Side-by-Side Pressure Map Seat Cushion Comparisons

Pressure mapping provides a visual representation of the degree of pressure relief achieved by a particular cushion. However, pressure mapping does not prove that one cushion is “better” than another. While pressure relief is very important in selecting a cushion, other characteristics that must be considered are positioning, vibration reduction, weight, and maintenance requirements.

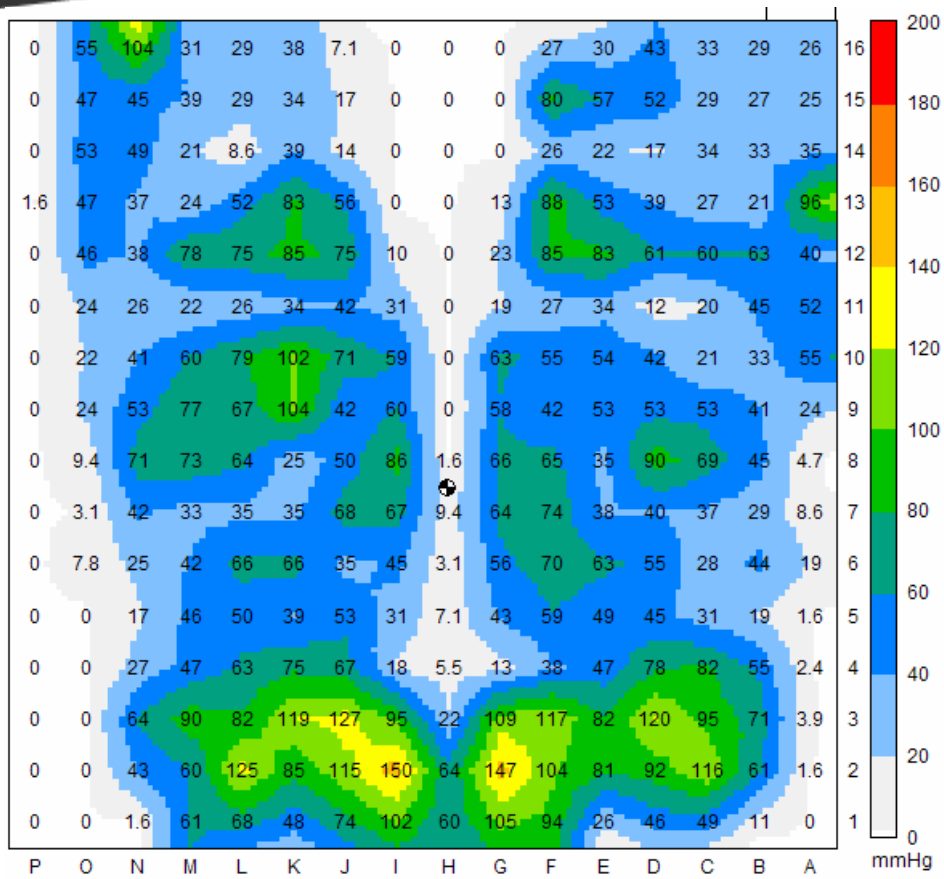
When looking at *VARILITE* pressure maps, keep the following in mind

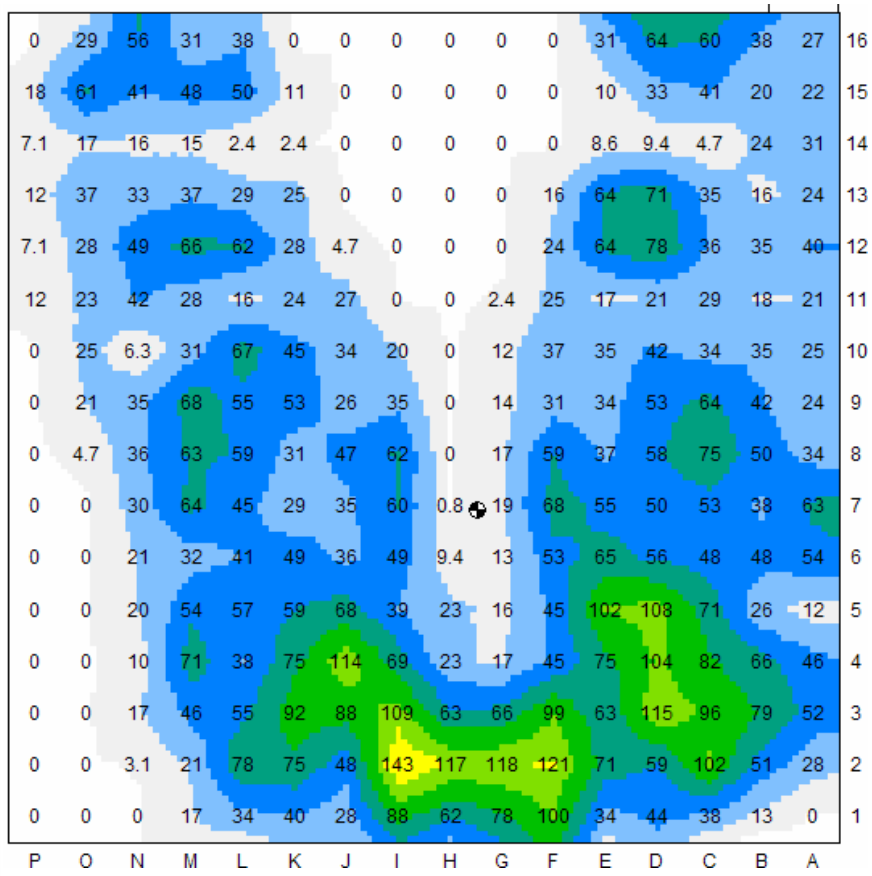
- All pressure maps provided in these documents were done on an able bodied subject with no pelvic asymmetries, no muscle atrophy, no leg length discrepancy, and no limited hip flexion. These maps illustrate which cushion best relieves pressure on our able-bodied subject.
- Unless there is an enormous disparity, it is difficult to say that any differences in numerical values are statistically significant. It would take an extraordinarily large sample of subjects and cushions in order to determine statistically that one cushion is better than another.
- These maps show that overall, *VARILITE* cushions perform very well.
- Included are pressure maps of standard foam* vs. cycle tested foam to show how quickly foam-only cushions lose their pressure relieving properties.
- Maximum or average pressures are not reliable indicators of success. Beware of localized high pressure areas. At times a localized high pressure area can distort average pressure results.

When comparing pressure maps, consider other parameters such as number of sensors included, variation coefficient, and center of pressure. A higher number of sensors included means the client immersed further into the cushion, or had more area of contact. A lower variation coefficient means a smoother surface area of contact, with fewer peaks and valleys. A center of pressure further forward could indicate that pressure was moved forward onto the thighs and off of the ITs.

**The standard foam used in these pressure maps is open cell polyurethane foam, 24 IFD (Indentation Force Deflection). This is the same foam that ISO will be using as standard foam in future documentation. Cycle testing was performed by pushing 250 pounds of force into the foam 10,000 times. This is equivalent to a client pressure relieving/transferring 18 times a day for 2 years*

Evolution PSV Wave™ CPW vs. Evolution PSV™

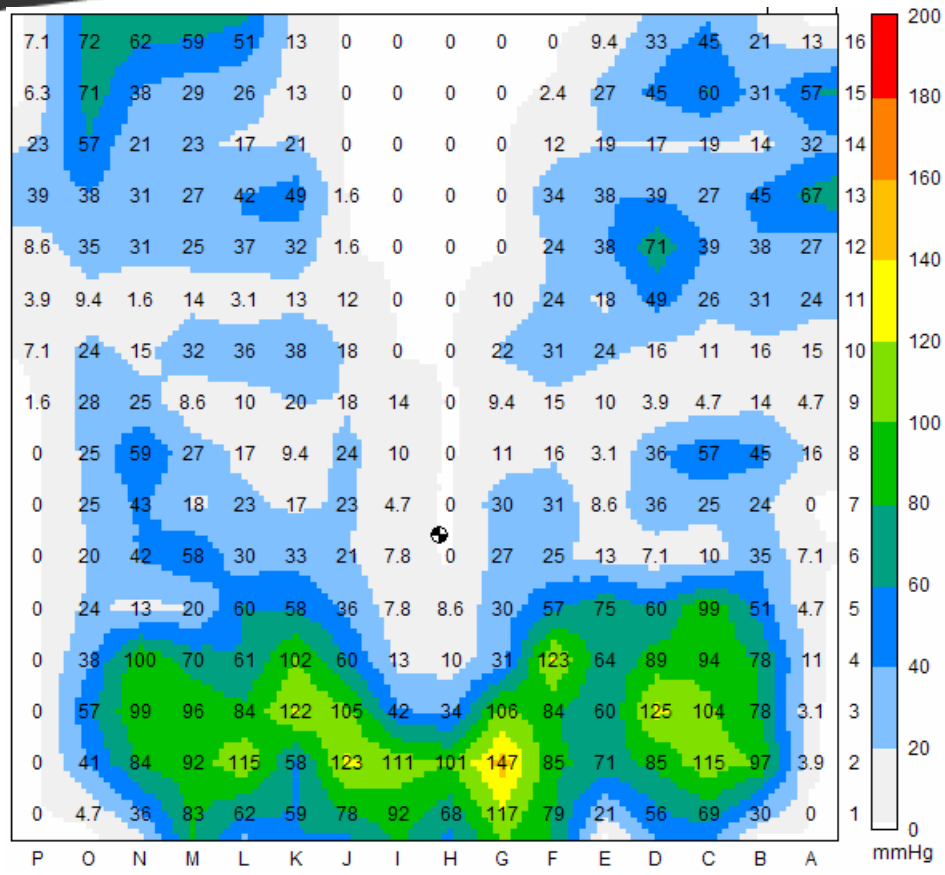


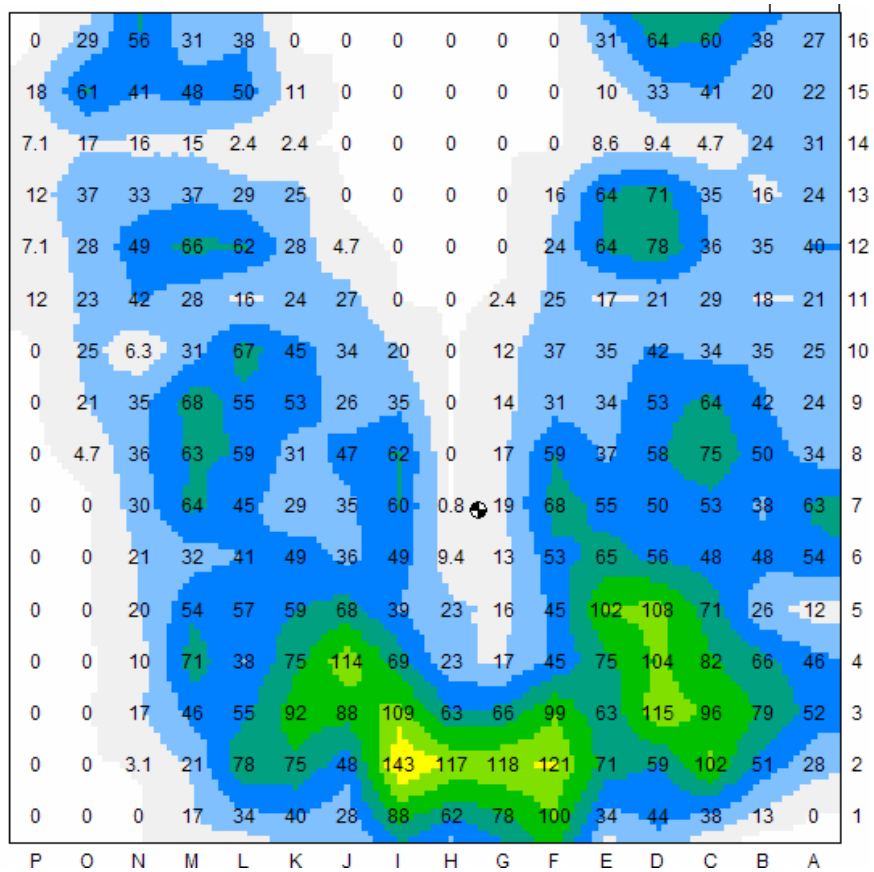


Evolution PSV Wave CPW	
Sensors Included	220
Average pressure	49.7
Standard Deviation	29.8
Variation coefficient	60.0
Maximum pressure	150
Center or pressure	8.0,7.5

