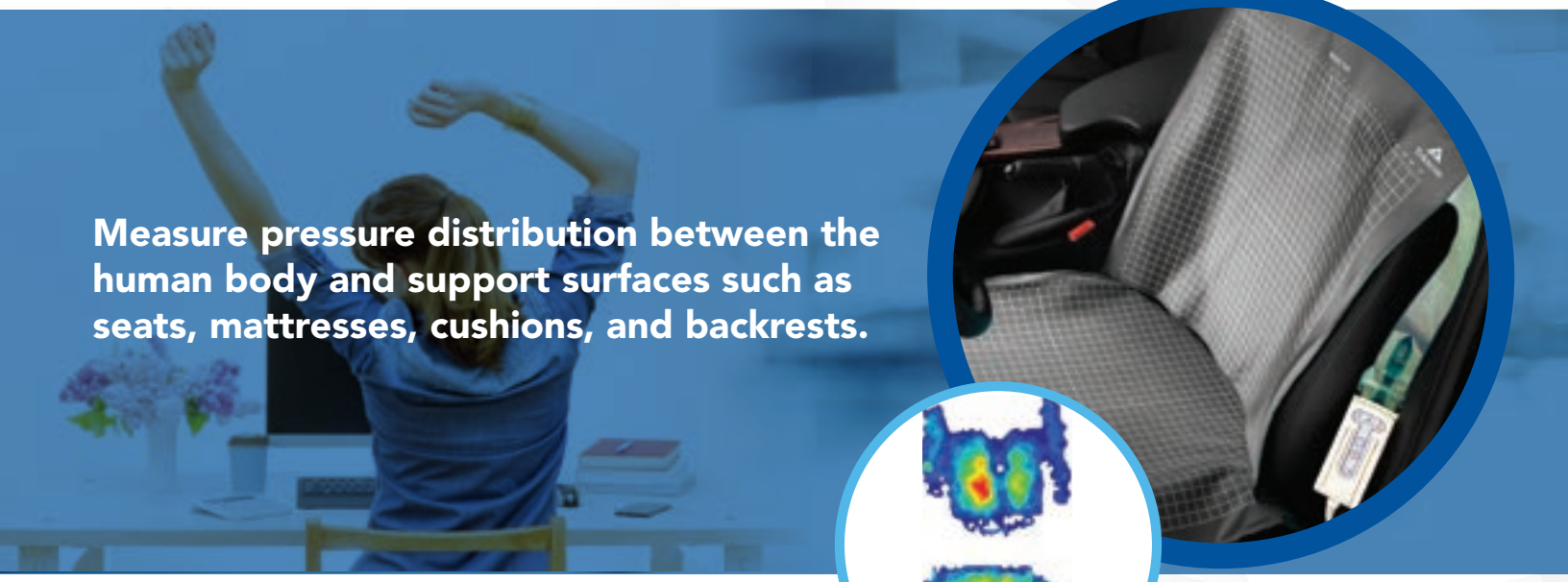
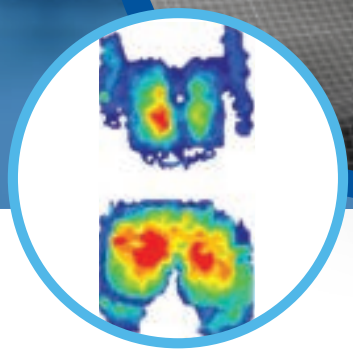
BPMS™ System

Body Pressure Measurement System



Measure pressure distribution between the human body and support surfaces such as seats, mattresses, cushions, and backrests.



