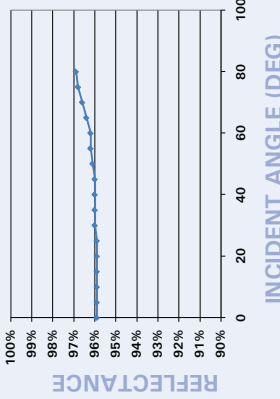
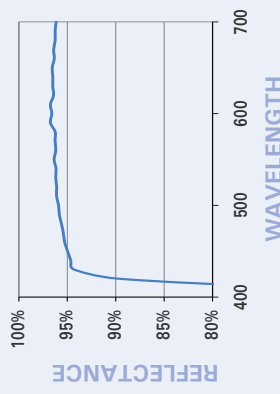
F-23
(White97)

< 6%



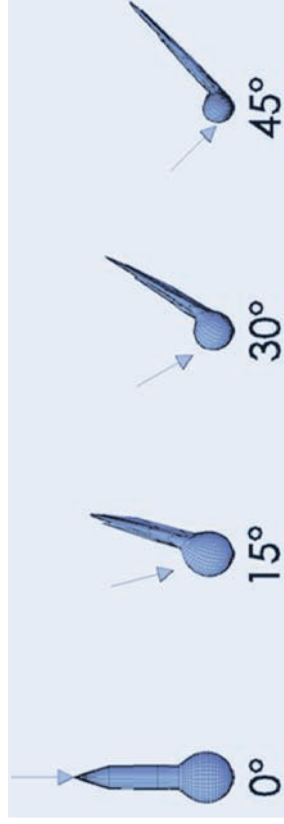
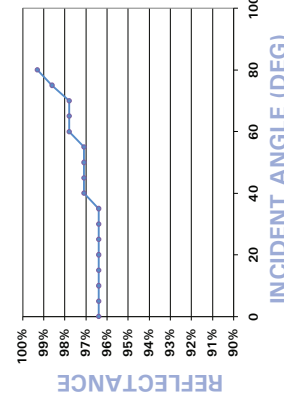
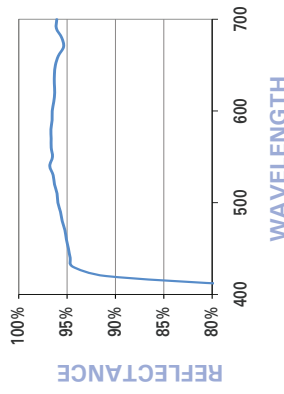
M13A
(WhiteOptics
Metal)

< 8%



M13G
(WhiteOptics
Gloss)

50%



This information has been carefully compiled from experience gained in the laboratory and under commercial conditions. However, the product's performance and its suitability depends on the particular conditions of use. We recommend that customers satisfy themselves that each product meets their requirements in all respects. This information is being provided by WhiteOptics LLC free of charge as a courtesy to customers, and WhiteOptics LLC HEREBY DISCLAIMS ALL REPRESENTATIONS, WARRANTIES AND LIABILITIES WITH RESPECT TO THE INFORMATION AND USE THEREOF. WhiteOptics™, White97, WhiteOptics Metal and WhiteOptics Gloss are trademarks exclusive to WhiteOptics LLC. All rights reserved.

* Reflectance and BRDF testing performed by LTI Optics and available in Photopia modeling software