Evolution PSV	
Sensors Included	208
Average pressure	43.7
Standard Deviation	27.3
Variation coefficient	62.3
Maximum pressure	143
Center of pressure	7.5,6.9

Evolution PSV Wave™ LPB vs. Evolution PSV™

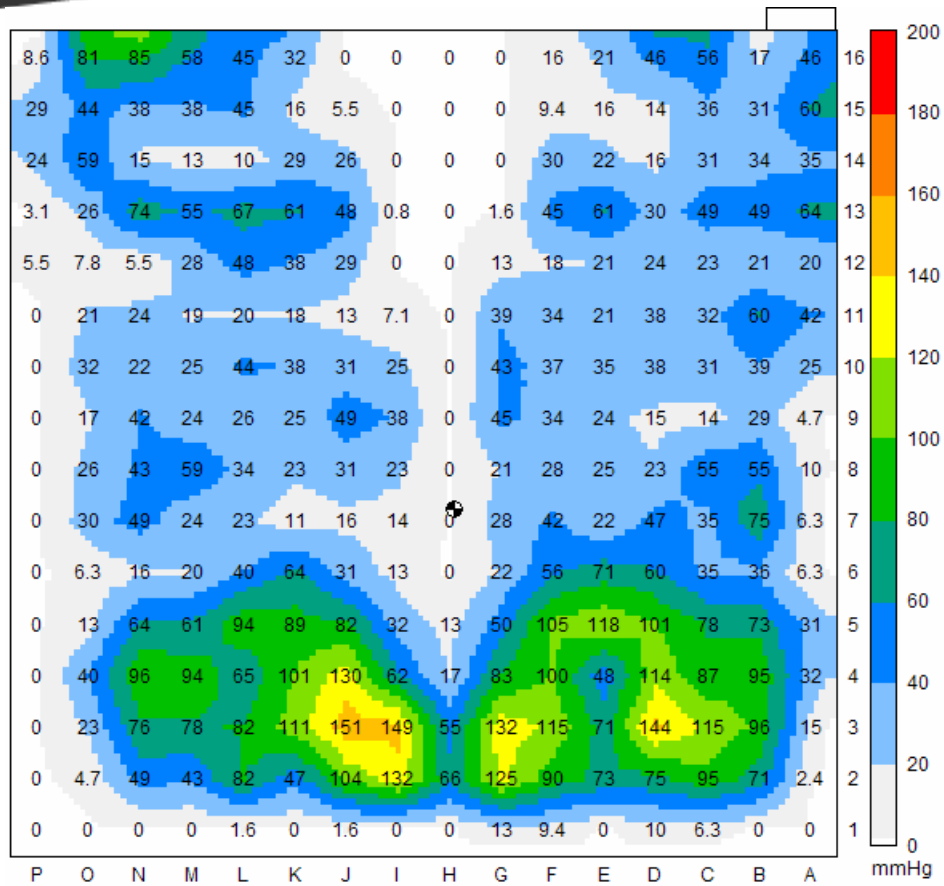


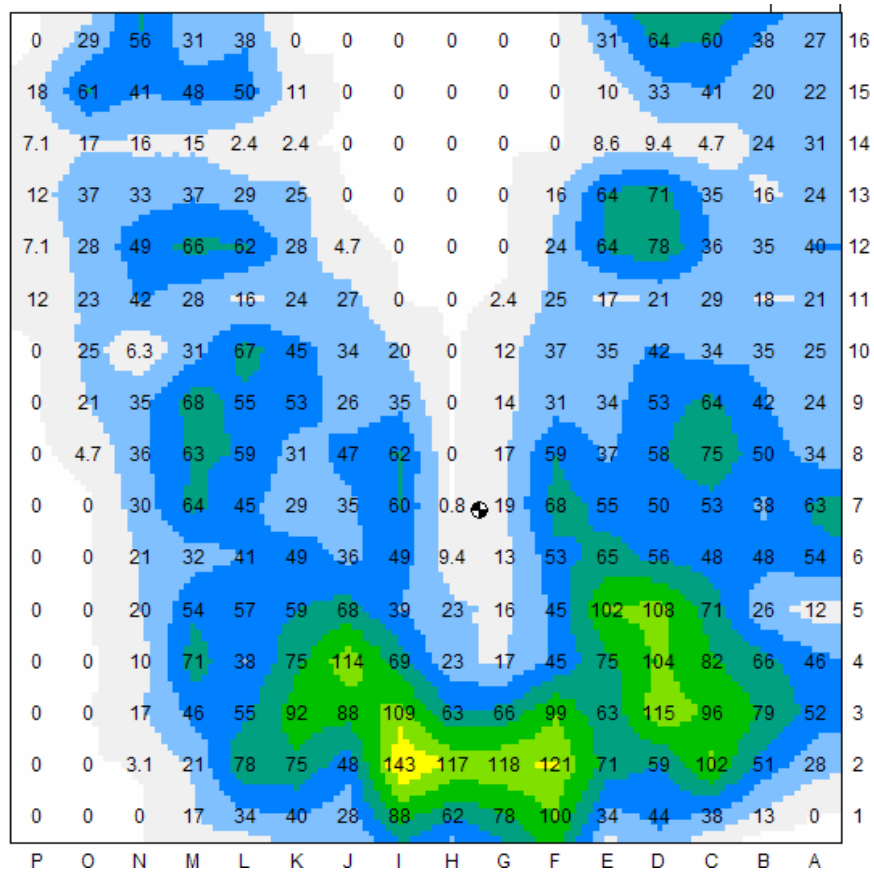


Evolution PSV Wave LPB	
Sensors included	219
Average pressure	39.3
Standard deviation	31.5
Variation coefficient	80.2
Maximum pressure	147
Center of pressure	8.2,6.4

Evolution PSV	
Sensors Included	208
Average pressure	43.7
Standard Deviation	27.3
Variation coefficient	62.3
Maximum pressure	143
Center of pressure	7.5,6.9

Evolution PSV Wave™ CPB vs. Evolution PSV™





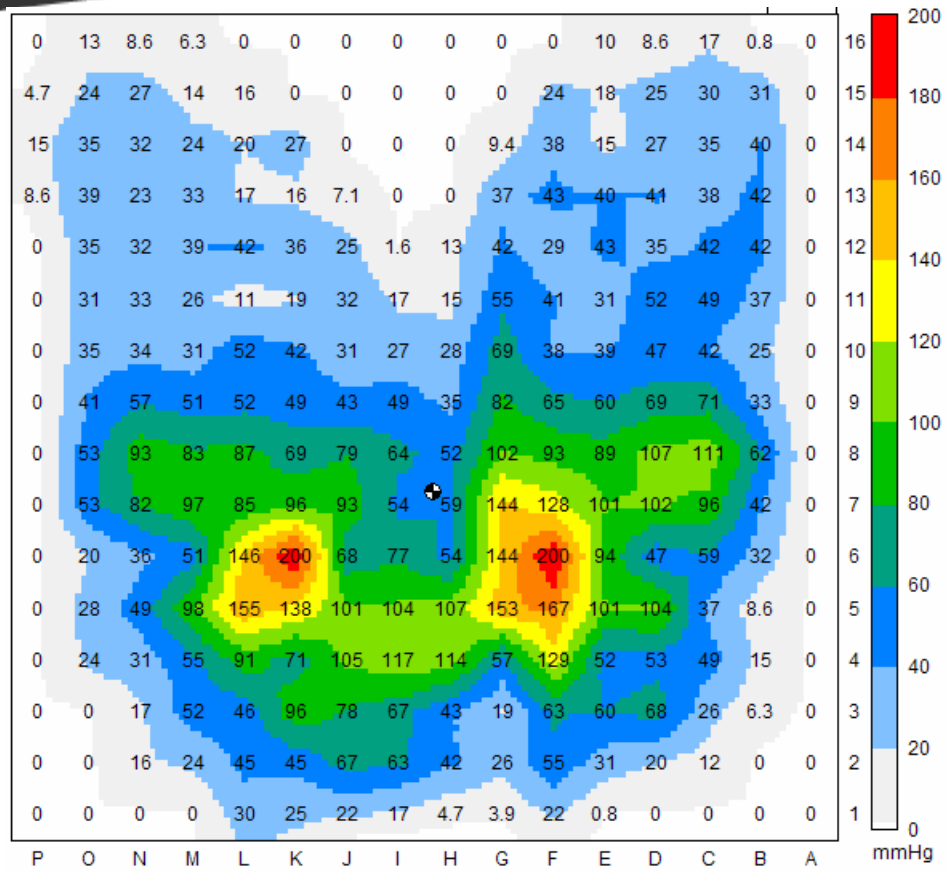
Evolution PSV Wave CPB

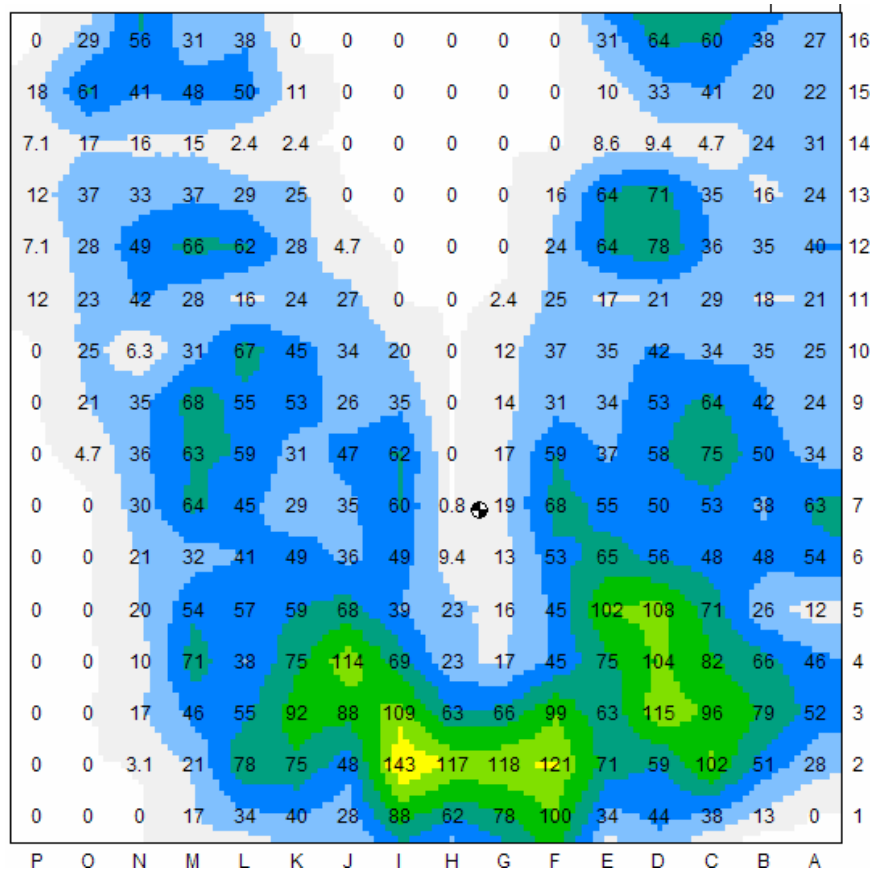
Sensors included	**217**
Average pressure	**43.6**
Standard Deviation	**32.3**
Variation coefficient	**74.2**
Maximum pressure	**151**
Center of pressure	**7.9,7.2**

Evolution PSV

Sensors Included	**208**
Average pressure	**43.7**
Standard Deviation	**27.3**
Variation coefficient	**62.3**
Maximum pressure	**143**
Center of pressure	**7.5,6.9**

