Smart Films INTERNATIONAL

T91 SMART FILM

ADHESIVE WHITE

Adhesive Polymer Dispersed Liquid Crystal (PDLC) smart film switches between opaque and clear states instantly. When power is OFF, liquid crystals (LC) scatter light, making the film opaque. When power is ON, the crystals align, allowing light to pass through for full transparency.

ADVANTAGES

Fast Switching Time
Changes from opaque to clear in less than 10 ms

Low Power
Consumes less than 0.5 W/ft^2 (5 W/m^2) when ON

Ultra Clear
Transmits 90% of visible light when ON

UV Protection
Blocks 99% of UV rays, reducing interior fading

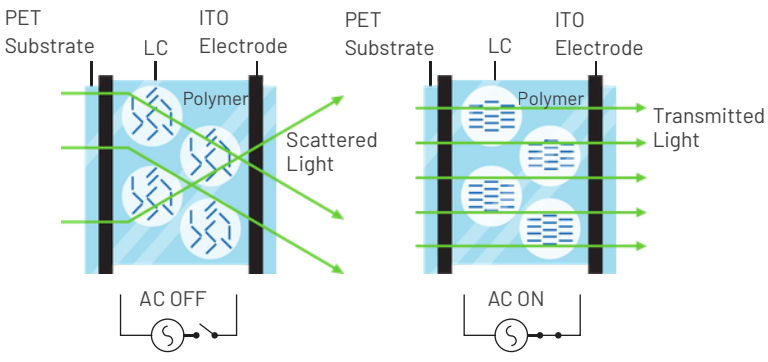
Long Lasting
Lasts over 15 years and endures 80 million switching cycles

Wellbeing
Allowing natural daylight

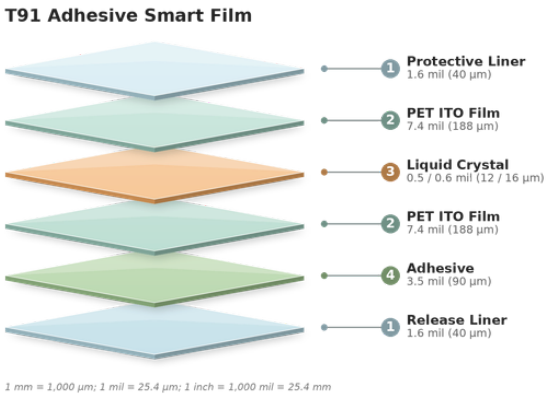
Low Haze
Maintains haze below 3%, preserving crisp views

Control
Certified controllers offer ON/OFF and dimming

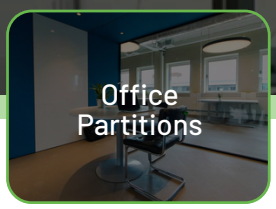
WORKING PRINCIPLE

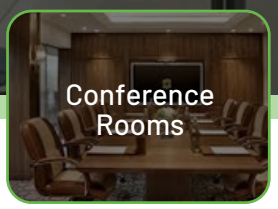


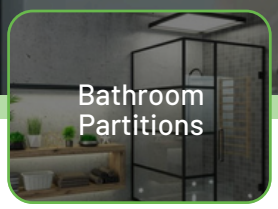
LAYERS STRUCTURE

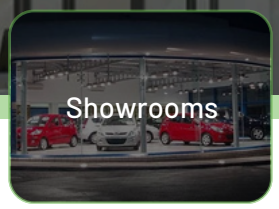


APPLICATIONS









T91 SMART FILM ADHESIVE WHITE SPECIFICATIONS

CATEGORY	PARAMETER	STATE	T91 - 0.6 mil (16 µm)	T91 - 0.5 mil (12 µm)
OPTICAL	Color	ON	Clear	
		OFF	Opaque White	
	Visible Light Transmittance	ON	90% ±2%	90% ±2%
		OFF	83% ±5%	85% ±5%
	Haze	ON	< 3%	< 3%
	Viewing Angle	ON	> 140°	> 140°
	UV Blocking Rate	ON	99%	99%
ELECTRICAL	Controller Input Supply		110 VAC / 220 VAC (50/60 Hz)	
	Operating Voltage	ON	48–65 VAC	
	Response Time	ON → OFF	< 200 ms	
	Response Time	OFF → ON	< 10 ms	
	Switching Cycles		> 80 million	
	Durability	ON	> 15 years	
	Smart Film Power Consumption	ON	< 0.5 W/ft² (< 5 W/m²)	
	Controller Power Consumption		0.2–0.4 W/ft² (2–4 W/m²)	
	Operating Modes		ON, OFF, Dimming, Segments	
MECHANICAL	Width		40.6" (1030 mm), 48.6" (1235 mm), 59" (1500 mm), 71" (1800 mm)	
	Roll Length		98 ft (30 m), 164 ft (50 m)	
	Thickness		20 mil (500 µm)	20 mil (500 µm)
	Formats		Cut to Size, Roll, Custom Roll Blinds, Shapes	
	Available Colors		White	
	Compliance		Company: ISO 9001, IATF 16949 Products: RoHS, CE, UL	
ENVIRONMENTAL	Storage Conditions		-4 °F to 140 °F (-20 °C to 60 °C) 20–60% humidity	
	Working Temperature		-4 °F to 149 °F (-20 °C to 65 °C)	