

# TACTILE PRESSURE INDICATING SENSOR FILM

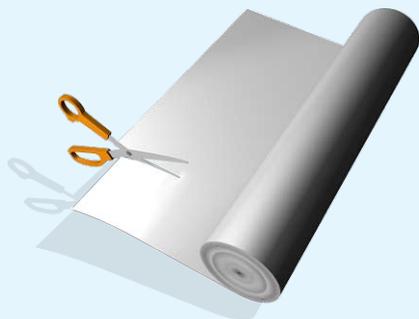
## Application: PCB Dry Film Lamination

Fujifilm Prescale® is a unique, affordable and easy to use tool that reveals the distribution and magnitude of pressure between your lamination rollers.

### 3 EASY STEPS

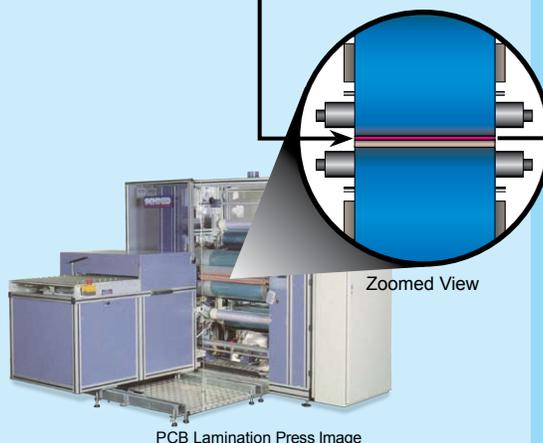
**1**

**PCB lamination pressure measurement film comes on a roll**



**2**

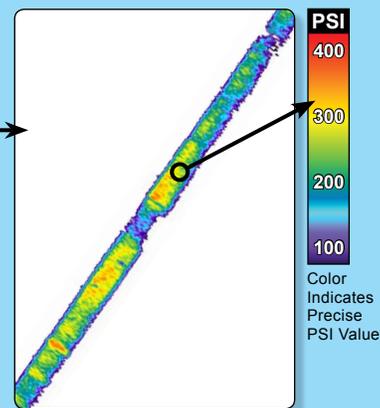
**Place the PCB lamination impression film between any two rolls that come in contact**



PCB Lamination Press Image

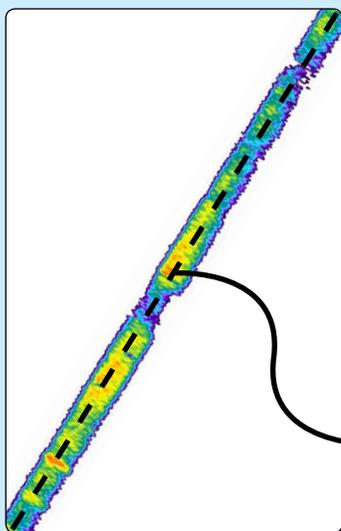
**3**

**Fujifilm Prescale® PCB lamination impression film captures a permanent image of pressure distribution and magnitude**



Colorization applied with the Topaq® optical analysis system

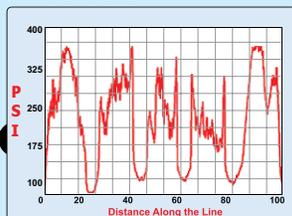
### FINAL ANALYSIS PRESSURE MAP OF YOUR NIP IMAGE



#### Pressure Statistics

Image:	SH_sample Pseudocolor Rep	
Pressure		
Average	28050.32	PSI
Std. Dev	5793.08	PSI
Area	0.14	sq.in
Force	3944.50	lbf
Minimum	20319.62	PSI
Maximum	43200.00	PSI
Format :	#.##	

#### Pressure Profile



Fujifilm Prescale® is used to measure nip roller pressure in the lamination process during the manufacture of PCBs. When performing the process of dry film lamination upon a composite structure or photopolymer and polyester film to a metal-clad dielectric there often exists the possibility of the photoresist wrinkling or bubbling. By carefully monitoring both pressure magnitude and distribution within your lamination rollers, with pressure indicating films, wrinkling induced defects can be significantly reduced. Over tightened or loose or worn roll chucks can cause roller misalignments and imperfect nips - both of which are the primary contributors to intermittent wrinkling.