Cycle Tested Standard Foam vs. Evolution PSV™

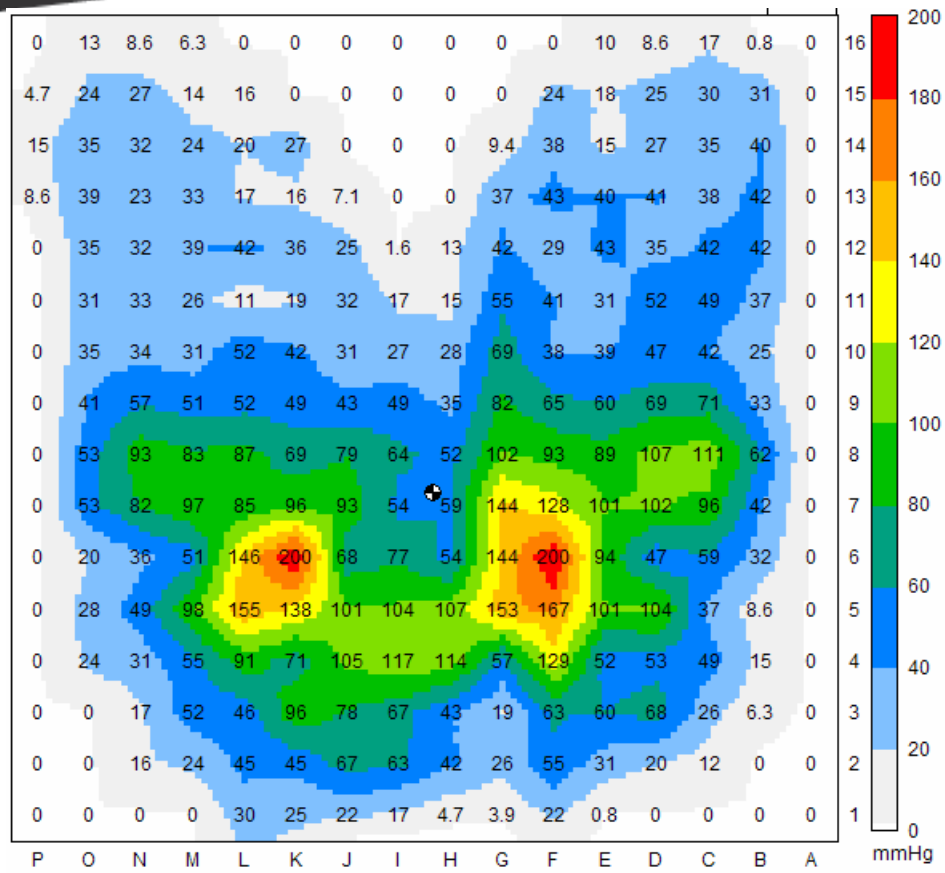


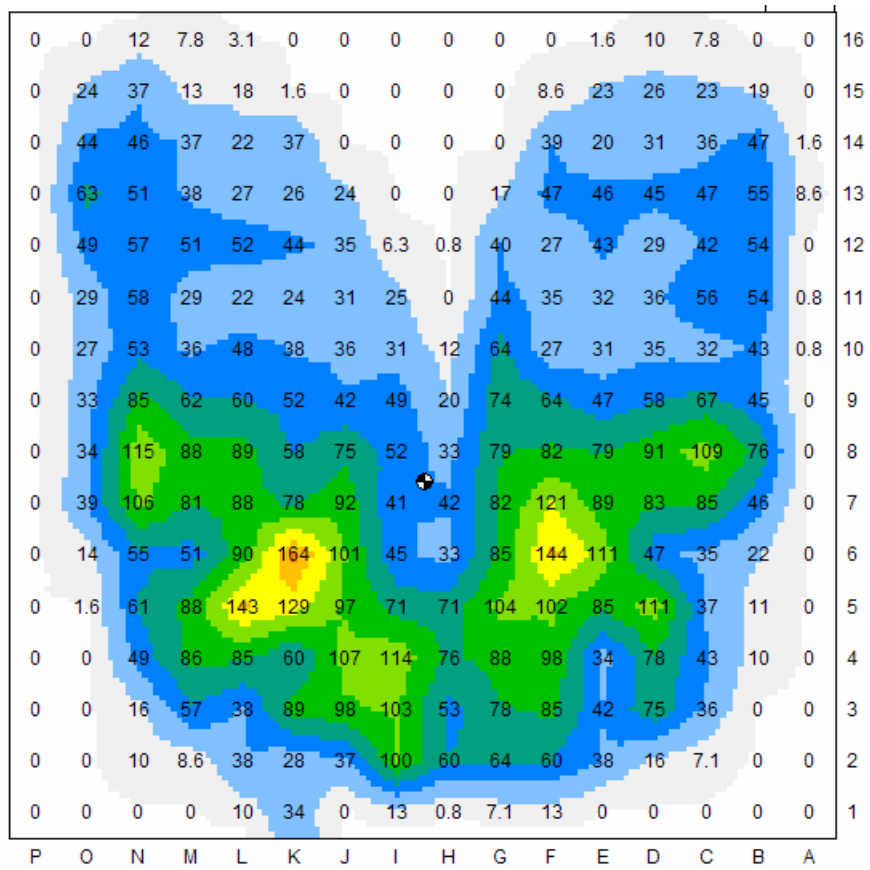


Standard Foam	
Sensors included	201
Average pressure	51.3
Standard deviation	37.4
Variation coefficient	73.0
Maximum pressure	200
Center of pressure	8.4,7.3

Evolution PSV	
Sensors Included	208
Average pressure	43.7
Standard Deviation	27.3
Variation coefficient	62.3
Maximum pressure	143
Center of pressure	7.5,6.9

Cycle Tested Standard Foam vs. New Standard Foam

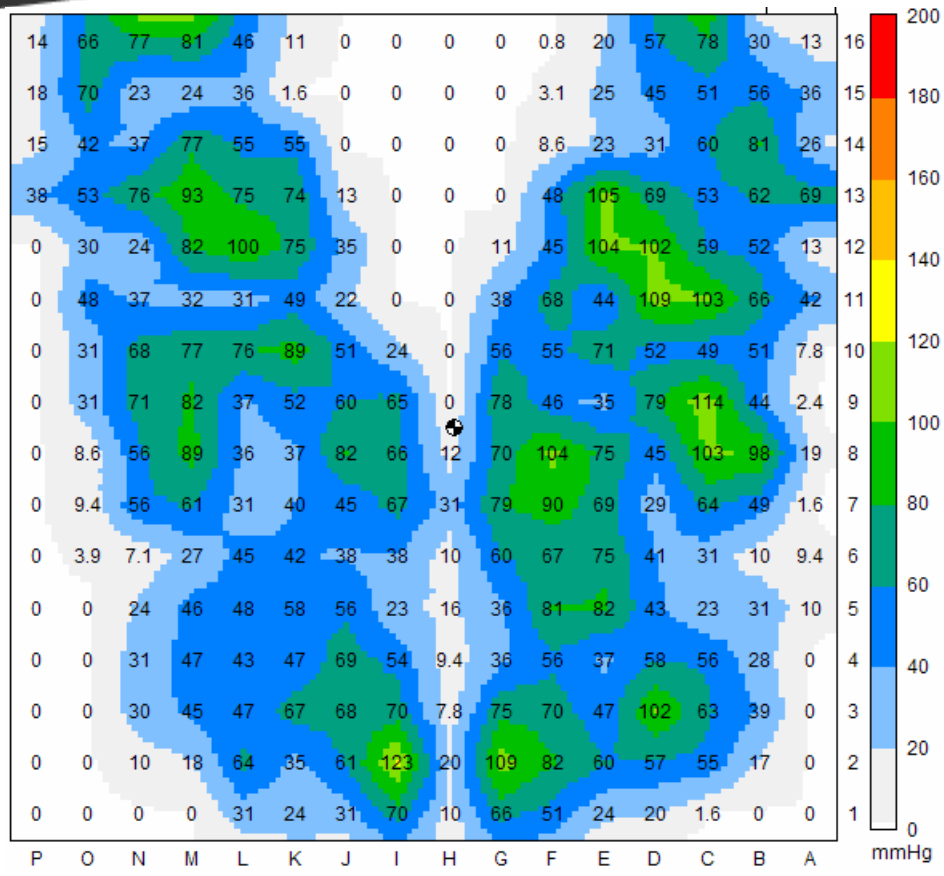


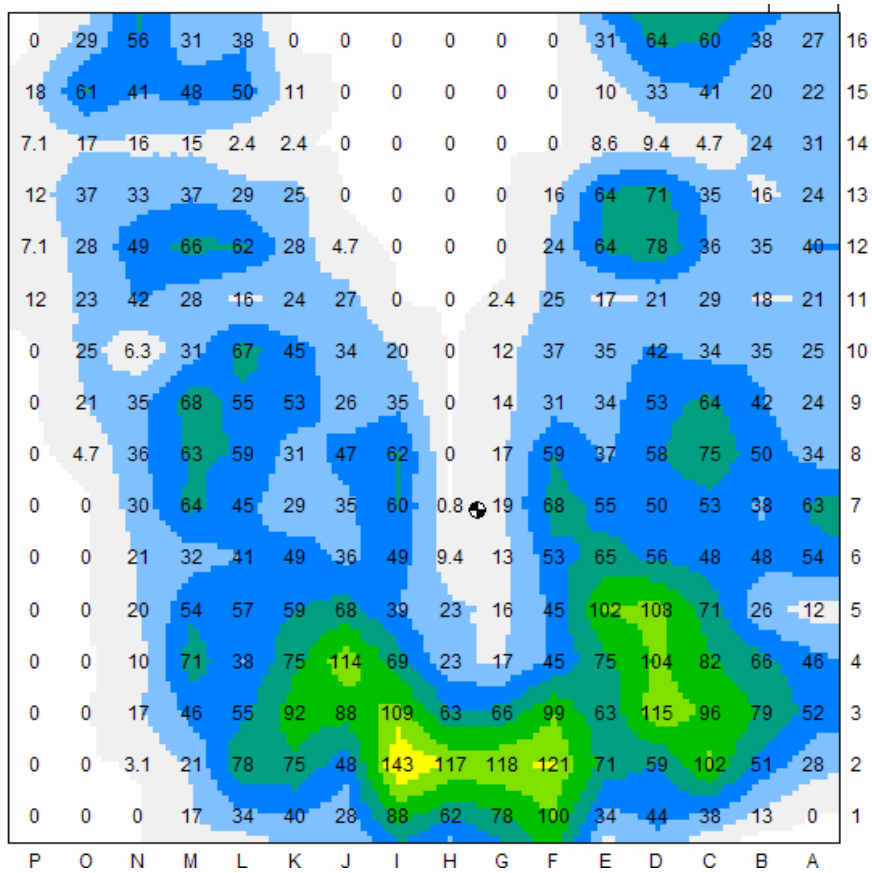


Cycle Tested Standard Foam	
Sensors included	201
Average pressure	51.3
Standard deviation	37.4
Variation coefficient	73.0
Maximum pressure	200
Center of pressure	8.4,7.3

New Standard Foam	
Count	196
Average	50.2
Std Dev.	32.3
Variation	64.4
Maximum	164
Center	8.5,7.4