KEY BENEFITS

- Design optimization
- Verify comfort
- Ergonomics
- Understand body shifts in a static chair or an application with a moving vehicle – ingress/outgress
- Analyze comfort of different materials for seat design
- Quality control
- Competitive benchmarking
- Marketing tool to demonstrate the comfort of your product
- Fully conforming sensor available (CONFORMat™) avoids hammocking or measurement of artifact

APPLICATIONS

- Comfort testing and analysis
- Support surface design
  - Shape/contours of seat or backrest
  - Dimensions of seat
  - Firmness and padding
- Material testing
- Durability and longevity studies
- Ingress/egress studies
- Seating and positioning research

Tekscan™

SYSTEM SPECIFICATIONS

Sensor Technology	Resistive
Accuracy	± 10%
Pressure Range	34 kPa (5 psi)
Thickness	0.20 mm (0.008 in.)
Ambient Temperature	-40° to 60°C (-40° to 140°F)
Ambient Humidity	5% to 90% RH
Connection Type	USB 2.0
Cable Length	4.57 m (15 ft) standard (Up to 30.48 m (100 ft) available)

SEATING

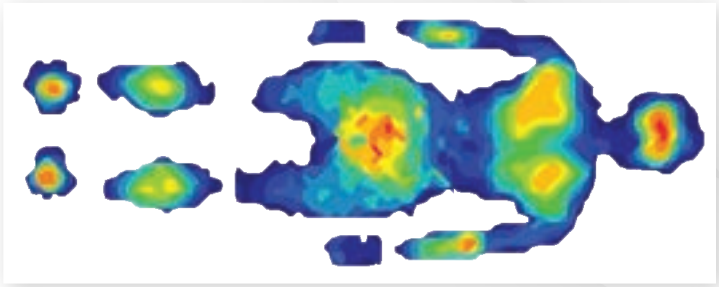
Seating Configurations

System Model	Sensor Model (Qty)	Sensing Area	No. of Sensing Elements	Sensel Density sensels per square centimeter (inch)	Pressure Range
BRE5315-1	5315 (1)	488.7 mm x 426.7 mm (19.20 in. x 16.80 in.)	2,016	1 (6.3)	34 kPa (5 psi)
BRE5315-2	5315 (2)	488.7 mm x 426.7 mm (19.20 in. x 16.80 in.) Two sensor configuration	4,032	1 (6.3)	
CER1	5330 (1)	471.4 mm x 471.4 mm (18.56 in. x 18.56 in.)	1,024	0.5 (3.0)	
CER5331-1	5331 (1)	707.1 mm x 589.3 mm (27.84 in. x 23.20 in.)	1,920	0.5 (3.0)	
CER2	5330 (2)	471.4 mm x 471.4 mm (18.56 in. x 18.56 in.) Two sensor configuration	2,048	0.5 (3.0)	
CER5331-2	5331 (2)	707.1 mm x 589.3 mm (27.84 in. x 23.20 in.) Two sensor configuration	3,840	0.5 (3.0)	
CER5330-5331-2	5330 (1) 5331 (1)	471.4 mm x 471.4 mm (18.56 in. x 18.56 in.) 707.1 mm x 589.3 mm (27.84 in. x 23.20 in.)	2,944	0.5 (3.0)	
BRE5350-1	5350 (1)	416.6 mm x 386.1 mm (16.40 in. x 15.20 in.).	1,558	1 (6.3)	
BRE5350-2	5350 (2)	416.6 mm x 386.1 mm (16.40 in. x 15.20 in.) Two sensor configuration	3,116	1 (6.3)	

BPMS incorporates a "modular" sensor concept. This means you can acquire a system with one sensor mat or up to eight. As your needs evolve, you have the capability of adding more sensors, thus protecting your initial investment.

MATTRESS

Subject Shown Lying on a 4-sensor Mat Configuration (Model 5315)

