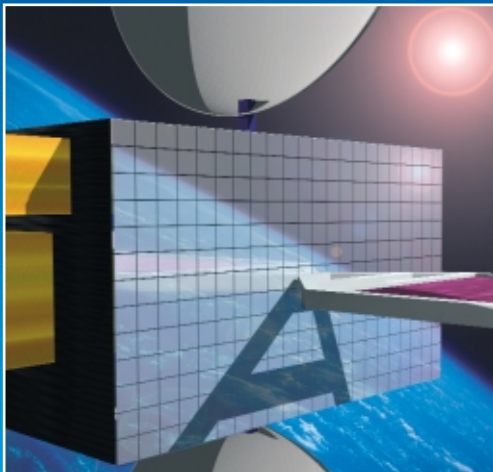
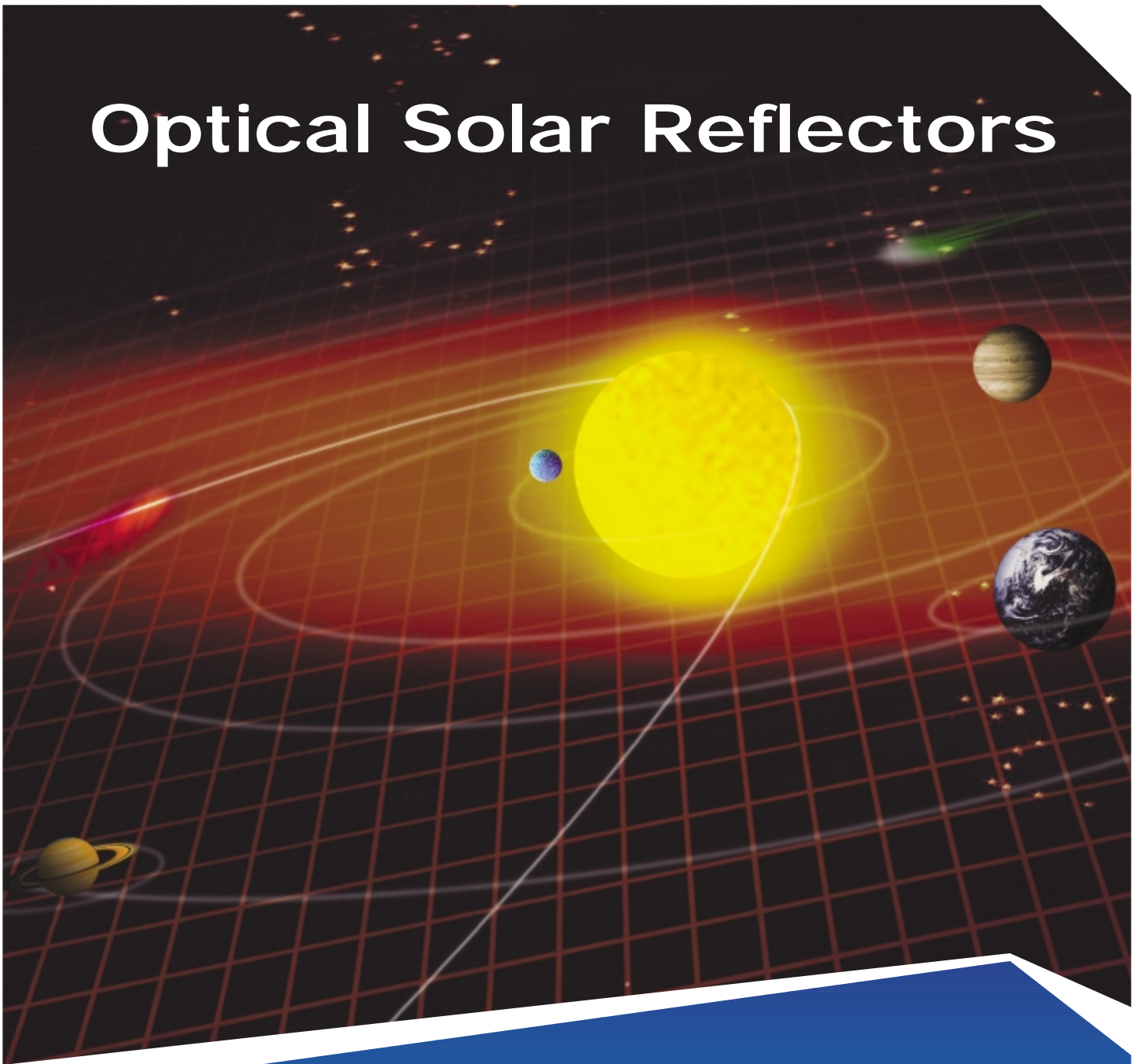


Optical Solar Reflectors



Qioptiq Space Technology

- Design and manufacture of radiation-stable Optical Solar Reflectors (OSRs)
- 30 years of Space Heritage
- Space Qualified
- Supply over 80% of the world's OSR requirements

Typical optical solar reflector specifications with 0.10mm thick Pilkington CMX and CMO glass types

	Specification	Maximum Alpha	Emittance	Front Surface Sheet Resistance	Front to Back Conductivity
Standard OSR (CMX)	PS 343	0.100	0.86	N/A	N/A
Conductive Coated OSR (CMX)	PS 344	0.100	0.83	<5 K Ohms/Square	<200k Ohms
UVS Coated OSR (CMX)*	PS 347	0.060	0.83	N/A	N/A
UVS/CC/OSR (CMX)	PS 349	0.060	0.83	<5 K Ohms/Square	<200k Ohms
Conductive Coated OSR CMO Glass	PS 613	0.085	0.83	<5 K Ohms/Square	<200k Ohms
Plain OSR (CMO)	PS 614	0.085	0.87	N/A	N/A

Alpha - Solar absorptance measurements calculated between 250 and 2500nm

Emittance - Normal emittance calculated between 5 and 50 microns.

*UV Reflective coating designed to operate from 0 - 66°

Physical Properties

Property	CMX	CMO
Density	2.605 grams/cm ²	2.536 grams/cm ²
Refractive Index	1.5265	1.490
Youngs Modulus	75±1.0 GNm	75±1.0 GNm
Poissons Ratio	0.22 ±0.01	0.22 ±0.01

Mechanical Properties

Thickness:	0.050mm TO 0.50mm / 0.002" TO 0.02"
Tolerancing:	LxW ±0.05mm / 0.002"
Surface Finish:	As drawn to : MIL-PRF-13830B, 80/50 scratch/dig
Parallelism:	0.05mm per 20mm
Perpendicularity:	90° ± 0° 30'
Coating:	Uncoated area, masked by coating tooling, shall not exceed 1% of the total coverglass area (8mm ² maximum)
Edge Quality:	Chemically etched for strength enhancement.

Durability

Humidity Resistance:	Rear Surface 98% ± 2% relative humidity for 24 hours @ 50° ± 2°C. Front Surface (if applicable) 98% ± 2% relative humidity for 72 hours @ 50° ± 2°C
Adhesion:	Using cellulose tape to MIL-M-13508
Abrasion:	Rear surface shall withstand careful cleaning with a soft lens tissue and isopropyl alcohol. Front surface (if applicable) - 20 strokes with 6mm pencil type eraser to MIL-E-12397 loaded to 10N
Radiation Resistance:	UV exposure, electron, low energy proton, high energy proton - please refer to relevant specifications
Thermal Cycling:	Details on request