Meridian™ vs. Evolution PSV™

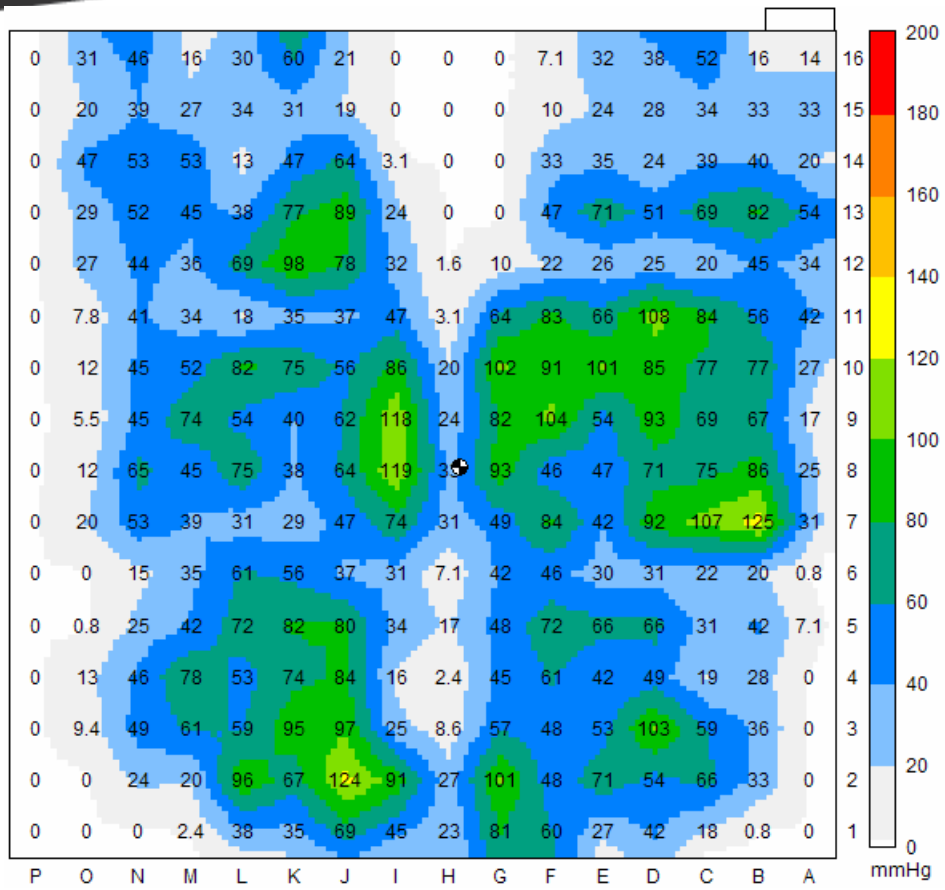


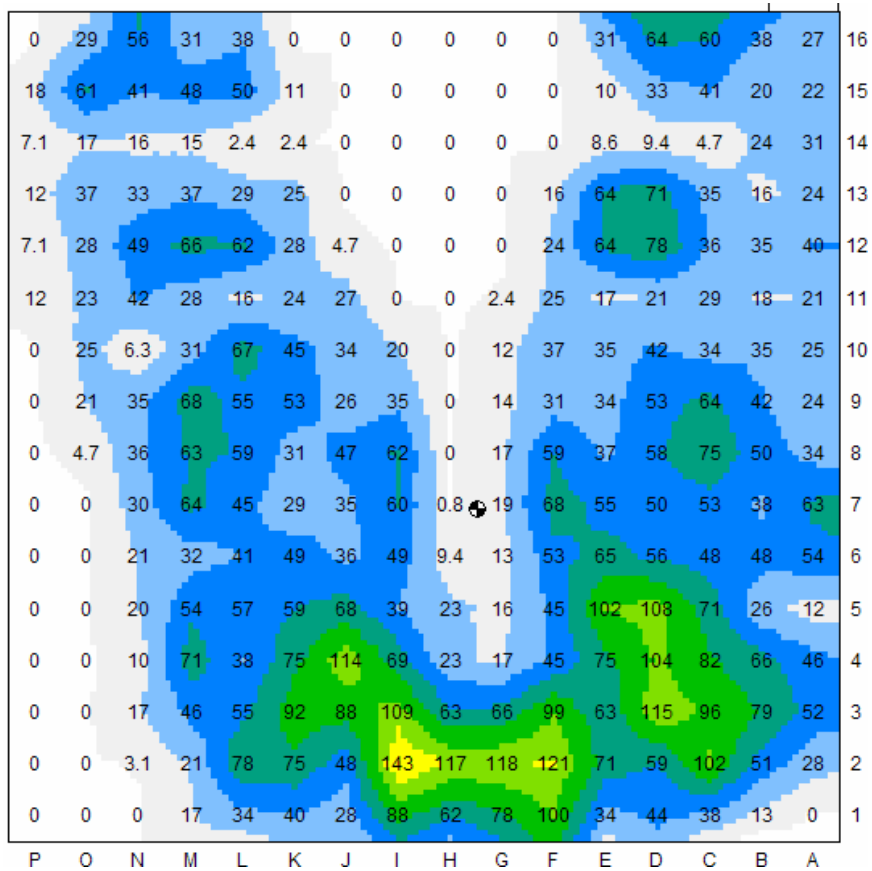


Meridian	
Sensors included	211
Average pressure	48.5
Standard deviation	26.8
Variation coefficient	55.2
Maximum pressure	123
Center of pressure	7.9,8.5

Evolution PSV	
Sensors Included	208
Average pressure	43.7
Standard Deviation	27.3
Variation coefficient	62.3
Maximum pressure	143
Center of pressure	7.5,6.9

Meridian Wave™ CPW vs. Evolution PSV™





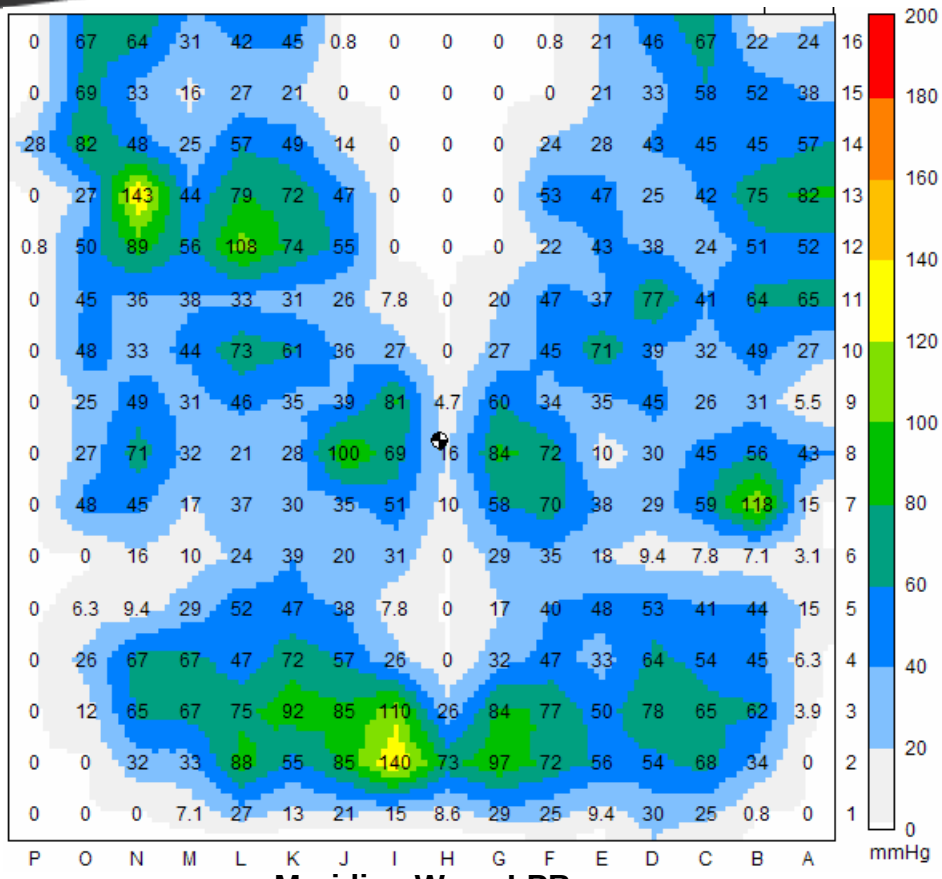
Meridian Wave CPW

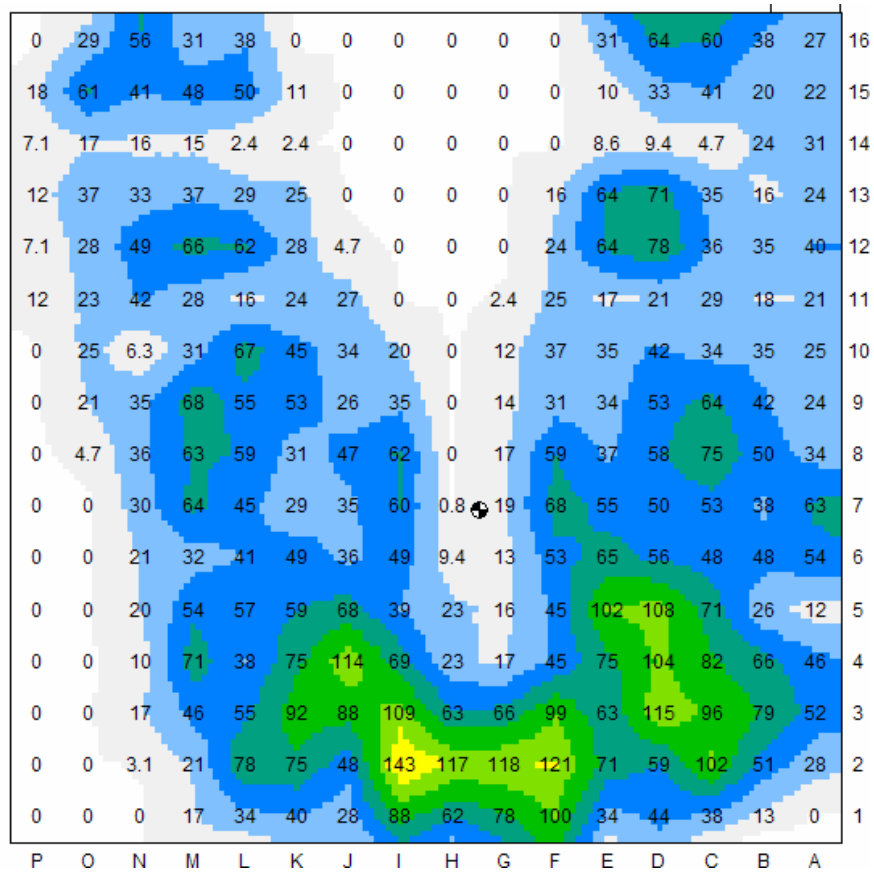
Sensors included	**222**
Average pressure	**47.7**
Standard deviation	**27.7**
Variation coefficient	**58.1**
Maximum pressure	**125**
Center of pressure	**7.8,8.1**

Evolution PSV

Sensors Included	**208**
Average pressure	**43.7**
Standard Deviation	**27.3**
Variation coefficient	**62.3**
Maximum pressure	**143**
Center of pressure	**7.5,6.9**

