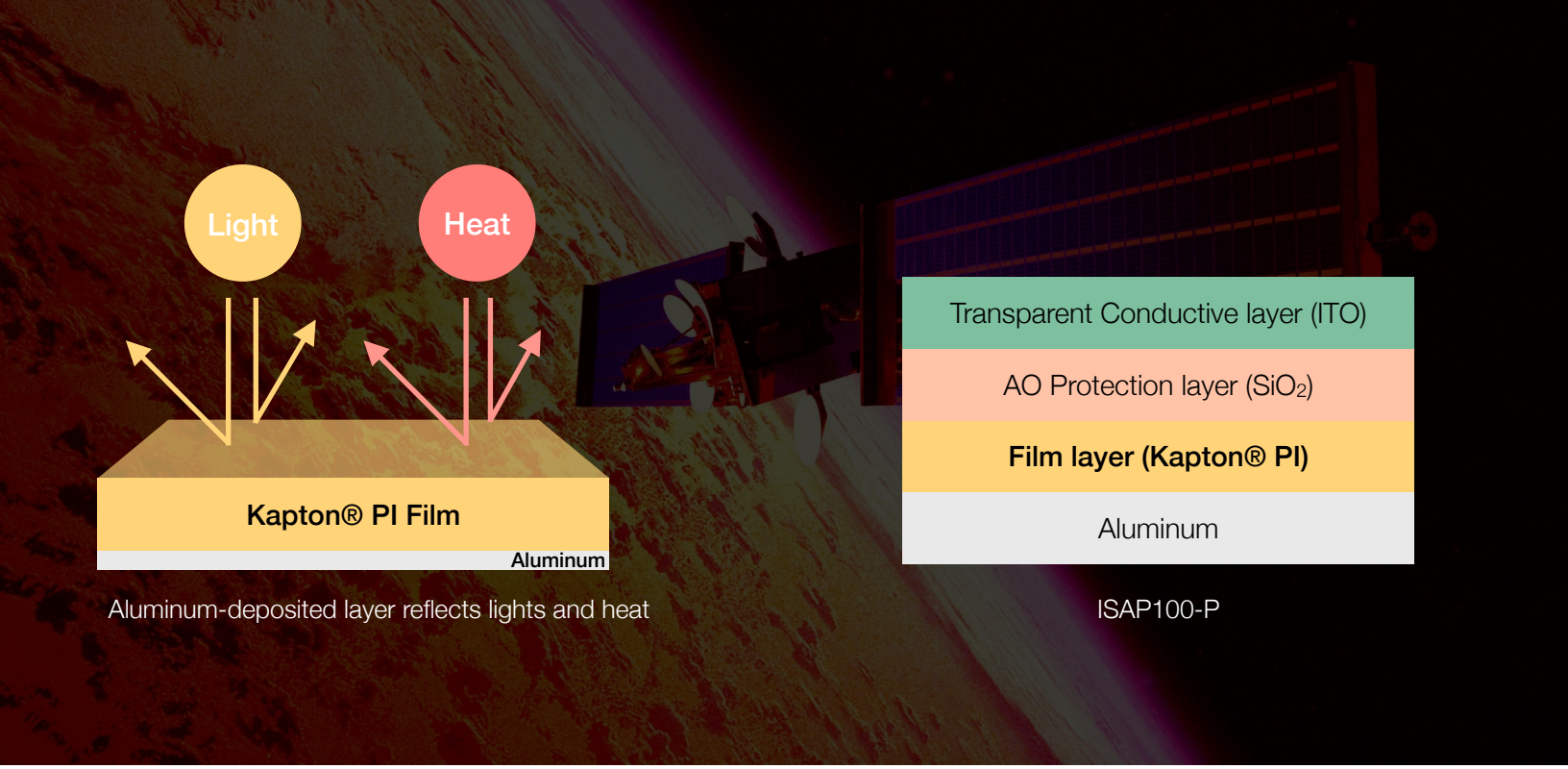

Aluminum-deposited layer reflects lights and heat

ISAP100-P

Aluminized Kapton® Polyimide

Multi-Layer Insulation (MLI) Materials

SQUID3 Space™ Aluminized Polyimide is a high-performance flexible film manufactured for spacecraft thermal control applications. Also known as Aluminized Kapton®, SQUID3's Aluminized Polyimide is commonly implemented in MLI blankets as internal and outermost layer. This product can be perforated to provide venting paths during launch and ascent. Manufactured using magnetron sputtering process, aluminum (Al), indium tin oxide (ITO), and silicon dioxide (SiO2) thin films are vacuum deposited onto Kapton® Polyimide substrates. Aluminization can be single-sided or double-sided. SQUID3 Space™ MLI Materials provide excellent thermophysical and optical properties. On-orbit degradation is well-characterized by NASA, ESA, and JAXA in flight literature.

Part Number Definition

I	S	A	P	1	0	0	-	P

Top Coat		
Code	Type	Thickness
I	ITO	25 nm
S	SiO_2	65 nm
IS	ITO/SiO_2	90 nm

Aluminization		
Code	Side	Thickness
AP	Single	150 nm
APA	Double	

Base Film	
P	Polyimide (Kapton®)

Film Thickness	
Code	Thickness
100	1-mil
200	2-mil

Perforation
0.03-0.06” (0.76-1.5 mm) diameter holes on 0.5” (12.7 mm) centers

SQUID3 SPACE

Aluminized Kapton® Polyimide Technical Datasheet

Physical Properties		
Thickness	mil (μm)	1 (25.4)
		2 (50.8)
Width	inches	20
		46
Continuous Temperature	°C	-185 to 260
Intermittent Temperature	°C	-185 to 150

Double-sided Aluminization (First Surface Mirror Properties)		
Part Number	**APA100**	**APA200**
Kapton® Thickness	1 mil	2 mil
Solar Absorptance	< 0.15	
Infrared Emittance	< 0.04	
Perforation	Available Upon Request	
Lead Time	6~8 weeks	

Single-sided Aluminization (Second Surface Mirror Properties)								
Part Number	**AP100**	**SAP100**	**IAP100**	**ISAP100**	**AP200**	**SAP200**	**IAP200**	**ISAP200**
Kapton® Thickness	1 mil				2 mil			
Solar Absorptance	< 0.4	< 0.42	< 0.45		< 0.45	< 0.47	< 0.5	
Infrared Emittance	> 0.65				> 0.71			
AO Resistant Coating 65 nm SiO_2		✓		✓		✓		✓
Conductive Coating 25 nm ITO (<1,000 Ω/sq)			✓	✓			✓	✓
Perforation	Available Upon Request							
Lead Time	6~8 weeks							

Materials Quality and Traceability

SQUID3 Space™ MLI materials are manufactured under a certified ISO9001:2015 Quality Management System facility. Complete material and manufacturing lot records, which include archive samples of finished product, are maintained by SQUID3. All products are shipped with a Certificate of Analysis.

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