Smart Films INTERNATIONAL



T15 BLACK SMART FILM

ADHESIVE PDLC

Adhesive Polymer Dispersed Liquid Crystal (PDLC) smart film switches between opaque black and clear black 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 0.4 W/ft^2 (4 W/m^2) when ON

Light Transmission
Transmits 12% of visible light when ON

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

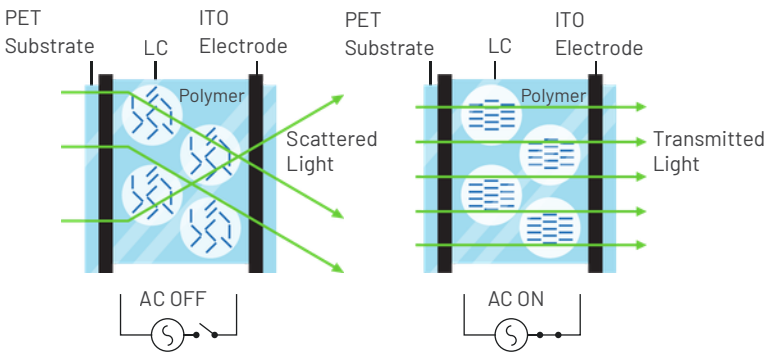
Long Lasting
Lasts over 15 years and endures 80 million switching cycles

Wellbeing
Allowing natural daylight

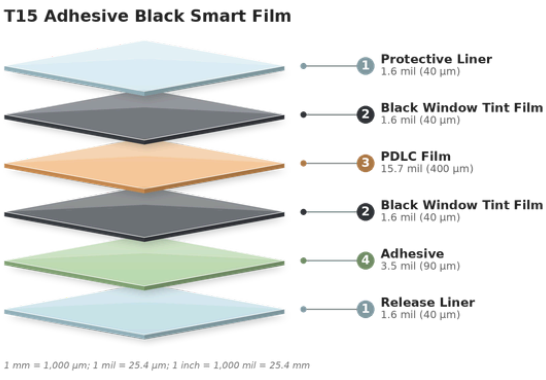
Low Haze
Maintains haze below 4%, preserving crisp views

Control
Certified controllers offer ON/OFF and dimming

WORKING PRINCIPLE



LAYERS STRUCTURE



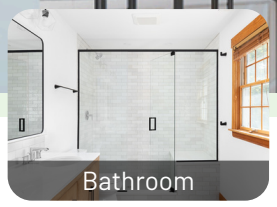
APPLICATIONS


Showrooms


Office Partitions


Conference Rooms


Healthcare


Bathroom

T15 SMART FILM ADHESIVE BLACK SPECIFICATIONS

CATEGORY	PARAMETER	STATE	T15
OPTICAL	Color	ON	Clear Black
		OFF	Opaque Black
	Visible Light Transmittance	ON	12% ±1%
		OFF	1% ±1%
	Haze	ON	< 4%
	Viewing Angle	ON	> 120°
	UV Blocking Rate	ON	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	< 0.4 W/ft² (< 4 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)
	Roll Length		98 ft (30 m), 164 ft (50 m)
	Thickness		22 mil (570 µm)
	Formats		Cut to Size, Roll, Custom Roll Blinds, Shapes
	Available Colors		Black
	Compliance		Company: ISO 9001, IATF 16949 Products: RoHS, CE, UL
ENVIRONMENTAL	Storage Conditions		–4 °F to 140 °F (–20 °C to 60 °C) < 50% humidity
	Working Temperature		–4 °F to 176 °F (–20 °C to 80 °C)