Meridian Wave™ LPB vs. Evolution PSV™





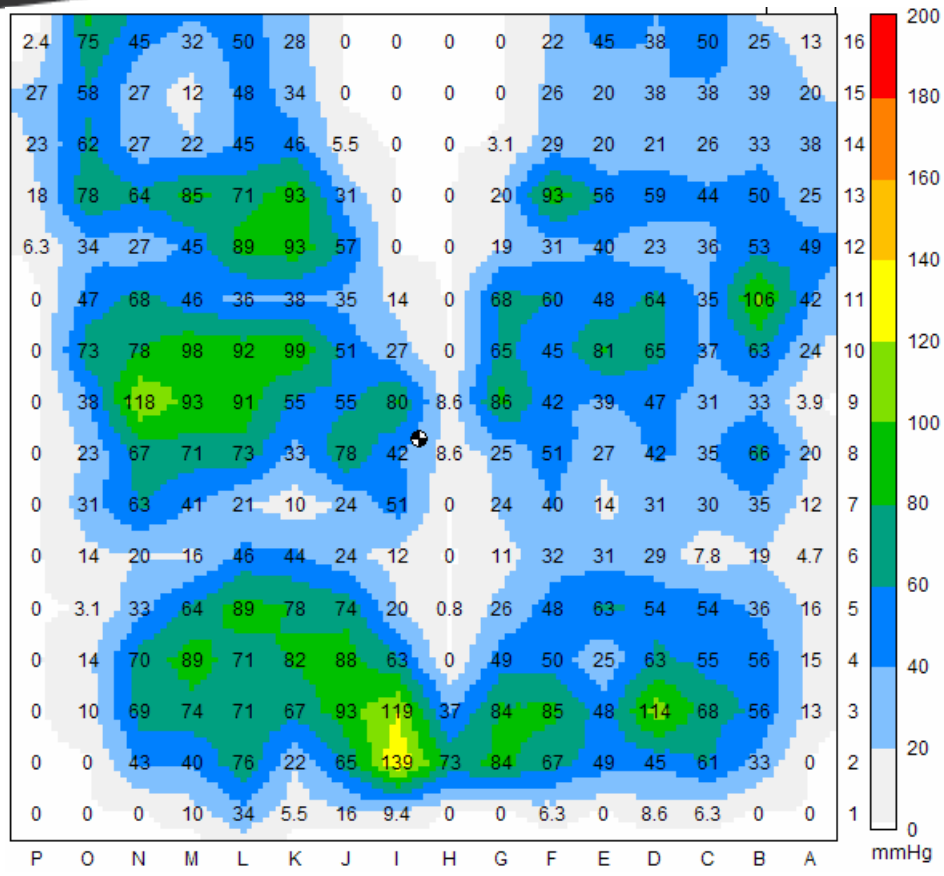
Meridian Wave LPB

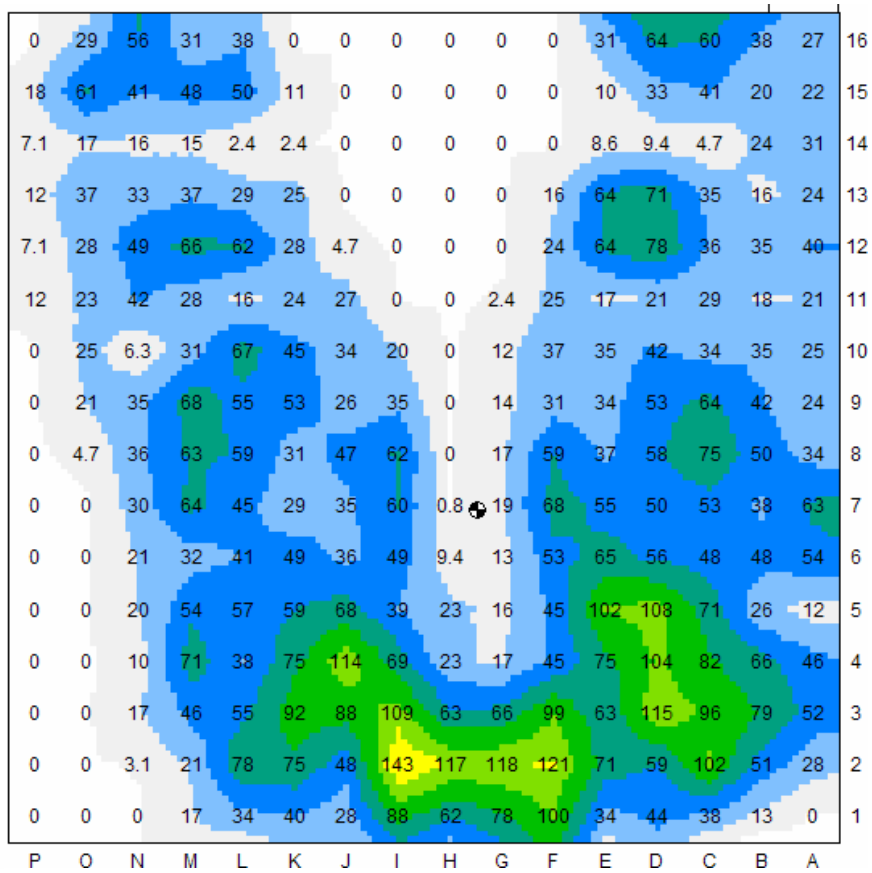
Count	**214**
Average	**43.1**
Std Dev.	**25.5**
Variation	**59.2**
Maximum	**143**
Center	**8.2,8.3**

Evolution PSV

Sensors Included	**208**
Average pressure	**43.7**
Standard Deviation	**27.3**
Variation coefficient	**62.3**
Maximum pressure	**143**
Center of pressure	**7.5,6.9**

Meridian Wave™ CPB vs. Evolution PSV™





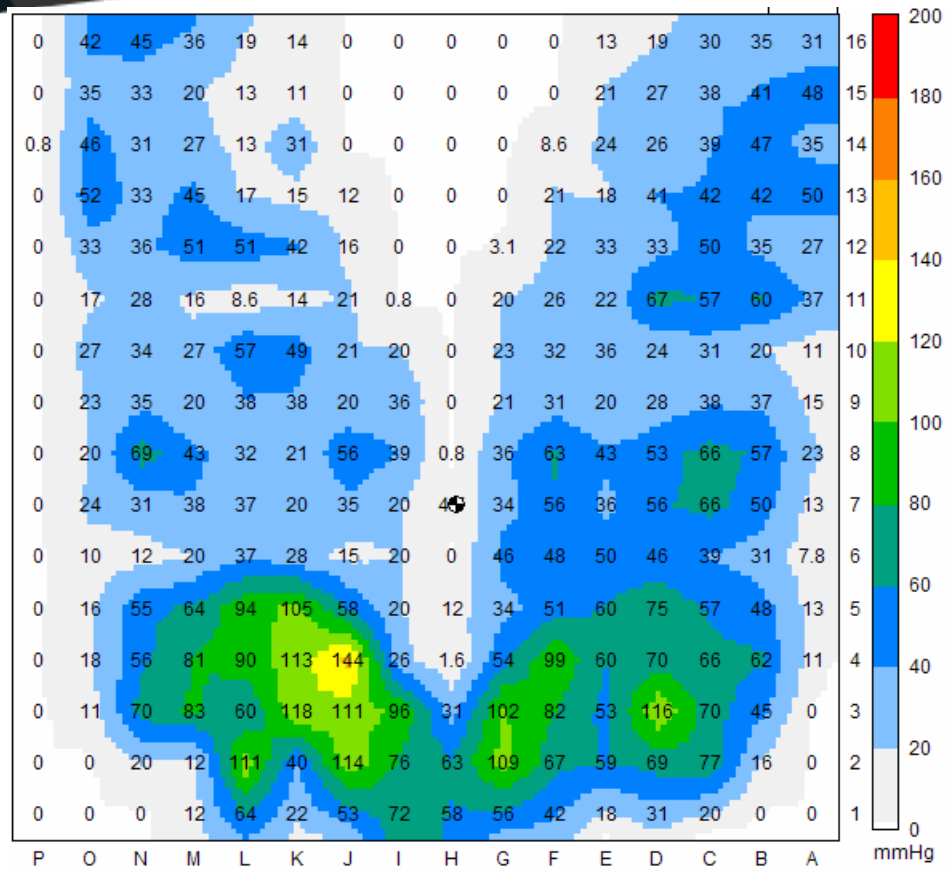
Meridian Wave CPB

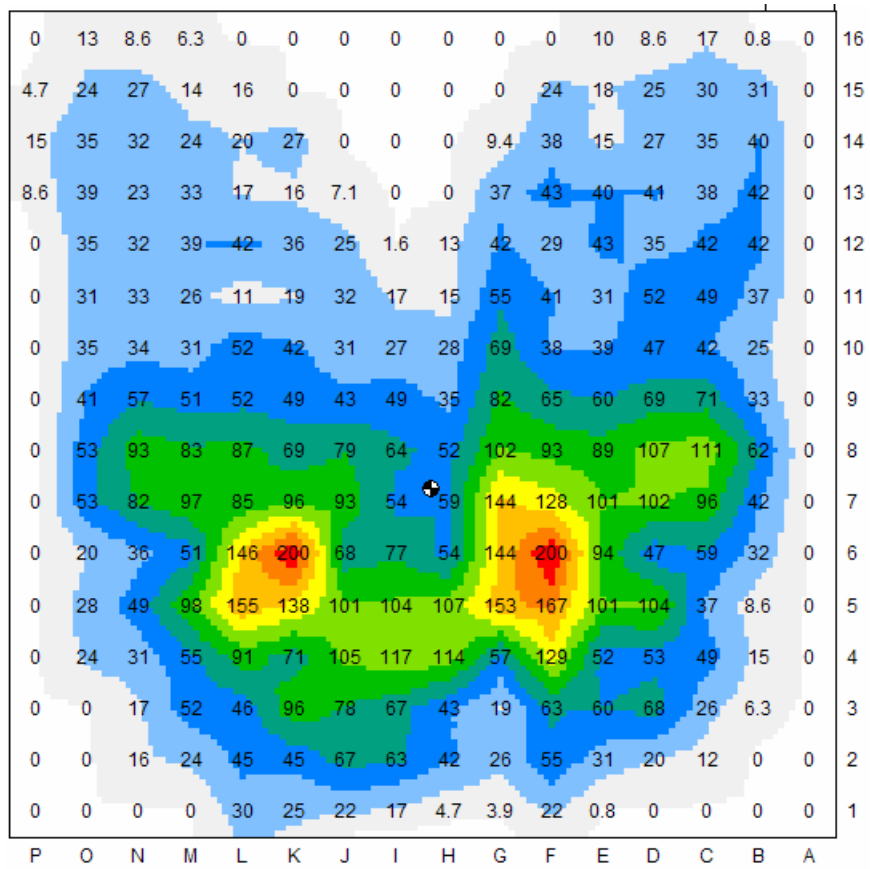
Sensors included	**217**
Average pressure	**45.1**
Standard deviation	**26.9**
Variation coefficient	**59.8**
Maximum pressure	**139**
Center of pressure	**8.6,8.3**

Evolution PSV

Sensors Included	**208**
Average pressure	**43.7**
Standard Deviation	**27.3**
Variation coefficient	**62.3**
Maximum pressure	**143**
Center of pressure	**7.5,6.9**

