

ORALITE® Photoelectric Sheeting

P66, P82, AC1000

(Formerly a Reflexite Branded Product)

Technical Datasheet

12/2015

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Description

ORALITE® Photoelectric sheeting is designed for use with retroreflective type photoelectric sensors, either with or without the use of polarizing filters. The sheeting is composed of cube corner (microprism) retroreflective elements in a flexible, smooth-surfaced tough and weather resistant polymeric film.

The sheeting is available in several configurations as shown in Table 1.

Product Construction

P66 Sheeting (Metalized)

ORALITE® P66 Photoelectric sheeting is a metalized microprismatic sheeting with integrally bonded cube corner elements. The flexible sheeting is not more than 0.008 inches thick and is provided with a clear lacquer top coating. The lacquer top coating is screen printable with both UV and solvent ink systems.

P82 Sheeting (Metalized)

ORALITE® P82 Photoelectric sheeting is a metalized microprismatic sheeting with integrally bonded cube corner elements. The flexible sheeting is not more than 0.008 inches thick and is provided with a clear weather and solvent resistant top coating designed for harsh environments and extended outdoor durability.

AC1000 Sheeting (Metalized)

ORALITE® AC1000 Photoelectric sheeting is a metalized microprismatic sheeting. The sheeting is constructed of UV stabilized acrylic film with integrally molded cube corner elements. The sheeting is screen printable and not more than 0.015 inches thick.

AC1000 Sheeting (Air Backed)

ORALITE® AC1000 Photoelectric sheeting is a non-metalized microprismatic sheeting. The sheeting is constructed of UV stabilized acrylic film with integrally molded cube corner elements. The sheeting is welded to a UV-stabilized polymeric film. The acrylic film is screen printable.

Reflectivity

ORALITE® Photoelectric sheeting shall meet or exceed the minimum coefficient of retroreflection shown in Table 2. The sheeting shall be measured in accordance with ASTM E810 at rotation angles of 0° and 90°.

Color

ORALITE® Photoelectric sheeting is available in white, which has a silver daytime appearance. The color conforms to the requirements in Table 3 when tested in accordance with ASTM standards E1347 and E1349. The measured values are the average of eight readings. The test sample is rotated 45° about its own axis after each reading.

Adhesive

ORALITE® Photoelectric sheeting is provided with a pressure sensitive adhesive backing. The adhesive is protected by a release liner that shall be removed by peeling, without soaking in water or other solvents.

ORALITE® P66, P82 and AC1000 metalized sheetings are available with a variety of pressure sensitive adhesives tailored to specific substrate requirements.

Impact Resistance

Following application to a smooth surface aluminum rectangle, 0.020 inch by 3 inch by 6 inch, the specimen is conditioned for 24 hours at 72°F and 50% relative humidity. The sheeting shall show no cracking when the face of the panel is subjected to an impact of a two pound weight with a 5/8 inch rounded tip dropped from a 100 inch pound setting on a Gardner variable impact tester, IG-1120.

Solvent Resistance

The sheeting will not dissolve, blister or pucker when wiped with a soft cloth wet with kerosene, mineral spirits, turpentine, VM&P Naphtha, 5% HCl or NaOH.

Specular Gloss

The sheeting shall have a specular gloss of not less than 40 when tested in accordance with ASTM method D523 at an angle of 85°.

Shrinkage

A 9 inch by 9 inch specimen of the sheeting with liner is conditioned a minimum of one hour at 72°F and 50% relative humidity. The liner is then removed and the specimen is placed on a flat surface with the adhesive side up. Ten minutes after the liner is removed and again after 24 hours, the specimen is measured to determine the amount of dimensional change. The specimen will not shrink in any dimension more than 1/32 inch in 10 minutes and 1/8 inch in 24 hours.



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Printing

ORALITE® P66 and AC1000 Photoelectric sheetings are printable with appropriate UV and solvent ink systems.

Printing a clear overcoating may be used to extend the life of the retroreflector. It is not recommended to print transparent inks as they will reduce the retroreflectors photometric performance. Opaque inks can also be used however these inks will reduce the usable area of the retroreflector.

TABLE 1
PHOTOELECTRIC SENSOR COMPATIBILITY

Photoelectric Sheeting	Sensor Application	
	Non-Polarized	Polarized
P66 (Metalized)	X	
P82 (Metalized)	X	
AC1000 (Metalized)	X	
AC1000 (Air Backed)		X

TABLE 2
COEFFICIENT OF RETROREFLECTION
(CANDELAS/LUX/SQUARE METER)

Observation Angle	Entrance Angle	Orientation Angle	
		0°	90°
0.2°	-4°	900 min	900 min

TABLE 3
COLOR SPECIFICATION LIMITS

White Coordinates*		Reflectance Y	
x	y	Min.	Max.
0.303	0.300	15.0	----
0.368	0.366		
0.340	0.393		
0.274	0.329		

*The four pairs of chromaticity coordinates determine the acceptable color in terms of the CIE 1931 Standard Colorimetric System measured with CIE Standard Illuminant D₆₅.

IMPORTANT NOTICE

All ORALITE® products are subject to careful quality control throughout the manufacturing process and are warranted to be of merchantable quality and free from manufacturing defects. Published information concerning ORALITE® products is based upon research which the Company believes to be reliable although such information does not constitute a warranty. Because of the variety of uses of ORALITE® products and the continuing development of new applications, the purchaser should carefully consider the suitability and performance of the product for each intended use, and the purchaser shall assume all risks regarding such use.

All specifications are subject to change without prior notice.

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