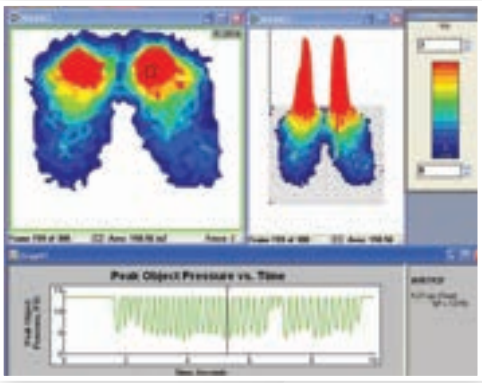


Mattress Configurations

System Model	Sensor Model (Qty)	Sensing Area	No. of Sensing Elements	Sensel Density sensels per square centimeter (inch)	Pressure Range
BRE5315-4	5315 (4)	1950.7 mm x 426.7 mm (76.80 in. x 16.80 in.)	8,064	1 (6.3)	34 kPa (5 psi)
BRE5315-8	5315 (8)	1,950.7 mm x 853.4 mm (76.80 in. x 33.60 in.)	16,128	1 (6.3)	
BRE5400-1	5400N (1	578.0 mm x 884.0 mm (22.76 in. x 34.80 in.)	1,768	0.3 (2.2)	
BRE5400-2	5400N(2)	578.0 mm x 1,768.0 mm (22.76 in. x 69.61 in.)	3,536	0.3 (2.2)	
HMER3	5400N (3)	1,734.0 mm x 884.0 mm (68.27 in. x 34.80 in.)	5,304	0.3 (2.2)	
HMER4	5400N (4)	2,312.0 mm x 884.0 mm (91.02 in. x 34.80 in.)	7,072	0.3 (2.2)	

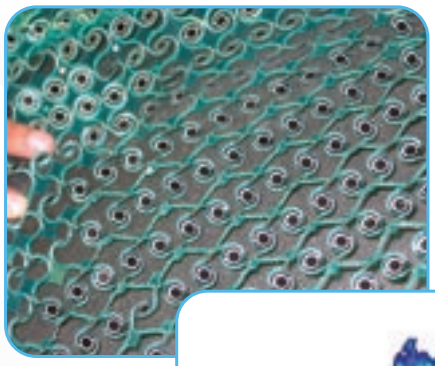
KEY SOFTWARE FEATURES

- Access real time or recorded data in 2D & 3D
- Key metrics; total force, peak pressures, and center of force
- Multiple graph options to plot data
- View and compare multiple test results simultaneously
- Ability to attach a digital image to each frame of a Tekscan movie
- Export data to ASCII or AVI files



Car Seat Test: Pressures Caused During Driving When Vehicle Bounces

SENSORS



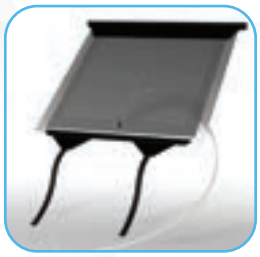
BPMS

- Enables precise measurement of the location of pressure, magnitude of peak pressures, and overall pressure distribution patterns, without altering the characteristics of the support surface.
- Spatial resolutions as fine as one sensing element per square centimeter and contain as many as 2,016 individual sensing elements.
- Multiple mats can be used to cover a surface and provide up to 16,128 sensing elements.

CONFORMat

- Utilizes new technology which conforms to complex, contoured, and deformable support surfaces like seat cushions.
- The sensor will not capture pressure artifacts, only the loaded area.
- The sensor mat design eliminates sensor hammocking while it conforms to the surface, resulting in the most true and accurate pressure data.

ADD-ONS



Video Synch™ – Video sequences can be recorded from a camera and synchronized with your pressure data and played back in the Tekscan software, enhancing the utility and clarity of collected pressure data.

Equilibration Devices – Pneumatic or vacuum devices that apply a uniform pressure to the active area of a sensor to normalize the output of each sensing element. The system electronically compensates for any variation in individual sensing elements, creating a unique calibration curve for each sensing element.

EQUILIBRATION TABLE

Compatible Equilibrators

Sensor Model	VB5A Equilibrator 572 mm x 584 mm (22.5 in x 23 in)	VB5B Equilibrator 965 mm x 692 mm (38 in x 27.25 in)
5315	S	X
5330	S	X
5331		S
5350	S	X
5400N		S

KEY: S – Standard Equilibrator for this sensor
X – Other Equilibrators that are compatible with this sensor