Stratus™ vs. Cycle Tested Standard Foam

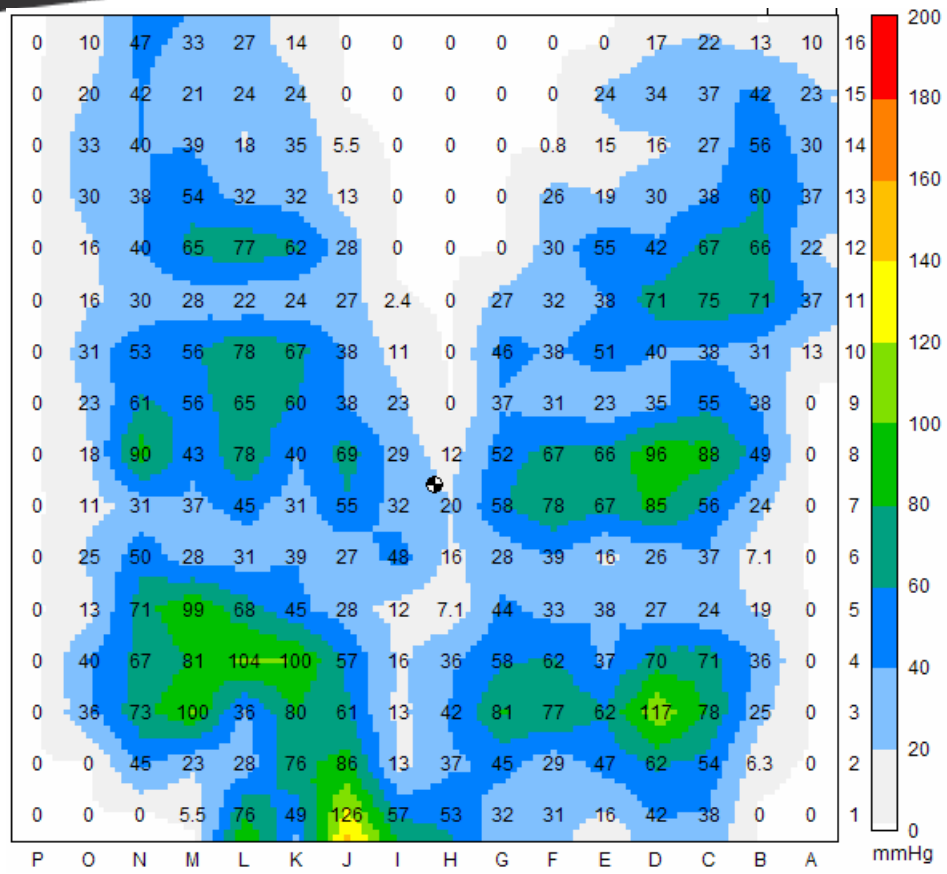


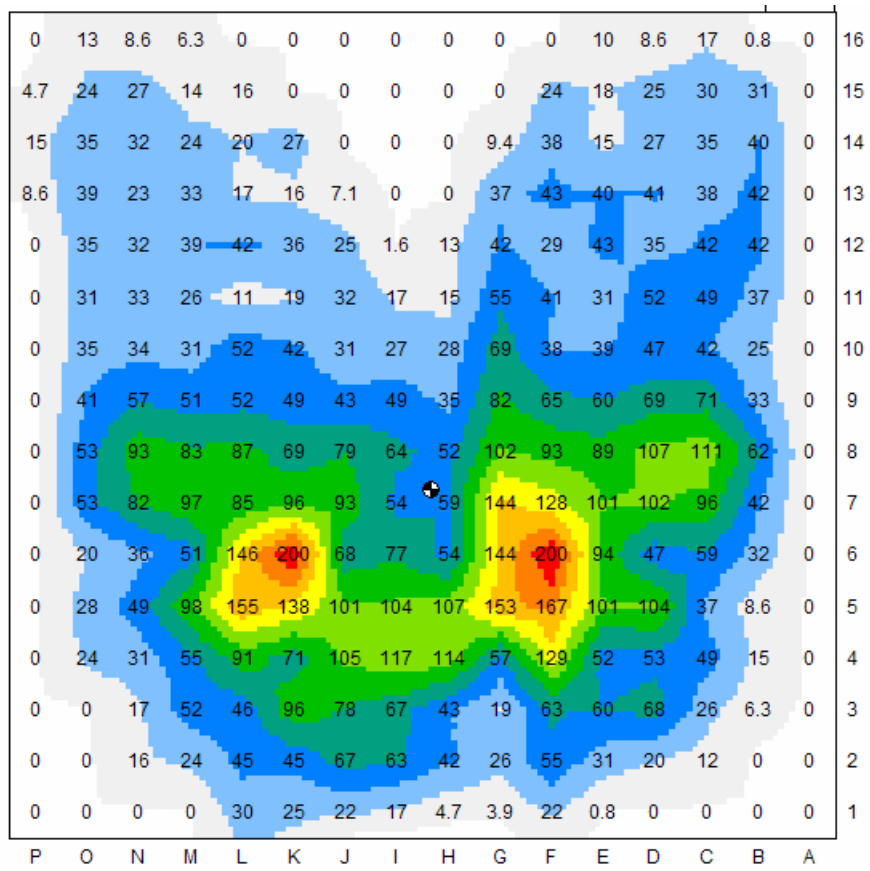


Stratus	
Sensors included	211
Average pressure	40.4
Standard deviation	26
Variation coefficient	64.5
Maximum pressure	144
Center of pressure	7.9,7.0

Cycle Tested Standard Foam	
Sensors included	201
Average pressure	51.3
Standard deviation	37.4
Variation coefficient	73.0
Maximum pressure	200
Center of pressure	8.4,7.3

Zoid PSV™ vs. Cycle Tested Standard Foam

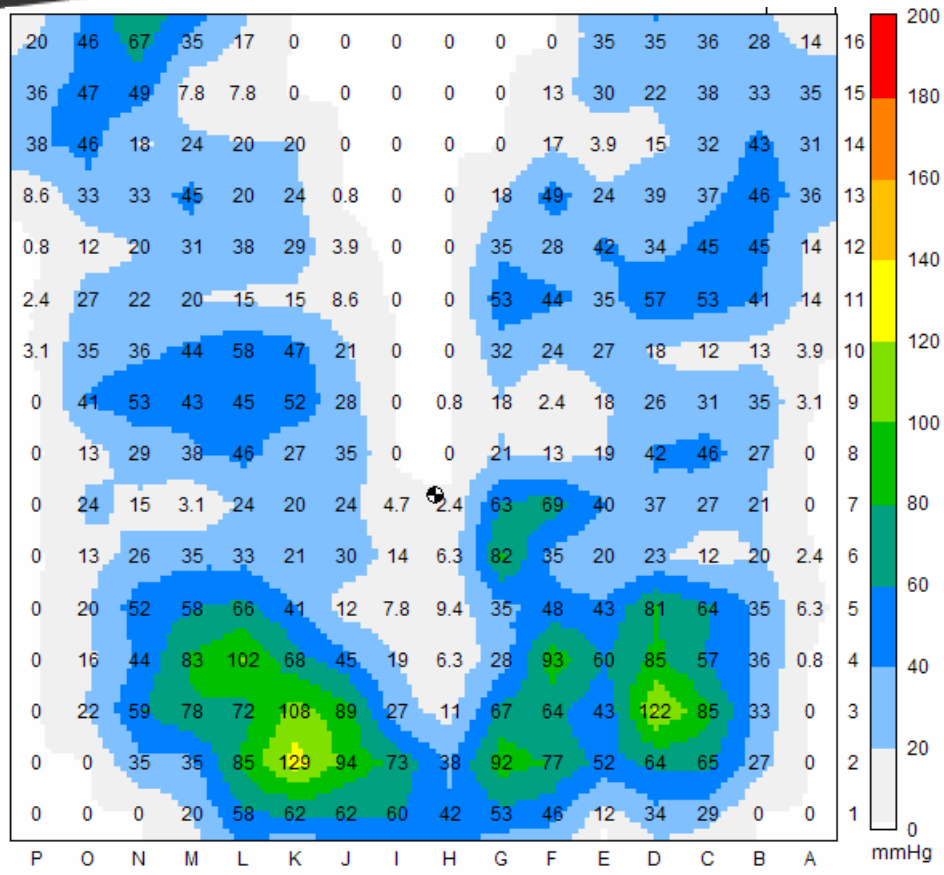


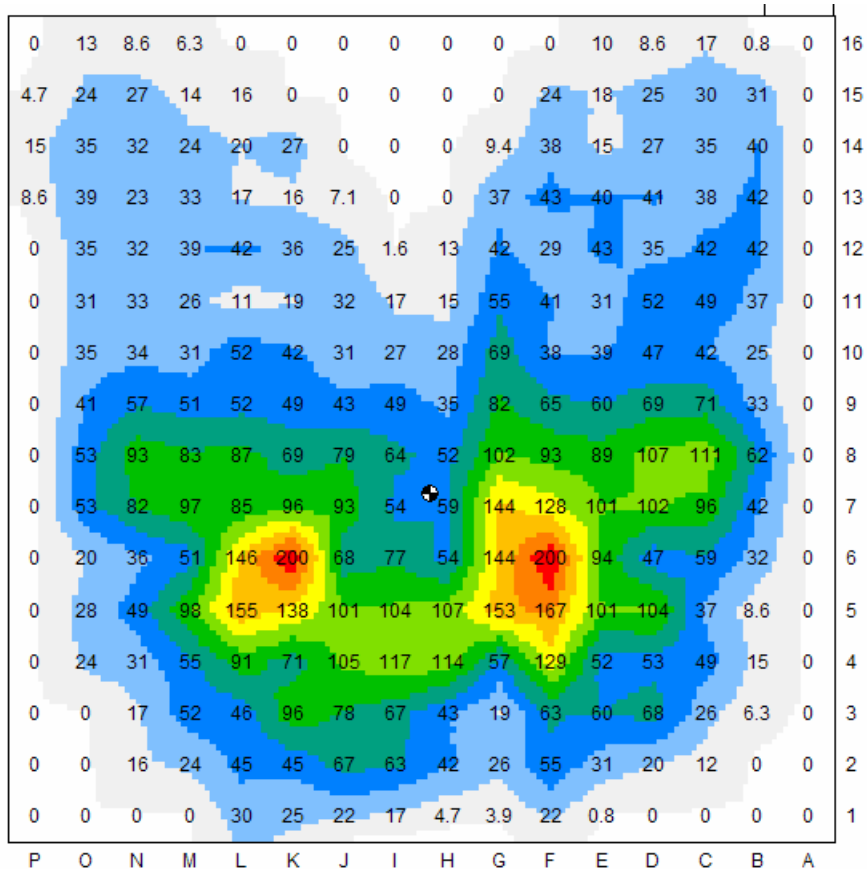


Zoid PSV	
Sensors included	204
Average pressure	42.1
Standard deviation	23.6
Variation coefficient	56.2
Maximum pressure	126
Center of pressure	8.3,7.4

Cycle Tested Standard Foam	
Sensors included	201
Average pressure	51.3
Standard deviation	37.4
Variation coefficient	73.0
Maximum pressure	200
Center of pressure	8.4,7.3

ProForm NX™ vs. Cycle Tested Standard Foam

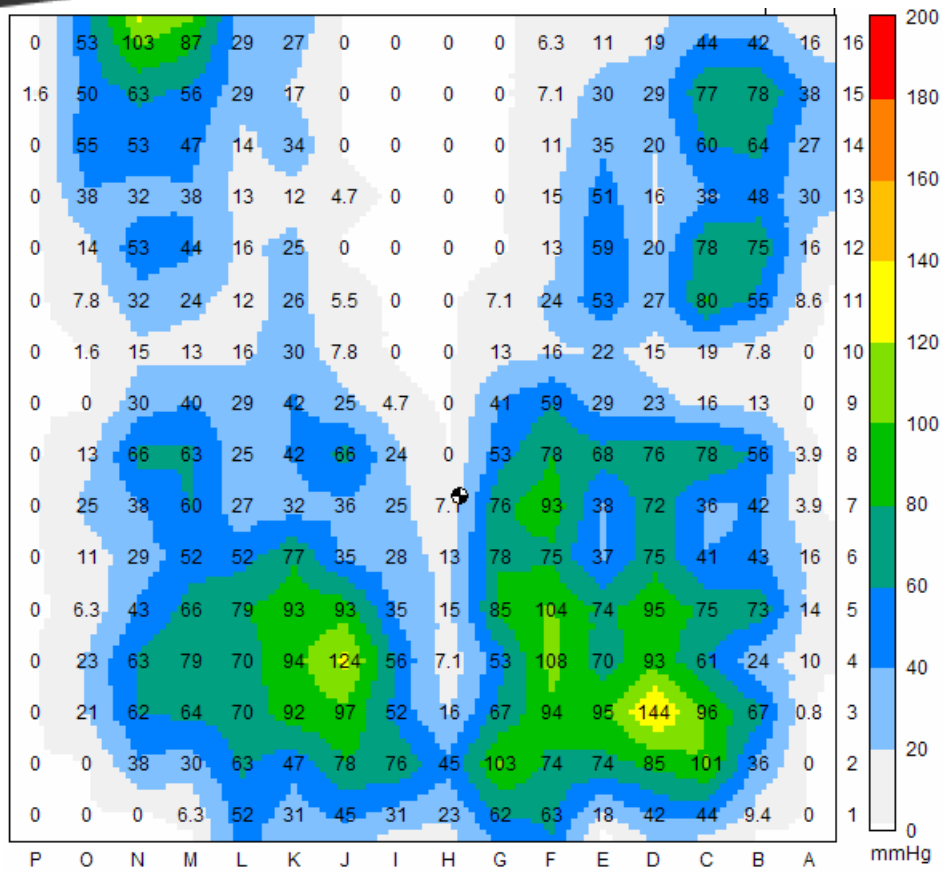


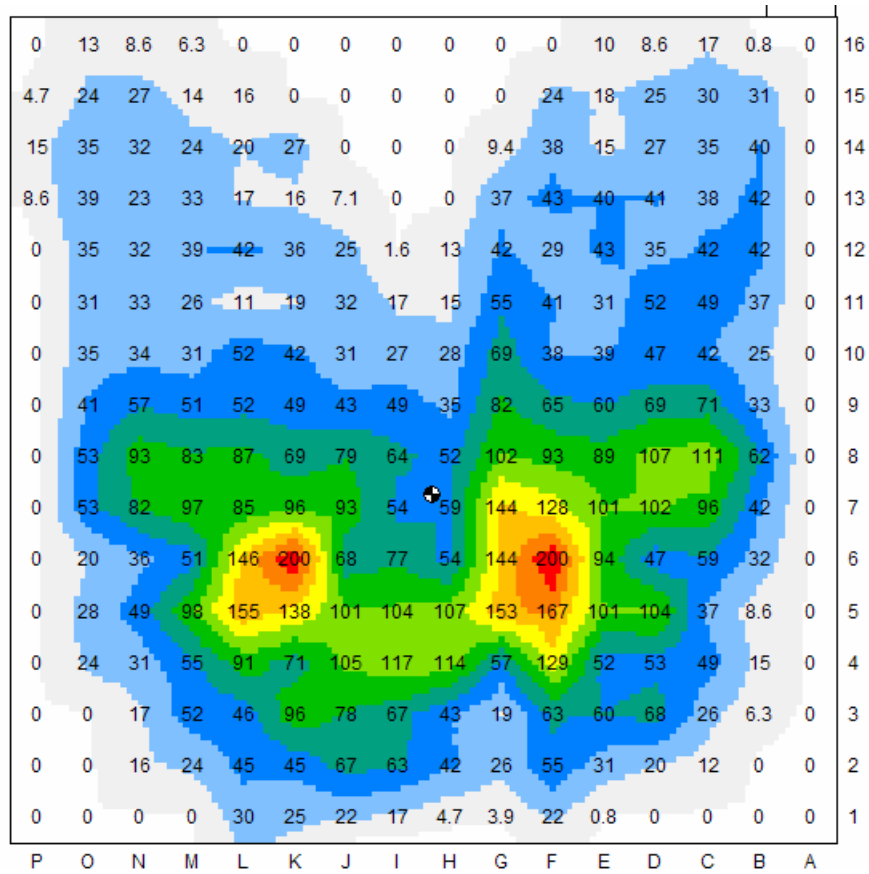


ProForm NX	
Sensors included	212
Average pressure	35.8
Standard deviation	23.8
Variation coefficient	66.6
Maximum pressure	129
Center of pressure	8.3,7.2