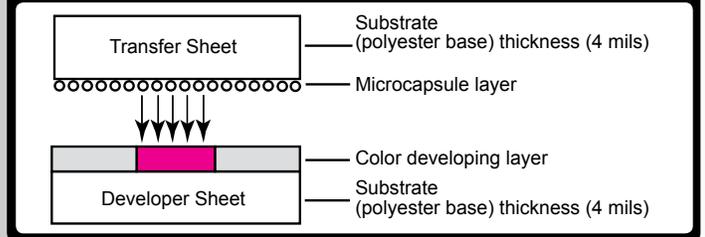
When placed between two nip rollers, the film instantaneously and permanently changes color in direct proportion to the actual pressure applied. Philosophically similar to the indication given by Litmus paper. Precise pressure magnitude is then easily determined by comparing the resultant color intensity to a standardized color correlation chart. No training or instrumentation is required.

# Tactile Pressure Indicating Sensor Film

## Accurate, Cost-effective, Easy to Employ Pressure Mapping Technology

Have you ever needed to evaluate pressure or force between two touching or mating surfaces? Previously, your only alternatives were strain gauges and load cells, that are both time consuming and difficult to interface. Now with the advent of our disposable one-time use pressure film, Fujifilm Prescale®, evaluating surface contact pressure distribution and magnitude is accurate, quick and highly economical.

### CROSS SECTIONAL VIEW OF FUJIFILM PRESCALE® FILM



## 7 Sensitivities To Accommodate A Wide Range Of Pressures

FILM TYPE	PRESSURE RANGE	
EXTREME LOW	7.2 - 28 PSI	(0.5 - 2 kg/cm <sup>2</sup> )
ULTRA LOW	28 - 85 PSI	(2 - 6 kg/cm <sup>2</sup> )
SUPER LOW	70 - 350 PSI	(5 - 25 kg/cm <sup>2</sup> )
LOW	350 - 1,400 PSI	(25 - 100 kg/cm <sup>2</sup> )
MEDIUM	1,400 - 7,100 PSI	(100 - 500 kg/cm <sup>2</sup> )
HIGH	7,100 - 18,500 PSI	(500 - 1,300 kg/cm <sup>2</sup> )
SUPER HIGH	18,500 - 43,200 PSI	(1,300 - 3,000 kg/cm <sup>2</sup> )

### INDUSTRY APPLICATIONS

<b>AEROSPACE</b>	Composite Layups, Material Testing, Bolted Joints
<b>AUTOMOTIVE</b>	Gasketing, Impacts, Fuel Cell Stacking, Clutches, Brakes, Tire Tread
<b>ELECTRONICS</b>	Heat Sinks, LCD Bonding, PCB Lamination, Wafer Bonding/Polishing
<b>MEDICAL</b>	Clamping, Gait Analysis, Ergonomics, Orthotics and Prosthetics

<b>PACKAGING</b>	Heat Sealing, Converting
<b>PLASTICS</b>	Lamination Press, Die Extrusion Injection Molding, Stamping
<b>PRINTING/ PAPERMAKING</b>	Nip Impressions

### PHYSICAL SPECIFICATIONS

<b>OPERATING TEMPERATURE</b>	41°F to 95°F (5°C - 35°C) (much higher for brief exposure)	<b>SUBSTRATE</b>	Polyethylene Terephthalate (PET)
<b>HUMIDITY RANGE</b>	20% to 90% RH	<b>ACCURACY</b>	±10% visual, ±2% utilizing optional optical measurement systems
<b>GAUGE</b>	4, 8, or 20 mils	<b>SHELF LIFE</b>	2 years
<b>SPATIAL RESOLUTION</b>	5 to 15 microns		

MSDS Available Upon Request.



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