Cycle Tested Standard Foam	
Sensors included	201
Average pressure	51.3
Standard deviation	37.4
Variation coefficient	73.0
Maximum pressure	200
Center of pressure	8.4,7.3

Solo PSV™ vs. Cycle Tested Standard Foam

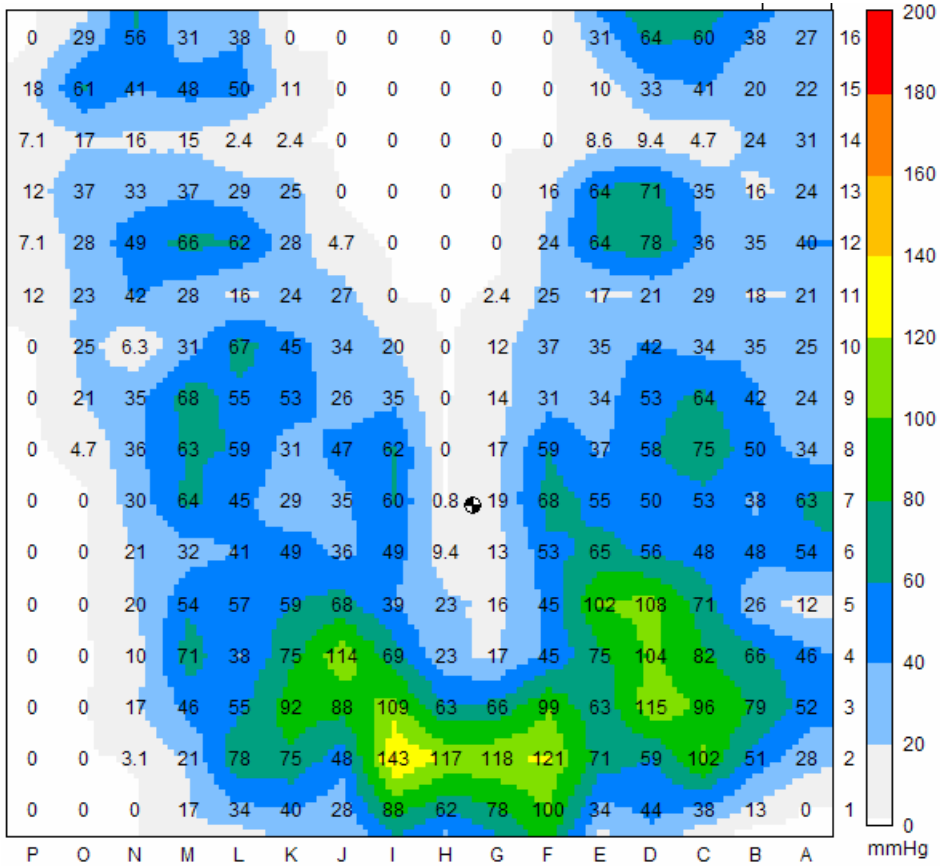


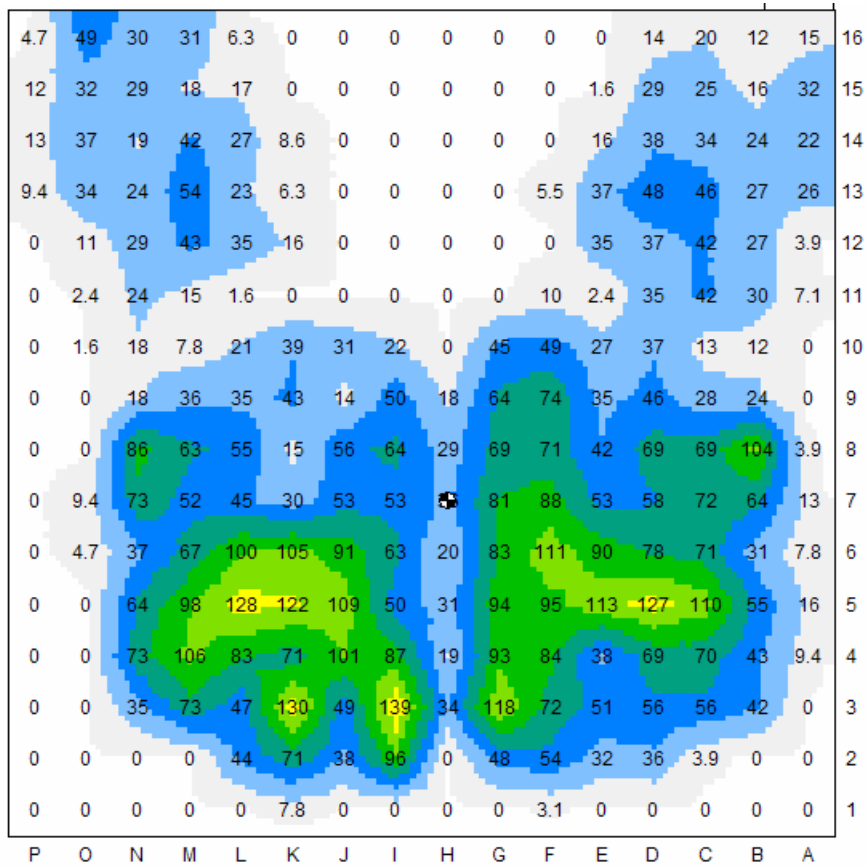


Solo PSV	
Sensors included	208
Average pressure	44
Standard deviation	28.8
Variation coefficient	65.6
Maximum pressure	144
Center of pressure	7.8,7.2

Cycle Tested Standard Foam	
Sensors included	201
Average pressure	51.3
Standard deviation	37.4
Variation coefficient	73.0
Maximum pressure	200
Center of pressure	8.4,7.3

Evolution PSV™ vs. Jay J2™





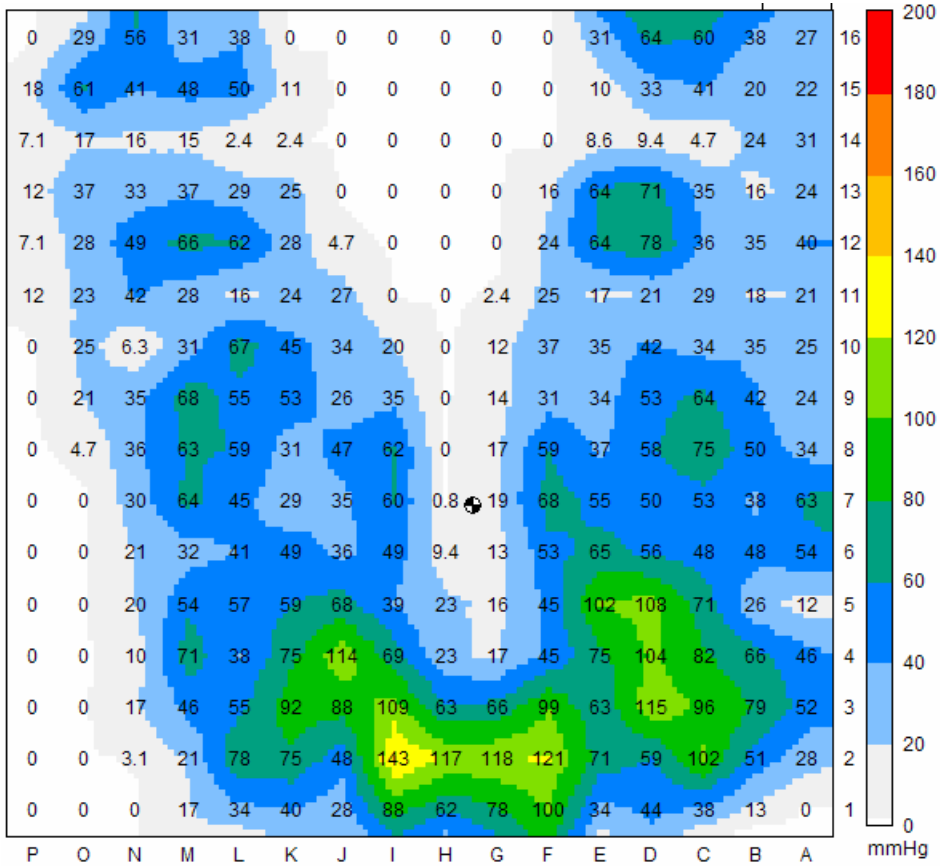
Evolution PSV

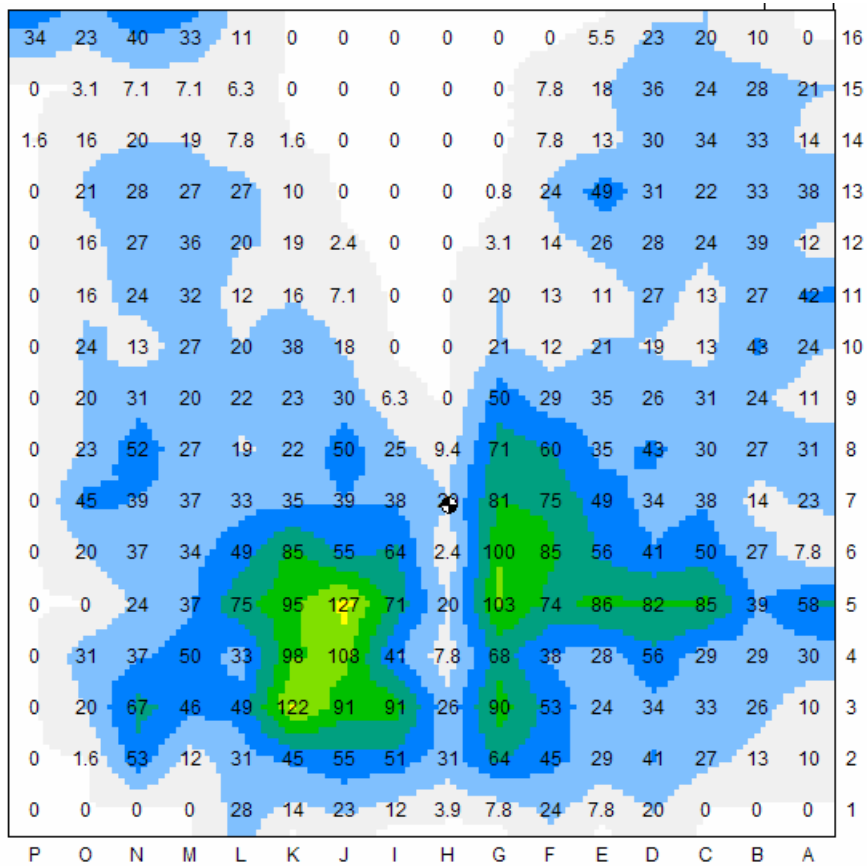
Sensors Included	**208**
Average pressure	**43.7**
Standard Deviation	**27.3**
Variation coefficient	**62.3**
Maximum pressure	**143**
Center of pressure	**7.5,6.9**

Jay J2

Sensors included	**184**
Average pressure	**45.1**
Standard deviation	**31.9**
Variation coefficient	**70.7**
Maximum pressure	**139**
Center of pressure	**8.0,7.0**

Evolution PSV™ vs. ROHO High Profile Quadtro Select™

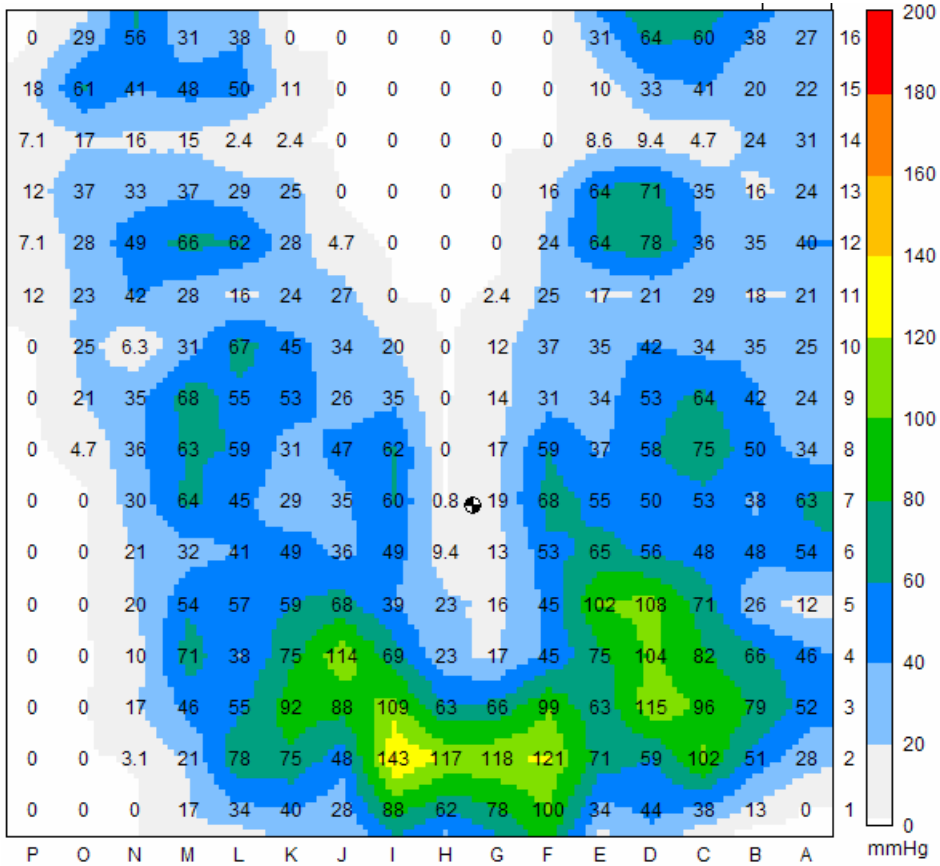




Evolution PSV	
Sensors Included	208
Average pressure	43.7
Standard Deviation	27.3
Variation coefficient	62.3
Maximum pressure	143
Center of pressure	7.5,6.9

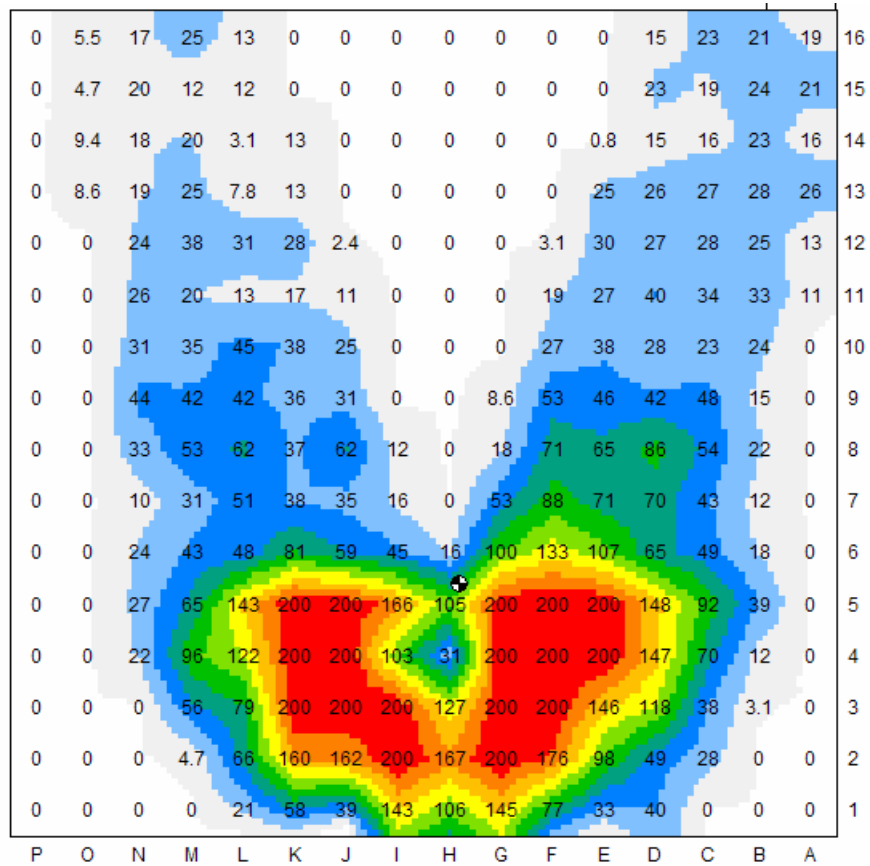
ROHO High Profile Quadtro Select	
Sensors included	209
Average pressure	33.3
Standard deviation	24.1
Variation coefficient	72.2
Maximum pressure	127
Center of pressure	8.0,6.9

Evolution PSV™ vs. Supracor Stimulite™



Evolution PSV

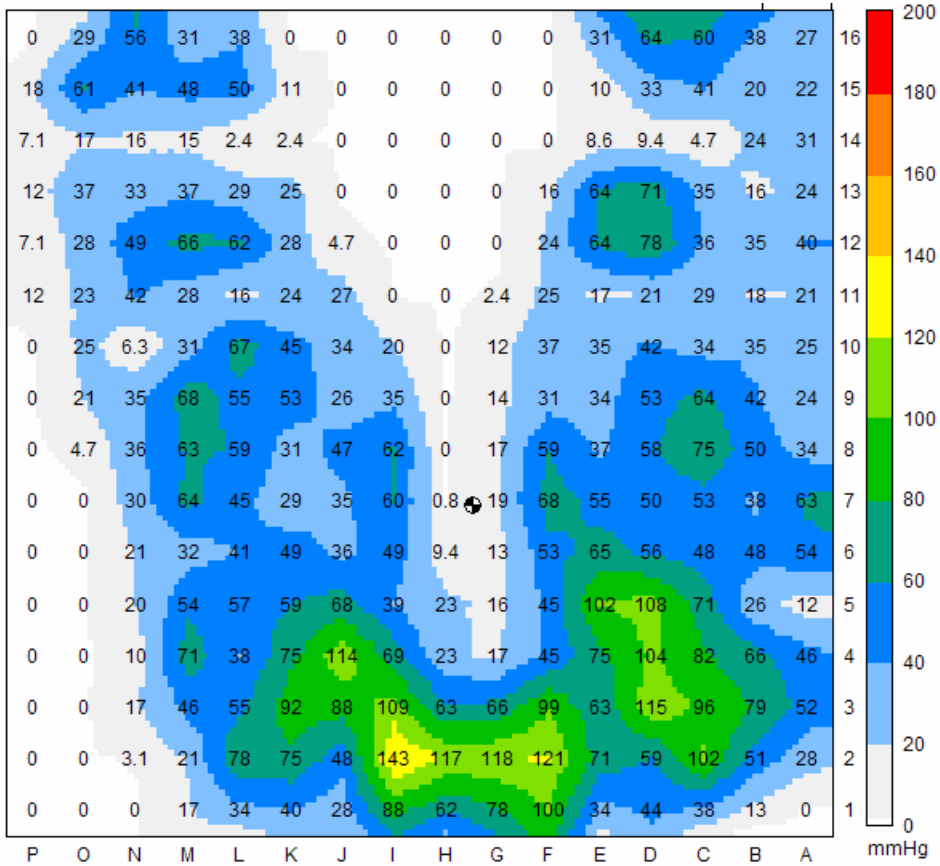
Sensors Included	**208**
Average pressure	**43.7**
Standard Deviation	**27.3**
Variation coefficient	**62.3**
Maximum pressure	**143**
Center of pressure	**7.5,6.9**

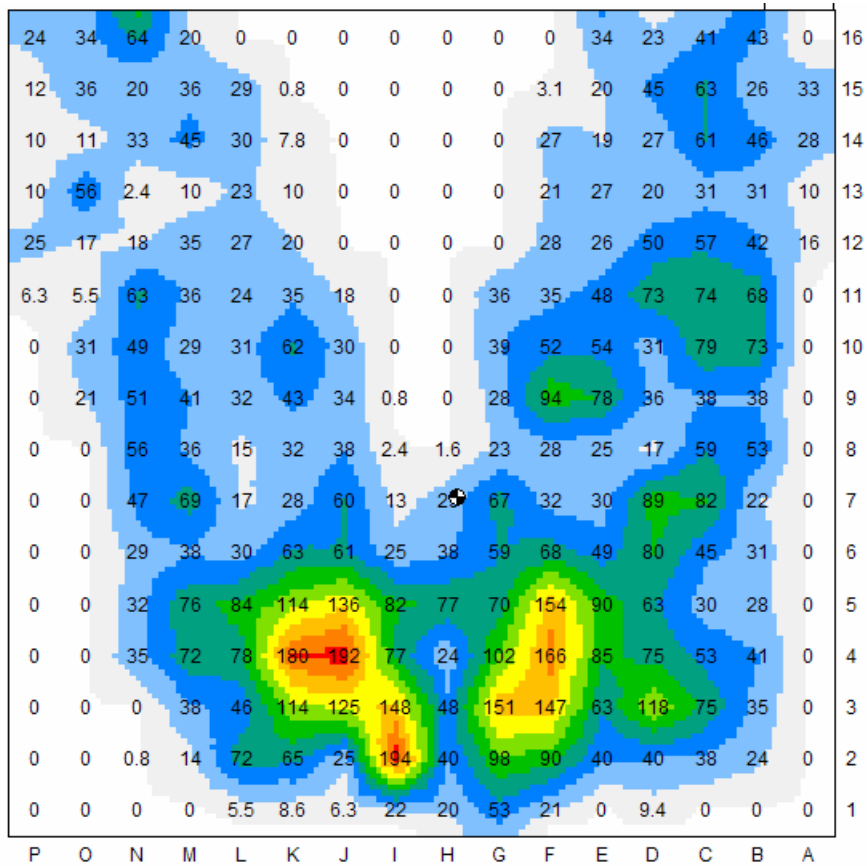


Supracor Stimulite

Sensors included	**174**
Average pressure	**61.2**
Standard deviation.	**59.8**
Variation coefficient	**97.8**
Maximum pressure	**200**
Center of pressure	**7.8,5.4**

Evolution PSV™ vs. Vicair Adjustor™





Evolution PSV

Sensors Included	**208**
Average pressure	**43.7**
Standard Deviation	**27.3**
Variation coefficient	**62.3**
Maximum pressure	**143**
Center of pressure	**7.5,6.9**

Vicair Adjustor

Sensors included	**192**
Average pressure	**46.8**
Standard pressure	**36.2**
Variation coefficient	**77.4**
Maximum pressure	**194**
Center of pressure	**7.8,7.1**